

ROD AND GUN IN CANADA



Laurentian Trout

**A MAGAZINE
OF CANADIAN SPORT
AND EXPLORATION**



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A morning's catch on a British Columbia river.

ROD AND GUN IN CANADA

VOL. IV.

MONTREAL, SEPTEMBER, 1902

No. 4

Wilson's Snipe.

BY CHAS. A. BRAMBLE.

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

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

Of course, naturalists have ranked the American snipe, *Gallinago delicata*, as a separate species, and equally, of course, they were right in so doing, because it is undeniable that the American snipe has two feathers more or two feathers less (I never could remember which, and I do not wish to consult a text book, preferring an original, if imperfect, description to one cribbed from another writer) in his tail than the European bird. Nevertheless, when our snipe

springs from a tussack and goes off at speed, he resembles the bird of the old world so closely that even the keenest eye that ever glanced along the rib of a twelve bore, could not tell the difference. True, the European bird is harder to hit, but that is because it is shot during the winter months when it is wilder (and especially wild, during a touch of frost) than in the autumn, while our birds reach us in September, and are off again when the first heavy northeaster strikes us toward the fag end of October. It is my impression that in the Southern States, during a cold snap in January, the American snipe must fly fully as strongly as did the birds I used to shoot in the north of England.

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

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

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

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

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

Snipe shooting means snap shooting, and there is no bird which demands

greater skill, although I almost think that the snipe shooter is born and not made, because I know in my own case I could always do pretty well at this kind of shooting while I am not nearly so good at deliberate firing, such, for instance, as duck shooting at flight time. I used to go out a good deal with an old Micmac, who looked on in astonishment, not unmingled with contempt, at the way I used to cut down the snipe, but when the time came for the evening flight of duck he could kill three birds to my two. His gun was a double ten bore muzzle loader, and the whole performance on his part was a very deliberate one; down would go the powder, then two wads, then the shot, another couple of wads, after that came the caps—and this performance was not hurried in the least because a few miserable ducks happened to have taken a mean advantage of the old man, by flying over when he could not attend to them. Not a bit of it, he would stand with his legs far apart, his gun held as in a vise, those far-seeing, old eyes of his seeming to pierce the heavens as he watched intently for an oncoming bird. Perhaps, a single black duck, perhaps a bunch, would appear, flying as if late for an engagement, and anxious to make up for lost time. The long, rusty barrels would swing slowly upward, and if the coveted bird was high up you may be sure they were held well ahead of it; the trigger was pressed, and more often than not that unfortunate duck would seem to lose all ambition and fall with a thud in the ooze.

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



Canada vs. Norway.

BY T. L. CARLETON.

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

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

The Canadian Dominion is so enormous in area, has so diversified a climate, and such a wealth of big game and fish, that it, certainly, is surprising more Englishmen do not visit it in search of sport. A great many, no doubt, are shy of the cold. They think that they would have to use skates and snowshoes most of the time; as a matter of fact the shooting and fishing in Canada really ends before the beginning of the intensely cold weather. The only animal that has sufficiently potent attractions to lure men into the bush when the thermometer is low is the caribou—all the other Canadian big game should be left alone after the snow has reached a depth giving the hunter an undue advantage. From the

first day of September until the first day of November, even in the colder parts of Canada, and for fully a month later in British Columbia and Southern Ontario, the climate is delightful, and sport is carried on under pretty nearly ideal conditions. In Canada there is no malaria and no sunstroke, and during the long autumn, no flies and no frostbites.

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

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

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

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

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

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

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

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

breaks suddenly; and this should be a warning to the sportsman to strike his camp and put his rifle in its case.

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

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

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

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

your guide, or some settler, at the price it cost you when the hunt is over.

