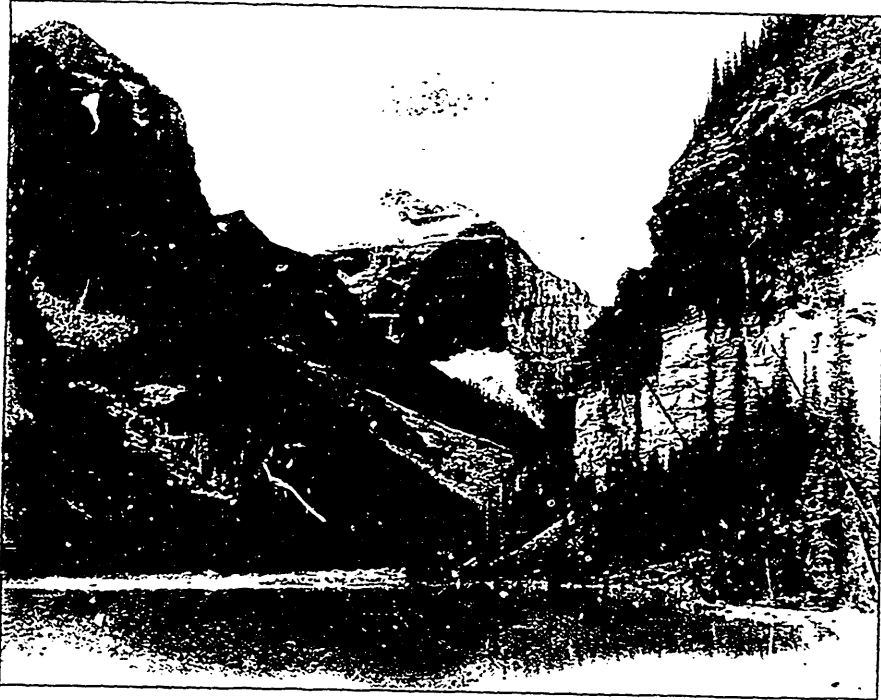


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ROD AND GUN IN CANADA

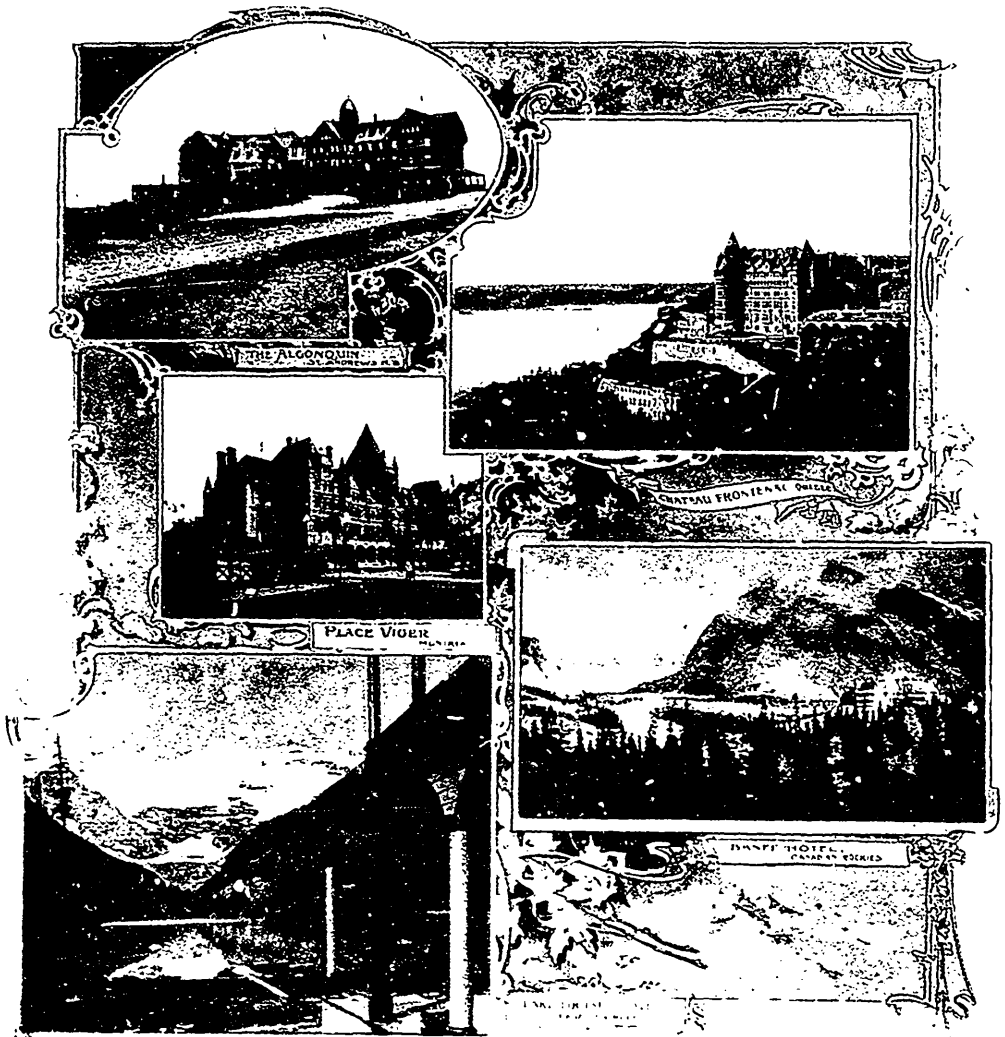


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A NOBLE HEAD.

British Columbia bighorn ram, now in the Provincial Museum, Victoria

ROD AND GUN IN CANADA

VOL. V.

MONTREAL AND TORONTO, NOVEMBER, 1903

No. 6

Great Slave Lake.*

BY W. J. McLEAN.

In order the better to convey to your minds an idea of the localities visited by me on my late journeys to the far north, though presented to you in a very inadequate manner, I will give you an account of the route followed by me on my way to the remote region referred to.

From Winnipeg to Edmonton, a distance of 1,032 miles, I travelled in comfort and ease, by railway. Edmonton is a flourishing town with several good hotels, especially the Alberta, and several stores, some of which are not far short of any in Winnipeg. There are also two or three banking houses. I think I may venture to say that Edmonton has a great future before it as a commercial centre. From Edmonton to Athabasca Landing, 99 miles, over a rolling country interspersed by small rivers and lakes, I travelled in a waggon. From this point I embarked on the Athabasca in a small open boat, and travelled 165 miles without any impediment, down the swift river to the Grand Rapids, justly so-called, as they are in the season of high water stupendously grand. Here on a small island, on either side of which runs the raging rapids, there is a tramway of about half a mile long, built and operated by the Hudson's Bay Company for the purpose of their own trade in the northern districts. On this tramway I had my boat and cargo taken over, and again

embarked at the foot of the rapids, and proceeded through a series of rapids to Fort McMurray, a distance of 87 miles. From this point to Chipewyan on the Athabasca Lake, a distance of 185 miles, the river runs smoothly to its outlet in the above lake. From Fort Chipewyan, three or four miles is travelled on the lake before entering the river, the first 50 miles of which above its confluence with the Peace River is called by the old voyageurs, Riviere de Roche, from its rocky character. After its junction with the Peace River it becomes the Slave River proper, a very large and swift river, on to Smith Portage, distant from Fort Chipewyan 102 miles. On Smith Portage, a distance of 16 miles, there is a waggon road constructed by the Hudson's Bay Company, over which they now do their transport work with oxen and carts. Formerly this 16 miles of the route was got over by following the river, and making five comparatively short portages, one of which, however, the Mountain Portage was a particularly arduous one, owing to the very high and steep sandy ridge over which it has to be done. It was over this portage route that I travelled. It was not altogether new to me, as I had gone over it several times many years ago. From Fort Smith the river becomes wider, and runs without any obstruction to its outlet in

* Mr. W. J. McLean, Ex-Chief Factor of the Hudson's Bay Company, read this interesting paper before the Historical and Scientific Society of Manitoba, and as it is one of the best descriptions as yet available of a region that will soon be better known, and which will change its character very rapidly, we have much pleasure in publishing it as requested by one of our western correspondents.

Great Slave Lake, a distance of 190 miles, making a grand total of 745 miles by water from Athabasca Landing. Along the river there are some very fine stretches of timber. The south and south-western portion of Great Slave Lake is, comparatively speaking, void of any particularly attractive scenery. That, however, is not the case with the north and north-eastern part of it. After leaving Fort Resolution, going north for a distance of 60 or 70 miles, one enters an innumerable cluster of rocky islands, and following the canoe or the Indian route, one requires to be particularly conversant with the locality in order to be able to follow the proper channel, as in many places the islands are so densely situated, and forming so many narrow gaps of almost identical appearance, that only an experienced and close observer can follow his proper course, the loss of which might lead to much annoyance and even to serious consequences. As one travels north along the west shore of the lake and among the islands, the red granite ridges which stretch along the lake shore, with here and there crumbling frontages, gradually rise to an imposing height. Some of the headlands and cliffs along this route stand perpendicular out of the water to a height of 100 to 200 feet, and I must admit that when sailing close in beneath some of those stupendous cliffs, I felt awestruck by their great and towering height above me.

In the face of one of those cliffs, about 120 feet above the water, I observed a golden eagle's (*Aquila crysaetos*) nest. The young bird, not yet fully fledged, was sitting composedly on the brink of it, regardless of any danger to its safety beyond an apparent suspicion conveyed by the alarming whistle-like calls of the parent birds, which were soaring far above it. My guide, who was over 40 years of age, told me that since his earliest recollection, and probably long before, the eagle hatched there every year. All through this portion of the lake, it is very deep, and at the Eagle's Cliff, as it is called, and of which I have just spoken, the natives claim that they failed to find bottom with a sixty fathom line.

About forty miles north from this point are the narrows, where the Hudson's

Bay Company many years ago used to have an outpost, and is known as Fond du Lac. Quite a strong current runs sometimes south and sometimes north, here. The water is crystal-like clear, and ice-cold, even in summer. I had a net set here one night, which was only 100 feet long, and in the morning we got about 240 pounds of fish out of it, consisting of seven different kinds of exceedingly fine fishes. There were three species of speckled salmon trout, varying in weight from seven to thirty pounds. This portion of the lake abounds with a variety of fish, some of which, owing to the temperature and the purity of the water in which they subsist, I believe cannot be excelled in any part of the world. I have stood on the rocks at the outlet of some of the many comparatively small rivers falling into the lake from the steep sides of the mountains bordering upon it, and watched the speckled trout in large numbers passing to and fro in their crystalline abode, and often thought how many of the sport-loving tourists in the old country would feel delighted to have such an opportunity for satisfying their desire for the pleasure and sport which the fishing rod and tackle can afford them.

These mountain torrents, in their impetuous race down through the rugged rocky channels in which they travel to rest in the quiet level of the great lake into which they disappear, look in their mantle of sparkling foam like a narrow drift of snow, or a white streak running serpent-like up the steep sides of the hills over which they bound from the level plateaus beyond, and can be readily seen here and there through the sparsely wooded sides of the mountains at several miles distance.

At the mouth of one of the rivers to which I have just referred, there is a small estuary, which the Indians of that region regarded with much veneration, as they claim they need not ever pass it hungry during the summer season. I have seen Indians (and did so myself) quietly approach this estuary with their canoes and set a net across it at the end next the lake, and then go to the outlet of the river, and forming their canoes into line, drive a large number of beauti-

ful salmon trout into their net. This particular river is about seventy miles north of Fond du Lac, or the narrows, where Mr. Waburton Pike wintered in 1889. The little wooden hut, in which he passed the winter was still a souvenir of his sojourn there.

I was still travelling slowly along the shore of the lake, which from this point lies in a north-easterly direction. It was now drawing near the last days of July and I was looking forward with eagerness for the arrival of the reindeer and caribou (*Rangifer caribou*) from the coast and barren lands, to where they had gone in the spring to fawn, and to be more free from the pest of flies that would worry them to a much greater extent during the summer season farther south. My guide told me, upon my making inquiry, that the usual time for the arrival of the deer was about the 12th of August. The weather was beautiful, with some days excessively warm; the nights were clear and balmy, and the stars, which owing to the very short time the sun dipped below the horizon for a month and a half previous, could not be seen, were becoming visible again at night. The remoteness and quiet solitude of the surroundings inspired one with a feeling that nature had ceased to exist, and the occasional shrill though melancholy call of the great northern diver (*Urinator imber*) (Gunn), was a relief to the wakeful ear at night.

In this part of the lake, and on a good sized island, stands an imposing huge column of red granite, rotunda shaped, and presenting a perpendicular facade about one hundred and thirty feet high, and probably three hundred yards in circumference. On the top of this column of apparently solid rock, is a small lake, but which can only be seen from the heights back from the lake shore. No one has ever been known to get to the top of this wonderful structure by nature. The natives regard it as supernatural, and are inspired with a superstitious awe of it, as they believe it to be the abode of some genius which it is not safe for them to approach.

Now the much wished for notable 12th of August (a notable day in the Highlands of Scotland) arrived, and with it, in compliance with their instinct, the

deer arrived also at the lake; and the Indians were at their different established points of vantage to meet them, and to give them—not a friendly—but a deadly reception. I must, however, admit that they were all, men, women and children, overjoyed at (to them) the very important event, as they now saw in sight for them, both food and raiment, which cost them very little to secure.

