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THE FAMOUS KOOTENAY FALLS

Below these rapids there is most excellent fishing, this being the home of the gamest of all trout, the Rainbow

ROD AND GUN IN CANADA

VOL. IV. MONTREAL, JUNE, 1902 No. 1

The Kootenay River.

BY GEORGE D. CURTIS.

The town of Nelson, B.C., is beautifully situated on the south shore of the Kootenay River, on its course from Kootenay Lake to its junction with the Columbia. Nelson is the commercial metropolis of the interior of British Columbia, and the chief town of the mining district of Kootenay. It may be reached in many ways: from the east by boat from Kootenay Landing, where the Crow's Nest branch of the C. P. Railway is arrested by Kootenay Lake; from the west by a varied journey via rail and lake from Revelstoke or the C.P.R. main line; from the south by the Nelson and Fort Shephard Railway, a branch of the Great Northern running from Spokane, Washington State. Any of these railway journeys are interesting, and those from east and west are beautiful. The Kootenay River is about half a mile wide at Nelson, and is ideal for boating. Many boat houses, with their wharves and landing stages, line the foreshore; many summer cottages and small ranches dot the far shore, and it is a real boon to be able to leave one's office on a hot summer day, with tea basket and rod, and in ten minutes leave behind the heat and dust of the town and find shady and fragrant refuge under sweet scented cotton woods and vestal syringa, while twenty yards away the trout are rising freely and are ready to fall victims to the sportsman's guile.

As an instance of the boating facilities which Nelson enjoys and of the keen interest in boating which predominates, the Northern Pacific Amateur Association is holding its annual regatta at Nelson this year, on July 25 and 26, and the Nelson Boat Club has built a splendid new boat house in preparation for the event. Crews from Portland, Winnipeg, Victoria, Vancouver, etc., will compete in fours, doubles, skiffs, canoes, etc.

For all disciples of Izaak Walton the Kootenay River has great attraction. From Balfour, where it emerges from Kootenay Lake, to Robson, where it joins the Great Columbia, is a stretch of 42 miles, and along this whole length there is excellent fishing. Taking Nelson for headquarters, any part of the beautiful river can be reached in an hour or two. Going up the river, the boat which leaves in the early morning will drop you at any point desired. Going down, the trains which leave at 8 and 10 a.m., will stop at wherever one may wish; the boat returning in the evening will call in response to signal and the obliging trains will stop at the waving of a flag. From Balfour to Nelson the river averages about half a mile in width, and a boat is essential to a good basket. At Proctor, opposite to Balfour, there is good hotel accommodation, and the fishing in this neighbourhood is at its best from the middle of May until the end of July. Below Proctor the river narrows, and for about half a mile has a width of about a hundred yards. Here are the swirls and eddies that trout love, and as there is ideal camping ground along the shore a keen fisherman can find his fill of enjoyment.

Below Nelson it would be difficult for a stranger to know where to commence fishing, as every creek seems so promising. Four miles down is the railway bridge spanning the river, and nearby is a small hotel where one can put up and procure a boat. The river is always good for a full creel from the bridge to Bormington Falls, a place of surpassing natural beauty, and one can fish anywhere, as there is a succession of rapids, pools, and eddies. At Bormington Falls is the power station of the Kootenay Electric Supply Co., which furnishes power and light to Rossland, Nelson and adjacent mines.

Two miles below Bormington is Ward's Ferry, an angler's paradise. This far-famed pool is about a mile and a half in length and half a mile across at its head, and the water comes tumbling down over rocks and forms a rapid of about two hundred yards, on each side of which the eddies come and go. It is by no means uncommon for one who can cast a fly to be rewarded with a basket of forty or fifty pounds in an afternoon, and the writer has, with the help of another, creeled seventy-six pounds in half a day, only one fishing at a time, while the other handled the boat. The fish of the Kootenay River are trout, charr, ling, a species of grayling, and a fish locally known as the squaw fish, while its tributary creeks and streams abound with brook trout. To the sportsman by far the greatest attraction is the rainbow trout (*Salmo irideus*), which is to be seen at his best in the Kootenay River. Balfour is a favorite haunt for charr at any time about mid-summer, and large baskets of this fine fish are taken, the *modus operandi* generally being trolling with spoon, artificial or live minnow. Ten and twelve pound charr are not at all uncommon.

The C. P. R. have a comfortable and well furnished house boat, which a party of fishermen can charter for any length of time, and which can be towed up and down the river by the regular steamers. With a good Chinese cook, a party of congenial spirits can hardly find a more pleasureable form of outing. One cannot use the house boat below Nelson on account of the rapids and falls, but compensation is found in the magnificent scenery and the exceptionable fishing. Here is a point, say, where the river is a quarter of a mile wide, evening is falling, the water is calm and glassy as a mill pond; all about are three-pounders sucking down their evening meal or rolling about with dorsal fins out of water, gorging their full of the innumerable salmon flies. This is the time for dry flies, when with fine tackle, greased line and a floating fly you may fill your basket with two and three pounders in a couple of hours. Or again, here are rapids with white tumbling water, full of rushing swirls and eddies; on the edge of the rough water lie the fish waiting for the food that the river almost sweeps into their mouths. It is harder work than in the still water, but you will get abundant recompense.

A word to anglers who propose to try their luck on the glorious waters of the Kootenay River: Do not depend on your own superior knowledge or great experience. There are many good fishermen in Nelson, Rossland and the parts about who are also very good fellows and who are only too glad to help a visitor to enjoy himself with profit, and as they know the river and the best pools at different seasons and conditions of the water, and the flies which are most suitable, it will repay the stranger if he will seek their very ready assistance.

Both in Nelson and in Rossland there are Fish and Game Associations, and the visitor who looks them up will always find some one qualified and willing to give all the help to them it is possible.

With regard to flies, the following may be of use to one coming to the Kootenay for the first time. It is quite unnecessary to overload oneself with a large assortment of tackle for the different seasons; those that are appended will amply suffice from March 15th to May 15th.

1st—Claret body, claret hackle and Indian crow-tail, gold or silver twist, and bronze mallard wing.

2nd—Yellow and red body, red hackle, Indian crow-tail and teal wing.

3d—March brown.

From May 15th until the end of the season, in addition to No. 2, the following:

4th—Apple green floss body, honey dun hackle, Indian crow-tail and summer duck wing.

5th—Green seal's fur body, Indian crow-tail, honey dun hackle and Egyp-

tian goose wing. (This fly can be tied with body three different shades of green.)

6th—Yellow and red body, red ibis hackle, Indian crow-tail and compound wing of scarlet ibis and white ibis. (This fly, generally known as parmachene belle, is a good evening fly all through the summer.)

7th—For the end of the season, bright yellow body, Indian crow-tail, honey dun hackle, and canvas-back wing, gold twist. This fly should be tied on Nos. 5 to 7, (new Nos.) Cholmondely Pennell hooks, using the smaller flies when the water is clear. They can be wrapt with small round gold or silver twist.

Most of the above flies, tied by Harding Bros. (England) to special pattern, may be obtained, together with all necessary fishing tackle, at very reasonable prices in Nelson.

(*To be continued*)

Ontario's Game and Game Laws.

BY JAMES DICKSON, D.L.S.

(*Concluded from the May issue*)

It can easily be understood how the Indian or professional hunter who kills for gain alone will resort to every ruse in order to secure the prize. But the true sportsman always gives the quarry a chance for its life. And if the still hunter fails, which in the majority of cases he does, in getting in a shot before the suspicion of the deer has been aroused, it requires both energy and skill to stalk it afterwards. The intelligence of the hunter pitted against the intelligence of the hunted. The odds, if anything, in favor of the latter. And when the stalk is brought to a successful issue, one feels he has earned the prize, and performed a feat of which he may justly feel proud.

The question of whether hounding should be abolished or not is a matter which requires the most careful consideration. There are such a diversity of interests involved. Some keen sportsmen are not sufficiently skilled in wood lore ever to become successful still hunters ; others are physically incapacitated for the fatigue involved, and their interests are as much entitled to consideration as any others.

Some sportsmen imagine they are the victims of a great injustice if they ever return from the chase without a full bag. Others care very little whether they have a kill at all or not. They simply go out for recreation, a change of scene, and a short holiday. The baying of a hound in full cry is the sweetest of music to their ears. The sight of a buck with a noble set of antlers at one end, a white flag at the other, alternately rising and falling as the graceful animal bounds over brush pile and fallen timber, is the grandest of sights to their eyes. And they would just as soon see it escape as not. The short wait they have on the runway from the time the first distant note is heard from the chase until they draw a bead on the quarry, or the short, sharp canoe chase, is fraught with the keenest enjoyment.

And it is manifestly unfair to deprive any class of their quota of pleasure if it can be avoided. But, if the preservation of the game is the main object to be kept in view, stop hounding at once.

Some gravely assert that more wounded deer are lost to the still hunter and either die a lingering death or become an easy prey to other animals, than are lost by the man who hunts with hounds.

This is the veriest sophistry. In the majority of cases the still hunter secures a standing shot, while with the other the opposite is generally the case, and I have known some beautiful misses scored at even short range. In still hunting, if the animal does not see the hunter, several shots can generally be had before it leaves, for it will not stir until it has located the danger.

The long range rifle is undoubtedly to blame for many wounded deer being lost ; numbers of them being shot at are never looked after. In old times, before the in-

troduction of the breech-loader and magazine rifle, a smooth bore that would chamber an 18 or 20 bullet to the lb., and good for a shot at 100 or 150 yards, or a rifle that would kill at 18 or 20 rods, was good enough, and I have no hesitation in asserting that, gun for gun, there were more deer killed in those days than there are now.

In those days a man would not shoot unless he knew the game was within range. Now, to use the language of hunters, they, whether the game is standing, or on the jump, "pump lead after them," either as long as the animal remains in sight, or until the magazine becomes exhausted.

In Ontario there is no open prairie, and unless in a newly burned district, or on hill tops a shot is not often had at a greater distance than the old muzzle loader would carry, and if sportsmen were confined to the use of weapons good only for such distances, and would not shoot unless the chances were fairly good, fewer wounded animals would be lost.

Another reason why so many wounded deer are lost is the prevailing idea that if one raises its flag and bounds off after being shot at, there has been a clean miss. This is entirely wrong. I have known a deer to raise its flag and bound as gracefully off as if it were unhurt, and run for 150 yards before it fell dead, pierced through the lungs, the bushes dyed red with the blood squirted out by every breath it inhaled; and I have known another raise its flag, and cover 300 yards before it dropped, with the tip of its heart shot off.

No doubt, in a great many cases—perhaps in the majority of cases—a wounded deer does not raise its flag. Every one fired at, no matter how it may act, should be tracked for some distance, and care taken to find out whether it has been hit.

A case came to the knowledge of the writer recently of a sportsman standing on a hill; he had emptied his magazine at a buck on another hill at a long range. He remarked to a friend who came up that he had scored a clean miss every time. The friend prevailed upon him to follow it. It was found a short distance off with two bullets in its hind quarters which might or might not have proved fatal, but which would have left it an easy prey to even a cur dog. There were two other shots through the body, either of which must have proved fatal in a few hours. It was, in fact, so much cut up with lead that the carcass was bestowed upon a settler, as not being worth taking out.

But of all the unsportsman-like methods resorted to in order to secure a haunch of venison or set of antlers, I hold that the calling of the male moose during the rutting season takes the lowest place. There is no more caution to be exercised or fatigue to be endured in stalking the Ontario moose than there is in the case of the red deer. Yet there are sportsmen—I trust they are few and far between—who, instead of going in broad daylight into the haunts of the moose and taking their chances for a shot where the animal's instincts are brought into competition with their cunning, sneak quietly, in the gloom of the evening, into its feeding grounds, esconce themselves to leeward of where they have reason to believe the animals are browsing, there, in the dead of the night, with a birch bark horn imitate the call of the female when she longs for the society of her mate,—a cry which owing to their keen sense of hearing is audible at a distance of a mile, and repeating the call until the game, completely deceived and responding to every note, is lured to its fate. It is forbidden to set a snare for moose; yet here is a snare of the very meanest kind, against which there is no law, but which should be legislated against at once.

There seems to be a consensus of opinion that two deer per man per season are enough,—in fact, the trend ofpublic opinion has grown rather in favor of reducing the number to one; and two years ago it was made permissible to kill one bull moose on payment of a license of $5 once in three years. This is now being changed, and an open season of one month in which to take one moose or caribou provided, for all that portion of Ontario north of the line of the C. P. R. This is as it should be. They are now so plentiful in that region that this concession can be very well afforded.

But we think this might be carried still further, and the killing of the female of any species of deer forbidden. It will

be urged, how are the hunters to distinguish between the sexes? In reply, during the open season the antlers are in their prime, and let none be allowed to be shot which have not got antlers. This, of course, will not apply to caribou, as both male and female of that species have horns, but the difference in their size is so great that it would require only a short time to enable the hunter to distinguish between them.

Apart from the antlers there are other points of difference between the sexes, by observing which the practised hunter rarely makes a mistake.

It may be urged that the temptation to shoot when only a portion of the animal is visible is so great as to be irresistible, and if the hunter does not shoot then he may lose his chance altogether. That is no valid reason why one should shoot before he is certain of what he has got.

Once, when a lad, the writer being out with his gun, he saw a spot of red through a clump of alders where deer were wont to be; seized with an acute attack of buck-fever, he fired, but the game turned out to be a neighbour's ox. A short time ago, when surveying in Manitoba, a young half-breed showed me a turned up tamarac root which he had seen a friend pump four shots into from his Winchester, mistaking it for a moose. A few years ago I knew a case of a man firing at a bear at very short rifle range, but on going up to it, found not a bear, but an Indian in the throes of death. He was dressed in black and stooped down in the act of setting a beaver trap when caught sight of. A short time thereafter the same individual shot a groundhog one day in his own field, but on going up found his own son dead, shot through the head.

Scarcely a season passes that we do not hear of fatal accidents owing to this hasty shooting.

With such cases constantly occurring, the man who has not sufficient self-control to contain himself until he is sure of his game should not go into the hunting field at all.

Exception is being taken to the length of the present hunting season, two weeks, and earnest efforts are being made to have it extended so as to include the whole month of November.

There is no doubt but that when the open season was fixed at two weeks the primary object was to have the deer disturbed for as brief a period, consistent with the public interests, as possible. But now it might be in the interest of both the sportsmen and game to have the period extended to four weeks.

The principal, and, in our opinion, a valid reason why a change should be made, is that the short season is responsible for so many rifles being in the field at one time.

Ten days or two weeks is about all the open time the average sportsman has at his disposal for an outing; and as the hunting season is so brief, all must take it at the same time.

Consequently, certain sections are literally alive with men and hounds. But were the season extended, the chances are that not more than half the number of parties would be out at one time, and the deer disturbed little, if any, more than they are at present.

It is not the intention of the writer to criticise the game laws either favorably or otherwise. Neither is it the intention to cast any aspersions on the backwood settler.

But there is a great deal too much sentiment in this "poor settler" cry. One class prefers to live in the wild woods, on the borders of or beyond the confines of civilization, depending wholly or nearly so on his rod, gun and dead-fall for a livelihood, and is more interested in keeping the woods in a state of nature than otherwise. The only education he considers necessary for his family is to have them skilled in all the mysteries of the chase, and to eke out a living without having to resort to hard, manual labor. And as soon as the march of civilization invades country grounds, and the game becomes scarce it is up stick and away to "greener fields and pastures new." He is constantly at war with any and all who attempt to encroach on what he believes is his by divine right. That is the class of backwoods settler who is continually crying out against the stringency of the game laws, and who is the recipient of so much sympathy.

Another class prefer to remain in our towns and cities and pass their lives as day laborers. Their presence is an abso-

lute necessity. They and their families frequently endure privations from lack of work or low wages, such as the backwoodsman hardly ever knows. They contribute very much more to the prosperity of the country than the trapper or impecunious backwoods settler does, and are much more deserving of special favors.

Another class go into the woods, who are the real pioneers of civilization. They devote their whole time to the cultivation of the land. They neither hunt nor trap. Their whole time is devoted to their farms. Their families are properly housed, clothed and educated. Probably not more than one in ten of them ever shoots a deer or traps a rat. A few, but even that a small percentage of them, take their short annual outing to hunt or fish. They never ask for special favors or complain of the stringency of the game laws. The sight of a deer during the close season never tempts them to drop cradle or axe and rush in after their rifle.

These are the true civilizers of the country and are the men above all others who are worthy of sympathy and support, and whose efforts are generally crowned with success.

It does appear somewhat absurd that a man living in the heart of a deer country can procure a license to take two deer for the sum of 25 cts. while other residents of the Province, hundreds of miles distant from the hunting field, should have to pay $2 for the same privilege. Surely this provision has outlived its usefulness. And the man who has the game at his door should, at the very least, be called upon to pay as high a license as he from a distance.

In a settler's license the name of the township, concession and lot are set down, and it was never the intention that any more than one member of a family should procure a license for a given lot. Yet, we are credibly informed that several members of the same family have each obtained a 25 cts. license. Nor was it ever the intention that residents in towns and villages in the game country should have the advantage of that provision in the law. Yet cases are known where the issuers grant such licenses indiscriminately, even to members of their own family.

When such acts on the part of those whose duty it is to see the law enforced, both in spirit and letter, impartially, are overlooked, it is not to be wondered at that it is so openly violated by others.

Any issuers of licenses found guilty of such acts should be promptly dealt with, and if discovered in time, the license revoked.

Two years ago the bounty on wolves was further increased from $10 to $15, which, together with $2, the average value of the pelt, makes each wolf caught worth $17 to the hunter.

I observe in a report of the annual meeting of the "North American Fish and Game Protective Association," the chief warden of Ontario is reported to have said that "wolves had been almost exterminated in the territory covered by the law." We must take exception to that statement. We know as a matter of fact that wolves have been more plentiful and more aggressive in the Huron and Ottawa territory this winter than they have been for years. And this is a matter for congratulation. It is perhaps the most positive evidence we could get that the deer are increasing in numbers. For where deer are not plentiful wolves are rarely found.

We have spent many an hour listening to harrowing tales by the poor settlers, of the havoc committed amongst the deer by wolves, but never met one who admitted that either he or his mongrel dogs killed any by other than lawful means, or at improper seasons, or any other variety of game, although evidence to the contrary was palpable in all their surroundings. That Mr. Wolf is correctly held responsible for a great slaughter of game there can be no doubt, but withal he is blamed for many black crimes of which he is entirely innocent, and were he a human biped who could take advantage of the law of libel, what rare chances there would be of him securing heavy damages.

It is only a few years since the Government assumed responsibility for the payment of any portion of the wolf bounty. Previous to that time there was no record of the number annually destroyed, and I very much doubt if the annual slaughter amongst them is any greater now than formerly.

Big game has now practically disappeared altogether from the older settled portions of the Province, that is south of the Laurentian range, where all the land is adapted for agriculture and the cover destroyed.

But north of that, there is all over the Province a large percentage of land which must practically remain in a state of nature. In some parts, large sections have been burned over, but in most of these a dense second growth is springing up. So that there is, and always will be, abundant shelter for all varieties of game, and a never-failing supply of the purest of water, an element as essential for the welfare of wild, as for domestic animals.

Further, it is a well established fact, that if deer are not harrassed and chased, they are as numerous, or even more so, in a sparsely settled district where there is sufficient cover, as in the depths of entirely unreclaimed wilds.

The deer is by no means a very wild animal, and does not hold man in much dread if undisturbed by hunter and hound. And, moreover, they are less liable to the attack of wolves in the neighbourhood of a settlement, a fact of which they seem to be perfectly well aware.

If the settlers were only more alive to their own permanent interests, would abstain from endeavouring each to get the start of his neighbour to the extent of a deer or two in the season, would abstain from the use of hounds and would refrain from, and keep, his hunting propensities in check for a few years, we venture to predict that, by the end of a single decade, deer would be as numerous in the sparsely settled districts of Ontario as they ever were. It would not then be necessary to go one or two days' journey for a day's sport or a haunch of venison, and the present restriction as to the number allowed to be taken could also be a good deal relaxed.

With the "Algonquin Park," where there is neither hunting nor trapping ever permissible except for the destroying of the carnivora, such as wolves, etc., in central Ontario, and surrounded as it is on all sides by a settled country, a section of which is not likely ever to be more thickly populated than at the present day, there is no reason why game should ever become scarce in "Old Ontario." And there is even less danger of such a contingency in what is known as "New Ontario," with its large forest and game reserve on the Temagamingue waters, a section of country in which the axe of the lumberman has never even been heard. Surrounded by a district extending from the Province of Quebec, on the east, to Manitoba, on the west, and to the Arctic Ocean on the north is a vast area literally teeming with animal life.

The moose, the largest, the noblest herbivorous animal, with the exception of the elephant, in the world ; the caribou, the red deer, and in a few sections the wapiti, roam in countless numbers, while fur bearing animals of all kinds from the weasel to the white bear, infest its woods and waters.

Not a lake or stream which does not contain some one or other variety of succulent and gamey fish ; abundance of all varieties of both water and other fowls peculiar to the northern hemisphere ; scenery unrivalled, either in summer or winter, and all easily accessible, owing to its numerous lakes and streams, at all seasons of the year.

A veritable hunter's and fisher's paradise, with a climate unrivalled for its salubrity.

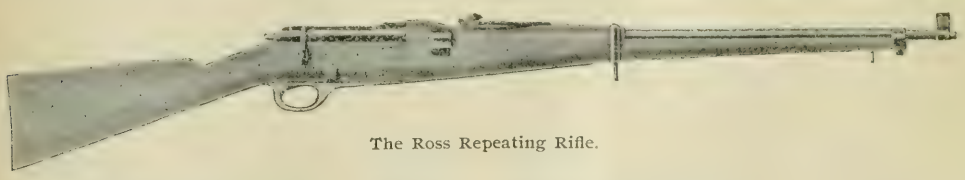
Should it not be the duty ? Is it not to the direct interest of every resident of Ontario to assist, to the utmost extent of his ability, in protecting and conserving this rich heritage ? And not stand idly by while a few unprincipled individuals are despoiling the land and leaving it in a condition to become barren to future generations for the sake of an uncertain temporary gain.

The "Ross" Rifle.

It is said the rifle invented by Sir Charles Ross has been adopted by the Department of Militia and that it will be manufactured in Quebec, hence a description of this arm will, doubtless, interest many of our readers, especially as it may also be sold in sporting model ere long.

The weapon was recently tested at Mr. Charles Lancaster's private range near London, and, subsequently, Arms and Explosives published the following account of the trials:

Sir Charles Ross has been wisely inspired in producing as his sample British weapon one which is adapted for the existing .303 Service ammunition, since this at once places it within the region of practical politics as a military arm that is well worth the careful consideration of the Small Arms Committee, and allows of a ready comparison with the Lee-Enfield on all counts. But beyond the leading conditions of having a barrel of Service calibre chambered to suit the Government cartridge, the rifle has few points of similarity with that now issued to the British Army. Even in external appearance the differences are sufficiently striking. For example, the magazine of the Ross rifle is flush with the wood of the stock, so that there is no unsightly metal projection in front of the trigger guard to worry the soldier in every conceivable way, and to prevent him from "sloping arms" according to the time-honored custom prevailing before 1892. It is well-known that the method of carrying the Lee-Enfield sideways at the "slope," which is necessitated by the obtrusion of the magazine at the place which should naturally rest on the shoulder, proves excessively tiring to the wrist and hand during a long march, and tends to cause a marked unsteadiness if any firing has to be done subsequently. Another feature to be noted is the continuation of the wood-work in one unbroken piece from butt plate to muzzle locking-ring, in place of the ugly and unpractical dividing of the stock just behind the shoe in the Lee-Metford and Lee-Enfield rifles, which was adopted, apparently, for no other reason than because the Martini-Henry had, perforce, to be so divided. These are features which are at once to be appreciated by a practical observer, but as regards other external characteristics it may be said that the rifle which Sir Charles Ross has brought over from Canada is what is termed a "shop pattern," and may be capable of some modification, as, for instance, in the matter of providing a half-pistol grip to the stock. On the other hand, this weapon in its present form "handles" beautifully in every respect, and the wood-work is finely modelled without sacrificing any of the strength requisite in an arm destined to the un-



The Ross Repeating Rifle.

ceremonious treatment of a "Tommy" under Service conditions.

Turning to the mechanism of the rifle, the bolt is of the front-lock straight-pull variety, a single rectilinear movement backwards and forwards serving to lock and unlock the breech-action and cock the firing-pin. This simplicity of operation, which is very marked in firing the rifle as compared with the usual turning-bolt, is attained by making the bolt-head separate from the main portion of the bolt, the two engaging by a series of volute grooves in such a manner that the pushing of the bolt home rotates the head, so that two lugs upon it enter into corresponding recesses in the front end of the breech-shoe as in the turning-bolt system, and *vice versa*, the withdrawal of the bolt rotates the head so as to free the lugs. It should be noted in this connection that Sir Charles Ross has fitted a long and strong mechanical extractor, which, in conjunction with the easy

WARD'S CROSSING

A scene on the Kootenay River, P.C., below Bonnington Falls


Length 23¾ in, Girth 13⅞ in, Height 4⅞ in
Caught by Ernest Mansfield in Kootenay
Lake 26th July 1901.

action of the bolt movement, suffices to dislodge even the most obdurate cartridge case. The extractor is, in reality, a long piece of steel, spring-tempered so as to allow it to snap over the rim of the cartridge, but for extraction it does not rely on its strength and springiness. On the contrary, the under-cut lug laps over the extractor during the withdrawal of the bolt, thereby locking it mechanically against the cartridge case. That Sir Charles combines the practical knowledge of the soldier with the mechanical ingenuity of the born inventor, is shown in his arrangement of the sear and trigger. He has so designed these that, though a strong trigger-spring is provided, the rifle would be quite as effective were it broken or lost. The sear-piece consists of two parts, the one being of the usual bell-crank form working on a rocking pin, with one end engaging in the trigger and the other in the usual manner in a detent in the cocking-piece for the purpose of holding back the striker in the cocked position. But, in addition, there is another arm on the cocking-pin, reaching forward and normally in contact with the under side of the bolt; it is compelled, except under stress of *force majeure*, to act on the sear proper by the pressure of a powerful spring, so that even were the trigger-blade entirely disconnected, the sear would be compelled to engage with its corresponding detent in the cocking-piece as the bolt was shot forward into locking position. So far, so good; but we may imagine that both the trigger-spring and this special sear-spring become inoperative through breakage or any other cause. In this case the trigger itself provides a solution to the difficulty. The back of the trigger-guard is slotted, and the trigger is made of extra depth so that it projects backwards an appreciable distance through this slot. In the natural process of handling the rifle and operating the breech mechanism, the middle finger of the right hand presses against the back of the trigger-guard just at the very spot where there is this projection of the trigger, and that pressure of the finger operating through the trigger to the sear affords at once the missing impulse to engage the sear with the cocking-piece.

The next point of interest lies in the magazine, which, as has already been pointed out, is of a compact form kept flush with the wood-work of the rifle. Generically, the Ross magazine belongs to the same class as the Harris magazine, which was described and illustrated in these columns some few months ago, to the extent that it consists practically of a metal box, into which the cartridges, five in number, can be dropped haphazard on to a platform depressed for that purpose by hand, the arrangement of the cartridges in proper zig-zag fashion ready for use being accomplished automatically, or at worst assisted by a slight shaking of the platform. In addition it permits of the use of a clip or charger such as is adopted in the Mannlicher and Mauser rifles. But beyond that general likeness, the two magazines have little in common. Without instituting any odious comparison, it may be said that the Ross magazine is decidedly the simpler in its mechanism, and consists of the fewer parts, three, as against eleven. The platform extends into, and is concealed in, the wood of the fore-end below the barrel of the rifle, and normally the platform is pressed upwards by the force of a strong and sufficiently flexible steel spring of Z shape. The platform, however, can be operated readily by hand, it being for this purpose provided, midway along its length, with an extension piece, which comes up on the right side of the rifle barrel through a suitable recess cut in the wood of the stock and hand-protector covering that portion of the barrel, in such a manner that, though not constituting a marked projection, the visible portion is easily reached by any of the fingers of the left hand when holding the rifle at its centre of balance, as would be done naturally during the process of firing and loading. One finger suffices to work this ingenious contrivance for lowering or shaking the cartridge platform, and the more so since its total downward travel in depressing the platform to its utmost extent is less than half an inch. Before leaving this point it should be mentioned that a simple indicator fitted in conjunction with the depressing stud shows at a glance how many cartridges are in the magazine at any given moment, and that miss-feeds cannot occur from accidentally depressing the platform, as might be the case were a forward movement required to depress it.

There is another feature of the magazine which also requires notice here. In accordance, no doubt, with the marked partiality of our War Office authorities for a magazine rifle, which may on occasion be worked as a single loader, Sir Charles Ross has provided his rifle with a "cut-off." His conception of a cut-off is, however, in marked contrast to the freak of fancy that fitted our Service rifle with the awful atrocity which does duty in that respect—except when it is bent out of shape or broken off. The cut-off of the Ross rifle is worked by an unobtrusive slide on the right side of the breech-shoe, which simply drops the interior of the magazine so that the cartridge which happens to be at the top is kept clear of the bolt in its travel backwards and forwards. For single loading, then, with the cut-off in use, nothing remains but to place single cartridges one by one on top of those held in reserve, and to fire them separately.

In the interval that has ensued between our first inspection of the Ross rifle some months ago, and the trial at which we were present at the beginning of December, Sir Charles Ross has not been idle. Sufficient has surely been written here to show that he has produced a military weapon which is absolutely practical in every respect, and on the face of it capable of being handled rapidly and easily, even by comparatively unpracticed users. But he has further devised for use in conjunction with this splendid weapon a system of carrying ammunition, that greatly enhances its efficiency. Unfortunately, we are precluded at present from giving a detailed description of this system, which is not yet fully protected; but without breach of confidence this much may be stated, that the cartridges are put up in separate cases into batches of five, each package thus constituting a magazine charge. These cases, which are made in tin or in cardboard, to suit climatic and other requirements, are so made that a single motion strips off the cover, and the contents can be poured direct into the magazine. The cases, opened or closed, can be carried in a bandolier, and this system at once removes one of the crying evils brought to light in the still-enduring South African War, since it is practically impossible to lose ammunition when made up in this fashion.

Having so far dealt with the rifle entirely as regards its constructive details, it remains to speak of it in operation. As is now well known, the Canadian Government has lately adopted the Ross rifle for the armament of the Dominion troops. This was not done, however, without submitting the weapon to tests which were probably more severe than any to which a rifle has hitherto been subjected. We are not at liberty, even did space permit of it, to give in detail the nature of those tests, but some idea of their severity and completeness may be gathered from the fact that they were modelled on the tests of the U.S. Ordnance Board, with every additional rigour of detail that ingenuity could devise. It is enough to say that the Ross rifle emerged satisfactorily from each and every of the series of trials, with the result that the authorities concerned signified their approval in the manner already indicated. More extended mention may be made of an endurance test, made with the rifle that we afterward saw and handled. This consisted of the firing of 500 rounds in 10 series of 50 rounds each. The total time occupied in actually firing the whole series amounted to 19 minutes 4 seconds, the best time for an individual 50 rounds being 1 minute 32 seconds, which, curiously enough, happened to be the last of the series, and the worst—which was the first—2 minutes 39 seconds. Immediately on completing this test, when the barrel must have been nearly red-hot and the woodwork was actually charred and smouldering, the rifle was tested and found to be in perfect working order.

The trials made in our presence were scarcely of so exacting a nature as those conducted in the Dominion across the seas, but they were nevertheless sufficiently thorough to demonstrate the remarkable qualities of the rifle. A certain number of shots were fired at 100 yards for diagram, under circumstances not particularly favorable to that test, but all the same the grouping showed good results. It may, in fact, be said at once that the whole of the trial, so far as the Ross rifle was concerned, took place under a disadvantage, inasmuch as Sir Charles Ross, who handled the weapon as demonstrator, had only landed from an Atlantic steamer on the previous day,

after one of the roughest passages on record, and could scarcely be expected to show his average "form." It follows, therefore, that the actual and undoubted success of his demonstration had a far greater value than might at first sight appear. In earlier Canadian trials of this same rifle, as has been mentioned, he was able to show extreme rapidity of fire, seven out of ten batches of 50 rounds each being fired well within two minutes per batch. Sir Charles wished to give us a sample of this rapidity by firing a series of 50 rounds. Apart from being out of "form" himself, he was further handicapped by the fact that, in place of having ten of his ingenious carrier-chargers ready to hand, he had less than half the number, and they had to be recharged in turn to make up the requisite number of rounds, and this work being accomplished by unaccustomed hands caused several perceptible pauses in the reloading of the rifle. Under all these adverse conditions, however, the 50 rounds were fired within 2 minutes 10 seconds, about the same time as was occupied in firing the second batch of 50 in the endurance test made in Canada. With this result as a basis, an expert volunteer marksman was set to fire a similar number of rounds from the Service rifle. The conditions were, to fill the magazine and use it as a magazine rifle throughout, without the cut-off, but the marksman was allowed to have the whole 50 rounds disposed at his side ready to hand. After following the smooth operation of the Ross straight pull, and the ease of loading, it was almost painful to watch the efforts of the expert with his Lee-Enfield and loose cartridges. The time occupied in firing 50 rounds from the Service rifle was 4 minutes 40 seconds, or 2½ minutes longer than with the Ross. In one case there was no hurry, and no taking of the rifle from the shoulder; in the other, all was bustle and quick spasmodic actions, to say nothing of loose cartridges dropping about in a manner eloquent of awful waste during the strenuous moments of active service.

Altogether, about 100 rounds were fired from the Ross rifle in our presence, and if this personal test cannot be accepted as conclusive, it was sufficient at all events to convince us that the inventor has brought to a state of practical perfection a magazine-arm of extraordinary capacity, sound alike in design and in construction. It seems well-nigh the ideal of what a military rifle should be, and the fact that it has emerged from tests so stringent as those imposed upon it by the Canadian authorities is sufficiently eloquent to need no further elaboration in demonstrating its fulfilment of every possible Service requirement.

For sporting purposes the Ross straight-pull magazine rifle has been adapted to the ·256 Mannlicher, the ·303 and the ·370 calibres, and at the present it is in contemplation to supply it to the ·400. The average weight with a 26 in. barrel is about 7 lbs. 8 ozs., and the total length is 46 in.

A Practical Darkroom.

BY H. M'BEAN JOHNSTONE.

While development and developers are subjects often enough treated in the columns of the photographic magazines, the workroom wherein all this is done is so seldom mentioned, and even when spoken of given only a passing notice, that apology for a thorough talk on it ought not to be necessary here. In almost everything else we are able to profit by the mistakes of others; but here, because we so seldom see more than our own workshop, we are obliged to learn largely by experience. It, therefore, is my intention to give a description of what seems to me to be a fairly convenient darkroom.

The darkroom which is most satisfactory (I am taking it for granted that it is to be devoted exclusively to photographic purposes) is the one in which everything is right at hand, and where, if there be only one or two plates to develop, there is not a lot of trouble to go to get ready. It must be large and roomy and have plenty of fresh air. Many and many is the time when I have had to go into a

little stuffy closet where there was hardly room to change your mind, and where the ventilation existed in name only. In such a place it is impossible to do one's very best work. After you have been at it for half an hour, and that horrible oily, smutty smell has commenced to manifest itself, there sort of creeps over you an inclination to get outside ; after that, the plate gets just whatever treatment you like to give, and no longer what it requires.

Now, in the first place, as regards the room to be used. I strongly recommend that it be plenty large enough to admit of your taking at least three or four steps to cross it, and, if possible, that it be fitted with a "snake" entrance instead of a door. This will admit plenty of fresh air, and will also allow you to set down the plate you are working on and go outside for a minute or two, if necessary, without letting in any light. Of course, where space is a question, it will be necessary to use a common door, as the other plan cannot be accomplished without a passage way four feet wide and six or eight in length. The advantage of a large room is that it gives you plenty of space to make enlargements by either day or artificial light, a thing that would be an impossibility were you working in confined quarters.

Then, too, if the room be of sufficient width, when you are building your sink you will be able to allow room at each end for a place to lay things on, instead of having to turn round when you want a place to put your plate-holders, etc. As regards the building of the sink (perhaps the most important thing to be considered after the choice of a room), I have several words to say. In the first place, have it made of wood and then lined with what is commonly known as "four pound" lead. Let the lead be well beaten down into the corners and then drawn up over the top and made fast with *copper* nails. You can buy such a sink if you have a mind, but I had mine made. The dimensions of it are about a yard long, two feet wide and eighteen inches deep. These, however, are of but little importance, and may be varied to suit the circumstances. If you can, it is just as well to have both hot and cold water taps over it, then when mixing chemicals where you have crystals to dissolve it is often possible to save considerable time. Have the carpenter make a wooden grating to fit over the top of it, that may be set down on it in such a way as to remain just where it is put and not slip this way or that. A grating like I have in mind ought to be made of strips about an inch square (common pine will answer), and so constructed that it may be taken out easily and washed from time to time. The object of this grating is to support dishes, etc., during development, and, at the same time, to allow anything which may chance to be spilled to drip into the sink beneath. In other words, it is simply a work table that can be slopped over. Mentioning it in the light of a work table brings up the question of how high are we to have it? Presuming that you do your work standing up, it is best that you have the top of the sink to fall just an inch or two below your elbow. This is most convenient. The advantage of a wooden sink under a lead lining, instead of an earthen sink, is to be found in the fact that if you drop a negative into it, it is less liable to break,—no slight consideration, when one remembers that we are all more or less butter-fingered, and, as a rule, with our best negatives. Another point worth noting, as it is apt to save a negative occasionally, is to have the mouths of your taps wound with cloth, in case in rinsing off a plate you lift it just an inch or two higher than you intended and scrape half the film off it. One is very apt to misjudge distances in the semi-darkness.

Now let your hypo pan be placed on the little stand you have left at one end of your sink, and right beside the other end have your washing-box arranged. The ruby window must be placed right back of the taps and over the sink, and ought to be so arranged that the light is on the outside but under control from the inside of the darkroom. This end may be gained by having a pipe put through the wall, and the turncock on the inside. The window must be made to slide back, in order that you will have a white light to examine your work by. It is an excellent idea to have a roller blind, with a white shade attached to it, put over the window, so that when you want less light it may be pulled down, or when the window is opened for the examination of the plate you will

have a white backing to hold it up against. The tracing cloth that engineers use is an excellent material to make such a curtain of, as it diffuses the light to just the right degree. A similar shade for the printing window is a very good idea. Now, over this window, we want to have a shelf about ten to twelve inches wide to hold bottles of developer, restrainer, etc. Large bottles of stock solution may be put away on the shelves on the other side of the room, and only such as are in common use be kept here. On no account must they be put away under the sink, for there is always more or less risk of foreign substances trickling down into them. Graduates, stirring rods, and other such paraphernalia as is in common use, may also be kept above the work table where it is convenient to the reach. The space below the sink may be utilized for a box or basket into which waste papers may be thrown.

On the wall at the end of the sink are *two* hooks to hold your developer and hypo towels. Be sure that you have two, and have them labelled, in order that you do not use the hypo towel when you are about to place your hands in the developing solution.

On the opposite side of the room from the sink is a closet that has been made perfectly light-tight, into which you may put your exposed plates as you take them from the holders, to keep until you are ready to develop. Above this are several shelves whereon may be placed such articles as are not in very common use, and where extra plate-holders may be put. Below the dark plate-closet is one shelf, and about six or eight inches from the bottom is a strip nailed across from side to side, behind which trays may be stacked against the wall.

The arrangement described in the foregoing has been treated in detail, not because it is supposed to be ideal, but because it has been found by experience to be perfectly practical and on the whole very convenient. It is true, the washing box and hypo tray might be nearer the developer, and avoid having to carry the drip over so great a distance; but in view of this fact, it has been so placed as to necessitate carrying it only over the grated sink. It is better that it should be thus than that the hypo be where there is any possibility of a drop getting into the other solutions. A further improvement might be the result of the solution bottles being where there was no possibility of their dropping into the sink; but where they have been put, they are most handy. So, there you are!

Fly Rods and Flies.

BY WALTER GREAVES.

Which material seems to suit the best for fly rods has occupied my attention for a considerable length of time, and I have used rods made of split bamboo, lancewood, greenheart, and lancewood and hickory combined. My experience inclines me to think that split bamboo, if properly made and of the best quality, is an excellent material for this purpose, —in fact, *the best*, so far as its steel-like properties and casting powers are concerned. The only objection I can see to its use (and it is the only one) is that if, through accident or otherwise, you should happen to break your rod when out fishing, you might find it a difficult matter to mend it properly on the stream; whereas, with the solid wood rod this can usually be done in a few minutes. According to my experience, lancewood comes second to the split bamboo, so far as its casting powers are concerned; and then greenheart. The lancewood will stand a great deal of rough work; and keep straight and sound for many years. Greenheart is, of course, a splendid wood for rods, but I find that after being in use for a few seasons it becomes powdery, and is then liable to snap with very little strain—in fact, without any apparent reason. I have known a greenheart rod to stand well for several years and then all at once to break time after time without being put to any severe strain. This has prejudiced me to some extent against the wood. I have never known

good quality of lancewood to act in this manner, and I have a rod in my possession, made, probably forty years ago, by Mr. Kelly of Sackville street, Dublin, on which I have killed hundreds of fish (black bass, trout, &c.), and I really believe it is as good to-day as it was when it came out of the shop, as it is perfectly straight, notwithstanding that I have no wooden form for it, but keep it in a bag. Among my many rods that I prize very highly I may mention a "Murray" trout rod, eight-strip split bamboo, ten and one-half feet, without dowels, g. s. trimmings, weight about seven ounces. To my mind this is as perfect a rod for trout or black bass fly-fishing as one could wish for. I have had it several years and it is just as good as the day I got it, although I have given it plenty of hard work. I take great care of all my rods, and varnish them well every winter. I have landed several grilse, and played some large salmon with the "Murray" rod, but was always unfortunate enough to lose the salmon, although I had some of them on for fifteen or twenty minutes. The reason for this is that I have accidentally struck them after the season closed, when fishing from the rocks for trout, and having only a trout reel and a line of about fifty yards, the reel either did not revolve quickly enough when the salmon made a long and sudden run, or the casting line gave way, caused probably through the back-running of the small reel. You have not much control over a salmon with a seven ounce rod, fishing from the bank. Anyone who has tried it will readily understand this. (Had I landed the salmon out of season, I should, of course, have put it back again into the water.) A rod I also prize very highly is one of lancewood, finished by myself—a light rod of about six and one-half or seven ounces. One can cast all day with it without feeling the slightest exertion, and it can land a heavy fish too, as I have on many occasions proved, both at Lake Edward, north of Quebec City, and in rivers and streams in New Brunswick. I have landed many trout in Lake Edward with the fly (I do not use bait) that I believe would run up to 3 lbs. You may think, from what you have frequently read, that the trout in Lake Edward do not take the fly ; but just try them. If you ever happen to have such sport as my brother and I had there once with the fly, you will not, I think, forget it. We camped about ten miles south of the Station, and fished chiefly near some rocks called "Gull Rocks." The only drawback to our trip was the black-flies, mosquitos, and sand-flies, which were simply in clouds during July ; but one might avoid this by going in May or September. A more beautiful lake it is impossible to imagine, and the atmosphere and scenery are simply delightful.

If you go to this part of the country, take the following flies with you, dressed on hooks No. 5 (not smaller, but no harm if a size or two larger) :—

Parmacheme Belle ; Grizzly King ; Professor ; Dark Montreal ; Claret Hackle ; Queen of the Water ; Canada ; Governor ; Zulu ; Silver Doctor ; Split Ibis ; Coachman.

Those flies will all kill in Lake Edward at one time or another ; and the same may, I fancy, be said of almost any trout water.

I make all my own flies for salmon, trout and black bass, and find them quite as killing as the best bought flies. Most of my flies I make without regard to any particular pattern. In dressing my salmon and trout flies, I prefer to make the bodies of seal's fur, as it retains its colour better than any other material when wet. Pig's wool and mohair are also good.

Did you ever try my "Massassaga" fly for black-bass ? If not, do so the next chance you get,—that is, when you fish in a weedy water, or one with frogs in the vicinity. (I think the bass take it for a green frog.) It is made thus :—

Body bright emerald green tinsel, tail bright scarlet ibis, wings guinea-fowl, with large spots, dyed bright yellow, hackle yellow, hook No. 1.

I used to have such grand sport with this fly near Massassaga Point, on the Bay of Quinte, that I called it the "Massassaga." If properly made, it is by far the best fly I have tried for bass. In fishing a river or stream one should pay considerable attention to the proper size of the hook to be used. I have caught salmon and grilse on a No. 8 hook, when they would not look at the same fly dressed on a hook a size or two larger. I also attach much importance to the

colour of the body of the fly,—more so, in fact, than I do to the wings or hackle, etc. With the correct colour of body, I have frequently caught fish on a fly when the wings and hackle had almost entirely disappeared, and the fish preferred it, even then, to other and more attractive-looking flies. I have found the following fly, which I call the "Nigado," a very good killer for trout:

Body gray seal's fur, ribbed with oval silver, butt yellow seal's fur, tail pin-tail, hackle gray, with fine guinea fowl over, wings black-and-white, barred snipe, small jungle-cock checks, head light pink or white ostrich. Give it a trial. A fly with the same dressing but with wings of mixed pintail and white feather, is also a good killer; but the one with the barred black-and-white snipe feather is the more attractive fly, I think.

The White Spruce.

The Spruce has been an important timber tree in New Brunswick and Nova Scotia ever since the disappearance of the pine, but farther west the latter has overshadowed it up to the present, and it is only in recent years, with the great expansion of the pulp and paper industry that it has been begun to be realized what a great part the spruce is destined to play in the future history of Canada. The pulp-wood forests in Eastern Canada have been estimated as covering an area forty-four times that of England, or, by another calculation, an area of 219,259,958 acres, while in northern British Columbia there is stated to be a forest of spruce the immensity of which cannot be conceived of by any person who has not seen it. There is in the Dominion a supply in abundance to meet the needs of the world, and it becomes our citizens, as thinking men and Canadians, to take due care that this great source of comfort and prosperity, which we can destroy in a day but cannot re-create in a century, be managed with skill and wisdom, so that not only shall the present need be supplied but the Canada of the future shall enter into an inheritance that shall stand as a monument to the wisdom and foresight of a generation that had sufficient power of imagination to have a vision of what the coming years might be, and strength enough to ensure that it should become a reality.

The spruces and other firs are differentiated from the pines by having their much shorter leaves arranged singly along the branches instead of two or more in a sheath, and the spruces have the additional distinguishing feature that the leaves are terete or four-sided. The White Spruce (*Picea alba or Abies alba*) attains a height of 100 feet and is a beautiful tree when growing in the open, its straight branches spreading in rows from the trunk and decreasing in extent from the bottom upward so as to give a pyramidal form to the whole. The foliage is light in color, sometimes approaching to a glaucous white. The branchlets are glabious, that is, smooth or devoid of hairs, and this is one of the chief distinctions between this and the Black Spruce. The cones are one to two inches in length, longer and slenderer than those of the Black Spruce, and drop from the branches. They are green at first, later changing to a brown or straw color, and the edges of the scales are entire. An examination of the cone is considered necessary to finally determine the species. The leaves, when crushed, have a peculiar feline odor, and for this reason it is not advisable to use this species in the manufacture of spruce beer.

The range of the White Spruce is from Nova Scotia westward to the Rocky Mountains and north indefinitely, it being yet undecided whether this or the Black Spruce has the more northern habitat. The White Spruce shows a preference for the higher and drier situations. It reaches tree-like proportions in about thirty years and is mature in one hundred, but in the Atlantic Provinces the rate may be more rapid. This is the timber tree among the Canadian spruces, and produces a white, clear, easily-worked lumber, a large part of which is exported to Great Britain.

The process by which this tree is turned into pulp and the qualities possessed by it which make it suitable for

this purpose form a subject of much interest. The woody parts of the tree are largely built up of cellular tissue, or woody fibre. A fibre of good length and toughness ensures a strong paper, and a clean, white wood is a requisite for the production of a properly colored pulp. These qualities are found pre-eminently in the wood of the spruce tree. There are, however, other substances, such as rosin, etc., in the tree structure, and the object of the manufacturer is to separate the wood fibre from the incrusting substances. The most simple method adopted is that for the production of mechanical pulp, which simply consists of breaking up the wood by pressure against a grindstone under a stream of water. This is a comparatively cheap process, but it results in the breaking up of the fibre and does not remove the impurities to any extent.

The chemical process, that which results in the production of what is called "cellulose" to distinguish it from mechanical pulp, is much more intricate and expensive, involving an additional output for boilers, chemicals, etc. The two main chemical agents used are sulphite and caustic soda, and the resultant products are designated as sulphite pulp and soda pulp. The wood is barked, cleaned of knots and imperfections, and, after being cut into chips by a strong revolving knife, is placed in the boiler. By the assistance of heat and the pressure developed in consequence the sulphite is driven into the pores of the wood, dissolving the rosin, and leaving finally the clear white pulp of wood fibre which is drawn off, washed and prepared for shipment by rolling and drying.

According to the figures of the Dominion Statistician the pulp mills of Canada now in operation have a capacity of 387,000 tons a year, of which 204,000 is mechanical pulp, 17,750 soda pulp, and 160,000 sulphite. Their output last year was 264,600 tons. The export of wood pulp in 1901 was valued at $2,002,120, of which $982,142 was shipped to Great Britain, $968,007 to the United States, and $51,792 to other countries.

The Nepigon.

Information as to the Nepigon seems to be in great demand this spring, and, having had many enquiries, we take this opportunity of giving a description of the river and its fishing. We are indebted to Mr. William McKirdy, the Government Fishery Overseer at Nepigon, for much of that which follows:

The Nepigon has long been termed "the king of trout streams," and as civilization advances, and the older trout steams are practically fished out, we find the Nepigon still holding its own, and producing records which would make any angler envious of the fortunate one who has selected the Nepigon for his outing. Five-pounders are common, and there is a record of one weighing eight pounds two ounces, caught by Eugene Stevenson, of Paterson, N.J.; numbers of doubles are caught, E. P. Williams, of Cleveland, O., with a six-ounce rod, taking one weighing 6½ pounds and another 4¾ pounds, in the aggregate 11¼ pounds. Many other records worthy of a first place cannot be recorded here, as our purpose is more particularly to give information as to the river, and a few hints on outfit.

The Nepigon is 40 miles long, with numerous lake expansions and surging rapids; its width 300 to 400 feet; water of the purest, clearest kind, and of the coldest temperature; there are nine portages on it, the two longest being 2½ and 1½ miles—the rest are short; it is near these portages the best fishing is to be had.

Nepigon station is on the C.P.R. main line, 65 miles east of Port Arthur, where connections are made with the C.P.R. steamers, Beatty Line, and steamer "Dixon" from Duluth. The train from the west reaches Nepigon at 9.40 a.m., giving ample time to reach the first camping and fishing grounds—12 miles—in good season, provided arrangements have been made for guides, etc. It is absolutely necessary to arrange for guides beforehand, in order to avoid disappoint-

A Pretty Fair Fish

A British Columbia salmon of the "Tyee" species, *Onchorynchus quinnat*, guaranteed to yield excellent sport on a light rod

READY FOR LUNCHEON

Canadian fishing gives every angler a keen appetite, and a cook who can stand an encore or two is worth his weight in gold

TROUT FISHING IN BRITISH COLUMBIA

Good sport on Shuswap Lake, a few miles from Kamloops

ment and delay, particularly during the months of July and August, when the season is in full blast.

The usual way of "doing" the Nepigon is in parties of two or four. Each canoe (18 feet long) is manned by two Indians, and accommodates two gentlemen and supplies for a ten days' trip. Cost :—

Two canoes, 50c. per day	$10 00
One head guide, $2.00 per day	20 00
Three other guides, $1.50 per day	45 00
Rent of one tent and fly for gentlemen, 50c	5 00
Rent of one tent for guides, 25c. per day	2 50
Rent of camp outfit (axes, pack-straps, cooking utensils)	7 50
Making a total of	$90 00

Added to this will be the cost of supplies, and this will entirely depend on the varied tastes of the party—the supplies for Indians are flour, pork, tea and sugar. As the Nepigon is eminently a fly-fishing stream, parties wishing to enjoy themselves to the fullest extent take one canoe for each, and also a cook, who can be procured at $2.00 per day ; this of course doubles the expense, but to those who can afford it is by far the best way. The cost per day for each varies from $3.50 to $7.00, as to the mode adopted. One word as to the guides. These men are Indians and half-breeds who have followed this business for a living for years, and are thoroughly acquainted with all the intricacies of the river, both as to the dangerous parts, and as to the best fishing pools. They are intelligent and desirous of giving satisfaction to their employers, doing all the packing over portages, putting up tents, making comfortable beds, and attending to the cooking —in fact are ever on the alert for their employers' comfort. Much of course depends on the head guide, who should be chosen for his experience and capabilities.

Tourists will find it to their advantage to procure their supplies at Nepigon, as it will avoid customs troubles when coming from foreign parts, also the disappointment of goods being delayed or lost in transit, and as the local outfitters understand what is necessary, goods are properly packed in suitable packages for storing in canoes and handling on portages. They keep on hand, for rental, tents, canoes, camping outfit for cooking, camp tables and chairs, blankets, etc., and a full line of such supplies as have been selected after ten years' experience in the requirements of visitors, and only the best are kept.

This stream is protected by the Provincial Government and a license fee of $15 for two weeks, $20 for three weeks, and $25 for four weeks per man is charged to visitors whose homes are outside of Canada, Canadians being charged $5 and $10 for the same privilege. Permits are procurable from the Fishery Overseer.

Lake Nepigon, the fountain-head, the producer of the brook trout for which this stream is justly famous, is also the home of the whitefish and lake trout, some of the latter having been caught with the rod weighing from thirty to forty pounds. The lake is beautiful, studded with numerous islands offering pleasant camping places, and many tourists who visit the Nepigon spend a time on the lake, which can be safely traversed in the large bark canoes used on the river. The climate there is particularly enjoyable ; the delicious coolness of the air, in contrast to sultry congested centres and more southerly localities, has wonderful recuperative powers, and refreshing sleep under warm blankets the lot of all.

The big game of the district consists of moose, caribou and bear, and as the Ontario game laws now permit the shooting of moose from the middle of October to the middle of November each year, it is very probable that many sportsmen will outfit at Nepigon, for a hunt in a region which has been rather strictly preserved for years. Owing to the number of Indian guides to be picked up at Nepigon it will be easy to obtain first class hunters, and that is more than half the battle.

A few names may be given, of fishermen who find it worth their while to revisit the Nepigon season after season : General McNulta and H. N. Higginbotham, of Chicago, Ill. ; General Noble, Dabney Carr, Esq., and Dr. Carson, of St. Louis ; C. W. Bunn, Esq., and Matt. Clark, Esq., of St. Paul, Minn. ; Trenor L. Park, Esq., Dr. Morris and L. E.

Sexton, Esq., of New York; L. C. Van Vleck, Esq., of Toledo, Ohio; C. E. Sampson, Esq., of Boston; Honorable J. W. Cochran, of Ashland, Wis.; Honorable Ben. T. Cable, of Rock Island; John A. Sea, Esq., of Independence, Miss.; J. C. Hunter, Esq., of Duluth, Wis.; D. E. Thompson, Esq., of Toronto, Ont.; J. W. Hague and F. W. Salisbury, of Pittsburg, Pa.; C. H. Bosworth, Esq., of Peoria, Ill.; Eugene Stevenson, Esq., of Paterson, N.J.

An Unfair Advocate.

In the issue of the 20th March last, The Farmer's Advocate, under the caption "A Disappointing Department," attempts a criticism of the Dominion Bureau of Forestry and the Canadian Forestry Association, which organizations it apparently cannot distinguish. It would be well, therefore, for the benefit of the Advocate and any others who may be laboring under the same misapprehension, to have it clearly understood that the Canadian Forestry Association is not in any way connected with or under the control of the Dominion Bureau, or Superintendent of Forestry, or any Provincial Department of Forestry, although it has been favored with the support of practically all of them, and owes much, especially, to the assistance which has been given it by the Dominion Government and the Dominion Superintendent of Forestry. It is only a fair statement of the case to say that the Forestry Association owes its origin to Mr. Stewart, the Superintendent, and that the present success is mainly due to the active efforts made by him to advance its interests. Mr. Stewart, in doing so, had probably in mind the advancement of the work of the Bureau over which he presides, but he was broad enough to see that his sympathies should be as wide as the whole Dominion, and that the propagation of a knowledge and interest in tree growth in every Province was not only a matter of interest to him as a Dominion official and a Canadian citizen, but would have its effect in a better understanding of the requirements of the Great West in regard to tree planting and forest management, a matter which is to be considered in Parliament and decided upon by the representatives of the whole Dominion. We venture to say that the future will vindicate the wisdom of those who have formed the Canadian Forestry Association, whether from the point of view of the whole Dominion or of that of any part of it in particular.

To understand the line of criticism of The Advocate, it is necesary to state that Mr. Stewart, after it was decided by the Government to adopt the co-operative system for assisting settlers in tree planting, which has been fully explained in our columns, held a number of meetings in Manitoba and the North West Territories to explain the proposed scheme. At these meetings he suggested the formation of Forestry Circles in affiliation with the Canadian Forestry Association in order that an opportunity might be given by the meetings of these circles for an exchange of views on tree planting and keeping up the interest in the subject, and also for an expression of their views as organizations, which is always more influential than individual expressions of opinion on matters of policy or public action. Membership in the Dominion Association was considered advisable for these circles, to keep them in touch by the publications of the Association, including the official organ, ROD AND GUN IN CANADA, with the work which was being done, while the influence of the Association would be available to support them in any advance or extension which they wished to advocate. But see how The Advocate interprets this: "Every member of the central association was supplied with a copy of a monthly sporting magazine, the ROD AND GUN, of which very excellent little paper the Forestry Superintendent is editor. It will thus be seen what an excellent scheme the formation of these little forestry circles proved to swell the circulation of ROD AND GUN." In reply to such a statement it is only necessary to say that the Forestry Superintendent is not the editor of ROD AND GUN, that he has no pecuniary interest

in it directly or indirectly, that he has no desire to increase its circulation except in so far as doing so may be in the interests of forestry, and that the insinuation conveyed in the latter portion of the quotation is utterly false and foundationless.

The article goes on to urge that the headquarters of the Dominion Forestry Bureau should be in the West, but unless the whole management of matters western is to be removed from the capital and the West cut off from the rest of the Dominion and the control of the Dominion parliament altogether, it is much more convenient for all governmental purposes that the Superintendent of Forestry, who would have to be at Ottawa the greater part of the time of the session of Parliament, no matter where his headquarters were located, should have the records of his work where they would be most conveniently available when called for by Parliament. The attempt to administer Dominion lands from Winnipeg resulted only in duplication of work and delays which made necessary the removal of the Commissioner's office to Ottawa. Besides it should be remembered that the Dominion Forestry Bureau has the protection and management of the great northern forests and those of the Rocky Mountains and the railway belt in British Columbia, which for all practical purposes are as far distant from Winnipeg, which The Advocate evidently means by the West, as they are from Ottawa.

The Advocate also complains because the carrying out of the project was not placed in the hands of thoroughly capable western men. We venture to say that The Advocate cannot find any more capable men, either western or eastern, for this particular work than those who have charge of it. To Mr. Stewart belongs the credit of originating and carrying through to so great a degree of success in so short a time the co-operative scheme, while his knowledge of timber matters has been gained by many years of practical experience. Mr. Ross, the assistant superintendent, was employed for some time at the Experimental Farm at Indian Head, where some of the most successful experiments at tree planting in the West have been carried out, and the fact that he afterwards took a special scientific course is not likely to have decreased his capability. Mr. A. D. Stevenson, the agent for Manitoba, is known widely as one of the most practically successful tree growers in the West.

A criticism of the alleged inability of the Bureau of Forestry to supply sufficient tree seeds of the most desirable varieties—a failure which, if it were the case, might easily be excused in the inception of a new and large scheme—gives occasion for statements on the tree question which hardly show that The Advocate has a very thorough grasp of the subject. In enumerating the most desirable trees, it begins and closes the list with the native maple. Now, while this maple is a hardy tree of quick growth, and therefore a most desirable one for starting with, it can hardly be seriously contended that operations should be confined to it, while in Southern Alberta it is stated by some who have experimented most extensively that it will not succeed at all, either on account of the Chinook winds or the altitude. The wood of the native maple is of very little use and it is only for shelter purposes that this tree is valuable. The Dakota cottonwood, which might just as well be called the Manitoba cottonwood or the native cottonwood, as it is as much a native as the maple, has been a success at the Indian Head farm and in the territories generally, and, if planted on suitable land, there need be no fear as to its success. It grows quickly and the wood is valuable. The ash, which also comes in for condemnation as a slow grower, has qualities in its wood that will be compensation for slow growth, and as this tree is also a native of Manitoba it should be grown with success. There are other trees such as the elm, oak, spruce, tamarack, etc., that are natives of Manitoba and it is to be hoped that while for the first years only the most easily available and successful trees are used, as opportunity and resources develop the number of species used for woodlots and shelter belts may be increased rather than diminished, so long as those that are merely experimental are not employed.

The Dominion Forestry Bureau will probably welcome criticism that will be helpful to the objects it has in view, but

the article in The Advocate makes no suggestion of any value. It is strong, and suggestive neither in fact nor in argument, and contains such utterly gratuitous insinuations as would destroy the value of a much abler presentation of its case.

We opine, however, that the attack was primarily intended to be directed against the Canadian Forestry Association, as the opinion is apparently held that the return for membership in the Association is not sufficient to compensate for the fee asked. The members receive the official organ, ROD AND GUN, and the Annual Report, and such other literature as may be from time to time issued by the Association or the Forestry Bureau. While the field to be covered is extensive the facilities are certainly inadequate to accomplish all that is desired by the Association, but the work in which it is engaged is one of such great national importance that it deserves the support of every patriotic Canadian even if it should be at some slight sacrifice, and even if some may feel that their needs are not as yet being fully met. We will be glad, however, of any suggestion that will aid in making their connection with the Association more helpful and useful to our members in the West.

The Volume of Standing Timber.

BY A. KNECHTEL, FORESTER, N.Y.S.F.F. AND G.C.

A few words in regard to form factors are necessary for a clear understanding of the methods described in this paper.

The term "form factor" means the ratio between the volume of a tree and that of a cylinder having the same base and height as the tree. Let A be the cross area of the base of the tree, B its height, F the form factor and V the volume; then:

Volume of cylinder = A x H
Volume of tree V = A x H x F
Form factor.. ..... F = A x H

The volume of the stem of a tree without the branches is less than that of the corresponding cylinder; hence, the form factor for the stem alone is less than 1. If the branches are added, the form factor is sometimes greater than 1, especially when the tree is young.

Form factors may be:

1. Stem form factors, which refer only to the volume of the stem above ground.

2. Tree form factors, which refer to the volume of the stem and branches, excluding the root wood.

3. Timber form factors which exclude all material except those parts that make timber, whether stem or branches.

The diameter is measured at breast height of an ordinary man, about 4 ft. 3 in. The height of the ideal cylinder is equal to the height of the tree. Since the measurements are taken at a constant height, the form factors of two trees of the same shape but differing in height cannot be the same. Therefore, in using form factors for calculating the volume of trees, the height of the trees must be taken into consideration.

European tables based upon the measurements of numerous felled trees have been prepared, which give the form factors for different species, heights and ages. The following table shows the form factors for four species:—

Height or Length	Timber only, down to 3 in. diameter				Whole tree, exclusive of root wood			
Feet	Scotch Pine	Spruce	Silver Fir	Beech	Scotch Pine	Spruce	Silver Fir	Beech
20	.14	.18	.27	.13	.83	.88	.83	.63
30	.32	.31	.38	.21	.68	.77	.77	.62
40	.45	.41	.51	.30	.62	.69	.68	.62
50	.48	.47	.53	.40	.57	.64	.65	.59
60	.47	.48	.53	.45	.53	.61	.63	.57
70	.46	.49	.52	.47	.51	.59	.60	.56
80	.46	.49	.52	.48	.50	.57	.59	.56
90	.45	.48	.50	.50	.50	.55	.56	.57
100	.45	.47	.51	.51	.49	.53	.55	.58
110	.44	.46	.52	.52	.49	.51	.52	.59
120	.43	.44	.52	.52	.48	.49	.51	.60

Tables of form factors give averages of numerous measurements, and are therefore not reliable for calculating the vol-

ume of a single tree. Tables are not yet constructed for the American species, excepting the white pine, but in a general way it may be said that the factors of shape run about as follows:—

Diameter in inches	Hardwoods	Softwoods
12	0.55	0.50
14	0.54	0.50
16	0.52	0 49
18	0.50	0.49
20	0.49	0.48
22	0.48	0.48
24	0.48	0.47

Factors of shape for any species will differ as the trees are grown under different conditions of soil, light, etc. A white pine tree grown in the open will have its stem nearly conical, while one grown in the dense forest will more nearly approach the cylinder.

The table below gives the form factors for the white pine when grown in a moderately dense forest. The table is taken from bulletin No. 20, U. S. Department of Agriculture, Division of Forestry, Washington, D.C.

Diameter at breast height	Corresponding factors of shape	Diameter at breast height	Corresponding factors of shape	Diameter at breast height	Corresponding factors of shape	Diameter at breast height	Corresponding factors of shape
6	0.51	17	0.46	28	0.42	39	
7	0.50	18	0.45	29		40	
8	0.50	19	0.44	30		41	
9	0.49	20	0.44	31		42	0.40
10	0.49	21	0.43	32	0.41	43	
11	0.48	22	0.43	33		44	
12	0.48	23	0.42	34		45	
13	0.48	24	0.42	35		46	0.39
14	0.47	25	0.42	36			
15	0.47	26	0.42	37	0.40		
16	0.46	27	0.42	38			

The Indian's Spring.

BY C. C. FARR.

The Indian name for spring is "Mi-no-ka-mi," "Mi-no" good, "Kami" an affix implying water, practically "open water." After months of ice and snow the wintry bonds are loosened, and once more navigation is possible, hence "Mino Kami." The very word implies the joyousness of spring and release from bondage. It is the season of full creeks and brimming rivers, of warmth and comfort, a joy to every animal. The spring birds fill the air with song and nature lives again.

The Indian is akin to the aquatic, and rejoices in the new conditions. He hangs his snowshoes upon a tree, or in his abandoned winter camp, where he can find them when he needs them again, and, like the other animals whose beloved element is water, he sallies forth to hunt his daily bread. During the warm days of April he has fashioned from his stock of bark (a stock laid in nine months ago) a new canoe, and thus prepared he sallies forth.

The muskrats are calling to their mates. He imitates their call, and calls them to their death. It is a simple cry, but unwritable, a language only learnt by experience. I have seen not less than half a dozen muskrats swimming round and following the canoe, attracted by the voice of my Indian companion, who was perfect in the art.

The beaver, too, is often thus deluded and falls an easy prey to the ready gun. It is the pairing season, and many a poor beast is cajoled to its death through love. The Indian cultivates the art from childhood. The imitation of the various calls of animals is the A B C of Indian knowledge, and is the essential qualification of a good hunter. The very birds are thus cajoled, the duck, the loon and even the owl. The partridge drums his whereabouts, and is sacrificed for its obstrusiveness.

There is no fear of famine in the spring, for meat is plentiful, and, failing meat, the pike are in the bushes, so intent upon their own functions that a blow with a paddle will provide a dinner. It is indeed "mino kami" and a relief from the hardships of winter.

The creeks are crowded with suckers, and where the suckers are there are the bears, so intent upon breaking their long winter's fast with a fish diet that they become unsuspicious, and if the wind is right, unconscious of the approach of their deadly enemy. When the bear first emerges from its winter's den it feeds on roots, and, even at a pinch, on twigs. A dead, half decayed moose to it is a bonanza, and often the Indian will kill a few moose in the winter, leaving their carcases where they fall as bait for the bears. The sap is also rising in the balsam trees and the hungry bear in spring will strip the bark for sake of the "so boen," the aromatic, sappy underbark of the balsam. The large black ants that have survived the winter in rotten trees are also to the bear a delicacy. And when the Indian goes forth to find a place to set his trap or deadfall for a bear he watches for such signs as these, the stripped balsam stem and overturned rotten log, knowing full well the habits of the bear, for the bear is conservative. It very seldom changes "routes," even when one has been killed another takes its "beat."

There must be something about the road it travels that is good for bears, for the same deadfall or spot for trap will often last an Indian his lifetime, and be used from generation to generation. There is an affinity between the bear and the Indian. The latter always looks upon the bear as his friend, and a good hunter will always shake hands with a dead bear saying "Meeguetch shoomis nias ka mijian." "Thank you, old man, for the meat you have given me." This is etiquette and must be observed by those who would kill more. It is as binding as the hanging up of the skull upon a tree, which is also the expression of regard for a friend. But I have left the Indian in his canoe with his muskrats, his beaver and perchance an otter swimming around him. The creeks are flooded over their banks and his canoe carries him where in summer he would be obliged to walk, through the alder, through the tangled growth of the primeval swamp, and down the foaming rapids of the creek where no canoe could pass in summer time. It is indeed mino kami.

It is likely that during the winter he may have set a line of traps for martin. He probably has not visited them for nearly a month and must now pick them up or they will become useless. He can bring them to his camp in his canoe and so steps ashore when the creek intercepts his winter's trail. A half decayed whiskey-jack occupied the first trap, and further on the carcase of a martin, the flesh so rotten that the hair pulls out like the bristles of a scalded pig.

Perchance a march mad rabbit has poked his inquisitive nose into the cabin, left a bunch of hair, and a foot, having been devoured by fisher, owl or martin. And thus he picks up his traps, not forgetting to set a dead-fall for a bear, near by the carcase of the moose, which he had wounded, during the hot suns of April, when no man could walk upon the melting snows. He throws them (the traps) into the canoe, for they are precious. He knows that in the fall he will need them for the mink catch.

His family are on the watch for him. They expect fresh meat and are not disappointed. Muskrats are there in the canoe in abundance. Also a beaver and ducks of various kinds. He, the lordly man, uncommunicative, and unemotional runs his canoe ashore and stalks up majestically, leaving the women and children crowding round the canoe and seizing the slaughtered animals with vociferous energy.

To the women belongs the task of skinning, plucking, cleaning and cooking the meat, fish, flesh or fowl, that her lord and master brings. He, happy man, has only to sit and smoke in contemplative silence while the work goes on. And then the meal, the welcome change of diet, well earned and well enjoyed. The grateful warmth of a cheerful fire counteracts the chill of the evening and induces sleep. The piping frogs from the neighboring pools close by sing lullabies. It is good to be alive. The spring has come. It is indeed mino kami.

The Montreal Dog Show.

The international bench show held at the Arena, May 15-17, under the auspices of Montreal Canine Association, was a much greater success than even the most optimistic among its promoters anticipated. The number of dogs benched was nearly 100 in excess of the show held last year, there being 471 in all, and the number of duplications in the classes swelled the total entry to something over 1,100. Although there was some confusion and delay in getting the dogs benched, and an absence of straw and other accessories for their comfort on the morning of the first day, by afternoon everything was running smoothly, and by the second day the exhibitors had quite forgotten all their troubles and were only concerned as to the verdict on their dogs. Favored with beautiful weather, there was also a record attendance, the public showing up exceptionally strong the second and third days. Among the visitors were Mr. Vredenburg, secretary of the American Kennel Club, and Mr. Donovan, of the C.K.C. Both gentlemen expressed themselves as being well pleased with the show and the numbers and quality benched.

Mr. James Mortimer, of Hempstead, L.I., judged all breeds, with the exception of toys, which were taken in hand by Mrs. John A. Pitt, of Montreal, a lady who has ample knowledge of her subjects from her experience both as breeder and exhibitor. It was the lady's first experience in the judging ring, but she acquitted herself admirably and gave entire satisfaction. On concluding her classes Mrs. Pitt was presented with a beautiful bouquet of red and white Beauty roses from the committee, by the president, Mr. D. W. Ogilvie. The gift was conveyed in a neat little speech appreciative of the lady's services.

It is almost needless to say that Mr. Mortimer had his hands full for the better part of two days, as he closely examined every animal brought into the ring, and gave every opportunity to the handler to show his dog to the best advantage. Of course, he did not satisfy every one—it was not expected that he would—but there was very little grumbling until collies were reached, and here, we may say, some dissatisfaction was expressed. Montreal is a hotbed for this breed, and almost every owner of a dog thinks he knows all about them, and it was, therefore, quite natural that there should be considerable variance of opinion over the selections made, but there was really no grounds for some of the remarks made by a few of the hot-headed ones. Mr. Mortimer judged conscientiously throughout, and if he erred it was an error of judgment only. However, it is only right to say that some men present who have bred collies all their lives, who know every part of them and who have kept pace with the modern standard, were very much disappointed, and pretty openly expressed their dissatisfaction. At Mr. Mortimer's other decisions there was nothing to cavil, and we believe they were accepted with the best of grace and gave general satisfaction.

It is not our purpose, neither is it within the scope of such a magazine as ROD AND GUN, to give a detailed criticism of the dogs. Suffice it to say that they were with few exceptions of a high standard of quality and of very even description, which made it all the more difficult for the judge. The absence of some breeds was a distinct disappointment to all lovers of the canine race. For instance, nothing was to be seen of the good old English mastiff, a dog which for courage and fidelity to his master's interests, has no equal. The neglect of the mastiff for a number of years past is bearing fruit, and there is now seldom to be seen, either at a bench show or elsewhere, any really good specimens of this noble and once highly esteemed animal. The English retriever is also another dog seldom seen at bench shows in this country, yet a more desirable companion, or a more useful, could scarcely be desired. It possesses in a marked degree the qualities which call forth the admiration of man—intelligence, docility, beauty—and it is greatly to be regretted that he is not

more appreciated at the present day. There was none of him at the show. Bloodhounds, which some years ago were quite common in this locality, were absent. Great Danes, deerhounds, and greyhounds were disappointingly few and below the average in quality. But if all these breeds were absent, or few in number, then was a gratifying increase in others, and especially was this the case in field and sporting dogs. There never was such an exhibit here of English and Irish setters and spaniels, fox terriers, Irish terriers and black and tans, collies (in quality), St. Bernards, bull dogs, bull terriers, and some other breeds, which made the show all the more interesting perhaps to the average visitor. City people naturally favor the small dog because of the limited accommodation necessary for his keeping, and to these the terrier race benches was a point of attraction, yet the great St. Bernards and handsome coated collies had a large number of admirers, especially among the fair sex.

The Choosing of a Puppy.

A litter of puppies in the early weeks of their existence is an interesting subject of study to the student of animal family life, from the different characteristics and individualities in the group. Although they are "all born twins" and are presumed to start level in the race of life, it is not long before each individuality asserts itself, and we have, as in the human family, the bully, the rogue, and the craven, who is continually sat upon by the others, deprived of his fair share of the means of existence, and bitten and mauled till life becomes a burden. Unless rescued by an observant master or mistress, in time he dwindles and dies, or at the best grows up into a "mongrel," despised of all his brothers and sisters, and finally becomes the unfortunate target for the small boy to vent his "fun" upon. To every sympathetic person, and especially to children, the differences in puppies—their good and bad qualities, growth and development — are intensely interesting features to watch, and many useful lessons may be imbided from the process. Even at the most immature period of life there are plenty of wiseacres who profess to a full knowledge of what a puppy will arrive at, much in the same way that a fond mother will predict for her first born that he will "wag his heid in a poopit" or occupy some equally important position in the public eye ; yet their predictions only too frequently come to grief. There is no sure method of selecting a puppy, no more than there is in predicting the future of a child, although there are many "infallible" ways of doing so. The wiseacre will take the fat, sleek, round-bellied little animals and put them on a bench to sprawl and whimper, the anxious mother meanwhile looking on proud of the notice taken of her progeny, yet filled with nervous dread of something going to happen, and only appeased when the examination is over. The markings of one little mite attracts the eye of the "fancier" and he waxes eloquent on the future prospects of this one being a grand dog or a promising female, but it is only talk, for until several months have passed over his head and the soft, pliable bone has commenced to "set," and the many ailments incidental to puppyhood have been successfully avoided or fought, there is no telling what a puppy will turn out at maturity. One safe way of getting at a good dog is to make certain that the sire and dam are sound, of good blood, that he is well housed in an airy place, free from damp, and that he is carefully, and even generously fed, for at least some time, on blood-enriching, muscle-forming food.

Of the many old and infallible rules which governed the selection of a puppy are one or two which are worth preserving, not that we believe they have any special merit, but because they were almost universally believed in and acted upon by our forefathers, who, some of the litter having to be sacrificed, wanted to know which. The method was to place the puppies in a row on the ground, a couple of feet from the mother,

A NICE "BASKET" OF TROUT

Two rods took these forty fish on Cheekamus Creek, near Vancouver. Total weight, 203 pounds

IN THE LUMBER WOODS

This is a typical scene in the lumber woods of the Upper Ottawa. These "Shanties" are well suited to the needs of the hardy fellows who pass much of their lives in the bush, chopping logs

and let them wriggle to her; then avoid choosing the last to reach the parental fount. "Stonehenge," one of the old writers on canine matters, in speaking of the selection of greyhound puppies, says: "Let the puppies remain with their dam for a week. Then hold each up by the tail; the best ones will bring their legs well over their head and you can see which possesses length and the promise of good ribs." An old friend of ours puts it tersely thus: "The last to come should be the first to go," and many well-known fanciers act upon and believe in this modified Malthusian doctrine which condemns the weakest, arguing that it is for the benefit of the mother as well as in the interest of the remainder.

When puppies begin to open their eyes they also begin to crawl, and at this stage is the most interesting period of their lives, for whatever they are going to turn out afterwards—long or short, rough or smooth—they are almost exactly alike in face, with ridiculously short noses and weak, bleary little eyes, strongly indented with "crow's feet" and marks down each side of their noses as if their heads had been originally fastened on with wire, like champagne corks, making them look the oddest caricatures in the world. When they begin to walk their bodies are round and fat, looking too heavy for their short understandings to carry, but gradually, if their feet look large and out of place, they assume better proportions and with plenty of space they soon romp around "as lively as kittens."

Take a litter of setter puppies at this stage, start them fair on their legs and see what they will do. One writer says: "It will be noticed that they walk with their noses close to the ground, like hippopotami, but with their tails up or stuck out straight, and that when they think they are going to fall they put their noses on the ground to help to balance them. At this time, too, they leave off squealing and try to bark, which they are inordinately proud of, and soon learn to do in a very fierce and forbidding manner. Being too weak to stand the shock of barking, a single bark is as much as they can usually manage at a time, and if they do this when walking it upsets their balance and they fall over. Sagacious puppies soon learn this and sit down to bark, getting up again to walk, and then sitting down for another bark. When once the puppies are able to make excursions on their own account they will, if allowed the full liberty which they deserve, become a daily and hourly excitement in any quiet family."

Small puppies early develop the dog instinct for burying food, and any old bones they pick up is instinctively carried to the nearest cache and half covered over. They are evidently afraid to lose sight of it altogether, and are forgetful of the fact that their brothers and sisters have also eyes, some sense of smell and a penchant for exploration on their own account. This is suggestive to naturalists, who see in it the survival of the instinct which makes the young wolf, or wild ancestor, begin to pick up a living and carry what it catches or what its mother gives it to its den. Puppies retain any amount of these interesting survivals, and for some weeks they regard collecting as the sole object in life, with this curious condition that they think nothing worth taking and keeping unless it comes from the house. They sit on the watch at the doors, or keep an eye from a distance on unguarded entrances, and then trickle in like water from a partly opened sluice, emerging soon after with an old boot, a hat or a door mat, which they proceed to tear up as small as possible; with the ulterior object of burying. The main object, however, is to tear, and when this is accomplished they look for appreciation of their efforts. Beating does not mend matters; the first opportunity is taken advantage of again—this period of wanton destruction must run its course. Greyhound puppies have the reputation of being the most mischievous of the mischievous brotherhood of puppies. They inherit this to some extent, for a large percentage of greyhounds when grown up are inveterate thieves and chicken killers, not from any particular vice, but because "it is their nature to," and they have not the moral sense which other dogs possess.

Our Medicine Bag.

With the present number ROD AND GUN IN CANADA emerges from the larval stage and enters into the sub-imago condition. Presently we hope to become an imago, with the full use of our wings and an ambition that will carry us far. These may seem boastful words, but they are not really so, because when those who have guided the destinies of this little magazine look backward and reflect upon the disheartening conditions that once beset them, the difficulties of the future promise to be absolutely trivial by comparison.

Within the short space of eighteen months this magazine has trebled in circulation, and the kind words we constantly receive from brother sportsmen assure us that the support ROD AND GUN IN CANADA has acquired has been won on its merits, and is not likely to fail us.

Of the making of sporting periodicals there is no end, and for a magazine to succeed it must have a field, and it must be able to fill that field in a satisfactory manner. In our judgment, and the success of the venture has proved we were not mistaken, a magazine was required which should deal with Canadian field sports in an absolutely honest way, and that the articles should be written by men who knew what they were writing about, and had not merely acquired their knowledge of the wild things of the woods out of their own inner consciousness, or from the pages of others. Keeping these aims steadily before us, we have been able to publish matter which has been deemed so valuable by the librarians of the large scientific libraries of the world, that they have in most cases become subscribers for ROD AND GUN IN CANADA.

We hope during the coming year to secure a number of well written articles, dealing with little known regions in Canada, and we are sure that the fourth volume of our magazine will be better than any of its predecessors.

Our readers will no doubt enjoy the very able article which we publish in the present number by Mr. George D. Curtiss, dealing with the Kootenay River. British Columbia is a most charming sporting region, and we esteem ourselves fortunate to be able to secure the valuable contribution that Mr. Curtiss has favored us with. We have also other manuscripts dealing with fishing and shooting in that province, which will appear from time to time.

The Chief Game Commissioner for New Brunswick makes the following observation in his report:

"As the law now stands any person can come into the Province and trap without a licence, and many of these so-called trappers come here with the intention of killing any animal whose skin they can sell from one dollar. Experience has proven that they will kill whatever they see either for food or for its pelt, and they are not particular where they build fires nor do they look to it that the fires are always extinguished before leaving them. Such methods render these trappers a source of danger to the forests of the country besides rendering game protection more difficult. The majority of the trappers come in from Quebec, a few from Maine, and some have been known to come from Nova Scotia, and to remain in our woods for many months."

The Report of the Commissioner of Lands, Forests and Fisheries for the Province of Quebec for the year ending 30th June, 1901, shows a revenue from Woods and Forests of $1,234,072.05. In June, 1901, a sale of timber limits in different parts of the Province was held, when an area of 4,634 square miles was disposed of at an average rate of $81.12 per mile, or a total of $375,947.19. The reduction in the dues on pulpwood for export from $1.90 to 65c. per cord is stated to have been made because at the higher figure the dues were found in many cases excessive or even prohibitive and very difficult to collect, especially in the case of wood cut by settlers when clearing their lots. Another reason given for the change is that the merchants who shipped to the United States showed

that they spent as much if not more in that Province than those engaged in the sawmill industry, inasmuch as they were obliged to bark their logs and handle them in other ways to prepare them for export. Another change in the regulations is that permitting the cutting of black spruce, balsam, poplar, hemlock and other small trees intended for pulp manufacture down to a diameter of seven inches. It is stated that the reports of the experienced inspectors and land surveyors were to the effect that the black spruce trees suitable for pulp making seldom attain a diameter of eleven inches on the stump, and as, in certain regions such as Lake St. John, the Saguenay and the North Shore of the Gulf of St. Lawrence, three-fourths of the forest consist of trees of this kind, it was becoming impossible to dispose of them by continuing to prohibit the cutting of trees under eleven inches in diameter.

Beginning with the May number, The Photographic Times and Anthony's Photographic Bulletin took the form of one publication with the name of the Photographic Times-Bulletin. While this move was not unexpected since the consolidation of the stock-houses of E. & H. T. Anthony & Co. and Scovil & Adams, one cannot but feel that in the passing of the Bulletin, a certain familiar face in the field of photography, has been lost, never to be replaced. Editor W. I. Scandlin, of the Bulletin, retires on an honorable and well won record and Editor Walter E. Woodbury, formerly of the Times, will be at the helm to give a guiding hand to the new publication.

A meeting of the Board of Directors of the Canadian Forestry Association was held at Ottawa on the 4th April. Outside of routine business the most important subject taken up was the resolution in regard to timber lands passed at the annual meeting, and the secretary was instructed to communicate with the different governments and lumbermen's associations in order that united steps might be taken to have the question dealt with. The resolution recites the loss to the forests occasioned by fire, and urges that steps be taken to so arrange for the setting apart of lands fit only for timber purposes and the prevention of settlement therein as a necessary step for the protection of the forests.

There has been introduced into the New Brunswick Legislature a Bill to establish a Forest Preservation and Provincial Park. The Bill proposes to give authority to the Lieutenant-Governor-in-Council to withdraw from sale, settlement and occupancy a tract of land in some portion of the Province covered with forest not exceeding 900 square miles in extent. The intention is to place this tract, which has not yet been selected, directly under the control of the Crown Lands Department, to be held as a forest reservation, fish and game pre-

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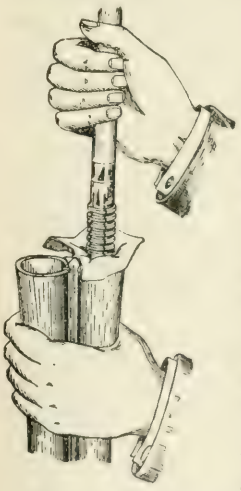
The J. Stevens Arms & Tool Co., of Chicopee Falls, Mass., are offering to the sportsman a new gun cleaner which more exactly fills the want of a gunner than anything yet devised. It applies the patch with a firm and hard rubbing contact to every portion of the barrel's interior, and adjusts itself to the smaller as well as the larger portion of the bore. It supersedes the indiscriminate use of scraping and scratching devices, thereby preventing any injury to the finished surface of the bore arising from their use. Being made of soft brass, it is indestructible and never requires cleaning. It is made for 10, 12 and 16 gauge guns, and sells including a cotton patch and one of fine brass wire cloth, for 50 cents. It is a practical outfit, and fits all standard rods.



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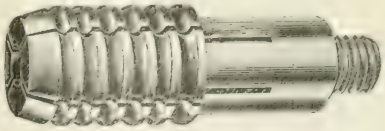

Actual size for 12 gauge.

serve, health resort and pleasure ground. Provision will be made for the protection of fish and game and for fire prevention. As to the timber within the park the policy apparently is to permit of its being cut either under the present regulations, particularly as to lands already under license, or under such special regulations as may be adopted by the Lieutenant-Governor-in-Council for the government and maintenance of the park.

The extension of the Rocky Mountains National Park at Banff has been decided upon at the session of the Dominion Parliament. This will add to the beauty and usefulness of the park and make the administration more convenient.

The majority of people who keep dogs will agree that, to find a name that is at once pretty, novel and appropriate, is not the least difficulty they have to contend with. If there are any who think otherwise, let them just glance over the pages of any dog show catalogue and find out for themselves how few there are which, in their estimation, hit the mark, or fall short of suggestiveness as to physical or other characteristics of a breed. Indeed, in some instances, the name bestowed makes the animal look positively ridiculous to anyone having the faintest idea of the fitness of things, while the poor animal itself appears to shrink under the load which it is condemned to carry through life. "Nero" is a very suitable name for a mastiff, a Great Dane, or a Newfoundland, but absurdity is apparent if it is attached to a fox terrier; while "Happy Hooligan" would be a happy designation for an Irish terrier it utterly lacks significance if applied to the one of Scottish origin. Like actors and actresses who have one name for the billboards and another for private life, show dogs have also two names, but how much better would it be if one name could be found equally fitting for both. The man who can invent such a name for his dog will experience that thrill of pleasure which accompanies the birth of a new idea in the mind of every inventor. Many of the names given to dogs when first domesticated, still hold good, and to-day we have our "Rovers," "Trustys," "Trays" and "Fidos" as of yore, but there is wealth in store for the man who will give us a compilation of names combining originality with fitness.

The officials of the Montreal Canine Association are being congratulated on every hand over the success of their last venture.

George Raper, probably the greatest authority in England on fox terriers, is under engagement to judge at Toronto in September.

"Oor auld friend" Joseph Reid captured the prize offered to the exhibitor having the greatest number of dogs at the show, and "Auchcairnie" Smith the one hung up for handlers.

The question now being debated in local canine circles is: "Ribbon shows, with a full classification and 50c. entry fee, vs. Good prize money, a limited classification and $2.00 entry.

Charles Thomson has sold his nice smooth fox terrier bitch, Elmwood Electra, for a good figure.

To propagate Britain's breed—the bulldog—the Bulldog Club of Canada was formed here Saturday evening, 17th May. The officers elected were: Mr. D. W. Ogilvie, president; Mr. H. B. Donovan, first vice; Mr. J. P. Roche, second vice; Mr. W. H. Tallis, Grand Mère, Que., secretary-treasurer. The foregoing will compose the executive along with Messrs. H. L. Thomas, Montreal, and F. W. Jacobi, Toronto. The C. K. C. will donate a challenge cup, and cups were also offered and accepted from Messrs. Tallis, Thomas, Roche and Ogilvie, and Mr. Donovan also guaranteed one from John G. Kent, Esq., president of the C. K. C. There are many admirers of this noble breed throughout Canada who should welcome this opportunity of advancing its interests by becoming members of the club.

The well-known fox terrier Bank Note will no longer be shown under the ægis of Mr. Ogilvie, he having disposed of him, along with his good little bitch Flashlight, to Mr. Geo. Thomas. The fancy are speculating as to whether Mr. Ogilvie is losing his interest in fox terriers or has something up his sleeve which he considers good enough to take the place of his famous dog.

Harry Lacy thinks he has the laugh on the owner of a black and tan dog judged by him last year.

Mr. Webber, of the Longueuil Cocker Kennels, has bought from "Pop" Dunn, of Woodstock, the red cocker dog Waverley Prince and the black bitch Greta.

It would seem that prick ears on a collie do not disqualify. The winner in the puppy class was so astonished at the award that his ears stood as straight as a donkey's the second time he was brought into the ring.

The Montreal Hunt has made a great addition to its kennels, ten couples being landed here from the S. S. Rosarian on Saturday, 17th May. They were personally selected by the huntsman, Mr. Wm. Nichols, in England, and in size and quality are a remarkably even lot.

Mr. H. B. Donovan, the popular secretary of the C. K. C. and editor of the Kennel Gazette, spent three or four days here taking in the show and cultivating the acquaintance of the fancy in this neighborhood. He was geniality itself and made a good impression on the boys.

Mr. J. A. Laurin has just imported from England seven Airedale bitches of prime quality. One of them is in whelp to Masterpiece.

The following appeal needs, surely, no introduction or excuse :

To the Editor of Rod and Gun :

As your paper moulds public opinion I request that you will publish, with editorial comment, the enclosed leaflet of the National Committee of Audubon Societies.

When published, a marked copy of your paper will be highly appreciated.

Very respectfully yours,

William Butcher, Chairman.

525 Manhattan Ave., New York.

"Many sportsmen, when on hunting trips, are in the habit of shooting birds that can in no sense be considered game 'simply for practice.' It is undoubtedly a fact that large numbers of gulls, terns, swallows, swifts, night-hawks, which in some sections of the country are known as bull-bats, and birds of like character, are destroyed every year.

"Without considering the æsthetic side of the question, such birds should not be killed, from an economic standpoint ; they are of great value to the public, and to wantonly destroy them 'for practice' in shooting is a habit that no true sportsmen will engage in ; let us hope that it is the result of thoughtlessness.

"This appeal is made to the sportsmen of the country, to ask them to consider the great value of the non-game birds, and it is believed that they will not only abstain from killing such birds, but will preach the gospel of protection at all times."

Our readers will not receive their copy of this month's issue of Rod and Gun in Canada in as good season as has been generally the case, but we feel sure that they will extend to us their forgiveness, seeing that the make-up is an entirely new one, and the delays were unavoidable. We hope, hereafter, that Rod and Gun will be issued not later than the first of each month.

We are happy to announce that we have made arrangements to obtain some exhaustive and accurate information as to British Columbia's sporting attractions, and we shall, from time to time, publish interesting and trustworthy stories as to the sport by flood and field which will

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have been sent us by our friends in that province. British Columbia is so rich in scenery, in climate and in sport, that exaggeration would be as useless and as foolish as an attempt at gilding refined gold. Whether the sportsman be a votary of the rifle or of the rod, he will find abundant occupation in many parts of British Columbia.

Few persons seem to know much about the sporting resources of the country between Port Arthur and the Manitoban boundary, so the following letter should interest our readers :

Hymers, via Murillo,
May 9th, 1902.

DEAR SIR,—

In reply to yours of April 28th I will try and give you a good account of our country. The country through which we hunt comprises the townships of O'Connor, Marks, Carmel and some other unsurveyed country adjoining. These townships are situated about twenty-five miles south-west of Port Arthur, on the line of the P. A. D. & W. Ry., and are thus easily reached. The country is rather rolling, with mountains here and there. It is well watered, there being any number of lakes and creeks that abound with trout. Game is also very plentiful, moose and caribou especially, also a few red deer, and the smaller game, such as partridge, pin-tailed grouse, rabbits and ducks, are very plentiful, bears are quite frequently killed. The country is mostly burnt over, enabling the hunter to see long distances, and he can generally find ample cover under which to approach his game. You asked for names of some other guides, I will have much pleasure in giving you the names of four others besides myself. Ed. (Scottie) Parker, Stanley P.O., via Murillo, who is well known to the sporting public, as he was a guide for years around Jack Fish ; T. Chambers, Hymers P.O., via Murillo ; J. Chambers, Hymers ; J. Wells, Hymers ; and your humble servant.

Yours truly,
R. H. CLARKE.

We quote the following from the Annual Report of the Dominion Superintendent of Forestry :—

"There is no work at present demanding greater attention than that of selecting and setting apart certain areas of the country for the production of timber. The older settled parts of eastern North America are now paying the bitter penalty for the ruthless destruction of the forests at the sources of their rivers and streams. Each spring is to many localities a season of anxiety, and never one passes without leaving behind its record of destruction of life and property. And this is not all, for on in the summer the very element that was wasted a few months before is sadly wanting. The springs and creeks become dry and soon the deep wells also fail, and this is due directly to the denudation of the natural reservoirs by the destruction of the forest which once covered them. Our aim should be to work in harmony with and not in opposition to nature. She does not ask for the forest growth on the fertile and productive valleys, but only on the rough mountain tops and hillsides where the altitude is frequently too great for the growth of cereals, or where the land is rough and difficult to work. There she asks us to spare the forest in order that she may weave a net to hold back the water at these heights. Moreover, it will in most cases be found that the timber produced by this land is of more value than all the grain that could be grown thereon.

The true policy for any country like Canada having still in its possession large tracts of ungranted lands, would certainly be to explore the country in advance of settlement, and then divide it according to its character into agricultural, timber and mineral lands. The agricultural lands can then be dealt with as seems wisest for agricultural purposes, and the mineral lands for mineral purposes, but when we come to the timber areas we find that the utility of the forest is at least two-fold—first, for the merchantable value of the products, and secondly, on account of the function it performs in modifying the climate in the distribution of moisture, and lastly, in its great office when growing on mountain and hill sides, in holding back the water and causing a more even flow to the rivers and streams that always have their sources in these elevations.

A correspondent at Innisfail, N.W.T., writes as follows :—"Duck shooting is now over. The last few weeks the sloughs have been crowded with ducks, snipe, grebe, mud hens, loons and other birds, and many have been the attempts made to bag some of them. The birds, however, have been exceedingly shy and wary, and there have been but small returns for the number of cartridges expended."

The calendar of the Yale Forest School, New Haven, Connecticut, has been received. The school is under the directorship of Professor Henry S. Graves and the fall term begins on the 25th September, 1902.

Two Nanaimo fishermen had some great sport recently at Little Qualicum. In a couple of days they secured about a hundred weight of rainbow trout containing a fair proportion of two and three pounders, but the prize fish was a magnificent seven pounds trout. Mr. Scovill took it on a light trolling rig.

The annual report of the Surveyor-General of New Brunswick for the year ended the 31st October, 1901, shows the total receipts from timber lands to be $174,524.10, the sales of timber licenses yielding $73,361.62, and stumpage $101,162.48, against a total of $152,294.09 for the previous year. In 1900 stumpage brought in a revenue of $112,315.19, so that the increase for the following year is due to the sale of licenses. The highest price paid was $300 per square mile for an area of 2½ square miles, but some sales were as low as $8.00 and $8.50. The renewal fee of $4.00 per square mile, which is practically the same as ground rent, contributed $38,808 to the revenue. The amount expended for scaling, collection and protection of lumber was $8,567.87.

The use of trained bloodhounds as detectives was demonstrated at Trail, B.C., recently. A market gardener whose plot of land lies some distance outside the smelter town, missed a large quantity of rhubarb. Captain Devitt, chief of police at Trail, was notified, and he proceeded at once to the garden taking a brace of young hounds, which he has had in training for some time. After feathering a little, the hounds opened upon the scent, and then it was simply a procession from the garden to a shack occupied by a chinaman, about a mile away. Inside the building was a badly frightened celestial and some 400 pounds of freshly cut rhubarb. The thief confessed to the crime and was imprisoned, while the gardener gathered the rhubarb and took it to market.

The Lament of the Grizzly.

In a dark and dismal lair sat an aged grizzly bear,
With a moribund expression on his face,
And in language strenuous he expatiated thus
To three attentive juniors of his race:
"I was something of a dub as a raw, unworldly cub,
And I thought that I'd become an 'also ran,'
If I did not recollect to expand my intellect
And exist upon the Seton-Thompson plan.
So I toned up on the lore of the bears who went before,
Heard the sermons in the stones and running brooks;
Studied botany and Greek (that which Arktos used to speak)
Till I talked like one of Seton-Thompson's books.

"I sought out the sulphur springs, found the roots and other things
That were good for grip, neuritis and the gout;
Learned with certainty to know by the foot-prints in the snow,
The religion of the hunters who were out.
Something in me would reveal the proximity of steel,
I could always find and spring a lurking trap,
And so much I came to learn that a fund of brains to burn
I had always handy by me and on tap.

"But as I to bearhood grew and meandered forth to woo
All the lady bears I found fought shy of me.
'Don't come round us,' they would say, 'with that educated way,'
And they'd promptly vanish up the nearest tree,
'For omniscence we don't care; what we want is just a bear,'
Would come floating from the branches far above.
'You distinctly will not do, you don't know how to woo;
You should study less of Greek and more of love.'

"Then, alas, it chanced one day as I journeyed on the way
To the huckleberry pasture from my lair,
That I met up face to face in a lone sequestered place,
With a hulking ignoramus of a bear.
Though I knew far more than he, of man, Greek and botany,
And could not by traps or firearms be tricked,
He could beat me out of sight in a common, vulgar fight,
And he left me with my wisdom badly licked.

"So you bears, who yet have youth, learn from me this simple truth:
Do not let this Seton-Thompson turn your head;
Let it be your only care to be just a common bear,
Or you'll turn up some fine morning good and dead."

—Exchange.

CONTENTS

June, 1902

Communications on all topics pertaining to fishing, shooting, canoeing, the kennel and amateur photography, will be welcomed and published, if suitable. All communications must be accompanied by the name of the writer, not necessarily for publication, however.

The Official Organ of the Canadian Forestry Association.

ROD AND GUN IN CANADA does not assume any responsibility for, or necessarily endorse, any views expressed by contributors to its columns. All communications should be addressed to:

ROD AND GUN PUBLISHING CO., 603 Craig Street, Montreal.

Price, 10 cents a Number. $1.00 a year.

H. B. Company's Nepigon Post

This "fort" is on Nepigon Lake, about 60 miles from the mouth of the river.

Have you wet a fly in the Nepigon? If not, listen to what General McNulta, U.S.A., says: "Having tested, by practical experience, some one or more of the head waters of every principal stream on both the Atlantic and Pacific slopes, from the most northerly settled limits along the Canadian Pacific line, to the most southerly point in Mexico, where trout are found, together with a test of most of the principal streams in Scotland and Ireland, I am still of the opinion that the Nepigon, from the standpoint of the high-typed sportsman, is the finest trout stream in the world."

The Nepigon has long been termed "the king of trout streams," and as civilization advances, and the older trout streams are practically fished out, we find the Nepigon still holding its own, and producing fish which would make any angler envious of the fortunate one who had selected it for his outing. Five-pounders are common, and there is a record of one weighing eight pounds two ounces, caught by Eugene Stevenson, of Paterson, N.J., in August, '95; numbers of doubles are caught, the largest by E. P. Williams, of Cleveland, O., on August 28th, '95, with a six-ounce rod, one weighing 6½ pounds, the other 4¾ pounds, in the aggregate 11¼ pounds. Many other records worthy of a first place, cannot, of course, be published here.

Lake Nepigon, the fountain-head, the producer of the brook trout for which this stream is justly famous, is also the home of the whitefish and lake trout, some of the latter having been caught with the rod weighing from 30 to 40 pounds. The lake is beautiful, being studded with numerous islands offering pleasant camping places, and many tourists who visit the Nepigon spend some time on the lake, which can be safely traversed in the large bark canoes used on the river. The climate here is particularly enjoyable; the delicious coolness of the air has wonderful recuperative powers, and refreshing sleep under warm blankets is the lot of all.

Nepigon station is on the main line of the CANADIAN PACIFIC RAILWAY, 65 miles east of Port Arthur and 929 miles west of Montreal.

Anglers may obtain all necessary information by applying to any office or agent of the

CANADIAN PACIFIC RAILWAY

or to the General Passenger Department, Montreal, Que.

THE HERALD PRESS, MONTREAL

ROD AND GUN IN CANADA

In the Rockies

A MAGAZINE OF CANADIAN SPORT AND EXPLORATION

SUNSET ON THE THOMPSON RIVER

This beautiful scene shows a characteristic bit of British Columbia scenery—and the trout run heavy

ROD AND GUN
IN CANADA

VOL. IV. MONTREAL, JULY, 1902 No. 2

Sport in Labrador.

BY DR. WILFRED GRENFELL.

The pleasures of life in any part of the world are very largely dependent on the person to be pleased. So, Mr. Editor, you must discount from that basis my statement that "life down here is as enjoyable as anywhere else in the world," and must put it down to "idiosyncrasy" if I fail to persuade your readers to agree with me. No life of idleness can ever be free from ennui, and suicide always seems to me the inevitable drift of the mere pleasure-seeker. Given, however, work enough to constitute a raison d'etre for life in these regions, I am free to maintain that down here, viewed from whatever standpoint—spiritual, intellectual or physical—life needs no points from anywhere else, while a tired worker from the maddening crowd can find isolation enough from the strain and rush due to modern discoveries and inventions, without either vegetating into the proverbial turnip or being absolutely out of touch with the doings of the great world outside. What waste of brain matter five editions a day conduce to. It is marvellous what little news of the world the fortnightly summary, which alone reaches us down here, appears to bring, and how little of importance one finds one has really missed when one returns even to regions where hurrying along in underground tubes one sees at all hours miserable fellow-creatures of all ages ruining their eyesight over ill-printed "speshuls." One can get books that are worth having as well here as anywhere, and enjoy the additional pleasure of being able to share whatever is pleasurable and profitable in them with others unable in any other way to attain it. It must be confessed that in many places intellectual development is put to as little practical purpose as is the physical development, though both are often gained in our big cities by such countless hours and even years of energy and toil. Inquiring in a certain city as to what uses the best athletes put their physical development, and what happened to them when "settled" in city life, the writer was informed, "the majority appear very rapidly to 'revert to type,' while many run to cumbersome adiposity." Neither happens with us here. One's only sorrows are how little one is able to impart to others. For one is called on to know everything from doctoring to watchmaking, from practical astronomy to curing boot leather from a recently-captured seal; while gymnastic or football training of our youth rewards one every day whether we hunt or travel, whether we sail the sea and paddle along river and lake in summer, or drive dogs, and komatik, and ply "ski" or snowshoe over the iron bound sea and land in winter. Alas, the poverty and often dire necessity of our neighbors, and I may add, friends, frequently grieves anyone possessed of a soul that cares for aught besides its own welfare. But it at least affords us opportunities of doing our charity without proxy, and feeling easy in mind that our second coat, when

given away, will not be diverted through the nearest pawn shop to the saloon next door. It makes a moderate income an asset of real value, and a source of true thankfulness for the pleasure it affords of enabling one to help deserving lame dogs over stiles. The care of and work at our little hospitals and ships, our scattered co-operative stores, our small co-operative lumber mill efforts, our small "clubs" and lending libraries and similar efforts, afford us, certainly, our most satisfactory pleasures. They leave us, however, time for developing, at least to some degree, what sports the country permits, and it is a word or two as to these that I am venturing to send you.

It must be understood that our shooting is solely for the pot, and record bags have no place in our ambitions. Yet this very fact makes us all the more anxious to shoot straight. For who can afford to miss when it means a dinner less or a pair of much needed boots swimming away on a seal's back. Our tastes, fortunately for us, are extremely Catholic. We eat, as our omnivorous anatomy permits us, almost everything. I have had on successive days for dinner steak from Polar bear, black bear and seal flipper. While one of the hardships of a travelling medico's life is that he is often sat down to face a boiled seagull or a dish of puffin soup. There is a particularly offensive bird on this coast known as the "hagdown" locally, but to science as the Great Shearwater. Gastronomically he most resembles the Fulmar Petrel, which has to be scented to be fully appreciated. The plea that one's medical adviser implores one to abstain from such, has saved me more than one tight corner with this all too easily caught bird. We are armed with almost every weird instrument for shooting—one would not be at all surprised to find a party with a chassepot, a culverin, or a "Brown Bess." One of our commonest accidents is the damage resulting from an exploding breech, while the length of the barrel appears only to be limited by the capacity of its owner to raise it to his shoulder.

The load of powder and shot is measured by the number of finger breadths it raises the ramrod, and may be anything from "five to ten fingers." Yet it is wonderful what excellent practice the men make both with ball and shot. I have known no less than fifty eider ducks killed by a couple of men at one discharge, and have seen twenty-five to thirty king eiders pay tribute in the same way. A short time ago here a man shot three caribou with one bullet. His own statement being that he "waited till the three were in line." They were of course not far from him. Two caribou in one shot is not at all uncommon. It is our custom at Christmas time to hold sports on the ice, and a wooden deer target hauled to and fro between flags on a komatik, or sleigh, is always one of the events. It is really remarkable how often with only these old muzzle loaders that deer is slaughtered at one hundred yards.

One morning, early in last October, with two men I repaired to some flats at the mouth of one of the Labrador smaller rivers, my station was on a bank near the mouth, my companions, each with a six foot gun, being on opposite sides about two hundred yards further up. We thus formed a kind of triangle. Black duck, Canada geese, merganser, wigeon and teal passed up as the tide came in, and again followed it out. Though it was a calm day, and the tide did not sufficiently stir up the birds from below, we had at night a very excellent bag, viz., nine geese and twenty-five ducks of sorts. As all our birds were that day single birds we had plenty of chances of seeing what these long guns can do. Several single birds at full speed and high up I saw turn from one gunner that day, to fall dead as they swerved to the man opposite. We were handicapped by having no dog to retrieve, and so lost not a few birds.

Among our folk are some exceedingly good at tolling either birds or animals. Lying on a bank on our way home that evening a flock of geese passed over, I should say not less than half a mile away. Yet they wheeled round to the tolling sufficiently to enable one to be singled out. Only his wing was tipped, and his long slanting, almost majestic, fall was indeed a sight a sportsman loves. It has always seemed odd to me that while birds rely for safety so much on their eyesight, deer and foxes seem scarcely to put any reliance on their sight. I have

known our caribou to trot right up to a man standing still on a marsh, across which their path led, and to refuse to turn till they almost ran over him, though he waved his arms to scare them to a sufficient distance for a broadside shot. Only the other day a man here sighted a red fox crossing a frozen bay. He promptly knelt down behind an ice pinnacle, and remained motionless with his cocked gun raised, calling like a fighting crow and then in orthodox fashion like a mouse; the fox, which was of course to windward, ran straight up to him. It was carrying a lesser auk in its mouth. It jumped on the pinnacle of ice and was actually so near that when he fired a leg was clean blown off. The same man assured me that once hidden behind a bank and lying flat down, he tolled a fox till it actually pounced over the bank right on to him. I believe it to be true, but I confess it seems like a "trouting" story.

The shooting we "follow" at this season of the year is sport indeed, and goes by the local name of "swatching." The "sport" consists not in the ferocity of the prey, not in the numbers of the slain, but in the agility, pluck and hardihood it calls for. The arctic "slob" ice flows in one vast field to the southward, hindered or accelerated by the trend of the wind, and varies in the pace it travels roughly from half to four or five miles an hour. Broken into large pans by the heavy swell from the spring gales, it leaves lakes or ponds between the pieces, or "growlers" as we call them. Armed with a gun, rope, seal gaff, knife and a little food the hunter leaves the coast in the morning, expecting either to kill seals on the pans or shoot them as they "bob" up in the ponds. He either takes a "chum," and a small boat or "flat" to ice edge with him, or leaves a look-out on the headland to watch him with a glass. It is safest perhaps to have the man, or "dog" as he is sometimes called. This useful person also caries a "gaff" —a long stick with a boathook end. If one falls in between the heavy moving pans it is almost impossible to get out alone, so one is gaffed in a most undignified fashion and "landed" as rapidly as possible. For these young ice mountains, and they are nothing less, have an inconvenient habit of over-running one, and not improbably involving a rather nasty risk of nipping a limb in any case. The game varies from a baby "white coat" harp seal, to a full grown bullhood seal (Phoca barbata). The latter is enormous both in size and weight, and is valuable to us for his fat and his carcase for dog food. His skin is not prized as highly for our boots as that of the old harp, or the square flipper. Part of the excitement, which I presume is the "sport" part of the hunt, arises from the fact that one seldom gets back to the place one started from, while if the wind "turns off," the ice may quickly clear out and leave you with a bare chance of fetching the protecting headland three or four miles to the southward; but if one finds any "soft slob" between the cliffs and the ice edge, the "flat" may likely enough prove of small use. That we should value a hunt as a source of dog food will surprise no one who remembers our locomotive power is derived from dogs and not horses, and we cannot feed them on hay or turnips, even had we these to offer them. They soon grow poor on vegetarian diet of any kind, while the quantity of flesh food a fair sized team will eat in the six to eight months of winter is prodigious. It has been my lot to enjoy "lugeing" in Switzerland and tobogganning on the built up runs in Canada, and also to travel both on "ski" and "racquets," but I must confess to a very strong preference for dog driving over any of these sports. Our work involves in winter visiting round a district 300 miles on the round, and then the people for miles to the southward have no chance of any medical aid whatever. This is from the North Newfoundland Hospital at St. Anthony. The country is of all sorts, hills, rivers, marshes, lakes; long arms of the sea intersecting the coast line, and thick woods in many parts, add enormously to the difficulty of making progress. The whole, of course, freezes over before Christmas, and so we have a perfect field for the exercising of our skill and ingenuity upon. Our own dogs this winter number twenty, half are Eskimo dogs we brought here from North Labrador. These are all large, have pointed ears, long straight hair and tails

curled completely over in a circle. My largest dog weighed 88 pounds, my second 78, third 74, and so on. Thus a team of a dozen such dogs has a very considerable motive power. Their endurance is phenomenal. They can travel all day and practically fight all night. They will sleep out in the coldest weather, and will keep in good condition on one moderate meal a day. But we find them slower, and more dangerous to anything in the cattle line, than the lop-eared mongrels of the coast. They ate into my host's diet house one night this winter and devoured "teetotally," as they say here, a large ewe in lamb. The larger part fell to four dogs, these could hardly stand up after it; they left only a handful of wool, not a bone or hoof. A large stock of whale meat procured in the fall is the best food we can obtain for them. I must not enlarge on this sport now, Mr. Editor, as the length of your patience is no doubt exhausted, and one is tempted to run on into anecdotes. I can only say fix me up with the dogs and komatik, kettle, axe, sleeping bag, rifle, and "ski," fill the "nonny" bag with good pork buns that won't freeze too hard to devour at a pinch unroasted, give me a compass and fifty miles of country on a fine day in February, and I wouldn't change the day's work for a week in a palace anywhere.

Angling Near Victoria.

BY A PRACTICAL ANGLER.

At present salmon may be fished for during the whole year, but March 1st will be found early enough. The only fly I use is the "Jock Scott"; size of hook depends upon the state of the river, but from No. 3-0 to No. 3 will be found to answer well. During March and April, if the river is not too high, steelhead salmon take a fly readily. In May they may also be caught; while in the Cowichan River a few cohoes run up a few miles, also an occasional spring salmon ("Quinnat"). Generally a large run of spring salmon takes the Cowichan about the 1st of July. These are the gamest fish we have and run from 10 lbs. to 70 lbs. and in rivers farther north have been caught up to 80 lbs. or 90 lbs. If the river is not too low, the spring salmon will readily take a fly, but it must be borne in mind that the water is very clear, a long line therefore, being absolutely necessary, also single gut. The spring salmon will generally take best at the head of a pool, frequently in very strong water. The cohoe or steelhead take best at the foot of the pool. Where large rocks are lying in the centre of a pool, the fish will invariably be found behind them, no matter how strong the water may be.

For salmon fishing, a dark, and if possible, a stormy day is always best. On such a day, with heavy hail squalls frequently passing, and a strong and bitter north wind blowing, I killed with a fly sixteen salmon in one afternoon, but this was some years ago.

The best part of the Cowichan River for salmon during March is between Duncan's and the tidal water. After the middle of April, the district about Sahtlam is best, and as the season gets later the upper part of the river is best. During August and September, salmon fishing is worthless, but as the river rises in October, the cohoe salmon fishing is very good, both in the Cowichan and in its neighbor, the Koksilah.

For trout fishing in the rivers, the months of September, October and November are decidedly the best, though good bags may after be made in tidal water and at any time. Large numbers of trout run into the mouths of the rivers with the first of the flood tide, and one may hook at every cast for half an hour and sometimes an hour. The "March Brown" is the best all-round fly for trout in the rivers, No. 7 or No. 8 hook, or if the day be very fine, No. 10 or No. 12. In the lakes it is very little use fishing for trout before April. Person-

ally I never begin before 1st May. Then small dark flies are best in most lakes, and *fine tackle* is essential if a good bag is to be made. Fine tackle is best at all times both for salmon and trout fishing, and I have hooked and landed in three hours a 26 lb. spring salmon, with a 14 feet trout rod, fine line, the finest gut I could obtain and with a No. 6 fly. In bright days, if one has the water to oneself, it is better not to disturb the fish until the sun has left the water. The time may be passed in trout fishing, but care should be taken not to go near the salmon pools. In the lower part of rivers, where constant fishing takes place, one must take one's chance, but in an average season of three months, I have known fifty-two salmon to be caught, of the varieties I have named, by one rod, fishing one day a week. I enclose patterns of what I consider the best flies for this district, which I think will be found to answer well in all the rivers and lakes of Vancouver Island.* In June and July there is a run of grilse of the "Quinnat" variety of salmon which affords excellent sport. These fish run from three or four to eight pounds, and on a fourteen feet trout line with fine tackle, give as good sport as a salmon on an eighteen feet rod. I enclose a fly I had dressed specially for these fish. There are several lakes and streams within easy reach of Victoria, one of the nearest and best being Prospect Lake, about nine miles off, with a good road. Boats can be hired at the lake. The trout in this lake are very good, and I have caught them up to four pounds. There are a good many of them, but as the lake is a great deal fished, the fish are shy and require careful fishing. Other smaller lakes are equally near. Next comes Sooke Lake, about seven miles long, full of trout. This lake is about twenty miles from Victoria, with a good road all the way. The trout in Sooke Lake do not run as large as those in Prospect, but 100 are often taken by one rod in a day. Next comes Shawnigan Lake, eight miles long. There are a lot of trout in this lake, but they are uncertain and somewhat shy. It is twenty-six miles from Victoria, and can be reached by train every morning from Victoria. There are boats for hire and two good hotels.

Forty miles by rail lands the angler on his best ground, for here we are on the Cowichan River. There are two lakes close to the station, and boats can be hired on either lake by applying to the hotel-keeper at the Quamichan Hotel. Conveyances can also be hired at the village of Duncan's. About thirty miles drive from the station is Cowichan Lake, one of the largest on the island. This lake abounds with fine trout, and a short time ago an officer of one of H.M. ships caught in five days 300 pounds of trout. There is a steam launch on the lake and several boats for hire. A stage goes from Duncan's three times a week, and there is a comfortable hotel. Going farther away we come to the Chemainus River, which, owing to heavy netting, is not worthy of the angler's attention. In fact if the angler is not satisfied with the sport obtainable in the neighborhood of Duncan's he had better return to Victoria and take the E. & N. Railway Co.'s steamer to Campbell River, some 150 miles from Victoria. Here, if he is well fitted with salmon tackle, he can have what I believe to be the finest sport in the world. A friend of mine, fishing for ten days in July, 1901, caught 172 salmon, averaging 43 lbs. each. The angler who is not satisfied with this had better depart to a better world, for his quest in this one will be hopeless.

Other, and more detailed, information can be obtained by inquiry at Victoria, from the Dominion Fishery Officer.

Before concluding it may be well to warn visitors that no salmon, fry, parr or smolt, or any grilse of a less weight than three pounds, may be taken, but must be liberated alive, at the risk of the person catching it.

For the benefit of those who are unable to distinguish the difference between a trout and a parr, I may say that the tail of the parr is very much forked, not square like that of a trout and there are bars down its side, resembling finger marks. As small trout are hardly ever seen in the Cowichan river, I would suggest that all fish under 8 inches in length be put back at once. The penalty for being found in possession of these fish is $100 or six months' imprisonment.

* [Not received.—Ed.]

For those who do not pretend to be expert anglers there is an abundance of sport to be obtained from May till October in all the bays and estuaries round the coast, trolling with a large artificial minnow or spoon. From half a dozen to twenty salmon are often caught in a day in this manner. A strong rod and not less than 200 yards of line on the reel are necessary, if big fish are running.

Specimens of big salmon and trout caught on Vancouver Island can be seen in the museum in Victoria, and the Curator, Mr. Fannin, will give visitors any information they may desire.

Timber Estimation.

BY A. KNECHTEL, N.Y.S.F.F. AND G.C.

To find the volume of forest by felling sample trees, the trees are measured as described in a preceding number of ROD AND GUN. The basal areas of the cross sections, breast high, are calculated from the diameters. Then, by adding these basal areas the total basal area is obtained, and by dividing the total area of any species by the number of trees of that species the basal area of the average sample tree of the species is obtained :

Let V=volume of the stand.
" v=volume of the average sample tree.
" A=total basal area.
" a =basal area of sample tree.
" n_1=number of trees with cross area a_1
" n_2= " " " " " " " a_2
" n_3= " " " " " " " a_3
" n =total number of trees.

$$\text{Then } a = \frac{a_1 n_1 + a_2 n_2 + a_3 n_3 +}{n_1 + n_2 + n_3 +} = \frac{A}{n}$$

From this basal area of the average sample tree is then calculated the corresponding diameter, and from the height measurements is ascertained the average height corresponding to this diameter.

A thrifty tree of the species having this diameter and height is selected in the forest. It is felled and its volume measured. In order to obtain a volume independent of the individual irregularities, several of such specimens are felled and measured. The average cubic contents of these represents the volume of the mean sample tree. This volume when multiplied by the number of trees gives the volume of the stand.

$$V = v \cdot n$$

Since it has been shown that

$$a = \frac{A}{n} \text{ ; then } n = \frac{A}{a}$$

Substituting this value for n in the formula above, and,

$$V = v \frac{A}{a}$$

The table below shows a convenient form for keeping the record.

MEAN SAMPLE TREE METHOD.

Species.	The Calipered Trees.			The Stand.		The Sample Tree.		No. of Sample Trees
	Diameter in Inches.	Number of Trees.	Sum of Cross Areas in Sq. Feet.	Number of Trees.	Cross Area in Sq. Feet.	Cross Area in Sq. Ft.	Diameter in Inches.	
						Measured at Breast Height.		
White Pine.	8	22	7.68					
	9	77	34.02					
	10	97	52.90					
	11	162	106.92					
	12	40	31.42					
	13	100	92.18					
	14	115	122.94					
	15	88	107.99					
	16	160	223.41	1560	2358.58	1.51	16.7	6
	17	182	286.89					
	18	45	79.52					
	19	67	131.92					
	20	88	191.99					
	21	110	264.58					
	22	86	227.02					
	23	22	63.47					
	24	14	43.98					
	25	85	289.75					
		1560	2358.58					

2,358.58 sq. ft. ÷ 1,560=1.51 sq. ft=cross area of sample tree.

The diameter corresponding to a cross area of 1.56 sq. ft. is 16.9 inches.

Diameters are calculated from cross areas and cross areas from diameters with the help of a table of areas of circles. Such a table, with much other useful

information can be found in the bulletin referred to in the previous paper.

From height measurements it is found that white pine trees 16.7 inches in diameter have an average height of about 100 feet.

Six sound, straight trees, then, about 16.7 inches in diameter and about 100 feet in height are selected in the forest, felled, measured and the volumes tabulated as shown below. There will be a difference in the form of the trees though their diameters and heights may be the same, and hence their volumes will differ. The total volume of the sample trees divided by their number will give the average volume, and this multiplied by the number of trees of the stand will give the volume of the stand.

Sample Trees.	Cubic Feet.	B. M.
No. 1	72.2	251
" 2	75.8	257
" 3	68.6	237
" 4	70.9	245
" 5	74.1	256
" 6	72.0	248
Volume of the six trees	433.6	1494
Average volume	72.3	272
Volume of 1560 trees	112788	424320

When the basal area a of the sample tree is exactly $\frac{A}{n}$, the simple formula $V = v + n$ is always used for reckoning the volume. But if the basal area is not $\frac{A}{n}$ it is evident that multiplying the volume of the sample tree by the number of trees multiplies also the error. The formula $V = v + \frac{A}{a}$ may then be used.

This very simple and convenient method was introduced into Germany by Huber, in the year 1824, and was recommended later by Carl Heeper. Still it is not sufficiently accurate. By other methods discussed in this paper much better results can be obtained with but very little more work.

The method depends upon the principle that the sample tree presents not only the mean cross area, but also the mean height and form factor of the stand. That these conditions be satisfied the following equalities must exist:

$$A\,H\,F = n_1\,a_1\,h_1\,f_1 + n_2\,a_2\,h_2\,f_2 + n_3\,a_3\,h_3\,f_3 +$$

But since $A = n_1\,a_1 + n_2\,a_2 + n_3\,a_3 +$

Then $H\,F = h_1\,f_1 + h_2\,f_2 + h_3\,f_3$

This is seldom true for a whole stand, but only for sizes that lie close together; and therefore the measurement of a stand by means of one arithmetical mean sample tree cannot give accurate results.

Sharbot Lake.

This famous lake is situated on the line of the Canadian Pacific Railway, being 166 miles west of Montreal, 169 miles from Toronto and 80 miles from Ottawa. It is about 50 miles north of the city of Kingston, being reached from that place by the Kingston & Pembroke Railway, which here forms a junction with the Canadian Pacific Railway. For years past it has been known as a famous fishing resort, and long before the completion of the Montreal and Toronto division of the C.P.R., it was occasionally visited by American sportsmen, who were sojourning on the St. Lawrence. Being thus easily accessible it is not surprising that, as it becomes better known, it is yearly becoming more popular. For picturesque scenery and fine clear water Sharbot Lake will compare favorably with any of the lakes in this part of Ontario.

It is about eight miles in length, and from three to four in greatest width, crossed at the narrows by the two railways above mentioned. A commodious station known as Sharbot Lake Junction has been erected at the village, a place of 300 inhabitants, picturesquely situated on the neck of land which almost divides the lake into two parts. A few summer

residences have been erected on the numerous islands which dot its surface, but for the most part the lake is still in its primitive condition. Situated by recent measurements some five hundred feet above Lake Ontario, the air is clear and dry here, and bracing even in the hottest weather. There is not a healthier place in all Ontario, and those who complain of the damp air of the shores of Lake Ontario will find here an invigorating and refreshing change.

Rocky and well wooded shores alternate, and the clear cold water is most exhilarating for those who need a thorough change. Marshy and swampy lands are absent, so the flies that abound in so many otherwise pleasant resorts are absent too, excepting during the latter part of May and early June.

From the middle of June onward is the best time for fishing, and no better lake can be found for the sport. Though so easily accessible it is by no means overfished, and fine strings of black bass, salmon trout and pike are captured every season.

Black bass as high as 4½ and even 5 pounds are not unusual, and lake or "salmon trout" of from 10 to 15 pounds are common, though an occasional one of 18 pounds and even of 22 pounds has been caught. The lake in places is very deep, and it is in such spots that the trout are fished for in summer.

A visit to this lake would well repay the family seeking quiet and change of scene during the summer months, and afford recreation at the same time.

The village has a good hotel, situated close to the station and lake, where reasonable accommodation can be obtained; besides there are several private houses that take boarders, and a furnished house can occasionally be rented for the season. Boats are readily obtainable and can be hired by the day or week, with or without guides who are acquainted with the best fishing resorts on the lake. In the neighborhood are other bodies of water that teem with fish such as Bob's Lake, Clear Lake and many others, while within a day's drive are Broule Lake, and Mackay Lake, noted for their speckled trout and beautiful scenery, all well worth a visit.

In the fall of the year very good hunting is still obtainable in this vicinity, the partridge being numerous, and many ducks, as the black duck, wood duck, teal and others are met with later:— Hotel, "The Union" — H. Roberts, proprietor. Guides and fishermen:—G. Jones, L. Burnham, M. Braceland.

Floral Photography.

BY HUBERT M'BEAN JOHNSTON.

Can it be possible that there is a more interesting and fascinating branch of the photographic art than that which deals with the study of old Mother Nature? Surely not, unless perchance, we look to one of the details of the great out-of-doors and discuss the preservation (within the boundary of a dry-plate) of the earth's gems, the flowers. Here, indeed, is there room for conscientious work. In their native environments, the wild daisies of the field attract us; brought to civilization in the garden and beneath the glass of the greenhouse, they hold us by the same charm. And how great is the diversity of form they possess, with all the graces possible in both shape and habit; what an infinite variety of color there is to pick from, in tones ranging from the deepest purples to the most snowy whites, and embracing every intermediate shade and tint under the sun. Was ever an opportunity presented anywhere that gave equal facilities for the studying of lighting, textures and color values?

Yet a photograph showing mere outline and shading alone is not all one can secure. There is something more. Every flower, like every person, has an individuality of its own and breathes a personality separate and distinct from all its fellows. Where this subtle quality lurks would be difficult to say. It may be in the poise or it may be in the delicate gradation of its tints, or yet

AN UNWILLING VISITOR

Hoisting in a Polar Bear, shot by Dr. Grenfell from the hospital steamer one day last September

POOR SEALERS WITH A "TOW"

The two large seals are 3-year Harps (*Phoco Greenlandica*); the smallest a "bedlainer," *i.e.*, a full grown bay s[illegible]

HUNTING THE "CARIBOU"

New Year's Day sports on the ice of the Labrador coast

AT THE FIRING LINE

Sealers shooting at the "caribou" with their long muzzle-loaders

again, it may be simply in the coy way in which its petals roll back ; but whatever it is, or wherever it is to be found, it is this feeling that must be portrayed by the lens if anything but a stilted, woodeny result is looked for. Capable handling, begat by a wholesome love for the work in hand, will alone avail to bring out the character of each individual specimen ; will alone show the bold assertiveness of the one, the homely graces of another, or the frank simplicity of a third ; each flower will then get just that touch of realism necessary to make it a reproduction of the original and not merely a likeness on paper. Nor does this depend upon the rarity of the specimens employed, for equally good results may be secured from the commonest roadside blossoms and the highest priced American Beauties. In fact, if one is most familiar with the field flowers they will, in all probability, afford the best material for picture making. But to get all out of a flower that there is in it, one must have a feeling of kinship, must be in love with his subjects, for to treat them as mere inanimate products of the earth—as material only—entails a loss of those subtle beauties reserved for the operator who is thrilled by their every sway. True enough, the flowers are less taxing and more facile than human beings to handle, yet there is a wide range of knowledge that may be advantageously brought to bear.

But in floral photography there is something else that ought to be thought of—*i.e.*. working systematically. In this connection, a most interesting method is to photograph the flowers according to the season in which they bloom in your district. Bring the specimen home, and after making the exposure make careful notes of date and color and any other particulars connected with the plant, and then afterward identify it by means of some book on botany ; if you prefer it, you may begin with the botany book, one of those treatises that give the most common flowers that bloom each month under the heading of that month, and then go in search of that particular flower. This done, in a few years one will have a fairly complete collection of prints of the blossoms of the district, which may be mounted up in a book with blank leaves between for notes, being arranged either according to their natural order or with reference to the time of year at which they bloom. Again, one plant may be photographed at different periods of its growth, and make interesting studies, as, for instance, the burdock, which varies greatly in appearance with successive seasons. Or if one be appalled by the apparent magnitude of the task and the great number of different subjects afforded by one section of country, a most excellent scheme is to confine one's self to one particular class of plant—the ferns, for instance, that grow in the immediate neighborhood. Any one district may produce more than a score of varieties, and this will be the easiest work for a beginner, the upper and under sides of the fronds being photographed of course, and then the minor part, such as the pinnae, separately. Flowering grasses, reeds and rushes constitute another section of the work. But whatever branch is studied, the photographer can hardly fail to largely increase his botanical knowledge and add interest to all his wayside rambles in future, as well as having a series of pictures of educational value.

The ideally perfect plan of work would be to photograph the flowers just as they are found in their wild state, but, unfortunately, Dame Nature places many difficulties in the way of the successful accomplishment of this. There is always the most impossible task of securing a suitable background, and then, should this be mastered, we have still to look to that constant enemy—the wind. One may never notice it until trying to photograph the growing flower, but it is a fact that only on rare occasions are our specimens still for ten seconds together. Moreover, a snap-shot exposure is out of the question, for the picture ought to be made as near to the natural size of the original as possible, and this necessitates so long a camera extension that the stop marked f-16 works in reality at an aperture of f-32, and requires about four times the exposure that would be needed if the photograph could be made from a considerable distance. If a color screen is used, the exposure is still further prolonged. Hence the most easy way is to collect specimens for home photograph-

ing. Few workers will care or be able to go beyond the five by seven size (it is hardly advisable to try anything smaller), and this will not allow of many plants being copied without reduction. In such cases it may be well to photograph the whole stem with its lower leaves and cluster of bloom on a reduced scale, the exact scale being carefully noted, after which the different parts may be photographed the full natural size. The root, the radical or root leaves, the upper leaves, tracts, etc., should be done less. Then the flower may be dissected and sepals, petals, etc., photographed individually. In working with flowers similar to the rose, for instance, one may picture the bud as well as the full blown flower. Of course this is assuming that one is working from a purely botanical standpoint.

It must be borne in mind, however, that flowers are, to employ a homely simile, very like soap-suds—evanescent, and unless care is taken of them after they are picked, one is likely to find he has on hand a bunch of wilted stems that are far from suitable for picture making. Instead of it being proper to pull the flower and at once take it before the lens, as most people appear to believe is the correct way, it is said to be a positive disadvantage. McFarland, an expert on such matters, says, "the ideal plan is to cut, not pull or break off the flowers early in the morning, before the sun has touched them, and to put them at once in water a few degrees warmer than the dark, cool cellar, or other location, in which they should be placed for an hour or so." This, he says, will allow the stems to fill up with water and puts them in most excellent condition for handling and photographing, even to the extent of reviving them sometimes when they are almost gone. Splitting the stalks an inch or two up, especially in the case of chrysanthemums, is also very beneficial. It is also said that dissolving sal-ammoniac or chlorhydrate of ammonia with the water in which the stems are put, in the proportion of about 75 grains to the quart of water, will keep flowers fresh for a fortnight.

It is advantageous to use orthochromatic plates in flower photography, though, save for deep oranges and blue shades, a ray filterer is unnecessary, and inasmuch as it will produce false color values, it is better done without. Yet, while the majority of workers use the orthochromatic plates, they are by no means an absolute necessity, and many excellent flower photographs have been made without.

The question of illumination is rather an important matter to be considered. Perhaps one of the best lights to be had, is that secured when the exposure is made with the flowers well back in a corner between two windows. The light is then under perfect control from both sides and just sufficient may be admitted to secure roundness without flattening the effect. If however, only one window is to be had, it is absolutely imperative that a reflector of some sort be at hand, else the other side of the subject will be lost in shadow and the flower will lose any appearance of relief that it might otherwise have, a state of affairs to be found very frequently where dark backgrounds are employed. Bear in mind that it is far easier to shut off extra light than to struggle along with only half enough, and, moreover, be careful that all the light does not strike on the outside of the flower so that the centre is left without any, for this will only result in some parts being under and other parts being over exposed. If you find it impossible to get enough light on the stems and under portions of the flower, without admitting so much light from the other side as to flatten it, take a mirror and, by flashing strong illumination (not sunlight) on the darker portions, beautifully clear detail, without any suspicion of hardness, may be had.

For flower studies, a most excellent background is a sheet of cardboard the full 22 x 28 size, and by having them in different colors, almost any effect that is desired may be secured. For a full dark surface, the kind designated "Carbon Black" is *par excellence*, while for daintiness, nothing can surpass a clean, pure white, and between these two extremes, one may pick out almost every tint or color imaginable. The pure white, however, necessitates some delicacy of manipulation if one would avoid hardness of outline or is looking for

softness, and until one is more or less familiar with the work in hand, it is advisable not to attempt its use. A sheet of the style known as "Rembrandt" is also a useful adjunct to a background outfit, more especially so should the pictures be made with any purpose in mind of using them afterward for the making of half-tone illustrations. In any event, what ever is used, see that it is of a dull finish on the surface. There is enough to bear in mind in flower photography without being distracted by a shiny ground. After selecting the different colored cardboards, number them on the back and then put them side by side, up on the wall, and make a photograph of them in order that you may have some idea of their relative values in monochrone. Mark the number that is on the back of each ground on the print, and it will be easily found when wanted. Remember, too, it is often possible to vary the precise value of a ground by placing one side a trifle farther away from the flower than the other, so that the angle at which the light strikes it is altered.

Once the subject of grounds is mastered, the next question to be considered in the light of properties is the matter of a receptacle for the flowers. Now, remember that it is not the picturing of ceramics that we have in view, so make an effort to have nothing that is not severely plain and simple. Plain, clear glass vases are the best, particularly those of few curves. Never, under any consideration, use cut glass, for the brilliant faces will invariably be the principal point of interest, to the detriment of the more important parts. Moreover, one will require to have variety in the types of vases chosen. A tall, narrow receptacle for a single specimen, with broader ones for bunches, will be needed, or sometimes, when there is more than one stalk, the subject is best displayed in a low, flat dish. The main point to remember is that the outline must be simple and free from any design or pattern.

One thing remains to do before making an exposure. We must focus. Apparently this is a very simple matter. But wait and see—there is something to learn here, too. You will find that if there are several flowers in the dish, they will occupy more or less space from front to back, so that to obtain a clear focus on them all is absolutely out of the question unless a different arrangement is adopted. While you can get those at one point all right, those at another are distressingly blurred and fuzzy. The flowers must be arranged all on one plane in some sort of fan-shaped style, and by exercising a little skill and placing some higher and others lower, it is quite possible to do this and make it look as natural (in the picture) as the first composition. Then, if that does not get as sharp a picture as is desired, it is the easiest thing in the world to improve by stopping down a little more. In the focussing, note that the background is placed just far enough back to be out of focus and still to catch just the faintest suspicion of a shadow of the subject. Of course this is impossible where dark grounds are employed, though with anything else it is very effective. An extremely common method of getting just enough of this shadow and at the same time photographing the flowers without showing any support for them, such as a vase, etc., is to place the blossoms on a sheet of glass a few inches above the background, which is laid on the floor. Then by supporting the instrument above it and pointing downward, almost anything wanted may be obtained.

Despite the attractiveness of flower photography in monochrone, it goes without saying, that the fascinations of this particular branch of work would be very much greater were it possible to work in color. Unfortunately, however, this is as yet a dream, unless we count the half-tone processes used to make three-color reproductions, and we must, perforce, confine ourselves to putting forth our utmost endeavor to make our representation of texture, gradation and light and shade all that it is possible for them to be. But to do this well, even though we lose the delicacy, richness and translucency of flower coloring, is no simple matter, and the worker who is able to make a success of his floral studies has undoubted proof to offer to his critics that he has put in some earnest study.

The Lesser Maples.

BY R. H. CAMPBELL.

There are two maples of common occurrence in Eastern Canada that seldom reach the proportions of trees. These are the Mountain Maple, *Acer spicatum*, and the Striped Maple, *Acer Pennsylvanicum*.

The mountain maple is found growing in moist woods from Nova Scotia to the west of Lake Winnipegosis and north to James Bay. It is usually only a shrub, from which it is sometimes called shrub maple, but often reaches a height of from 25 to 30 feet. The leaves approach most nearly in appearance to those of the red maple, but are usually divided into three lobes, the two additional lobes which sometimes are present not being prominent. They are of soft texture and are downy beneath, and the teeth on the edges are rather coarse. They assume brilliant colors in autumn, a deep red being the most common, and lend their share to the beauty of our Canadian woods. The twigs are brown instead of red, as in the red maple, and the flowers, which appear in June, are small and of a greenish-yellow color and clustered in racemes, or long, loose, erect bunches. The small wings of the seeds diverge widely and they, too, partake of the rich coloring which makes the leaves so gorgeous.

The striped maple, sometimes called flowering maple, is also known as dogwood and moosewood, though these names properly belong to other shrubs. This tree grows in high, sandy woods, in opposition to the habit of the mountain maple. It is found from Nova Scotia west to Lake Superior. This is a very pretty tree, reaching a height sometimes of forty feet, with its graceful branches spreading upwards and drooping at the top. The bark is light green, striped with dark lines, which gives it a beautiful appearance, and at the same time forms a specially distinguishing feature. The leaves are large, reaching six inches in length, and the three lobes are all toward the top of the leaf, giving it a distinctly different shape from those of the other maples. The edges are finely serrate. The greenish flowers are in drooping clusters, appearing in May or June, and are followed by the large, divergent, pale green wings. The name moose wood was derived from the fact that the moose feed upon the shoots of this tree. It is stated that in the early days the settlers used to turn out their cattle to browse upon these shoots before the grass appeared in the spring.

Nova Scotian Forests.

Amongst reports on the Forests of Canada submitted to the British Houses of Parliament in the year 1884 is one by W. A. Hendry, of Halifax, on the Forests of Nova Scotia, in which the following passage occurs :

"It is matter of record that the forests of Nova Scotia had not been visited by any great fires until 1784, just 100 years ago. The few Indians then in the Province had the forest divided among their families.

"The country was then nearly all covered by a soft wood forest. The most thin and rocky portions had a fair mixture of white pine, with spruce and fir. The deeper soils of the soft wood land were chiefly occupied by hemlock, with a few large spruce and black birch.

"The aborigines, as well as the early French settlers, were careful never to make fires in the woods in the dry season of summer. In 1783, however, a great number of refugees and discharged soldiers came into the country, and many new settlements were formed. The following year no rain fell in June, the latter part of May and first ten days of July. Fires were kindled in the clearings by the new settlers and it is reported

that within a fortnight two-thirds of the province were burnt over.