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

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



A Kamloops correspondent writes as follows :

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

According to a letter in the Ashcroft "Journal" :

The Thompson River is an ideal one for trout, bright and clear with the exception of about a week at high water in the middle of June and early in July. After high water there are no over hanging branches near enough to catch your line as you make a cast, the river is always clear from snags, the bane of some trout streams. The mosquitoes are very scarce, and the trout enormous and gamey. Fairly expert anglers can fill their baskets in an afternoon with fish anywhere from a quarter of a pound to five pounds. The average trout weighs two pounds. The water is swift and the fish muscular. After a big run of salmon the trout are in prime condition, having fed well in the salmon spawn. The air is dry and bracing, and it is a rare thing to have a day's sport spoiled by rain. Should

the angler desire larger fish he can go up to the lakes at the Marble Canyon where they are taken over twenty pounds in weight. These, however, will not rise to a fly; occasionally a steelhead will take the fly in the Thompson but it is a rare occasion.

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

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

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

Game Legislation.

BY J. A. M'DOUGALL.

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

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

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

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

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

comparatively safe after passing Mason and Dixon's line, but now the niggers and mean whites have found that there is a market for this fowl in the big cities of the north, and they hunt them diligently from November until March. No doubt the birds want all the protection they can get in Canada, in the States immediately south of the International boundary, and throughout the path of their migrations; but still more do they require protection in the Southern States, and as this protection is not likely to be granted them the destruction of these migratory birds is likely to continue until they become as scarce as the beautiful passenger pigeon. We Canadians did not kill the passenger

pigeons; we made no perceptible inroads upon those great flocks, whose weight broke the boughs off the forest trees, yet, within a generation or two they disappeared, and now the boy growing up thinks the old man is telling a "whopper" when he relates the number of pigeons he could get at a shot when *he* was a boy. I must confess that I am a pessimist on the subject of protecting migratory birds. South of us lies the great Republic, with its mills, its factories and its teeming millions, and when we raise game birds whose foolish instincts lead them to wander southward in the fall we should not expect them to return in the spring, except in sadly diminished numbers.



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

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

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

A very praiseworthy movement is on foot to restock the Adirondacks with moose, but our game commissioners do not believe in robbing Peter to pay Paul, and, consequently, a young moose con-

signed to D. T. Benson, Old Forge, N. Y., was seized at Ottawa. The animal was caught near Fort Francis, New Ontario. Our law forbids, and very rightly, the export of these animals, hence the seizure.

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

Some New Cartridges.

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

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

They say :

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

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

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

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

Cartridge	Bullet	Velocity At Muzzle	Penetration in 7-8 inch dry pine boards at 15 feet from muzzle. Soft Point Bullet	TRAJECTORY	
				100 Yards Height at 50 Yards, Inches	200 Yards Height at 100 Yards, Inches
.45-70	300 grs.	1875 ft. sec.			
.45-90 Winchester	300 "	1950 " "			
.50-110 Express	300 "	2225 " "	13 14 12	1.47 1.41 1.07	7.30 6.63 5.82



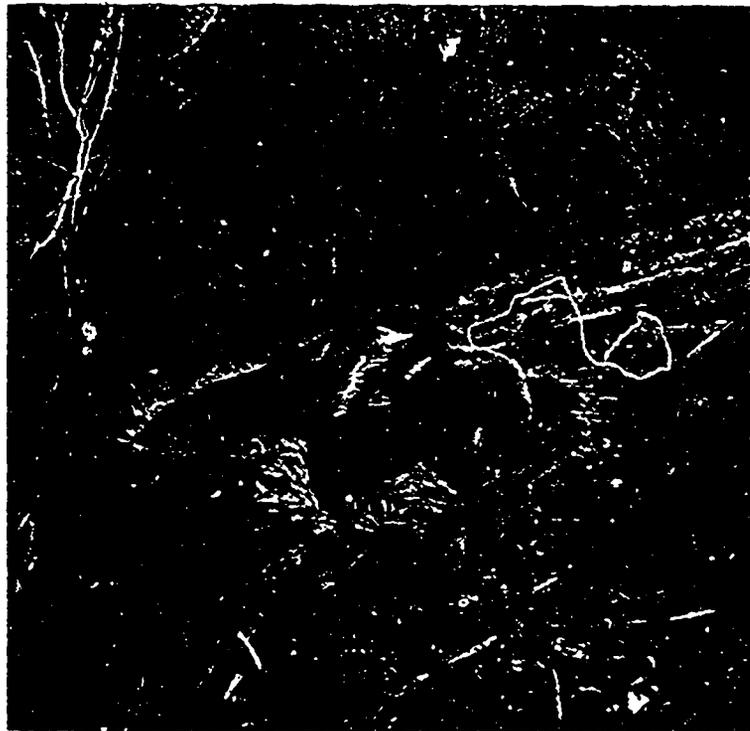
IN THE FAR NORTH.
Grand Rapids of the Athabasca River.