Now the deer shooting, or more correctly speaking slaughter, began in earnest, and the crack of the rifle could be heard on every side. Not only to the hunter and his rifle were these beautiful and harmless animals easy victims, but also to the old men and women, who in their canoes watch for and pursue them when crossing the lakes and estuaries of rivers, and kill them with spears in large numbers. There is really no by-law for the preservation of these helpless animals, even to a reasonable extent. On their arrival the deer are in poor condition, and their meat is scarcely worth being preserved (smoked and sun dried) for food, but they are wantonly killed in great numbers notwithstanding; often only for their skins, which the natives use largely for winter garments and coverings, and at this time they are growing their coat of new hair, which as yet is short and fine, and more elastic and durable and resembling fur, than it is later in the season, when it becomes coarse and brittle. The fawns are as frequently killed as their dams, as their skins are much finer and lighter in quality, and therefore more desirable for young people and children. The women dress these peltries with much skill, and make them as pliable as a piece of fine cloth. The male deer have splendid horns or antlers, especially when they are three or four years old, a new set of which they grow every year, in less than six months. They all, young and old, cast their horns in December, and the horns for the following year do not begin to grow until the month of April. During their period of growth the horns are quite soft, and are covered with a velvet-like skin. This skin falls off, or more strictly speaking, they tear it off their horns by rubbing them against trees and rocks, and this they do about the middle of September, when the horns are full

grown. They then become quite hard. It was very interesting to watch those animals, of which there are thousands then marching in their annual tour. They scarcely appeared to take any rest, or halt, excepting for three or four hours in the middle of the night. They kept travelling in continuous bands along the lake towards its north-east extremity, and appeared to be impelled by some mighty power over which they had no control. They have regular and well trodden paths, which they keep without deviation, even when fleeing from their enemy. These paths in many places lead into rivers, lakes and wide bays, and it is surprising how unhesitatingly and fearlessly they take to the water and swim across. I have seen them swim across some arms of the lake fully a mile and a half to two miles wide, and as if guided by compass, strike the exact landing place and trail on the opposite side to where they started from. They are wonderfully powerful swimmers, and it takes a good canoe man to keep up with them. The fawns take to the water as readily as the old ones, and the icy cold state of the water had no influence on them, for they appeared just as lively and active upon landing as they did when they went into the water.

At Lockhart River, at the extreme north-east end of Great Slave Lake, I camped for a few days, enjoying its many fine attractions. This is a beautiful place, with charming surroundings, diversified by high, sloping hills, level, sandy plateaus and valleys, dotted with tall spruce trees and no underbrush. This is *par excellence* the place for a month's outing for the sport-loving tourist, for here he can get fishing and shooting to his heart's content, and a variety of very fine wild fruit in great abundance. In fact the country all along the side of the lake which I travelled was teeming with a large variety of wild berries, such as the strawberry, gooseberry, raspberry, blueberry, cranberry, eyeberry and yellowberry, and so forth—pleasing luxuries in that distant country. Roast venison and cranberry sauce was an easily obtained dinner. The Lockhart River so far as I saw of it is full of rapids and some fine waterfalls. They also cause the destruction of a

great many deer, as when crossing the river they are frequently carried over the falls and are drowned or killed by being dashed against the rocks. I saw a score or more of them along the river that were killed in that way.

Situated on a fine sandy flat on the border of the lake, on the east side of the estuary of the Lockhart River, stands the ponderous stone chimneys of the buildings which once constituted the now almost forgotten Fort Reliance, which was first built by Sir George Back's party as a wintering station in 1825, when the pioneer expedition was made to the Arctic by the Great Fish River, since named Back's River, after the explorer. This expedition was in search of Sir John Ross, who was lost for four years in an attempt to discover a north-west passage, from whose journal during that long and weary time some notion of the sterling qualities of our sturdy race can be learned. It was on this expedition of Sir John Ross' that his nephew, Sir James Clarke Ross, more famous in Arctic and Antarctic discovery, discovered the magnetic pole. Twenty odd years afterwards, the same route was traversed by Chief Factor Anderson's expedition, which was sent under the auspices of the Hudson's Bay Company in 1855, doubtless with a fond hope of rescuing at least some survivors of the lamented Sir John Franklin's party, alas! not to be realized, and Fort Reliance was restored by Mr. Anderson's party, chiefly to serve as a base of supply of provisions in case his expedition should have to winter there. You will I trust be pleased to permit me this digression on a subject to the generation of Nor'westers, now well nigh passed away; it was one of engrossing interest, and which I may be permitted to say is worthy to rank with the bravest stories treasured in the history of our people.

If the attractions and possibilities of this great region were better known to the wealthy pleasure-seeking sportsmen and tourists of the old country and the United States, I feel sure that very many of them would come and spend a month or more of the summer season in it, which for its picturesque scenery, invigorating climate and sport-producing

capabilities, is not excelled in any part of the American continent; and I believe the time is not far distant when many of the wealthy pleasure-seekers of the old country and America, who spend millions on European travel, will make it an annual resort. There is no doubt a great future in store for that part of the country, with its enormous mineral deposits and great supply of the finest fishes the world can produce and so forth. I cannot offer to give you an accurate idea of its grandeur—it would require a student of nature to adequately describe it.

Sir George Back, in his evidence taken before the select committee of the Hudson's Bay Company in 1857, stated that he experienced 70 degrees below zero, (102 degrees of frost) in January, 1825, at Fort Reliance, Great Slave Lake. Fort Reliance is in 62-46, north latitude.

I observed but very few birds in the region of the north-east portion of the Great Slave Lake, such as the Golden Eagle (*Aquila chrysaetos*), the Great

Northern Diver (*Urinator imber*), Cowheen or Old Squaw (*Clangula hyemalis*), Green Winged Teal (*Anas carolinensis*), Ring-Necked Duck (*Aythya collaris*), Canada Grouse or Spruce Partridge (*Dendragapus canadensis*), Rock Ptarmigan (*Lagopus rupestris*), and three or four species of gulls. I had five (5) samples of copper ore taken from points on the north-west shore of Great Slave Lake, assayed by Professor Kenrick, of St. John's College, which gave the following results, viz:

Sample No. 1 gave 11.3 per cent. copper, silver a trace.

Sample No. 2 gave 15.2 per cent. copper, silver a trace.

Sample No. 3 gave 21.0 per cent. copper, silver a trace.

Sample No. 4 gave 16.5 per cent. copper, silver a trace.

Sample No. 5 gave 27.6 per cent. copper, silver a trace.

Assay of Galena taken from a point near Fort Resolution, G.S.L., gave 60 oz. of silver to the ton.



Veris Initium

1901.

BY HELEN M. MERRILL.

Winter is approaching. While many delight in it, some think not kindly of it, and yet if we were deprived of it, we should be deprived also of the beauty and joy of the Canadian spring, the most delightful in the world.

The Canadian winter is not tedious. We experience little or no severe weather before Christmas, and after New Year's the days pass rapidly as we look forward to the first flash of a blue wing, or song of a sparrow.

According to Cesar's calendar, which divided the year into eight periods, the second point, the ninth of February, was Veris Initium: the beginning of spring. Subsequently a revision of this calendar reduced the periods to four, the second falling upon the twenty-first of March.

While it cannot be that any possible arrangement of periods would suit all latitudes, that man can any more establish a date for the coming of spring than he can say to love "Come here," or "Go there," for spring loves the hills and comes when she lists, it would seem that the old Roman calendar at times more accurately indexes our seasons than does the revised, or Gregorian calendar. However this may be, independent of all written laws, spring set her sign in the heavens over her hills this year on the morning of the 18th of February. And what a sign! A splendid sundog in the south, its edge toward the east overlapped by a shaft of rainbow, the lower end lost in the forest, the upper indistinct toward the crest of the mist-bank

in whose heart gleamed and grew dim, and gleamed ever more brilliantly the silent dog.

One who at sunrise chanced to see this charming phenomenon said: "The sun-dog is a sign of storm" and quoted:

"A rainbow in the morning
Is the shepherd's warning."

And yet not a breath of wind stirred during the forenoon. The sky was a radiant, crystalline blue such as is seen, I doubt not, only in Canada and lands of similar climate; for it would seem that as frost precipitates dust and impurities in our lakes and streams, it in some wise must be accountable for the splendid, far-shining blue of our winter skies.

At mid-day a gentle wind blew out of the west, and respecting this it is written in Ovid's calendar:

"And lo! if anyone used to shiver at the northern blast, let him now be glad; a milder breeze is coming from the zephyrs. . . the hours of early spring are at hand."

The day to its close was balmy and beautiful, and there followed several pleasant days, quiet and spring-like; and though a little snow fell, there was an atmosphere about them which made one expectant of hearing any morning a song sparrow sing merrily.

On the twenty-eight of February a few hairy woodpeckers came to town, and on the outskirts several snow-buntings were seen. The morning of the first of March was grey and calm. At noon a great white gull flew over the harbor, and almost immediately in its wake came wind and snow, but in the heart of it one felt the caress of spring.

It is said that gulls fly to shore, and inland, not on account of any direct influence an approaching storm may have over them, but in search of food, the fish on which they are accustomed to feeding, swimming to a depth beyond their reach in rough weather.

On Friday, March eighth, a small flock of crows visited town. On February seventeenth, several of these birds had been seen in a wooded district in the country. As many crows spend the winter in Canada, it is only in their movements that one may look for prophecy. On that day they flew high, portentous of the approach of spring.

Following close on the crows' visit, several horned, or shore larks were seen on the outskirts of the town. It seems as if the nearer this bird comes to town, the rougher will be the weather which follows. A year ago I discovered several a mile from town, feeding ravenously, as is their custom, in the road, and a few days later came unexpectedly upon three of them in town, one feeding in front of the post office in the midst of a flock of house-sparrows. By the following morning the severest snow-storm of the season had set in. This year they hardly came within town limits. Snow and wind followed, but the storm was of brief duration, and mild. Monday and Tuesday were delightful days, and on Wednesday not far from town I came upon four snow-buntings rollicking in the wind. Of all birds these seem the most joyous. They play alike with the breeze and the sunlight, the storm and the snow. Wherever they appear there seem to be spirits in the air with which they frolic. On the morning of which I write, I caught a snatch of exquisite song, a tantalizing measure of summer-like music, as the birds rollicked by.

At the edge of a wood where pines grow dense, four blue jays flashed their beautiful metallic colors in the sun, in little rapid flights from tree to tree. Near by, a modest flock of four crows settled in a blue beach, and later I came upon four shore larks feeding in the road. Nature, indeed, on that day delighted her favorite number, five.

On March eighteenth, five trees in the wood were full of crows, numbering in all several hundred. They were holding a council of some sort—it was hardly time for afternoon tea—and the din of their voices was good. There is something tangible in the cry of a crow.

The day following was decidedly wintry. A day or two later, at sunset, I saw in a field not far from the wood a grand and solitary elm hung black with crows against a gorgeous sky of purple, and rose, and gold. In the morning I was awakened before dawn by a great, strange cry. It was scarcely light enough to see more distinctly than as shadows hundreds of crows sweeping like a vast, black army over house top and harbor to the southern hills. From this

district they went abroad daily in small foraging parties, at times flying across country in a business-like manner suggestive of site-hunting for summer habitations.

Another day or two and the morning one looks forward to from the beginning of the year, had arrived. I was directed very early to a southern window. I opened it cautiously, and at the same time expectantly, and no sooner had I done so than I heard the most delicious song of all the year. No other song, no matter how alluring or pretentious, has quite the same undefinable charm as has that of the first song sparrow; not even the mellow warble of the blue bird, nor yet the cat bird's ravishing cadenza in June, nor the bell-like vesper call of the veery.

It was Sunday, the twenty-fourth of March, this auspicious spring day. For several hours after rising the sun appeared but as a luminous spot in a fog bank, then withdrew altogether from sight behind heavier vapor for the remainder of the day. Rain fell during the forenoon, yet the bird sang on and on, undaunted, and at sunset a robin's sweet, inspiriting song was heard. Some there are who contend that the robin has no song. The following is a test proffered by its defendants. Does it utter its notes for pleasure's sake, or like the crow which cannot sing, does it call to attract attention from its mate or comrades, or by way of reproof, or complaint? Who could imagine the robin repeating again and again its cheerful ditty for aught else than pure joy, as if it were the best thing in life to do. Then by way of comparison, who ever heard a crow caw as if solely for happiness? There is not much variety in the robin's song, it is true; neither is there in that of the veery, its cousin; yet who would be bold enough even to hint that the latter does not sing?

On Tuesday the twenty-sixth, as I listened in the rain to a song sparrow singing to a colony of house sparrows in a garden, a new note struck through the air, and on looking up I caught a glimpse of a soldier bird flying over the rooftops toward the bay. On Wednesday there were but a few patches of snow to

be seen on the uplands across the harbor. Thither the weather spirit called us. The walking was not good on the ice; there were already indications of honey-combing on top. Arrived on the far shore, it was as if we had come suddenly into an aviary. A flock of nearly thirty song sparrows lighted in red cedars about us, singing ecstatically. Usually one sees but a solitary song sparrow, at the most two or three. We regarded this flock as an omen of an uncommon season.