"Except what is cultivated, or under water, every part of the peninsula of Nova Scotia would now be covered with trees were it not for the destruction by fires, which scourge the country more or less every season.

"Forests create and gradually improve the soil and climate of a country. The axe makes sad havoc, but may be regulated: fires are terrible. It is to be hoped, however, that an earnest effort to do so on the part of those in authority may prevent a repetition of the destruction from that source.

"The writer had occasion, upwards of 42 years ago, to travel over a large section of wilderness country lying east of Halifax, and in so doing he traversed many miles of open barrens. The burnt stumps, trunks and roots of spruce and white pine trees, many of large dimensions, were at that time scattered all over the barrens, and their remains may still be seen. Although the surface has been burnt over many times within the past 45 years, still the forest goes on reproducing itself and being burnt down, and will continue to do so until active means are resorted to for having the forest fires put out as soon as observed."

Though this statement was made eighteen years ago, practically no advance has been made, as shown clearly from the reports obtained last year in connection with the enquiry into the forest fires.

One of the leading lumber firms of Cumberland county makes the following remarks in connection with a fire that occurred there last year:

"The exact loss is hard to estimate. We can carefully cull, for instance, such timber as will make English deals this year; then in ten or fifteen years we expect to be able to go back and get as much more, and so on forever. Much of this spruce covered land, although of little use for the production of farm crops, will pay well as a lumber farm, for the wood will grow regularly without expensive cultivation. When such a forest is burned, a generation may come and go before it regains its original value, for not only has the wood been killed but the vegetable mold accumulating for ages has also been destroyed.

"We look upon the lumbering industry as second to no other in the Province, not only on account of its value for the export trade but for the supply of home factories and industries, which are constantly increasing, while the wood supply is constantly diminishing. Such considerations appear to justify the creation of the most stringent laws for the protection of our forests, especially when it is so constantly illustrated that once a fire originates, circumstances over which we have little control determine the extent of its ravages.

"It is hard to estimate the loss from a fire. For it is more than the single loss of one or two thousand acres to the proprietor. It is a direct loss to the whole country, more than to the individual owner, for it robs the country of a portion of an industry which otherwise would have supported many lumbermen in the woods, shipping industries at our ports, and artizans in our factories and throughout the country. If we could only keep the fires out of the forests, on account of the knowledge we are beginning to acquire as to how they can best be cultivated, our wood supply for local purposes could be made to last for ages, if not forever."

This puts the whole case in a few words. The fires are the greatest difficulty. This is the consensus of opinion by forest owners and others. The Fire Act is adequate if it were enforced, but there is no proper machinery provided for its enforcement. There is no system of fire rangers provided by the Government, and only in the case of a few energetic lumbermen have active and effective steps been taken to prevent destruction by this means. But this is wholly unequal to the requirements of the situation. The measures taken by a few forest owners may be effective to a limited extent, but unfortunately fires will not confine themselves to the points from which they start, and unless there is a system that will reach the fires when and wherever they start—and such a system the Government only can organize—the results will never be satisfactory. The holders of timber lands appear, from the statements made by a number of

them, to be quite ready to co-operate with the Government in establishing a fire ranging service, and taking such other steps as may be necessary to make the prevention of fires a possibility. Year after year the destruction of the forests by fire goes on ; year after year lumbermen and farmers suffer serious loss, or only avoid it by the most strenuous and painful efforts, and still nothing is done to arouse public opinion or prevent the danger.

It is, perhaps unfortunately, not always the case that as swift retribution follows the careless use of fire as it did in one case in Queen's county last year. One man, who owned fifty acres of meadow, had his hay all made and in his barn. He went to clear more meadow by burning, with the result of burning down his barn with its contents, his camp and all—burning him completely out. This fire ran into neighboring timber and did considerable damage.

There is one great fallacy of which everybody who speaks of forest fires appears to be more or less guilty. Fires which run over lands previously burnt over, but which thus prevent the new growth from establishing itself and reaching productive size, are classed as of no account or as doing damage which is not worth estimating. A forest is, however, as valuable in its future possibilities as in its present products, and there will be no possibility of reclothing the barren lands with forest, and making them productive, as long as fires are permitted to occur freely over them. The opinion of the majority, which is based on perfectly sound principles, and is probably the only practicable method under present conditions, is that if fires were kept out, the reforesting of the barren lands might be left to take care of itself.

The Warden of Pictou county suggests, however, that the Government should be asked to bonus pine culture, as he considers that the most useful wood and of such quick growth as to be profitable. As an instance of the quick growth he cites a log twelve feet long, sawn by himself, which grew in his own recollection and from which he cut 300 superficial feet of inch boards. He goes on further to say :

"Much of the land that has been cultivated and reduced by cropping should be allowed to grow spruce also. The southern slopes of the hillsides in Pictou county, where the streams run north, are not worth cultivating. The wood on the banks of the streams should be preserved, as it would assist to prevent the sudden rise of streams, so that when the bottom lands are cultivated they will be more productive. The Government, when granting lands, should put a proviso in all grants forbidding the clearing of all banks of streams and portions of lands where rivers take their rise, for the rapid rising of streams by sudden thaws caused much damage to bridges, intervale lands and other property."

The forest owners are anxious to make their lands permanently and steadily revenue producing, and more careful methods of cutting with this end in view are being adopted. The cutting of comparatively young trees for paling, to be exported to the United States, is having a bad effect on the woods where it is practised, particularly in the county of Digby.

In the Riding Mountains

BY GEO. BATHO.

"Yoho! Away we go," sang out our driver, and, amid a chorus of many dog voices and the hastily interjected farewells of a small group of loungers, our buckboard, with its funny-looking load of freight, rolled out of the liberty barn and rounded the corner with a smart flourish. We were soon out of sight of the straggling little prairie village, and were heading up a faint new trail which led away to the north-westward. Roads in Manitoba do not require much making, and even in those "early days" we were able to make good time as we drove onward toward the long, low line of blue which rose above the tawny brown of the autumn prairies, and threw its rugged outlines against the brighter azure of the eternal vault.

We had long been planning for a hunting expedition in the Riding Mountains, had Jim, and Sam, and I. And now we were on our way toward a week's incursion into the "happy huntings grounds" of our dreams.

It would be idle detail to tell of the adventures of our trip ingoing, although, after we reached the broken region which marked the rise of the mountain slope, we had a number of rather interesting experiences. Suffice it that after making our way some twenty miles beyond the timber line we found ourselves, late in the afternoon, ready to pitch tent in a little opening at the base of a long, heavily-wooded slope, which ran away back toward the north, and shut in one of the most picturesque valleys that ever cradled the infancy of a mountain river. The sides of the valley were clothed for the greater part by a heavy growth of poplar, but through the wall of bare trunks there gleamed, here and there, the chalky forms of that most graceful of trees, the white birch, while, huddled together in the broken angles of the hillside, the sombre spruce stretched their long, deep, mysterious shadows across the landscape. It was an ideal camping ground, and when that evening we three sat cross-legged before the fire, and watched the fading glory of a perfect Manitoba sunset, the rugged simplicity and exquisite grandeur of the place seemed to throw its spirit over us, and we smoked silently on until the stars came out and darkness crept down over the hills. Then we tumbled in and dreamt, like one of old, of "all manner of four-footed beasts of the earth, and wild beasts, and creeping things, and fowls of the air."

The next day we spent in more fully establishing ourselves in camp and in making a few little trips into the woods and along the river, "just to get acquainted with the lay of the land," as we told ourselves. In one spot close to the river I found a number of fresh moose tracks, and I promised myself that I should dine on moose steak before I left the woods. The second day set in colder and with a stiff wind, bringing up a few flurries of snow from the north-west. We sallied forth determined to feel our way farther into the forest, and hoping to bring back something big. It was determined that we follow up parallel to the river valley toward the north-west, trying to keep, if possible, within hearing distance of each other's rifles. Sam was to keep nearest to the river, Jim to take a course farther back, and I to keep on the outside.

The Riding Mountains (which, by the way, are about one hundred miles long by sixty miles wide) are in places very heavily wooded, especially on the northern slopes, while in some of the levelier parts are open stretches of beautiful meadow, the region abounding in lovely chains of little lakes, interlocked by streams and small rivers. It is an ideal hunting ground, there being not only a great deal of wild fowl and other small game, but the dense parts being filled with big game as well.

As may be supposed, the day did not pass slowly, for many a flock of teal and mallard in the lakelands, and many a

scurrying coyote or bobbing cottontail in the woods, invited me to try the powers of my Winchester.

About three o'clock, as I was beginning to feel fagged and careless, I came up over a sharp, heavily-wooded hill, and there, down in a little creek valley before me, I saw four grown moose and three calves. I had come up right against the wind, and they had not scented me. I shall never forget the intense excitement which seized me, nor the extravagant proportions to which the moose appeared to grow as I gazed upon them. To be able to secure one of those monsters would be something to talk about all the rest of my life. They were still a good quarter of a mile away, and I hardly dared trust myself to take so long a shot. An unevenness in the ground a little to the right, however, offered a chance to creep up to within about two hundred yards, so I made a very careful detour and gradually crept forward. How I feared that one of my comrades should blunder along or that some sound should alarm them! How I watched lest I should step on a dead limb! Closer and yet closer I got, until at last, I was afraid to go farther. There were a few scattered trees between the moose and where I crouched, but I carefully raised my rifle to take aim. A fine bull stood broadside, and I levelled at him. It was a magnificent shot, but my nerves shook so that I could hardly hold my rifle. My heart seemed to beat my side with blows like a hammer, and as the wind and snow blew into my face, the tears gathered in my eyes. But my old rifle spoke out, and the bull gave a great leap—and fell. I had hit him! But he was on his feet again in a trice, and though he dragged a front leg, he followed the others as they rushed up the creek valley and swung into the woods. Instead of trying to secure a second shot, I obeyed a mad, blind impulse and dashed after them.

The light flurry of snow made it easy to follow the tracks, and as I saw splashes of red here and there, I hoped that I should soon come up with the fallen moose. But he kept out of my sight, although I could at times hear him breaking the dead wood ahead of me. I was impatient with myself that I had not killed him, and was determined to do my very best to overtake him, thinking he would give out before long.

After a couple of hours of very exhausting chase, however, I found that the thickening snow was blotting out the freshness of the tracks, and finally decided to turn back.

I soon found that it was impossible for me to follow my own tracks back, so I decided to strike out in the direction in which I supposed the camp to be. I had a vague idea that the moose had led me back to the north-east, but had been so excited that I had kept no account of my bearings, and being a novice in all sorts of woodcraft I soon found myself utterly at a loss as to the proper direction in which to proceed. I wandered about until dark in the hope of striking the river, but it seemed that no matter which way I turned I succeeded only in getting into heavier timber. I was very hungry and tired when at last I decided to build a fire and make the best of it for the night.

My fire was half made when a flickering light through the trees attracted my attention. Could it be the blaze of some other hunting party, or was it only some will-o'-the-wisp? I watched for a moment and decided that it must be the light of some other party, and then set out in its direction.

In a few minutes I stood in the doorway of a little low-roofed hut, and inside was a stalwart half-breed and his wife. I was welcomed in broken French, and right gladly I accepted.

"You fer hunt de moose?" my host enquired after he had watched me eat a supper, the extent of which would have caused great concern to any of my friends at home. The story of my afternoon's experience, as I told it, seemed to amuse him.

"De win' she blow also dat way moose travel heem?" he asked at last. And then I suddenly remembered that in my utter loss of reason I had been following those moose all afternoon with the wind, and my host's good nature became contagious and I joined in the laugh.

"De moose heem mak' it de joke on you;" and off we went into another round of laughter.

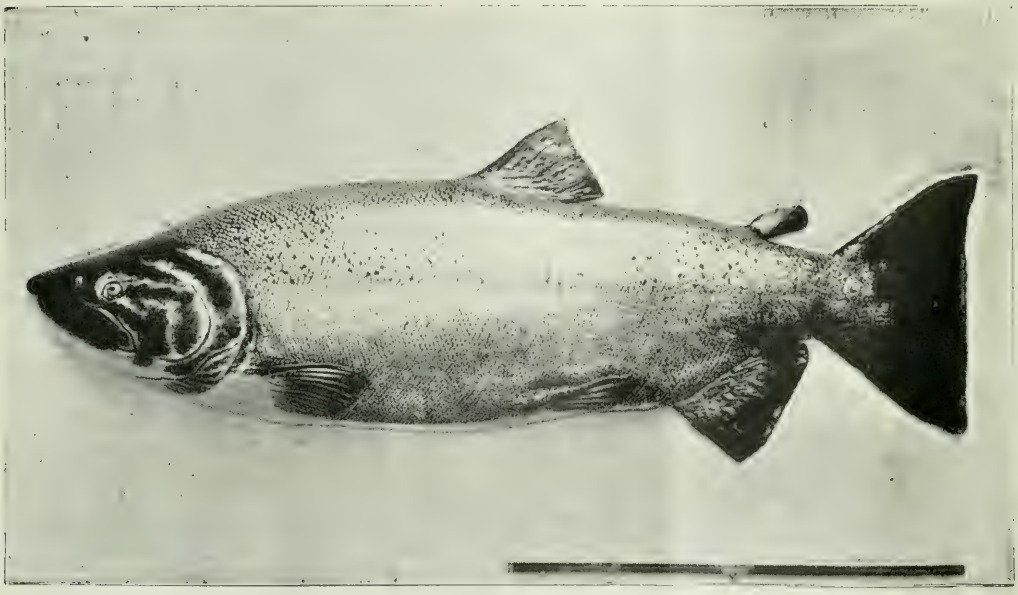
THE WINTER PATROL

N. W. Mounted Police leaving Fort Chipewyan for Edmonton with dog trains

IN THE FAR NORTH

Main house of the Hudson's Bay Company

British Columbia Salmon



Tyee or "Spring" Salmon

Of the half dozen salmon species found in British Columbia, the "tyee" is the heaviest and noblest. A truly royal fish.

The next morning, after giving me much information as to the lie of the surrounding country, and some valuable and very much needed advice as to hunting, the half-breed set me out toward camp.

"Go two-t'ree mile, 'cross beeg hill to little creek beyond, and turn sout' wan mile also; dat tam you come on beeg reever. Ver' glad you kam dis way, me;" and with a politeness which would do credit to many who make much greater claims to civilization my good friend started me back toward camp.

When I got to the spot where I had seen the moose tracks the first day, I sat down for a few minutes in the edge of a little thicket to watch the movements of a large hawk which was circling over the valley and apparently getting ready to swoop down upon some poor victim below. Suddenly I was attracted by the appearance from behind a couple of ragged tamaraks of a great pair of horns and a dark brown head, and then a splendid bull moose pushed aside the underwood and came forward close to the water's edge on the other side, a considerable distance down the little river. Owing to the overhanging boughs of some trees half way down the bank, I dared not shoot at him from my cramped position, so I determined to remain hidden and see what he would do. He gazed about for a moment and finally approached as though to cross the river.

It was an absolutely open shot to the near bank, so I crouched lower and waited. But all at once the moose turned abruptly about, as though he scented danger, and disappeared where first he had come into sight. This move was a great disappointment, indeed, as even my little glimpse of this bull had been quite enough evidence that I had before me an extraordinarily fine specimen of the species. But the movements of moose are not always easy to reckon with, and to my extreme surprise the brute boldy walked into view a few yards closer, and plunging into the water swam to my side of the river. For one moment he paused on the bank to look up and down before entering the timber. It was a good three hundred yards, but I had got over my "buck fever," and my nerves were as steady as steel. The bull went only a few yards, for my bullet passed just behind the shoulder.

At the sound of my rifle my two friends came rushing down the river bank, and helped me rejoice over my first moose. He was a magnificent monster indeed.

When I got to the tent I found a couple of nice fox skins, as well as other small game which the other boys had brought in. Before we broke up camp we had three more moose and two jumpers (black tail), and it was only by dint of considerable ingenuity, and the services of my half-breed friend and his wagon that we were able to take away with us the load which our rifles had secured.

There is still lots of game in the Riding Mountains, and in the Duck and Porcupine Mountains to the north, but although I have three or four times repeated my visit to the old camping ground, and my same old rifle has spoken death to a round dozen of the brethren of that first monarch of the woodlands, and although I have also secured three splendid bear robes, still the glory and the pride of all the rest dies out, as I lay aside my pen and lean back to look once more upon that magnificent, shaggy head which forms the most conspicuous figure amongst the miscellany which adorns my study wall.

Sporting Dogs—The Retriever.

BY D. TAYLOR.

The English retriever, either flat or curly-coated, is a breed of dog seldom seen to perfection in this country, and more's the pity. His uses are manifold. From his tractability, intelligence, and the comparative ease by which he is taught to fetch and carry, he is unexcelled by any other breed of dog as a useful companion for man. He is quick to learn, ready to obey, and will go back on his master's trail for miles in search of anything that may have been dropped, and bring it back in triumph. The breed is not of very ancient origin, and is probably a mixed cross of the English or Irish water spaniel, the collie and Newfoundland. At the present day, however, the retriever can be bred true to type, and there are many fine specimens of both varieties in the Old Country, where they are used very extensively in some parts for retrieving heavy game both on land and water, and we don't know of any other dog that would be more serviceable to the sportsmen of Canada, if properly broken. The dog has, unfortunately, the reputation of being somewhat uncertain in temper, but, as far as our experience goes, this is a libel on his character. True, with strangers he is rather suspicious and has the habit of investigating closely a casual visitor, a proceeding which, to a nervous man, is occasionally somewhat embarrassing ; but once the caller is recognized by a member of the family the dog's suspicions are at rest, and for all time afterward he has the entire confidence (unless any underhand tricks are attempted) of this faithful guardian of the household.

The general conformation of the dog is very pleasing to the eye. His coat, when in proper condition, is glossy and dense, without any trace of coarseness. He should be strongly built ; forelegs straight and well set under, with plenty of bone, as this is essential to the work he has to perform ; a slim legged dog is to be avoided. The head of the retriever is a very important feature in the breed, and a thick-headed, round skulled animal may generally be regarded as vicious, or at the best of uneven temper. The skull should be wide and flat at the top with just the suspicion of a furrow down the middle and the eyes black and piercing, yet with an almost indefinably mild expression denoting confidence and good temper. The coat may be either a solid black or liver, but the former color in our estimation is to be preferred, anything of the latter we have had an intimate acquaintance with having, for some unaccountable reason, just a shade of treachery in their character.

At one period of our life we knew a flat-coated retriever called "Bright," who was a marvel of intelligence and docility. The name was a most appropriate one, for brightness shone out of his expressive eyes, and his handsome face was lit up with the light of intelligence and understanding. His natural talents were developed to an extraordinary pitch by careful and intelligent training, the variety and extent of his accomplishments being the wonder and admiration of all who had the pleasure of his acquaintance. He was also amiable in disposition and unless set upon by another dog would have no part in a fight ; yet he could hold his end up with anything in the neighborhood, seldom coming off second best, and it was probably owing to this fact that he was usually let severely alone. His courage, however, was unquestionable, for he once tackled a young and vicious bull, holding the animal's nose with grim tenacity and finally bringing him to mother earth. One of Bright's most brilliant feats was to retrieve a silver quarter dollar thrown by his master into a field of standing grain, and this he did with unvarying success repeatedly. His keenness of scent was marvellous. Going out for a walk one day along a lonely country road, his master dropped his purse into the ditch, fully a mile and a half from home. Reaching there he said to the

dog: "Bright, I have lost something; find it." The obedient dog started out with his nose to the ground, and in less than a quarter of an hour was seen in the distance tearing back for all he was worth with the purse in his mouth. If his mistress desired to convey a message to her husband any reasonable distance from home, which, by the way, was in a sparsely settled country district, all she had to do was to write a note, tie it to his neck and send him on his quest. The intelligent animal never failed in finding his master. Bright was also taught many pretty tricks, and would jump through paper hoops and over obstacles at the word of command. One of the most amusing was to see him sit with a tempting morsel of meat on his nose at the words "On trust," waiting with patience and only a longing twinkling in his eyes to hear the words "Paid for," when he would toss it in the air, catching it as it fell. On this being done he would wag his tail vigorously and give utterance to short, joyous barks, as if asking for the experiment to be repeated. But "whom the gods love die young," and this was the fate of Bright. When about three years old he was poisoned, whether accidentally or not was never discovered, but it is hard to believe, being such a general favorite, that any one would commit such a cruel deed. His remains were buried amid the sympathy of many friends, and his bones now rest in peace under the spreading branches of a maple tree near the banks of the St. John River in New Brunswick.

There are a great many authentic stories told of the sagacity frequently displayed by the retriever in saving life from drowning, and of his faithfulness to his master, but it is seldom, we hope, that the exercise of these gifts leads to his own undoing, as was the case in an incident which occurred recently in British Columbia, the truth of which is vouched for. A miner owned a dog of this breed, and was also fond of fish and of fishing, but ill-success in catching the wary trout seemed to be his portion. One day, annoyed at his ill-luck, he took a stick of dynamite and a fuse, and he and his dog started for the lake. Taking the piece of dynamite, the miner attached a fuse by wrapping it carefully in a piece of cotton, meaning to explode the dynamite in the lake, which, he knew, would kill a large number of fish and could be gathered in as they rose to the surface. He lighted the fuse and threw the stick into the lake. Then happened something he had not counted on. The dog saw his master throw the dynamite into the water and, following up his training, plunged in after it. The miner shouted, threw stones and sticks and everything he could lay his hands on, but all to no purpose. The dog got the dynamite stick before the cotton had saturated sufficiently to sink it, and before the fuse had burned out. Then he started for the shore. By this time the unlucky miner knew that he could not save the dog, and that he must run if he were to escape himself. He set out at a tremendous gait, but the faithful retriever was soon after him, and he saw there was no hope for himself if the dog caught up with him before the fuse burned out, so he put on more speed. The dog continued to gain, and the miner felt certain that in another minute both would be blown to atoms. All the wickedness that he had been responsible for during his lifetime came upon him in a flash and brought a realization of what death meant at that moment, and he prayed as he never had before. Then came a dreadful explosion, and for a moment the miner did not know whether he was dead or alive. He felt of himself and came to the conclusion that he had escaped. The hole in the ground was only a short distance away from him, and he returned to it.

The poor dog had been faithful unto death—a death which seems peculiarly hard when one reflects that he was merely doing what he had been taught to do, while his master was doing what the laws distinctly forbid.

Newfoundland Fishing.

BY "JOCK O'SCOTTS."

The traveller should go by the way of North Sydney and the steamer "Bruce" to Port-aux-Basques, Newfoundland. Everywhere Customs' officials pass baggage and fishing tackle free of duty. No fishing permit is required. He will leave Port-aux-Basques at 7 a.m., and find himself in a wonderful country, riding in a train that has model sleeping and dining cars. No better breakfast can be obtained on any dining car than the angler can get in the diner on the Reid Newfoundland Company's system. The trains run nearly five hundred miles through almost unbroken wilderness. In about an hour the angler will be looking at a river that lies on the left of the train—a river, the very sight of which will make him eager to cast a line there. It is the Codroy, full of pools that in turn are full of salmon and grilse.

He can stop at Tompkins', where there is fair accommodation for anglers. Guides can be had for $1.50 per day. Board is about the same price, where fees and extras are included. And as he sees the salmon jumping he will be astonished at the broadness of their backs, and wonder how his rod and reel, that seemed so large to him, will bear the strain of an hour's fight with one of those uneducated rovers in the Codroy.

That is merely the entrance to that paradise of sportsmen. He can stop at Robinson's or Fischell's station, and, by a walk over the moss of a few miles with a guide, he can get to Fischell's Falls, where he will find many salmon. It is unusual not to see at least one large fish trying to leap that fall. It is too high, all fall back. As many as five heavy salmon were seen leaping there simultaneously at my last visit, and often they would jump sidewise, striking on the rocks with a whack that could be heard in the camp.

The angler needs a salmon rod, 100 yards of line tested to a thirty pound pull, a strong reel, and only two flies—the Silver Doctor and Jock o'Scotts—a half dozen of each for a week of fighting the fish will be a good enough quantity. The fish rise well to the fly known as the Fairy, but the other two kinds are better.

Running down Harry's Brook, you will, in late June or early July, get the finest salmon fishing. Fish of twenty pounds are common. Grilse are numerous. On the 19th of August, one American sportsman, without a guide, took eight salmon in Harry's Brook that weighed 123 pounds. In two hours the day before he took nine grilse on a trout rod, and they weighed about four pounds each; and in addition, about a dozen trout. Almost anywhere a boat taken on the train from Bay St. George can be loaded by a guide and shoved right into water beside the track. There are a hundred ideal camping places. The entire stream can be run in a day; and when the stage of water in the river is right that day should close with the angler happy as he looks at the salmon, trout and grilse. The sportsman will see that Harry's Brook is unique, full of finest salmon, to be taken in abundance by all anglers from June 20th to July 20th, and grilse in plenty. Yet it has a railroad along its entire length, close to the bank nearly all the way.

At its upper end Pinch Gut Brook flows, a beautiful stream, and there, after a fight of three hours, one sportsman secured a salmon weighing twenty-three pounds and a fraction. Two miles east from the head of Harry's Brook, and two hundred feet from the railroad, stands the Log Cabin, on Spruce Brook, St. George's Pond—an ideal lodge in a sporting wilderness, twenty-five miles from any house, and providing sportsmen with a wonderful resort.

Again the whirl of the railroad car wheels. Twenty miles east from the Cabin, on the left, is a small stream, where there is good fishing. Five miles

further, and we reach the village of Bay of Islands, at whose upper end the Humber River flows into the Humber Arm of Bay of Islands. The Humber is the largest river on the island. Even at the Grand Falls, fifty miles up, the salmon fishing is superb. The Upper Humber affords even finer salmon fishing than Harry's Book, and all free. Guides and boats and abundant stores of foods can be obtained in the shops at Bay of Islands. No better outing can be had than a month of camp life on the Humber.

At Bay of Islands a sailboat can be chartered, and in two days she will take a party outside and into the mouth of Serpentine River to Serpentine Lake. There the salmon fishing in two streams is virgin. Hills two thousand feet high, with snow patches on them in August. The Serpentine gives the best joys of a Newfoundland outing, as the scenery is gigantic.

Then for nearly two hundred miles eastward on the railway there are numerous streams, a short distance from the track, that have never wet a line. If the sportsman wants a cheap outing, with finest fishing, he will stop at Terra Nova Station, live at the little hotel there, and use the boat, all of which can be obtained for $5.00 a week. The angler can have the choice of a dozen pools and the whole of the lakes to the west, and it will be a poor day when he cannot tire of fishing in an hour. Fifty grilse and ten salmon will be a good week's work, if he is selfish enough to catch them.

The Salmonier River, about a hundred miles outside of St. John's, yields capital sport all of July. You can get twenty or thirty grilse of three to five pounds weight in a week. So, too, the Exploits River, will furnish salmon of from five to fifteen pounds in weight. Those two rivers last named must be fished from a camp. Provisions and guides can be obtained easily. At Hawke's Bay, near the Point Riche on the Western Coast, there is a good salmon river called the Torrent, in which the salmon run from twelve to thirty pounds.

The salmon angling at the head of Grand Lake is superb, fish of twenty pounds being common.

Close Seasons for Game.

BY W. R. JONES.

Our American cousins consider the Philadelphia lawyer the shrewdest of his kind, but I will venture to assert that the very smartest gentleman of the legal fraternity hailing from the city of Brotherly Love, would find his intelligence taxed to the uttermost were he to endeavor to keep track of all the changes in the Canadian game laws. It has long been a recognized pastime with our legislators to amuse themselves during any leisure hours at the fag end of the session by tinkering the game laws, so that, no matter how well meaning he may be, the sportsman often finds it impossible to keep within the law, simply because he does not know of the latest changes.

Let us suppose, for instance, that a hunter of big game has been absent for the better part of the year in central Labrador; is it at all likely that on his return he will find the game laws as he left them? Certainly not. Perhaps as he descends the upper waters of such rivers as the Saguenay, St. Maurice, Gatineau, etc., he finds a nice fat bull moose wallowing in the water; now when he plunged into the bush the law said, let us suppose, September 1st was the beginning of the open season, but during his absence the inevitable tinkering has been going on as merrily as usual, and the law now reads, October 1st. Meanwhile our suppositious friend being tired of fat pork, takes a shot at the moose, thereby loading his party down with fresh meat, and at the same time rendering himself liable to a heavy fine, or the loss of personal liberty. If

only Canadian legislators could be made to understand the extreme importance of having the game laws fixed and unalterable, game protection would become very much more efficient. We should follow the example set us by the Old Country, where the 12th of August and the 1st of September have been the opening days for grouse and partridge shooting during the lives of two or three generations of men; then there would be no more excuse for a man not knowing the game law than there is for the idiot who shoots a fellow being with a gun he thought unloaded.

Notwithstanding the herculean difficulties of the task, and the improbability of the result being quite satisfactory, I have endeavored to make out a table showing the close seasons for big and winged game throughout the Dominion of Canada. It is as follows:

BIG GAME.

	Deer.	Elk.	Moose and Caribou.	Antelope.	Squirrel.	Rabbit.
Brit. Col.	Dec. 15—Sept. 1.	Jan. 1—Sept. 1.	Jan. 1—Sept. 1.			Jan. 1-Sept. 1.
N. W. T. (10)	Dec. 15—Nov. 1.	Dec. 15—Nov. 1.	Dec. 15—Nov. 1.	Dec. 15—Nov. 1.		
Manitoba	Dec. 1—Sept. 15.	Dec. 1—Sept. 15.	Dec. 1—Sept. 15.	Dec. 1—Sept. 15.		
Ontario	Nov. 16—Nov. 1.	At all times.	Nov. 15-Oct.16(x)		Dec. 16—Sept. 15	Dec. 16-Sept.15
Quebec	Jan. 1—Sept. 1.		Jan. 1—Sept. 1 (1			Feb. 1-Nov.1(3)
N. Brunswick	Jan. 1-Sept.14 (1)		Jan. 1-Sept. 14 (1)			
Nova Scotia	To 1904	To 1904	Jan. 1-Sept. 15(1)			Feb.1-Oct.1 (2)
Newfoundl'd.		To Jan. 1, 1912.	To Jan.1, 1912 (20			Mar. 1-Sept. 16

BIRDS.

	Quail.	Grouse.	Prairie Chicken.	Wild Turkey.	Duck.	Goose and Swan.
Brit. Col.	At all times.	Jan. 1—Aug. 31.	Jan. 1—Aug. 31		Mar. 1—Aug. 31.	
N. W. T.		Dec. 15—Sept. 15	Dec. 15—Sept. 15		May 5—Aug. 23.	
Manitoba	Jan. 1—Aug. 1.	Nov. 15—Sept. 14	Nov. 15—Sept. 14		Jan. 1—Sept. 1	
Ontario	Dec. 1—Oct. 31.	Dec. 16—Sept. 14	To Sept. 15, 1905	To Nov. 1, 1905	Dec. 16—Aug. 31	May 1—Sept.14
Quebec		Dec.15--Aug.31(1			Mar.1-Sept.14(2)	
N. Brunswick		Dec.1—Sept.14(1)			Dec. 1—Sept. 1.	Dec.2-Sep.1(16)
Nova Scotia		Sept.30—Dec.1(2)			Mar.1—Aug.31(2)	
Newfoundl'd		Jan. 12—Sept. 15.			Jan. 12—Sept. 15	

	Dove.	Introduced Pheasant.	Plover.	Snipe.	Woodcock.	Rail.
Brit. Col.		At all times.	Mar. 1—Aug. 31			
N. W. T. (10)				May 5—Aug. 23.		
Manitoba	At all times.		Jan. 1—Aug.1 (2)	Jan. 1—Aug. 1.	Jan. 1—Aug. 1.	
Ontario		To Sept. 15, 1905.	Dec. 16—Sept. 14	Dec. 16—Sept. 14	Dec. 16—Sept. 14	Dec.16-Sept. 14
Quebec			Feb. 1—Aug. 31.	Feb. 1—Aug. 31.	Feb. 1—Aug. 31.	
N. Brunswick		At all times.		Dec. 1—Sept. 1.	Dec. 1—Sept. 1.	
Nova Scotia		At all times.		Mar. 1—Aug. 31.	Mar. 1—Aug. 31.	
Newf'oundl'd.			Jan. 12—Aug. 19.	Jan. 12—Aug. 19.		

(10) Except unorganized territories, in which the seasons are as follows: Deer, elk, caribou, mountain sheep, mountain goat, April 1—July 15 and Oct. 1—Dec. 1; musk ox, March 20 -Oct. 15; grouse, prairie chicken, Jan. 1—Sept. 1; duck, goose, swan, and also except in Assiniboia south of Tp. 23, and east of Range 24, where they are protected until 1906, Jan. 15—Sept. 1.

(x) North of C. P. R. main line from Mattawa to Port Arthur; south of main line, Nov. 16—Oct. 31.

(1) Counties of Ottawa and Pontiac excepted, wherein close season is Dec. 1—Sept. 30.

(1) East and north of Saguenay River, March 15—Oct. 14.

(20) Moose only: Caribou, Feb. 1—July 30; and Oct. 1—30.

(2) Certain species.

(16) Goose only.

Ptarmigan are protected in Quebec, Feb. 1—Nov. 1; in Nova Scotia, at all times, and in Newfoundland from Jan. 12—Sept. 16.

Curlew are protected in Quebec, Feb. 1—Sept. 16, and in Newfoundland from Jan. 12—Sept. 16.

Taxidermy.

A very useful pamphlet has been issued by the Smithsonian Institute on preparing study specimens of small mammals. It was written by Mr. Gerrit S. Miller, Jr., Assistant Curator, Division of Mammals. It is so necessary for explorers and sportsmen who travel in our northern wilderness to know how to preserve the rare specimens they are almost certain to have it in their power to secure, that we deem it advisable to reproduce Mr. Miller's instructions. (1)

For preparing study specimens of mammals ranging in size from that of the smallest mice and shrews to that of a woodchuck, hare, or large skunk, the following instruments and materials are necessary :

Scalpel or pocket knife with blade.
Fine pointed forceps.
Scissors.
File.
Metric rule.
Dividers.
Cotton, tow, and excelsior for stuffing.
Galvanized iron wire of several sizes, from about No. 15 to No. 23, for feet and tails.
Combined cutter and plier for manipulating wire.
Dry white arsenic, or a mixture of one-half arsenic and one-half powdered alum.
Corn meal, fine sawdust, sand, or clean, dry earth, to be used as an absorbent.
Strong paper for labels.
Medium soft pencil, or waterproof ink.
Needles and thread.
Pins.
Alcohol, formalin, or strong cane rum.

A pair of long forceps or "stuffers," and a fat scraper will often prove convenient for use on larger skins.

Specimens of small mammals are to be preserved (a) as skins ; (b) as skeletons ; and (c) entire in alcohol or formalin. (2)

SKINS.

Mammals should be skinned as soon as possible after death. They spoil much more quickly than birds.

In hot climates the viscera should be removed from small mammals immediately, and the abdominal cavity filled with cotton, tow or leaves.[1]

This precaution is especially important with rats, mice, shrews and rabbits, or with any specimens that must be kept over night before skinning.[2]

1. Prepare two labels, one for the skin, the other for the skull. On the skin label record : (a) Number ; (b) sex[2] ; (c) locality ; (d) date ; (e) name of collector ; (f) total length (tip of nose to tip of tail bones, animal stretched straight) ; (g) tail (turn tail at right angle with back, and measure with dividers from angle to tip) ; (h) hind foot from heel to most distant claw tip.

All measurements to be made exclusive of hair. They should be recorded in millimeters.

On the skull label record : (a) Same number as that on skin ; (b) collector's name or initials. Both labels should be made of strong paper, and the writing on the skull label should be in pencil (heavily marked) or waterproof ink.

2. Lay the animal on its back. Make an incision in median line of belly, running from shortly behind breastbone to base of tail. Work the skin loose at one side until a hind leg is exposed. Push the leg from the outside and pull it from the inside, at the same time stripping back skin until loosened as far as heel. Then, if the animal is smaller than a red squirrel, cut off the leg (with scissors), flesh, bone, and all, a little above heel, taking care not to injure the skin. In larger animals the flesh should be cut through to the bone at heel and stripped upward to knee, where the bone is to be disjointed. The same course may be followed with smaller specimens, but it takes more time, without materially

1 Mr. E. W. Nelson has furnished the special recommendations for work in tropical climates.

2. It is probable that specimens may be temporarily preserved by keeping them exposed to the fumes of strong formalin in some tight receptacle. This method should be tested.

improving the result, except when the specimens are intended for mounting. In animals the size of a skunk, or larger, the process of skinning should be continued to the toes, and the flesh removed from the foot, the bones of which are to be left in place. Repeat the process with the other leg.

3. After the hind legs are finished, skin around base of tail and across rump. Then seize the tail bone lightly with forceps or a split stick held close against the skin with the left hand, and with the right hand draw the bone out of the skin. The finger nails of the left hand will often prove more convenient than forceps for stripping the tail. This process may be troublesome at first, but it presents no real difficulty except in the case of some large, long-tailed animals.

4. Hold the animal by the hind quarters grasped in the right hand, and with the fingers of the left hand drawing with an equal pressure on all sides simultaneously, slip the skin back until the front legs appear. With larger specimens it may be more convenient to hold the skin in the left hand and let the body dangle over the edge of the table, while with the right hand the skin is loosened around the circle of contact. By cutting carefully close to the skin much fat that would otherwise adhere to the skin may be left on the body. However the animal is held, it must be remembered that all tension must be applied at the line of contact between the body and the loosened skin; otherwise serious stretching will result, and a stretch is far more serious than a cut.

5. On reaching the front legs draw them out from the skin and treat exactly as has already been done with the hind legs.

6. Slip the skin off until it bends at the bases of the ears. Cut through these carefully (with knife) so as to injure neither skin nor bone. (It may be found that the ears can be more readily loosened with forceps or finger nails). A short distance in front of the ears the eyes will be encountered. Work the skin as far forward as possible with the fingers of the left hand, and cut close to bone with knife held in right hand. The membranes will thus be divided without injuring the eyelids. Considerable practice will probably be necessary before this can be done rapidly and safely. Cut away the skin from the skull until the lips are reached. These are to be carefully separated from the jaws and gums until the skin finally hangs attached by the nose only. Cut through the cartilage of the nose, taking care not to injure the delicate nasal bones of the skin of the muzzle, and the operation of removing the skin is completed.

(*To be continued*)

Game of British Columbia.

BY CLIVE PHILLIPS-WOLLEY.*

The game of a province is one of its assets. If the province be a province of the British Empire, one which is anxious to attract to it men of the British race, then its game is one of its most valuable assets, for ever since those early days when our ancestors painted themselves blue with woad, covered themselves in cold weather with wolf skins and enjoyed a European reputation for their sporting dogs, the British have been a race of hunters. This position needs no elaborate defence, unless you are arguing with local legislators. The people see it and history proves it. A big half of England's explorers were principally sportsmen, and are so to-day; a big half of the men who came to settle here have their imaginations fired by the stories of deer hunting and bear shooting which may balance the monotony of farm chores, and a very large number of those who eventually invest their very essential English sovereigns in this country came here in the first instance to hunt our game.

It has been the same story in Africa and in India. Britain's colonial empire

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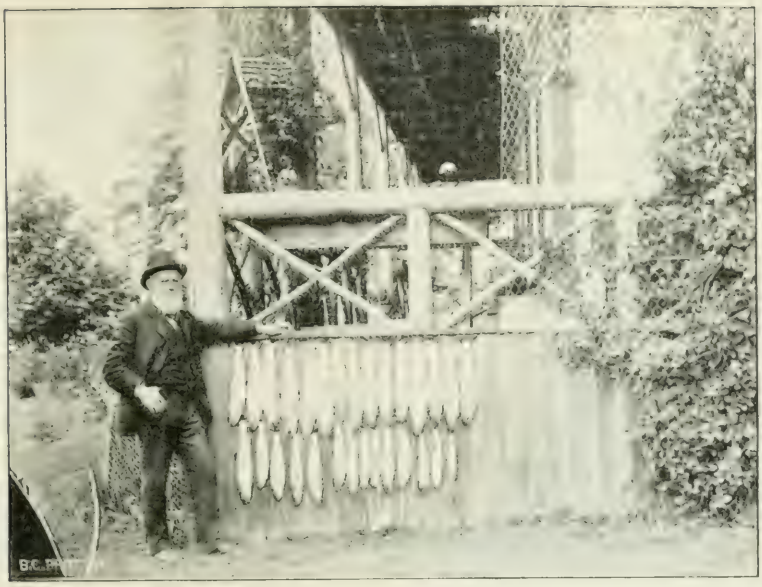

COWICHAN LAKE TROUT

These fish were caught within a few miles of Victoria, the Provincial capital

A BIG TROUT

This fine fish was one of a dozen similar trout taken by a Vancouver Island angler

THE WHITE GOAT'S HOME

A scene in Western Alberta where the ground is a good deal disturbed

THE OJIBWAY CANOE

A 5-fathom birch-bark with its crew on Lake Missanabie, Ont.

owes a vast debt to her wild game and to the sporting instinct.

In this country especially the hunters came first. The fur traders preceded the miners, and even on the coast the sea otter had almost as much to do with the early voyages of our discoverers as the mythical sea passage of which so much was said.

Africa, of course, in everything, from game to gold mining, is a dangerous rival to compete with, but even Africa in its early days could hardly dwarf the North American continent in its production of great game.

I grant at once the vast herds of antelope of all sorts, the moving masses of elephants, the beauty of the sable antelope and the grand danger of the lion, but I set against them the sea of buffalo which used to sweep across the prairies of the Northwest, the myriads of caribou which still go to form "la loule" in our far north, the matchless beauty of our elk (wapiti) and the grim strength of the grizzly.

In both countries the depletion of game has been very considerable, but neither is by any means exhausted. On the contrary, neither has yet yielded up its last animal new to science.

It was only in the May of this year that the London Times recorded the advent of a new mammal from the forests of the Congo, a beast as big as a bull, and standing half way between that beast and a giraffe, with a creamy coat, a crimson forehead and purple gaiters—from the knee down—altogether a brilliant beast to have so long escaped notice ; and in the same year the scientific authorities of America have chronicled the discovery of two new sheep at our own door, the ovis stonei from Cassiar, B.C., and Fannin's sheep from Alaska.

Neither is this the end of it, to my mind. Here, at any rate, are still oft-repeated stories of an ibex which is said by the Indians to frequent the higher mountains of the northern mainland. A reference was made to this in the report of Lieut. Simmons, U.S.N., who is confident that these stories have a basis in fact. He is also the authority for the blue bear of Mount St. Elias.

On Queen Charlotte's Island there is said to be a variety of caribou still unrepresented in European museums, named already after the late Dr. Dawson, who wrote to me shortly before his death begging me to make my next shooting expedition in that direction, and bring him back a specimen, and over and above these beasts there are legends about the fauna of the Kamschatkan coast which make the mouths of sportsmen water. I mention these facts because, whilst some of the beasts referred to are not British Columbian, all inhabit districts for which Victoria, B.C., would be the natural starting-point.

To come back to British Columbia proper and to our comparison with Africa. In every point but one Africa must be admitted to be our peer as a sporting country. In one important aspect we have the field to ourselves. In Africa the sportsman has to run the risks of fever, dysentery, and every other known disease arising from malaria and bad water, snakes, leeches, and other abominations, whereas in British Columbia there is no danger of either disease or snake bite. The rattlesnake exists in one or two places on the Mainland ; he is reasonably plentiful even in some parts of Osoyoos and on the Bonaparte River, but he always gives you fair warning before he hits you, and I have never in twelve years' residence known a man bitten or even heard of one who had been fatally injured.

Of the beasts that have vanished before the incoming of man, the list is still very small.

The sea otter, which used to be very plentiful about Chemainus on Vancouver Island, has been driven back for the most part to the Aleutian islands, and though there are plenty of whales still to be seen round our coasts, the great grey whale, which used to afford most of the employment for the 300 ships which in 1852 plied their business in the North Pacific, has ceased to exist in sufficient quantities to make whaling a very remunerative business.

On the Mainland of British Columbia, except in one small and far away corner of East Kootenay, the elk of our local sportsmen, or more properly wapiti (cervus Canadensis), has disappeared, though we may still find the bleached antlers of this grand beast on the townsite

of Vancouver, about Westminster, on many of the small islands of the gulf, and generally from end to end of British Columbia. On Vancouver Island alone in British Columbia the wapiti still holds his own in considerable numbers, and a recent discussion in the Field established, I think, the fact that any competent hunter who will take the trouble can still obtain a couple of fine heads in the season, which is all that the law allows. There are wapiti still in the Alberni and Comox districts; a friend of mine has killed several in recent years near the head of Cowichan Lake; naval officers have killed specimens recently in the Comox district, but the principal haunts of this deer to-day amongst us are on the northern and western sides of this Island. These haunts will not be more accurately particularised here. They are all too well known already.

On the American side, just opposite to Victoria, in the Olympian range, the wapiti is said to be extremely plentiful, and I myself have known of more than one successful expedition in that district, which is not only close to us, but is very little known. I have always been of opinion that a man who would go back some distance beyond the dense forest of the coast line would be likely to find his way into a new and fine big game country, and that without much trouble.

The heads of our Vancouver Island wapiti are not as wide in span as those of Montana and Wyoming, nor as large in any particular as the largest eastern heads, but they are not far behid them. A specimen now hanging in the Badminton Club is probably as large as any Island head now on view in the country. I have never seen a larger.

The mule deer (cervus macrotis) is next in size to the wapiti, and as if to balance matters, abounds all over the Mainland, but does not occur on the Island. You can find him wherever there are not too many prospectors, and if you cannot obtain a fairly good specimen of this handsome stag, you had better give up big game shooting, for he gives the hunter every chance, ranging in the early part of the shooting season high up on the edge of the sheep lands in the open or in scattered timber. The big bucks are generally the highest up. There is a phenomenal head at Vernon now, I think, which is almost worth a visit to anyone really keen about sport. It numbers 59 points in place of the ordinary ten, and though it is figured in Volume 1, Badminton Big Game, no picture does justice to its strange beauty.

The white tail (C. Virginianus) is comparatively rare in British Columbia, although I came upon a place once in the Kettle River district where this deer was fairly abundant, and I know that he occurs in the Okanagan, Osoyoos, and other districts of British Columbia. He is a pretty beast, with a handsome head, but he has every bad habit which a game beast can have, sticking close to dense cover in river bottoms and such places, giving the hunter nothing but an insulting glimpse of his hinder parts as he pops over a log like a jack rabbit. He is plentiful all the way along the river between Steele and Jennings.

The black tail (C. Columbianus) is the mowitch or deer par excellence of Vancouver Island, a small fellow, weighing from 100 lbs. to 175 lbs., and carrying a head of ten points at the best. He is as plentiful as anyone who farms wants him to be, but his many misdemeanors in meadow and orchard are freely forgiven him, because he is the musketry instructor of Vancouver Island, and as such a very honest servant of the King. He teaches our boys to shoot, he supplies the larder of many an impecunious rancher, he is as pretty as paint, as common as beauty in nature, and is probably at work amongst our peas as I write. You might not get a specimen on Beacon Hill without offending the city fathers. I don't know where else you could hunt for one in vain.

My lord the moose and his neighbor, the caribou, belong especially to our northern limits, although the caribou is pretty plentifully distributed about the Mainland of British Columbia in the Kootenays, towards the head of Kettle River and elsewhere, and an extraordinary recurrence of moose took place last year in the neighborhood of Ducks.

(*To be continued*)

Our Medicine Bag.

Notwithstanding the cruel destruction of game which has been going on in the Okanagan, Mr. R. Leckie-Ewing, of Okanagan Landing, writes to the London Field that there is yet any amount of shooting to be got in the valley. He says, in part :—

"As I write I can see out of the window of my shack a band of over 2,000 (duck) quietly swimming about in the middle of this arm of the lake. They are about 800 yards out, and to approach within gunshot is quite hopeless. It is only when the pack breaks up, and a few of their numbers leave the main body and start feeding near shore, that any shooting can be had. Of course, earlier in the season, and before the birds had packed, we had better shooting, as then the shores of the more unfrequented parts of the lake always held lots of duck, and, with our retrievers, we were able to make very fair bags, averaging from fifteen to twenty brace a day. I doubt if any lake in any country contains such a variety as Okanagan. To enumerate their countless species is quite beyond me, but amongst the more common varieties can be found mallard, teal (green and blue-barred), buffleheads, redheads, black duck, pintails, canvas-backs, wood duck (very scarce), goosander, sawbills and golden-eyes. Cross-breeds are also very plentiful. There is a curious tradition about the last-named bird—the golden-eye or whistler—so called on account of the loud whistling which this bird makes with his wings when flying. Along with other diving ducks, these take a tremendous lot of killing. Unless one has had the experience, it would be impossible to believe the perfect hail of pellets which they can withstand, and, unless hit in the head or neck, they are never killed outright. I have often and often dropped these birds at short range, and left them apparently lifeless on the top of the water, floating belly up, but, before the retrievers could reach them, up they get and fly away as if nothing had happened. More often, however, they dive, and, when they do this, it is hopeless to think of ever seeing them again. But, apart altogether from the sport to be had in this district, to the photographer, the lover of beautiful scenery, and, above all, to those in search of a perfect climate, commend them to the Okanagan Valley. A visit once paid (and this is quite an easy matter) would result, I feel sure, in many others, as no country I know of offers more inducements, nor could be more absolutely satisfying, than this one. The fishing, too, is very fine.

Regarding an alleged deterioration in Nepigon fishing, printed in a western United States newspaper, Mr. William McKirdy, Fishery Overseer, writes :

"I wish to state that there are no mills of any kind on the river, nor are there any logs or pulpwood in any portion of the stream where trout is fished, nor can there be seen one dead fish from one end of the river to the other : in fact the river has never been in better shape than at the present time. The whole story is too absurd for anything, and were it not that people who do not know the facts might give it credence it would be unworthy of notice. The whole article is a deliberate falsification."

The show committee of Montreal Canine Association are in a position to declare a gain of something like $275 as the result of the bench show held at the Arena in May. This is very satisfactory when it is borne in mind that, owing to the large number of entries, a considerable sum had to be expended for new benching, fifty per cent. of which was paid for from the receipts, leaving the balance to be charged to capital account. The executive of the Association met the same evening on which the statement was presented and heard a proposal read from the Police Committee of the city, in reference to the gathering in of stray and unlicensed dogs. The Association was

asked to co-operate by appointing a canine expert, who will determine the value of all unclaimed dogs collected, and decide as to whether they should be destroyed or sold. Mr. Alex Smith was the unanimous choice of the committee for the position. This appointment is a wise as well as a popular one, for there is no man in Montreal who knows half as much about a dog as "Auchcairnie," and we have no doubt he will justify his selection. All condemned dogs will be humanely destroyed under the supervision of an officer of the Society for the Prevention of Cruelty to Animals, which is also co-operating in this first genuine effort to rid the city of a constantly increasing nuisance and danger to public health.

A bit of black court plaster is a good thing to carry in the camera case. It is just the thing for mending a cracked front board, a leaky bellows, or even a broken plate-holder in cases of emergency. Also it is apt to come in mighty handy after showing a quick tempered man the picture of himself you have taken.

This is the season of the year when you ought to take the old felt off the back of your printing frame and glue new on in its place. The old backs will in time get so thin that a desirable amount of contact is not to be had between negative and paper, particularly so at the hinge. One will frequently find a negative printing sharp all over and leaving a streak of fuzziness up and down the middle, owing to the felt being worn. By the way, don't use flannel to back your frame if you can get felt. So little is required that the question of expense is not worth considering.

During the warm weather dogs are more or less liable to eczema, therefore great care should be taken with their diet, their skin closely examined frequently or at the first appearance of scratching, and something to alleviate the irritation applied at once. At the same time, on general principles, it is a good and safe course to administer a blood-cooling and mild purgative occasionally. Above everything else, at the first appearance of an eruption on the skin apply freely some such preparation as Jeyes' Fluid, diluted with water in the proportion of five to one, to the parts affected, which will allay the irritation and in all probability prevent its spread. Should the first symptoms be neglected there is no end of trouble in store for the owner and a great amount of misery and unnecessary pain caused to the dog. Should red mange ensue, as it frequently does, a mixture of oil of tar, black sulphur, and a small quantity of either turpentine or Jeyes' Fluid, made into a salve and rubbed well in is said to be a safe and speedy cure.

By hanging a lace curtain between the sitter and the camera, of course, quite out of focus, the light will be very much softened and the threads of the curtain will produce an effect very similar to that of chalk drawing.

The Dogs' Protection League (Eng.) have in view the foundation of a nursing home for dogs, where women can be trained by lectures and practical experience in the nursing of canine patients, and are now engaged in collecting funds for that purpose. There is no doubt that many dog owners would regard the innovation of women dog nurses with much satisfaction, and it is believed that a large field would be opened to women fond of animals who may desire to find a new profession for their energies. Many prominent ladies have given their support to the movement, and it is expected the institution will be in working order ere long.

Judging by what we hear from British Columbia it is high time the present slaughter of game in the Okanagan district were put a stop to. Mr. Alexander Crawford writes from Okanagan Mission as follows:

"Will you please print the following letter, which is about the game of this country as it used to be, and as it is to-day: When I came to this country about nine years ago, in the spring the caribou used to come off the mountains to the lower flats in bands of from ten to forty, and it was nothing to see in May

from fifty to a hundred caribou in a single day ; but when the game hogs got to where they roam they soon slaughtered them, or scared them off, for now you may hunt for months and not see one. Now for the deer : They used to be nearly as thick as sheep, it was nothing to see fifty in a band. They have been slaughtered wholesale ; a friend of mine told me that he had seen the ice of Okanagan Lake, near the shore, nearly covered with dead animals, and now you will travel all day and may not see one. The 'game hogs' now are taking advantage of our poor brutes, and kill not only the bucks, but the does as they come down low to fawn.

"I hope that your real sportsmen will realize the rapid decrease of our game, and, that if this kind of work is kept up, there will soon not be a deer left. Not only are deer getting scarce, but grouse are too, and I think that this work ought to be stopped right away. There ought to be a game warden here to see that no game is killed out of season.

"I hope that something will be done in this place, and that the deer will be protected for five years, and not be allowed to be killed in that time. I would like to see the deer as they used to be."

The Coronation Show held under the Ladies' Kennel Association of England had 2,700 entries, made by 360 exhibitors, a most astonishing number for a show held and organized solely by ladies. Altogether over 900 dogs were up for competition at the Botanical Gardens, London, which is a very good criterion of the strength of ladies kennels. Besides the dogs there were 360 coops of poultry and 300 pens of cats, so that the interests of different classes of pet stock lovers was taken into consideration.

Some amusing results may be had by stretching a film before printing. Make a portrait of a good natured friend, and then soak the plate after development in a solution of very weak hydrofluoric acid, which will remove the film. Now by applying the detached film to a larger plate upon which a thin coating of gelatine or albumen has been applied, and, instead of smoothing it straight and even, as one would usually do, stretch it this way or that as seems to give the oddest expression. Very startling results may sometimes be obtained, and all with just enough likeness to be funny.

The Savage Arms Company, of Utica, N. Y., have just acquired the right to manufacture and sell the magazine and magnetic tack hammers, the invention of Mr. Arthur W. Savage, the inventor of the famous Savage repeating rifle.

The magnetic hammer is the best of the kind on the market, being very strong and practical. The magazine tack hammer is particularly intended to save the thumbs and fingers of the weaker sex, who, from time immemorial, suffer from the lack of skill in aiming the uncertain hammer. While the hoped for time may come when man will do all the labor, at present circumstances appear to make it necessary or convenient for the "better half" to decorate

the home and tack the carpet, so by right of suffering thumb-nails the tack hammer is her rightful property.

The new hammer is very simple to use. All that is necessary is to pull the trigger with the forefingers, then release it, which places a tack from the magazine on to the face of the magnet, which forms the striking face of the hammer, where it is held until it is driven by one or more blows. It readily enables any one to tack up decorative material on the sides of a room or the ceiling, and in any position which is generally considered difficult when using the ordinary tack hammer. The magazine hammer only requires one hand to operate, thus leaving the other hand free for holding the material to be tacked.

The placing of the tacks in the magazine of the hammer is done either one at a time, or with one movement of the loader which goes with each hammer. Everything is simple and in plain sight, and if once used the device is considered indispensable.

In an article published elsewhere in this magazine dealing with the fishing on Vancouver Island, reference is made to certain flies which the author recommends. At the time of setting up this article we had not received the flies mentioned. As we go to press, however, a description of them has reached us. The writer says: The standard flies for salmon are the Jock o' Scotts and Silver Doctor, varying in size from 3-0 to 6, and for trout the March Brown, from 7 to 14, according to circumstances. All these patterns are kept in stock, or manufactured, by the local dealers, and specimens may be seen at 34 Victoria street, Victoria.

We are in receipt of one of the handsomest catalogues it has been our good fortune to run across, it having been issued by the J. Stevens Arm & Tool Co., of Chicopee Falls, Mass. In addition to an exhaustive description of the arms made by the company, this pamphlet contains a vast amount of information useful to riflemen. Those of our readers who use the grooved barrel, should certainly write to the Stevens Company for a copy of this little book.

There are plenty of blue grouse in the heavy forests of the coast region in British Columbia, and there is little danger of their ever being thinned out, but it is just as well to make the Indian keep the law, and there is some satisfaction in reading that two Sooke Indians, who were recently caught red-handed with fifty-six blue grouse in their canoe, were fined $75 each, or thirty days imprisonment. They do things very thoroughly out in the west, and if some of our magistrates here in Quebec would give up handling poachers with gloves and use bare knucles, as this western justice has done, it would be well with our game.

One of the features of the forthcoming guide book which is being published for gratuitous circulation by the Montreal Business Men's League is an article on fishing and hunting in the Province of Quebec by Dr. W. H. Drummond. The author of "The Habitant" is an ardent fisherman, and indeed fond of all outdoor sport, and his knowledge of the Province specially qualifies him for writing upon the subject. The guide, which will be out of the printer's hands in the course of a couple of weeks, will be sixty-five pages and will be illustrated in half-tones. It is the intention of the League, which is under the auspices of the Montreal Board of Trade, to publish from time to time pamphlets and guides of Canada, the same being circulated free to different portions of the United States and Europe. One of the main objects of the League, which numbers among its members some 350 of Montreal's best known business men, is to stir up interest in Canada and Canadian affairs, and the ardent sportsmen are by no means least among the number.

An Act was passed at the session of the Quebec Legislature authorizing the appointment of a Commission to enquire into matters affecting timber and colonization. The clauses defining the duties of the Commission, in so far as they relate to forestry, are as follows:—

"To make a critical study of the laws and regulations respecting public lands, woods and forests, colonization societies, works and roads, and the protection of settlers, as well as the carrying out of such laws and regulations;

To enquire into the number and causes of the difficulties between settlers and holders of timber licenses, and to advise upon methods of their prevention and removal;

To find out what are the sections of the country most suitable for colonization;

To study the new proposals or systems which may be submitted to it, and, whilst taking into account the financial resources of the province, to recommend those which tend to amend the laws and regulations so as to foster colonization and the development of forest industries."

This is a very important step and one upon which the Government of Quebec deserve congratulations. Such a commission, composed of strong and impartial men, should be able to collate information of the greatest value, and to assist the Government in determining the proper lines upon which the future development of the resources of the province should be directed.

The recent importation of Balmoral Piccolo and Balmoral Hope by Mr. J. Cromwell Cox, of Ottawa, has added greatly to the wealth of collie sires in Canada. In the first named we have an almost ideal specimen of what a stud dog should be, as the very best blood flows in his veins from both the sire and dam side. He is a large, powerfully-built dog, with grand action, long and shapely head, and is a beautifully-marked golden sable and white. Piccolo was an extensive winner in the Old Country, over forty prizes and specials being awarded him under different specialist judges. His kennel mate, Balmoral Hope, is quite a young dog, a little over a year old. He has a very stylish appearance, being also large in size, with a beautifully-chiselled head, heavy coat and frill and profuse brush. Hope was bred by T. Stretch, of Ormskirk, Lancashire, Eng., and his blood is of the most aristocratic.

Bush fires have already begun their season's work. Serious fires occurred near Whitney, in Ontario, during the month of May and threatened much damage to the settlers and to the forests. Some timber was destroyed, and it was only the advent of rain that prevented more damage, as the fires were unmanageable even by the most strenuous efforts of settlers and lumbermen.

A fire which occasioned considerable loss also occurred on the Coulonge River in Quebec. The forest fire season has opened out early, but it is to be hoped that it will not be as destructive as last year. We again urge on all readers of ROD AND GUN the necessity for the greatest care in the handling of fire in our coniferous forests.

In some very interesting articles recently published, 200 yards in twelve seconds is set as a sort of standard mark in whippet racing, *i.e.*, a dog is spoken of as better than a twelve second dog or worse. One of the fastest dogs ever placed on the race track was one named Not for Joe. His weight was 56 lbs. and he ran 200 yards in 11½ seconds. Shepherd dogs, and those used in ranging and hunting attain a speed of from ten to fifteen yards per second; setters and pointers are said to hunt at the rate of eighteen to nineteen miles per hour. A foxhound has been known to beat a thoroughbred horse, covering four miles in six and one-half minutes, and greyhounds, which are said to be the swiftest of all four-footed creatures, are able to cover, at full gallop, a space of from eighteen to twenty-three yards per second. A dog has been known to jump forty-two feet from take off to landing.

Travellers in the bush often hear the word "snye" given to a narrow passage way between islands or other obstructions. The derivation of this term seems to be as follows:—The early French settlers spoke of a "chanle" or channel; this became corrupted into "ch'nil" by their descendants, and from this to "snye" was an easy transition.

Our congratulations are offered to the Tourists' Association of Victoria, B.C., for its energetic action with regard to the fisheries of Vancouver Island. A suggestion that they made to the Ottawa government in respect to restocking the streams and lakes, has, we hear, been favorably received, and the department will now undertake not only to continue the planting of sockeye, black bass, steelhead, and cohoe salmon, but have promised to begin the hatching of rainbow and dolly varden trout. The only criticisms we have to pass, relate to the dolly varden and black bass; we cannot understand why fishermen who have such grand species as the steelhead, the quinnat and the rainbow, should want either black bass or dolly varden, particularly the former. Some of our eastern fishermen will get a better idea of the fishing of British Columbia when they realize that the minimum, legal size, in future is to be eight inches.

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July, 1902

Communications on all topics pertaining to fishing, shooting, canoeing, the kennel and amateur photography, will be welcomed and published, if suitable. All communications must be accompanied by the name of the writer, not necessarily for publication, however.

The Official Organ of the Canadian Forestry Association.

ROD AND GUN IN CANADA does not assume any responsibility for, or necessarily endorse, any views expressed by contributors to its columns. All communications should be addressed to :

ROD AND GUN PUBLISHING CO., 603 Craig Street, Montreal.

Price, 10 cents a Number. $1.00 a year.

H. B. Company's Nepigon Post

This "fort" is on Nepigon Lake, about 60 miles from the mouth of the river.

Have you wet a fly in the Nepigon? If not, listen to what General McNulta, U.S.A., says: "Having tested, by practical experience, some one or more of the head waters of every principal stream on both the Atlantic and Pacific slopes, from the most northerly settled limits along the Canadian Pacific line, to the most southerly point in Mexico, where trout are found, together with a test of most of the principal streams in Scotland and Ireland, I am still of the opinion that the Nepigon, from the standpoint of the high-typed sportsman, is the finest trout stream in the world."

The Nepigon has long been termed "the king of trout streams," and as civilization advances, and the older trout streams are practically fished out, we find the Nepigon still holding its own, and producing fish which would make any angler envious of the fortunate one who had selected it for his outing. Five-pounders are common, and there is a record of one weighing eight pounds two ounces, caught by Eugene Stevenson, of Paterson, N. J., in August, '95; numbers of doubles are caught, the largest by E. P. Williams, of Cleveland, O., on August 28th, '95, with a six-ounce rod, one weighing 6½ pounds, the other 4¾ pounds, in the aggregate 11¼ pounds. Many other records worthy of a first place, cannot, of course, be published here.

Lake Nepigon, the fountain-head, the producer of the brook trout for which this stream is justly famous, is also the home of the whitefish and lake trout, some of the latter having been caught with the rod weighing from 30 to 40 pounds. The lake is beautiful, being studded with numerous islands offering pleasant camping places, and many tourists who visit the Nepigon spend some time on the lake, which can be safely traversed in the large bark canoes used on the river. The climate here is particularly enjoyable; the delicious coolness of the air has wonderful recuperative powers; and refreshing sleep under warm blankets is the lot of all.

Nepigon station is on the main line of the Canadian Pacific Railway, 65 miles east of Port Arthur and 929 miles west of Montreal.

Anglers may obtain all necessary information by applying to any officer or agent of the

CANADIAN PACIFIC RAILWAY

or to the General Passenger Department, Montreal, Que.

THE HERALD PRESS, MONTREAL

ROD AND GUN IN CANADA

By the Cowichan

A MAGAZINE OF CANADIAN SPORT AND EXPLORATION

VIRGIN FALLS.

These lovely falls are near Nepigon Lake. Col. Andrew Haggard, a brother to the novelist, and many others, have enjoyed great sport here.

ROD AND GUN IN CANADA

VOL. IV. MONTREAL, AUGUST, 1902 No. 3

Nepigon Fishing.

BY H. J. METCALFE.

"The average weight of the trout in the Nepigon is two pounds," said my informant,—and I set him down in my own mind as a man of brilliant imagination. Although I had fished in many different lands, or rather in many different waters, and had caught so-called sea trout which weighed four pounds and over, I had never seen any stream where the average weight of the trout was two pounds, and, like the philosophic chicken, I could not believe in anything I had not seen. But I determined, at the first opportunity, I would wet a fly in the mighty Nepigon and prove to my own satisfaction that my friend was not above telling a whopper when he talked about fish.

So one fine day I got off at Nepigon and went up to see Mr. McKirdy, who is not only fishery guardian, but also the outfitter, counsellor and friend of everybody who visits the river, to find out what I could about its capabilities. After we had partaken of some liquid refreshments and my pipe was drawing smoothly, I asked about the two pound average.

"Quite true," replied McKirdy.

"What, then, must be the weight of your heaviest fish?"

"Oh, six or seven pounds."

Six or seven pounds! and here had I been wasting years of precious time fishing in streams where the poor, benighted folk thought a four pound trout a monster!

As a matter of fact, now that I know better, I have not the slightest doubt that fish in the Nepigon occasionally reach a weight of over ten pounds, and it is even possible that the legendary fish of seventeen pounds which old Hudson's Bay men yarn about, was actually taken by a prehistoric angler before the days of the iron horse.

Senator Kirchhoffer once published a transcript he had made from the Hudson's Bay Company's books of the record of the biggest trout taken between 1880 and 1891. This is what he found:—

"In 1881 Mr. Maitland, of Edinburgh, and his wife in seven weeks took 295 trout, average 2½ pounds, largest 6½ pounds. From July 6 to 17 Messrs. Heath and Delunge, of Toronto, with three Arntons, of Montreal, took 134 trout averaging 2½ pounds, largest 5½ pounds. From July 18 to August 7, four Cincinnati rods took 300 trout, average 3 pounds, largest 6 pounds. Eight Ohio men, from August 7 to 19, took 100 trout, average 2¾ pounds, largest 6¼ pounds. From August 9 to 15, four Rock Island rods took 76 trout, average 1¾ pounds, largest 6 1-16th pounds, which seems particularly trustworthy owing to the accuracy with which the 1-16th pound is recorded. From August 27 to September 2, L. R. O'Brien and George A. Mackenzie, of Toronto, took 76 fish weighing 171 pounds, largest 5 pounds.

"In 1882 forty-eight rods were on the river. The largest trout taken weighed

6 10-16th pounds, the next 6 pounds, the third 5½ pounds—all these by American parties.

"In 1883 the Bishop of Georgia took a 6½ pounder; fifty-seven rods were on the river, and the tally of "largest" showed, besides the big fish of the Apostolic Successor, one fish of 6½ pounds, one of 6 pounds, one of 5¾ pounds, four of 5½ pounds, three of 5¼ pounds, six of 5 pounds, and three of 4½ pounds.

"In 1884 the Church again beat the record—Rev. Canon Mackay having taken on August 17 forty trout in eleven hours, including one of 6 pounds, and two of 4 pounds. Mr. J. G. A. Creighton and wife, of Ottawa, in fourteen days took 364 trout, including one of 6½ pounds, two over 6 pounds, one of 5½ pounds, and two of 5 pounds.

"In 1885 sixty-four rods fished the stream. This year 7-pounders were first recorded by a perfectly trustworthy Pennsylvania party of two rods. Between August 12 and 21 they took one of 7½ pounds and one of 7¼ pounds. Two trout of over 6 pounds were caught by other parties, and a large number over 5 pounds.

"In 1886 a party of four rods, including Mr. W. D. Matthews, President of the Toronto Board of Trade, are reported as having taken in thirteen days 243 trout, including one of 7½ pounds, two of 7 pounds, one of 6 pounds, sixteen of 5 pounds, twenty-six of 4 pounds and sixty-four of 3 pounds. This dwarfs into insignificance almost all the other catches of the year, though several of over 6 pounds are recorded. Since that date there is rarely a season that trout over 7 pounds are not reported."

To resume my story: McKirdy soon fitted me out with a canoe and a couple of Indian guides, one of whom was, perhaps, the best guide on the Nepigon. I paid him two dollars a day, and the young Indian who took the bow half a dollar less. The canoe was a birch bark, three fathoms long, and my camp outfit was hired from McKirdy at a very reasonable price, and he also supplied the eatables and drinkables.

Our route passed first through Lake Helen, a very picturesque patch of water, but one which had no charms for us just then, as I was too anxious to wet a line in the famous pools above, and the Indian is at no time impressed by the beauty of the landscape, having an essentially practical mind. After a few hours paddling against a swift current, the white, creamy waters of the rapid in front of Camp Alexander caught my eye, and we went ashore to boil the kettle, as this is a famous fishing cast. I took some trout here before we left, and they would have been good ones in any other river, as they weighed more than two pounds, but it was not until we reached Cameron's Pool that I got my first heavy fish.

Here the water tumbles over a succession of reef-like ledges, and as my little Jock Scott hovered by the edge of a snowball of spumedrift, a great trout rose at it, and as I saw his broad, silvery side flash in the foam, my heart rose in my mouth, as something told me that I was about to hook the heaviest trout of my life. He took the fly with a rush, and we fought it out for ten minutes before I had any advantage. Then his strength began to wane, and a minute or two later one of the men slipped the landing net under him and lifted a magnificent fish of 5¼ pounds into the canoe.

For a couple of days I had wonderful sport, then reluctantly gave the order to run down stream, as my time was limited. In that time, however, I had ascertained that my informant was truthful. The average weight of the Nepigon trout *is* over two pounds, provided the fisherman is also a sportsman and returns the little fellows which he takes by accident to the water—and when I say the little fellows, I mean all trout weighing less than sixteen ounces.

The Nepigon trout are so heavy because the river has its birth in the great Lake Nepigon, a body of icy water, ninety miles long and swarming with fish, and these do not migrate from the lake until they have reached a certain size. In Lake Nepigon, trout of all sizes are taken, from mere minnows to ten or even twelve pounders, but the very small fish do not leave the lake, hence the angler fishing the Nepigon catches few fish under a pound.

Supplementing the information contained in the foregoing story, the following

extract from Mr. S. T. Bastedo's latest report is appended :—

"The River Nepigon, which connects Lakes Nepigon and Superior some sixty miles east of Port Arthur, and which is said to be the head waters of the St. Lawrence, is our most noted fishing river, and is admitted by those who have whipped its waters to be the finest trout "stream" in America, if not in the world. "Stream," however, conveys a very erroneous and vague idea of the magnitude of the river, unless one were in the habit of speaking of the great Niagara, for the Nepigon possesses in but a slightly lesser degree the "whirling and tumbling water, and the eddies and currents leaping and charging from side to side in eternal confusion" of that river. Here is the virgin home of the speckled trout, specimens having been taken weighing five, seven, and even ten pounds ; and here is the angler's paradise. When they are rising well, the fun is fast and furious, for the trout of this region are unequalled for vigor and activity. No more delightful outing could be imagined, desired or experienced than is afforded by a fortnight spent on the glorious Nepigon. The scenery alone would well repay a visit, not to speak of the angling. In its sinuous windings it recalls the famous Saguenay, and it is a matter of constant wonder what splendor the next turn will reveal. In some places the shores are banked with foliage to the water's edge, while in others bold bluffs rear themselves majestically to dizzy heights, and many islands add charm to the view. Immediately one begins the ascent, he feels that he has been transported to another world. Dull care is left behind, the anxieties of life cease to oppress, the very atmosphere seems to be intoxicating, and he gladly yields to the fascination of his surroundings. After leaving Lake Helen and passing the little Indian village at the mouth of the river, the prospect is unbroken by settlement or habitation, and is one delightful expanse of nature's most exquisite handiwork. Six miles more, and the first camping place—Camp Alexander—is reached, and the initial portage has to be made. Here tents are pitched, and preparations begun for spending the night. Some of the guides repair to the forest, and in a few moments return heavily laden with large bundles of fragrant spruce boughs, which they adeptly convert into restful couches.

Others have meantime been preparing the evening meal ; the call to "wee-sin" is a welcome sound, and soon the camp is lulled to rest by the never ceasing song of the river. No reliable fishing is to be obtained below Camp Alexander, though the impatient angler has occasionally been rewarded with a rise where a fly has been cast in the eddies along the way. The river falls in its course of twenty miles between Lake Nepigon and Camp Alexander some three hundred feet, so that for this distance falls and rapids follow in quick succession, and good fishing is to be had almost anywhere between these points. The guides are either Indians or half-breeds, and, as a rule, are most attentive and trustworthy. To be properly equipped, two guides are required for each canoe, unless one is himself an adept canoe man, and has a fondness for hard work, for it requires a strong arm, a skilful hand, an unerring eye, and an active brain to safely pilot a craft through these turbulent waters into the coveted haunts. Indeed, as the struggle against the rushing waters becomes fiercer, the muscles and veins of the swarthy guides stand out like cables. The guides are anxious that the tourist should have good fishing, and the rivalry is keen as to which boat shall bring in the largest trout ; and when a fish is struck their exclamations of delight are second only to the uproar created by the swift running waters. In places where the current is too strong for paddling, and not angry enough to necessitate a portage, the guides pole the canoe along ; and, as inch by inch headway is made, it seems a battle of the weak against the strong, wonder prevails as to which will ultimately triumph, and speculation arises as to what consequence would follow the snapping of the trusted spruce or the capsizing of the canoe. Occasionally such a contingency arises as the snapping of a pole, but the skilful bowman has never yet proved unequal to the emergency.

Near the head of the river is Virgin Falls—a miniature Niagara. At the foot of the falls may at any time be seen, disporting in the foam, hundreds of whitefish and speckled trout; and the former takes the fly as to the "manor born." A few miles above the falls is Lake Nepigon itself, a most beautiful sheet of water, measuring some seventy miles long by fifty wide, with a coast line of about six hundred miles. The lake is thickly studded with islands—it is estimated some one thousand in all.

The descent of the river is not the least enjoyable part of the trip, and is of course accomplished in a much shorter time, as most of the rapids are "run" in the downward journey. Frequently the canoes of several parties may be seen descending a rapid in quick succession—a most thrilling sight.

Game of British Columbia.

BY CLIVE PHILLIPS-WOLLEY.

(Concluded from the July issue)

In Cassiar the moose is so plentiful that a party of surveyors for the Cassiar Central Railway Company when on duty, *i.e.*, making plenty of noise and not hunting, saw eleven moose between 8 a.m., and noon, as well as two bands of caribou. Over forty moose were reported to have been killed for food by the Indians and others round Dease Lake the winter before last, and although the largest heads ever secured came from some distance north of British Columbia, Mr. A. S. Reed, who obtained the six extraordinary heads now in the Union and Badminton Clubs, has killed one moose in Cassiar, which would not disgrace that phenomenal group. No sportsman should leave Victoria without a visit to those heads, for such a bag has never been made before to the knowledge of living man, and it is extremely doubtful if there is in existence an "honest" head as large as the largest of these giants from Cook's Inlet.

As to caribou, Mr. A. S. Reed's head at the Union Club is the finest I have ever seen, and it has been my business to make a note of big heads. That was killed, I believe, in Cassiar, in which district I have myself killed my two bulls, as many, that is, as I could handle, between breakfast and lunch of my first day in, and spent the rest of my time wishing that I had not been in such a hurry. I could have killed a dozen that day.

I have done with the deer, and yet I have the pick of the basket left. If you want to enjoy nature, to sleep in cup-like hollows of sun-dried yellow grass, away up at the top of the world, where the air is sweet as a young girl's kiss, and as maddening as that of champagne, be off sheep shooting to Similkameen, Empire Valley, or, if you want the new sheep (ovis stonei) to Telegraph Creek. Don't go where most men tell you to, unless they have a really warm friendship for you and are practical hunters who have been out lately. Don't follow the trail of even the best of our sportsmen too closely, because if you do you will find good camping grounds worn bare and the sheep will be at the back of the next divide. But they are not killed out; they have only moved on, and if you are man enough to cut your way through a bit of timber to the next range whose bald tops you can see above the timber line you will find as good sport as I found in Ashnola in the eighties, and the world does not hold any better. Perhaps the biggest sheep of British Columbia come from East Kootenay, but they are less plentiful there than they are in Chilcotin. A 16-inch ram is about as good as you are likely to get in British Columbia. The new sheep (ovis stonei) is plentiful in Cassiar. His horns are lighter and stand out more widely from his head than those of ovis Montana, and this is all the difference that an ordinary hunter will

notice between him and ovis Montana. The snow-white sheep of Alaska must be sought for further north, at Cock's Inlet or on the Kuskoquim, and Fannin's saddle-backed sheep further north still, in the mountains at the back of Dawson.

There is a poor relation, awfully out at elbows and as common as poor relations always are, to be found hanging round the sheep's hills, on the steep and barren rock faces which are on one side of every sheep range. This is the Rocky Mountain goat. He is a survival from the ark; his appearance suggests it, and his mental development confirms the theory. No self-respecting beast would go about to-day in the long frilled drawers which he wears in public; his shape suggests the 'prentice hand of Nature; he is content with the worst food and the most inconvenient residence, and if you want to shoot him he is either so stupid or so sick of life that he will not take much trouble to get out of your way. Be merciful. He is at least a quaint ornament to the rough steeps on which he dwells.

And now I know I am going to get into disgrace. If someone would give me half a dozen drinks I could tell you all about grizzlies as it ought to be told, but in the Duncans district we are not as well supplied with whiskey as are the people in town, and seen through the sober medium of tea or milk, the grizzly does not weigh 2,000 lbs., and does not feed exclusively on his hunters.

As a matter of fact, the ordinary grizzly of the Kootenays, of Kettle River, of the Clearwater country and of the various Fraser River districts weighs well under, very well under, 1,000 lbs. I should call a 600 pound bear a big one, and so would anyone else who weighed him, but there are individuals who attain far greater weight, and on the Stikine River, on your way into Cassiar, where ursus Richardsonii (a variety of grizzly) is very plentiful, the average bear is larger. Its diet is very largely salmon, and the supply is unstinted. Further north still there is a giant, and our local giant killer, Mr. A. S. Reid, is even now on his trail, and unless I am utterly mistaken we shall see that gentleman back here in the winter with more than one skin which will measure ten feet from nose to the place where the tail ought to be. The secret of that giant's habitat is not included in the price of this article, but others of his kind are brought back occasionally by our sealers from the Kamschatkan coast.

I apologise humbly for knowing nothing of the grizzly's ferocity. The first time you hunt him, when the shadows are beginning to move in the foothills, and there is no sound but your own footsteps, you will know all about it that I know, and when you see him, grim, rugged, and in no great hurry to be going, you will no doubt feel the pleasantly creepy thrill up your backbone which I ought to communicate to you by printed words, but as a matter of fact he never did any harm to me, and I am not going to libel him, or he might treat me worse the next time I meet him.

In dealing with the black bear and the panther, our two other "ferocious" quadrupeds, I have no scruples. I have known a small and much wounded black bear charge home. The man he charged could almost have licked him with his fists, and there is now in this district a fine old Welsh farmer who kicked a black bear off his dog with his boots, but still the little brute I first mentioned did charge home. I should think he was the only black bear who ever did such a thing, and the panther is a worse coward than the black bear.

Both are extraordinarily common on Vancouver Island. I have known in recent years a black bear killed in the limits of Victoria; another was killed within the limits of Vancouver; I have known them shot in men's orchards; one was round this farm this spring; four were seen in one round on the coach road between Nanaimo and Alberni, and when the salmon are running they are plentiful on every river up the coast.

Panthers are so plentiful that in 1892 the British Columbia Government paid bounties on the scalps of 72 of these great cats, all but two killed on Vancouver Island. I have known two instances of panthers killed within three miles of Victoria post office in the last five or six years, but unless you keep sheep you are extremely unlikely to see one in half a dozen hunting trips. Though the panther weighs about 150

lbs., and has measured as much as 8 feet 2 inches from nose to tip of tail, he has no more fight in him than a Chinaman. Like the latter, he is mostly tail.

There is still left the wolf, of which we have a very handsome variety upon the Island, and a quantity of feathered game and fish.

Of these a bare and imperfect list must almost suffice. The pheasant, which was imported less than twenty years ago, has done marvellously well upon Vancouver Island and at the mouth of the Fraser on the Mainland. It is no unusual thing to see as many as fifty birds feeding in one field in the Saanich or Duncans districts. Quail almost drove one of our governors to break the law or give up the governorship in Victoria, but they are an uncertain quantity. One year they swarm, and the next they are very scarce. A hard winter is almost too much for them, though it does not seem to affect the much rarer mountain quail as it does the Californian snipe, which, not quite like our Irish bird, and slower on the wing, are sometimes plentiful on the delta lands, and brant, geese, mallard, pintail, teal and half a dozen other varities of duck are plentiful along the coast in the winter.

Grouse (willow and blue) are indigenous and plentiful, and the man who can kill willow grouse as they dash through the timber may shoot without shame in any company, neither are there many birds which are better on the table than the willow grouse, but no man must expect to kill the big bags here which may be killed in other countries. The dense timber is against it, and so is public sentiment.

For an accurate account of our fish you must catch an icthyologist, but from a sportsman's standpoint there are the giant salmon of the Campbell River, which run from 50 to 75 lbs., and take a spoon freely. This is the tyee salmon. There are three other varieties, of which one, the cohoe, gives good sport with the spoon. Some men say that the salmon of San Juan river and elsewhere will take a fly, and there is a well-founded report that a number were taken in the sea near a certain river's mouth with a fly last year. I do not know this. There is a big trout, the steelhead (Gardner's trout), which looks so like a salmon and runs so large that he may have caused some of the mistakes, if they were mistakes. The common trout of our rivers is, I think, porporatus, but I know that both the dolly varden and the cut-throat trout are taken in British Columbia.

In our tidal waters, as the tide comes in, fine baskets may be taken frequently; on Cowichan River, near the lake, there is excellent fly fishing about Easter, and again at the end of the season, whilst between those seasons you can kill all the trout you want with a spoon on Cowichan Lake, and if you go to less frequented streams you can kill until you are tired of killing. A certain admiral, his secretary, flag captain and myself, once killed 509 trout, averaging 1½ lbs., in three days. That was on the Nimpkish. But if at the tail end of the season you are still hankering for a fish, and can really cast a dainty fly, I will reward you for reading this long article. There is a lake called Quamichan, two miles from Duncans, on which you can hire a boat. Get there by 6.30 p.m. It is useless to go earlier at this time of the year, and not much good in any case unless it is a calm evening. Men will tell you that the fish there don't take a fly. Never mind. Buy some of the finely-tied black gnats, or stone flies tied by Mrs. Leather, of Duncans, get a fine cast, and when the sun is down, watch. There will not be many rises, but row to the first rise you see and follow it. That is the strange part of it. These fish seem to run feeding right across the lake, and when caught they are all big fellows from 1½ to 4¼ lbs. It is the most sporting fishing I have ever had in British Columbia, being a combination of fox hunting and dry fly casting. The best basket I have heard of was in two consecutive evenings, when 21 fish, weighing 57 lbs. were caught.

Fish Culture in Canada.*

It was not until 1853, so far as I can ascertain, that any attempt was made upon this continent to artificially breed fishes. Dr. Theodatus Garlick, of Cleveland, Ohio, was the pioneer. He obtained parent brook-trout in Canada, taking them across from Port Stanley in Ontario, to his establishment in Ohio. He was an enthusiast, and his exhibits of young fish, hatched from Canadian trout-eggs, were a feature for many years at Agricultural Exhibitions in the various States bordering on the great lakes. Canada soon followed suit. The initial attempts were, of course, largely experimental. The late Mr. Samuel Wilmot claimed to have originated fish-culture in Canada; but I find the claim to be disputed, and with justification, by a venerable and respected citizen of Ottawa, Mr. Richard Nettle. Stimulated, no doubt, by recollections of famous streams in his native Devonshire, Mr. Nettle, as early as 1856 or 1857, began the incubation of salmon and trout eggs for purposes of artificial stocking, in hatching tanks in the City of Quebec. He disputed the accuracy of the claim frequently put forward on behalf of Mr. Wilmot. The Bishop of Ottawa (Dr. Hamilton) incidentally confirmed the claim of Mr. Nettle in a recent conversation, his lordship informing me that he himself saw the young fish and the hatching arrangements about the time referred to. Mr. Nettle was then Superintendent of Fisheries for Lower Canada. From a report by the late Mr. Wilmot, dated Dec. 31st, 1878, it appears that he commenced experiments in fish-hatching in 1865, eight or nine years later than Mr. Nettle's experiments, and he carried it on as a private enterprise until the Dominion Government took the work over and gave Mr. Wilmot an appointment as a Government official. In 1866 Mr. Wilmot acted as a fishery officer, with authority from the Government of Upper Canada, and on May 30th, 1868, he become an officer under the Department of Marine and fisheries; but it was not until eight years later (1876) that he became Superintendent of Fish Breeding. For his initial experiments he was paid, in 1869, the sum of $2,000 by Order in Council.

Thus fish-culture in Canada, at first a private enterprise on a small scale, received a kind of semi-official sanction; but in 1868 it became distinctively a branch of the Dominion Government service, the Newcastle Hatchery, possessed by Mr. Wilmot, being transferred to the Department of Marine and Fisheries. This hatchery, Mr. Wilmot affirmed, in his report dated Feb. 3rd, 1875, "has been the nucleus from which all of the National and State fish-breeding establishments in Canada and the United States of America have taken their rise." Additional hatcheries were soon built, the famous Restigouche Salmon institution in 1872 (twice rebuilt), and the Miramichi Hatchery in 1873. In 1874 the Gaspe Hatchery was commenced, and in 1875 a large mill was purchased at Tadousac and converted into a fish-breeding establishment, supplanted by a new building later. The work expanded, so that Mr. Wilmot, in Feb., 1875, was able to speak of five hatcheries in Canada, four of them in full operation.

Much interest naturally centres in the Newcastle Hatchery on Lake Ontario, where thirty-five years ago the work commenced. The building, enlarged and improved, is situated on a small stream at the head of a small creek or marsh opening into the lake near Bowmanville, and about thirty-five miles east of Toronto. A sheltered and secluded valley of great sylvan beauty encloses the site, but the work has always been handicapped by its distance, both from good spawning grounds, and from suitable areas for planting the fry. Mr. Wilmot erected the hatchery, as was natural, near to his own residence, and at a time when salmon frequented Lake Ontario, and resorted to the creek in question for purposes of spawning. For

* These extracts are taken from a paper read by Professor E. E. Prince, Dominion Commissioner of Fisheries, before the Ottawa Literary and Scientific Society.

many years salmon have been practically extinct in these waters, and the hatchery failed in its original purpose of keeping up the supply of Lake Ontario salmon, which Mr. Wilmot claimed to be indistinguishable from the sea-going Atlantic salmon. From 1868 to 1873 over a million fry were sent out from this parent hatchery (an average of 200,000 per annum.) A small private hatchery was also carried on during these earlier years of Canadian fish-culture, by the well-known salmon fisherman and merchant, the late John Holliday. Mr. Holliday was born on the banks of the famous salmon river, the Scottish Tay, and was stimulated, no doubt, by the salmon-culture work at Stormouthfield, in Perthshire, commenced in 1853 by the proprietors of the salmon fisheries on the Tay. He built a hatching establishment on the Moisie River (north shore of the Gulf of St. Lawrence), which has continued its operations to the present time. Messrs. Brown & Co. also erected a trout hatchery at Galt, Ont., and in 1868 had no less than 10,000 parent trout impounded in one of their ponds for the purpose of taking spawn for hatching purposes. Other hatcheries privately conducted with zeal and success might be named, such as the Credit Forks Hatchery carried on by Mr. Chas. Wilmot, the silver Creek establishment near Toronto, and others.

In the United States, it was not until 1871 that fish-culture became a recognized department of work under the auspices of the Federal government. Previous to that year individual States had made attempts in this direction, indeed, New Hampshire in 1865 had commenced fish-hatching operations, and agents were sent to the rivers of Canada, where they were permitted (as Mr. Charles G. Atkins tells us) to take salmon from the spawning beds, and were thus enabled to secure some hundreds of thousands of eggs, which were "hatched with a measure of success." Pennsylvania and the State of Connecticut followed in 1866. In 1867, 1868, 1869 and 1870 the States of Maine, New York, California, New Jersey and Rhode Island, severally began fish-culture in their respective territories.

In Canada the salmon and brook-trout naturally claimed first attention; but in 1867 and again in 1868, whitefish were successfully impregnated and hatched by Mr. Wilmot as he tells us in one of his reports. A pioneer fish-culturist in the United States, Mr. N. W. Clark, of the State of Michigan, has been credited with first successfully handling the eggs of the whitefish (*Coregonus clupeiformis*) on this continent, but the statement published by Mr. Wilmot gives four or five years priority to the Canadian, if, as Mr. Clark said, the first whitefish eggs in the United States were artificially hatched in 1872 (see U. S. Fish Comm. Report, p. xxvi., 1872-73). In 1875 a whitefish hatchery of large capacity was completed at Sandwich, Ontario, and has carried on, with marvellous success, the incubation of the eggs of that species on the Detroit River.

Under the zealous and indefatigable Samuel Wilmot, fish-culture in Canada made rapid strides, and the Dominion has generally been acknowledged to be in the front rank in this work. France and Germany were in advance, it is true, as far as exact scientific methods and knowledge were concerned, and the United States has taken the lead in making most munificent provision from the public funds for pisciculture, and Great Britain has set a worthy example in private enterprises and in costly experiments under skilled superintendence, witness the Stormouthfield*, Howietown, Cray's Foot, and Guildford establishments.

Canadian fish-culture was, no doubt, conducted in a rough and ready manner, the Superintendent and his staff being practically self-taught, so that many blunders were committed, and many erroneous methods for some years adopted. But the conditions were so favorable, the purity of the water and the abundance and coldness of the supply, the robust and healthy nature of the parent fish, and similar circumstances compensated for much that was lacking in manipulation and technical knowledge, during the early years of Canadian fish-culture. "The most important requisite . . . . is pure water; it is indeed to a hatchery what coal is to a steam-engine,"

* Now supplanted by Dupplin.

A Nepigon Trout.

This young Toronto fisherman is admiring a fish just caught; weight 6 lbs. 12 ozs. Mr. G. L. Wetmore, Divisional Engineer, C.P.R. was the captor.

NEPIGON LANDING.

This picture shows a very large gathering—for a region where trout are abundant but men are few and far between.

said the late Sir James Gibson Maitland (Int. Fisheries Exhib. London 1883), to whom Scottish fish-culture owed so much. It may be doubted whether any other country can offer conditions so favorable as Canada, and it is certainly remarkable that in the vast number of fry of various species, hatched year after year in the Dominion hatcheries, abnormal or deformed fishes hardly ever occur. Monsters, as a rule, are familiar enough in the tanks of European hatcheries, but nothing is so rare in Canadian establishments.

The total quantity of fry of all kinds distributed by the Dominion Government, that is, from 1868 to 1899, both years inclusive, is no less than 2,650,468,200. The average annual quantity during the last 20 years has been 128,000,000. In 1895 the output was extraordinarily large, amounting indeed to nearly 300 millions. For the last nine years vast quantities of lobsters have been hatched, the annual average being no less than 100,000,000. Deducting these from the total output, we find that the average output each year, during the last twenty years, has been 85 millions, mainly of the three kinds, salmon, Great Lake trout and lake whitefish (*Coregonus*), which are all fishes of great economic value.

Whatever may be said for or against the artificial hatching of fish, no fair-minded critic can doubt, that the distribution year after year, of this enormous quantity of young fish must have benefited our waters to an incalculable extent, Artificially hatched fry, unlike those hatched naturally on the spawning beds, must in the eyes of some critics, be more at the mercy of enemies when newly planted. Nothing, however, could be more helpless and unprotected than naturally hatched fry, and those turned out from hatcheries are really less at the mercy of enemies, inasmuch as they are always some days old, frequently several weeks old, before being planted, and should be more sturdy and robust than the fry exposed immediately after hatching, on the natural spawning beds. Nor is the objection better founded that the fry are suddenly transferred from the warmer water of the hatchery to the colder water of the lake or river outside. Records, which have been kept, show that the water flowing rapidly and plentifully through the tanks is more equable and cold than the shallow waters outside. The fry, it is further contended, are untaught to seek shelter, and must be gobbled up by watchful enemies. This cannot be so. The eggs are all taken from wild fish, and the young inherit the instincts of their parents. Hence when the fry have been carefully watched at the time of planting, they have been noticed to act with alertness and intelligence, and at once dart off to shelter. All the stock objections are made in ignorance of the real facts, for the facts all prove the very opposite of the theories set forth by critics, usually arm-chair critics.

To most people fish-culture is thought to consist in taking some ripe mature fish, just before spawning, squeezing eggs from them, fertilizing them, and placing them in jars or on trays, in a current of water until the young fish hatch out. Fish culture is, however, much more than that ; it includes at least half-a-dozen different methods. Of course, one method, and that most familiar, consists in obtaining ripe living fish of both sexes, and after subjecting them to the same process of careful and gentle pressure, mingling the two products in a spawning vessel or dish, where the eggs are rapidly fecundated, and then transferring the vivified eggs to the trays or hatching jars. The parent fish, being handled with care are returned to the water, with rare exceptions, alive and unharmed, and in the case of salmon usually continue the ascent up-stream, which had been interrupted by the hatchery officials. In B.C., it is said, the spawned fish frequently descend, but this may depend upon the sex, for Frank Buckland noticed that male salmon invariably bolt up-stream if disturbed, whereas the "hens" or female salmon bolt down stream. The fish do not die, as the signs of ripeness are readily visible to the expert officer's eye, and ripe fish are spawned painlessly and with the utmost readiness and ease. It is a curious fact that eggs from dead fish may be successfully used if death is recent. Thus the distinguished Russian naturalist, Owsiannikoff, in a paper read

in 1869, before the Imperial Academy of St. Petersburg, stated that he had fertilized the eggs taken from dead fishes, and in most cases with success. Different species also may be crossed and hybrids readily produced, but there are limits to the process due, no doubt, to certain microscopic peculiarities in the structure of the egg capsule.

Two methods of fertilization have been adopted, the wet and the dry, and the latter has almost universally superseded the former. In the dry method no water is added until some moments after the ova and milt have been mingled and gently stirred with a feather or the fingers. In the early days of Canadian fish-culture the wet method was followed, and the eggs were placed in water before the milt was added, and a proportion of eggs always failed to be fecundated, hence the universal adoption of the so-called dry method.

Some of the different methods followed in obtaining eggs or fry may be here instanced.

(1) The parent fish are secured some time (days or even months) before spawning, and impounded until they become ripe and swollen. Whitefish are often kept in this way, and the plan has been adopted in Canada of confining salmon in tidal ponds for many months, and apparently without harm. Indeed the salt water prevents fungus, and as salmon take no food after leaving the sea, there is no difficulty in retaining them until the spawning season, and then taking the eggs and milt. After being kept from June or July until October or November the parent fish are liberated on being artificially spawned.

(2) The parent fish are netted at the spawning time near the breeding beds. Salmon, in British Columbia, are treated in this way, also Great Lake trout and whitefish. The parent fish are rarely injured, and are thus liberated in their native waters.

(3) Parent fish are captured and the eggs taken and fertilized, but the fish are killed and sent to market. This is the plan adopted in some cases by U. S. fish-culturists, especially with the Great Lake trout. It is unavoidable as a rule, with black bass and sturgeon, even when very ripe, as they refuse to yield their spawn. It is not adopted in Canada.

(4) Parent fish are impounded in ponds or enclosures, where they deposit and fertilize their spawn naturally. The spawn is then transferred to the hatchery and incubated artificially. Bass, maskinonge, perch, carp, sturgeon, etc., have been treated in this way.

(5) A similar plan to the last is followed excepting that the eggs are allowed to hatch out in the ponds where deposited.

(6) Instead of securing the parent fish, or obtaining the eggs after being deposited, the small fry, incubated and hatched naturally, are netted and used for purposes of stocking waters. Trout and black bass have been mainly introduced into new waters by this method. Black bass, when very young, devour each other, even when only a little over an inch in length, and the Caledonia (N.Y.) Hatchery officers have reported that their young black bass grow so rapidly that they must be shipped immediately after being collected in the adjacent marsh ponds. Nearly 400,000 of these fry are annually distributed from the American hatchery named.

It is plain that if we can secure the eggs from the ripe parent fish, fertilize them by the dry method, and hatch them under the care of experts, the results must infinitely surpass those possible under natural conditions, where a small proportion only can be expected to surmount all the dangers and difficulties of their environment. Let me give an illustration of this waste of eggs on the natural spawning beds—a waste not contrary to natural law, but obedient to the principle of compensation and adjustment, universal in the world of nature. In 1895 I spent some time closely observing certain spawning beds of the Fraser River salmon, commonly called sockeye or blueback. I noticed, not once, but scores of times, pairs of fish busy nesting, the male fish lingering near his partner until she shed a shower of eggs.

(*To be continued*)

Taxidermy.

(*Continued from the July issue*)

7. Examine inside of skin and remove scraps of flesh and loose tissue. Ordinarily no further treatment will be necessary. The skins of many animals, however, are lined with a thick coat of fat. All fat must be removed. This can be done only by thoroughly scraping the inside of the skin with knife and scraper, a tiresome but necessary operation. The free use of an absorbent, such as corn meal or sawdust, will facilitate the process, and the whole skin may afterwards be thoroughly cleansed with washing soda or any similar alkaline preparation. Great care must be taken not to stretch the skin. After the inside of the skin is properly cleaned it is to be poisoned. For this purpose dry arsenic is ordinarily sufficient, but a mixture of arsenic and powdered alum in equal parts should always be used in damp climates, and especially in the humid tropics. Dip the skin in the box or paper containing the preservative and turn it about so that all parts are covered with the poison. Dampen the surface of the skin if it is so dry that the powder does not adhere freely.

When the skin is poisoned, turn it right side out. The simplest way to do this is to reach in from behind with forceps, seize the nose, and draw it out. Draw the feet and tail out to their natural length and see that the ears are in place. If any blood has soiled the fur it may be removed by washing, after which the hair is readily dried by the use of a stiff brush and an absorbent (preferably corn meal or sawdust). Small spots of blood can often be removed, when thoroughly dry, by brushing with a stiff brush (a toothbrush is best), without previous washing. Very bloody specimens, or those extensively soaked with fat, should be thoroughly washed both inside and out with soap and water before poisoning. They are then best dried by the use of an absorbent or by exposure to a strong current of air.

8. Cut and straighten five pieces of galvanized-iron wire,[1] one long enough to reach from tip of tail to middle of body and slender enough to fit into extreme tip of tail (file the point a little, if necessary), two long enough to reach from palm to middle of body, and two long enough to reach from back of hind foot to middle of body. The four leg wires should be just sufficiently heavy to give stiffness to the legs and protect the feet from injury when the skin is dry. A single wire for both legs of each side should be used in rabbits or other thin-skinned animals in which unusual support for the legs is required. The size of the wires needed can best be learned by practice, though the following notes will serve as a guide :

Mouse : Legs, No. 23 ; tail, No. 23 or No. 20.

Rat or small squirrel : Legs, No. 20 or No. 17 ; tail, No. 17.

Large squirrel, rabbit, woodchuck, skunk : Legs, No. 17 or No. 15 ; tail, No. 15.

For very small mice and shrews, No. 23 wire may be used for the tail and No. 24 wire (or Carlsbader insect pins No. 4) for the legs.

No wires that will rust should ever be used ; galvanized iron wire is preferable to all others. Splinters of wood or bamboo are often a convenient substitute for wire.

9. Cut off the skull and remove any loose flesh, but under ordinary conditions do not attempt to remove the eyes, tongue, large muscles, or brain of any animal smaller than a rat, as these parts can be readily dried by artificial heat or direct sunlight. With larger specimens some of the flesh must be cut away to prevent decay, and the brain should be removed through the natural orifice at

1. When many skins are to be prepared it will be found a great convenience to keep on hand a supply of ready-cut wires of various lengths, which may be selected as required.

back of skull. The brain can be readily washed out with no injury to the skull, particularly if a jet of water as from a syringe or faucet is available. A piece of wood whittled flat and used as a spoon will materially assist the process. In tropical countries or very damp climates persons having sufficient skill to do so without danger of injuring the specimen should remove the eyes, tongue, brain, and all the large muscles, as the skulls will otherwise become very offensive. Inexperienced collectors should preserve the skulls in formalin, alcohol, strong cane rum, or a solution of arsenic in water,[1] taking care to label them with pencil or waterproof ink on stiff paper (not pasteboard). Skulls placed in formalin should be removed after a few days and dried. Fasten the skull label securely and place the skull where it will dry as quickly as possible. Unless they are drying very rapidly it will be necessary to protect small skulls from flies. Never put salt or alum on a skull. The skull label may be fastened by seizing one end of its thread between the tips of a pair of fine-pointed forceps, with which the thread is pushed through the flesh at the fork of the jaws and out at the mouth. Or it may be tied to a short piece of the neck left in place for the purpose. The former method, however, is generally preferable. In either case the label should be tied close to the bone, leaving the least possible slack, and the thread should always be cut off neatly.

When many skulls are to be cared for at once they may be very conveniently treated by "stringing" on a cord or wire passed through the loops by which the labels are attached (never through the fork of the lower jaw). The "strings" can be hung before a fire or in the sunlight—wherever the skulls will dry most rapidly and thoroughly. Care must be taken that they are not stolen by cats, rats, or dogs.

10. Tear off a piece of cotton slightly larger than the body of the animal. The exact size required can only be learned by practice. Roll it roughly into shape and grasp its whole length with the forceps. If the forceps are too short for this seize it by the end which is to go into the head. Holding the cotton body by the forceps in the right hand, slip the skin on with the left until the points of the forceps have reached the mouth. Then grasp the head with the fingers of the left hand firmly enough to hold the cotton filling in place. Remove the forceps and with the right hand work the skin back over the artificial body. This method of putting the skin on to the body obviates the risk of stretching incurred in an attempt to push the body into the skin. For animals larger than a squirrel, stuffing of excelsior or tow is preferable to that made of cotton, as it permits more rapid and thorough drying of the skin.

11. When the artificial body is in place the wires are to be inserted in the legs and tail. Tear off a bit of cotton large enough to fill the skin of the leg, and project well into the body cavity. Then lay a wire on it, letting one end project a short distance beyond the edge of the cotton. Now twirl the wire with the fingers of the right hand, at the same time pressing lightly with those of the left over the edge of the cotton nearest the free end of the wire. The fibres will soon become wrapped about the wire at this point so that the whole mass of cotton will revolve with the wire, though fastened to it in a narrow region only and elsewhere standing out in a light, elastic mass.

Insert the wire into the position formerly occupied by the leg bone (or alongside the bone if this has been left in) and drive the point securely into foot, taking care not to distort heel. If the cotton has been securely fastened, it will be carried with the wire so that it will now shape itself to the inside of the skin and fill out the leg to its original size. With animals the size of a skunk, woodchuck, or rabbit (in which the leg bones are invariably to be left in place) it will be found more convenient to insert the wire first and then wrap wire and bone together to the required size and form.

The wire must invariably be wrapped with cotton before insertion into closely furred or naked tails. To wrap a tail

1. This is not, strictly speaking, a solution. When powdered white arsenic is stirred in water (about a teaspoonful to a quart) enough is held in suspension to make a strong preservative fluid.

wire requires considerable practice. The process is exactly like that of wrapping a leg wire, except that a long shred of cotton of very good quality must be selected, and this twisted about the wire, tightly at the end that is to go to the tip of the tail, more loosely toward the base, so as to produce a tapering form like that of the tail bones. The tail wire must project slightly beyond the cotton wrapping. Before inserting the wrapped tail wire it should be powdered with arsenic. Great care is necessary in inserting a wrapped tail wire. If the wrapping is too dense and thick it may stretch or break the tail. If it is not sufficiently firm it may tear and leave the tail collapsed and unfilled at the base or near the middle.

12. Tie skin label securely to the right[1] hind leg close above the heel. Allow it enough play so that both back and front may be readily examined, but not enough to tangle with the labels of other specimens.

13. Arrange the leg wires neatly so that the legs will be held parallel with the body. The front feet are to be brought close to the sides of the neck, and the hind feet stretched out backward alongside the tail. If necessary fill in with bits of cotton to shape the thighs and rump to their natural form. Lay the end of the tail wire along the middle of the artificial body, and over it (the skin lying on its back) place a sheet of cotton thick enough to fill out the belly without stretching it. Tuck the edges of this layer of cotton under the edges of the cut in the skin, so that all lies smooth. Arrange the cotton in the head, and straighten the skin about the eyes. Sew up the cut in the belly and take a stitch in the lips to hold the mouth shut. (This may be done before the skin is turned right side out, but it is often convenient to have the mouth open during the final shaping of the head.)

Do not force in all the stuffing that a skin will hold.

Do not leave a skin half filled and covered with wrinkles.

A properly made skin should give essentially the same measurements as those taken from the fresh specimen. Small skins should be filled out to the natural form of the animal, but those as large as a skunk or woodchuck should be flattened so that their greatest depth is not more than 50 mm. (2 inches). For this purpose a flat weight may be placed upon them while drying.

14. Lay the skin on a flat surface, preferably of soft wood, to dry. Pin the feet with soles down, so that the toes are held perfectly straight. If the tail does not lie as it should it may be held in place by pins driven into the board beside it, crossing one another just over the back of the tail.

The final shaping is to be given as the skin is pinned down. See that the feet do not project at the sides beyond the line of the body. Also make the sides of the body parallel, so that the thighs are not broader than the shoulders.

15. When the skin is pinned down lay it away to dry. Never dry a skin in direct sunlight or by artificial heat. An exception to this rule must be made in very damp climates. Here, however, the artificial heat employed should be as slight as possible. A swinging shelf hung near the ceiling of the room in which cooking is done will be found a convenient place for drying skins in damp, tropical countries. In hot climates skins must always be dried where there is a free circulation of air, otherwise they will probably spoil.

As soon as the skin is thoroughly dry remove it from the drying board, and the preparation of the specimen is completed. Specimens may be shipped in any strong, light box, but in tropical countries this should, if possible, be lined with zinc or tin. Wrap each specimen separately in paper and pack closely and smoothly. In tropical countries, to lessen the danger from attacks of insects, skins should not be boxed until ready to ship, and frequent examination for ants should be made. Naphthalin and bisulphid of carbon are valuable for killing or driving out insects.

Slight variations in the details of the foregoing directions will naturally suggest themselves. They need no special remark here. Some difficulty, however, may be found in preparing the skins of

1. Not on left leg.

bats. These animals are to be skinned as already directed, except that all of the bones of the legs and wings must, when unbroken, be left in place. Fold the wings close to sides of body and lay skin in position. The tail wire and bones of the legs and wings are not to be wrapped with cotton.

But skins from all localities are much needed. At least one-half of every series should when possible be preserved in this way ; the remainder may be kept in alcohol or formalin.

Temporary preservation of skins.—For various reasons it is often impracticable to prepare a specimen completely. In such cases skins may be temporarily preserved. Measure the animal carefully and label the specimen so that there can never be any doubt as to its history. If measuring implements are not at hand the dimensions may be indicated by lines on a strip of paper or by knots in a piece of stiff cord. Remove skin as already directed, poison it, and turn it right side out to dry. If arsenic can not be had use salt or alum, or even no preservative at all, but never let any alum touch the skull. Small skins should be thoroughly dried ; but larger ones, if covered inside and out with salt, may with safety be shipped to considerable distances, if sent without delay. The same care should be taken in measuring and labelling specimens that are temporarily preserved, and in preparing the skulls, as in the case of those made up in complete form.

SKELETONS.

To prepare skeletons of small mammals in the field, remove the skin as already directed, but cut through the skin itself at ankles and wrists, leaving the feet attached to the legs. Then remove the viscera and larger muscle masses, but not enough to disjoint any part of the body. Make up the skin roughly and preserve it as an aid to identification. Dry the skeleton quickly and thoroughly. Never use formalin to preserve skeletons or specimens intended to be used for skeletons. If such material can not be kept dry it should be placed in alcohol or arsenic water.

SPECIMENS IN ALCOHOL OR FORMALIN.

Alcohol and formalin are not used at their full strength. Add to commercial alcohol (95 per cent) one-fifth its volume of water. Add to commercial formalin[1] twenty times (or in tropical climates twelve or fifteen times) its volume of water. Label specimens with pencil or waterproof ink on stiff paper (not pasteboard). Open the abdominal cavity so that the preservative fluid may penetrate freely, but do not remove any of the viscera. Wet the fur thoroughly to base with water or alcohol before specimens are placed in formalin. At first keep specimens covered by at least double their volume of fluid. Less is required after they are thoroughly preserved. Specimens that have been preserved for several weeks may be safely shipped in air-tight jars, tanks, or bladders, if wrapped (to prevent abrasion) in cloth, tow, or cotton batting, dampened with the preservative fluid.

In tropical countries, where formalin may not be obtainable, and alcohol, if to be had at all, is very expensive, cane rum may be used as a substitute, though specimens preserved in it should be transferred to alcohol or formalin for permanent storage. Only the strongest grades of rum should be used.

1. This is a 40 per cent. (saturated) aqueous solution of formaldehyde gas. It is often sold under the name formaldehyde.

(*To be continued*)

Wild Birds That He Knew.

BY "POMAR."

In the early 80's of the last century Manitoba was to a large extent a virgin prairie,—a land of boundless possibilities on the eve of development. It was likewise a land which, if not as yet overflowing with milk and honey, was certainly overflowing with all kinds of feathered game.

It was at this time that my father, who had laid up the sickle and the hoe and retired to the *otium cum dignitate* of private life, was induced, through a series of domestic bereavements, to seek solace and possible accretion of worldly goods in the new and untried West. In 1881, or thereabouts, he with other kindred spirits formed a colonization company and undertook to place a certain number of settlers in what is now the prosperous municipality of Glenwood. The magnificent railway service of the C.P.R. was then only in embryo, and the prospective settlers had to tramp the distance of some 120 miles from Portage la Prairie through sloughs and over the wet prairie on foot, knee deep most of the time in water, to get to their destinations.

Arrived at the junction of the Pipestone and Souris Rivers, the little band picked out their future homes, and were soon enjoying life in sod houses. Game was particularly abundant, especially prairie chicken and wild ducks. It was indeed a sportsman's paradise. Every pond, hole or slough on the prairie, and there were many of them, was fairly alive with ducks, and the opportunity for the pot-hunter and game hog was unlimited. My father was an old hunter in his younger days in Ontario, and a good shot, and he had no difficulty in keeping the larder well filled. He had a farming partner, and it was mutually agreed that my father would attend to the domestic branch of the concern. At times he found time hanging heavily on his hands, and he would then wander down to the little woods by the side of the Souris River or out on the prairie in search of game. On one of his trips to the woods he came upon a ruffed grouse (partridge) sitting upon her nest. Madame resented the intrusion of the uninvited paleface to the bosom of her family, or prospective family, ruffling up her feathers and looking very angry. It struck my father that he would experiment with this most timid of game birds, and see if she could not be tamed. He found she was still laying her eggs preparatory to incubation, and he commenced operations by making it a point to be within view of the nest when she was laying. He always had some pieces of bread with him. He would then stand where the bird could see him plainly, and would keep swinging his arm towards her, holding a crumb of bread in his hand, and kept talking to her and calling her by the pet name "Jennie." Every little while he dropped a piece of bread close to the nest. After in that way dropping several pieces he would go away out of sight, and in about ten or fifteen minutes go back to see if she had picked up any of the bread. The second time he went back to the bird he could see that she had taken all the pieces and was looking for more. He could also get a little closer to the nest and leave some more bread. He had been with her half an hour, and not thinking it good policy to stay any longer for fear of wearying her, he brought his first lesson to a close. He repeated the lesson twice a day, getting a little closer each time, and on the third day the bird was so tame he could lift her off the nest. She would sit on one hand and take her food from the other. She laid eight eggs and brought out seven chicks. Before she was done hatching she got so tame that she would leave her nest and follow him, and several times he had to replace her on the nest and get out of her sight as soon as he could, to prevent her doing this.

When the little ones were all hatched he put mother and chicks in a basket and took them to the house, where they

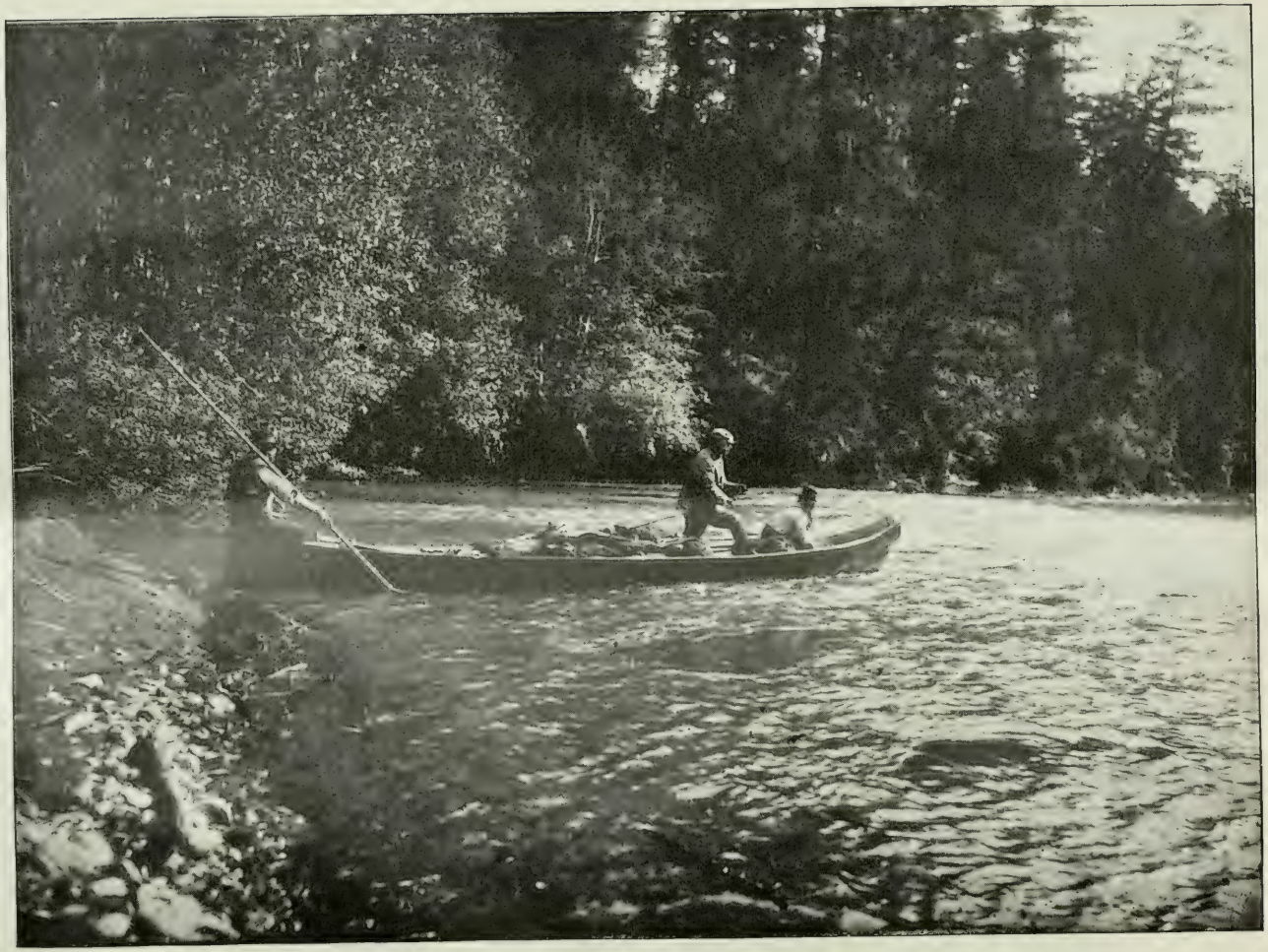
made themselves completely at home. There they remained as members of the family for about three weeks, when my father commenced to tire of his company. The old lady, in fact, got too familiar, and did not know enough to keep her place. She was continually flying into pots and pans and getting mixed up with articles of diet, which was rather unromantic from the standpoint of domestic cleanliness. So my father decided to say good-bye to his feathered friends, and gathering up mother and chicks, took them to the woods and, bidding them a fond farewell, left them there. Madame was more constant in her affection, however, than her human companion, and was determined not to take the mitten so readily. The same evening she and her interesting family landed back at the house without even waiting for a formal invitation to come in. After dark my father took the party back again to the woods, made a nice nest for them under a bush and left them there, and has never seen them since. Whether she considered herself capable of taking a hint and resented the invitation to stay away, especially when repeated, or whether her too trusting nature was taken advantage off by a predatory fox, whose sentimental nature had been developed along other lines, will never be known ; but the ready response of this poor wild thing to the first display of human kindness might profitably be considered by us who call ourselves Christians and arrogate to ourselves most of the "here" and all the "hereafter."

My father also turned his hand to the job of taming a wild duck that was nesting on the prairie. He adopted the same tactics with it as with the partridge. It hatched out eight young ones, and got very tame. He kept them around the house for several weeks, and then gave them to the little daughter of a neighboring settler who had settled on Plum Creek, about a mile away. Her father built a sod house for them, and they lived on the Creek during the day, feeding and disporting themselves, and went into their house every night. This continued until fall when a pot-hunting biped came along and wiped out the whole family at one fell swoop, no doubt, thereafter congratulating himself on the magnificence of his sportsmanship.

A few years after this first year of my father on the Manitoba prairie, I visited him for the purpose of regaining health that I had squandered in over study in a stuffy Ontario office. The very first breath of the pure air of that magnificent country seemed to put new life into me, and after a few months there I came back with renewed strength. Game was still very plentiful, although signs of decrease on account of the unmerciful onslaught made upon it was even then apparent, indicating the necessity of those wise laws since enacted for its protection. I found great pleasure in foraging for ducks and chickens. Among other amusements, I spent some time trying to trap a wary gopher that had made his home in our sod house and was perforating it with too many holes, I thought, for the comfort of the inmates. My efforts were successful, and I at last had the satisfaction of strangling him at the end of a running noose. On the return home of my father I exhibited my victim's cold body, and was pained to learn that another of my father's pets had fallen a victim to man's inhumanity. This little animal he had also tamed, and made quite a pet of it. He used to put rings in its ears and a ribbon around its neck, and it would sit on his knee and eat out of his hand, and was very tame. She would come at the call of her name, "Jennie." But, like her unfortunate predecessors, Jennie's life ended in a tragedy.

NEPIGON RIVER.

This view was taken near Cameron's Pool—a spot almost sacred in the eyes of the "regulars" who visit it each season.



A Tight Line.

This fisherman was "taken" in the act of playing a salmon, but owing to the unfortunate limitations of photography the rod does not show.

Second Sight and The Indian.

BY ST. CROIX.

The more one sees of the thoroughly wild and unspoiled Indian, the more one realizes what a strange being he is,—in many respects wonderfully gifted, and in others perfectly idiotic, from our point of view. He is, in fact, a mass of contradictions. Consider, for instance, his physical development. An Indian, even a picked one, in the prime of manhood, rarely shows the muscular development we see in the white man who has been engaged from his youth up in heavy labor. The Indian's limbs usually appear slight, the biceps, thighs and calves being, apparently, poorly developed ; yet he can carry weights and travel distances that a white man could hardly accomplish. Some of the Indians of the Carrier tribe, inhabiting the northern central plateau of British Columbia, think nothing of carrying 200 pounds ten miles at a stretch, and there are Indians here in eastern Canada who can do even better than this. One youngster who was in my employ a couple of years ago, a slight, lathy youth with a thirty-inch waist and a thirty-six inch chest, could carry three hundred pounds over a fairly long portage without distress, and is said to have toted, in order to make good a boast, four hundred pounds for a short distance. I doubt not that there are exceptional men scattered throughout the Hudson's Bay Territories capable of surpassing these feats. And in the matter of endurance the Indian is even more remarkable ; in fact, he seems, at his best, hardly to know what it is to be tired. Some of the natives employed as carriers by the Cassiar Central Railway used to pack heavy loads over a tremendously stiff mountainous country, where the trails were steep enough to try the wind of a racehorse, twenty miles, and then return laughing and joking at a jog trot, so as to be able to go out again on the following day with another equally heavy load. After dark they would gather round the camp fire, as lively as school boys at play, and their laughter would resound far into the twilight, which is the nearest approach to darkness known to those regions in summer.

But if the Indian's physical being is an enigma to us, what shall be said about his mental equipment ? Capture one of these wild men of the woods, bring him to our civilization, and his intelligence seems far below that of a child ; but in his own wilderness he is a different creature, and, pitted against him, we are forced to acknowledge his infinite superiority. Among those who have had much to do with the Indian, a conviction that he possesses a sort of sixth sense, lacking in us, is very general. Some uncanny tales are told illustrative of this alleged extra sense, and I have no doubt many of the readers of this article have come across instances even more astonishing than those I am about to relate ; indeed, it is partly with a view to inducing others to write upon this subject that I have undertaken this contribution.

When the Riel rebellion broke out in the Northwest, in the spring of 1886, there was a spirit of unrest and discontent among the Indians of the territories, which caused the Dominion Government great uneasiness. For weeks a general rising seemed imminent, and as such an outbreak would have meant destruction to the scattered settlements, and might have caused the miscarriage of General Middleton's campaign through the severing of his connection with his base, the Government resolved to leave no stone unturned to keep the tribes on their reservations. The Indians at Qu'Appelle were particularly discontented, and this was the point on the Canadian Pacific Railway from which the transport waggons took their loads to the front, so it was most important that the peace should be kept. The one man in the whole Northwest who could allay the angry feelings of the tribesmen was Archbishop Taché, of

St. Boniface; his knowledge of the Indian was most profound, and his influence over them great. So to him the Government turned in the hour of danger, and with that devotion to duty and disregard of safety which characterized him, he started at once for Qu'Appelle to keep the turbulent young men from putting on the war paint and taking a hand in the fighting. This he was successful in doing; and although the Indians showed great excitement, they did not leave their reservation.

One afternoon an Indian came to the Archbishop and said: "There has been heavy fighting this morning on the Saskatchewan." This statement was so remarkable, as there was no possible means of communication with that region, that the Archbishop telegraphed the Indian rumor to the Winnipeg papers, and next morning it appeared in cold print. On that day the battle of Batoche had been fought and the Indian rumor was not confirmed for a couple of days. Now, how did the Indian know what had been done so far away? The Archbishop firmly believed in this sixth sense to the day of his death, having often had evidence of it during his long residence among the wilder tribes. I recently came across a review of a work published by a traveller who had returned from Abyssinia, who had remarked this strange power amongst the Abyssinians, and gave some remarkable instances of it.

A few months ago I wrote to an old friend of mine, who has passed a good many years in the north in charge of various Hudson's Bay forts, asking him if he had ever observed any evidence of this mysterious power. This is what he said in reply:

"Now, about these same Indians, and their gift of second sight, or whatever it is called. I have not very much to say about it, nor can I give any particulars or interesting illustrations, except in a general way.

"In the first place, when we were living at the fort, and Indians and half-breeds constituted pretty well the whole of the inhabitants, Mrs.——and myself used to say that the blessed creatures seemed to know intuitively what was happening. We used to think that it was probably the result of their mode of living; I mean that they are a race that do not live in a cut-and-dried conventional manner, not by routine as we whites do, but rather by observation and induction, and that this faculty has been developed in them to such an extent that they can reason out almost unconsciously to themselves probabilities which are accepted by them as facts.

"In this connection I have known them to be all wrong sometimes; just often enough to make it the exception.

"In the matter of straight clairvoyance, I only know one case, at least only remember one at this moment worthy of mention, though I have heard much of conjuring, and have been told some wonderful things. The case I allude to is that of 'old Blacknose'; just when he was at the point of death and had been speechless for some time, he suddenly muttered—'Look! Look! at the poor women there in the ice. They can't get out. They are drowning (sinking).' By a strange coincidence, or otherwise, at the same time, as nearly as could be adjudged, the two young wives of Pears and Cat were caught between two cakes of ice, while crossing a bay to look at a net; their canoe was crushed and they were drowned."

Now if any readers of ROD AND GUN IN CANADA can throw more light on this obscure but interesting subject, I trust most sincerely that they will do so.

Control of Forests.*

Mr. A. C. Campbell writes in connection with an editorial comment made some time ago on a suggestion offered by him in "The Commonwealth" that timber lands might be managed on the same basis as agricultural lands, that is, by small individual holdings, though of a greater area than in the case of agricultural homesteads, and urges, in opposition to the opinion in favor of an extension of government control, that society is at present founded on an individualistic basis, that in every line of wealth production, with so few exceptions as to be hardly worth considering, we have proceeded on the theory that self-seeking devoted to wealth production was the strongest force that could be used for the industrial advancement of society. Possibly the use editorially of the word socialistic may have conveyed a larger meaning than was intended, for the extinguishment of individual effort is not necessarily involved in the extension of state control in forest management to a greater degree than that in which it at present exists. On the extension of state control, without at present attempting to define where the evolution of the future shall fix its limits, will depend largely whether or not Canadian forests are to be managed so as to be a permanent and steady revenue producing factor for the state.

The assumption that state control is a new idea in connection with the management of forests in Canada must, however, have been formed without due consideration of the facts of the case. Practically the whole system of forest administration is based on the principle that the ownership of the land must remain in the state, that the holder of such land shall have only the timber under yearly license, and that under restrictions as to the diameter of the trees to be cut, and certain dues to be paid to the state, which require that all the operations and records should be open to the scrutiny of state officers, with severe penalties for wrongful returns. Surely such a system applied to any other industry would be considered socialism of a somewhat advanced nature.

To make the question clear it may be premised that forests controlling water-sheds or which for any other reason are not to be managed purely for revenue purposes do not enter into the question, though much of our forest land is in just such situations, and that lands fit for agricultural purposes are to be excluded. There remain, therefore, the great stretches of Laurentian or other rock suitable only for timber production now partly covered by forest and partly swept bare by fire. Is is plain that no one without the amplest resources and great interest in succeeding generations would hold such fire-swept land, for it might take 100 to 150 years to grow a timber crop on it, and individuals will probably be unanimous in deciding that such lands will certainly not be handled by them, whether or not the state chooses to take action in connection with them.

The non-agricultural lands already covered by forest alone remain then to enter into the problem. The first, and a very serious difficulty in the way of the holding of small areas of such lands by persons of little or no resources, is the danger from fire. Fires are occurring continually. Every year single holders of timber lands are losing more than sufficient to wipe out dozens of such forest homesteaders. Suppose the tracts that were utterly destroyed, both timber and soil, by fire in the Timiskaming district last year had been so held, what would have been the result? The people would have lost everything they possessed and would have been compelled to seek new locations, as they could hardly wait 100 or 150 years for the growth of a new crop. The necessity for fighting fire has involved an extension of state control, for an effective system requires that the whole forest area should be guarded whether it contains valuable timber or not, and the

* Contributed by the Officers of the Canadian Forestry Association.

individual owners are agreed that the state should undertake this duty, which they feel will not be done by individual effort.

The argument that the very reason why we have so little attention paid by the majority of individuals to this vital question of forestry is that those who are sufficiently well informed on this subject to speak with authority, give people to understand that it is a question for the state and not for the individuals to deal with, hardly places the responsibility for the apathy of the general public on the right shoulders. It is not the advocates of forestry who are to blame for the lack of public interest. Unfortunately the public do not yet listen to us. Our voices are but as of those crying in the wilderness with but little sign that the wilderness will soon be other than it is, except perhaps in its increasing extent. Long before the voice of the forester was heard the logic of hard facts had shown the impossibility under existing conditions of conducting forest management by the individualistic methods employed in agricultural operations, and though the necessary consequence follows that what people are not directly and individually concerned in they do not consider of vital interest, the blame does not rest with the forester. Nor is he to blame if oratorical rhapsodies about our boundless resources, our inexhaustible timber supplies, have led the public to the conclusion that the forests will grind out forever their toll to the public exchequer and that there is no occasion for looking ahead to find out how far and how long we can depend on them to contribute to the public revenue and see whether it is necessary to take any measures to assure that this contribution should be a permanent and increasing factor. To lead the public from such wanderings in the wilderness is to be accomplished by creating a realization of the direct interest of the individual in the maintaining of the public revenue, rather than by encouraging individual effort to undertake what, under present conditions, has many possibilities of failure, while success would be entirely problematical.

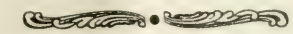
When the lumber districts are reached the distance from the market is sufficient to make only the most valuable trees, such as pine and spruce, profitable to handle. While the original crop is still on the ground the problem would perhaps be simple. But it is not so simple as that of an apple orchard, as the crop in that case is an annual one and nothing would be gained by removing the trees. In the case of forest trees, however, it is hardly likely, in face of financial stringency or any other impelling cause, that a small holder would be able or willing to refuse to make use of the resources lying at his hand without regard to the future. Like the gentleman who, though living north of the Tweed, had imbibed some of the recklessness that is supposed only to exhibit itself south of that line, and regularly made up his losses on the Derby by sacrificing a few acres of his forests.

Whether the sustained yearly products of forest land, provided it escaped every danger, would be sufficient to provide for a homesteader and his family is a factor that requires consideration. There are hardly sufficient data based on accurate observation and calculation to settle definitely what the sustained annual yield would be. Mr. J. C. Langelier computes it at 2,500 feet per acre for spruce, which at $3.50 per cord would make $14.58 per acre. The tables prepared from investigations of the Adirondack spruce show that cutting to 12 inches in diameter, breast high, taking the largest yield shown, the first cut would be 8,700 feet, board measure, per acre ; the second cut would be in 10 years 1,827 feet ; in 20 years 2,958 feet, or in 30 years 5,638 feet, and it would be necessary to delay the second cutting for 38 years to get a return equal to that obtained from the first cutting. This very careful estimate certainly would not give much encouragement to expect that a small holder would be able to live on the proceeds of his holding.

While the adoption of such a general policy as that suggested does not appear advisable, yet there is no reason why individual effort should be altogether discouraged, and a few instances that point in the direction of profitable private management of forests even on a small scale may be cited.

It is stated that in the French settlement near Weymouth, in Annapolis County, in the Province of Nova Scotia, an annual cut of twenty to twenty-five thousand feet of lumber is made on lots of 100 acres, and that the owners of these lots find that this annual cutting can be kept up indefinitely as long as there are no forest fires. The quality and size of the lumber shows improvement, and many tracts which have been cut over for the past ten years have better timber on them now than in the past. The owners of this timber regard their holdings as income property and will not sell their timber, but cut out the suitable logs every year, take them to the nearest mill and haul the lumber, when cut, to Weymouth, where there is a ready market.

An example of profitable private forest management in the West is given in the recent work on "Practical Forestry" by Professor John Gifford. The plantation was on a piece of land, eighty acres in extent, near Hutchinson, Kansas. The owner cut 2,500 trees at the end of the sixth year of growth, and 13,000 trees at the end of the seventh. Each tree made two fence posts, and the posts were sold at ten cents each on the ground where they grew. He obtained $2,600 cash for the fence posts in the second thinning on an eighty-acre patch of land. At the end of ten years from the planting his woodland was measured by experts from the Department of Agriculture at Washington, and the stand of timber was found to be worth $267.17 per acre. After counting every expense, including all labor, the price for which the land would have rented and the interest at six per cent. on all money invested, a net profit of $197.55 per acre remained for the ten years, or $19,75 per year. In addition to this profit was the money received for the trees cut in the two thinnings.



It has always been an enigma, even to scientific icthyologists, why salmon show such marked partiality for certain streams, and even for particular tributaries of those streams. Hence, it is gratifying to have light thrown upon this obscure subject, as is done in the following communication from the Nanaimo correspondent of the Victoria Daily Colonist. Writing to his newspaper, under date of April 24th, he says:

"The Indians living about here have little faith in the success of the attempt which has been made by the Fishery department to turn the Nanaimo lakes into a spawning ground for sockeyes.

"Old Dick, an Indian lawyer, has given Indian Agent Robertson what appears to him and his brother Indians sufficient reasons for believing that this cannot be accomplished. The legend given by Old Dick is a very pretty one and has strong local color.

"Ten generations ago, he says, the first Indians came to this part of the island. They came from Great Thunder and were five in number, coming through from a great cloud between Mount Benson and the sea. Shortly after this two others followed, who were of those who wore the great mask, and were therefore of higher intelligence. These displaced the original five. These first Indians found among the salmon tribes a firm agreement existing. According to the terms of the agreement the sockeyes were confined to the Fraser River. The eastern rivers of Vancouver Island were to be passed by them. The humpbacks had an agreement by which they were during alternate years to enter the Fraser and the eastern rivers of Vancouver Island. This agreement has been observed by the salmon very faithfully, he says. The white men when they came tried to induce the salmon to break their treaty, but without success.

"This, the Indians claim, augurs ill for the success of the attempt made to make the Nanaimo lakes a spawning ground for the sockeyes. They cite the failure of the attempt made some years ago to make Cowichan Lake a spawning ground as an evidence that the treaty among the salmon still holds good."

The White Elm.*

The elms have robed their slender spray
With full-blown flower and embryo leaf;
Wide o'er the clasping arch of day
Soars like a cloud their hoary chief.

So the genial Autocrat of the Breakfast Table sings of the coming of spring, and, although he disclaims all idea of considering trees from a scientific standpoint as being too formal a way of treating friends, he evidently loved them well enough to have made close and accurate observation of their times and seasons and manifestations. And in a New England landscape there is no more characteristically beautiful tree than the White or Swamp Elm, particularly when it assumes its most usual form, a few great limbs spreading from a short stout trunk curving outward and upward into a great fan shape, from which the drooping ends hang in graceful pendants of green. No tree with more beautiful or graceful lines can be seen anywhere, and to many it is in this respect the greatest among the trees of the field. Seen in outline against the sky, it impresses with its simple and majestic beauty, and withal it is a tree that has many associations that make it a homelike and familiar feature to most Canadians.

The White, or Swamp Elm, (*Ulmus Americana*) belongs to the order Urticaceae or nettle family, being in the same order of plants as our common nettle. The scientific name for the genus is the old classical name for the European species, which are, however, quite distinct from the American Elm. The leaves are oblong or oval, with the veins pinnate or spreading from a central midrib like the pinnae of a feather, and the edges sharply and usually doubly serrate. The base of the leaf is oblique, one side being lower than the other. The twigs are grey and smooth, not having any corky ridges. The small green flowers appear in April in close bunches, and though individually inconspicuous anyone who observes at all will readily notice the full blown flowers robing the slender spray. The seeds following immediately after, in May or June, are orbicular in shape, with a narrow wing entirely surrounding them but notched at the top. They are smooth, except the edge of the wing, which is ciliate or bordered with fine hair. If the seeds are required for planting they should be collected in May or June and planted immediately. Elm seeds usually show a large percentage good. According to the experience of the Experimental Farm at Indian Head, seeds from trees grown in the West succeed, whereas imported seeds fail to germinate, thus confirming a common experience with tree seeds. The distribution of the White Elm is very wide, extending from the Atlantic Coast westward to the valley of the Saskatchewan. It prefers low moist soil, its favorite location being along the flats of old river bottoms.

The White Elm was, with the exception of the pine, the largest forest tree in Eastern Canada. Trees six feet in diameter and over one hundred feet in height were common, and even a diameter of eight feet has been known to be attained. Trees which grow in the forest have clear straight trunks on which the crown is upraised high in the air. In the open a rounded form is assumed, in some cases, and in others the fan shape or "sheaf" top. When a tree has grown in the forest for some time and the other trees are cleared from around it, it will often send out short bushy branchlets from long dormant buds along the trunk, making the "fringed" or "bearded" elm. The spread of root necessary for the stability and maintenance of such large heads is very great. It has been known to reach one hundred yards from the trunk of the elm. There are many famous elms. One of the most celebrated was the Boston Elm, which was supposed to have been in existence before the city was founded, and which, when it was blown down in 1876, had a circumference of twenty-two feet.

* Contributed by the Officers of the Canadian Forestry Association.

The wood of the elm is hard and firm, although not very durable, and is very useful for many purposes where these qualities are required. Some of its uses in manufactures are for furniture, baskets, bicycle rims, &c. It is exported to England as square timber, and is there used for planking and wearing parts of vessels. It is also used for piling, etc., being found durable under water. The export of elm timber for the last fiscal year was 26,818,000 feet, and the value $193,749.

The director of the Experimental Farm at Indian Head recommends that in planting elms they should be set out at four years of age, and the distance apart should be four feet. This tree has been found one of the most successful, and is recommended for trial in the West. The fact of its being found growing there naturally is a sure indication that there should be no difficulty in the way that cannot be easily overcome. The preference of this tree for a rich moist soil should, however, be remembered.

The rough, corrugated bark of the elm had sheltered many of the embryo statesmen and captains of industry of Canada, for it formed the roof covering for most of the first log cabins that were built by the pioneers. It was cut in large pieces about four feet long and two or three feet wide, and these were laid overlapping one another on the transverse poles which formed the support of the roof.

Nearly all of our lakes and streams of any magnitude are well adapted to the black bass, which stands with few rivals as a game fish, and many prefer its flavor to that of the dainty brook trout, writes Mr. Bastedo. No native fish has a more extended range. Its fecundity, too, is so great that given half a chance, a few pair will in a short time populate the waters in which they are placed. The two principal varieties are the small mouthed and the large mouthed. The species is somewhat difficult to distinguish, and the generally accepted points of difference sometimes proves misleading. The colors and markings of each vary with age, and the size of the mouth with the size of the fish. The most reliable, and perhaps an infallible, means of identification is the number of scales on the cheeks, a larger number (usually 17 rows) being found on the cheeks of the small mouthed variety than on those of the large mouthed (usually 10). It is erroneously believed that the large mouthed variety is less gamey than his small mouthed cousin, but this perhaps is only experienced where the former is taken in ponds or sluggish waters, for a two pound large mouthed in our cold or running waters will prove inch for inch every bit as good a fighter as the small mouthed, and is in every sense adapted for transplanting in any part of the Province. The black bass is also so radically different from all other fresh water fish in its spawning habits, and in the care which it exercises over its young, that the percentage of loss of fry when hatched is very small. Trout and whitefish have been known to devour their eggs as soon as deposited; and in the case of speckled trout, where these are propagated in ponds, it has frequently been found necessary to remove the parent fish from the spawning beds immediately upon the spawn having been deposited, or the eggs were in danger of being devoured and the season's labor lost. The parent bass, however, will hover about the spawning bed from the time the eggs are cast until the fry has been hatched (usually in from five to ten days, according to the temperature of the water) and are in a measure able to take care of themselves. Everything, therefore, points to the black bass as being at present the ideal fish with which to stock our (i.e. Ontario) waters.