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



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



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

Chats About Driving.

BY "MEADOWBROOK."

DRIVING SINGLE.

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

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

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

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

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

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

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

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

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

and alter anything that may seem to require alteration.

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

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

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

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

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

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

touch on the reins will often effect a cure.

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

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

Only a poor coachman drives with a rein in each hand, it being then impossible to pull up quickly or to use the whip effectually. With the correct

rein hold it is an easy matter to stop short by pulling the reins with the right hand through the left. Practise taking up the reins quickly with either hand, as you would have to do in stopping suddenly, being careful to have the right hand with the fingers downward, and the left hand with the fingers upward.

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



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

Mr. David Denne, a well known Montreal sportsman, has been writing some interesting reminiscences of thirty years ago in the Peterboro "Evening Review." In those early days he frequently visited Stony Lake, the Otonabee River, and Chemong Lake, then more usually called Mud Lake. All those interested in that district would do well to procure, if possible, these interesting letters by a veteran sportsman. Though they will not find the deer, the duck, and the bass so abundant as they were when Mr. Denne was a young man, they will find some of them there yet, and as the present gen-

eration will not be able to compare the sport attainable to-day with that of the long ago, it will not share the regret that Mr. Denne, almost pathetically, acknowledges feeling. One of his letters concludes with some sentences that give the key to the mood of the writer. He says:—

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

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

Fish Culture in Canada.

(Concluded from the August issue)

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

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

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

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

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

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

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

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

When the ripe female fish is being spawned by the hatchery operator, the eggs run freely in a stream into the pan or dish, previously rinsed in clean water; the operator gently pressing the abdomen with one hand, while with the other he

holds the fish firmly in the region of the anal fin, the head of the fish being secured under the armpit, if a large fish like a salmon. A male fish is then treated in the same way, the milt flowing into the spawning pan amongst the eggs, and the eggs are stirred with a feather, thus securing fertilization. After being washed, the eggs are placed either upon black Japanned tin trays, 15 in. x 10 in. x $\frac{7}{8}$ in., perforated with small holes and holding about 2,000 salmon eggs, or they are placed in glass vases 20 in. x 6 in. in diameter. The former are more suitable for salmon and trout, the jars being best for whitefish. Zinc trays are found hurtful to eggs, the officer at the Miramichi hatchery reporting in 1874 that a large number of salmon eggs were poisoned from this cause. The eggs, being alive, require abundant oxygen, hence a continuous stream of water must pass over them day and night until they hatch out. Under natural conditions river-water, of course, pours over the eggs, but fish culturists are agreed that spring-water is preferable for hatching purposes, not only because the temperature is more equable, but is purer and more free from debris and vegetable matter. In 90 to 120 or 150 days, the young fish burst from the eggs; shad, however, take only from two to five days, and cod hatch in ten to thirty days. Most of the valuable fresh-water species, like the trout and whitefish take many months. In special cases where the hatching of sturgeon and shad has been attempted as in Chautauqua Lake, N.Y., hatching boxes with double wire screen, top and bottom, have been placed in a running stream, or if containing maskinonge eggs, have been sunk at a depth of four or five feet in the lake. The fry are transferred to large tanks for periods of a few days or a few weeks, and are distributed in large cylindrical cans, nearly two feet high and twenty inches in diameter, the narrow neck of which is devised to hold ice in hot weather, in order to keep the water cool.*

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

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

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

In 1887 eight or ten thousand young salmon were retained in a pond at the Restigouche hatchery, and were fed during the summer, "yet they did not seem to thrive well, as but few were seen in October when the pond froze over (as Mr. Alex. Mowat reported).

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



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

It is to be feared that Mr. Bastedo has been studying fish more than fishermen lately. Here

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

Dodging a Negative.

BY HUBERT M'BEAN JOHNSTON.