As we approached the uplands, we came to a lone pine tree from which a blue jay called loudly. In a moment there came an echo, and we saw two others hastening to him across the fields. As they passed the pine, he joined them, and together they flew down to a meadow at the edge of the bay. It was a cheery spot. A stream from the hills rippled over the land, giving the knolls the appearance of a delta in miniature, and went singing merrily through devious channels to the shore.

Proceeding from the solitary pine across held to a gorge, we found the stream at this point tumbling and swirling through its rocky cut some little distance above the meadow. What is more delightful in early spring than an upland stream? What sound so restful, what sight so fascinating? I should like to pitch my tent for a season somewhere beside this one, in the latter days of March, defying the gods of earth and air to make me repentant, no matter how unbefriending some days might be.

The uplands were full of beauty this grey March morning. The fields for the most part were bare, while here and there in a lane, or along a fence, or in a sheltered hollow, were still to be found light drifts of snow.

At the stream's edge it was good to go trampling over great soft mats of juniper flattened by the winter's drifted snows, which had also preserved quite fresh their bright green hue. Walking here it seemed as if one trod on incense pots of gods, since presently the air grew sweet as that of a midsummer forest.

In May the meadows on the uplands will be scattered over with pink, and white, and purple flowers; larks will carol from grassy knolls, plovers call and

the stream sing blithely, no matter whether the sun shines or the day be dull and showery.

On our return home, in the field of the lone pine we saw half-a-dozen blue birds, and it was good to watch their bright wings flash like blue fire against linger-

ing drifts of snow, as they flew from rail to rail along the fence. We had heard a dulcet warble in this same field on our way to the uplands, but did not recognize it. Spring had come to her own again, and this was her heart song to the happy hills.



Okanagan Fishing.

BY R. LECKIE-EWING.

Probably few lakes in the Province hold a finer stock of fish than those caught in the Okanagan; and fewer still wherein Mr. Angler can indulge his hobby, practically speaking, all the year round. The winter fishing in this splendid sheet of water would be very hard to equal anywhere.

During the spring, summer and fall months, when fly fishing can be had, the trout caught never run to any great size, from half up to five pounds, the last figure being almost the limit at which the silver trout will rise to a fly.

The lake is some seventy odd miles in length and from two to three and a-half in breadth, so that the fisherman has lots of ground to choose from. With the rod, the best catches are always taken whilst fishing off some rocky point, where the water is deep, and a long line can be thrown. It is around these points that the trout appear to feed, and one can often see them passing and repassing, and if one is careful and can throw his fly lightly ahead of them, he can see his fish coming up and is able to strike him successfully.

If the fish are on the feed, all flies are equally good, as they will rise to any, and the size appears to have little to do with their fancy.

A very successful lure is the grasshopper, and by attaching one of these insects on to a small hook an almost sure catch can be had.

One need not expect to get very heavy baskets with the rod, Okanagan, for some reason or another, never yields the huge catches which one reads so much of, and which can be caught in many smaller and less known waters.

But what may be lacking in fly fishing in summer is amply made amends for by

the weight and size of the fish caught during winter.

About the beginning of November up till the end of March, these huge fellows are on the feed. They are of two varieties, locally known as the silver and the spotted. In build and size they are pretty much on a par, but the silver variety, on account of his dark green back and beautiful silvery sides, is by far the handsomer of the two. During winter they, of course, do not rise to fly, so that trolling has to be resorted to; this makes the sport much poorer, but if a light trolling rod and tackle are used, the splendid fight the big fellows show makes the troll no mean substitute.

They run in size from 3 lbs. up to 30 lbs., the last named of course being exceptional, but fish of from 7 to 15 lbs. are commonly caught.

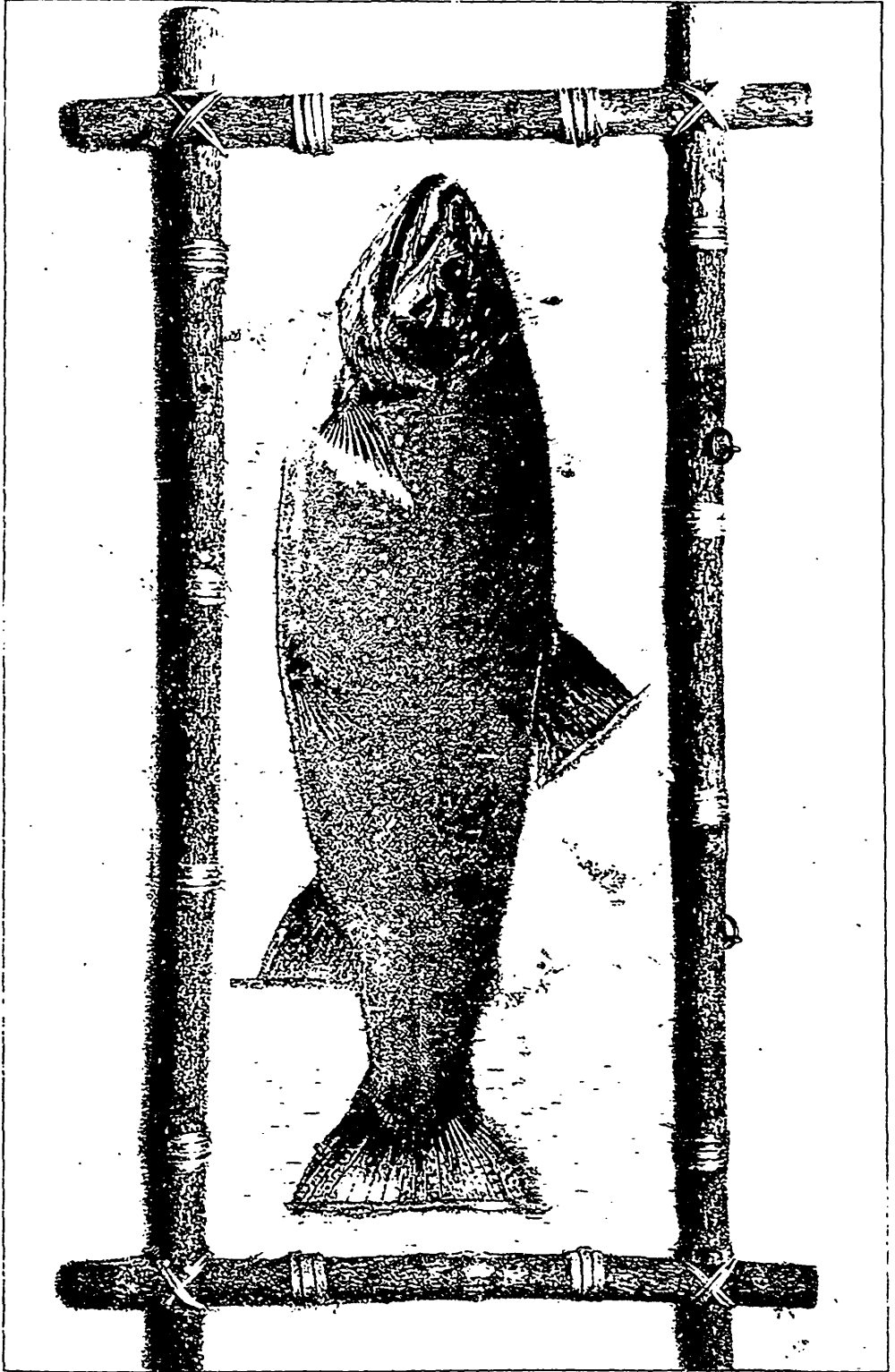
The Indians (who are fast dying out), fish nearly all winter, marketing their catches, often making good money at it.

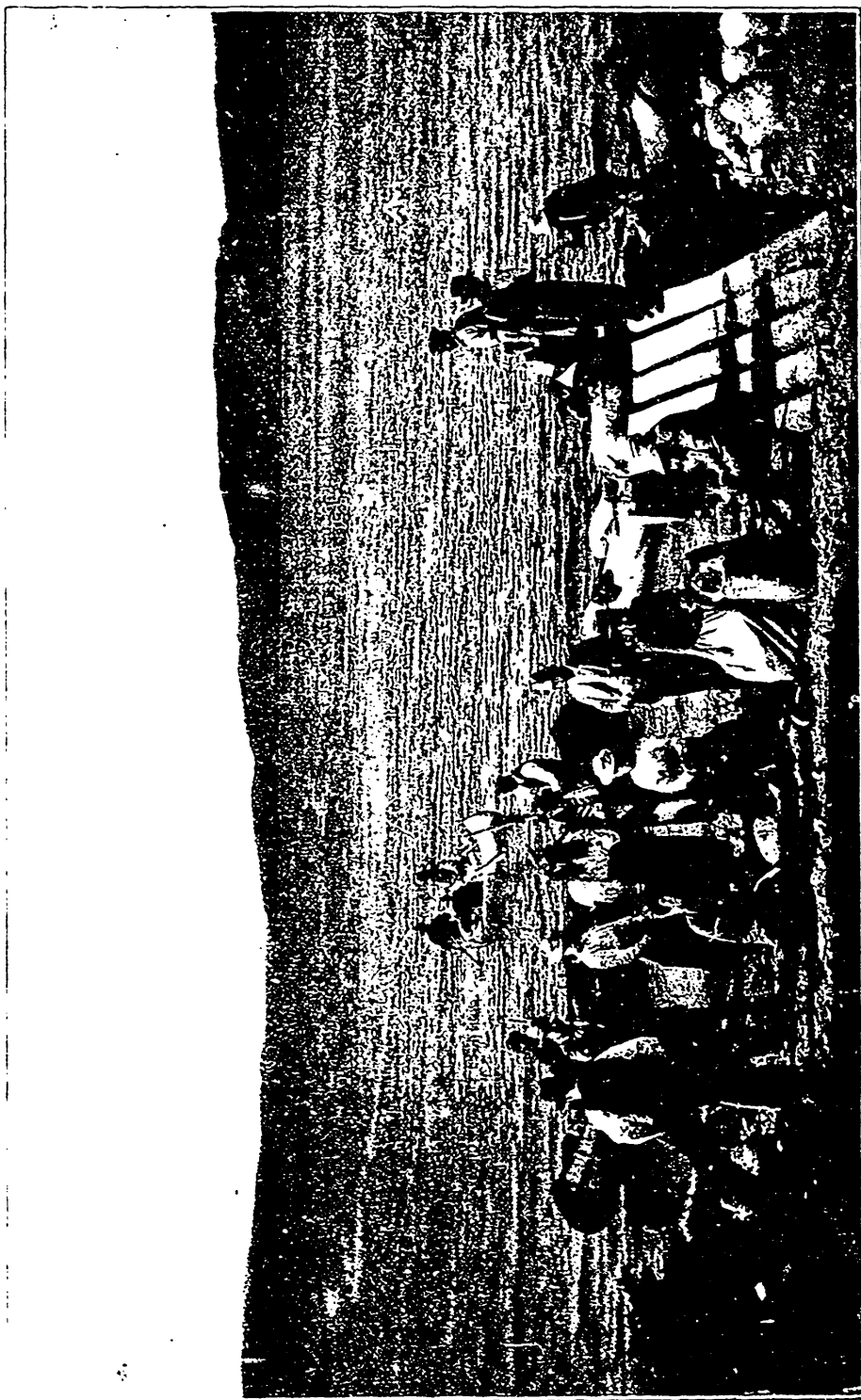
The baits used are many and varied: spoons, otters, beetle baits, and ones cut out of bright colored tins, are all equally good; great care must be taken in seeing that hooks, cast and line are very strong, especially the first named. I have lost many a fine fish by the hook either straightening out or snapping off in the mouth of a strong, heavy fish.

But apart from the fishing, the climate in the Okanagan Valley, and particularly that around the shores of the Lakes, is about as perfect as any sportsman could desire. Even in winter, it is never very cold, and it is only occasionally that a biting wind, and a hard frost keeps the angler indoors.

Big and small game shooting can also be had in the near vicinity, so that when the rod is laid aside, the rifle or gun can always take its place.

A NAIPIGON "FRONT"





LAKE HELEN.

one of the lakes on the Neppigon, the river of the giant trout

“A Vicious Dog.”

BY D. TAYLOR.

From the time the dog made his appearance in our street, up to his untimely and cruel ending, he was a source of annoyance and anxiety to people blocks away who only incidentally heard of him, not to ourselves or to our immediate neighbors. I don't know why it was so, for he was only a little bit of a fox terrier, didn't take up much room, and was never out of the yard in which he lived unless accompanied by his owner. But all the same these people styled him “a vicious dog.” From my point of view this opprobrious appellation was totally undeserved, for in an experience of over two years, he proved a most agreeable companion, and with children who occasionally came around the yard a most engaging playmate. He was full of fun at all times, and nothing delighted him more than a romp with a young Canuck of five years. For this small atom of humanity the dog had a great affection, and it was amusing at times to watch the actions of the two and the airs the young sprig of manhood would assume when directing the dog to do something or other.