Sporting Dogs—The Setter.

BY D. TAYLOR.

There are three great branches of the setter family—the English, Gordon and Irish—which, though sharing a somewhat general resemblance in conformation, have each well-defined characteristics, and are distinct altogether in color. The setter is an absolute necessity to the sportsman after winged game if he wishes to save himself fatigue and trouble, and is, when well broken, an invaluable assistant in procuring a good bag. In the long stubble of a wheat field, or in the purple heather, the dusky brown of the partridge or grouse can scarcely be distinguished from the color of mother earth or of the heath, and, therefore, the setter becomes the eyes of the sportsman, flushing the birds at the proper moment for a good shot. He seems to interpret the mind of his master with an accuracy and intelligence that is simply marvellous, and, when the day's shooting is done, the tales told "over the walnuts and the wine" of the feats of some favorite dog are among the most pleasant memories of a shooting season.

In the selection of a young setter to be trained for shooting over, it is well that the various characteristics of the breed should be closely studied, because, in proportion to the number of "points" in an animal a greater degree of intelligence may be looked for, and its consequent full development more easily accomplished. The best type of English setter should have considerable prominence on the back part of the head, or what is technically known as the occipital bone, somewhat narrow between the ears, and with a very decided brow over the eyes, which must be of medium size, rather animated and of a dark color. The ears are comparatively small, carried close to the cheeks, soft, of leather thinness, and partly clothed with silky hair. The man who breeds for show purposes only and the sportsman who looks toward the work the dog has to accomplish in the field, are somewhat at variance as to the build and contour of the frame, but by judicious breeding a happy combination of strength and symmetry is obtained without any apparent depreciation of the qualities desired by either, and when this is accomplished the result is altogether pleasing to the eye of both sportsman and artist. The nose of the setter should be long and wide, with nostrils wide apart and large; the jaws strong and equal, not undershot; shoulders sloping; chest deep, rather than wide, and ribs well sprung. The front legs should be set straight, with knees broad and strong; hind legs muscular and plenty of bone. In regard to the feet there is a diversity of opinion among experts, some holding to the cat's foot while others prefer what is known as the hare, but the former is to be preferred. The color of the coat in the English setter is not strongly insisted on, a great variety being admitted. The most popular is the "Blue Belton"—black and white ticked with large splatches; then follows orange and white, ticked and marked as in the blacks; liver and white; black and white with tan markings, etc. Solid colors of black, liver, red or white are occasionally met with but are not desirable.

The Gordon setter is claimed by its admirers to be the handsomest of the species, and when he is of the proper color and true to standard type there are not many who will care to dispute the claim. The breed is popularly supposed to have originated with the Duke of Gordon about 1820, and the outcome of a cross between a breed of setters he then owned and one of his very keen nosed collies. The variety generally possesses a splendid intelligence, acute scenting powers and great endurance. In the best specimens are always to be found the leading features of the collie, bloodhound and setter. His head is much heavier than that of his half-brother, the English setter, broad at the top between the ears, skull slightly rounded, and the depth from the occiput to the bottom of the lower jaw much greater; his body is also heavier. The

A Summer Residence.

Indian birch-bark tepees by Long Lake, New Ontario.

The White Elm.

This fine elm (*Ulmus Americana*) shows to perfection the fan like form characteristic of the tree under certain conditions.

FUTURE CHIEFTAINS.
Squaws and papooses at the H.B.C. fort, Brunswick House

THE WHITE ELM.
Here we have an entirely different shaped elm, owing to other influences during early growth.

great beauty of this dog is his color, and much prominence is usually given to it in judging. It should be a rich, glossy black, with deep sienna or dark mahogany, the tan markings clearly pronounced and without any admixture of black on the body, but black pencillings on the toes are admissible. The black should be intense, not brownish or rusty. The muzzle also should be tan and the spots over the eyes well defined.

The Irish setter in appearance is more akin to the English than the Gordon. He has an oval skull and the head is long and lean, brows somewhat raised, showing stop, and the eyes a rich hazel or brown. His ears are fine in texture, of a moderate size and set on low, well back, hanging close to the head. In color he is a rich chestnut or red mahogany; must not be any suspicion of black. In general style and appearance he is a very handsome dog, and when in good condition is ranked as second to none of the setter tribe either in beauty or for work in the field. He is game to the end and never seems to tire out, even on the longest field day.

ST. LOUIS VIOLET.

This handsome collie, the property of Mr. Thos. S. McGee, has had a remarkable career this year. She won everything, including special for best in show, at the Montreal Collie Club's Show, under Dr. Wesley Mills; shortly after at Ottawa she repeated the same performance under Mr. James Watson, New York, and again at Montreal, under Mr. James Mortimer, she won four first prizes and nine specials.

Whenever possible the sportsman himself should train the dog he is to shoot over, for the simple reason that he will have better opportunities of noting the dog's peculiarities and temper, encouraging his good and correcting his bad qualities. It is quite possible to obtain a well-broken dog, but the chances are he will not exhibit the same degree of efficiency with a stranger as he would with his trainer, and there is consequent disappointment and vexation. On the other hand, the owner's pleasure at seeing the fruits of his own skill and patience is ample reward for any trouble he may have taken; indeed, in the matter of training a dog, the idea of its being in any sense a task soon disappears.

Mr. Douglas W. Ogilvie, president of Montreal Canine Association, is a gentleman with a born affection for the canine race and a ready sympathy for the pariahs that roam the streets. With a strong conviction that some systematic effort should be made to provide for strayed or homeless dogs, until such time as they are claimed or sold to someone who would assume the responsibility of their care, Mr. Ogilvie has, for some time, advocated the founding of a dogs' home. He has enlisted the co-operation of a number of philanthropic gentlemen, who have promised generous subscriptions towards such a worthy object, and it is not at all unlikely that a small beginning may soon be made in providing for outcast dogs. We do not suppose that such an institution could ever be made self-sustaining, yet a very considerable revenue would be derived towards its support from the boarding of dogs and from the sale of those gathered in which are considered worthy of being kept and conditioned. To build a suitable home, and provide the necessary grounds, would cost a considerable sum, but in this connection we would point out to those interesting themselves in the matter that there is a place ready to hand if it can be secured. The old kennels of the Montreal Hunt on Delorimier Avenue would, with some repairs, be a most suitable place, as there are fine grounds and accommodation for many dogs.

Our Medicine Bag.

The Montreal Business Men's League has issued a neat little pamphlet describing Montreal. Many thousand copies have been mailed to Great Britain and the United States, the objects being, to induce people to take an interest in this city and to place in the hands of tourists a handy guide. From time to time the League will bring out other publications. Any of our readers who wish for this pamphlet should send us two cents for each copy they require, to cover cost of postage and wrapper.

The Province of Ontario has been unable to obtain a supply of landlocked salmon eggs from the waters of the sister Province of Quebec, but an effort is to be made to introduce the steelhead in waters where it is thought the landlocked salmon should succeed. The steelhead is a superb fish, but if the Ontario Fish Commissioners will bend their entire energy toward stocking their waters with the rainbow trout, we fancy they will have better success, and consequently better sport. We must confess to a partiality for the rainbow after a very varied experience of the salmonidae in two hemispheres. If there be a better fish for its inches, we have not had the pleasure of an introduction.

Mr. S. T. Bastedo, Deputy Commissioner of the Ontario Department of Fisheries, states in his latest report:— "There is no doubt a tremendous loss of the spawn of the lake trout and whitefish where this matures at a period which is not covered by the present close season, and steps should, in the opinion of the undersigned, be taken for the prevention of a portion at any rate of this serious waste. In Lake Superior the trout begin spawning about September 28th and finish by October 10th, and, therefore, the spawn of all ripe fish taken previous to November is a total loss. The method pursued in some of the neighboring States is, during the gravid period, to place men upon the fishing tugs to take the eggs of the female fish and impregnate them with the milt of the male. The eggs are then carefully planted on the natural spawning beds, as the fishermen return their nets to the water. The results have proved most satisfactory. In fact, the Legislature of Wisconsin has enacted that the fishermen "shall," during certain specified periods — the spawning period—"take the eggs from the female trout while alive, and the milt from the male trout while alive, and after mixing them together in a pail or pan, immediately cast them into the water from whence such fish were taken," and very severe penalties are provided for the violation of this clause. The fishermen might well, in their own interests, readily adopt this means of assisting in maintaining the fish supply; but the expense to the Department of placing an experienced man on each tug for a fortnight or so would not be great, and it is believed the experiment should be tried."

A special summer meeting of the American Forestry Association will be held at Lansing, Michigan, on the 27th and 28th of August, followed by an excursion from Lansing to Mackinac from the 28th of August to the 1st of September. The Forestry Preserve will be visited, and in connection with it the problem of the Jack Pine plains of Michigan, the fire problem, and the shifting sand question will be discussed. The American Forestry Association have extended a cordial invitation to the members of the Canadian Association to attend this meeting. If any of the members of the Canadian Association find that it will be possible for them to attend, they should advise the Secretary of the Association at Ottawa in order that the American Association may be notified. Further particulars may be obtained on application to the Secretary.

At the last session of the Legislature of British Columbia the change suggested by the Canadian Forestry Association in the penalty clause of the Bush Fire Act was adopted. The clause now reads as follows:—"Whosoever neglects or refuses to comply with the requirements of this Act, in any manner whatsoever,

shall be liable, upon summary conviction before a Justice of the Peace, to a penalty not exceeding two hundred dollars and not less than fifty dollars, and in default of payment thereof, to imprisonment for a term not exceeding six months; and in addition to such penalty shall be liable to civil action for damages at the suit of any person whose property has been injured or destroyed by any such fire; and any railway company permitting a locomotive engine to run in violation to the provisions of section 7 of this Act shall be liable to a penalty of two hundred dollars for each offence, to be recovered with costs before any court of completed jurisdiction, and shall also be liable to civil action for any damages that may have resulted from negligence in this regard.

Canadian sportsmen who contemplate visiting Newfoundland this autumn for deer stalking will do well to note that the law has been considerably amended. The former graduated license, valid from four to eight weeks, permitted the killing of three to seven deer, and costing from $40 to $80, is abolished, and a new rule is enacted. It provides a uniform license, at a fee of $100, good for two months, and permitting the shooting of three caribou—all stags. This new regulation will, it is believed, prevent the shocking butchery of the deer which has been carried on during late years. A commission was appointed to inquire into the details of the newspaper reports of the extent of this slaughter, and the report of the commissioners showed a most shocking disregard of all the regular hunting methods which prevail in other countries. The practice was to shoot the deer by scores and hundreds at the crossing places near the railway which they traversed in their annual southward migration for the winter. The heads and antlers were taken, and the carcasses in most instances left to rot. The result was a serious depletion of the herds, and the danger of their speedy extermination unless restrictive enactments were speedily passed. The new measure has been very favorably received by American sportsmen of the best class.

According to the Quebec Chronicle of May 30, a sturgeon weighing three hundred pounds was brought to the Quebec market on the previous day by the steamer Champion.

A Calgary despatch says: A rocky mountain goat has been added to the native wild animals in the Banff National Park. Mark Douglas, the superintendent, offered the sum of $50 for a kid, and a party of Stony Indians soon succeeded in capturing one near Kanaskas. The little fellow is quite tame, and is being fostered and mothered by one of the Angora goats. There is only one other animal of the species in captivity, and it is in the zoological gardens of Philadelphia.

We are in receipt of the following interesting letter from a well known sportsman :

Ottawa, June 11th, 1902.

EDITOR ROD AND GUN :

I read with much interest this morning Mr. Greaves' article in ROD AND GUN IN CANADA. I think it the most common-sense article in a sporting journal I have read for a long time, and coincides exactly with my ideas as regards rods and tackle, and especially flies.

His ideas on the split bamboo and lance-wood, I believe to be absolutely correct. I have had 25 years' experience with almost every kind of rod that is made, and I believe the split bamboo to be (under almost every circumstance) far and away better than any other rod that is made. I have had in my possession a Leonard rod split bamboo, which I have used almost continually for about 12 years. It weighs 6½ ozs. and is as good as the day I got it. I have used it in Maine, in the Lake St. John country, and in the Nepigon, and, needless to say, all about here. I have probably half a dozen other Leonard rods, and what applies to that one applies to them all.

I find that there are too many fishermen who give little attention to their tackle. They think any rod is good enough, and if they happen to have a good rod, you will find a cheap reel or poor line for the rest of it. We find also another class of fisherman who thinks that any kind of fly will do, so long as it is feathers on a hook. I find that the best is never any too good, and I buy the best reels and the best lines that I can find, also the best leaders. I find a good deal of trouble in getting proper leaders, and have to send away for them. I have not become skillful in the art of fly tying, so I send away for all my flies, except some small ones that I use around here for brook trout fishing.

Your correspondent's selection of flies is also particularly good. I expect I have up in the thousands of flies, but if I were going to do it again, I think I could pick out six flies which would be sufficient for any water or any lake I have ever fished in.

The only flies that he mentions that I know little about, are Governor, Zulu, and the Split Ibis. I would add one fly to his list, which I think is one of the best killing flies that I have ever tied, for almost all kinds of fishing, except bass, and that is the Jock Scott, and also the Dusty Miller. I could add many to the list, but I simply mention the ones that proved so taking in Lake Edward.

I found Parmachene Belle, Jock Scott, Dusty Miller, Queen of the Water, and Dark Montreal, the best killing flies in almost any water, and especially in the Nepigon. I think I got two trout on the Jock Scott, to one on any other fly. He also leaves out Brown Hackle, which I think one of the best.

I am glad to see a man write an article such as Mr. Greaves has written, who apparently knows something about it, for three-quarters of the articles written in the sporting papers are written by men who are writing for so much a line and who are not posted in the least.

I remain, yours very truly,
CHARLES E. TURNER,
U.S. Consul-General.

The forest fire which occurred near Whitney in the month of May burned over an area of some twenty-five square miles. The timber destroyed was not valuable but the very valuable limit owned by Mr. J. R. Booth, on the Madawaska, from which he obtains the timber for winter cutting in the mill at Ottawa, was seriously threatened. It was only by the most strenuous exertions on the part of the fire rangers and the employees of the Parry Sound Railway that the town of Madawaska was saved from destruction. Back firing with a favourable wind was used with good effect in addition to other means, and the fire was finally extinguished by rain. The season up to that time had been very dry and the fire was apparently started in a number of places, but by whom or by what means it has not up to the present been possible to ascertain.

The J. Stevens Arms and Tool Co., Chicopee Falls, Mass., write :—Many of your readers will be interested to learn of the change in location of our New York Office from 318 Broadway to 80 Chambers Street. We had but limited room at our former office and have for some time been looking for a more desirable location in the wholesale sporting dealers' district that would give us additional floor space as well as storage room. At 80 Chambers Street we will have more than five times the floor space than we formerly had. Our increased line and our increased business made this change necessary.

The annual bench show in connection with Toronto's Industrial Exposition takes place on September 8, 9, 10 and 11. The judging will be in the hands of competent experts, among whom is Mr. Geo. Raper, of England. We have not as yet received a copy of the premium list but we understand the classification is very liberal with good cash prizes and a goodly array of specials. Mr. Fred Jacobi is secretary.

The Ottawa Kennel Club will hold a bench show (their second venture this year) in connection with the Canada Central Fair, on August 27-29, Mr. C. H. Mason, New York, will judge all breeds. Mr. A. Percy Mutchmor is secretary, of whom premium lists and other information may be obtained. From the personnel of the committee, and the energetic and business-like manner in which they conducted the spring show, the same degree of success that characterized their initial effort may well be looked for in this. We trust the fanciers in Montreal district will support the enterprise to the fullest extent, and in doing so will show that they admire the pluck and sportsman-like conduct of their Ottawa brethren. Good cash prizes and many valuable specials are offered. The show will be held under C. K. C. rules.

Fishers of bass are complaining to the Ontario Fishery Director, Mr. S. T. Bastedo, that the season opens too early. They hold that on the 18th of June, the date of opening, the fish they catch have not yet spawned. Mr. Bastedo has stated that the North American Game and Fish Protective Association investigated this very subject at its recent meeting and recommended that the close season for bass be extended to July 1st. This view of the case has been laid before the Dominion Government, and it is understood that the fish will be protected until the first of July in future years.

Some people lose a lot of fun just through not knowing things. They hang around districts long ago shot and fished out, when a few hours travel would carry them to where their perseverance would meet with an adequate reward. Others, again, take long journeys when a comparatively short one would better meet the exigencies of the case. As an instance in point: A few weeks ago a party of sportsmen left Los Angeles, California, for Minnesota, whither they were bound on a fishing expedition. These unfortunate persons travelled by way of Seattle and the main line of the Canadian Pacific Railway through to their destination, and by so doing left behind, without exception, the best fishing region in the world. To attempt to compare the fishing to be found in Minnesota to the fishing to be enjoyed in British Columbia would be a waste of time. In British Columbia, you have the rainbow trout, the black spotted trout, the great lake trout, the steelhead, and down at the mouths of the rivers the cohoe and quinnat salmon, and alongside this list the fish found in the shallow lakes of Minnesota make but a poor showing.

Why is it that sportsmen, who, as a rule, are a most intelligent class, fail to learn where they can get the greatest amount of enjoyment at the least trouble and at a minimum of expense? We understand that these Los Angeles fishermen, who belonged to a club known as the "Mississippians," seem to have wandered about the west without any definite aim in the first instance, and by an unfortunate chance ran across a genial idiot in Victoria, who told them that British Columbia trout did not bite, and, then without testing the truth of this weird statement, these gentlemen travelled further and without doubt fared worse.

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August, 1902

Communications on all topics pertaining to fishing, shooting, canoeing, the kennel and amateur photography, will be welcomed and published, if suitable. All communications must be accompanied by the name of the writer, not necessarily for publication, however.

The Official Organ of the Canadian Forestry Association.

ROD AND GUN IN CANADA does not assume any responsibility for, or necessarily endorse, any views expressed by contributors to its columns. All communications should be addressed to:

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Canadian Forestry Association

THE objects of the **CANADIAN FORESTRY ASSOCIATION** are :

The preservation of the forests for their influence on climate, fertility and water supply ; the exploration of the public domain and the reservation for timber production of lands unsuited for agriculture ; the promotion of judicious methods in dealing with forests and woodlands ; re-afforestation where advisable ; tree planting on the plains and on streets and highways ; the collection and dissemination of information bearing on the forestry problem in general.

Rod and Gun is the official organ of the Association, which supplies the articles relating to Forestry published therein.

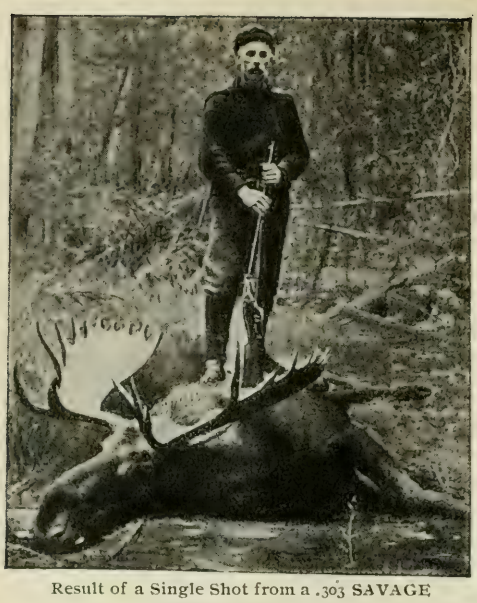
This Association is engaged in a work of national importance in which every citizen of the Dominion has a direct interest. If you are not a member of the Association your membership is earnestly solicited.

The annual fee is $1.00, and the Life Membership fee $10.00.

Applications for membership should be addressed to the Treasurer,

R. H. CAMPBELL,

Ottawa, Ont. Department of the Interior.



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CANADIAN BIG GAME

THE time for the turning of the leaf will soon have come: the velvet on the antler is pealing in long strips, leaving a clean horn the color of buckskin. Then the law will permit the shooting of the moose, caribou and deer—and wouldn't you care for a head or two yourself?

Well, why not try Quebec, Ontario, Manitoba, or some other of the sisterhood of the Canadian Provinces? By such a choice you would probably be successful beyond your expectations, as many others have been. Only the other day a well-known physician of Winchester, Ky., wrote: "I met you last summer at Hotel Bellevue, Timiskaming, and you kindly located a camping party for me on Ostaboining where they had fine sport, getting several moose, deer and fine fishing. I wish to get some information regarding, etc."

Equally trustworthy information is **AT YOUR DISPOSAL.** Ontario has thrown open her jealously guarded big game preserves, the shooting of moose, caribou and deer being now permitted from October 15th to November 15th north of the main line of the Canadian Pacific Railway, from Mattawa to Port Arthur, a region enormous in extent and carrying a heavy stock of game.

The great province of Quebec yet holds its own as the home of vast quantities of deer, and the giant bull moose bathes and feeds in the great Lake Kipawa as of yore. Last Autumn a head obtained in this region by a Montreal sportsman spanned 62 inches. The Gatineau, an important tributary of the Ottawa, flows through one of the best deer ranges of the continent, while the Lièvre, Rouge and Nord drain similar and almost equally well-stocked regions.

Further east the St. Maurice, a stream 400 miles from source to mouth, traverses a land of rock and barren which the moose, the caribou and the bear find very much to their tastes.

Manitoba is as noted for its moose as for its duck and chicken, and those who can spare the time may ensure a successful hunt by visiting the Prairie Province. Beyond lie the Territories and British Columbia, with their hundreds of thousands of square miles of plain, forest and mountain, offering unsurpassed hunting for moose, elk, blacktail, sheep, goat and grizzly.

For further information write to any officer or agent of the

Canadian Pacific Railway

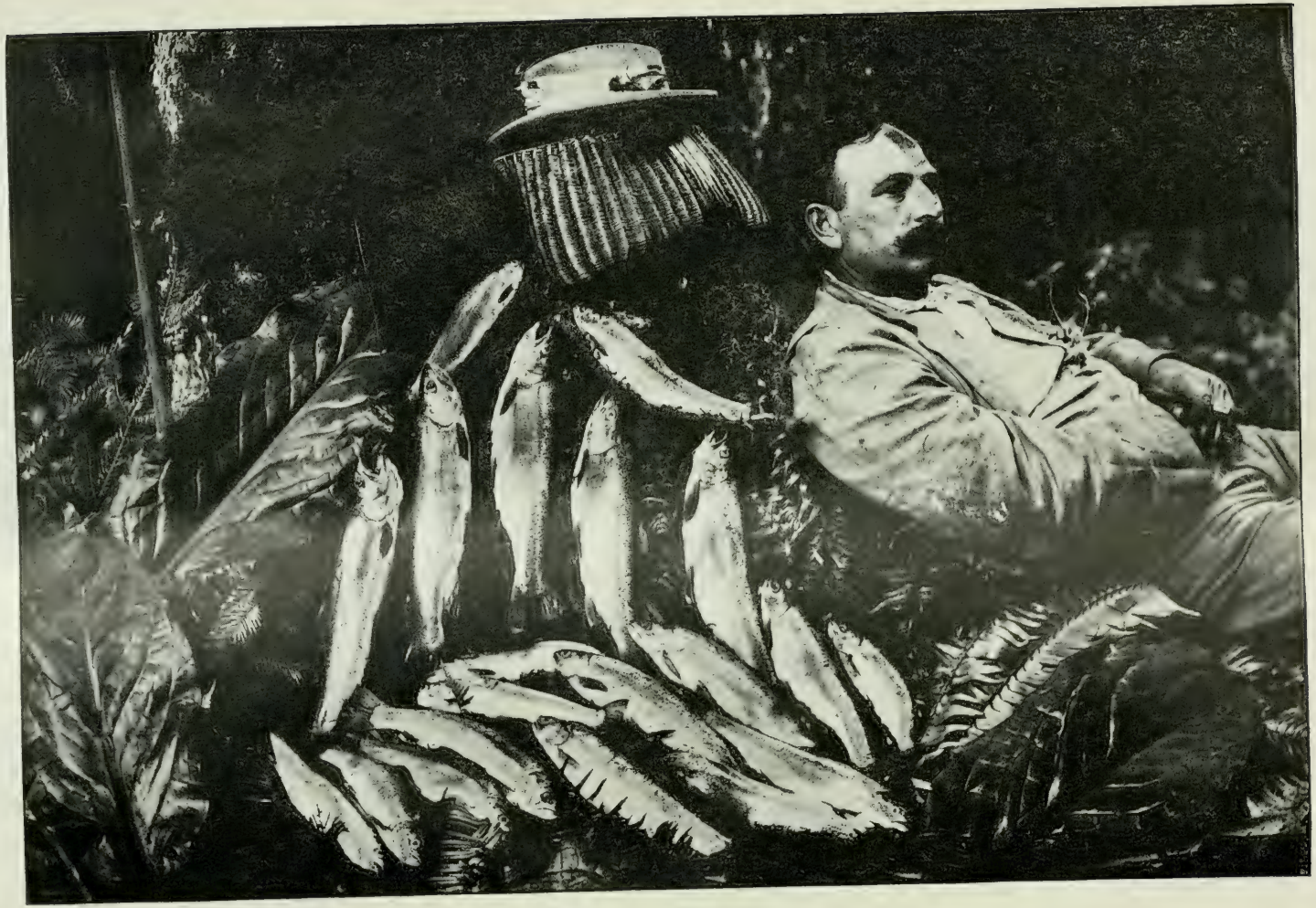
Or to the GENERAL PASSENGER DEPARTMENT, MONTREAL, QUE.

THE HERALD PRESS, MONTREAL

ROD AND GUN IN CANADA

Laurentian Trout

A MAGAZINE OF CANADIAN SPORT AND EXPLORATION



AT PEACE WITH THE WORLD.

A morning's catch on a British Columbia river.

ROD AND GUN IN CANADA

VOL. IV. MONTREAL, SEPTEMBER, 1902 No. 4

Wilson's Snipe.

BY CHAS. A. BRAMBLE.

Few Canadian sportsmen will fail to agree with me when I say that the woodcock and the snipe are our finest birds. I was going to write game birds, but according to the canons of sport, neither the one nor the other comes into that category, yet, I will venture to assert that no game bird that flies can give truer or more exciting sport than the woodcock darting amid the frost-touched foliage of the alder, nor than the zig-zagging snipe, as with his shrill "scaaip, scaaip" he springs from the marsh and wings his rapid flight against the breeze.

Of the woodcock I have already written something for ROD AND GUN IN CANADA, so I will now pay my tribute to the snipe. I am almost afraid that if these splendid little birds continue to diminish in number as they have diminished during the last twenty years, somebody will have to write the obituary of the species one of these days, but they will last our time, though we may not find it so easy to pick up ten couple of birds in a morning as we once did.

Of course, naturalists have ranked the American snipe, *Gallinago delicata*, as a separate species, and equally, of course, they were right in so doing, because it is undeniable that the American snipe has two feathers more or two feathers less (I never could remember which, and I do not wish to consult a text book, preferring an original, if imperfect, description to one cribbed from another writer) in his tail than the European bird. Nevertheless, when our snipe springs from a tussack and goes off at speed, he resembles the bird of the old world so closely that even the keenest eye that ever glanced along the rib of a twelve bore, could not tell the difference. True, the European bird is harder to hit, but that is because it is shot during the winter months when it is wilder (and especially wild, during a touch of frost) than in the autumn, while our birds reach us in September, and are off again when the first heavy northeaster strikes us toward the fag end of October, It is my impression that in the Southern States, during a cold snap in January, the American snipe must fly fully as strongly as did the birds I used to shoot in the north of England.

The common Indian snipe is the same as that of Europe—though there are two other species shot in the east, namely, the pintail and the painted snipe, which are only very occasionally bagged in Europe. But the common snipe of the British Isles changes his nature so completely under the vertical rays of a tropical sun, that one hardly realizes the slow, owl-like bird which flops up from the clump of rice in the wet paddy-field may be the same bird one missed the previous year when shooting in Sussex.

I have touched upon the foregoing because one so often hears it said that the American snipe is hardly so game a bird as his European cousin, whereas the truth is, that each is influenced by the weather to an enormous extent, and in identical climates it will be found to be

six of the one and half a dozen of the other.

Spring shooting is an abomination, and I believe that most sportsmen would be willing to forego it, if only the other fellows could be made to stop too, yet it must be conceded that, in the west, the big bags of snipe are best picked up in the month of April. A few springs ago I happened to be on the prairie when the big flight of these birds came up from the Gulf states, and they were so numerous that a dog was merely a nuisance; one had only to walk, down wind, with the gun at the ready, along the bank of some young feeder of the mighty Saskatchewan. The birds were lying on the short, brown grass, and as they rose presented easy marks, so that it was quite possible to make an unusually high average of kills, much higher, in fact, than I have been able to do anywhere else except in the tropics.

But, after all, there was more slaughter but infinitely less sport than in that other shooting which I had years ago on the marshes of the Saint John. Well do I remember driving ten miles one fine September morning to try a small rushy island, which occasionally held birds. I had often picked up a few couple either on the island or the adjacent marshes, but had never done anything very wonderful. This morning, however, I was in luck, for no sooner had I stepped from the canoe than my spaniel put up a snipe, and on leaving the island I had sixteen couple, and four couple more were picked up on the main land. This was enough, in all conscience, yet I am under the impression that had I been bloodthirsty, I could, perhaps, on that occasion have rivalled the record bags made in Louisiana and in the Malay Peninsula.

Snipe shooting means snap shooting, and there is no bird which demands greater skill, although I almost think that the snipe shooter is born and not made, because I know in my own case I could always do pretty well at this kind of shooting while I am not nearly so good at deliberate firing, such, for instance, as duck shooting at flight time. I used to go out a good deal with an old Micmac, who looked on in astonishment, not unmingled with contempt, at the way I used to cut down the snipe, but when the time came for the evening flight of duck he could kill three birds to my two. His gun was a double ten bore muzzle loader, and the whole performance on his part was a very deliberate one; down would go the powder, then two wads, then the shot, another couple of wads, after that came the caps—and this performance was not hurried in the least because a few miserable ducks happened to have taken a mean advantage of the old man, by flying over when he could not attend to them. Not a bit of it, he would stand with his legs far apart, his gun held as in a vise, those far-seeing, old eyes of his seeming to pierce the heavens as he watched intently for an oncoming bird. Perhaps, a single black duck, perhaps a bunch, would appear, flying as if late for an engagement, and anxious to make up for lost time. The long, rusty barrels would swing slowly upward, and if the coveted bird was high up you may be sure they were held well ahead of it; the trigger was pressed, and more often than not that unfortunate duck would seem to lose all ambition and fall with a thud in the ooze.

For my own snipe shooting I should pick a hammerless twelve bore, with a very straight, long stock; thirty-inch, cylinder barrels, and of a weight, certainly, under seven pounds. A good many men use barrels shorter by two inches, but I have always imagined that I could do better with a barrel of the regulation length.

Canada vs. Norway.

BY T. L. CARLETON.

Englishmen seeking their sport abroad once went to Norway. The country had many advantages. The climate was healthy, the scenery undeniable, the sport to be had rough, but free and exciting. In the 70's and in the 80's Norway was a very charming country, but within the last ten years many causes have combined to produce a decadence, and western Scandinavia is no longer the sporting El Dorado it was.

It is but natural, therefore, that those sportsmen who wish to go farther afield than the confines of the British Isles, should have cast their eyes across the western ocean, where, in rather more southerly latitudes, sport resembling closely that of the Norway they once knew is awaiting them. Indeed, I think I may even venture to say that sport on a grander scale than was ever possible in Scandinavia is to be had to-day in the Dominion of Canada. The one sole drawback is the longer sea voyage, but to the man who has the time to go deer stalking, and grouse shooting, and salmon fishing, this drawback is more apparent than real. Once landed in the new world, there is a greater choice of game, and an infinitely better climate during the shooting season than in Norway; moreover, a man may speak his mother tongue and be understood.

The Canadian Dominion is so enormous in area, has so diversified a climate, and such a wealth of big game and fish, that it, certainly, is surprising more Englishmen do not visit it in search of sport. A great many, no doubt, are shy of the cold. They think that they would have to use skates and snowshoes most of the time; as a matter of fact the shooting and fishing in Canada really ends before the beginning of the intensely cold weather. The only animal that has sufficiently potent attractions to lure men into the bush when the thermometer is low is the caribou—all the other Canadian big game should be left alone after the snow has reached a depth giving the hunter an undue advantage. From the first day of September until the first day of November, even in the colder parts of Canada, and for fully a month later in British Columbia and Southern Ontario, the climate is delightful, and sport is carried on under pretty nearly ideal conditions. In Canada there is no malaria and no sunstroke, and during the long autumn, no flies and no frostbites.

These are some of the reasons why Englishmen should visit the Dominion; but there are others. Two additional charms, to my mind, are the freedom, and the slight cost attending big game hunting. The owner of a Scotch deer forest will not probably appreciate Canadian shooting as much as the sportsman whose income forbids anything more expensive than a gun in a small partridge shoot. Lack of means is here no bar to sport; it costs no more to hunt big game in Canada than to *live* in a London lodging.

It would be quite possible for a man, were he willing to take the advice of older hands, to have two months of big game hunting in Canada at a total cost of £100. He could, for that sum, make a trip to any of the provinces of the Dominion (excepting as hereafter specified) and might reasonably hope to make some such bags as the following: in Quebec, a bull moose, and a couple of Virginia deer, together with enough duck and ruffed grouse to almost feed himself and his man; in Manitoba the law permits the shooting of two of each of the various species of big game found there, and a good shot, willing to work, ought to be able to bag up to the limit, and, in addition, he will not find the slightest difficulty in making good bags of mallard and sharptail grouse when desirous of a change from rifle to shotgun; in British Columbia, by starting from Vernon, or Ashcroft, or other equally good headquarters, a six-weeks expedition should yield sheep, goat, and mule deer, and possibly a grizzly. The game laws of British Columbia are, if anything, too liberal, as they permit a bag of five cari-

bou, ten deer, two bull elk, two bull wapiti, five mountain goat, and three bighorn rams. It is more than likely, however, that a man taking the British Columbia trip would spend £150 instead of the £100 which should suffice in the East.

Of course it is quite impossible to make a really successful hunt in more than a single province in any one year; and even were such a thing possible, the expense would be proportionately greater, owing to railway fares, additional game licenses, and other necessary disbursements.

The secret of sport in Canada, as in most other lands, is a wise choice of ground in the first instance, and a dogged tenacity of purpose in the second—the man who is daunted by trifles, and too easily swayed by the advice of every chance acquaintance, is not likely to be successful.

The legal season for big game hunting begins in most of the counties of Quebec on September 1st; in Ontario on Oct. 16; in New Brunswick and Nova Scotia on September 15th; in Manitoba on September 16th, and in British Columbia on September 1st.

Leaving home about the middle of August, the sportsman should proceed at once to his chosen province, and getting together a moderate camp equipment and securing a hunter, go to his ground as quickly as possible. He may then enjoy two months sport at a daily cost, including all expenses, of ten shillings a day, provided he kill a fair amount of game.

The shooting season is the pleasantest time of the year in Canada. A bright September day in the Laurentians, when the slight frost of the previous night has turned the birches to gold and each maple bush to a crimson flame, is something to be remembered, and the magnificent mountain ranges of British Columbia, with their crests of snow, and flanks clothed in pines, are also at their best during those mellow fall days when the cobwebs float in the air, and the stags are wandering restlessly in search of the hinds. Nature has given the North American continent the most perfect autumn. The weather usually remains fine until the winter is close at hand—then it breaks suddenly; and this should be a warning to the sportsman to strike his camp and put his rifle in its case.

The big game of the Dominion consists of moose—an animal identical with the elk of Norway; caribou (reindeer) of four species; bear, including grizzly, black, and probably many others as yet unnamed by science; four species of deer; antelope, bighorn, mountain goat, musk oxen and wolves. On Vancouver Island and the southern parts of British Columbia there are cougars, usually known as mountain lions. The moose, caribou and black bear occupy the largest areas of country, inhabiting the vast forests which stretch across the northern part of the continent from Nova Scotia to the Yukon. In the west the blacktail is very widely distributed, that is to say, the animal the frontiersman calls the blacktail, but which is really the mule deer, the true blacktail being a smaller species, only found in the dense forest region bordering the Pacific coast.

Nearly all these animals are at their best from September 1st to Decemcer 1st; though caribou may be hunted successfully until January, and bear shooting is less of an uncertainty in May than at any other time, and, moreover, the pelt is then in its finest condition.

It is a great mistake to take a big outfit to Canada; it being a temperate climate a great many articles that are necessary for a man's comfort and well-being in the tropics would be merely encumbrances. Everything that is absolutely necessary, may be bought at reasonable prices in Canada. A man going out for a couple of month's sport in the autumn requires little save an old shooting suit or two, some warm underclothing, and a good, plain 12-bore. If he should happen to be the owner of a double express .450 or .500, or better still a double .303, he should take it with him, but having to buy a rifle, I should advise a Winchester, which is cheap and serviceable. There is, I know, somewhat of a prejudice against the Winchester in the minds of those who have become accustomed to the balance of a double express by a good maker, but there are Winchesters and Winchesters, and by ordering an extra light weight with express sights, half-magazine, shotgun butt and sling, one

gets a rifle which handles nicely, shoots well, and can be bought in the United States for £5 and in Canada for £6. Canadian shooting is rough work, and one can scarcely trust an Indian to clean the battery, as he will certainly scamp the work, thinking a rifle shoots better when it is rusty, his own being red from breech to muzzle. During a wet spell in camp, it is an unmitigated nuisance to have to watch over the well-being of a valuable rifle, whereas, should your weapon be a Winchester, a few spots of rust will not interfere with its sale to your guide, or some settler, at the price it cost you when the hunt is over.

In Canada, groceries, blankets, moccasins, tinware, tents and canoes are cheap, and it is poor economy to bring any of these things from England. The sportsman would do well, however, to bring a good compass and powerful field-glass, as such things are cheaper and of better quality in England.

Canada has even more to offer the angler than the shooting man,—but this article has run to too great length already.

A Kamloops correspondent writes as follows :

Fishing is in full swing at Savonas, B.C., and some splendid catches are reported. Salmon flies are numerous, and trout can be seen rising in all directions. A new lake has been discovered within three or four hours' drive of Savonas, which is called Allan's Lake, and is absolutely teeming with fish, averaging three or four pounds. It is a different species of trout to those usually caught in this district, and is more like a salmon in shape. They are a very game fish, and make splendid eating. Mr. Adam Ferguson has put a canoe on the lake, and rigs or saddle horses can be obtained at his place. A small creek, which is called Crooked Creek, connects the new lake with Mamette Lake.

According to a letter in the Ashcroft "Journal" :

The Thompson River is an ideal one for trout, bright and clear with the exception of about a week at high water in the middle of June and early in July. After high water there are no over hanging branches near enough to catch your line as you make a cast, the river is always clear from snags, the bane of some trout streams. The mosquitoes are very scarce, and the trout enormous and gamey. Fairly expert anglers can fill their baskets in an afternoon with fish anywhere from a quarter of a pound to five pounds. The average trout weighs two pounds. The water is swift and the fish muscular. After a big run of salmon the trout are in prime condition, having fed well in the salmon spawn. The air is dry and bracing, and it is a rare thing to have a day's sport spoiled by rain. Should the angler desire larger fish he can go up to the lakes at the Marble Canyon where they are taken over twenty pounds in weight. These, however, will not rise to a fly ; occasionally a steelhead will take the fly in the Thompson but it is a rare occasion.

The foregoing is, from our own experience, perfectly true.

The North American Field Trial Club's annual meeting will be held at Ruthven, Ont., where the Club have beautiful grounds and there are lots of game. A Derby and All-age stakes will be given, but the purses are not yet announced. The C.K.C. donates a handsome silver cup for the All-age and a silver medal to the Derby winner.

We notice that some of our American contemporaries are inclined to fix the name of "Indian Devil" upon the Canadian lynx. Our Canadian "Indian Devil" is a very much more ferocious animal—the wolverine, to wit. The lynx is a cowardly idiot which may be trapped by any Indian boy or squaw, with a string noose, but the wolverine is quite a different proposition, and it will follow a line of traps, springing them for the sake of the bait, or animals caught therein, without harm to itself. Happily, it is a sub-arctic animal, that is only obtained north of the Height of Land, and especially on the edge of the great barrens stretching from the forest to the shores of the Arctic ocean.

Game Legislation.

BY J. A. M'DOUGALL.

All Canadian sportsmen must admire the sound common sense, as well as the enthusiasm, now displayed by the Game Commissioners of most of our provinces. The old order has passed away and given place to the new, very much to the advantage of legitimate sport. Until quite recently our game laws were a farce, often ridiculous, and invariably poorly enforced, but in three provinces at least, namely, New Brunswick, Ontario and Manitoba, an earnest effort has been made of late to enforce the laws, and good results may already be seen.

There can be no doubt that duck were more abundant in 1900 in Ontario than had been the case for a dozen years, and perhaps they would have been as abundant in 1901 had the season not been so dry; of course when all the sloughs and marshes are dry one cannot expect wildfowl to tarry on their way south, as they do when the ponds and lakes are full to overflowing.

Several very important changes have been made in the Ontario game laws this year, mostly in line with the recommendations of the Ontario Game Commissioners in their report for 1901, and most of the changes, if not all of them, are for the better. A bounty of fifteen dollars for every wolf killed and produced should result in the destruction of a great number of these horrible beasts. Unless one has really seen the amount of damage they can do it is quite impossible to realize how thoroughly they can clear a well stocked range of its deer. A friend of mine, a woodsman, who has done a large amount of timber cruising, tells me that whenever he leaves the settlements behind he very soon misses the tracks of the deer, finding, instead, nothing but evidences of the ravages committed by the wolves. He has convinced himself that a great many moose calves are destroyed, although the mature animals are tolerably safe, excepting from very large packs in the depth of winter, when yarded.

It seems a pity that hounding is legal, because, notwithstanding the number of persons who advocate this form of sport, most old hunters know that hounds do a deal of mischief. But though opposed to hounding myself, I am not one of those who think that still hunting will not equally clean out the deer, for it will, though not so rapidly, nor with the same certainty. In the western states of the Union, where much of the land is open and still hunting easy, game has been exterminated over large areas by men who never owned a single hound, but who used their Winchesters with deadly skill. Yet this question has but an academic interest, because I do not think hounding will ever be prohibited in Ontario, for, after all, the game belongs to the people, and the people seem, as a body, in favor of hounding. That part of the county of Bruce, known as the Indian Peninsula, is alone exempt from the curse, as "sub-section 4 of section 8, chapter 49, of 63 Victoria," specially prohibits capturing, wounding or killing deer while in, or immediately after leaving, any river, lake or other water. The recommendation made by the Commissioners for the prohibition of hounding north of the main line of the Canadian Pacific Railway, was not adopted, but up to now little hounding has been done in that sparsely settled region.

The Commissioners seem to think that if woodduck and woodcock shooting were prohibited in the states bordering on Canada, and if the Canadian provinces also extended their protection to these birds, that much good would result, but information in my possession makes me think that the real damage is done much farther south. I am convinced that were they to make further enquiries the Commissioners would in the end be convinced that the woodduck and the woodcock are killed off in the extreme Southern States of the Union, where they winter. A few years ago they were

comparatively safe after passing Mason and Dixon's line, but now the niggers and mean whites have found that there is a market for this fowl in the big cities of the north, and they hunt them diligently from November until March. No doubt the birds want all the protection they can get in Canada, in the States immediately south of the International boundary, and throughout the path of their migrations; but still more do they require protection in the Southern States, and as this protection is not likely to be granted them the destruction of these migratory birds is likely to continue until they become as scarce as the beautiful passenger pigeon. We Canadians did not kill the passenger pigeons; we made no perceptible inroads upon those great flocks, whose weight broke the boughs off the forest trees, yet, within a generation or two they disappeared, and now the boy growing up thinks the old man is telling a "whopper" when he relates the number of pigeons he could get at a shot when *he* was a boy. I must confess that I am a pessimist on the subject of protecting migratory birds. South of us lies the great Republic, with its mills, its factories and its teeming millions, and when we raise game birds whose foolish instincts lead them to wander southward in the fall we should not expect them to return in the spring, except in sadly diminished numbers.

The Indians of Nootka Sound, Vancouver Island, seem to have been murdering deer in a wholesale manner. According to the Victoria "Daily Times," 100 carcasses were recently counted by a Mr. Dawley on the beach at Nootka, after they had been stripped of their pelts by the Indians. Mr. Dawley says:

"The deer are thick at Nootka, and if the Indians were stopped from their wholesale slaughter, would last for many years. The mode adopted in securing the deer is one which is considered unlawful in a more settled district. The headlights on the coast attract the deer, and it is when they are thus congregated that the Indians do their shooting. Complaints have been made to the authorities with no effect."

Captain Andrew Halkett, of the Fisheries Department, returned to Ottawa recently after depositing a number of parent black bass in Lake Massawippi and other lakes in the Eastern Townships. Lake Massawippi has never had black bass in it, but the department is sanguine that the experiment will prove a success.

A very praiseworthy movement is on foot to restock the Adirondacks with moose, but our game commissioners do not believe in robbing Peter to pay Paul, and, consequently, a young moose consigned to D. T. Benson, Old Forge, N. Y., was seized at Ottawa. The animal was caught near Fort Francis, New Ontario. Our law forbids, and very rightly, the export of these animals, hence the seizure.

The annual meeting of the Lake Massawippi Fish and Game Protection Club was held on July 26th at the Club House, North Hatley. Mr. H. R. Fraser presided; there was a good attendance of members. The president reviewed the past year. The fishing was better now than for many years past. It was decided to put guardians on the lake during the autumn and spring. It was also decided to take further steps to stock the lake. During the past year 100,000 salmon and a large number of bass were put in the lake. It is hoped during the present year to put in another large number of black bass. The election of officers resulted as follows: President, H. R. Fraser; Vice-President, J. H. Cochrane; Secretary-Treasurer, E. B. Cochrane; Committee, F. J. Clarke, H. J. Bassett, David Jackson, R. E. McKay, Roy Moulton, Herbert Pope, Gilbert Hitchcock, Geo. W. Kezar, G. A. LeBaron, Hon. D. G. Wright, George Powell, McG. Craighead.

Some New Cartridges.

Thirty years ago Purdy, the great London gunmaker, brought out a deer-stalking rifle which he dubbed an "Express," on account of the great velocity imparted to its bullet. He obtained quite remarkable results by using a short bullet of 270 grains in a barrel of .450 caliber, a charge of 110 grains to 125 grains of No. 6 Curtis & Harvey powder, and a slow twist. The new rifles proved an improvement upon those previously in use, but they were by no means ideal. To secure a velocity of 1800 ft. sec., a very moderate degree of accuracy had to suffice; recoil reached disagreeable proportions in any arm under 9 pounds weight; the charges fouled the barrel quickly — and the swell gunmakers, who alone manufactured these rifles, charged from £15 to £25 for single and £45 to £80 for double barrels.

Yet numbers were sold, and wherever wealthy British sportsmen went—and where did they not go?—the roar of the London Express disturbed the silence of the hillside, forest and plain. They were good rifles, and up to recently the best obtainable, but now the Winchester Repeating Arms Co., of New Haven, Conn., U.S.A., as a result of carefully conducted experiments, is able to offer for sale high velocity, low pressure cartridges, adapted to the 45-70, 45-90 and 50-110 calibers, loaded with smokeless powder and soft point metal patched bullets, which promise magnificent results up to 200 yards at least.

They say:

We are now able to furnish, through the regular trade channels, the above new Winchester High Velocity, large-bore, cartridges for Winchester Model 1886 .45-70, .45-90 and .50-110 caliber rifles. These cartridges, although they give high velocity and great muzzle energy, develop only slightly increased initial pressure. By their use, owners of Winchester Model 1886 rifles of the calibers mentioned can greatly increase the power of their guns. For fine shooting, a slight alteration of sights may be necessary when these cartridges are used. When ordering new rifles in which it is intended to use these cartridges, it should be so stated in the order, so that the proper sights may be fitted.

With the great increase in velocity which these cartridges have, their trajectory is proportionately flatter, and, at 200 yards, their remaining energies are practically the same as those of the small caliber high-power cartridges. It is a desirable feature of these cartridges that they can be used by persons who fear to use the high-power small caliber cartridges on account of their great range. These points considered, and the fact that the results are obtained with bullets of large cross section, make these cartridges unsurpassed for striking and killing power at the distances at which most big game is killed.

Thus the gunner is given the choice of three cartridges, any one of which will undoubtedly prove excellent against moose, elk, caribou and deer. The 45-90 should have the longest range; the 45-70 perhaps the greatest accuracy; and the 50-110 inflict the most disabling wound at close range—but the difference will not be great and the hunter may pick any of the new cartridges, confident that whatever is his choice his rifle will not fail him at the critical moment. As a matter of fact these new cartridges amount to a revolution in ballistics.

The following table shows the muzzle velocity, penetration and trajectory of these High Velocity Low Pressure Cartridges:

Cartridge	Bullet	Velocity At Muzzle	Penetration in 7-8 inch dry pine boards at 15 feet from muzzle. Soft Point Bullet	TRAJECTORY	
				100 Yards Height at 50 Yards, Inches	200 Yards Height at 100 Yards, Inches
.45-70	300 grs.	1875 ft. sec.	13	1.47	7.40
.45-90 Winchester	300 "	1980 " "	14	1.41	6.63
.50-110 Express	300 "	2225 " "	12	1.07	5.82

IN THE FAR NORTH.
Grand Rapids of the Athabasca River.

A BIG DINING ROOM.
Commissioner Laird and party taking their last meal in the open after five months' camp life.

THE GREAT LONE LAND.
A view on the northward-flowing Athabasca.

THE KING IS DEAD!
This grizzly was shot near Hope, B.C.

Chats About Driving.

BY "MEADOWBROOK."

DRIVING SINGLE.

A man who aspires to become a good whip should begin by learning to drive a single horse thoroughly well; he may then proceed to practise with a pair.

Before starting, the driver should cast a critical eye over the horse and harness, and then, taking the reins in the right hand, mount from the off side, the near rein being under the forefinger, and the off rein under the third finger.

Sit down as soon as in the cart, and transfer the reins to the left hand; the near rein being between the forefinger and thumb, and the off rein under the middle finger.

Hold the whip in the right hand by the collar. The position on the box should be an erect one, the elbows close to the sides, forearm horizontal, knuckles to the front, and wrist bent inward, so to assist the play of that joint.

The forefinger and thumb of the left hand are not brought into use except when turning a corner, then a loop should be taken in the rein with the right hand under the little finger, and it is passed under the left thumb.

Don't keep the off rein in the right hand, as then you cannot use the whip without the horse swerving to the near side. Never use the whip unnecessarily, nor job your horse in the mouth, nor flap the reins on his back, either to make him start or quicken his pace.

Never start, stop, or increase your pace suddenly, if you can help it, but if obliged to do so catch the reins with the forefinger and thumb of the right hand just before the left, and shorten as much as necessary.

Use large, leather, unstrapped gloves in ordinary weather, and woollen gloves when it rains.

It is not a difficult matter to learn the use of every strap and buckle in a harness, and this should be made an aim, so that when the tyro mounts the box for the first time, he can harness or unharness his nag, unaided if necessary, and alter anything that may seem to require alteration.

One can hardly walk a dozen yards along any city street without noting some instance of carelessness or ignorance in the fitting of harness-traces too long or too short; bearing reins cruelly tight; bits improperly fitted, or breeching that wants letting out by several holes.

With a little care and attention at the outset of his driving career, the young whip forms habits of observation which will effectually prevent his ever overlooking such details in later life. After a time the eye glances instinctively over horse and harness, and the slightest thing awry is immediately detected.

A correct position on the box is essential. The body should be erect without stiffness, the legs nearly straight, the heels together, the left arm bent at the elbow, with the forearm carried horizontally, the hand opposite the centre of the body, knuckles to the front and thumb up. The right hand holds the whip just below its collar, as the silver band above the leather is called, the point being opposite the left shoulder.

About one driver in a hundred seems to suspect that there may be such a thing as "form" in driving, and about one carriage builder in a dozen plans his vehicles so that a man can sit properly on the box seat. This, however, is but one of the many reasons why it pays to go to a good firm when ordering.

The hand should be held palm upward when the reins are taken up, and turned knuckles to the front after the fingers and thumb have been closed.

Both reins should have an even "feel" on the mouth of the horse, but he should never be held too tightly. True, with a confirmed puller this is sometimes impossible, but then a horse of that nature is unfitted for a gentleman's use. In the case of an incipient puller, made so for the time being by bad bitting and poor hands, a change of bit and a light

touch on the reins will often effect a cure.

To start, drop the left hand a little and give a slight flick with the whip. A good coachman starts and stops gently, and not with sudden and neck-dislocating jerks.

A double ring snaffle is a good bit as a rule, and many horses will go pleasantly in one, that would baulk and show temper with a tight curb.

Only a poor coachman drives with a rein in each hand, it being then impossible to pull up quickly or to use the whip effectually. With the correct rein hold it is an easy matter to stop short by pulling the reins with the right hand through the left. Practise taking up the reins quickly with either hand, as you would have to do in stopping suddenly, being careful to have the right hand with the fingers downward, and the left hand with the fingers upward.

To make a turn, place the right hand in front of the left, on the near or off rein, as the case may be, and pull it slightly. Keep the hand there until the turn is completed.

We have received catalogue No. 59, issued by Lewis Bros. & Co., of Montreal, Toronto and Ottawa. This is one of the most comprehensive catalogues of sportsmen's requisites that is published, and it is a liberal education in sporting matters, merely to glance through it. Winchester, Savage, and Stevens rifles are all figured and described therein, together with all the accessories belonging to them. Messrs. Lewis Bros. & Co. are the Canadian agents for the Smokeless Powder Company, of 28 Gresham Street, London. As many of our readers are aware, the Smokeless Powder Company manufacture Rifleite.

Mr. David Denne, a well known Montreal sportsman, has been writing some interesting reminiscences of thirty years ago in the Peterboro "Evening Review." In those early days he frequently visited Stony Lake, the Otonabee River, and Chemong Lake, then more usually called Mud Lake. All those interested in that district would do well to procure, if possible, these interesting letters by a veteran sportsman. Though they will not find the deer, the duck, and the bass so abundant as they were when Mr. Denne was a young man, they will find some of them there yet, and as the present generation will not be able to compare the sport attainable to-day with that of the long ago, it will not share the regret that Mr. Denne, almost pathetically, acknowledges feeling. One of his letters concludes with some sentences that give the key to the mood of the writer. He says :—

> The Chemong Indians came down to Stony Lake to trap and shoot muskrats. They lived principally upon them, and they literally smelt of musk at that season. There were some good hunters among them—men you could trust and who would not drink to excess. Many a good day I have had with them, and I well remember many of their kind and thoughtful actions. I do not think I should care to visit these lakes as they are present, and without those dear, kind friends, whose faces and voices often seem pretty near. I hear from Mr. G. Fitzgerald, a former game warden, that game and fish still abound, but this abundance will be for the sport of others. My hunting grounds are now further east, where game is only moderately abundant, but it is nearer home, and there is no place like home, when the shadows lengthen.

The Bay Chaleur Tourist Association is an exceedingly energetic body. It has just issued a very neat pamphlet describing the various summer resorts of northern New Brunswick. Copies may doubtless be obtained, by applying to the secretary, Mr. John Montgomery, Campbellton, N. B.

Fish Culture in Canada.

(Concluded from the August issue)

Just as the eggs were cast into the rapid stream, the male fish had his attention attracted by a rival, and darted with lightning speed to drive him off, both male fish tearing at each other with gaping jaws, armed with formidable teeth, the teeth at this time being of abnormal size. Time after time I saw female fish wasting their eggs in this way, for the eggs deposited in the gravel by the female, while her partner was engaged in a fight twenty or thirty yards away, were unfertilized and would, of course, perish or be eaten by hungry enemies, suckers, trout, etc., which hovered near in hordes.

The curious fact repeatedly noticed by observers, that male salmon outnumber the female; and the fierce fights and numberless resulting deaths, may be a device for reducing the surplus number of one sex. "To me it is the strangest puzzle," said Frank Buckland, "why the male fish always predominate over the female," and he asserted that frequently there occurred seven males where there might not be more than one female salmon. During the second year of the Restigouche Hatchery's work, the late John Mowat reported that the male fish were in excess of the female as two to one, and the late Alexander Russell, in his famous book "The Salmon," gave prominence to Shaw's not less interesting discovery, that in the young striped "parr" stage, male salmon are mature, "the male parr (alone) arrives at sexual maturity, and does and can impregnate the ova of the adult female salmon."

If, to the natural loss of enormous quantities of eggs by non-fertilization, be added the depredations of ducks, loons, herons and aquatic birds, not to speak of otters and four-footed enemies, as well as destruction by floods, by mud, gravel and ice, it is easy to see how great are the advantages offered by artificial incubation, and by caring for the eggs in properly equipped hatcheries.

Anglers, as a rule, favor fish culture, but there are exceptions, and the sportsman needs to be reminded that, whereas, the fish are liberated strong and uninjured after being artificially spawned, those taken by the angler's line shortly before the breeding season, are killed and prevented from fulfilling their task of peopling the waters with young brood. It is easy to hatch 90 per cent. of salmon eggs in a hatchery, whereas, Sir Humphrey Davy estimated that not six per cent. of the eggs deposited on the breeding grounds come to perfection, and Stoddard held that only four or five fish fit for the table were the result of 30,000 ova on the spawning beds. The take of salmon in a single net may suffice to furnish enough eggs to keep up the supply of young fish, and it is the rule at the Government nets to liberate all fish not required, and these are allowed to ascend to the upper waters. Thus at the Tadousac nets in 1889, 559 salmon were taken for the hatchery, but 310 of the largest were sufficient, and the remaining 249 were turned into the river again. This is frequently done. In most of the hatcheries reliance is placed upon the Departmental nets, managed by the hatchery officers. In these nets fish are trapped, and after being spawned are set free. In some cases parent fish are bought from local fishermen by special arrangement, but the plan has, on the whole, proved uncertain, as the fishermen asked exorbitant prices, or ignored their agreement and shipped the fish straight from their nets to the markets, leaving the hatchery officers in the lurch. Many parties have entertained an ignorant prejudice against artificial hatching of salmon, not fishermen only, but men of education and social standing. Thus the lessees of certain rivers in Gaspe, refused to allow any salmon to be taken for hatchery purposes, and anglers who have been known year after year to kill hundreds of salmon in famous pools, really spawning grounds,

have declaimed against the inhumanity of taking the spawn from the small number of parent fish, which are ample for supplying a salmon hatchery.

Frank Buckland has truly observed that "the success of salmon egg-collecting depends upon very small circumstances, and he specifies seven necessary provisions to be made by the "spawner," viz.: a water-proof suit, spawning pans of large capacity, a long, shallow basket to hold the fish under water until wanted, hose flannel in yard lengths for wrapping the struggling fish when spawning, dry towels to wipe slime off the hands, moss and trays, and lastly, nets.

In a report published in the Marine and Fisheries Blue Book, 1896, I described all the types of fishes' eggs known to scientific experts. I grouped them under seven heads, according to their special features, and I pointed out that they varied in shape, size, external structure, etc. The smooth, spherical, pea-like eggs of the salmon, trout, whitefish, and the like, are far more favorable for artificial incubation than slimy eggs, eggs clinging in bunches, eggs in gelatinous strings, eggs covered with spines, oval eggs, and other varieties.

The eggs resembling peas vary in size in different species. A quart measure is frequently used in counting eggs on account of its convenience. The measure holds 57.75 cubic inches, and has been found to be capable of containing 3,300 land-locked salmon eggs; 4,272 Atlantic salmon; 3,696 Pacific salmon; 5,525 Great Lake trout; 8,311 to 9,935 English Brown trout; 12,063 to 13,998 American brook trout; 24,363 striped bass; 28,239 shad; 36,800 lake whitefish; 73,938 maskinonge; 152,292 pike, perch or doré; 233,280 tomcod; 335,000 cod; 496,000 smelt. In diameter the eggs vary from ¼ of an inch in the Atlantic salmon, and 3-16 of an inch in the brook trout, to 1-30 of an inch in the tomcod (*Gadus tomcod, Walb*) or 1-25 of an inch in the silver hake (*Merlucius*).

When the ripe female fish is being spawned by the hatchery operator, the eggs run freely in a stream into the pan or dish, previously rinsed in clean water, the operator gently pressing the abdomen with one hand, while with the other he holds the fish firmly in the region of the anal fin, the head of the fish being secured under the armpit, if a large fish like a salmon. A male fish is then treated in the same way, the milt flowing into the spawning pan amongst the eggs, and the eggs are stirred with a feather, thus securing fertilization. After being washed, the eggs are placed either upon black Japanned tin trays, 15 in. x 10 in. x ⅞ in., perforated with small holes and holding about 2,000 salmon eggs, or they are placed in glass vases 20 in. x 6 in. in diameter. The former are more suitable for salmon and trout, the jars being best for whitefish. Zinc trays are found hurtful to eggs, the officer at the Miramichi hatchery reporting in 1874 that a large number of salmon eggs were poisoned from this cause. The eggs, being alive, require abundant oxygen, hence a continuous stream of water must pass over them day and night until they hatch out. Under natural conditions river-water, of course, pours over the eggs, but fish culturists are agreed that spring-water is preferable for hatching purposes, not only because the temperature is more equable, but is purer and more free from debris and vegetable matter. In 90 to 120 or 150 days, the young fish burst from the eggs; shad, however, take only from two to five days, and cod hatch in ten to thirty days. Most of the valuable fresh-water species, like the trout and whitefish take many months. In special cases where the hatching of sturgeon and shad has been attempted as in Chautauqua Lake, N.Y., hatching boxes with double wire screen, top and bottom, have been placed in a running stream, or if containing maskinonge eggs, have been sunk at a depth of four or five feet in the lake. The fry are transferred to large tanks for periods of a few days or a few weeks, and are distributed in large cylindrical cans, nearly two feet high and twenty inches in diameter, the narrow neck of which is devised to hold ice in hot weather, in order to keep the water cool.*

The young fish carry beneath the body a small bag of food yolk, and require no other food until it is used up

* Fry are conveyed up some salmon rivers in floating crates or perforated boxes, and 25 miles of a river can be planted in a day.

—a few days sufficing in some species, a few weeks in others. If possible, the fry should all be planted before the store of natural food is exhausted. In stocking lakes or rivers it is best to select inshore shallows not frequented by large fish, or rocky ridges and banks far from shore. The fish travel by rail or team for long distances without serious harm, if ice is used with care. Short distances are, however, best; indeed, Mr. Samuel Wilmot urged the establishment of small supplementary hatcheries, where the advanced eggs could be sent just before hatching, and the fry more safely distributed from them. "This system of carrying, or rather, trying to carry, young fry to distant points (particularly where no speedy means of travel by railway is to be found) should be discontinued (said Mr. Wilmot in 1877), because the time almost invariably spent in fruitless journeys of this kind, could be so much better and more profitably applied at nearer points, where the safety of the young salmon in the transit could be relied upon." At times a few thousands of fry have been kept until they are four or five months old; but constant care is necessary, and a large proportion as a rule, die when the fry are kept out of their natural habitat in lakes or rivers. The feeding of fry is not easy, as the quantity and kind of food require regulation, or the results may be fatal.

In 1887 eight or ten thousand young salmon were retained in a pond at the Restigouche hatchery, and were fed during the summer, "yet they did not seem to thrive well, as but few were seen in October when the pond froze over (as Mr. Alex. Mowat reported). . . . I have very little faith in the attempt to grow salmon fry with artificial foods, with a view of realizing any benefit from the proceeding." Last year Mr. Mowat again kept some salmon fry (about 10,000) in outside tanks with an ample stream of water passing through. Mr. Mowat is one of the best practical fish-culturists living, and this experiment was a success owing to special attention, the fry growing satisfactorily until they were nearly six months old. The food consisted of finely ground raw fish and liver: but quite as important a matter was the intelligent manipulation and care of a zealous officer in charge. The fish were well fed, yet not overfed, and kept perfectly clean, by the removal of dead and decayed matter, especially waste food particles. Many of this batch of fingerlings measured fully three inches in length. The growth of fishes, especially young fishes, varies extremely; thus brook trout are usually two inches long when four months old; three inches when eight or nine months old, and five inches when a year old. Lake trout are six inches long at the end of the first year, and black bass at the same age are four to six inches. Salmon, when confined in ponds, are often stunted in growth; thus 3,000 salmon fry were planted in a small lake near Louisburg, Cape Breton, in 1888. In 1889 they were three or four inches long, and in 1891 (in their third year) some were caught with the fly, but were not more than eight inches in length. A similar experiment at the Restigouche Hatchery resulted in producing young salmon, seven inches long in the third year, and ready to descend to the sea.

The Toronto "Star" is much exercised over Mr. Bastedo's recent notice asking anglers in the Muskoka district to return all bass to the water, unless wounded so badly that they could not recover. The "Star" says:—

It is to be feared that Mr. Bastedo has been studying fish more than fishermen lately. Here and there may be found a man who will pay some attention to the request, but ninety-nine out of a hundred will keep and eat the bass they catch. Tourists who may never come back, young fellows who take no thought of the morrow, will not heed the request made by the Deputy Commissioner of Fisheries, and other people will not throw bass back into the water on Friday so that these men may catch and keep them on Saturday.

Dodging a Negative.

BY HUBERT M'BEAN JOHNSTON.

When the amateur has made a fair landscape negative, it never seems to occur to him that it is possible to make any improvements upon it. Yet, the probability is that there was never yet made a landscape negative, so perfect that it would be impossible to better it by a little careful treatment. Of the legitimacy of hand work there ought to be no question. That has already been thrashed out in the photographic journals often enough, though, doubtless, there are still those who would be willing to argue it. The intention, however, is to look at the matter in a common-sense light, and, having once decided that such dodging is perfectly permissible, to go ahead and mention a few ways by which improvements may be accomplished.

When one commences to understand that a treated negative will render a better translation of the subject than one which has been simply printed from in the ordinary way, the question naturally occurs : What kind of negative is best for the purpose in hand? Now, it will be found that the front-rankers usually make their negatives as thin as their printing processes will allow. The reason is not because of any special direct advantage to the print, but because the more personal attention that is given to each frame, the higher is the class of work turned out. A thin negative will allow the operator to give this time to each frame without losing an undue number of hours. It is positively marvellous, for instance, how many different effects may be had from the one negative, by simply shading one part while another tints to a few shades deeper. Moreover, the introduction of this personal element into the printing at once forces upon the critic a clear idea of how very necessary it is that the worker make his own negative, and make it of such a quality as to allow him to get as near his ideal reproduction of the actual scene as possible. But then, again, there are workers who have different ideas and make their negatives as strong as they can. Both may be very skillful, and both may turn out work of a high standard in their own line. But let these two members of these different classes exchange negatives and behold the result, and how futile are their endeavors to get satisfactory prints. The fact is, the negative, unseen by the world at large, is but a tool in the hands of its maker, and upon him must depend entirely what shall be the artistic and pictorial value of the prints taken from it. Perhaps there is not much opportunity for altering the composition, but so far as that important factor, atmosphere, is concerned, he certainly has full control.

While the plate is developing, it is possible to get a good deal out of it by means of a little coaxing and tinkering with the solution in which it lies, an all-sufficient reason for avoiding one-solution mixtures. Light action on a sensitive film is undoubtedly a fixed factor, and all the manipulating in the world cannot produce more on the negative than was impressed on the plate during the exposure, though short of that almost any variation can be brought about by altering the quantity of the various ingredients. From a dozen negatives of the same spot, made under the same conditions, can be produced a dozen different prints, each showing the character of the treatment the plate has received. Just as a developer cannot pass one tone and pick up the next, however concocted, it is impossible for it to pick any particular tone in the scale of gradation and act solely on it. The action must be mechanical, and pass regularly, stage by stage, from lightest to darkest ; and just to the extent our skill enables us to control development, depends the exact degree to which it will be necessary to dodge afterward by means of tracing paper, stump and pencil.

A very interesting experiment in printing is to see how many different results it is possible to secure from one negative by simply controlling its printing with a bit of card. The number of

different effects that may be had by this simple process appear truly wonderful when first it is exercised, and when other schemes for doctoring are successfully put into operation, "painting by light" appears to be more of a possibility than many would at first be willing to allow.

Some years ago photographers were only familiar with doctoring as far as it was possible to do it in the process of development, but since then there have been many changes, and there has come to them a realization that in negative-making their only aim is to get as perfect a print as possible, and they are now quite ready to seek out methods of dodging after other means are exhausted. By this, it is meant to use tools that will tone objectionable parts and introduce others when necessary for the improvement. Of course, discretion is necessary, for, like retouching, it may be easily overdone. The tools required are very simple and inexpensive, and in their use require but little practice to acquire skill. Like everything else, it is a case of practice makes perfect. One will need a bottle of retouching medium, a bottle of vaseline, a tube of ivory black (oil colors), a tube of gamboge (water colors) ; three brushes, one camel's hair, one medium hog's hair and a No. 1 sable ; a packet of white tissue paper, two retouching pencils, Nos. 3 and 4 ; a little black lead powder (waste from pencils), a paper stump end, a sharp-pointed penknife and a retouching needle. A retouching desk is, of course, necessary, but may be easily made at home.

The negative must first be prepared by putting the dope or retouching medium on it. In doing this, pour just a drop in the centre of the plate and then rub it all over with a piece of linen that is free from lint. Now paste a piece of tissue paper over the glass side, taking care that it is first cleaned, and making sure that the paper is free from flaws and of even transparency. Then sharpen the retouching pencils by rubbing them to a fine point on the emery paper. The lead dust will be of use, so save it.

As an example of the method of dodging, we will suppose we have a thin landscape negative, with weak detail in the shadows and faintly defined clouds in a dense sky. Place the negative on the desk and put another piece of paper over it on the film side, and then trace on the paper the outline of the horizon. Remove the tissue, which may be cut away at the sky-line and the upper half pasted over the sky on the glass side of the plate. There is now only one thickness of paper over the landscape and two over the sky. Commence on the film side by brightening the detail in the shadows with the retouching pencil No. 3. Hold it much the same as you would hold a pen, and make fine cross-hatched strokes. Don't press too hard. Heavy pressure will remove the medium and scratch the gelatine. The high lights are now to be brightened up, and this will be best done on the tissue paper on the back of the negative. Squeeze a little of the gamboge on a sheet of glass, and with a camel's hair brush mix it well with some water, taking care not to make it too thick. It is at its right consistency when it is transparent. Load the brush not so full that it will run, and apply it to the highest lights, such as white walls of houses, water, sun on the roadway, etc. Take care that the color does not go beyond the outline. It will depend upon how near white the high lights are to be, how much gamboge is applied. Here it will be highly advisable for the tyro to make a trial print and see how the work is progressing.

The effect of atmosphere may be had by putting a thin wash of gamboge over the portions of sky that are farther away, and an even thinner wash over the landscape. The clouds should now be improved upon, so that they will be printable. First deepen the density of their high lights by loading the paper stump with black lead and rubbing it on the tissue paper right over them. Turn the negative over and reduce the shadowy portions to still further increase the contrast. This may be done by covering the rounded end of a penholder with chamois and, after dipping it in emery powder, rubbing gently in one direction. Be careful to see that the rubbing is evenly done. Rubbing too hard will scratch the film and spoil it. Where the whole sky is dirty, the only possible method of improvement is to block out the whole heavens and let that portion of the negative print be perfectly plain.

This may be accomplished by pasting a piece of black paper on the back of the negative, cut, of course, to the sky-line. Another way is to spread a coat of lamp-black on the back of the negative, which is done by holding the plate, film side up, over a tallow candle until the black is thick to opacity. With some care it may be made to thin out toward the horizon. Then, with a piece of cloth and a match, the black covering the landscape may be removed. This coating is necessarily very thin, and must be renewed from time to time, but in this way the harshness of the former method, which destroys all perspective, is avoided.

The beautiful effect of snow falling, so hard to catch in real life, is easily dodged in. But be careful that the surroundings are natural. It is best to put the snow on the glass side, in order that it may be softer in the print. The effect is made with a small brush and black paint, and may be made to appear very natural.

Sometimes, when the movement of a figure in the foreground has spoiled an otherwise good negative, it may be obliterated by using the retouching pencil on the lighter portions to make them of the same density as the surrounding parts, and then, with the needle, lightly cross-hatch over the dense parts until they are of the same tonal value as the rest. If carefully done, close inspection will fail to reveal there has ever been a figure there. A rough printing paper ought to be used in this instance. The same method will also be found useful in toning down lights that are too small to be reached with the emery powder.

Don't throw away a thin negative because it makes a dark print. Paint a spot on the glass side with ivory black, and have one or more streaky lines coming zig-zag from it. This will secure you a lighter picture.

But there are too many improvements that may be effected with these simple appliances, and it rests entirely with the photographer and the amount of care he puts on his work, how good his productions are to be, and whether they shall rank as pictures or photographs.

One of the best photographic developers for use where the object presents hard contrasts that cannot well be avoided is, a one solution developer of glycine, such as :

Glycine	1 oz.
Sodium Sulphite	5 oz.
Potassium Carbonate	17 oz.
Water	5 oz.

By dissolving the sulphite and glycine in three ounces of water first, and the carbonate of potash in the remainder and then mixing the two, a good stock solution will be produced and for use we may further dilute one part of the concentrated developer with three or four parts of water.

Few, if any, photographic supply houses are in business for their health. Yet, Andrew J. Lloyd & Co., of Boston, publish an Encyclopædia Photographic which is a marvel of completeness and a valuable reference book on all subjects connected with photography. Notwithstanding the fact that it is a large sized and beautifully bound octavo and must cost considerable to put out, the house is distributing them free to all who ask for them. We advise our readers to get a copy, which may be had for the asking. Mail orders will be filled on receipt of 20 cents in stamps to pay the postage, but it is well worth the price and none ought to miss it.

The July issue of the Photogram, London, Eng., published a list of the touring dark rooms all over the touring world, in each instance with notes on the facilities of development or the accessibility of photographic supplies. The amateur who does any amount of travelling, ought by all means, to secure a copy.

One of the Many Trout Lakes for which Quebec Province is Celebrated.

In the Heart of the Laurentians.

BLACK BEARS.

These are the only bears in Vancouver City—back in the Ranges there are others.

THE DOUGLAS FIR.

This is one of the grandest timber trees of the Pacific Coast ; 500,000 sq. ft. have been cut on one acre.

The Douglas Fir.*

What the white pine is to Eastern Canada the Douglas Fir is to the Province of British Columbia, where magnificent forests of this tree still tower in majestic grandeur, reaching a height of two hundred or even three hundred feet. In such a forest, as in the shadow of the mountains, man begins to realize the great forces of nature which are working around him, and in his breast there rises that feeling of awe and reverence which must have influenced the worshippers of an earlier day when they chose the forests as the temple of their gods. Look up, and still further up, and still the great tree towers till the eyes are strained in vain seeking to measure its height. Think of the power of unwearied effort by which little by little, from the diminutive seedling, such an immense column has been raised, and think of the pulsating life by force of which the water needful for its existence is carried through all that height of trunk and spread of branch; and man, be he Christian, or pagan or unbeliever, must recognize that he is here in the presence of one of the greatest manifestations of that mystery of power which he may designate life, but which he does not therefore any the more clearly understand.

This tree is known most generally in Canada as the Douglas Fir, though it is also designated as the Red Fir and the Oregon Pine. The botanical name is *Pseudotsuga Douglasii*, or *Pseudotsuga taxifolia*, though the uncertainty about its classification before this name was settled upon may be seen from the other scientific names which have been applied to it, namely, *Pinus taxifolia*, *Pinus Douglasii Abies mucronata*, *Abies Douglasii*. The generic name is derived from *pseudo*, false, and *tsuga*, hemlock, and the first specific name from that of the man who first described it and introduced it into Europe, while the second is from *taxus*, yew, and *folium*, a leaf. The flat leaves are scattered over the twigs, but they have this special character which distinguishes this tree, that they are set with the edges up and down instead of with the flat side uppermost as is usual. It reaches its best development in the coast district, though it is found all through the southern part of British Columbia up to a height of 6,000 feet, where it appears in a stunted form. It passes over the Rockies as far east as the vicinity of Calgary. Its northern range is irregular and still somewhat uncertain. The great size of the trees is shown by the fact that as much as 500,000 feet have been cut from one acre, while the average is from 30,000 feet to 50,000 feet, although only the trees between two and seven feet in diameter are usually cut. The bark is largely used for tanning, and the wood is suitable for a great variety of purposes, such as house building, ship building, bridges, wharfs, piles, masts, furniture, fencing, etc. When excluded from the air it is very durable, and is therefore useful for piles, and the great length of the timbers which can be obtained makes it specially valuable for bridge building and similar purposes.

In the districts of British Columbia, where the winter is like that of the East, the logging is somewhat similar, but in the part where lumbering in Douglas fir is most important snow is unknown and winter unheard of. The usual method of cutting is for the axeman to cut a deep notch on each side of the tree at a height which can be conveniently reached. In these notches pieces of board, long and wide enough for standing room, with an iron prong pointing upward are inserted. The weight of the men on the boards drives the prong into the wood and makes everything firm. From this vantage place a cut is made by the axe in the side of the tree to which it is to fall and the remainder of the cutting is done with a crosscut saw. The object of leaving so high a stump is apparently to get above the swell of the root. It will be easily understood that the felling of a tree two hundred feet in height is a difficult operation, and if not carefully handled may result in great damage to the timber

* Contributed by the Officers of the Canadian Forestry Association.

either from splitting or from the impact of the fall. If the tree is growing on a slope it is usually felled upward, and in other cases it is felled so as to have the force of the fall broken by trees of inferior value, and sometimes even an artificial bed of branches is prepared. If long timber is not required the log is cut in lengths from twenty-four to forty feet, the bark is cut off or "rossed" so that the pieces will slip easily, and they are drawn over a skidway prepared by laying across the road at distances of a few feet round logs of a diameter up to fourteen inches. The skidway is sometimes made more slippery by greasing the logs. The motive power may be oxen or horses in teams of a dozen or more, the oxen being now largely superseded by the quicker-stepping horses, or it may be by a stationary engine working a cable on a drum, or even a steam tramway may be run into the scene of operations. Logs of such great diameter are not easily sawn, and at first the work was done by two circular saws, one working from above and the other from below, a method which required a very nice adjustment of the saws. Since the introduction of the band saw it has taken the place of the older method. The proximity of the good timber to the coast gives great facilities for shipping.

With such magnificent forests it might easily be concluded that the lumber industry in British Columbia should be in a flourishing condition. The want of a market is, however, a great difficulty. The local population is small, the North West Territories are not yet sufficiently populated to make a large demand, the market to the south is practically closed by a heavy duty on lumber, and the shipping facilities for Australia and the far East are not sufficient as yet to make the business very extensive in competition with the American West Coast timber. Within the last few years conditions have commenced to show signs of improvement, but the average price last year was only about $10 a thousand.

With the first number of the present calendar year and its eighth volume The Forester, the official organ of the American Forestry Association, assumes a dual role as the representative not only of the forestry but also of the irrigation interests of the United States, and appears under the name of "Forestry and Irrigation," with a neatly designed and striking cover suggestive of the two interests for which it stands. The Forester has been the chief exponent of forestry principles in the United States and has done very much to arouse in its constituency an interest in the subject and give a clearer understanding of the objects of the whole forestry movement. Amongst its contributors are the leading scientific men and forest students of the country, and with their help it has been enabled to supply to its readers a series of able articles dealing with the history and development of forest management not only in the United States but on the continent of Europe, where it has reached its highest development. The editorial work has been well done, and through its various departments touch is kept with the progress of events and the literature of the subject. Everyone who is interested in forestry will find in "Forestry and Irrigation" information which he needs, and we feel that we are advancing the interests of the Canadian Forestry Association by recommending all of its members who can possibly do so to become regular readers of that magazine.

The Value of a Forest.*

BY A. KNECHTEL, FORESTER WITH THE F.F. AND G.C.S.N.Y.

THE GROUP METHOD.

By this method the trees of a stand are divided into several groups, and sample trees are felled for each group. From these sample trees the volumes of the separate groups are calculated. These volumes added together give the volume of the whole stand.

The number of groups is dependent upon the accuracy desired. As for the whole stand in the preceding method, so for the group in this method, the sample tree should represent the mean cross area and the mean height and form factor. The larger the number of groups the more nearly will this condition be satisfied but the more laborious will be the calculation, since each group must be treated by itself.

If in measuring a stand great intervals have been made between the diameter classes, in accurate work each diameter class may be considered a group. The calculation of the diameter of the sample tree is then saved, since this possesses the mean diameter of the class into which it falls.

If v_1, v_2, v_3, etc., be the volumes of the individual groups then the volume of the stand,

$$V = v_1 + v_2 + v_3 + \text{— — — —}$$

As has been shown, the volume of each group may be found by multiplying the volume of the sample tree of the group by the number of trees,

$$V = v \cdot n,$$

or by the formula

$$V = v \cdot \frac{l}{a}$$

Species.	Diameter at Breast Height.	Number of Trees of each Diameter.	Basal Area of each Diameter Class.	Groups. Group Number.	Groups. Number of Trees.	Groups. Basal Area in Sq. Feet.	Sample Tree. Average Dimensions. Basal Area in Sq. Ft.	Sample Tree. Average Dimensions. Corresponding Diameter in Inches.	Sample Tree. Average Actual Volumes. Cubic Feet.	Sample Tree. Average Actual Volumes. B. M.	Number of Sample Trees of each Group.	Volume of each Group. Cubic Feet.	Volume of each Group. B. M.
White Pine.	8	22	7.68										
	9	77	34.02	I	358	201.52	.56	10.1	14.3	33	2	5119.4	11814
	10	97	52.90										
	11	162	106.92										
	12	40	31.42										
	13	100	92.18	II	343	354.53	1.03	13.8	41.5	124	2	14234.5	42532
	14	115	122.94										
	15	88	107.99										
	16	160	223.41										
	17	182	286.89	III	454	471.74	1.59	17.1	66.8	245	3	30327.2	111230
	18	45	79.52										
	19	67	131.92										
	20	88	191.99										
	21	110	264.58	IV	306	747.06	2.44	21.2	106.2	532	2	32497.2	162792
	22	86	227.02										
	23	22	63.47										
	24	14	43.98										
	25	85	289.75	V	99	333.73	3.37	24.9	164.3	760	1	16265.7	75240
				Total volume of the stand.....								98444	403608

*Contributed by the Officers of the Canadian Forestry Association.

As has been pointed out, the volume of the stand may be obtained by the formula,

$$V = v_1\frac{A_1}{a_1} + v_2\frac{A_2}{a_2} + v_3\frac{A_3}{a_3} + \text{———}$$

Now, if $\frac{A_1}{a_1} = \frac{A_2}{a_2} = \frac{A_3}{a_3} = c$

Then $V = c\,(v_1 + v_2 + v_3)$

That is, if this condition were satisfied, it would not be necessary to calculate the volume of each sample tree and group separately, but the sample trees could all be worked up together. This would simplify the calculation very much. The volume of the stand would then be obtained by multiplying the total volume of the sample wood by the common factor *c*.

This condition is not satisfied, however, by the Group Method, but is well reached, as will be seen, by the Draudt and Urich methods.

The Seventh Annual Report of the New York Forest, Fish and Game Commission, transmitted to the legislature on the 30th January, 1902, gives the logs and timber, obtained in 1900 from the forests of northern New York, total 533,339,072 ft. B. M.; 166,614,856 ft. being spruce taken by the sawmills and 230,649,292 ft. spruce taken by the pulp mills, and 54,948,590 being pine. In 1890 the spruce used by the pulp mills was reported at 51,966,282 ft. In addition to the native spruce used in the pulp mills 151,157 cords, or 82,985,193 feet, were imported from the Canadian provinces. The lumber product of the Catskill forests for 1900 was 56,606,343 ft. B.M.; 2,730,780 ft. being spruce and 9,340,448 ft. pine. 1,374,147 ft. spruce were consumed by the pulp mills. The combined product of the Adirondack and Catskill forests amounted in 1900 to 651,135,308 ft., or more than the entire Canadian lumber import of that year to the United States. In regard to the future of the timber supply the following statement is made :—

"Each year recently the softwood timber on 80,000 acres or more is cut and removed by the lumbermen or pulpwood operators. This would indicate that if the present rate of cutting continues, these industries will exhaust their supply of raw material in ten or twelve years, after which they will have to depend on the State forests or Canadian imports for a further continuance of their business. At present the Empire State leads all others by far in the number of its pulp-mills and amount of product ; but if it expects to hold its supremacy in this industry it must make some prompt and intelligent provision for a future timber supply.

"In discussing this question some of our lumbermen and wood pulp operators point to the great Canadian forests and the inexhaustible supply of spruce which they claim is standing there. But the Province of Ontario has already put an export duty on logs and round timber that is intended to be prohibitory ; and the Province of Quebec evidently will do the same whenever the supply of spruce in New York and New England is gone. Our people then will not only have to go to Canada for their raw material but will have to take their mills and workmen with them. The millions invested throughout New York in the great manufacturing plants belonging to the lumber, pulp and paper business will be non-productive, and these industries will be paralyzed."

During the year 1901 a beginning was made replanting burnt over areas, and on the 21st April of the present year the work of setting out 420,000 seedlings will be commenced under the charge of Mr. A. Knechtel.

Forest Reserves a Necessity.*

Probably the most important resolution passed at the annual meeting of the Canadian Forestry Association was the following :—

"In view of the enormous loss of timber by fire, this Association, embracing a membership from all parts of the Dominion, having at this its annual meeting had under consideration the great mistake that has been made in the past by opening up for settlement land unsuitable for agricultural purposes but adapted for the growth and production of timber, would respectfully urge on the governments of the country, both Federal and Provincial, the necessity of greater attention in the future to this important subject.

"The Association would further urge, in order that this may be intelligently done, that the newer and unsettled portions of the country should be explored in advance of settlement."

The occasion of the passing of this resolution was the discussion which arose in connection with the destructive forest fires which occurred last year in the Timiskaming district, resulting in the loss of at least two hundred million feet of timber, worth hundreds of thousands of dollars, and reducing close to one hundred square miles to a barren and useless waste, a large percentage of which fires, and those most destructive, were started from burnings set out by settlers. There is then an apparent conflict between settlement and the lumber industry, and there is no reason why the difficulties that surround the problem should not be faced, though whether or not there need be any real conflict is another question.

There are three parties to the problem, the settler, the lumberman and the general public. If the tax-paying public of Ontario and Quebec, particularly, would realize that the returns from the forests are the largest single item in their revenue, and form a large proportion of it, they would see how directly the whole question affects them. On the perpetuation of the revenue from the forests the prosperity of these provinces and their freedom from direct taxation mainly depends. It is, therefore, not merely a question between settler and lumberman, but one in which every citizen of the country is directly and vitally interested.

But can agricultural settlement and the lumber industry both be perpetuated, or is it another struggle in which one party must inevitably succumb and the fittest only can survive and, if so, with which side should our sympathies go? The almost universal answer has been that public sympathy will go with agriculture, as represented by the struggling pioneer and settler, rather than with the lumber industry as represented by the wealthy lumberman. Here is the poor settler striving to make a home for himself and his family, struggling against the adverse conditions of pioneer life, and hoping some day by his industry to reach a condition of comfort and even prosperity. On the other hand, there is the lumberman, usually wealthy, who has paid large sums for his timber as it stands, and who must either cut it immediately or take the risks involved in holding it. A great deal was said last year of a purchase of a timber limit for the sum of $650,000, but if a fire were to occur in that limit such as occurred in the Timiskaming district that whole investment might be wiped out in a few days, which to many a man would mean ruin, with no advantage to anybody and a great loss to the public revenue.

Is there no way in which agricultural settlement and the lumber industry can both be carried on? In the Black Forest in Germany the peasant can cultivate his little farm in the very midst of the forest, but he has learned that fire must be handled very carefully. This the Canadian settler has not learned, and possibly may not always be able to do. There seems to be no solution of the matter possible under present conditions other than to make the line of separation between the two industries as clear and distinct as possible. And a line of demarcation, the only possible one and

* Contributed by the Officers of the Canadian Forestry Association.

the one fixed by natural conditions, is defined in the resolution above quoted. Lands which are suitable for general agricultural purposes must be devoted to such purposes when the advance of settlement demands. But there are large tracts of land in Canada which have no depth of earth, while the great ribs of rock stick through on the slightest provocation. To place agricultural settlers on such lands is to doom them to disappointment. Supposing the Ontario Government had permitted settlers to go into the Temagami Timber Reserve instead of making an exploration and directing them to the good agricultural lands beyond, the result would have been the sweeping away of the forests by fire and the disappointment of the settlers, for they would inevitably have had to give up the struggle to make a living on such an unfriendly soil.

The principle of forest reservations is well established in the United States, and is being extended. There are already over forty National Parks and Forest Reserves covering an area of nearly 50,000,000 acres. The Dominion Government have set apart over ten extensive reserves in the West covering about 3,000,000 acres, without including any estimate for the Foothills Reserve in the Rockies. The Province of Ontario has four reserves, with a total surface of over two million and a half acres. In the Province of Quebec there is the Laurentide Park, with a superficies of 1,689,400 acres. At the last session of the Legislature of New Brunswick an act was passed authorizing the reservation of a Forest Park.

This question is one of special importance in the Province of Quebec at the present time, on account of the recent appointment of a Commission of Enquiry on Forestry and Colonization. It is to be hoped that this Commission will look carefully into this question of forest reservations, for next to protection from fire, and indeed, as part of a scheme of protection, it is a policy of the greatest moment and one which must be adopted sooner or later. If sooner, the reservations will be well timbered ; if later, they will probably be wasted by fire in such a way that the timber must be allowed to grow up by the slow process of years. It is necessary, however, that this subject should be thoroughly understood by the public, for it is not the first time that this policy has been considered.

A "Forestry Reserve Act" was passed by the Province of Quebec in the year 1883, but, in order to make a selection of the lands to be reserved, detailed and lengthy inspections of each lot were undertaken, involving the suspension of sales in certain districts. This momentary suspension was interpreted as an act of prohibition, and complaints and attacks were made which brought about the repeal of the law. It is to be trusted that the Commission now appointed will be the beginning of a movement which will result in the permanent adoption and development of this the only rational policy for providing for the best interests of the agricultural settler as well as the lumber producer, and at the same time establishing on a sound basis the financial future of the province.

A committee of the Société Française de Photographie, appointed in 1898, has just reported the result of its experiments on the preservation of dry-plates. The conclusion is that the method of manufacture is by far the most important factor, but that other things being equal, plates will keep best if they are packed face to face with clean white paper laid between them. The paper should be cut a little smaller than the plates and previously kept in the dark for several months. The use of separators which allow the admission of air between the plates, is condemned.

The Forestry and Colonization Commission of the Province of Quebec has been appointed. The Commissioners are : Mgr. Laflamme, Professor of Geology, Laval University, Quebec ; Judge Bourgeois, Three Rivers, and Hon. G. W. Stephens, Montreal, with J. C. Langelier as Secretary.

Taxidermy.

(*Concluded from the August issue*)

TRAPS.

To an inexperienced person the selection of traps for use in collecting small mammals is always a source of perplexity. A good trap should be light, strong, and so constructed as to be readily sprung by the mere touch of a passing animal. Furthermore, it should be small enough to allow considerable numbers to be carried without occupying undue space.

For mammals of the smallest size the most useful traps are those which cause immediate death by a blow. They are much smaller than the choking traps commonly used for house mice, and have the additional advantage of allowing the animal to pass freely through from side to side. The latter feature permits them to be used either with or without bait, as occasion presents. These traps have the serious defect that they injure the skulls of a considerable number of specimens, but this is fully offset by their numerous good features. Three traps of this type have been widely used in field work—the Cyclone, Out o' Sight and Schuyler. The Cyclone traps are packed in wooden boxes 7½ by 6½ by 3 inches in outside dimensions, each containing three dozen traps. The base of this trap measures only 2⅜ by 2$\frac{1}{16}$ inches. On account of its small size and peculiar mechanism it is specially fitted for use with bait in cavities among rocks, or under the roots of trees. It will spring in a smaller space than either of the other traps. Its chief disadvantage lies in the tin base, which readily becomes rusty, and in this condition causes much staining of specimens. The Out o' Sight and Schuyler traps are sold by the dozen in pasteboard boxes, 6¼ by 4¼ by 2 inches, and 4¾ by 3¾ by 2¼ inches in outside dimensions, respectively. The base of the Out o' Sight measures 3¾ by 2 inches, that of the Schuyler 3 by 2½ inches. While these traps lack the compactness of the Cyclone, they are preferable to it for use in runways, as they may be so set as to be almost completely hidden from the passing animal. The base of the Out o' Sight is of wood, that of the Schuyler of galvanized iron. They are, therefore, not subject to rust. As furnished by the manufacturers, the bait wire of the Schuyler is bent. For field use this should be straightened. Both of these traps are made in larger sizes suitable for killing such animals as rats, squirrels, weasels. Of the Schuyler rat killers two forms are manufactured, of which that closely resembling the mouse killer is the more useful. A trap which may be mentioned here is that made for the capture of moles by the Animal Trap Company. It is less bulky than most mole traps and has the further advantage of causing little or no injury to specimens.

For all mammals larger than rats and squirrels the well-known steel traps should be used. These are made in two forms. The Newhouse trap is the stronger and more durable, but the Blake and Lamb is much more conveniently carried.

Full information concerning sizes and prices of all the traps mentioned above may be obtained by addressing the manufacturers.

Yellow and faded photographic prints on silver paper may be restored to their original lustre by the following process. Separate the print from the mount by soaking until it comes off itself. Immerse in a 5 p.c. solution of bi-chloride of mercury until bleached. Wash well and place in a 10 p.c. solution of sulphite of soda which will blacken and intensify the image. Wash well again and dry.

Nelson, B.C., Fishing.

BY A. F. ARMIT.

I have noticed of late that a good deal has been written and is being said regarding the excellence of the trout and salmon fishing in the vicinity of Victoria, on Vancouver Island. Now I would like to say a few words in favor of Nelson, in West Kootenay, as an angler's paradise.

Nelson, half mining town, half business centre of that particular portion of B.C., is situated directly on the Kootenay River, and some fourteen or fifteen miles from where it joins the Columbia. Nelson is a place easy of access, both from the States and from all Canadian points ; the C. P. R. has a line in there, and the Nelson & Fort Shepard Railway connects it with Spokane ; there are good hotels where the sportsman may put up, and there, above all, is the river at his feet and teeming with what I believe are the gamiest trout in British Columbia. In May and June one may have rare sport trolling for char through the narrows at Balfour—but a few miles distant from Nelson. These fish are a species of salmon, and run anywhere from four to eighteen and twenty pounds in weight. They are, however, rather an inferior fish from a chef's point of view.

One great thing in favor of the Kootenay trout is that he has not yet become too shy through overfishing, the superiority of the river being as yet but little known, comparatively speaking.

The fish are of the rainbow variety, such as are to be found in California and in the Gunnison River, in Colorado, though they do not run quite as large as in the latter river ; this possible defect, however, is amply counterbalanced by their remarkable fighting qualities. I have known it to take close on to half an hour to land a pound and a half trout in Kootenay River, and in smooth water at that.

Some few miles below Nelson, at a spot called Ward's Crossing, the very acme of the Kootenay fishing is to be had. Here the river has been forced through a narrow gorge in the mountains, thus forming a series of tremendous rapids, and here in these rapids and swirling, foaming masses of water lie the kings of the Kootenay trout. They are of much larger size and far stronger and gamier than those in the upper part of the river, and they know not what it is to be timid and wary. Always battling with the rushing currents of the stream has apparently made them of a peremptory, not to say violent, disposition. They snatch at a fly with a dash and splash and whirl of gleaming sides that is often disconcerting to the newcomer, unused to their ways. The rough water helps them and lends them weight, and one has often been deceived into thinking he has hooked some real record-breaker, though when netted the fish on the end of the line may tip the scales at under two pounds. They are rare fighters, those trout, and game to the very last. Often when apparently safely landed on shore or in the boat, one last almost superhuman flap will place them in their native element once more. I think the largest trout I ever heard of as being taken at that point weighed 7½ pounds, and the smallest, one pound ; fish of lesser weight cannot live in the rough and boiling water there. The early morning and late afternoon and evening, even till dark, are the best times to fish at Ward's Crossing, and as a rule during the summer the trains to and from Nelson run at such hours as make this possible. I have more than once been one of a party of fishermen returning from Ward's, after an evening's sport, with creels, nets and even coat pockets full to overflowing with the speckled beauties. And these trout for eating are of a quality not to be excelled, I believe, by any trout in the world, bar none.

And in the matter of flies their tastes are extremely catholic. They will run to almost any fly, if they are on the rise at all. The writer, however, has had best luck with the "March Brown," "Red Ant," "Claret and Seal," and

NANAIMO LAKE, B.C.
This charming sheet is in one of the best sporting districts of Vancouver Island.

A TRUE FRIEND.
This was the most popular man in Commissioner Laird's outfit when he visited the Peace River to make treaties with the Indians.

Loon Shooting, Lac des Isles, Que.

Fishing Camp at Lac des Isles, Que.

that old standby, the "Coachman." Now and then some nameless fly, evolved from the imagination of some thoughtful fisherman, has met with great success, and flies with just a touch of red in wings or tail have been found to be very useful.

I think I am safe in advising all who have the time, the means, and who are true lovers of the sport, to make a trial of the Kootenay River, making Nelson, which is an agreeable little town in which to pass a few weeks or even months, their headquarters. From there all the best fishing of the river is within easy reach, either by rail or steamer. Even directly in front of the town, for a mile or two in either direction, the fishing is not by any means to be despised.

A Loon Hunt.

BY BERT DE WINTON.

Played out after a hot, busy August and an equally trying September, the quartette, in caucus one more than usually humid evening in the last days of the dying month, resolved on a short run up into the Laurentians. The "quartette" comprised two M.D.'s a C.T. and your humble servant. Very little discussion was necessary before our objective point was chosen, a delightful spot about seventy miles due north from Montreal, in the hills. A brief note dispatched to "Dan C." to meet us at Trembling Lake, and we repaired to our several abodes to overhaul tackle and guns, which, as we were only able to steal away for the week, comprised the extent of our outfit, with the exception of a blanket.

Leaving the cares of the daily grind to the tender mercies of the office boy, etc., we met, happy as school boys on a lark, at the old Dalhousie station, down at the "barracks," on a hot October afternoon and entrained at 5.45 for our destination. This was reached after a short run of about four hours, where Dan was waiting for us with his double and buckboard. Still another hour, right back into the teeth of the mountains, and we had reached the starting point of the Mecca of our hopes. Here we found that Dan's forethought had provided for us and we were joined, or rather we joined, Fred and George, who had arrived long enough ahead of us to provide a blazing log fire and its concomitants of boiled tea, thick hunks of jack-knifed homemade bread, fat pork and fried trout.

Our intentions had been of the best, having at first decided to push right on to our destination; but, whether it was that we had some regard, or thought we had, for the poor fellows who had paddled ten miles down the lake to meet us, or of the seductive influence of the fat pork, fried trout and "boiled" tea, I am not prepared to say, howbeit, we decided to make the kindly shelter of the birch and balsam our canopy and the placid lake our companion, for the night. And such a night. It seemed almost sacriligious to so much as utter a syllable, so wonderfully peaceful and inspiring was that beautiful evening among the mountains.

Eight hundred yards across the glassy bay on which we were camped, which, for all the motion on it, might have been a mirror, old "Billy" ran sheer down from his lofty peak of one thousand feet nearly half as much more into the lake, and behind was another "hill" of about five hundred feet, while through the stillness of the night came the musical trickle and splash of the two small streams that made their way from the lakes on the top of either mountain to the big sheet below.

The stars, too, seemed to be brighter than was their wont, as the little dipper slowly pushed its way from one mountain to the other. Is it any wonder then, that, lost in the contemplation of such a scene, even our pipes were occasionally neglected and had to be retuned with the aid of a glowing coal from the blazing logs nearby,

and that the usual topics of conversation proved of too little interest to hold attention and were dropped one by one until absolute silence, only broken by the wierd two-hoo of an owl in some lofty pine, the ker-plonk of a contented frog, the splash of a restless trout, or the hoo-loo-loo of a loon away up the lake, prevailed?

The fire was pleasant, too, and notwithstanding we were but seventy miles away from the heated city, the blazing logs and blankets were very much appreciated.

With the first glint of steel from down the lake, we were up and had our rods impressed into active service, and by the time our bush friends, accustomed to what to us was living in another world, had replenished the logs and got the kettle to boiling, we had sufficient of the speckled beauties caught for our morning meal.

By seven o'clock the "barks" were ready, Dan's horses fed and on their return home, and our first day's journey had fairly started.

After a short council of war, we decided to leave the "bear's cave" and postpone the hunt for "silver mountain" until our return, and proceeded up the lake, making an occasional detour to run into some exceptionally pretty spot and take the kinks out of knees unaccustomed to kneeling. Never was Delmonico repast more appreciated than was that 11 o'clock midday meal. After this fortification of the inner man, we portaged across the "Razor-back," something like three-quarters of a mile, to another small body of water about two miles long.

Here we potted the muskrat by moonlight, tramped the beaver swamps by daylight, bagged an occasional brace of teal and canvas back, hooked the red and brook and gray trout (and were also lucky enough to secure a fine specimen of the silver trout), tramped and climbed through swamp and over mountain to Bass Lake to procure a change of pastime, for the better part of the week, until we were brown as walnuts and happy as urchins on a regular school day with an absent teacher.

"How'd you like a crack at a loon?" came the startling proposal from silent George.

"Giminy!"

"Holy smoke!"

"Great Scott, man, why didn't you say so before?" asked Harry, all eagerness for new worlds to conquer.

Still further back into the mountains, until Mud Lake was reached, a long pull of seven miles, where each of the valiant four hoped to cover himself with glory by potting the most notorious loon in the mountains, whose record had become a by-word from the number of sharpshooters he had successfully stood off.

Now, did you ever try a shot at one of these beautiful birds? If you did, you will comprehend somewhat the feelings with which a fairly good centre shot will fire, only to be chagrined after his most energetic "That's got him," to hear from your extreme right his hoo-loo-loo at you.

Webster gives two meanings to the word Loon,—"a stupid man" and "a bird, the great northern diver," and I am perfectly convinced, after that day's doings, that there is, after all, a connection.

This king of divers, or dodgers, had taken possession of a long, narrow lake, very properly named "Mud Lake," shaped much after the fashion of two sausages, the whole not being much more than three-quarters of a mile in length and perhaps four hundred yards at its greatest width. Here he had defied, for goodness knows how long, the best shots of the country, sailing around with perfect indifference to how many or how few were pelting at him, and he may be there yet, for all I know to the contrary.

The connection of the two definitions of the word comes in here: for the whole of that blessed afternoon we successively scrambled out of the mud or detached ourselves from the cedar snags into which predicaments our over-eager desires precipitated us, or pegged away at that loon. When we left the precincts of that lake, just before sundown, to start our long seven mile trek to camp and grub, by the aid of the stars and a pine torch, the last thing we heard was that loon's taunting hoo-loo-loo.

Sporting Dogs—The Pointer.

BY D. TAYLOR.

The pointer is one of the most useful dogs in the field, and no sportsman with the facilities for a week or two's shooting at his command can afford to be without one. To say that the dog should be well broken and under complete control is only repeating what every sportsman knows, but nevertheless it is not out of place to emphasize a condition which is going to make or mar a day's sport. There is nothing more exasperating to the shooter than to be out with a dog that is wild and erratic in his movements, and the strain on the man's temper is too often the cause of much unaccustomed blasphemy, as well as an indifferent bag. Before going forth, therefore, the sportsman should make sure that his dogs, if they have been broken by a professional handler, are under perfect subjection to himself—it will save a lot of trouble, worry and "cuss words."

The pointer is said to have originally come from Spain to Britain, and, whether or not, great efforts have been made during the past few years to improve the breed, and not without success, at least as far as external beauty goes. There is little doubt that, to a certain extent, the attention paid to the production of this quality alone has, in the opinion of a great many sportsmen, led to the deterioration of its usefulness as a field dog, at the same time it cannot be overlooked that many supporters of the show dog adopt the same lines in breeding as do the sportsmen for working dogs. And there is no earthly reason why the two should not combine and produce the desired result — beauty and utility— through scientific breeding. The numerous field trials now yearly held throughout the country, it is claimed, have to a great extent saved the pointer from becoming extinct save as a show dog, and the promoters of these events urge that our kennel clubs should give them more encouragement and assistance than they have hitherto done. It is pleasing to note, in answer to this suggestion, that the Canadian Kennel Club recently took the question of field trials into consideration and now offer handsome cups and medals as prizes at these meetings. The effect of this new departure cannot be otherwise than to encourage a much greater extension of the sport in localities where conditions are favorable, as well as to promote the breeding of good pointers and setters.

The characteristics of the pointer are brains, nose and speed, the face being lit up with intelligence and lively in appearance. The head is rather finely drawn—a heavy head denotes coarseness and an unreliable disposition. The eyes are of medium size, not too far apart, and of the various shades of brown in color. The nose is an important part of a pointer's face, and should be large, long, broad and deep, with nostrils large and open. The ears should be moderately long and flat, filbert shaped, thin and flexible. Shoulders long, sloping and powerful. Good legs are most essential in a pointer; both front and hind should be straight and strong, and covered with well-developed compact muscles; cat-like feet, with plenty of hair between the toes. The tail is also another important feature. It should be set on well up and taper to a decided point; the straighter it is the better. Regarding color the order of preference usually is: Liver and white, black and white, orange and white, whole black or whole liver.

Mr. H. W. Huntington, a prominent authority on dogs, says, remarking on the pointer: "As all smooth, fine and short-coated dogs show their structural formation more clearly than the long-coated ones, their faults and deficiencies naturally are greatly accentuated, whereas a rough or long coat not infrequently covers a multitude of sins. The pointer is one of the most attractive of our sporting dogs, and his clean-cut features and outline will always secure to him many friends, even outside the

sportsman. The entire anatomy of the pointer is one that will bear the closest study, and when it is symmetrical and correct in all respects, it has no superior in the canine world. The head is one of the most striking features. It should not be snipy nor short in muzzle, and the absence of the stop generally mars the face, Ears that are large and thick in leather or set on very low are faulty, as are eyes that are other than dark, whatever the color of the body may be. Yellow, orange and lemon-colored eyes are really ugly to look at, as they are devoid of that pleasant expression which the pointer should have, and they should accordingly be penalized. A heavy neck, one that is not well set into the shoulders or shows throatiness, is properly objected to, and likewise are considered straight shoulders, flat ribs and front legs that are not absolutely straight and of good bone. "Out at elbows" is a serious fault, and very often seen in this breed, yet it should not be. The back should not be too long nor weak, and weak hind-quarters never help a dog to do a hard day's work a-field. The cat foot is now generally considered to be the proper one, as being better suited for the kind of work a pointer is called upon to perform. A splay foot, as seen in some of our earlier dogs, is an abomination, some judges contending that it should penalize almost to disqualification. The tail that is coarse, shows an inclination to coil, or is carried over the back, is one that should prevent a pointer from ever getting into the money at a dog show. As the dog is to do a deal of work, his stifles should be well bent and muscular."

How to Rear Puppies.

Bitches about to whelp are better left entirely alone. They should be placed in a dry, warm kennel, containing a raised bench, so constructed that the bitch cannot get underneath it, and only just large enough for herself and her prospective litter. Bitches at this critical period get restless, and will crawl or creep into any hole or corner, and will sometimes whelp in the most unsuitable places—on a cold floor, for instance. The bench should be protected on all sides, so that the puppies are not subjected to the danger of being thrown overboard, and the bench should not be too large for fear of the puppies getting pushed away from their dam and getting cold before they are properly dry. This contingency frequently happens. While the earlier puppies are yet moist they are pushed away from their dam during the pangs of labor in giving birth to those succeeding, cold strikes into their tender systems, and they gradually lose the vigor which nature has given to assist them in first drawing from the dam their natural sustenance. Thus pushed aside, and unable to reach the mother, they whine, and gradually pine away and die, to the consternation of an anxious and expectant owner.

Some breeders, in order to avert the possibility of what we have just described, take away the puppies as they are born, into a kitchen or other warm place where there is a fire, putting them back when the bitch has finished whelping or at intervals of rest from her labor, to get their natural nourishment.

A bitch, shortly before she is due to whelp and for sometime afterward, should be fed upon sloppy food, such as porridge and milk, bread and milk, hound meal soaked in sheep's head broth, etc. ; also a good dose of castor oil should be administered a day or two before she is due. While whelping she should simply be given scalded milk, lukewarm. The second day after whelping the bitch should be allowed out for a short run of a few minutes, increasing the period day by day.

As puppies are more or less nearly always affected with worms from their birth, it is a good thing to begin to treat them for these parasites before they

leave the dam, say about three weeks old. If a small worm capsule or pill be given at this age twice a week for three weeks, the probability is that they will be perfectly free from these pests when they leave their dam and start life on their own account. Worms are held to be responsible for quite half the mortality in young puppies, and have brought to an untimely end many flowers of the breeders' efforts.

Puppies rarely thrive or come to be any good if kept too long together in kennels, and especially in closed up kennels. It is a frequent cause of distemper, no matter how much attention is paid to cleanliness and disinfection. The puppies bunch together and the hot, foetid breath of the whole is inhaled by each, making them weak and feverish, and good subjects for the much dreaded disease. The secret of success in rearing puppies is fresh air, pure water, free and unrestrained exercise, good food—given frequently and a little at a time, access to grass, and a dry, warm bed at night. The fewer the number of puppies kept in kennels the better, and the more chance there is of raising strong and healthy ones.

Bishop Doane, of Albany, N.Y., owns a handsome St. Bernard dog, of which he is very fond. Dog and man are inseparable companions, being always seen together on the streets, where they are a familiar sight. Indeed, the dog often accompanies the Bishop to church, and he is commonly known as "the Coadjutor Bishop." Bishop Doane pays the following affectionate tribute to his faithful companion :

"I am quite sure he thinks that I am God—
Since he is God on whom each one depends
For life, and all things that his bounty sends—
My dear old dog, most constant of all friends ;
Not quick to mind, but quicker far than I
To Him whom God I know and own ; his eye,
Deep brown and liquid, watches for my nod ;
He is more patient underneath the rod
Than I, when God His wise correction sends.
He looks love at me, deep as words e'er spake ;
And from me never crumb or sup will take
But he wags thanks with his most vocal tail ;
And when some crashing noise wakes all his fear
He is content and quiet if I'm near.
Secure that my protection will prevail !
So, faithful, mindful, thankful, trustful, he
Tells me what I unto my God should be."

That a dog has some rights has just been conceded by a St. Louis judge, in an action for damages against the owner of a dog which bit a boy while in the act of tying a tin can filled with stones to its tail. Said the judge : "Any dog has a legal and undeniable right to bite any man, woman or child who purposely and with intent to disturb said dog's tranquility and peace of mind does attach or cause to be attached to said dog's tail a tin can or other weight which will impede the progress of said animal. A dog which bites its persecutor in such a case is acting purely and honestly in self-defence, and is justly immune from punishment." The action was dismissed.

The Montreal Poultry Association intends holding its annual exhibition in the Arena during the first week in November, and on this occasion will inaugurate a new feature, namely, a show of dogs, to embrace the more popular breeds. We believe this is a wise move on the part of the directors, and that it will tend to increase the gate receipts, inasmuch as the dog lover is more in evidence than those who take an interest in the egg producer. Money prizes will be given in the open classes, and the directors are sanguine that specials will be contributed by the friends of the society, and also by those who may be relied on at all times to encourage a dog show. First of all, what the directors want is to get a man to judge who has the confidence of the fanciers, and we have little doubt the show will be well supported by at least the local breeders.

We had a pleasant call last month from the well-known fox terrier breeder, Mr. Lynn, formerly of Port Huron, Mich, but now located in New York. He came here primarily to see the Yankee boat win the yacht race, but, having got into the hands of a good terrier man, he could not resist the tempta-

tion of taking in some of the kennels instead. As Mr. Lynn expressed it, he'd "rather any day see a good dog than a yacht race." Mr. Lynn had the pleasure of seeing, amongst other promising youngsters, Kincardine Piccolo, a grandson of Ch. Endcliffe Banker, a dog which he bred and sold to Mr. W. P. Fraser, of Toronto. The puppy is rising eight months old, and is unquestionably a wire-haired terrier of great merit. Mr. Lynn was highly pleased with him, and remarked that he was as sound a coated puppy as he had ever seen.

A correspondent from Mackeys, Ont., about 300 miles west of Montreal, writes:

There is splendid hunting here — partridge, deer, moose and bear; besides there are to be found minx, muskrats, etc. Fishing is also good, there being red trout, pike, bass, doré. There are some pretty lakes and rivers; we have here the beautiful Ottawa, which is only a few rods from the railway station. I have seen some beautiful speckled trout since coming, and which were caught without trouble, and which afforded a good day's pleasure to some seven or eight anglers; they were caught about two miles from here, and were reached by boat and canoe. I have also seen some very large pike, doré and maskinonge. There is a hotel here affording fairly good accommodations, and should we know of any intending sportsmen coming, arrangements can be made for canoes, guides, etc. Some wealthy New Yorkers have two or three limits a few miles to the north, in which they hunt and fish; they are expected here this week. There is room yet for many hunters and anglers here.

Our front cover illustration gives a fair idea of one of the many thousand lakes and lakelets in the Province of Quebec, which in its area of 229,000 square miles, is estimated to contain at least 75,000 lakes, varying in size from the little gem to immense expanses of water, such as Lake Kipawa and Grand Lake Victoria. Nearly all the smaller lakes contain speckled trout.

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September, 1902

Communications on all topics pertaining to fishing, shooting, canoeing, the kennel and amateur photography, will be welcomed and published, if suitable. All communications must be accompanied by the name of the writer, not necessarily for publication, however.

The Official Organ of the Canadian Forestry Association.

ROD AND GUN IN CANADA does not assume any responsibility for, or necessarily endorse, any views expressed by contributors to its columns. All communications should be addressed to:

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THE objects of the **CANADIAN FORESTRY ASSOCIATION** are :

The preservation of the forests for their influence on climate, fertility and water supply ; the exploration of the public domain and the reservation for timber production of lands unsuited for agriculture ; the promotion of judicious methods in dealing with forests and woodlands ; re-afforestation where advisable ; tree planting on the plains and on streets and highways ; the collection and dissemination of information bearing on the forestry problem in general.

Rod and Gun is the official organ of the Association, which supplies the articles relating to Forestry published therein.

This Association is engaged in a work of national importance in which every citizen of the Dominion has a direct interest. If you are not a member of the Association your membership is earnestly solicited.

The annual fee is $1.00, and the Life Membership fee $10.00.

Applications for membership should be addressed to the Treasurer,

R. H. CAMPBELL,

Ottawa, Ont. Department of the Interior.

CANADIAN BIG GAME

THE time for the turning of the leaf will soon have come: the velvet on the antler is pealing in long strips, leaving a clean horn the color of buckskin. Then the law will permit the shooting of the moose, caribou and deer—and wouldn't you care for a head or two yourself?

Well, why not try Quebec, Ontario, Manitoba, or some other of the sisterhood of the Canadian Provinces? By such a choice you would probably be successful beyond your expectations, as many others have been. Only the other day a well-known physician of Winchester, Ky., wrote: "I met you last summer at Hotel Bellevue, Timiskaming, and you kindly located a camping party for me on Ostaboining where they had fine sport, getting several moose, deer and fine fishing. I wish to get some information regarding, etc."

Equally trustworthy information is **AT YOUR DISPOSAL.** Ontario has thrown open her jealously guarded big game preserves, the shooting of moose, caribou and deer being now permitted from October 15th to November 15th north of the main line of the Canadian Pacific Railway, from Mattawa to Port Arthur, a region enormous in extent and carrying a heavy stock of game.

The great province of Quebec yet holds its own as the home of vast quantities of deer, and the giant bull moose bathes and feeds in the great Lake Kipawa as of yore. Last Autumn a head obtained in this region by a Montreal sportsman spanned 62 inches. The Gatineau, an important tributary of the Ottawa, flows through one of the best deer ranges of the continent, while the Lièvre, Rouge and Nord drain similar and almost equally well-stocked regions.

Further east the St. Maurice, a stream 400 miles from source to mouth, traverses a land of rock and barren which the moose, the caribou and the bear find very much to their tastes.

Manitoba is as noted for its moose as for its duck and chicken, and those who can spare the time may ensure a successful hunt by visiting the Prairie Province. Beyond lie the Territories and British Columbia, with their hundreds of thousands of square miles of plain, forest and mountain, offering unsurpassed hunting for moose, elk, blacktail, sheep, goat and grizzly.

For further information write to any officer or agent of the

Canadian Pacific Railway

Or to the GENERAL PASSENGER DEPARTMENT, MONTREAL, QUE.

THE HERALD PRESS, MONTREAL

ROD AND GUN IN CANADA

Mount Rundle, Banff

A MAGAZINE OF CANADIAN SPORT AND EXPLORATION

EMERALD LAKE TROUT.

The result of an hour's fishing in the Rocky Mountains.

ROD AND GUN IN CANADA

VOL. IV. MONTREAL, OCTOBER, 1902 No. 5

A Bear Hunt by Moonlight.

BY BERT DE WINTON.

Jack and I had determined on a trip back into the mountains. Our occupations were such that vacations had to be taken somewhat on the instalment plan, as it was rarely we could manage to get away for more than a week at a time, for a run back to the bush. Naturally, with such a limited time at our disposal, our choice of grounds was equally limited, but withal we had seldom any cause for complaint with our week off when we made the Laurentians our "stamping grounds." They were easy of reach—only a matter of a couple of hours' run by rail, and then back into the mountains another hour behind a good Canadian pony, when were reached the first of a chain of lakes, where most of our short stunts were put in. And scarcely a season passed but we managed to get back into our favorite haunts a few times. Game of all kinds was fairly plentiful, and the lakes, rivers and creeks are full of fish, and we therefore always had a good time on these short excursions up the line.

Settlement goes back through these parts in a jagged, uncertain sort of edge, parallel with the railways, and one climbing along over a mountain or through the bush, comes upon a clearing in all sorts of out of the way places. A man's nearest neighbor may be a quarter of a mile away, or he may be five,—it makes but little difference to these backwoodsmen, who speedily become discontented when settlement encroaches too close upon their "farms," and it is no matter of serious thought to pull up stakes and go further back to where they can be left alone.

It was to one of these little clearings we had betaken ourselves in the fall of 1898, where we proposed putting in the better part of a week or two, with no other object perhaps than a few brace of partridge, some ducks and a little quiet fishing.

Jack, Harry G. and myself comprised our outfit. Jack and myself knew almost every stone throughout the mountains, but with Harry it was different; he was a veritable tenderfoot, as far as the mountains were concerned, but as good a hand in a beat to windward as ever reefed a sail in a "blow." His experience, up to the present, in the fishing and shooting line had consisted of an occasional snipe and a half day with a rod in the hopeless task of trying to hook a sucker, along the water front in the vicinity of the city. Hence, it was more with a desire to "see what you fellows find so much to talk about," as he expressed it, that he volunteered to come along, just to fill up.

Our bush friend, "Big Jim," picked us up at the lakes, where Ned and his pony had dropped us, and took us the balance of the way up to his clearing, over various lakes and portages.

Big Jim was a worthy representative of life in the wilderness, straight as a string, a shade over six feet one in his socks and broad of beam in proportion; the weigh beam went up with a thud

around 220 pounds when he stepped on the scales. He looked every inch a man, fit for anything, and his looks did not belie him, for he could do at a pinch, the work of half a dozen ordinary men, but when it came to sport—he did not understand the meaning of the word. All his life he had been side partners with the woods and its denizens, and looked upon all game as just so much food in his usual bill of fare, and I do not believe he would have rolled out of his bunk to pot a grizzly passing his door, if his larder happened to be full at the time. That is not to say he could not shoot. By no means, for I never saw another who wasted as few cartridges for the amount of game taken, as Jim, when he did go out to hunt.

It was this familiarity of the man with his surroundings which led him to mention in a casual manner, on the second day of our arrival, that "those 'tarnal bears are playing the devil with my oats in the back clearing."

Now, bruin is quite impartial as to what he eats, provided he can get it easily, and he will lick out your soap-grease at the kitchen door, or carry off a young pig, with equal nonchalance. He also has a sweet tooth, and is quite at home in the berry patches, which are scattered freely throughout the bush, or an oat field when the grain is in the milk.

Of course, after Jim's remark all other kinds of sport was laid to one side, and the means of capturing that bear discussed pro and con. The probability that he might be away from that locality dozens of miles, was never admitted into our plans. After a leisurely supper, for Jim was never anything but leisurely, regardless of our impatience, we drew the shot from our guns and slipped a ball in its place. We were for firing them away, but Jim advised as little of that kind of melody as possible if we wished any success, as a bear will usually give a wide berth to the sound of firearms.

A short turn of half a mile over an old logging road brought us to the oat field in question, an oblong patch of ground containing about six acres, in one corner of which stood a good sized barn, half logs, half boards. One half the mow contained hay, and in that part we took up our quarters to wait and watch for his bearship. Jim advised taking watch about, and curled himself into his blanket and immediately went to sleep. By the time we had got comfortably settled the night had set in, the moon not rising until nearly 11 o'clock, after which the whole field was flooded with its silvery light, and from our elevated position everything could be plainly seen over the black-stump dotted field. At first we all remained on the *qui vive*, each eager to catch the first look at our expected guest.

The night, however, passed away, and still no appearance of our quarry, and in like manner so did another, but on the third night we were rewarded for our vigil. It was Harry's watch, but he evidently had fallen asleep at his post, an accusation he vehemently denied, of course, for it was big, sleepy Jim who quietly roused us to the sense of another presence than our own, in the lower left hand corner of the oatfield. There, not fifty yards away, was a bear, sometimes on all fours and sometimes erect, as he would reach for a head a little higher than the others, quietly cropping the heads off the half ripe oats. He was suspicious, however, and the slight commotion made by our rising did not serve to allay his fears, for now and then he would stop eating, and alternately dropping on all fours or rising to his hind quarters, he would sniff the air as if scenting danger. Fortunately we lay down wind from him, or our chances for a good shot would have been slight indeed.

The sharp click of our guns on the still night air, as we cocked them, caught his ear, for rising quickly to an upright position and sniffing in the direction in which we lay concealed, he dropped again and made for the bush. But he was not quick enough, for just as he dropped, Harry and Jack blazed away at him, one of the shots catching him in the right flank, for he turned and snapped at his side as he ran. As he did so I let him have my right barrel in the front shoulder. He fell, got up and again toppled over, but rose again and started once more for the shelter of the brush on three legs. Then Jim's rifle spoke. With a grunt and a snarl he pitched over head foremost, struggled to regain his feet, turned

and bit his side, and finally rolled over bleeding from his three wounds. Jim's ball had hit him just behind the left shoulder, and there is no doubt but for his good shooting, we would have had our three nights in the barn to no purpose, for while the shots in the flank and forequarter were enough to disable him, they were not necessarily fatal, and the chances were we would have lost our bear if he had once managed to reach cover.

We all enjoyed some of his juicy steaks, but Jack won the toss and the skin, and it may still be seen ornamenting his study floor in front of the grate.

How Hull Farmers Shoot Bears.

BY J. SMARDON.

Bears are plentiful this season. Five were seen in a single field one night lately, standing upright in the ripening grain gathering the heads together within the clasp of their mighty forearms that they might chew away at the oats. The amount of damage the cumbersome beasts will do these bright August nights by trampling down and devouring would hardly be believed. It is no wonder that farmers wage bitter warfare against them, even though Bruin's skin is not in prime condition, and is, indeed, of scarcely any value just now.

The two men who saw these five bears had been watching for them from trees, but had unfortunately stationed themselves on the other side of the field. Being no great sportsmen they took such aim as they could and fired together, driving the bears away. To their surprise a young bear was found dead next morning at the edge of the woods, killed by a spent bullet from one of their shotguns. There is one little spot in the top of a bear's skull where the bone is very thin and brittle, and just there the ball fired at a venture chanced to strike.

In that same field last year, while the wheat was standing in stooks to dry, two playful young bears, having had all they wanted to eat, proceeded by way of amusement to overturn all the sheaves and scatter them. They were espied soon after midnight by the farmer, who was going home with his bride from a dance. The youngsters were so interested in their sport that they did not notice the lookers-on, who were somewhat ruefully watching their antics, until the comical side of it struck the young people and they burst out into shouts of laughter. The bride afterward declared that it was as good as a circus to see the clownlike manner of the two bears as they went about their play. The farmer was particularly struck with the industry of the fun-makers, as before they fled at his guffaws they had scattered more sheaves than he and his hired men had been able to set up in half a day.

It is unusual for bears in the open to allow themselves to be approached, as they are exceedingly timid at such times, and their sense of smell and hearing are then very acute. The regular plan followed about here for their detection is for the watcher to station himself on a ladder at the head of the bush, some twelve feet from the ground, and therefore out of the scent of the bear, before nightfall and quietly await the coming of the game.

One hunter who did not take up his position until darkness had set in had just been worked up to a degree of excitement by a pronounced sniffing near the foot of his perch, when there was a great rustling amid the branches of his tree. The thought that it was a well-loaded beech and that bears are fond of beech nuts flashed across him just as a big black object came sliding down the trunk. Before he could think of shooting, the great hams of a bear knocked him and his ladder down to the ground, where a second bear awaited the coming of his mate. Whether he actually fell upon this one or upon the body of the climbing

creature he never knew, but he fell upon something soft. He was quite unhurt, when, at his frightened call and the accidental discharge of the rifle, the two alarmed creatures ran into the woods.

Last week a man on a ladder had a good opportunity of watching a large, cautious old bear approach his oat field. Every few yards, as he came down the lumber road toward the open, the bear halted and, sniffing the air, rose upon his haunches to make sure that the coast was clear. That there might be danger from above never seemed to strike the wary brute, though a glance upward must have revealed his enemy silhouetted against the moonlit sky. On he came, and after a long final survey made a dash for the fields. As he came into full sight the hunter fired, aiming between the shoulders of the bear, which swerved enough from its path to upset the ladder and bring the man to the ground.

The fall was somewhat broken by the underbrush, but as the man fell the bear pounced upon him. After a full minute spent in utter stillness the man, unable to endure the weight upon his chest, groaned aloud. As the creature made no movement, he took heart to wriggle from under the huge hairy load, and after much exertion had the satisfaction of standing over the lifeless carcass of the bear. His bullet had sped true to its aim, and had done its work in just the nick of time upon which his life depended.

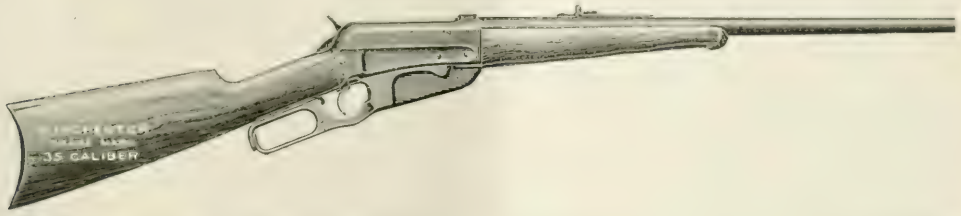
Dan Pretty, a well-known guide, once, under similar circumstances, watched a bear nosing his way to a grain field, but in that case Bruin raced back into the woods, making Dan feel certain that some unlucky movement had betrayed his presence. In a few minutes, however, the bear reappeared, walking before and escorting with many gruntings a handsome, larger animal, which followed shyly, keeping its nose to the ground. A fortunate shot sent the first bear into its death flurry, whereupon the second arose upon its hind-quarters and turned around and around screaming in a piteous manner. With the help of a comrade, Dan killed the second bear. The reason for the courtesy of its companion was made clear by the discovery that it was blind. The extraordinarily plump condition of its body showed that kind friends must have kept it amply provided with food.

This same Dan Pretty was once the witness and referee of a terrible fight between two bears. He was following the trail of one he had wounded in an oat field one afternoon, when he came upon such a sight as very few men have witnessed. In a little opening in the woods an immense brown bear and a so-called silver-tip were engaged in a life and death struggle, which, from the torn up condition of the ground, had already lasted a long time. As Dan put it, they bit at each other like dogs, clawed like cats, boxed like prize fighters and wrestled like Cornish miners, as nearly as possible at one and the same time. The brown bear, which had escaped from captivity after severely injuring its dancing master some months before, was no match in agility for the native, but had an immense superiority in weight and strength. After numberless vain attempts the big fellow at last managed to get in a terrible swing upon the side of his enemy's head, with sent the silver-tip reeling. Evidently considering the fight won by this blow the brown bear sat down and began to examine his wounds, when, like a flash, the other rushed in again and, fixing his teeth into the brown bear's stomach, rent and tore him in a frightful manner.

Dan felt himself called upon to object to such foul play, and took a hand in the scrap just then, pumping enough lead into the silver-tip to keep him quiet forever. In spite of wounds the big brown bear slipped away and was not seen again.

A .35 Caliber Winchester Rifle.

The latest productions of the Winchester Repeating Arms Co. are a .35 caliber rifle and cartridge. The well known 1895 model with box magazine has been adapted to handle a new smokeless powder cartridge, known as the Winchester .35 caliber, which is the most powerful shooting cartridge, at both long and short ranges, ever offered. Rifles for this cartridge are made with twenty-four-inch round nickel steel barrels, making them handy for hunting purposes. The diameter of bore is .350 inch, depth of rifling .004 inch, and the twist one turn in twelve inches. The magazine holds four cartridges, and one cartridge can be carried in the chamber. This rifle, finished with a straight grip stock and forearm of plain walnut, weighs about eight and a half pounds. Rifles of this caliber can be furnished with rifle butts with steel buttplates, or shotgun butts with either steel or rubber buttplates, without extra charge. Extras which the company furnish for the model 1895 .30 caliber Army rifle can be furnished for the .35 caliber at the same list prices; but octagon or half octagon barrels or pistol grip stocks cannot be furnished for this gun.



The Winchester .35 caliber cartridge embodies high velocity and consequent flat trajectory, great energy and striking power, making it a very desirable cartridge for hunting the biggest game known. Some idea of its tremendous killing power may be gained from the fact that the striking energy of this cartridge at 200 yards is greater than the muzzle energy of the .45-70-405.

This cartridge is loaded with a 250-grain soft point metal patched bullet and special smokeless powder, which imparts to the bullet a muzzle velocity of 2200 foot seconds, thereby developing a muzzle energy of 2685 foot pounds. The penetration at fifteen feet from the muzzle is fifteen seven-eighths-inch pine boards. Owing to their size and high velocity, .35 caliber soft point bullets upset, or mushroom, in a most perfect manner. Following is the table of ballistic data of the Winchester .35 caliber cartridge:

Weight of bullet (grains)	250
Muzzle energy (foot-pounds)	2685
Muzzle velocity (foot-seconds)	2200
Remaining energy at 200 yards (foot-pounds)	1546
Penetration in ⅞ inch dry pine boards at 15 feet from muzzle (soft point bullet)	15
Trajectory—100 yds.; height at 50 yds. (inches)	1.03
" 200 yds.; height at 100 yds. (inches)	4 75
" 300 yds.; height at 150 yds. (inches)	12 24

On a ranch near Medicine Hat, Assiniboia, Mr. James McGregor has been engaged in an interesting diversion for some years. He has 1,000 acres fenced off with barbed wire, and within this enclosure has been breeding antelope and releasing a certain quantity each year until there are now several bands within a radius of one hundred square miles.

Cloud Photography.

HUBERT M'BEAN JOHNSTON.

In endeavoring to rid ourselves of bald-headed skies in negative making, it is possible to adopt any one of three different methods. First, we may have real clouds, by which it is meant those that were actually in the heavens when the exposure was made ; then, we may have real clouds printed in from another negative that had been made for its sky effect alone ; or, we may have artificial clouds on the back of the negative. Any one of the three schemes is productive of results that are superior to plain, white paper, though, depending upon the result aimed at, each way is apt to prove the best. For instance, in purely pictorial work, there is small reason to doubt that the best results are to be had from printing in. To photograph a landscape alone, paying proper attention to light and shade, composition and arrangement of mass, is by no means a simple task. To do all this at its very best and at the same time to watch for the most pleasing disposition of cloud lines, becomes almost an impossibility. In such a case, therefore, it is best to pay no attention at all to the upper part of the picture, trusting to be able to supply whatever is needed from some other negative at a later time. But then again, printing in means work and delicate manipulations. Difficult even with Solio, Aristo and other printing out papers, how much more so must it become, when one is in the habit of employing Dekko or Velox or is making lantern-slides. Undoubtedly, for work of this type, where one has to judge exposures, the method where both clouds and landscape are included on one plate, has much to recommend it. Of those negatives where the clouds are supplied by faking on the back with lamp-black or opaque, only passing comment need be made. They have never been capable of commanding consideration in connection with the term pictorial and never will be. The method's only claim for notice is that in such prints as are intended for the engraver, it is better than nothing at all, inasmuch as it serves to break the monotony.

Just because so much has been said and written about cloud photography, amateurs have gotten into the way of regarding it as something very difficult and requiring all sorts of special ray-screens and plates. On the contrary, it is quite possible to obtain both clouds and landscape on one plate at one exposure, and on an ordinary plate at that. This can be done by what is referred to as a modified exposure, a method which consists in cutting off some of the light from the sky during the exposure. There are a number of simple ways of doing it. Perhaps one of the best is that which calls into play a shutter that is fastened to the lens tube by a hinge at the top and that swings up and then down again to make the exposure. As will be easily seen, this allows more time on the landscape than on the sky, greatly to the benefit of both. Needless to say, this method is not suited to quick exposure work and will call for a plate a trifle slower, perhaps, than the one you are in the habit of using. But a slow plate is no disadvantage. The thicker emulsion with which it is coated will allow of your securing more half-tone and gradation than a thinner and faster one would permit. Small obstructions, such as a tree, on the sky line, will not interfere with this method of exposure, but where there are mountains or a forest in front of the lens, the scheme will have to be abandoned or the middle of the plate will be underexposed.

In cloud photography, before one even considers whether or no, an orthochromatic plate is a necessity, must come the question of halation and its cure. This is true whether only clouds alone are being photographed or both clouds and landscape on one plate, though with the latter it is more apparent. Suppose, as an example, you take a photograph of a sunset with a building in the foreground

and cutting off part of the sky. Look at the halo of light surrounding it. The illumination appears to be strong and to have spread out over the building. The explanation that it has been reflected back at an angle from the back of the plate is almost too old to refer to. But consider a moment something that you have probably overlooked, because there was no building to attract your attention to it. If the light overspreads in one instance, what is there to prevent it doing the same thing every time? And in a bright sky, who is ever going to notice it? Yet, the fact remains, it is there all the same and just as much as it obscured the brilliancy of that building's edge, does it detract from the clearness of outline of the cloud forms. Moreover, inasmuch as the edges of the cloud are usually the thinnest and most delicate parts, one of the chief beauties of the subject is lost. To avoid the difficulty, a most excellent idea is to use the double-coated, non-halation plates made by some manufacturers. Though these are a trifle slower in their action, owing to the thickness of the film to be penetrated by the light, when one is using the shutter referred to herein, but little inconvenience results. Should one not care to go to the expense of buying such plates, however, ordinary plates coated with the usual lamp-black backing, are quite satisfactory. There are also a number of prepared backings on the market that are very simple and clean to handle.

The question of orthochromatic plates is more or less debated. Some workers contend that the most true to life results are to be had on ordinary plates, whilst others claim that a ray screen and all the rest of that paraphernalia is an absolute necessity. The fact is, ordinary plates, under certain conditions, will give fairly realistic results. On a day, for instance, when we have very pronounced clouds standing out against a colorless ground of plain grey, there is no real reason why the ordinary plate ought not to supply all needs. Take, however, a day when the heavens are overcast with light, fleecy clouds on a blue field, and one will require both orthochromatic plate and color screen to get anything like truth in values. With an ordinary plate all would appear white and plain, owing to the fact that blue leaves no impression on the sensitive film. But even with all the proper equipment, it is no easy matter to render blue properly. A very common error that the tyro in cloud photography is going to fall into is the using of too dark a screen. The result will be that the picture will resemble that imitation impressionistic thing that came out in the July number of the *Photo Era*, and the clouds will bear a strong resemblance to tufts of white cotton wool pasted to a sheet of carbon-black cardboard. This is caused by the combination of the dark orange screen and the blue sky; the heavens take on a dark green tinge and don't photograph at all. The difficulty is easily obviated by using a Bausch and Lomb ray filterer and diluting the bichromate solution. Thus, it will be perceived that a very strongly defined cloud on a blue sky is going to necessitate a weak ray-screen and *vice versa*. But the only way to judge when a screen is too dark is to note the occasions on which it leaves the sky underexposed and at the same time fully exposed the dark, heavy foreground. Color sensitive plates, particularly Cramer's, may be used alone and yield very satisfactory results. Inasmuch as they are partially corrected for blue in their making, they serve to show the contrast between those portions of the picture and such as are white, or at least lighter. It goes without saying, of course, that a screen is unnecessary with a yellow sunset, just as at the same time, it is understood, that where the sky is red, it is an essential.

While referring to sunset pictures, it may not be amiss to just mention and call attention to the falsity of the so-called moonlights made in this way. These pictures, so frequently made across a sheet of water, are the result of a short exposure with a small stop and a development long enough to secure white clouds and a dark ground for them. Their resemblance to a real moonlight is most remarkable, owing to its absence, a fact which is easily proven by making a real moonlight and seeing it for yourself. In the genuine night picture the foreground is the most brightly lighted portion, the distance and heaven gradually fading away into nothingness. In

the fake moonlight, the condition of affairs is just reversed and the distance is strong and clear, with dark, shadowy foreground. The real sunset picture requires a longer exposure, in order that the detail in the foreground may show when the sky has developed up to the correct density. If the amateur feels that he *must* have a "moonlight," he will find it better to secure it by full exposure and slight development rather than by short exposure and forced development. And with long exposure it is of course going to necessitate the use of backed orthochromatic plates to preserve the clouds.

Just a word or two on developing processes. To catch clouds on an ordinary plate one must give a short exposure and carry on the process of development very slowly in a diluted solution. The more we dilute the developer the more often is it possible to save an over exposure. In such a case normal solution is out of the question. As the sky appears and commences to stand out a little, more stock solution may be added for density, but care must be exercised not to overdo it. Nor must any one take any chances on over developing in cloud work. In fact, if anything, rather err the other way. For the edification of those who have but a dim idea of the requisites of a good cloud negative, let it be stated that the principal characteristics ought to be an image devoid of fog, in which the range of half-tone is perfect and the extreme high-lights fairly intense. A developer rich in pyro, or whatever agent is used, and weak in accelerator, is useful with the aim of bringing out the high-lights first and securing in them good printing power by restrained, but not too weak, developer. With corrected or color sensitive plates, development may be carried on with solutions of full strength.

The only places where extra care is needed is to stop before the negative gets too dense, particularly when both clouds and foreground are on one plate. If the exposure has been made for the foreground and not for the clouds, every part of the plate ought to be done about the same time. The exact moment to stop development is when the sky commences to be a trifle more dense than the foreground. Remember that the sky half of the negative gains density twice as fast as the other part. A good idea is to keep the solution well over the foreground, with occasional washes over the other part to prevent the formation of a definite line.