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

When one commences to understand that a treated negative will render a better translation of the subject than one which has been simply printed from in the ordinary way, the question naturally occurs: What kind of negative is best for the purpose in hand? Now, it will be found that the front-rankers usually make their negatives as thin as their printing processes will allow. The reason is not because of any special direct advantage to the print, but because the more personal attention that is given to each frame, the higher is the class of work turned out. A thin negative will allow the operator to give this time to each frame without losing an undue number of hours. It is positively marvellous, for instance, how many different effects may be had from the one negative, by simply shading one part while another tints to a few shades deeper. Moreover, the introduction of this personal element into the printing at once forces upon the critic a clear idea of how very necessary it is that the worker make his own negative, and make it of such a quality as to allow him to get as near his ideal reproduction of the actual scene as possible. But then, again, there are workers who have different ideas and make their negatives as strong as they can. Both may

be very skillful, and both may turn out work of a high standard in their own line. But let these two members of these different classes exchange negatives and behold the result, and how futile are their endeavors to get satisfactory prints. The fact is, the negative, unseen by the world at large, is but a tool in the hands of its maker, and upon him must depend entirely what shall be the artistic and pictorial value of the prints taken from it. Perhaps there is not much opportunity for altering the composition, but so far as that important factor, atmosphere, is concerned, he certainly has full control.

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

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

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

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

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

As an example of the method of dodging, we will suppose we have a thin landscape negative, with weak detail in the shadows and faintly defined clouds in a dense sky. Place the negative on the

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

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

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

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

Sometimes, when the movement of a figure in the foreground has spoiled an

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

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

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



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

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

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

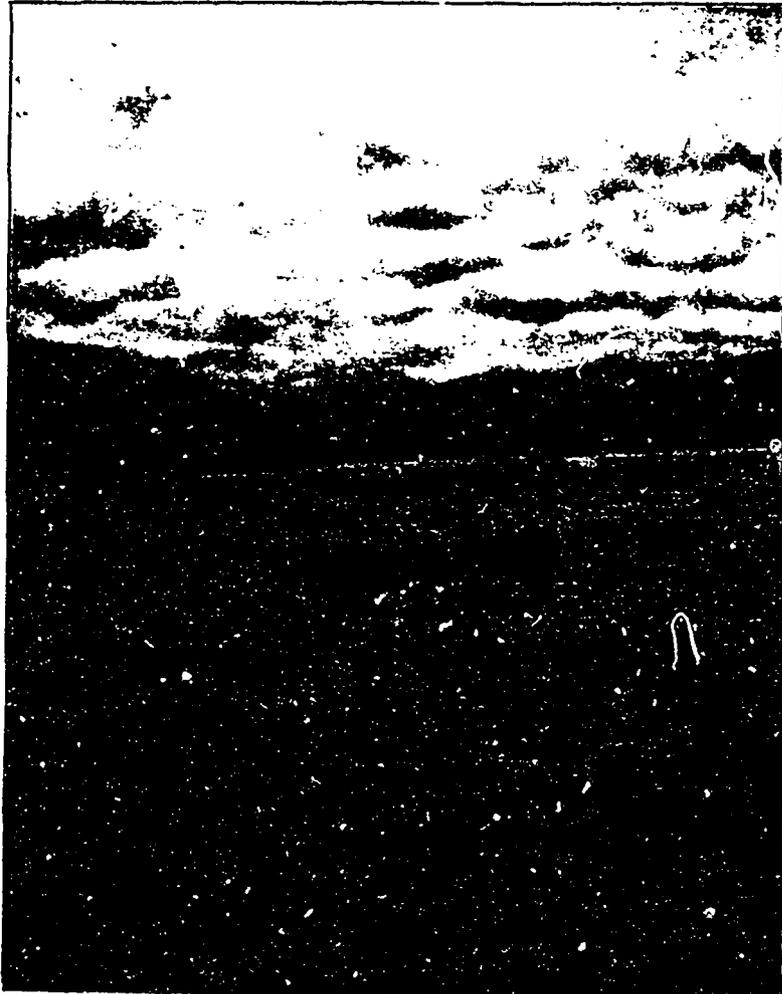
Few, if any, photographic supply houses are in business for their health. Yet, Andrew J. Lloyd & Co., of Boston, publish an *Encyclopædia Photographic*

which is a marvel of completeness and a valuable reference book on all subjects connected with photography. Notwithstanding the fact that it is a large sized and beautifully bound octavo and must cost considerable to put out, the house is distributing them free to all who ask for them. We advise our readers to get a copy, which may be had for the asking. Mail orders will be filled on receipt of 20 cents in stamps to pay the postage, but it is well worth the price and none ought to miss it.