How, then, did the possessor of all these good qualities acquire his evil name? The explanation is simple, but it may be said that it was only after committing the offence for which the majesty of the law demanded the death penalty, that people who would not have known him had they met him on the street suddenly discovered that he had all along been a vicious dog. Boys, overflowing with animal spirits and with a reckless disregard for the feelings and rights of others, took every opportunity to annoy and tease him when confined, along with a collie, within the yard, which was cut off from the street by a spar gate. There were regular hours of persecution—going to and coming from school being favorite times. The boys pelted the dogs with stones, shouted and rattled with sticks on the gate; they took pleasure in hearing the dogs bark and in seeing them leap with impotent

rage against the gate, in vain attempts to reach their tormentors. But the sad part of the story has yet to be told. One day, just at the usual hour when the tormentors usually appeared, a boy was running past the gate which, unfortunately, had been left slightly ajar by a tradesman a short time previously. The dog got out and, conceiving the lad to be one of his daily visitors, fastened upon him. An excitable individual who happened to be passing, with more valor than discretion or good judgment, belabored the dog with an umbrella, a proceeding which acted on the dog as a stimulus to hold what we have. The result was that the boy required medical treatment, and the fiat went forth that the dog had to be destroyed to appease the clamor of people who knew absolutely nothing of the dog's character or even of the dog itself.

While every sympathy is deserving the lad who was bitten, it is not out of place to suggest that some consideration might in all fairness have been shown the dog, which held a clean record and looking at the provocation to which it had previously been subjected. But in regard to dumb animals, and dogs especially, the average man or woman is very unreasoning. The moment that a dog resents brutal treatment, or shows impatience at being teased and tormented, he is set down as “vicious,” or even “mad,” and the truthfulness of the old adage “Give a dog a bad name,” etc., is soon made apparent. It is a far cry from the day when we burned witches, and it is not now considered necessary, unless amongst the most ignorant of the masses, to skin alive a black cat in order to have a sure cure for rheumatism; but the popular delusion still holds good to some extent, even among what are considered the educated classes, that it is absolutely necessary to destroy a dog that has, under provocation, bitten someone. The idea that the person so bitten will, if the dog at some future date should develop rabies, become afflicted likewise, still

retains a strong hold on the public mind, and nothing will satisfy these nervous-minded people but the dog's destruction. Indeed they are backed by the strong arm of the law, which demands that the so-called "vicious" dog shall be incontinently slain, in order that the suffering person and his friends may sleep easier o' nights. Upon few other topics have men shown themselves so irrational as on the subject of the mad dog. At no distant date it was a cardinal article of our faith that in what are known as the "dog days," any and every dog was liable to go mad spontaneously. It was esteemed among the eternal verities that if a dog showed signs of distress for want of water in a hot and arid land he was mad; on the other hand, if he refused to drink water when not in need, it was a sure sign of madness. The belief that the dog afflicted with rabies ran in a mathematically straight line and could not be swerved from it, was equally strong with the notion that the person bitten assumed the actions and voice of a dog. These and other beliefs are they not written in the book of man's superstitions?

Without further recalling all the variegated details of this barbarous delusion, it may be asserted advisedly that not one "mad" dog in a hundred is really mad, and that the popular conception of the causes, nature and symptoms of rabies is, as a distinguished medical writer on the subject has stated, "as wildly erroneous as that the moon is made of green cheese, and that the rage for killing every dog suspected or accused of being vicious or mad is unspeakably brutal, stupid and calculated to defeat the very object which those who cherish it vaguely think they have in view." Further on the same writer says: "That such a mania should prevail in a civilized community, after the enlightenment given to the world by the illustrious Pasteur, is a sad expression

to the perverse persistence of human frailty and folly, and of the savagery which centuries of civilization have not been able to eradicate."

Mr. A. J. Sewell, M.R.C.V.S., the honorary veterinary inspector to the Home for Lost and Starving Dogs, London, gives the following as the preliminary symptoms of rabies:

Loss of Appetite.—If unaccountable, watch the animal closely.

Change of Disposition.—Cheerful dogs become morose and sullen, quiet ones become restless, and the good tempered ones become quarrelsome. A disposition to hide in dark corners.

Bark.—Very characteristic, short, dismal, hollow, half a bark and half a howl. This change should be readily noticeable, as the usual bark of the house or yard dog must be well known to the owner.

Attack.—Timid dogs become fearless and snap and bite both large and small dogs without provocation. As a rule there is no "fight," but merely a "snap," and this is often preceded by a lick, from the rabid dog. Even his companion, the cat, is liable to be attacked.

Eating Unnaturally.—Although as a rule refusing food, rabid dogs will devour filth, stones, straw, etc. Great disposition to gnaw kennel woodwork, hearth-rugs, table cloths, legs of tables and chairs, etc.

Disposition to Wander.—A rabid dog has a great inclination to escape and wander. When any suspicious symptoms have been detected, he should be confined or securely chained.

Water.—Rabid dogs have no fear of water. They will plunge their muzzles into the water, but during the later stages of the disease, they are unable to swallow.

The Jaw—in dumb rabies—so called—the lower jaw, through paralysis, is dropped slightly, and the mouth is constantly open with a fixed appearance.



A Hunting Trip.

BY A BOY.*

It was in the early part of August that a citizen of Syracuse received a letter from Mr. A. —, of the Canadian Pacific Railway, inviting him with his son and a gentleman friend to go on a hunting and fishing trip into the wilds of Canada, in the Province of Quebec. After a good deal of letter writing, all arrangements were made, and on the 18th of August the three Yankees started for Morristown on the Rome, Watertown and Ogdensburg Railway at five-fifteen a.m. Arriving in Morristown at ten-twenty, we crossed the St. Lawrence on the ferry and landed at Brockville, Ontario. Shortly after we were met by the custom house officers and by a representative of the Canadian Pacific Railway. After we had our dinner, which, by the way, cost Yankees seventy-five cents and Canadians fifty cents (I believe they charge Yankees more because they eat so much, at least they looked with surprise at our appetites). After dinner we strolled about town, did our final shopping and departed at five-five p.m. for Mattawa, arriving there at ten a.m. We were met at the station by a bus, which was driven by a small boy, and a footman to take care of our luggage, who drove off the crowd by saying, "This bus is for the gentlemen who own the railroad." Of course we were surprised at this remark, but we did not take the trouble to correct him for the more important they thought us the more attention we should get. Shortly after we arrived at the Rosemont House and were comfortably put up by the proprietor.

The next morning the rest of our party arrived from Montreal. With but little delay we proceeded on a branch of the Canadian Pacific. Arriving in Timiskaming at about noon, we ate our dinner there, then embarked on the steamer Meteor and began our long eighty mile ride, arriving in Haileybury the next day, which was Sunday.

Monday morning bright and early we started on our trip, enjoying ourselves immensely with plenty of good, wholesome food. I will describe one of our meals, it was a little more elaborate than usual, but it was Sunday and that accounts for it. The meal consisted of bouillon, black bass, boiled and fried, grilled partridge, bacon, Lyonnaise and boiled potatoes, pickles, marmalade, Dent's crackers, hazel-nuts, coffee and tea.

As we journeyed along we spent considerable time in fishing and hunting. We passed through many beautiful lakes. One lake in particular attracted our attention. It contained thirteen hundred and forty-six islands and from one point more islands can be seen than from any one point on the St. Lawrence river. The beauty of this lake, Timagaming, they say, compares favorably with the Saguenay. It is shaped like a huge octopus, with arms extending fifteen or twenty miles in all four points of the compass.

We camped about noon, one Monday, on an island in a pretty little lake which the Indians call "Mick-wa-ki-ji-ko sakai-gon," and means the "Lake around which grows red cedars." not very far from big Lake, Kipawa. Our party now consists of only four, the other four having very important business which they must attend to. After dinner we are all on the alert and wish to try our hands at fishing and hunting, whichever suited us best. The guides say that there are plenty of moose around the lake, and Wabiskigens and Wabiskiginens start out with two of the best guides in that part of the country, namely Michel Kat and Frank Lemire, both Indians, on a savage hunt for moose. They paddled down to the foot of the lake, a distance of some six miles. As they pass along down marshes are seen and tracks, but no moose. Having reached the foot of the lake, they turn about and paddle

* Aged fourteen.

back towards camp, as it is growing dusk. Coming back they begin to feel tired, and stop at a little island to stretch their legs, as it is very tiresome sitting in a canoe all one afternoon without moving.

After strolling about for a few minutes, they start to walk back to the boat, or rather canoe, when Frank Lemire suddenly stopped and the rest of the party involuntarily did the same. "Hist! he said, I hear moose coming through the forest." Try as we might we could not hear the moose, for the forest was over half a mile away. While they were all listening intently and standing as mute as statues, Frank again spoke as follows: "Vibudge! (which means quick); jump in canoe; see two moose entering the water, one an old moose and the other a young one." Again the Yankees were at fault, their eyes not being trained as were the Indians (through long practice in the woods) could not see them, but trusting him implicitly they quickly entered the canoe; then the Indians paddled towards the two moose without making the least bit of noise. As they approached nearer and nearer the old cow-moose was becoming more and more nervous; the setting-sun being in her eyes she could not see us, but she threw up her nose once in a while and

sniffed the air as if she smelt us. When we approached to within one hundred yards of her, her suspicions having been aroused, she turned about and started for the shore. Then the Indian in the stern suddenly turned the canoe with its broadside to the moose and shouted: "Shoot now! and shoot hard!" Bang! went Wabiskigen's rifle, and down fell the old moose, and bang! went Wabiskigen's rifle, and down fell the little fellow. After dragging the moose to a rock the guides took the saddles and the best part of their bodies; we started for camp as it was long past dark, and there were two of the happiest hunters in Canada in that camp. When they reached camp they were told that one of the fishermen named Pak-wej-wa-ki Wi-ni-ni had caught eleven bass weighing twenty-four pounds and a quarter, being away from the camp just one hour and fifteen minutes,—a truly remarkable feat when it is considered that they were caught on a light fly rod.

Thus ended the principal events of a very enjoyable fishing and hunting trip that will be remembered with pleasure by the participants as long as they live.

The Province of Ontario, we are told, is full of moose, caribou, and deer, north of the Canadian Pacific Railway; next year I hope to shoot there.



Canine Vaccination.

BY "FANCY."

There is no end to the remedies for distemper in dogs, many of which are utterly worthless, while from some good results are obtained; but the fact remains that no certain specific has ever yet been discovered for the absolute cure of this dreaded disease. Persons of experience in the management of kennels and breeding of dogs agree in saying that the best of all cures is prevention, and that what conduces to immunity are dry, comfortable quarters, strict sanitary conditions and regular feeding and exercise. It is claimed, however, by the

discoverer of the method, a Dr. Phisalix, that the vaccination of puppies renders them almost immune, reducing the liability to about five per cent, and the mortality to two or three. A prominent London veterinary surgeon, Mr. Henry Grey, M.R.C.V.S., writes as follows concerning the new treatment:

"The vaccine used in this operation is obtained by cultivating the virulent microbe or cocco-bacillus of Lignieres and Phisalix, termed the *Pasteurella canis*, which is a very small micro-organism found in the blood and viscera

of dogs, cats, guinea-pigs, etc., during the early stage of distemper, so as to weaken it, that when injected under the skin it does not cause distemper, but acts as a preventive. It is of two grades of strength, one a weaker or more attenuated culture, to be used as a first vaccine, the other a stronger and less attenuated culture, to be used as a second vaccine. It reduces the liability to the disease from 90 or 100 per cent. to 5 per cent., and the mortality from 90 or 50 per cent. to 2 or 3 per cent.

"It should be adopted as early as possible, preferably at the age of weaning or soon after, before the puppies are exposed to the risk of coming in contact with distempered dogs or are put in infected quarters or surroundings. However, dogs of all ages can be vaccinated to advantage. It seems very harmless to dogs of all weights, of all ages, and of all breeds, provided they are strong and free from disease or infection. Healthy puppies or adult dogs only should be vaccinated. It does not prevent distemper if the dog be exposed to contagion before the vaccination "takes" or is already the subject of the disease at the time of inoculation. Two inoculations are necessary, one with the very weak or first vaccine, the other, twelve or fifteen days, or even three weeks, after the first, with stronger or second vaccine. The dose for a puppy of six to eight weeks is two cubic centimetres; for a puppy of two or three months, two and a-half cubic centimetres; for a puppy or adult over three months, three cubic

centimetres. It is injected under the skin of the groin, after this has been previously washed with warm water and soap, by means of a Roux antitoxin syringe, which should have a capacity of three to five cubic centimetres, and which should be thoroughly sterilized before being used. The second inoculation is made with the same quantity of second or stronger vaccine under the skin of the opposite groin after a period of twelve to twenty-one days following the first, the same precautions being taken. The reaction to be obtained is a swelling in the glands above the seat of injection, or even the seat itself, two or three days after the inoculation, temporary loss of appetite, slight dullness, and even stiffness of the limb. Sometimes an abscess forms at the seat of inoculation, and when it does occur it should be opened. If the injections fail to produce a reaction, another inoculation should be made, using this time freshly prepared second vaccine. Unless the vaccination "takes," no immunity is likely to be conferred. The vaccine should be fresh, and the contents of the bottle used up at once, as soon as the bottle is opened. It should be kept in the cool in a dark place. The bottle should be shaken up before the contents are used, when it produces a slight turbidity. It has been used with great success by veterinary surgeons in large kennels, including foxhounds, as well as other breeds, such as toy Pomeranians or toy griffons, etc., both in England and on the Continent."