In the making of cloud negatives for the purpose of printing in with our landscape negatives, it must be borne in mind that clouds are subject to the same rules as terrestrial objects. No one would think of photographing them at the zenith and introducing them at the horizon, but, even so, proper care is not always displayed in placing them at the proper distance above the horizon line. In the first place the cloud ought to be taken with a lens of the same form as is used on the landscape, and the direction, strength and quality of the lighting should be the same in both. In all cases either include the horizon line or mark the negative in some way that you may not commit the foolish error of printing it upside down.

But to go on and deal with this subject any farther would make the yarn well nigh endless. Perhaps the few remarks that have been made here will not do more than to point out the way, but once one starts on that way he quickly learns a lot for himself that somehow never finds its way into print, and that is after all, the very essence of the matter. Suffice it to say in conclusion, that the amateur who has never tried cloud photography has before him a new field full of unexplored delights, and he would do well to lose no time in jumping in and doing a little experimenting.

The Fish and Game Protection Association, with headquarters at Quebec City, is in a flourishing and vigorous condition, and reports a paid-up membership of four hundred. It is doing excellent work. This is a distinct organization from the Province of Quebec Association for the Protection of Fish and Game, with headquarters in Montreal, which has been in existence many years.

IN THE FAR NORTH WEST.

A beautiful reflection on the Iskoot River, a branch of the Stickine

A Young Kipawa Moose.

There are others—and many of them much bigger than this young bull.

My First Moose Hunt.

BY LT.-COL. ANDREW HAGGARD, D.S.O.

The moose, the biggest of the deer tribe in North America, is practically the same animal as the European elk, still to be found in Scandinavia, northern Russia, and possibly in some of the northernmost parts of Germany also. Moreover, he is of the same genus as the old Irish elk, whose enormous horns excavated from bogs fairly take away the breath of the sportsman who views them upon the walls of some museum or country house adjacent to the scene of their discovery. Although, however, his antlers cannot compare with the gigantic trophies of the antediluvian Irish elk, the moose of Canada is himself a tremendous creature, an old bull moose frequently standing as much as nineteen hands at the shoulder. With his very high withers and his Roman nose he is an ungainly beast, especially as his enormously tall legs give one the idea of being too long for his body. For all that, he is agile in the extreme, and those tall legs of his seem equally adapted for stepping over the fallen logs lying everywhere in the Canadian forests or for splashing through the muskegs or swampy prairies, where he dearly loves to roam in search of his favorite food, the willow, for the huge hoof widens out as it sinks into the bog, while the great strength of the moose enables him to lift it out again easily and without apparent effort, no matter how deeply the limb may sink. With his huge, wide-spreading palmated antlers towering above his towered head, and his wild eye fixed upon you when about to charge, a moose is a ferocious looking animal indeed. How great is his strength none know better than the writer of these lines, whose scarred wrist bears witness to the occasion when for five minutes, at least, he preserved his life by hanging on to the horns of one of these huge creatures, who, after charging, carried him about the while as easily as had it been but a fly upon his antlers. That was a terrible experience indeed, but as it was not my first moose, we will not go on with it here.

There are two methods of hunting the moose in the Dominion of Canada. One, which is chiefly practised in the lower provinces (that is, Nova Scotia and New Brunswick), is by hiding at night in the rutting season and calling. The call, which is made to imitate the tremulous cry of the cow moose, can be heard at a great distance. It is made with the assistance of a sort of funnel of birch bark, and, if the cry be skillfully given, will on a still night bring the bull moose from a distance of a mile or two right up to the very muzzle of the rifle of the hunter who is waiting to slay him. Thus seeking for love he finds death. It seems scarcely an honorable way to kill this mighty monarch of the forest !

The other method, that of still hunting, is that more usually pursued by the Indians and other hunters of the lone Northwest; and it is only by careful tracking, by great endurance, and by the greatest precaution that success can be attained by him who would kill his first moose. I am not alluding to another method of still hunting which usually depends more upon chance than on skill; this is shooting the moose from the birch-bark canoe, as he comes down to drink at the borders of some far-away lake or stream. This is a method of hunting far more successfully practised in shooting caribou than moose, as one can usually be more certain of the exact haunts of the former at a certain period than of the latter, who is a great traveller. Many a moose certainly has been slain in this way, but he is more likely to be obtained quite unexpectedly by a chance shot from a canoe than when deliberately employed in looking for him in this manner. Great slaughter of moose also takes place at times by the red Indians in the depth of the winter. At such a

time a band of moose will form what are called moose yards, within which they trample down all the snow, leaving a rampart all around them, traversed by only one or two exits. But it requires the Indian, with his love of reckless waste of life, to kill off a band of moose in a moose yard ; beside which, to track them to its entrance through the deep snow, with the thermometer down to 40 degrees below zero, is more likely to prove fatal to the white man than the moose.

In order to prevent, if possible, the wholesale massacre in this manner of the larger food-giving animals, such as moose and wapiti, the Hudson Bay officials in the Northwest, upon whom the Indians are dependent for their stores, have of late years steadily refused to take from the Indians any of their undressed hides. It is only when the skins are tanned, dressed, and turned into shirts, gloves or moccasins that they will be accepted at the Hudson Bay posts ; nor will the carcass of one of these animals be bought from an Indian. In spite of this the Indians are rapidly killing out all the food by wantonly destroying, whenever they get the chance, far more game than they can use. The time will soon come, therefore, when, if they do not take to agriculture far more than they do now, they must starve and be wiped off the face of the earth, as they have themselves wiped out the buffalo. It is especially in winter that the greatest destruction of big game goes on, for then not only does the snow much facilitate the tracking of the animals, but also often impedes them in their escape, while the wily savage can follow on snowshoes.

It was in the beginning of October that, after travelling for six days, I found myself in the far-away backwoods skirting the shores of an arm of one of the great northern lakes, and on the further shore we could see that the forest fires were raging. We had seen and heard them blazing across the water for a day or two, and the air was full of smoke. Despite the fact of the water being between us, this was somewhat alarming, for the few Indians I met gave all sorts of contradictory reports as to the actual direction in which there were forest fires. Our trail lay for the greater part through woodland, all the wood being as dry as tinder, logs lying scattered about pell-mell in every direction, rendering the use of the axe frequent to clear the track. We were, we knew, in a veritable fire-trap should once the fire work round the end of the arm of the lake ; but such was my desire for moose that I pushed on. Eventually my half-breed attendant and I managed with difficulty to get our Red River ox-cart across a deep creek or stream of good water, which we were very glad to find, beyond which we soon had the campfire burning in a spot which we carefully cleared all round of any brushwood likely to catch. This half-breed was a capital fellow, strong as a horse and perfectly tireless, an excellent cook, but no hunter, and together we were searching for a famous Indian moose hunter whom we knew to be somewhere out in those wilds. The next morning we could hear the crackling of the forest fires sounding nearer, and the air was so dark with smoke that a brace of wild duck that had lost their way flew against our little tent with a thud. Becoming alarmed, we pushed on rapidly, and breathed more freely when we had floundered through some very wet muskegs, after which, being out of the continuous forest, we traversed small prairies and occasional belts of wood. Eventually, after the air had become clear of smoke, and when the crackling of the fires could be no longer heard, I came upon the Indians I was in search of. They were camped upon a grassy ridge overlooking a large marshy pond of very bad tasting water. They had several wigwams, crowds of ferocious Huskey dogs, as they call the Eskimo breed, some women and children, and enormous quantities of raw meat hanging up to dry on poles over wood fires. That Indian encampment was not a pleasant thing to approach, but I had to approach it, in spite of the smells and the Huskey dogs. These brutes, which look like wolves, usually bite first, and think about it afterward. Fortunately for us the chief, whose name was Rainy Cloud, came out just in time from his wigwam, and he rained such showers, not clouds, of curses and blows combined

upon those savage brutes that they were compelled to give up their evident intention of making a meal of myself and my companion. Then I had to solemnly shake hands with every filthy man and woman Indian in the band. "Shade of Fenimore Cooper! what price the noble redskin now," did I exclaim while going through this terrible ordeal. But I survived it somehow. I put up my camp as far from the Indians as possible; but Rainy Cloud, with Waving Pine and Long Arrow, came over too, and did not depart until they had got much tea and sugar out of me. For the three succeeding days did Rainy Cloud escort me moose hunting. During these three days did I wander alternately through dry poplar woods where, even although wearing moose-skin moccasins, one had to step on tiptoe the whole time for fear of twigs crackling; through willow swamps, where numerous branches newly beaten off betokened the recent presence of moose; and then again through miles of prairies, shut in by circular belts of trees, like a gentleman's park surrounded by plantations. In these prairies the tracks of the moose and the places where they had been lying down were numerous, while in the long hay-like grass the roads made by the bears were frequently crossed. It was frightfully hot those early days in October, and often we had no water. To procure any water at all I had occasionally to take my hunting knife and cut out some sods in an almost dried up muskeg, then to wait for water to filter into the hole. When it had very slowly trickled in and filled the hole, Rainy Cloud and I would drink the yellow fluid thus obtained, after straining it through a handkerchief. It was usually very nasty, but I once got some delicious water from a muskeg which to look at was stagnant with rotten vegetation.

We got no moose at all during those three days. It was always the same thing! As we tramped along, hour after hour, whenever we found a trail of any animal, Rainy Cloud, scarcely pausing to look at it, would know how old it was. With the exception of bears, of which there was plenty of fresh trail, he would always say "a week old, a fortnight old." Only once did we find the trail of one moose, and a large one, too, to which he said "yesterday."

At last we gave it up, the Indian himself declaring that all the moose in that country were "nipoh;" that is, dead. He and his gang had evidently killed the country out before I got there.

Unfortunately for the white hunter there is no restriction as to hunting seasons for the redskin, but he himself must not begin to hunt moose before October. Very disheartened at having undergone so much toil in vain, I left that district, returned to the big lake, got a boat, and sailed upward of a hundred miles to the northward. I had taken with me a new hunter who knew that country, whose name was Singing Bird. Of all the unsociable, disagreeable Indians I ever had to do with, Singing Bird was the most disagreeable and the most taciturn. But he was a splendid hunter, and before we had been a week in the new country we very nearly had several moose. But the weather had become frosty and there was no wind. The consequence was, do all we could the twigs would crack under my moccasined feet whenever we were getting near one in the woods, after perhaps tracking him for hours in the prairies. On such occasions Singing Bird used to grunt out "Ugh—your fault!" as we would hear the huge animal crashing away within a few yards of us. And then without another word he would start another hunt after a new moose, for to follow one once disturbed was useless; he would not stop for miles.

After a day or two's hunting in common, I began, in spite of Singing Bird's disagreeable ways, to have a great respect for his method of hunting. And he got a respect for me also when I found him out in a lie one day, when he got tired before I did. We had been following for miles the trail of a big bull moose and a cow, when suddenly Singing Bird said, "No use, yesterday's trail: go camp now." I merely looked at him and said: "Singing Bird, did it freeze yesterday?" "No," said he, "this morning." Then I said, "Singing Bird, I saw where those two moose had broken ice." He saw that he was caught, and,

probably for the only time in his life, laughed. Then he said, "Let's go on." But we did not get them that night.

Next day he found the trail of those moose ten miles from where we had seen them the night before. He did not follow it, but instantly started off at right angles. We walked five miles, across prairie and muskeg, till we came to a little wood. "Wait," he said. It was the only word he had uttered all day. When we had been waiting two long hours in silence, he pulled my sleeve. Far out on the prairie was that which made my heart thump as it never thumped before. Two black dots!—yes, two black dots—coming nearer. The two moose, by thunder! Nearer they came, and nearer, till I could see the magnificent antlers of the bull distinctly as they stood out against the frosty sky, and the female, being a little behind, he occasionally turned round and caressed her. Then they came on again, straight towards us, biting off the tops of a willow bush here and there.

At last they were within fifty—no, forty—yards of us. Every nerve in my body trembled as I raised my Winchester and aimed at the bull. Bang! He is down on his knees—dead? No! He is up, and coming straight at us with a bellowing cry. Bang! again, as he seems about to rush past or over us. With a terrible, awful crash that huge mass of animate flesh topples right over into the bushes alongside us, nearly crushing us in his fall. The edge of his antlers scraped my cap off! But I had killed my first moose!

Brome Lake.

BY WALTER GREAVES.

My impressions of Brome Lake are that it must be an excellent sheet of water for large bass (*Micropterus salmoides*), and if one happened to be there when they were taking the fly well, I am sure he would have grand sport.

I spent three weeks at Knowlton during July and August last, and, although I often went out fishing, I was not fortunate enough to strike any of the large ones. During my visit they were not taking well, and I did not see or hear of any being caught with either fly or bait. A Mr. Robinson, of Montreal, landed one of 6½ pounds with a minnow the day before I arrived, I believe. One morning, between 10 and 11 o'clock, I landed twenty with two of my "Massassaga" flies. I then returned home satisfied, as any sportsman would doubtless have done. Several times I caught two at a cast, and I could have caught hundreds, I believe, if I had tried. They were, however, small bass of about 1½ pounds each.

Good, dry row boats can be secured from Jos. Benoit and Mr. Sturtevant. I patronized the former and found him and his assistants civil and obliging, and, from what I heard, the same may be said of Mr. Sturtevant.

I am not able to arrive at any definite conclusion as to why the large bass were not taking during my stay, but think it may have been owing to the cold weather and heavy winds and rain. I noticed that the water was nearly always discolored, and this, I fancy, was sufficient to prevent the fish rising well to the fly. It is my desire to pay a visit to Brome Lake when the fish are taking well and if I do I hope I may be able to give you a good account of the fly fishing there. I am anxious to get one of the six-pounders on a light rod with a fly.

Beyond the Forest.

BY GODFREY PEEBLES.

So comparatively little is known of the vast extent and resources of Canada outside the few whose business it is to be posted that the most virgin field of sport in the known world is practically an unknown quantity to any but the few. Every province in the Dominion furnishes its quota, but for sheer abundance and variety of game and grandeur of scenery, Canada's Great North Land is without all doubt beyond compare.

To the ordinary individual it is a place pigeon-holed in his memory chamber as a land of much gold and terrible cold, but he might to good advantage to himself file away another piece of knowledge in this storehouse of his. Truly it is a land of gold ; a land where the mercury at times drops into the bulb, for nature in forming this immense region—how immense is hardly comprehended by any —has been in no wise niggardly. Immense wealth is there for the prospector, spells of intensely severe weather for the hardy, and, when old Sol gets his work in, warmth enough for the coldest blooded. But it is when the question of game is considered that the immensity of this wonderful Northland comes promptly to the front and stands out in bold relief. It is the immense storehouse of all the known varieties of American big and small game, and doubtless many species which have not yet been discovered. Here one has the powerful grizzly, the wood buffalo, the majestic moose, the nomadic caribou, the rare musk ox, the black fox, whose pelt is worth from three to four hundred dollars, etc., etc. I might go on ad infinitum and name the fur bearing creatures of this part of the Dominion, but that would take up more space than is at my disposal. It is the home by choice of the keen-eyed wild goose, whose honk-honk-honk is a familiar part of the life of its myriad marshes; the duck in all its varieties is there ; its waters are teeming with fish of all kinds —but why go on, its dimensions are so stupendous and resources so limitless, that language fails in an endeavor to put it in black and white.

It is a land of contrasts—when it is dark it is all dark, and when light it is all light. In the winter season the sun is absent and in the summer always present. Nature seems to have excelled herself in providing extremes. Here for hundreds of miles is jumbled together in wild confusion, rocky masses sufficient to pave the cities of the two hemispheres.

Again, as far as the eye can reach the grey barren stretches into nothingness where sky and horizon meet. Man is better away during the winter months, but for the balance of the year there spreads out before him such a vista of beauty that the eye is stalled—in every direction, the hillside and valley is carpeted with the prettiest of flowers which apparently spring up in a single day, so powerful is the influence of the long day of sunshine, and one may not walk in the month of June without at each step crushing quantities of wild strawberries which grow in profusion and to a very large size.

In the grandeur of its mountain and water scenery it is doubtful if this Northland is anywhere excelled ; its mountains rise in their great majesty to the skies and down their rugged slopes in leaps and bounds, rushes the mighty flow of waters caused by the melting of the eternal snows on their towering peaks, and it is no extraordinary sight to see great bodies of water plunging down in white spumey splendor, a sheer depth of several hundred feet into the canyon below.

The hunter and frontiersman is always the advance guard of advancing civilization and I doubt these great solitudes being left alone any more than any other region. Manitoba and the North West Territories but a short thirty years ago were noted for their great cold and vast herds of buffalo, and fit only for the trapper and Indian, but in that short

period what a change has come over this once dreary solitude; it is now peopled by a multitude who are rapidly growing wealthy in this once "Far West." History has a way of repeating itself, and doubtless the restless white, sighing for other worlds to conquer, will slop over into this beyond, for that is all this Northland is. The day, however, when the hunter will find any difficulty in making good bags in this his paradise, is yet a long way off.

Modern Rifles.

BY ST. CROIX.

After all, the only true and certain test of the value of a sporting weapon is a trial upon game, so perhaps it may interest all excepting the old "moss-backs" to learn about the rifles Canadian hunters of big game are using. Of course the licheniferous ones don't care to know, because they find themselves unable to kill game with modern rifles, and refuse to believe that younger men (with keener eyesight perhaps) are doing so day by day.

During the course of a little journey across the Dominion, taken recently, I found the deer hunters of the Sudbury district using the 30-40 or 30-30 as a rule, though a small percentage prefer the 38-56. From Sudbury to Lake Superior the same calibers are chosen, and most, if not all, the 45-90 and 45-70 in use are old guns that their owners would part with at a sacrifice.

In the mountains the demand is for 30-40, 303 or 303 Savage. The 30-30 is unsurpassed for deer and black bear, but the professionals won't trust it for grizzly.

The Indians still stick to the 44 Winchester, but they not infrequently pay a heavy penalty for using this light handy rifle. Only a few weeks ago one of the best Okanagan hunters was killed at Sicamous by a silver tip, entirely owing to the miserable inefficiency of his rifle. The tragedy happened within a mile of Sicamous Junction, and as near as could be ascertained the facts of the encounter were as follows: Tollomie, an experienced man of some fifty odd years, had come down the Shuswap Lake in his canoe with his klootchman, and finding fresh deer tracks on the willowy bench where stand the deserted ruins of the old town of pre-railroad days, landed to get some meat.

The growth was thick and he was lost to sight almost immediately. Not long afterward the woman heard two shots in rapid succession, and after a short interval a third. Tollomie not returning, his better half went to find him, and soon came upon the unfortunate fellow lying in a pool of blood, one hand almost gnawed off, both eyes out, and his scalp hanging over his face.

The poor, plucky woman helped him to the canoe and paddled to Sicamous. Next day he was sent by train to Vernon, forty-two miles distant, and got into the doctor's hands—but after lingering for almost a week he died through blood poisoning.

His rifle was jammed when found, and it is thought the bear after receiving three shots, felled him by one savage swipe while the old fellow was trying to get another shell into the chamber. The cartridges had been reloaded with poor powder, and the shell that jammed was considerably longer than a factory cartridge owing to the bullet being inserted but a short distance so as to allow of a heavier charge.

All the white hunters who heard of the adventure were unanimous in saying it could not have happened had Tollomie had a 30-40, a 303 or a Savage in his hand. Three shots from any of these powerful rifles, at short range, would have taken the fight out of the worst silver tip in British Columbia. But the Indian is poor, and 44 caliber cartridges are cheap, so Bruin, in the future as in the past, will not always die unavenged.

Practical Forestry.*

"I am of the opinion that a *practical* demonstration of re-foresting our denuded timber lands would be of immense benefit to this country. We have often been told of late years that there is greater profit in caring for and re-foresting timber land than there is in clearing and cultivating the said land This, I believe, is true, but there are so few of our people who know how to begin or what variety of timber to select or where to get it There are thousands of acres of such lands lying idle and useless all over this Province that if re-foresting were undertaken would eventually largely increase the value of these lands and would solve the problem of future supply. I am not aware that the Government has done anything in the direction of re-foresting. If I am right in this perhaps our Association would consider the advisability of taking up the matter with the Government, with the view of establishing experimental re-foresting farms at various points in the Dominion, particularly in the Province of Ontario.

"Take for instance hardwood lands, where the soil is light and very stony; the lumberman goes in and removes all sawlog material from a block of such land, it becomes practically valueless, being too rough for cultivation. It is such lands as these I would like to see an effort made to turn to some account."—J. E. Murphy, Haworth Station, Ont.

This extract brings up a very important question and one which is worthy of the fullest consideration. Forestry is practical as well as theoretical. Practical forestry in Canada, until recent years, meant cutting off the virgin forest and devoting it to useful purposes, without consideration of any succeeding crop. The virgin forest has become so thinned that the blue sky begins to appear through the intervals, giving warning of the future, and much of the land which produced good timber cannot be made to produce good crops of anything else. The last report of the Director of Forestry for Ontario shows that in the forty-three older counties there is an area estimated at 3,376,000 acres of waste land, cleared of its timber and made of no use whatever. The practical question therefore now is, how is timber reproduction to be secured, and in what way are such waste lands to be utilized? The wisdom that will solve the problem must be based on a knowledge, first, of the business conditions, and secondly, of the forest conditions. A wise foresight, based on practical knowledge of the lumber business, is a necessity to decide what crop is to be encouraged for the somewhat distant reaping time. The agriculturist has sometimes made mistakes in selecting his crops with only the interval of a few months between seeding and harvest. How much care therefore is required in making a forecast which must look forward to a greater or less number of years for its justification. In Germany, extensive plantings of beech were made in the early days when there was a great demand for such trees for railway ties, but the substitution of metal for wooden ties belied the expectations of the foresters, and it was found that it would have been better to have gone less extensively into beech planting.

As far as soft woods are concerned, it seems clear that the most valuable lumber trees are, for a large part of Ontario and Quebec, the white pine; for Eastern Quebec, the Maritime Provinces and Manitoba and North West Territories, the spruce. But when it comes to a choice between these and hardwoods, or among hardwoods themselves, the question is more complicated. His Honor Sir Henry Joly is a strong believer in, and advocate of the planting of walnut, and some time ago, in ROD AND GUN, Mr. Thomas Conant, of Oshawa, gave an account of his successful experiments with this tree. The tree to be planted or encouraged must be selected on a practical knowledge of the usefulness and value of the timber, and on a careful consideration of the future prospects in the market.

But then comes in the other side of the question. Certain trees are best commercially, but which will give the best results in the conditions in which they are to grow and how are they to be grown so as to produce the best timber? Here the scientific knowledge of the forester must be brought to bear. And in this more even than in the business aspect, the assistance of the Government is required, for the necessary information as to the sylvicultural conditions, rates of growth, protection from injurious influences, etc., can only be properly

* Contributed by the Officers of the Canadian Forestry Association.

collated by the Government. Even a scientifically trained forester would require some information in regard to local conditions, and therefore it is desirable that the problem should be given attention as soon as possible so that the earlier will those desiring to go into timber culture be put in a position to direct their efforts most wisely.

In Ontario, the Government derives so much of its revenue from the white pine that this tree has been given some special study, and in the Timagami Reserve, a first step has been taken toward the management of a mature forest, while in the Reserve in Frontenac and Addington counties, and in the Sibley Reserve, north of Lake Superior, burnt over and denuded lands growing up with a new stand will be dealt with. Harwood lands are not so largely public lands, nor are they a source of direct revenue to the state, so that the Government has not felt the demand so urgent to take hold of them, and there may be some uncertainty as to how far the country would justify them in so doing, for every such advance means increased expenditure. In the United States, the Bureau of Forestry makes its co-operative offer apply to the management of tracts for producing lumber, and advantage of it has been taken by many private owners, but this means the training and employment of a staff of experts.

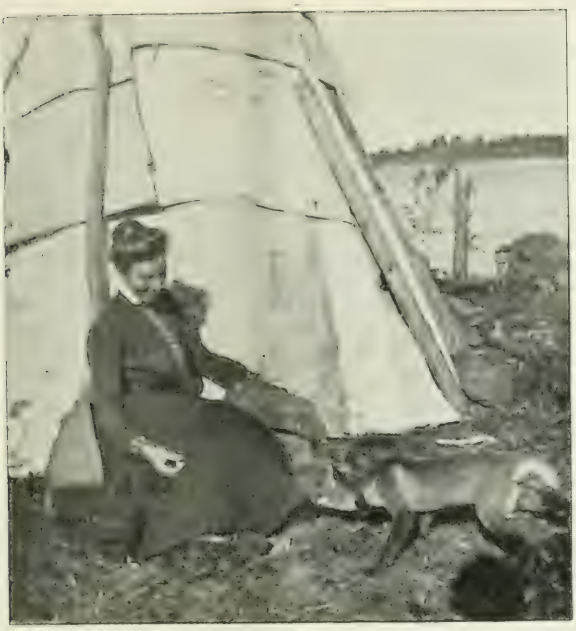
With so much land literally going to waste, is there not, however, justification for asking that the subject be given thorough consideration?

At the annual meeting of the Canadian Forestry Association a paper was submitted by Mr. W. N. Hutt, which is probably the first attempt to deal with the question of the rational management of wood lots in Ontario, and although the paper referred mainly to the small wood lot of the farmer, still the principles laid down are those which must be considered in dealing with larger areas, and if steps were taken to have a practical demonstration on the lines suggested so clearly and ably by Mr. Hutt, the problem of our waste lands would be advanced much nearer to a solution. Although it is a matter of special moment to the agricultural population, apparently little or no attention has been given to this matter even by the institutions whose special business it is to do experimental work for their benefit, at least in Eastern Canada.

Dr. A. Harold Unwin, who has kindly contributed the article on "European Forestry," published in this issue, is one of the European members of the Canadian Forestry Association. He is an Englishman, his father being a member of the well-known publishing house of T. Fisher Unwin & Co., London, Eng., but he has for the last few years been making a special study of forestry in Germany. He has done practical forest work in the Harz Mountains in Prussia and Bohemia, and completed a course in scientific forestry at the Royal Saxonian Forest Academy in Tharandt, Bavaria. He has recently obtained from the University of Munich the degree of Doctor in the Faculty of Economy.

The interest that is being aroused in forestry is shown by the resolution passed at the recent meeting of the Maritime Board of Trade held at Sydney. It exemplifies the fact also that it is a matter of practical business importance since it was considered by the business men of the Maritime Province of sufficient moment to be dealt with by a special resolution. The resolution is as follows:

"Whereas the subject of forestry has in recent years engaged the attention of the governments of many countries of the world, and some of the provincial governments of Canada have taken action looking to the protection and care of their timber reserves; therefore be it resolved that, in the opinion of this Board, the time has arrived when laws should be made for the protection of the timber limits of the Maritime Provinces in the direction of securing, as far as possible, immunity from the ravages of fire, for a more careful and scientific practice as regards the cutting of timber, and also, as far as may be practicable, the encouragement of the planting of forests."



THE LADY AND THE FOX.
Taming a fox, Desbarats Islands.

THE BASSWOOD.
One of the most useful trees of the Canadian forest.

UPPER SHEEP CREEK FALLS.

These falls were photographed by the explorers of the Atlin-Quesnelle Telegraph Line.

The Basswood.*

Here's a song for thee—of the linden tree,
A song of the silken lime ;
There is no other tree so pleaseth me,
No other so fit for rhyme.

When I was a boy, it was all my joy
To rest in the scented shade,
When the sun was high, and the river nigh
A musical murmur made.

When, floating along, like a winged song,
The traveller bee would stop,
And chose for his bower the lime-tree flower,
And drink, to the last sweet drop.

How many have shared that pleasure with Barry Cornwall! As we think of these rare days in June when the first heat of summer is making itself felt, a few white clouds floating lazily over the clear blue sky, with the first suggestion of the summer haze dimming the landscape and the drowsy murmuring of the bees overhead, with the sweet scent of the lime flowers pervading the atmosphere and all the senses drinking in the sweet harmony of the scene,—who could resist its entrancingly drowsy attraction, or help feel arising within him the longing that he might be a boy again, if but for a little while, to escape from the pressure of the world's care and its jarring noises, and in the peace and beauty and sweetness of such a scene, to feel the discordant notes hushed and the harmony of nature spreading its soothing influence over the nerve and brain and heart.

The Basswood, or American Lime or Linden, whether in blossom or not, is an easily distinguished tree. Its large leaves, four or five inches or more in width, are heart-shaped and the edges are prominently serrate. On fresh shoots or young trees, the leaves often reach a very much larger size. The veins in the leaf are very distinct, spreading from a large central vein and branching before they reach the margin. The manner in which the flowers are produced is peculiar. Instead of the stem of the bunch of drooping, cream-colored, sweet-scented flowers being inserted directly on an ordinary twig, it is placed in the centre of a strap-shaped bract three or four inches long and about three-fourths of an inch in width. The sweet odor of the honey-laden flowers is a great attraction to bees, and this tree is a very suitable one to plant where honey production is desired. The fruit is a small round nut, which is edible, but so small that it is of little interest to anyone but the small boy, by whom it has been sometimes designated "monkey nut," though this is purely a local name. It may be seen scattered over the snow under these trees in winter and it is often the second year before it germinates.

The scientific name Tilia is the old classical designation for the European tree of this genus, and this word also meant the inner bark or bast of a tree. Which was the primary meaning it is perhaps impossible to say, but the ancients made use of the inner bark for different economic purposes, so that the name may have been transferred from what was considered the most useful part to the tree itself, or, being used to designate the bast of this tree, may have extended its meaning to include all others. To trace the etymology of such words often leads back to very interesting bits of history.

Linden comes through the Anglo-Saxon, and Lime is apparently a corruption of line or lind from the same source. Teil-tree, a name also used in Europe, is from Tilia, through the French.

The Basswood was a useful tree to the early settlers. According to Dr. Canniff, it was largely used by them in Ontario in constructing their log cabins. The logs were flattened somewhat on opposite sides and were laid with the flat sides together, the ends being notched so that the logs at the ends and sides of the hut would fit into one another and hold solidly. The interstices between the logs were filled up with moss and clay. If a peaked or "cob" roof was desired, it was made by cutting the end logs into successively shorter lengths, and the roof was completed by being covered with bark, or

* Contributed by the Officers of the Canadian Forestry Association.

later by rough wooden tiles, the whole of the work being done with the axe.

The roofs were sometimes made of basswood logs, hollowed out and placed over one another, with the round and hollowed sides turned upward alternately, and fitting into one another like tiles, forming a covering that was entirely impervious to rain. The troughs used to catch the sap in making maple sugar were also hollowed out from basswood. The inner bark was used by the Indians for tying their birch bark baskets together and for other similar purposes.

This inner bark is of a mucilaginous nature when masticated, and has served the small boy as a substitute for "slipp'ry ellum" when the latter was not conveniently to be obtained.

When the wood is seasoned quickly it is very white, and, being easily worked and split, is used for a great many purposes where a light wood is required, such as carriage panels, boxes and woodenware. It will not warp if well seasoned and not exposed, and is therefore used for sounding boards for pianos. As a veneer, it is used for chair seats, three ply of the veneer being used, and for fruit baskets, etc.

Its distribution in Canada is from New Brunswick as far West as Brandon in Manitoba, but it reaches its best development in Ontario, where the supply for commercial purposes is mainly obtained, and where it sometimes reaches three feet in diameter and one hundred feet in height. In Eastern Manitoba this tree might be successfully planted, and as it is both ornamental and useful in many ways, it is one that it would be well to experiment with. It is particularly desirable where bees are kept, as the flowers are great honey producers.

European Forestry of the Present.

A. HAROLD UNWIN, D. OEC., THARANDT, BAVARIA.

Europe being economically not homogeneous, naturally shows this also in its forest administration. Even in this the 20th century, there are forests in old Europe which can not be cut or used, technically because the timber is valueless or cannot be transported to the nearest railway station. Such parts of the Continent are Northern Russia and Finland, some of the mountainous parts of Central Sweden, Galicia and Servia. Here one may find forest ranges, that is to say areas under one educated forester with assistants, such as in Northern Russia, of two million acres in extent. The areas to be cut are sold by auction, similar to those in Canada. This is the one extreme in forest management; the other, that of "intense" management, one finds in England, France, Saxony and many other parts of Germany.

Here every piece of forest produce can be sold, and instead of selling the use of the area per year, government forest officers have the timber cut down and then sell it by auction, thus getting a higher price for it. In this case, the ranges under one educated forester are usually four or five thousand acres in extent, and are carefully divided so as to insure regular cutting, etc. Of course, between these two extremes one gets the most varied transition stages with ranges of different sizes, *e.g.*, the largest in Germany are between 25,000 and 35,000 acres in extent.

The financial effect of this arrangement is varied. In Russia, *e.g.*, on the average, including protection forests, seven cents per acre a year clear profit is made. This clearly shows that even in a country like Russia, with full protection against fire a forest brings in profit, and under government management, too. This is, of course, a very small profit, but with intenser management, where all timber can be sold, it gradually rises, and in the best-managed spruce forests of Saxony

is five dollars per acre per year.* The capital represented pays at that profit at the rate of 2½ per cent., which, considering the useful indirect effects of the forests, is very satisfactory.

In the above, the size of the ranges was made a very prominent point, and indeed it is the *sine qua non* for forest management and protection, especially against fire. Of course, the more valuable the forest the smaller the range, and the more careful must be the protection of it against fire. The European forest laws against fire would be useless without the foresters, etc., demanding as they do that the whole masculine population of the district turn out with implements in case of fire. This is the case in Russia, Finland, and in some rural parts of Germany.

In one part they have actually brought the telephone into use, and all foresters' houses are connected so that they can be at once called.

Another point which is connected with the size of the ranges is the purely forest technical management of the forest. If a forest is once put under one man's management, cutting can be so arranged that the trees can naturally reproduce themselves at the proper time, and in other cases, where this method is too slow, planting takes place.

In connection with Government forest reserves, great stress has been laid on the altitude of the forests, *e. g.*, Austria is in the unlucky position of having 48 per cent. of its state forests between an altitude of 3200–5000 feet. That is to say, the trees can scarcely be grown at a profit. In other states, the forests are distributed better; for instance Russia, where 50 per cent. are situated on flat land (the plains), 25 per cent. on hilly land, and 25 per cent. on mountainous land. This is of course very advantageous. Of course it is best for the general welfare of the country if the Government owns most mountain forests, but at the same time it must secure large areas on lower-lying ground so as to insure a good profit from the undertaking for the yearly budget; at least this has been the experience in Europe and Asia, especially India and Japan.

The above all refers to State forests, but forest management is practically the same in the large private forests such as those of the nobles, and those of the towns such as Görlitz with, roughly, 50,000 acres. Only the smallest woods of a few acres which the peasants have, serve other objects beside timber production, such as pasturage for pigs, litter for stables, etc., and so demand a different form of management.

Summing everything up, one may say that forest management and the principles of forestry remain the same all the world over; the only difference existing is in their conversion into practice. That depends upon the value of a timber tree for any respective people of a respective country. The most brilliant example of this is in the different uses of white pine in different countries. In America it has its special use as timber, whereas in Europe, where it has long been introduced, it is chiefly grown on account of its sylvicultural qualities, such as a nurse for tender conifers.

* From the Tharandter Jahrbuch, 1899.

The railway companies report a very large number of enquiries from intending sportsmen, and it is likely many of these will visit Canada this year. Among the early hunters who passed through Montreal were Mr. F. H. Daniels and party of Worcester, Mass., who went up beyond the height of land in the first part of September to the district in Quebec Province immediately south of Lake Abittibi, which is reported to be an excellent ground for both moose and caribou. The open season in that district commenced September.

About the Birds of the Bush.

BY C. C. FARR.

One of the hardest things for a busy man to do is to devote sufficient time to study the habits of the fauna of the northern bush.

As a boy, I took pride in knowing the names, the habits, and the habitat of every animal that drew breath in England, especially the birds. I knew their nests and where to look for them, the color of their eggs, and the sound of their voices, and I looked upon those who did not, as Cockneys, boys who would expect to have fresh kidney every day from one sheep.

I regret to-day that I am unable to classify the birds that I meet in the bush, with the feathered friends of my boyhood ; that is, to assign to the various species their proper place in relation to those that I knew. In the robin, of course, I recognize the thrush, and in the blackbird, an innocent relative of the mischievous starling ; but the finches, the warblers, the buntings, and even the wrens I have failed to identify, hence I have gone to the Indian and have tried to gain from him the knowledge of ornithology that I lack.

Now the Indian, though a close observer of nature, is lamentably deficient in such knowledge. Ask him anything regarding the habits of an animal that figures in his bill of fare and he can supply interesting and valuable information. He knows how to catch it, and all its peculiarities. But ask him questions regarding some small bird that he does not eat. He may know it by sight, as a red bird, yellow bird, blue bird, etc., all of which he classes under the generic term "Pen-ay-Sheesh" (little bird), but he is probably more ignorant of its habits than you are with a knowledge of allied species in other lands. His ornithological investigations are allied to the pot, and he has a wondering contempt for the fool that can interest himself in something that he cannot eat.

However, a bird of size appeals to him, and even if he does not care to eat it, he knows quite a bit about its habits. I once induced an Indian to give me a list of the hawks, or, more properly speaking, the falcons and hawks. The following is practically a transcription of my notes :

Ken-u (Eagle).—The largest of all birds, builds its nest on the face of a cliff, usually in inaccessible places. Not common, Indians rarely shoot them.

Peech-e-keeg-wan-ay (Fish hawk).—Nasty to taste.

Mee-kiss-ay.—A large hawk that flies very high, circling like the eagle. Utters a prolonged shrill cry, almost a whistle.

Notch-ash-quas-ie.—A large grey hawk. Flies low, eats mice and snow birds.

Shagwet-a-mo.—Mottled brown, large hawk, that flies rather low ; has a head like an owl, eats frogs and snakes, will attack hens. Has a broad band of white across its tail.

Pep 'ee, gwish.—Rather smaller, eats birds and mice, very hard on hens.

Tchehay-sic.—A light colored hawk, feeds on frogs.

Miskway-na-naysic.—A dark brown, fair sized hawk. Frequents marshy places and rivers, eats frogs and snakes.

Pe-boon-is-ie.—A rather larger hawk. The only one of its kind that winters in these northern latitudes. Feeds on partridges, and is dangerous to hens.

Kish-kay-kayke.—A kind of a kestrel. All these kaykaykes are lighter built birds, in fact probably they are the true hawks, all the others being falcons.

Kaykayke.—A smaller kaykayke.

Kay-kay-konse. — Small kaykayke. The termination "onse" being diminutive. All these kaykaykes build their nests close to water, and usually in the face of an escarpment.

They apparently need constant bathing to keep them healthy. This familiarity with water has evolved in them a taste for fish. They hunt small birds and skim over the surface of meadows as the swallows do.

Their tails are rather long for the size of bird, especially so in the kishkaykayke.

This ends the list of hawks as I have it, I do not claim for it entire accuracy. It is like my list of ducks, somewhat incomplete, but it should give a nucleus to some naturalist with more time at his disposal than I have, on which to build a more perfect list.

The description of birds and their habits, as far as it goes, is correct enough, but there are probably more species to be described than I have met, or the Indians have told me about.

The kenu, or eagle, builds here. In fact within eight or nine miles of where I am there is a rock called Ken-u-wa-bik, Eagle Rock. Their nests are built in places usually inaccessible, but I have seen young eagles in captivity, and beyond the fact that they were eagles, and had a hundred horse power appetite, they were not interesting creatures and somewhat uncanny to look upon.

I thought when I witnessed their voracity that it was a lucky thing that they do not increase and multiply at a rapid rate, for if they did our game would soon become extinct. I wonder why they do not become more plentiful, for nothing seems to eat them. The Indians very seldom shoot them, and yet they are decidedly a "rara avis." Nature must have evolved some check upon them, and I often wonder what it is.

The notch-ash-quas-ie does not build here, but follows the snowbirds north.

The shagwetamo, tekehaysie, and the miskwaynanaysie are all frog eaters. It is strange how many things prey on the frog. It is the amphibious rabbit, a staple of food for most of the predacious animals. Even the crow fattens itself and its young on frogs, and it is well that such is the case, otherwise we should be overrun with frogs, as were the Egyptians of old.

The minnow is the water rabbit and feeds the fishes. It is wonderful to watch and see how nature adjusts the balance. An over supply of any particular creature seems to bring with it an increased demand and vice versa.

The world is like a huge machine, composed of a multitude of different parts all really dependent one upon another yet each acting for itself, unconsciously producing a nicely balanced, automatic whole.

But I must finish my tale of the hawks. The pi-boon-is-ie is a very interesting specimen. It is practically a winged weasel, and hunts down the partridge as the weasel hunts the rabbit. The partridge is first flushed, and the piboonisie follows it to the same tree. Again the partridge flies, so does piboonisie, and soon the chase becomes in deadly earnest. Every flight the partridge takes is imitated by its foe, until the bird succumbs to fatigue and fright, an easy prey to its pursuer. This hawk is very bold in its attacks upon hens, and will hardly leave its prey even on the close approach of man.

There is one bird of carnivorous and predacious habits and of unsavory reputation that I have omitted, though it is not of the genus falconidee. It is called, by the Indians, wendigo penaysie, devil bird, "penaysie" being a generic term for "bird."

I fancy that, true to the utilitarian habits of the Indian, he has placed foremost in his list of birds, the one that, to him, affords the most reliable food supply, namely, the partridge, for the Indian word for partridge is penay (the bird) and all other birds are hence called "penaysie."

The partridge to the Indian is as the porcupine to the white man, that is, a sure and certain meal in case of starvation, for the Indian can kill a partridge without a gun. Besides hitting it with a stone, he has a plan of sticking a snare on the end of a long pole. This snare he sets open by means of a little cleft in the stick, then slowly and cautiously he pushes the snare towards the partridge, which is craning its neck, and watching its enemy very intently. The silly thing actually sticks its head through the noose, provided it is held at the right angle, and a smart jerk brings it down fluttering to the ground. In the spring, when the male is drumming forth its love song, the Indians set snares on the logs where drummers drum, and the foolish birds, if the snare is half decently set, are sure to be caught. But I have digressed and am in danger of making too much of a jumble of my facts. I must return to my wendigo penaysie. This is the great northern shrike, and its habits are indeed diabolical. It passes

these latitudes early in spring and late in the fall. The reason why it has obtained its unsavory appellation is on account of its peculiar method of attracting its prey. It sits in a thick bush or tree and warbles forth innocent lays in bird language. One would imagine to hear it, that a flock of little songsters were twittering and singing in a manner most joyous and peculiar to them. The innocent little birds imagine the same thing, and congregate upon the bush in happy anticipation of a regular bird pow wow. This is Mr. Shrike's opportunity. He seizes one of the poor, deluded ones and bears it off screaming, in anticipation of its fate.

Whether the fact of falling into the hands or claws of this feathered monster is more dreadful than of others of like habits, or whether its mode of despatching its victim is slower and more cruel, I know not, but I have seen it engaged in its nefarious practices and I know that the screams of the poor little wretches were heart-breaking, and I thought that the Indian was right. It is indeed a devil bird.

To the Editor of ROD AND GUN IN CANADA :

A party of tourists travelling in the Timagami country had an unfortunate experience the other day. They had camped for the night on a point on Boyn's Lake and, on leaving in the morning, put out the fire they had used for cooking, but, unluckily, one of the Indian guides had built another fire a little way off, which was not properly extinguished, and it spread and burnt over about two acres. Fortunately the fire rangers were on hand and prevented the fire from doing any further damage. The tourists were followed up and fined $25.00 for the carelessness of the guide, which is rather hard on them, but just, as the guide is the paid servant of the tourist and the latter is really the responsible party.

There is always a risk, in a dry time, of the camper starting a fire that will do millions of dollars worth of damage, but if the head of the party will remember to insist on the guides properly putting out the fire when leaving a camping ground, there should be no fear of damage and the unfortunate experience of these people will be avoided. M.

To the Editor of ROD AND GUN IN CANADA :

I hope to get away for my annual moose hunt, in the early part of October, in the wilds of Northern Quebec, and having suffered quite a lot last year from wet and cold (we had snow and rain three quarters of the time) I am providing myself with one or two articles new to me—first, I have the lightest waterproof-wall tent for the size I can get, made of a combined silk-cotton material which is guaranteed to shed more water than the proverbial duck's back. It will have a stove pipe hole on the side near the front, with a light metal collar to protect from pipe heat—ridge pole will protect outside so as to allow the crotch uprights to go outside. I have had enough worry with the inside arrangements to last me. There will be a folding camp stove of sheet-iron, 20 inches x 12 inches x 12 inches, weight 5 lbs. 5 ozs.; two lengths nesting and one elbow of 3 inch pipe, weight 2 lbs. 3½ ozs.; wire gauze spark arrester. Stove has no bottom, sides rest on ground, fire to be built on ground, thus saving weight of stove bottom and trouble of covering it with one or two inches of sand to prevent burning through. My trousers and coat of ordinary cloth have been put through the alum-sugar of lead waterproof scheme.

I don't mind being wet occasionally, but a steady water diet is disheartening if there are no means of drying every three or four days. A canvas tent weighing 20 pounds will weigh at least 40 pounds wet, and it always seems a hardship, and fills me with disgust to portage 20 lbs. of water on one's back when there is water to spare at each end of the portage and more coming down in bucketsful from the clouds.

Apropos of camping equipment, if these lines meet the eyes of the manufacturers of the Kenwood sleeping bags, I hope they will profit by them and adopt a dark brown canvas cover instead of the pretty grey their outside bag is, or was, when I bought mine some years ago—mud, oil, etc., soon makes the grey look very bad, whereas the dark brown may be as dirty as you please but it looks fairly decent.

You may hear from me later on as to how I got on this trip. MONTREAL.

To the Editor of ROD AND GUN IN CANADA :

There have been no less than four cases known this summer of moose being killed out of season on the Timagami Reserve, and the fire rangers are trying to locate the offenders. Doubtless there are numerous cases where the man behind the gun has held his hand—and all honor to him when he does so—but those who are guilty of breaking the game laws must understand that they do so at their peril. Even if they are not caught this year they should remember that the foot of justice is sure, if halting. It is a terrible waste of good material to kill a big moose, take one meal off it, and allow the remainder to rot in the wilderness; and not only that, but to defile the spot where it is slain with the odor and pestilential bacteria that emanate from the decaying body.

HAILEYBURY.

Recent Bench Shows.

BY D. TAYLOR.

The dog show held in connection with Toronto Industrial Exhibition, which can lay some claim to be the principal event of the kind in Canada, was this year an undoubted success. The entries exceeded last year's by over 150, a happy result no doubt attributable to an entire change in the judges and more particularly to the presence of Mr. George Raper, of England, whose reputation as a canine expert is world-wide, also to the active personal interest of Mr. George Gooderham, chairman, and his committee, composed of Messrs. John G. Kent, W. A. Littlejohn, J. J. Ward, E. Strachan Cox and R. J. Score. Mr. Kent acted as ring steward for Mr. Raper, and his prompt service rendered that gentleman's onerous task of judging the whole of the show, with the exception of sporting spaniels and Irish terriers, a comparatively easy one. Mr. H. Parker Thomas judged the spaniels, and was as usual thoroughly conscientious in his work. Mr. Charles W. Rodman, Jr., had a comparatively easy task in judging Irish terriers.

Another change to be noted was the substitution of Mr. Fred W. Jacobi as secretary and superintendent in place of Mr. W. P. Fraser. Mr. Fraser had so long and so acceptably filled the dual position that some apprehension was felt at his unavoidable retirement, but the conduct of the show proved that in Mr. Jacobi the directors have found a man to fill his shoes. Things ran as smoothly as ever they did, the building was bright and clean, with an entire absence of the unpleasant odors which are sometimes the accompaniment of a dog show. Visitors were cordially welcomed and courteously treated, and, indeed, every one had a good word to say about the new superintendent.

In regard to the exhibit of dogs it may be said that taken all round, they were of a very superior quality, although in some breeds the entries were not numerous. St. Bernards were a good lot and fairly numerous. Bayview Kennels won with Col. Steele from novice dogs and bitches upwards to winners, the special for the best St. Bernard in the show going to a smooth, Duke of Watford, whose massive head, sound body and limbs, entitled him to the honor. Sir Hereward II was a close second to Col. Steele in all the rough classes, reversing the Ottawa decision, and beating Uncle Homer. He is a dog with a fine head, good front and body and plenty of bone but lacks in development behind. It was noticed that he was deficient in action in the ring, a fault unusual with him. The bitch classes were not quite so good. Zantha was an easy first, the second prize being withheld and the third given to Princeton Belle, a massive bitch with extremely short legs.

Bloodhounds had only two entries and Newfoundlands were not up to the mark ; Great Danes were fairly good, the winner, Mercedes, being much the best of the bunch. Russian Wolfhounds, what there were of them, were quite representative, the well-known dog, Kubelik, from the Terra Cotta Kennels, taking premier place ; Kama, a beautiful bitch from the same kennels, second, and a Montreal dog, St. Ivans, being a respectable third. In deerhounds, the best was Ormonde, a recent importation. In greyhounds Nellie Coulter, set down in good condition, won handsomely over Ben Lewis' Lansdowne Royal. English foxhounds had only two entries, the New York and Montreal winner (Hector) being easily first.

American foxhounds were quite numerous, the majority in point of size and appearance being closely allied to the English breed. The well-known dog Hanks Gimcrack was first over a very even lot in the open class. As a rule, the bitches showed more quality than the dogs ; Carman, a beautiful model and frequent winner, being first, with Gregory's Music, another fine model, but not quite in such good condition, being a

close runner up. There were two harriers shown, Hank's Huntsman and Ranger, which were placed as written.

Pointers were an exceptionally good lot and would have done credit to any show. In novice dogs and bitches, Young Lynn won handily from Lady Simcoe, and in the open class Meteor Dot II. was first, but in winners' class he had to give place to the young dog, first in novice, a youngster of good quality and undeniable style.

Of English setters there was a good entry, twenty-seven in all facing the judge. Ulverstone Rap, a very nice type of setter, with good head and coat, plenty of bone and great depth of chest. He was not in the best of condition from much travelling lately but still easily led all through. Rock Surrey, a stylish dog and good mover was second and reserve in winners. In bitches, the well-known Pera and Dell, a Canadian bred dog, were first and second respectively.

Irish setters was one of the prominent features of the show, both in point of numbers and quality. In novice dogs, Messrs. Coulson & Ward won with Shamrock Bobs, a sound dog for his weight. In limit and open St. Elvan, in rather poor condition, won. He is a typical Irish setter of the right color. The bitches were of rare good quality, Nora Shannon beating St. Lambert Kathleen in novice class, although the verdict might have been reversed as the latter though quite out of coat is much better in size, substance and head. Kathleen had a walk over in limit and was again beaten in the open by ch. Sig's Girl, in perfect condition.

There was a fine entry of sporting spaniels to face Mr. Thomas, a compliment which that gentleman deserves. There were 130 in all, and the quality could hardly be excelled anywhere. In Irish water spaniels, MacCarty had almost a walk-over with Peggy Shea. There were eleven entries of field spaniels, and King Bruce, a new importation by Ben Lewis, was simply irresistible ; the others were not in the same street.

Cocker spaniels, of which there were 117 entries, showed a marked improvement all round. They were a very even lot, but in the dog classes, at all events, there was nothing new brought out to beat Ole Obo, Perfection, Knoydart Robin Hood and Braeside Blue Jacket, the first named winning in open blacks, any other color bringing Perfection to the front. In the bitch classes several new ones came to the front, among them being Geo. Bell's Colored Girlie, and Thos. Lemon's Irene, a bitch with a nice, clean cut head and good action.

Collies were a very good entry, numbering 68 all told, but the quality, taking them in the aggregate, was not equal to what has been again and again exhibited in Montreal. True, there were several conspicuous examples of the collie type which could hardly be improved on. At the same time, there were not a few of the "only collie" variety. Conspicuous among the dogs was old Woodmansterne Conrad, now over six years old, but looking as well as ever he did, in fact, he was in perfect bloom and had no difficulty in coming to the front until he came in contact with Balmoral Duchess, the winner in the bitch classes, for the best collie in the show. This latter is a new importation by Mr. Cromwell Cox, Ottawa, and the first time shown this side the Atlantic. She was a picture to look at, and, notwithstanding the absence of any white markings on her face, has such a lovely color and beautifully set dark eyes that light up and give expression to a finely-shaped head that she is attractive from whatever point of view you look at her. Perhaps a little light in bone, that is about all that can be said against her, otherwise she is one of the best bitches that has ever appeared in this country, and we congratulate Mr. Cox on his find, and have no doubt that in much better company than she had to buck against in Toronto, will be able to maintain the premier position. Mr. Cox was somewhat fortunate with his other dog, Balmoral Piccolo, as he did not run up against Conrad until the winner's class, the latter being only entered in Veteran, where he had a walk over, and the old dog was not to be denied. Mr. Reeves, the owner, also showed a son of Conrad's, but he was sadly out of coat. However, he is sure to make his mark later on, as he possesses all the qualities of his sire, and, if we mistake not, is slightly better in some respects. Mr.

CANADIAN "ELK."

This excellent snapshot was taken by Mr. S. J. Thompson at Banff, Alberta.

AN INDIAN GRAVE.

On the Teslin Trail, Cassiar District, B.C.

Joseph Reid showed a puppy by Elwyn Astrologer ex-Heather Blossom, which took second place in the class, his litter brother, belonging to Mr. James Ainsley, Outremont, taking third. Among the bitch puppies Mr. Reid exhibited two from the same litter, for which he got first and second places respectively, coming second in open with Lilac Blossom first in puppies.

Old English Sheepdogs had only three entries which were not of conspicuous merit. Bulldogs were fairly well represented, Mr. Tallis' The Terror winning in puppies, Mr. H. L. Thomas' Duke of Wellington getting into third place. Limit and open was captured by Mrs. F. F. Dole's Edgewood Lord Brunswick. In bitches Rodney Beatrice won from Mr. Thomas' Rose of Kent, a decision which was open to question.

Bull terriers were a very good representation and as usual Frank Dole had the lion's share of the awards.

Fox terriers, wire and smooth, were by far the finest exhibit in the show, the entries of the Norfolk Kennels, the Sabine Kennels, A. A. Macdonald and Fraser & Lindsay making up a collection that would be difficult to find in other than one or two shows on the continent. Fraser & Lindsay won through with Matchmaker in the wire dog classes and in the smooths ch. Norfolk Richmond was the winner, with his kennel mate, Norfolk Mainstay, close second. In smooth bitches that grand terrier ch. Norfolk Handicraft was first, beating out Matchmaker for the best terrier in the show. The Norfolk Kennels also secured the David Ward Challenge Cup (value $250) given by Sam. Coulson, Esq., for the best kennel of four, any breed, with his smooth fox terriers, after a very keen competition.

The exhibit of black and tan (Manchester) terriers was the finest ever seen at any show in America, and Mr. Raper is authority for the statement that it could not be equalled at any show in England. There were forty-nine all told, and this splendid record may be attributed to the influence of the recently formed Black and Tan Terrier Club.

Mr. George Caverhill as usual won everything in Skye terriers and Mr. Johnston Mitchell followed suit in Yorkshires.

The bench show at Sherbrooke was held in connection with Canada's Great Eastern Exhibition and under C. K. C. rules. The entry was very disappointing, only about sixty dogs putting in an appearance. This may be accounted for in some measure from the lack of advertising and the fact that up to the time of the show being held it was not known who was to make the awards. The whole preliminary work in connection with the show practically devolved upon the secretary of the Exhibition and this with his other onerous duties was altogether too much for one man. We understand that an effort is being made to form a kennel club in Sherbrooke, and we hope the fanciers there will succeed in their designs and that their efforts will meet with success on a future occasion. While the number of dogs shown was small, there was quite a lot of quality, and the judges had no sinecure in making the awards. Messrs. Jas. Moore and H. M. Walters, both of Montreal, awarded the prizes, the first named taking pointers, setters, collies, field and cocker spaniels, greyhounds, foxhounds and beagles, the latter looking after all other breeds.

Our Medicine Bag.

The premium list of the L. K. A. Show is out, and it certainly merits the consideration of fanciers. There are 365 classes, with prizes $15, $10 and $5 straight away through, except, of course, in winners, where the prize is a medal. The $100 prizes for the packs of hounds should be a great attraction, and the number and the value of the specials make one wish to own some dogs in order to be in the race. Entries close Oct. 1, and the entry fee is $3 for members and $5 for non-members. Mr. Theo. Marples, editor of "Our Dogs," will judge all the breeds that were originally assigned to Mr. Gresham.

Mr. Justice J. Maitland-Dougall, of Duncans, British Columbia, states that game is very plentiful, and on a recent trip they could easily have filled the trap in which they were driving, with grouse and pheasants, without so much as leaving the road. And at one point they saw two deer in a clearing but a short distance from the road—one a magnificent buck with great horns and another smaller one about two years old. So tame were they that it was not until the judge and his companion shouted at them that they made any effort to move. Pheasants particularly are very plentiful, and farmers are complaining of them. "To give you an idea," said Judge Maitland-Dougall, "of how numerous they were last year, I may say that two of us in the office, who do not do more than the average shooting, bagged between us about 100 cocks, and this year I am sure there are many more about than last."

Brome Lake is furnishing anglers pretty good sport just at present, judging from an Ottawa correspondent, who mentions the capture of twenty black bass in an hour one day with his "Massassaga" fly, but evidently felt rather blue because his string did not average more than 1½ pounds per fish. Another gentleman just returned from there said he saw one party with two black bass beauties, which together weighed 12 pounds—one a shade under 7 pounds and the other a little over 5 pounds.

We are in receipt of volume V. of the Canadian Kennel Club Stud Book, which carries us up to Aug. 31, 1902. Progress is evident on all sides. The book is very carefully compiled and well printed. The pedigrees have been scrutinized by those most competent in each case and the names of the scrutineers are given. There seem to be more collies registered than any other breed. Pointers, setters, cockers, fox terriers and Irish seem to be well thought of. The spread of the western part of the Dominion is likely to give the secretary a good deal more to do in the future, and we may say that Canada is making her mark in the dog-breeding world the same as she has done in other lines.

An excellent, cheap and efficient mounting paste, that has the highly desirable quality of keeping for a long time, is to be made as follows :

Flour,	3 oz.
Alum,	¼ oz.
Camphor,	40 gr.
Water,	20 oz.

Mix this well and boil it. Then when it has cooled, it is all ready to be used.

We regret to say that Messrs. F. & A. Stuart's St. Bernard dog, Sir Hereward II., which won second place at Toronto, has since died from distemper. He had not been in the best of health since Ottawa show, where it is supposed he contracted the disease, but the symptoms, at the time of his being sent on to Toronto, did not develop and it was not for a moment thought he was suffering from this complaint. However, on the third day of that show he was seriously ill and was at once put under treatment. A marked improvement followed, but on arrival here it was at once seen that he

was dangerously ill. The services of a vet. was at once secured and everything possible done to arrest the progress of the disease, but he finally succumbed after a few days suffering. Messrs. Stuart, who have been very unfortunate lately, will have the sincere sympathy of all true fanciers in the loss they have sustained through the death of this valuable dog, who, up to the time of this attack, had the promise of a great future in the show ring.

ROD AND GUN'S circulation is steadily increasing and its sphere of influence extending. Our latest subscriber hails from the Philippine Islands.

The Montreal Collie Club announced an open-air collie show (open to members only) for the 27th ult., but owing to the inclemency of the weather it had to be postponed. It will now be held on Thanksgiving Day, October 16th. Mr. "Tom" Smith, of Laurencekirk, Scotland, will give out the ribbons, and as he knows all about a collie there is little doubt he will be able to give satisfaction.

The open season for moose and caribou in Ontario this year, which commences October 16th, north and west of the line from Mattawa to Port Arthur, and November first, south of that line, promises to attract many big game hunters from the United States. Unfortunately the late date of the opening is against the best interests of the Province and the hunters, many of whom hesitate to risk a trip to any district which involves much canoe work, where the danger of the early frost might interfere with their movements; many more would go into Ontario if the season opened earlier. This has been frequently pointed out in ROD AND GUN IN CANADA.

That unmitigated nuisance, the German carp, in addition to an already heavy arraignment, has to answer to yet another charge. Originally introduced into a small stream or milldam at Newmarket, Ontario, it got into Lake Simcoe through the Holland River, and has since proved itself a veritable pirate, destroying every other fish inhabiting its waters, with the possible exception of the bass. To its many crimes are now added the destruction of the beds of wild rice in Cook's Bay, Lake Simcoe, and the consequent driving away of the wild duck. This particular spot at one time contained many hundreds of acres of wild rice, and was the feeding ground of large numbers of duck and other wild fowl, but now there is not a blade of this plant to be seen. Alderman O. B. Sheppard, Dominion Inspector of Fisheries for Ontario, recently returned from an inspection of these waters, said that what was at one time the very best duck hunting grounds in the province had been destroyed. The carp has so far resisted all efforts at its destruction, being very tenacious of life under the hardest conditions, and successfully defied the best laid traps for its capture. In addition to its other faults, the carp has not even the virtue of being a good food fish, but has degenerated from its natural fine-grained condition in its native German waters to a coarse-grained, unpalatable fish, in its new surroundings. The ultimate destruction of this pest is a problem now confronting the fishery departments of both countries.

The Ottawa show had a total of nearly 500 entries, about 350 dogs being benched. The best filled classes were American foxhounds, cocker spaniels, collies and bull terriers. Pointers and setters, with the exception of Irish, of which there was a number from Montreal, were almost an unknown quantity. The Terra Cotta Kennels contributed wolfhounds, the best specimen being Kubelik, who won in all his classes. In cockers Miss E. Macdonnel won with her particolored Braeside Blue Jacket, and in bitches Mr. Davis' Kola won over Ottawa Jessie, a nice little dog which takes a lot of beating when in proper condition. Balmoral Kennels came to the front in collies with Balmoral Piccolo, an imported son of the English champion Parbold Piccolo, and were also second and third respectively with Brandane Chief and Balmoral Hope. Bulldogs had a good entry of thirty, but sixteen of these were absent. Mr. H. L. Thomas, Montreal, won handily with his fine

puppy, Duke of Wellington, in all classes for sex, and in the bitch classes with Rose of Kent, which also annexed the C. K. C.'s bronze medal for the best specimen of the breed. In bull terriers ch. Faultless and Ottawa Belle scored respectively. Mr. Joseph A. Laurin won in Airedales, both sexes. There was not much in smooth fox terriers to look at, but in wires Messrs. Fraser and Lindsay's celebrated dog Matchmaker won everything, including the valuable gold medal donated by the president of the Ottawa Kennel Club, Mr. J. Cromwell Cox, for the best specimen of any breed in the show, the Inaugural Cup presented by Messrs. Cox and Mutchmor for the most typical specimen, and the Ottawa cup, donated by Mr. John G. Kent, for the best fox, bull or black and tan terrier. Irish terriers were poorly filled, Scotties had no entries, but black and tans were a fairly good class, in which Ringmaster and ch. Daisy were adjudged the best of their respective sexes. Mr. George Caverhill's Skye terriers of course won. Mr. Chas. Mason, New York, was the judge.

We hear ugly rumors from the far north. It is said, and said openly, that the Indians are killing the wood buffalo, and that the Mounted Police are powerless to prevent it. Our admiration for the North West policeman is unbounded, but when half a dozen men have to look after a territory as big as all France, Germany, Austria, Italy and Spain, it is just possible they may not be able to put a stop to poaching—if they make the Indians keep the King's Peace it is quite as much as the taxpayer has a right to expect.

Yet if the buffalo are being wiped out something should be done at once. Heads are worth $350 apiece, and the temptation is far too strong for any Cree to resist, hence the men who are buying the heads must be found and made an example of. The true place to protect the buffalo is not on the Smoke River, but at the shipping point.

And while we are in the humor let us make another suggestion. Taking it for granted that the men of British Columbia do not wish to have their ranges denuded of timber, had they not better set themselves seriously to work to prevent forest fires, by punishing the guilty parties ?

It is no secret that many of the worst fires are started by prospectors who choose a dry spell for their operations. On the off chance of discovering a ledge of mineral bearing quartz these men will burn up ten thousand acres of magnificent forest—it's almost as sensible as the Turkish Pasha's plan of setting fire to his house to get roast pig. Moreover, the Turk burnt his own property ; these fellows burn the property of the people.

Many complaints have reached ROD AND GUN from the erstwhile owners of more or less valuable dogs. It appears that that contemptible creature, the dog poisoner, is more than usually active this year, so much so that it would appear advisable for dog owners to band themselves together and thereby insure some measure of protection for the inmates of their kennels. The dog poisoner is usually a person of very lowly intelligence, for any one worthy to be ranked as a man would certainly not condescend to such a pitiful revenge as to take the life of a faithful dog out of spite. Granting this, there is little doubt that a shrewd detective would very soon run some of these gentry to earth if put upon their trail, and then no doubt the courts would impose heavy sentences upon those convicted of such a dastardly crime. It has been suggested that dog owners should contribute a small sum towards the expenses of a dog protective association, the secretary of which would be notified in case of their dogs being victims of the poisoner. It would then become the duty of the association to take measures to ascertain the guilty party and to bring him within reach of the law. Should this suggestion meet with the approval of any of our readers we hope that they will correspond with us regarding the matter.

We believe that the Ontario Government is making a mistake in permitting commercial fishing in the smaller lakes of the province. For instance, the net fishermen are now depleting the waters of Dog Lake, Missanabie, and have already done damage that it will take

years to repair. These men are not supposed to net brook trout, but as a matter of fact, they ship more brook trout than any other fish. These fishermen are always miserably poor, as they receive but four cents a pound for their catch and have to find ice and pack them into the bargain. It seems a pity that lakes that would attract large numbers of sportsmen should be cleaned out by market fishermen, who merely succeed in making a bare living by skinning the waters and who would be better employed elsewhere. The province will lose a lot of money if this short-sighted policy is continued.

The cut of Mount Rundle, which appears on the cover of the present issue, shows a characteristic bit of Banff's beautiful scenery. Moreover, although the base of Rundle is within a couple of miles of the railway station, goat are occasionally seen upon the dizzy ledges of the eastern side. This shows that the man who is after big game need not travel very far from civilization to get it—because Banff is very much civilized, and you can get your champagne frappe, Turkish cigarettes and other necessaries there as well as in New York or London. Of course, Mount Rundle is not recommended as the best possible hunting ground for goat, and, as a matter of fact, they are seldom there excepting in winter, but a few miles beyond, goat, bear, caribou and sheep may be found in reasonable numbers by the persevering hunter.

The sixth annual report of the Forest, Fish and Game Commission of the State of New York has reached our hands. Once again we congratulate the Commissioners upon their work. The great State of New York is setting an example to the rest of the world in these annual reports. The range of subjects covered is great, and each paper is written by one who understands his subject thoroughly. The paper upon "Methods of Estimating and Measuring Standing Timber," by Mr. A. Knetchel, State Forester, is one that deserves to be read by everyone interested in scientific forestry, though we fear that the day is yet distant when Canadians will adopt any such exact methods. The township maps, with their wealth of detail and 20-foot contour lines show the accuracy to which timber land surveying is carried in New York state—but the expense attendant upon the production of such maps must, of course, be considerable, and until the Dominion or Provincial Governments open their purse strings we are not likely to have similar luxuries put within our reach. Mr. Denton's fishes are very lifelike, while the five colored plates of game birds that Mr. John L. Ridgeway has contributed to illustrate the articles written by Mr. H. C. Oberholser are quite as good in their way—in fact, we have nothing but praise to bestow upon this admirable report.

The insidious complaint known as hay fever is said to number 100,000 victims in the United States alone. There is no cure for it. So soon as the pollen of certain grasses are given to the four winds of heaven, the hay fever sufferer begins his annual martyrdom. He has then four courses open to him ; he may remain within the danger zone and bear his sufferings like a stoic ; he may take ship and remain at sea until mid autumn; he may bury himself in the heart of a large city where, surrounded by a cheval de frise of bricks and mortar, he will be comparatively safe, or, better still, he may hurry to some Canadian point west of Mattawa, where he will be perfectly secure and where he may enjoy fishing, bathing, boating, camping and, finally, shooting to his heart's content. One of the leading hay fever authorities in the United States has declared that the only region where the hay fever patient is safe is in western Ontario or northern Quebec.

Fishermen who are fortunate enough to live in, or visit British Columbia, have surely nothing to be dissatisfied with when they can find sport like that mentioned in the Nanaimo *Herald*, B.C., recently :

Mr. C. F. Barker, of the Vendome Hotel, returned last evening from a two days' fishing trip to Little Qualicum. His catch comprised about two dozen of the prettiest rainbow trout ever pulled out of a stream. All of them were over a pound in weight, most of them went as high as five and six pounds, and one big fellow measured over two feet in length and weighed eleven pounds. Mr. Barker was one of quite a large party of fishermen, all of whom made good catches.

We have recently seen a photograph of a fine moose head obtained by Mr. C. H. Woodruff, of Chicago, in Alaska, 200 miles north of Dawson City, in September, 1900. It is a grand specimen, and the spread is said to be 69½ inches.

Quite a few of the photographs received from contributors to ROD AND GUN IN CANADA reach us in a more or less damaged condition from creasing, etc., while in transmission through the mails. As many of these photos are difficult to get, and often hard to replace, we suggest that contributors enclose photographs or prints between good heavy cardboard, thus reducing the risk of injury to a minimum.

Ed. Corning and H. A. Brown returned last week from a fishing trip to Fish Lake, 20 miles south of Kamloops. In five days they caught 800 lbs. of fish, which included silver, salmon and speckled trout. They state that this is the greatest lake for fish in British Columbia, in fact the greatest on the continent, and recommend lovers of the rod who are looking for good sport to go there.—*Revelstoke Herald.*

These two men no doubt thought they were having good sport, but they have yet to learn that fish killing on this scale is not sport, but butchery.

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October, 1902

Communications on all topics pertaining to fishing, shooting, canoeing, the kennel and amateur photography, will be welcomed and published, if suitable. All communications must be accompanied by the name of the writer, not necessarily for publication, however.

The Official Organ of the Canadian Forestry Association.

ROD AND GUN IN CANADA does not assume any responsibility for, or necessarily endorse, any views expressed by contributors to its columns. All communications should be addressed to :

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THE objects of the **CANADIAN FORESTRY ASSOCIATION** are :

The preservation of the forests for their influence on climate, fertility and water supply ; the exploration of the public domain and the reservation for timber production of lands unsuited for agriculture ; the promotion of judicious methods in dealing with forests and woodlands ; re-afforestation where advisable ; tree planting on the plains and on streets and highways ; the collection and dissemination of information bearing on the forestry problem in general.

Rod and Gun is the official organ of the Association, which supplies the articles relating to Forestry published therein.

This Association is engaged in a work of national importance in which every citizen of the Dominion has a direct interest. If you are not a member of the Association your membership is earnestly solicited.

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CANADIAN BIG GAME

THE time for the turning of the leaf has come: the velvet on the antler is pealing in long strips, leaving a clean horn the color of buckskin. The law will now permit the shooting of the moose, caribou and deer — and wouldn't you care for a head or two yourself?

Well, why not try Quebec, Ontario, Manitoba, or some other of the sisterhood of the Canadian Provinces? By such a choice you would probably be successful beyond your expectations, as many others have been. Only the other day a well-known physician of Winchester, Ky., wrote: "I met you last summer at Hotel Bellevue, Timiskaming, and you kindly located a camping party for me on Ostaboining where they had fine sport, getting several moose, deer and fine fishing. I wish to get some information regarding, etc."

Equally trustworthy information is **AT YOUR DISPOSAL.** Ontario has thrown open her jealously guarded big game preserves, the shooting of moose, caribou and deer being now permitted from October 15th to November 15th north of the main line of the Canadian Pacific Railway, from Mattawa to Port Arthur, a region enormous in extent and carrying a heavy stock of game.

The great province of Quebec yet holds its own as the home of vast quantities of deer, and the giant bull moose bathes and feeds in the great Lake Kipawa as of yore. Last Autumn a head obtained in this region by a Montreal sportsman spanned 62 inches. The Gatineau, an important tributary of the Ottawa, flows through one of the best deer ranges of the continent, while the Lièvre, Rouge and Nord drain similar and almost equally well-stocked regions.

Further east the St. Maurice, a stream 400 miles from source to mouth, traverses a land of rock and barren which the moose, the caribou and the bear find very much to their tastes.

Manitoba is as noted for its moose as for its duck and chicken, and those who can spare the time may ensure a successful hunt by visiting the Prairie Province. Beyond lie the Territories and British Columbia, with their hundreds of thousands of square miles of plain, forest and mountain, offering unsurpassed hunting for moose, elk, blacktail, sheep, goat and grizzly.

For further information write to any officer or agent of the

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Or to the GENERAL PASSENGER DEPARTMENT, MONTREAL, QUE.

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ROD AND GUN IN CANADA

Seymour Creek, B.C.

A MAGAZINE OF CANADIAN SPORT AND EXPLORATION

BRITISH COLUMBIA ELK HEADS.

These trophies were only obtained after some particularly hard work, but the locality is not exhausted.

ROD AND GUN
IN CANADA

VOL. IV. MONTREAL, NOVEMBER, 1902 No. 6

A Mixed Bag.*

BY L. H. SMITH

(Author of "A Sportsman's Taxidermy and Photography," etc.)

It was on a fine November morning that M—— and I, with a brace of setters in the buggy, started out for a day's shooting.

An hour's drive over a good road brought us to our destination, a farmer friend's, at whose place we always put up when we shoot in that neighborhood.

Willie, the farmer's son, with school-bag strapped on his shoulder, was starting out for school, but on seeing us turned back and opened the gate to let us drive in. He greeted us :

"Good morning. We expected you last week. There are lots of quail, and nobody has been here shooting. Awful sorry I can't go with you. Our exams are on at school and I am trying for the fourth book. Dare not miss a day."

"That's right, Willie, stick to your lessons, you can have plenty hunting Saturdays and holidays. Where have you seen birds?"

"Well, you know where the old slashing was last fall where you got so many?"

"Yes."

"Well, last spring father cleared that all up and put in a piece of buckwheat and a patch of millet. There are two bevies there. I put one of them up last night when I was bringing the cows in from the wheat stubble. There must be more than twenty in it. Big fellows. Then you know Mr. Ray's willow swale, where you shot the woodcock, there is a bevy stay around there somewhere. I did not see them, but I saw where they had been roosting. You'll find them. I saw a woodcock there. I must hurry now or I'll be late, but if I am, the ma'am won't say anything, she boards at our place and is real nice."

"Don't stay longer, Willie, you hurry to school. We can put the horse away. Give him a drink and a feed at noon, and we will see you in the evening."

"All right, I'll attend to him. Good-bye. I hope you will have as good luck as you had last time."

"Thanks, Willie. It's going to be a fine day. I think we shall make a good bag."

With this hurried conversation Willie started off on the run for school. After putting our horse in the stable, we started out, heading for the buckwheat and millet stubbles, with Belle and Bristol, which were our brace to-day, close at heel.

It was past nine o'clock. The sun high up would have been dazzlingly bright, but it was filtering through that peculiar smoky haze which makes our lovely "Indian summer."

What a delightful morning! What a day we were promised! Is there any weather in any part of the world, to be out-of-doors in, which is so bewitching as our Indian summer?

We cast off the dogs in a good wheat stubble which adjoined the millet patch, M—— working Belle, whilst Bristol looked to me for orders. M—— cast

* Illustrated from the author's photographs.

Belle off to the left and I waved Bristol to the opposite direction. After two or three casts Belle hauled up and commenced roading a running bevy, and soon stiffened on a staunch point. It was a little time before Bristol made his sweep in that direction, when at about fifty yards he caught sight of her and backed instantly. We walked up leisurely and flushed the birds, a grand bevy. M—— made a right and left. I missed my first bird, but scored with my second shot. *Too quick. Too quick* with my first barrel, and yet how often we do it. We marked the birds down in the bush, and after gathering our three birds, started after them. Our dogs did us some good work on the scattered birds, except that Bristol stole one of Belle's points, for doing which he received a few clips of the whip. We bagged five more, and a rabbit which scudded out of a brush-pile which we were shaking up for quail, found a resting place in our game bag.

We next started for the woodcock swale where Willie said he saw signs of a roosting bevy. We beat it thoroughly and flushed three cock, which we bagged after using three cartridges on the last one. What a bird a late fall woodcock is ! Full-feathered, fat and lazy. Living high and basking in the midday sun ; ready to start south on the first night the atmosphere changes and sends the thermometer so far below the freezing point that the black, soft muck, in which he delights to bore, has a crust formed on it too hard to be pierced by his long and sensitive bill.

We spent considerable time in hunting for the bevy, which we saw for ourselves had been making its lodgings in the swale. We were nearly giving it up when Bristol, away off, began showing signs of birds having been running where he was. The scent was cold, and evidently it had been some time since they had been there. Belle, going over to him, took up the faint scent, but neither dog could make anything out of it. We then cast them over into the next field, an oat stubble, not a very likely place to find birds. Presently Bristol caught up a hotter scent, and commenced roading down the weed-grown fence which he crossed at the end of the field, into an old chopping. Catching up the scent again, and trailing on over logs and around old rotten brush piles, M—— keeping Belle at heel, allowing my dog to finish the work he had commenced, and was now doing so well. Presently he came to a staunch point at a small bushy second-growth patch into which the birds had ran probably on hearing us following on their trail.

Flushing the bevy, we each bagged one. The birds flew to good cover, partially grown up neglected pasture, patches of withered golden rod and stunted scrub, covering the ground. We did some bad shooting here, but before we gave them up had added five more to our bag, making seven out of this bevy, and another cotton tail.

Two rabbits, three cock and fifteen quail. The bag was getting heavy, and as we intended coming back, somewhere near this place, we laid our game by the side of an old log and covered it safely with weeds and dried grass. I know of nothing I dislike to carry so much as rabbits. There is no game that goes into the bag that is such a dead lump as a rabbit.

It was now getting near noon and we knew the quail would be laying up, scratching and sunning themselves in some nook or weed patch with a southern aspect, and would be hard to find. There was a nice piece of partridge bush some distance on, and as it laid in the direction we were hunting, we intended taking it in. Knowing that the noon hour is as good for partridge, ruffed grouse, as any other time in the day, we started for it. We hunted the likely spots on the way, where Bob White and family might be spending their noontide, but found none.

It was past noon when we got to the bush, and selecting a log to sit on, which was lying in a sunny glade, we halted for our lunch.

Every sportsman knows what a pleasant hour this is. Especially so if it be on such a lovely day as I am now describing. The pleasure is enhanced by the good shooting you are having and the goodly number of birds already in the bag, the result of the morning's work. "A lunch in the bush." To all

lovers of "out-of-doors" it means much, to the sportsman it means something he cannot convey to another on paper.

The day was so charming, we loitered more time away at our noon hour than we should have done. The lazy, hazy Indian summer atmosphere acted on us like an opiate, and made us almost loath to leave the pretty spot we had selected where to take our meal.

The partridge bush was our next ground. Walking abreast, as nearly as we could, and about fifty yards apart, making the dogs work close in front of us, we beat the ground carefully. One, then another, cunning old cock, prowling about alone, flushed wild on us, and we got nothing from our dogs for some time. Presently Belle flew into a point and two birds rose. M—— rolled one over whilst the other went off unshot at. Quite a time passed before I had a chance. A bird at some distance to my right flushed of his own accord. Turning quickly, and making a good shot, I brought him down. On ordering Bristol to retrieve him I found he was a runner. The dog trailed him for fifty yards or more to where he had taken to a hole by the side of an old decayed log, an arm's length to reach him. What runners and hiders they are sometimes when wing-tipped! Another bird bagged by M——, over a staunch point, was our toll from the partridge bush.

It was now 2.30 p.m., and we started beating again for quail. A very likely piece of ground with good feed, and good cover near by, and where we found birds last year, did not reward us to-day.

Presently we came on a piece of millet which had been sown on new ground, among the decaying stumps, and left uncut. If there is any one thing that quail love to eat more than anything else, it is millet. Belle flushed a good bevy here. She hauled up as if she were shot but had run into the birds before she caught their scent. They took to the partridge bush and gave us a poor chance. We bagged only three and had to give them up.

The afternoon was wearing on. It was 3.30, and we held "a consultation of war."

"What shall we do?"

"Well, we are more than a mile from our starting place. We will turn back. We will take in that little swamp out in the field a little north of our route, a cock sometimes lies in it, and it will not be much out of our way. If we don't find a bevy around there, we will head for the buckwheat and millet where we found the first bevy in the morning. Willie says there is another bevy there, and we should be able to find it this evening."

In the willow swamp Bristol made a staunch point. "Look out," and up got a partridge. No shot for me, but M——, being in a good position, brought him down. Just then another cotton tail started out of her form in the grass at my feet, and I stopped her. There was no good feeding ground near, so we spent no time looking for quail but struck a line to where we had hid our game. After picking it up, we continued in the direction of our first shoot in the morning. Passing over the ground where we had our second bevy, Bristol came to a point and three birds got up. Two barrels gave me only one bird, and no excuse whatever why I did not kill two.

It was 4.30 when we arrived on our early morning ground, and about forty-five minutes was all the time we had to make any addition to our, already, nice bag. Luck favored us. The dogs slashing across the buckwheat stubble almost simultaneously flew into a point, and we had Willie's second bevy. On rising, we each took one bird, and hurried after the bevy. They did not go to the best of cover. The bush they flew to was too open with too little underbrush.

But evening was coming on and the birds commenced to run and call, and our dogs were soon roading and pointing them outside and in better cover, and doing the best work perhaps they had done all day, and we had a few minutes of fine sport. We did not shoot till dark, but quit to give the remnant of the bevy time to get together to go to roost. Eight of that little family were missing at "Roll Call" that night.

Willie, hearing us shooting, ran across the fields and joined us, and was delighted at our good luck. When we started for

the barn he insisted on carrying the bag which contained the most game.

Assisted by Willie, a few minutes sufficed to hitch up, and, refusing his father's pressing invitation to stay to supper, with dogs and everything snugly aboard, we drove out of the yard just as the full moon was rising to light us on our way home.

After supper we smoothed and spread out our game. Twenty-seven quail, four partridge, three cock and three rabbits. Thirty-seven head of four different varieties.

Sitting by the cheerful grate fire, where our dogs were toasting their noses and enjoying a half-hour before being put in their kennel, we talked over our day's sport and concluded that "A Mixed Bag" on an Indian summer day was the best of all shooting.

Official Rules of the M.R.C.

At a meeting held by the committee of the Montreal Revolver Club the following official rules were drawn up and adopted for the guidance of all competitions in future:—

M. A. A. A. REVOLVER CLUB.

RULES AND REGULATIONS.

In handling a revolver always treat it as though it were loaded.

ARMS.

No. 1. Any revolver having a minimum calibre of .22 or a maximum calibre of .45 may be used in all matches of the club, provided the length of the barrel does not exceed 8 inches, and the weight 2¾ pounds, unless otherwise specially provided for.

(For the present the committee reserves to itself the right to make special rules in regard to the arm and ammunition to be used in the indoor competitions and practices, which members will be notified of in due course.)

TRIGGER PULL.

No. 2. The minimum trigger shall be 2½ pounds, and shall be determined by a test weight being applied to the trigger one-quarter of an inch from the point, when the arm is at full cock.

SIGHTS.

No. 3. Only open sights are allowed. The foresight may be a bead, or of a plain barley-corn pattern. The rear sight may be adjustable for windage and elevation, but must be capable of being firmly clamped in such position.

Sights may be blacked, smoked or painted white at the option of the marksman. No aperture or peep sights allowed, and the rear sight must be in front of the hammer.

AMMUNITION.

No. 4. Any fixed ammunition may be used, provided the same is not of a dangerous character.

DISTANCE.

No. 5. The open air practice and competitions shall be held as convenient, on a range where the firing point is clearly defined and free from any shelter or wind screen whatsoever. The distance shall be 25 yards from the target to the firing point. Competitors must stand at the firing point, directly opposite to the target on which they are firing.

The indoor practices and competitions shall be held on a range as may be most convenient to the committee, and, if possible, shall not be less than 20 yards long from the target to the firing point.

TARGETS.

No. 6. In the open air practices and competitions M. A. A. A. standard revolver target shall be used, having a black bull's eye, divided into two values, 7 and 6, and the rings and values shall be as below mentioned:

7-ring bull—1¾ inches in diameter.
6-ring bull—2¾ inches in diameter.
5-ring white—4 inches in diameter.
4-ring white—5⅝ inches in diameter.
3-ring white—6⅞ inches in diameter.
2-ring white—9¼ inches in diameter.
1-ring white—12⅝ inches in diameter.

The steel targets provided at the club ranges are for practice only, and no

scores made on them will be accepted for record, unless specially provided for by the committee.

In the indoor practices and competitions the target used shall be the standard American revolver target, having a black bull's eye 2¾ inches in diameter, divided into three values, 10, 9, 8, as below mentioned :

10-ring—1⅜ inches in diameter.
9-ring—1⅞ inches in diameter.
8-ring—2¾ inches in diameter.
7-ring—3¾ inches in diameter.
6-ring—5 inches in diameter.
5-ring—6⅝ inches in diameter.

POSITION.

No. 7. The position in all practices and competitions shall be standing, free from any support, the revolver being held in one hand with arm extended so as to be free from the body.

LOADING, FIRING AND CLEANING.

No. 8. The revolver must be loaded at the firing point only, and, until empty, must be pointed towards the target or held in a vertical position. The arm must be examined by opening the breech before a competitor leaves the firing point. The arm must be loaded to its fullest capacity in all competitions and must not be used as a single loader. No allowance shall be made for a mis-fire or a hang-fire in which the bullet comes out of the barrel.

Cleaning shall only be allowed between strings of six shots, unless otherwise specially provided for.

No unnecessary talking shall be done by a competitor at the firing point. Blowing through the barrel of the revolver at the firing point is not allowed.

MARKING AND SCORING.

No. 9. In all matches a new paper target shall be furnished to each competitor and not more than ten shots are to be fired on one target at 20 yards, and not more than twelve shots per target at 25 yards.

Shots touching a line or within the line shall be scored the value of that line. The eye alone shall determine whether a shot touches a line or not. Shots shall not be signalled, but may be spotted from the firing point, provided no time is lost by the marksman. The value of a score shall be computed by entering the value of each shot commencing with the shot of lowest value.

TIES.

No. 10. Ties shall be decided as follows :

(*a*) By the fewest number of shots of lowest count.

(*b*) By firing one string under the same conditions as the match.

(*c*) By any special rules governing the competition.

TIME LIMIT.

No. 11. The time limit for a string of six shots is three minutes, unless specially provided for.

PENALTIES.

No. 12. It shall be the duty of all officials of the club to caution any member observed infringing any of the rules and upon a repetition of the offence the officer of the day is empowered to debar the offender from further use of the range for the day, and his score shall also be disallowed.

A Montreal sportsman, whom we will call Jones—just simply Jones—owns a remarkably intelligent pointer. There would be nothing wonderful in this, seeing that nearly all shooting men own, or have owned at some time, the "best dog on earth," but the marvel is as follows : Jones and a friend were trying a cover for mythical "pattridge," and after drawing it blank, Sancho Panza (that is the way he is designated in the bench show catalogue, though his kennel name is Boz) after some lively roading, came to a staunch point on the edge of a railway track. The guns walked steadily forward, finger on trigger ; but nothing got up. Finally, Jones walked up to the dog, now trembling with controlled excitement, and after a short search, his eye lit upon the prize—a large, well preserved, lump of anthracite. N.B.—*This dog is not for sale.*

A Big Game Preserve.

BY ST. CROIX.

Geographers of an older generation used to get out of their difficulties by writing the word "desert" across the faces of their maps, whenever they had insufficient information about the regions they were endeavoring to represent. Unconsciously we have adopted their methods with regard to Canadian game lands. It is very generally supposed that large areas of this Dominion are rocky, inhospitable wastes, where, though they may contain a good many small fur-bearing animals, there is no great abundance of big game, and one, in particular, of the regions that has been dismissed by many writers as almost valueless, is the great tract of country lying between Mattawa and Heron Bay, Lake Superior. I, myself, until comparatively recently, thought this might be the case, for it was just possible that the climate might be so bleak and forbidding that moose, deer and even caribou and bear, might have abandoned it for some more hospitable region. But now I know better. This district throughout its entire length and breadth is a vast game preserve—in some parts, of course, the hunter finds game more abundant than in others, but, taken by and large, it is very well stocked with the four species that go to make up our list of eastern big game.

North Bay is the first point worth making a headquarters of. Here there are a couple of good hotels, whose rates are but two dollars a day, and there are numerous outfitters, so that all the necessaries of life may be procured; moreover, prices are reasonable. North Bay is on the great Lake Nipissing, the west arm of which is a most excellent hunting ground. There are bear, deer and moose, and the fishing is fully equal to the shooting, for mascalunge, grey trout, pike, black bass and doré may be taken by any angler worthy of the name.

The climate of this region is very delightful; the thermometer rarely reaches eighty degrees in the shade, and the nights are invariably cool.

The French River, which is the discharge of Lake Nipissing into Georgian Bay, is perhaps the best water for mascalunge of them all. Brook trout are found in Trout Lake (3 miles), in Anderson Lake (18 miles), in Otter Lake (8 miles), the North River (10 miles), and Four Mile Creek (6 miles). The livery stable keepers charge $4.00 a day for double rigs, but they would very possibly make reductions to those using one several days in succession. Of course, the big game hunting is not done from a rig, but from a canoe, and conveyances are only needed by the grouse shooter and the fisherman.

The trout caught in these waters are not large. The biggest I saw measured but seventeen inches, and the average is not over ten inches, but they are bright and beautiful, and game to the back bone. There is wonderfully good duck shooting on the West Arm. Late in the fall, the mascalunge fishing along the north shore of the lake is equally good.

Sudbury is most famous for its nickel mines than for the sport yielded by the neighboring forests; nevertheless, the local men seem to get a good deal of game and fish, so that it is more than probable any sportsman would be able to do well if making his headquarters here. The Balmoral is a fine hotel, and the American House is another good stopping place. The Onaping Hunt Club, of Sudbury, is composed of residents who do more or less deer shooting in the fall. Last year they found an unusual number of deer west of Sudbury, and this abundance was thought to be caused by the increase of wolves on the French River. None of these beasts have been seen around Sudbury, though a few have found their way to Wahnapitae.

Thirty miles west of Sudbury, about Onaping Lake and through the Vermilion River, there are plenty of deer and some bear and moose. It may be remarked in passing that most of the maps of this region are very unreliable. Cartier would make a pretty good headquarters, but

not so good as Biscotasing. This little backwoods station is delightfully situated, for from here canoe routes diverge in many directions, and there are Indians to be had who know the country, and who can generally show sport. A canoe voyage from Biscotasing to Dayton, on Georgian Bay, will be found an enjoyable one. This is known as the Missasauga trip, and six days would be occupied in going over from Biscotasing to Dayton, though it might take three weeks coming back again were it necessary so to do, which of course would not be the case, as the return to Biscotasing could always be made by jumping on the cars at Dayton and riding back to the starting point by way of Sudbury. The country is burnt for twenty miles from Biscotasing, but after that is green. The divide into Georgian Bay is thirty miles south of Biscotasing.

Mr. J. E. T. Armstrong, the Hudson Bay officer in charge at Biscotasing, will be only too glad to answer any questions as to this region.

The game of the district consists of moose, caribou, deer and bear, and there are, of course, partridge, duck and rabbits for the pot. Few bear are shot, though Mr. Armstrong generally takes over a hundred skins in trade; these, of course, have been trapped.

West of Biscotasing, deer becomes scarcer, and there is a very evident change for the worse in the climate. This year the hay was not ripe until August the 15th, and some of the birches were beginning to turn color on the 6th of August. The deer in these regions weigh from 225 to 250 pounds, though one buck was killed last autumn which weighed 305 pounds.

Missanabie, where there is another Hudson Bay post, in charge of Mr. S. A King, is, perhaps, the best point in the district from which to start after big game or fish. Brunswick House is fifty miles north of this post, and between the two there are thousands of square miles of magnificent moose grounds. There are not so many deer here as further east, but there are moose, and caribou and many bear. It may be added, however, that deer are said to be increasing, and that wolves are very scarce, if indeed they exist. The portage to James Bay is nine miles east of Missanabie station. Dog Lake is a fine body of water, and between it and Monitouwoc there is, occasionally, very good fishing for speckled trout. There is a tug on the lake, and for a small sum fishermen and hunters are transported to the beginning of the rapids, where the trout lie. Some of my trout weighed 2¾ pounds, but they are often caught 5 pounds in weight. I have never seen such sporting doré as those that are found in these rapids. They take the fly even better than do the trout, and a doré of two pounds weight in a rapid will test a light fly rod almost to the breaking point.

From Missanabie to Lake Superior there is a great deal of good caribou ground, and there are several waters where trout may be taken by the enterprising fishermen. Some of those that have a good local reputation are the Cahganogaming, Waubashene, Little Jackfish, McVey Creek, Amyot Lake and the White River.

Throughout all this region the canoe is as indispensable as the pack pony in the mountains. In winter the natives travel tremendous distances by dog team, but in summer they always journey by water. There is plenty of game, but unless you secure the services of a trustworthy Indian hunter you will not be likely to see much of it. Few parts of this continent are blessed with so perfect a summer climate, and this adds very greatly to the pleasure of an outing in the region I have so briefly described.

Fly Fishing for Black Bass.

BY WALTER GREAVES, OTTAWA.

It seems to me from what I can gather from both fly and bait fishermen I meet in different parts of the country that an article on the above subject might prove interesting and instructive to a number of your subscribers.

When speaking to friends and others about fishing for bass I always ask whether they use flies or bait. The answer usually is "bait: the bass will not take the fly in such and such lake." It generally turns out that they either do not use the right kind of fly in the right manner, or they do not fish in the right places and at the proper time of the day. I am inclined to think that bass will take the fly in almost any water if fished for properly and in the right depth of water; at least that is my experience, and I have fished for them in various waters and caught many hundreds of them with the fly.

At the beginning of the season (15th June) fish in shallow water near the shore, casting well up under the bushes. The bass lie there protecting their young, I think. Use large gaudy flies: Parmachene Belle, Professor, Grizzly King, Light Montreal and my Massassaga (which is killing at any time of the year, being taken I think for a green frog), dressed on hook No. 1, old scale. As the season advances, say by the middle of July, they begin to roam about and seek deeper water, when one should cast out from the shore towards the reefs and boulders, still using gaudy flies. The proper hours for fly fishing up to this time are early in the morning and up to about 5 or 6 p.m. Sometimes they rise well in the evening. You may, however, rest during the middle of the day, as they seldom take well at that time. There are days also when bass will not rise at the fly, but one must not be discouraged at this, for the same applies to every other game fish.

During the end of July, August and September, you will catch them about the shoals, reefs or bars where the water is not too deep, say from 4 to 8 feet. An excellent method is to troll slowly with a long line, using the large gaudy flies before mentioned and the Dark Montreal, Lord Baltimore, Polka, Silver Doctor, Zulu, &c. I prefer moving about and casting to this method, but the latter is sure to account for some large fish. In casting one must keep moving about in order to meet with success. Of course, if you come across a place where the bass seem plentiful, stop there some time. One might, however, as well cast on land, as expect bass to rise in 30 or 40 feet of water. Follow my suggestions and let us know the result. I am not addressing anglers who know how to fly fish for bass, but those who are anxious to learn something about the exciting sport of catching black bass with the fly. I could offer many more suggestions, but do not wish to make this article too long or tedious.

[Our correspondent sends us a pattern "Massassaga," dressed as follows: tail, scarlet swan; body, green tinsel; hackle, yellow; wing, guinea-fowl, stained yellow; head, scarlet wool.—ED.]

The bull dog fly, which in appearance is a glorified housefly, and in disposition a perfect hornet, is a great pest for about two months, to those travelling with pack trains in the Rockies. Few of the packers seem to know that there is an almost certain shield from its attacks, and that the substance that grants immunity is nothing more than the common fish oil, which is to be had in British Columbia at so reasonable a price. The oil is extracted from the dog fish, which swarm in the Pacific, and a little of it smeared over the coats of the ponies is an almost effectual preventive.

STARTING OUT.

A day's covert shooting when the leaves are down is a delight.

(BY L. H. SMITH)

LUNCH.

There is no tonic like shooting—and hunger is the best sauce.

(BY L. H. SMITH)

A Shot in Covert.

And in this instance the odds are on the gun.

(BY L. H. SMITH)

After Supper.

They clean the guns, and talk over the day's sport.

(BY L. H. SMITH)

Chats About Driving.

BY "MEADOWBROOK."

DRIVING DOUBLE.

A pair well broken to their work are as easy to drive as a single horse, but with green or restive horses it is quite another matter.

In putting to, adopt the following method: With harness on and traces crossed over the back, each horse is led out of the stable by the nose band, not the rein or bit. Bring the horses carefully to the pole, without allowing them to touch either pole or bar, and fasten the hooks of the pole chains into the kidney links of the harness. Next attach the outside traces to the roller bolts or whiffletrees, and fasten the inner traces. Should one horse be a kicker, put him in first. Reverse the process when taking out. Don't pole too tightly.

On the correct adjustment of the coupling reins much depends. They should be so fitted that both horses go straight and pull evenly on the traces. Coupling reins are generally too tight, so that the horses carry their heads in toward the pole, instead of going straight. It is convenient to have more than one hole in the billets for buckling the reins on the bits, to allow of changes without altering the coupling reins.

Bearing reins are of decided service in town, but are usually not desirable on long journeys.

TANDEM DRIVING.

Tandem has been described as "making two horses do the work of one," but while this may be partly true in a flat country, it is false as regards a hilly one. At any rate there is no end of fun to be had with a tandem cart and team.

Choose a comparatively light cart, with straight shafts, and make the wheeler draw it, having the leader to depend upon in going up hill.

Tandem is a fine introduction to driving a coach, but don't believe anyone who says it is more difficult than the latter; experience teaches the reverse.

Catching the thong is a knack, and one that has never been picked up by mere reading; ten minutes with a master will give the idea, and then practice will make perfect. It will be found that if a few of the knots have been left long on the whip stick, they will materially aid the beginner.

In using the whip "flicking" should be avoided. When the leader requires hitting, hit him under the trace and at the full extent of the thong. By practising hitting the leader on the near side, the learner will be helping his four-in-hand driving. To do so neatly, turn the hand over and keep the top of the stick low, raising the right elbow and dropping the right wrist.

There are three ways of attaching the leader to his companion: (1) Bars. (2) To wheeler's traces by spring hooks or "cockeyes." (3) By a continuous trace. Each method has its advocates, but perhaps the second is the best, as it is the simplest and works well, if care be taken in turning corners not to let the leader throw the wheeler down.

Most tandems are too straggling, and some of the daylight between the leader and the wheeler might be dispensed with to advantage. The nearer the horses are brought to their work the better.

Breeching should be used in a hilly country.

The near leading rein passes over the top of the forefinger of the left hand; the off leading rein between the fore and second fingers; the near wheel rein lies underneath it, and between the same two fingers; the off wheel rein passes between the second and third fingers. When mounting the cart the reins are held in the right hand, and on gaining the seat are transferred to the left. It is as well to separate the wheel reins with the third finger of the right hand while mounting, as a precaution, for if the horses should try to turn any particular rein would be more easily found.

Before starting, shorten the leader's reins and make the wheeler start the cart; on the flat the leader is merely for show, and if the wheeler's collar is pulled forward in the least, the leader is doing

more work than he ought. He need not take hold of his collar until a hill is encountered.

Corners require a good deal of care. The leader must be taken off draught, and in turning, say, to the left, put out the right hand, catch the leading rein, and loop it under the thumb. This of course shortens the left leading rein, and brings the leader round to the left. As soon as the leader feels the effect of the loop, he will come round, and the right hand may be required on his off rein to prevent his doing so too quickly, and will in any case be wanted on the off wheeler's reins for a second or two. As soon as the team is straight, raise the left thumb.

"Finger tip" driving is the mark of a beginner. The reins should be well "home" between the fingers, and this is best insured by slightly bending the wrist.

"Palm" the whip, allowing it to rest against the thumb.

Remember it has been said, "A bad leader is master of the situation;" consequently to avoid mortification, shun "a bad leader." A kicker or balky horse is inadmissible as a leader.

As regards size, the leader may be as high at the withers as the wheeler, but should weigh less and be of lighter build.

A rather wide cart should be chosen, and the tandem is not complete without rugs, nosebag, halter, stick basket, horn, lamps, clock, and tool box, the last containing pick, hammer, leather punch, pocket knife and matches.

The tandem whip thong should be ten feet in length, and the stick to the quill five feet.

The National Park.

BY TOM WILSON.

The points of interest as yet unvisited in the Rocky Mountain National Park are many. Even within the boundaries of the old park there are many nooks and corners that have never been seen by white men, and now that the park has been so vastly increased in size, it will be many years before its glorious peaks, passes and valleys shall have become familiar.

One of the pleasantest excursions to be made from Banff is that to Devil's Lake, in which, by the bye, there is occasionally very good fishing. One passes the "Mountain where the water falls," which is the Indian name for Cascade Mountain, and here a beautiful little prairie has been fenced in, that holds buffalo, elk, antelope and goat. Those who know the history of these ranges since the days of the first explorers, are almost forced to rein in their ponies, and muse upon the changes that have taken place since those early days when the Rev. Robert Rundle killed wild buffaloes at this very spot. But this was more than fifty years ago, and now the missionary has also passed away, though his name will endure for all time through the thoughtfulness of Dr. Hector, of the Palliser Expedition, who named a nearby mountain after the man of God.

Two miles and a half from the wharf at the Devil's Lake—this water is 12 miles long—a fine trail much used by Indian hunting parties, crosses a high divide into the valley of the Middle Fork of the Dead Man's River. I know of few finer views than that which is to be had from the summit of this pass; moreover, within the purview of the onlooker there should be a small glacier close to the base of Mount Aylmer, 10,300 feet, the highest mountain in the old park, and to the south, benches stretch away tier upon tier as far as vision may reach. These upland meadows are carpeted with alpine flowers, and are, truly, a paradise for the botanist. Following this trail for nine miles one passes through heavy, green timber, until arriving at The Gap, leading to the eastern end of Devil's Lake. Close by, the bed of the Ghost River is higher than the

valley of the pass, and a very little engineering would turn this river into the lake, as no doubt it once flowed, for the work of an ancient glacier, which piled up a moraine, forced the river to flow eastward down its present channel. This it does not do without a protest, however, for, excepting during the spring freshets, it shortly disappears under ground and flows as a subterranean stream for five miles before emerging into daylight.

Resuming our journey from The Gap towards Devil's Lake, we pass, for five miles, through a valley whose width does not exceed eight hundred yards, and which is bounded by perpendicular cliffs between 3,000 and 4,000 ft. in height. On arriving at the lake, a little gulch may be noticed, which would be an interesting place for the geologist, as the footprints of some prehistoric animals are visible on the slab rocks. This valley was traversed by Sir George Simpson in his overland journey around the world, made in the early forties.

Turning to the southward after travelling along the south shore of the lake for a mile, we pass several of those picturesque, natural pillars western men have named hoodoos, and in due season reach the summit of the pass which leads down Carrot Creek to the Canadian Pacific Railway, at a point about two hours' ride from the village. But if, on the other hand, we wish to extend our trip, instead of following Carrot Creek, we might turn east through a fine, park-like country to the South Fork of the Ghost River, and continue on down it until we reach a little tributary from the southward. Ascending this, we should, at length, reach a little lake in which there are trout, and heavy trout at that. This was a favorite camping ground and stronghold of the Stoney indians half a century ago, and here they have defeated the Blackfeet, when the latter were ten times as numerous as themselves. Following the old indian trail, and crossing a rolling and well-timbered country, we should at length reach the Bow River at the site of the old Bow Fort. Stone fireplaces and chimneys are still standing that were built in 1802 by the Hudson Bay Company. This fort was abandoned after a short occupancy, as the Blackfeet and Blood indians murdered and scalped the company's servants, and stole the goods that had been freighted at so heavy an expense to this distant post. Three miles further up the Bow, are the Bow Falls, an ideal camping ground, where the best fishing on the Bow River may be enjoyed. Boarding the train here the traveller will find himself at Banff within an hour.

Mr. A. Knechtel, of the New York Forest, Fish and Game Commission, is in Muskoka gathering white pine seed to be sown in the nursery under charge of the Commission. This nursery is to provide seedlings for replanting the burnt-over areas in the Adirondack Park. The reason that it is necessary to come to Canada for this seed is that it is a poor seed year for the white pine in New York State, rendering the supply insufficient, while on the contrary on this side of the line the seed is reported to be plentiful. The spruce seed which is required is being obtained nearer the scene of operations, as there seems to be no scarcity in respect to it. About 200 bushels of pine cones will be required, yielding about 100 lbs. of seed. The work of replanting which is being done by the New York Commission is a very interesting experiment, and the results will be of great interest to Canada, as the conditions are so nearly similar in a great part of this country. It will give data for the comparison of planting with natural reproduction, the method upon which we are depending entirely at present and will have to depend on for some time to come, but which it will probably be necessary to supplement when the conditions have changed so as to make some other course of procedure desirable to hasten or assure the reproduction of the best trees in special locations.

A Working Plan for Forest Lands.*

The description of a working plan for forest lands near Pine Bluff, Arkansas, by Frederick E. Olmsted, is given in Bulletin No. 32 of the Bureau of Forestry of the United States. The examination of this tract was undertaken at the request of the owners, the Sawyer & Austin Lumber Company, who wished to ascertain how far it was capable of providing a sustained yield for their mills, the annual capacity of which is about 40,000,000 feet. The tract comprises an area of 105,000 acres, about five per cent. of which is bare of merchantable timber. It is generally flat, and the soils are deep sand loams and loamy sands with a slight admixture of clay. The northern part is hilly and the rock granitic, with a shallow soil. The forest, still virgin, is of mixed pine and hardwoods. In the spring of 1900 the Company began lumbering steadily on this limit, and intend to continue such operations. The trees are being cut to a diameter of 18 inches on the stump. They are cut at about 18 inches from the ground, and the last log cut is made well up in the crown, generally at a diameter of about 14 inches.

The influence of fire on the stand of trees was very noticeable, as it was found that only five per cent. of the total area had escaped more or less serious fires during the last ten years. The mature trees were generally but little damaged, but the young growth suffered severely. The examination showed that, as a result of the fires, the number of trees in the small diameter classes is insufficient to maintain the present stand of mature trees, thus adding seriously to the difficulty of proper management. We quote an important paragraph:

"If the forest is to be managed with a view to future crops, it is necessary to obtain young growth which will develop into a first-class stand of timber. This is impossible unless fire is kept out. A partial protection is worse than none, for if the forest be guarded for five or six years and then burned over, the fire feeds on the accumulated litter, and the damage done is much greater than if light fires occurred each year. Therefore, if protection is attempted, it should be thorough."

About fifteen per cent. of the limit is river bottom land, upon which pure hardwood forests occur. On the remaining eighty-five per cent. of "pine lands" about fifty per cent. of the stand is pine, the average number per acre of all trees over 12 inches in diameter being 27.79, and of pine 15.17.

The sustained annual yield that can be obtained from the forest is given in the following table, the annual cut per acre being the same as the present stand:

Cutting limit, diameter, breadth, height, inches	12	14	16	18	20
Area to be lumbered annually, acres	2,380	2,439	2,439	2,380	2,380
Annual cut per acre, board feet	6,067	5,845	5,597	5,130	4,561
Total annual cut, board feet	14,439,460	14,255,955	13,651,083	12,209,400	10,855,180
Time required to cut over tract, years	42	41	41	42	42

This shows that the area of 100,000 acres, cutting to a diameter limit of 12 inches, breast high or about 14 inches on the stump, can supply continuously about 14,500,000 feet per year, while to give the sustained yield of 40,000,000 feet, which is desired, 276,906 acres would be required, or about 170,000 additional. If the forest were normal, that is, if all age classes were present in sufficient numbers to maintain the present stand of mature timber in years to come, a condition which has been prevented by the fires, equal cuts could be obtained in much shorter periods than are now necessary, and probably twenty-five years would produce a second crop equal to the first, in which case an area of only 170,000 acres would be required for a sustained annual yield equal to the present annual consumption.

It is estimated that, cutting to the diameter mentioned, with stumpage reckoned at $2 per 1,000 ft. B.M., and the value of cut-over land at $1 per acre, the average annual interest represented by the future crops on cut-over lands is, for a period of forty years, about 8.8 p.c.

* Contributed by the Officers of the Canadian Forestry Association.

Protection from fire is a serious difficulty, as the forest tract is not a solid block, but is cut into by farms and private wood lots, and thus the dangers are greatly multiplied. The following extract shows the transfer of the emphasis from the protection of the mature pine to that on cut-over lands :

"The forest would prosper most if the whole track could be protected from fire. On account of the difficulties just mentioned, however, such a course would in all probability be impracticable at the present time. The most urgent need at present is a thorough system of protection for the cut-over lands. This is entirely practicable, and should by all means be adopted. After the opening of the forest the young growth will quickly develop on these lumbered areas, and it is of the greatest importance that it be given every possible chance for rapid growth, and that the reproduction of the pine be effectually protected in every way."

In regard to the question of assisting the reproduction of pine as against the hardwoods, the following is the statement of the case :

"The object in such a forest should be to obtain a constantly increasing stand of pine and a decreasing stand of hardwoods, as the pine is the most valuable species which this locality can produce. An increase in the stand of pine can be brought about in two ways—by the removal of a large part of the hardwoods and by the exclusion of forest fires. The quality of the young growth, and consequently of the mature forest, will depend largely upon the presence or absence of fires. Even more effective would be the removal of the hardwoods. Unfortunately, however, the quality of the stand and the condition of the market will not permit of this being done at present except at a financial loss, nor is there much reason to suppose that conditions will change to any great extent in the immediate future. Every chance, however, should be taken to cut and remove all hardwoods which show a possibility of affording even a very slight profit. It should be borne in mind that every oak or other hardwood cut tends to increase the number of pine trees in the future stand."

The Ash-Leaved Maple.*

The ash-leaved maple or box elder or Negundo or, as it is often called in Canada, the Manitoba maple, was one of the puzzles in classification, as the different names, scientific and common, which have been given to it would indicate. The fruit is that of the maple, while the foliage has much of the appearance of the ash ; and apparently it was from some resemblance found between it and the elder that it was designated box elder. Negundo was the Indian name, and it has been incorporated in the scientific designations of *Acer Negundo* and *Negundo aceroides*, which are used interchangeably according to whether or not the user has decided that the tree belongs to the genus *Acer* and is to be classed as a true maple.

The leaves usually consist of five leaflets strongly and pinnately veined and toothed, particularly towards the end, ovate in shape and pointed. The lower leaflets sometimes assume the shape of maple leaves, and the three terminal leaflets occasionally partly coalesce into a similar shape. The flowers appear rather before the leaves, and the sterile and fertile are borne separately, the former being in clusters on sliglit capillary pedicels or stems, and the latter in drooping racemes from lateral buds. The seeds are the true samara or winged double seeds of the maple, and are smooth with large, rather incurved, wings. The small branches are green, and on the younger trees the bark is smooth and grey brown, becoming later a more decided grey and rough.

In Canada this tree is most largely distributed in Manitoba and the eastern part of the North West Territories, being found only sparingly in Ontario, though it is now frequently introduced as a shade tree. Unless care is taken, however, it is apt to grow crooked and finally become anything but ornamental. Its chief recommendations are its easy propagation and its rapid growth, as it will reach the proportions of a good-sized tree and be seed-bearing in ten years. It probably does not reach a great age, and its wood is of little value, except, perhaps, for firewood, where better is not available. As the pioneer tree for a shelter belt or wood lot nothing

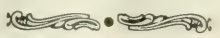
*Contributed by the Officers of the Canadian Forestry Association.

could be better, and it has been the most extensively used for this purpose in the West. It has been distributed largely from the Experimental Farms and is being used to a great extent by the Forestry Branch of the Department of the Interior.

The ash-leaved maple is found as far west as Maple Creek, to which it gives its name, and it is grown with great success at the Experimental Farm at Indian Head, but there is a decided difference of opinion as to whether it will succeed farther west. Some assert that it will grow, and cite instances to illustrate their position, while others who have had considerable experience have found it impossible to grow it successfully. The Chinook winds and the elevation, no doubt, are the detrimental influences.

The gathering of seed from this tree is a comparatively easy matter, as it remains attached to it late in the season, and is sometimes found scattered over the snow in winter. It may be kept over the winter by packing in dry sand; about two inches of sand to each layer of seed, alternately. Last year the seed of this tree at Indian Head and in other parts of Assiniboia was attacked by a fungus, which caused a loss of probably ninety per cent. of the whole crop. The edges of the wings became bleached and spotted, and the seeds failed to fill. The disease is probably a temporary outbreak, and there is no previous record of such an occurrence. Dr. Jas. Fletcher, in his report on this matter, suggests as the only two methods of combating the attack, the burning of the affected seeds, or, where possible, spraying the trees with some good fungicide like Bordeaux mixture.

Sugar is made from the sap of this tree, and in the West it is often called the sugar maple. The product, though not equal to that of the hard maple, is palatable. The Indians manufactured it for their own use quite regularly; and in St. Martin's lake, in the northern part of Manitoba, there is an island named Sugar Island from the fact that it contained a grove of the "sugar maple," and was frequented by the Indians for the purpose of obtaining their supply of this dainty.



The Census returns of the United States show that the lumber product for the year 1900 was 34,787,084,000 ft. B.M., having a value of $385,298,304; the conifers making up 26,153,063,000 ft. with a value of $268,481,112, and the hardwoods 8,634,021,000, with a value of $116,817,192. The quantity of white pine was 7,483,283,000 ft., of hemlock 3,420,673,000 ft., and of spruce 1,448,091,000 ft. The largest product, though less in value than that of the white pine, was that of the yellow pine, including all species, which amounted to 10,603,108,000 ft. The change in the proportion of lumber drawn from different parts of the country is shown by a comparison of the figures of 1850 with those of the present census. Their percentages are :—North Eastern States, 1850—54.5, 1900—16.0; Lake States, 1850—6.4, 1900 - 27.4, Southern States, 1850—13.8, 1900—25.2; Pacific States, 1850—3.9, 1900—9.6. The Lake States, the white pine district, reached their highest percentage in 1890 when it was 36.3. They are still the largest producers. Wisconsin has the highest production of any State, namely ten per cent of the total product of the country; Michigan, 9.6 per cent; Minnesota, 7.7 per cent; followed by Pennsylvania with 6.3 per cent and Washington with 5.3 per cent. The stumpage of white pine is $3.66; of Norway or red pine, $2.88; of spruce $2.26. The hardwoods, obtained principally from the central part of the United States, including the eastern portion of the Upper Mississippi valley, are led by the oak with a production of 4,438 million feet, followed in descending proportion by poplar, maple, elm and ash. Black walnut has the highest stumpage, namely $5.00.

The Collie Club Show.

BY D. TAYLOR.

The annual fall show of the Montreal Collie Club was held on the grounds of the corporation quarry at Outremont on Thanksgiving Day. As usual, it was confined to the membership, still, even with this restriction, the number and quality shown was a credit to the club, and goes to prove that some, at least, of the members are working in the right direction, namely, breeding to the best sires obtainable and endeavoring by every other means in their power to reach the highest standard in the collie of the present day. The club has the good fortune to have a live membership; not a few are hustlers, who consider that every man who owns a collie should be in this charmed circle of doggy men, and readily accounts for the large number of names on the secretary's roll. It was only a ribbon show, yet the enthusiasm was as pronounced as if the prizes had been in the shape of anthracite, while the anxiety as to the judge's awards was just as keen as that displayed by the average householder when he views his empty coal bin.

Fortunately the weather was favorable for an outdoor function, a bright, warm sun making overcoats and wraps a superfluity, and accordingly a large number of spectators, among whom were many ladies, came to see and admire the dogs. It is remarkable how many of the fair sex take to the collie, and how the faithful creatures respond to the care and attention bestowed on them with such manifestations of love and gratitude as to compel the admiration of every thinking man or woman. The committee, conspicuous among whom were Messrs. A. F. Gault, president; J. R. Lewis, secretary; and R. C. Binning and Jas. Ainslie, gave a friendly welcome to all visitors. Hot coffee, cake and fruit were given out with open-handed hospitality, and one and all expressed their thanks for the courtesies extended.

The judging was in the hands of Mr. Tom Smith, of Laurencekirk, Scotland, who is himself a keen admirer of the collie, with the added knowledge gained by experience as a breeder. What he don't know about the good and bad points of the breed amounts to very little, and his awards were given with fairness and impartiality, and were received by the exhibitors in the spirit in which they were made. There was little or no kicking, which is something out of the common at dog shows.

Getting down to the dogs, it may be remarked that while the number shown was hardly equal to that anticipated, the quality, with a few exceptions, was fairly good, and there were several outstanding examples of what the modern collie should be. Two of the finest specimens shown (Balmoral Piccolo and Balmoral Duchess) came from the Balmoral Kennels, Ottawa, and were greatly admired. We have had occasion previously to express our opinion of both dogs, and the favorable impression entertained at first sight has only been strengthened by a further inspection. Both animals are typical of their sex, and no better blood can be found anywhere than that which flows in the veins of either. The bitch was not nearly in such good condition as when she won in Toronto last September, and there was also an evident lack of grooming. On these points only we think she might have given way to her kennel mate in the place for best collie in the show, but Mr. Smith was evidently taken with her shapely head and sweet expression. The second prize dog, Mr. Hill's Balgreggie King, has a remarkably fine appearance. He is of good size, and built on racy lines, with a good length of head, inclined to be cheeky, and the ears a little too far apart; otherwise he is almost faultless. He is a very welcome addition to the stud collies of Canada. Of the young stock one of the best was W. Wells' Lacolle Blossom, a puppy of exceptional merit and exceedingly well developed for his age. He has a good head, well carried ears, deep

chest, and is straight and true in front. In the class under three months Mr. Stalker showed some very nice ones, the winner especially, Strathardle Prince, giving excellent promise. Among the bitches Mr. Woodall had two little beauties in Lady Marion and Lady Helen, which, if he has any decent luck with should be heard of later on. The Balmoral Kennels showed in the class under six months a very handsome puppy in Balmoral Laza and another almost equally good in dogs in Balmoral Sandy. The first in this class, Glencoe Dandy II., however, was properly placed. Mr. Ainslie owns three good puppies, Rannoch Prince, Rannoch Rover and Rannoch Belle, which a month or two older should show a marked improvement. The first named appears backward for his age, but has all the characteristics of a good collie. Mr. Smith's Lord Stanley is a good bodied dog, but faulty in the head and rather large ears.

The club is to be congratulated on the position it has attained in membership and influence. Their shows are always well conducted and an object-lesson for the beginner in the dog fancy; besides, they have the tendency to teach people what a good dog looks like and how, when properly cared for, what a pleasant companion and friend under good or bad fortune he really is.

Derivation of Breed Names.

It should prove interesting reading to all lovers of dogs to know from whence the names of the different breeds are drawn. Some of them, of course, are self-evident, deriving the family name from some locality where the breed was popularly supposed to originate or where it is extensively bred. Thus we have the "Skye" terrier taking the name from the island of Skye, inasmuch as at one time it was almost exclusively raised there. In the same category we have the Airedale terrier—"the gentleman from the Valley of the Aire," the denizens of which are strenuous in their advocacy of the merits of this fine dog of the terrier family. By the way, few people would imagine that the name terrier is derived from the Latin word *terra*, corrupted through the evolution of time into the present form, and that it was applied because of its habit of following game into the burrows of the earth. The name pointer is easily traceable to the habit of that dog pointing at game with its nose, in fact, with its whole body, because from the tip of the tail to the other extremity is almost a straight line. The difference between the setter and pointer in making a "point" accounts for the name, because, when the bird's are sighted the former comes to a crouching attitude, and hence the term setter. Readers of Sir Walter Scott's "Guy Mannering" will have no difficulty in ascribing the origin of the Dandie Dinmont breed of terriers to the typical border farmer who figures so largely in the novel of that name. They are quite his equal in courage and tenacity of purpose, and will tackle and draw a badger from his lair even if the "varmint" weighs half as much again as his small but plucky antagonist.

There has been a great deal of controversy about the term greyhound, and the authorities are at sixes and sevens over the derivation of the name. Some have even explored the Greek vocabulary to find a *raison d'être* for the prefix "grey"; others claim that it signifies great, while the majority (who have certainly more plausibility on their side) say that it simply implies that the predominant color in the animal is grey, and in no other breed of hound does the blue and grey appear so frequently. In olden times stag-hunting prevailed as a favorite amusement among the nobility and gentry of Britain, and the hound known by this name at the present day owes its title to the fact that this breed —said to be part greyhound and part bloodhound—was employed exclusively in hunting the stag. In like manner the foxhound gains its distinctive appela-

THE HOME OF THE HOODOO

A scene taken in the Canadian National Parks

THE BLACKSMITH SHOP.

This photograph was taken during the construction of the Atlin-Quesnelle telegraph line.

tion from the fact of its being used only for hunting the fox. And we may say that, with the probable exception of the bloodhound, there is no other breed of dog which pursues its quarry with such tireless energy and persistence. The derivation of the term bloodhound is obvious. In former years these dogs, from their singular power of scenting the blood of both man and animals, were extensively employed in tracking criminals, runaway slaves, etc., and hence the name. Even in the present day they have been used successfully in tracing criminals and the name is altogether appropriate. The fox terrier is said to derive its name from the fact that this useful little animal was at one time reckoned an essential adjunct to a pack of foxhounds, and occasionally they are used yet along with the pack. The little fellows are never far behind when, after a long run, the fox goes to earth, and in such case their usefulness comes in, assisting in no small degree in the capture of the fox. Harriers are chiefly used in hunting hares, and the connection of one name with the other is apparent.

The age to which a dog lives in the ordinary course is always a somewhat interesting subject, especially at the present time when so much is done in the way of breeding for early maturity. For instance, we have both collies and fox terriers becoming bench champions before they are well out of their puppyhood, but it is sad to say that in a majority of such cases the overshown dog afterwards rapidly degenerates or dies an early death. A correspondent writes of the death of his fox terrier at the advanced age of 18 years, having been born in 1884. This is, no doubt, a case of unusual longevity, but instances of dogs living to 14 and 15 years are common, whilst others which have survived to 26 years and over have been chronicled from time to time. The death of a dog of Lord Ogilvie's is recorded at 23 years old, it arising from an accident. The well-known fox terrier Belgrave Joe was born July 31st, 1868, and died Jan. 13th, 1888, whilst another aged terrier was one of the working stamp, born in January, 1880, and died Feb. 13th, 1900. In several of the above well-authenticated cases of longevity death either arose from an accident or was brought about by the owner owing to the growing feebleness of the poor creature. No mean can be struck as to the average age of the ordinary dog, but this might be taken at 10 years as he is now.

Speaking of dogs, said a nattily dressed man who had quietly seated himself in the group, here is a story that was an actual occurrence and has never been published. It happened one day that a street car was overcrowded. An Irishman stood on the rear platform, and, looking in, saw an overly-dressed man accompanied by a toy dog, the dog occupying the seat.

Turning to the conductor, he remarked in very rich brogue, "Phwat koind of roights has thot dawg to a man's sate en Oi hev paid foive cents en stand?"

Stepping into the car, the conductor abruptly requested the removal of the dog, and the Irishman took the seat, remarking to the owner, "That's a foine dawg ye have." No response.

He makes the second attempt to mollify the ruffled feelings of the dog-man by remarking, "Phwat koind of a brade dawg is thot?"

"It's a cross between an Irishman and and an ape."

"Oh, is thot so?" came the quick rejoinder. "Sure, then, it's related to both av us."

The Irish Setter.

BY H. M. WALTERS.

Of the three varieties of setters, namely, English, Gordon and Irish, the writer has always had a strong preference for the last named. In Canada, more particularly, quite a number of really good Irish setters can be seen daily as ladies' companions ; in the Old Country one rarely sees one in this capacity, being solely seen on the bench and in the field. It has been stated frequently that the Irish setter is far behind his Scotch and English brother in the field, being a rash, headstrong dog, and more likely (unless given lots of exercise to steady him down before shooting over) to prove more a source of annoyance than a pleasure to his owner over birds. The writer cannot agree with this idea, as his experience has invariably been distinctly favorable to the Irishman. As an instance of this he would mention that on one occasion he purchased a noted bench winning bitch from Sir Humphrey de Trafford, England, that was stated to be broken by Hallam and a good worker, unselfish and steady on her birds. The bitch had not been worked the season previous to her sale, and the writer showed her for two seasons very successfully, and never shot over her, being under the impression that she was gun shy, but we will return to this later. A friend seeing her took a great fancy to her and induced the owner to lend her for the grouse season, which opens on August 12th. She was sent up north on the 10th, and the 12th being Sunday never was out. On the evening of the 13th the writer received this wire : "Ronesther perfect in field, made no mistake ; very unselfish. Will you sell her ?" He afterwards stated that he had never shot over a bitch that quartered her ground more carefully and in such good style, and had such perfect self-control when fur was put up. This instance the writer can give and many others, that would go to show that the Irish setter has a most retentive memory, and when once carefully broken is a most charming companion in the field. With his rich red jacket and gay stern he is a most attractive looking dog ; being as a rule a beautiful mover, he is a more racy type of dog than the English and Gordon and has a much more lively air about him.

Above all things the Irish setter should be the possessor of a good dark eye, a canary or straw colored eye should, in the writer's estimation, be tantamount to disqualification, although in reality only ten points are allowed for the eye. A light eye takes away from the dog that lovely, trusting expression which a well bred Irishman should have, and gives instead a staring, frightened look altogether foreign to the Irish man as well as the Irish dog. He should also have a rich red coat, the mealy color so often seen being very undesirable. He should have lots of bone and feather and stand on good straight legs ; should not have hare's feet, but a compromise between the hare and the cat foot ; in body he should be well up at the shoulder, but with the shoulder placed well back as in a thoroughbred horse, and fall from there in a graceful manner to the tail which should be short, the shorter the better. Long tails are the most general fault in this country, and although the writer admires this short gay stern so much, he has not seen one or possessed one that came up to his standard of perfection, with the exception of one St. Elmo bitch bred by a Mr. Kermode, of Montreal, that unfortunately died of apoplexy. The head should be long and clean, with the stop nicely defined and the muzzle square, not snipey. There was a very good specimen at the late Montreal Show, by name St. Lambert Kathleen. She was, though only an eleven months puppy, nearly perfection in muzzle, and had a very fair straight tail. The ribs should be well sprung and the quarters not cut off sharp behind, but falling off gradually to the stern. As an example of body the writer would mention Champion Sig's Girl, who is well nigh perfect in body and spring of ribs. One

of the main features of the head of the Irish setter is the decided development of the occipital bone, which, although not so highly developed as in the bloodhound, is yet quite marked in the Irish setter of show renown. One of the best illustrations of this may be seen in the head of Champion St. Lambert Mollie, and also the points referred to before, namely, good legs and feet, these being some of her strong points. On this side of the water the writer understands that Champion St. Elmo was at one time *facile princeps* in head, having that perfect formation above the eye and the high occipital bone before referred to. He is often spoken of as "the lovely headed St. Elmo." The writer saw him for the first time four years ago at the Montreal Show at the Arena, and, with the exception of Rev. O'Callaghan's Champion Shandon, he had never seen so perfect a head, although for type and quality all through he preferred both Champions Shandon and Finglas. The most perfect bitch the writer ever saw was Rev. O'Callaghan's Champion Aveline, a dream of quality. Champion Geraldine, the same owner, was thought by some superior, but of the reverend gentleman it can be truly said he never showed or sold a poor one, he always making a practice of destroying at nine months those he considered lacking in too many points, preferring this course in order that the breed might not deteriorate. To Mr. Samuel Coulson is largely due the high state of perfection to which Irish setters have attained in Canada, he having been a genuine friend to the breed. It is to be hoped that many young fanciers will follow in his footsteps. But we must not forget before closing that true lover of dogs and their ways, and that able judge, Dr. Wesley Mills, who probably knows more about Irish setters than any man in Canada, and who bred some good dogs in their time. Had this little essay on the Irish setter been in his hands, it must undoubtedly have proved more pleasant and instructive reading. To hear a lecture on dogs by Dr. Mills is a *sine qua non* that you will not rest satisfied until you have heard another. In conclusion, let us hope that the Irishman may be taken up by more patrons like the last two gentlemen named until he attains as near perfection as possible.

Opportunity.

BY THE LATE JOHN J. INGALLS.

Master of human destinies am I!
Fame, love and fortune on my footsteps wait,
Cities and fields I walk; I penetrate
Deserts and seas remote, and passing by
Hovel and mart and palace, soon or late
I knock unbidden once at every gate!
If sleeping, wake; if feasting, rise before
I turn away. It is the hour of fate,
And they who follow me reach every state
Mortals desire and conquer every foe
Save death, but those who doubt or hesitate
Condemned to failure, penury and woe,
Seek me in vain and uselessly implore
I answer not, and I return no more!

In the Rockies.*

BY JAMES OUTRAM.

The annual problem of where to spend a summer holiday is now-a-days most difficult to solve : not from a dearth of wonderlands or healthful resorts and lovely scenes, so much as from an "embarras de choix."

With modern facilities of locomotion, cheap tours and other mediums, the beauties and marvels of Dame Nature are almost all within the reach of thousands, and fresh discoveries are adding to their number year by year.

These latter possess for many an additional fascination from the fact of novelty, being unhackneyed like so many of the world's famed "sights," while equal in their charm of scenery to countless widely advertised and long visited tourist centres.

Such a place is to be found within touch of civilization, in the heart of the Canadian portion of the Rocky Mountains, that magnificent Cordilleran belt which spans the North American Continent from Arctic sea to central isthmus.

Two summers since, in passing across the continent, the writer spent a week at Field, a little railway centre in British Columbia, and was so enchanted with its situation and surroundings that he determined to return in 1901, and spent three months ere he could tear himself away.

The journey thither is of continuous interest from either shore : from the Pacific, by the glorious Fraser canyon, and across the snowy Selkirk range ; or from the busy East, over the deep-blue waters or skirting the rocky, indentated shores of the Great Lakes ; across a thousand miles of silent prairie, with its fields of waving grain ; through the giant gateway of the mountains, where the precipices seem to rise straight from the undulating plain and suddenly engulf the approaching traveller ; past sunny Banff, magnificent Mount Temple and its glacier-bearing neighbours of the water-shed ; at length "The Great Divide" is crossed, and ten miles further down, on the Pacific slope, lies Field, 4,000 feet above the sea, cradled in the arms of mighty mountains, whose snow-clad peaks and shattered crags appeal directly to the heart of every Nature-lover.

Close nestled beneath the castellated ramparts of Mount Stephen, the glory of the valley, beside the murmuring waters of the Wapta River, stands the hotel ; and the greeting from Miss Mollison, ablest of managers and pleasantest of hostesses, makes the guest feel immediately at home.

But the delightful situation of this charming centre and its many comforts, only give a preliminary foretaste of the joys of its environment, with its boundless possibilities.

The mountaineer is amply catered for : magnificent view-points, with a fair spice of difficulty in the ascent, lie close round the hotel ; and loftier peaks, which almost vie with those of Switzerland, can be reached in a day or two by camping out. Facilities for this are provided on the spot, and guides from Switzerland are stationed by the railroad company for the benefit of climbers. For more extended expeditions, also, three valleys offer pre-eminent attractions. Cataract Valley, leading from Hector to the exquisite O'Hara Lake, circled by noble crests ; Ice River Valley, deeply cleft in the centre of the Ottertail group of mountains, whose charms were practically all unknown till last July, when Messrs. Fay and Scattergood and I made the first mountaineering expedition to explore the valley and attempt its three great peaks ; and Yoho Valley, of which more anon.

For the less energetic, geologic interest and natural beauties are encountered close at hand. On the slopes of Mount Stephen there lie extensive beds of fossils, where trilobites in myriads, of an infinite variety of size, may be picked up by any one ; and, higher still in the huge amphitheatre above, fine specimens of crystals can be found.

Two and a half miles or so from Field is a fine natural bridge, formed by the

* From the *English Illustrated Magazine.*

wearing of a narrow archway through a massive wall of rock, which stretches right across the river bed, and the whole volume of the Wapta foams through the contracted orifice in this mighty barrier with tremendous force and a fine display of lashing spray and turbulent disorder.

Barely two furlongs further the harassed river enters a narrow canyon, down which, with tortuous course and several thundering cascades, it tears its way between constraining cliffs, presenting a succession of effective "bits" to wanderers above on either rocky bank.

But the grandest feature of the neighbourhood of Field is, most undoubtedly, the Yoho Valley, which, both by its own resources of lake and waterfall and glacier, and the delight of its approaches, whether by Emerald Lake or Burgess Pass, is destined probably to be the most famous of the many grand attractions of the mountains.

True, there is not the rugged, precipiced *entourage* of Moraine Lake; nor the exquisite setting of Louise, whose superb, snow-crowned sentinels, Victoria, Lefroy and Aberdeen, keep their eternal vigil over its fair waters: but there is infinitely more variety. One is led on from one sublimity of Nature's handiwork to another. Lakes, large and small; gorges black and awesome; lesser ravines, with twisting channels and sparkling-rush of water, eddying between the well-worn rocks; grand woods and noble cliffs, with flower-decked alps and lovely vistas through the trees; glaciers, wondrous in form and colour, descending into the valley-bed; and above, the lofty mountain-sides, all hung with gleaming glaciers and culminating in pure snow-clad peaks or jagged, gabled masses, which pierce the very vault of heaven.

But it is the waterfalls that add the crowning charm in the concatenation of delights. The countless tumbling cascades that seam the steep walls on either side; the grandeur of the great, glacier-fed Takakkaw Fall,* and the less lofty, but perhaps yet more effective Twin Falls, scarcely to be surpassed in any land for picturesqueness and for charm.

In this idyllic corner of the mountain world, the writer spent two or three weeks as Mr. Edward Whymper's guest, and had the opportunity of climbing all the hitherto untrodden peaks in its vicinity and of exploring thoroughly its recesses, vast snowfields and outlying passes.

There are two main approaches to the Yoho Valley now. The principal by waggon road through a grand forest (where one long vista leads the vision down the enshadowed avenue of tall, tapering trees to the white sunlit crest of glacier-crowned Mount Vaux), to the shores of Emerald Lake.

Here a hotel in the Swiss châlet style is being built, and comfortable accommodation will be provided for a lengthened stay. Situate on the edge of a small wooded promontory, lapped by the peaceful waters, with pleasant paths meandering through the forest growth along the shore, and cosy corners everywhere for rest and scenery to be enjoyed, it stands beset by alpine slopes and rocky pinnacles, Mount Wapta's castled ramparts and the splendid precipices of Mount Burgess; and in front, the sheer face of the Emerald mountain with its snowy curtain and encircling glaciers, far above; the whole rich setting re-appearing in sharp-detailed duplicate upon the mirror surface of the tree-girt lake.

But we must leave the châlet and, on foot or horseback, resume our expedition. Quitting the lake, a stretch of gravel flat is crossed, and a steep trail winds past some pretty falls and ere long buries itself in the thick woods, through which we steadily ascend until the summit of the Yoho Pass is gained, at an elevation of just 6,000 feet, between Mount Wapta and the Parson's Peak, the culmination of the eastern spur of the Emerald group of mountains.

Here a trail converges from the right, a beautiful alternative by which to come direct from Field or to return.

It is a way replete with lovely pictures; the pine trees and the lowlier growth upon the slopes and ridges of Burgess Pass form a succession of admirable frames and foregrounds for many a striking view, so that the 3,000 feet of ascent, by a good pony trail, seems scarcely half the altitude, so constantly enjoyable has been the scenery — down the valley where Mount Vaux's elegantly moulded glacial apex shines against the blue; up the narrow wooded canyon to the Great Divide;

* *Takakkaw*, a Cree Indian word, meaning "It is wonderful."

or straight across to Stephen's splendid mass (seen here perhaps to better advantage than from any other point) and the Cathedral's ruined spires and towers.

As the narrow ridge of Burgess Pass is crossed, the Emerald group bursts on the sight, with the bright lakelet in the leafy setting 3,000 feet below, more exquisitely emerald in colour from this vantage point than from a lower altitude, and the tremendous wall of Burgess towering above our heads.

The trail now skirts the bases of Mount Field and Wapta, trending downwards at an easy angle. The latter peak is well worth climbing and not difficult, provided that one expert and a rope are of the party. It affords a glorious panorama in all directions, and is, in many ways, the finest point from which to get a comprehensive survey of the Yoho Valley.

The path swings round to join the lower part on Yoho Pass, and brings us, in a few paces, to a restful little lake, enshrined in forest, with a fairy peep of whitened summits far beyond, and the sharp Parson's Peak its dominating feature in a backward look.

Again we have a choice of routes at our disposal. The upper one soon passing timber-line and clinging to the rugged flank of the east ridge of Emeralds, just below its fringe of glacier, presents a series of fine prospects. Before the path emerges from the trees, a booming as of distant thunder reverberates with ever growing volume and intensity, and in half an hour we issue in full sight of the grand Takakkaw Fall, on the far side of the valley, more than a mile across in an air line.

The great névé between Mount Balfour and Mount Niles gleams white above ; a crevassed glacier tongue streams down a narrowing gully, worn in long ages in the face of a tremendous wall of rock, nearly 2,500 feet in height ; the torrent, issuing from an icy cavern, rushes tempestuously down a deep, winding chasm till it gains the verge of the unbroken cliff, leaps forth in sudden wildness for 150 feet, and then in a stupendous column of pure white sparkling water, broken by giant jets descending rocket-like and wreathed in volumed spray, dashes upon the rocks 800 feet below, and breaking into a milky series of cascading rushes for 300 feet more, swirls into the swift current of the Yoho river.

Down the far-stretching steeps, clothed with their wealth of pines or rugged in their barrenness, dash other silvery cascades ; the river gleams below : majestic lines of cliff and jagged pinnacles cleave the clear sky, and glaciers and snowfields lie along their base.

When we at length move onward, the sharp-cut point of Angle Peak rises above us to the left, and we swing round the shoulder of the Emerald massif into the Upper Yoho Valley, a tributary descending at right angles to the main. It is an ideal upland vale. The lower portion is draped heavily with trees of varied foliage, screening an exquisite little lake, and the torrent's course, rugged always and broken by repeated cataracts and miniature canyons, grows deeper and narrower and more abrupt, as it plunges downward to a final headlong leap over a splendid belt of cliffs to join the foaming river.

A somewhat long but interesting digression may be made to the head of the valley, which soon grows wilder, hemmed in by the ragged spurs, the massive peaks and lofty glaciers of the Emerald group on one side, and the broken ridges from Survey Station 18 and Insulated Peak upon the other.

Near the top of the pass, the gable of Kiwetinok Peak forming an effective background, lies a lonely alpine tarn, almost entirely frozen over, when visited in August last, with deep snow-banks and barren boulders bordering its chilly surface. Across the pass, a way, laborious and long, can be made into the Beaver-tail Valley and on to Field.

If the lower path from Yoho Lake is taken, we round its further end and traverse thick pinewoods, with the roar of the great Fall ever sounding louder in our ears. Then comes a rapid descent, with a view of the Takakkaw on the way, and sharp zigzags to the floor of the valley, where rich grassy meadows lie extended at our feet.

Soon we are standing by the river brink, face to face with the huge cataract, whose glistening mass of foaming water seems to pour straight from the blue firmament that crown the frowning walls,

and crashes with a ceaseless thunder on the boulders at their base.