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



ONE OF THE MANY TROUT LAKES FOR WHICH QUEBEC PROVINCE IS CELEBRATED.



IN THE HEART OF THE LAURENTIANS.



THE DOUGLAS FIR.

This is one of the grandest timber trees of the Pacific Coast: 500,000 sq. ft. have been cut on one acre.



BLACK BEARS.

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

The Douglas Fir.*

What the white pine is to Eastern Canada the Douglas Fir is to the Province of British Columbia, where magnificent forests of this tree still tower in majestic grandeur, reaching a height of two hundred or even three hundred feet. In such a forest, as in the shadow of the mountains, man begins to realize the great forces of nature which are working around him, and in his breast there rises that feeling of awe and reverence which must have influenced the worshippers of an earlier day when they chose the forests as the temple of their gods. Look up, and still further up, and still the great tree towers till the eyes are strained in vain seeking to measure its height. Think of the power of unwearied effort by which little by little, from the diminutive seedling, such an immense column has been raised, and think of the pulsating life by force of which the water needful for its existence is carried through all that height of trunk and spread of branch; and man, be he Christian, or pagan or unbeliever, must recognize that he is here in the presence of one of the greatest manifestations of that mystery of power which he may designate life, but which he does not therefore any the more clearly understand.

This tree is known most generally in Canada as the Douglas Fir, though it is also designated as the Red Fir and the Oregon Pine. The botanical name is *Pseudotsuga Douglasii*, or *Pseudotsuga taxifolia*, though the uncertainty about its classification before this name was settled upon may be seen from the other scientific names which have been applied to it, namely, *Pinus taxifolia*, *Pinus Douglasii*, *Abies mucronata*, *Abies Douglasii*. The generic name is derived from *pseudo*, false, and *tsuga*, hemlock, and the first specific name from that of the man who first described it and introduced it into Europe, while the second is from *taxus*, yew, and *folium*, a leaf. The flat leaves are scattered over the twigs, but they have this special character which distinguishes this tree,

that they are set with the edges up and down instead of with the flat side uppermost as is usual. It reaches its best development in the coast district, though it is found all through the southern part of British Columbia up to a height of 6,000 feet, where it appears in a stunted form. It passes over the Rockies as far east as the vicinity of Calgary. Its northern range is irregular and still somewhat uncertain. The great size of the trees is shown by the fact that as much as 500,000 feet have been cut from one acre, while the average is from 30,000 feet to 50,000 feet, although only the trees between two and seven feet in diameter are usually cut. The bark is largely used for tanning, and the wood is suitable for a great variety of purposes, such as house building, ship building, bridges, wharfs, piles, masts, furniture, fencing, etc. When excluded from the air it is very durable, and is therefore useful for piles, and the great length of the timbers which can be obtained makes it specially valuable for bridge building and similar purposes.

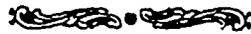
In the districts of British Columbia, where the winter is like that of the East, the logging is somewhat similar, but in the part where lumbering in Douglas fir is most important snow is unknown and winter unheard of. The usual method of cutting is for the axeman to cut a deep notch on each side of the tree at a height which can be conveniently reached. In these notches pieces of board, long and wide enough for standing room, with an iron prong pointing upward are inserted. The weight of the men on the boards drives the prong into the wood and makes everything firm. From this vantage place a cut is made by the axe in the side of the tree to which it is to fall and the remainder of the cutting is done with a crosscut saw. The object of leaving so high a stump is apparently to get above the swell of the root. It will be easily understood that the felling of a tree two hundred feet in height is a difficult operation, and if not carefully handled may result in great damage to the timber

* Contributed by the Officers of the Canadian Forestry Association.