In a municipality adjoining Montreal one of the constables was reported by his chief for insubordination in refusing to hang an unlicensed dog. In persisting in his refusal at the risk of dismissal the constable acted the part of a man, and should be commended for his humane feeling instead of censured. Constables have too many disagreeable duties to perform without being called upon to play the part of public hangman, even in the case of a dog, and if there is to be

any censure let it be borne by the police committee who do not provide a more humane method of getting rid of unlicensed dogs than by strangulation. We agree in this that it is desirable to destroy many of the dogs now running unclaimed around our streets, but the means employed in this particular municipality are both antiquated and brutal—it should be desisted from at once in favor of a more humane and scientific method, namely, anæsthesia, or death by sleep.

Adirondack Forestry.*

The Adirondack Park, in the State of New York, is under the control of the Forest, Fish and Game Commission, under the chairmanship of Col. Wm. F. Fox, and through the kindness of the Commission an officer of the Canadian Forestry Association was given the opportunity recently to visit the Adirondack Mountains for the purpose of seeing the character of the forest and the reforestation work which is being carried on under the supervision of Mr. A. Knechtel, forester to the Commission, who is by birth a Canadian, being a native of the Province of Ontario. The itinerary arranged by Mr. Knechtel could not have been more happy, either from the point of view of pleasure or information. The scenery of lake and island, so familiar a feature of the Laurentian districts of Canada, is reproduced here in all its beauty, and from the dawn of the day when the first gleams of sunlight cause the mists to rise and waver, concealing, and then again for a moment revealing, the higher hilltops, till the broken fragments drift away from lake and hillside white and pure against the dark background of the forest clad heights, and the full glory of the risen sun spreads a golden radiance across the rippling waters, throwing out into clear view in the fresh air of morning the island-dotted lakes with their bold shores, the scene is one of surpassing charm. And not least of the beauties is that of the autumnal forest. The red maple is striving to justify its name, the hard maple is putting its glory on, the poplar ceaselessly agitates its yellowing leaves. Amidst these lighter colors stands out the dark green of the spruce, the blue tint of the balsam, piercing the air with its spire-like top, the dark hemlock, and the lighter cedar fringing the shore. All these are spread out on the sloping shores in a mass of delicately contrasting colors, while occasionally a cloud-piercing pine tree raises its troubled head in majesty above the surrounding forest, as if striving yet to uphold its departing glory.

It is easy to enter into the feelings of the old lumbermen in their admiration for the white pine, when it is seen standing thus in lonely supremacy, and to a Canadian it is like the face of a familiar friend.

The forest is of much the same character as that of the Laurentian districts of Canada. Spruce and balsam, hard and soft maple, aspen and large-toothed poplar are the most frequently-occurring trees. Next come hemlock, white pine, Norway or red pine, tamarack, elm, white and yellow birch, ash, moose maple, mountain maple and lesser shrubs. The spruce is not, however, the species most generally distributed in Canada, being the red spruce (*Picea rubra*), which has been found as a distinctly differentiated species only in the eastern provinces. On lower lands the black spruce (*Picea nigra* or *Mariana*) is also found. The red spruce is described as follows by Britton and Brown: "A slender tree sometimes reaching a height of 100 feet and a trunk diameter of four feet, the branches spreading, the bark reddish, nearly smooth. Twigs slender, sparingly pubescent, sterigmata glabrate, leaves light green, slender, straight or sometimes incurved, very acute at the apex, five to eight lines long, cones ovoid or oval, seldom more than one inch long, deciduous at the end of the first season or during the winter, the scales undulate, lacerate or two-lobed.

Much of the forest has not been lumbered, although all that has passed into the hands of lumbermen has been cut over to some extent. There is therefore still to be found almost primeval forest, some of the trees being of great size, notable among which was an immense white cedar (*Thuja occidentalis*) close to five feet in diameter, so far as it could be measured with the appliances at hand. White pine logs up to twenty-four inches in diameter are still being cut at some of the mills. An examination of the forest floor did not reveal a very large or general reproduction of spruce,

* Contributed by the Officers of the Canadian Forestry Association.

and there are many indications which go to show that the views expressed by Mr. Knechtel, and previously referred to in *ROD AND GUN*, as to the advantages possessed by the hardwoods, are justified.

An interesting product of the forest in the Adirondack Mountains is the Adirondack boat, which takes the place of the canoe in Canada, and is used by the guides conducting tourists. These boats are made of thin narrow strips of white pine, nailed together over spruce ribs formed from the curve of the root. The whole boat, including light seats of cane, has been made as light as sixty-five pounds, and seldom goes much above that figure, so that it can easily be carried by the guide over a portage or "carry" with the assistance of the yoke, which is always a part of the boat's equipment. Owing to the growing scarcity of white pine, cedar is sometimes substituted for it in the manufacture of these crafts, but is not considered with favor by the older manufacturers.

At Acton was found the headquarters of the New York State College of Forestry, which has for the present suspended operations. The combined library and lecture room, with the cottages which were occupied by the professors and students, form a modest group of buildings, now looking lonesome in their desertion, and it is impossible not to feel strong sympathy with the brilliant principal in the frustration of his plans.

The nursery is mainly stocked with white pine, Scotch pine, Norway spruce, Douglas fir and European larch, it having been more feasible to obtain the foreign than the native species at the beginning. The trees one and two years old are making good progress, but the seed planted during the present year, particularly of the white pine, does not appear to have germinated very fully. It is evident that the seed should be sown thickly so as to allow for failures. Quite a large area has been planted out in the vicinity of Axton from this nursery, and is making on the whole a good showing. Some failures were noticed, however, and it is understood that others have been replaced since the first planting.

Some few miles further on is the Wawbeck nursery, near the tract on

which lumbering operations were carried on by the college. White pine and spruce seedlings in this nursery are growing vigorously, and many of them are ready to set out, but the beds are showing the effects of the withdrawal of care. Lumbering operations are to be suspended with the exception of the disposal of timber already cut and the felling of the trees on the area burnt over, except in so far as it may be necessary to fulfil the requirements of the contract with the Brooklyn Cooperage Company for a supply of hardwood for its wood alcohol plant. This contract was the main difficulty in the way of a change of policy when it was found that close cutting was not meeting with public approval. The scientific problem which had been undertaken by the College was to replace a mixed forest with a pure forest of pine and spruce, as it had been decided that these were the most valuable trees to reproduce, and the method employed was to cut clean and replant with the desired species. This was the simplest solution and based on scientific principles, but popular opinion did not see the necessity for a coniferous forest or the desirability of entirely removing the one in existence on the faith of the future, and leaders of public movements cannot get too far ahead of popular opinion if they are to continue to lead. The fact that the venture was not made a success from an economic point of view also added to the difficulties of the situation.

An interesting plantation on this tract was that on grass land, the trees being placed in furrows run with a plough. This breaks the sod and gives the tree a chance to grow before the grass can form again while the trench assists to hold moisture.

The wood alcohol plant at Tupper Lake is a somewhat unusual industrial undertaking. The wood, consisting of maple, beech and birch, cut into cord-wood lengths, is placed in metal cart of two and a-half cords capacity, two of which are run into each retort. Closed from the air the wood is charred without being burnt, producing charcoal. The other commercial products obtained from the liquid distilled from the retort are wood alcohol and acetic acid, the latter

of which is combined with lime to form acetate of lime. Other products are tar and chemical oil, but these are as yet practically waste products.

At Saranac Inn Station is the nursery of the Forest, Fish and Game Commission. This is a new venture, the stock for the plantings already made having been obtained from the nursery of the College of Forestry. Seeds of native trees have now been collected, and little rows of white pine, red pine and red spruce are making their appearance in the beds and are apparently assured of success. The soil is a light, sandy loam, well suited for pine. After they have attained a year's growth the trees will be transplanted to six inches apart, and after another year will be ready for planting out. The nursery is a noticeable feature to travellers on the New York Central & Hudson Railway, and the Commission have shown good judgment in placing it and the first plantations in situations that will attract the attention of the public. The establishment of the nursery is an evidence that the Forest Commission are satisfied with the success of their first efforts at replanting.

And a visit to the plantations at Lake Clear Junction and on the Saranac Lake branch line will demonstrate the grounds for this confidence. At these places about one thousand acres have been replanted with white pine, Scotch pine, Norway spruce, European larch and Douglas fir. Of these the larch has not been a marked success, but as the nursery stock when received was not in the best of condition the partial failure may be due to this cause. The Douglas fir is healthy, though not very vigorous, and the remainder are making a vigorous, healthy growth. The land covered by the plantation is in part light, sandy soil, and in part rocky hillside, in fact just such burnt-over areas as can be duplicated over and over again in either Northern Ontario or Québec. The trees were first set six feet apart each way, but it has been decided that a closer stand is desirable, and in future they will be placed four feet each way. The cost of material and labor was found to average about half a cent a tree, which at a total of 1,200 trees would be \$6.00 per acre, but planting closer will take about 2,000

trees, making the cost \$10.00 per acre. It is expected, however, that with their own nursery stock and the experience gained it will be possible for the Commission to reduce the cost still further. These plantations are close to the railway and in a few years will be a great object lesson to all passers-by.

Protection from fire is provided for by a system of fire wardens, there being a chief fire warden appointed by the Commission and under him are five wardens for the towns (a division which corresponds somewhat to the municipal term township in Canada) who may divide their towns into districts and appoint district fire wardens in addition. In case no town fire warden is appointed the town supervisor (or reeve) acts in this capacity. All residents are required to assist in extinguishing fires, and such services are remunerated at the charge of the town. The Commission are empowered by law to direct the work, and the town is responsible for the charges. It will be seen, therefore, that here the municipal organization and the fire warden system have been made to work harmoniously together, a development that would be most desirable in Canada.

That the system is a success is shown by the fact that in spite of the unusually long dry spell of the early summer the damage done by fire on the State lands was comparatively small.

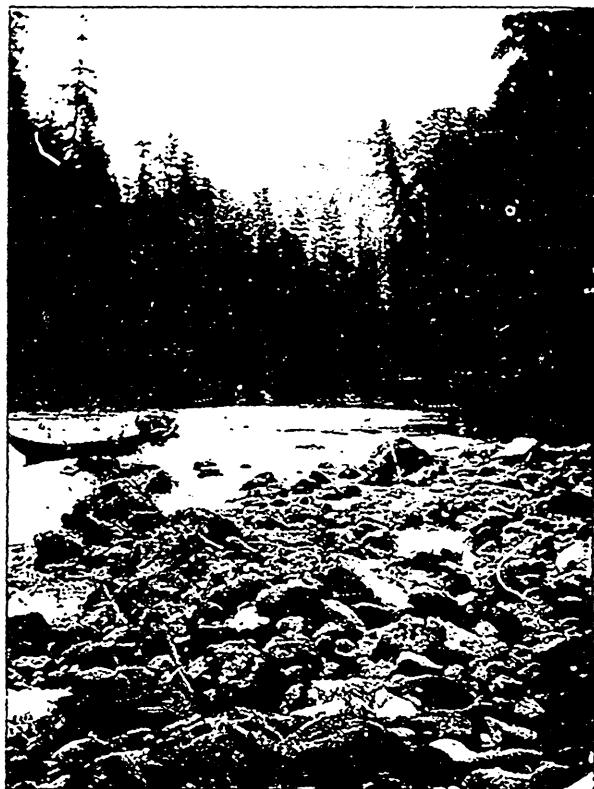
It is unfortunate that the Commission has no power to remove timber from State lands, a clause in the constitution of the State preventing this. Thus the burnt timber, which is not only unsightly, but a menace to the remainder of the forest, cannot be removed, and no steps can be taken to improve the forests by the removal of mature or fallen timber. As no change in the constitution can be made except by popular vote the repeal of this clause is not easily to be obtained.

In addition to the public lands in the park are several large private holdings. On some of these estates fires were numerous during the present year, and there is a strong impression that they were not all accidental. Private holders have not always been tactful or judicious in their dealings with the people previously located in the district, and



FLAT ROCK PORTAGE.

A snapshot taken on the way down the Nepigon



A VANCOUVER STREAM.
A characteristic bit of island scenery

the antagonism aroused has gone to extreme lengths. A startling example of this is the recent shooting of one of the large landowners by someone whom it has been so far impossible to discover.

The difficulties of the situation may result in an enlargement of the area under State ownership, which probably would be the best solution for the management of forest lands.



Our Western Forests.*

Mr. E. Stewart, the Dominion Superintendent of Forestry, has returned to Ottawa after an absence of three months in the Northwest and British Columbia. He made his annual inspection of the work of the Forestry branch and also some explorations in the timbered districts with a view of protecting them from fire and, in certain cases, of setting aside additional areas for timber reserves.

The good work done by the fire rangers is again shown by the absence of such disastrous forest fires as occurred almost every year before the forest ranging system was established. The only fire of any extent this season was one that occurred in the Turtle Mountain Timber Reserve. It has always been very hard to guard this reserve, owing to the fact that the timbered area extends over the American boundary adjacent to the reserve, and as the American Government has thrown the land open for sale, settlers all along the line embraced the opportunity afforded by a very dry time in May to burn the timber on their clearing. A fierce wind from the south drove a number of these fires over into our timber and overran certain portions of the reserve. It is believed, however, that it will be found that the damage will not be as was first anticipated.

In British Columbia, during the dry weather in the early summer, several fires were started, but by the prompt action of the rangers none of them assumed large proportions. On the Columbia River, below Revelstoke, what no doubt would have proven a very destructive fire to the large timber limits was kept in check by the large rangers, and those employed to assist

them, till rain came to their relief and extinguished the fire.