Traversing shingle flats, green sunny meadows, and shady forest groves, we pass the shallow Lake Duchesnay, its waters wonderfully warm and its shore thickly strewn with the tiny shells, with Yoho Peak, so often visible as we ascend above the pines, and the white, gleaming glacier forming the central feature of the background.

Hard by, the river passes through a narrow, crooked flume, worn deeply in the solid rock, a turbulent and seething flood ; and, a short distance higher up, two considerable tributaries enter from the west. First the Upper Yoho stream, leaping from out the dark-green woods that cling to the steep cliff sides, makes its lofty plunge close to the trail, forming the Laughing Fall. Two hundred paces further, the torrent draining Habel glacier comes impetuously down, and our way now lies along its course. A forest trail with some ascent is followed, and soon athwart the pine trees to our left a glimpse is gained of what, by many, is considered to be the chiefest glory of the region—the Twin Falls—not equalling in grandeur the Takakkaw's single leap, yet still more picturesque.

A path diverges to its foot, ascending steeply through the trees ; and near the junction, with a fine view of the Falls, a rustic shelter is erected where the visitor may make a pleasant stay. Delightful peeps of the tumultuous stream are frequently obtained, and a superb gorge is passed, with vertical precipices fully 200 feet in height, whose crests are almost touching as they overhang the boiling torrent.

Soon we arrive at the foot of the Twin Falls themselves, and from a wide, sloping terrace, covered with undergrowth and shrubs, gaze up at the noble cliff, which rises abruptly some four or five hundred feet and stretches right across the valley. From two deep grooves worn in the centre of its upper rim, the parted river pours its glittering twin streams in ceaseless cataracts, which rush united downwards in a succession of turbulent cascades and sweep below us widly in their headlong haste.

A *détour* to the right enables one to clamber to the summit of the cliff, and thence a pleasant stroll through an open flower-strewn glen will take us to the end of Habel glacier, with its three tongues ; or, by keeping to the north, an interesting rock scramble leads to Yoho Peak.

The return from the Twin Falls should be by the footpath beside the little river. Frequent cascades and foaming rushes, miniature canyons and meandering curves, form many a lovely picture, set off by the varied greenery of bush and plant, and framed by massive trunks and over-arching boughs.

Crossing the stream, another characteristic Yoho Valley lake comes suddenly to view amidst the trees, and from its lower end, above the heavy fringe of firs, we catch a distant glimpse of the Twin Falls, and see them again reflected in the clearness of the water, whilst the murmur of their far-off thunder fills the ear.

Then we complete our journey to the upper end of the main valley. Half an hour from the Shelter brings us on a sudden face to face with the vast tongue of glacier that pushes its resistless way from the great life-bereft snow regions far above, between huge barren cliffs, into the verdant heart of the warm lower realms of life and vegetation.

It is one of the twoscore or more great outflows from the enormous Wapta and Waputtehk ice-fields, an expanse some thirty miles in length, which curves in the form of the letter J around the head of Yoho Valley, its long tongues descending on either side of the water shed between each pair of peaks that form retaining walls for its vast arctic mass.

The Yoho Valley, thrusting itself as it were into the very centre of this great snow-field, is obviously an unequalled base for studying the glacial world. No glaciers near the railroad rival these for area, variety or interest. Easy of access, all the characteristic features of these marvels of the alpine world are readily displayed within a few hours' journey of its sheltered woods and meadows.

Even a single hour on the ice will yield such scenes of interest that it would repay ten times the labor. Vast crevasses, lateral and longitudinal, are caused by the passing of the frozen river, from fifty feet to a hundred feet in depth, over the rapid fall of bedrock, or by the compression of its mass between the narrowing

cliffs. Séracs—the pinnacles and towers of ice formed by the combination of the two distributing causes—rise in bewildering chaos in the more broken parts. Great banks of brown moraine, the *débris* fallen from the mountain slopes and carried downwards by the advancing stream of ice, line its sides and sometimes mark its centre. Here and there, perhaps, a glacier-table may be seen, where a large block has by reflected heat melted the ice and snow in a deep hollow around it, but by its shadow shielded a pedestal on which it is upborn in isolation.

From Yoho Peak (an easy climb) a glacier panorama, seldom to be surpassed, save possibly in some far more inaccessible locality, is outspread. Situated between the Habel and the Yoho tongues, a wide expanse of snow-field, edged with noble peaks, almost surrounds our viewpoint; the one exception is the south, where a fine vista of the green Yoho Valley breaks the uniformity of white, and leads the eye down its deep, wooded cleft to the long indentated range of splendid mountains beyond the railroad — Mounts Temple and Victoria, Lefroy and Hungabee, Cathedral and Stephen.

For those who have both time and inclination more extended glacier excursions can be profitably made. The ascent of Mount Habel and Mount Collie, respectively 10,600 feet and 10,500 feet above the sea, are comparatively simple if a good guide is employed, and a stupendous panorama, particularly grand towards the giant ranges on the north-west, is obtained from either.

Others, who do not wish to climb but may desire to see the beauties and interests of glacial scenery and experience, are recommended to essay one or more of the three passes opening up new worlds upon their further sides. But an experienced guide is absolutely necessary for the safety of these trips. As yet no shelters are erected on the other side, and a night out is necessary if a return by the same or by another pass is planned. But a night out in the Rockies, wrapped in a blanket on a springy couch of branches underneath the spreading fir-trees (especially beside one of the beautiful lakes that nestle at the terminal of each of these three glacial passes), is a delightful experience and well worth the experiment.

The Balfour Pass to Hector Lake is an exception, however, and a long day's rapid marching will take the traveller to Laggan the same night, and make an agreeable variation in the return route to civilized society.

The treasures of this alpine valley and its varied environment, its wealth of forest, flowers, streams, lakes, glaciers, waterfalls and mountain peaks, are far from being exhausted in this brief survey. Weeks might be pleasantly passed exploring its recesses and wandering amongst its still untrodden haunts.

One only lack there is, in common with the Rocky Mountain region generally—the lack of life. Deep tracks of cariboo and other big game witness to their quondam multitude, but they are driven now to more secluded fastnesses. The mountain goat is sometimes seen, and a herd of seventeen were watched with interest by our party one morning on the southern slope of the bare ridge which bounds the upper Yoho Valley. Marmots, it is true, are seemingly abundant, and their whistle echoes often among the higher rocks. The squirrel, too, peeps out at times amongst the pines or races across the pathway. Bird life is scarce: a whisky-jack or two, a few grouse, and occasional small birds are seen at intervals, but silence usually reigns supreme. The porcupine is fairly common and frequently amusing to encounter: several visited the precincts of our camp, and one I met in circumstances of special interest.

When traversing the snowy ice-field which overhangs the end of Habel glacier, at an altitude of some 9,000 feet, a round, dark object was perceived close to the edge of a crevasse. On going nearer to investigate, we recognized that it was a porcupine, a record mountaineer amongst its species, 1,500 feet above the timber-line. Getting as near to it as possible, for the great crevasse yawned deep between us, I took a portrait of this alpine enthusiast.

We were not certain whether he was dead, asleep, or wrapped in meditation, so we snowballed him. At this indignity he uncurled hurriedly and waddled off. A second photo was recorded as he dis-

THE MANITOBA MAPLE.

An avenue on the Indian Head Experimental Farm of the Dominion Government

A Typical Irishman.

Champion St. Lambert Mollie, owned by Messrs. Walters and Learmont.

appeared beneath an overhanging ledge of snow, but soon he slipped and fell some twenty feet into the chasm, where we saw him wandering about unhurt, but probably, alas! unable ever to climb out. And there we were compelled to leave him to his doom, the victim of the only fatal accident recorded for the year in the Canadian mountains.

It may appear unwise to close the story of the Yoho with a tragedy. But unless, like this victim, travellers will climb alone or insufficiently equipped on glaciers and other unsafe places, there are no dangers on these mountains; and their grand summits and extensive panoramas, the glaciers with their wondrous beauties of form and coloring, the sombre forests and the flowery alps, the splendid cataracts and lovely lakes, unite in calling to the lovers of the sublime and beautiful to come and pay them a visit, which cannot fail to lead to admiration and affection, and send them home refreshed, invigorated and inspired.

Our Medicine Bag.

Many successful hunters have passed through Montreal on their return from the game lands of the upper Ottawa this autumn, but, possibly, none of them was more successful than Mr. F. H. Daniels, of Worcester, Mass., who, with two friends, penetrated beyond the height of land, south of Abitibi. The party shot three bull moose and a caribou. Mr. Daniels says the country he was in is a fine moose ground during the calling season, but that it would be inadvisable to go there after September 30. Mr. Daniels reached Montreal on October 1. The country he was shooting in lies to the northward of the great County of Pontiac, and, consequently, hunting is legal after September 1.

We make no apology for giving our readers an opportunity of reading the masterly article written by the Rev. James Outram on the Canadian Rockies, and which appeared in the English Illustrated Magazine for October. Mr. Outram is one of a half dozen mountaineers who stand head and shoulders above their fellow-climbers.

The forests are becoming a practical problem indeed for Canada. A few days ago forest preservation was made the subject of a resolution by the business men of the Atlantic provinces, and the light which arose in the East has shone even to the farthest West, for, at the meeting of one of the provincial political parties in British Columbia held recently, among the resolutions adopted as the platform of the party was one to the effect that pulp lease provisions should provide for reforestation and for that purpose steps should be taken for the general preservation of the forests by guarding against wasteful destruction of timber.

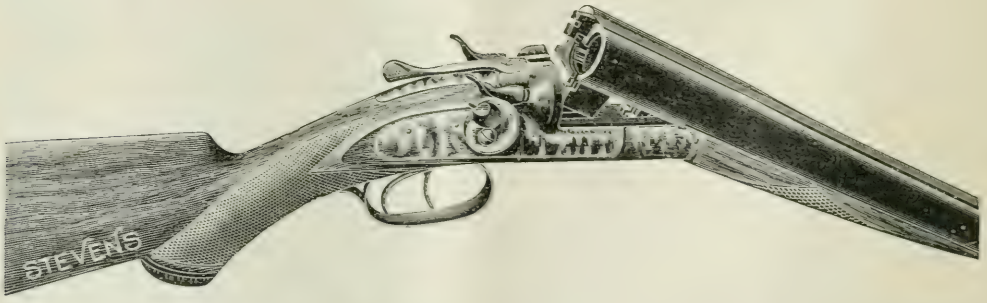
It is evident that the hammerless gun and high-velocity, smokeless cartridges for rifles have come to stay. Until quite recently, the hammer gun held its own fairly well with the hammerless; the latter when first brought out were intricate and fragile, and, hence, exceedingly liable to accident. The writer remembers a painful experience with a new hammerless, by a great English maker, although it happened almost twenty years ago. He went to Lake St. Peter duck shooting, and after a shot or two the gun became clogged, and as, with the tools at command, nothing could be done to relieve the situation, he had to forego a successful shoot. The memory of this affair lived with him for many years, and during that time he gave the hammerless gun a wide berth. But to-day the hammerless has reached a pitch of

perfection which makes it rank ahead of the best hammer gun that ever was built.

After all, there never could have been any reason for so much ponderous mechanism to accomplish so light a task as the giving of a blow sufficiently strong to ignite a sensitive cap. Once the eye has become accustomed to the trim lines of the hammerless, the hammer gun appears almost a monstrosity; especially if the hammers are of the old-fashioned kind that stand up pert as a cropped bull terrier's ears. And on the score of safety, the hammerless gun should be given the most credit; there is nothing to catch in clothing, dog-lead, branches, or against the gunwale of a boat. So pronounced is the preference of British sportsmen for the hammerless gun, that several of the English gunmakers have given up the hammer gun, and decline to take orders for one, so it is said.

But another "improvement," introduced about the same time the first hammerless guns appeared, is not so generally approved as was once the case. A great many sportsmen consider that a thoroughly good cylinder is a better gun for upland shooting than a choke. Of course, for wildfowl shooting, where the shots are long ones and the birds unusually tough, the choke is by all odds the better, but for upland shooting, when a man has to snap at his game at distances varying from fifteen to forty yards, the cylinder will fill the game bag with greater certainty than the choke—only the cylinder must be a good one, which means that it must have been scientifically bored, and such guns are hardly to be picked up for a ten-dollar bill.

The modern smallbore, smokeless rifle is rapidly driving the older weapon out of the field. Once upon a time, improvements to sporting weapons spread slowly enough, but to-day the big manufacturers advertise their wares so thoroughly, that hunters, even in exceedingly remote districts, soon know as much as their brethren of the cities with regard to each new invention. Go where you will; in the Rocky Mountains, adown the broad valley of the Yukon, in the great sub-arctic forests of Canada, or on the plains, you will find the modern rifle in the hunter's hand, his most cherished belonging, and the most efficient instrument civilization has yet produced for the utter undoing of the wild things of the waste lands. This is the only feature of the situation which should give us pause; how will it be with the game, now that the necessity of judging distance has been so far overcome that the tyro can kill with, almost, the same certainty as the veteran hunter? But after all what profit is



The J. Stevens Arm and Tool Company, of Chicopee Falls, Mass., have brought out a new, double-barrelled shotgun, with smokeless steel barrels, reinforced breach, frame and parts drop forged, matted extension rib, top lever, treble bolt, low circular hammers, rebounding bar locks with steel works, solid plungers, patent fore-end checkered, checkered pistol grip, with rubber cap, rubber butt plate, choke bored and especially designed for smokeless powders. Machine-made throughout, and all parts are interchangeable. Weighs about 7½ lbs. It is made at present in 12 gauge and 30-inch barrels only. Price, $25.00.

there in such foreboding? Let us, rather, give thanks, because the small-bore rifle came in our time, while there was yet a little game to kill.

The stomach of a dog is a peculiar thing to see on the desk of an official of the United States Treasury, but that was the object which E. E. Schreiner recently spread out before him. Mr. Schreiner is chief of the division of redemption of the Treasury, and has become accustomed to receiving money under peculiar conditions. Even he, however, admitted the originality of the case in question.

"Dear sir," ran the letter which accompanied the stomach, "I send under separate cover stomach of my dog Fritz. I was playing with him to-day, holding a twenty dollar bill up for him to jump at, when he suddenly leaped higher than I anticipated, grabbed the bill between his teeth and ran under the house, where he chewed the money up and swallowed it. I thought more of the $20 than I did of Fritz—he was always chasing chickens—so I shot him and cut out his stomach. Please see if you can't paste the bill together and redeem it.

"The unique feature of this case," said Mr. Schreiner, "is that we found the bill, slightly chewed up, but sufficiently whole to identify and redeem. The man has received a check for $20 by this time."

Forest fires during the month of August were reported in the vicinity of Nelson, British Columbia, by which considerable damage was done to mining property. It is stated that the large stamp mill and other properties at Ymir were only saved after a fierce and prolonged fight by a large crew. On Vancouver Island there were also fires destroying thousands of feet of lumber and threatening houses and railways. There having been no rain since April, everything was in condition to assist the starting and spread of fires. A despatch of 14th September, from Victoria, states that immense fires are burning in the surrounding districts and that the town of Albernin is threatened. During the past months very serious fires have occured in the United States, in Washington and Oregon, resulting in the loss of life and much valuable property and timber. Fires of considerable extent have also occurred in Wyoming and Colorado. It appears to be a dry year on the West Coast.

We have received a copy of the American Rifleman's Encyclopedia; a very useful collection of words and terms used by the riflemen of the United States, with copious explanations and many useful suggestions. Mr. A. C. Gould, the well-known American writer upon rifles and ammunition, is the compiler, and such a work could have been arranged by no higher authority. The Peters Cartridge Company are to be congratulated upon having brought out such a useful little book. The price is ten cents.

His Excellency the Governor-General had some magnificent sport last month in the west. Shooting at Qu'Apelle, 400 ducks were bagged by the party in one week, and further west, as the guest of Senator Kirchoffer, at Moose Jaw, sixty-five geese were accounted for in one day. On October 11 the Governor-General's party reached Poplar Point, Manitoba, and were again indebted to the Senator for some good sport. At York Lodge they enjoyed the same excellent duck shooting that His Royal Highness the Prince of Wales found exactly twelve months previously. Year by year these wonderful marshes of the west yield bags of duck such as men who confine their shooting to eastern preserves, never know.

Horsey Uncle—"Well, my dear little girl, did you get down to the races in time to see the half mile trot for green horses?"

His little niece—"Yes, uncle; but did you know they were all brown?"

The great animal painter, Edwin Landseer, not only loved every dog he saw, but there seemed to be a clear understanding between this great-hearted man and the dogs he loved to paint. It is recorded that the late Queen Victoria once asked him how it was he gained this knowledge and understanding. "By peeping into their hearts, ma'am," was his answer. He seemed to possess a mesmeric influence over even the fiercest animals with which he came in contact, as the following incident illustrates. In company with a party of ladies, he was visiting at a certain house, and when the servant opened the door, out rushed three or four dogs, one a fierce-looking mastiff. The ladies recoiled in fear, but there was no cause for alarm. The animal bounded up to Landseer and treated him like an old friend with most expressive demonstrations of delight. One of the company remarking how fond the dog seemed of him, Landseer replied: "I never saw the dog before in my life." A dog seems to know by intuition who are his friends, and from whom he may expect kindly treatment or friendly recognition, and will follow a stranger having this virtue with every mark of confidence.

The following letter has been received:

Some miles north of here a large band of caribou has been located. There is no trail in there, and I only can find out three white men who have been there, and the Indians do not hunt there as they cannot get out their game. I am anxious to form a party to go in and hunt next fall—it will require about forty miles of trail cut—so should have to arrange early. Knowing that your paper is always looking for new hunting grounds for your readers, I thought I would write and ask you to let parties correspond with me or put them in communication with me. I will guarantee from my own knowledge the finest deer shooting in British Columbia all the way to the caribou county, as well as couger, bear and small game. I had experience in handling such parties for some years in the National Park.

W. H. DISBROWE.

Grand Forks, B.C.

Baron von Plessen, of the German navy, registered in Winnipeg a few days ago. The trip through the west has come to be a sort of an annual holiday for the baron. This year he brought back a fine mountain sheep and six goats, in addition to bear and other game. The time was spent in the Kamloops country. The baron is now on his way to a region where he will endeavor to secure a few moose. He was sent to the grounds, where has enjoyed such fine sport, by the editor of this magazine.

A most excellent developer for the use of photographic films is as follows:

1.	Water,	12 oz.	
	Sodium sulphite,	3 oz.	
	Ammonium bromide,	20 gr.	
	Citric acid,	60 gr.	
	Sulphuric acid,	1 oz.	
	Pyro,	1 oz.	
2.	Water,	12 oz.	
	Sodium carbonate,	4 oz.	(if dry, 1 oz. 4 dr. 48 gr.)

For use with a normal exposure, take one dram of each stock solution, Nos. 1 and 2, and 2 ounces of water. This developer, though having pyro in it, neither stains fingers or plate and keeps well. Moreover, it yields negatives of beautiful printing quality and color that are quite free from veiling or greyness.

The Gore Kennel Club, of Hamilton, Ont., will hold a bench show about the middle of November. Full details are not yet to hand, but from the energy and liberality usually displayed by the fanciers of the Ambitious City they will equal if not surpass their previous efforts to provide an attractive premium list.

Concerning the use of a hypo bath after the reduction of a photographic negative with persulphate, trials show that unless the reduced negative has been well washed after immersion in the sulphite bath, there is a tendency on the part of the hypo to still further reduce and weaken the image. Negatives well washed between the sulphite and hypo baths will not exhibit this tendency. In any event, the suggestion that a hypo bath is desirable is only intended to apply when the action of the persulphate has left a reduced stain in the reduced image and its use under ordinary circumstances is unnecessary.

Mr. W. N. Hutt, who submitted the paper on "The Management of Wood-

lots" published in the report of the Canadian Forestry Association, has received the appointment of Professor of Horticulture in the Agricultural College of the State of Utah. While congratulations to Professor Hutt are in order on his selection for this important position it is regrettable that his services should be lost to Canada, as his practical knowledge of and great interest in the question of what might be called agricultural forestry has done much to help forward the movement for preventing and repairing the excessive denudation which has taken place in the older settled parts of Ontario.

In these days when, almost, every Canadian sportsman is an amateur surveyor, the following remarks by Col. Sir T. H. Holdich, ex-President of the Royal Geographic Society, are worthy of attention. Addressing the members of the British Association for the Advancement of Science at Belfast recently, he said: "Once again, too, would I warn travellers of the utter uncertainty of all classes of barometric determinations for altitude. Very little has been done in recent years towards improving instruments of the barometric class, and meteorological science has not yet taught us how to deal with the constant variations in air-pressure produced over local areas by changeable weather. There are some countries where barometric records can hardly be regarded as offering a clue even to differential heights It cannot be too often insisted on that the determination of the relative heights of mountain peaks, and of the local value of refraction by means of the theodolite is as much the duty of the triangulator as is the fixing of those peaks in position for the topographer. From these again the altitude of positions in the plains can be safely determined by small instruments of the clinometer class without resorting to the barometer at all, although it may still be necessary to ascertain the value of one initial (or final) point which must be determined by many observations spread over a considerable length of time and synchronous with another set of observations determined at sea, or some already known, level. This, of course, will occur only when a new geographical area is opened up to survey at some distance from the sea." During the past summer, travellers who have, of course, had only small aneroid barometers to depend upon, have challenged the heights heretofore ascribed to several of the peaks of the main Rocky Mountain range, but while it is not probable that any of the accepted heights were correct, it is likely that they were quite as correct as those that are now offered. The determination of heights, as Colonel Holdich remarks, is a most uncertain matter, when one has to depend upon the readings of an aneroid barometer that are to be compared with those of another instrument at a considerable distance. We, ourselves, have had the most remarkable results from such attempts. On one occasion, owing to having read the barometer on the summit of a mountain in the afternoon and at its foot the next morning, we found on comparing them with the readings of a standard eighty miles away that, according to these figures the top of the hill was several hundred feet lower than the base. Barometric surveying will occasionally give results that for weirdness rival Mark Twain's tunnel, which projected several hundred feet beyond the hill it pierced.

A country must possess considerable attractions when it can draw people of means season after season, and this is just what our Canadian wilderness seems to be able to do. As instance: An American medical man, Dr. Woodstock, of New Jersey, has visited North Bay each summer for the past thirteen years. He camps at Trout Lake, three miles from the city, where there is good fishing and a marvellously fine summer climate. Another medico who has the good sense to appreciate the Canadian West, is Dr. Shaeffer, of Philadelphia. This gentleman has taken his wife to Glacier, in the Selkirk Range, annually for a dozen seasons. These are but two instances out of many, but it proves that the claims Canadians make are well founded, and that from June until November the climate of western Canada is unsurpassed by any in the world. When, in addition

to this fine climate the visitor has an opportunity to indulge in so many outdoor sports and recreations, he is assured that time will not hang heavily upon his hands. Botanizing, collecting, climbing, exploring and fishing may well fill the early summer, and then with the blooming of the golden rod and the flaming of the maple's leaf, comes the best time of all, when the grooved barrel shall sound the knell of some woodland or mountain monarch, and the trusty double carry disaster to many a plump chicken and mallard.

Answers to Correspondents.

MANITOBA: You have not given the model of your rifle, so that it is impossible for us to answer your question, but if you own the model '89 use only the .44 calibre black powder cartridge. If, on the other hand, your rifle is of the model '94, you may use either the .44 black powder, or the .44 low pressure, smokeless powder cartridges. We have made enquiries from the manufacturers, and they say in reply, "We are not manufacturers of ammunition, but are manufacturers of rifles and shotguns. The ammunition manufacturers do not load the .44 calibre cartridges with a high pressure, smokeless powder, and our rifles are not made to take such cartridges. We do not know whether the ammunition manufacturers intend to place a .44 calibre, high pressure cartridge on the market or not."

J. DUFOUR: Wahnapitae Lake, 14 miles from Wahnapitae station by road, or 18 by river (with six short portages), yields good grey trout fishing in October.

VICTIM: Hay fever is practically unknown west of Mattawa. Within reach of North Bay, there are no better fishing places than the Manitou, and Goose Islands, and the French River.

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November, 1902

Communications on all topics pertaining to fishing, shooting, canoeing, the kennel and amateur photography, will be welcomed and published, if suitable. All communications must be accompanied by the name of the writer, not necessarily for publication, however.

The Official Organ of the Canadian Forestry Association.

ROD AND GUN IN CANADA does not assume any responsibility for, or necessarily endorse, any views expressed by contributors to its columns. All communications should be addressed to:

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Canadian Forestry Association

THE objects of the **CANADIAN FORESTRY ASSOCIATION** are :

The preservation of the forests for their influence on climate, fertility and water supply ; the exploration of the public domain and the reservation for timber production of lands unsuited for agriculture ; the promotion of judicious methods in dealing with forests and woodlands ; re-afforestation where advisable ; tree planting on the plains and on streets and highways ; the collection and dissemination of information bearing on the forestry problem in general.

Rod and Gun is the official organ of the Association, which supplies the articles relating to Forestry published therein.

This Association is engaged in a work of national importance in which every citizen of the Dominion has a direct interest. If you are not a member of the Association your membership is earnestly solicited.

The annual fee is $1.00, and the Life Membership fee $10.00.

Applications for membership should be addressed to the Treasurer,

R. H. CAMPBELL,
Department of the Interior.

Ottawa, Ont.

CANADIAN BIG GAME

THE time for the falling of the leaf has come: the law now permits the shooting of the moose, caribou and deer — and wouldn't you care for a head or two yourself?

Well, why not try Quebec, Ontario, Manitoba, or some other of the sisterhood of the Canadian Provinces? By such a choice you would probably be successful beyond your expectations, as many others have been. Only the other day a well-known physician of Winchester, Ky., wrote: "I met you last summer at Hotel Bellevue, Timiskaming, and you kindly located a camping party for me on Ostaboining where they had fine sport, getting several moose, deer and fine fishing. I wish to get some information regarding, etc."

Equally trustworthy information is **AT YOUR DISPOSAL.** Ontario has thrown open her jealously guarded big game preserves, the shooting of moose, caribou and deer being now permitted from October 15th to November 15th north of the main line of the Canadian Pacific Railway, from Mattawa to Port Arthur, a region enormous in extent and carrying a heavy stock of game.

The great province of Quebec yet holds its own as the home of vast quantities of deer, and the giant bull moose bathes and feeds in the great Lake Kipawa as of yore. Last Autumn a head obtained in this region by a Montreal sportsman spanned 62 inches. The Gatineau, an important tributary of the Ottawa, flows through one of the best deer ranges of the continent, while the Lièvre, Rouge and Nord drain similar and almost equally well-stocked regions.

Further east the St. Maurice, a stream 400 miles from source to mouth, traverses a land of rock and barren which the moose, the caribou and the bear find very much to their tastes.

Manitoba is as noted for its moose as for its duck and chicken, and those who can spare the time may ensure a successful hunt by visiting the Prairie Province. Beyond lie the Territories and British Columbia, with their hundreds of thousands of square miles of plain, forest and mountain, offering unsurpassed hunting for moose, elk, blacktail, sheep, goat and grizzly.

For further information write to any officer or agent of the

Canadian Pacific Railway

Or to the GENERAL PASSENGER DEPARTMENT, MONTREAL, QUE.

STEVENS

DUCK SHOOTING is great sport, and now is the season for it. Many sportsmen will go into the woods, and as the "laws are off" nothing can prevent a successful trip, unless it be an *unreliable* **Firearm.** We make the **Reliable** kind, and have

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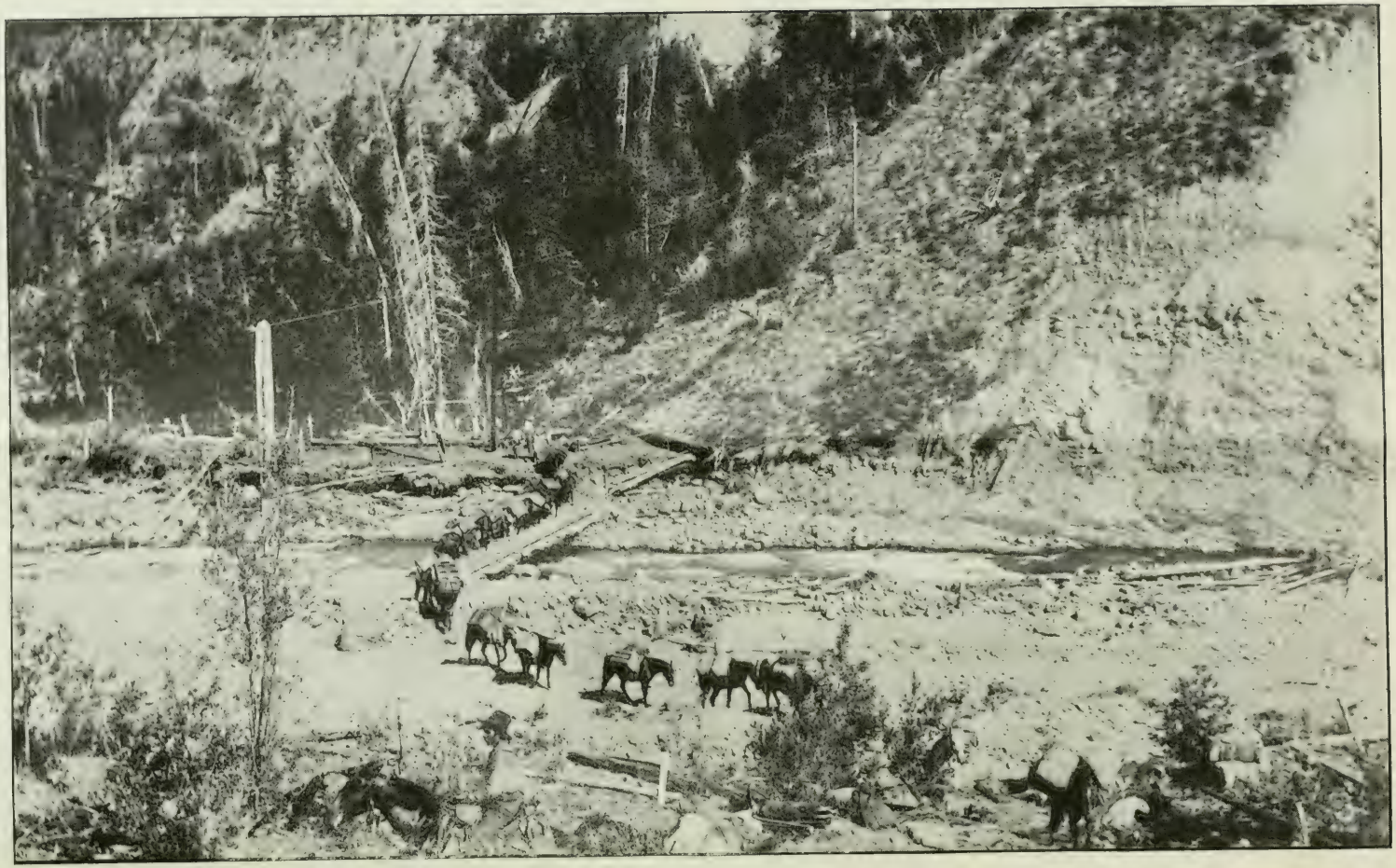
ROD AND GUN IN CANADA

Nipissing's Surges

A MAGAZINE OF CANADIAN SPORT AND EXPLORATION



ON THE TRAIL.

A pack train in Cassiar, B.C.

ROD AND GUN
IN CANADA

VOL. IV. MONTREAL, DECEMBER, 1902 No. 7

Hatching and Planting Trout.*

BY PROF. EDWARD E. PRINCE.

In the hatching of trout and salmon, whose ova are comparatively large and heavy, it is usual to place the eggs in shallow perforated trays over which pure fresh water passes during the period of incubation. If the eggs are loosely spread so that they do not unduly press upon each other, and if frost, excess of light, deleterious chemical or other influences are guarded against, the process of artificial hatching can be accomplished with facility. More than thirty years ago the Commissioner of Irish Fisheries hatched a quantity of salmon by a simple incubating apparatus in his office in the Customs House, Dublin—a clear proof that the obstacles to success are not serious.

Before commencing artificial fish-culture for the purpose of stocking any waters, it is necessary to prove as a first step that the waters are suitable. Even streams and lakes, which once abounded with trout, may, during the process of depletion, have become altered in character, and no longer possess their former favourable features. A few adult trout transplanted from other waters will in a single season afford the required information. If the fish survive and flourish, there need be no fear of success. Such information is especially necessary in the case of artificial ponds or of waters which it is proposed to stock for the first time. Under conditions which are really unfavourable speckled trout will, of course, live, but not in a healthy, vigorous state. They will even survive in shallow stagnant water, where the supply is small and uncertain, but very different conditions are necessary for successful trout-culture.

If it is intended to hatch and rear trout from the egg, the parent fish must be secured before the close season begins and retained in a pond until ripe, otherwise trout can only be secured by obtaining from the Minister of Marine and Fisheries a special permit, the conditions attached to which are very stringent. Trout, when two years old, will yield spawn, but as the number of eggs yielded by them is small, and the eggs have been proved to be less hardy than those of older fish, it is preferable to select parent fish not younger than four years and not older than twelve years. Moreover, the larger fish furnish a greater number of eggs, the amount being about 900 for every pound weight of the parent, and the eggs themselves are of larger size. A salmon produces eggs at least one-third larger than those of a small grilse, and the fry hatched from eggs of large size have been found to be finer, healthier, and of more rapid growth than from smaller eggs. This is as true also of trout. The spawning season extends over a long period, and individuals containing ripe eggs may be found from late fall until spring. It is not necessary to describe the methods of obtaining parent trout, though the drag seine of 1-in. bar, *i. e.*, about 2-in. extension mesh, is very effective. The seine being an excessively destructive

* A Special Report to the Department of Marine and Fisheries.

net is generally discouraged in Canadian waters, however, and it must not be forgotten that the barring of small streams frequented by trout and other fish is forbidden by law.

The requisite number of parent trout having been obtained and confined in a small pond ready for artificial spawning, it is necessary for at least two operators to assist in the work, one to perform the "stripping," the other to net the fish, as required, and hand the vessels, etc., to the operator. Kneeling on the ground the operator firmly but gently lifts a fish by the tail out of the landing net, using his left hand and rests its head for a moment on a towel, lightly passing his right hand towards the throat and grasping it with the open thumb and forefinger under the breast fins, the other three fingers of the right hand being pressed upon the left gill-cover of the fish. The back of the fish is pressed against the right breast of the operator and the tail bent back and upward. If the fish is fully ripe, the ripe eggs will shoot out in a continuous stream and the assistant completes the operation by gently pressing upon the under side of the fish and passing his hand from the head towards the tail to expel the eggs that may not have run out. The eggs should not fall far, so that the assistant should hold or place on the left of the operator the shallow dish, which is to receive the eggs. No force is necessary. If the eggs refuse to stream out, the fish is most probably not fully ripe, and a little patience will prove that. Some fish refuse for a minute or two to yield their spawn, and old fish always spawn less freely than young examples. Some manipulators wrap the fish in a towel, leaving the snout and hind part of the body free, others hold the fish's head or shoulders in the left hand, and grasp the under side of the body with the right hand, holding the tail down and slightly pressing with the right thumb. There are disadvantages connected with these methods ; but in all alike patience and gentle handling are essential. The fish should not be unduly disturbed or roughly treated, and spawning can thus be accomplished without the slightest possibility of injury. Very large and strong fish may demand the united efforts of two operators. When four or five female fish have been spawned into the plate yielding, say, 10,000 ova, the assistant must then land in succession two or three ripe males. Each fish should be brought close to the eggs as they lie in the plate, and as soon as the abdomen touches the eggs a large flow of creamy milt will be forcibly ejected. The plate should be turned round as each new male is brought so that all the eggs may receive a share of the fluid milt. A slight pressure of the right thumb and finger behind the breast fins and further back will increase the flow. The milt of a single male will suffice for an extraordinary number of eggs if both sexes be in fully ripe condition, and in case of necessity one male may with confidence be used to fertilize the ova of five or six females ; but where possible the first named proportion is safest. The vivifying or fertilization of the egg will be aided by gently stirring them with a clean feather after milting, and adding half a pint of water to dilute the creamy milt. Each dish when thus filled and stirred should be placed on one side and five more females spawned into another dish. In half an hour they should be transferred to a larger vessel, a clean wooden bucket, and placed under a gentle flow of clean water, to wash all impurities and excess of milt away. The eggs will appear no longer soft and yielding, and instead of clinging together will be hard to the touch and separate from each other. They are very elastic and will endure great pressure. Thus Frank Buckland, the most famous of English pisciculturists, placed upon some trout eggs a weight not less than 5 lbs. 6 ozs. before he could crush them. Nevertheless pressure especially upon newly fertilized eggs is highly injurious.

It is necessary to place the eggs, after being cleaned, upon the hatching trays. These consist of lightly made square frames of wood, across which is stretched japanned wire cloth, though in the Government hatcheries perforated tinned trays, black japanned, have been found advantageous.

The following five conditions are necessary for successful hatching :—

1. A supply of water which is regular and unfailing.

2. Water of even temperature, that supplied from a spring at some depth beneath the ground is preferable.

3. Freedom from impurities and sediment, which suffocate the eggs, hence the supply of water should run into a tank to allow sediment to settle before it runs over the hatching trays.

4. The quantity desirable is about 100 gallons per hour for 10,000 eggs. The greater the quantity of water the better, as eggs actually breathe water and need ample supplies of oxygen which the fresh inflow of water contains.

5. Protection from floods by means of guards and an overflow ditch higher up than the supply pipe. While spring water from its equable temperature, purity and other features is always preferable, yet when incubation has advanced to what is called the eyed-egg stage, water from a brook or river will serve quite well.

Trout eggs hatch out in from 50 to 150 days, according to the temperature, amount, and rapidity, as well as the character, of the water. Water from limestone strata is generally held to be best, and the greater the quantity of water the longer can incubation be protracted. Temperature is of course most potent, and a change of one degree Fahr. rise or fall, shortens or lengthens the process of incubation four or five days. Eggs of trout which hatch out in 50 days when the temperature of the water is kept at 50° Fahr., will take 100 days if the temperature is kept as low as 40°. The filled hatching trays are placed in wooden tanks open at the top, and a flow of water through the boxes must be arranged to ensure two inches or less of water over the eggs. Direct light should be excluded to discourage fungus growth. Dead eggs should be picked out each day. When eggs die they lose their delicate transparency and bloom, and assume a dead white appearance, and unless removed a feathery fungus rapidly covers the egg, and spreads to other healthy eggs. Hence the necessity for promptly removing them. If eggs require moving on the tray it should be done gently with a soft camel-hair pencil or brush. They may be softly swept into a spoon when it is desired to remove a few from the tray. A tray may be emptied by lifting it out of the water and skilfully overturning it into a dish. Eggs must never be touched by the hand, and dead eggs are best removed with wooden pincers or forceps.

Hatching and rearing boxes require to be blackened inside. Charring is much to be preferred to black varnish. Black paint must be avoided. Hot blocks of iron 20 lbs. or 28 lbs. weight are closely applied to the surface to be charred and this close contact prevents burning. All boxes, trays, etc., after charring, varnishing, etc., must be well seasoned in water some time before hatching operations begin.

When the delicate young fry, called "alevins," begin to hatch, they do so in such numbers that special tanks are necessary to which to transfer them. Many of the fry cannot free themselves from the egg-shell or capsule, and require a little skilful help by means of an artist's camel-hair brush. When not more than two hours old the little fish have intelligence enough to dart away from danger. It requires some agility to capture one with a spoon. A scoop of fine gauze or perforated zinc is effective.

The following points may be noted in connection with managing the fry :—

1. They should be exposed to very little light.

2. No food is required until the large bag of yolk attached to each alevin is almost absorbed.

3. Prevent massing together, their jelly-like bodies when crowded together result in suffocation and death.

4. Cover the exit with fine gauze to prevent the tail and yolk sac of some of the fry passing through, and occasionally sweep them gently away from the point of overflow.

Before the yolk is gone, trout fry will pick up minute particles of food, and, indeed, if fry are kept more than six or seven weeks, systematic feeding must be resorted to. At the Restigouche hatchery, Mr. Alex. Mowat was granted permission in 1899 to retain and rear 10,000 sea salmon fry until they were six months old, when many of them reached three inches in length. This very successful attempt is referred to in the report by the officer named (See Depart-

ment's Report for that year, Appendix II, Fish-Culture Operations) from which I quote the following :—

As regards the 10,000 fry retained at the hatchery in open air tanks until six months old, the experiment was most successful. Many of these little fish were fully three inches in length when liberated in the autumn. The food for the fry consists of pulverized liver and raw fish, the fish only being used as a fluid food, and the liver grated into powder. A great amount of attention and care must attend the work of feeding the fry, and keeping all dead and decayed matter removed from the tanks. I am confident that from the trial made during the past summer at the Dee Side hatchery, that large numbers of the fry can be fed and reared in the tanks for at least six months before being liberated.

The utility of using other fish in a powdered or mashed state for the sustenance of advanced fry was suggested long ago by that pioneer in fish-culture, Dr. Theodatus Garlick, of Cleveland, Ohio, U.S.A.* Dr. Garlick, in his interesting little "Treatise on the Artificial Propagation of Certain Kinds of Fish" published in 1857, said (p. 89): It has been ascertained that the lean flesh of animals, when boiled, is an excellent article of food for young fish, or even old ones. As the fish are very small, it is necessary to hash it up into very fine particles, or they will swallow it; in fact, it should be pounded or grated very fine, but as they increase in size, it may be given in coarser particles. The flesh of other kinds of fishes, where they are plenty, would be an excellent substitute for the flesh of animals, either cooked or uncooked; I think this kind of food preferable to any other.

The question has often been discussed whether fry whose incubation has been protracted are stronger than those which have been hatched earlier under a higher temperature. Certainly the mortality in broods of English trout hatched in water below 40° F. is far less than when the water is of a higher temperature. The same has been found to be true of the Canadian speckled trout and the Rainbow trout.

In a series of ova which had reached an advanced stage in water of 48° F., and were then placed in trays supplied with water 10° lower, the hatching out did not take place until the 120th day, though they are known to hatch in 50 or 60 days under a higher temperature. The resulting fry are more robust, and fewer die during the early stages after liberation from the egg than in those hatched at a temperature of 48° to 60°. Actual tests on spawning beds have shown that for long periods the water may not rise above 34° or 35° until April, and the period of hatching is, therefore, prolonged to 150 or 160 days, with the result that the fry are stronger and more healthy.

In accordance with the conditions which obtain in nature, the fry, after exclusion from the egg, should not be subjected to very low temperatures, but water ranging from 45° to 55° is most suitable. The carrying of fry to the localities where they are to be deposited is an important matter. Railway journeys, if not too protracted, do little harm to fry, unless the cans or tanks holding them are kept too near a stove or hot pipes. Excessive heat often proves fatal in railway cars, but as a rule journeys by rail are less perilous than by team over rough roads, when the shocks and collisions seriously disarrange the delicate organization of the young fry and damage, it is believed, the sensitive otocysts of the little fish. Team-drives over rough trails through forests are not conducive to the well-being of fry, and when posssible cans should be carried, in the manner described later, over very rocky or uneven tracts. Conveyance by boat or canoe is by far the best mode. Cans specially contrived for the purpose are best, and should be made of heavy galvanized iron† or stout iron well tinned, and holding 10 to 12 gallons of water. They may be 24 or 26 inches high, and say 18 inches in diameter, but may be of the form of a truncated cone, with a narrow neck in the centre for the purpose of preventing the splashing and loss of water as far as possible. Into the neck (say six inches in diameter), a cylindrical can fits, the bottom of which

* Vide my paper on "Fish Culture in Canada" Transact. Ottawa Lit. and Sci. Soc., Part II., p. 164.

† While galvanized iron is the best material, it must be remembered that the spirits of salt, used in soldering is very hurtful, and new cans should stand full of water (often renewed) for eight or nine weeks.

is made of fine metal gauze. The gauze not only allows of aeration, but when necessary serves as a receptacle for pieces of ice, which, melting, trickles into the water below, in which the fish are swimming about. The ice is often broken up into fine pieces or crushed, if it does not melt and cool the water properly. It should always be remembered that the young fishes, above all salmonoid fishes, cannot endure heat, nor are they able to withstand frost with impunity. Indeed, ice placed in the lid of the can or tank has proved harmful when on warm days the fry have been surrounded for some hours by water of 50° or 60°. Hence the advisability of transporting young fish either in the early spring months or during the night, and at early morning when the season is warmer and more advanced. At such times they can be most safely shipped.

It is well known that newly hatched fish are far less hardy than eggs. But even eggs during the first few weeks are very sensitive, and within three weeks after fertilization they should be subjected as little as possible to concussions and rough usage. Salmon eggs 22 days old died in eight or nine days after being roughly handled during some experiments by the late Dr. Francis Day, the well-known British salmon authority, but after the 47th day only very hurtful causes, such as chemical impurities, etc., will do them any harm, and "eyed" eggs are hardy in the extreme. No doubt vast numbers of ova are lost every year at the head waters of salmon rivers by being frozen. Certainly in 1881, this loss was very severe on many Scottish rivers. The famous physiologist, Dr. Davy, brother of Sir Humphrey Davy, imbedded salmon eggs in ice, and found that they survived ; but his experiments provided conditions probably more gradual than the severe and trying circumstances of freezing near the source of a river.

In order to keep the cans suitably cool an outside jacket of iron is often provided, separated by an empty space from the inside can containing the fry. Such double cans are very effective, and being much cooler than ordinary cans, the fry are shipped in them with much greater safety and success. Whitefish fry, which are very small and delicate, will to the number of 15,000 to 25,000, travel in one of these cans without loss if the journey be not long and trying ; but half that quantity of brook trout and salmon would as a rule suffice. Some authorities favour the wise principle of putting a minimum quantity of fry in each can and regard 3,000 to 5,000 as ample, but with newly hatched fry before the gills are properly developed, and before they have acquired their full larval activity and vigour, a greater number can be safely shipped in each can. Ten cans is a full shipment for one team, and fewer cans are in most cases advisable. At the famous Howietoun fish ponds in Scotland, the lamented Sir James Gibson Maitland, whose recent death all interested in fish culture must deplore, used a conical form of can 24 inches in diameter across the bottom, and 4½ inches in diameter at the top. The height of the can is 32 inches, and the weight, when filled, about 170 pounds, so that two men could easily lift it about by means of two strong handles fixed at points a little above the centre of gravity (about 14 inches from the bottom). When it is necessary to convey the cans along forest paths or across rocky hills, two poles are horizontally attached to the handles, and the can is then easily carried—one man walking in front and the other behind. Many Scottish lakes situated on the highest altitudes have been successfully stocked by this method.

All fry should be planted immediately after arrival. If the hour of arrival at the planting ground be midnight or during the small hours of the morning so much the better, the atmosphere is then cool. In any case no time should be lost as every moment is of importance, and the sooner the fry are disporting themselves in the clear waters of the stream or creek, the greater is the assurance of success. Under no plea whatever should fry be kept in the cans over the night. Great risk is run by a few hours' delay. If through the impossibility of obtaining a team or other cause it is absolutely impracticable to at once plant them, they should be constantly watched and fresh water splashed in, or the water aerated by a bellows or other means. Aeration is most easily and effectively done by lift-

ing up water in a dipper from the can and letting it fall again with a splash; but on no account should the device be adopted of blowing down a tube into the can with a view to aerating the water. Such an absurd plan has been actually adopted by some manipulators; but in blowing down poisonous air from the lungs, the water in the can already vitiated with carbonic acid gas, becomes more vitiated and poisonous. The surest way of killing and asphyxiating fish suffering from lack of oxygen is to blow air from the mouth into their midst.

Again, fry should not be unduly knocked about or the cans roughly handled. "Fry will not stand much knocking about," wrote Sir Gibson Maitland . . . "the bottom of a tank (or can) used for transporting fry should be stiffened by cross pieces soldered underneath, as, if it saggs at all, the fry soon get fatigued, possibly because the least spring from the bottom frightens them and they exhaust their strength by frequent and aimless sallies through the water." The same author also wrote: "With care fry can be carried for twenty-four hours, but the result is not satisfactory if the journey be longer."

Of course small quantities of fry can be sent further and more easily than large. The re-aeration of the water is a difficulty. It cannot be done automatically, as is the case with yearlings, because the motion the water acquires tires out the fry if very young. The cans should never be filled quite to the top; but a considerable space should be left or the fry will suffocate.

Bread crumbs or particles of such supposed food should never be scattered amongst young fish, when being shipped. Very bad results have followed when this has been done as bread is a most unnatural food for young fishes.

It usually suffices in a long journey to change the water at appropriate intervals. The fact is well known that little salmon and trout, only 2 or 3 weeks old, actively wave their pectoral fins to and fro and thus create a current of water which aids in oxygenation, and facilitates the breathing operations of the fish.

The actual planting of the fry is a most important matter, and a good deal of very inappropriate advice has been published upon this matter.

It is clear that fry should not be suddenly transferred from a warm can to a can of water that is several degrees higher in temperature than the lake or stream.

The temperature should be somewhat equalized by mingling the two waters before the fish are emptied out. The temperature of the water into which the fry are to be transferred should not be more than 6° higher or lower than the water in which they have been carried from the hatchery.

It is hardly necessary to say that if fry are being sent some distance to be planted, it is an advantage to have all arrangements for their reception made beforehand, so that teams may be waiting the arrival of the cans and an immediate start be made. Before placing the cans on the team it is advisable to remove the ice from the covers of the cans unless the outside atmosphere be very warm. Cans of fish should never stand in the hot rays of the sun; but a cover or sheet should be so placed as to shield them. Cans should also be thoroughly rinsed and cooled with water before fry are placed in them. Fish frequently become sick before leaving the hatchery because this rule has not been observed and the fry placed in cans which have been warmed by the sun or nearness to a stove.

It is a good principle to find out where the fish naturally spawn in the waters to be planted, or if no fish of the same species occur, to ascertain where the best natural conditions exist. Thus whitefish should always be planted on clean gravelly ground in fairly shallow water, or where reefs of honeycomb rocks extend. Brook trout and salmon should be placed near the head of streams or as far up tributaries of large rivers as possible, avoiding, however, those which dry up during the summer.

Lake trout do best if distributed over rocky shoals such as are selected by the parent fish. In such places as those specified there is abundance of shelter, and the small fish, as a rule, make at once for niches in the rocks, or the protection of pebbles and stones. As pike, pickerel and other predacious fish are in

spring occupied in spawning, there is less danger from these fish than is commonly supposed, especially as the first-named species are then in weedy, marshy localities engaged in depositing their eggs. If sunfish, shiners, small suckers and pike appear to abound, it is best to select some other areas which are free from these destructive pests, or, if that is not possible, drive these fish away by disturbing the water, sweeping a net over the ground or some such method.

It is often the case that neither time nor circumstances will admit of reaching the best and most appropriate localities, and the planting must be done where it is apparent the young fry would not have been under natural conditions found. After much experience with young fry, I am bound to confess that planting fry upon what may not appear the most suitable grounds results in better success than might have been anticipated. The charge often made against officials of merely dumping in the fry at the most convenient rather than the most suitable places is less grave than might be imagined by the inexperienced. A man standing on shore, with one foot encased in a fisherman's boot, in the water, can pour the fry gently into a deep part near the edge, and the fry will immediately seek shelter. A better plan is to gently empty the fry from a boat and the fry disperse before they reach the bottom. For a few minutes the mass of young fish appear to crowd together and then spread themselves and disappear from sight. That they survive and do well admits of no doubt, as the remark, already made, applies in this case, viz., that the chief enemies of the young fish are in swampy shallows engaged in depositing their spawn. In thus favoring the planting of fry in deep water when it is a matter of difficulty to plant them in small batches in shallow water, I have the support of the late Sir Gibson Maitland who wrote : "At first we used to place the fry in the shallowest water near the inlet of the ponds ; but they were so frightened that they used to be huddled together in masses . . . when poured into deep water they instantly disperse, and in a few minutes have spread all over the pond in a lively and inquisitive spirit."

Wood as house fuel is certainly to be preferred to the soft coal abomination to which many were reduced. It is dusty and dirty in the handling, and the black smoke befouls the atmosphere and begrimes the houses and everything else with which it comes in contact. The dingy appearance of many American cities is largely due to this cause, and it is stated that the celebrated fogs of old London may date their origin from the beginning of the use of coal as a fuel. It is said that fogs began in London when the inhabitants were only 35,000 in number, the reason being the employment of coal instead of wood for fuel —at that time quite a new-fangled notion. In 1306, the King commanded that "fire-makers should cease their burning of sea coal and make their fires of such fuel as wood, as had been formerly used." It happened, however, that Mr. Richard Whittington, of revered memory, who turned again at the sound of the Bow Bells, formed, with others, the coal trust of that day and they made most of their money by shipping coal. "So," it is naively said, "the proclamation had no effect." Unofficial experiments show that in a week six tons of solid matter, consisting of soot and a variety of tarry hydrocarbons, highly injurious to animal and vegetable life, are deposited on a square mile in London and, after being purified to this extent, the fog is greeted by the country people upon whom it is carried down by the wind with the epithet of "London dirt."

Bruno the Hunter.*

By William Henry Drummond.

You never hear tell, Marie, ma femme,
Of Bruno de hunter man,
Wit' hees wil' dogs chasin' de moose an' deer,
Every day on de long, long year
Off on de hillside far an' near,
An' down on de beeg savane?

Not'ing can leev' on de woods, Marie,
W'en Bruno is on de track,
An' young caribou, an' leetle red doe
Wit' baby to come on de spring: dey know
De pity dey get w'en hees bugle blow
An' de black dogs answer back!

No bird on de branch can finish hees song,
De squirrel no longer play—
De leaf on de maple don't need to wait
Till fros' of October is at de gate
'Fore de blood drops come, an' de fox sleeps late
W'en Bruno is pass dat way!

So de devil ketch heem, of course, at las' —
Dat's w'at de ole folk say—
An' spik to heem: "Bruno, w'at for you kill
De moose an' caribou of de hill,
An' fill de woods wit' deir blood until
You could run a mill night an' day?

"Mebbe you lak' to be moose youse'f,
An' see how de hunting go!
So I'll change your dogs into loup garou,*
An' wance on de year dey'll be chasin' you
Den res' of de tam w'en de sport is t'roo
You'll pass wit' me down below."

An' dis is de night of de year, Marie,
Bruno de hunter man,
Soon as de great beeg tonder cloud
Up on de mountain's roarin' loud,
Comes from hees grave w'ere de pine tree crowd
De shore of de leetle lake.

You see de lightning zig, zig, Marie,
Spittin' lak' loup cervier†
Ketch on de trap? O! it won't be long
Till mebbe you lissen anoder song!
For de sky is dark an' de win' is strong,
An' de chase isn't far away.

W'y shiver so moche, Marie, ma femme,
For de log is burnin' bright?
Ah! dere she's goin'! Hulloo! Hulloo!
An' O! how de tonder is roarin' too!
But it can't drown de cry of de loup garou
On Bruno de hunter's night!

Over de mountain an' t'roo de swamp,
Don't matter how far or near,
Every place hees moccasin know
Bruno de hunter he's got to go,
'Fore de grave on de leetle lake below
Close up for anoder year.

But dey say de ole feller watch all night,
So you needn't be scare, Marie,
For he'll never stir from de rocky cave
W'ere door only open beneat' de wave,
Till Bruno come back to hees lonely grave
An' de devil he turn de key.

Dat's way for punish de hunter man
W'en murder is on hees min',
So he better stop w'ile de work is new,
Or mebbe de devil will ketch heem too,
An' chase heem aroun' wit' de loup garou
Gallopin' close behin'!

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 * Were wolf. † Lynx.

In the Northland.

Government explorers on the headwaters of Stickine River, B.C

ROCKS AND DOWN TIMBER.

Every packer knows the delights of such a combination,—especially in fly time.

Shadows 'Neath Bare Boughs.

BY HUBERT M'BEAN JOHNSTON.

Ask a photographer what are the essentials to success in winter landscape work and hear his answer. Most likely, he will run over half a dozen different factors: subject, light, perspective and what not. But there is one thing that he will not mention,—one thing that is of the utmost importance,—one thing that in a way plays a part of greater importance than any of those he mentions. He will forget all about the shadows.

By shadows, one does not necessarily mean shade. What is commonly referred to as shade is one thing; shadow is quite another, and between the two there lies a gulf as wide as the difference between black and white. When we speak of shade, we usually mean that part of the picture from which the sunlight is obscured by the leaves of a tree; by the shadow, we mean the blotches of darkness which the tree between the sun and the earth throws on the latter.

Now, it is in winter photography that these shadows are of the most importance. It is the shadows which lend to the snow-laden landscape all its delicate varieties of depths and drifts; it is that same shadow which marks out the side of every little hollow and throws into prominence every powder-covered reed and each small hillock that chances to lie a trifle higher than the rest. Were it not for the shadows, all would be one deadly, uninteresting mass of unspotted white, without possibilities in the way of composition, and monotonously nauseating to look upon. In winter photography, it is the shadows alone which make it worth while to attempt to centre the interest in the foreground by fluffing up the snow with one's feet before taking the picture. Without them, for in winter there is no atmospheric perspective to speak of, foreground, middle ground and distance would be all the same, all equal, all one black blotch on our negative without pictorial value.

Suppose we look first, in detail, at how it is possible to improve upon the foreground by means of shadows. A failure often teaches more than a masterpiece. Let us take a photograph with the source of illumination directly at our back. It is barely possible to distinguish the slender reeds and rushes that spring up here and there through the snow like so many miniature trees. They are almost lost. Then go at it a different way. Photograph them so that the sun is at the side and so that they will cast long shadows across the picture. The lower the sun is, the better the result will be. This makes an improvement. But now try it another way. Do not have the sun directly at your side nor directly in front, but, as it were, betwixt and between. This gives you a shadow that is four times as noticeable as any other kind and, consequently, a great deal more valuable in the creating of foreground effects. Or perhaps you have still heavier shadows in the foreground,—possibly a fallen tree or an immense boulder crops up through the snow and casts a dark patch to one side. It can be made use of to distinguish the foreground from the distance, even without any other assistance in the way of relative sizes of objects. The mere contrasting of that shadow with other shadows farther back in the picture, will serve to at once establish a perspective of its own which is at once both simple and effective. I want all who have copies of the last American Annual to turn to a picture by J. H. Field, of Berlin, Wis., entitled "Winter." The artist (for in this particular line of work, Mr. Field *is* undoubtedly an arttst) shows in his foreground nothing but a country road such as one might expect to find running from a barn to the fields. And yet it makes a magnificent foreground. Farther back his middle distance and distance assume their proper places and relative values without any suspicion of

question, and at once the whole picture conveys to one a sense of winter and desolation, that far too often in such cases is expressed only in the title.

In winter photographs, one of the most difficult effects to attain is that of breadth. The trees are all stripped bare and there are no masses of light and shade to marshal into line. Even the waving hillsides are monotonously bleak and white. Again is it necessary to fall back on the shadows. Let them run either way you like, straight across the picture or from the tree trunk down to your feet. If you have the proper knack, you can do this successfully. Supposed you want them to run across, you must have them well toward the middle distance so that the whole tree shows. This will get you what you want. One or two trees in the immediate foreground, on the contrary, so that only their trunks show, are what is necessary if it is intended that the shadows shall run out toward the edge of the plate. This latter method is, however, only capable of treatment in the hands of an extremely careful person, for to accomplish successfully the sun must be directly in front, and one not only has to watch for halation from the sun itself, as in summer work, but there is also the reflection from the snow to contend against.

To get the effect of depth the operation is in a measure reversed. Cross shadows will give it, provided there are a few in the immediate foreground, none in the middle distance, and a few more in the extreme distance. The contrast between the two, and the fact that some are wider than others, together with the fact that the width of the spaces between them decreases as they go farther away from the eye, tends to produce the effect aimed at. Or again, a long shadow running from the base of a tree in the middle distance down to the lower edge of the photograph, will seldom fail to produce a vista-like effect that will successfully carry out the impression. Another extremely simple and at the same time extremely effective method of getting an appearance of depth for a photograph in winter work, is to stand in the middle or slightly to one side of a road where passing sleighs have worn deep tracks in the snow. Then with the sun to one side of the path and low in the heavens no difficulty ought to be experienced.

One of the most difficult kinds of work that I am familiar with, (difficult either in summer or winter), is to stand in the middle of the roadway directly in front of a hillside and secure a picture of it that will successfully depict the gradual rise ahead. True, there is little difficulty in showing a high horizon line. The difficulty lies in showing that the distance between that line and the lens is a gradual ascent instead of a straight wall, as usually appears. Of course, a fence running up at one side will help. But suppose there are no fences? Well, now, I'll tell you. If you are able to so arrange it that a few shadows of trees will fall diagonally across the path, there will be no trouble in showing the ascent. But should you find yourself unable to do this, all that is necessary is to walk up to the top, going from one side to the other and back again, taking care to kick up the snow well with each step. Then photograph it when the sun strikes it at the angle which makes the heaviest shadows.

Just a word in conclusion. Shadows may seem to you to be unimportant, and yet, after all, they are the very essence of winter photography. The amateur who is ambitious to score in pictorial work in the colder months, will find it impossible to do better than to pay a close attention to the way the light falls on different familiar objects and spots when the sun lies in varying parts of the heavens.

Camping in Canada.

BY DAVID T. ABERCROMBIE.

Locality is the first point to be considered. These suggestions are relative to the most popular form of trip, one through wooded and watered country, by canoe and portage. Maps of such localities and information are furnished by the passenger agents of the railroad and steamship companies, including descriptions of places, list of guides and best points of departure.

On a canoe trip, guides are a necessity, at least one with his canoe for each person; everywhere one man and his outfit is considered a sufficient care for one guide, and there are cases where a man needs two guides; an extra one as cook will add much to the comfort, for having a cook will prevent taking time for the routine work of camp. The wages of guides vary from $1.00 to $3.00 per day, according to the country and what it is customary for the guides to furnish; in some cases services, canoe and outfit. Canoes can be hired for from 25 cts. to 50 cts. per day, depending on the time of hire. Each canoe should be supplied with two paddles and, where necessary, a setting pole. Should a canoe be hired the choice of style should be left to the guide.

Those new to camping often leave their outfitting to be attended to by the guides, with a resulting discomfort due to the guides' different view point. Experienced campers make sure of their needs being supplied by owning their own equipment, collected and made ready at home, not left to be hurried over at the point of departure; even provisions had best be bought in the accustomed market. All can readily be carried within the 150 lb. baggage limit granted on a first-class ticket.

No matter where you go, wool is the best material for clothing; it keeps drier, is softer and makes less noise in the bush than either cotton or linen, and consequently makes the best hunting garment. Several thin layers of clothing or blankets is very much warmer than one layer of the same weight. If a person objects to the feeling of wool, let the layer next to the skin be of some other material. Do not take clothes so old and worn out that one is continually patching and sewing ripped seams. Following is a list of necessaries, including clothing and articles worn from point of departure:

Three suits thin woollen underwear; 4 pairs heavy woollen socks; 1 grey or blue flannel shirt; 1 Pontiac heavy shirt; 1 large loose coat; 4 handkerchiefs; 1 neckkerchief; 1 felt hat, wide brim; 1 pair trousers; 1 towel; 1 pair Scotch knit wool gloves; 1 hair brush: 1 tooth brush; 1 comb; 1 cake soap; 1 pair lumberman's rubbers with leather tops; 1 pair low oiled moccasins; 1 match safe, waterproof, that floats; 1 belt; 1 sheath knife; 1 watch; 1 compass (pocket); 1 2½ lb. belt axe; 1 poncho: 1 package toilet paper: 1 pack strap; 1 head net; 1 Johnson sleeping bag made of 4 blankets 6 x 7 ft., weighing 10 pounds, folded and laced together at foot and one side, and covered with a waterproof cover; 1 Vaeger hunting cap which is used as a night cap; 1 suit all wool pajamas; 1 hot water bottle, 4 quart, this filled with hot water and placed in sleeping bag on a cold night is better than 5 pounds of extra blankets; 1 piece cotton line, 12 feet long; rifle, ammunition, fishing rod; tackle, camera, tobacco, etc., according to the person's taste and the season of the year; 1 pneumatic air mattress, weighing 9 pounds, makes an ideal bed and saves a great deal of time gathering boughs.

One 7¼ x 9¼ Abercrombie waterproof wall tent with sod cloth—16 lbs.; 1 7¼ fly projecting in front of tent to dine under, 4 lbs.; 1 7¼ x 7¼ pyramid tent for guides, weighing 8 pounds; 1 pot stove for heating wall tent (with telescope pipe); 1 Abercrombie nested cooking and eating outfit of aluminum as follows:

One cooking pot, 9 x 10 inches, holding 12 quarts, with cover and bail handle;

1 cooking pot, 8 x 8 inches, holding 7 quarts, with cover and bail handle; 1 cooking pot, 6 x 6½ inches, holding 3 quarts, with cover and bail handle; 1 coffee pot, 5 x 6 inches, holding 2 quarts, with cover and bail handle; 6 each cups, bowls, plates, knives, forks, teaspoons and dessert spoons; 2 shallow serving pans with folding handles; 1 dish pan, 10 x 4 inches; 1 large and 1 small fry pan with detachable handles; 4 sprinkling boxes for pepper, salt, spice and mustard; 4 dish towels, and 2 cloth pot holders; 2 canvas water pails; 2 canvas wash basins: 1 cake soap; 1 cylindrical fiber case, 12 x 14 inches, to contain the pot stove, cooking and eating outfit, sprinkling boxes, towels, pails, basins and soap, some pieces of cheese cloth for pudding cloth, bean pot, etc., this outfit may be bought and weighs 24 pounds; 1 18-inch aluminum folding reflecting baker or oven in canvas bag containing 1 bread board, 1 wire broiler, 1 large cooking spoon, 1 cake turner, 1 dish mop; (this package is 19 x 1 x 14 inches, and weighs 8 pounds).

Two small spools of assorted brass wire; 1 box of assorted nails, ¼ pound; 1 oil stone, small; 1 flat file, and piece of emery cloth; 1 pair pincers, medium; 1 awl handle and set of awls; 1 stick of cement for mending fishing rods, etc.; 1 pair scissors, needles, buttons, safety pins; 1 piece of bees wax; 1 spool of linen thread; 1 B.G.I. cleaning rod of brass, for rifles; 1 vial of gun grease; 1 roll of heavy twine, about 30 feet. Roll these small articles in an old piece of cloth suitable for gun cleaning and carry in a little canvas bag. This package weighs about 2 pounds.

Two folding lanterns, aluminum, weighing 4 ounces each; 36 candles, weighing 3 pounds; 1 rolling table top, weighing 3 pounds; 1 set of folding shelves, weighing 2 pounds; 1 brass tube of matches, weighing 1 pound; 1 wall pocket, weighing 1 pound; 2 pack straps, weighing 5 pounds; 1 pack of cards, set of chess men, dominoes, checkers or dice and box will provide amusement; note book and pencil should be carried; paper, stamps and envelopes may be useful.

Food list for four persons, two weeks:

	lbs.		lbs.
Flour	24	Oatmeal	2
Corn meal	10	Rice	6
Beans	6	Julienne	1
Erbswurst	½	Soup tablets	½
Bouillon capsules	1	Evaporated apples	2
Lentils	2	Evaporated apricots	2
Sugar	9	Salt	1
Royal Baking Powder	1	Whitman's chocolate	1
Coffee	2	Tea	1
Butter	6	Bacon	3
Pork	10	Dried potatoes	4
Shredded cod fish	1	Shelled nuts	1
Peerless Evaporated Cream	7	Dried eggs	1
		Dried onions	¼

Pepper, spice, mustard—shaker full.
Total, 106 lbs.

One sees from the small quantity of meat on the list that game and fish will be supplied from the woods and waters, but this list is made out for two weeks even without that addition.

By actual experiment with this list on various trips the maximum consumption of food per head per day was 1.88 pounds, the minimum was 1.23 pounds.

One might be criticized carrying seven pounds in the shape of rolling table, folding shelves and wall pocket, but the outfit as described will not be burdened with these articles, and the comfort derived from using them is well worth their little weight.

A table top to eat from, shelves to hold the food, a wall pocket to hold clothes and little things need to be used only once to be considered an absolute necessity.

A fibre telescope 18 x 24 x 12 inches, with straps and handles, makes the lightest and most convenient packing case. The different articles of food are put up in cylindrical waterproof bags 8½ inches in diameter, and of varying heights, with the exception of butter, which is packed in a cylindrical tin-lined copper can of same diameter, and pork, bacon, chocolate and coffee, which are packed in pantasote leather bags of the same shape. Each package is marked with name of contents.

The seven cans of Peerless cream are dropped into the telescopic stove pipe.

Pork and bacon should be sliced for convenience in packing and use and the waste of cover, rind, etc., removed so that the weight represents clear food.

These food packages are then packed one upon another into three cylindrical

waterproof canvas provision bags, nine inches in diameter, twenty-four inches high and are then ready for the packing case, the canoe or portage. On the outside of each is a tag showing contents.

Remove the cover from the blankets of the sleeping bag and fold each part 18 x 24 inches as well as the tents and other cloths.

Place a folded sleeping bag in the bottom of one of the cases, next one of the tents, then two of the provision bags, and in the hollow made by the bags pack the clothing of one individual, pack straps and small articles, then the pneumatic air mattress.

In another case place the other folded sleeping bag, on top of that, the remaining provision bag and beside it a roll made of the stove pipe, the rolling table, the folding shelves and the dining fly. Next put in the baker outfit, remaining pack straps and small articles, the other tent, the clothes belonging to the other individual and the pneumatic air mattresss.

This makes two articles of baggage, the cooking outfit and stove in their cylindrical case make a third, all ready for the railroad. Leave out the pantasote ponchos for use in case of rain.

Spread out the cover for the sleeping bag, lay one set of blankets in the centre folded as flat as possible, 18 x 24 inches ; on them place the pneumatic air mattress, then the 7¼ x 9¾ inch tent, then the baker outfit, then the extra clothing of one individual and some small articles. Fold the cover tightly over the package thus made, fold down the ends, and turn them over and secure with the twelve foot rope. Fasten one pack strap on to this package. This pack will weigh about fifty pounds.

Spread out the other sleeping bag cover, and in the centre place the other set of blankets folded 18 x 24 inches, then the pneumatic air mattress, next the guide's tent, next the wall pocket, then the extra clothes of the other individual, and the remaining small articles. Fold the cover tightly over the package thus made, fold down the ends and turn them over and secure with the twelve foot rope ; fasten another pack strap on to this package. It will weigh about fifty pounds. If the ponchos are not in use fold and slip them under the straps.

Fasten a pack strap on to two of the provision bags ; this will make a seventy pound pack. The remaining provision bag, the stove pipe packed with cream, the dining fly, the table top, folding shelves and guide's blankets, &c., fastened together with a pack strap will make another seventy pound package. This will leave the rifles, fishing rods, cameras, etc., to be carried by hand, and the cooking outfit as an extra load for the strongest packer. A hundred pound pack is considered a moderate load over a short portage. If the party expects to bring out any heads, scalps or hides, get a pack of coarse salt at the point of departure.

TAXIDERMY.

To skin an antlered head begin at a point on the back bone between the shoulders, cut through the skin up along the cervical vertebrae to a point on a line between the antlers, cut across this line and around the antlers keeping close to their base.

Then from the point of beginning cut down to and across the brisket, and up the other side. Carefully remove the skin from neck and head until the ear is reached, cut the cartilage close to the skull. Proceed to the eye and cut carefully from the bone, being sure that the whole eyelid, both outer and inner skin, and the sinus under the eye, is left adhering to the scalp.

Proceed to the nose and lips ; open the mouth and cut around at the top of the gums, not injuring the lining of the lips, let the scalp hang down from the skull and carefully work around the lining of the nostril, cutting through as far back as possible from the opening, carefully work around the lips in the same way until the cut on the inside of the mouth is reached when the whole scalp will come away. Remove the skull by inserting the knife between the last cervical vertebrae and skull. Remove the surplus bits of cartilage and tissue from the scalp and rub the flesh side with coarse salt, leaving it well covered with salt. Fold and roll carefully and put in a cool place. Remove the brains from the skull by a stick through the opening made by detaching

the vertebrae, remove the flesh, fat and cartilage from the bone, being careful to preserve the lower maxillary which should be tied to the skull, wash both inside and out and place in the sun to dry.

After the scalp has lain over night, open and pour out the water, and salt again very thickly, spread and dry in the shade ; under no circumstances hang up by the nose ; watch carefully to protect from fly blows. Ship to the taxidermist as soon as possible.

Skinning a bird is a very delicate operation, and should not be undertaken by the inexperienced. A bird should be hung by the feet and will last a number of days in cold weather ; it should be shipped to the taxidermist as soon as possible.

To skin a fish carefully ascertain measurements, and make a diagram for the taxidermist marked with the length and girth in at least four places, open on the reverse side from the one to be exposed when mounted by making a slit through the skin from gills to tail. Separate the skin from the flesh, cutting about the fins so as to leave the muscle in which the bone is imbedded ; cut through the back bone at the tail and at the head, leaving in the gills. Cover well with salt inside and out, and ship to the taxidermist as soon as possible.

The medicine kit should be provided with such universal remedies as brandy, some bandages, some absorbent cotton, some adhesive plaster, compound cathartic tablets, cholera mixture tablets, quinine, phenacetine, mustard and belladonna plasters. Each individual should consult his own peculiarities and take what remedies he is most likely to need. In case of a wound or cut, remember that cleaning with hot water and a pure soap is sufficient antiseptic treatment. In season carry fly ointment.

(*To be continued*)

Moose in Canada.

BY JOSEPH J. DE LONG.

Charlie and I had read of moose, looked at his picture, seen his mounted head, seen his imitation at the sportsmen's show, until, one day we were fortunate enough to dine in company with a friend, who told such glowing stories of a country he had shot over the previous fall and the ability of the guides and the abundance of the game, that we decided we could not stand it any longer and straightway engaged the same guides for October 1st ; it was then early June. I read the papers and magazines and this man's poor experience with a 30-30 and that one's opinion that nothing was better adapted for moose than that same caliber. There were advocates of every other rifle made, so I bought a small caliber carabine with ten rapid fire shots, thinking that what the bullets lacked in weight they made up in numbers. Then I read statements by guides that 45-90 was none too big, stories of how wounded moose would travel for three days and how they were found dead at distances that made me heart sick to think of the travelling to be done, through brush and swamp in uncertainty, so I bought what I thought would preclude much travelling after a moose had been hit—a 50-110 Winchester express and took that, together with the carbine.

When I afterward looked at a moose and thought carbine—carbine went into the trunk, as a weapon only fit for use in the hands of the most expert marksman.

We left New York on the 9 p.m., arrived at Beauce Jct., P.Q., at 11 a.m., drove fourteen miles on a bone breaker and arrived at St. Francis about 3, where we dined and started at once for St. Justine—thirty miles distant.

The "proprietaire" of the hotel was told to charge our dinner, the ale which we took with us and cost of driving thirty miles until we should return, the

idea being that if I was shot, I should not have to pay at all. This was discounting future possibilities to an extent that was highly gratifying to me, and the grin that opened up Charlie King's features showed me that it was the establishment of a happy precedent that was not displeasing to him.

The fourteen mile drive accustomed us to the dodging of mud balls and the complaints of our extremities. The completed ninth mile of the thirty found us a mile beyond the farm of a French-Canadian—with whom we had stopped to chat a moment—in a road that threatened the demolition of our rolling stock—with the night so black that the French driver gave up all chances of ever entering the Pearly Gates by his direct accusations against the Almghty, as the author of all our trouble. It was raining also, and if the Ruler of the universe was unaware of that fact, it didn't take Frenchy long to impart the information, in rare expletives "made in Canada." We turned around and the mere fact that it was done successfully was proof that we were not held accountable for the Frenchman's sins.

Back to the farm we went and were received very graciously. There was a four-room house containing the merest necessities of life. The man and wife—about forty-five—had been the most cheerful of workers, and were really worthy of their hire. They had thirteen children—two married, four dead, and seven in the house—the oldest not over eleven, the youngest in the cradle with the cholera, and every mother's son of them with dirty faces, dirty legs and feet and unsavory *tout ensemble*. Only the man spoke English. We were invited to take his bed, but visions of other unhappy nights spent in Canadian farm beds suggested the advisability of taking to the barn in company with the horse and chancing rats, so, after a few drinks and a little chat with pater, off we went with a lantern, and at exactly 8.30 o'clock turned down the wick to a minimum light—laid down on a pile of hay and went to sleep much after the manner of the babes in the wood. I awoke shortly thereafter with the conviction that a rat had overturned the lantern setting fire to the hay, and that we were in for a good roasting, but there stood the light and there lay Charlie peacefully sleeping, so I said my "Now I lay me" again and knew nothing till called at 5 o'clock.

For breakfast we ate boiled lamb, "potak" (potato) and leek stew, sour bread that might have been moulded into bullets and used with effect, and drank terrible coffee. We paid the man $2.00 voluntarily, which completely unnerved him, then drove away with the whole family standing at the door supremely happy.

The thirty miles completed, we were told to drive four more, to the hotel, and there at 12.30 o'clock we found our guides, Ed. and Nat, with a man and his wife, who had just come out from camp, where they had spent two weeks in a vain effort to get moose. The weather had proved very bad. Hard rains, wind and a swollen river made the chance for moose very poor, and all they had to show was a good sized black bear, which, by the by, is good enough for anybody. We ate dinner immediately and started at once for the camp, driving four miles over a heart breaking road on a springless wagon and hoofing the remaining eleven through mud, over fallen trees and around impassable barriers until, night setting in, with no moon or stars, found Nat and me at the beginning of an old "tote" road, a mile and a half from camp. Ed. had forged on ahead followed by Charlie, and had reached camp about this time.

Nat, who was struggling with a pack over his shoulders and a game knee, had allowed me to go ahead and feel the way for him. The dead centre of the soul of a corpse bound for the infernal regions could not have been any blacker than the night, and every step had to be felt before taken. Nat stood his game leg and load as long as he could and then told me in language plentifully interspersed with dashes to shoot my gun three times in the air as a signal to the camp that we were in trouble—that it was the blackest night ever made and he could go no further without light; so the shots were fired and we continued to struggle along, at one time over our ankles in mud, at another stumbling against rocks to the side of the road, until two jack lights, with Ed behind them, came to our rescue

and made the remainder of the old "tote" road comparatively easy.

A quarter mile by canoe brought two very tired, wet and disgusted men to camp, where supper was found ready. This was Saturday night—we left New York Thursday—our trunks with my bag and overcoat, were to be brought to us by Harry the following day, but as they did not show up Sunday nor Monday, Ed footed it back again to find that Harry had started all right enough Sunday morning, but had broken down five miles from home, and, returning with part of the harness to make necessary repairs, found, upon getting back again, that some——French Canadian had stolen what was left of his harness and my bag, containing—ye gods think of it—three dozen handkerchiefs, two shirts, a suit of underwear, one pair of pajamas, comb and brush, tooth brush, soap, woollen socks and a flask of Charlie's. Back he went to town, where Ed found him and they reached camp, without further mishap, Wednesday night for supper.

Harry was in great straits about the stolen bag and I was about heart broken—the loss of comb and brush, toothbrush and handkerchiefs seemed irreparable, but I later found a comparatively new toothbrush left by somebody, which I boiled so as not to hurt somebody's nor my own sensibilities, and that trouble was over. I washed two handkerchiefs out of the four I had with me every day and that relieved that situation, and the camp brush smoothed down the top hairs of my head in a "good enough" fashion for camp. We all took a drink with Harry, to comfort the really forlorn man—then we took a drink for my sake, then we took another, preceded by a statement from each as to his special desire regarding a final resting place for the "——French Canadian" who did the trick, and by that time, consideration for the bag having grown smaller and smaller in comparison with our ever increasing appetites, we sat down to a supper of trout, venison, partridge, fried "potaks" and raw onions in vinegar, topped off with half a dozen fresh baked biscuits or squares of corn bread and jam or maple syrup. This menu constituted, either in whole or in part, every meal. Tomatoes, corn and peas as wanted.

The camp is on the St. John, about ten miles from its headwaters and over 390 miles from its mouth—at no point where we shoot is it over thirty yards wide, and from that to ten yards in a few places it varies. It is lined with alders, fir balsam, hackmatack and pine to the water's edge. The spot and the river and the woods are ideal. Game is so plentiful that it is ludicrous to worry about meat. We want venison; very good—out goes a man and guide and back he comes with his pick of several shots, a yearling, young, tender, juicy, fine. We want trout; small ones for the pan or four pounders for baking; very good—out goes a man and guide and back he comes with what was wanted and fifteen or twenty bottles of pure cold spring water for occasional use. We want partridge; very good—out goes man and guide and given the right kind of a morning, back he comes with the birds: birch partridge, white meat; spruce partridge, dark meat, or both. We want a moose (we want a moose very badly); very good—out go two men, two canoes and two guides, one north, one south. They may be gone three, four, five, six or more hours.

The guides in imitating the cow moose, call Mr. Bull through their birch bark cornucopias. Bull moose is no fool; he was born with big ears and big nose and when he can distinguish cow moose calls within a radius of three miles, which practically covers a territory of about twenty-five square miles, with the cornucopia in the middle, he gives a fair illustration of what might be expected of his nose. One thing is certain, should the wind blow ever so gently toward him the hunter will have no chance for a shot. Deer also being very keen of scent, I took the usual precaution of a scrub for the altogether in the river, finishing up with baby talcum powder, so that I might have good reason for laying the blame on Nat for any game discovering our whereabouts through the agency of the wind.

I later discovered that, if my treatment was efficacious, Nat was in a bad way, so far as the deer was concerned, as it seemed a number of times, judging

SIX POUNDS TWO OUNCES.

One of the Ramsey Lake, near Sudbury, Ont., bass.

A FRESH BEAR PELT.

Hunting camp on the North Thompson, twenty miles from Kamloops.

LAKE NEPIGON
Indian mother and child.

FOUR OF A KIND.
Mule deer shot in the North Thompson country, B.C.

by their scamperings and whistliugs, that they thought there still remained something in Denmark a little off color, so I got Nat to take a bath also. He shied at the talcum powder as he said it was of "no blame use," and he performed the whole operation in such a half hearted manner that future scamperings told me that the job had not been satisfactory to those most interested and they couldn't stand for it. Nat called it all too blanked nonsense and said that the real time was to go when there was no wind ; to blank with the bath.

A perfectly still dark night is bull moose's undoing, if luck does the rest, because all still dark nights do not bring a willing bull moose to answer the cornucopia summons—luck plays a part. The cornucopia and the man behind it may succeed in getting the old boy down to a dozen yards of the expectant gunner and three hours of patient coaxing after that fail to get him to budge an inch further. He remains out of sight in the alders.

The night the trunks arrived, Ed. was willing to go out with Charlie, but the latter would not hear of it as he knew Ed. must be very tired, so Nat and I took a chance.

The night was black--one of the kind that Nat calls "the blackest God ever made"—there was no wind and we put off at about 8.30. If there is any one thing Nat can do to perfection it is to push a canoe along with his paddle in the water continuously with not even a ripple of water ahead or astern and clearing all obstructions in the way of stones or logs in a way to excite admiration ; not a sound is made ; we sneak along around this bend and that bend, hardly daring to turn our heads and condemning every muskrat in vigorous undertones that make us jump when he dives. There are thousands of them, and on any still night, until one becomes accustomed to them, the silent occupants of the canoe may count on four or five shocks per hour. Nat laughs and whispers : "You ought to hear a beaver." The sound of a muskrat diving is very similar to that of a four pound trout breaking water, and their dives and flops are always made because the canoe comes too close to them while they are crossing the stream.

A great commotion in the alders dead ahead stops the canoe—the commotion continues, and gently, very gently, we go forward again ; slowly, deliberately, sneakingly, until the bow of the canoe all but touches the bank. Nat rocks the canoe and I open the jack (whisper it—it's against the law). A scramble to the right makes me think the game is up, but Nat whispers : "Give it to him," and looking again I see through the alders two luminous spots for which I hurriedly aim and pull, because if I don't my heart will break through my throat. Three or four jumps to the left followed by dead silence. Nat swears a little, says that it was a big buck and that if I have missed him I have missed a good one. We found that the bullet had gone straight through an alder about six feet from the bank, and as after careful investigation we could find no marks of blood, we came to the conclusion that I had really missed him.

It was my very first shot under a jack lamp and I shot hurriedly, straight for the eyes, which was, of course, a very wrong thing to do, as if he had been hit the head would probably have been worthless. We climbed back into the canoe and went on up the stream ; my heart had gotten back into place and I was betting my very existence (with myself) that the the next time I would not shoot for eyes, when I heard a peculiar two or three grunts, which started me guessing—it sounded like a reasonably near frog or a distant moose. I rather incline to the frog theory, and grin at the comparison of a moose with a frog. On we went ; I fidgeted in my chair—Nat called me down and told me to keep quiet, as he had heard a moose grunt, so I consigned the frog to a place known to be hot and waited.

Suddenly a series of short grunts came to us from a point not fifty feet away, and away went my heart like an express train—the canoe stopped short, then began sneaking again, on—on—until it stopped beside a fallen dead tree trunk and was rocked again by Nat. I opened the jack (sh) a six foot bank shows ahead of us on the right ; nothing more, but a disturbance in the "logan" (a land-locked mud pool—probably from lagoon) on the other side of the bank, tells the story.

I close the jack again and think I am in particularly hard luck as the fear comes to me that the game is up. We back away a short distance and a moment later, Mr. Moose, evidently wondering what that light could mean, climbs the bank, making considerable disturbance.

I open the jack (sh) and, jumping Jerusalem! there stands a ten thousand pound beast with antlers stretching twenty yards apart and with two green spots between them that transfix my vision—I see nothing but green spots again. "Give it to him," whispers Nat, and bang goes 50-110 with a bullet which I thought would be quite sufficient; he turns and I give him another aimed at the seat of his pants, but without much hope of bringing him down; back he goes into the "logan" and Nat whispers a string of dashes. I say mean things myself inwardly and outwardly. Why did I shoot for the eyes again after the first experience of the evening?

I swore and raved while the bull moose was going through some very queer exercises on the other side of the bank. Suddenly he started, away from us at first, then to the right, and Nat, who knew his little book, swinging the canoe around, paddled like a fiend back over the ground we had come, around a bend and into narrow water, but bull had been quicker and had crossed the stream, climbed the bank and was now twenty-five or thirty feet back in the alders, thrashing around in a manner that gave me a great deal of encouragement, because it seemed that he must be hurt. Nat thought so, too, and that settled it in my mind, so I patiently waited, expecting every moment that the thrashing would stop; instead, it came nearer and nearer, until—could it be possible?—out he came with a rush from the alders to the edge of the bank and the jack (sh) instantly opened, revealed the two luminous spots again. I was getting a little experience. I shot below the eyes and head first into the stream plunged seemingly two hundred thousand pounds of meat, horn and eyes.

We backed down stream and waited; the two green spots pointed our way for a moment and then disappeared, and a few minutes later we paddled to his fallen greatness and saw a big six or seven year old grey moose. His entire body was submerged and only one prong of his antlers stood clear of the water, but we lifted the head clear and measured the forty-seven inch antlers and counted the eighteen points thereon. It proved a very symmetrical, beautiful specimen, which was hard to leave even though it was midnight, but we finally paddled away into the night to camp, where Charlie and Ed. listened to the whole story with blinking eyes. I slept that night like a pirate.

The entire next day, Thursday, was spent by all four men in cutting off the head and two fore hoofs for me, taking each leg off at the shoulder and rolling the body out of the river up the bank and into a deep grave along with the legs—one of the rules of the camp. We found his lower jaw broken, a flesh wound in his back trousers and a hole in the middle front of his neck, which was probably the *piece de resistance*.

It was Sunday before the job of skinning the head was completed, the antlers and upper jaw placed in the sun on the river bank, the lower jaw hung on a tree and the skin pickled and hung up, and from where I sit in the canoe writing I occasionally look up and see his royal highness sunning himself dry before going to the taxidermist.

When I left camp a week later Charlie, who had worked every moment of the good intervening time, was still without his moose. He had a fine shot at one with eight points, but refused it, hoping for better things. This bull, whose chief characteristic was an enormous "bell," was found at dusk lying down on a little sand bank just above the spot where mine was secured, and was evidently courting the widow of my moose.

Two days later, at 11 o'clock in the morning, Charlie came upon a bull, a cow and a spike-horned yearling moose standing out in full view, at a distance of 100 yards from a bend in the river which he had just rounded; seven shots put the gentleman out of business. He had a 45-inch spread of antlers with 14 points; a little smaller in both those particulars than mine, but they weighed nine pounds more.

Chats About Driving.

BY "MEADOWBROOK."

FOUR IN HAND DRIVING.

Use your left hand almost exclusively in managing the reins. When you wish to turn a corner to the right, bend your wrist over so as to bring your thumb underneath toward your left hip; if on the contrary you wish to turn to the left, bring your little finger underneath and incline it toward your right hip.

To mount: Take up the leader's reins in the left hand and place them on either side of the middle finger of the right hand, then take the wheel reins and place them on either side of the third finger of the right hand. The off side reins should be several inches longer than those of the near side, and then they will be level when on the box.

With the reins in the right hand the coachman catches hold of the loop or lamp iron with his left, and places his left foot on the wheel box. His right follows on the roller bolt, the left then reaches the step, and the movement of the right lands him on the box. He should immediately sit down.

The reins are then transferred to the left hand, the position of each rein being the same as for tendem, the whip, already caught up, taken from its bucket, and with a "sit fast," and "stand away," the coach is in motion. The wheelers must start the coach.

Eight or nine miles an hour is a good pace for a coach over perfect roads.

Three hints it is well to remember are, "Don't apply the brake too often." "Don't let the leaders do too much on the flat, or any work going down, but make them pull going up hill."

Should the coach rock, increase the pace so that the leaders may steady it by pulling on the pole. By the way, poles are usually too long. Ten feet eight inches is about right when the wheelers are 15.3 in height.

Whips may be of holly, yew, or black thorn; the stick five feet long and the thong twelve feet.

When turning, catch up the opposite wheel and loop it under the thumb, to prevent the wheelers turning too quickly.

A thorough mastery of the whip is essential. With the long thong of a four in hand whip it must be caught around the stick after hitting a leader, as it may get entangled in the wheels, and in any case would be a nuisance. The point should be of leather, not silk or whip cord.

The wheelers must always be put in first and the outside traces made fast before the inside traces are fastened. When taking out, reverse the process. The latter may be a half hole shorter than the outside, as most wheelers incline toward the pole.

For a man who wears a No. 8 or No. 9 glove, the reins should be 1¼ inches wide and moderately stout.

Buxton or elbow bits are best for heavy coach work. The bit must suit the horse, and most horses will go well in a shifting bit with a smooth and a rough side to the bar.

NEW JUDGING RULES OF THE COACHING CLUB.

The Drag.

The drag should have a perch and be less heavy than a road coach, and more highly finished, with crest or monogram on the door panels or hind boot.

The axles may be either mail or collinges (not imitation).

The hind seat is supported by curved iron braces, and is of a proper width for two grooms, without lazy back.

The lazybacks on the roof seats should be turned down when not in use.

The under side of the footboard, together with the risers of the box and coachman's seat, should be of the same color as the under carriage.

The body of the drag and the panel of the hind boot should correspond in color.

The door of the hind boot to be hinged at the bottom that it may be used as a table when open.

The skid and safety hook (if carried) should be hung on the off side.

It is customary to trim the outside seats in either pigskin or cloth, and the inside of the drag in morocco or cloth.

The coachman's driving apron when not in use should be folded on the driving cushion, outside out. Passengers' aprons (if carried) to

be neatly folded and placed on the front inside seat.

A watch and case are not essential, nor is the pocket in the driving cushion.

There should be no luggage rails or straps on the roof, between the seats.

Inside, the drag should have: Hat straps fastened to the roof. Pockets on the doors. Places over the front seat where the lamps may be hung when not in use. An extra jointed whip. An umbrella basket, to be hung on the near side. Lamps off. Lamps inside coach. Two extra lead bars, consisting of a main and side bar fastened to the back of the hind seat with straps. Main bar above. Lead bars put on with screw heads of furniture up.

The following articles to be neatly stowed inside the front boot: A small kit of tools. An extra lead and wheel trace. Loin cloth for team, and the necessary waterproof aprons, should be carried in a convenient and accessible part of the drag.

It is usual for a park drag to be fitted with luncheon boxes, wine racks, etc., also a box on the roof called an "Imperial. This latter is never carried except when going to the races or a luncheon.

The grooms to be suitably dressed.

Park Harness.

Pole chains must be bright and have spring hook. The chains should be of a length which will admit of snapping both hooks into the pole head ring. If too short, one end may be hooked in the pole head ring and the other in a link. If too long, they shall have one end snapped in the pole head ring and the other brought through said ring (from the outside in) and snapped in a link.

Crupper on all horses.

No loin straps, or breechings.

Face pieces (drops).

Martingale around the collar and not through kidney link alone.

Martingales on all horses.

No rings on coupling reins.

Mountings of coach harness, and the buttons on servants' liveries to be of the same metal.

Wheel traces with metal loop ends, not drains.

Wheeler's inside traces shorter than outside traces, unless the inside roller bolt is enlarged to give the same result.

Lead traces straight or lapped, not crossed.

Eyes on ends of hames through which the kidney links pass.

Plain kidney links.

Solid draught eyes on hames.

Clip inside of trace leather, and showing rivet heads only.

Full bearing reins with bit and bridoon.

Single point strap to tug buckle.

Metal front to bridles.

The crest, or monogram, should be on the rosettes, face pieces, winkers, pads, and martingale flaps.

Ribbon or colored rosettes are inappropriate.

Hames straps, put on with points inside: i. e. to the off side on the near horse, and the near side on the off horse.

Coupling rein of low-headed horse underneath.

Reins of single brown leather.

Draft reins sewed in one piece with end buckles only.

Lead traces with screw heads of the cockeyes up.

Close coupling all around.

All parts of the harness should be doubled and neatly stitched.

Collars to be of black patent leather, shaped to the neck; the top bent back.

The hames bent to fit the collar accurately.

Harness black. All straps should be of proper length and not too short.

When the owner or his representative drives, the shutters should be down; otherwise up.

The Coach.

The road coach should be built stronger than a park drag, especially as to the under-carriage and axles, which latter should not measure less than two inches in diameter.

The axles may be either mail or collinges (not imitation).

The hind seat is usually supported by solid wooden risers, but the supports may be of curved iron, as in a park drag. Its seats should be wide enough for two beside the guard, who should occupy the near side with an extra cushion. He should have a strap to take hold of when standing to sound the horn.

The lazy backs of the box seat, hind seat, and roof seats are usually stationary.

The under side of the footboard, together with the risers of the box, coachman's seat and rumble, should be of the same color as the under-carriage.

The body of the coach and the panel of the hind boot should also correspond in color.

The door of the hind boot to be hinged on the off side, to enable the guard to open it from the near hind step when the coach is in motion.

The skid and safety hook must be hung on the off side in countries in which it is customary to drive on the off side of the roadway, for the skid should be on the outside wheel or the coach will slide towards the ditch.

The trimming of the outside seats may be of carpet or any other suitable material, not leather. The inside of the coach is usually finished in hard wood or leather.

The coachman's driving apron when not in use should be folded on driving cushion, outside out.

A footboard watch with case to be provided. The driving cushion to have a pocket on the near side.

The iron rail on the roof between the front and back seats to have a lattice or network of leather straps to prevent small luggage, coats, rugs, etc., placed on the roof, from falling off.

Inside the coach should have: Hat straps fastened to the roof. Leather pockets at the sides or on the doors. An extra jointed whip.

The basket to be hung on the near side and in front of the guard's seat. The horn to be placed in the basket with its mouthpice up.

Lamps in place and ready for use.

Two extra lead bars, consisting of a main and a side bar fastened to the back of the hind seat with straps. Main bar above.

Lead bars put on with screw heads of furniture up.

The following articles to be neatly stowed in a convenient part of the coach: A wheel jack. A chain trace. An extra bit. Two rein splicers (a short strap of the same width as the reins with a buckle at either end.) A kit of tools, comprising a wrench, hammer, coil of wire, punch, hoof-pick andt a knife. A bearing rein.

The guard to be appropriately dressed and to have a waybill pouch with a watch fitted on one side and a place provided for the key of the hind boot.

Road Harness.

Pole chains may be bright or black, but pole head and chains must be alike. Hooks with India rubber rings, not spring hooks.

Chains with single hooks must be put on pole head from inside out, then passed through the kidney link and hooked into one of the links of the chain.

Cruppers on wheelers, but not necessarily on leaders, unless bearing reins are used. Some road coaches use no saddle pads, the traces being held up by trace bearers from the collars, but this savors too much of the "bus" order.

No loin straps or breechings.

Face pieces (optional.)

Martingale aronnd the collar, and not through kidney link alone.

No martingales on leaders; kindney link rings on leaders.

No rings on coupling reins.

Mountings preferably of brass, but at least all of the same metal throughout.

Wheel traces with French loop or chain ends. Chain put on roller bolt with chain out and ring in.

Wheelers' inside traces shorter than outside traces, unless the inside roller bolt is enlarged to give the same result.

Lead traces lapped, crossed or straight.

Hook ends to hames.

Chain and short kidney links on all chains.

Ring draught eyes on hames.

One or more bearing reins are optional.

Cruppers with or without buckles. Newmarket straps should be double.

Metal or leather front to bridle. If leather, the color to match the coach.

A crest or monogram is not generally used in road work, but instead lead bars or a special device in brass is put on the winkers and rosettes.

Hames straps put on with points inside; i.e. to the off side on the near horse and the near side on the off horse.

Reins of single brown leather.

Draft reins sewed in ode piece with end buckles only.

Traces with screw heads of the cockeyes and chain ends up.

All straps preferably of single leather.

Collars may be of patent, plain black, or brown leather; straight, thick, and full padded.

The hames straight to fit the collar.

Harness, black or brown.

For Park Drags.

The servants to be trim and nearly of a size (the head groom being a trifle larger and heavier). Smooth shaven as to the upper lip and chin. In proper liveries, consisting of:

Stiff-legged top boots, white breeches, preferably of leather (may be stockinet). Waistcoats generally of some striped satinet, showing a trifle above the coat collar. Coats smartly cut and well fitting, rather full in the skirt.

The head groom's coat to be a trifle longer in the skirt than his fellow's, and to have pockets with flaps, which the others should not. Collar of the coat, plain or velvet. The customary white scarfs and standing (so-called coachman's) collar.

Hats of proper shape, not extreme, and with no cockades or other ornaments unless the owner be an officer or ex-officer in the army, navy, or diplomatic service, where the former are permissible.

The head groom stands at the off wheeler's head and his fellow in front of the leaders. When the coachman signals "ready," both grooms salute, at the same time stepping to one side a trifle. As the çoach passes them, the men so measure their distance, that each can put the inside foot on the lowermost step at the same time, and ascend to the hind seat together.

ODDS AND ENDS.

When buying a carriage horse, seek one with as few bad points as possible, rather than search for impossible perfection.

Great speed is not desirable in a gentleman's driving horse. High action and handiness are much more desirable qualities; as a rule, the extremely fast horse has a long gait, which makes him unhandy.

Too young horses are not to be recommended for harness work. Six and seven years are better ages at which to buy than four years, as youngsters are more likely to go wrong, throw curbs, etc. A horse well taken care of should last until twenty years of age.

Fifteen to twenty miles a day for five days in the week is good work for a carriage horse, and then the pace should not usually exceed eight or nine miles an hour.

Don't "guess" at what ails your horse; should he fall sick, consult a qualified veterinary surgeon. His fee will probably be really money in pocket in the end.

Material defects in a carriage horse are: Bad cases of bone spavin; blindness; vice, viz: kicking, bolting, rearing or baulking; navicular disease; being "nerved," or badly broken-winded.

When practicable, a horse should be fed five times a day :

6 a.m., hay,
7 a.m., oats,
Noon, hay,
1 p.m., oats,
6 p.m., hay and oats.

He should receive at these feeds 12 lbs. each of good old oats and hay.

The bedding should be the best wheat straw. Fresh green forage is valuable in hot weather, and beans and peas may be mixed with the corn, when horses are doing hard, cold work, provided always that animals under six years of age are generally better without much stimulating food.

Oats should weigh at least 39 lbs. to the bushel.

Very warm stables are a mistake—though the strappers like them, as the horses' coats look better in a hot stable, and less elbow grease is required to make them shine.

Water should always be within reach of the horse ; he will then rarely drink more than five gallons a day, whereas if watered but thrice, he will often drink eight gallons.

It is a wise plan to give each horse a bran mash once a week. Recipe : Put the quantity required in a rough cloth and tie it up. Steep for a short time in a bucket, having enough boiling water to moisten the bran. Wring the water out of the mash by twisting the neck of the cloth. Then open and cool somewhat.

Gruel is a capital thing for a tired horse. Recipe : Two fistfuls of oatmeal placed in a bucket, and boiling water added until the consistency of cream is reached ; then cold water is poured in until the water is at blood heat. Give before it cools.

The coach-house should be dry and well ventilated, and kept free from dust. Cushions of all carriages ought to be covered with holland wrappers when not in use, or a cotton or linen stable cover used to protect the entire carriage.

A carriage is best washed before the mud on it has had time to dry. Water, if left on, will spoil the varnish.

Carriages should be examined frequently. Axles need greasing, washers replacing, and poles, springs, and shafts inspecting and testing.

Harness-room and carriage-house should be distinct from the stables, and the former should have a stove, hooks, brackets, pegs, and a glass case for bits, etc. The ammoniacal fumes from the stable, if allowed to penetrate, would ruin harness and varnish.

Collars must fit, and each horse should have its own. These should be washed with soap and water and thoroughly dried after using, but not before a fire. A false collar of flat, thin leather is useful to prevent collar gall in tender-skinned horses.

To avoid mud fever, never wash a horse's legs when he comes in tired and muddy ; merely brush off and bandage.

Ponies under fourteen hands are better with very short hogged manes, but anything over that height should not be hogged.

The fuel crisis which was forced upon Canada by the recent scarcity of coal brought very forcibly home the question of the supply of wood. It is surprising how little consideration is given to the matter even by many of the agricultural communities. There are large numbers of farmers who are buying wood and coal who could quite easily have a sufficient supply of fuel for themselves if they would only take the little trouble necessary for the purpose. In many such cases they are the owners of sufficient land unsuitable for cultivation to give all the wood they require. The inadequate ideas which prevail as to the value of woodlands is illustrated by the offer made by one farmer not far from the capital of the Dominion, who had kept no woodland on his farm, to another who had been more provident in this respect, of $300 for ten acres of bush land. The reply to the offer was that there was one hundred cords of wood on each acre, which at $3 per cord, a modest price surely according to our present ideas, would make $300 for one acre. So he went away sorrowful.

Why Partridge are Scarce.

BY ABEL JOHNSON.

A very critical person on reading the above heading might suggest that the reason partridge are scarce in Eastern Canada is that there is none. But after all every Canadian sportsman knows perfectly well what is meant.

The first settlers in this country, prompted thereto by a mysterious spirit of perversion, called grouse, partridge; and thrushes, robins; and hares, rabbits; and committed many other similar enormities, possibly in a large measure to show their complete independence. The ruffed grouse is the bird the Canadian of the backwoods means, when he speaks of partridge. He further divides his partridge into two species; and he is very careful to refer to the one as the birch and the other as the spruce partridge, showing that even if he does not follow the teachings of the scientific naturalist, he at any rate has an intelligent knowledge of the grouse of his native forests.

But this disquisition has led me away from the subject I intended discussing—which was, why are the grouse, or partridge, so scarce this year? If anyone has found the birds even moderately abundant in the Province of Quebec since the season opened, his experience has been the reverse of my own and of every man whom I have questioned. Ground that held a heavy stock of birds last year hardly holds one this autumn. The reason of this scarcity was the cold backward weather we experienced in the nesting season. The eggs were chilled and most of them failed to develop into a chick, or, when the youngsters actually broke the shell, they could not stand the perpetual moisture and thus perished. The old birds seem to have suffered, probably through having spent their strength in trying to hatch out eggs that had been killed by the cold. It, therefore, happens that you may pass along the woodland roads of this province without hearing the merry drumming of the cock bird, and without being pleasantly startled by the sudden flushing of the brown woodland grouse.

I am afraid two or three years must elapse before the partridge of Quebec can be as abundant as was the case last year and the year before. However, every cloud has its silver lining and what we have lost in one direction, we seem to have gained in another. Never have deer been more plentiful, never at least of late years; and the big black moose has strayed back into regions from which he disappeared a dozen years ago. Strange as it may seem the reason of this increase is, almost undoubtedly, to be attributed to the increase of settlers. In the Laurentians there is little good land and the farms are in most places scattered, and considerable tracks of forest intervene between the clearings, so that there is an abundance of covert for deer, and, occasionally, sufficient covert for moose, in districts containing a considerable number of farms. The backwoodsman is generally not a great hunter—even a cursory examination of his firearms will show that he is very unlikely to do much damage. Rusted grooves and leaded lands, shaky stocks and verdigris stained cartridge cases are not signs of a successful killer of big game.

The deadly enemy of the deer and also of the moose calf, is the wolf, and so cowardly an animal is he that even a sparsely settled district is one that he will avoid. It is said, and I think the saying is true, that the wolf will leave a district in which he can smell smoke, and his olfactory powers are so wonderful that he can wind smoke from the settler's fire at an almost incredible distance. The deer, on the other hand, soon becomes reconciled to the near presence of man, and by remaining in the vicinity of the clearings, is enabled to bring forth its young and live out its life in safety from the most bloodthirsty beast of prey we have on this continent. The toll taken by the settler is very much smaller than the toll taken by the wolf, hence the increase in the deer in the lands watered by the Rouge, Lievre and Gatineau.

The Black Walnut.*

The Walnut is one of the best known trees in Western Ontario. In the pioneer days it was often burnt in log heaps or split into fence rails, but from the time when it was taken out as square timber for export, or when it became the favourite wood for furniture, it has always been regarded highly, and it is difficult to appreciate the attitude of those who wasted it carelessly in ignoble uses in the days of its plenty or cleared it away severely and ruthlessly. It is a graceful and handsome tree, and may be found ornamenting the sides of many of the country roads or drooping its beautiful canopy over farm gates and fences, where it is a great attraction to the squirrels which, in the fall, keep themselves busy running about nibbling at walnuts and chattering angrily at anyone who dares to disturb them or approach too near what they consider their special preserve. The photograph in this issue shows a walnut tree which beautifies the entrance of a Western Ontario homestead and where, alas! many a squirrel has had his exit from this mortal stage hastened by the boy and the gun.

The English Walnut (*Juglans regia*), or as it might more correctly be called the Persian Walnut, was cultivated in Palestine in the time of Solomon, and its common name reveals that it came as a stranger, for the Anglo-Saxon words from which it is derived mean "foreign nut." Among the Romans it had various names, and one of them is continued in the generic name *Juglans* (*Jovis glans*), the nut of Jove or Jupiter. It was therefore held by them in high esteem. It was the royal nut (*regia*. The new world species is however a different one, being distinguished by the specific name *nigra* (black), which will be recognized as particularly fitting by those who know the dark, handsome wood which it produces. The distinguishing feature of the foliage is the large number of leaflets, from fifteen to twenty or more on each leaf. In this respect it closely resembles the butternut, but the stems are not easily distinguished by their general appearance but, growing in the open, the butternut as it increase in age assumes a spreading, straggling shape, while the walnut is of a more erect habit. The bark is a grey brown, becoming furrowed as it grows older. The inflorescence, appearing in May, is inconspicuous like that of most trees, justifying the poet's comparison :—

> See the proud tulip's flaunting cup
> That flames in glory for an hour,
> Behold it withering—then look up—
> How meek the forest monarch's flower,

Indeed it is remarkable how many people never know that trees have any flowers at all, never reflecting that where there is the fruit there must be the flower to prepare the way, and that every plant is fully equipped in ways varied, yet ever strangely similar, for its great work of producing its kind, and that these organs are not less wonderful when small and inconspicuous, but are the more remarkable for their delicate perfection. The staminate flowers which supply the pollen to fertilize the solitary or few clustered flowers from which the nuts are produced, are in drooping green catkins from the wood of the preceding year. The nut is ripe in October and is encased in a spherical green-coated husk, within which is a dark-brown, sharply cut, rough, hard shell, which encloses the edible kernel. The fruit of the Black Walnut, though not equal to that of the English Walnut, has a sweet, pleasant taste and the gathering of these nuts for commercial purposes is made a regular business in some districts.

Black Walnut long held the first place as a furniture wood, but the vagaries of fashion and the increasing scarcity of this tree have combined to relegate it to a less important position, the light-colored woods being given the preference. It is still highly prized, and nothing can be handsomer than some of the beautiful finishing or veneers in this wood. Rosewood has been entirely displaced in piano

* Contributed by the Officers of the Canadian Forestry Association.

NO LONGER DANGEROUS.

One of Billy Manson's "tame" bears.

THE BLACK WALNUT.

One of the most valuable species found in Ontario.

cases by veneers of walnut and other woods, and the beautiful cases thus produced have a very rich effect. There is no room for doubt that walnut will always be in demand. Young trees are growing up, and it is to be hoped that from this source of supply the wood may become more plentiful. The walnut grows quickly, and will make board timber in twenty-five years, but it is only as the tree gets older that the heart wood assumes the rich uniform dark brown color which is its chief recommendation. There is some difference of opinion as to whether it is the most profitable tree to grow. It has the largest average stumpage of the trees of North America, and stories are frequently given of the high prices paid for old stumps. It is pointed out, however, that these old stumps are usually purchased for the purpose of making gun stocks and that the shaping of the roots makes them the most valuable for this purpose.

Experiments in walnut growing have been undertaken to some extent in Canada. His Honor Sir Henri Joly de Lotbinière has for many years been doing considerable work in this direction on his estate in the Province of Quebec, and with good success.

In May, 1895, Mr. Thos. Conant, of Oshawa, planted 5,000 Black Walnut trees obtained from a nursery, and of these, in six years, forty-five per cent. had grown fully fifteen feet high and three inches in diameter, twenty-five per cent. had about doubled their size and twenty-five per cent. had merely existed, while only five per cent. were lost. The owner estimates the value of this land at $500 per acre, an increase of five times its previous value, as $180 per thousand feet could easily be obtained there at any time for black walnut.

The Gooderham Company, of Toronto, also started a walnut plantation, some time ago, near Oakville, in regard to which we reproduce the following notes:

"We commenced, about five or six years ago, to plant young walnut trees in rows about five feet apart. The soil was light and loamy and exceedingly well manured both before and after planting. The trees have done fairly well, not more than ten or fifteen per cent. dying, although we have noticed that they are sometimes so late in leafing the year after planting that one might be tempted down to the month of July to suppose the most of them dead. A great many of them died off but grew up by the root. This, no doubt, was a disadvantage, and for this and other reasons, it seems to us better to plant the nuts, which we have done from year to year with great success. It is true squirrels take a great many of them, but there always seem to be plenty left. We first planted a nursery, putting the nuts only a few inches apart in rows about five feet apart and subsequently transplanted most of these trees so as to leave good stock about five feet apart in each direction. In some cases, in transplanting, we have had very bad luck, especially when the season was wet, a great many of the trees having died. Latterly, we have been planting about two walnuts in holes about five feet apart, the intention being to destroy the weaker shoot and leave the stronger one to grow. We cultivated several times a year between the rows except among the older trees where the leaves are now so thick as to check the growth of weeds and grass."

The nuts may be gathered in October, and the Forestry bureau of the United States give the following instructions in regard to storage. If they are to be stored over winter, it is better to remove the husks. One simple way of doing this is to bore in a piece of board an angur hole about the size of the average nut, then drive each nut through this hole with a blow from a hammer, the husk being cut off by the edges of the hole. The nuts may then be dried slightly to prevent destructive moulding, but not sufficiently to destroy the vitality of the seed. For winter storage, a shallow excavation should be made in well drained soil, a layer of nuts six inches in depth placed therein, covered by six to twelve inches of leaves, chaff or straw, and over this four to six inches of earth. To prevent the washing away of the earth, a covering of boards or slabs may also be provided, and the sides should be well banked up to prevent mice or other rodents from doing damage. Frost will not do any harm but may assist in opening the nuts.

Draudt's Method.

BY A. KNECHTEL, F.N.Y.S.F.F. AND G.C.

By this method of estimating the timber content of an area, the sample trees when placed together present an exact model of the stand, and show the relationship of size classes as to number of trees. In the sample trees all diameter classes of the stand are represented, and the same relationship exists between the sample trees of the different diameter classes as exists between the diameter classes themselves.

It is first decided what proportion the whole number of sample trees shall bear to the whole number of trees of the stand. The percentage may either be chosen directly, that is, we may say that there shall be felled as sample trees, 1, 2 or 3, etc., per cent. of the whole number of trees; or the total number of sample trees to be felled may be decided upon, and then from a consideration of these and the total number the percentage can be reckoned.

Suppose, for example, the number of trees of the stand to be 1780 and that 25 sample trees are to be felled. Then,

AN EXAMPLE OF DRAUDT'S METHOD.

Species.	Diameter.	Number of Trees.	Basal Area.	P=1% Multiplied by Number of Trees.	Sample Trees.					The Stand.	
					Number.	Basal Area Should be	Basal Area really is	Volume.		Volume.	
			Sq. Ft.			Sq. Ft.	Sq. Ft.	Cu. Ft.	B. M.	Cu. Ft.	B. M.
	8	22	7.68	0 22							
	9	77	34.02	0.77	1	.4418	.4517				
	10	97	52.90	0.97	1	.5454	.5675				
	11	162	106.92	1.62	2	1.3200	1.2962				
	12	40	31.42	0.40							
	13	100	92.18	1.00	1	.9218	.9360				
	14	115	122.94	1.15	1	1.0690	1.0690				
	15	88	107.99	0.88	1	1.2272	1.2272				
White	16	160	223.41	1.60	2	2.7926	2.7752				
	17	182	286.89	1.82	2	3.1526	3.1712				
Pine	18	45	79.52	0.45							
	19	67	131.92	0.67	1	1.9689	1.9689				
	20	88	191.99	0.88	1	2.1817	2.1599				
	21	110	264.58	1.10	1	2.4053	2.4283				
	22	86	227.02	0.86	1	2.6398	2.6398				
	23	22	63.47	0.22							
	24	14	43.98	0.14							
	25	85	289.75	0.85		3.4088	3.4088				
		1560	2358.58	15.60	16	24.0749	24.6997	1014.4	4024	102212 93	393819.25

$$\text{Volume of stand} = \frac{2358.58}{24.0997} \times 1044.4 = 102212.93 \text{ cu. ft}$$

or

$$\text{Volume of stand} = \frac{2358.58}{24.0997} \times 4024 = 393819.25 \text{ B. M.}$$

$$1780 : 25 : : 100 : p.$$
$$p = 1.4 \text{ p.c.}$$

The number of sample trees for each diameter class is then found by multiplying the number of trees of each class by p. Fractions of 0.5 or over, resulting from the multiplication are reckoned as a full inch, and those under 0.5 are discarded. Should several neighboring classes furnish no sample tree each, or rather only a fraction under 0.5, several classes may be grouped together according to the size of the fractions. Finally the sample trees should be added together to see if these agree with the whole number decided upon at first. Differences which are caused by rounding off the fractions are then balanced. In order to avoid too many fractions of sample trees the diameter classes need not be made too small.

Sample trees are then, according to sizes and number, selected in the forest. After being felled they can either be cut into sections, say, four feet long, and their volume accurately measured, or they can be worked up in the usual way for sale.

According to the principle of the method the sample wood likewise presents the chosen per cent. of the volume of the stand. The volume of the stand, then, is to be reckoned by the formula

$$V = \frac{v \times 100}{p}$$

On account of rounding off the fractions due to fixing upon the number of sample trees, this relation does not exactly hold, and instead of the quotient $\frac{100}{p}$ according to Draudt's proposition that of

$$\frac{\textit{The sum of the cross areas of the stand}}{\textit{The sum of the cross areas of the sample trees}}$$

is instituted, and by multiplying this quotient by the volume of the sample wood the volume of the stand is found.

If the sample trees are worked up, keeping the sorts of wood separate, each sort will present the chosen per cent. of that sort in the whole stand, and the volume can be determined as explained in the foregoing.

The disadvantages of the method are that in rounding off the fractions of sample trees in each class inaccuracies occur, and that frequently no sample tree at all is taken from classes which contain only a small number of trees. The larger the stand, the larger will be the number of trees in each class, and hence the more accurate will be this method when applied to the stand.

A meeting of the Board of Directors of the Canadian Forestry Association was held at Ottawa on the question as to whether the association was in a position to undertake the publication of a paper wholly devoted to forestry interests, and the secretary was instructed to obtain estimates and other necessary information and report fully to the Board. A proposal was also submitted that in addition to the annual meeting held at Ottawa in the winter there should be a summer meeting at some other place. This was favorably considered, and it was suggested that the first of such meetings might be held in the West. Arrangements for the annual meeting to be held at Ottawa in March next were made, and it is expected that the papers to be submitted will be as fully representative and as important as those which have been published in previous annual reports. It was decided that representations should be made to the Provincial Governments of the important work that the association was doing with the object of obtaining such assistance as would help in the extension of the work and a wider distribution of literature.

Our Medicine Bag.

We esteem ourselves as fortunate insomuch that the present issue of ROD AND GUN contains, exclusively, a new poem by our great Canadian poet, Dr. William Henry Drummond. "Bruno the Hunter" treats of subjects that Dr. Drummond has made himself an acknowledged master of. In his own field he is inimitable and without a serious rival. We beg our readers to consider these verses as a Christmas gift from one of our best known sportsmen to his brothers of the gun and rod. In addition to being a charming effort of the poetic imagination, "Bruno the Hunter" contains a very admirable moral.

The standard work upon the ichthyology of this continent, north of the Isthmus of Panama, is "The Fishes of North and Middle America," a book of four volumes and more than three thousand pages, by Professor David Starr Jordan, President of Leland-Stanford Jr. University, and Barton Warren Evermann, Ichthyologist of the United States Fish Commission. But so comprehensive a work is only needed by those who wish to study the fishes of this western continent very seriously, and these talented writers have been well advised in the bringing out of "American Food and Game Fishes," a more popular though equally trustworthy guide. This new addition to the series of nature books published by Doubleday, Page & Co. will charm the angler as well as all those who are interested in the finny inhabitants of our seas, lakes and streams. The authors of this volume are too well known to need any introduction; let it merely be said that upon a foundation of exact scientific knowledge and research they have built a popular and altogether fascinating book, giving the reader all that is worth the knowing on the subject of our food and game fish, and of the methods by which they are captured.

The illustrations are of extraordinary merit. In addition to the ten lithographed plates in colors, there is a most remarkable series of photographs of over one hundred species taken from the life. This work was done by Mr. A. Radclyffe Dugmore, who, in order to obtain his material, visited many widely-scattered localities, and was at great pains to make these, the first really successful photographs of living fish ever secured.

This is one of the indispensable books that a scientific angler cannot afford to be without. It is scholarly, and yet at the same time practical, and the publishers have done their part in a way that is above praise.

Opening the book at the beginning of an article on the Pacific salmon, we became immediately interested, as much of our experienee has been gained in British Columbia. Speaking of the spawning habits of the quinnat and the redfish, the authors make statements that are in the main in accordance with our own experience, but it is not surprising to find slight divergences from what we have observed, seeing the complexity of the subject and the difficulty attendant upon a thorough investigation of the ways of these mysterious fish. According to Messrs. Jordan and Evermann, "the matter of spawning is probably similar for all the species, but we have no data for any except the quinnat and the redfish. In these species the fishes pair off; the male with tail and snout, excavates a broad, shallow 'nest' in the gravelly bed of the stream in rapid water, at a depth of one to four feet; the female deposits her eggs in it, and after the exclusion of the milt, they cover them with stones and gravel. They then float down the stream tail foremost. As already said, a great majority of them die. In the head waters of the streams, unquestionably all die; and we now believe *all* die after once spawning, regardless of where the spawning beds may be." Last September we had an opportunity of seeing the redfish, or as we Canadians call them, the sockeye, spawning. The performance was exactly as described in the foregoing quotation, but the Dominion

officials engaged in collecting their eggs were strongly inclined to the belief that though most of the parent fish die through sheer weakness, that *all* do not. Out of a hundred thousand fish, perhaps, ninety-nine thousand will weigh between certain extreme weights as, for instance, between four and seven pounds; a small percentage will weigh almost twice as much, and once or so in the season, gigantic salmon, comparatively speaking, will be noticed. The Dominion Fisheries officers surmise that the smaller fish are four-year-olds making their first ascent from the sea; that the larger fish are eight years old, and are returning to the head waters where they were hatched, for a second time; and that the monsters are twelve-year-old fish that have survived the trials of twice stemming the turbulent streams of British Columbia.

The condition of some of these spawning fish was awful. One male had his head almost severed in half; many of them had fins and tails worn to their bases; great sores, the result of fierce encounters between the males, made some of them hideous to look upon; and one female fish was actually intent upon reproducing her species, although her whole head, from a point just in front of the eye, was missing.

Speaking of the peculiar variation in color of the flesh of the quinnat, mention is made of the white-meated fish so common in the Fraser in the autumn, and it is indeed strange that fish, not to be distinguished, superficially, should differ so much from one another in the color of their flesh. In the month of May, fishing in the sound off Fort Wrangel, Alaska, we caught as many white-fleshed, or streaky-fleshed fish as we did red, but when served one was as good as the other.

It is, unfortunately, quite impossible in a brief review, such as ours must necessarily be, to do justice to this monumental work, and, in conclusion, we will only say to our readers that if they are fishermen they cannot invest four dollars to better advantage than in buying it.

The Collie Club of America, at a meeting to be held shortly in Philadelphia, is to take into consideration a proposition to hold a show of collies in 1903, thereafter to be an annual fixture. In all probability the proposal will carry, and we have no doubt that under the Club's powerful influence there will be a gathering of this favorite breed from all parts of the States and Canada such as could not be brought together under any other auspices. The Club has several very valuable challenge cups under its control, the award of which carries a medal to commemorate the win, and it is the ambition of every collie breeder to possess one of these.

A wonderful inland sea is Lake Superior! What would an inhabitant of Central Europe think, could he be placed on a 3,600 ton steamer, in a gale of wind, on our big Canadian-American lake? He would see the great seas come out of the wrack and mist, and strike against the strong bows like a sledge hammer striking upon an anvil, and would feel the good ship tremble, notwithstanding her strength, as the green water rushed aft along the decks before making its escape through the hawse pipes. No land in sight, as likely as not no sister ship, nothing but the heaving, ice-cold waters of the great lake, and the wheeling, crying gulls and terns. This is Lake Superior in an angry mood, but, happily, in summer the inland sea is more often placid than raging. The surface is, perhaps, so calm that the rising fish makes a ring that may be seen from afar; the smoke from the funnel stretches away into the dim distance, until it merges into the purple haze of the sunset. But see Superior in whatever mood you will, it is always grand, beautiful, alluring, and to sail on its broad bosom once is to create a strong desire to revisit it.

Mr. E. Stewart, Dominion Superintendent of Forestry, has returned from an extended trip through the northern part of Alberta and Athabasca, which was undertaken in order to ascertain the extent of the timber in that direction and what steps might be necessary for its protection. Much valuable timber was found along the Mackenzie and Peace Rivers, the poplars there especially reaching a great size. The Aspen poplar was found reaching in clear straight

trunks to a height of seventy-five or eighty feet. One thing particularly noticeable was the thorough manner in which the distribution of the notices of warning in regard to the setting out of fires had been done by the Mounted Police and the officers of the Hudson's Bay Company, by whom it had been kindly undertaken in the districts where there are at present no forest rangers. These notices were found all along the routes of travel in the northern districts.

Mr. Stewart considers the Peace River district specially suited for agricultural purposes and exhibits some very fine specimens of wheat grown at Lesser Slave Lake.

The annual general meeting of the Montreal Canine Association was held in the Natural History Rooms, on the 13th November. Owing partly to very inclement weather, and also to the fact that a considerable number of the shareholders were disqualified from voting through the non-payment of the yearly assessment of two dollars, there was a comparatively small attendance. The treasurer's report, duly audited, showed a balance on the right side of something over $280 in cash and assets valued at $700. A new constitution and by-laws was adopted, after which the meeting proceeded to the election of officers, with the following result: Hon. Patrons—The Governor-General of Canada, Lord Strathcona and Mount Royal, His Worship the Mayor of Montreal; Hon. President—S. Coulson, Esq.; Hon. Vice-Presidents—Dr. Mignault, J. G. Kent, Esq. (Toronto), Dr. Chas. McEachran; President—Mr. D. W. Ogilvie; Vice-President—Mr. Jos. A. Laurin; 2nd Vice-President—Mr. Joseph Reid; Treasurer—Mr. F. Stuart; Secretary—Mr. J. R. Innes; Executive Committee—Messrs. N. C. Ogilvie, H. M. Walters, D. Robertson, John A. Pitt, Alf. Brittain, H. L. Thomas, W. Henry, S. Britcher, H. A. Christmas, A. F. Gault.

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December, 1902

Communications on all topics pertaining to fishing, shooting, canoeing, the kennel and amateur photography, will be welcomed and published, if suitable. All communications must be accompanied by the name of the writer, not necessarily for publication, however.

The Official Organ of the Canadian Forestry Association.

ROD AND GUN IN CANADA does not assume any responsibility for, or necessarily endorse, any views expressed by contributors to its columns. All communications should be addressed to:

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Canadian Forestry Association

THE objects of the **CANADIAN FORESTRY ASSOCIATION** are :

The preservation of the forests for their influence on climate, fertility and water supply ; the exploration of the public domain and the reservation for timber production of lands unsuited for agriculture ; the promotion of judicious methods in dealing with forests and woodlands ; re-afforestation where advisable ; tree planting on the plains and on streets and highways ; the collection and dissemination of information bearing on the forestry problem in general.

Rod and Gun is the official organ of the Association, which supplies the articles relating to Forestry published therein.

This Association is engaged in a work of national importance in which every citizen of the Dominion has a direct interest. If you are not a member of the Association your membership is earnestly solicited.

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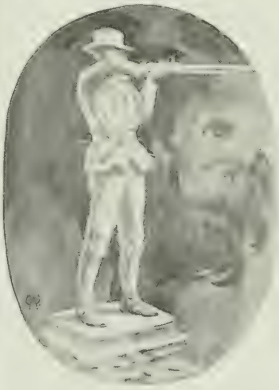

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ROD AND GUN IN CANADA

Lake Atlin, B.C.

A MAGAZINE OF CANADIAN SPORT AND EXPLORATION

PTARMIGAN IN WINTER PLUMAGE.

This view was taken in the mountains of Northern British Columbia in almost 60° north latitude.

ROD AND GUN IN CANADA

VOL. IV. MONTREAL, JANUARY, 1903 No. 8

South of Abitibi.

BY "ENGINEER."

Having just returned from the most successful hunt after big game that I have ever made, perhaps a short description of a little known country may be welcome to the readers of ROD AND GUN.

Our party of three arrived in Montreal on August 29th. Here we purchased supplies and hunting equipment, and enjoyed ourselves extremely at the very comfortable Place Viger Hotel. A couple of days sufficed to finish our business in Montreal, and on the evening of the 31st we left by the St. Paul Limited for Mattawa, where we arrived early on the following morning. We went to the Hudson Bay Company's store and arranged for our entire outfit, with the exception of provisions we had brought with us or purchased in Montreal. From the H. B. C. we also obtained the canoes necessary for the trip, with the exception of one three fathoms long which was brought down to Klock's depot by our Abitibi guide. We had three thirteen foot canoes, and one eighteen foot, all birchbarks. A friend had already arranged for three guides and a cook, and I wish to take this opportunity of urging all those who go into the north woods, to take a cook in addition to their canoemen, this being an essential of a successful trip.

Next morning we began our journey into the far north. Two of the Mattawa guides, George Crawford and Joseph Clemow were with us, and at Timiskaming we were met by Charlie Moore, of Timagaming. The trip up the lake on the S.S. "Meteor" was a most delightful one, and I only regretted that I had not taken my wife with me, as she could have stayed on the steamer and made excursions back and forth during my absence in the woods. It is a most interesting country and I am sure a lady would enjoy it.

At North Timiscaming, which is the end of the steamer's run and of the lake, we were met by two waggons that Mr. Klock had placed at our disposal. We loaded our canoes and outfit on the waggons and started across the long portage to Klock's depot, sixteen miles away. Of course, we all had to walk, but we rather enjoyed the trip and arrived safely the same evening. We spent the night at the depot and had good accommodation. Here on September 3rd, Willie Ellison joined our party; he had just paddled down from Abitibi, and was thoroughly acquainted with the country north of the depot. In winter he hunts between Abitibi and Klocks. Jos. Clemow acted as cook, he was fairly well acquainted with the country as was also George Crawford. Moore knows the Timagaming region like a book, but had never been to Abitibi before.

On leaving the depot we only did a half day's paddling, for the wind was strong and the waves so high that we shipped water badly. In fact, the only possible objection to the Abitibi trip is

that great lakes have to be crossed, and one may be windbound occasionally, as the seas that get up are something frightful, these lakes being anywhere from six to thirty miles long. Next morning we were off again. On our trip up, the only shooting we had was at small game, such as ducks and partridge, the latter being abundant and furnishing plenty of fresh food whenever we tired of salt pork. On one lake we saw quantities of moose and deer, and were camped seven days there ; but found we were too early, the moose and deer being still in the velvet. We, therefore, decided to make the trip to Abitibi and do our hunting later. Here we left the three small canoes, together with the cook and one guide, and with the two other guides and the eighteen foot canoe, the entire party started for Abitibi.

At Abitibi we were handsomely entertained by Mr. Skene, in charge of the Hudson Bay Company's post. Returning to our camp we picked up our other guide, the cook, and the outfit and started in to hunt in earnest. It did not take long to get three moose and a caribou. The moose heads were excellent and highly satisfactory to us all ; the caribou not so good. We saw but three caribou. They are probably numerous, but hard to locate as the woods are thick. We saw a great number of moose and could easily have secured more heads, but we stopped hunting just as soon as we had each shot one. We returned by way of the White River.

Our largest head measured fifty-six inches and the smallest forty-eight inches, possessing twenty-three and sixteen points respectively. As I have said before, the trip was the best I have ever taken, the guides could not be beaten. They were gentlemanly, intelligent, excellent hunters and at the same time good servants. The cook was an artist, and a good hunter to boot. I am convinced that the best big game country is south of the height of land, and our guides, with the exception of the man from Abitibi, were convinced that the best big game country was within sixty miles of Mattawa and that it was not necessary to go so far north. I am glad, however, that we made the trip ; it was a most enjoyable and satisfactory one and I should like to take it again.

Camping in Canada.

BY DAVID T. ABERCROMBIE.

(*Continued from the December issue.*)

COOKING RECIPES
(*For four persons*)

Coffee :—Have the coffee ground fine, place eight heaping dessert spoonfuls in a hot coffee pot, add two quarts of boiling water and set beside the fire for ten minutes. Never boil coffee.

Tea :—Place four heaping tea spoonfuls of tea in a hot pot, add two quarts of boiling water, set beside the fire for a few minutes. Never boil tea.

Chocolate :—Make a paste with one-quarter can of Peerless Cream and eight dessert spoonfuls of chocolate (Whitman's) and a little water ; add two quarts of boiling water and sweeten to taste.

Biscuit :—Place two pints of flour in bread pan, add two heaping tea spoonfuls of baking powder, one level tea spoonful of salt, some cold pork fat the size of an egg and thoroughly mix while dry ; add one quarter can of Peerless Cream and cold water enough to make as soft a dough as can be rolled on the bread board which has been previously sprinkled with flour. Roll about one-half inch thick and cut into convenient pieces with knife. Place in the greased pan, place the pan in the rack of baker before the fire. Bake until a fork inserted in a biscuit shows no dough when withdrawn.

Bread :—Make the same as biscuit only thin enough with cold water to pour into a pan and bake in the same manner. This will make two panfuls.

Oatmeal :—To two quarts of boiling water add one tea spoonful of salt, then add while stirring two cups of oatmeal and boil for ten minutes.

White Sauce :—Take a piece of butter the size of an egg, melt slowly in the fry pan and stir in thoroughly one heaping dessert spoonful of flour until perfectly smooth ; add one-half tea spoonful of salt, one quarter tea spoonful of pepper, a mixture of one-quarter can of Peerless Cream and one cup of hot water. Mix thoroughly while boiling. Serve with boiled fish.

Corn Bread :—Place one pint of flour and one pint of corn meal in the bread pan, add two heaping tea spoonfuls of baking powder, one level tea spoonful of salt, two dessert spoonfuls of dried egg, one teaspoonful of sugar, and cold pork fat the size of an egg. Mix thoughly while dry. Add one-quarter can of Peerless Cream and cold water enough to make a thick batter, stir until well mixed and pour into the greased pan ; place the pan in the rack of the baker and the baker before the fire. Bake until a fork inserted shows no dough when withdrawn. This makes two panfuls.

Griddle Cakes :—Place two pints of flour in bread pan, add two heaping tea spoonfuls of baking powder, one level tea spoonful of salt, two dessert spoonfuls of dried egg, and thoroughly mix dry. Add one quarter can of Peerless Cream and cold water enough to make a batter about the consistency of the Peerless Cream or until it pours from the mixing spoon a continuous stream. Be careful not to make the batter too thin. Fry in the fry pan kept greased with a piece of pork fat held on a fork.

Rice Griddle Cakes :—In the above receipt substitute one pint of cold boiled rice for one pint of flour and proceed as for griddle cakes. Cold boiled potatoes, oatmeal or hasty pudding may be used in the same manner. If convenient save water in which rice is boiled to make griddle cakes.

Boiled Rice :—Thoroughly wash and rinse one cup of rice in cold water, drain and place in at least two quarts of boiling water in an uncovered pot, add two tea spoonfuls of salt and boil hard from twelve to twenty minutes, or, adding water as it boils away until done. New rice boils more quickly than old, test by tasting. When done drain and set on the fire to dry. If convenient save the water for soup, stews or griddle cakes.

Hasty Pudding :—Add one-half tea spoonful of salt to one quart of boiling water, and stir in slowly one cup of corn meal. Boil ten minutes or until done, stirring constantly to prevent scorching.

Fried Mush :—Prepare as for hasty pudding. Pour into shallow pans and allow to cool ; cut into slices and fry in pork fat until brown. Oatmeal may be used in the same way.

Potatoes :—Soak the dried potatoes several hours, not less than two, taking as much as the hand can grasp for each person. Pour off the water, adding fresh boiling water and boil ten minutes ; repeat this, the third time putting in a tea spoonful of salt and boiling until done. Drain and let stand over the fire for a minute with cover removed, adding salt, pepper and butter to taste, and mash with a pestle (a piece of birch sapling makes a good one). While dried potatoes are somewhat troublesome to cook (three changes of water being necessary) this trouble is outweighed by the fact that their weight is one-twelfth that of fresh potatoes, they do not rot, and no amount of freezing will injure them.

Potato Cakes :—Prepare the potatoes as above. Mix in one-eighth can of Peerless Cream and one dessert spoonful of flour, pat into cakes, sprinkle with flour and fry in pork fat.

Lentils :—Wash one cup of lentils in cold water, drain and put in two quarts of boiling water. Add a level tea spoonful of salt. Boil one-half hour or until done, drain and serve with pepper, salt and butter to taste.

Baked Beans :—Wash two cups of beans and parboil until when placed on a fork or spoon and blown upon their skin suddenly splits, then drain, wash in cold water and drain. Cover the bottom of the bean pot about two inches deep with the beans, then place a piece of salt pork as big as a fist (about one pound) in the centre, and pour the rest of the beans around and over. Add one-half

tea spoonful of salt, one-quarter tea spoonful of pepper and one dessert spoonful of sugar, then cover with warm water; place a piece of thin cloth over the top and force on the lid. A hole has already been dug in the ground one foot deep and one foot in diameter in which a fire has been burning for several hours and stones made hot. Scrape out the ashes, coals and stones, put in the pot of prepared beans, pack and cover with the hot coals and stones and cover all with earth. Leave for eight or ten hours and in case of rain cover with bark. This is as delicious a dish as is known to woodsmen. A piece of venison added with the pork makes an acceptable variety.

Fruit :—Clear one pint of evaporated fruit and put it into two quarts of cold water; add half a cup of sugar and allow to simmer until done. Serve with a little spice. An iron or tin pot will discolor the fruit and spoil its flavor.

Julienne :—Julienne is a mixture of vegetables cut in strips and dried. It supplies the vegetable acids craved by the human system. It may be used as a plain vegetable in a soup or in a stew. For a vegetable soak a cup of Julienne an hour, drain and boil with two quarts of water and one level tea spoonful of salt until tender; drain and serve with plain seasoning or with white sauce.

Julienne Soup :—Boil in two quarts of water one cup of Julienne; add one-half tea spoonful of salt, and a scrap of pork for flavoring, add water as it boils away. In one and one-half hours add four Boullion Capsules and serve.

Stew :—Place one cup of Julienne in two quarts of boiling water, add one dessert spoonful of rice, one dessert spoonful of lentils, a pinch of onion and a half tea spoonful of salt; boil one-half hour, replacing water as it boils away, and add two pounds of venison, moose, rabbit, or of any meat or fowl: use marrow bones if possible and a little pork for seasoning, boil one hour and if desired thicken when done with a paste made of one dessert spoonful of flour and some of the liquor from the stew. A stew is cooked best by slowly boiling and there is less danger from scorching. When taking off the fire add four Bouillon Capsules.

Pot Roast :—Parboil Julienne and other vegetables the same as for a stew; add the meat, cover the pot as when baking beans and put it into a prepared bean hole and leave the same as baked beans. Season with pepper and mustard as desired.

Prepared Soup :—To two quarts of boiling water add one of the two soup squares previously broken and made into a paste with warm water and boil ten or fifteen minutes. These squares make a fine soup and are a change from the usual food of the woods,

Erbswurst :—To two quarts of boiling water add one-third of a package of erbswurst and boil ten to fifteen minutes. This is the celebrated pea meal sausage, the army ration, and is nearly a perfect food containing all the necessary elements except water, Use less water and when cold it can be cut in slices, dipped in flour and fried in pork fat.

Codfish Cakes :—To two pints of mashed potatoes add one-quarter cup of flour and one cup of shredded codfish; the amount of codfish may be changed to suit taste. Thoroughly mix, make into cakes and fry in pork or bacon fat.

Creamed Codfish :—Prepare two pints of white sauce without salt; while it is boiling stir in one cup of shredded codfish. Serve on toasted biscuit or with mashed potatoes.

Boiled Fish :—Clean the fish and take off heads, tails and fins, place a small piece of pork inside each, pin in a towel loosely and boil in salted water. Four pounds of fish is sufficient and requires about fifteen minutes to boil. Remove the towel and serve with white sauce.

Broiled Fish :—Clean the fish and cut off heads, tails and fins. Open through both belly and back, dry and sprinkle with salt and pepper, lay them in the broiler; and place over the fire until hot and rub with a piece of bacon or pork, repeating until done.

Fried Fish :—Clean the fish and cut off heads, tails and fins. Open through both belly and back, cut out the back bone, dry, sprinkle with salt and pepper, cut into convenient pieces, roll in corn meal and fry in pork fat. Very small

fish need only be cleaned and may then be fried or broiled whole.

Broiled Meat :—Lay the cut slices of meat, three-quarters of an inch thick in the broiler and put over the hottest part of the fire for a few minutes until both sides are seared, then withdraw and cook slowly until taste is suited, rare, medium or well done. Salt and pepper while cooking and serve with a little butter.