either from splitting or from the impact of the fall. If the tree is growing on a slope it is usually felled upward, and in other cases it is felled so as to have the force of the fall broken by trees of inferior value, and sometimes even an artificial bed of branches is prepared. If long timber is not required the log is cut in lengths from twenty-four to forty feet, the bark is cut off or "rossed" so that the pieces will slip easily, and they are drawn over a skidway prepared by laying across the road at distances of a few feet round logs of a diameter up to fourteen inches. The skidway is sometimes made more slippery by greasing the logs. The motive power may be oxen or horses in teams of a dozen or more, the oxen being now largely superseded by the quicker-stepping horses, or it may be by a stationary engine working a cable on a drum, or even a steam tramway may be run into the scene of operations. Logs of such great diameter are not easily sawn, and at first the work was done by two circular saws, one working from

above and the other from below, a method which required a very nice adjustment of the saws. Since the introduction of the band saw it has taken the place of the older method. The proximity of the good timber to the coast gives great facilities for shipping.

With such magnificent forests it might easily be concluded that the lumber industry in British Columbia should be in a flourishing condition. The want of a market is, however, a great difficulty. The local population is small, the North West Territories are not yet sufficiently populated to make a large demand, the market to the south is practically closed by a heavy duty on lumber, and the shipping facilities for Australia and the far East are not sufficient as yet to make the business very extensive in competition with the American West Coast timber. Within the last few years conditions have commenced to show signs of improvement, but the average price last year was only about \$10 a thousand.



With the first number of the present calendar year and its eighth volume *The Forester*, the official organ of the American Forestry Association, assumes a dual role as the representative not only of the forestry but also of the irrigation interests of the United States, and appears under the name of "Forestry and Irrigation," with a neatly designed and striking cover suggestive of the two interests for which it stands. *The Forester* has been the chief exponent of forestry principles in the United States and has done very much to arouse in its constituency an interest in the subject and give a clearer understanding of the objects of the whole forestry movement. Amongst its contributors are the leading scientific men and forest students of the country,

and with their help it has been enabled to supply to its readers a series of able articles dealing with the history and development of forest management not only in the United States but on the continent of Europe, where it has reached its highest development. The editorial work has been well done, and through its various departments touch is kept with the progress of events and the literature of the subject. Everyone who is interested in forestry will find in "Forestry and Irrigation" information which he needs, and we feel that we are advancing the interests of the Canadian Forestry Association by recommending all of its members who can possibly do so to become regular readers of that magazine.

The Value of a Forest.*

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

THE GROUP METHOD.

By this method the trees of a stand are divided into several groups, and sample trees are felled for each group. From these sample trees the volumes of the separate groups are calculated. These volumes added together give the volume of the whole stand.

The number of groups is dependent upon the accuracy desired. As for the whole stand in the preceding method, so for the group in this method, the sample tree should represent the mean cross area and the mean height and form factor. The larger the number of groups the more nearly will this condition be satisfied but the more laborious will be the calculation, since each group must be treated by itself.

If in measuring a stand great intervals have been made between the diameter classes, in accurate work each diameter class may be considered a group. The calculation of the diameter of the sample tree is then saved, since this possesses the mean diameter of the class into which it falls.

If v_1, v_2, v_3 , etc., be the volumes of the individual groups then the volume of the stand,

$$V = v_1 + v_2 + v_3 + \dots$$

As has been shown, the volume of each group may be found by multiplying the volume of the sample tree of the group by the number of trees,