After visiting British Columbia Mr. Stewart inspected the forest nurseries of his branch at the Experimental Farms at Brandon and Indian Head. At these nurseries are grown the seedling trees which are annually distributed all over the prairie sections of the country to farmers who, in co-operation with the Government, are carrying out a system of afforestation on their homesteads. Upwards of 1,000,000 seedling trees have been distributed this season, and a much larger quantity will be distributed next season. These trees are furnished only to farmers who have prepared their land for that purpose and agree to follow the directions of the forestry office in planting and attending to them. The success that is attending this work will be appreciated when it is stated that as near as can be estimated fully 75% of all the trees sent out during the past three years are now growing. These plantations are now beginning to be seen as one drives through the country, but in a few years they will be a conspicuous feature of the landscape. Of course, only a farmer here and there has yet gone into the scheme, but they are scattered all through the bare prairie regions and will be an excellent object lesson which will certainly induce every farmer desiring a shelter belt on his farm to follow the example thus afforded him.

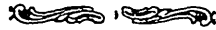
Mr. Stewart attended the meeting of the American Forestry Association at Minneapolis in August, and says he could not fail to observe how forestry matters are engaging the attention of the

* Contributed by the Officers of the Canadian Forestry Association.

American public. No doubt the many patriotic utterances of President Roosevelt on the subject have served to awaken the public to the fact that it has been too long neglected. The meeting, like that of our own Canadian Association, was attended by men in all walks of life, the specialist from the college sitting side by side with the practical lumberman from the Upper Mississippi or the Pacific Coast and exchanging ideas on this most interesting problem. Not only this, but the meeting was

honored by the presence of a number of the leading ladies of the twin cities, and from other parts of the country, who have done a most excellent work in this connection through an organization known as the Minnesota Federation of Women's Clubs in arousing public attention in favour of a forest park on the upper waters of the Mississippi.

It seems generally admitted that the setting aside of this natural park is due to the efforts of this Society. Would that we had such an organization in Canada!



The Ironwood.*

The ironwood is found scattered here and there throughout the forest, although nowhere in large numbers, but is well known from the characteristic which gives it its name—namely, its hardness, making it as solid and heavy almost as iron. When the axe strikes it the dull, heavy, resistant nature of the wood makes itself felt immediately, and with a shock of surprise that wood could be so solid. The leaves of the tree are much like those of the birch, but not so smooth, and the bark is very rough. If the fruit is on the tree there is no difficulty in distinguishing it, as it is covered by inflated receptacles placed

together somewhat in the form of the fruit of the hop, from which comes one of the common names, hop-hornbeam. The scientific name is *Ostrya Virginiana*. The wood is not a commercial one, but is used on the farm for any purpose where strength and solidity are required, hence the name leverwood sometimes applied to it. A distinguishing feature of its appearance is the dark heartwood. The ironwood is found growing singly in pastures, as shown in our illustration. A use to which it was formerly put was as a pestle for the grist mill, which in primitive days was the hollowed out top of a tree stump.

* Contributed by the Officers of the Canadian Forestry Association.



Do you wish to make a long, tolerably expensive, and assuredly successful expedition after moose next autumn? Well, then, proceed to Prince Albert, and go by wagon thence to Montreal Lake and on to Lac La Ronge. Here there is a Hudson's Bay Company post, and you can get Indians, and sugar, and tea and other delightful things. If you cannot kill moose upon the Churchill River, it is because nature evidently intended you to refrain from moose hunting. At the present moment Major Buss, of the

British service, is there and having good sport. Last season one of the professional moose hunters, that is to say, one of the Indians who supplied Lac La Ronge with meat, shot two hundred moose to his own gun, and they were coming just as thickly when he left off as when he started in, but it must be admitted that moose in that district are very small as compared with our Ottawa bull moose and carry poor horns, 46 inches being about the best found.

Ontario's Forest Policy.*

A very important statement in regard to the future policy of forest management is that made by Hon. E. J. Davis, Commissioner of Crown Lands, in the following interview as reported in the newspapers:—

"The position is this: The area in the Province that has timber upon it is divided into two classes. One class is land that is good for agricultural purposes. On that class the present system of selling the timber is practically about the only system that can be pursued, because the timber must be cleared off and the land opened up for settlement. The other class of land is not suitable for agriculture, being rocky and otherwise unsuitable. On these areas the new policy will apply. The Temagami Reserve was set apart in 1901 as a permanent forest reserve. Since that time we have not sold any timber there. It contains about 1,400,000 acres, or 2,200 square miles of land, not good for agriculture. The proposition is that we should sell certain portions of the timber as it develops and can be placed on the market to advantage. We have decided to sell the timber by public competition, at so much a thousand feet, and the trees that are to be taken will be marked by our men. No trees below the size marked can be cut.

"We are hoping to set apart reserves whenever we can in other areas, in a similar way. Many old licenses will in time lapse, and the limits will revert to the Crown. These will be reforested and kept as permanent forest reserve. The system practically is a first step towards the plan of reforestry in use in Germany, and will involve much more stringent regulations in regard to fire ranging than have been hitherto in force."

The policy thus laid down is a sound one. Agricultural lands may be cleared of timber as they are required for settlement and the land put to the use to which it is best adapted. The management of such lands is a simple problem. The only difficulty of serious moment is

the prevention of fire until the land can be denuded.

The wisdom and foresight necessary to arrange that the lands adapted only to the raising of timber should be devoted to that purpose must rest with the Government. There are lands so rocky or sandy that the returns from agriculture or grazing are inadequate to the support of a prosperous community. A leading religious journal of the United States recently, in an article on mission work among the people of the mountain districts of Carolina, stated that these people were so poor and ill-nourished that there was reproduced the type of pale-faced, stunted childhood found usually only in the slums of cities, and this was emphasized by the relation of special cases of children attending the schools who had but a scant meal of potatoes as their usual fare, while at times even this inadequate nourishment failed, and they had to go to school without. If this be a true statement of the conditions in a settlement of long years' standing, is there not ground for considering that a serious mistake was made by those who established it? In Scotland, as appears by the evidence submitted before the British Forestry Committee, which has recently reported sheep grazing is becoming an unprofitable industry, and many landowners are considering the advisability of placing their grazing lands under forest. Calculations made by several witnesses went to establish the fact that under forest 100 to 200 acres would require the employment of one man, while for sheep grazing not more than one man per thousand acres would be employed, calculating two sheep to one acre and 500 sheep as the flock that could be cared for by one shepherd. So that the forests would support five to ten men and their families in place of one where the land was devoted to sheep grazing. It will thus be seen that those who urge permanent forests are not speaking without consideration, or giving due weight to other industries.

* Contributed by the Officers of the Canadian Forestry Association.

It having been settled then that certain designated lands are to be kept perpetually in forest, there are certain conditions to be provided for. Protection from fire should, as stated by the Commissioner, be provided at all hazards, and a much larger expenditure than now made upon it would be a paying investment. Every tree, even the smallest, is valuable either actually or potentially, and to permit of the destruction of the growth of even the smallest number of years would be less the part of wisdom than for the farmer to allow the crop of one year to be destroyed because he could have another one the next year. The providing of an adequate preventive service is the necessary corollary to the setting apart of timber reserves.

The removal of the mature wood crop has also to be provided for, as a reserve from which no lumber is taken would not be serving its full purpose, and the plan suggested appears to be the most feasible one. The Government will keep control of the cutting but will not do the actual work itself. Provision can thus be made for the care of the young growth, while those in the lumber business and knowing it best will have control of the practical part of the operations. A diameter limit for cutting may well be fixed, but there are other conditions to be considered. A seed supply must be assured, and trees which would blow down when deprived of the support of those surrounding them had better be removed. This is specially likely to be the case with spruce, which is shallow rooted. Some means of getting rid of defective or worthless trees will have to be devised, and also some method of utilization of the hardwoods.

The method of reproduction of the

forest is a problem that is not by any means a settled one and requires a careful, accurate study. If clean cutting and replanting were adopted the question is simple, but, except possibly on small areas, this is an impossibility at the present time. Natural reproduction must therefore be relied on, and the conditions under which it takes place are not by any means as clear as some are inclined to think. The frequency and quantity of the seed crop of the principal coniferous trees is not at all well known. The results of the struggle between different species is not definitely worked out so as to give sure data for all cases. The method of reseeding of burnt over areas is still in doubt. These and other problems only careful, continuous observation for a series of years can work out. It would be well if the Government had special areas of cut-over or burnt-over lands marked out to be observed carefully from year to year with reference to the supply of seed, the average of reproduction of valuable trees and the results of the struggles between the different species. If the members of the Canadian Forestry Association who visit the forest districts regularly, or otherwise, would mark some such tract and keep careful note of observations upon them, much valuable data might be thus obtained.

These problems can only be worked out with time, but the Government has set its face in the right direction, and a steady adherence to the policy outlined will result in placing the forest administration of Ontario on a sound and permanent basis which will insure not only to the benefit of this generation but to the future prosperity of the country.



Manitoba moose hardly carry as good heads as those from Eastern Ontario and Quebec; the largest head ever measured in Winnipeg, is believed to have spanned but 58 inches, and anything above 54 inches is very good.

Of all the regions likely to yield bear to the persevering hunter, the tributaries of the Stikine may be recommended with the greatest confidence. In spring, as one old Hudson Bay man told the writer a few weeks ago, "any fool can kill a bear."

Long Range Shooting.

BY AN AMATEUR.

Riflemen in the habit of shooting at ranges not exceeding 200 yards or 250 yards, have, as a rule, very erroneous ideas as to the demands made upon those who go in for shooting at ranges of 900 or 1000 yards. In short range shooting, holding, and the preparation of ammunition are almost all the factors that have to be thought of, whereas, in long range shooting many others are brought into the problem. Atmospheric pressure, light, wind and differences of refraction, owing to varying densities in the layers of air, render the task of the long range rifleman by no means an easy one. Notwithstanding the victory of the American team in the shoot for the Palma trophy, it is pretty generally conceded that the British long range shots are somewhat in advance of those of other countries. That is to say, for every good long range shot outside the British Isles, there are probably three within its borders, and an immense amount of thought has been given to long range shooting. In this connection a very useful paper recently appeared in the Kynoch Journal, from which I have ventured to take the following paragraphs:—

“One of the most remarkable features of the Bisley Meeting this year was the very marked improvement in the shooting of the 303 Service rifle at long ranges, when using the special ammunition manufactured by the Kings Norton Metal Company. It was admitted on all hands that with this ammunition the shooting was at least as good as with the Mannlicher, which has hitherto been considered its superior at long ranges. There appears to be no doubt that the special ammunition kept the elevation much better than that issued by the Government for the meeting, which was generally stated not to have been quite up to the standard of the last two years.

“As an instance of the very fine shooting qualities of the Kings Norton ammunition, we may mention the 900 yards shoot made by Mr. L. R. Tippins, whose

full score occupied a space in the bull about one foot high by two feet wide. The variation in elevation with a Service cartridge for the same number of shots is seldom less than three feet.

“The very fine shooting by Major Fremantle is another example of the great advantage which this ammunition has over the usual Service cartridge.

“The question to be solved is, what is the cause of this great improvement? The most obvious difference is the increase of velocity, amounting to about 120 feet per second. But this, although in itself advantageous, is not sufficient to account for the observed results. A series of experiments were therefore undertaken to determine the causes responsible for the great improvement in shooting. A number of the cartridges marked “High Velocity” were examined, and were found to contain 34 grains $\frac{1}{8}$ grain of cordite, the diameter of the strands being ‘035” as against about ‘032” in the Government specification: the bullets which averaged 213½ grains being rather small in diameter, possibly owing to the choking of the neck of the case after loading. The turn-over at the base of the bullet was rather deeper than is usual.

“The velocities in a series of seven shots were found to vary about 30 feet between the maximum and minimum. This, although a very good result, can hardly be said to be exceptional, as Standard cartridges tested against them gave practically the same variation.

“The pressures when taken in a Woolwich back pressure gun gave 17.45 tons, as against 15.17 tons for the Standard cartridge. When taken in a side pressure gun, the pressures were 18.07 tons, as against 16.68 tons for the Service cartridge, at a temperature, in both cases, of 58° Fahr.

“It will be seen that the larger diameter of the cordite strand has a marked effect in keeping down the pressure, which would otherwise have reached 20 tons.

"It is now necessary to consider what are the conditions which will allow of the elevation being kept within a foot or so at a thousand yards. If we neglect errors due to mechanical defects in the barrel of the rifle, or in the construction of the bullet, and inaccuracies of holding, we have two main causes which may produce variations in elevation.

"1.—Variations in the trajectory due to irregular muzzle velocities.

"2.—Variations in the angle of departure due to the effect on the "jump" and "flip" of the rifle, caused by slight irregularities in recoil.

"Fortunately for rifle shooting, the errors due to these two causes have not necessarily to be added together. It is evident that as far as the trajectory is concerned a high velocity tends to give a high shot, and it may be supposed that the resulting increase of recoil would have a similar effect by increasing the jump. This, however, is not always the case. The jump is of course increased, but the flip, or springing of the barrel, may entirely counteract the increase in jump, and also the difference of trajectory.

"As it is difficult to give an explanation of flip, which would not be tedious to the non-scientific reader, we will make a direct appeal to experiment, which will illustrate our point.