Broiled Birds :—Clean by opening on the back, sprinkle with salt and pepper and lay in the broiler, place over a hot fire and when heated through rub with a piece of bacon or pork. Keep repeating this until done.

Pork :—Pork is used mostly for its fat and as a flavoring in soups, stews, etc. It should be washed in boiling water to remove salt and fried slowly in a pan.

Bacon :—Bacon can be either fried or broiled over a slow fire.

Gravy :—Melt a dessert spoonful of pork or bacon fat in the fry pan, rub in a dessert spoonful of flour until smooth and browned. Then add two cups of boiling water and a dash of pepper.

Boiled Fruit Pudding :—Make half the quantity of dough as given in the receipt for biscuit to which has been added one-half cup of sugar. Roll into a strip six inches wide, and double the thickness of pie crust, spread with fruit sauce, roll up and tie into a cloth, drop into boiling water and keep boiling thirty minutes. Remove the cloth and serve with brandy sauce.

Brandy Sauce :—Melt together a piece of butter half the size of an egg, one-half cup of sugar, then stir in until smooth a tea spoonful of flour and a pinch of salt. When perfectly smooth add two cups of boiling water; boil for five minutes, remove from the fire and add a dessert spoonful of brandy and dash of spice.

Fruit Pie :—Mix thoroughly while dry two cups of flour, an even tea spoonful of baking powder, a pinch of salt and a piece of pork fat twice the size of an egg; then stir in one cup of cold water. Roll very thin on the bread board previously sprinkled with flour, cover the bottom of the greased pan with part, fill with fruit sauce and cover with the remaining half. Put in the rack of the baker and bake before the fire.

Toasted Biscuit :—Left over biscuit cut open and slightly moistened, placed in the broiler and toasted over hot coals make a very acceptable dish.

Food Supply of Manitoba.

BY A. HENEAGE FINCH.

Since the "passing of the buffalo," it is supposed by many that the natural food supply of Manitoba is exhausted, but this is by no means the case. Along the streams, in the more inaccessible forests, but chiefly among the head waters of the rivers among the mountains, vast herds of elk and moose roam almost undisturbed. A few years ago the writer, along with four others, camped for two weeks on the margin of one of Manitoba's large forests and succeeded in loading up our sleigh with a round ton of game, this bag being composed of five magnificent elk and one mule deer. Between seventy-five and one hundred individual elk were seen by the company. These seem to be increasing, as the Indians are either too indolent or too poorly armed to capture them, and but few white hunters ever invade these wilds at such an inhospitable season, and fewer still are fortunate enough to make such a good "bag."

Among the "foot hills" and bluffy country between the prairie and the mountain forests "mule deer" literally swarm. As in the case of moose and elk, it requires considerable pluck and endurance to live under canvas and hunt these fleet and wary animals when the north wind blows and the thermometer registers 15° or 20° below Kalimazoo. But the game is well worth the candle.

Then, again, the mountain slopes are honeycombed with bear dens, and the watchful eye of Nimrod may detect the chimney of Bruin's "dug-out," when a

three or four-hundred-pounder with fur soft and brown as beaver will be his reward.

The marshes and ponds abound with wild fowl of all descriptions, wild ducks, chiefly mallards, that all around favorite, some widgeon, pintails, teal, butterball, spoon bill and others, while an occasional canvas-back and red-head make life worth living, in September and October. That wary king of game birds, the "sand hill crane," with his merry laugh, will draw a smile from the saddest heart.

Then, too, in spring and fall, *Anser canadensis* with his melodious *honk-a-wunk*, and the merrier *whink-whink* of *Anser polaris*, in their northern and southern passage, will test the patience and skill of the "Knight of the tapering tubes."

The prairies, fields and bluffs, especially in the newer districts, where most needed, are alive with chickens and ruffed-grouse. Snipe and plover also abound, but are considered "small potatoes." Hare and cotton-tail, too, are numerous, but fall into the same category.

The lakes and streams yield to the careful disciple of Walton a plentiful and toothsome supply of the finny tribe—from the mullet to the royal sturgeon—the only absentees being the angler's favorites, the greyling and the "speckled beauty."

The wild fruit supply is also abundant. First come the strawberries—the queen of wild fruits—closely followed by saskatrons and raspberries; later comes a bountiful crop of black currants, gooseberries, plums and wild grapes. No house in the land need go unsupplied with fruit all the year round from this native supply.

Almost every fall the plains, meadows and yards are dotted with mushrooms.

I speak not from hearsay. During the years we have lived in this new country our larder and cellar have been fully supplied with meat and fruit from these native sources alone.

On Still-Life Work.

BY HUBERT M'BEAN JOHNSTON.

In reading the photographic journals, one sees a great deal about the necessity of confining one's attention to a single branch of the art, "if he ever hopes to become an expert." Well, that is all true enough. But the majority are not really looking to become experts; they want only to make a pleasurable recreation out of it. Of course, if they are able to get some scientific information incidentally, they have no objection. Now, it seems to me, that all who find themselves in this predicament, can hardly do better than to take up the subject of still-life work. After one has practised on all the neighbours' cats and dogs, and wasted plates on all the babies in the immediate neighbourhood,—incidentally calling down on one's self the wrath of all the doting mothers,—it is a most excellent period in the photographic career to think of more serious work. The study of still life just fills the bill, and not only is it likely to prove highly interesting and instructive, but it requires no special outfit, and does away with the exertion that goes with long distance walks. The possibilities, in an artistic and decorative sense, are great.

One must look carefully to the grouping and lighting. Although it is quite possible to secure good results from a single specimen, unless good care is taken, the result is very likely to look like an advertisement from a seed merchant's catalogue. Yet, on the other hand, too many articles in the picture, some of them, perhaps, entirely incongruous and piled in anything but an artistic manner, will result in a photograph, which, as an illustration of a green-house, is a tremendous success, but which, as an artistic success from a purely pictorial or decorative standpoint, is simply appaling. First bear well in mind that the objects composing the picture should not only be as few as possible in order to correctly carry out

the idea, but must also be grouped to make an artistic and harmonious whole. Simplicity, however, does not necessarily mean that because the effect is natural and unstudied, no time has been spent on the work. The very best pictures are the result of any amount of care and study, no matter how careless they may look. As the late "grand old man" of photography, Mr. H. P. Robinson, used to put it, "the business of art is to conceal art."

Perhaps to the aspirant of honors in this particular branch of work, no better help could be suggested than a study of engravings of paintings by our well-known artists. There, as nowhere else, will the idea be impressed upon one, how interesting a picture may be produced with almost nothing.

Let us suppose, for instance, that we are going to photograph a bunch of daisies or roses in a tall bell-mouthed vase. The first difficulty will be met with in the focussing. Immediately you look at the subject on the ground glass, you are impressed with the idea that there is a certain depth to your subject that will make it extremely difficult to get a clear focus on all parts at once. Try it any way you will, there is no help for it. The only thing to do is to take the flowers and so place them that they are all on the one plane; notwithstanding the apparent impossibility of going this, so that the result is natural, once it is tried, it is astonishing to find how simple it is. A fan-shaped arrangement will give to a certain extent the effect of distance, if carefully handled. A piece of newspaper with printed matter upon it, attached to the flowers, will show the point on which to focus; but don't forget to remove it before making the exposure!

But passing over the flower question, which is really so well treated in several text-books on the subject as to require little additional, turn to the arrangement of miscellaneous objects. Remember it is essential that you obtain your effects with just as few elements as possible, and see also that they bear some relation to one another. I suppose that a photograph of a shaving brush might be correctly referred to as still life. And doubtless it might be highly suitable for use in a drug catalogue. But suppose you make the picture also include an open razor, a mug full of suds and a strop, all lying on a dressing table so that a corner of the mirror is showing; now you have something more than merely still life, you have a still-life picture. Or take, for instance, a picture of fruit. The photograph includes a few peaches, a bunch of grapes and a decanter of wine. Does it not convey to one the impression of a dainty little luncheon? There is no incongruity apparent; all these articles might be expected to be found together. Or take a photograph of a basket of grapes alone, overturned so that everything lies in an apparently confused heap on the table. Is there not an air of abandon and plentitude about it that gives it a certain interest? Something more attractive than if just one bunch were to be laid out on the table by itself. There are a hundred and one other different combinations of different articles that may be arranged so as to make similar interesting pictures. But care must be taken to make the picture tell a story and not be simply a facsimile of so many different things.

I read lately, in one of the photographic magazines, of a collection of photographs that exist at Harvard University's Mineralogical Museum, of snow crystals. These are the work of Mr. W. A. Bentley, of Nashville, Vt., and are, it is said, a record of all the New England snowstorms for the past quarter of a century, The crystals are said to be of every variety and range, all the way from frost on a window-pane to the effect of a snow-stricken forest of evergreens. The methods of producing them are so simple that any one who owns a camera and a microscope, can do the work. "Mr. Bentley recommends that the microscope should be fitted with a half-inch or two-thirds inch objective, of wide aperture and short axis; that the focussing apparatus be exceptionally quick and accurate; the diaphragm aperture of not more than one-sixteenth of an inch; the illumination, ordinary, uncondensed daylight; and the exposure (rapid plates being used) from forty seconds to five minutes. The chief difficulty to overcome, is to prevent the crystals from melting, and the whole

work must be done in a cold room with but one window from which to catch the flakes. A black card serves to collect the crystals as they fall, a bit of broom splint to place them on the glass side of the microscope, where they are pressed flat with a bit of feather ; and the photographer must take special care not to warm the slide by breathing on it or by handling it with ungloved hands. The operation, in short, requires care, nicety, and patience, as well as apparatus.''

In the photography of still life, the very best results are to be had by using plates of not less than seven by five in size. Such pictures are mostly wanted to be used for decorative purposes, and anything smaller than this would hardly amount to much for framing purposes. Moreover, when the picture is of a smaller size, the production is not so near the natural size of the objects photographed, and consequently is not so natural. In order that the full size of the object may be had, it is well if you are buying a new camera, to get one with a long bellows, so that you will be able to work with a subject very near to the lens. And this brings up the question of the lens itself. As we discovered in photographing flowers, it is difficult to get all the objects on one plane, it is even more difficult in the case of fruit, etc., unless everything is strung out in an ungainly line. You will find that an anistigmat will secure you the very best results, as it has more depth than the ordinary rectilinear. By using a lens of this type and stopping down fine, you will find that you get better definition than is possible with a lens of short focus and very large opening.

It think it goes without saying that one ought to use ortho-chromatic plates and a color screen. And then for bright objects, a backed or double coated plate that will do away with halation, is a tremendous advantage. You might not notice it, but it is surprising how much halation there is to be found in even a photograph of simply a white table napkin. Try it and see. You will then note how much better the grain of the linen shows up in the one than in the other. Or if the linen has any pattern woven in it, it will show up much more distinctly in a picture where ortho-chromatic plates with a backing have been used. This may seem to be a very simple point, and in a great many branches of the art it certainly would not amount to much ; but in still-life photography, where the whole essence of the matter is correct reproduction of values, it assumes a value that is all out of proportion.

When one comes to make a still-life exposure, perhaps the point that is of the most importance is that of proper lighting. Here it is possible to make or mar the picture. To successfully give various formulæ is, however, almost impossible on account of the great diversity of conditions. One rule may be laid down though. It is this. Always try to secure a light that will best give the effect of roundness. That means that the bright side must not be given the full glare of the sunlight and that the dark side must not be in complete shadow, though there must be a considerable contrast between the two. Along with the impression of roundness may be considered the idea of relief. To a large extent, the standoutiveness of a subject is to be traced to the background. But again it would be impossible to prescribe any particular type of ground for it. Sometimes it is a soft shadow on a light ground that does it, while again it is to be had from the use of a coal black backing. Very largely it is a question to be decided from the subject and the possibilities in the way of lighting.

READY FOR THE TRAIL.

The packs are all on; the diamond hitch thrown, and the outfit on the point of starting.

ON THE FRENCH RIVER, ONT.

One of the numerous rapids intervening between Nipissing and Georgian Bay.

The Moose Season.

BY C. C. FARR.

Now that the open season for moose has come and gone, a retrospective summary of the results of this piece of legislation should not be out of place, that is, regarding the Timiskaming section of northern Ontario.

In the first place there has been much dissatisfaction expressed by those hunters whom I have seen, at the lateness of the time appointed for the sport, it being generally conceded that the discomforts and dangers attendant upon a trip at this time of year are almost prohibitive, except with a few robust enthusiasts.

Moose are not like the red deer which usually haunt the same localities season after season, but they are more nomadic and are here to-day and away to-morrow.

The etymological derivation of the word moose is from the Indian Bem-os, to walk. At least I imagine so, for the moose is indeed a walker, hence it entails a considerable amount of travelling to find him. But travelling in these northern latitudes during the end of October is not a very enviable occupation, and avoided even by the Indian as much as possible. But what is of all most exasperating is the fact that at this time of the year the moose have left the lakes and water-courses, and sought retirement in the almost inaccessible uplands, where to look for them is almost like looking for the proverbial needle in a haystack. The worst of it is that the hunter, who has paid his twenty-five dollars for a shot at a moose, independent of the cost of his trip, sees any quantity of tracks, but they are all about two or three weeks old, and it is almost a sheer impossibility to tell where the beasts that have made these tracks have gone to.

It is no use sitting like a fool in a canoe with gun in hand and shooting nothing, except, as sometimes happens, one of the party ; and as for disembarking with a view of wandering through the bush in a haphazard manner, in the hope of accidentally coming upon a moose, life is too short for such a game of chance, and the game itself hardly worth the candle.

If it were possible to make use of the "call," then there might be a chance of getting a shot, but the last amorous bull has retired into the fastness of the forest to recuperate, and eventually to allow his antlers to drop off in private and in peace, and, therefore, he would never even answer a call much less come forth from his lair at the sound.

The old tracks on the shore give no clue as to his whereabouts. He may be in the vicinity or he may be miles and miles away, for, as I said before, he is a traveller of no mean order and he travels straight. But what he makes for (he and his family) are spots where there is an abundance of his favourite food, the nutritious twigs of the hardwood, and when such a spot that suits his fancy is found, he does not wander much, but devotes his time to eating and sleeping, and growing fat. When the supply of food becomes a trifle scarce, and the swamps are frozen up, a move may be made and a fresh spot chosen, but unless he is disturbed by some outside agency he does not go far.

If the season were extended to the time when the snow is permanently on the ground, then there might be a chance of striking a track and a still hunt, but the way the thing now is, the time appointed for the slaying of moose is about the exact time when it is hardest to slay them, and, judging from the comments that I have heard, there are many men in future who will either keep their twenty-five dollars in their pockets, or spend it in buying a license from the Quebec authorities, so that even if the moose are not quite so plentiful, they will have a chance of seeing something more than ancient tracks, the sight of which is just pure irritation.

I speak from the sportsman's point of view, and if the object of the authorities

has been to preserve their moose from the men whose money they have taken, then I commend them, and say that they have done well.

I fancy that in spite of the large staff of forest rangers that infest the Timagamingue section, a number of moose are slain out of season, shot down and left to rot. At least I was told by the Indian Cheegie that he knew of two moose just on his own lands that were killed in the summer by "Keetchie Mokoman," Americans, and left where they fell.

If this is the case, then the only cure for it will be the long talked-of organization of guides into a licensed body, whose duty shall be to act as game wardens, ex officio, or in case of a danger of blackmail being levied by dishonest guides, the only alternative will be the prohibition of carrying firearms even by the guides themselves out of season.

My First Bighorn.

BY JAMES BREWSTER.

My ambition for some time had been to secure a large mountain sheep's head. I had shot several ewes and small rams, but had never been able to secure a trophy that was worth preserving, although I had worked hard. But I found in after years experience that it was not altogether hard work that accounted for sheep heads, but a knowledge of the habits and a bit of luck. On October 1st, 1891, with one saddle horse, a pack horse, and a sheep dog, I started on this particular trip, during which I secured my first bighorn.

The country I intended to visit lay almost due north of Banff Canadian National Park, about thirty miles. The first day I made about fifteen miles over a pretty rough pack trail. The next day being much better going, I made my camp early in the afternoon within a couple of miles of where I intended to hunt. I was up before daylight the next morning and cooked my breakfast over a small camp-fire, and then put up a lunch in case I might be out longer than I expected.

Just as it was coming daylight, I started in the direction of some grassy plateaus where I had seen sheep on several other occasions before.

At 7 o'clock I had gained a ridge overlooking a grassy side hill. At this point I intended to stay at least the best part of the morning, hoping that some sheep or goats might come out to feed. I had not waited long before I heard some stones rolling to the west and a little above me. I could not see what it was, but knew it must be either a sheep or a goat.

Presently I saw, about three hundred yards away, an old ewe and a lamb about six months old coming around a corner of the ridge I was on. My hopes fell. The wind was blowing almost straight toward them and I thought they would soon scent me and be off, but anyone who has hunted in the mountains knows how the wind acts. You might think a breeze was blowing straight for a particular point, and in about fifty feet change and blow almost at right angles. Anyway this seemed to be the case, for the ewe came walking along followed by several others. I watched them closely, but no big ram could be seen. I had not waited long when I heard a noise further up the mountain, and looking in that direction I saw just what I was waiting for, a monster ram, with as fine a pair of horns as I had ever seen before. He was too far away for me to reach with my rifle, which was only a .44 calibre. I decided to wait until he came a little closer, as I was very anxious to make sure of him. He would take a few steps along and then nibble at the grass. One who has not experienced the sensation cannot imagine what it is to lay in wait for a large animal to work close enough to get a shot at, and you expecting every minute for him to start in the opposite direction. Fortune

seemed in my favor. Something startled them. They either scented me and miscalculated my direction, or something behind frightened them, for the ram threw his head and ran down to the other sheep, then they all came racing almost straight in the direction I was concealed. I let them come until they were about one hundred yards from me. Then I raised my rifle over the rocks I was hiding behind.

The movement was very slight, but it was noticed by the ram who was in the lead. He stopped almost instantly. I knew this was my chance. I glanced along the barrel, and fired. The whole herd wheeled and started to run at full speed up the mountain. I had time to fire another shot before they disappeared around the corner of the ridge.

I pulled the collar of my sheep dog, who was getting pretty excited by this time, and let him go in pursuit of them. He bounded off as fast as he could run, and by the time I had reached the place where I had seen the sheep last, the dog had overhauled the bunch and singled out the ram, who was limping badly. The dog and the ram were now about three hundred yards from me. I was afraid to shoot for fear I would hit my dog who was worth more to me than the sheep was. The dog detained the ram so that in five or ten minutes I was within less than one hundred yards again. I took another shot and the ram dropped on his knees. The dog then pounced on his neck and succeeded in holding him down until I arrived and put the brute out of misery with my hunting knife.

I soon skinned and quartered him, and the next forenoon, with the aid of a pack-horse, I landed my first bighorn in camp.

The King's Guns.

Knowing the keenness that the King has always displayed for shooting, a visit to the royal gun room is indeed a pleasant experience for anyone with a spark of enthusiasm for guns and rifles. In endeavouring to convey some notion of the beauties of a collection which represents the weapons of a life's shooting it is difficult to know where to begin. Not very many steps from the game larder an entrance may be gained into a ground floor apartment, known as the lower gun room. Here the weapons are brought in after shooting, and the ample bench accommodation provides every facility for removing the traces of the day's work and getting them once more into good fettle. The gun room proper is, however, reached by a flight of stairs, says a writer in the London Field. It is in the upper gun room where the treasures are kept, and where, no doubt, many a guest at Sandringham finds the opportunity for spending a pleasant hour or two.

Like all other good sportsmen, his Majesty knows better than to retain possession of the guns which have been in constant use during the shooting season. He sends them to his gunmaker so that they may receive a thorough cleaning and general overhauling. The gun cupboards are by no means denuded of their contents in spite of the absence of a dozen or more at Mr. Purdey's. Probably among the most valued of the weapons bearing their own record of presentation is a double-barrelled hammer rifle by Purdy inscribed as a gift from the Queen, with the date December 24, 1867. Quite close to it is a gun which well deserves the special distinction of one day becoming a national possession. It is a 24-bore muzzle-loader by Westley Richards, and it is noteworthy as having been the first gun that the King ever possessed. More than this, it has since served as the medium for giving early instruction to several other members of the Royal family as they have reached the age of wisdom at which loaded firearms became permissible.

It would need a more systematic investigation than was necessary for our purpose to place the weapons available

for inspection in anything like order of date. We saw, for instance, a Purdey muzzle-loading rifle with the old two grooved channels for which a specially moulded bullet is adapted, reminding one of photographs of the planet Saturn with its encompassing rings. Then, again, we found a pair of hammer guns by Charles Lancaster, with his patent system of sliding fastening for the barrels. Next to this was a D. Egg flint-lock rifle with seven grooves, and inlaid with the royal arms. A pin-fire Westley Richards smooth-bore double shot gun comes next in order on our list, and following it a pair of Purdey 12-bore hammer guns inscribed "Albert Edward, Nov. 9, 1868," evidently a birthday gift. Then we come to two weapons whose makers' names are no longer so familiar as they may have been in the past. William Moore, who described his station in life on the top rib of a pair of hammer guns as maker to H.R.H. Prince Albert, carried on business in those days at 78 Edgware Road. George Smith, of 40 Davies Street, Berkeley Square, W., was responsible for a pin-fire rifle with five grooves. The barrel was of Damascus, and it was sighted up to 500 yards.

Turning from these examples, selected at random from the more ancient weapons, we may cast our eyes upon a double-barrel smooth-bore shot gun by Von Montagu of Ghent. It bears the inscription, "Given to his Royal Highness Prince of Wales by Leopold King of the Belgians, Aug. 13, 1852." The gun is a marvellous example of fancy carving and metal work. The comb of the stock is carved in the form of an eagle's head, which has been fashioned with a dexterity of touch and a vigor of style that show the workman to have been a true artist. On the face of the stock are other groups of a sporting kind in bas relief, and of an equally meritorious character. The silversmith was evidently put on his mettle to make an altogether exceptional trigger guard. His conception of a fancy way of expressing this necessary part was to form it as a greyhound with an appropriately lean length of body extended in the act of coursing. The outlines have been ingeniously adapted to make the necessary curvature for the accommodation of the trigger. The lock-plates are constructed in the form of silver geese, their extended necks, added to a certain amount of artistic licence, having provided the necessary outline. The hammers are chased and wrought into the shape of dogs' heads. Finally, the ramrod is held in place by silver rings, into which have been worked the figures of a fox and two swans. Altogether the weapon is of a kind that is never likely to be duplicated. We do not remember to have seen any exact representation of a weapon which is inscribed "Husqvarna Capefabrik." It is a double shot gun, the barrels of which are fixed solid with the body. The breech face is, however, hinge mounted on the system associated with Remington rifles, and the hammers have identically the same method of holding the breech in place after the pulling of the trigger.

Of highly ornate weapons there are just a few richly chased and ornamented guns and rifles, but, curiously enough, they do not bear the evidence of having been used to the extent that their makers in many instances no doubt intended, ornamentation having evidently been considered more suitable for the gun cupboard than for the pheasant covert or the deer forest. The weapons which show the greatest signs of genuine hard work are the least ornamented of all. The shot guns go in sets of three, and possess to a marked extent the characteristics that have made the name of Purdey famous. They handle and balance as only a carefully made shot gun can do, and to the expert it is evident that they have been specially built for driving.

It is unnecessary to enter into the minor details of adjustment that mark the guns made specially for his Majesty, for, like everybody else, he finds from experience that certain special details of construction suit him better than others. The most marked characteristic, for instance, is an exceedingly light pull on the right trigger, and it also lies a little further back than is consistent with ordinary practice. It may be added that his Majesty is evidently partial to the pistol stock, and that the left barrel is choked rather more than is usual for

driving. In addition to the ordinary shot barrels, one of the guns has been fitted with a pair of ball barrels for driven deer, which handle very comfortably. The rifles in current use include a double .303 and a double .450-.400 for high velocity Cordite ammunition. The former is a great favorite, but the latter is not in such great request, since his Majesty does not indulge in the class of shooting in which the special merits of such a powerful cartridge would be marked. As regards ammunition the King, like other sportsmen, is guided by the nature of the work to be done. At any rate, there is no gainsaying the fact that he is a convert to the 33-grain bulk nitro, and the charge of shot is the 1 1-16 oz. which is reckoned its appropriate counterpart. The size of shot which his Majesty used at the close of last season's shooting was No. 4, this being found the most effective for strong flying birds that remained to be thinned down.

A School of Forestry.*

The question of the establishment of a School of Forestry has been under discussion in the Province of Ontario for some time recently. And that such is the case is only the result of the evolution of conditions in connection with the lumbering industry which is taking place in the province. When the theory of management of timber lands was that the land should be cleared once for all and made use of for agricultural purposes, the practical part was comparatively simple. But this theory is now completely reversed, and the thinking portion of the public who appreciate at all the problems that face this industry have accepted the conclusion that it is to the advantage of the individual and the state that certain lands should be kept permanently in timber and managed with this end in view. And a further step has been taken to emphasize the interest of the state in this question by the setting apart of forest reserves, in which the sphere of control of the government is to be largely extended. Thus from both the public and the individual point of view the necessity for a more scientific (in the broad sense) management of timber lands is becoming more clearly apparent.

A consideration of the present conditions and the objects to be accomplished will be necessary to an appreciation of the qualifications required by the men who are to deal with them. And at the outset it may be promised that the work that has to be done must be practical, must be done under business conditions, or at least with business conditions kept in view. Theory must be made subordinate to practical considerations. The problems of each country are its own, and must be worked out by its own citizens. The light obtained from the experience of others is at best but a side light, and cannot be trusted to unreservedly.

The first object is the removal of the matured forest, and for this the laying out of roads, the improvement of streams and other works, which premise some engineering knowledge and skill, must be done. The cutting must be carried out so as to provide for the quickest and best reproduction of the tree or trees desired. This means that injury to the young growth must be avoided, that proper provision for reseeding should be made, that trees left standing should be able to maintain themselves, and that as far as possible the less valuable trees should be eliminated. For this purpose some knowledge of the growth and seeding of trees is necessary, as well as practical and business ability. The elimination of undesirable species is a difficulty, for the cutting out of the valuable trees only gives the former the greater opportunity to occupy the ground. The reproduction of the white pine in Ontario is made surer by the sweeping of the whole ground by fire than by the cutting out of the pine. The fighting of forest fires may be almost a science in itself, while at the same time a matter of practical moment. Insect and other destructive agencies in timber demand

* Contributed by the Officers of the Canadian Forestry Association.

study, although the means of combatting them in the large forests of low stumpage value existing in Canada are not easily applied. There is also the great deforested and rocky belt which presents an immense problem in reforestation. To this must be added the increasing of woodlands in old settled districts.

The scientific attainments required for a forester in Canada are not as great as in countries where a more elaborate system of management can be carried out. What is required is not a biologist, or a botanist, or an entomologist, but a forester. The knowledge of the expert may be called in when necessary, but the practical work is what is to be provided for. That a man should have the fullest theoretical and scientific knowledge will be, not a hindrance, but a help to him, if it does not blind him to the work he has to do, and the presence in the forest of young men who have their eyes open to being something more than cutters of trees, must mean an increasing knowledge of those processes of nature which enter into the solution of the forestry problem, and which will become more important as the system of management becomes increasingly intense. There seems to be no reason to doubt that the practical side of the question will be kept in view, for in any suggestions made as to the establishment of a School of Forestry there has been coupled with it a recommendation that provision should be made for practical work in connection therewith. The establishment of such a school, wherever it may be located, will be an important forward step, and if the management is wise and strong, there need be no reason to fear for the success of the experiment, or that the demands of the situation will not meet the provision thus made for it. There is already a School of Mining in Ontario, which has been successfully carried on for some years, and mining is not capable of becoming as exact a science as Forestry, while its importance to the community on the grounds of public revenue or in other respects is not nearly so great. Agriculture has its colleges and schools, and the results of their work fully justify their creation. That the Province of Ontario should establish a School of Forestry is, therefore, not only a step capable of the fullest justification, but is a fair, and perhaps it might even be said, a tardy necogni of the necessities of the great lumbering industry.

The Lumber Supply of the West.*

Under the heading, "Without Lumber no Settlers," the American Lumberman, in its issue of the 15th November last, calls attention to the large immigration from the United States to the Canadian West, and makes the statement that owing to car shortage or other causes many prospective settlers have been unable to obtain lumber for building, and have been compelled to return whence they came. The reports received by the Canadian immigration officials do not furnish any confirmation of such a statement, and evidently the view of the situation so expressed is largely foundationless, or at least greatly exaggerated, but still the article impresses a subject that is of the greatest importance. A large part of the West is a prairie country, practically treeless, and as a supply of lumber is a prime necessity for residence, it must be provided for if the development of the country is to be continued and if comfort and prosperity are to be secured to the settlers.

This is no new proposition. In the Annual Report of the Department of the Interior for the year 1875, the then Minister of the Interior, Hon. David Laird, said:—

"During my journey from Fort Garry to Qu'Appelle in the summer of 1874, nothing impressed itself upon my mind

* Contributed by the Officers of the Canadian Forestry Association.

more than the treelessness of a large portion of the country over which I passed. Day after day, as I crossed the wide extent of prairie utterly destitute of trees, the question presented itself: How is the settlement of these prairies possible if the settlers are without wood for fencing, building or fuel?"

At that time an attempt was made to meet the need by the passage of the Forest Tree Culture Claim Act, which provided for the grant of 160 acres of land on condition of planting thirty-two acres with forest trees within a period of six years. Under this Act 253 claims were taken up but only six sufficiently complied with the requirements to entitle them to patent. The failure was due partly to lack of knowledge of tree culture, partly to the slower returns from tree growing as compared with wheat growing, and partly from the lack of persistent effort on the part of the Government and the settlers. The problem has now again, however, been approached by the Government, but in a different way. Through the Forestry Branch of the Department of the Interior, it now undertakes to supply settlers with seed or cuttings and to give such expert advice and supervision as may be required to make the plantation a success. Application under this scheme from all parts of Manitoba and the Territories have reached over the thousand mark, and a sufficient supply of plant material has been assured, but to reap the full benefits of the scheme, extension is inevitable, and whatever increased expenditure is required will be fully justified by the necessities of the present situation and the greater demands which the development of settlement will occasion. The policy should be permanent, should have continuity, and the importance of the interests involved demand that there should be no looking backward until the desired ends have been assured.

But this is only one part of the question. The supply of sawn lumber cannot be provided for by farm wood lots and must be looked for elsewhere.

The figures in the last Annual Report of the Department of the Interior show that in the Province of Manitoba about 150,532,300 feet B.M. of lumber was disposed of in the year ending 30th June, 1901, of which 31,500,000 feet was obtained in the province; 90,000,000 feet came from Ontario (25,000,000 feet of which, however, was manufactured from saw logs brought in from the United States; and 16,000,000 feet from British Columbia. In the North-West Territories 13,500,000 feet was manufactured and sold, but there are no figures as to the quantities imported, although probably the largest import was from the Province of British Columbia. The population of Manitoba in that year was 254,947, and that of the North-West Territories 160,000. The Minister of the Interior speaking recently at Toronto estimated the present population of the Territories at 250,000, and stated that he would not be at all surprised if by the first day of July, 1905, there were about 750,000 people in Manitoba and the North-West Territories, and perhaps a million. If this anticipated increase of population takes place, the demand for lumber will be greatly increased, and therefore it is important to consider the sources of supply and their possibilities.

36,000,000 feet, manufactured or otherwise, are imported into Manitoba from the United States, but this quantity is decreasing and the production from the lake states has shown a steady decline for some years.

A large importation is from the Province of Ontario, and the very efficient system of forest protection which that Province is working out is a matter of interest and deserves the moral support of all those dependent on its supplies.

In the Province of Manitoba and in the Northwest Territories, the Dominion Government has undertaken the preservation of the timber supply in the first place by establishing forest reservations, such as the Riding Mountain, Turtle Mountain, Moose Mountain, Foothills and others, where the lands are not suitable for agriculture or control the sources of rivers and streams, and secondly by organizing a forest protection service which, at a small cost, has prevented any very serious loss of timber by fire since its inauguration two years ago.

In the Province of British Columbia, a well-forested Province, and the natural

source of supply for the prairie country, the Dominion Government controls what is commonly called the Railway Belt, being a strip twenty miles on each of the main line of the Canadian Pacific Railway, and has extended its fire ranging service, and it is here that the value of this service has been most strikingly exemplified. Not that the starting of fires has been absolutely prevented. Unlike the remainder of Canada, the Coast district has this year had a dry season, and therefore fires were quite as frequent as usual, but these fires were extinguished in their incipiency, and the loss from them was practically nil. Contrast this result with what occurred just across the international boundary.

In the State of Oregon, as reported in Forestry and Irrigation, an area of more than 170,000 acres was burned over, and 2,124,000,000 feet of standing timber killed. The total loss is estimated at $2,955,000, the timber being valued at $2,449,000, farm property at $315,000, and saw mills and manufactured forest products at $149,000. Two people perished in the flames, eighty-six families were left homeless, and two hundred other settlers suffered a partial loss of property.

In Washington, fires ran over 434,000 acres, sixteen lives were lost, one hundred and sixty settlers had their homes destroyed, and hundreds more suffered some loss of property. The total loss is estimated at $6,600,800, $607,000 being the value of farm property, and $5,751,800 the value of the timber. The quantity of Douglas fir destroyed is placed at 5,026,800 feet. Other fires in this State caused a loss of $2,256,300, bringing up the total loss for these two States to $12,767,100.

The expense of an efficient staff of five rangers would not begin to pay the interest on such a sum, and here is the conclusion of William T. Cox, of the United States Bureau of Forestry, who has made a special investigation of these fires, as to the possibilities of their prevention. Speaking of the fires in Oregon, he says:

"Had timely measures been taken, I feel satisfied that all of these fires could have been extinguished before becoming serious, and had there been rangers in these localities, it is doubtful if any fires would have occurred, barring, of course, such accidental ones as that set by the locomotive.

"Commendable work has been done by the Government rangers in the forest reserves, and the obsence of serious fires in them should serve as an object lesson to the States of Oregon and Washington."

In view of these facts, can anyone doubt the wisdom of the policy of guarding the forests upon which the Western prairies are dependent for their timber supply? In the face of the calamities worked by forest fires to our neighbours to the sonth of the International boundary, should not all citizens interested in the development of the West and of Canada unite to urge that the forward policy already undertaken should be developed to the full needs of the situation and carried out with that persistence and thoroughness which alone will ensure its success?

A Royal Sturgeon.

Not often is a fish weighing 50 lbs. taken on an 8 oz. rod, as was the case in this instance. The struggle lasted over an hour

A 35-POUND MASCALONGE.

This fish was taken last summer by a New York angler in the French River.

Salmon and Trout.

BY ST. CROIX.

Having just finished a delightful book with a title as above, I propose to discuss its contents in ROD AND GUN. This is one of a series of books edited by Caspar Whitney, which will go to make up the American Sportsman's Library, of which three volumes have already been published, while seven others are promised. As a rule I consider books of this sort somewhat of a disappointment, as the best works with which I am familiar, have almost always been written by sportsmen who had given many years of their lives to their favorite diversions, and had at length written out of the very fulness of the knowledge that was in them and not at the bidding of some editor-in-chief. In other words, the two classes of book stand in the same relation to one another that the individual aim of the hunter does to the old-fashioned volley of the soldier.

But the volume before me was mainly written by one of the best anglers this continent has yet produced. The late Dean Sage, whose untimely death at his fishing camp on the Restigouche last summer was so widely deplored, wrote the history of the Atlantic salmon, which occupies the first 130 pages of the book. This is by long odds the best description of our Canadian salmon fishing that has yet been written, as might be expected, seeing the pen that wrote it. A few pages, good enough in their way, though not going into the subject very deeply, have been contributed by Messrs. Townsend and Smith on the Pacific salmons, and Wm. C. Harris occupies the remaining chapters in describing what he calls the "trouts" of America. Mr. Harris has been a prolific writer, but he hardly gives one the impression of being a practical fisherman, and consequently what he has written falls far below that part of the work which was contributed by Dean Sage.

Certain questions have been discussed by salmon anglers with great vigor for the past two or three generations, and it does not seem as if any final answer to them has yet been given, so one turns naturally to those parts of Mr. Sages' writings which discuss these moot points, as the ideas of so practical an angler must carry great weight. The question of a rod is a highly important one, some men preferring a limber Castle Connell and others a stiff Scotch rod, these being the extremes. Mr. Sage ordered a rod sixteen feet in length from Farlow, of London, in 1887, and found it an excellent one, but his favorite was a greenheart, by Forrest & Son, of Kelso, Scotland, fifteen feet long, that he used for twenty-five seasons, and with which he killed a great many heavy fish. Of it he says: "It has been varnished a few times and some of the whippings about the joints have been renewed; but it is as good as ever, including the two tips, neither of which have been broken." Further on he says: "I think a good fifteen foot Forrest rod equal to any I have seen. The American split bamboo rods have great power and are light and delightful implements to handle, but many of them have been found subject to a dry rot near the joints, which develops generally after one or two season's use, when the rod will sometimes break at an ordinary cast without the least previous sign of weakness. This general tendency, which perhaps may be prevented by great care of the rods, has made them unpopular here (Restigouche), and in spite of their many advantages they are not very much used. It is rather strange that trout rods made of the same material, and by the same makers, are as durable as any other rods. As between jointed and spliced rods, it is hard to decide, though probably the jointed one would carry the preference. I believe, however, that a spliced rod is more even in its cast than a jointed one, from having no part of it, as ferrules, stiff and immovable. For the same reason the jointed rod would be more likely to break at the joints or any

of the different sections than would a spliced one. Perhaps, however, in actual work the annoyance in putting up and taking down more than counterbalances the slighter advantages I have named in the spliced rod."

So thoroughly do I agree with Mr. Sage's preference for the greenheart, that on no account would I trust to spliced bamboo for my season's salmon fishing. Some years ago I had an opportunity to compare the casting power of a 16½ foot Castle Connell, spliced rod, which cost me, I think, $6, in the west of Ireland, with that of a $75 split bamboo, by a New York maker, whose reputation is second to none. The cheap, insignificant greenheart simply smothered the other rod. It cast farther, picked up the line more cleanly and killed fish in less time.

With regard to flies, Mr. Sage was of the opinion that a Jock Scott (should it not be Jock O' Scott's?) Silver Doctor, and Fairy, in three different sizes, would be sufficient for any book, but as he sapiently observes, few anglers would have sufficient self-control to start forth with so small a choice of flies, and the general practice is to take very many more than can possibly be needed, to be either lost, given away or moth eaten.

Mr. Sage was a thoughtful man and a keen observer and this article on the Atlantic salmon is really the pith and kernel of his life's experience as a fisherman.

Messrs. Townsend and Smith have, unless I am mistaken, written considerable upon the various species of salmon found in the Pacific and, consequently, their paper is quite trustworthy, so far as its facts go, but it seems to me they missed an opportunity when they neglected to occupy a few more pages with some good descriptions of actual fishing on the coast.

Salmon and Trout, is published by the Macmillan Company of London and New York.

Adaptation in Fishes.

BY PROF. EDWARD E. PRINCE, D.C.F.

Fishes are frequently classed as fresh-water species and marine species, but there are many which occupy a kind of neutral position, and have the habit of spending part of their time in fresh water and part in the sea. The salmon, sea-trout, smelt, striped bass, sturgeon, shad, &c., are familiar examples, many of them being anadromous, and ascending into fresh water for spawning purposes, while a few are catadromous, like the eel, and deposit their spawn in the sea. The power of adaptation implied in this change of environment is most remarkable, and appears, in many instances at least, to be acquired during the life of the individual. Thus, a newly-hatched salmon soon dies if placed in sea-water, and the eggs of that species are also fatally affected by the same treatment; yet later in life the salmon lives indifferently in salt water and in river water. Further, many species, which normally migrate, have lost the habit, and, like the land-locked salmon, smelt, flounder, or herring, may pass their days without ever tasting salt water. Some curious instances of extreme changes of habitat in certain mollusks are on record, as, for instance, the bed of cockles (*Cardium edule*) which was described before the Wernerian Society in Edinburgh in 1825 as existing in a Yorkshire peat moss forty miles from the sea. These shell-fish lived in a sandy channel, communicating with the river Tees, and were precisely like those distributed over the vast beds, eight or ten square miles in extent, at the estuary of that river. To the taste, however, they were distinctly less salt in flavor. A Mr. Brand, more than a hundred years earlier, had described, in an account of the Orkney Isles, a bed of cockles in the fields a mile from the sea. They were in a deep furrow to which salt water might have had access during an exceptional storm. Specimens of the sea-whelk

(*Buccinum undatum*) have been found in a fresh-water lake on the island of Yell, a mile and a half from the sea, and as the apex or tip was fractured it was thought that sea-birds or crows had carried them to their new location. Yet, the shell being somewhat thinner in texture, and more distinctly banded, it seems more probable that they had lived for a long period in their fresh-water environment, and thus differed from the marine forms.

Oysters, as is well known, flourish in brackish water, and can endure transference to water almost destitute of salinity; but they do not appear to breed or maintain a healthy state, they merely fatten and increase in size.

Many fishes in the same way are unfavorably affected if prevented from performing their usual migrations from or to salt water. Dr. Barfurth discovered that the ovaries become diseased, and the eggs degenerate in fishes which are prevented from normally migrating. The same observer has recorded the fact that the ill-effects reappear in the following season, the eggs and brood of the fish, permitted after confinement to ascend to the spawning grounds, being very inferior and clearly affected detrimentally. The eminent Scottish authority, Professor W. C. McIntosh, some years ago described flounders that became egg-bound and swollen while confined in salt-water tanks; and ultimately they sickened and died.

The results, in all cases, are not so unfavorable. Sir J. G. Maitland kept some sea-salmon fry from March, 1881, when they were hatched, until 1884, and took the eggs and milt, so that he secured young salmon fry of small parent fish (smolts) which had never been to sea. Dr. Francis Day has told us that some of the young brood had attained a length of 5½ inches in 1886. The retention of sea-salmon in fresh water is found usually to retard their growth, and in one of the earliest experiments (at Lier, in Norway) the weight reached in five years was under two pounds, less than one-tenth of that normally reached by migratory salmon. Sea-salmon planted in Lake Huron prior to 1883 were reported by the late Mr. Wilmot to be smaller than those found along the coast. The ouananiche of Lake St. John, P.Q., like their land-locked congeners in Lake Onawa and other waters in Maine, and the Chamcook Lakes in New Brunswick, are smaller than sea-salmon. In many cases access to the sea is possible; but if from some geological or other natural cause the fish were originally prevented from descending to the sea, but catadromous habit appears not to have been resumed, partly no doubt owing to the abundance of food in their fresh-water habitat. Land-locked smelt are very often abundant in waters containing land-locked salmon, and they afford an amble supply of food. Pacific salmon exhibit the same phenomenon, of which Kennerley's salmon is an example; but the spring salmon artificially land-locked in California in 1875 or earlier, bred and their progeny reached a weight of eight or ten pounds, though on account of scarcity of food, another series were found in nine years to barely reach a weight of two pounds. The spring salmon or quinnat is a large species ranging from 15 to 50 or 60 pounds or even more. The salmon retained at Tadousac, and in certain small lakes adjacent to to the Restigouche proved to be stunted, and weighed less than a quarter the weight normally reached at the age of the specimens referred to. The adaptability of smelt (*Osmerus mordax*) has long been known. Nearly seventy years ago Col. Meynell acclimatised smelt and bred them in a small sheet of water, and quite a number of lakes in New Brunswick, Lake Utopia and others contain land-locked smelt.

Only one or two members of the cod family (*Gadidæ*) are indigenous to fresh water. All the rest are marine, the fresh water species being the cusk or burbot, often called ling or lawyer. The tom-cod (*Microgadus*), while it prefers saline or brackish water, can survive in a fresh-water environment, and occurs in abundance in Lake St. Peter, below Montreal. An allied form, the silver hake (*Merluccius bilinearis*) is recorded as abundant in Darling's Lake, near Rothesay, N.B., attracted from the sea by the ascending schools of gaspereaux, which are their favourite food. In the Baltic Sea, the true cod, as well

as the haddock, pollock, and other gadois, occur, but each only one-quarter of the size which these fishes attain in the sea. In the Bras d'Or Lakes cod are stated to be large (sometimes 56 or 85 pounds (but the head is of disproportionate size, as though they were not well fed. They are caught through the ice at Whycocomagh, far inland and in water of low salinity.

Of the herring tribe at least five species come up into fresh water annually, and some have become land-locked like the gaspereaux or alewives (*Pomolobuspseudharengus*) of Lake Ontario and Lakes Cayuga and Seneca (N. Y. State) and other inland waters. They are often erroneously called shad or menhaden, and they die in immense numbers in early summer owing to some unfavourable circumstance connected, doubtless, with their non sea-going habit. True sea-herring are not known to be land-locked in Canada ; but in Iceland and in the Baltic a fresh-water variety occurs. Some of the Baltic herring were kept for a long period in tanks by Professor McIntosh in Scotland, the water supplied to them being perfectly fresh. They were somewhat stunted.

Many fish when permanently shut off from the sea improve in size and table qualities. Dr. J. C. Mitchell, an authority on the fishes of Egypt, affirms that three species of mullet reached a large size and were of finer flavor after retention in fresh water than those in salt or brackish water. In Florida red fish (*Pagrus*) confined in a fresh-water lake were found 38 pounds in weight, and improved in delicacy of flavour, while numerous other marine species survived the change, but some sharks and sting-rays succumbed, owing, it is surmised, to the winter cold of 1885. The shark tribe are essentially marine, and ill-able to adapt themselves to non-marine surroundings. I know of one record only of a marine species found far from the ocean, viz., a questionable instance of a dogfish, which was stated to have followed the salmon schools for a distance of 1,500 miles from the Pacific shore. The fish was recorded to have been killed up the Bruno River, Nevada, by the wheel of a waggon crossing a ford. There are, it is true, some fresh-water sharks, like *Carcharias gangetica* in the Ganges, and Senegal saw-fish, also Indian and South American rays (*Narcine, Torpedo*, &c.) Certain whales also are non-marine, such as the small *Platanista gangetica* in the Ganges, and *Inia* and *Pontoporia*, belonging to the Grampus and Porpoise family, and found in the Amazon and other South American rivers. The white beluga ascends the St. Lawrence for 150 miles, and goes up the Saguenay river for some distance.

The carps, of which our suckers and mullets are examples, are credited with much plasticity. The German carp can not only endure but survive changes of a remarkable character, living in mud and existing far from lakes or streams for a long period. Certain suckers can endure alkaline and other chemical impurities, and an extraordinary high temperature. In that wonderful volcanic geyser area, the Yellowstone Park, Professor Jordan found suckers and chubs in water of 85 degrees F. and 88 degrees F. and young trout in a temperature of about 75 degrees F.

The catfish and bull-heads are notoriously tenacious of life. Thoreau, indeed, said that *Ameiurus nebulosus* opens and shuts its mouth for half an hour after its head has been cut off ; but there are only one or two questionable instances of their surviving removal from favorable surroundings. More experiments are, however, desirable. If, as Bloch stated, the delicate grayling (*Thymallus*) can flourish in brackish water, contrary to Sir Humphrey Davy's dictum that salmon and trout will do so, but the fastidious grayling cannot do so, it is possible that the variety of fishes capable of acclimatisation in saline, alkaline or other waters may be considerable. The sticklebacks, while normally frequenting fresh water, except *G spinachia*, flourish in brackish water, and in shore pools reached by high tides. The marine flat-fishes, the flounder, &c., are found up rivers far from the sea, while the striped bass has been successfully retained for years in fresh water, but the climax is reached in that paradoxical fish, the blenny of Ceylon and the Celebes, which habitually live on damp rocks, leaping from one to the

other, and shunning the water to avoid being drowned! *Periophthalmus*, as it is called on account of its projecting eyes, leaps, when pursued, like a frog, and, as Dr. Günther says, seems to "prefer escaping in that way to swimming beneath the surface."

The plasticity and adaptability of various fishes to new surroundings is not only a matter of peculiar biological interest, it is of eminent practical importance. Hence the brief sketch which I have prepared has been amplified and in a somewhat detailed form will appear as a special report in the forthcoming Blue Book of the Fisheries Department to be laid before Parliament at the approaching session. The subject is one needing fuller investigation. If barren waters remote from the sea, and unfavorable, from conditions of temperature, alkalinity, and the like, for indigenous inland species, can be stocked with fine species of fish, marine or brackish in their habitat, the possibility of conferring immense benefit upon the public becomes plainly apparent. From our present fragmentary knowledge it may be surmised that no small number of species have such powers of endurance as to facilitate the work of acclimatization.

In Days That Are Past.

BY "SNIPE."

About the Fall of 1871 I took my gun, and as almost a complete stranger in Canadian woods, and certainly never having seen a partridge in this country, I wandered off with my spaniel towards the north of Peterboro' town. My dog knew more about the bush than I did, and had been taught to tree partridges, did not chase hares and squirrels, and was altogether a most desirable companion. I was getting over a snake fence, and my dog had just passed though it, when from the top rail, off went the first partridge I had heard or seen, and up on to a bough of a neighbouring tree underneath, which my dog barked heartily with his eyes on the bird. I would not take a sitting shot, and when the bird flew off on the other side of the tree, I could not see it, but the dog knew enough to follow it to another tree and there barked until I approached. There was not so much foliage at this place, and I had a fair shot, and was soon examining my first Canadian partridge.

I shot several more that day, and once a right and left. I came across red, black and grey squirrels, the latter new to me. There were also lots of hares. I passed over a farm of a very kind farmer, of the name of Collins, who gave me some nice apples and offered me other refreshments. I left him with regret, and at the bottom of one of his fields where he had been making a drain, I came across more woodcock than I had ever seen before, and what sport I had! I had never seen an American woodcock previously, but I found them then, as often afterwards, unequalled for sport with the gun, although when snipe take to the bush, I consider them harder to hit. Mr. Collins was rather surprised to see me so pleased because I had killed such a lot of his little birds and had no idea of their value.

Whilst we were talking a flock of geese flew close over our heads on the way to the river. I saw them coming and heard them too, but in those days of muzzle loaders I had no time to change my No. 8 shot for a heavier charge, so they honked away to their hearts content and were soon out of sight.

Shortly after this excursion, when it was found that partridges were so plentiful in the woods all around the town, a small 22 cal. rifle was carried instead of a shot gun, and after the dog had treed the birds, a ball through their head soon brought them to the game bag, and many a good day's fun I used to have killing

lots of birds without a gun. One evening when returning over the Mud Lake Railway, then a disused line overgrown with thistles, etc., I saw flock after flock of wild pigeons resting on the branches of a dead pine near the track; they stayed only a short time and made room for others. I crept along the far side of the bank and got into a "cow ketcher" hole facing the tree, and from this advantageous point, unseen by the birds, I fired away at them all my cartridges and was glad to pick up from under the tree enough dead birds to make a large bundle and afterwards many good pies.

I believe a few partridges are still to be found here. A law that prohibits the selling of them for a term is not sufficient. Let no one shoot them nor eat them for a time, and they will rapidly increase. As long as $1.25 a brace is paid right and left for them, and presents of them are allowed, the birds will be killed to supply a secret demand, and they will still find (in barrels) purchasers in the States. The protection for them at present is no better than that for some ducks in Quebec, from 1st to 15th September. The law allows the open killing of varieties and consequently they are all shot, blacks included. Let no ducks at all be shot before the 15th September, no half and half measures. Do away with spring shooting. No sportsman will shoot then.

Stop the shooting of our wild fowl by thousands when the winter takes them to Mexico. The little we can do here in the way of preservation is as nothing when you read of fortunes being made there by their wholesale destruction by electric discharges to supply a large demand at $1 a dozen.

Slaughter of Deer.

BY SAMUEL GIBB.

The wholesale slaughter of game by the Chilcotin Indians, is a subject that ROD AND GUN should take up and endeavour to put a stop to. If permitted to continue it will mean the entire disappearance and destruction of all game in this section of the province. For years West Lillooet has been noted as a sportsman's paradise, but hunters have told me of late that they had travelled for days over ground traversed by the Chilcotin Indians without seeing a sign of deer or mountain sheep, all shot down. The Chilcotin Indians come over generally in the month of May and range from Cadwallader creek on Bridge river, to the Gang ranch. They travel in separate bands, numbering 30 to 40 in each, and they will kill every animal they come across, irrespective of sex or age. Their mode of hunting is to encircle a large track of land and drive all the game to a particular place, where they slaughter them at short range. From May till the beginning of October these bands of Indians live entirely on game, with whatever wild roots they may gather on the mountains. They dry all the meat, after their daily wants are supplied, and pack it back to Chilcotin. Indians from this part who have seen their deserted camps, describe them as being mountains of bones, veritable Golgothas. Since the Chilcotin Indians have started hunting in this section game has rapidly decreased. Take a low estimate of 150 Indians living on deer and mountain sheep chiefly for five months annually, not to take into account the amount of dried meat they pack home for their winter consumption, each Indian would kill eight animals monthly, which would mean about six thousand every season. If this slaughter is permitted to continue, deer and sheep in this section will be soon entirely exterminated, and if the Indian Department will not do its duty, our provincial government must take the matter in hand and settle it.

The Butternut.*

Who does not remember the stained fingers that were a necessary accompaniment of the butternut season, that deep brown which resisted all the ordinary cleansing processes and which could only be washed away by time? But what mattered stained hands and fingers when, by the persuasive knocking of a stone, with a rock or a fence rail as a resting place, the sweet kernel of the butternut could be induced to emerge from the protective habitation provided by nature, to tempt the appetite and please the palate of the young gourmands who were familiar with the location of all the best trees in the neighborhood. And it may be that, in the same way as Charles Lambe's Chinaman discovered the virtues of roast pig by licking the fingers that had come in contact with one of these animals which had been accidentally roasted by the burning of his dwelling, that the method of dyeing cloth which was practised by the early settlers was discovered. The butternut color was a brownish yellow, somewhat like a dark khaki. It was, however, the inner bark, which has much the same properties as the husks of the nuts, which was mainly used for this purpose.

The bark is an important part of this tree, and is responsible for the two specific names used to designate it in scientific classification. This cousin of the walnut is known as *Juglans cinerea*, the name *cinerea* referring to the grey or *ashen* color of its bark. Michaux preferred for it the specific name of *cathartica*, as a decoction of the bark was used in primitive days as a cathartic. This bark was evidently a powerful curative, for it was considered that to apply it on the back of the neck was a sure cure for toothache or inflammation of the eyes.

The butternut was also called oil nut, from the oily character of its fruit. The nuts, like those of the walnut, were used as pickles, being picked when half mature, placed in boiling water to take off the down, and then pickled in vinegar. The mature nuts are often stored for winter consumption, and it was quite a usual form of entertainment for boy guests who dropped in on a winter's evening to bring out the butternuts or walnuts to be cracked and eaten. How many memories of the old fire-place, with its cheerful glow and the flickering shadows dancing over floor and walls; the merry evening gathering, the pleasant story, the happy laughter; what recollections, brightened with the halo which the passing years have shed, and sweet with the painful sweetness of scenes that can never be recalled, spring up in the mind as we search back through the days that are gone, to pick up the dropped threads and reconstruct the picture of those homes which have been the foundation and stepping-stone of Canada's greatness, and whose simple but strong influence has been a power in moulding the careers of many of her distinguished sons!

This tree is known also as white walnut. In outward appearance it much resembles the black walnut, but the stems of the leaves are covered with clammy hairs and the nuts are elongated instead of obicular in shape. The straggling appearance which older trees assume when growing in the open is well illustrated by the characteristic photograph which is reproduced with this article. The wood is much whiter and lighter than that of the black walnut, and is used to a large extent in cabinet work and interior finishing. It takes stain well, and may be colored so as to resemble very closely the black walnut.

Sugar is sometimes made from the sap of the butternut, like maple sugar, but whether it is a very satisfactory product we have no information.

* Contributed by the Officers of the Canadian Forestry Association.

Our Medicine Bag.

We invite the particular attention of our readers to the article on The Moose Season, by Mr. C. C. Farr, one of the soundest authorities we have upon the subject. Mr. Farr makes out a strong case in favor of a more rational hunting season; we trust that the authorities will eventually see things in the same light as our correspondent does.

Arrangements are now being made for the Annual Meeting of the Canadian Forestry Association, which will be held in Ottawa, on the first Thursday in March, 1903. Papers have already been promised by Mr. J. S. Dennis, of Regina, who has had an extended experience in irrigation work in the West, and who will deal mainly with the effect of Forestry in its relation to irrigation, and by Mr. W. T. Macoun, Horticulturist at the Central Experimental Farm, who has done considerable experimentation with the growth of forest trees at the Farm. It is expected also that some account of the Laurentide Park, in the Province of Quebec, will be given by Mr. W. I. C. Hall, of the Department of Lands and Forests. Other papers are being arranged for, and full announcement will be made at a later date.

We had the pleasure of a call recently from Mr. J. R. Anderson, Deputy Minister of Agricultural for the Province of British Columbia. Mr. Anderson has taken a great interest in the subject of forest preservation, and has done much to call attention to the subject in his own province.

Those of our readers who combine a love of natural history with a desire to use the camera, should procure a copy of "Among the Water Fowl," by Mr. Job, published by the Copp Clark Co., Toronto. Mr. Job has made a special study of the waterfowl and his book is intensely interesting because all its material was obtained at first hand. Although he has some very beautiful pictures of birds and bird life, he seems to have procured them with a very modest outfit; this is his description of it:—"In case my own experience may be of any encouragement, let me say that all the pictures in this book were taken with an ordinary 4 x 5 focusing camera, rapid rectilinear lense and bellows of twelve-inch draw, that cost me lest than $20.00. I consider the 4x5 size just right for field work. Equipped with such a camera and any good make of rapid plate, with a little careful study and practice of photographic method, following out some such plans afield as are described in this and other volumes, with a real love for the birds and nature, there is no reason why anyone may not succeed better than I have done."

We consider that Mr. Job is overmodest, and most of us would be very glad could we duplicate his work, much less try to excel it.

Some of the writer's experience was gained on the plains of North Dakota, where the avifauna is practically the same as it is in our own Northwest, while many of his expeditions took him to the lower St. Lawrence, and even to those glorious collecting grounds, the Magdalen Islands.

So great was Mr. Job's enthusiasm, that he actually visited the islands and promontaries of the Atlantic coast in the depth of winter, and like some other bird lovers found the ocean at its best and grandest in winter.

"The experience of the summer of 1902 has clearly demonstrated the great value of organized supervision of the forests on our public domain, and particularly of the protective forests of our Western mountain districts. According to recent reports of Forest Inspector E. T. Allen, while the forests of the unprotected public lands of Colorado were on fire in many places, the reserves of that state suffered but little damage. Similarly, the mountain forests in nearly every part of Wyoming were visited by severe fires. Much the same condition was noted in Montana, where the sun was darkened for days by the smoke

A Police Post in the North.

Headquarters of the N.-W. Mounted Police at Lake Bennett.

THE BUTTERNUT (*Juglans cinerea*).

This illustration shows the form assumed by the tree when growing in the open.

from forest fires on the public lands outside the reserves, while the reserves remained practically unscathed. The striking difference between protected and unprotected forests was seen in Washington state. The difference between having a well-organized service, always on the lookout to prevent and capable to fight forest fires, and having no protection for these important mountain woods, has never been felt so keenly before."—*Forestry and Irrigation.*

Here is a clear and strong argument in favor of the policy of setting apart forest reserves and providing an adequate fire guardian service.

The article published in the present issue on Bighorn Shooting was written by Mr. James Brewster, one of the best known guides in the Rocky Mountains. It is not often that a guide possesses the literary skill to which Mr. Brewster may evidently lay claim.

We have received recently the following letter from one of the most successful guides in British Columbia. It shows that there is plenty of game yet if you go to the right country and in the right company:—

I thought I would drop you a note to let you know I am still living. I expect to make a commencement on the game paper this month, but as I will be away amongst the Indians throughout January, I will not be able to finish it until about the end of February. I had two Americans out hunting with me in September and October. We confined ourselves entirely to sheep and goats, and were very successful. They got their full complement of each—all the law allows, and consequently were well satisfied. Most of their heads were fine ones. I got a number of photos which may be of use to you. I am busy at present writing for the American Museum, but expect to be through in about ten days.

There is one etiquette of the ball room and another of the hunting field, and the one is as rigorous as the other. In this country as in England, not to know the manners of the hunting field is to be very badly bred indeed, and therefore we predict a large sale for a neat little pamphlet brought out by Messrs. Vinton & Co., named "Fox hunting; what to do and what not to do." As a specimen we select the following at random: "On arrival at the meet, a cheery 'good morning' to your acquaintances is never amiss, nor are such words amiss to the huntsman should he pass you, but do not seek him out to deliver them. Should the master pass you, raise your hat to him. Keep well clear of the hounds. Avoid talking to the hunt servants." The cost of this pamphlet is one shilling sterling.

Prairie chicken have been reported from Parry Sound several times in the last few years, but it appears now that the birds in question were ptarmigan, which are common in winter, even as far south as the head of Lake Timiskaming.

The Forestry Quarterly is the name of a new publication to be issued under the direction of a Board of Advisers of the Faculty and Alumni of the New York State College of Forestry. As stated in the announcement in the first number, although there are a number of publications in the United States and Canada wholly or in part devoted to the propagandism of forestry, there are at the present time none which are mainly or entirely devoted to the professional or technical interests of the subject. It is this field, which the advancement of scientific study of forestry in colleges and by other agencies has opened up, that the Forestry Quarterly designs to fill. Besides publishing original articles on subjects of interest to the profession, and translations of such articles from foreign sources, it is intended to bring reviews and references to current literature and the news of the forestry world in general. It is in the main a student publication intended for students, but it will be supervised by an Advisory Board, at the head of which is Dr. B. E. Fernow, and this should be sufficient guarantee that a high standard will be maintained. The leading articles in the first number

are: "Volume Tables," by Judson F. Clark; "Difficulties and Errors in Stem Analysis," by A. S. Williams; and "Adirondack Birds in their Relation to Forestry," by E. A. Stirling.

Until 1899 the so-called dog salmon of British Columbia were not of any commercial value. The Indians have caught them from time immemorial and dried them for winter consumption, and they have always looked upon this fish as the staple food of the sleigh dogs, but the white settlers would not touch them and they were never canned. Three years ago, however, an intelligent Japanese merchant, S. Tamura, of Vancouver, began the exportation of dried dog salmon to Japan, and the trade has now reached a point where its permanency is assured, and it is tolerably certain that in the years to come this business will attain to remarkable proportions. This season he will export 2,500 tons of these salmon. The price paid the fishermen for dog salmon has averaged five cents a fish, and most of those so far obtained have come from Fraser River. We have always been of the opinion that there are very few fish that are not fit for human food, but whenever any species is unusually abundant the inhabitants of the region where it is found are very likely to turn up their noses at it. Although an oyster is not a fish, perhaps the scorn with which it was regarded a few years ago by some of the inhabitants of the shores of the lower St. Lawrence may be adduced in proof of this statement. Once, when at Shippegan Island, we noticed some oyster shells outside the back door, and as a steady diet of fried pork had become monotonous, we asked if there was any possibility of getting oysters. The proposition was considered so extraordinary that our host almost fell over backwards, but when he was able to realize that local fashion would not be followed, he requested one of his sons to take a basket and a long rake and fetch some. The lad returned in an hour or two with as many as he could carry. These oysters were to be had in the shallow coves round Shippegan Island for the trouble of raking them up, and, consequently, they were not esteemed. It is so with any species of fish, especially with those of the Pacific coast.

A new forest reserve near Kamloops, in the railway belt in British Columbia, to be known as the Long Lake Timber Reserve, has been set apart by the Dominion Government. It includes all of Townships 17 and 18 in Range 19 and the westerly two-thirds of Townships 17 and 18 in Range 18, all west of the 6th Meridian. The range of mountains in which this reserve is situated reaches a height of 6,200 feet, and forms the watershed for a number of streams flowing into the Nicola River on the south and the Thompson River on the north, which take their rise in the numerous small lakes and swamps in this range. There is a good growth of timber on the hills, principally fir and black pine (Pinus Murrayana) but its main importance is from the fact that in order to ensure the success of agriculture in the valleys below it is necessary to have a full and reliable water supply. The land included in the reserve is at such an altitude that it could not, under any circumstances, be successfully devoted to agricultural purposes.

The Peterboro canoe is making rapid strides in public favor, and in another generation or two it will have crowded the birch bark out of existence in all excepting very remote places. But the Peterboro, as usually made, has certain faults of form. The sides are not deep

enough in a good many of the models, hence when the canoe has to be portaged all the weight rests upon the carrier's head, and not upon his shoulders, as would be proper. A transverse section of the canoe shows a bottom too round for stability, and the longitudinal section shows a keel too straight for ready manoeuvering. Last August we used a Peterboro on the Michipicoten River which had all these faults in an exaggerated degree. Its one good quality was its speed, otherwise it was a rather useless craft, and might easily have proved a dangerous one in a bad rapid. The beauties of the Peterboro are its strength and its fair lines, and its disadvantages are merely those incidental to a faulty model, which could, of course, be remedied.

Those of our readers who are blessed with a chip of the old block, whom they wish to make a sportsman of, will undoubtedly be casting around for a Christmas box which shall cause the youngster to bend in the right direction. To such "Rob and His Gun," by W. A. Linn, may be recommended confidently. It is a boy's book, yet we will venture to say that old boys who have long left school will enjoy it fully as much as a youngster just home for the holidays. Mr. Linn is thoroughly orthodox in his descriptions of such sports as quail and duck shooting and deer hunting, and any lad who takes his advice to heart will have made a long step toward being a sportsman. The book is well illustrated and printed, as might be expected, seeing that it bears the imprint of the Scribner's. The price is one dollar.

There has been issued by the Bureau of Forestry of the United States a Bulletin by Edward T. Allan on "The Western Hemlock." The bulletin sets out in detail the results of a study of this tree for two seasons on the ground, and the conclusions are summarized as follows:

(1) The wood of the Western hemlock is far superior to that of the Eastern tree. It is suitable for use in all ordinary building work; it furnishes good paper pulp; it is sufficiently light and strong to make excellent woodenware stock, and it is particularly valuable for indoor finishing. Its bark is half as rich again in tannin as that of the Eastern tree.

(2) Under favorable conditions the Western hemlock reproduces abundantly and grows very rapidly. Since these conditions are usually disadvantageous to red fir, hemlock may often be counted upon to reforest cut-over lands when red fir would probably fail to establish itself.

(3) The Western hemlock has now to contend mainly with a prejudice which is based on a knowledge of the Eastern tree alone. The importance of bringing it into the market on a large scale as a substitute for spruce and white pine is growing rapidly. Its qualities entitle it to rank among the valuable timber trees of this continent.

The Savage Arms Co., of Utica, N.Y., manufacturers of hammerless firearms and ammunition, have issued a very attractive calendar for the present year. It represents a typical western man of the best type—tall, blond and sinewy—standing over a blacktail that he has just brought down by a single shot from his Savage. We regret that our readers will not be able to obtain copies of this calendar, as we learn that the supply was exhausted within a few days of the public becoming aware that it was to be had for ten cents.

Fox hunting *à l'Anglais* has been a recognized Canadian sport since the earliest days of the British occupation, and we have a very considerable number of men and women who ride both straight and well. The country adjacent to Montreal is hunted by two packs, and well hunted too, though, unfortunately, the season during which the little red rover can be hunted is but a short one as compared with that of the shires. These reflections have been prompted by a perusal of Notes for Hunting Men, by (the late) Captain Cortlandt Gordon Mackenzie, R.A., a little work that should be in the library of every hunting man, whether residing in the British Isles or

out of them. Captain Mackenzie fell a victim to enteric while in charge of the remount station at De Aar, Cape Colony, and so the notes have been edited and put through the press by Mr. H. N. Schofield, a warm personal friend of the deceased officer. The seven chapters composing this unpretentious but most valuable little book, deal with The County in which to Hunt; The Horse on which to Hunt; The Stable; General Stable Management in a Hunting Stable; Feeding of Hunters; Summering and Conditioning of Hunters, and Stable Servants. Each chapter contains hints, the result of many seasons' experience in the hunting field—hints that should be worth a good deal to all who follow hounds.

We Canadians need not concern ourselves as to the county in which to hunt, for our choice is as Hobson's, but the following advice as to mounts is as pertinent here as in the old country.

"A lover of horses would, I imagine, fain be the possessor of a stud of one size and stamp, in a word, a level lot; but you must remember that a collection such as this, like all other collections, is an expensive luxury, and, even with ample means at your disposal, can only be obtained at the cost of considerable time and trouble. A stud of this sort bears somewhat the same relation to that of the sportsman of moderate means, as a bookshelf of first editions, or 'éditions de luxe' to the common workaday volumes which you and I keep on our library shelves. These latter may serve every useful purpose, but do not please the taste and eye of a connoisseur to the same extent. Most of us must be satisfied to have our book-shelves and our boxes filled with good, useful articles; so, should you belong to the many, I would counsel you at starting, to put on one side all 'luxurious' ideas, and, without being overparticular about looks, never let slip an opportunity of securing a horse which you know to be a good and stout performer, practically sound, at a fair price. They go in all shapes and sizes and colors. I can only think of two things which I should avoid at any cost in buying a hunter, unless (and you see there is always a saving clause) he is an *exceptional* performer going at an exceptional price. These two things are: (1) Bad shoulders; (2) Too great length of leg.

The price of this handy volume is two shillings and sixpence, and the pubbishers are Messrs. Longman's, Green & Co., 39 Paternoster Row, London.

A History of the Lumber Industry in the State of New York, by Col. Wm. F. Fox, Superintendent of Forests for that State, issued by the Bureau of Forestry of the United States, is a very interesting sketch of the conditions of this industry from the pioneer days up to the present time by one whose family has been closely connected with its development, and who has had the best opportunities for obtaining an intimate knowledge of the subject of which he treats. There is much of romance and human interest in the life of the woods from the days when New York state was covered by an almost unbroken pine forest, much of adventure by stream and forest from the time when the whipsaw, the prototype of the great modern sawmill, supplied the necessities of the inhabitants, and the first rude waterwheels furnished the motive power for the machinery which sent out sawn boards to meet the requirements of the developing towns and cities, and Colonel Fox has continued to make an interesting history while at the same time giving a great deal of very useful information in regard to the evolution of the lumber industry.

"Why my Photographs are Bad," by Charles M. Taylor, jr., is a volume which should prove of much value to every amateur photographer whether a beginner or one more experienced in the work. In Part I, are reproduced twenty photographs showing errors frequently made by photographers; each error is treated separately, Mr. Taylor explaining the cause of each and telling how it may be avoided or overcome. Part II, consists of twelve good photographs, both time and instantaneous, showing results which with care and practice any amateur may obtain. Accompanying each of these photographs is a schedule showing under what conditions each was taken in order that

proper results might be secured. The book is simply written, thoroughly practical, direct and to the point; it is the result of years of actual experience.

It will appeal to the experienced photographer as well as to the beginner. The reduced photographs illustrate the book and explain the reading matter in a most creditable manner, and are so attractive that one is not satisfied until the book has been thoroughly read.

We are in receipt of the Annual Report of the Smithsonian Institution for the year ending June 30th, 1901. As usual it contains papers of absorbing interest by some of the world's most profound thinkers and discoverers, and though many of these are of too abstruse a character to be popular, several contributors deal with subjects coming quite naturally within the sphere of ROD AND GUN in Canada. Some of these are: Report on the National Zoological Park; Forest Destruction, by Gifford Pinchot and C. Hart Merriam; on the Preservation of the Marine Animals of the Northwest Coast, by William H. Dall; Some Private Zoos, by F. G. Aflalo, and The National Zoo at Washington, by Ernest Thompson Seaton.

We have received from the Department of the Interior a very handsome map of the Dominion on a scale of thirty-five miles to the inch. It is in eight sheets and handsomely colored. This is by far the handsomest map of Canada that the Government has yet issued.

Some interesting information in connection with the new Dominion hatchery on the Lakelse River, B.C., has been received from Mr. Thomas Whitwell, in charge. He states that the party who were to operate it, including himself, arrived at their destination on June 23rd. They had left several thousand feet of lumber and some supplies at the mouth of the Lakelse, necessitating eighteen trips by Indians in canoes before it was available. The river is very difficult to ascend, falling 200 feet in ten miles, so the difficulties which were encountered in the transportation of material and supplies were enormous. After this had arrived they had to transfer a raft of lumber another nine miles to Sockeye River, at the head of Lake Lakelse, to be used in building fences, pens, traps, etc.

These were all completed and established in the river and different creeks by August 11th, and in three nights they had between 300 and 500 sockeyes in the pens. They started spawning the first lot of fish on the 21st and got 400,000 eggs that day. Since then they have had six more spawnings, getting in all 3,932,000 eggs, filling every basket and trough in the hatchery. At the time of writing, October 11th, they had about 2,000,000 in the eyed stage, all of which were doing well. Mr. Whitwell hopes to be able to liberate three and a half million, if not more, of good, healthy young sockeye salmon about the end of January or in the beginning of February, provided they don't have a shortage of water or a very severe frost. He hardly expects they will be able to leave the hatchery before the middle or the end of April, as both the Skeena and Lakelse River will be frozen until that time, so they will have to wait for the break up.

Of the innumerable books that have been written dealing with women on horseback, "Side Saddle Riding," by Eva Christy, is one of the most satisfactory. A feature that we greatly appreciate are the illustrations, which are made from actual photographs. While not so artistic as pen and ink and wash drawings, photographs have the merit of showing things as they are, and to our mind, they convey much safer information to the beginner. The subjects dealt with are saddles, stirrups, bridles, reins, martingales and other necessay parts of a woman's equipment in the hunting field. After that follows an excellent chapter on hunting and jumping, and one on dress, which, by the bye, is quite a revelation to the masculine mind, as it goes into the details of things and explains much that was previously incomprehensible, not to say mysterious. The book is published by Vinton & Co., Ltd., 9 New Bridge Street, London, England, and the price is three shillings and sixpence.

BETTER LUCK NEXT TIME.

So off they went on another WILD GOOSE chase.

They took live decoys, metal decoys, and GLASS decoys—

The last answered BEST, because when there were no geese, the CORKS could be pulled and the decoys SAMPLED.)

The honkers ARE knowing birds.

They make NOISE enough sometimes.

That is when they are a SAFE distance OFF.

But when they are coming down on to the FIELDS, they soar in like hawks, and PASS over you without WARNING.

Then they always SEEM to fly so deliberately.

But just time them over a KNOWN distance if you want to get an IDEA of how fast they move!

They LOOK easy enough to hit,—and so they are if near enough and YOU UNDERSTAND the business.

On this OCCASION we only had ONE shot—

And then, I suppose, the birds were TOO FAR away.

The shot was LARGE and so was the charge of POWDER, — but the birds seemed quite INDIFFERENT,

And just continued STRAIGHT ON until lost to sight.

We have OFTEN tried to shoot a goose near Montreal, but — somehow — have always FAILED.

DUCKS and such things we are good for,

But those HONKERS always SEEM to know

A little MORE than

Yours truly,

"SNIPE."

CONTENTS

January, 1903

Communications on all topics pertaining to fishing, shooting, canoeing, the kennel and amateur photography, will be welcomed and published, if suitable. All communications must be accompanied by the name of the writer, not necessarily for publication, however.

The Official Organ of the Canadian Forestry Association.

ROD AND GUN IN CANADA does not assume any responsibility for, or necessarily endorse, any views expressed by contributors to its columns. All communications should be addressed to:

ROD AND GUN PUBLISHING CO., 603 Craig Street, Montreal.

Price, 10 cents a Number. $1.00 a year.

Canadian Forestry Association

THE objects of the **CANADIAN FORESTRY ASSOCIATION** are :

The preservation of the forests for their influence on climate, fertility and water supply ; the exploration of the public domain and the reservation for timber production of lands unsuited for agriculture ; the promotion of judicious methods in dealing with forests and woodlands ; re-afforestation where advisable ; tree planting on the plains and on streets and highways ; the collection and dissemination of information bearing on the forestry problem in general.

Rod and Gun is the official organ of the Association, which supplies the articles relating to Forestry published therein.

This Association is engaged in a work of national importance in which every citizen of the Dominion has a direct interest. If you are not a member of the Association your membership is earnestly solicited.

The annual fee is $1.00, and the Life Membership fee $10.00.

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Caribou Hunting

THE season for big game hunting is almost over, though you have not been able to profit by it owing to the numerous demands upon your time; nevertheless, you are reluctant to let the year go by without firing a shot at game out of the new rifle. Well, there is time yet, for in most of the Canadian provinces caribou are lawful game until the middle or end of December, and the best time to hunt them is while the snow is yet so shoal that snowshoes are not required.

Take with you a good modern rifle—for the shots on the barrens are sometimes long ones,—plenty of heavy, warm clothing, and a sufficiency of currency to pay your way, and if you are a dyed-in-the-wool sportsman there is a good time ahead.

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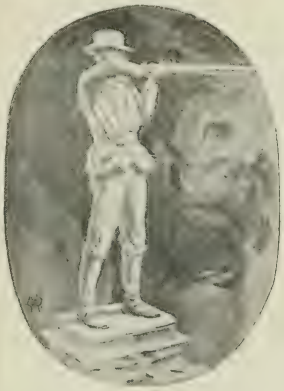

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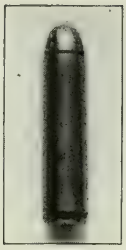
A MAGAZINE OF CANADIAN SPORT AND EXPLORATION

AMERICAN HIGH VELOCITY BULLETS.



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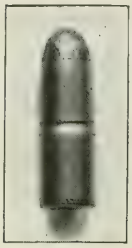

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No. 1—.236, 112 grs. S. P.
No. 2—.25-35 W., 117 grs. "
No. 3—.30-30 W., 160 grs. "
No. 4—.303 Sav., 195 grs. "
No. 5—.30 U.S. Govt. 220 grs. "
No. 6—.32 Sp. W., 165 grs. "
No. 7—.32-40 M., 165 grs. "

No. 8—.33 Win., 200 grs. S. P.
No. 9—.35 Win., 250 grs. "
No. 10—.38 M., 255 grs. "
No. 11—.40 Mar.-Rem., 253 grs. "
No. 12—.45 W.H.V., 300 grs. "
No. 13—.50 W.H.W., 300 grs. "

ROD AND GUN
IN CANADA

VOL. IV. MONTREAL, FEBRUARY, 1903 No. 9

High Velocity Cartridges.

(I.—AMERICAN.)

BY CHAS. A. BRAMBLE.

The black-powder rifle is passing rapidly into disuse and will, apparently, in the not very distant future, be as much out-of-date as the Brown Bess. Its place has been won by a weapon firing a charge of a smokeless nitro compound, capable of giving a much higher velocity to a projectile than black powder. The absence of smoke is, of course, an enormous advantage, but the modern compound, — I speak of all the new powders collectively, they having a strong general resemblance—boasts of others yet more valuable. For instance increased velocity gives a flatter trajectory, since gravity acts in proportion to the square of the time, and a flatter trajectory does away with the necessity for a part at least, of those calculations as to distance, so vital in the case of the earlier rifles, though much less so in the later ones. Also, the energy of a projectile being equal to its weight, into its velocity squared, divided by twice gravity, it follows that the energy—often called striking force—of the modern projectile is vastly greater than that of its predecessors.

One drawback the modern charge certainly has. The life of a barrel is much shorter than formerly, especially in the case of military weapons, of .30 caliber or less, firing a steel-mantled bullet, and in which the powder charges used may give breech pressures running up to 60,000 lbs. The resistance the air opposes to the passage of a bullet is governed by the velocity of that bullet, and by the shape and area of its point, but not by its length, excepting to an almost infinitesimal amount. But, the greater the weight the greater the momentum at any stated velocity ; and the greater the momentnm the more effectually is resistance overcome. Hence, the weight of the bullet has been increased by adding length, until projectiles of four diameters have taken the place of shorter bullets wherever great range is desired.

But it was discovered that a long picket-shaped projectile, of lead, even when alloyed with a considerable percentage of tin, could not, stand the increased pressure and accompanying velocity obtained through the use of nitro powders without stripping, (*i.e.*, leaving the grooves and passing down the barrel, being shaved in the process to the diameter of the interior of the barrel from land to land), thereby rendering accuracy impossible and greatly shortening range, through the absence of rotation to keep the bullet point foremost, and because of the escape of gas by way of the grooves.

To overcome this defect the projectiles were coated with a thin mantle of some harder material, such as steel, cupronickle, or alloys of a similar character. This device proved effective, and, moreover, the bullets thus protected showed

a power of penetration greatly in excess of any previously noted, and highly desirable for military purposes.

Unfortunately, this extreme penetration becomes an actual disadvantage under certain conditions (such as usually obtain in sport), and great disappointment was caused at first by the feeble stopping power of these bullets when used against big game. It was soon discovered, however, that by filing the extreme point flat, or by leaving it without mantle, or by other equally simple variations of the standard military projectiles, the bullet would expand upon impact, showing much less penetration, but making a larger orifice, thus producing equal effects upon animal tissues to a leaden, low-velocity bullet of wider caliber.

The foregoing will serve as an introduction to the series of bullets that represent the latest advances of American manufacturers.

The smallest caliber for which a high velocity, nitro-cartridge, suitable for military or hunting purposes, has been manufactured in the United States is the .236. The point blank range of this cartridge fired from a suitable rifle is for military purposes between 600 and 700 yards, within which the trajectory of the bullet is so flat as to make the entire range a zone of danger, and at a range of 1000 yards the bullet rises at the highest point of its trajectory but 24 feet. The rifling must have turn of 1 in 7½ inches to keep this bullet of 4.23 diameters point on, and consequently the breech pressures must be high, and nothing but steel having a high tensile strength will bear the strain. The rifle manufacturer has, however, at his command a choice of material which permits him to indulge in charges giving even higher pressures than this with perfect safety. As a sporting weapon with soft-pointed bullets the .236 has not been in such request as the larger calibers, yet there can be no doubt it is sufficiently powerful to account for any American animal if its bullet be accurately placed. The striking force is 1563 foot pounds, while the Ojibway hunter kills his moose, caribou and bear with a 44-40-200, the energy of which is but 691 foot pounds. With a soft-pointed bullet, the charge under consideration has a far more damaging effect, than those not intimately acquainted with the power of the high velocity charge will credit.

The .25-35 Winchester and the .25-36 Merlin may be considered as identical, for the charge is in each case 21 grains of Dupont or Laflin & Rand .30 caliber smokeless powder and a half-mantled bullet with soft lead point, 117 grains in weight. This cartridge is extremely accurate, strings of 10 shots within a 4-inch circle at 200 yards being quite possible, and is naturally pleasant to shoot, but its energy being but about 1008 foot pounds, such a charge should be reserved for animals not exceeding the Virginia deer, and the antelope. While the .25-35 would undoubtedly be sufficiently powerful for any animal under conditions favorable to the shooter, the sportsman always prefers to have a little power to spare. One great advantage of this caliber is that a short range cartridge with lead bullets of 67 to 86 grains and 20 grains F.F.G. black powder, or 8 to 10 grains of Laflin & Rand's "Sporting Rifle Smokeless," may be used with excellent results upon small game up to at least 100 yards.

The 30–30–160 is one of the most popular cartridges we have. It is a delightful charge, having great accuracy, considerable killing power, and giving a recoil which is insufficient to be unpleasant. Moreover, a light rifle may be used, and the breech pressures are very moderate. This charge is effective for antelope, deer, and, under favorable conditions, for caribou and moose, but it is not recommended for grizzly, or for sheep, and is not as sure in its results upon even moose and caribou as later and more powerful cartridges. The 30-30 will kill any game we have on this continent, but the bullet must be excellently placed to bring down in its tracks an old bull moose or a silvertip in good health and condition. With a 1 to 20 lead bullet of 100 grains and a charge of 10 grains of Du Pont No. 1, Laflin & Rand "Sporting Rifle Smokeless", or 10 grains E. C. "Smokeless Rifle Powder, No. 7" the 30-30 makes an admirable weapon for small game up to 100 yards.

A charge which is much used by big game hunters, being a deserved favorite, is the .303 Savage. This rifle is of the same caliber as the British Lee-Metford. It is identical with the U. S. Government rifle except that it fires a lighter bullet, which has a velocity of projection 100 feet less than the 30-40 as made for sporting rifles. The Savage line of cartridges is a long one, including bullets of the following weights: 180 grs., 195 grs., 185 grs., (patched) and two of 100 grs., each.

Several of the great powers have adopted military weapons of about .30 caliber, the United States being one. The Service bullet is, of course, fully mantled, and is capable of penetrating 58 dry pine boards ⅞ in. thick at 15 feet from the muzzle, but the soft point bullet used in sporting cartridges will only penetrate 13, which shows that the bullet expands to something more than four times its original area on striking. The 30-40-220 will kill any animal, even the elephant falling to a single well directed head shot with a full-mantled bullet, but there are numbers of men who believe its "shock" is not powerful enough to disable dangerous and tough game under certain conditions. The trajectory and accuracy are quite up to modern requirements and, personally, I am of the opinion that the 30-40 is good enough for any beast on this continent.

The Winchester and Marlin companies each has a .32 caliber, high velocity, cartridge on the market, and their ballistic data are practically the same. The old 32-40-165 black was almost, the most accurate 200 yard charge ever produced, and this same cartridge may be substituted for the high-velocity load for target work or small game shooting, so that the weapon of this caliber with special steel barrels must be considered as a wonderfully useful rifle.

In the .33 Winchester we have an unusually desirable cartridge, superior to the 30-40 on account of the greater area of its bullet, nowithstanding that its energy is a trifle less. Another advantage of the 33-200 grain bullet is that its range is not quite so great as the military bullet, its weight being less and the resistance it offers to the air considerably more. This is a new cartridge and has had but one season's trial upon game, but there can be no doubt as to its being an admirable one.

Following the lead of the English makers who are going in for very powerful nitro-cartridges to take the place of the partially obsolete .500 and .577 Express rifles, the Winchester Repeating Arms Company has put a .35 rifle in the market which should go a long way toward satisfying those who crave for more "power." With the possible exception of a real-old-fashioned, 1000 lbs. grizzly, it is hard to see what we have in Canada able to stand up after getting a shot from this new rifle. With its 2685 foot pounds of energy there is but one American rifle more powerful, and that has neither the range nor the accuracy of the .35. For deer and antelope I regard it as quite too destructive, but for elk, moose, sheep and especially grizzly it will prove a handy weapon.

The old .38-55, with a bullet varying from 250 grains to one of 330 grains, for target purposes, is undoubtedly the most accurate 200 yard charge ever produced, and there is no doubt the manufacturers were well advised when they decided to make barrels of special, smokeless steel that should permit of the use of a moderately high velocity charge as an alternative to that of black powder in this caliber. The .38 Marlin has a velocity of 1650 feet, which, joined to a fairly heavy bullet, gives a striking force approximately equal to those of the .32–40 and .32 Winchester special. Of course, the trajectory at short range is not quite so good, but, on the other hand, the diameter of the bullet is greater, a point some shooters insist upon.

The .40-65 high velocity is a cartridge that is comparatively little used in Canada, though it should prove fairly satisfactory upon any game we have in North Amerca at moderate ranges.

Three cartridges remain to be considered, and they deserve especial attention, seeing that they may be used in rifles already highly popular, and have been devised with such consummate skill that, notwithstanding their high muzzle velocities, they produce so moderate a breech pressure as to render the use of ordinary

steel barrels and actions constructed to resist black powder strains, perfectly safe. The description of these cartridges by the Winchester Repeating Arms Company, which produced them as a result of long and costly experiments, is as follows :

"These cartridges, although they give high velocity and great muzzle energy, develop only slightly increased initial pressure. By their use owners of Winchester Model 1886 rifles, of the calibers mentioned, can greatly increase the power of their guns. With the great increase in velocity which these cartridges have, their trajectory is proportionately flatter, and at 200 yards, their remaining energies are practically the same as those of the small caliber, high-power cartridges. It is a desirable feature of these cartridges that they can be used by persons who fear to use the high-power small caliber cartridge on account of their great range. These points considered, and the fact that the results are obtained with bullets of large cross section, make these cartridges unsurpassed for striking and killing power at the distances at which most game is killed."

These claims may easily be substantiated, and it is undeniable that the .50-110, with its 3345 foot pounds of energy, is the very weapon to stop a grizzly, and those who regard the moose as a tough beast will find in this cartridge what they have been dreaming of for years. They will not be satisfied, because the soul of the rifleman who demands "more power" can never in the nature of things be satisfied. Now that an American rifle has been produced, handy, sufficiently accurate for sporting purposes, and having a striking force of over 3000 foot lbs., it is morally certain manufacturers will be entreated to turn out something yet more destructive, and the English .450 with its crushing blow of 5000 foot pounds, and even more terrific weapons, will be pointed to in envy.

But what game have we in North America demanding such bombardment?

BALLISTIC DATA OF AMERICAN HIGH VELOCITY CHARGES.

Nominal Caliber	Diameter of Bullet	Weight of Bullet	Velocity in feet per second	Penetration of ¾ inch Pine Boards	Energy or Striking Force	Powder Charge	Trajectory 100 yards	Trajectory 200 yards
.236	.244	112 grs. S. P.	2550 ft. sec.	12	1563 ft. lbs.	32.4 grs.	0.76 in.	3.48 in.
.25-35	.258	117 "	1925 "	11	1008 "	21 grs. .30 cal. (Du Pont)	1.32 "	6.21 "
.30-30	.306	160 "	1934 "	12	1330 "	29 grs. .30 cal. (Du Pont)	1.37 "	6.35 "
.303 Sav.	.311	195 "	1900 "	13	1561 "	28 grs. L. & R. .30 W. A.	1.23 "	6.25 "
.30-40	.308	220 "	2000 "	13	1953 "	34 grs. .30 cal. (Du Pont)	1.22 "	5.47 "
.32W.Sp.	.320	165 "	2062 "	12	1557 "	23 grs. L. & R. light'ng smok'less	1.23 "	5.95 "
.32-40 M.	.320	165 "	2062 "	12	1557 "	23 grs. L. & R. light'ng smok'less	1.23 "	5.95 "
.33 W.	.336	200 grs.	2056 "	13	1876 "	29 grs. L. & R. lightening No. 2	1.21 "	5.78 "
.35 W.	.358	250 "	2200 "	15	2685 "	(?)	1.03 "	4.73 "
.38 M.	.375	255 "	1650 "	14	1540 "	26.5 grs. L. & R. lightening No. 2	(?)	7.86 "
.40-65	.403	253 "	1700 "	12	1622 "	33 grs. L. & R. lightening No. 2	(?)	8.75 "
.45-70	.456	300 "	1888 "	13	2379 "	30 grs. L. & R. sharpshooter	1.47 "	7.40 "
.45-90	.457	300 "	1992 "	14	2641 "	33 grs. L. & R. sharpshooter	1.41 "	6.63 "
.50-110	.510	300 "	2242 "	14	3345 "	45 grs. L. & R. sharpshooter	1.07 "	5.82 "

Spring.

By William Henry Drummond.

Have you ever heard the mountains calling in the spring,
Or the whisper of the river sliding by?
Have you ever paused to listen for the Mallard's whirring wing,
Or marked the grey goose column on the sky?

Have you ever seen the partridge drumming near the bend
Where the alders shade the tiger of the stream?
Have you ever kicked yourself all over, my dear friend,
When you woke and found "Alas! 'twas but a dream"?

January, 1903.

The Death of a Dog.*

BY "A FRIEND."

"For those of his friends who will remember him, and for those who would know of the climbers, as well as the mountains to be climbed in this region, we write this record of 'Fritz.' It is fitting that this short sketch of his life should be recorded at Glacier, for here his privileges were many, his admirers numerous. At Glacier he was loved; near Glacier he died, and here he is mourned as a good friend should be. He was a beautiful dog, a black setter with a dash of retriever in him. His eyes were his winning point. They were irresistible, big, soft, honest.

"He was a gentleman, too, every inch of him. He always acknowledged any friendly advances with dignity, though you could see his master was his one absorbing admiration.

"He began life with a desire for bird-hunting. This ended, when in 1898, at the age of two years, he discovered there was more serious business ahead of him, and joined the photo-topographical survey of the Canadian Government, then being made in the east foothills of the Rocky Mountains in the interest of irrigation. His two greatest pleasures were to run with the horses, and accompany his master to any summits where photographs were to be taken for mapping purposes. His honesty was always to be relied upon. No food was touched, no matter how tempting, if forbidden, and his toilet was as immaculate as his manners. In 1900 he accompanied the survey party which was gathering data for a topographical map of the Crow's Nest coal lands in south-east British Columbia, and never missed a climb or flying camp, throughout the work.

"In 1901 he first came to the Selkirk Mountains, at which time a topographical survey was commenced along the line of the C.P.R.

"It was here that he really made his mountain-climbing record, and has left friends behind in numbers, to remember a brave climber. Among those mountains which he overcame successfully were: Swiss Peak, Mts. Avalanche, Grizzly, Cheops, Abbott, Cartier, Mackenzie, and many other points less elevated. The two on which he failed were Mts. Lookout and Napoleon, owing to the perpendicular cliffs.

"In this same year he had a narrow escape with his life. Faithfully following his master, they were caught on the long trestle bridge immediately east of Twin Butte, by an approaching train. Seeing nowhere to go, he just stood in the centre of the track wagging his tail. Fortunately a man sitting on the pilot kicked him to one side, the pilot did the

*Extracted from the Minute Book of the Glacier House, B.C.

rest. Scrambling along the edge, he came to where his master was hanging to the timbers of the bridge, and remained quiet until the train had passed. It is said his master barely saved himself in his efforts to shield Fritz.

"In 1902 Fritz and his master again came to the Selkirks and the list of climbs was increased. He first ascended the two peaks at the head of Cougar creek, then the peak formerly known as Mt. Roy. Next he conquered Rogers Peak—the highest point of the Hermit range. An attempt on Mt. Bonny very nearly ended disastrously. While ascending Mt. Swanzy, preparatory to reaching Mt. Bonny, he slipped on a steep ice slope, and rolled in a series of catherine-wheels a depth of three hundred feet, finally dropping over a ledge. It was supposed he was killed, but soon he appeared lower down, wagging his tail, and resting before again attempting the climb. The party proceeded on its way, as it was known he could not ascend. On the return it was necessary to make a detour by the Swanzy névé, and when opposite the spot he was whistled for, fully believing, however, that he had returned to camp. A faint whine far aloft showed where the poor old fellow had patiently awaited the return of his friends. He regained the party with bleeding feet, and very stiff, but none the worse otherwise. It was on the next trip he lost his life, and here I use his master's words. 'We had crossed the Geikie glacier, and camped by the Dawson morains. An ascent was being made by the rock point immediately to the north across the Geikie glacier. It was a difficult place, and the party had no rope. The old dog was getting very much excited, as he began to see his finish, so far as the ascent was concerned. A critical point had been reached, and we were slowly climbing one at a time. Fritz was lying quietly on a rock awaiting developments; as the last man crawled up, he sprang to a rock near by, slipped off and commenced falling down the slope. The slow motion was soon changed to leaps and bounds; for the first three hundred feet he never uttered a sound. He then struck the rocks, gave two faint yelps and silence followed. The rigid struggling body became limp, struck the shale, rolled over and over, till at the edge of a precipice it stopped, at a depth of 700 feet below us. A few yards more would have carried it over the brink and it would have gone down 3,000 feet.

"The body never stirred after it stopped. Poor old Fritz was dead! We looked at one another in silence. The chief simply remarked: 'We'll go no further but get back, if we can.' Having completed the work at the station selected, we climbed down, and setting the poor old chap on a bare spot, covered him round with moss, and then built a stone cairn over him, erecting one slab high above the others, on which was inscribed, as well as could be done with an ice axe, the single word "Fritz." There was no time for more. The sun was setting and there were still 3,000 feet of stiff rock work.

"A clean, clever, faithful dog! He died doing his duty as he saw it. May we all be as faithful and as consistent in its execution. He now lies not far below the eternal snows, while the bright stars look down and the soft clouds wrap him in slumber, with no further troubles of icy slopes and rocky ridges. From the camp by the Dawson moraine, the morning sun just touches the stone on which his name is inscribed. If there be a happy hunting ground for dogs he is there. And may he live in plenty, for on this earth his commons were often short. He took what there was to be had without complaint, a wag of his tail for "thank you." On flying trips, a few pork rinds often constituted his only meal, or what could be spared from the scanty rations of the party. No matter how scanty the morsel, he was always content, and would rather die than steal. Poor old Fritz! We miss you!"

The Snowshoe.

BY C. C. FARR.

The snowshoe is the Indian's winter canoe. Without it, in winter, he would be as helpless as he would be in summer without his canoe, and to realize how helpless that would be one has to know something about the country in which he lives. First and foremost, there are absolutely no roads, except the trail made by the Indians themselves, leading from one lake to another, which, except by the initiated, are hardly distinguishable from the paths of wild animals. Upon the banks of the stream, at every rapid, the same kind of trails are found. We call them "portages." The Indians call them "o-ne-gum," and the rest is trackless forest. We can imagine then, what the Indian would be able to do in the summer without his canoe. In winter, he would be just as helpless without his snowshoes, for in these northern latitudes the depth of the snow varies from two feet to four : in fact so important are these two things considered among them, that it is with them an unwritten law, that neither canoe, nor snowshoes, if found put away by the owner, anywhere in the bush, shall be molested, on account of the desperate straits the owner might be put to in case he should need them, and find them gone.

There are several kinds of wood used for making the frames: chief amongst which are the ash, the white birch, the yellow birch, the maple, and the tamarac, the latter, however, is only used in the far north, where the other woods are scarce, or of stunted growth.

The Indian name for the ash is "ar-gi-um-ah-tik," "snowshoe wood," but it is not used in this locality very much as it is stringy, and peels off, besides, it absorbs the wet, and lacks the necessary stiffness for a serviceable snowshoe, in all weathers. The white birch is a good deal used, but mostly for sale. It is not durable enough for an Indian. The maple makes a good strong frame, but is too heavy, and is hard to work. The wood, "par excellence," is the yellow birch. It is light, strong, and durable, and is easily bent into shape. It is not every tree that will make good frames. If the grain is twisted it is of no use. If there are many knots in it they may cause it to break in the bending. The very best tree for the purpose is a sapling, one with smooth bark and of healthy growth.

The tree is first cut down, and a length cut off it, say about nine feet, according to the size of the snowshoe required. It is then split into pieces of about the thickness required, which are dressed down with the axe roughly, and carried home to be completed at leisure.

The "crooked knife" is now brought into use. This is a tool, the use of which is almost entirely confined to Indians. It is a thin piece of steel, curved up at the end, and bound on to its wooden handle by a deerskin thong. It is to the Indian, his plane, drawknife, and spokeshave, all combined into one, and it is wonderful how expert in the use of it the Indian becomes, putting a finish to his work that would not disgrace both plane and spokeshave : so with this implement, he goes to work, and pares down his timber to the required size. The Indian name for this tool is "mo-ko-tah-gan," probably derived from the root "muk," to bite. For instance, "mug-gash-ka," "rough water," meaning "water ready to bite you ;" "mukwa," "bear," some one that will bite ;" "mok-kuj-i-gan," "a biting thing, "a plane," "mok-o-man," "a knife," etc.

As soon as the stick is whittled into shape, a kettle is brought into requisition, and with the help of a rag, the wood is thoroughly soaked and softened, so that it can be bent by careful manipulation to the required shape, in which shape it is left until it is thoroughly dry, and set.

Regarding the shape of a snowshoe, tastes differ, though the Indians are unanimous on that point. They like a wide shoe, and one not too long, for the

simple reason, that a long shoe makes walking through a thick bush difficult, and has a tendency to cant, when the snow is soft, and deep. Of course, on the northern plains, where the snow is wind-driven, and hard, it is different, and there the very long shoe is used almost entirely. It is very narrow, and has a turned up toe, and is admirably suited for the locality in which it is used, but would be nearly useless here, in this land of tangled bush, and of soft yielding snow.

But to the snowshoe frames, which by this time have assumed their permanent shape. The next thing to be done, is to cut the mortices for the cross bars, insert them, and bore the holes for the filling: when this is done they are handed over to the women, whose task it is to fill them.

Nearly any kind of skin can be used for the filling, such as moose, caribou, deer, bear, and even beaver, but the best of all these is caribou, for the reason that it does not stretch when wet, but rather tightens.

First of all the rope, or cord, which runs round the whole frame on the inside, has to be attached, and then the "mater brand," which is that many stranded band, passing across the shoe, and on which the ball of the foot rests and which is the main support of the filling.

The coarse or heavy knitting, made by cutting the thickest part of the hide into strips, called by the Indians "as-kim-mon-ei-arb," is now filled in, and last, the fine knitting, "at-tib-bisk," at toe and heel.

It is quite an art, this "filling" of snowshoes, as it is called, and there is just one way of doing it. It is like one of those labyrinthine puzzles, that are a delight to the lover of puzzles. There is just one spot at which to begin, and if you do not strike that, you will not get there.

The strips of hide have to be wet, so as to be soft, and pliable, and are usually rolled into a ball, so as to be more conveniently handled.

The snowshoe is now complete, except the strings, which are made from the tanned hide of any large animal. There is a good deal affecting comfort in the tying of a snowshoe. One of the greatest mistakes made, is tying them too tight, and many a sore toe is the result; only in a thick bush are tightly tied strings possible, for they enable one to guide the point of the shoe with more precision. On a beaten track, or on a lake, a loosely tied shoe is far easier, and less likely to do injury to the foot.

Should the string threaten to drop down over the heel, a crotched twig stuck into the moccasin string at the heel will stop it.

On a long trip, extending over a week through soft snow, it is another matter. However well adjusted the strings are they will probably bring blood, except in the case to those who are thoroughly hardened. Changing the snowshoes from right to left and "vice versâ" will some times obviate the difficulty, and bring relief. I myself have sometimes used rabbitskin, a remedy recommended by an Indian, and no doubt it would cure the whole thing, if one could only get it to stay there. I found, by experience, a small piece of diachylon plaster placed over the afflicted spot the most effective remedy, and if that failed, then there was nothing to do, but grin and, bear it, and hope for a beaten track, where one could walk without the snowshoes.

One of the most important things in snowshoeing is, to kept your snowshoes dry; especially in bitterly cold weather; otherwise they will "load up," that is become clogged with ice and frozen slush, so that, they become a weary load to drag along, and the unaccustomed exercise of certain muscles of the legs brings on "mal de raquette," the snowshoer's scourge.

The is another kind of snowshoe used by thé Indians. It is made by bending a stick into the shape of an egg, or a beaver skin stretcher, on which the youngsters usually made their first tentative efforts. They are often filled with string, and are very quickly made.

FRITZ, THE "CLIMBER"

Whose untimely death in the Selkirks is described in this issue.

AN HISTORIC ROUTE.

This snapshot was taken on the French River, the waterway used by the old explorers of the North-West.

"Taku Jack," Taku Arm, B.C.

Freight that cost five dollars a pound to move.

Breaking to Retrieve.

BY H. B. T.

If it were desired to teach a boy a certain accomplishment, and if he were made to perform certain parts without understanding the application, he would lack interest in his lessons, and only learn them because he felt obliged to. If the lessons were made as interesting as possible at first he would learn more quickly and be prouder of his knowledge when gained, and more cheerfully willing to exhibit what he had learned. The intelligent dog, by learning first to hold, carry and deliver an article, and being praised and petted for doing it, through being made to understand the object, begins these lessons in retrieving by feeling proud to perform a simple action which procures him so much approval from his master. He will then in later lessons be more inclined to do what is required of him, quickly and cheerfully.

Check immediately any inclination to playfulness on the dog's part during the lessons, and avoid it yourself in trying to encourage his cheerfulness in going forward to retrieve, or in seizing the article used. Make him perform all parts of his lessons in a steady, business-like manner, and if he is inclined to a playful manner of retrieving his birds, by pouncing upon or mouthing them, check him at once and make him do it more steadily. Make him sit squarely facing you when delivering the bird or other object, and do not pull it from him, but make him release it, and if he tries to seize it again tell him sharply to "Stop that," and if necessary tap him smartly on the muzzle, then, placing it in his mouth again, make him deliver it properly. These little tricks, if corrected at the time, may save much future trouble. Until you can depend upon his steadiness, if you have reason to believe that the bird is only wing broken, make the dog stay down while you catch the bird yourself; then, after killing it, throw it out and allow him to retrieve it. This sort of treatment will generally prevent his becoming "hard mouthed," and will be much less work than trying to break him after he has become so. At the beginning of his lessons use a corn-cob or a tight roll of paper, tied to prevent its unrolling, and small enough to make it unnecessary for him to open his mouth widely to receive it. After he has learned what is required of him, this may be changed for one of about the circumference of a quail's body, and later for one of the size and weight of a grouse. Do not use anything heavier or more awkward for him to hold, or he will be apt to develop the habit of holding it too tightly.

The principal object at first is to make him understand what is required of him and how he is to do it. When this is thoroughly understood the whip may be used to compel him to do it. First make him hold the roll in his mouth until you take hold of it and tell him to let go. It will probably be necessary to open his mouth and place the roll in it. Do this by placing the hand over his muzzle with the fingers on one side and the thumb on the other and pressing his lips against his teeth. Do not pinch his lips to hurt him any more than is necessary to make him open his mouth a little way, when the roll may be quickly pressed in crosswise from in front. He will probably try to drop it at once, and to prevent his doing so as quickly as possible get hold of his collar or the loose skin of his throat, and while in this way preventing him from pulling away from you, press upward against the lower jaw. In spite of all you may do to prevent it he will be likely to succeed in dropping it a few times, as he may struggle at first; but by holding him firmly and with the assistance of the other hand in either holding the roll in place or holding his jaws together by a light grasp upon his muzzle, he will soon become resigned.

This process may require some quickness and dexterity, but will be successful with the exercise of a little patience. When he has consented to hold the roll without trying to drop it, encourage him by stroking his head and speaking

kindly to him. If at this time he should try to drop it again, check the attempt if possible, but if not, place it again in his mouth and make him hold it until you take it from him, thus making him understand that a word of praise is not permission to drop it, and that he is to hold it until you command him to let go. It will save trouble during this part of the lesson if the dog is made to sit in front of you. If he attempt to come forward, step on his toes and force him to sit down again, as otherwise he may bother you by trying to press his head close to you or between your knees, and it is well also to have a check cord on him to prevent a possible attempt to leave you.

After he has been made to hold the roll until it is taken from him, the lesson will be sufficient for the time. At the next lesson teach him to sit holding it while you move away from him ; then call him and make him sit to deliver it. He will probably drop it at first and attempt to follow you, but the attempt must be checked and he be made to wait until he is called. Go to him and after placing him in his former position, replace the roll in his mouth. There will be opportunities during these lessons to get him accustomed to words of warning such as "Wait," "Careful" or "Steady." When he will wait until called and deliver the roll properly, do not attempt to teach him more until the next lesson. Go slowly, teach one thing at a time, be sure of making him do what is required of him before ending each lesson, give him plenty of praise and encouragement when he does well, and before each lesson make him do what he has learned in the preceding one. At certain times he may show more obstinacy than usual. At such time, rather than prolong the lesson, end it as soon as he shows, though ever so sulkily, that he is willing to give in ; but make him do it thoroughly at the next lesson.

As the next step, teach him to take the roll from your hand. Hold it close to his lips and tell him to fetch it. If he turns his head away follow the movement so as to keep the roll in front of his lips and show him that he cannot avoid it, by repeating the command "Fetch it." If he seems inclined, however reluctantly, to take it, press the roll into his mouth as soon as he opens it a little, and speak encouragingly to him as though he had done it all himself. Next teach him to step forward and take it by holding it farther away from him and motioning him toward you with a snap of the finger, while at the same time telling him to fetch. He should have learned the meaning of this gesture in former lessons, and although he may not obey it promptly under these circumstances, it will help to teach him your meaning. Use the check cord if necessary to make him come forward, and if he does not respond readily to the cord, use the whip on his rump to make him do so, while holding him by the collar to prevent his jumping away from you, and when necessary, guide his head toward the roll by grasping his muzzle. As the lesson advances, lower the roll toward the ground until he will lower his head to take it from your hand when held so as just to clear the ground. As he starts to take it, rather help him to adjust it in his mouth than to move it away from him.

Making him carry the roll three or four steps every time before taking it from him will serve to keep in his mind the object of his lessons and make a little variety in them. It will make no difference whether he sits, stands or crouches while you are trying to make him take the roll from your hand, so long as his attention is kept upon it and he can be made to come forward when necessary. Allow him plenty of time to do things himself in obedience to orders before you resort to punishment to compel him to do so. Make the dog understand that he cannot avoid doing as he is ordered and that the sooner he does it the sooner the lesson will be over. This part of the lessons will require considerable patience, but will pay in the end, and is good discipline for the breaker as well as for the dog.

Before teaching the dog to pick up the roll from the ground it will be well for him to have become accustomed to carrying the larger sized roll and learn to open his mouth wide enough to take into and hold firmly an object as large as the body of a grouse. The most

business-like manner of retrieving is to take a firm hold of the bird's body. In this way, particularly when the bird is only wing-broken, it can be more easily carried through the brush and lifted over briers, and the dog is less apt to get into a way of mouthing or tearing his birds.

To make him pick up the roll it will be better at first to help him if he is inclined to mouth it before taking hold firmly. After that the time will have arrived when it will probably be necessary to use the whip to make him pick it up himself properly and promptly. After whipping him, call his attention to the roll and make him grasp it properly by helping him if necessary, but it will probably not be necessary more than once or twice.

At the next lesson, after getting him so that he will pick it up promptly, toss it a few steps from you, and after ordering him to go on, accompanying the order with a motion of the hand in the direction of the roll, walk with him and direct his attention to it. Make him pick it up as before, and end the lesson when he has done it fairly well. During this lesson keep the check cord in hand, allowing him plenty of slack cord, unless it is necessary to use it, and do not use the whip except when necessary to force him to pick up the roll.

When he can be made to lie down until after you have thrown the roll and he is ordered to catch it, and will then retrieve and deliver it nicely, do not require him to retrieve so many times in succession as to make him tired of it, but only enough to satisfy yourself that he will not refuse.

There will be some difference in the time required to teach retrieving, dependent upon the difference in the dispositions of the dogs. The amount of work attendant upon yard breaking will in many cases be less than has been made to appear probably.

Some dogs may go through the whole course of their retrieving lessons without its being necessary to whip them, but as a general thing teaching a dog to retrieve will bring out all the stubbornness and power of resistance there is in him, and it will be surprising to find how exasperating some dogs can be in many little ways at different times. Be calm and deliberate in your actions at all times, and do not allow the dog to realize that his peculiar behavior is irritating to you.

Calmness and patience, though important at all times, are of the utmost importance in teaching retrieving, and it is much better to let the dog go unpunished than to risk a possibility of punishing him at the wrong time.

Even with the natural aptitude for work which is necessary to successful dog breaking, a man must learn and gain confidence by experience in order to know how to govern his actions in peculiar cases and do the right thing at the right moment.

A gentleman had a dog to which he was very much attached and which occasionally gave proof of extraordinary sagacity. Lately it took sick, and although everything was tried to relieve the animal it ultimately pined away and died. The day before his death he seemed to rouse himself, going out to a corner of the garden and commenced digging furiously. The gentleman's friends augured good from this and predicted a safe recovery, but the owner himself from that moment lost all hope, and his fears proved to be only too well grounded. The dog was digging his own grave!

Another Use for the Hand Camera.

BY HUBERT M'BEAN JOHNSTON.

Unquestionably, hand-camera photography is one of the most fascinating branches of photographic work. While the scope of picture making in this line must be acknowledged to be practically unlimited, it is a fact well worthy of note that those who turn out the best work with one of the little leather covered black boxes, are those who have first served an apprenticeship to the art, with a safely mounted field-instrument. The idea seems to be a common one outside the fraternity, that carrying a set of legs about with one, is a serious objection, when, for the same money or even less, it is possible to secure an instrument that will do just as good work and be very much easier to carry. My own personal experience,—and it has extended over a number of years,—would lead me to advise anyone buying the first camera, to by all means get a field instrument, or all events, one that will admit of the use of a tripod.

But it is not my intention here to go into all the different particulars regarding the precise type of instrument you want to use. Instead, it is assumed that you already have some sort of a hand instrument and that your aim is what the aim of every right-minded photographer should be,—pictorial effect. Now, I want to call your attention to a most excellent use for your little black box.

Suppose you are a pencil or water-color artist and you come suddenly in your rambles through the wood upon a scene which you think ought to make something good. Do you at once sit down and draw or paint it just as you happened upon it. No, you certainly do not. You move about it from viewpoint to viewpoint, rejecting this one and questioning that, and then, instead of trying to produce a masterpiece right on the spot, out comes a portfolio and you merely take away with you a number of hurried outline drawings that may be studied at leisure. Then, next time you come, you are prepared to say which you like the best and draw for that alone. Now, so it is or ought to be with a hand camera. When we are out with a fixed intention of putting on a dry-plate some long thought-out idea that will rank on a level with the works of fancy and imagination of great painters, the value of this pictorial memoranda made with the hand camera, is at once intensified all out of proportion to the respect which has hitherto been paid to it and the task of discriminating is immediately simplified by half. After one has been a few times over the country and has made hand-camera pictures of it from this standpoint and that, it is no longer necessary to sit down of a morning and wonder what direction the afternoon's walk will take. All that one has to do is to pull out a note book of blue prints and at once can be gauged the possibilities of any particular spot at the same time with correct ideas as to the right lighting.

By the aid of our experience with the hand-camera and the repeated photographing of different spots from half a dozen different standpoints,—a thing we would never dream of doing if we were using 8 x 10 plates,— we quickly have our powers of selection made more acute, and we are able to decide far better and with less doubt which position it is best to occupy in attempting any new scene. Or if we are working in the same spot, occasional reference to the little picture that has been made before will at once remove any lingering doubts that we may have had as to just how much and how little ought to be included in our picture. We are able to pick a standpoint where Nature will spread before us all her unfettered beauties—the small and scrubby bushes or the great giants of the wood that rank as kings among their brethren ; or perhaps the glassy surface of the pool reflecting the dark shadows of the overhanging branches until a rippling breeze gives old Sol an opportunity to break his rays on it in a million dazzling points of sheen. Or we

may get the breadth that only goes with great deep masses of shade when contrasted with long stretches of light flooded sward. Or we can decide whether we want those rocks, stumps, old logs, storm-beaten earth and reeds that have bowed their heads before steady driving gales,—whether we need these things or whether we do not need them. These are all some of the things for which we can use the hand-camera memoranda and there are a host more.

No matter how chock full of beauties a subject may be, it is best that the operator make himself perfectly familiar with all its possibilities, and to do this, what can be found that is better than a hand-camera? In prospecting for suitable material, we frequently come upon views which, if treated at a different hour or season, would yield admirable results, but which if taken on the spur of the moment could not possibly make more than a badly lighted photograph quite without that breadth of aspect that old Sol in his proper position, would have enabled us to secure. If we simply passed them on, (and this is what we so often do), in half an hour we would have forgotten that they had ever existed. On the other hand, photographed with the hand-camera, they may be studied at leisure and notes made under them in pencil so that we may come back for a second and probably more successful attack, and one that, by its results, will amply repay us for any trouble we may have put ourselves to in the search for the very best. Surely there can be no possible excuse for the instrument lying idle at any time or season of the year. Spring, summer, autumn, and winter all afford equal facilities for different types of pictorial photography. "To the attentive eye," says Emerson, "every moment of the year has its own beauties, and in the field it beholds every hour, a picture that was never seen before and never shall be seen again."

The earnest photographic student of Nature, whether at her best or at her worst, and no matter with which of her constantly varying moods he is enamoured, will find that in securing it in all its proper effect on a photographic dry-plate, the use of the hand-camera in the same light as the painter handles his sketch book, will not only result in a very perceptible improvement in his work, but also in a saving of plates, a fact which in view of the prices of the larger sizes and those most commonly used for pictorial work, is well worthy of careful consideration.

The following letter has been received from Tom Martin, one of the best guides in British Columbia. It should interest those who care for big game hunting.

SICAMOUS, B.C., Dec. 25, 1902.

As I promised I am writing to you again, and first and foremost as to the Seymour Arm. One of the trappers that was out there this fall got three bears and two caribou. He got the caribou up on the divide near where I said the trail should go. He got the bear near the head of the arm. He says there seems to be quite a number of caribou around that section this fall. Some Indians shot a few near the head of the Anesty Arm, but I cannot say how many. However, they brought in and sold to Mr. Padmore one good head. Another party of Indians was up the Eagle River, and got some caribou, two grizzly bears, two black bears and two goats. They found a great amount of game. The country they visited was to the north of Griffin Lake, where the proposed trail should come out.

Since you were here I was out with the Denver on two occasions; each time visiting the Anesty Arm. We towed the house boat and made the trip in five hours and thirty minutes. As usual the fishing was good this fall; grouse were very abundant. As many as twenty being shot in one day by one gun.

The Rocky Mountains Park.*

Entering by the main line of the Canadian Pacific Railway the Gap of the Bow River, which marks the point where that river debouches from the Rocky Mountains to the prairie lands of Southern Alberta, and following up the broad valley of that river hemmed in on each side by lofty ranges amongst which "The Three Sisters" are a conspicuous feature, keeping their serene and age-long guard over the flowing river, and the restless stream of mortals that pass below, the station of Banff is at last reached at a height of 4531 feet, and the traveller is within what has been set apart by Act of the Dominion Parliament as the Rocky Mountains Park of Canada.

In this vicinity hot springs of great curative value were long known to exist, and when the Canadian Pacific Railway was approaching completion, it was suggested that a reservation of these springs should be made, so that they might be kept always available for the use of the public, and accordingly an Order-in-Council was passed on the 25th November, 1885, reserving certain lands surrounding these springs, and instructions were given for a survey. The survey was made by Mr. Geo. A. Stewart, afterwards the first Superintendent, and he recommended that a much more extended tract be included and that a Forest Park be created. Accordingly on the completion of the survey an Act of Parliament was passed in the year 1887 (50-51 Vic., chap. 32), setting apart, as a National Park, a rectangular tract twenty-six miles in length and ten in width, and providing that this tract should be reserved and set apart as a public park and pleasure ground for the benefit, advantage and enjoyment of the people of Canada.

At this point the Bow River, which has been following a somewhat north-easterly course and is joined by the Cascade River flowing in from an opposite direction, turns more to the east and flows onward to the plains. A short distance above the junction of the Cascade and the Bow, Devil's Creek flows into the former from Devil's Lake, the most considerable body of water in the park, being about twelve miles long and two wide, and occupying what may have been at one time the valley of the Ghost River which now flows past the northern outlet but which would also then have affected a junction with the Bow. The parallelogram laid out for the Park has its greatest length in the direction of these opposing valleys, and it includes also the Vermilion Lakes, west of Banff, and the Spray River coming in from the east near the same point. All this scenery of lake and river and waterfall is surrounded by mountains rising to a height of from 8,000 to 10,000 feet, and forms a picture of beauty and grandeur such as can hardly be surpassed.

It has been felt for some years that the National Park should include a larger area, and in his report for the year 1894, the Superintendent recommended that the bounds be largely extended. This recommendation has been repeated by the present Superintendent, Mr. H. Douglas, and so strongly supported that at the last session of the Dominion Parliament, an Act was passed extending the boundaries of the Park so as to include a large triangle, the Western boundary or hypothenuse of the triangle being the summit of the Rocky Mountains, the boundary between British Columbia and the North West Territories, the eastern boundary being the eastern line of Range eight of the Dominion Lands Survey, commencing where it reaches the summit of the Rockies perhaps fifty miles south from Kananaskis and running north to the north boundary of Township 34, near Clearwater River, making a length in the total of nearly one hundred miles. The northern boundary runs westward along the north line of Township 34 to the summit of the Rockies. This would make the total area to be included in the Park about 2,800,000 acres. This district includes the valley of the Bow River from below Kananaskis to its

* Contributed by the Officers of the Canadian Forestry Association.

source and also its tributaries, the Kananaskis, the Spray, the Cascade, part of the Ghost River and other smaller streams. The northern part includes the head waters of the Red Deer, Clearwater and other streams.

In the broad lower valleys the trees are scattered, giving the country a park like appearance. As the elevation increases and the valleys narrow the tree growth becomes more dense, the best forests now being found between the heights of 5,000 and 7,000 feet. Here and there in the lower valleys may be found some specimens of the Douglas fir, (*Pseudotsuga Douglasii*,) and along the streams the White Spruce (*Picea alba*,) and Balsam Poplar, (*Populus balsamifra*,) while the Aspen Poplar, (*Populus tremuloides*,) sows itself on every wind and appears on all the higher and dryer locations. The most common tree at the elevation of Banff is the Lodgepole Pine, (*Pinus Murrayana*,) which comes in on the dry ground which has been run over by the fire. Along the Bow River are found occasional specimens of *Pinus flexilis*, and proceeding still higher are found *Pinus albicaulis*, Englemann's Spruce, (*Picea Engelmannis*) and Lyall's Larch, (*Larix Lyalli*) the last forming a yellow crown about the summits of the mountains in the autumn when the leaves are preparing to fall. Above these stand up the bare snow-clad peaks.

In regard to rhe forest fires in the Rocky Mountains, the following from a report on this district by Dr. Dawson, the late Director of Geological Survey, is important :—

"Notwithstanding the evidence previously mentioned of the occasional occurrence of forest fires in ancient times in these mountains, it is only within the historic period for the region (probably not before the beginning of the century) that such fires became common, and during the past few years their frequency has increased in a greatly accelerating ratio. The effect of such fires is most disastrous. Large quantities of valuable timber are destroyed and whole regions become so blocked with tangled burnt woods and windfall as to be practically inaccessible, while the fine mountain scenery is seriously marred. These destructive fires in most cases arise through sheer carelessness or wantonness, and the most stringent measures should be taken to prevent them before it is too late. It is often stated that the Indians are responsible for much of this destruction, and it is doubtless true that since they find the whole region in process of being ravaged by fires which they cannot prevent, they have become more careless than before. They would not, however, willingly destroy their own hunting grounds, and the best evidence of their care is found in the fact that while along the North Kootanie Pass (which so far has been scarcely used, except by the Indians) the woods are generally unburnt, these in the vicinity of the parallel Crow Nest Pass, which has now for a few years been the route taken by the whites, are entirely destroyed, and represented only by bleached or blackened trunks."

From the creation of the Park care has been taken for the prevention of fires, and with success, as no serious destruction has occurred from this cause. The area to be protected was small, however, compared with that contained within the present boundaries and it will require an extensive and thorough organization of the fire preventive system if the beauty of the scenery is to be preserved and useless waste of valuable wood material prevented. More important still, however, is the control of the water supply of the valley of the Bow, Red Deer and other rivers. The Bow River is the source of supply of the most important irrigation projects in the North-West, including several in the vicinity of Calgary, and the large scheme which the Canadian Pacific Railway are undertaking further to the East is dependent upon it and the Red Deer River. Irrigation requires a steady water supply, not a flood in the spring and a water famine afterwards, and one of the easiest and cheapest methods of providing for it is to preserve the forest cover of the sources. The extension of the Park has not been made too soon, and it is to be hoped that measures will be taken as speedily as possible for the adequate protection of the whole watershed which it dominates.

While the forests hold the chief place in the eye of the forester, there are other features of the Park worthy of mention. The principal fish are the lake trout (*Salmo namaycush*), and in the rivers the bull trout (*Salvelinas malma*); and rainbow trout (*Salmo mykiss*). There is also what is called the grayling but is really a whitefish (*Corego Williamsoni*). These are good game fish and may be caught by any person who pays sufficient attention to their habits to understand the proper way of doing so. The ordinary tourist has, however, not always made a success with the rod, and it is proposed to take steps to have the water fully stocked so that none need go away unsatisfied even if his skill as an angler be of the poorest.

In the report prepared for the Department of the Interior at the date of the establishment of the Park the wild animals were given as the wapiti or elk, the black tail or mule deer, the white tail or jumping deer, the red or Virginia deer, the pronghorn antelope, mountain sheep and goats, bear, beaver, otter, mink, etc. The list was perhaps more extended than the facts would warrant, especially in respect to the larger animals, as those which would more likely be found in the foothills were included in the list. Regulations have been made for the protection of the wild animals, and in addition an effort is being made to gather into the Park the representatives of all the Canadian wild species so that some specimens may always be preserved whatever the exigencies of the future. The most notable animal thus perpetuated is the old king of the prairie, the buffalo, a number having been presented to the Park through the kindness of Mr. G. T. Blackstock and Lord Strathcona, which are succeeding well and increasing in numbers. The elk and musk ox have also been added to the collection The birds are mainly birds of passage, such as ducks and geese, but they are numerous at the times of migration. To attract them to the Park some wild rice was obtained from Ontario and planted but with poor success, and on account of the coldness of the water it is hardly likely that it will be possible to bring it to maturity.

A museum has also been established in which will be brought together specimens of animals, birds, insects and other subjects of interest characteristic of the Rocky Mountain district. Considerable progress has been made with this collection and it will probably be placed in a new and specially constructed building in the near future.

Canadians have reason to be proud of their National Park. Nature has nowhere been more lavish of her beauty or reared it on a grander scale. Let there be preserved unmarred to the Dominion of the present and the future this gem in her crown, that its beauty may rejoice the heart and its cooling waters descend in steady flow to rejoice the thirsty land.

Some time last spring Mr. George H. Carley, secretary of the Gore Kennel Club, Hamilton, purchased a pair of French bulldogs from a firm in Paris, France. The firm, it appears, gave references which were satisfactory to Mr. Carley, who immediately remitted the price—$250. Mr. Carley has greatly increased the revenue of the post office department in his efforts to find out the why and wherefore of the non-arrival of his purchase but without effect. The last letter took the shape of an ultimatum, giving the firm one month to deliver the dogs or refund the money. In the event of no satisfactory settlement the Government will be asked to make some inquiry into the matter.

Dog Team on Pike Lake, B.C.

One of the Provincial Police and his "tillicum," or chum, off for a hunt.

CHIEF SHAKES' CANOE.

A type of the cedar dug-out in use by the Indians of the Stikine River, B.C.

Ontario Forest Reserves.

Regulations have been established by the Government of the Province of Ontario for the Forest Reserves under its control. The immediate occasion for the passing of these regulations was the opening up of the Timagami Reserve by the Timiskaming Railway and the necessity for making provision for the regulation of prospecting and mining development in the Reserve. These regulations apply to reserves set apart under the Forest Reserves Act of 1898 and amendments thereto.

The Commissioner of Crown Lands is authorized to appoint a Superintendent to have charge of any reserve, and as many rangers or forest guides as he may deem necessary, and may employ them for such periods of the year as may appear to him proper. In order to control travel in the reserves these officers are given authority to require from any person entering or passing over them information as to his identity, duration of his stay, part of reserve he intends to visit or any matters of a similar nature.

Prospecting for minerals will not be allowed except to those holding permits for this purpose, for which a fee of $10.00 is charged, and which will be good for twelve months from the date of issue. Permittees may be required to furnish security for the due observance of the regulations. No lands shall be disposed of for mining purposes in any reserve which in the opinion of the Commissioner of Crown Lands are valuable for the timber thereon or are in the vicinity of any considerable quantity of timber, and all timber of every kind upon lands in a forest reserve located, sold or leased, shall be reserved to the Crown. The Commissioner may, however, allow the use of such timber as is required for purposes essential to the carrying on of mining operations on terms of payment to be fixed by him. The owner or lessee may be required to clear fire lanes for the protection of timber on his lands or lands adjoining. Mining operations can be begun or resumed only by the written consent of the Commissioner, on an application giving full particulars as to the land and proposed operations generally, and no ores containing sulphur or other deleterious substances shall be roasted in the open air in any reserve, or treated in such a way as to expose the trees and other vegetation therein to injury.

Standing and growing timber must not be injured or cut without authority.

Fires may be started only for the purpose of cooking, obtaining warmth, or clearing lands with the consent of the Commissioner for some industrial purpose permitted to be carried on. Every person who makes or starts a fire in the open air for cooking or camping purposes shall (a) select a bare rock whereon to kindle such a fire wherever possible, and if there be no bare rock in the neighborhood, then a site on which there is the smallest quantity of vegetable matter, dead wood, branches, brushwood, dry leaves or resinous trees; (b) clear the place in which he is about to light the fire by removing all vegetable matter, dead trees, branches, brushwood and dry leaves from the soil within a radius of ten feet from the fire; (c) exercise and observe every possible precaution to prevent such fire from spreading, and carefully extinguish the same before quitting the place. Any burning substance from a match, cigar, pipe or firearms must be extinguished. Everyone in charge of any party in the reserves must have a copy of the regulations and read it to his party at least once a week.

Locomotive engines must be provided with the most efficient means to prevent the escape of fire, including a screen of netting in the smokestack, and it shall be the duty of every engineer to see that such appliances are properly used.

The Commissioner may construct roads, ways and buildings, but no person, company or municipality, except for the necessary and convenient operating of mines on patented or leased lands, or for some other industrial purpose permitted by the Commissioner to be carried on,

shall do so without special permission, this prohibition including the running of steamboats.

Every person acting as guide in the reserves must obtain a license from the Superintendent, for which an annual fee of $1.00 is to be charged. Any one acting as guide without a license is subject to a fine of $50.00 for each offence, or in default to imprisonment for a period not exceeding six months. Any violation of the regulations by guides renders them liable to forfeiture of the license.

These regulations have evidently been framed with much care, and with an adequate staff and a proper enforcement they should be effective in protecting the timber, while at the same time permitting travel through the reserves for pleasure or business and the development of the mineral resources. It is well that the Crown should retain the timber entirely in its own hands and that it should used only under proper restrictions and supervision, as in no other way could it be assured that adequate protection would be given.

There is no provision in the regulations, however, for the cutting of timber, although in the Timagami Reserve at least parts of the forest are fully matured and are quite ready for that process, and, in fact, are none the better for waiting. There are two methods in which the timber could be dealt with, *i.e.*, either to be cut by Government officers and sold in the log, or else sold on the stump and cut under supervision of such officers. Either method would require a staff of trained officers, and the question is as to which would be the most convenient and practicable. Possibly the special circumstances of a particular case might render either one or the other method preferable, but, on the whole, it might be advisable in the beginning to be content with selling to the lumber operators the standing timber at a rate per thousand. Natural reseeding will have to be depended on for the reproduction of the trees, and, therefore, it will be necessary to see that the cutting out of the valuable trees does not merely result in giving opportunity for the more vigorous growth of the poorer ones and the suppression of the young growth which should furnish the future crop. Means must be devised for the economical removal of the less valuable, though mature, trees, so that the more profitable ones may be given every opportunity of occupying the ground. The disposal of the débris of lumbering operations is another matter that requires attention if fires are to be prevented and the land put in the best conditions for reproduction. Fire seems to be the only agent by which this can be accomplished under present conditions, but it will require the most careful handling.

The management of timber reserves is one of the most important questions of forest administration, and we will be glad to have the opinion of any of our readers on the subject.

In a recent number of "Queen's Quarterly" is an article by W. H. Muldrew, on "Some Recent Contributions to the Literature of Forestry," calling attention to the literature which is growing up in Canada as a result of the interest which has been taken in Forestry. Very appreciative reference is made to the publications of the Canadian Forestry Association, and in recent literature issued in the United States special mention is made of "Practical Forestry," by Professor John Gifford, which is certainly a useful and interesting contribution to the history of the subject.

In the article in our January number on "The Lumber Supply of the West" an error occurred in giving the quantity of Douglas fir destroyed by fire in Washington State as 5,020,800 feet. The quantity is 5,026,800,000 feet, and the value $5,026,800.

Guardians of Game.

The third annual meeting of the N.A. F.G.P.A. was held in Ottawa last month. The members met in the City Hall Council Chamber on the afternoon of January 21st.

The North American Fish and Game Protective Association was organized three years ago in Montreal, the Hon. S. N. Parent being the moving spirit. He was chosen as its first president

As the name implies, the object of the association is for the preservation of fish and game and the harmonizing of laws.

In the protection of fish and game the association deals with the preservation of the forest and makes endeavors to have it preserved from destruction for commercial purposes, or by forest fires or from other causes. Regulating the seasons and taking intelligent efforts to prevent the introduction of fish that would destroy those already there, and of value for their sporting or edible qualities, such as introducing black bass into natural trout and ouananiche waters.

The harmonizing of the laws of the different provinces of Canada and the adjacent states of the American union is also an important consideration.

At the business sessions of the association reports are received from the representatives of the different states and provinces as to what legislation has been carried affecting the association.

The delegates assembled in the City Council Chamber at 3 o'clock. The Hon. R. F. Latchford, the president, found himself supported by some fifty delegates. After referring to the importance of Ottawa as a fish and game centre, the president welcomed the delegates from both sides of the line, saying that in sportsmanship there was no boundary. He then called on Mayor Cook to extend the civic welcome. The Mayor was glad to greet the sportsmen, Canadian and American. He thought the more the two countries came together in such gatherings the more would be promoted a feeling of kinship and Anglo-Saxon brotherhood. He was glad to extend the freedom of the city to the delegates. In thanking the Mayor for his welcome, Mr. Latchford said he thought the petty influences which had kept the two peoples apart were growing less and less and the mutual regard increasing,

Dr. Finnie, of Montreal, read an interesting paper on the wolf, which are numerous wherever the red deer is found, and are a cause of loss to the settler in sheep. The Ontario Government has provided a generous bounty, and as a result Ontario is free from the animals, except in the northern parts. In Quebec there is no bounty, and there is great need for one to protect game and stock. Dr. Finnie thought the association should pass a resolution to strengthen the hands of Premier Parent, who is in favor of a bounty, but is kept from acting by the fears of his colleagues that the payment of a bounty would take too much money from the treasury.

Prof. John Macoun said that the deer do not extend indefinitely to the north, but only in a belt between the settlers to the south and the wolves to the north, and when word comes that deer are plentiful it means that the wolves are pressing them more fiercely than usual. The professor said that unless the Quebec authorities take steps to exterminate the wolf, the wolf will exterminate the deer and the red deer will vanish from the face of the earth as has the buffalo. The same fate threatens the moose, which are being pressed down after the deer. The old moose is able to take care of himself, but the young are not. The bounty on wolves should be so large that wardens and others will hunt the animal for profit.

At the close of the discussion Dr. Finnie brought in a resolution reciting the state of affairs, and reading :

"That this association strongly recommends that the Quebec Government take the matter into its serious consideration, and that a bounty be offered for every pelt and that General Henry, Mr. E. T. D. Chambers, Mr. C. E. E. Ussher

and Dr. Finnie be a committee to urge the Government to action."

Mr. D. G. Smith, fishery commissioner of New Brunswick, said there was no friction in the administration of the fish and game laws between the officers of the state of Maine and Quebec, and those of New Brunswick. One improvement might be made, viz.: if it were possible to make the processes of the magistrate's courts co-operative on both sides of the border lines. It might, at all events be done as between Quebec, Nova Scotia and New Brunswick. The game fish of those provinces are holding their own; big game are decidedly increasing. Visiting sportsmen seldom secure the coveted moose and caribou heads. New Brunswick requires no license to be taken out for the hunting of any game save moose and caribou; the license fee for these being $30 for a non-resident, and $2 for a resident. The public domain being an asset of the province, its game should no more be taken free than its lumber. Guides should be content with their privilege of working at their calling without charge on the public property. Some of the best salmon and trout centres formerly leased by the province were reserved at the last general sale, to be opened to the public, yet the amount realized was equal to that of the preceding term. All the Crown Land lakes and streams of New Brunswick in ten of its fifteen counties are open free to the public—resident and non-resident alike. Fishing privileges, like the mines, are reserved to the public in all Crown Land grants issued. The amount received for big game licenses last season was $2,000 more than in 1901.

Mr. S. T. Bastedo, deputy commissioner of fisheries for Ontario, spoke shortly on the help given by neighboring states and provinces in enforcing the game laws. Ontario officers had received much assistance from commissioners of various border states in the enforcement of the law forbidding the sale of bass. Then Ontario and Quebec had worked together in this respect, and officers along the boundary were instructed to help one another. Mr. Bastedo said that there are 120 game overseers in the province with a number of game wardens who received salaries of $600 a year, as against the $500 paid to such officers in New York state.

Mr. G. H. Richards, president of the Longue Pointe Club, Boston reported briefly on behalf of Massachusetts. He said that their law prohibiting the sale of woodcock and partridge has been very beneficial in its action, and reviewed shortly the satisfactory condition of affairs in his state.

A resolution proposed by Col. Irwin that the attention of the Quebec Government be called to a deficiency in the act which requires proof of catching fish in addition to the possession of illegal implements, brought out an interesting discussion on the divided authority of the Dominion and provinces. The motion was withdrawn on the assurance of the president that representatives from Ontario, Quebec and New Brunswick would wait on the Government this week to discuss this question.

A resolution directing that all recommendations for legislation be referred to the executive committee for consideration before being brought before the convention was carried after a long discussion.

Secretary Chambers read a communication from the secretary of the Canadian Forestry Association, asking that delegates be appointed to attend the meeting of their association to be held in this city in March. It was decided to send two such representatives and their selection was left to the president.

The committee on location reported in favor of Portland, Me., as the place for next meeting, and this was carried unanimously.

The meeting came to a close on the evening of Jan. 22 at 6 o'clock, so far as the business sessions were concerned, and the meeting was characterized by all as the most successful in the history of the association. In the afternoon the following officers were elected on recommendation of the nominating committee:

President, L. J. Carleton, Augusta, Maine.

Vice-presidents, H. O. Stanley, Dixfield, Me.; John Fottler, jr., Boston, Mass.; R. E. Plumb, Detroit, Mich.; A. T. Dunn, St. John, N.B.; Nat. Wentworth, Hudson Centre, N.H.; C. H.

Wilson, Glen's Falls, N.Y.; C. A. McCallum, London, Ont.; Dr. J. T. Finnie, Montreal, Que.; F. G. Butterfield, Derby Line, Vt.; C. S. Harrington, Halifax, N.S.; S. A. McGrath, Franklin, Pa.

Secretary-treasurer, E. T. D. Chambers, Quebec

Executive committee—Chas. E. Oak, Augusta, Me.; F. S. Hodges, Boston; Henry Russell, Detroit, Mich.; D. G. Smith, Chatham, N.B.; Nat. Wentworth, Hudson Centre, N.H.; J. H. Seymour, New York; S. T. Bastedo, Toronto; C. E. E. Ussher, Montreal; F. L. Fish, Vergennes, Vt.; H. M. Wallace, Halifax, N.S.

Membership committee—L. Z. Joncas, Quebec; Dr. W. H. Drummond, Montreal; W. W. Henry, Quebec.

Auditing committee—W. J. Cleghorn and L. O. Armstrong, Montreal.

President Latchford appointed Dr. Finnie and Mr. Montague Smith as representatives of the association to wait upon the Canadian Forestry Association, which meets in Ottawa on March 5th next.

Valuable papers were contributed at the closing session by Mr. Wm. McKirdy, of Nepigon, on "The Nepigon Trout"; by Mr. S. T. Bastedo, deputy commissioner of fisheries for Ontario, on "The Stocking of Inland Waters"; by Mr. Thomas Southworth, chief of the forestry department, on the "Forest Reserves System of Ontario," and by Mr. H. G. Elliott, assistant general passenger agent G.T.R., on "Hunting and Fishing in the Highlands of Ontario." These were followed by a paper by Mr. C. S. Smith, of the C.A.R., protesting against night fishing for frogs.