$$V = v \times n,$$

or by the formula

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

Species.	Diameter at Breast Height.	Number of Trees of each Diameter.	Basal Area of each Diameter Class.	Groups.			Sample Tree.				Number of Sample Trees of each Group.	Volume of each Group.			
				Group Number.	Number of Trees.	Basal Area in Sq. Feet.	Average Dimensions.		Average Actual Volumes.			Cubic Feet.	B. M.	Cubic Feet.	B. M.
							Basal Area in Sq. Ft.	Corresponding Diameter in Inches.	Cubic Feet.	B. M.					
White Pine.	8	22	7.68	I	358	201.52	.56	10.1	14.3	33	2	5119.4	11814		
	9	77	34.02												
	10	97	52.90												
	11	162	106.92												
	12	40	31.42	II	343	354.53	1.03	13.8	41.5	124	2	14234.5	42532		
	13	100	92.18												
	14	115	122.94												
	15	88	107.99												
	16	160	223.41	III	454	471.74	1.59	17.1	66.8	245	3	30327.2	111230		
	17	182	286.89												
	18	45	79.52												
	19	67	131.92												
	20	88	191.99	IV	306	747.06	2.44	21.2	106.2	532	2	32497.2	162792		
	21	110	264.58												
	22	86	227.02												
	23	22	63.47												
	24	14	43.98	V	99	333.73	3.37	24.9	164.3	760	1	16265.7	75240		
	25	85	289.75												
	Total volume of the stand.....											98444	403608		

* Contributed by the Officers of the Canadian Forestry Association.

As has been pointed out, the volume of the stand may be obtained by the formula,

$$V = v_1 \frac{A_1}{a_1} + v_2 \frac{A_2}{a_2} + v_3 \frac{A_3}{a_3} + \dots$$

$$\text{Now, if } \frac{A_1}{a_1} = \frac{A_2}{a_2} = \frac{A_3}{a_3} = c$$

$$\text{Then } V = c(v_1 + v_2 + v_3)$$

That is, if this condition were satisfied, it would not be necessary to calculate

the volume of each sample tree and group separately, but the sample trees could all be worked up together. This would simplify the calculation very much. The volume of the stand would then be obtained by multiplying the total volume of the sample wood by the common factor c .

This condition is not satisfied, however, by the Group Method, but is well reached, as will be seen, by the Draudt and Urich methods.



The Seventh Annual Report of the New York Forest, Fish and Game Commission, transmitted to the legislature on the 30th January, 1902, gives the logs and timber, obtained in 1900 from the forests of northern New York, total 533,339,072 ft. B. M.; 166,614,856 ft. being spruce taken by the sawmills and 230,649,292 ft. spruce taken by the pulp mills, and 54,948,590 being pine. In 1890 the spruce used by the pulp mills was reported at 51,966,282 ft. In addition to the native spruce used in the pulp mills 151,157 cords, or 82,985,193 feet, were imported from the Canadian provinces. The lumber product of the Catskill forests for 1900 was 56,606,343 ft. B.M.; 2,730,780 ft. being spruce and 9,340,448 ft. pine. 1,374,147 ft. spruce were consumed by the pulp mills. The combined product of the Adirondack and Catskill forests amounted in 1900 to 651,135,308 ft., or more than the entire Canadian lumber import of that year to the United States. In regard to the future of the timber supply the following statement is made:—

"Each year recently the softwood timber on 80,000 acres or more is cut and removed by the lumbermen or pulpwood operators. This would indicate that if the present rate of cutting continues, these industries will exhaust their supply of raw material in ten or twelve years, after which they will have

to depend on the State forests or Canadian imports for a further continuance of their business. At present the Empire State leads all others by far in the number of its pulp-mills and amount of product; but if it expects to hold its supremacy in this industry it must make some prompt and intelligent provision for a future timber supply.

"In discussing this question some of our lumbermen and wood pulp operators point to the great Canadian forests and the inexhaustible supply of spruce which they claim is standing there. But the Province of Ontario has already put an export duty on logs and round timber that is intended to be prohibitory; and the Province of Quebec evidently will do the same whenever the supply of spruce in New York and New England is gone. Our people then will not only have to go to Canada for their raw material but will have to take their mills and workmen with them. The millions invested throughout New York in the great manufacturing plants belonging to the lumber, pulp and paper business will be non-productive, and these industries will be paralyzed."

During the year 1901 a beginning was made replanting burnt over areas, and on the 21st April of the present year the work of setting out 420,000 seedlings will be commenced under the charge of Mr. A. Knechtel.

Forest Reserves a Necessity.*

Probably the most important resolution passed at the annual meeting of the Canadian Forestry Association was the following :—

“In view of the enormous loss of timber by fire, this Association, embracing a membership from all parts of the Dominion, having at this its annual meeting had under consideration the great mistake that has been made in the past by opening up for settlement land unsuitable for agricultural purposes but adapted for the growth and production of timber, would respectfully urge on the governments of the country, both Federal and Provincial, the necessity of greater attention in the future to this important subject.