"A series of shots were fired from the prone position, first with Standard 303 ammunition, and then with the Kings Norton high velocity cartridges, taking care that the temperature of the barrel and other conditions were the same in each case. The mean point of impact with the high velocity cartridges was about an inch and a half lower than with the Standard cartridges. With the Standard cartridges the height of the group was about one foot, with the others it was about six inches.

"The same cartridges were then fired from a fixed rest. In this case the high velocity bullets struck the target one foot eight inches higher than the Standards, and the height of the group in each case was about one foot.

"This experiment shows that when a rifle barrel is firmly clamped so that a flip cannot take place, it does not behave

in the same way as when fired in the ordinary way from the prone position.

"It was found by experiment that the Kings Norton cartridges were giving about 120 feet more velocity than the Standard. The calculated difference of elevation due to this is about 20½ inches, which is almost the difference observed when using the fixed rest; and it is interesting to note that from the prone position the Kings Norton cartridges, instead of shooting 20½ inches high, shot 1½ inches low—a difference of 22 inches, which can only be accounted for by supposing that the increased charge so affected the spring of the barrel as to not only produce the observed difference in elevation of 22 inches, but also to counteract the increased jump due to the heavier recoil.

"It is often noticed when firing experimental charges at 100 yards that with some rifles the heavier charges throw the bullet lower on the target than the lighter ones, whilst in other rifles the contrary is the case. This is another example of the effects of flip. It is therefore apparent that some rifles possess what may be termed "Negative" flip—that is to say, at short ranges an increase of velocity causes a bullet to strike lower on the target. It does not matter whether the flip is actually sending the bullet up or down, it only implies that it throws it more down or less up with the higher velocity.

"In long range shooting this property of negative flip is most valuable, as it may at a certain range exactly correct the difference of trajectory due to the inevitable slight variations in the explosion of cordite. It must, however, be clearly understood that this exact equilibrium can only be produced by a given charge at one particular range, or rather, that for each range there is a charge which will produce equilibrium. There is no doubt, however, that for every rifle a charge may be found which will produce a very fair amount of correction over a wide series of ranges.

"It will be interesting here to consider what amount of elevation will be produced by a given variation in velocity at different ranges. At 500 yards for velocities of about 2,000 feet per second a variation of 10 feet in the muzzle velocity will cause a difference of elevation of 1½

inches. For velocities of about 2,100 feet per second the difference will be about 1.6 inches for each 10 feet variation. At 1,000 yards for muzzle velocities of about 2,000 feet per second the variation is about 8½ inches per 10 feet per second. For muzzle velocities of 2,100 feet per second the variation of elevation is about 8 inches per 10 feet variation of muzzle velocity.

"If we take 40 feet per second as a fair average variation of muzzle velocity, we see that this is equivalent to a difference of elevation of 32 to 34 inches, according as the muzzle velocity is 2,000 or 2,100. To this has to be added the error of holding, which is at least one inch per 100 yards, or say 10 inches at a 1,000 yards, and also any errors due to mechanical defects of barrel or bullet.

"It is thus evident that apart from errors due to changes of light, or direction of wind, the accuracy of elevation is barely sufficient to keep within the inner ring at a thousand yards, unless there is some compensating action such as we have been describing.

"With the Service charge the compensating action is not very marked, as a slight increase of charge throws the shot high, and a decrease throws it low. The neutral point for short ranges is given by a charge greater than the Service, but less than the "High Velocity" charge.

"We append a table showing the velocities and pressures of .303 cartridges

in various rifle and pressure guns. It will be seen that whereas the Woolwich pressure gun considerably increases the velocity taken simultaneously owing to the oiliness of the barrel, the side pressure gun shows no such increase, as the cartridges, of course, are dry.

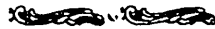
"The ratio of the velocities given by various cartridges is not the same in the different guns. It may be mentioned that the rifle showing the lowest velocity had just been used with great success at Bisley.

"We think that the foregoing sufficiently shows the care with which the rifle and cartridge have to be adapted to each other in order to obtain the best results at long ranges. We fear that in the new English Service weapon these things are being left entirely to chance.

Kings Norton High Velocity	Kings Norton Long Range	Standard 2040 ft.	Bisley Government Cartridges
Muzzle Velocity in Rifle —			
(1) 2130 ft. sec.	2118 ft. sec.	1995 ft. sec.	
(2) 2039 "	—	—	1925 ft. sec.
(3) 2125 "	—	2005 "	—

WOOLWICH PRESSURE GUN			
Pressure			
17.45 tons	17.77 tons	15.17 tons	—
Muzzle Velocity			
2245 ft. sec.	2169 ft. sec.	2107 ft. sec.	

SIDE PRESSURE GUN			
Pressure			
18.07 tons	19.08 tons	16.68 tons	—
Muzzle Velocity			
2071 ft. sec.	2093 ft. sec.	2000 ft. sec.	—



A preservative process for timber was described by W. Powell before the Engineering Section of the British Association recently. The method is quite simple. Timber was boiled in a saccharine solution until most of the oil in the timber was exhausted, and then, by leaving the wood in the syrup to cool a certain quantity of the sugar was absorbed by the timber, in some cases so much as to cause it to sink. After the wood had become sufficiently saturated it was put into a drying stove and the moisture driven off at a fairly high

temperature, until the wood was thoroughly dry-seasoned, and it was then ready for immediate use. Poplar absorbed over two and a half times its own weight of the solution, and when thoroughly dried was 75 per cent. heavier than its natural state. Experiments showed that the woods so treated were very much increased in strength and solidity, were much less inflammable or subject to rot, and much more sanitary as paving material. The cost and amount of labor required in the process was comparatively small and the plant was simple.

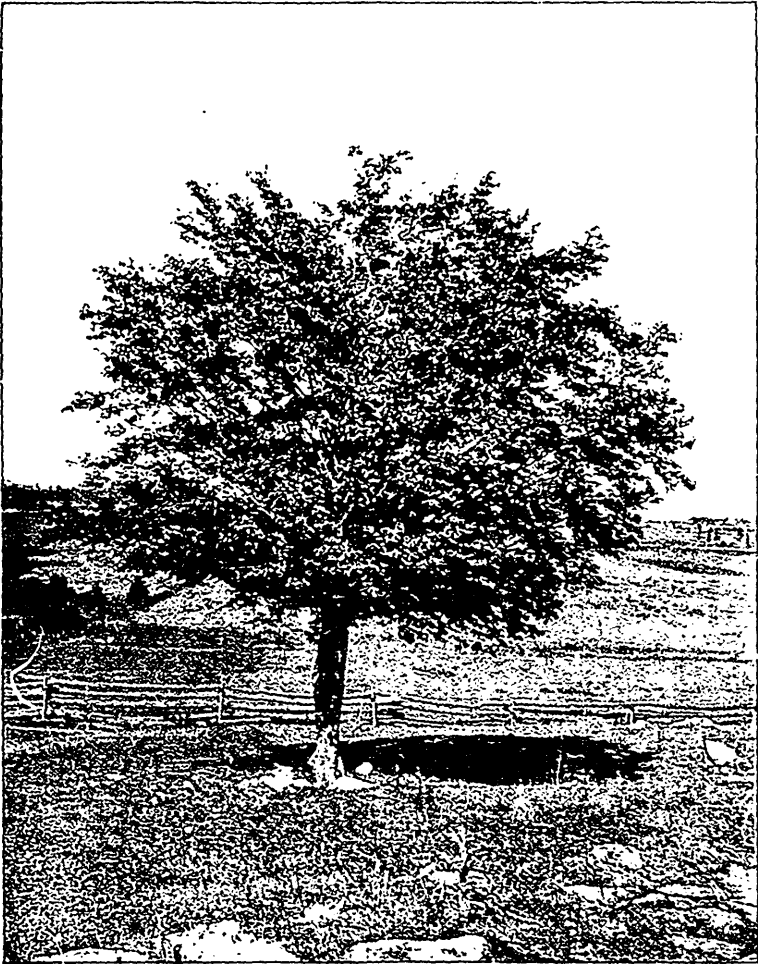
Our Medicine Bag.

In his introduction to Bulletin 60, "A Catalogue of the Fishes of New York," Director Frederick J. H. Merrill, of the New York State Museum, says: "In the present bulletin Dr. Tarleton H. Bean gives to the citizens of the State the benefit of his natural talent and long training as an ichthyologist. It is hoped and believed that the results of this work will be of much practical use to the public at large, and to teachers and students in the schools of the State." These expectations will no doubt be realized, as the bulletin, a work of close to 800 pages, contains a vast amount of such information as Dr. Tarleton Bean can impart so lucidly. One of the principal drainage basins of New York State is the St. Lawrence River, hence this bulletin is almost as useful to Canadians as to those for whom it was more especially written. Excellent as is this bulletin, Dr. Bean promises ere long to prepare a new account of the fishes of New York, containing illustrations of all the species, together with keys for identification, but can not complete such an undertaking till after the inland waters of the State have been more thoroughly and systematically investigated. It is not to be expected that even the best authorities will agree upon all points, and so we must forgive the author for saying "The flesh of the rainbow is generally much esteemed, and in most localities the game qualities of the fish are scarcely inferior to those of the brook trout." After a fairly wide experience with the rod in three continents, we should put the rainbow—at least as he exists in the Kootenays—very, very far ahead of *Salvelinus fontinalis* as a game fish, and not behind it as a table delicacy.

We are thoroughly in accord with Mr. Frank M. Chapman, of the American Museum of Natural History, as to the enormous value of the bird to the agriculturist, but although agreeing with his arguments, as contained in a bulletin entitled "Economic Value of Birds to

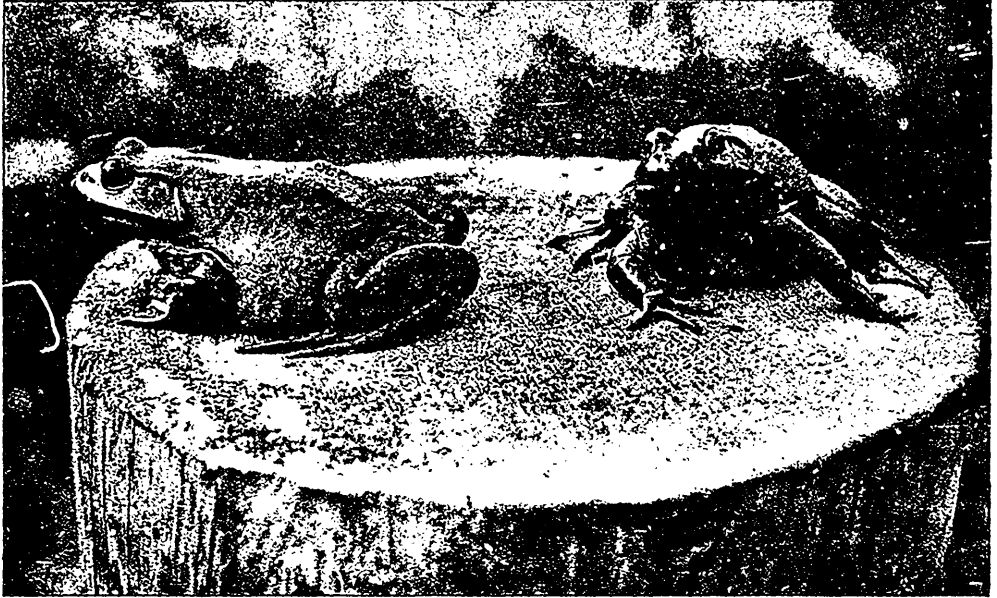
the State," we doubt if his opening postulate—The Bird is the property of the State—is good law. Apart from this, Mr. Chapman's pamphlet is admirable throughout. After recapitulating the good the bird does the state, the author shows what the state, in return, should do for the bird—and as there are seemingly but four things the latter can do to be of service to the avian wanderers, self-interest might, one would think, cause them to be done. Enforcement of the law; licensing cats and destruction of all non-licensed cats; teaching children to realize the economic and æsthetic value of birds; leaving hedge rows, undergrowths and clumps of trees as resorts for birds, are the only points necessary to attend to, according to this high authority and sincere bird-lover. The pamphlet is most excellently illustrated by Louis Agassiz Fuertes.

Mr. Thomas Southworth, Director of Forestry for Ontario, has returned from an inspection of the Timagami Timber Reserve, made in company with the Commissioner of Crown Lands, Hon. E. J. Davies. There is a very fine body of pine in this reserve, much of which has reached maturity, and, as appears by statements made by the Commissioner since his return from this trip, it is likely that provision will be made in the near future for taking off some of this timber. The difficulty of getting rid of the timber slashings and debris is a problem of serious moment, as all such refuse increases to a great extent the danger of fire. Some experiments will be made to see whether it will not be feasible to get rid of this material by burning. This would not only accomplish the primary object, but would prepare the best seed bed for the white pine. It has been noticed that the pine reproduces much more generally on burnt-over than on cut-over lands, owing to the exposure of the mineral soil; and, therefore, the burning of the debris, if done with due care, would probably be beneficial rather



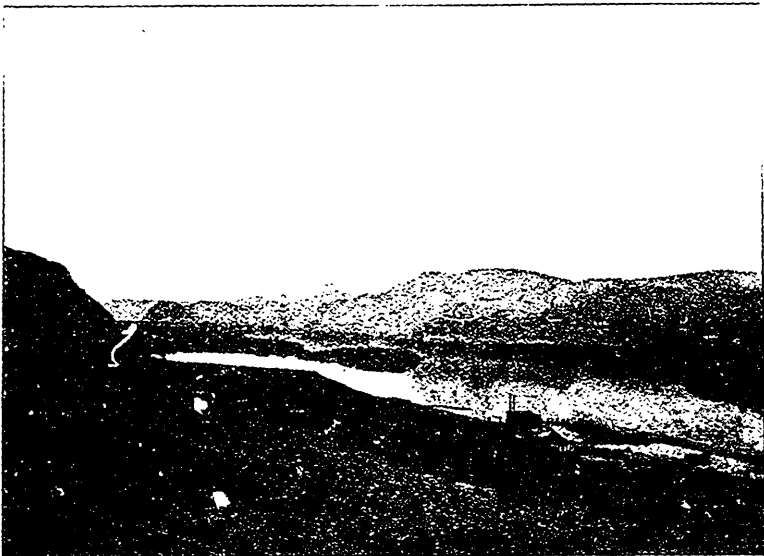
THE IRONWOOD.