The following resolutions recommending changes in the game laws were passed:

"Whereas it has been brought to the notice of this association that a failure of justice has frequently happened by reason of the absence of the provision of law hereinafter recommended;

"Resolved, that legislation ought to be passed by the Legislatures of all states and provinces represented in this association to make it an offence punishable by fine or imprisonment to have nets, spears or other appliances for taking fish in possession on or near any waters at times and places where it is unlawful to use the same. It is further resolved that Gen. Henry and Lieut.-Col. Irwin be a committee to assist the local member of the executive committee in urging such legislation upon the Province of Quebec and to present this resolution to its Government and the members of the Legislature.

"Resolved, that the association recommend the stopping of the sale of woodcock and partridge in the provinces of Canada and contiguous states."

A resolution appreciative of the services of the secretary, Mr. E. T. D. Chambers, was passed and the sum of $100 voted him for his services. Resolutions of thanks were also passed thanking President Latchford, Mayor Cook and the City Council for the use of the council chamber, the railroads for their courtesies, and the press of the city. The final vote of thanks was to the entertainment committee, whose chairman, Mr. John Emo, and secretary, Mr. John Byrnes, have been indefatigable in making the convention a success.

According to secretary-treasurer E. T. D. Chambers, there is a respectable balance of cash on hand. The increase in members during the past year was twelve, there being over eighty members on January 1st.

Our Medicine Bag.

An English sportsman who is very well known to a great many residents of the Dominion is Admiral Sir William Kennedy, K.C.B., at one time in command of H. M. S. Druid, on fishery duty on the Newfoundland and Labrador coasts. Admiral Kennedy has just published a very entertaining book "Sport in the Navy," dealing not only with the sport he enjoyed on the North American station, but also in every other part of the known world. It may almost be called a gazetteer of sport, for the author has had a crack at almost all things that walk, fly or swim in the four quarters of the globe. We do not think that a peripatetic sportsman could provide himself with a better guide book.

Of the sports to be enjoyed off the coasts of the Dominion, the Admiral says: "The North American Station has always been popular with Naval officers, especially the Northern part of it, on account of the sport, the climate and pleasant society. My first acquaintance with Halifax was in the Hero, when we spent four delightful months there, and it was then, in 1864, I was first initiated in the fascinating sport of fly fishing. Our parson was an enthusiastic fisherman and he took me in hand. The lakes in the neighborhood were well stocked with trout, and I remember my first day on the Spider Lake, when I caught seven, and thirteen the next; after that my education was complete, and I was not satisfied with less than four or five dozen." The author enjoyed capital fishing in Drysdale Lake, 12 miles from Halifax on the Musquadobit, the Clyde, and in various other Nova Scotian waters.

But it was in Newfoundland that the Admiral evidently enjoyed himself most, for he gives a decidedly rosy description of what he did in that charming island. He accounts for the heavy antlers of the Newfoundland caribou by the feed being superior to that of any other region where caribou or reindeer are found. He says: "The caribou of Newfoundland is really a woodland reindeer, identical with the reindeer of Scandinavia, but far heavier in the body, and with more massive antlers. This I attribute to the superior feeding in Newfoundland—the moss on which they feed being found ankle deep on the islands; and also to the shelter afforded by the woods, whereas the reindeer lives on the fjelds of Norway and Sweden, without any shelter whatever from the stormy blast; the moss is also very sparsely distributed, at least, such is my experience."

The Admiral of course had his turn of service on the North Pacific Station, and seems to have profited by his opportunities while stationed at Esquimalt, and he says: "For all-round sport with rod, gun and rifle, combined, with a fine climate, beautiful scenery, and pleasant society, commend me to Vancouver Island. Here one can sleep in a blanket, and shoot or fish all day as in Scotland; and in the same clothes, and I know no more delightful occupation than wandering through the woods with gun or rifle, or trolling for salmon in the lovely harbour of Esquimalt."

Sport in the Navy is published by Archibald Constable & Co., Ltd., 2 Whitehall Gardens, London. The price is six shillings.

Stories of extraordinary sagacity shown by dogs do not surprise anyone now-a-days,—they are so rife that the unreflective reader looks upon them as a matter of course, and does not care to strain his brain-pan over the why and the wherefore of such common occurences. There is no question that most of the recorded instances of marvellous feats performed by dogs represent more frequently the results of careful and patient training than the intuition of the animal itself, although there are numerous well-authenticated instances where natural intelligence, stimulated by circumstances calculated to excite the dormant faculty of reason (or instinct, as some will have it) has prompted actions in which analysis, fearlessness and fidelity must have been combined in

order to their successful accomplishment. A bright example of what may be had by proper training, added to natural sagacity, may be daily seen on the London & South Eastern Railway, where a little fox terrier—one of the most esteemed officials of the road—does his daily round of duty. It is employed as a messenger between the London terminus and a signal box some distance up the line, to which it carries despatches to the signalman, returning with his answers thereto. The trusty messenger comes on duty regularly every day at two o'clock, leaves off at the allotted time, and while engaged in its work will allow no one to intercept it. Wet or dry the faithful animal never fails to appear on the stroke of the clock, never goes on a drunk or strikes for higher pay, and it is known and idolized by every employee in and around the station.

Messrs. Lally and Stevenson, of Toronto, returned recently from a couple of weeks moose hunting in the Lac du Bonnet district, Manitoba. Mr. Lally says that this is the best hunting ground he has ever visited. This year big game is especially plentiful, and the two sportsmen succeeded in bagging a moose apiece.

They saw one elk, but were not fortunate enough to get a shot at it. Their bag was completed by a bear and a number of wild fowl.

Dr. Bernard Fernow, the well known director of the New York State College of Forestry, in Cornell University, has just published through Messrs. Thos. W. Crowell & Co., of 426 and 428 West Broadway, New York, a most valuable text book on "The Economics of Forestry." It is undeniable that up to the present we have been sadly lacking in works dealing with the economical side of forestry, although the German literature is very rich in such books. Dr. Fernow seems to have covered the subject very thoroughly. In the first place he discusses the relation of the State to the natural resources of that State; then he attacks the forest as a resource; after which he discusses the forest as a condition; then forestry is defined. Further on he deals with the business aspects of forest production, and goes into the natural history of the forest and silviculture. He has also something to say on forest policy, and touches upon the forest policies of foreign nations, ending with a careful summary of the conditions obtaining in the United States, and with the growth of the forestry movement in that country.

The price of this indispensable work is $1.50, or by mail, $1.65.

The editor of the *North Star*, published at Parry Sound, delivers his ideas as to the destruction of salmon trout in the following paragraphs:

"Last week we referred to the close season for salmon trout, and pointed out, as we have almost every season for the past twenty years, that the framers of the statutes as to the close season for these fish, had made a mistake, and that no fishing whatever should be allowed for either salmon trout or whitefish between October 15th and November 15th, or, better still, from the first-named date—October 15th—to the end of November. During a residence on Georgian Bay of twenty-two years we have known of only three years in which the fish delayed their run on the spawning beds until the close season, and in all other seasons the heaviest run was in the last of October and the first half of November.

"It would not be so bad for the preservation of the fish if netting was absolutely prohibited on the shoals or within the waters of the islands. There is such a regulation as to net fishing among the islands, but the line ought to be extended to the outside shoals. All the fish that legitimate anglers take on the spawning beds would not make any difference in the visible supply of fish, but the netting that is going on all through the spawning season, or at least during the spawning that takes place in October, is playing havoc with the fishing of Georgian Bay.

"At the present moment nearly every shoal along the coast line of the bay is surrounded by a circle of nets, so much so that it is almost impossible for anglers to troll for salmon trout. Certainly it is an annoyance and a shame that these splendid food fish should be slaughtered wholesale at the time when they are seeking to perpetuate their species by laying eggs on their usual spawning beds.

"We trust that this state of affairs will not be allowed to continue much longer, but that steps will be taken to change the close season for salmon trout, and that netting will be absolutely prohibited at all seasons of the year among all the islands of Georgian Bay."

There can be no doubt that the taking of any fresh water fish upon their spawning beds is a great mistake, moreover, the fish are not then in condition.

There have been books innumerable about dogs, but it remained for Dr. Egerton R. Young to find a way of saying something entirely new, and, therefore, interesting about man's best friend. Dr. Young has just published an important book about dogs in the Northland, and as he has been a missionary to the Indians of the Northwest for a number of years, he has naturally had a great deal to do with the hauling dog, for as a matter of fact, most, if not all these dogs, have to accept the inevitable destiny of their species in the Great Lone Land.

Any man who has done more or less winter travelling far from the railways, has carried away some lively recollections of the dogs that dragged him across the frozen plains and streams of the North. The "Huskie" is indeed a dog apart from other dogs. He has all the vices that it is possible for a dog to have, and yet they are offset, and more than offset, by his one kingly virtue—no other dog can haul with him, and in a country where the dog is kept as a beast of burden, this is, of course, a prime requisite. As Dr. Young says, "Steal they always would and did, anything eatable, and many things considered uneatable, they could not pass by. I have known them to leave their supper of white-fish to go and tear smoked moose-skin moccasins down from a clothes-line and greedily devour them. An old leather shirt was considered a dainty morsel, and at times there seemed to be more than even poetic justice in the fact that, if they could find the whip of a cruel driver, they speedily devoured the lash, even it were ten feet long, and only made of braided buckskin and loaded with shot throughout."

This well illustrated and well written little book is published by the Fleming Revell Co., 25 and 27 Richmond Street, West, Toronto. The price is $1.00.

His Honour Lieutenant Governor Snowball, of New Brunswick, is Vice-President, for that province, of the Canadian Forestry Association. Mr. Snowball has been connected with the lumber industry in New Brunswick for many years, and is now one of the largest operators, and the trade circular issued by his firm is an authority on the timber trade. Besides his successful management of private enterprises he has also held prominent positions in public life, having sat for some time in the House of Commons and for a longer term in the Senate, previous to his appointment as Lieutenant-Governor. We are pleased to be able to announce that His Honour has very kindly consented to submit a paper on lumber conditions in New Brunswick at the annual meeting of the Canadian Forestry Association to be held in Ottawa on the 5th and 6th March next.

A course of lectures on Forestry is to be given by Dr. B. E. Fernow, at Queen's University, Kingston, from the 26th to the 30th January, inclusive.

The fourth annual meeting of the Canadian Forestry Association will be held at Ottawa, on the 5th and 6th March, 1903. So far as the programme has been arranged papers will be submitted by His Honor Lieutenant-Governor Snowball; Mr. J. S. Dennis, of Regina; Mr. W. T. Macoun, of Ottawa, and Mr. W. C. J. Hall, of Quebec, on subjects of special importance relating to the provinces which they represent. It is hoped that all members of the Association will assist in making this meeting a success by ensuring a large attendance. If any member wishes to submit a paper or subject for discussion, notice should be sent to the Secretary at as early a date as possible. Matters of

HAPPY DAYS.

Some young fishermen who did well on the French River last summer.

THE BIRCHBARK.

All the poetry and mystery of the forest are in it,—and often all the pork and hardtack, too

LAKE ATLIN.

A winter scene in Northern British Columbia.

BRINGING IN THE BUCK.

This Gatineau deer made a heavy load for two stout men.

great importance will be dealt with at this meeting. It is proposed to place the work of the Association on a more extended basis and to undertake a considerable development of its scope of operations. Fuller notice will be sent to each member by mail at a later date.

Stevens rifles are well known to be exceedingly accurate weapons, and we were not surprised to learn that on the first day of the present year Mr. Harry M. Pope, with a Stevens rifle fitted with a "Stevens-Pope" barrel, succeeded in breaking both the 50 and 100-shot world's records on the Standard American target at 200 yards off hand, with a full score of 100 bull's eyes. The former 50-shot record of Dr. W. G. Hudson's was 462 points, and this was raised to 463. The 100-shot record of 900, also Dr. W. G. Hudson's, was raised to 908. The shooting was done at the first shoot of the year, under the auspices of the Rod and Gun Club of Springfield, Mass., and the weather conditions were perfect.

A Boston correspondent has favored ROD AND GUN with a note which he asks it to publish editorially or otherwise as deemed best. We have read it carefully and agree cheerfully to do as he desires, but at the end of the said note, we propose to append a few comments of our own:

A movement is on foot to improve the guide service in the Laurentian district north of Quebec. The guides there are Indians, half breeds and French Canadians, and they are not educated up to a standard of proficiency that compares with that of Maine guides. A few who do considerable hunting and trapping in the winter months are good hunters and fairly familiar with the handling of a canoe, but the majority are simply carriers without knowledge of the country or a canoe, and sadly lacking in what may be termed "guide duties."

There are some fifteen clubs in this district, the rights being leased to them by the Government. The Triton Club, leasing some seven hundred square miles, about one hundred miles north of Quebec, has appointed a committee whose duties are to raise the standard of men who serve as guides in that district. It is the scheme to have committees appointed by each club and to have said committees work together under a general plan.

Success will be slow in coming even under the best of conditions, but the movement is a good one and should receive the hearty support of all the clubs of that district. Every club member should take a personal interest in this step forward.

Communications from any club members, bearing suggestions or criticisms will be thankfully received by Andrew G. Weeks, Jr., No. 8 Congress St., Boston, acting for the committee of the Triton Club.

The Laurentian district north of Quebec, is not so well known to us as the Laurentians further West, but so far as our experience goes, the Canadian guides, whether Indians, French Canadians or of British descent, have nothing whatever to learn from the Maine guides. For those whose tastes run to extreme luxury, who require "camps" that are really elaborate dwelling houses, and who want everything made easy, the Maine guide may be preferable to the homespun article produced in the Canadian backwoods; but those sportsmen who delight in wilderness life, and require *men*, capable of carrying, let us suppose, a 96 pound canoe over an eleven mile portage without grumbling, and also able to carry a load of 200 pounds, or even at a pinch, just double that weight, as one young Indian we know can do, if necessary, will find the guide of the Laurentian chain as good a servant as he should ask for. Better woodsmen and canoemen do not exist. Our correspondent must have been unfortunate, and we will venture to say that his experience has been altogether exceptional. There is probably no need for any committee to have been appointed to raise the standard of the guides in the district north of Quebec. If it should prove that we are in the wrong as regards this particular district, it is very certain that we are right in our contention, that, as the general thing, the Canadian guide would be bad to beat at his own game.

The annual show of the Westminster Kennel Club, the first in importance on this side of the Atlantic, will be held in Madison Square Gardens, on February 11 to 14 inclusive. The entries have gone on increasing year by year, and, as the number of dog fanciers is also being added to immensely, there is no reason to doubt that the show of 1903 will be a record one as far as the number of dogs benched is concerned. At the same time the quality in all breeds should be equal to anything yet shown, as amateurs and professionals alike have shown a disposition for years past to breed only from the best types, and this wise policy is now beginning to bear fruit. The prize money runs up into the thousands, besides which there is a large number of valuable specials, contributed by specialty clubs, etc. There is a strong array of judges, several as yet unknown in the judging ring, but all are specialists in the various breeds assigned to them. Among those who have been honored with an invitation to place the ribbons at this important function are two Canadians, namely, George Douglas, Woodstock, Ont., who will undertake sporting spaniels, and Mr. A. P. Fraser, Toronto, who will pass in review Scottish terriers.

The Woodman's Handbook, Part 1, by Professor H. S. Graves, Director of the Yale Forest School, is a very useful publication recently issued by the Bureau of Forestry for the United States. As stated in the introduction, the purpose of the Handbook is to give a collection of tables and rules of practical use to lumbermen, foresters and others interested in the measurement of wood and timber. Only such information as is deemed of immediate practical value to American woodsmen is included. The unit of measure most commonly used in this country for selling logs and lumber is the board foot. The amount of manufactured lumber which can be sawed from logs of different dimensions is shown in log rules. Satisfactory log rules are difficult to construct, because the sawed product of logs depends on the skill of the sawyer and on the kind of machinery used, which necessarily vary. There are now in use in the United States and Canada over forty different log rules for board feet. The old Scribner rule used until recently in Manitoba and the North West Territories, the Scribner-Doyle rule used in Ontario and the special rules used in Quebec, New Brunswick and British Columbia are included more or less fully. As the cubic foot is used commercially in America to a very limited extent, only the simplest rules for its use are given.

The first volume comprises rules for finding the contents of logs and standing trees, methods of estimating timber, a brief outline of forest working plans, and a description of instruments useful in the woods.

A critical consideration of the various log rules now in use will be given in a later bulletin of the Bureau of Forestry.

It is the intention of the author to include in a second volume directions for studying the growth of American trees, tables of growth, as far as the growth of American trees has been studied, directions for the study of the future production of forests, tables showing the future yield of forests, and miscellaneous tables of value to woodsmen.

As considerable copyrighted matter is included in the Handbook it cannot be obtained by purchase either from the Bureau or otherwise, so that its area of usefulness may thus be somewhat restricted.

A contributor to a recent issue of the London Field, gives the following account of salmon fishing in Newfoundland :

In the first place, the best way to go there is by the Allan Line to Quebec, getting off at Rimouski, where a train meets the boat and takes you via Truro to Sydney, Cape Breton ; thence a steamer takes you about eight hours to Port aux Basques, the western terminus of the Newfoundland Railway. This brings you within an hour's run of the Codroy, a fine river with plenty of pools and full of fish. From here you can move on to Crabbe's, Robinson's, Fischell's, and Harry's brooks. At the last you will find good accommodation at Messrs. Powlett and Dodd's two

hotels, Bay St. George and Log Cabin. Here are supplied tents, guides, and all camp equipment. From this base four rivers can be easily fished ; and as they are directly on the railway track, the fishing is more accessible than in the case of those rivers which are farther away from the line ; but, on the other hand, this has its disadvantage, as there are more fishermen, all the rivers being free.

Now, I wish to set at rest once for all the prevailing idea that Newfoundland salmon will not take the fly I can only say that I used nothing else the whole caught. I made the mistake—it being my first visit—of going to a late river for salmon first, instead of an early one, consequently my first fortnight was wasted. However, I am quite satisfied with what I saw, and mean, if possible, to go over again next year, hoping to profit by what I have learnt. The country is full of salmon rivers, few of which have ever had a line on them, and as the Government have appointed a fishery inspector in the person of Judge time I was there, and, notwithstanding a somewhat dry season, I was fairly successful in catching fish. My best take

was seventeen salmon in four days, but that was nothing to what some rods Prowse, a most painstaking official, who is working hard to put down the netting and stop all kinds of poaching, there is no reason why in time this should not be the finest fishing country in the world. However, let no one attempt to go there who is not prepared to a certain extent to rough it, and in places to rough it pretty considerable.

In the first place, there are no roads whatever in the island, except in the vicinity of St. John's. The railway cuts across most of the rivers, including all those I have mentioned, but after quitting the train one has to walk over one of three abominations (probably all three), viz. : Along the railway track, stepping from sleeper to sleeper ; or by a so-called trail, through marsh and jungle, which is so rough that it can be easily lost even by the guides ; or up the bed of a river, which means walking over boulders and constantly fording from side to side. The latter is the best route if you have a boat for your baggage and a canoe for yourself. The flies also are very bad, and make your life a burden. Black fly, deer fly, sand fly, and mosquito are to be met with everywhere.

The sport to be obtained, however, is well worth the trouble and discomfort incurred. I should add that the salmon do not run large ; my experience this season was six or eight grilse, averaging 4 lb., for one salmon of 10 lb. to 15 lb. I saw some large fish which might have weighed 25 lb. The best fish taken this year on a fly was 26½ lb. Trout are numerous, and in many places run to a big weight. I trust these few notes may be of assistance to anyone who wants an economical fishing trip in a lovely climate.

The Angling Editor of the Field says : "American anglers have been complaining that their native brook trout (*Salmo fontinalis*), which is a kind of charr, has been disappearing where rainbow trout have been introduced, the inference being that the introduction of rainbow trout is therefore a mistake. This is a strange position to take up, for anyone who has caught and eaten both these fish would, I imagine, have no difficulty in saying that the rainbow trout was far superior to *S. fontinalis* in the river, on the line, and on the table. No doubt there are in America fly fishers who have a sentimental attachment, bred of long association, to the brook trout, as there are men in England who would be sorry indeed to see the rainbow trout or any other fish take the place of our good old English brown trout, *Salmo fario*. Yet who would not say that the sea trout affords better sport than the brown trout, and if this is admitted, the rainbow trout must also be so far considered better than our native species, for it closely resembles the sea trout in appearance, and in its free rising and gallant fighting habits."

We are in receipt of a green covered volume with white and gold lettering, entitled "Camp fires in the Wilderness." It is written by E. W. Burt, and published by the National Sportsman Press. Perhaps the best idea we can give our readers of the peculiar merits of this book is by offering Mr. Burt's account of the caribou. We shall not cut out any of this valuable information, as we consider it rather a brief description as it stands. Even these few lines, however, will show the profound study the writer has given his subject, and convince the reader that the last word about the caribou has now been said :

"The caribou is found mostly in New Foundland (?). They are in appearance like a cow, with short legs and broad feet, which enable them to travel rapidly over the snow. They spend the winter in the shelter of thickly wooded sections, feeding on the black moss which hangs from the trees. Their thick fur turns white on the approach of winter, and they herd in large companies in the dense woods. Early in September the velvet on the horns rubs off ; the stags are now in their prime, and the rutting season begins in October. During that time the stags fight fiercely, and will not hesitate to rush upon hunters when they get sight of them. Their great antlers are formidable weapons. They use their feet also. Sometimes their horns become interlocked, and both animals perish by starvation. The period of their migra-

tion begins with the early autumn frosts, when they start to graze southward. The Maine law on caribou is closed until 1905."

The author seems to have terrible things on the brain, for further on when speaking of the timid lynx, he remarks: "In winter time, when driven by starvation, the wildcat will not hesitate to attack a man, sometimes springing upon him from the branches of a tree, where it has been lying in wait. If you see a wildcat in Maine, shoot it, and you will not be arrested for breaking the law." All of which leads one to reflect upon the things one comes across in print, when one has not got a gun.

"Hints on loading and reloading shotgun shells" is a small pamphlet issued by the Ideal Manufacturing Co., New Haven, Conn. It is one of the most useful little books we have seen for some time. Contrary to the general experience, it is worth keeping, although it costs nothing.

We have been notified by Mr. N. S. Hyatt, Commodore of the American Canoe Association, that Mr. H. Lansing Quick, of Yonkers, N. Y., is acting as Sec'y-Treasurer until further notice, in the place of Mr. Louis Simpson, deceased.

The London Fishing Gazette is running a series of articles dealing with "Inexpensive salmon and sea-trout angling." The author, Mr. Augustus Grimble, is evidently well acquainted with the waters of the British Isles, but if he wishes to make his series of papers complete he should visit the Dominion; certainly, when it comes to inexpensive salmon and trout fishing, we can leave Europe a long way astern.

A valued correspondent of ROD AND GUN, Dr. George W. Blakeslee, of New York, writes to us as follows:—"That portion of Quebec lying between the Gatineau and Rouge is well known to me, especially the head waters of the Lievre, which I visited the past autumn. My vacations for four years past have been spent on this river, and for two months this autumn I had a glorious time with rod, gun, and camera. Lake Megamangoos, the head of the left fork of the Lievre, is a grand sheet of water, as yet undisturbed, and the forests about it untouched by the lumbermen. It is an ideal spot for a two or three months' stay in late summer and early autumn." To all of which we give a hearty Amen.

Of all the English sportsmen's magazines, Baily's is one of the best, and the issue for January, which has just reached us, is quite up to the usual standard. Although English sport does not follow the same lines as Canadian sport, there is the strongest sympathy between Canadians who shoot, fish and ride, and their fellow sportsmen in the old land, and men who wish to be up-to-date and broad in their views, cannot afford to miss such magazines as Baily's.

At a general meeting of the Montreal Canine Association held on Saturday evening, January 24th, Mr. H. L. Thomas read an interesting paper on the "British Bulldog," of which breed he is the owner of several remarkably fine specimens, some of which have done a lot of winning both at home and abroad. Lack of space prevents us giving the paper in full at the present time, and we have only to say that it was listened to with attention and received the approval of those present. During the meeting it was announced that the following, among others, will judge at the annual show in the Arena during the month of May next: Mr. Richard Croker, jr., New York, bull dogs; Mr. H. Thomas, Belleville, sporting spaniels; Mrs. Kernochan, New York, Irish terriers; Mrs. J. A. Pitt, toys and pet dogs. Mr. Frederick Freeman-Lloyd, who has had considerable experience as a judge in England, and is at present editor of the Kennel Department of the New York *Telegraph*, will undertake all breeds not otherwise assigned. Mr. Joseph A. Laurin was elected delegate to the American Kennel Club.

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February, 1903

Communications on all topics pertaining to fishing, shooting, canoeing, the kennel and amateur photography, will be welcomed and published, if suitable. All communications must be accompanied by the name of the writer, not necessarily for publication, however.

The Official Organ of the Canadian Forestry Association.

ROD AND GUN IN CANADA does not assume any responsibility for, or necessarily endorse, any views expressed by contributors to its columns. All communications should be addressed to:

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Canadian Forestry Association

THE objects of the **CANADIAN FORESTRY ASSOCIATION** are :

The preservation of the forests for their influence on climate, fertility and water supply ; the exploration of the public domain and the reservation for timber production of lands unsuited for agriculture ; the promotion of judicious methods in dealing with forests and woodlands ; re-afforestation where advisable ; tree planting on the plains and on streets and highways ; the collection and dissemination of information bearing on the forestry problem in general.

Rod and Gun is the official organ of the Association, which supplies the articles relating to Forestry published therein.

This Association is engaged in a work of national importance in which every citizen of the Dominion has a direct interest. If you are not a member of the Association your membership is earnestly solicited.

The annual fee is $1.00, and the Life Membership fee $10.00.

Applications for membership should be addressed to the Treasurer,

R. H. CAMPBELL,
Department of the Interior.

Ottawa, Ont.

Caribou Hunting

THE season for big game hunting is almost over, though you have not been able to profit by it owing to the numerous demands upon your time; nevertheless, you are reluctant to let the year go by without firing a shot at game out of the new rifle. Well, there is time yet, for in most of the Canadian provinces caribou are lawful game until the middle or end of December, and the best time to hunt them is while the snow is yet so shoal that snowshoes are not required.

Take with you a good modern rifle—for the shots on the barrens are sometimes long ones,—plenty of heavy, warm clothing, and a sufficiency of currency to pay your way, and if you are a dyed-in-the-wool sportsman there is a good time ahead.

Caribou Hunter's Camp.

OPEN SEASONS FOR CARIBOU

NOVA SCOTIA, September 15th to January 1st.
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QUEBEC, September 1st to January 31st.
NORTH-WEST TERRITORIES, November 2nd to December 14th.
BRITISH COLUMBIA, September 1st to December 31st.

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Canadian Pacific Railway

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THE HERALD PRESS, MONTREAL

ROD AND GUN IN CANADA

Caribou Hunting

A MAGAZINE OF CANADIAN SPORT AND EXPLORATION

NORTHERN TRAVEL.

This view was taken in Cassiar, B.C., where even the dog must carry his proportion of the outfit.

ROD AND GUN
IN CANADA

VOL. IV. MONTREAL, MARCH, 1903 No. 10

Northern Ontario.

BY H. BARNARD.

Having taken a short holiday in the Timiskaming locality last season, our party, then consisting of three, secured guides and a camping outfit more or less complete and made a flying trip, portaging across from Haleybury to Sharp Lake (six miles), and thence down some smaller lakes to Lady Evelyn Lake, and on through Lake Timagami, around by Bear Island, where there is a Hudson Bay post, and on through Rabbit Lake and the Bass lakes, striking the Metabechewan River, which took us out to the mouth of the Montreal River on Lake Timiskaming, where we caught the down steamer, having travelled by canoe a distance of 130 miles. The trip, though hurried, was so pleasant that I determined that if it were possible another season I would indulge in further travel of the kind—I would go further north over a less travelled path.

My guide on that occasion was Tom Polson. Tom has a good proportion of Indian in him, is thoroughly reliable in a canoe, a muscular fellow who can put 200 pounds of freight on his back, sling a canoe over his shoulders, and walk off over a portage a mile long ; a willing worker, who can paddle all day and all night if necessary ; a great hunter, and is acquainted with every river, trail and lake in the Nipissing district, and from Timiskaming north to James' Bay. Having arranged to have him accompany me, I felt confident of being able to accomplish a trip north to Lake Abitibi this season. I left here, accordingly, on August 10, well equipped for the journey, my base being The Head, or North Timiskaming, Que., and the route from there by the Quinze River and lake, thence up the course followed by the Hudson Bay canoes to their post on Lake Abitibi.

Polson had just finished a trip up the Metagama River, and was returning by way of Mattawa, where we met, and proceeded by C. P. R. to Timiskaming. I may here state that I set out with the intention of being alone with my guide during the whole trip, but on the same train from Mattawa I encountered a gentleman and his wife, a Mr. and Mrs. Beworth (this is not their real name, but it is near enough to it for all practical purposes). They were from Chicago, and, as it proved, were looking for just such an adventure as my trip would afford.

The gentleman is a man of genial, taking manner, with a fund of good humor, good companionship, and good stories, always reserving for himself the privilege of changing his mind ; is wholly devoted to the happiness, pleasure and well-being of his charming better half, and ready to make any sacrifice to gratify her desire to exercise her sporting proclivities in search of something to shoot, large game preferred.

The lady is young, decidedly prepossessing in appearance, and of that American type having lots of snap and confidence in her own energy and ability to do what anyone else could in the way

of travel. She had a first-class No. 12 hammerless shotgun, shooting jacket and other necessary paraphernalia, and I judged from her conversation on shooting topics that she knew how to handle both shotgun and rifle with considerable detriment to anything in the shape of game which might have the misfortune to come within the scope of her vision. She was agreeable in manner, and possessed a good store of common sense.

As a rule I do not take up with strangers readily, but here was an aggregation of good qualities pretty hard to ignore, so that when Mr. B. expressed his desire to go on such a trip I did not hesitate to say that I would be happy to have them join me. I had no doubt that an extra tent and other necessary outfit for their accommodation and comfort could be obtained and extra guides secured. This being the case, they decided to come, and thus the party was formed. We proceeded by steamer to the Head, having stopped over night at Baie de Pere of necessity, the steamer not running after dark: but we made use of the time by visiting the little town to do some shopping, Mrs. B., with great foresight getting a toaster, which afterwards proved very useful.

Next morning the boat started early and we called at Haleybury. There we secured a tent and some bacon. Leaving Haleybury, the boat proceeded to Liskard with freight and passengers, and thence on to the Head. Having arrived, we at once set about completing our outfit, extra canoes and provisions. We were fortunate in getting big Bill Polson, as good if not better than Tom in some respects, and who is a cousin, and the third guide, a younger brother of Tom's, completed the personnel of the party. Teams had been engaged for the long portage to be in readiness for the morning, and our labors here ceased for the time.

The 14th dawned bright and clear. Our guides were on hand early, and the teams ready. Our provisions consisted of bread, bacon, tea, coffee, flour, canned goods, sugar, pepper and salt, etc. (no meat; we depend upon our own exertions for supplies of fish, flesh and fowl), are loaded on the wagons, together with tents, baggage and other impedimenta. Our canoes are taken to the river, and we start to meet the wagons two miles up at the foot of the Quinze rapids. Here the canoes are loaded on the wagons, a seat is provided for our fair companion, where she is destined to get some acquaintance with rough roads and have ample time to determine between walking and riding in a springless wagon, as to which is the most desirable. For my own part, I decided in favor of walking and covered the whole distance, sixteen miles, afoot. The others all experimented with the wagons, and perhaps they displayed good sense in so doing. At any rate we arrived at Klock's farm at about 4 in the afternoon, pretty tired, but still enthusiastic.

Here we expected to spend our first night under canvas, but better fare was in store for us. You are not allowed to suffer any discomfort at Klock's farm. Mr. Klock, the kindest and most affable of gentlemen, met us, and insisted upon our accepting the hospitality of his summer residence. We must have looked pretty tough in our camping attire, but that did not matter; we were taken to the house, and introduced to his charming wife, who at once by the magic of her grace and amiability placed us at ease, and made us feel thoroughly at home. After enjoying a splendid dinner, and spending a very pleasant evening, we retired early, glad to seek repose and rest for our weary limbs in the enjoyment of a comfortable bed.

I was astir early, and with canoe and trolling line sought to ascertain the kinds of fish to be had. The result was that in an hour's time I landed eight pickerel, two pike and one black bass, all good-sized fish. We thought that after breakfast we would be allowed to depart on our way; but not so: Mr. Klock does not do things by halves. Instructions had been given to have his steam yacht in readiness, and it was intimated to us that just by way of seeing us off an excursion would be made to the Barriere portage. Accordingly our traps were all put aboard, room made for the guides, the canoes taken in tow, and together with Mr. and Mrs. Klock, four charming young ladies and two gallant young gentlemen, guests at the farm, we all got aboard, and it will easily be im-

agined that the first sixteen miles of our water journey was accomplished under the most delightful and pleasing conditions imaginable.

Arrived at the portage, our effects were carried across by the guides to the opposite landing, where our first dinner was prepared, which being disposed of, our canoes loaded, and ourselves comfortably ensconced therein, we begun to glide silently away, but not before Mrs. Klock appeared on our landing like a guardian angel to say a final farewell and wish us a pleasant and safe trip. The exceeding kindness accorded to us will always remain with me and be productive of memories of the most pleasant nature.

Our first camp was pitched at a point near Lonely River, some sixteen miles from the Barriere, and on Barriere Lake. The scenery consists of wooded banks covered by a growth of spruce, poplar and white birch. There is considerable pine suitable for logs, but the timber has long since disappeared, and while it is pleasant to paddle along in the fresh atmosphere, and see the numerous islands, rocks and crags that abound along the route, there is nothing to go into raptures over, and the sameness of the scene, were it not for the exhilarating air and change, would be apt to strike one as somewhat monotonous. The attention of a new-comer is constantly on the alert to discover a moose or a bear or something that you read about in the guide-books. There is a possibility of seeing a moose as you go along, but very little probability. I will take up the moose question a little later, when I arrive at the time when I stood face to face with them.

The guides do all cooking, washing dishes, etc. Each person has a tin plate, cup, knife and fork and spoon. First the bacon is fried—not as you would get it at home, crisp and dry, but in fairly thick slices, and just cooked enough to make it juicy and fat. After the bacon is taken out the fish is put in, and a lot more fat (lard?) is added, so that the fish still has a chance to swim. In the meantime potatoes have been boiling in a pail, and tea has also been made. Perhaps you think boiling water has been poured over the tea as you would draw it at home. Not at all. A pail of cold water is put on the fire, a sufficient quantity of tea or coffee having been added, and when it has boiled the tea is made. The whole meal is prepared in half an hour, and your appetite, which will generally be found equal to the occasion, will do the rest.

The water in nearly all the lakes on this route is of a muddy hue, and the fish, which consist of pike, pickerel and a few bass, are not as good as those caught in some of the other lakes which I will refer to again. There are whitefish in nearly all of these lakes, but can only be caught with gill nets, which the Indians use for the purpose. They are whitefish all right enough, but are dull and muddy-looking; the flesh is soft and of poor flavor. Our Lake Ontario whitefish would not recognize them as cousins removed to the forty-second degree.

Our way now is up the Lonely River, which is a muddy stream or channel about eight miles long, forming a connection with Opasatika, or Long Lake.

We arrived at the Lonely River in the morning, but decided to camp at a point a mile beyond before entering it, in order to visit a deep bay to the right into which a creek empties, and is known as a good place for moose and red deer, a sight of which we were anxious to obtain. While the others went fishing and gunning for small game, I, with my guide, started off and reached the scene about 5 o'clock. We paddled two miles up the creek, expecting to return as soon as darkness set in, hoping to interrupt the game when they were out feeding in the night.

In unfrequented places a moose may be seen at any time of the day, but along the line of travel, or in those places hunted by the Indians, the moose very rarely comes out to the water till after dark. It then comes in search of the leaves and roots of the common yellow pond lily, familiar to most people. The moose is a great swimmer, and its habit of feeding in the water makes it an easy prey to the hunters. It walks into the water till its back is perhaps a foot only above the surface. It will then crop the large round leaves, and put its great head down to the bot-

tom, secure a huge mouthful of the large, round, succulent root, which being eaten, the performance is repeated; and so quietly is this carried on that you are likely to get close before discovering them. The cow moose, having no horns, makes less noise than the bull, with its immense antlers, which make more disturbance when being brought up out of the water. The quick ear of the practised hunter will at once distinguish between the presence of a bull or cow. The moose is not quick-sighted, and will pay little attention to an approaching canoe so long as there is no noise made or motion of the occupants, so that a hunter stealing up to the animal will, as soon as its head is submerged, paddle fast, and, as the head comes up, suspend all motion. I have been told that it is possible to get close enough to hit them with the paddle.

At dusk the sharp eyes of the guide detected two red deer in the long grass bordering on the creek. Their ears were just sticking up over it, but nothing escapes him. They were two hundred yards distant and took alarm, doubtless having sighted us as soon as we did them. The only part I saw of them was their white tails bobbing up as they bounded through the grass, and when they reached solid ground, with a snort they were off as fast as a bullet would follow.

Darkness set in quickly, the air got cool, and plenty of able-bodied and sanguinary mosquitoes pounced down upon us. The noise of the muskrat as it dived off the bank, the wake of a beaver swimming along the calm surface, and the astounding splash it makes when diving would startle any one. These, coupled with the flight of large bats dodging past, made the situation weird and uncanny in the extreme. A moose would probably have put in an appearance had we remained later, but we had enough for this occasion, and left a little after 10 o'clock and got back to camp by 11, the others of the party having caught plenty of fish, and our lady friend had bagged three ducks. We did not see the moose this time.

Next morning we proceeded up the Lonely River, which well deserves its name. It is a channel some nine miles long connecting two lakes. Its banks are high in some places and low and swampy in others, and the shores a soft, clinging kind of mud. A tall growth of spruce, poplar and birch lines the banks and casts strong shadows on the placid surface, suggesting at once to the mind that here is a capital place for the camera fiend in search of shadow pictures.

We saw moose and bear tracks, and "signs." The quick eye of the hunter and guide will notice every indication of the presence of game. "See the pond-lily leaves snipped off, leaving the stem standing up: That is the work of the moose. If bitten off recently, the end will be fresh; if longer, it will have dried. See the bush with the clusters of white berries. Notice the leaves are disturbed and turned over. A bear has been after the berries." We push in to the shore, and there, sure enough, are the bear tracks, plain and unmistakable. There are "signs" for everything—to discover the whereabouts and habits of animals, whether muskrat, beaver, otter, marten or mink, or other fur-bearing animals, or game such as moose, caribou, bear or red deer. The practised hunter can read them like an open book, and it is not possible to evade their relentless enemy, man.

Ducks are not plentiful, at least the kinds known as marsh ducks, such as black and grey ducks, teal, mallard, wood duck, etc., there being no wild rice growing in these parts, and consequently little food for them; but I have no doubt that later in the season there would be considerable numbers of deep-water ducks here, red-heads, blue-bills, whistlewings, widgeon, etc. We saw a few black ducks and easily got within range of them, under the skilful management of the guide, who, as soon as he sights the quarry, seems to get rigid in his position; but you know it is not so; motion is reduced to the minimum, but his paddle is working; you feel it like the throbbing of a screw propeller, and you are filled with surprise to see how rapidly you approach the ducks and they do not seem to realize their danger till it is perhaps too late.

I was told by Mr. Klock that some wild rice had been planted last fall or winter, but that it had not taken, and

was regarded as a failure; but remembering the time when wild rice had been planted in the Dundas marsh, and which did not seem to grow the following season, but a year or two after, I am inclined to think it takes a year or so to germinate; and, having mentioned the fact, hope was awakened that the seed planted would eventually come to something. There is a total absence of snipe and woodcock in this country. I looked for both, but found no trace of either.

Once through the Lonely River, we get into Lake Obikoba. The water is of the same dull color. We catch plenty of fish to supply our table, trolling as we go along, and stop at noon for dinner, and get started again at 2 o'clock. There is nothing striking about this lake, unless it is the vastness and continuousness of these inland waters. The shores present the same high character, covered with a dense growth of small trees, and in some places they are rocky and bare. We go through some narrows and get into Long Lake, which is 20 miles long. My canoe is always in advance, for I keep up my share of the work. Our friend, Mr. B., has dubbed us the "Abitibi Express."

Away in the distance the guide notices a canoe. I thought I could see pretty far, but I am "not in it" with him. It is one of the Hudson Bay Company's big freight canoes. These canoes are splendidly built, and will carry two tons of freight, which is their regulation load. They are handled by six men, a bowman, who is the man in authority, a steersman next, and four who might be called deck hands. All work from daylight to sundown, receive two dollars per day, and get four meals thrown into the bargain—breakfast two hours after starting, in order to get up an appetite. Their food consists of good fat salt pork, dumplings made with flour and baking powder, and tea, which is indispensable. Time is allowed for a smoke, and they are off again. Diet is varied by having pork and dumplings for one meal, and dumplings and pork for the next, and so on alternately. They seem to get along all right, and work constantly at the paddles. It certainly is interesting to see the large canoe slip along with six paddles working incessantly in rapid and perfect rhythm. As we pass the guide utters a friendly "Qua-qua," or "How do you do." A few words are exchanged in Indian, for they do not understand a word of English, and we go on our way. This is their down trip, light. In three or four days' time they will come back loaded with merchandise in boxes, bags and barrels of pork weighing 100 pounds each, which must be loaded and unloaded and carried over the portages eight times, for that is the number of portages on this route. A load for each man to carry across a portage is 200 pounds. Each man has a long leather strap, having a broad part in the middle; each end is tied around the load, the broad part of the strap is adjusted across the front part of the head, the load being supported on the back. The strap is called a tump line. These men cross a portage at a quick pace with such a load, and have no use for rubbernecks.

We camp on a nice sandy beach near the end of Long Lake, and there decide to "cache" part of our provisions till our return, to save carrying so much weight. We did so accordingly on a small island, and proceeded to our next portage, which takes us into Little Lake. Here the scenery is grand. The shores are rugged, precipitous and wild looking. Two large mountains, called the Swinging Hills, stand out in gigantic proportions, and the Kettle Mountain, with its flat top, forms a striking picture in the distance. The Swinging Hills are so called because the Indian can tie his rope from the top of one to the other and swing in the middle. This would require two great stretches, one of rope and the other of imagination. These mountains can be seen from a very long distance, their immense size conveying the impression that they are quite near.

We pass on to the Height of Land portage, which is the longest and hardest, as a considerable hill has to be climbed. At the top of this hill is a log house, the owner of which is apparently a maker of canoes, as the material for such is all there. There are also the skins of a cow moose and calf hanging near by, while hoofs and bones litter the place, which has a decidedly unsavory smell. The owner is away, and we are at liberty to inspect the premises, and fully gratify our curiosity. I did so,

and will give my impression regarding the matter later on. We cross the portage and get into the Labyrinth Lake. This is really a beautiful lake, studded with many islands where one would easily get lost; but our guides are quite familiar with the place, and we strike for an island off to the left to camp for the night. On a point opposite, some 500 yards distant, is a hut, where some Indians live; and as our tents spring up a good-sized boy puts out in a canoe to take stock of us. He approaches suspiciously until "Qua" and a couple of guttural sounds escape one of the guides, and the boy knows it is all right to come ashore. He answers a few questions put to him, and then hangs around. He is invited to take supper with the guides, and is allowed to do full justice to some plum jam which we had, and which proved a drug on our hands, but which henceforward ceased to trouble us.

After supper we visit the Indian camp. Everything is squalid, poor and in disorder about the place, and you wonder how they live. If they have any beds they are carefully concealed. In one corner huddled up is a young woman who has been sick for a month. I judged from her breathing, and what they said was the matter with her, that she had pneumonia, but was getting better. I told them through the guide to give her a little fresh air, and they said they were going to do so, as they intended starting down the river to camp and would take her along. How would this style of treatment suit in this region? There are no doctors here, and if you get sick you have to get well again. If you don't, you die, and that is all there is to it, so the guide tells me. Happily, there is very little sickness in this land of pure air. The tepee with the aperture in the top to let out the smoke is the winter house of the Indian. A great many of them occupy canvas tents the year round. Wrapped in a rabbits' skin blanket, the native will go to sleep on the ground in a tent and defy the cold, even when the thermometer is 40 degrees below. Rabbit-skin blankets are said to be very warm and are curiously made; the skins are cut in strips circular-wise, so as to make a long length; these are twisted and tied together till they look like long ropes of fur; these ropes are netted like a fish net with a small mesh, and the result is a thick mat of fur well adapted to the required purpose. They are valued at $3 to $12, according to size. Mrs. B. got a very nice one for $5. We secured a couple of birch bark baskets as souvenirs. When we were departing we were asked if we did not want a little dog, as they had a surplus. I liked the look of the little animal, and said I would call for it on our way down.

Next morning we proceeded on our way. We have three short portages close together, after passing which five or six miles of river is to be covered. Here the character of the land changes, being lower and apparently more level, and judging from the dense growth of poplar here to be seen, the ground must possess considerable fertility. Pine is not noticed, but for many miles the poplar is in great abundance, and if it extends back, as doubtless it does, there is a supply of this wood which will meet all demands for a long time to come, and which will likely be valuable for a great many purposes, when it can be transported, which will require railway communication, that sooner or later will be made. We have another short portage, and some 14 miles more of river, till we strike Upper Lake, about six miles long, at the end of which, with three miles of river added, we come to the last portage, called the Dancing portage, because the Indian feels so happy at getting through without further portage on the route that he manifests his approval by indulging in a dance.

Five miles from Dancing portage we round a point, and find ourselves at the entrance of Lake Abitibi, with the Hudson Bay post in full view three miles away; and, after a stiff paddle against wind and tide, we finally arrive there, glad to get a rest and some dinner. Mr. Skene, the chief factor, was away, but Mr. McKenzie, a genial Scotchman, who was in charge, invited us to pitch our tents in an enclosure, so that we would not be troubled with the dogs, which we did, and reference to which I shall leave for the next occasion.

(*To be continued*)

A Rough Experience.

BY J. A. TEIT.

A year or two ago we had a winter when but little or no snow fell in the mountain valleys on the north side of the Thompson River, and even at Christmas and at altitudes of 2,000 to 3,000 feet the mountain sides were practically bare of their usual white mantle. Under these circumstances neither the Indians on the reserve adjoining my ranch nor I, felt the least apprehension for the safety of our horses, which were lying out. One day, however, towards the end of January several Indians who had been searching for their horses came into camp and reported an extraordinarily heavy snowfall on the higher levels. So heavy was the fall, and so deep the drifts, that they were unable to proceed on horseback or even on foot without snowshoes, which nine years out of ten are not required on any part of the mountains below the 4,000ft. line. As soon as this serious news became known those having horses running on the mountains became very anxious about them, and the Indians at once decided upon sending out a search party next morning, and asked me to join them. As I had a considerable number of horses out I decided to put up with the discomfort, hoping that with their assistance I might save, if not the whole, at all events the great majority of my animals.

A day or two previously two young men had arrived at Spence's Bridge and asked me to take them out after deer, as they had never seen any, and were most anxious to kill some. They had brought Winchester repeaters with them, and were really very good target shots, cutting off the necks of bottles at fifty yards or more with rarely a miss. As soon as they knew I was going out for a few days with the Indians to search for horses, and incidentally to procure some fresh deer meat, they made up their minds to join the party at all hazards. Nothing I could say about the discomforts they would have to endure on the trip had the slightest weight with them ; go they would, unless the Indians positively refused to allow them to join the party. I told them we should camp some nine or ten miles back, and advised them, as they were unused to sleeping out, to be sure and bring an ample supply of blankets, and also to hire snowshoes of the Indians. They turned up to time next morning with snowshoes, big overcoats, and one pair of blankets between them. When I reminded them of what I told them overnight, they replied that as we were going some distance, mostly uphill, they thought they would only carry what was absolutely necessary, and refused point blank to take anything more. I said nothing further, only shook my head ; but at the same time felt quite sure they would gain a little experience by the following morning. The party consisted of our three selves, four Indians, one half-breed, and three squaws, wives of some of the Indians. We followed the regular trail to the Tswal valley, where we struck snow two feet or more deep, although until we arrived at this point, there had only been an inch or so.

Here three Indians put on snowshoes and went on ahead, whilst the remainder of the party followed in Indian file on foot, thus making a deep trail. Our visitors expressed their surprise at seeing the women carry, with tump lines over their heads, not only all the camp outfit, but a week's grub for the crowd, and their own blankets, whilst their lords were only encumbered with their own blankets, rifles, and ammunition. I took three blankets, but the Indians had only two each. After proceeding a couple of miles further we found the snow quite three feet deep, so the Indians, after selecting a suitable place, prepared to camp, and as we had no fresh meat, and it was still early in the afternoon, we proceeded to a gulch some two miles distant to hunt deer, leaving the women in the meantime to erect a suitable lodge. One man in every Indian hunting party is always selected, or recognized for the time being, as chief hunter, and he di-

rects all the operations of the party. The Indians who run along the ridges of a gulch to cut off the escape of the deer that way are called "runners," those who sit to intercept them at various points, or lie in ambush for them at such places as they might escape at, are called "sitters" or "shooters," and those who start the deer are called "drivers."

When we arrived at the bottom of the gulch we stationed our visitors there to watch for any deer that might be driven out that way. Some of the party ascended the ridge on the right, where one hunter was left to guard a slope about half-way up, another was left at a similar place some three-quarters of the way up, and two hunters went along the ridge on the opposite side to cut off the deer if they tried to get out that way. When all were stationed at their posts the two drivers (myself and the chief hunter, a fine athletic young Indian) descended into the gulch to start the deer, which happened to be high up, and by some mischance they sighted us before we sighted them. They ran straight down the gulch, and got out through a slope on the right before the "runners" could get down to intercept them, and thus escaped. However, as they crossed an open bench a "runner" fired and wounded one of them. Two Indians were at once sent off to track it, whilst the remainder of us returned to camp. We found the women had cleared away the snow and erected a brush lodge large enough to accommodate the whole party. It was of the ordinary kind, oblong in shape, and of a framework of poles, overlaid thickly with pine branches and snow banked up all round outside. A roaring fire was built running right down the centre of the lodge, the smoke escaping through a long narrow opening in the roof. The ground on each side of the fire was laid to a depth of about six inches with small ends of fir branches all placed the same way, thus making a fairly comfortable couch to either sit or lie upon. As the women had not found time to cut sufficient firewood, our friends busied themselves with the axes, cutting down dry trees and splitting them into logs, and very soon we had a huge pile of firewood for consumption during the night and next day. Those unemployed with axes were hard at work carrying or dragging the logs to the door of the lodge, where they were piled up handy for use. The squaws meantime were busy cooking supper, which consisted of fried bacon, dried fish, boiled rice, bread, tea, etc., and before long they had everything ready for our meal, when, having eaten nothing for so many hours, we sat down fully prepared to do ample justice to it. It was quite dark when the trackers put in an appearance; they said they had followed the trail of the wounded animal for a long distance, but as darkness was coming on and they were of opinion the deer was only slightly injured they gave the chase up as a bad job. After supper we sat round the fire talking and smoking, and as our young friends were very anxious to know what the Indians were saying, especially the substance of the hunting tales, etc., told by some of them, I had to translate a summary of the conversation for their benefit. The fire was now roaring fiercely, and the lodge felt comfortably warm, although before morning the thermometer dropped to 25 below zero. I could see my young friends were greatly struck with the novelty of their surroundings; the roaring, blazing fire, the crackling of the logs as now and again they threw out a shower of sparks, the flickering light playing on the faces of the Indian hunters as they sat round the fire telling tales and legends of bygone days, the women silently gliding about, putting everything in order for the morrow, all combined to form a weird and striking picture of Indian camp life, and accompanied as it was by the almost ceaseless and unearthly howling of the coyotes outside, could not fail to impress itself on the memory of our guests for many a long year, possibly even for a lifetime. About ten p.m. we banked up the fire, rolled ourselves in our blankets, and with our feet to the blaze, dropped off to sleep. When the fire burned somewhat low our friends who slept huddled together, very soon discovered that one pair of blankets and big overcoats were not sufficient to keep them warm, so shivering with the cold they at last got up and built a huge fire, but still I fear they spent an uncomfortable night, only dozing for short periods

SPORT IN MANITOBA.

These Virden boys caught the birds at the morning flight, and burnt straight powder

GUIDES AND TROPHIES.
A glimpse of the "wild" north land.

MAKING GOOD TIME.
The guide Willie Ellison in an 18-ft. birch-bark.

AT LAKE MIKINAKSAJANY.
Messrs. Daniels and Quimby, with George Crawford and W. Ellison making camp.

and then turning over, toasting first one side and then the other before the blazing logs. All arose before daylight, when the women at once started cooking, and the men, after washing their faces in snow or snow water, carefully wiped out their rifles and made ready for an early start. Breakfast was soon served, and consisted of the same homely fare as sufficed for supper. Before starting I asked the leader of the hunt to station our visitors in a good place, telling him they were fine shots and very anxious to kill some deer. He replied that he would give them the very best places. All being now arranged, we put on our snowshoes and started in Indian file for the hunting ground, the two young men bringing up the rear. Progress was, however, very slow on account of our having to wait now and again for our visitors, who were floundering about in the snow and generally toiling slowly along some distance behind. After travelling about three miles we brought up on a flat at the foot of a gulch. The Indians who were to drive had left us when about a mile from camp, making a detour over the mountains to the head of the gulch. The chief of the hunt now posted our two visitors on a low knoll on the flat, where they were sheltered and partly hidden by some large trees, and where the deer, to reach the open valley, would be compelled to pass within fifty to seventy yards of them whichever side of the knoll they might take. The rest of us ascended the ridge on the left side of the gulch to guard some slopes where it was possible the deer might try to escape. Soon after we had all taken our stations we heard two or three shots at the head of the gulch where the drivers had entered, and shortly after I saw a band of thirty to forty deer pass the foot of the slope where I was standing, making towards the exit at the bottom of the gulch, and shortly after shooting was heard in that direction where our two friends were stationed, which continued for a few minutes, as if a small battle was raging there. The Indians posted above came hastily down to me and said, "Did you hear the shooting? Over twenty shots"; others said nearly thirty shots. "They must have killed at least eight or ten deer, or certainly not less than five or six even if they shot ever so badly," and I felt bound to agree with them, although I had very serious misgivings as to the probable number killed, having often seen how very badly it was possible for novices to shoot, especially when a large band of big deer came charging down on them. We all proceeded as quickly as possible towards the bottom of the gulch, the Indians in high glee, expecting shortly to be busily engaged dressing the deer and carrying the meat to camp. On arriving at the outlet we discovered our two friends in a state of great excitement, moving around examining the tracks for blood. A hurried survey of the ground by the Indians and myself confirmed my worst fears. Not one deer had they killed! No, nor even wounded one, and it is hard to say whether our two friends or the Indians felt the worse. The latter could hardly realize the fact that no deer had been killed after having heard so many shots fired. It appears our two friends had commenced shooting at the deer as they came towards them on emerging from the canyon, down which the wind was blowing strongly; therefore, when they heard the shots the frightened animals did not seem to know from whence they came, so continued to advance in a direct line for the knoll, on reaching which the band split, some passing on either side, several within twenty yards of the guns; indeed, one must have nearly run over them, as one of the unfortunate tyros admitted he fired at a deer not more than seven yards distant, and made a clean miss. Presently the drivers arrived on the scene, when, after some talk with the other Indians, they all started to bully the chief hunter for putting untried men in so responsible a position; and he, I suppose in self-defence, turned to me and said, "We have been good friends for many years, and have hunted together for a number of seasons, and we know you to be a good hunter and speak no lies. Why, then, did you tell us your friends were good shots? You know how badly deer meat is wanted in our lodges, and it was not friendly of you to make fools of us as you have done." I assured him they were undoubtedly good shots, as I had

seen them shoot really well at a mark, and was very sorry and greatly surprised to find how badly they performed at deer. Another Indian was very angry, and said they might be very good shots at a mark, but they were no hunters, consequently through them the whole morning had been wasted, and all their hard work had gone for nothing. Then, pointing to the two young men, he added the best thing they could do would be to go back to the lodge and stay there and help the squaws. Evidently it was a very bad case of buck fright, and although our visitors could not understand what the Indians said, they fully realized the fact that they were both angry and greatly disappointed, and they looked, and no doubt felt, terribly crestfallen, more especially so, as they had, through the half-breed, who spoke a little English, led the Indian to suppose that given the chance they would kill nearly every deer they shot at. The two young fellows standing by themselves looked so very sheepish that I felt quite sorry for them, and by way of consolation assured them I had seen other novices, good target shots, perform quite as badly at big game as they had done, and suggested they should return to camp, have some food, and a good sleep, when very probably they would shoot better on the morrow. They thanked me for my advice, and started at once on the back trail.

The drivers had killed two deer at the top end of the gulch, and three Indians went back to dress them and bring in the carcases. Having now provided some fresh meat, we started to search for the horses, and were successful in finding several, which we drove down the mountain to below the camp where the snowfall was comparatively light and where, consequently, they could find a little grass. When we arrived at the camp we found our visitors had simply called for their blankets and then started down the trail for the Thompson River, reaching Spence's Bridge, as we afterwards discovered, before dusk. No doubt, after their tall talk they felt somewhat ashamed, and thinking the Indians were still angry, decided the best thing they could do was to go home. We spent the next two days looking for horses, and found a considerable number, including all my own save two; they were all driven down below camp, with the exception of a few which were snowed up in a bad place and were too weak to walk, so we put a bullet through them and left them. The Indians on their snowshoes overtook two deer, which they drove into some deep snow and clubbed, and several more were shot. On returning home we took what meat we could with us, and the remainder, which was frozen hard, we cached in a heap inside the lodge, placing over it some tall poles to which were attached several scarlet streamers torn from one of the blankets to keep off the wolves and coyotes.

We started for Spence's Bridge next morning, slowly driving the horses before us, well pleased at having saved nearly the whole of them. When I saw our friends in the evening they said they were perfectly satisfied that the country was a splendid one for deer, and that it was well worth all the trouble and fatigue to have seen thirty to forty big deer charging down on them, but if ever they went hunting again it would be during milder weather, and they would prefer to dispense with the presence of witnesses.

How One Grizzly Died.

BY JAMES BREWSTER.

It was the 15th of November, which is rather late for travelling with horses in this part of the country, owing to the cold weather and chances of heavy snow storms, but I had a party out north hunting big horn, and we were just returning. There had been four or five inches of snow on the ground for three days, and the temperature had been hovering around zero for a week or more—that is at night, of course ; in the day time, when the sun was out, it was fairly warm.

Now, to come down to our story. We were just about to break camp. I was rounding up the horses, and the cook was making up the packs. As I was crossing a small flat to where the horses were, I noticed in the snow the tracks of a large grizzly. I examined them closely, and made up my mind that they were at least twenty-four hours old. The gentleman I was out with had been saying that he would like to see a grizzly, or one's tracks, so I went back to camp and reported what I had found. We went off immediately to look at them. On seeing the tracks he said :

"We must get that fellow, Jim." I told him the age of the tracks.

"How far has he gone, do you suppose ?"

I answered that he might be one mile away, or he might be twenty.

"All right ; we will give him one day's chase, at any rate."

We went back to camp and began making preparations for the hunt.

Of course some of my readers will wonder why this bear happened to be wandering about in such weather ; and so, before proceeding further, I will try and explain. The bear is fairly cunning in selecting a place to den up, but sometimes he is unfortunate. Usually they get a place in a small narrow valley, fairly well timbered, with very few if any avalanche runways in it. There they find a cut bank on the creek that runs in the bottom, and in this cut bank prepare an abode for the winter, and sometimes they make a bad mistake in their choice. When we get cold weather here before any snow comes, the small streams freeze up solid and keep overflowing, until I have seen them piled up nearly twenty feet high with ice. Thus the water continues to rise until it reaches the residence of Mr. Bruin, which, shortly, becomes half full of water, and makes things so cold and uncomfortable for him that he has to get out. Then, after hanging around for a day or so, he makes up his mind that there is not much chance of any more sleep in that hole, wanders off, and tries to find heavy fallen green timber, or makes straight for some hole he has wintered in some previous year. I do not say that this is the only cause of a bear leaving his den in cold weather, but it is one, and it would take up too much space to explain the other possible reasons. I think this was the cause of the bear whose tracks we saw in the snow leaving his winter quarters. Why I think so I will explain later.

After arming ourselves with a good rifle apiece, plenty of shooting material, one blanket, and enough provisions to last us a day or so, we started off on the track of our friend the grizzly, my dog also accompanying us. We struck the trail at 8.30 a.m., and, after following it for two miles down a small stream that ran into the Clearwater River, we found a place where he had lain down and slept during the sunshine of the previous day. We were now just one night's travel behind Bruin.

Leaving this place he started in the same direction as he had been travelling before, but apparently at not a very fast rate. Travelling about ten miles, we reached the Clearwater River, but still the bear's trail continued. Crossing the river, he had headed for a small valley coming in from the north. Before we reached the mouth of this valley the sun had gone down behind the peaks of the mountains, and things had begun to look

pretty cold and bleak. Determined to find a sheltered camp, we pushed on to some green timber we could see ahead, and on reaching this the marks of a place where the bear had put in that day could be seen on the sunny side of a small willow brush, but he had left again, only about an hour's start of us now. We quickened our pace, and, between walking and trotting, soon reached the head of the small stream, at the foot of a high, bare-looking summit. Darkness was beginning to draw in around us, so we sat down on a log to size up the proposition before us. On careful examination we could see a dark object moving along in the snow almost at the top of the ridge. This we had no doubt was the grizzly, but it was impossible for us now to overtake him before darkness had set in, and then we might find more trouble than we were looking for. So we decided to camp in some timber, and hold a council of war as to further proceedings.

I rustled together some dry brush, and soon had a rather cheerful looking camp fire started. We opened our packs and dug up what grub we had and proceeded to eat ; for the first time since breakfast.

After finishing our meal we made plans for the morrow ; then we decided to turn in and find out from experience how it felt to sleep in a snow-bank at ten degrees below zero. I had tried it a good many times before, but the gentleman was not sure he could stand it. I made a good bottom of spruce boughs, as close to the fire as it was advisable to get. We then took it, each in turn, to look after the fire, while the other tried to sleep, but it was very little either of us obtained that night—and the dawn was welcome. As the grey streaks of light stole over the mountain tops, and warned us of the approaching day, I shook my companion, and together we finished what grub we had left, and after consulting each other between mouthfuls of bacon and bannock, we decided on a plan of operation. We were to leave in camp our blanket and tin pail, and climb to the top of the ridge, which was about 1500 feet higher than the camp ; from there, with the aid of our field glasses, I knew we could see about five miles or more down the valley, on the side which was known by the Indians as "Stick Ceepeeseeses" (Mt. Sheep Creek). This valley was destitute of timber, with the exception of a small strip of spruce about a mile from the foot of the summit. I knew that with glasses we could see if the tracks had left this timber, and if so there would not be much use following, as it might take a couple of days to overhaul him, and at the same time we could get back to the camp, we had started from the morning before, that day if we made good time.

It was barely light enough to see when we started for the summit, and after about an hour's climb we reached the top. By this time the tracks of the bear had almost drifted full of snow (which was about two feet deep here). Taking the glasses we could make out tracks entering the green timber at the foot of the slope ; but do our best we could see no sign of them leaving the wood at the farther end. We were now convinced that our friend was having another sleep. We began to get ready for battle. There was an open ridge running along the east side of the timber, which was about two hundred yards wide. On this ridge we proposed to make a stand. There we could send the dog down into the bush, and wait developments. After about half an hour's slipping, sliding and falling, we lowered ourselves down to the ridge, and followed it until we were opposite the centre of the strip of timber. No sign of bear could be seen ; stillness reigned in the wood ; yet he must be concealed in it somewhere, for no tracks but the ones entering could be found. Seating ourselves on a log, for we were pretty tired after our early climb and small breakfast, we started our dog down the ridge into the wood. He had not left us long before we heard a loud barking in the lower end of the woods. Running along the ridge for fifty yards we came in view of a large grizzly sitting under a root, the dog baying furiously thirty feet or so in front of him. My companion dropped down on one knee so as to get a steady aim and fired ; the bear gave one bound and dashed straight for the dog, who on being chased headed straight for us. When they had got within seventy-five yards from us, and

almost straight below us at the foot of the hill, we both fired. The bear dropped to the ground this time, but regained his feet almost instantly, and instead of following the dog, made straight for us, covering the space between us by long bounds. Things were getting very interesting with a thoroughly enraged grizzly rushing straight for us, and now about fifty yards off. We both fired again, the bear dropping the second time, only to get up as before, and continue his rush towards us. We fired our third volley together at a range of not more than fifteen yards. The bear drops on his side, lies silent for a moment, then struggles to his feet, but just as my companion brings his rifle to his shoulder to give him another shot, he reels back and dies.

On examining the fur our attention was drawn to the amount of ice that was collected in it, and this went to show that my theory of how and why this bear had left his den was probably correct. After skinning him we found that six out of the seven shots had entered the body and one had gone clean through his heart, which one it was we were unable to determine, but it was most likely one of the two last. It was about twelve o'clock when we finished skinning, and were ready to return to our own camp. The long weary walk I will not attempt to describe. The skin of this grizzly measured a trifle over eight feet from tip to tip, and was exhibited in the camp of Brewster Bros. in the Sportsman's Show, New York, during the month of February.

Luck.

BY W. K. KENNEDY.

There is no such thing as "chance," philosophers tell us. This old world of ours acts on in accordance with inexorable laws. We, as individuals, too, are governed by the same exceptionless rules, acting outside of us, acting upon us, giving to each, as compared with his fellow, his equal share of good and of evil,—laws impartial in their working, laws bringing inevitably the same results to each.

One sometimes wonders if all this is so. The plans of one are successful, those of another are disappointed, not for a day, not for a month, but during all of life. It is answered, the plans of one are matured, the circumstances are weighted, everything is taken into consideration—hence their success, the plans of another are ill considered—hence their failure. This would satisfy us as an answer were the plans of one or the plans of another accomplished or frustrated by the action of the circumstances that could be reckoned upon in the making of them. But what when the one is successful, not once or twice nor three times, but in the great majority of instances, by the action of what we call luck, another disappointed by the action of what we call bad luck? Let me illustrate: You are a sportsman—a high compliment, by the way—and you give, each year, the reins of your business to another, and you wander off to the woods or to the lakes. The weather favors you, the particular days that you occupy are of the kind that are needed in the locality that you choose. You return with a good bag, and bring with you the memory of a glorious time. I, also, am fond of sport, and I go. I have thought carefully, considered carefully, my time and place, and clearly, if these inexorable laws work impartially, I have the same chance of success as had you, and I start in happiness in consequence. But some way, somehow, I am unfortunate, as we say. I am just too late, or too early, or the weather is very bad, or my guide has taken ill—something happens that ought not to happen, some element is missing that should be present, and I, too, return, but with an empty bag and the remembrance of a disappointing holiday. But then, of course, the next season will bring me sport and will bring you failure. But it does not do anything of the kind,

nor does the next nor the next. Why? Because I have not inherently that ingredient of a successful sportsman, luck. But I am reminded that it is non-existent, this thing they call luck. Perhaps, but nevertheless, I shall continue to say that I am unlucky and that my friend is lucky, until philosophers supply me with some better term to describe my invariable failure of pleasing results in my hunting trips and my friend's success.

Lately, I took with me upon a duck shooting trip a friend. A good shot and a fine fellow he was, but unlucky. He informed me of the fact when I invited him. "You take awful chances," he said, "something will happen. I have been shooting for years in the places where my friends get sport, I get none." But I assured him that no nemesis of bad luck could ruin the place that I knew. But he did, nevertheless.

We arrived upon the evening before All Saints' Day. At two o'clock in the morning I knocked at the door of my guide's cabin and told him to call for us at five o'clock. He refused to go on All Saints' Day, he said it was sacred. I offered him what financial weight I thought sufficient to counterbalance his scruples, but it was of no avail. We started out alone, my friend and I. We paddled a Lake St. Peter canoe, six miles towards our hunting ground. A six mile paddle is nothing?—No, it is not, in a canoe or in a skiff or in a jolly boat, but have you paddled a Lake St. Peter canoe with a Lake St. Peter paddle; a paddle ten feet long, that weighs rather more than an average crowbar? You must stand in the stern, and you find that you have sadly neglected the muscles that are here called into play. The wind slews the bow, and you paddle for dear life merely to keep the boat straight, It is hard, hard work, and profanatory.

We found the blind ready built, made of stakes with rushes twisted about. It was placed three-quarters of a mile out in the lake. Lake St. Peter is eight miles wide, and so long you cannot see its further end. We placed some fifty-six wooden decoys and awaited the daylight and the duck. Daylight came, and a frowning, threatening look it bore. The wild duck were in the water around us. They were everywhere. With the daylight came a breeze, which had in tow a wind, which in turn was attached to a gale. The waves sprang up quickly in the shallow water of the lake, and our decoys drifted sixty, seventy, one hundred yards away with the action of the breakers. The duck flew low. They wheeled as they saw our decoys and swept in little bands into the water among their wooden imitators. It was very exciting, but valueless. What could be done with duck eighty yards away? We gathered in our decoys with endless trouble, for the boat was all but unmanageable in the high wind and swelling waves. We took the anchors from half of the decoys and attached them to the remainder, thus giving weight enough to hold them against the force of the slapping waves. But the wind increased, the boat danced inside the blind like a grain of pop-corn in a wire cage, pounding the wooden stakes and all but jumping out of the enclosure. The waves slapped the sides of our boat and washed over it until we had a couple of inches of water in the boat with us and the cartridges. Clearly this sort of thing could not be tolerated. We had great difficulty in getting the canoe from the blind, and still more in picking up the decoys. Four of my hollow ones, that I prized most highly, had slipped their anchors and were bobbing about two hundred yards away. It was impossible to recover them.

We turned the boat to the nearest shore but could make no progress against the wind. For a full hour we struggled without gaining one hundred yards. At length a charitable lull in the storm permitted us to gain a low sandy island, where we remained the rest of the day. The next day a howling "north-easter" kept us in the Club House. We could not even gain the snipe marsh separated from us by a half mile of water. The third day turned out clear and hot, and absolutely still, but for some unaccountable reason the duck would not fly. They rafted up in huge flocks in the middle of the water, going off together when disturbed to another spot.

This was our last day, and we reluctantly gathered our decoys in the evening and turned towards home. My

friend was unmoved. This was his usual experience. He had started from home expecting little, and he was not disappointed. Experience had made a Stoic of him.

Next week a man, who possessed what is technically known as "bull headed luck," returned from shooting in the blind which we had used, with so large a bag that he should have been ashamed of himself.

So it is with the more serious side of life. Misfortune surrounds some people as with a mantle. Everything they touch crumbles to ashes in their grasp. Their cherished schemes are blasted so often, that even the world remarks the fact and points to them with the comment, "There's an unlucky beggar," and becomes fearful of this presence in its schemes. The world, of course, is not a philosopher—and reasons only by results.

But, luck, whatever its nature is—whatever the law that brings it as a result—is an asset in the hands of whoso possesses it, though an uncertain one. The proper way to use it, is so to act as if it existed not, and only after everything has been done that can be done to accomplish a desired result, and every precaution taken that can be taken, to depend upon it to carry you through, provided always you are one of fortune's favorites and she has bestowed upon you—luck.

Genre Pictures.

HUBERT McBEAN JOHNSON.

The genre branch of photography is a section of the art that is far too often forgotten. And yet, perhaps as in no other kind of work, is it possible to secure such striking results, and so full of human interest. A winter landscape, robed in downy white, or a midsummer view with all its masses of luxuriant foliage, is interesting no doubt, but put alongside it a photograph of fishermen mending the nets, or firemen fighting the flames, or any one of a hundred and one other different things, and you will discover that they contain a human interest that is entirely lacking in the others. The reason is very simple, of course. In the one there is only the rolling stretch of country to be seen, while the other is a picture of people doing something. The one picture is inanimate; the other has a little story to tell. Why should the depicting of the life around us not prove worthy of our best and highest efforts? It cannot be for lack of material, for the every moment changing tide of humanity simply reeks of stories full of both pathos and humor.

Possibly it would be difficult to discover a better lesson in genre photography that a study of the pictures of famous masters. The painters of olden days, made fully two-thirds of their paintings to tell some story or another. Even if they painted a landscape, they introduced figures into it that would give interest to it, and supply it with a point it would otherwise lack. And right here, in looking at these pictures, the tyro will run up against a very important point, though at the same time a point that is quite frequently overlooked. A mere picture of human beings occupied in doing something, such as mending nets or selling fish and so on, is not necessarily genre photography. The meaning of the expression "genre photography" is pictures that have a story to tell, and do it. Suppose, for instance, that instead of simply having the men at work on the nets with his fisherman's needle and ball of twine, you show him ruefully holding up the mass of cordage to one of his fellows and showing him the extent of a hole; or again, you might depict him in the act of examining a broken needle or looking for more twine. But at any rate, have him doing something more than only passing the twine through the meshes of his nets. What made me think of the

example of a fisherman was the fact that the most striking genre picture that I am able to remember having ever seen, was that of a fisherman so employed. But he had dropped all his work, and with his hand shading his eyes, was intently gazing out to sea. To his right lay the implements of his craft, while on his other side were the unmended nets. Like all good genre pictures, it did not require a title, and told just as plainly as words could put it, that he had sighted the sail of some boat he was anxiously expecting. The artist had seized and carried through his idea so that his impression was accurately shown on paper, as he had intended it should be.

Perhaps in genre photography, as in no other branch of the art, is it necessary that the worker should have in mind some definite aim and a set method of arriving at his preconceived end. In landscape work, chance is often as important a factor as anything else, and though we all know that this should not be, even the very best landscape workers must admit that it is true. But in genre work it is a story-telling picture that we are after, and having decided on what that story is to be, it must of necessity follow that there is only one best way to tell it. That, then, must be the way that we tell it.

In selecting the theme, there are two things that one ought to guard against. The first is imitation of something someone else has done, and the second is of attempting too much at once. The first may be dismissed in a word. No one who has any self respect would even dream for a moment, of stealing an idea. The average beginner, however, usually falls into the error of trying to include a whole novel in what ought to be only a paragraph and not even a short story. It takes very little to make a genre picture. A few clothes, and perhaps an implement or two supplied by the "property-man," combined with an expression to fit the case, are all that is required. And perhaps, of these, the expression is the most important. Clothes and properties are after all, a mere back-ground for the face in such a picture, and it is in the features that the chief interest must lie. A week ago I was looking at a genre picture of a miser leaning forward on a table and gloating over his wealth. With long, bony fingers he clutched at it as though some one were trying to take it from him. His shirt was open at the throat, and a long grey beard swept his bony breast. But it was on the interesting expression of his countenance that one's gaze rested. The eyes were turned to the left, and in them could be seen the look of fear that one might imagine would come there at the slightest noise. The expression was as if he had heard something and feared an intruder. In short, it was a real genre picture.

To make a thorough success of genre work, it is necessary that one be constantly on the look out for new impressions and methods to interpret them. In no other kind of work does one find his ideas playing out so quickly as in genre photography, and unless you are constantly making notes, you will very soon find that just when you want to make a picture, you cannot get anything worthy of your work. The ideas for the very best genre pictures have not come in a moment, and no matter how simple they happen to look—the simpler the better—they are most likely the result of a considerable amount of study and thought.

The choice of models is an important question, and the advice which the late H. P. Robinson used to give in landscape figure work, ought to hold very good here. The subject will bear the most careful training, but more than that, ought to possess a certain amount of natural ingenuity in make-up and ability to take the pose you want. Of course, there is the question of getting a person to understand your idea. Once you are able to get your aim fixed before the subject you happen to be working with, there is more prospect of your getting good results. Half the battle is won when you have a model whose ideas work in accordance with your own. It is a most excellent scheme for every pictorial photographer to get on the right side of as many of the old characters about town as he is able. After they have posed a few times and have had explained to them the requirements of the work in hand, they will usually enter into the idea very heartily and are frequently as anxious to give satisfactory results as

"BOILING THE KETTLE."

A frugal luncheon in the far North-West.

A DOMESTIC WOMAN.

An Ojibway housewife at Abitibi post.

ABITIBI BELLES.
Two Ojibway maidens, pleasant if not fair to look upon.

WHERE THE DAYS ARE LONG.
At Abitibi in June there is hardly any darkness, and everyone lives out-of-doors.

MANAGER SKEENE, H.B.C.
In charge of Abitibi post.

you are to get them. Usually they are well paid for their trouble by a copy of the picture, though if you should happen to find it necessary to lend some old codger five cents for "street-car fare" you will not find it necessary to look upon it as a loss.

In conclusion, let us think about what we have seen in connection with such models as may chance to be at our command, and also as to the proper settings, pictorially, until the picture is complete before us in our mind's eye. When we start to make the exposure, we will find difficulties enough cropping up to tax all our ingenuity without worrying beforehand as to what they are going to be. Nevertheless, once get started and you will find that the study of genre photography is one of the most fascinating branches of the art you could well run across. Moreover, it is something that one does not have to go outside to practice, and for the months of March and April, when out of door work is associated in our minds with wet feet and sore throats, it ought to possess attractions.

The Ash.

BY N. M. ROSS, ASST. SUPT. FORESTRY.

Of our many native hardwood trees, the ash is one of the most important, the toughness and elasticity of the wood, combined with light weight, making it of value for many different purposes. Under this genus there are several varieties native to North America. Perhaps the most common of these are white ash (*Fraxinus Americana*), red ash (*F. Pennsylvanica*), green ash (*F. viridis*), and black ash (*F. nigra*).

The main characteristics of this genus are :—Generally large trees with rough bark and comparatively open crown. The leaves are opposite on the stem, are odd pinnate consisting of four to fifteen leaflets. The flowers are small and inconspicuous and generally dioecious, that is, the staminate or male flowers are borne on different trees to those producing the pistilate or female ones. The seeds are borne in persistent clusters, the seed, including the long narrow wing, varying from one to two inches in length.

Of the varieties noted above, the white ash is by far the most important from an economic standpoint. This tree reaches the height of one hundred feet, and three feet in diameter, and ranges from Nova Scotia to Western Ontario. It is nowhere very abundant, but occurs in greater numbers in the western portion of its range. The ash never occurs in pure forests like the spruce. The open nature of its crown would not enable it to preserve a sufficiently dense ground cover in a pure stand, and varieties of trees which are not so light demanding would gradually become mixed in with it. It thrives best on rich, moist soil.

The wood of the white ash is very largely used in the manufacture of agricultural implements, cabinet work, inside finishing, and wherever a light, tough wood is required. Its specific gravity is 0.6543, and weight 40.77 pounds per cubic foot. The wood produced from second growth or stool shoots is considered to be the best. The ash is a rapid grower, and would be of value for planting on the better soils in mixture with other trees with more shade enduring qualities.

The black ash is more abundant than the white ash, and ranges further west into Eastern Manitoba. It is essentially a swamp tree. The wood is often used in place of that of white ash, but is specially fitted for barrel hoops, basket and cabinet work. Its specific gravity is 0.6318, and weight 39.37 pounds per cubic foot. It would be useful for planting in swampy places where other hard woods would not thrive.

The green and red ash are very similar, the former being considered but a variety of the latter. They seldom reach a height of more than forty or fifty

feet. The chief characteristic distinguishing the green ash from the red is the dark-green shiny appearance of the foliage, the leaves and petioles being smooth, while those of the red ash are more or less downy or hairy. In their western range it is almost impossible to distinguish the one from the other, although the variety growing further west is generally known as the green ash. In the prairie districts it is found growing along creeks and river bottoms, and ranges considerably west of Fort Qu'Appelle, on the Qu'Appelle river in the North-West Territories.

The wood very much resembles that of the white ash, but is heavier and more brittle. Its specific gravity is 0.7117, and weight 45.35 pounds per cubic foot.

In the West it is particularly valuable for planting on the better soils. It is very hardy and easily propagated. The wood furnishes excellent fuel, and makes very good fence posts, for which it is used a great deal in the West, where it can be obtained.

The ash is very easily propagated from seed. This ripens in the fall, and after being picked should be thoroughly air dried. When stored in bags in a dry place it may be kept three or four years and still maintain a large germinating percentage. In moist climates, where it is not possible to thoroughly air dry, the seed should be stratified in sand and left outside during the winter in a well drained spot. The seed can be separated from the sand by sifting. Sowing should be done early in the spring or late in the fall. In a dry season seed sown in the spring will often lie dormant in the soil, not germinating till the following year. Stratified seed, or seed soaked in water before sowing, will generally come up the first spring. The seed should be sown thickly in drills about one to one and a half inches deep, the distance apart depending on the method of cultivation it is intended to give the seedlings. During the first season the seedlings will make an average growth of six to eight inches, and in the second should reach two feet or more, when they should be transplanted from the nursery to the permanent plantation.

Estimating Timber Content.

(URICH'S METHOD)

BY A. KNECHTEL, N. Y. F. & G. C., N.Y.

This is the same in principle as Draudt's method, but takes a sample tree for the same number of trees, and thus endeavors to avoid the small error occasioned by rounding off the fractions resulting from multiplying by the rate per cent.

By this method the trees of the stand are arranged in groups so that each group contains the same number of trees. For each group a mean sample tree is then reckoned.

As in Draudt's method, the sample wood is all worked up together, and the volume of the stand, as well as the division of the same into sorts, is reckoned by multiplying the volume of the total sample wood, or for the latter requirement that of the particular sort, by the quotient.

$$\frac{\textit{Sum of the cross areas of the stand}}{\textit{Sum of the cross areas of the sample trees.}}$$

The method does not insist upon any fixed number of groups ; still they should not be too few, at least not fewer than three, lest the trees with mean cross areas may not possess the mean contents of the group. Too large a number of groups is inconvenient, as it involves repeated separation of the diameter classes, and since for each group a sample tree must be reckoned.

The Association of German Forestry Experiment Stations, which in 1889 adopted the method, prescribes the number of five groups. This number meets the demands in both directions, and need be increased only in stands with great differences between the diameter classes.

Here, as in the method of the mean sample tree, several sample trees should be felled for each group. Experience has shown that correctness of result with an insufficient number of sample trees cannot be expected. Less than two for each group is sufficient only exceptionally. It is better to take from three to five, and in poor stands even more.

Here, also, deviations can be made from the reckoned diameter in choosing the sample trees. They may even be chosen freely from the group, if only the sum of the basal areas approximates closely that of the calculated sum.

The objection is raised against the Draudt and Urich methods that as the sample trees are chosen in proportion to the number of trees, and not in proportion to volume, the groups containing the smaller trees have more than their proper share. Moreover, in those groups a deviation in choice of sample tree is more noticeable. These objections can be overcome by choosing so many trees that in any case, even in the strongest groups, the required accuracy is reached.

URICH'S METHOD

Specie	Diameter	Number of Trees.	Groups. No. of Group	Diameter	Number of Trees Detail	Number of Trees Total	Basal Area Detail	Basal Area Total	Mean sample tree Basal Area	Mean sample tree Diameter	Real Sample Trees No. of trees	Diameter	Basal Area Detail	Basal Area Total	Volume of Stand Cu. ft.	Volume of Stand B. M.
							Sq. Ft.	Sq. Ft.	Sq. Ft.							
	8	22		8	22		7.68				1	10.1	.5564			
	9	77	I.	9	77	312	34.04	171.18	.548	10	2	10.2	.5675	1.1239		
	10	97		10	97		52.90									
	11	162		11	116		76.56									
				11	46		30.36									
	12	40		12	40		31.42				3	12.9	.9077			
	13	100	II.	13	100	312	92.18	290.40	.930	13.1	4	13.4	.9794	1.8871		
	14	115		14	115		122 94									
	15	88		15	11		13.50									
				15	77		94.49				5	16.2	1.4314		667.3	
White Pine	16	160	III	16	160	312	223.41	436.12	1.397	16	6	15.9	1.3789	2.8103	2368.	103771.62
	17	182		17	75		118.22									368246.96
				17	107		168.66									
	18	45		18	45		79.52				7	18.7	1.9072			
	19	67	IV	19	67	312	131.92	584.12	1.872	18.5	8	18.5	1.8666	3.7738		
	20	88		20	88		191.99									
	21	110		21	5		12.03									
				21	105		252.56									
	22	86		22	86		227.02				9	22.8	2.8352			
	23	22	V.	23	22	312	63.47	876.78	2.810	22.7	10	22.4	2.7366	5.5718		
	24	14		24	14		43.98									
	25	85		25	85		289.75									
TOTALS		1560			1560			2358.60						15.1669		

$$\frac{2358.60}{15.1669} \times 667.3 = 103771.62 \text{ cu. ft.}$$

$$\frac{2358.60}{15.1669} \times 2368 = 368246.96 \text{ ft. B.M.}$$

Canadian Canine Breeders.

BY D. TAYLOR.

Noting the marked success of so many Canadian kennels at the recent show of the Westminster Kennel Club held in Madison Square Garden, New York, a comparison is naturally suggested between the fanciers of the Dominion and those of the United States. When it is remembered that those who take up the fancy on the other side are largely men of considerable wealth, who can afford to, and who do, spend large sums in importing the very finest specimens obtainable of the various breeds, it is surprising that Canadians get a look in at the prize-money at all. Yet it is true, nevertheless, that they do get there and very often to some purpose, as the records of any show of any pretensions held in the northern portion of the States will amply bear out. This fact is all the more gratifying when the comparison in numbers is also taken into account. For every dog fancier in Canada there are a dozen or more in the United States, so that the Canadian who has the temerity to enter his dog at any of the American shows bucks against both the wealth and numbers of that country. Thus there is all the more credit in a Canadian winning, especially at such an important fixture as the Westminster Kennel Club's show, where the cream of all America and the latest prize-winners from Great Britain, purchased and imported especially to win, are to be met with. In looking around for a reason for recent Canadian successes one may easily find one in this: that Canadians give more attention, from necessity perhaps, to the mating qualities of sire and dam than do wealthy Americans, who are too much inclined to mate to the latest prize-winning freak, apart altogether from considerations of the fitness of the selection, the only motive being to be in a position to boast of having a litter sired by so-and-so. In nine cases out of ten the figure for the service of such freak is too high for the average Canadian even to think of, and therefore the prohibitive price comes to be, in some respects, a blessing in disguise. Not being able to gratify the whim of breeding to the latest fad, he is compelled to look nearer home, and is liable to find in his neighbor's backyard a sire possessing the very qualities in which his dam is deficient or whose progenitors were noted for these qualities, and which are liable to reappear again in the second or third generation. However judiciously mated the direct influence not infrequently fails to appear in the litter, but as blood and breeding will always tell it is liable to break out when least expected.

There is yet another obstacle, and not one of the least either, in the way of Canadians exhibiting at shows on the other side, namely, the annoying and unnecessary restrictions and formalities of the American customs, which frequently causes delay in the transportation of the animal, and entails on it much suffering. There have been instances where a dog has been delayed at the port of entry for two or three days, through neglect, perhaps, to make some formal declaration, and this, added to the long and fatiguing journey already undergone is bound to have a very serious effect upon the constitution and temperament of the dog.

Among those who have brought honor to Canada under the circumstances, and against the fiercest kind of competition, may be mentioned: For St. Bernards, Messrs. Fred. T. Miller, Trenton, Ont., and F. & A. Stuart, Montreal; wolfhounds and greyhounds, Terra Cotta Kennels, Toronto; Irish terriers, Rev. Father O'Gorman; fox terriers, Norfolk Kennels, Mr. A. A. Macdonald, Toronto, and Messrs. Fraser & Lindsay, Toronto and Montreal; collies, Messrs. Joseph Reid and W. Ormiston Roy, Montreal; C. B. McAllister, Peterborough; Balmoral Kennels, Ottawa, and J. T. Reeve, Toronto; cocker spaniels, Geo. Bell, Toronto; George Douglas and "Pop" Dunn, Woodstock, Ont.; and H. Parker Thomas, Belleville; bull terriers, Newmarket Kennels, Montreal; Airedale terriers, Mr. Joseph A. Laurin, Montreal. These names do not exhaust the list by any means; indeed they could be added to very considerably did space permit.

Our Medicine Bag.

The course of lectures delivered by Dr. B. E. Fernow, Principal of the New York State College of Forestry, at Queen's University, Kingston, from the 26th to the 30th January, marks an important forward step in education, for this is the first occasion on which forestry has been made a subject of instruction in a Canadian University. Queen's University, as appears from a brochure issued over the signature of Hon. Wm. Harty, Chairman of the Board of Governors of the School of Mining, gave consideration to the question of the commencement of teaching in forestry as far back as 1895, and in January, 1901, a lecture was given by Dr. Fernow at Kingston, followed by a conference on the subject. The present course is a development of the idea, and it was intended only to be the preliminary to the making provision for the inclusion of forestry in the regular programme of instruction. The attendance at these lectures was large and steadily maintained, and the interest shown by the students and the general public was very satisfactory, and the enthusiasm aroused culminated in the formation of a committee of leading men to consider the question of the establishment of a Chair of Forestry.

Queen's University has shown a great deal of enterprise in connection with this movement, and deserves great praise for the efforts made by it, which have done much to place the question of forest management in the forward position which it occupies to-day. The governments and the holders of timber lands, recognizing clearly at last that non-agricultural lands should be maintained under timber in perpetuity, are desirous of making the best possible use of and obtaining the highest returns from them, and are, therefore, beginning to enquire for expert assistance so that the establishment of a School of Forestry is a necessity to meet the demand for persons equipped with such special knowledge which is now arising and will, undoubtedly, steadily increase.

The lectures by Dr. Fernow are to be published in pamphlet form, and copies may be obtained from the Secretary of the School of Mining at Kingston, at twenty-five cents each.

Announcement has since been made that a School of Forestry will be established in the calendar of studies for the next college term.

To The Editor of Rod and Gun :

'Dear Sir,—During the summer of 1901 I tried to describe in your magazine a fish that was caught in Timiskaming Lake, and the like of which "I never did see."

I explained that it was a heavy fish, something of the shape of a bass, with large white scales. I happened to mention this fish to an Indian (John Egwina) the other day, and he at once recognized it as being what he calls the "Waba-Sheegan" or White Bass.

He says that these fish are rare even in Timiskaming, and that he knows no other lake where they are found, and even then that they are taken in only one particular part of Timiskaming, namely at the mouth of the Montreal River. This fish that I saw, as a matter of fact, was caught near the high rocks about four miles

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A most unique catalogue comes from the Peterboro Canoe Company, of Peterborough, Ont. An artistic cover design is printed on a dark blue cover paper. At the top is printed in gold the word "Canoes." At the left hand side is an illustration of a lady in a canoe. Between each page is pasted an insert showing a canoeing scene. These little inserts are printed on a light green coated paper, and are of triangular shape. The idea is an original one. The booklet contains valuable information concerning racing canoes, war canoes, juniper canoes, canoe skiffs, cedar skiffs, steam launches, tugs, etc. The Peterboro Canoe Company is one of the largest manufacturers of canoes in Canada. Its goods are known throughout the English speaking world, as well as in other lands where the English tongue is not spoken. The prices of these canoes and boats are in keeping with their quality. Purchasers may rely upon the quality of the canoes of the Peterboro Canoe Company. Send for a catalogue.

south of Haileybury, and twenty-five miles north of the mouth of the Montreal River.

There is another strange thing that this man tells me about the Waba-Sheegan, and the telling recalls to my mind that I have heard about it years ago, only I never saw the fish until I saw this specimen. It is, that this is a singing fish. It follows, or rather swims under, a canoe, and gives forth a humming sound, which, though I have never heard, I have an impression is somewhat uncanny to listen to.

It sometimes accompanies the canoe for a long distance.

It rarely takes a troll, being more often caught in a net.

As the deepest water of Timiskaming is opposite the mouth of the Montreal River, and that of the upper part of the lake at the high rocks where this fish was caught, can it be that it has an affinity for deep water and hence not so often caught as other fish are? Yours,

C. C. FARR.

Haileybury, 17th Nov., 1902.

Without claiming to make a certain identification of Mr. Farr's rare fish from Timiskaming, we will hazard the guess that it was Aplodinotus grunniens. This fish is abundant in the Great Lakes, although it has not been recorded from Timiskaming. It is a bottom feeder; its flesh is coarse; it has been taken weighing fifty pounds; its color is greyish silvery, dusky above, sometimes very dark, and the back is sometimes streaked with oblique dusky stripes along the scale rows. Its local names in those parts of Canada where it is known are Sheepshead, or fresh water drum.

The enterprising and graceless Ottawa penny-a-liner is getting in his fine work. Each winter as soon as the snows become deep, this industrious, but misguided person, starts up his wolf story manufactory. His victims are the editors and readers of sundry American yellow journals. On the 7th of February the Ottawa scribe sent a yarn to the New York American and Journal, which they thought good enough to put a scare head upon. It described at some length the terrible doings of an imaginary pack of wolves near the town of "Lewis," which it appears is situated on the eastern bank of the St. Lawrence, opposite Quebec City. The inhabitants are described as "in a fever of excitement." The ferocious beasts seized a child, according to the Ottawa correspondent, and were about to devour it, when the father of the little one came to the rescue with his axe.

We are willing to wager a small sum that the inhabitants of Levis, which same is on the eastern shore of the St. Lawrence, opposite the City of Quebec, are suffering far less this winter from wolves, than from the high price of coal.

The fourth annual meeting of the Canadian Forestry Association will be held at Ottawa, on the 5th and 6th of March next, commencing at 10 a.m. The morning and afternoon sessions will be held in the Council Chamber, City Hall, and the evening session will be held in the Assembly Hall of the Normal School, on the 5th of March.

The following papers have already been promised:—"Forest Conditions in New Brunswick," His Honor Lieutenant-Governor Snowball; "The Growth of Forest Trees at the Aboretum of the Experimental Farm," W. T. Macoun, Horticulturist; "Tree Planting in Manitoba," A. P. Stevenson, Nelson, Man.; "Forestry in Relation to Irrigation," J. S. Dennis, Irrigation Commissioner of the Canadian Pacific Railway Company. A report on "The Forest Fires of 1902" will be submitted in accordance with the resolution passed at the last annual meeting Other papers relating to Ontario, Quebec, Nova Scotia and British Columbia are being arranged for, but it is not possible at the present time to make a definite announcement in regard to them.

Secretary-Treasurer Robt. McAllen, of the Ottawa Kennel Club, sends us the following: "The O. K. C. never had a brighter future than at the present time. The organization is very strong indeed, and we are getting arrangements under way for our fall show, and expect to eclipse all previous efforts. With the best judges, good management, and care of dogs, together with an attractive prize list, we expect the dog fanciers' support with substantial entries. The officers of the Club are: President, A. B. Brodrick; Vice-President, F. M. Birkett, M.D.; Secretary-Treas., Robt. McAllen; Executive Committee, Dr. R. E. Webster, A. Z. Palmer, F. C. McLean, Geo. Easdale, R. H. Elliott, F. A. Armstrong, J. J. Gleeson, Geo. Thomas."

EDITOR ROD AND GUN IN CANADA:

In that very interesting article in your last issue, "Another use for the Hand Camera," I find this advice: "Advise anyone by all means to get a field instrument, or at all events, one that will admit the use of a tripod." Having always been an admirer of nature in its varying forms, and a devoted lover of its photographic shadows, and, moreover, having packed my impedimenta many weary miles in all weathers, my experience may prove a blessing to others as it has to myself. A tripod such as you buy is generally too light, or frail, or cumbersome. Whereas the substitute I employ (necessity was the mother of my invention) has neither weight nor space room—weighs perhaps an ounce and can be stowed in the innermost corner of a pocket.

All that you need carry is the usual jack-knife or what is better, one of Marble's safety pocket hatchets, three small pieces of cord and two cotton bags, say 12 or 14 inches square. When a picture looms in sight all you have to do is to cut three light poles about 6 ft. long, tie a string around the bunch about a foot from the top, spread out the lower ends tripod fashion; then fill your two bags with earth, sand, stones or anything heavy, place the larger one on the upper forks of the tripod, leveling the top to place camera on, and place the smaller bag on top of the camera to steady it. By this means you can in a couple of minutes make a stand to suit any conditions, and catch a good view in quite a stiff breeze. After pressing the button you empty your bags, untie the string, and keep both for future reference—the discarded legs showing the point from which the view was taken. I use the two bags in travelling as an extra covering for my camera. When the "liquid lens" has arrived at perfection and cheapness, what delightful reminiscences those who "love darkness better than light" will be able to secure in the weird soltitudes of our forests and lakes.

A. L. RUSSELL,
Dominion Land Surveyor.

Port Arthur, 8th Feb., 1903.

To the Editor of ROD AND GUN IN CANADA:

DEAR SIR,—I was reported by quite a number of prominent newspapers of both the Upper and Maritime Provinces as having said, at the meeting of the North American Fish and Game Protective Association in Ottawa, on Thursday, 22nd, when referring to this Province:

"The game and fish laws of that Province are holding their own; big game are decidedly increasing, although sportsmen seldom secure the coveted moose and caribou heads."

What I really said was this:

"There is an undoubted increase of big game animals—particularly of moose and caribou. The sportsmen of both the United States and Great Britain are finding their way into our Province in larger numbers each succeeding season, and it is a rare thing for any hunter to fail in securing the coveted heads. If he does so, it is, in nine cases out of ten, not the fault of his guide, or of the game he fails to bring down."

You will perceive that the synopsis of what I said, as it appeared in the papers referred to, did New Brunswick a great injustice, to say nothing of the awkward position in which it placed me, as speaking for it at the time in regard to its wonderful game attractions, in which it is our pride that we stand second to no other part of Canada.

If you will assist in correcting the error to which I refer I will be grateful.

Truly yours, D. G. SMITH,
Fishery Commissioner of the Province of New Brunswick.

Chatham, N.B., Jan. 24th, 1903.

The railway companies have arranged, as in previous years, to specially aid The Canadian Forestry Association, and the Canadian Pacific, Grand Trunk, Canada Atlantic, Ottawa & New York and International Systems have agreed to allow members of the Association and their wives accompanying them, attending the Annual Meeting from points east of Fort William, return passage at single fare, provided a certificate is obtained from the agent at the poi where the ticket for Ottawa is purchas Members should purchase a single f ticket to Ottawa, and the certificate, a

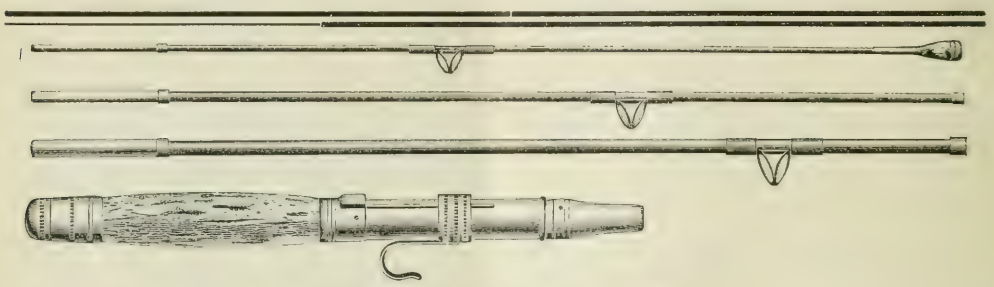
being signed by the Secretary of the Association, will entitle the holder, on presentation to the ticket agent at Ottawa, to free return. A receipt from the ticket agent will not be sufficient. The certificate must be on the standard form. This privilege will only be allowed commencing three days before the meeting, and three days will be granted after the meeting to take advantage of the free return.

The Secretary should be notified regarding any papers, resolutions or other matters of importance requiring discussion which any member may wish to bring before the meeting, in order that arrangements may be made for giving them consideration.

The importance of the subjects to be dealt with should ensure a large attendance. A successful annual meeting will give a great impulse to the work of the Forestry Association, and will do much to establish it on a firmer basis and to advance the great objects it has in view. It is hoped that every member will make a special effort to be present and endeavor also to get others interested in the subject, to become members and attend the meeting.

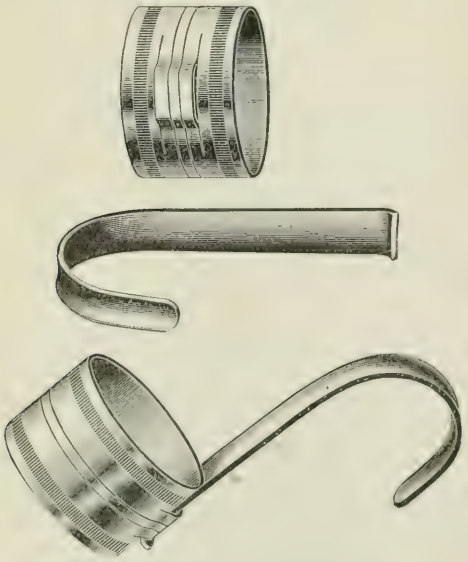
In cases where members may not be able to attend the meeting on account of distance from Ottawa or otherwise, it is suggested that steps might be taken to have their districts represented by persons who will be able to attend.

Notice is hereby given that resolutions will be submitted to amend the constitution to provide for changing the date of the Annual Meeting. The question of an allowance to local circles of

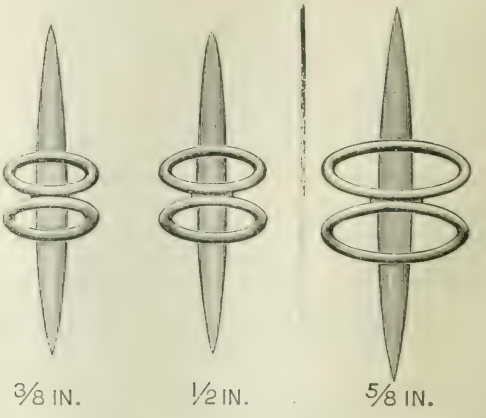


THE KALAMAZOO BAIT CASTING ROD.

Three specialties now being brought to the notice of fishermen by the Horton Manufacturing Co., of Bristol, Conn., makers of the celebrated Bristol steel fishing rods, are the Kalamazoo bait casting rod with short handle, patent detachable finger hook, large polished German silver 2-ring guides, and solid agate top with extra large opening. The reel seat is arranged in such a manner that the reel is brought close to the grip, and with the aid of the "finger hook" the fisherman is enabled to thumb the reel without feeling the strain. Owing to the large guides and top, even a novice can cast 100 feet after a few minutes practice. The rod is made in three lengths: 5, 5½ and 6 feet, and weighs from 8 to 8½ oz. It is essentially good value at $7.10.



FINGER HOOK AND REEL BAND.



LARGE POLISHED GERMAN SILVER GUIDES.

A Big Grizzly.
This bear was a big fellow, even for the Bridge River country, B.C.

Drying the Pelt.
A snapshot taken in a hunter's camp, Lillooet, B.C.

A Sicamous Trout.

The weight of this fish was seven and three-quarters pounds.

Beyond the Clearings.

View of the Ottawa River from North Timiskaming.

the Association for local expenses will also be submitted.

The attention of the members of the Association is called to the fact that membership fees for 1903 became due on January 1st.

E. STEWART,
Department of the Interior, Secretary.
Ottawa, February 10th, 1903.

Professor Penhallow, of McGill University, lectured recently before the Ottawa Field Naturalists' Club, on "The Pulp Industry in Canada." The lecture gave a great deal of information in a very interesting way, and showed the importance of the pulpwood forests as a national asset. This industry has resulted in the creation of towns such as that at Grand Mere, where no population previously existed, and has increased very much the value of the spruce throughout all our northern districts. The views with which the lecture was illustrated gave clearness to many points, particularly those which showed microscopic sections of pulpwood and wood fibre. The manner in which the fibre is broken in the mechanical process, as compared with its perfect condition as separated by the chemical treatment, was brought out by a number of specimens thrown on the screen. This lecture is one of a series primarily for teachers, which has been established at McGill University under the superintendence of Professor Penhallow, and any responsible person may obtain the lecture and views for use in any part of Canada by addressing Professor Penhallow, McGill University, Montreal.

Baily's Magazine for February contains the proposed alterations in the Hurlingham polo rules. There are some very important changes, especially in the off-side and crooking rules. Baily's is always interesting, and the issue in question will be found quite up to the average.

The Live Stock Journal Almanac for 1903, published by Vinton & Co., 9 New Bridge Street, Ludgate Circus, London, has been received. This is an almanac that deserves to be better known in Canada, as all breeders of live stock will find it a most useful publication. We consider it will be especially interesting to our readers in the Northwest. Some of the articles sure to interest Canadian breeders are: "Horses for the Army," by Mr. Stein, who gives some valuable advice as to supplying a reserve of horses for military purposes. A good many Canadian remounts were sent to South Africa, and we are looking forward to a steadily increased demand in the future. The Irish wolf-hound is discussed at considerable length by Mr. F. Gresham, and an excellent cut is given of Champion Dermot Asthore, owned by Mrs. Laura Williams. If the Irish wolf-hound is really able to catch and kill his wolf, he should be in extreme demand in the Territories. Up to now, we have discovered no better dog than the old Glengarry deerhound, as the Russian borzoi, when put to the test, failed lamentably. This almanac contains 266 pages of excellent reading matter, and yet is sold for one shilling.

The American Annual of Photography for 1903, the first annual issued by the Anthony-Scovil Co. since the consolidation of the firms of E. & H. T. Anthony and Scovil & Adams, both of New York City, is on the market. The year-books of these two firms are so well known to the amateur photographic fraternity as to make it almost superfluous to say that the present book is a good one. Combining as it does the work of the very best photographic writers and the cream of the illustrators from both volumes, it is almost a masterpiece so far as annuals are concerned, and can be honestly recommended as being a valuable book, teeming with practical suggestions and earnest pictures in the art pictorial. It ought to be in the hands of every photographer, whether he be amateur or professional.

Montreal has now two dog shows in sight, that of the Montreal Collie Club on the 14th inst., for collies only, at which Dr. Wesley Mills will judge, and the annual show of the Montreal Canine Association in May. In addition to the judges already mentioned for the latter, it is announced that Mrs. J. L. Kernochan will judge Irish terriers, and Mr. Lynn, of Port Huron, Mich., fox terriers.

CONTENTS

March, 1903

Communications on all topics pertaining to fishing, shooting, canoeing, the kennel and amateur photography, will be welcomed and published, if suitable. All communications must be accompanied by the name of the writer, not necessarily for publication, however.

The Official Organ of the Canadian Forestry Association.

ROD AND GUN IN CANADA does not assume any responsibility for, or necessarily endorse, any views expressed by contributors to its columns. All communications should be addressed to:

ROD AND GUN PUBLISHING CO., 603 Craig Street, Montreal.

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Canadian Forestry Association

THE objects of the **CANADIAN FORESTRY ASSOCIATION** are :

The preservation of the forests for their influence on climate, fertility and water supply ; the exploration of the public domain and the reservation for timber production of lands unsuited for agriculture ; the promotion of judicious methods in dealing with forests and woodlands ; re-afforestation where advisable ; tree planting on the plains and on streets and highways ; the collection and dissemination of information bearing on the forestry problem in general.

Rod and Gun is the official organ of the Association, which supplies the articles relating to Forestry published therein.

This Association is engaged in a work of national importance in which every citizen of the Dominion has a direct interest. If you are not a member of the Association your membership is earnestly solicited.

The annual fee is $1.00, and the Life Membership fee $10.00.

Applications for membership should be addressed to the Treasurer,

R. H. CAMPBELL,
Department of the Interior.

Ottawa, Ont.

EMERALD LAKE CHÂLET, B.C.

THIS CHÂLET HOTEL was built last summer by the Canadian Pacific Railway Company. It has accommodation for 70 persons.

Emerald Lake is 7 miles from Field, a station on the main trans-continental line, an excellent carriage road connecting the two.

The Châlet is a capital headquarters for the mountain climber, fisherman and big game hunter, and the artist will find an inspiration in the wonderful color values of the scenery. For particulars apply to any Agent of the

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ROBERT KERR, **PASSENGER TRAFFIC MANAGER.** MONTREAL.

THE HERALD PRESS, MONTREAL

ROD AND GUN IN CANADA

Yoho Valley, B.C.

A MAGAZINE OF CANADIAN SPORT AND EXPLORATION

TRITON CLUB.

Lac la Croix, from the club house, looking down the lake.

ROD AND GUN
IN CANADA

VOL. IV. MONTREAL, APRIL, 1903 No. 11

Northern Ontario.

BY H. BARNARD.

(Continued from the March issue.)

Hudson's Bay Post, Lake Abitibi, cannot be called a settlement. It consists of the house and store houses of the company, several log houses in a more or less state of dilapidation, and a Roman Catholic church. The Indians, who all go north hunting in the winter, return in the spring with their catch of furs; then the place is a large village of tents. They stay here all summer, living on what they have made in the winter, and when it is time to return north, usually the latter part of August, go into debt for their supply of provisions for the coming winter, to be paid for in furs when they return. This goes on from year to year, and apparently through the whole course of their existence. Some of them save a little, and are better off than their neighbors; but as a rule they are thriftless and improvident, and seem to have no object in life beyond the bare necessities of the hour. They are handicapped in the struggle for existence by the force of circumstances, which might be summed up in the simplicity of their nature, lack of education, want of ambition and the white man's greed. Perhaps they are filling the place which nature intended; and as the great civilizer, the railroad reaches out, game and animals, taken for their fur, their means of support, are driven northward, and with them the remnant of a race dying or losing its identity by absorption into the mass of society, higher or lower as it encroaches upon their hunting grounds.

The Indians here at present seem poor in everything except dogs—dogs of every color and mongrel breed that dogs can attain, always hungry, and the most rascally thieves in existence. It took one man his whole time to prevent them from stealing our provisions, and when we were at dinner we had dogs in front, dogs behind and dogs all round, so that it required constant vigilance on our part to get our legitimate share. They stole a can of pork and beans, and, I think, one of the can openers. I believe if a loaded shotgun were left around they would steal the cartridges out of it. There is no tax on dogs at Abitibi. The more dogs you have the better off you are. Their owners seem to regard them as part of the family, and with them enjoy their mode of life; but whether they are happy, pleased or discontented, their countenances give no sign. It may be easy to see "the mind's construction in the face" of an ordinary white man, but not in that of the North American aborigine, at least the Abitibi sample.

The women are very shy. If they see you coming they will seek the seclusion of their tents quickly. After you pass, if you turn around you will likely catch a glimpse of two or three heads for a moment that have been taking a sly look at you. Some of the tents are quite tidy, and the younger women nicely dressed, and even good looking; but these were exceptions. We managed to get a few pairs of moccasins and some

birch bark baskets. These we know are genuine Indian work.

Lake Abitibi is forty or fifty miles long. The water is shallow and muddy. Fish are fairly plentiful, such as they are, and consist of pike, whitefish, pickerel, perch, etc. I do not think they grow to very large size.

In two weeks time the Indians will all have departed, and I cannot imagine what there is to do in such a dismal place to make life bearable till their return. One might well exclaim :

"O solitude, where are the charms,
That sages have seen in thy face?
Better dwell in the midst of alarms
Than reign in this horrible place."

We left Abitibi in a drizzling rain, registering an inward vow that our next visit would not likely be in the near future. A good stiff breeze sprung up and helped us along. The clouds broke and the weather cleared, for all of which we were most devoutly thankful. We soon got into the river ; Abitibi was lost to sight, and we are fairly started on the return trip, which is pretty much the same as the up, with the exception that we paddle up stream and view the scenery from a different standpoint with renewed interest.

Our objective point is now the island where our provisions are "cached," it having been decided by our friends, Mr. and Mrs. Beworth, to return by the same route as we came, while it is my intention to branch off at this point to strike the route back to North Timiskaming by way of the Blanche River. We therefore proceed on our way leisurely out of Abitibi Lake ; the canoe with our fair companion is in the lead, and at a distance of perhaps a hundred yards a big freight canoe is following ; we bring up the rear. Presently we hear a shot ; the lady has knocked over a duck that was imprudent enough to fly too close. Further on another shot is fired ; the duck was hit, that was plain, but it kept on for fifty yards or more and then suddenly toppled over, to the immense delight and astonishment of the six Indians in the big canoe, who never saw ducks shot on the wing. They thought the lady was a good shot, and they were right. She had got accustomed to firing out of the canoe, and was dangerous to trifle with. This is the only time that I saw Indians demonstrative, and I believe the only thing to stir them to this pitch is to kill. To take life is part of their nature, and to see it done in an artistic manner commends itself to their admiration. This is the only way in which I can account for the manifestation.

The big canoe shoots ahead, and is soon lost to sight, and we "pursue the even tenor of our way." By the time we get to our camping place for the night, we have secured four ducks. These having been dressed and prepared for the pot, we supped like aldermen on stewed duck, which was a creation of the fair adventurer responsible for the principal ingredient.

The only incident which happened on the way till our arrival at Cache Island was the meeting of the big freight canoe which we encountered going down, now on its return, loaded. At our first camping place on the up trip, Mr. B. left a valuable fishing rod standing against a tree. It was not missed till we were many miles away, so we continued our journey without it, with very little hope of seeing it again ; but the freight canoe crew had camped there and found the rod, brought it away, and cheerfully returned it to its owner, who, happy in the recovery of the lost article, contributed a fair sum to the finder, and we parted company, feeling very much satisfied at the outcome.

Crossing the Height of Land portage, we met a Mr. ———, a nice looking lady and two merry-eyed, sweet-faced girls. The gentleman was an inspector in the employ of the Hudson Bay Company, travelling in great style in a big canoe, with plenty of provisions and six men, including a chief. I really could not do justice to a description of travel of this kind under such pleasant and favorable conditions. Suffice it to say, the two merry girls, whose ages might be 13 or 15, were bubbling over with merriment. There was not much room for doubt as to how they were enjoying it. We chatted for a few moments with the inspector, who was very agreeable, and then took leave, each to go in the opposite direction.

We reached Cache Island early. Here we had dinner, the last meal we were to have together. We then divided our cooking utensils, and, having found our cached effects intact, portioned out the provisions, loaded our canoes, said farewell, and each party—Mr. and Mrs. B. and their guides and I with mine—departed in different directions, expecting to meet at North Timiskaming a week later. I should have mentioned that I called at the Indian camp for the little dog, before referred to, so that we were now a party of three, the guide, the dog and myself. The guide has given the dog an Indian name, Ah-noo-ke, which means hunter. Our route now lies through a rough and wild region. There are fifteen portages on it, two of them being a mile long, and the others not so long, but all difficult. This matter having been discussed, it was concluded that this part of the trip would be too rough for Mr. and Mrs. B., especially for Mr. B., and we therefore thought it the better plan to separate. This route having been mapped out by me in the first place, I am somewhat tenacious of purpose when I arrive at a decision, and I did not feel like making any change in my plans regarding it, especially as I had been travelling through a country full of moose, red deer, bears and caribou, and had only succeeded so far in sighting the tails of two deer. I started out to see a moose, and I do not think I would be here now writing this if my ambition in this respect had not been gratified.

We leave Cache Island at 2 o'clock, and now the Abitibi express puts on full steam. The intervening four miles to the first portage on our route is covered in short order. Here we commence where the good qualities of a first-class guide are brought out. The trail is through swamp and over high rocks, through dense thicket and underbrush, over fallen trees and rough ground. You would wonder how he knows the path. But with a hundred pounds weight on his back, fastened with the tump-line across his head, and the canoe overturned and resting on his brawny shoulders, he trudges along so fast that I cannot follow quick enough. He is soon out of sight, and before I am half across I have lost the trail, so that I sit down, glad to take a rest till his return, my load of a hundred pounds or over not getting any lighter as I proceed. Little Ah-noo-ke was good company in this wild place, its playful antics breaking the loneliness of the situation. The guide returned quickly, and having got the rest of our effects, which made a heavy load, we proceeded onward and completed the portage. We are now at a lake where the character of the water has altogether changed. It appears brown, just like Lake Ontario water appears blue ; but it is beautifully clear, and, after seeing so much muddy water in the other lakes, presents a pleasant relief. We go to a point of land which commands a good view of the whole lake, to camp, pitch our tent, and while the guide is getting supper I go out and succeed in catching two splendid pike—they come out of the clear water bright and shining, and proved to be firm in flesh and of good flavor. Our camp fire attracts a number of large grey owls, which appear to be numerous here ; they perched on the tops of the spruce trees, and looked like sentinels, but did not act as such, for they kept up a chattering and hooting noise, which reminded me of those beautiful lines ;

"Save that, from yonder ivy mantled tower,
The moping owl does to the moon complain
Of such as, wandering near her secret bower,
Molest her ancient solitary reign."

The owls, however, did not disturb our slumbers. We went to bed early, for we were tired with the heavy work of the long and hard portage. We were astir early next morning, and got started on our way, as we had fourteen more portages to make, and we were in a country where we might encounter a moose at any time. Having passed the next portage, which was a short one, we went to a trail leading to a lake off our route, thinking we would follow it up to see if there might be game there. We saw the tracks of moose and caribou, and plenty of bear spoor, but nothing more. It is rarely that you meet these animals while walking through the woods ; but judging

from the numerous tracks, they must be plentiful, and could be easily got if dogs were used to hunt them.

Proceeding on over some short stretches of water and a couple of short portages, we next got to our long portage. This one would almost break your heart, to say nothing about your back ; but we get over it, and find ourselves in a lake of considerable size, our intention being to go out of our way to another lake, which, being in a remote place, would likely afford the coveted sight of a moose. We found, however, at the landing where the trail commences that "signs" gave unmistakable evidence that a considerable party had recently visited the place. We, therefore, walked across the portage about a mile, and at the lake we found that a large, well-equipped party had been there probably two weeks before. There had been two tents, besides those of the guides, as indicated by the balsam-bough beds and the abundance of empty cans. Debris of ducks, partridge and moose fully convinced us that the said party had been enjoying life to their hearts' content. The air was tainted with decaying animal matter, and, following up the scent, we soon came upon the hide of a cow moose hung up to dry, and getting back to the camping spot, we could have picked up several handfuls of exploded rifle shells, which had evidently been used to shoot at a target of birch bark a short distance away. Rough tables and seats had been erected in true picnic style, and other appointments of the camp, led us to infer the party were "tender-feet, and had been made up of probably a couple of older heads and several young fellows, first-rate at wasting ammunition by shooting at a mark, and who, when they are thrust into the presence of a moose, hand the rifle to the guide to do the shooting. Such parties usually have more money than nerve of the right kind, and are interlopers from the other side.

So much for our investigation of this place. We went back to a camping point on our regular route, and here again we had evidence in the shape of shank bones and vertebrae that the same party had preceded us with a larder well supplied with moose meat. That night we decided to go out and paddle quietly around a small bay, and then two or three miles up the narrows here formed. When we got to the part where we thought we would stand a fair chance of seeing a moose, disappointment met us instead ; wafted on the evening air, the fetid scent of decomposing flesh assailed our nostrils. The moose was there, but slaughtered and left in its tracks to rot. We started at once for camp, but in passing the same place the next morning the spot was well marked by the sudden starting up of a number of crows, and upon closer examination the carcass was revealed minus the head. It had been a bull moose, killed for its horns.

About four miles to our next portage, which is short and comparatively easy, we enter another small lake. In a little bay to the right we notice some ducks. They are of the sheldrake variety ; they feed exclusively on fish, and the flesh is so strong that they are totally unfit to be eaten. They are also very wild and hard to get near, but we had surprised them around the corner, and one that flew pretty near I induced to wait till we picked him up, the guide remarking that was a good fat fellow and something like a duck. I told him that the old ones were a little strong, but perhaps the young ones (this was a young one) were all right—we would try it for supper. I thought this would be a good chance to have a laugh at his expense. Accordingly, when supper time came, the duck was duly gotten ready. I took particular care to have the fish fried first. Everything being ready, and the tea well boiled, I sat a little apart to await results, which very soon came. The guide, remarking, "It's sthrong, all right enough," yet he persevered ; but presently said he could not go any more of it. I gave a little piece to the dog, and it soon got sick at its stomach. Our frying-pan had to undergo house-cleaning that night. The dog soon got convalescent, and the guide said he would get even on some one else the first time he got a sheldrake.

This proved to be our last night in camp. We have twenty miles to go and seven portages to make before we strike the Blanche River, and then twenty-six miles to the "Head."

Those who have had the patience to follow me will have gathered that I have travelled a long distance and worked hard for the prime object of seeing a moose in its native habitat, and have so far failed. It is, therefore, left to the short space of one day to accomplish the desired end, and this day proved the most eventful of the whole trip.

(To be continued)

The Mississaga.

BY G. M. RICHARDS.

In March, 1902, while visiting the New York Sportsmen's Show, I made the acquaintance of that well known guide and hunter, William Harris, of Day Mills, Ontario.

The previous summer I had spent some time in the Muskoka Lakes district of Canada, but had found the country overrun with pleasure seekers, and the fishing anything but good; therefore, after having talked the matter over with Mr. Harris, I decided to visit his section of the country, and make the trip down the Mississaga River.

Accordingly, on June 20th, I left the Grand Central Station, bound for Thessalon, Ont., a small town on the shore of Lake Huron, about 13 miles from Day Mills. My baggage had been checked through to Thessalon, and there was examined by Mr. Neal Currie, the local Custom's officer. Mr. Currie is a sportsman himself, and my baggage gave me no trouble.

On the night of the 21st of June, I reached Day Mills, which boasts of a post office, a saw-mill and a population of about forty. It lies within a few hundred yards of Lakes Waquekobing and Pokawogaming, in the heart of the best moose and deer country in Southern Canada, a paradise for the lover of rod and gun.

For almost three months I remained at Day Mills, now and then making short trips to various nearby lakes, but spending most of the time on Lake Waquekobing, a beautiful sheet of water, about ten miles long and 2½ or three miles in width. It is fed, with the exception of a small and insignificant creek, entirely by springs. Its water is cold and very clear; on a calm day bright objects being distinctly visible at a depth of thirty or forty feet. Soundings have shown it to be, in some places, nine hundred feet deep.

The shore is very high and rocky, and is indented with numerous sheltered bays, making ideal camping spots. At several places cliffs rise perpendicularly from the water to a height of over one hundred feet; on one of these cliffs are drawn crude faces, which were presumably done by the Ojibway Indians, as they were there when the first settlers came to that country twenty years ago.

The lake teems with small mouth bass, lake trout and whitefish, the bass averaging about three pounds; many are caught weighing five and six pounds, and every one is a fighter.

In every direction from Lake Waquekobing, and varying in distance from five hundred yards to twenty miles, lie dozens of lakes, many of which are nameless, and nearly all are well stocked with fish. Brook trout are plentiful, and are not fingerlings; they may be caught in either lakes or swift water.

And best of all, the summer boarder is a thing unknown in that country. There are as yet no boarding houses, and the sportsman must either camp or stop at one of the few farm houses in the neighborhood.

On Saturday, August 9th, Mr. Harris received a telegram from two sportsmen,

asking him to be at Winnebago, one of the starting points of the Mississaga trip, with provisions, canoes and guides, on the following Monday morning. This gave him but one night to make the necessary preparations, as he would have had to leave Thessalon by rail the next morning ; therefore, I went on alone the next day, and met the two gentlemen on the West bound train at Sudbury. We stopped off at Biscotasing, and secured a canoe, and some provisions from the Hudson's Bay Co., and then went on to Winnebago, forty miles further west, where Mr. Harris joined us on Tuesday morning with another canoe and camp equipage.

Winnebago, by the way, is simply a name whose only use, evidently, is to fill in a vacant space on the map ; no one lives there, there is not even a station. It is marked only by a small, forlorn-looking log shanty, standing a short distance from the track. About 100 yards south of the railroad flows the Winnebago River, a small stream perhaps 100 feet wide, the waters of which empty indirectly into the Moose River, which in turn flows into James Bay.

On the morning of August 13th, we started up the Winnebago River with two fifteen foot birch bark canoes, both quite heavily laden. All that day we paddled up stream ; the current was, however, not very rapid, and we made good progress. The country was generally low, and heavily wooded with tamarack, spruce and cedar, a fair sample of that great and little known region lying between the Canadian Pacific Railway and Hudson's Bay. We encountered a few small rapids and were obliged to make two short portages. Here and there we passed deserted Indian camps, marked by the naked tepee poles, and skulls of slaughtered moose, which hung bleaching on the lower branches of nearby trees.

Towards evening we entered a lake about five or six miles long and two miles wide ; the shore was high, rocky and heavily wooded. On a small island at the farther end of the lake we came upon an encampment of Ojibway Indians, numbering perhaps fifteen, and judging from appearances each one possessed at least five dogs, whose breed it would have puzzled a dog fancier to determine.

Of the Indians, but one could speak English, and his vocabulary was limited to about twelve words. He informed us that the lake was called Waquewogaming, and was well stocked with bass ; also that there were plenty of moose and bear in the vicinity. That night we camped near the lake, and next morning, accompanied by two of the Indians, we made a portage of half a mile over two small ridges and through a "muskeg," into Nebish Lake ; on the trail we saw plenty of moose tracks which were but a day old.

Crossing Nebish Lake, which is small and very shallow, we followed a narrow creek for about an hour, and then came to a portage, a mile in length. A good trail led over a high ridge to a large and beautiful lake, which the Indians called Kabeskushing. It was dotted here and there with high pine clad islands, rising abruptly from the water, making cool and tempting resting places. At one of which we stopped and had dinner.

Not long after noon we left the Indians and entered the outlet of the lake, the east branch of the Mississaga River, flowing in a south-easterly direction. It was on this stream that we saw more signs of moose than at any other point on the trip. The banks were low, and covered with willows, and at very frequent intervals, we would come upon strips of shore, which, for a hundred yards or more, were literally covered with moose tracks, freshly broken bushes and trampled grasses, all of which gave evidence of the presence of the "Monarch of the Forest." Now and then we would see the imprint of Bruin's dainty foot in the soft bank.

Throughout the trip, although we saw deer, bear and plenty of small game, we failed to catch sight of a moose, doubtless owing to the fact that we travelled fast, and did not take the trouble to go quietly.

Often we would pass deserted camps, centres of last year's hunting expeditions of the Indians. These sites were always marked by whitened bones hanging to trees or bushes. I counted as many as eight skulls of moose at one camp. As we went on the stream grew narrow and flowed swiftly between high banks covered with pine, but the third

day out we entered a larger stream which flowed in from the west.

The scenery now became more beautiful and impressive, high cliffs rose on either hand, the slope of the land became more abrupt, and rapids were quite numerous, we were, however, able to run the majority of them. Running rapids, by the way, is an experience to remember, every nerve is on the alert, the excitement is intense, and there is just enough danger to make it enjoyable.

A stream without rapids loses its charm for the canoeist ; it would be too tame.

Many times we passed lakes which were but a few yards from the main stream, the waters of which would have tempted any angler, but our time was limited and we could not stop. As we proceeded the signs of moose, which had been so plentiful, began to give place to those of deer ; gradually the stream widened, until it attained the proportions of a small sized lake, and at first sight seemed entirely enclosed by high hills. Upon investigation, however, we found the outlet, a narrow gorge between towering cliffs, through which the water rushed with a roar, raising a cloud of mist, and creating a spectacle the beauty of which defies description.

After passing "The Gorge" by making a short portage, we entered a series of rapids which took nearly a day and a half to run. These rapids terminate in a fall of about thirty feet, at what is known as "Squaw Chute." There we were obliged to make a portage of about two hundred yards, carrying the canoes and packs across a narrow chasm, bridged by two logs, which had been rendered wet and slippery by a recent shower. At every step they trembled beneath us, and we did not loiter.

During this time we passed through a country, which was by far the most picturesque of the entire trip. The river wound its way between high hills and overhanging bluffs, and at times, in the distance, seemed to disappear beneath them.

Six miles below "Squaw Chute" is "The Tunnel," locally noted for its scenery. In reality it is not a tunnel, but a canon of perhaps a mile or more in length, and marks the outskirts of civilization. There we were able to secure a wagon to take us over the portage. Below "The Tunnel" the principal point of interest is Slate Falls, which is generally made the terminal of the trip, as it is but a short distance from Lake Waquekobing. Thus it was that eight days after leaving Winnebago, we found ourselves once more at Day Mills, having travelled about two hundred and twenty miles by canoe, the first tourists, and the first white men, other than a few surveyors and prospectors, to make the Mississaga Canoe Trip, which trip in a few years is bound to become popular with all who want a fast and exciting experience.

It is pre-eminently a country for the sportsman and pleasure-seeker. Only thirty miles by rail from Day Mills are the Desbarats Islands, where, every year from June until September, the Ojibway Indians enact the drama of "Hiawatha." Full particulars can be had from the Canadian Pacific Railway, or from Mr. Harris, who furnishes guides and outfits. Both resident and non-resident hunting licenses may be had from him ; fishing licenses are not required.

Should any of my brother sportsmen decide to visit this country, I can assure them that they will not be disappointed.

Annual Meeting of the C. F. A.*

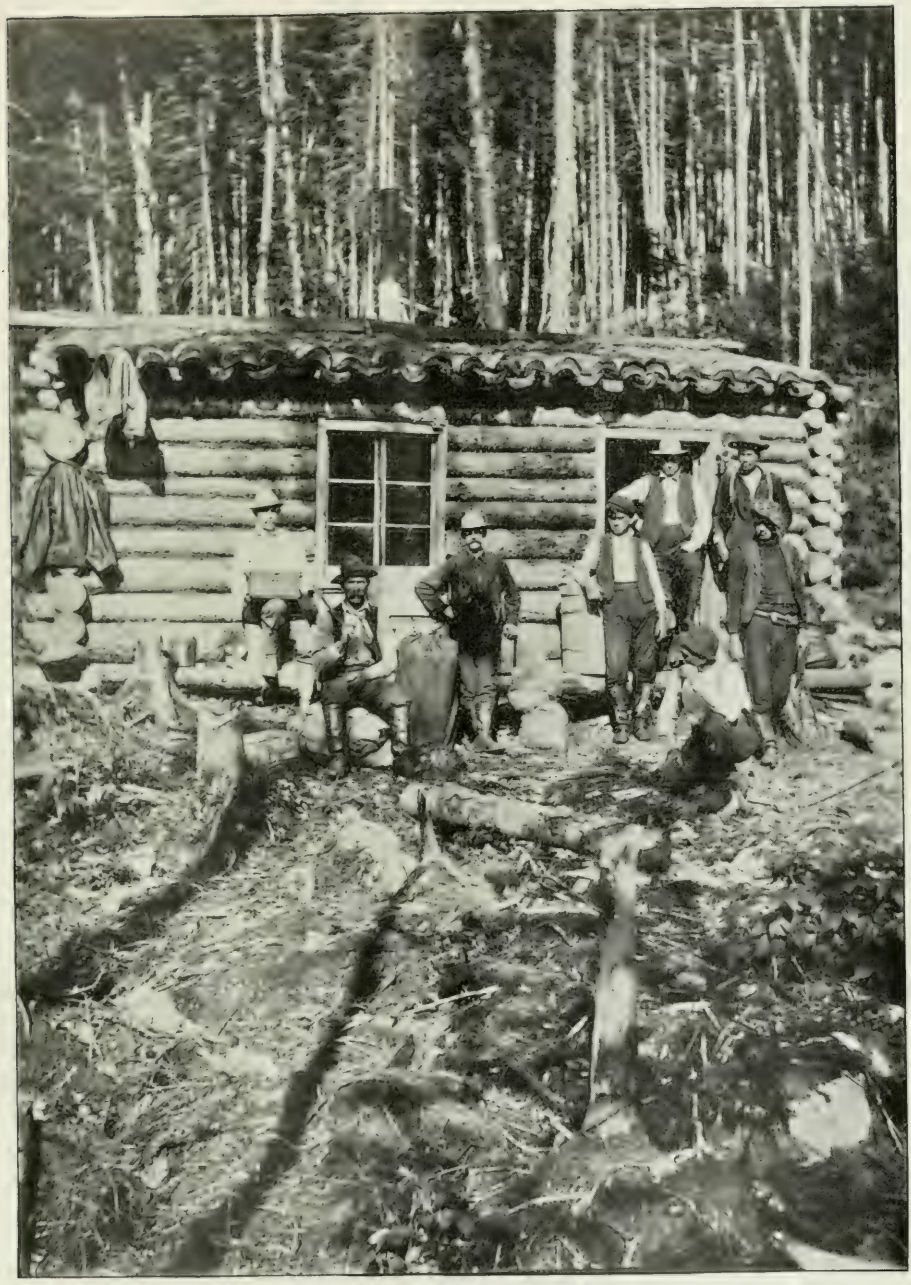
The fourth Annual Meeting of the Canadian Forestry Association was held in the Council Chamber of the City Hall at Ottawa, and was the most successful, both in numbers and interest, of any meeting which has yet been held. Among those present were:—Mr. Wm. Little, Montreal; Hiram Robinson, Ottawa; J. R. Booth, Ottawa; Aubrey White, Assistant Commissioner of Crown Lands, Toronto; E. G. Joly de Lotbiniere, Quebec; His Worship Mayor Gendron, Hull; Prof. John Macoun, Ottawa; Thos. Southworth, Director of Forestry, Toronto; W. C. Caldwell, M. P. P., Lanark; Colin Rankin, Mattawa; Geo. Johnson, Ottawa; A. Knechtel, Albany, N.Y.; T. S. Young, "Canada Lumberman," Toronto; C. Jackson Booth, Ottawa; E. Stewart, Dominion Superintendent of Forestry, Ottawa; Norman M. Ross, Assistant Superintendent, Ottawa; Sir Sandford Fleming, K.C.M.G.; Dr. Wm. Saunders, Ottawa; Dr. A. Harold Unwin, Ottawa; N. McCuaig, Bryson; N. E. Cormier, Aylmer; J. R. Reid, President of the Board of Trade, Ottawa; R. T. Pinkerton, Westmount; Henry Robertson, Collingwood; Hon. J. K. Ward, Westmount; Sir James Grant, K.C.M.G., Ottawa; J. B. McWilliams, Peterborough; Prof. W. L. Goodwin, Dr. A. P. Knight, Geo. Y. Chown, Queen's University, Kingston; J. H. Faull, University of Toronto; Col. D. Macrae, Guelph; Dr. John T. Finnie, Montreal; Lt.-Col. White, Ottawa; R. H. Cowley, D. B. Dowling, F. King, J. Keele, and others.

The report of the Treasurer and Board of Directors showed the Association to be in a satisfactory condition. The membership was 400 as against 347 reported at the previous annual meeting, and the Treasurer's statement showed a revenue of $580.17, and an expenditure of $474.02, leaving a balance of $106.15. The report of the Board of Directors called attention to some of the more important events in connection with forest management during the year 1902. The forest fires in Canada east of the Rocky Mountains were not at all serious, owing to the wet season, but in British Columbia the summer was dry throughout, and fires in the railway belt were only prevented by the utmost vigilance, while in the rest of the Province and across the international boundary great damage was done. The Rocky Mountains Park of Canada and Yoho Park on the east and west slopes of the mountains of that name have been established, forming a magnificent park of a combined area of three million and a quarter acres, and one of which every Canadian may well be proud. In Ontario regulations for the forest reserves have been adopted, but no provision has yet been made for the cutting of timber. The Forestry and Colonization Commission which was appointed at the last session of the Legislature of the Province of Quebec has not so far presented its report, having become practically disorganized. Whether the Commission is reorganized or not, the question of forest management must be given attention. The New Brunswick Legislature passed an act to establish a Forest Park, which has not yet been located. In Nova Scotia, the Crown Lands Department have been gathering information in regard to the forest lands under control of the Crown, and it is altogether probable that some important advance in the administration of these lands will be made in the near future. No special feature marked the movement in Prince Edward Island.

The work of cooperation with the settlers in forest tree culture in Manitoba is now assuming large proportions. Besides about seven hundred pounds of maple and ash seed, there will be distributed this spring over 900,000 trees to 627 farmers. The reports of the supervisors as to the condition of trees planted in the previous years are very satisfactory.

Lectures in forestry are becoming more frequent, and the establishment of one or more Schools of Forestry in Ontario is among the probabilities.

*Contributed by the Officers of the Canadian Forestry Association.



TRITON CLUB.

Club camp known as "Starvation Point."

TRITON CLUB.

Lac des Passe, looking toward the head of the river.

The President, Mr. William Little, in his address called attention to the fact that according to the last United States Census report, that of 1900, the stock of white pine then remaining did not exceed fifty billion feet b.m., and since the amount cut annually was then about seven and a half billion feet, the cut of the past three years should reduce the amount by about twenty billion feet, leaving the quantity standing less than the amount of all kinds of lumber sawn in the census year, 1900, namely, thirty-five billion feet. Mr. Little referred to the memorial presented by the Forestry Association of Quebec to the Dominion Government in 1883, asking for an enquiry into our white pine resources, and expressed his conviction that if the present indifference continues and the enquiry asked for be delayed many years more, the condition of our Canadian white pine forests may be stated in very similar terms to those of the schoolboy's essay on Ireland, which consisted of the single sentence: "There are no snakes in Ireland."

A paper on "The Forests of New Brunswick," by His Honour J. B. Snowball, the Lieutenant-Governor of the Province, was read. It spoke of the forest fires which had been very destructive on several occasions. The Saxby gale, which occurred in October, 1869, swept across the Province and blew down a section of well-timbered forest on the tributaries of the south-west Miramichi River, forty to fifty miles wide. The following year fire got into it, and the whole district was burned over. Fire, attributed to the carelessness of settlers, again ran over this district since 1870. The lumber blown down and burned consisted largely of rough pine and was all on Crown Lands. The loss to the province and district of this large section, over 700 square miles, is not less than a quarter of million dollars annually, and the loss must continue unless some system of reforesting and better protection is adopted. In forestry proper there is nothing whatever being done in the Province beyond the work of a few wood rangers, whose duty it is during two or three summer months, to protect the forest from fires, or rather to prevent the settlers from burning their newly-cleared lands, in these the most dangerous months for fire.

"A Report on the Conditions of Lumbering and Forestry in Western Nova Scotia," by F. C. Whitman, of Annapolis Royal, was presented by the Secretary. From the days of the first discovery of St. Mary's Bay and the Annapolis Basin, and the settlement at Port Royal in 1505, the Province has been noted for its forests. The growth was so dense in early days that it was over two hundred years before any roads were cut through it, and the early settlers in going to even nearby settlements had to depend on a single file path for foot or horseback travel. The occupied part of the country was the fringe following the salt water of the coast and along the numerous rivers. The export of lumber to the West Indies was begun and, as other markets developed, the cutting became general. All the western country was a lumberman's paradise for timber, and accessible by lake, stream and river, for every tree that grew. Fifty years of steady cutting, followed by fires that sometimes burnt to bedrock, presents to-day a sorry spectacle of waste, and too often, absolute desolation. Now it has come to a point where those who move can find no new ground in Nova Scotia, and within the past year provincial operators have gone north to Newfoundland and Labrador. The forests have been cleared by the settlers along the river valleys, by small portable mills and by the operations of larger holders in the interior. Cutting was begun on the white pine, which is now commercially gone. Spruce followed, and is being cut at the rate of 100,000,000 feet annually, and it is now found difficult to get the proportion of 12-inch stock which is required to fill South American orders. Mr. Whitman expresses the opinion that it is opportune to undertake a movement in the study of forestry, and that an appeal to the people in the interests of the country would lead to a betterment before it is too late. The producing farm lands lie in the valleys. The foot-hills and the vast interior, although no longer a forest primeval, will always be more suitable for wood growth than for any other purpose.

The discussion on these papers was taken part in by Prof. John Macoun, Mr. Geo. Johnson, and others.