Ostrya virginiana, though by no means an abundant tree is prized by the backwoodsman



LAKE ST. CLAIR SEA LIONS.

'These are the Jambos of their species - and beautiful as they are big.'



THE NORTH THOMPSON.

Its junction with the main stream.

than harmful. It is expected that the railway to New Lisheard will be complete before the end of next summer, and as this road runs for a considerable distance through the Timagami Reserve, special precautions against fire will be taken. The right of way is being cleared back for some distance on both sides of the track, and a guard will probably be placed on the road to follow each train.

It is hoped that an extension of the reserve will be made so as to include the non-agricultural lands further to the west, and eventually the greater part of the Laurentian watershed. Recent explorations have shown that there is a considerably larger quantity of pine still untouched than there was thought to be some time ago. Considerable bodies of pine have been located on the Missanabie and Seine Rivers, in addition to that standing in the Timagami district.



It has been pointed out recently by H. A. Surface, professor of Zoology at Pennsylvania State College, in a contemporary, that there is a direct and important connection between forestry and zoology, and he gives several examples of how this connection exists. Aside from the clearing of forest growths which naturally drives away denizens of the woods from the cleared localities, he finds that the effect of forest destruction on streams is a far-reaching one. Clear streams, flowing perpetually through wooded country, are the natural haunt of the trout; but if the country in which these streams rise or have their courses is destructively cut over, the streams themselves becomes intermittent, muddy, and in some cases only a succession of warm and slime-covered pools in mid-summer. As such they are fit only for the lurking places of the mud-sucker and the carp. In the larger streams and rivers which, under natural conditions, are the homes of the desirable game fishes, the black bass and pickerel, which pass the water in deep pools in a state of partial hibernation or quietude, the changes are even more to be deplored

when the watershed is disforested. Floods arising from the destruction of the trees bring down immense quantities of silt, "washings," sand, etc., and deposit them in deep pools, where the current runs slower, so that the quiescent fish are covered over and destroyed. Another disastrous result comes from the washing of the fishes out of their places of winter abode, dashing them against rocks and ice, and in some cases leaving them stranded to gasp out their lives after the water subsides.

The setting aside of forest reserves will not only keep the forest and the beauty of the landscape, but will restore game and song birds to their original haunts, protect the wild animals, and preserve the most desirable fishes—the trout, the bass and pickerel.



A very pleasant function on Thanksgiving Day was the annual open air show of the Montreal Collie Club, confined to members only. It was a delightful day for an outing, and the grounds of the Corporation quarry at Outremont is an ideal spot for such a gathering. Old Mount Royal, clothed in the brightest autumnal tints, was a splendid background, and afforded a diversified picture of green and color with which the lover of nature could never feel satiated. The glorious weather drew a large number of visitors to the grounds, who seemed pleased with the specimens of the breed shown, although at this season of the year, when they are coming into coat, is not the time to see the collie to the best advantage. There were about fifty dogs benched, and generally speaking the quality was good although the majority were undersized, and the bitches were slightly better than the dogs. Mr. W. S. Spark, of Ottawa, who has had some experience of judging in England, handed out the ribbons, but we are bound to say his rulings did not give entire satisfaction. However, dissent from the judge's decision is nothing uncommon at a dog show and ought not to be taken too seriously. The principal

Messrs. Abercrombie & Fitch have issued a new and complete catalogue of outfits for explorers, sportsmen and pros-

pectors. This is a very useful manual, and should be in the hands of all who take their vacation in the woods.

prize takers were Messrs. James Ainslie and R. C. Binning, of Outremont, and J. J. Reid, St. Lambert, the first named taking the highest awards in both sexes. The committee, who entertained the visitors to tea, coffee and cake, are to be congratulated on the success of the affair.



The value of the water supply and the necessity for its protection in the West is well shown by the following quotation:—

"In this connection it is interesting to note the many times which the water of some of the western rivers is used over and over again. First, it pours through some rocky gorge and generates an immense electric power. This is transmitted miles away to do its work, pumping water for irrigation, and supplying towns with current for lighting, street railways, etc. The river in the meantime has lost none of its usefulness. It flows down and out on to the plains and valleys, and is diverted to agricultural land until all its water is taken out and it remains a dry bed. When land has been irrigated for a number of years it becomes so well saturated that thereafter much of the water used for irrigation seeps away, so that as one drives down the dry bed of the river it is seen to be no longer dry. The water used for irrigation has drained off into its natural channels and is returning to the river bed, the lowest point. So that ten miles below the last diversion dam there is a respectable river again flowing towards the sea. This water has now been used twice, once for generating electricity and once for moistening the roots of plants: it is now taken out again to irrigate more land. This returning of the water by seepage may occur three or four times, and each time it is used over again for irrigation, and if large additional areas are irrigated by pumping, the river may actually increase in volume."



Sergeant L. R. Tippins, of the 2nd Volunteer Battalion of the Essex Regiment, is one of the crack shots of the Empire; a statement easy of substantiation by any one having access to reports of the shooting at Bisley where he has won innumerable prizes and much kudos. He has also developed into a writer who commands attention when discussing the grooved barrel and the use thereof, and we have much pleasure in calling the attention of our readers, and also of the Department of Militia, to a couple of treatises recently published by Sergt. Tippins. "Modern Rifle Shooting in Peace, War and Sport," and "The Service Rifle," should be in the possession of all Canadian riflemen, for they are the latest utterances of one who thoroughly understands the modern rifle, and keeps not only abreast of the times, but even a little wee bit in advance. The prices of these books are \$1.37 and 25 cents respectively, and the publisher is J. S. Phillips, 121 Fleet Street, London, E.C. We intend to discuss some of the matters mentioned in these works in a future issue, lack of space being our excuse for a brief notice of what deserves more generous treatment.

Bird life has been studied from many standpoints—and one of the latest books is also one of the most interesting. Messrs. Clarence M. Weed and N. Dearborn have published with the J. B. Lippincott Company of Philadelphia, "Birds in their Relations to Man," in which the habits, appetites and foods of a majority of our North American birds are minutely and accurately described. Moreover the scope of the work has been made to include the conservation of birds, both non-game and game, the Lacey Act, and a partial bibliography of the economic relations of the birds of this continent. We consider this one of the most useful, most instructive and authoritative works on economic ornithology published.

The J. Stevens Arms & Tool Company, of Chicopee Falls, Mass., has issued a puzzle which calls for a great deal of ingenuity upon the part of those who would make a success of its solution. It

will be sent upon request, and receipt of two 2-cent stamps. The Company says that if you can solve this puzzle you are certainly a crack shot.

A new edition of "Down Channel"—the third—has appeared and will doubtless find a ready sale, for its author, the late Mr. R. T. McMullen, had a host of admirers among the Corinthian yachtsmen of the British Isles. His solitary death on the "Perseus" in mid-channel on the night of June 14th, 1891, caused widespread sorrow. The last entry in his diary was on June 12th; on the following day he landed and posted a letter at Eastbourne. The next heard of him was a telegram on June 16th, saying he was found dead on the evening of June 15th, by some French fishermen. He was sitting in the cockpit, with his face toward the sky, and the vessel sailing herself along. "Down Channel" is a log of his cruise for 51 years, and is brimful of hints and shrewd observations that will be appreciated by Corinthian sailors all the world over. The price of the book is \$1.25; the publishers being Horace Cox, Windsor House, Bream's Buildings, London, E. C.

We hope, earnestly, that the Dominion Government in its wisdom will see fit to place a very large bounty upon the grey timber wolves of the Northwest Territories. We are assured on excellent authority that there are not more than 150 of the woods buffalo now living; there are no calves, nor animals under three years living at the present moment; those that are left are all adults, able to defend themselves from the bands of timber wolves that have been preying upon the young buffalo. These destructive brutes hunt the buffalo range each spring, and after having killed the calves, they migrate, by certain well-known trails which they invariably follow, to the barren lands, and prey upon the caribou and musk oxen until the succeeding spring, when they return to re-

new their depredations upon the buffalo herd.

Neither the Indians nor scattered whites are killing the buffalo, and if a bounty of \$10 were placed upon the grey wolves, the Indians would soon make a business of exterminating them, or, at least, so thinning their numbers, that they would not be able to commit ravages upon the same scale as at present. We yet have a few of those magnificent, black, shaggy, buffalo bulls that the old timers knew so well; surely we can afford a couple of thousand dollars a year in order to protect them.

Messrs. Sampson, Low, Marston & Co., St. Dunstan's House, Fetter Lane, London, E. C., have issued "Angling Anecdotes" by Robert Stanley; the same being a series of humorous stories more or less intimately connected with the gentle art. It is a capital shilling's worth, and would make a nice Christmas present for any wielder of the rod.

One of the most successful hunters in British Columbia, a man who has shot forty-two bears in three seasons, uses a 38-55 smokeless, but rarely fires at over fifty yards and tries for the neck shot every time. He uses a pack of small terriers, and while they are distracting the animal's attention, he places the fatal shot.

The value per thousand feet of pine lumber imported from Canada by the United States shows a steady appreciation from year to year. By the treasury reports it averaged \$13.24 for the first eight months of 1901, \$14.30 for the corresponding period of 1902, and \$14.66 for the same part of 1903.

The E. I. Du Pont, Nemours & Company, of Wilmington, Delaware, manufacturers of Du Pont smokeless powders, have issued a set of twelve half-tone cards, showing the Canada goose, snipe, rabbit, turkey, woodcock, blue-winged teal quail, grey squirrel, pinnated grouse, ruffed grouse, mallard and canvas back.

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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.

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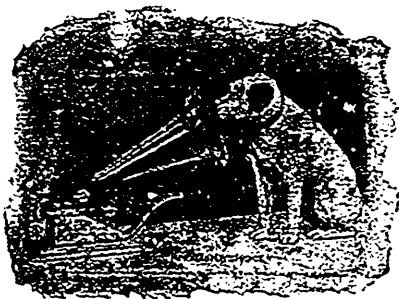
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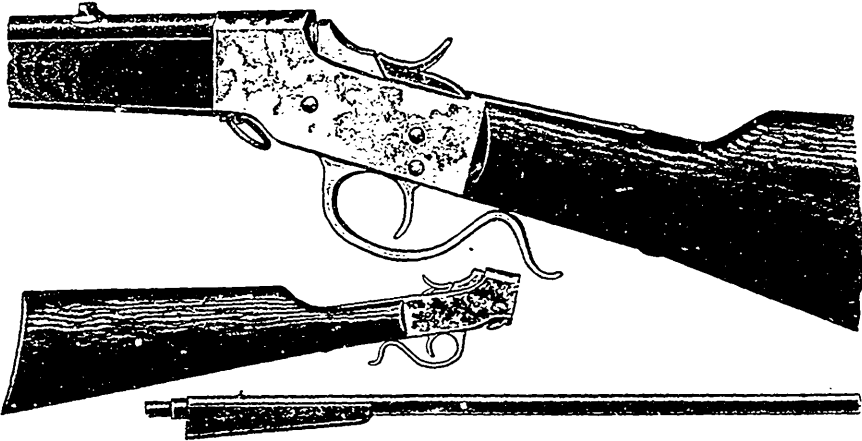
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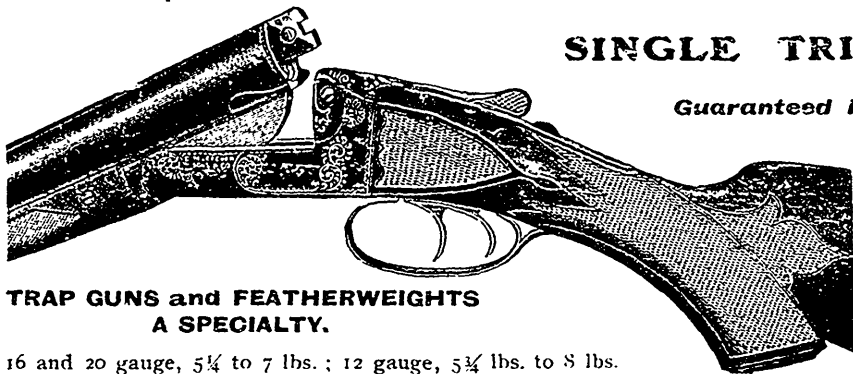
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