On Thursday afternoon the first paper was by Mr. W. A. Hendry, formerly Deputy Commissioner of Crown Lands for Nova Scotia, on "Forest Fires." Mr. Hendry called attention to the wonderful recuperative power of the forest. It is said by intelligent lumbermen that a forest, say of spruce, will recover itself in from sixteen to eighteen years. As an example, take the section of country from the head of Bedford Basin to the Half-way House, or Pockwoch Lake, say forty square miles, would cover the area of the section referred to. Halifax has been built from that section. This Province was originally covered with soft wood, chiefly red and black spruce mixed with balsam fir. The most barren portion always had a mixture of white pine, and the best of the soft wood ground was chiefly occupied by hemlock, which generally had a sprinkling of tall spruce fit for mast timber, and a few large yellow birches. In 1783, a great number of refugees and discharged soldiers came into the Province, and new settlements were formed round the shores. The following year there was no rain in June, the last week in May, and the first ten days of July. The barren lands covered with thickets of spruce were set on fire, and within a fortnight, it is believed, more than half the Province was burnt over. The moss and litter was burnt off the ground, and all the leaves of the trees consumed. These fires did not pass over the hardwood land, and in most cases the hemlock groves escaped, as this tree does not form a cone covered with branches, but generally forms a stem from eighteen to twenty inches diameter, which rises from thirty to fifty feet to the lowest branches of its head. The edges, however, of the hemlock and hardwood land were killed for a distance of thirty to fifty yards by the flame of the adjoining spruce. The large swamps also escaped, and served for seed beds to introduce wood again into the burnt land.

Mr, Aubrey White, Deputy Commissioner of Crown Lands for Ontario, delivered an instructive and practical address, entitled "History and Results of the Fire Ranging System in Ontario." Mr. White stated that, in 1885, he was asked by Mr. Pardee, the then Commissioner of Crown Lands, to submit a memorandum embodying a scheme for establishing a system of forest ranging. Previous to this, an act had been adopted by the Legislature for the prevention of forest fires, but it was practically a dead letter. Mr. White complied with Mr. Pardee's request. The period of danger from fires was from May 1st to October 1st, and he suggested that fire rangers be placed on licensed lands during that period. It was left to the lumbermen to say what number were required, and also to select suitable men. Mr. Pardee was anxious to eliminate from the arrangement anything of a political nature, and to get the confidence of the lumbermen, so that the scheme might be a success. The lumbermen were asked to select men of cool temperament and sound judgment, who would not unnecessarily harass or annoy the settlers, for if the settlers were antagonized, an army of men could not protect the forests of Ontario from fire. In case of fire the rangers had *carte blanche* to call out all the assistance they needed to subdue it. In order to enforce the provisions of the Forest Fire Act, power was taken to appoint rangers as Magistrates, and their assistants as constables. Owing to the character of the men chosen by the lumbermen, however, the Government had not felt justified as yet in appointing many rangers as Magistrates. The cost of the supervision of the forests and the suppression of fires was divided equally between the lumbermen and the Government. The licenses required the lumbermen to keep a diary of their movements from day to day, and to note anything of interest which occurred on the limits. In this way a good deal of interesting information was obtained. It was not until 1887 that fire rangers were appointted on lands of the Crown. In 1885, at the inception of the system, thirty-seven men were kept in the field, at a cost of $7,911. Last year 234 rangers were employed at a total cost of $108,000.

In the discussion which followed, Mr. J. R. Booth said the Government, by its fire ranging system, had saved millions of dollars' worth of timber to

the country, and the only thing he could recommend was to enforce the regulations without fear or favor, and to prevent settlers from going into a timbered country which was not fit for settlement.

Messrs. N. McCuaig and N. E. Cormier, Superintendents of Fire Rangers for Quebec, pointed out what they considered the superiority of the system in that Province, which provided for the supervision of the rangers. Mr. A. Knechtel, Forester with the Forest, Fish and Game Commission of New York, explained the fire legislation of that State.

The Report on "The Forest Fires of 1902" was not complete, as full data had not been received.

In Nova Scotia it appears from reports that the damage done during the year 1902 was not as great as that for 1901, although there is a difference of opinion with respect to the damage done. One fire alone is represented by one person to have caused damage amounting to $150,000, but he appears to have known that the fire was more extensive than did others who reported it. It appears to be certain that the area burned over in 1902 was greater than that burned over in 1901, but a considerable portion was not at the time good timber land. It should not be forgotten, however, that much of this land might in a few years begin to produce timber. The fire has put this back perhaps two generations. There were over 25,000 acres of forest burned, and the loss was certainly over $100,000. Perhaps it may have been double.

In the Province of New Brunswick the summer of 1902 was very wet, and there was little need of wardens to look after forest fires. The province escaped particularly well, as it appears from the records of the Crown Lands Department and correspondence had by that Department with prominent men in each county, that comparatively little damage was done. In the County of Kent only was there a fire of any proportions. Quite an extensive fire took place in that county early, which destroyed timber on both granted and Crown Lands, but it has been impossible to ascertain with any accuracy the extent or value of the timber destroyed.

In Prince Edward Island the statement is made that fires were not at all prevalent, and no reports of forest fires were received by the Department of Agriculture during the past year.

In Manitoba and the North West Territories the season was also favorable, and no serious fires have been reported.

The Province of Quebec escaped without serious loss during the past year, but this result is probably mainly due to the wetness of the season, as many fires were started. In fire district No. 1, or the Upper Ottawa the exact number of fires is not given, but there were eight that were sufficiently serious to require an expenditure of about nine hundred dollars for their extinguishment. Three of these fires were caused by fire from locomotive engines, three by carelessness on the part of river drivers, and others were caused by settlers and lightning. The rangers employed in this district were twenty-nine regular and twenty-two special, a total of fifty-one. In Fire District No. 2 there were 79 fires reported, 47 of which occurred in May and 15 in June, one in July, 10 in August and 6 in September. One was caused by Indians, one by fishermen, the cause of four is unknown, and the remainder appear to be due to fires. The number of fire rangers in this district was twenty-two, and they had to patrol and safeguard a tract of 17,824 square miles. In the Gatineau District the average area for each ranger was 360 square miles, on the Lower Ottawa 585 square miles, and in the St. Maurice Agency 1316 square miles.

The total amount expended in the Province for the protection of the forests from fire was $17,000, but the fire tax brought in the sum of $7,306, leaving the net expenditure $9,694. This to protect a revenue of over one million dollars.

Ontario and British Columbia were covered by other papers submitted during the meeting.

The paper by James Leamy, Dominion Crown Timber Agent for British Columbia, on "Forest Protection in the Railway Belt, British Columbia," was read by Mr. C. Stewart. The only part of Canada in which the season was dry practically throughout was British

Columbia. All through the railway belt innumerable fires occurred, the majority of which were set by settlers clearing their lands, while others were caused by sparks from locomotives and fires left carelessly by campers. These fires were carefully watched by the rangers and promptly attended to. One of the most important fires was caused by a watchman on the limits of Mr. Wells. This required the calling out of the whole force of the mill to fight it. It burnt about one million feet of timber, the most of which will be saved. In Vancouver Island and the other parts of British Columbia very serious fires occurred, and great destruction was caused in the States of Oregon and Washington, just across the international boundary. Mr. Leamy called attention to the sprinklers used on locomotives on the Great Northern Railway, and suggested their adoption on Canadian railways.

On Thursday evening a lecture of great interest and of a highly instructive character was given in the Assembly Hall of the Normal School, Ottawa, by Prof. Jeffrey, of Harvard University, on "Forest Trees and Their Uses."

Hon. Clifford Sifton, Minister of the Interior, presided, and in introducing the lecturer expressed his pleasure on being able to participate in the feast of instruction which they were about to receive. There was no subject, Mr. Sifton thought, that had been neglected in proportion to its importance to the Canadian people as that of forestry to the extent of many millions of dollars annually. Any person who has given the subject consideration would endorse this opinion. He urged the value of the work of the Forestry Association, and wished it success. Prof. Jeffrey, in his opening remarks, stated that forestry was one of the subjects which the American people now realized to be of the utmost importance to the nation, and he cautioned the Canadian, people when matters of such vital importance as forestry and timber were to be dealt with, they should see to it that scientific experts were given a place in the work. The lecture was illustrated with a large number of stereopticon views, showing high magnifications of microscopic photographs of the majority of the woods common in America. Illustrations were shown to explain why some woods are weak and others strong, why some are delightfully odoriferous and others decidedly objectionable.

A vote of thanks was moved by Mr. Aubrey White, Assistant Commissioner of Crown Lands, Toronto, and Mr. E. Stewart, Superintendent of Forestry, Ottawa.

A paper on tree planting in Manitoba by A. P. Stevenson, Nelson, Manitoba, was the first item on the programme Friday morning. Mr. Stevenson dwelt on the success which had followed the planting of trees on the western prairies, saying that it had been truly proven that trees will grow in the west if they are only planted. The Government has well begun the work there. Last year 400,000 trees were planted by the settlers under the supervision of the forestry branch of the Department of Interior. Ninety per cent. of these trees are in a healthy condition, and when spring opens it will take about a million trees to meet the demands of applicants who are taking advantage of the co-operative tree planting scheme introduced by the Dominion Government. The people are alive to the necessity and possibilities of tree planting in the region, and the ball had only to be kept rolling to produce grand results. Mr. Stevenson, in closing, said that there is a rich mine of undeveloped wealth in the treeless regions of the North-West which can only be developed by a comprehensive broad system of tree planting.

A very interesting paper was the one by W. T. Macoun, Horticulturist of the Central Experimental Farm, on "The Growth of Forest Trees in the Forest Belts and Arboretum at the Central Experimental Farm, Ottawa." Experiments in the growing of forest trees at the Central Experimental Farm were begun mainly for the purpose of gaining information which would be useful to the farmers of Canada, and the fifteen years' work accomplished has been of some service to the farming community and also to others who are interested in the growth and development of trees from a more economic and scientific standpoint.

The main points on which information was desired were: First, as to the

rate of growth of the best timber trees when grown on different kinds of soil and at different distances apart; the distances chosen at first being 5 by 5 feet, 5 by 10 feet, and 10 by 10 feet. Second, it was desirable to know how the growth of trees planted in blocks of one species compared with those grown in mixed plantations. Third, it was important to learn what influence the forest belts would have on the crops in the adjoining fields, in regard to the shelter afforded them, and also how far from the belt the crop would be affected adversely. Fourth, the planting was also planned as far as possible with the object of improving the landscape, and the several species were arranged so that a good effect would be produced. Other useful and interesting facts would also be obtained, and the belts would stand as object lessons to farmers who saw them, and would be useful to those who were interested in studying tree growth.

The most satisfactory growth from a forestry standpoint has been obtained in a solid plantation of evergreens, which was in 1887 a nursery, but which was allowed to remain and was extended. The trees in this plantation were in rows 3 feet apart and the trees from 1 to 2 feet apart in the rows. These have done remarkably well, growing tall and straight, and having their lower branches killed early owing to the dense growth. This plantation has been gradually thinned until the trees are now about 3 by 4 feet apart, but the distance will be widened somewhat this year, as more will be taken out for poles. The rapid growing evergreens have succeeded about as well in unmixed blocks as where mixed with deciduous trees and other species of evergreens, but the deciduous trees have required much less labour to keep them growing vigorously where the species have been mixed. The quick growing but thin foliaged trees require the thick foliaged deciduous kinds and the evergreens planted among them to make good soil conditions and give best results, and the thick foliaged but slower growing kinds require the others for the same purpose.

Professor W. L. Goodwin, of Queen's University, Kingston, in a paper on "Forestry Education in Canada," made his starting point the necessity for a proper system of Forestry, *i.e.*, "utilizing the forest and at the same time perpetuating it." Lumbering is the only thing for a new, sparsely-settled country, the greater part of which is covered with forest, and the ordinary lumbering methods must prevail until the point has been reached where it can be said that the forest capital is sufficiently reduced to be workable as capital earning its yearly income. Forests serve various purposes, but no plan has been followed as to the lands which should be retained in timber, and steps should be taken immediately to have the question dealt with on defined principles. The increase in the price of white pine in the last thirty or forty years, and the range in the scale of rates, shows the expansion of values and that the poorer qualities of lumber are now finding sale. Forest lands are bringing higher figures from year to year when disposed of. That forestry will pay in the long run is shown by the statistics of the German forests. The 35,000,000 acres of German state forests produce a net revenue of $1.80 per acre, equal to a net annual income of $63.000,000; and both capital and income are increasing. This is after 150 years of scientific management, but the records show that the state forests have yielded a fair income from the start. The total value of their forests is increasing, while that of ours is rapidly decreasing. But if we are to work into a system of forestry suitable to Canadian people and Canadian conditions, we must have forestry education to train the small army which will be needed to manage, oversee, protect and reap the forest crop. Professor Goodwin then recounted the steps which had been taken by Queen's University leading up to the decision of the Board of Governors to go forward next session as far as circumstances will permit to make provision for a course of study in forestry.

Mr. J. H. Faull, of the University of Toronto, stated that the University had been considering the question of the establishment of a Chair of Forestry, and it was the intention to make provision for the teaching of the subject.

Dr. A. P. Knight, of Queen's University, gave the result of some experi-

ments made by him to ascertain "The Effect of Sawdust in Rivers on Fish Life." There was a difference of opinion between the Dominion and Ontario Superintendents of Fisheries on this question, and Professor E. E. Prince requested Mr. Knight to undertake an investigation to establish the facts of the case. Mr. Knight first experimented with sawdust of different kinds of wood, and found that they would sink in varying times, but white pine sawdust would take about two minutes. The sawdust in the water gave off a brown liquid which proved fatal to fish life whether in the form of eggs or in a developed state, and was also fatal to the food of fish, such as minnows, aquatic worms, crayfish, etc. This only affected the lower part of the tank in which the experiments were made, but when the sawdust began to decay the water in the upper part of the tank was affected by the withdrawal of oxygen, so that it also became fatal to fish life. To take a practical case, Dr. Knight visited the Bonnechere River, and after ascertaining the daily cut of the mill and from it the probable quantity of sawdust passing into the stream, and also the volume and velocity of the water, he came to the conclusion that the solution brought about by this mixture would be so much weaker than any with which he had experimented that it could not be harmful to fish life.

It was decided to change the date of the annual meeting to the second Wednesday in March, to avoid clashing with the meeting of the Canadian Mining Institute, and also that the next meeting be held in Toronto.

A resolution was passed urging an increase in the fire warden service throughout Canada, and that exploration should be made of public lands for that purpose and instructing the Executive Committee to bring the question to the attention of the different governments.

The election of officers resulted as follows: Patron, His Excellency the Governor-General; Honorary President, Wm. Little, Westmount, Montreal; President, Hiram Robinson, Ottawa; Vice-President, Aubrey White, Assistant Commissioner of Crown Lands, Toronto. Provincial Vice-Presidents—Ontario, J. B. McWilliams, Peterborough; Quebec, Hon. S. N. Parent, Quebec; New Brunswick, His Honour J. B. Snowball, Lieutenant-Governor; Nova Scotia, A. H. McKay, LL.D., Superintendent of Education, Halifax; Prince Edward Island, Rev. A. E. Burke, Alberton; Manitoba, Major Stewart Mulvey, Winnipeg; Assiniboia, J. S. Dennis, Calgary; Saskatchewan, P. G. Laurie, Battleford; Alberta, Wm. Pearce, Calgary; Athabasca, F. D. Wilson, Ft. Vermilion; British Columbia, H. Bostock, Monte Creek; Yukon, The Commissioner, Dawson; Keewatin, the Lieutenant-Governor of Manitoba; Secretary, E. Stewart, Ottawa; Assistant Secretary and Treasurer, R. H. Campbell, Ottawa; Directors, Dr. Wm. Saunders, Professor John Macoun, Thos. Southworth, J. R. Booth, C. Jackson Booth, John Bertram, E. G. Joly de Lotbiniere.

We are in receipt of the Eighth Annual Report of the Forest, Fish and Game, of the State of New York. It is, as usual, full of information, and reflects the greatest credit upon the commission. Forestry has advanced, and, quite naturally, farther in the United States than in this country, because the American forests are very much nearer exhaustion than our own, and it is not until a scarcity begins to be felt, that man endeavors to repair the waste he has caused by his own carelessness.

A Rainy Day in Camp.

By William Henry Drummond.

A rainy day in camp! how you draw the blankets closer,
As the big drops patter, patter on the shingles overhead.
How you shudder when recalling your wife's "You ought to know, sir,
That it's dangerous and improper to smoke a pipe in bed!"

A rainy day in camp! yet there's consolation in it;
Tho' the lake is like a caldron, and aloft the thunder rolls—
For the birchbark you can launch her in less than half a minute.
After old man Jupiter Pluvius is tired punching holes.

Then the fly you made last winter (and a good one needs baptizing),
Drop it gently on the riffle at the inlet of the stream.
Work around, too, near the edges, where you saw that big fish rising,
And if you strike him there, sir! your patent reel will scream!

A rainy day in camp! and the latest publication
That the mice have left unnibbled, tells you all about "Eclipse,"
How the Derby fell before him, how he beat equine creation,
But the story yields to slumber with the pipe between your lips.

Wake again and turn the pages, where they speak of Lester Wallack
And the heroes of the buskin over thirty years ago—
Then, in case the damp surroundings cause an inconvenient colic,
"What's the matter" with the treatment neutralizing H_2O?

A rainy day in camp! what a wonderful collection
In this magazine so ancient, of items small and great,
With the History of the Negro, illustrating every section—
So different from the present White House Colored Fashion Plate!

A rainy day in camp! and you think of how the C. P.
And the G. T. competition will affect the Golden West—
But these problematic matters only tend to make you sleepy,
And again beneath the blankets, like a babe you sink to rest.

Cometh now the giant moose heads, that no eye of man can number—
Every rain drop on the roof-tree is a plunging three pound trout—
Till a musk ox in a snowdrift turns and butts you out of slumber,
And you wake to hear Bateese say, "Dat's too bad, de fire's gone out."

A rainy night in camp! with the blazing logs before us,
Let the wolf howl in the forest and the loon scream on the lake,
Turn them loose, the wild performers of Nature's Opera Chorus
And ask if Civilization can sweeter music make.

The Rifle.

BY J. F. BOWEN.

The team that took the Palma Trophy over the Atlantic last Fall owed a great part of its success to the coaching of the Hon. T. F. Freemantle. It seems certain that the American riflemen had the best arm, because at the longer ranges the vertical deviation of their bullets was always less than that of the team which defeated them. Where the British scored was in their more thorough knowledge of wind, weather and weapon. These remarks are not made with any view of belittling the representatives sent by our neighbors from the south, but merely to show that the Hon. T. F. Freemantle is a trustworthy authority upon rifle matters. His book "Notes on the Rifle" is one of the best that has ever been written on that fascinating weapon, and any man who takes an interest in the grooved barrel, and either has, or desires to have, skill in its use, should certainly not be without a copy.

So much of our Canadian sport depends on skill with the rifle—for nowhere may larger quantities, or a greater variety of big game be found than in the Dominion — that this English author's observations and experiments, as set down in his book, should be particularly valuable to us.

It may be said that no rifle is better than its sights. If the sights are too coarse or badly adjusted, the best barrel in the world will fail to give satisfaction. Mr. Freemantle has this to say as to the best form of sights:

"Here the golden rules are few, and experience, habit, and fancy go for very much. The cardinal point is to have such sights as will enable accuracy to be combined with rapidity of aim. It is easy to carry refinement of sights much too far. Many of the cross-bows and bullet bows of our forefathers had aperture, or "pin-hole" backsights, and adjustable foresights far more delicate than the accuracy of the weapons really required. Even with the best modern rifles, such sights give quite as great a degree of accuracy in aiming as the rifle is in fact capable of attaining. It is, however, surprising what good shooting can be made at a target even with rather coarse sights. For shooting in the field, the sights should not be liable to be injured at a touch, and the eye should have no difficulty in seeing the foresight at once, even in a bad light. Therefore it must be both distinct in color, or rather in illumination, and large enough to be seen clearly while the eye is focussed upon the mark. It should be dark against a light background, and light against a dark one. While bright in a gloomy light, it should not unduly catch the sun's rays. It would be impossible, unfortunately, to find any arrangement which would quite perfectly secure these results. The present writer thinks well of the foresight discs of white enamel which are now fitted to rifles, and generally of a white colour for the foresight. As regards the backsight, it is a matter of taste whether the notch be wide or narrow, deep or shallow, or be omitted, leaving a straight bar. The bright line to guide the eye to the true centre, which is a convenience with the V, becomes a necessity with the bar, and may well take the form of a triangle with its vertex touching the centre of the bar. The natural tendency in firing hurriedly is to take too much foresight, especially with a wedge-shaped sight with a fine tip, such as is the military "barleycorn" pattern. The tendency is to pull the trigger when the sights are aligned, without waiting to fine down the amount of sight taken so as to get the normal aim taken in deliberate shooting. Hence a chief advantage of the head sight, the most conspicuous part of which is the tip.

"It is bad to form the habit of taking a very fine sight. Good shooting can quite as well be made with a rather full sight, when once the eye has become accustomed to it, and aim can be taken more quickly, and with less effort to the eye. A good system in using the V sight, is to have it of a moderate size, and to bring the tip of the foresight level

TRITON CLUB.

The Moisie River, leading to the lake of that name.

RAPIDS ABOVE SLATE FALLS.
On the Mississaga River, Ontario.

SLATE FALLS.
One of the most beautiful spots on the Mississaga River.

with the shoulders of the V. This gives useful guidance in keeping the aim constant as regards elevation, and there is but little obscuration by the backsight of the surroundings of the point aimed at—a matter of special importance in a running shot. A small square notch in the backsight, large enough just to contain amply the bead of the foresight when aim is taken, also answers well. The writer thinks highly of sights on the principle of the Lewis sights, applied to the earliest issues of the Lee-Metford. These consist of a square notch in the backsight, and a square block with a white line or sawcut down the middle of it, for foresight. The latter is seen through the notch of the backsight, which it nearly fills, and the flat top of the foresight comes into line with that of the backsight. For picking up an aim in a hurry, without any tendency to shoot high, these sights are much superior to the ordinary barleycorn foresight used with either the V or the bar.

"Men differ so much in the aim they take with the same sights, that the purchaser of a sporting rifle should, if possible, try it himself on the gunmaker's ground, where he can have the sights regulated to suit his own shooting. With the sighting which for one man gives the proper elevation at (say) 100 yards, another may find the same rifle throw every shot much above the bull's-eye, and vice versa.

"The Lyman-Beach sights, which consist of an aperture backsight fixed upon the grip of the rifle, so as to be near the eye, and a fine bead foresight, are excellent for accuracy, and can be well used, if the conditions are not very unfavorable, in the field. There is with them some loss of light, which is sometimes a disadvantage, as when dusk is coming on, or in shooting at an object in deep shadow. But the field of vision is not otherwise obscured, and a good view is gained all round the foresight. The eye has no difficulty in centering itself to the backsight, and the attention can be given almost entirely to the position of the foresight with respect to the object aimed at. The backsight—and this is so far a drawback—has to be so near the eye as to make these sights unsuited to any rifle having a heavy recoil. It is raised on a pillar, which is hinged so as to fold down, and has a screw motion to vary the elevation. These sights, in fact, are an adaptation for sporting purposes, and minus the more elaborate adjustments, of the fine sights used for target shooting with the match rifle.

"Telescopic sights are very easy to aim with and very certain to use, but they are heavy and bulky, and require favorable conditions, being ill-suited for a hurried or a running shot. And they are comparatively easily put out of adjustment by a jerk or blow. The ordinary form of telescope, too, knocks against the eye in the recoil, which is inconvenient. But aim taken through a telescope gives a degree of confidence scarcely to be attained with other methods of sighting. The mark has merely to be brought into the field of the glass, the cross threads or aiming points placed upon the right spot (allowance being made for wind or for distance), and the trigger pulled. If the rifle is a good one, there is no uncertainty about the result. The telescope should not have at all a high magnifying power, as it is important not to reduce the size of the field too much, and nothing is gained by magnifying details unduly. Sometimes, as in waning daylight, an object can be defined with such sights well enough for a shot, when the mark is so indistinct as not to allow of a certain aim being taken with open sights. To aim with a rifle fitted with a telescopic sight is a striking object lesson in the impossibility of holding a really steady aim. There is no position, it soon becomes obvious, in which the rifle is free of all motion from the pulses. Every small movement becomes magnified to a surprising extent, even such movements as with open sights would be inappreciable. The larger "wobbles," due to the tension on the muscles, from which no man is free in the less steady positions, become really alarming when magnified, and it seems a miracle if one can let off anywhere near to the point aimed at. The consolation is, that what looks in aiming like a very wide shot, often proves on subsequent investigation to have been a very close one."

(*To be continued.*)

New Brunswick Moose.

BY GEORGE E. ARMSTRONG.

On the morning of October 3rd, 1901, Mr. Charles S. Bird, of East Walpole, Mass., my brother Dave and myself, started to cross the six miles of trail between camp Wapski and Beaver Lake, where we intended to stay for a few days to try for a big moose.

It was about one o'clock when we reached the camping ground, half a mile from the lake. There we made some tea and ate a quick lunch, then I started with Mr. Bird for the lake, to see if we could discover any game, as some might possibly be feeding on the lily pads and roots that were very plentiful around the edge of the lake. Before Mr. Bird started, he told me he would not shoot a moose unless it had a very large set of antlers, but, would rather go home without one. We left Dave in camp to pitch the tent and cut wood for the night.

When we arrived at the lake, we found a good sized bull moose feeding close to the edge of the water, and we easily crept within fifty yards of him, as the wind was in our favor. I asked Mr. Bird, in a whisper, if that one was large enough; he said no. Yet I think, without doubt, the antlers would have spread 48 inches, and I am convinced they had eight-inch webs, with at least seven points on each.

However, we determined to lie still and watch it. Occasionally I took up my birch-bark horn and gave the grunt of a bull, and we had lots of fun seeing how he took it. He was evidently anxious to find out where the sound came from, but as we were hidden in a small clump of bushes, he could not see us. Often we could only see the top of the animal's back above the water—it is surprising how long moose will keep their heads under water; often they remain partly submerged for a full minute. They have a way of throwing their ears forward, so, that although their head is under water, none seems to penetrate into the ear itself. This is something I have noticed a great many times. We watched the moose until it was almost dark, when Mr. Bird said he would try and get as close to the animal as possible, without scaring it. He crept up to within about twenty yards before Mr. Moose had the least idea anything unusual was going on. At length, seeing Mr. Bird so close, the moose appeared surprised, and took a few steps towards him to investigate, and I thought that he would actually come up to him and smell him over, as Mr. Bird was standing perfectly still. At length the moose made up his mind that something was there that had no business to be there, and then quietly and slowly walked into the woods.

It was about one hundred yards from the water to the border of the forest, and after the moose left the lake Mr. Bird ran after him, and then ensued a good race between the man and the big deer. Mr. Bird is a splendid runner, but the moose kept in the lead, and when he got to the edge of the wood, he stopped very quickly and turned—and so did Mr. Bird.

By this time it was nearly dark, and we started back for camp well satisfied with our afternoon's sport, and thought we should not have to stay in this locality very long to get the moose head we were after.

We were up next morning early, in fact had eaten our breakfast before it was light, and then went to the lake. It was yet very dark when we reached the water, but on looking across I saw something coming from the woods over the meadow. I could not make out just what it was, and thought at first it was a cow with two calves, as I could see something light on either side of the moose that looked like calves, and it was not yet light enough to tell just what it was. I whispered to Mr. Bird that it was either a cow with two calves or else a very large bull. A few seconds later I saw that it was the bull Mr. Bird had come after.

(*To be continued.*)

Our Medicine Bag.

One's success in Canadian big game hunting depends so largely upon the guide, that we make no excuse for returning to a matter touched upon in our February issue. Although we were compelled to differ from a Boston correspondent with regard to some statements relating to Laurentian guides, we are quite willing to give up a little space to discussing this most important matter. Mr. Andrew G. Weeks, jr., has been kind enough to send us another letter, and in order to present the matter fairly to our readers we reproduce some extracts. He says :

"There is not one who knows better than I, and those associated with me, the high standing of the regular guides in Canada. I have a number of strong friends among them, and would say nothing that would reflect upon them. You are perfectly right in your statement that the Canadian guide is a better and more willing carrier than the average Maine guide, and also, as I have before stated, more expert canoe men, but this is not the class we wish to approach. You, yourself, call a certain class of so-called guides "humbugs," and you are right. That, however, does not prevent them from passing as guides, and securing identically the same wages as an expert does ; and it is this class that we wish to get at. There is no doubt but what more guides are necessary, in our district at least, and the insufficiency of the supply forces us to hire these men. The demand is also a temptation for them to take the work up. I think you will agree with me that no harm can be done in a general attempt to raise the standard of these men, and I feel you should lend us your kindly support. . . . . The idea is to educate those who profess to be guides and are not, without criticism on the many experts that our district furnishes."

Another sportsman informs us that the men Mr. Weeks employed last fall could only paddle on one side of the canoe, and then only with a great deal of splashing and fuss, and that none of them had been over the territory they were supposed to guide in. This gentleman adds that he has had exceedingly good luck with most of his own guides, and has been astonished at the packs they carried, but he found that whiskey was playing the mischief with many of them, and that they were more like children, in some respects, than like men and had to be petted and humored, and that of even the best guides too much should not be expected.

The guides of the backwoods have had a very different training to the city man. They are children of nature, and notwithstanding that some of them are grey

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For more than fifty years D. M. Lefever, of Syracuse, N.Y., has been manufacturing sportsmen's weapons of a high grade. The factory is well worthy of a visit. The visitor who has a chance to inspect it sees the several steps in the process of manufacturing, and when he leaves the building understands why fine guns cost much money, and cannot be built in a day. The shaping of the various parts, such as the frame and trigger-plate, can only be done by skilled workmen, and while the New Lefever is considered a simple gun, sixty different cuts are needed to shape the frame before it is ready to go to the action fitter. The tools used are ingenious and somewhat complicated : One tool makes a cut across the face of the frame : others cut the sides, and form the recess of the trigger plate. These cuts being to within a thousandth of an inch of their measurements when finished. The boring of the barrel is a most delicate operation. Each step in the process of manufacture, from the brazing on of the lugs to the last coat of French varnish, is done with the most minute care, and is subjected to constant inspection, so, no wonder, the work when finished is of a nature to satisfy the most exacting sportsmen. The D. M. Lefever, Sons & Co. are progressive. Their single trigger gun is giving great satisfaction, and is no doubt an improvement, especially for trap shooting, where the second barrel must be given with the rapidity of lightning. A little, single-trigger, brush gun, weighing six pounds, is one of the gems of the Lefever output. All specifications are carefully followed, and those ordering guns from this Company may be sure they will get just what they bargain for.

haired, they are generally boys at heart, and an effort to change them more into the city type seems usually to give them all the vices of civilization, without any of its virtues. If the members of the Triton Club can really "improve" the guide service of their district, they will have achieved a result for which they may well take some credit. But we must confess that we do not see how they can do so. A good guide has lived in the woods since boyhood. Paddling, packing, chopping and hunting should be as familiar to him as the telephone and ticker are to the city man, and if he has not acquired skill in woodcraft by the time he is an adult, nothing the club sportsman can do will improve him very materially. All the guide seems to learn by a contact with wealthy sportsmen is an improved palate for whiskey, and a nicer discrimination in tobacco and cigars, as well as in jams, preserved soups, and other delicacies that were unknown to his fore-fathers and to himself in his younger and more strenuous days. However, in these matters there is room for difference of opinion, and we wish the members of the Triton Club every possible success in their undertaking. If they should start a Training School for Guides we hope to be able to borrow one of its graduates some summer for a week or two.

To the Editor of ROD AND GUN, Montreal:

As I am a lover of both rod and gun, nothing affords me more pleasure than giving you an outline of the hunting to be had in the Peace River country. The low, outlying, marshy country is literally covered by ducks of all kinds, principally the mallard, canvas back, and green and blue winged teal. They breed freely around the marshy lakes, where, indeed, I have seen thousands of eggs in the laying season. Indians visiting these lakes get their supplies of food for, say, a month or six weeks at a time, to last until they go in search of larger game. Very few geese breed in the Peace River country, as they nest in the barren lands of the far north. The banks of the Peace, especially in the upper regions, are very high, in some places from 1,500 to 2,000 feet. On these high grounds berries grow in abundance, especially raspberries, cranberries, blueberries and strawberries.

This country is the paradise of the bear; principally the black bear and the brown bear. A few grizzlys also roam therein. The Indians hunt the bear successfully in the berrying season, and although the pelt is of very little value the meat is at its best. They dry it, and the dried meat serves as food while going back further into the interior to hunt deer and moose, which are very plentiful along the eastern ranges of the Rocky Mountains, and seem to follow the whole range to the Arctic Ocean.

On the highest peaks of the Rocky Mountains sheep are found.

The lower levels of the Peace River valley are the first feeding grounds of the wild goose flights from the far north. The goslings that have never heard the sound of a gun, and know not the danger they run, can be easily approached. These flights generally stay on the feeding grounds two or three weeks. Then they fly further south. They then become wary of the sportsman and are hard to approach.

On nearly all lakes of any size, there is plenty of sport for the rod. Trout of all kinds are to be had in abundance in clear water lakes. Pickerel and pike are plentiful. I have never heard tell of black bass, or, in fact, bass of any kind in any of the northern waters.

Yours truly,

H. A. CONROY.

Ottawa, 23rd Feb., 1903.

The Census Bulletin No. XI. of the Agricultural Statistics of Prince Edward Island show that the Island has an area above tide level of 1,397,991 acres, 85.44 per cent. of which is occupied as farms and lots, the average size of the lots being 1.56 acres, and of the farms 90.74 acres. The land in farms comprises 60.76 per cent. in an improved, and 39.24 per cent. in an unimproved state.

The Savage Arms Company, Utica, New York, have written to us under date of March 6th as follows:

"To meet the demands of sportsmen we have adopted a 30-30 and .303 1899 model Savage to take the following well-known loads—25-35, 32-40 and 38-55. You will also note full descriptive matter of the model 1903 Savage repeater, which is furnished to use the various .22 caliber cartridge, as mentioned in catalogue."

The description of the .22 caliber hammerless repeating rifle furnished us by the manufacturers is as follows:

"The new .22 caliber rifles are manufactured with octagon barrels only, standard length being 24 inches. Extra length of barrel up to 30 inches can be furnished (for extra charge see page 17). All stocks of the .22 caliber rifles of this model are made with pistol grip only, without extra charge. Set triggers cannot be furnished for this model. When ordering, specify which chamber is required. If this is not stated the arm chamber for the .22 short only will be furnished. Price, $14.00. Weight, 5 pounds 6 ounces."

The unimproved land consists of 350,366 acres in forest, and 117,857 acres in various conditions, such as swamp, marsh or waste land, blueberry barrens, and land in rough or natural pasture, but not in a state fit for cultivation. Forest plantations cover only 28 acres, and ornamental trees have been planted on farms to the number of 71,394, or an average of less than six for each farm. On the lots, being holdings under five acres, 1,996 trees were planted, or an average of 2. The census of 1891 showed an area of 496,156 acres under forest, but it is explained in the present bulletin that woodland and forest in that year's returns included all unimproved lands, whereas in those of the latter the forest area is given separately, but is also counted as part of the unimproved land. The unimproved land is reduced in 1901 to 468,223 acres, but in view of the difference in the method of obtaining the statistics, it is impossible to say anything more than that there is a reduction in the area of forest. What the diminution is cannot be stated exactly. Taking the total area of the island, the portion under forest as above mentioned is equal to about 26 per cent., so that the proportion of forest is getting down close to the 25 per cent., which is generally considered as the point which should not be passed. The efforts to increase tree growth are represented by 73,390 trees planted, and 28 acres of forest plantations. Statistics on these points were not given in the year 1901, but it is quite clear that what is now being done does not begin to offset the areas destroyed by fires.

As to fruit-bearing trees, the total number of bearing and non-bearing apple trees in the island is 202,910 ; of peach trees, 163 ; of pear trees, 1,962 ; of plum trees, 27,480 ; of cherry trees, 70,431 ; of other fruit trees, 57,924 ; and of grape vines, 749. The yield of fruit trees in the last census year was 184,487 bushels, and in the former census year 60,325 bushels, and as the number of non-bearing trees shows a large increase, it is evident that fruit production is growing in favor in the Island.

The following letter written by an Ojibway Indian upon birchbark was sent, together with its translation, by our esteemed correspondent, Mr. C. C. Farr. The writer inserted it in the cleft of a split wand, which he stuck in the ground at a camp site on one of the branches of the Blanche River, Northern Ontario. The postal arrangements in that part of the world are primitive, but a careful study of the wording of this letter, will show that courtesy is not confined to so-called civilization :

Kah-kah-konie keesis 3 1902.
September month 3rd, 1902.

.n tabajitonan kee-tasonah-nan homap
I am using your traps here

kah-nah-gah-da-mah-ban 6 mah-mah-wee
you left six altogether

tah-sin-non kee-tah-nah-me-kon way-way-nint
so many kind regards to you thoroughly

an-oke maysh-kut homah ejc
(I) am hunting instead here whatever (I)

kash-kit-to-i-an ni-tai-anan ke scheeman
may be able we have your canoe

Matach-u-wauk at-ah-way-an ne-gah
at Matachuan (you) bought we will

kah-nah-wen-dan way-way-nint.
take care (of it) thoroughly.

nin Meeshen Twen.
I Michael Twen.

(P. S.)

Pesk-ke-chah-gam-mik ne-go-be-bon ni gah
At Paskechahgammi one year I will

gway-jit-on ni-match-ee-ton-nan tai
try we are taking along in addition

kak-ee-nah ne tas-on-nah-gan-nan.
all our traps.

Cosh-o-so-min ka-ko-nah-sa
We bid you good day we hope

mee-no-pe-mah-tis-ee-ank
(that) you will be well

kitah-ne-num-tah-nint-ah-min
we want you

meeno-an-nok-ay-ank.
(that you will) hunt well.

A writer in the New Orleans *Democrat* has been hunting up the different ways of spelling mascalonge, and this is what he found :

Maskalonge, Mascalonge, Maskalunge, Muscalonge, Muscallonge, Muskalonge, Muskalinge, Moskalonge, Masquallonge, Maskallonge, Muskellunge, Masq'allonge, Moscononge, Maskinonge, Maskanonge, Maskenonge, Masque longu, Maskenozha, Maskinoje.

But it must not be supposed that there are not may other ways of spelling the name of this great member of the pike family. It is too bad that people will stick to the old mistaken idea that mascalonge comes from the French words, masque allongé, meaning long mask, or long face. The truth appears to be that the early French settlers always adopted the Indian name for any animal that was not familiar to them. They found the moose and called it by its Indian name. They found the black bass, which is now known as "l'achigan," and also adopted the Indian title. Mascalonge is undoubtedly the nearest approach they could make to the Indian term of maskinogé, which means "bad pike." The mascalonge, as every one knows, is a very savage fish, and when an Indian hooked it, and the mascalonge began to raise Cain, and carried away the Indian's tackle, the latter, naturally, and very properly, thought of it as a "bad pike." Then, in the course of time, this name which had been originally applied to the mascalonge of the great lakes was carried further north and west, and applied equally to the great overgrown pike of those regions, although they were not really mascalonge.

One of the most flourishing social associations of Toronto is "The Good Times Fishing Club." It has a large membership, and from the annual dinner few absent themselves. The last gathering of this nature, which took place a few days ago, was the most successful in the history of the organization. The annual dinner of "The Good Times Fishing Club" has become a fixture of some importance, and we were pleased to hear that the fish stories are improving steadily, and that the weight of the fish figuring therein, is keeping pace with the growth of the club. Mr. J. J. Thomas, President of the Club for 1902, was at the head of the table, though later, Mr. A. L. Malone, Vice-President, relieved him, and took over the onerous duties of toast-master and musical director. It has been the custom to give a medal each year to the member catching the largest trout, and as President Thomas won the trophy last year, it became his pleasant duty to tell his brother Good Timers the story of how the big fish died. Mr. J. B. Clefue, Honorary President of the Club, was presented with a medal, the same being a fac-simile of the medal annually presented to the captor of the largest trout. As he is severing his connection with the Club, and returning to Scotland, his fellow members wished to testify to their appreciation of his many good qualities.

Mr. H. Lansing Quick, Acting Sec.-Treas. American Canoe Association, whose address is Yonkers, N.Y., writes as follows :

We are very anxious to get some good photographs of canoeing scenes, of last year's general meet, or of the Division meets ; for publication in the 1903 year book. If you will kindly ask through your paper, that any member having good views will kindly send same to me, I will be greatly obliged.

I would also like to have any member who has noticed errors in 1902 book, in their names, number, address, canoe, or club, to notify me direct, and I will see that it is corrected this year.

Baily's Magazine for March is as interesting as usual. Some of the more important articles are : One on polo ponies, by Captain E. D. Miller ; a very instructive paper upon the treatment of horses on board ship, by Captain M. F. Hayes, and a portrait and biographical sketch of Mr. Washington M. G. Singer, the first English M. F. H., so far as is known, who was born in the United States.

An English recipe for waterproofing garments, tents, etc., is as follows :— 4 oz. sugar of lead and 4 oz. alum, dissolved in four quarts of water. Put the garment in soak for twenty-four hours, then let it drip dry.

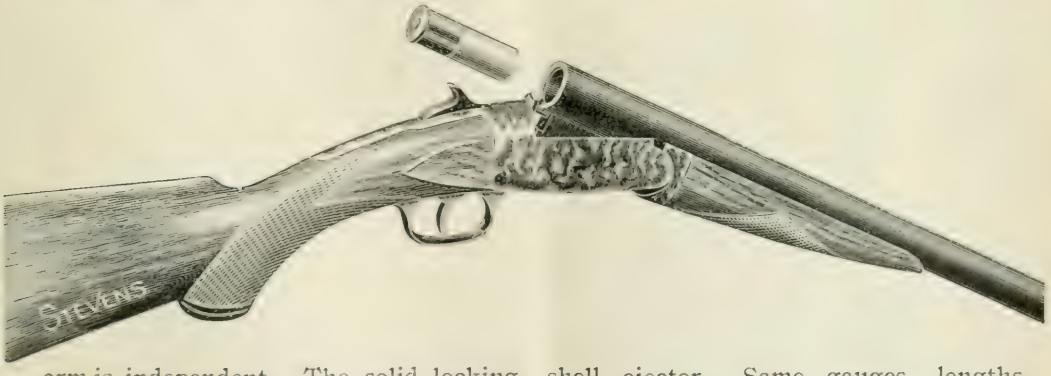
Speaking of protection from forest fires the "American Lumberman" says:

"We believe that the state is justified in going a long distance in this direction and in taking measures which will save the property of the timber owners and lumbermen, for the time has come when private interests must be to some extent subservient to the public good. Granted that in some cases regulations for the conduct of logging operations so as to guard against fire would make the logging unprofitable, it is better that one man should fail to make his profit of $5,000 or $10,000 or $100,000 a year than that his fellow citizens should be liable to a loss ten times as great, that his operations might occasion."

This is somewhat radical for an organ of the lumber interests. Such disregard of individual interests could hardly be expected from any but a journal carried on by impractical forestry enthusiasts.

Stevens Model 1903—Single Trigger Action Single Barrel Shot Gun.

This gun is novel in its mechanism, and, we believe, embodies features that will enter largely into firearms of the future. The top snap is dispensed with, the trigger serves to open the gun as well as discharges it. When the hammer is down, pressure of the trigger pulls back the locking bolt, and the gun is opened; the hammer must be down to accomplish this. The cocking of the



arm is independent. The solid locking bolt prevents the gun getting shaky, even with severe and long use. The hammer of this gun is so fitted in the frame that the working parts are thoroughly protected. The main spring and locking bolt spring are made of specially tempered coil spring wire, so arranged as to give a reliable, smooth, and easy working mechanism. They are specially designed for smokeless powders. All parts are interchangeable.

DESCRIPTION.

No. 160. Trigger action, low rebounding hammer, special "electro-steel" barrel, choke bored for nitro powder, pistol grip, walnut stock, rubber butt plate, drop-forged frame, case-hardened, patent forearm fitted with metal joint.

	Price
12-Gauge, 28-30-32 inch barrel weight about 6¾ pounds	$8.00
16-Gauge, 28-30-32 inch barrel, weight about 6½ pounds	8.00
20-Gauge, 26-28 inch barrel, weight about 6¾ pounds	8.00

No. 165. Same description as No. 160, but with addition of an automatic shell ejector. Same gauges, lengths and weights. Price $9.00.

No. 170. Trigger action, low rebounding hammer, special "electro-steel" barrel, choke bored for nitro powder, automatic shell ejector, checked pistol grip and forearm, pistol grip cap, walnut stock, rubber butt-plate, drop-forged frame, case-hardened, patent forearm fitted with metal joint.

	Price
12-Gauge, 28-30-32 inch barrel, weight about 6¾ pounds	$10.00
16-Gauge, 28-30-32 inch barrel, weight about 6½ pounds	10.00
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CONTENTS

April, 1903

Communications on all topics pertaining to fishing, shooting, canoeing, the kennel and amateur photography, will be welcomed and published, if suitable. All communications must be accompanied by the name of the writer, not necessarily for publication, however.

The Official Organ of the Canadian Forestry Association.

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A view taken from the summit of Mt. Yoho, looking eastward.

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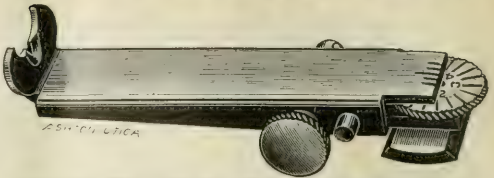

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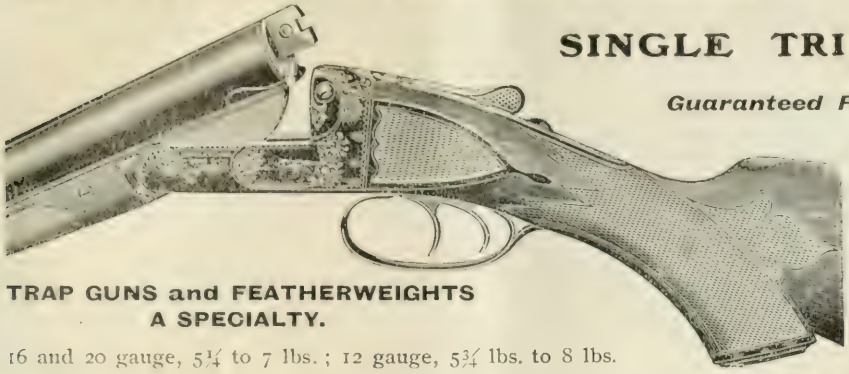

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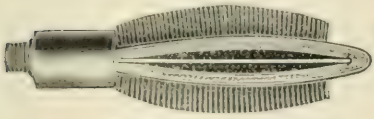

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Rod and Gun is the official organ of the Association, which supplies the articles relating to Forestry published therein.

This Association is engaged in a work of national importance in which every citizen of the Dominion has a direct interest. If you are not a member of the Association your membership is earnestly solicited.

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ROD AND GUN IN CANADA

Stoney Indians

A MAGAZINE OF CANADIAN SPORT AND EXPLORATION

MT. ASSINIBOINE.

Mr. H. W. Du Bois's party breaking camp.

ROD AND GUN
IN CANADA

VOL. IV. MONTREAL AND TORONTO, MAY, 1903 No. 12

New Brunswick Moose.

BY GEORGE E. ARMSTRONG.

(*Concluded from the April issue.*)

As soon as Mr. Bird would make a fresh start to crawl, the moose would begin to get anxious. After looking several times and seeing nothing, it walked up to the beaver house and climbed up on top, and thus it could see Mr. Bird lying in the grass and mud. The bull made up its mind there was trouble in the air, so slowly left the beaver house and started for the shore. When it got out on the meadow, and was half way to the woods, Mr. Bird let go one of his 30-30's. It made not a bit of difference in Mr. Moose's step; so crack went Mr. Bird's rifle again, and still he walks on as if nothing were the matter. I was beginning to get uneasy, and jumped out of the woods and told him he must be missing him. He jumped up and fired two more shots, and still the moose was going steadily, and was now nearly to the woods. I told him to take care and get him next time, so he took a careful aim and pulled the trigger, but no report came. The rifle was empty! He had only put four cartridges in the gun, slipping the rest in his coat pocket, and his coat was now on the other side of the lake, over a quarter of a mile away. "Well," he said, "if I have not hit that moose I will never fire a rifle at another; he is welcome to live." I told him to watch the way the moose went, and I would run back and get the cartridges. So away I went ploughing through the mud, but after getting over to where I thought we had left our coats, I could not find them. Finally, after loosing fully ten minutes, I found them.

When I got back to Mr. Bird he said he had heard the moose making a terrible noise in the woods a few minutes before, but that all was quiet then. Mr. Bird loaded up again, and we walked over to where he had last heard the moose. On reaching the spot we found lots of blood, and saw where the moose had started down the edge of the meadow on a runway. A few yards beyond lay the forest king, stretched out in death. It was a large moose. We measured the spread of antlers, they were fifty-eight inches; thirteen inch webs; with thirteen points on each web. We went back and measured the distance Mr. Bird fired at, and it was one hundred and twenty-five yards. On examining the moose we found two holes through its neck, about six inches apart.

While standing there looking over our prize, Mr. Bird said to me: "What is that I see moving down at the foot of the lake. I looked down, and to my surprise I could see the antlers of a large moose above the alder bushes at the foot of the lake, about half a mile away. It was coming to the lake, and it was only a minute until it stepped out into the water, and looked around awhile and then took a drink, and started up the shore of the lake towards us. The sun was now about half an hour high, and was shining very brightly. It was one of our beauti-

ful October mornings, and to see the sun glistening on the bull's antlers as it drew nearer was a sight that one seldom sees, and one that I shall never forget. It came up to about thirty-five yards of us, when it stopped. It could see the moose that Mr. Bird had just shot lying there, and could also see us. It walked up to within twenty-five yards, and stopped and looked straight at us for about five minutes. I am positive it was a much larger moose than the one that Mr. Bird had just shot. It soon made up its mind that it had no business with us, so turned and walked into the woods, and went up by us only a few yards back in the woods trying to get scent of us.

It was ten o'clock when we got the head off and up to our camp. After we ate our lunch we started back over the trail for Camp Wapske. I carried the head across, and perhaps I was not glad when I got sight of camp, as both my shoulders were blistered. Any one who ever carried a moosehead with that spread of antlers over a trail that was only spotted out knows something of the kind of job it is.

On our arrival at Camp Wapske we found that Mr. Bird's friend, L. F. Fales, had shot a fine caribou, and had seen several moose, but got no shot. He was much pleased to hear of what we had seen, and said he was going back to get the big moose that visited us. I advised him and his guide to go over as soon as possible, which they concluded to do. Mr. Fales, Ed. Mallory, guide, and Dave as cook, returned to Beaver Lake, taking with them supplies enough to last a couple of days. Mr. Bird and I were going to stop at Camp Wapske and hunt caribou. On the 10th Mr. Fales returned to Camp Wapske with his moose. He had shot it on the morning of the ninth. It was a good moose, but not the big one that visited us. The team also had arrived at Camp Wapske on the night of the tenth, it being the appointed time for him to come after us. We got him to lay over a day for us while we went back and got some of the meat to bring out with us. On the morning of the 12th we all started for home, Mr. Bird and Mr. Fales being in the woods but ten days, and each securing a fine moose and caribou head.

The Blue Print.

BY HUBERT MCBEAN JOHNSTON.

Why is it that photographers the world over are indifferent to the blue print? This seems to me to be a very puzzling question, and one that I must confess, I am quite unable to answer. It surely cannot be because it is not specially adapted to any particular kind of work, for, as a matter of fact, there are classes of photography where the blue tint of the blue print ought to stand out prominent. Somehow the blue print is one of the things in photography which the average amateur accepts without question and makes no effort to learn more about. He finds it there when he begins first to take pictures, and because it is such a simple process, he very quickly takes it up and rushes it to death. Then, as he advances in the art pictorial, he goes after other more difficult processes and the poor—but honest—blue print, is forgotten.

The prejudice against the blue print because of its color, is interesting. In everyday life, we are apt to enthuse about anything blue, from the color of the water to the deep, rich blue of a woman's eyes. The collector will rave over the rare depths of color in a Delft plate of years ago, and the plain everyday woman will sigh over the soft, tremulous tints of a bit of turquoise. But let either of them take up the art-science of photography and see how

quickly their color fancies turn to sombre browns and greys, whose monotony is relieved only by blotches of red or black. Is there any good reason for it? No! There is none. Every color under the sun has its own peculiar beauties that the Lord gave it when he created it, and by no means is blue lacking.

Apart from its color possibilities, the blue print like every other print of a superior type, has numerous other attributes that make it worthy of consideration. It possesses a capacity for rendering detail in abundance, has a wide range of tone, gives a visible image during printing, prints dull in finish, and last but by no means least, is easy of manipulation and ridiculously cheap. In view of the last mentioned point, it might be mentioned that one of the most common uses to which the blue print is put, is the indexing of negatives by pasting a blue print of the plate on the outside of the envelope in which it has been stored.

Of course the photographer who really intends to make any practical use of his blue print work, will not purchase the stock that is sold in the photographic supply houses, but will make his own. It seems to me that the best formula I have ever used is that of Herschells, which is as follows: A: Ammoniocitrate of iron, 20 parts; water, 100 parts. B: Potassium ferricyanide ("Red Prussiate"), 16 parts: water, 100 parts. Equal quantities of A and B are mixed together just before using and filtered to form a sensitizer.

As far as the question of paper is concerned, the range for choice is very wide. The weight that is used, must to a very large extent, depend upon the size of the print, though in many cases, a small print on a very heavy paper, adds tone to the picture and saves mounting it if it is not desired. It will be advisable for the tyro to use the ordinary, fairly stout, "cream-laid" note, or any hard-sized bond paper. The chief requisites for paper for iron printing are that it should be free from wood-pulp or other impurities that usually go with cheap papers; that the surface should be fairly hard and not too heavily grained, and that it be of sufficient body and toughness to withstand the washing it has to be subjected to. Of course, paper specially for the purpose may be bought at supply houses. Once you have the paper, you have to size it, although it is true, many papers are sufficiently sized in their making to give fairly good prints. As a rule, however, unless the paper is sized, the image does not stay on the surface and the print looks rather flat and dead. Then too, sizing is necessary to supply the organic matter essential to the reduction of iron salts by light. Now, for sizing, arrowroot is most commonly used. A good mixture may be prepared as follows:

Take one half ounce of arrowroot flour and mix it to a stiff paste with a few spoonfuls of water. Be careful to rub down all the lumps, etc. Then add warm water to make 22 ounces, and gently boil solution until it is clear.

To size, the paper may be immersed in this solution for a minute or two or should the sheet happen to be a thick one, it may be fastened to a board by its four corners and gently sponged down. Use a liberal quantity and sponge each sheet first one way and then the other, and after that has been done, take a clean sponge and go over it to make sure that the surface is even all over and that there are no streaks left. Next, let the paper dry thoroughly, and on no account attempt to sensitize it until thoroughly dry.

For the next operation, that of sensitizing, we will require a few camel's hair brushes about three inches wide, bound in rubber, or in place of these, a few absolutely clean sponges or a supply of absorbent cotton. Perhaps the last mentioned is, after all, the best. There are a great many sensitizing formulas on the market, but if you intend to make your own, the most satisfactory one I can recommend is the one commonly known as Herschel's, to which I have referred and given a few lines back. The chief requisite in coating the paper, is to do it evenly and quickly and then to dry it as rapidly as possible in order that the sensitizing mixture may be kept as much on the surface of the paper as possible. The sensitizing, which must be done by a weak, artificial light, is proceeded with as follows: Put the sensitizer in an open bowl. Fasten the

sheet of sized paper to a board, sized side up, and then incline the board slightly. Dip your mop in the solution, taking care not to get it too full, and then, starting at the top, rub it down across the sheet of paper, seeing that the edges of each stroke just join the edges of the last. The mop must not have so much solution on it as to run in streaks down the paper, and the whole sheet ought to be coated in rapid, even, methodical strokes. When you have finished it in one direction, with a mop slightly drier, run across the other way and insure a full, even coating. This you will be able to do after a little practice. As soon as the sheet has been properly sensitized, place the board to which it is pinned near the stove and let it dry. Of course, it goes without saying that one must not allow the paper to become scorched or get so heated that it will be brittle.

While on the question of sensitizing, it might not be amiss just to mention the sensitizing of fabric, which is, after all, the work that induces most people to do their own sensitizing. The fabric must be perfectly clean, and free from all dressing, soap, etc., and it must be sized. If the material be silk, linen, satin or fine canvas, soak it well in hot water to remove the dressing ; wash it well with soap and then pass through changes of hot and cold water to remove all traces of alkali. For sizing such fabrics, gelatine is advised as follows : soak half an ounce of hard gelatine under cold water until quite soft and then heat well until thoroughly dissolved. Immerse the fabric in this for ten minutes and then hang up to dry. Before sensitizing, see that the fabric is stretched quite tight on a board and that there are no creases. The sensitizing mixture ought to be somewhat stronger than for paper, and is best applied with a flat hog's hair brush. As usual, dry quickly before a fire.

To bother to go into the different kinds of work to which the blue-print is specially adapted, would not only be superfluous, but as well, would involve the using of a considerable amount of space. To comment upon how applicable it is to different land and seascapes is unnecessary. Attention might just be called in passing, to how well certain kinds of figure studies look in blue. For instance, studies of the Japanese and other natives of the Orient have a certain atmosphere about that lend themselves especially well to this sort of thing, while for certain scenes taken in the flowery kingdom, I have seldom seen anything that will surpass the blue-print. Then again, in floral photography, where the flowers themselves hover on a shade of blue, the blue-print stands pre-eminent. Cloud photography, the season for which is just commencing, is also a kind of work that lends itself very readily to the magic of the blue-print.

The Dog Show.

BY D. TAYLOR.

Those who have had any experience in the management of dog shows will at once admit that, as a cause of mental worry, unsettled living and physical discomfort for a prolonged period, there is nothing to equal a position on a dog show committee. For months previous to the actual event the committee have to hustle for all they are worth—there are so many things to accomplish, so many difficulties to encounter and surmount. There are the patrons to be looked up and reminded of their duty to encourage the breeding of high class dogs, the prize money to be guaranteed, attractive "specials" to be secured, and a thousand and one other things to be thought of and provided for, so that if the committee man is really in earnest there is no lack of work to occupy all the spare time the average man has at his disposal. Then why is it that so many people are to be found willing to sacrifice business interests and home duties, endure with meekness and resignation the wailings of disappointed feminine competitors or the deeper growlings of the masculine element, all to wear a badge as emblem of authority for a few days. Why is it, we ask, that we see the same men, year after year, voluntarily submitting their necks to the yoke after registering the most solemn vows never again to allow themselves to be dragged into the canine vortex? It cannot be that this doubtful honor is the attraction for men who, otherwise, are looked upon as perfectly sane. No, it is not that; it is not even the fact that the committee man during the actual function is looked upon as an oracle on all matters pertaining to the canine race and willingly allows himself to be button-holed by visitors of an enquiring turn of mind. There are some, of course, who take a secret pride in the glory of their position, who look wise when interviewed, and discourse learnedly of the relative difference between a dachshunde and a great St. Bernard, and look with a superior air upon their hard-working confreres; but in general, a committee man is chosen because he is a true fancier, who delights in the work from pure love of the canine race. And it is this, and this alone, that leads him time and again to undertake a too frequently thankless task. To the born fancier the yelping, barking and baying of hundreds of dogs is sweeter music far than a Beethoven symphony played by a highly trained professional orchestra, and this is why a dog show has such an irresistible attraction, sufficient for him to counterbalance all the trouble and annoyance of months of preparation, and the petty jealousies and recriminations which usually attend the show itself.

There are several such enthusiasts among the members of the Montreal Canine Association, and to these is mainly due the success which has hitherto attended the shows held under its auspices. The coming annual event this month promises fairly to excel its predecessors in the number of entries; at the time of writing these being far in excess of those at the corresponding time last year. To anyone taking the trouble to compare this year's premium list with that of last year will find that the number of specials offered is very much greater, which goes to show that the present committee has been working to some purpose. The specials are also of a much higher class than hitherto, and embrace valuable silver cups and medals down to fedora hats, silk umbrellas and bottles of perfume for the ladies. Among those who have contributed valuable specials this year are His Excellency the Governor-General, who offers a cup for the best brace of dogs, any breed, entered by a resident of the Province of Quebec; His Worship Mayor Cochrane, who offers a cup for the best brace of dogs entered by a resident of Montreal; S. Coulson, Esq., who offers the "Wesley Mills Cup" for the best kennel of four, open to all breeds; the "Montreal Cup," for the best specimen in the following breeds: St. Bernards,

Russian wolfhounds, greyhounds, Scotch deerhounds; the "Quebec Cup" for the best specimen of the following breeds: English, Irish and Gordon setters and pointers; Jos. A. Laurin, Esq., offers a $25 cup for the best bitch, any breed, open to members of M. C. A.; D. W. Ogilvie, Esq., offers the "Glenora Trophy" for the best dog, any breed, open to members of M. C. A.; H. L. Thomas, Esq., offers a $25 cup for the best specimen, any breed, entered by a lady; the American Collie Club offers the Club trophy, value $300, for the best American bred collie, and a medal to the best of opposite sex to winner; also the "Van Schaick Cup" for the best collie, and a medal to the best opposite sex to the winner; the Association also offers a money prize of $20 for the largest exhibit entered and owned by one kennel or exhibitor, and $20 to the handler having the largest string. There is a full classification for nearly all the breeds, and among the novelties provided for this year are French bulldogs, toy bull terriers, Welsh terriers and whippets. With such inducements, and the low entry money, the Committee ought to be rewarded with the biggest entry they have ever had, as well as a record attendance on the part of the public.

The judges are: Mrs. John A. Pitt, of Montreal, all toys except pugs; J. J. Lynn, Esq., of Port Huron, Mich., Fox terriers and Boston terriers; George Douglas, Esq., of Woodstock, Ont., cocker spaniels and field spaniels; F. Freeman Lloyd, Esq., of New York, all other breeds.

One of the most genuinely funny books that have appeared lately is "A Dog Day; or, The Angel in the House," by Walter Emanuel. Here are a few random entries from the pup's journal:

8.30—Ate breakfast with difficulty. Have no appetite.

8.35—Ate kittens' breakfast.

8.36—An affair with the cat—the kittens' mother. But I soon leave her, as the coward does not fight fair, using claws.

9—Washed by Mary.

9.30—Showed myself to family. All very nice to me. Miss Brown—whom I rather like—particularly enthusiastic. Kissed me again and again and called me "a dear, clean, brave, sweet-smelling little doggie."

9.40—Had a glorious roll in the mud.

1.30—A windfall. A whole dish of mayonnaise fish on the slab in the hall. Bolt it.

1.32—Curious pains in my inside.

1.33—Pains in my inside get worse.

1.34—Horrid feeling.

1.35—Rush up into aunt Brown's room and am very, very ill there.

1.37—Better.

1.41—Quite well again.

1.42—Jump twice on to the waistcoat part of old Mr. Brown, who is sleeping peacefully in the armchair.

1.43—Miss Brown beats me. Very nice. Just like being patted. I yelp, do the sad-eye business, and pretend it hurts frightfully. She soon leaves off and takes me into the next room and gives me six pieces of sugar! Good business! Must remember always to do this.

4 to 5.15—Slept.

5.15—Awakened by a bad attack of eczema. Caught one.

7.15—Ate kittens' supper. But I do wish they would not give them that eternal fish. I am getting tired of it.

8.40—Fight the cat. She scratches my paw viciously, drawing blood, and making me howl with pain. This brings Miss Brown down in a hurry. Wraps paw up in bread poultice.

9 to 10—Dozed.

10—Led to kennel.

11.15—Lights out. Thus ends another dull day.

A Woman's Venture.

BY C. A. B.

Sir Donald, the highest peak in the Selkirk Range of British Columbia, is 10,600 feet high. It is one of the grandest peaks of this western continent--black, splintered, forbidding. No Indian ever even attempted, so far as is known, to climb it, and it was not until 1890, four years after the last spike of the great Canadian railway had been driven, that Emil Huber and Carl Sulzer, members of the Swiss Alpine Club, accompanied by the Swiss guide, Hasler, and the porter, Harry Cooper, balanced themselves upon its narrow, knife-like summit.

Eleven years later, there having been several ascents in the meantime, Sir Donald yielded to the fair sex, Mrs. E. Evelyn Berens being the first woman to set foot upon the highest peak of Canada's Pacific province. Mr. and Mrs. Berens happened to climb Sir Donald by the merest chance, for when they left their Kentish home to take a run through Britain's biggest colony the last thing they had in mind was mountaineering, but, finding themselves at Glacier and becoming permeated by the enthusiasm of the place, they resolved to do or die. Mr. Berens is said to have remarked afterwards that he, personally, had considered when half way up the peak that the odds were enormously in favor of the latter alternative. For a day or two previous to the attempt the guilty pair held surreptitious interviews with the Swiss guides, meeting them by stealth under the gloomy pines, in order that the other visitors might not get wind of their fell purpose. And yet it did leak out somehow, and when they finally got off by lantern light at 3.15 a.m. one August morning, several windows were tenanted, and more than one wish for a safe return was shouted after the plucky little English woman then heading her pony up the stony trail leading to the glacier. The rest of the story had perhaps better be told by Mrs. Berens herself. She says:

"Before deciding on taking the trip I was greatly puzzled as to what I should wear—as not being a new woman, I did not have unmentionables packed away at the bottom of my trunk, and did not think it safe to attempt it in skirts and frills. After a time my kind friend, Mrs. Schaffer, of Philadelphia, suggested that I should go through my husband's wardrobe. The result was I picked out a pair of something— and, naturally, being a woman, I picked out the very best pair of shooting knickers, as being the prettiest color, so as to be as becoming as possible under the circumstances. I account my greatest courage was not in getting up at 2 a.m., but in appearing before the guides in my new rig, and I think that most people will confess that, having been a girl all my life, it was certainly embarrassing (to say the least), this sudden blossoming into a boy.

"However, that trial being over, we started gaily. I may mention a thing which greatly amused me—I kept unconsciously holding a piece of cloth in my hand when walking on the level. I suppose being a girl so long I had got accustomed to holding up my dress. It is funny how habits stick to one.

"When I first got on the rocks I asked the guides how long it would take us to reach the top. The reply was, 'Oh, four or five hours.' Thinks I to myself, what nonsense, I am sure we can easily get there in an hour or so. Alas, my conceit was very quickly taken out of me, as I soon found it was not such an easy climb as it looked. Be wise, friends, and never despise a mountain; it always gets the best of you in the end.

"I looked down once, and once only, at the valley and ice below, and it looked as far away as Piccadilly or Chestnut Street, and to look up seemed almost as bad. In climbing always look for your next foothold and nothing more, as if you look down it is apt to frighten you, and if up you may become discouraged.

"It really is surprising what a delight mountains take in growing gradually higher when one is climbing them. I am afraid the photographs we took on the

summit are not very good, as we could only get away two or three feet, but I think by them one can realize how very small the top of Sir Donald really is—certainly there is not room to dance a set of lancers. I cannot attempt to describe the scenery, I only try to write from a woman's point of view, and the points I would like to suggest to any lady climber are : 1st, To wear knickers ; 2nd, To wear putties to prevent her legs from being knocked to pieces by the rocks ; 3rd, To wear good strong boots with plenty of nails ; 4th, To drink as little as possible (I only took half a cup of tea) ; 5th, To take a good breakfast before starting, and to have but a sandwich or two and an orange, if thirsty, on the way. 6th, To take a coat, which the guide can carry, and which one can slip into on reaching the summit, as it is cold up there. I should not advise gloves on the rocks, as they are apt to get wet and slippery, and one can take a firmer hold with one's bare fingers."

This modest account was written by Mrs. Berens in the register at Glacier. Last year a Boston girl, Miss Marion Raymond, followed in her footsteps, and also stood upon the lofty crest of Sir Donald, and with these two exceptions no woman has reached so giddy an elevation in the Dominion of Canada. The late Marquis of Dufferin happily described British Columbia as a Sea of Mountains. There are yet innumerable ascents to be made, and, no doubt, when American women shall have become as enthusiastic about mountaineering as are their British and Swiss sisters, many of the other glorious peaks of that wondrous western land will bear the imprint of nail-studded climbing boots, very much smaller in size than the workmanlike, but hideous footgear affected by the male climber.

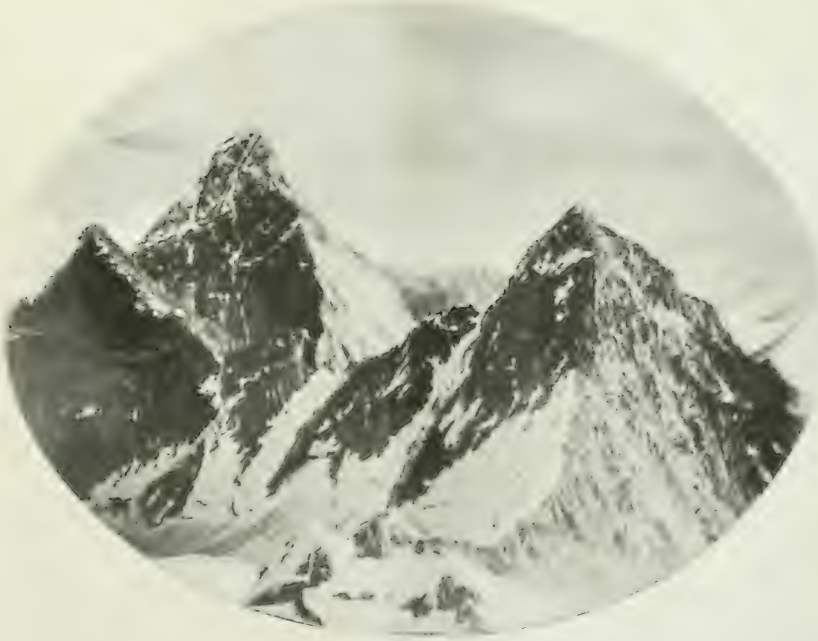
The marvellous increase in the number of those who wish to go to the woods of Canada for the summer necessitates a liberal supply of guides, canoes and outfits. There was a scarcity of guides and canoes last year. The Canadian Pacific Railway, with its usual enterprising spirit, will endeavor to arrange a full supply for 1903. The very successful play of "Hiawatha," given annually at Desbarats, has been the means of bringing together a considerable number of the more intelligent Indians, who have become gradually educated as to the wants of the white people who wish to take a summer trip in canoes and camps. Mr. Armstrong, who originated the play, is taking a special interest in giving shape to the guide-supply enterprise. He will at Desbarats provide Indian tepees or lodges, set them up and furnish all necessary conveniences. He is also laying out a series of canoe trips of various lengths, and of different degrees of excitement, in the way of slow waters and fast. Desbarats, 27 miles east of Sault Ste. Marie, is very convenient of access, and is to be the point of departure. From here canoe trips will be made eastward to Temiga-ming and Temiskaming in Northern Ontario and Quebec. The Mississaga canoe trip, immediately to the north of Desbarats, is one of the best on the continent.

There is a very delightful little canoe trip, quite near Desbarats, which can be done in one day, but which can be better done in three. This canoe trip is the breaking-in trip, wild and enjoyable, but short. Then to the west we have the many rivers running into Lake Superior, ending with the far-famed Nepigon, where the best trout fishing in the world is to be had.

Information about these canoe trips and summer camps may be had by writing to Mr. L. O. Armstrong, Canadian Pacific Railway, Montreal. There are a couple of summer camp-hotels at Desbarats, and for the ever-increasing number of those who are afraid of canoes, there is fishing to be had here, either in large boats, or without boats at all, by driving in waggons to the lakes, where large, flat punts are provided for nervous fishermen and women. Desbarats is warranted to cure the worst case of this species of nervousness in a fortnight or less.

IN CLIMBING COSTUME.

Mrs. Bereus, a young Englishwoman, was the first to climb the highest peak of the Selkirk range—Sir Donald.



SIR DONALD.

The master peak of the Selkirk range, British Columbia; elevation, 10,007 ft.

A Tame Bear.

From the collection of Billy Manson, Bridge River, Lillooet, B.C.

The Grouse of Timiskaming.

BY C. C. FARR.

The first thing that strikes an observant man about grouse is the surprising fact that there are any, for such a succulent morsel as a well-fed grouse must of necessity have enemies, whose name is legion, and the wonder is, that the whole race has not been long ago exterminated. Nothing but the wonderful adjustment of the balance by nature has saved them, by the evolution in them of a power to protect themselves from the assaults of animals of prey, by ways and means, that we can not always fully apprehend or understand the significance of. For instance, the ordinary partridge, in spite of its apparent reckless daring, or simplicity, is very rarely caught on the ground by a dog, and hence, by analogy, a fox would have to do some very fine and dexterous stalking in order to compass the destruction of one of these, so called, silly birds.

The russet colour of its plumage is an undoubted protection, but not alone sufficient to account for the survival of the species.

I have been told by Indians that a fox cannot locate a "drummer" by the sound, which seems credible enough, unless the quick eye of the bird, even when engaged at this grave function of its being, can catch the stealthy movements of the wily reynard in time to elude the spring; in which case it would not matter much whether the fox could locate the drummer by the sound or not. I know that a dog cannot find a drummer as quickly as I can, so there may be something in it after all.

The sight of a partridge is wonderfully keen, and yet it will allow an enemy to approach it very closely, instinctively knowing that no harm can befall it as long as a certain distance is maintained; in fact this peculiarity is one of its modes of self protection, for remaining absolutely still, even when an enemy is close, often enables it to escape detection, where a sudden motion of flight would betray its presence.

The actual shooting of a perched partridge requires no skill, but it is the seeing them after they have been flushed that requires skill, for though they make no great pretence of hiding when they alight, they remain so absolutely still and are so assimilated in colour to their surroundings that it requires a quick and practised eye to see them.

If, after alighting, the partridge makes the slightest noise, then it is a sure sign that it is not going to stay there for any length of time, and if the sportsman wants to get a shot, he will have to shoot quickly, or he will not shoot at all.

There is one enemy of the partridge, however, to escape whom, nature has not endowed the poor bird with half enough sense, and that is man. Fortunately for the partridge, men are not proportionately plentiful in the bush, and in this lies safety, but when civilization advances, and the number of men increases, then the number of partridges decreases, until, finally, the unequal contest is ended by the extermination of the partridge. The Ruffed Grouse, or Partridge, is known to the Indian by the generic name of "Peenay," "The Bird," implying thereby that it, above all feathered bipeds, holds the first place in his esteem, and well it may, for it is the best friend in feathers that an Indian has. No need for him to go hungry as long as there are partridges near, even if he has no gun, for they are easily killed, in various ways, without one; a well aimed stone will knock them over, though a surer method, and one that I think I have already mentioned in ROD AND GUN, is to attach a snare to a long pole, which snare is deftly passed over its head, the partridge helping the operation by poking its head through the noose, provided that it, the snare, is brought up to it in a skilful and proper manner; for, as I said before, nature has not prepared the partridge to elude the wiles of man.

In the spring the "Drummer" is

caught by setting a snare upon the log where he does his drumming. So important is he, and full of his own business, that he readily puts his head through the snare in his march backwards and forwards on his log.

When a drummer is killed, it is said, that there is always another to take his place. I suppose that the number of spare drummers must be limited, but I myself have seen three killed off the one log.

The diet of a partridge is very varied, and naturally regulated by the supply of such things as it can eat, which again mostly depends upon the season of the year. Generally speaking, in the spring the buds of the various deciduous trees supply it with all it needs, especially the leaf buds of the birch, poplar, and balm of gilead. In summer the young leaves and shoots are relished between frequent courses of insects, but fall is the fattening time, when every kind of berry is plentiful and ripe. It would be impossible to enumarate all the different kinds of berries upon which they feed, but for the sake of those who are travelling through the bush, with the hope of shooting a few of these birds, it will not be amiss to mention a few facts that may be useful to them in future.

Along the courses of streams, and the shores of lakes, a number of different kinds of berries grow that find much favour with the partridge, the principal of which are the high bush cranberry, the "partridge berry," a pink berry (*) that grows on a low bush, and is very unpleasant to the taste, and of the "muk-o-min" the bear berry, a purple berry that has a very nasty odour, and which is evidently a kind of dogwood berry, for the wood of the small tree or shrub that bears it is very tough, while the leaves are round, and dark in colour, and after the first frost, emit a most unpleasant odour.

Wherever such berries grow in fair abundance, partridges are pretty sure to be found, especially on a sunny, end-of-September or October day.

The very best time to kill partridges is during the last few warm, sunny days of the year, before the first permanent fall of snow, and it is strange to note the effect of this first fall of real winter snow upon them. While the sun shines, and the ground is bare of snow, in these late October or beginning-of-November days, the partridges frequent the roads, or naturally cleared spaces, and are busy upon the ground, hunting their daily food, but, immediately that the snow comes, they disappear as if by magic. I have gone forth on such a day, and have seen dozens of them feeding along the road, but owing to a defect in my gun, or possibly having no gun, I conld not shoot them ; however, I would think that it did not matter, as I could have a chance at them on the morrow. During the night it snowed, and the weather turned very wintry. When I would go back to the spot, or rather a number of spots, not the vestige of a partridge would I find, not even a track in the snow, and so it is always. The Indians tell me that they retire to the shelter of the balsam or spruce groves, but even if they do I could find them there, and I think that when the snow comes, they are somewhat like hens, and do not care to walk much in it, but keep aloft, and hence are not visible.

The Indians of the Temiscamingue country recognize only four kinds of grouse. The "Peenay," which I have just attempted to describe, the "Wabapeenay," "the white partridge," or Ptarmigan, the "Ish-coot-ays-ie," the spruce partridge, and the "Argusk," the sharp-tailed grouse.

Though the ptarmigan has often been shot around Temiscamingue lake, it is not either a regular resident or visitant. During some seasons a good many are killed at the head of the lake, where are large expenses of willow-covered flats, and six years ago I killed quite a number at Haileybury, but these visitations are very rare, in fact I have never seen a ptarmigan since. Looking through McIllwraith's "Birds of Ontario," I cannot find the Spruce partridge, or Wood Partridge, as it is sometimes called, (Indian) "Ish-coot-ay-sie,"

(*) Partridge Berry—called by Indians Man-i-josh-i-min, meaning that it has no regular name, but is one of the poisonous berries, from Man-i-josh-qrub (adjective), uncanny, bad, poisonous.

mentioned in it, unless it be the Canada grouse, which, by the description, it seems most closely to resemble, but if this is the case, he does not mention the distinctive feature from which it takes its Indian name, I mean the bright flame-coulored streak on the side of its head, "Ish-coot-ay," in Indian meaning fire. The reason why it is called the spruce partridge is that it apparently feeds on the shoots and leaves of the spruce. These birds do not seem to be able to adapt themselves to the advance of civilization, and are consequently becoming more scarce every year in this immediate neighbourhood, though further north and west they are as plentiful as ever. They are, in their habits, like the ruffed grouse, but they are more difficult to find after being flushed, for they fly higher into the trees, and instead of lighting upon a limb of the tree, they will often light upon the brush of the spruce or the balsam, and hence cannot easily be seen. The flesh of the spruce partridge is dark, and strongly impregnated with the flavour of spruce.

The sharp-tailed grouse, (Indian) "Argusk" is not uncommon some seasons, but its visits are periodical and are supposed to be regulated by the severity of the winter. During the winter just past I shot a pair of them, a photograph of which I am sending with this to ROD AND GUN. They were only a few yards from the house when I first flushed them, and they flew only a few yards further on, patiently waiting for me to fetch the gun, poor little things. I felt sorry when I had killed them, and yet I consoled myself with the reflection that they might, when dead, interest readers of ROD AND GUN. After I had shot them, I showed them to an Indian, asking him if he knew the Indian name for them, and was surprised to find that he did not, though he knew the birds; but he told me that an Indian, who used to live further north, would knew their name, and that he would ask him, which he did, and the result was the name that I have given above.

I remember one winter, about seven or eight years ago, that there were a great number of these birds killed on Temiscamingue, but they were looked upon as a somewhat *rara avis*. By the by, my Indian friend told me that they wer very plentiful on the plains at the head waters of the White River, about the Height of Land, and that they only came so far south or west when the winter was very cold, which was the same thing that I had heard before.

I find that McIllwraith, on other authority, pronounces them to be the true prairie chicken. I have never seen the prairie chicken in the west, so am no authority, but I have asked those who have and they unanimously agree that this bird is the prairie chicken of the west.

Judging by what little I have seen of them, they would be very soon exterminated unless stringently protected, for they seen very tame, and easily killed. Only last week I heard that five of them were killed by some fiend with a gun. There were only five in the covey, and this kill-everything-in-season-and-out-of-season-pot-hunter bagged the lot.

Bait-casting for game fish has become one of the highest forms of piscatorial art, and a knowledge of this beautiful and most successful style of angling is worthy of careful study by one who occasionally "goes a-fishing" as well as by the most enthusiastic angler. A booklet, the object of which is to instruct anglers in this fascinating art and acquaint them with the use of modern artificial bait, is published and sent free on request by F. C. Woods & Co., of Alliance, Ohio. This company are makers of accessories used in this art, one of which, the "Expert" Wooden Minnow, with their new patent perforated spinner, is designed to overcome the annoyance, expenditure of time and money, which the securing and caring for of live bait entails. This little device is of handsome appearance, and as to its efficiency the company have scores of testimonials.

Forest Fire Protection in Europe.*

BY A. HAROLD UNWIN, D. OEC.

This, one of the primal cares in forest management, has been developed to a wonderful extent in Europe, but presents a great diversity of plan, though in all cases it is exceedingly effective. One of the first things which is done is to eliminate as much as possible all causes of fire which can comparatively easily be remedied, such as that caused by locomotive sparks. The engines have spark catchers in the form of wire netting, which is only imperfectly effective; a better means of making the sparks harmless is by clearing strips 30 to 60 feet wide on each side of the line. These strips are always kept cleared of any growth, and the men working or patrolling the line are compelled to extinguish any fire which they find. In more densely populated parts of the country, such as in France and Germany, where the railways have to be daily patrolled, this is very effective, though less so in Austria and Russia.

A great cause of forest fires is carelessness on the part of those working in the woods, tourists, etc., in fact, the population in general. In Russia, Finland, Norway and Sweden, in case of fire all the male population in the district (sometimes a day's journey away) where the fire has broken out, have to turn out with any implements they have, to put it out. In cases of very large fires in France and Germany, regiments of soldiers are sent to the place. The above law has worked well, and before Germany was so densely populated as it is now, a similar regulation was in force, (one of the best was in Saxony in 1745). This seems a very judicious measure in sparsely populated districts and where the forests are large in extent. Of course, buildings are not allowed in the immediate vicinity of the forests. A natural cause of fire is lightning, which, according to European statistics, is infrequent, partly perhaps due to the clean condition of the forests and lack of dead or dry rotten trees. The periodical burning of heather or moorland, for purposes of agriculture, in the neighbourhood of forests, often causes fires. This system, which is practised in Germany in one of the driest districts, the Luneberge Haide, has not caused as many fires as might be expected. Here, out of several 100,000 acre tracts only about 50, or at the most 100, acres of forest get burned in any year. It is practised in parts of the Black Forest, and there for years, owing to the care exercised by those burning the areas, no forest has been destroyed. This is also due to the forest rangers, especially in the first case, although the ranges are very large (8-10,000 acres per man), owing to the almost valueless nature of the forests (pine of the lowest quality). Their labours are lightened, however, as they can be called up at any time from a central watch-tower by means of telephone and informed as to where a fire has started.

Inside the forest there are factors which influence the question, the first and foremost is the species of tree found on a given area. As a general rule in Europe it has been found that Scots pine (*Pinus sylvestris*) makes in its younger stages the most inflammable forest, then come spruce, fir and other conifers, then the lighter foliaged trees such as birch, poplar, willow, and lastly, oaks and beeches. This, of course, means that greatest care is exercised in the pine forests to prevent fires. And here again the next protective measure, that of dividing the forest into ranges, first becomes imperative in pine woods, at least if they at all are valuable, which they are in Europe. The forest ranges vary in extent according to the situation and value of the forest concerned, as was stated in my article in "ROD AND GUN" in October last year. In the ranges themselves again in the whole of Europe, even in Northern Russia, strips up to 100 feet wide, called fire traces, are cleared and run right through the ranges from end to end, every quarter or half

*Contributed by the Officers of the Canadian Forestry Association.

mile, and, with the addition of the roads, the forest officers are enabled in case of fire breaking out to rapidly locate it and cope with it. These bare strips also prevent small fires from spreading, as they cannot spring over these. In case of combatting a fire these give a starting point for cutting down the trees to form a wide strip or for making a fresh fire to burn towards the real forest fire. This clearing strip, well in front of a fire, has proved most effective but requires a good deal of labour.

Another method of protecting a forest is to plant broad strips of birch or beech trees through coniferous forests, especially pine (this has been done near Dresden, and was a few years ago the means of preventing a small fire becoming a very large one). These strips act as a check to the fire, being less inflammable. Of course, this is done and can only be done in forests which are of great value.

The seasons of the year also have their effect. In Europe March is considered the most dangerous, as the forest is driest then and all the old dry grasses form the best material for a fire. The latest statistics show that most fires in Europe occur in March. In each country this of course varies. The soil in a forest also influences the spreading of a fire. Dry moors and heaths are a constant danger, and fires have been known to smoulder on these a great length of time before breaking out. But forest fires after all depend on the human being, and the more educated he becomes the less fires there are. This is clearly shown in European statistics, where forest fires are steadily on the decrease, not only as to number but also as to extent. The latest way the European, especially Belgium or German peasant forest proprietor, protects his forest against fire is to insure it. Several companies undertake this risk with rates varying from 0.05 p. c. or 0.2 p. c. of the value of the woods, according to the species, age and local circumstances. It goes without saying that various governments in Europe do not nor ever will insure their forests against fire for the simple reason that they are so large that it is cheaper to lose forest every year than to pay premium on the whole area. The great thing always done is to properly divide the forest up by roads and fire traces, and good fire rangers do the rest.

The Savage Arms Co., Utica, N.Y., have adopted the 30-30 and the .303 1899 Model Savage to take the following well-known loads: 25-35, 32-40, and 38-45. The Model 1903, 22 caliber, has a standard length of barrel of 24 inches,

octagon barrels only. Extra lengths of barrels, up to 30 inches, can be furnished. Stocks of all 22 caliber rifles of this model are made with pistol grip only, without extra charge. The advantages claimed by the Savage Company for the new rifle are: Shells are ejected to the side and to the right; the takedown is very simple; it has a solid top; is hammerless; strong mechanism with few parts; positive extraction and ejection; magazine quickly removed and inserted; clogging is almost impossible; there is a direct straight feed; cartridges may not be discharged until action is closed and locked; efficient loader; light weight and easy manipulation, the arm being the lightest 22 caliber repeating rifle on the market.

Natural Reproduction in the Adirondack Forests.

In the second number of the Forestry Quarterly, published by the New York College of Forestry, is an article on Natural Reproduction in the Adirondack Forests, by A. Knechtel, which is of special interest to Canadians, as the reproduction of the forest by natural methods will probably be the only plan followed in Canada for some years to come. No matter how strongly any advocate of scientific methods of forest management may express himself as to the defects of the present system, the fact remains that no careful study of the reproduction and growth of timber trees has been made, and, while general advice is quite easily given, the practical problem is still to be worked out, and, without fuller knowledge than is possessed at present, there is a possibility that the best intended efforts may fail of the desired result just as completely as the efforts of the past. If there were but one species of tree or if all were equally valuable, matters would be greatly simplified, but there is always the difficulty that in removing the valuable species the advantage may be given to the inferior and thus the whole forest be steadily on the down grade. With the slow growth of the forest such a mistake would be irreparable for many years. The displacement of the white pine by spruce and other less valuable trees is quite apparent on cut-over limits, and the question of how far the process may be carried downward by the closer cutting of spruce is not lightly to be set aside.

Mr. Knechtel's plan for studying natural reproduction was briefly as follows:

Selected so as to give variety of conditions, quarter-acre circles were chosen here and there over Township 5, Hamilton County. Within each circle eight squares, each ten feet on a side, were measured off on the forest floor proper, evading old decaying logs. All the vegetation on these squares, from the smallest plants and seedlings up to the largest trees, was noted. Attention was then given to the old rotting trunks that had fallen on the quarter-acre plot and all the small trees growing on them were classified and counted. Record was made of the location of the circle, the degree of slope, the exposure of the plot, the light admitted through the crown, and anything else that would furnish a useful record. Mr. Knechtel thus states the conclusions of his investigation :—

"It was intensely interesting to note the manner in which the reproduction was going on. The pine, spruce, and hemlock were, of course, regenerating only from seed. Under the conditions prevailing in that township—virgin forest, dense shade, much duff on the forest floor—these species were reproducing almost entirely on the old, decaying tree trunks lying in the forest, and these trunks were themselves pine, spruce and hemlock. They were not reproducing on old, decaying beech, birch or maple trees. Occasionally an old hemlock was found literally covered with little spruces and hemlocks, while on the forest floor not a small tree of these species was to be found upon the quarter-acre. Patches of young spruces, from one to five or six feet high, were found, apparently as if they had germinated upon the forest floor, but upon close examination these were generally seen to be arranged in rows, which would indicate that they had come from some such seed bed as old logs. Frequently, too, the undecayed knots of an old hemlock could be kicked up along the row.

"It is true that these species were also found germinating and growing on the forest floor. It was only, however, where the mineral soil was exposed, and this is of rare occurrence in the virgin forest ; usually it occurs only on steep slopes and at the roots of upturned trees. Even in forests where lumbering has been carried on, unless fire has burned

off the humus, the mineral soil is not much exposed. Skidding tears up the soil to only a slight extent, not enough to warrant the assumption that a seed bed will thus be furnished to reproduce the softwoods in sufficient numbers to keep up a forest lumbered periodically.

"When fire goes through a softwood forest, leaving here and there a seed tree, the young growth comes up in abundance, for the reason that the fire not only burns off the humus, exposing the mineral soil, but it leaves a covering of ashes just suitable, when leached into the soil, for encouraging the growth of the trees; in fact, just the mineral matter that the burned trees took from the soil, the fire driving off into the air only the elements obtained from the air.

"In a forest lumbered periodically, the regeneration of white pine, spruce and hemlock is, then, largely dependent upon the existence of a good mineral seed bed.

"The hardwoods, especially the maple, birch and beech, reproduce freely everywhere. The abundant regeneration of these as compared with that of the softwoods is everywhere noticeable. Almost any kind of a seed bed seems to be sufficient for them.

"The softwoods are more exacting than the hardwoods in regard to light requirements and are more easily injured by frost. Nurserymen are careful in raising conifer seedlings to see that the plants are shaded from the hot glare of the sun, and that the screens are removed in continued cloudy or wet weather. In the winter the beds are well covered with leaves to protect the plants against the frost. No such careful treatment of hardwoods is necessary. In the forest, then, it is only where the light conditions are good, and sufficient protection is afforded in the winter, that the conifers can be reproduced.

"But it is not only in the matter of seed bed and light conditions that the hardwoods have the advantage, for they also sprout from the root. Beech roots run frequently above the surface of the soil, and these, when wounded, as by the skidding of logs, send up bunches of suckers. Groups of from two to ten trees of maple, birch, basswood, or, in fact, nearly any species of hardwoods, can be frequently found growing from the same root. It is common in the woods to see four or five basswood trees thus situated, each more than a foot in diameter. To be sure, such shoots from stumps or root are generally short-lived, but they take up the light space, and live long enough to produce seed. To replace a softwood tree that is taken from the forest, another must be grown from the seed; but when a hardwood tree is removed, many may spring from the root.

"In case of fire, the hardwoods, as is well known, have the advantage. The softwoods are more open in structure of wood, have thin bark, especially when young, and are resinous and hence more easily burned. The hardwoods are not easily burned. They are so resistant that a belt of hardwoods is often planted as a protection to the softwood forest."

This is an important contribution to the study of the forest under natural conditions, and the results of the investigation are well worthy of consideration. The fact has been referred to in discussing the growth of white pine in Canada that seedlings have been found growing most frequently on old logs and stumps, and it is a matter of observation that pine forest has preserved its character as such more fully where lands have been once burnt than where the pine has been cut out, so that the conclusions reached by Mr. Knechtel are so far confirmed. The problem still remains as to how the seed bed required by the conifers shall be furnished and in what way the natural advantages possessed by the hardwoods may be overcome, but the conditions which govern it are more clearly defined by the data gathered in this investigation.

Charles Plath & Son, 62 Fulton Street, New York, N.Y., have issued a new illustrated catalogue and price list. Their stock is large, varied and excellent, and their prices are as low as is consistent with the quality of the goods they supply. Anglers in need of tackle—and what angler is not in need of tackle in the bonnie spring time?—should write for this catalogue.

Northern Ontario.

BY H. BARNARD.

(*Concluded from the April issue.*)

We will now just skim over the route, starting from where our canoes were first launched, the foot of Barriere Lake. There is no doubt that moose, red deer, caribou and bears abound in this country, and are scattered pretty thickly all over it. It is apparent that they are slaughtered all the year round by Indians and parties who go out for pleasure, both from Canada and the United States, particularly the latter, in season and out of season—bull, cow or calf—for their hides, their horns and flesh, much or little ; and that which cannot be utilized is left to rot. The law is not regarded, and there does not appear to be anyone to enforce it. Partridges and rabbits, or hares, are plentiful, and fur-bearing animals—beaver, otter, marten, mink and muskrats are plentiful.

Fish are abundant, but not of quality to be of commercial value to any extent. There is an unlimited supply of pulpwood, poplar and white birch, which at present is valueless in the absence of railway communication. Minerals—gold, silver, mica, asbestos, etc.—exist ; but whether they possess much or little value remains to be ascertained. The water in the chain of lakes to Abitibi is not clear, having a muddy appearance, and springs are not plentiful.

After leaving the Height of Land, the country is uninteresting for a pleasure trip, but might possess advantages for the prospector. For a pleasure trip, to branch off at the head of Long Lake, and connect with the Blanche River, affords a splendid vigorous outing. Trout fishing is not to be had here. The country through which the Blanche River runs is the place where settlers have been pouring in, and the land all along the river from the head of navigation to the mouth has been pretty much taken up. Thomstown will likely become an important place, being situated just at the rapids, where splendid water power will be available. The land all along is covered with a thick growth of poplar, birch, spruce and cedar. The soil is a sandy loam, with a heavy subsoil of white clay, and seems to have great fertility. Numerous springs of water are to be seen running into the river, which would indicate that good water is easily obtainable. The climate is good. Winter sets in early and is steady, the spring opening up quickly, and while the growth is a little later than it is further south, things seem to thrive and ripen, and are not affected by early and late frosts more than anywhere else.

Sawn lumber for building purposes can be had at Leskard and at Judge's, six miles up the river. Leskard is a thriving place, and promises to be the principal town in these parts, being at the upper or Ontario end of Lake Timiskaming, west of the Blanche River. A good opening might be here for a druggist, a good hotelkeeper, a doctor, a banker or enterprising merchant. At Haileybury a large dock is being built by the Government. This is a work much needed, and will make this a place of considerable importance. The harbor at Leskard will also be dredged, it is understood, as the water is shallow, and at present merchandise must be lightered to the wharf or shore. The land from Haileybury north is flat and sloping, and is of the best for farm purposes, the soil being very fertile and well watered, and free from stones. The drawbacks at the present time are lack of rail and telegraph communication. With a railway touching Haileybury and Leskard, and on to Abitibi, and eventually James Bay, a country of rich farming lands, immense tracts of spruce and pulpwood, poplar to fill the vacant place of basswood, white birch for furniture and other uses, will be opened up, and land rich in all the requisites to prosperity for the individual who is prepared to go out and develop it, and willing and manly enough to go to work. Many hardships will be encoun-

CAMP ON SPRAY RIVER.

MR. N. CAUCHON'S camp during one of his explorations in the Rocky Mountains.

MAKING FLAPJACKS.

The cook (Sid Baker) was twice wounded at Spion Kop—but he is a good cook yet, and can pack anything with four legs. Photo by Mr. H. W. Du Bois.

tered at first, and must be met with stamina and ability to withstand them. Patient, hard work, persistently and intelligently applied, must prevail. There is no calling in life that can be gone into with so small a capital which will be productive of such large results, with so much hope of success, and so conducive to health and happiness.

We are now at the last lake we are to traverse, and from which we get into the river which flows into the Blanche. We can take either of two routes. One is to go by the long portage of a mile or more, which would bring us out at a point on the river below the falls and rapids; or enter the river here and make three portages along its course. The long portage is the one nearly always taken, because the trail is easy, while the three portages along the river are all of the most formidable nature, consequently less used. The guide said, by taking the three portages we would stand a better chance of seeing something, as it was unfrequented and wild. We therefore enter the river, which has a swift current, and we quickly get to a place where it is quite apparent that a portage is to be made, for there is a steep rapid into which we appear to be going on to certain destruction; but a dexterous move of the paddle sends the canoe to the bank, not ten feet from the eddy where it would be impossible to stop. I think the guide did this to try my nerve; but I had confidence in his strength and ability, and did not flinch. We land our things and load up for a start across. The trail leads along the side of a bank, and it is a wild place, indeed. Magnificent photographs could be had all along this river. Rocks, crags and chasm, wild river and dense forest, deep canyon and cascade, you have it all here. We get over the first portage, lose no time in loading our canoe, and off again, for we have quite a stretch of river before us, which gives us a rest, as the strong current takes us along with little effort on our part. This is a sort of compensation for the hard work of the portages. We have some difficulty in locating the next trail, the portage being so little used that it has become almost obliterated; but having found it, we go ahead with the axe to clear away some fallen trees, and finally make the place passable. The path leads along the side of a steep, rocky hill, down through a ravine or swale, and up again over high and slippery ground.

It was on this portage that our first misfortune happened, and the little dog was the victim. I had crossed first, the guide following with our provision box, tent and other stuff on his back—probably two hundred pounds weight—and in going down one of the slippery places his feet slid from under him, the weight of the whole load striking the ground. Unfortunately, the dog had followed the guide instead of me, as it usually did, and being close behind received the weight of the whole load. We missed it at the end of the portage and in going back found its lifeless body in the track, with the head crushed. We carefully laid the remains by the way-side, covering it with stones, and it was a long time before I could shake off the feeling of regret that took possession of me, for the little animal, by its faithfulness, intelligence and playful activity, had gained a warm place in my affections.

The portage over, we start again, and here the river takes a short turn. I must have been getting tired of looking for game and was off my guard, for as we rounded the turn the guide startled me with "There's a deer!" Sure enough, standing in a little grassy place, in full view, one hundred yards distant, was a deer, entirely unsuspicious of danger, quietly cropping the grass. The canoe moved forward as quietly as a log floating down stream, but much quicker my Winchester was ready, and when within thirty yards I took a steady, deliberate aim and fired; but whether I killed that deer or whether I did not this brief narrative will not record.

Proceeding, we have now some five miles of river to cover, which took us along a very nice part of the river, where the country was more open and flat. We had several rapids to get over, which the guide said we would run. We caught good fish on the way, and at one place, where a deep, swift current was running, a splendid chub was landed; it would weigh 2½ pounds. Great sport could be had at this place, as the fish took the

bait sharply and was game to the last. It looked beautiful coming out of the clear water; its deep reddish golden color would delight the eye of any sportsman, and its quality as food was just as good as its personal appearance.

Under the skilful management of the guide we got over all the rapids safely. One of them being shallow, he got out to walk, and incidentally hold the canoe back; and at another I was asked if I could swim. Being assured in the affirmative, he let her go, and we went in great style, getting through with a good bump on a rock as we neared the end, which he said he knew would happen, but the rock was round and would not damage the canoe. We slid over into deep water and safety. The guide is a "rapids expert." We landed at a nice place, a little further on, for dinner, and to take a little rest after the work of the morning; and having before us the most difficult portage, which is over a jagged mountain of rock, at which we arrived in due course. It takes two trips to get over it. We scale the rocky height twice, and, having gotten all our things over, sit down on the rocks, where a little stream of pure cold spring water flows, quench our thirst, and contemplate the scene here presented, which is one of great magnificence and grandeur. To the left, through a low gorge, forty feet wide, formed by the rocks, we have just surmounted, and an opposite corresponding rocky shore crested by a steep woody bank, the stream glides on in glassy and graceful undulating curves over the huge rocks which form its bed, till it reaches the brink of its more rapid descent, there to be dashed against immense boulders; then moves on its silent way out of the large basin here hollowed out.

Leaving the basin, low, muddy shores, covered with bushes bearing the white berries which the bears eat, lead up to the steep banks. There is no doubt about bears being here in plenty; their tracks are thick in the soft mud. The guide says, "If you want a bear we can get one in the evening"; but as we round a little turn in the river his whole being is changed in a moment. The alertness of the hunter is aroused; I can feel his magnetic influence as he remarks in an undertone, "I see a moose—there are two of them—to the left; get your rifle ready and shoot the big one when I tell you." I knew the man I had to deal with, and I knew I would have to shoot. I had revolved the matter thoroughly in my mind previously, and had decided upon my action when the time should come, if it did come. I was now in the presence of big game for the first time—an immense moose cow and her six-months-old calf. The calf stood knee-deep in the water, while the cow was nearly submerged out further from the shore, its great head and shoulders standing out strongly. I saw the head go down slowly, and again come up with the same measured deliberation, having secured a large mouthful of root of the pond lily above referred to. The immense jaws began to work. The head was turned sideways to me, so that its large proportions and the action of the jaws in chewing were quite plain. I was perfectly cool as we rapidly approached; my nerve was as steady as a rock. I was just taking in the sight of these animals in their wild state; I had no intention of killing; so I deliberately sighted my rifle at 200 yards, took a steady aim at its head and fired. "You have missed! shoot again." It had turned sideways now, and I aimed straight behind the shoulder, with the same result. I had fired directly over, as we could see by the bullet hitting the bank. "Fire again!" The animal was walking out of the water now. I fired the third shot, which went in pretty close proximity to its head, but directly over. The moose hurried now, having seen us, and in a moment was under cover and lost to sight. The crackling of a stick once was all we heard, and all was stillness. It is surprising how quietly these large animals move through the thick woods. They might pass within ten yards of you, and you would not hear them. This was the only occasion the guide spoke to me in anything but a respectful manner. He said in a sort of contemptuous way, "I thought you could shoot better than that." A few minutes after the moose were gone he relaxed, and laughed, saying, "After all, it was nothing"—the first moose he shot at he had made just as bad shooting,

and he was just as glad that I did not kill it, as there were only two of us; but if I had given him the rifle there would have been a dead moose there all the same. He said I could say that I had seen the moose, and had a shot at him—that was perhaps enough. I did not tell him that if I were so disposed I could have sent a bullet within three inches of any point on the animal—but such was the case. We were not thirty yards from it. We let the canoe drift with the stream for a little while, till we had discussed the size and every move of the moose, and our nerves had regained their accustomed balance, for I can tell you that when you see these animals your nerves get on a tension, and a feeling takes possession of you that has to be experienced before it can be understood—it cannot be described.

My object now having been accomplished, we started along in good earnest, and, helped by the swift current, arrived at the conflux of the Blanche River, which is a muddy channel sixty feet wide, and when the mud is stirred up by a freshet its white nature gives a milky white color to the water; hence the name Blanche River. We soon arrive at the head of navigation for small steamers—the rapids, at which point civilization commences and the city (?) of Thomstown is located. We know it is Thomstown, because a pole is stuck in the mud at the side of the bank and a piece of rough board is nailed crosswise at the top, with the word "Thomstown" very badly scrawled upon it in large letters. There is also a good sized house built with rough boards, probably to be eventually covered over with metal shingles and siding. The door is labeled "General Store." Two ugly dogs ran out to dispute our right to land, and the proprietor, a hardy-looking fellow, soon followed to counteract the dogs. I am sorry I did not go to inspect the store, but it was getting late, and we were busy getting our things carried over this our last portage, and we were in a hurry, having carried all but the box of provisions. The guide, left in the canoe, signified his intention to run the rapid, to the astonishment of the native, who is apparently the whole population.

The canoe is quickly afloat, and one or two strokes of the paddle sends it into the swift current. It is helped along faster by rapid and powerful strokes. The guide is a study as he passes the critical point, and he indulges in a chuckling laugh as he shoots out below safely and sends the canoe into the bank. A snapshot of this would have been a gem for magazine illustration. Our things are again loaded, and we start off. It is now 4 o'clock, and we have determined to finish the trip to-night. It is twenty-six miles to the mouth of the river, and four more to the head, thirty miles in all. I shall not say anything about the country hereabouts at present, as it is my intention to give my impressions by the way in my next and concluding letter of this series, and in which I hope to be able to give some information for intending settlers, or those desirous of interesting themselves in the advancement of New Ontario.

We therefore keep up a good pace for two hours, then land to get supper, and gum the canoe, which has begun to leak after the trials and tribulations of the journey. In an hour's time we are again off, and just here we meet a boat with two men in it, and apparently all their worldly possessions therein. They were settlers looking for their land, with no one to direct them where to go to find it. They had been all day rowing from Leskard, and when they asked me how far it was to Thomstown, and I told them ten miles, they seemed stricken with despair, and I truly felt sorry for them. Tired out, they would have to pass a night in their boat on a dismal, lonely river. What will be their feelings when they arrive at the city of Thomstown?

We settled right down to work now, on and on into the twilight, still on into the deepening gloom, and on into the shades of night, past the clearings of new settlers, where the fires of brushwood and logs being burned would flicker up and lend a little brightness to the way, only to make the darkness more intense being passed—on into dark lanes shrouded by tall overhanging cedars, making the darkness so deep that we can scarcely see our way. The air has become quite cold, and we have to work hard to keep warm in the damp atmos-

phere. It is dreary, and the way seems interminable. The pace is beginning to tell, though, and the country is getting more open. Houses appear scattered along, and good clearings are seen. The country gets gradually more open, and we come to a place called "Judge's," where there is a saw mill, store and several houses. We have ten miles to go yet, so there is no let up. The guide says we are making good time, and will get in sooner than he expected. The steady swinging of our paddles is kept up, and we at last get out of the river and into a marshy channel formed by an island opposite to the mainland. This place is full of stumps and snags. The guide tells me it is called the Devil's Knee. I readily believed him, for such a diabolical looking place could not easily escape some connection with the prince of darkness. Having passed out of this, we are in the open, and the direction of the canoe is changed. There is a heavy mist rising from the water, and I ask the guide how he knows the way, and he replies that he was brought up around here and ought to know it, mist or no mist. The moon is getting pretty old, but it is beginning to rise; it is 1 o'clock. We soon see a low shore ahead. This, the guide tells me, is the meadow lands of the H. B. company, from which they gather a heavy crop of wild hay yearly without the trouble of planting. The island seems pretty long, but we keep plying our paddles till twenty minutes to 2 o'clock, when our canoe grounds on the shore of Quinze River at North Timiskaming, after a steady paddle of six hours and a half from the place where we gummed the canoe. This is the record of our last day, we having started at 7 o'clock in the morning.

It is perhaps unnecessary to say we were a little tired. I soon roused the lodging house keeper, and, having been shown to a bed none to inviting in appearance, was soon under the influence of "nature's sweet restorer." The guide packed up the remainder of the provisions, etc., and trudged home, a mile distant. I was up early, and having rid my face of a three weeks' growth of hirsute covering, and otherwise performed my toilet, felt all right and looked less venerable. The guide turned up about 10 o'clock, and I got him to secure a good-sized skiff, and after dinner put my traps aboard, and we rowed across to Haileybury, some thirteen miles, in order to be able to catch the down steamer the next day, and so on till I reached home, having been away exactly three weeks.

The other section of the party, Mr. and Mrs. Beworth, did not arrive at the Head till two days later, and were obliged to wait over till the following Monday, as the steamer only goes to the Head once a week. I learned later that they had a very pleasant trip, and had gone off the route to an isolated lake, and pretty nearly saw a moose—at least they were sure that they were in pretty close proximity to one, because they thought they heard it squeak. I am certain both the lady and gentleman will feel better for the outing. When I last saw Mrs. B. she was looking splendid. It is true that the city complexion was ruined, but in its place was a good brown substantial color, charmingly becoming, but not intense enough to hide the good sanguine color beneath. Mr. B. seemed to be enjoying life immensely, a somewhat anaemic look had entirely disappeared from his countenance, and he was in robust health. After parting we missed his cheery call, "Say, boys, can't we put in here to get dinner?" I hope to have the pleasure of meeting them again some time.

The guide has since departed north to Abitibi, and will penetrate still further, there to hunt during the winter, and not return till next June.

The Sonne Tent & Awning Co., of Craig Street, Montreal, have this spring issued a very interesting and useful catalogue. Those who contemplate camping out should write for this catalogue. Boat-building is an important feature of this firm's business, and promises to develop very materially as the season for boating advances. The Sonne Co. is now building several large and beautiful craft to order. Estimates for the building of boats, etc., will be furnished upon request.

Lake Timiskaming.

BY HELEN M. MERRILL.

In every country, and particularly in one like Canada possessing vast belts of unsettled territory, there are those whose cry is for unbeaten paths, regions traversed by none or few ; and so when we first gave serious thought to going up Lake Timiskaming we saw visions and dreamed dreams of bark canoes and Indian guides, and tents and camp fires, with fish and dough-gods for diet, and balsam boughs and blankets by night on peaceful lake shores, or beside sweet-voiced river rapids. Imagine then the surprise on learning on our way north that the day in which tourists were obliged to travel on Lake Timiskaming by canoe was already a far cry distant, the wonder indeed increasing on finding at Timiskaming Station, at the southern extremity of the lake, a trim steamer with spacious decks, saloon and state-rooms, and electric lights. Under the circumstances canoes and Indian guides would have been a piece of gross affectation, so we were spared the inconveniences of camp-life for which the novelty of a canoe trip over these waters would have atoned, had this little craft been the only means of transportation.

Lake Timiskaming, on the inter-provincial boundary line (Ontario and Quebec), lies some thirty-nine miles north by northwest of Mattawa, a branch line of the C. P. R., which follows the cliffy shore of the Ottawa River from Mattawa to Timiskaming Station, connecting at the latter point with the steamer "Meteor," making tri-weekly trips to North Timiskaming, on the Upper Ottawa, some seventy-five miles distant. The Ottawa, with its wild rapids, its sheer cliffs of granite, and green mountains, is a fitting approach to the perfect loveliness of the lake. At the station, from a pine-crowned hill-top, an excellent hotel overlooks both lake and river, the rippling waters of Timiskaming, the high green hills on the opposite shores, and the white-churning rapids of the Ottawa, the Long Sault, which extends some six and a half miles southward.

Timiskaming means "Where there is deep and shallow water," the bays being shallow, the cliffs on the margin in other places falling hundreds of feet beneath the waters.

There are a great many persons to whom all bodies of water look alike, dimensions excepted, one lake, for instance, quite resembling another. In each is seen only water and shore, no distinguishing features in the element and its environment being recognized. On the other hand, there are those to whom these objects present individual characteristics, as do faces of men, which differ peculiarly one from another. While the former predominate, no one, I think, would associate Lake Timiskaming with any other lake in the wide world. Timiskaming with its blue, transparent waters, its cascades, and song-birds ; Timiskaming girt round with green hills and granite walls, gull-haunted, and mysterious with northland legends peculiar to wherever the red huntsmen have plied their paddles or set their traps. Comparison has been made of this lake with the Saguenay, and a similarity discovered to the extent that in either case the chasm has been created by earthquakes, the latter being not a river but an inlet of the River St. Lawrence. Along the Saguenay's frowning cliffs no song-bird, nor any living thing is to be seen, nor do its dark and gloomy waters, which have been likened to those of the Dead Sea, churn to foam about a steamer's wheels.

With the exception of the shores of the bays, the environing land is invariably high, in many places precipitous, varying from fifty to over two hundred feet. Here and there are cliffs which fall into the lake with that sheer-down effect suggestive of great depth of water ; as is indeed the case, the waters reaching a depth below sea-level. In the vicinity of the Montreal River a depth of four hundred feet is reported, while off the mouth of the Kipawa River there is said to be a depth of 1,200 feet,

or over 600 feet below the level of the sea.

Although the shores of Lake Timiskaming have been accessible by rail and steamer for a few years only, several villages which are the centres of prosperous settlements, now lend an atmosphere of civilization to the surrounding country. On the Ontario side, well to the north, are Haileybury and New Liskeard. The former, which consists of a dozen houses, hotel, store and two churches, and a telephone system of which the lake people are pardonably proud, is the centre of an extensive farming section. It is also the lake meterological station. New Liskeard, four and a-half miles to the north, is increasing so rapidly in population that one is liable to err in giving figures. While its population in July last had reached 400, it has since that time increased to the extent that it has recently been made a town. It is a very popular point of settlement, on the shore of what is known as the Timiskaming District, were the farm lands have been taken up to a distance of thirty miles from shore. Many of the veterans of '66 have had their land grants located here.

A number of fine horses have already been shipped to this district. On the up trip we ran in close to shore below Thornloe, putting out two long, heavy planks, over which, while scantlings were held in place as guards, two handsome, strong, young horses were led ashore by their owner. Plunging over a few small rocks at the shore's edge to a grassy slope beyond, they at once began grazing, and seemed quite at home. When this method of landing is impracticable, passengers are transhipped in a "pointer," a dinghy pointed at either end, and sufficiently large to accommodate ten or a dozen men, and an incredible amount of baggage, the horses being put off into the lake to swim ashore. As yet there are wharves on the Quebec side only, at Timiskaming Station, Haileybury and North Timiskaming.

A first afternoon on Lake Timiskaming, if the weather be fine, is one never to be forgotten. On account of many headlands, and occasional islands, it seems as if there were a succession of lakes rather than one, the only point from which a shoreless expanse of water is obtainable, being off Fort Timiskaming, below "The Narrows." We arrived here before sunset. The sky for some distance above the horizon was brilliantly suffused with pink in which floated a few rose-colored clouds. Above these the sky was blue as an April sky, and in the lake the painted heavens were duplicated, and on looking through a gateway between dusky green points, as through a gateway to the sea, the eye followed the reflected glow up an enchanting, illimitable vista. After sunset, slowly, very slowly, as is the way with the north, the colors faded and the shadows of evening closed in, the sky growing peculiarly blue, northern lights appearing. Then recurred to me the belief of a singular old man, that the Garden of Eden lies in the north, at the Pole, and that the northern lights are flaming swords placed round it after the banishment of Adam and Eve to keep human beings out. If there be any truth in this let us hope that those who have not returned from Arctic explorations have in some wise gained admittance to this Polar paradise.

North Timiskaming, an Indian reserve of some 600 population, a few whites included, is situated some four miles up the Quinze, or Upper Ottawa River. On account of the "Meteor" having considerable freight to tranship in her dinghy to Thornloe, we signalled the tug "Comet," and came on to this port on her, and as she was not sure of her course, such a time we had finding and losing the channel, or snye, the popular name for channel on the lake, and running aground. This diversion began about a mile from the mouth of the river where its deep channel winds through shallows, where beaver meadows, from which tons of hay are mown annually, appear toward the end of August, at the period of low water. We ran aground twice going up. Returning we almost grounded again, being misled for the moment by a gull which we mistook for a buoy.

On disembarking at North Timiskaming the first thing which attracts one's attention is a notice in Indian: "Kawin Sakaswa" (no smoking), in

bold capitals on a store house. This port as far as one can see from the landing consists of little more than a shop where various goods may be purchased, including Indian moccasins and mitts made on the reserve, and guides and canoes engaged. To many it is a point of no little interest, since here begins the portage route to Abitibi House, the route traversed by the Abitibi fur brigade. The distance to Lake Abitibi is over a hundred miles by canoe, the only means of travel, the usual time taken by the trip being fourteen days. The scenery on the lakes, rivers and portages is unusually interesting and beautiful. The Height of Land occurs, on this route, between Opasatika Lake and Lake Matawagogig, this water-shed, singular as it may seem, being swampy, which necessitated its being planked by the Hudson Bay Company to facilitate the transportation of their furs and supplies.

Down the northern slope, as the elevation decreases, the climate in summer attains, it is said, to a higher temperature than that of southern Ontario, the decrease of elevation over-balancing the increase of latitude. There the waters flow from Lower Lake Abitibi through Abitibi River to the Moose, and thence to James' Bay, the Abitibi at its junction with the Moose being three-quarters of a mile wide.

On Lake Timiskaming the mean temperature during June, July and August, is under seventy. The elevation of this district, and its mountains on which pine and balsam grow luxuriantly, account for its possessing a climate antagonistic to disease, particularly epidemic and pulmonary, it being commonly reported that, Indians excepted, the lake people die of old age. Notwithstanding its position and elevation, Lake Timiskaming opens in April, navigation beginning then, and remains clear of ice until December, occasionally until late in the month. The explanation given for this is that the deep waters become heated to a considerable depth during the summer, and continually come to the top, thus preventing the lake freezing over earlier.

On the return trip down the lake, after tea on board the steamer, we took a walk through the pretty French village of Ville Marie, formerly Baie des Peres, situated along the curve at the head of beautiful Kelly Bay. Here the Oblat Fathers have a Mission. The church and priest's residence, and also the hospital and school, which are under one roof, and in charge of the Grey Nuns, are fine red brick buildings, the latter having a chapel in white and gold. On our making bold to seek admittance to the hospital and school, the nice-looking nun who opened the door inquired :

"*Parlez-vous Français, mademoiselle?*"

At which I managed to speak just enough French to inform her that I do not speak any. So she motioned us into the parlor, where the Mother Superior, speaking our language, soon appeared, to show us over the building.

Lovely indeed is the village of Ville Marie on a moonlit, midsummer evening. The gardens were full of flowers, roses climbing about the verandahs, and forming bowers, from several of which drifted musical lullabys of young matrons singing their little ones to sleep. Everywhere outside of the gardens, alsike clover, the sweetest clover growing, blossomed, perfuming the air exquisitely with its fragrance ; while on the outskirts, from the hills and glens, the thrilling song of the White Throat echoed between intervals of expectant silence.

Fort Timiskaming, situated not far south of Ville Marie, was once an important post of the Hudson Bay Company. The chief factor of the district resides here, the business being carried on at Ville Marie. It has already become a favorite summer resort. Here and elsewhere on the lake shores and islands, Americans are beginning to pitch their tents for a season of rest and recreation. To me the most attractive spot on the lake, as a camping ground, is the little flat bit of land, a mere interval in the green wall of the hills, at the mouth of the Kipawa River, a breadth of snow-white, tossing rapids being all that is seen of this river in passing. Here I should like to pitch my tent in June, for the summer.

West of Lake Timiskaming lies a labyrinth of beautiful lakes and streams, in which are many islands, waterfalls, and rapids. Lake Timagaming (lake of deep waters) the fabulous paradise of the Algonquins, is the chief one in the

group, and contains some thirteen hundred islands. An excellent portage route through this labyrinth begins at Haileybury.

In various localities in and around these extensive northern lakes, fish and game in variety are abundant, such as whitefish, bass, dore, grey and speckled trout, pike (kenonji), and maskinonge (maskinonji, big, lanky pike); moose, deer, bears, wolves, lynx, beaver, otter, mink, martin, foxes, hare, duck and partridge. Canoes and Indian guides to the different hunting grounds may be engaged at North Timiskaming, Haileybury, and Timiskaming Station.

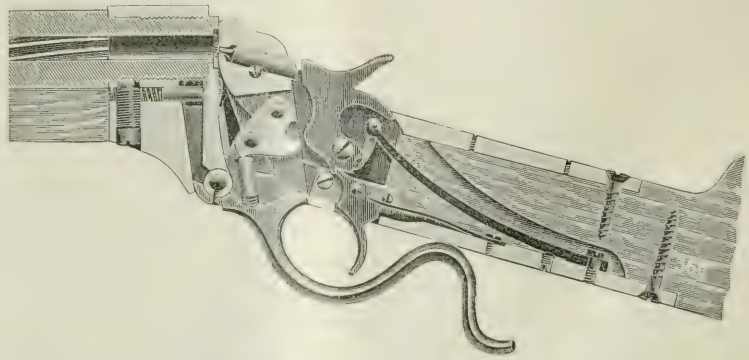
There is an old saying to the effect that the longest lane has an ending. So, it is to be regretted, has a pleasure trip, and this Station is the homeward turning point to North Bay, the gateway from the happy northlands, through which on an evening when Lake Nipissing was scarcely perceptible through the shadows, we passed reluctantly, with hearts harking backward. The final, parting words, which are from Swinburne's "Reginald," a characteristic description of England, apply aptly to lovely Northern Ontario:

"But I just ask you where you'd find its like?
.....Take the streams away,
The country would be better than the south
Anywhere: give the south our streams, would it
Be fit to match our borders? Flower and crag,
Burnside and boulder,..... you don't
Dream you can match them south of this?"

And in reference to the streams:

"Bright and tawny, full of fun,
And storm and sunlight, taking change and chance
With laugh on laugh of triumph. Why you know
How they plunge, pause, chafe, chide across the rocks
And chuckle along the rapids, till they breathe
And rest and pant, and build some bright deep bath
For happy boys to dive in and swim up,
And match the streamlet's laughter."

The J. Stevens Arms & Tool Company, Chicopee Falls, Mass., have been working for the past two years on a new drop forged, sliding breech-block action to supplant the old style action that they have been using on their Ideal rifles for many years, and have perfected what they believe to be the best, simplest and most durable action yet brought out.



Mr. H. M. Pope, the well-known rifle expert, is more than satisfied with it.

The strength of this new action permits the use of the modern heavy charges; its ease of manipulation is a conspicuous feature. The popular lever action is retained, but greatly improved, with sliding breech-block. The dropping of the lever leaves a free inspection of the barrel from the breech, permitting loading quickly. Bringing back the lever raises and carries forward the strong breech-block with a rocking motion which prevents any possibility of buckling the shell, thus properly seating the cartridge in the chamber and finally securely locking the action ready to be discharged.

The standard length of barrel for rim-fire cartridges will be 24 inches, weight 7 pounds; for center-fire cartridges, 26 inches, weight 7½ pounds, and made in all the standard calibers.

All of the Ideal rifles, No. 44½ to No. 24, will be fitted with this new style frame and action. They will continue the manufacture of the No. 44's with the old style action, but in 22, 25 and 32 rim-fire and 25-30 and 32-20 center-fire calibers only.

CAMP IN BURNT TIMBER.

This photograph was taken by Mr. Howard W. Du Bois, near the Simpson River, Rocky Mountains.

IN THE ONANAGON, B.C.

A home in the finest climate of the continent. Peaches, apples and grapes grow to perfection in this favored valley—and the shooting is superb.

Great Bear Lake.

BY PROFESSOR H. A. CONROY.

I will try to interest the readers of ROD AND GUN by giving an account of the Upper Mackenzie and Great Slave Rivers; the Great Slave River is a continuation of the Lower Peace River. I have skirted very nearly two sides of Great Slave Lake. That part of the country lying north-east of the Hay River is known as the buffalo country. There are supposed to be about 1000 wood buffalo roaming over an immense territory. They are protected by a close season of seven years. One would think that they would multiply very fast, but the Indians tell me that about 80 per cent. of them are destroyed by timber wolves.

The timber wolves of that country, as nearly as I can understand from the pelts, are fully one-half or two-thirds larger than the Ontario or Quebec wolf. As a usual thing, they travel in twos; they are sometimes seen in threes. The Indians tell me they have never seen more than three together. The wolf is the hardest of the animals of that country to trap, so the Indian claims. They are very wary of a gun.

On the northeast shore of Great Bear Lake is what is known as the great barren lands or the musk-ox country. I have had conversations with the Indians many times concerning the musk ox, and they say that the animal will never diminish much in numbers. The hunters cannot follow them more than three or four days into the barren lands; they generally hunt them with dogs. Around the shore of Great Bear Lake their pelt is considered prime in the month of October. After that time the undergrowth of fur becomes longer and longer until it falls off about April.

The reindeer come south to the north-east end of Athabasca Lake every year. They are a small deer, weighing from 80 to 100 pounds, with long antlers. They have never been known to come further south than Fond du Lac, and they come in countless thousands. Around the last days of February, the Indians go about three days' march into the interior of the barren lands to meet them. The deer turn north again, followed by the Indians, who must kill thousands of them. I have seen tons of reindeer meat.

The fish in the far northern lakes are in abundance; whitefish, salmon trout, grey trout, speckled trout, jackfish, and a fish called the unknown.* This unknown is a beautiful fish with a kind of silvery sheen over its body when taken from the water. It is commonly called the Mackenzie River salmon. One thing peculiar to my mind is that there is no real salmon in the Mackenzie River. There is a fish called the bluefish† found in the Mackenzie River. It is about the size of a mackerel, very gamy, and takes a fly as readily as a speckled trout. The Mackenzie River is the only water in which I have seen this species.

* L'Inconnu (*Stenodus Mackenzie*, Richardson).
† Artic grayling; Poisson bleu (*Thymallus signifer*, Richardson.)

"The Complete Campers' Manual," or "How to Camp out and what to do," is the title of a very interesting and instructive booklet published by "Buzzacott," complete camp outfitter, Racine Jct., Wis., and Chicago, Ill. Copies of the book can be had on receipt of 10c. in coin or stamps. It is well worth many times this price. From cover to cover the booklet is replete with the most valuable information, which every sportsman will appreciate. What to take and what not to take on a hunting or camping out is a perplexing problem to the average camper. It is the aim of "Buzzacott" to solve this problem.

Anglers may procure the "Missassaga" bass fly from T. W. Boyd & Co., 1683 Notre Dame Street, Montreal.

N.B.—Do not be without a few of these in your book next time you go bass fishing.

Our Medicine Bag.

Eight pages have been added to ROD AND GUN IN CANADA this month. Its growth has been most satisfactory. We hope, and expect, to add to the size of the magazine from time to time.

Mr. Graves, of Ottawa, has sent ROD AND GUN two of his celebrated "Missassaga" bass flies, with and without jungle cock cheeks. This is undoubtedly one of the best flies for bass, especially in shady forest waters. It is a very taking fly, and many of our friends tell us they have found it simply irresistible, the bass probably taking it for a luscious green frog.

Catalogue Number 70 of the Winchester Repeating Arms Co. has reached us. It is, as usual, full of information of the greatest interest to riflemen. The new guns described in it are the Model 1886 rifle for the .33 caliber Winchester smokeless; the Model 1895 rifle for the .35 caliber Winchester smokeless; the Model 1902, single shot rifle, for the .22 caliber, and the Winchester breech-loading saluting cannon. In addition, there are some details of trajectories and penetrations, and a full description of the high velocity cartridges made to suit the new rifles before mentioned.

We omitted to state last month that the gentleman who discovered the birch-bark letter, of which Mr. C. C. Farr sent us a translation, was Mr. Stephen P. M. Tasker, a Philadelphia sportsman. Mr. Tasker was carrying out an exploration on the Height of Land when he discovered the letter in question. By the way, how comparatively few have visited that interesting and mysterious Height of Land, whose sinuous ridge divides the waters of the Arctic zone from those of more temperate latitudes, and which extends from Hamilton inlet, in Labrador, to the Rocky Mountains? Thousands have crossed the Great Divide between the Atlantic and Pacific waters, but how small a company have gazed upon the streams flowing into the frozen north. All honor to the daring, enterprising spirits who have led the way into a region that will some day palpitate with busy life.

The Canadian Camp Fire Club seems to have been launched in a very auspicious way. It is the strongest of its kind, and its officers and members are well-known sportsmen of the United States and Canada. The eligibility for membership is having camped out in Canada. Once a year there will be a great dinner in New York, and some of those who have not been so fortunate as to enjoy open air life are to be invited, and will probably be made to see the error of their ways. The Club now has a membership of three hundred, including many women.

The Winchester Repeating Arms Co. have just issued a very useful little manual, The Trap Shooter's Guide, which will be sent gratis to all applicants. The scientific spirit of the age is well illustrated by the demand that evidently exists for such hand-books as the one in question. Within the memory of men yet living, the ordinary field shot was content with "two fingers" of a load for ordinary work, and may be an extra "finger" or so for long shots and tough fowl; now he requires to know the correct load to a grain, and that is just what this little book will tell him. There are, in addition, the trap shooting rules, and a full description of the various systems for dividing purses at tournaments. Moreover, some sayings from the trap shooters' philosophy have been interwoven in the text, giving to the work a high moral flavor, and one that will doubtless be appreciated by shooting men. For instance: "Raise thy gun often, but thy voice seldom."

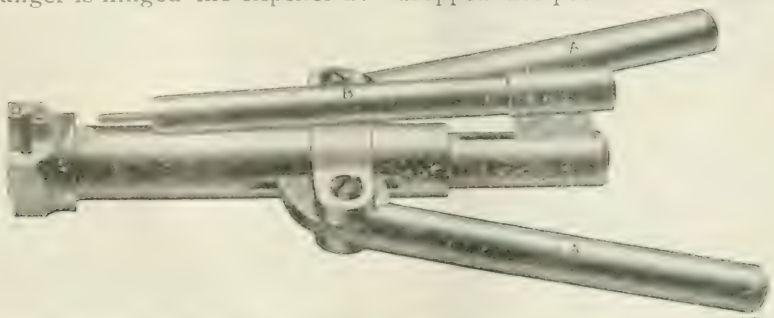
The April copy of Baily's magazine (Vinton & Co., 9 New Bridge Street, London, E.C.) contains an admirable article on polo, by Captain E. D. Miller,

the famous English player, which discusses at some length the sweeping changes that were made in March by the Hurlingham Committee in the Rules of Polo. Captain Miller is one of those who were classified as first class players by the committee, and he is consequently entitled to speak as one having authority. By the bye, all the American players on the International team of last year have been included in the list; this shows how rapidly American polo is coming to the front. Salmon fishermen will be interested in Mr. W. Murdoch's "Gloaming Salmon Angling." Mr. Murdoch is, unless we are mistaken, the well-known Scotch fisherman who hails from Perth. "With the Border Mew" is the title of a contribution by Mr. W. H. Ogilvie, and as it refers to a type of fox hunting that is but comparatively little known, should attract considerable attention among hunting men.

Fores' Sporting Tales and Sketches for March is, as usual, entertaining, and may be taken up to while away an idle hour, with the certainty that an Anglo-Saxon sportsman, no matter where he may dwell, will find something to interest him. We hope that the Editor of Fores' will give as much space in one of his forthcoming issues to Canada as he has given to South Africa in that of March. We have no baboons in Canada, but we have grizzly bears, and as material for blood-curdling yarns, the grizzly is rather more than a match for the baboon that carried away Elsie Myers in Unicorn's contribution to this magazine.

The eighth annual report of the Forest, Fish and Game Commission of the State of New York has been received. It is not so elaborate as its predecessors, but contains a great deal of useful information, especially upon forestry matters. We miss the magnificent work of the late A. N. Cheney, and it will doubtless be difficult for the Commission to replace him.

The "Stevens-Pope" Re and De Capper is the quickest and most serviceable tool for the purpose. The body C is hollow and contains a plunger for seating primers a spring for returning parts to initial and position. To the rear end of this body are fulcrummed levers—A A—which engage said plunger. To the rear end of this plunger is hinged the expeller B. over shoulder C. On removing thumb, the shell drops down so the head of shell falls behind shoulder C, which prevents shell shifting position when levers A A are closed expelling old primer. The shell is then withdrawn and reversed with one motion, and head of shell dropped into slot D, a primer is then dropped into pocket E and levers again



The forward part of the body has a slot D for receiving head of shell for capping, and a slot E into which primer is dropped, coming to exact position to enter primer pocket.

The tool is held in the palm of hand with levers A A wide open; the thumb is pressed on the rear end of expelling plug B, lifting same so the shell is slid onto it freely, the head of shell passing closed, seating the primer. This tool is very light, extremely powerful, and subject to very little wear. It does not soil the hands as others do. Will be made in all sizes. Standard calibres now ready. Price, nickel plated, $1.50. Manufactured by J. Stevens Arms & Tool Company, Pope Department, Chicopee Falls, Massachusetts.

CONTENTS

May, 1903

Communications on all topics pertaining to fishing, shooting, canoeing, the kennel and amateur photography, will be welcomed and published, if suitable. All communications must be accompanied by the name of the writer, not necessarily for publication, however.

The Official Organ of the Canadian Forestry Association.

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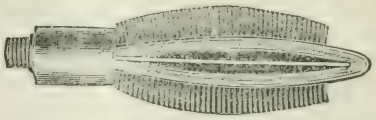

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If you send us two new subscribers we will send you your choice of a Bradley Shot Gun Sight, valued at ninety cents; or a Pioneer Gun Cleaner, valued at ninety cents.

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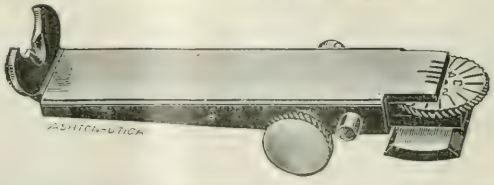

If you send us four new subscribers we will send you a New Savage Hunting and Target Sight, valued at $2.00.

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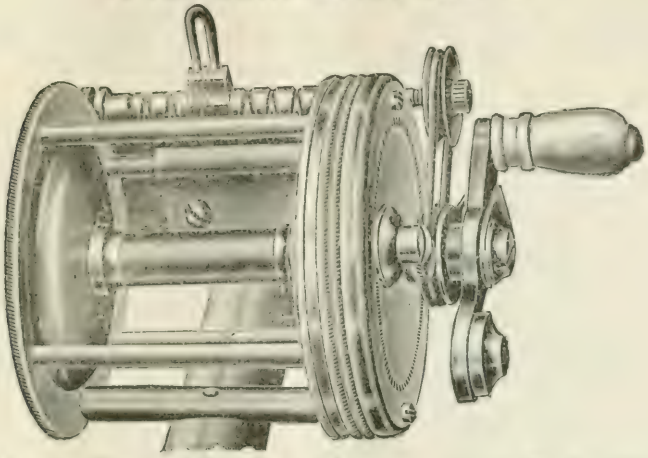

A splendid Jewelled Bearing 60 yard Patent Independent Level Winding Device, valued at six dollars, strong cut gear, light running, durable, will be sent for ten new subscribers to Rod and Gun in Canada.

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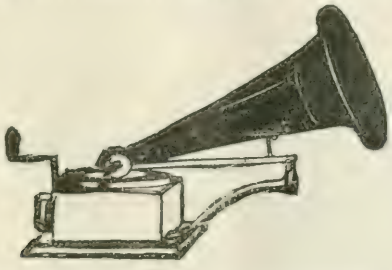

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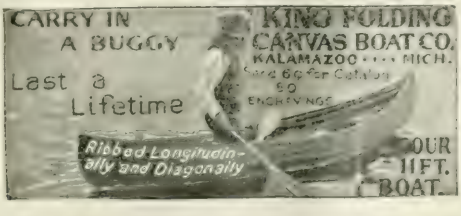

To anyone sending us eighty new subscribers we will send a King Folding Canvas Boat, valued at $40.00. This boat can be carried in a buggy, and will last a lifetime.

THE Bradley Shot Gun Sight

The Bradley system of sighting shot guns is a radical departure from old methods, and makes wing shooting easy and certain. There are two beads, one for each barrel, and instantly attachable to the gun in such a manner that there is no interference with the sight originally on the rib. Shooting at stationary objects or straight away birds, the side beads plainly define the killing circle of the arm since a bird seen between them if not out of range will certainly get a good portion of the charge. But it is in crossing shots that the Bradley sights are the most valuable. All double barrel shot guns cross the central line of sight at about 30 yards beyond which the right barrel throws to the left and the left to the right. Sighting directly down the barrel fired compensates for this, but there is still the diffiuulty of judging how much to lead crossing birds. And some shooters are never able to get the knack of doing this correctly. With the Bradley sight it is only necessary to aim at a left flyer down the left barrel and fire the right (or the reverse in case of a bird crossing to the right , which gives the proper lead and will almost invariably insure a kill. With this sight any one can very soon become a good wing shot. Sent postpaid for 50 cents. In ordering give gauge of gun.

C. L. BRADLEY, Clarksville, Tenn.

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Canadian Patent for a good novelty in sporting goods line. Splendid article for a small manufacturer. For particulars, address.

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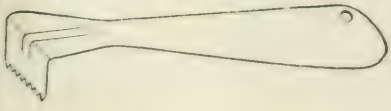
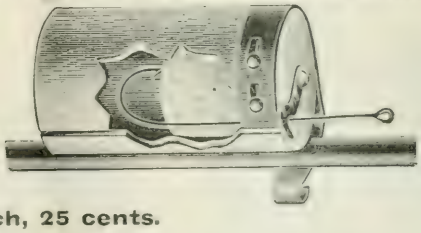


Spring Lock Fish Hook Shield



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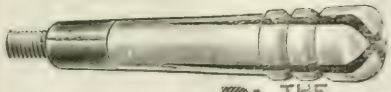
By Mail, Each, 25 cents.



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30 cents.

It is very strange the trouble-saving HOOK SHIELD has so long escaped the attention of inventors. It fits on to any Rod or Pole, holds any hook, with or without bait, in a vise-like grip, locking securely to the pole that dangerous, dangling, annoying fish hook when not in use. Weight, ½ oz. Can be applied in five seconds.

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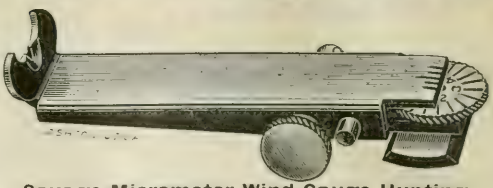

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For all kinds of Shooting and for all kinds of Rifles.

THIS new departure in the well-known Buck-horn pattern overcomes all previous sighting difficulties—finely threaded screws allow of adjustment in any direction to one thousandths of an inch. Constructed of the finest materials, simple and strong. Discard your old sight, which neither permits of side adjustment nor of accurate elevation, and use a modern sight on a modern rifle. Send for circular.

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Telegram

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Kansas City, Mo.,
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M. Diefenderfer and ***DUPONT SMOKELESS*** *won the Grand American Handicap. Hensler second; Luther Squier tied with third; eight men divide fourth; six of them use* ***DUPONT.***

(Signed) F. J. Waddell,
Agent.

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The preservation of the forests for their influence on climate, fertility and water supply ; the exploration of the public domain and the reservation for timber production of lands unsuited for agriculture ; the promotion of judicious methods in dealing with forests and woodlands ; re-afforestation where advisable ; tree planting on the plains and on streets and highways ; the collection and dissemination of information bearing on the forestry problem in general.

Rod and Gun is the official organ of the Association, which supplies the articles relating to Forestry published therein.

This Association is engaged in a work of national importance in which every citizen of the Dominion has a direct interest. If you are not a member of the Association your membership is earnestly solicited.

The annual fee is $1.00, and the Life Membership fee $10.00.

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R. H. CAMPBELL,
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May in the Laurentians.

Lake Superior (St. Faustin, P. Q.)

SHOULD you have fished Laurentian waters, you may skip this page for you know, already, they yield the best early trout fishing. But if the delights of a first visit are as yet in store, be assured that nowhere within easy reach of the big cities of the United States may better sport be found, a more exhilarating air breathed, or such gloriously wild, satisfying, scenery enjoyed.

Gorge of the Devil's River.

Notch of Devil's River.

A run of four hours from Montreal will carry you to the heart of this unspoilt region; to lakes where the deer drink, the ducks rear their young unmolested, and in which lusty trout leap madly at the fly.

Trembling Mountain.

For additional information apply to any agent of the

CANADIAN PACIFIC RAILWAY,

or to

ROBERT KERR, Passenger Traffic Manager, MONTREAL.

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