“The Association would further urge, in order that this may be intelligently done, that the newer and unsettled portions of the country should be explored in advance of settlement.”

The occasion of the passing of this resolution was the discussion which arose in connection with the destructive forest fires which occurred last year in the Timiskaming district, resulting in the loss of at least two hundred million feet of timber, worth hundreds of thousands of dollars, and reducing close to one hundred square miles to a barren and useless waste, a large percentage of which fires, and those most destructive, were started from burnings set out by settlers. There is then an apparent conflict between settlement and the lumber industry, and there is no reason why the difficulties that surround the problem should not be faced, though whether or not there need be any real conflict is another question.

There are three parties to the problem, the settler, the lumberman and the general public. If the tax-paying public of Ontario and Quebec, particularly, would realize that the returns from the forests are the largest single item in their revenue, and form a large proportion of it, they would see how directly the whole question affects them. On the perpetuation of the revenue from the forests the

prosperity of these provinces and their freedom from direct taxation mainly depends. It is, therefore, not merely a question between settler and lumberman, but one in which every citizen of the country is directly and vitally interested.

But can agricultural settlement and the lumber industry both be perpetuated, or is it another struggle in which one party must inevitably succumb and the fittest only can survive and, if so, with which side should our sympathies go? The almost universal answer has been that public sympathy will go with agriculture, as represented by the struggling pioneer and settler, rather than with the lumber industry as represented by the wealthy lumberman. Here is the poor settler striving to make a home for himself and his family, struggling against the adverse conditions of pioneer life, and hoping some day by his industry to reach a condition of comfort and even prosperity. On the other hand, there is the lumberman, usually wealthy, who has paid large sums for his timber as it stands, and who must either cut it immediately or take the risks involved in holding it. A great deal was said last year of a purchase of a timber limit for the sum of \$650,000, but if a fire were to occur in that limit such as occurred in the Timiskaming district that whole investment might be wiped out in a few days, which to many a man would mean ruin, with no advantage to anybody and a great loss to the public revenue.

Is there no way in which agricultural settlement and the lumber industry can both be carried on? In the Black Forest in Germany the peasant can cultivate his little farm in the very midst of the forest, but he has learned that fire must be handled very carefully. This the Canadian settler has not learned, and possibly may not always be able to do. There seems to be no solution of the matter possible under present conditions other than to make the line of separation between the two industries as clear and distinct as possible. And a line of demarcation, the only possible one and

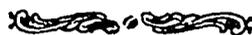
* Contributed by the Officers of the Canadian Forestry Association.

the one fixed by natural conditions, is defined in the resolution above quoted. Lands which are suitable for general agricultural purposes must be devoted to such purposes when the advance of settlement demands. But there are large tracts of land in Canada which have no depth of earth, while the great ribs of rock stick through on the slightest provocation. To place agricultural settlers on such lands is to doom them to disappointment. Supposing the Ontario Government had permitted settlers to go into the Temagami Timber Reserve instead of making an exploration and directing them to the good agricultural lands beyond, the result would have been the sweeping away of the forests by fire and the disappointment of the settlers, for they would inevitably have had to give up the struggle to make a living on such an unfriendly soil.

The principle of forest reservations is well established in the United States, and is being extended. There are already over forty National Parks and Forest Reserves covering an area of nearly 50,000,000 acres. The Dominion Government have set apart over ten extensive reserves in the West covering about 3,000,000 acres, without including any estimate for the Foothills Reserve in the Rockies. The Province of Ontario has four reserves, with a total surface of over two million and a half acres. In the Province of Quebec there is the Laurentide Park, with a superficies of 1,689,400 acres. At the last session of the Legislature of New Brunswick an act was passed authorizing the reservation of a Forest Park.

This question is one of special importance in the Province of Quebec at the present time, on account of the recent appointment of a Commission of Enquiry on Forestry and Colonization. It is to be hoped that this Commission will look carefully into this question of forest reservations, for next to protection from fire, and indeed, as part of a scheme of protection, it is a policy of the greatest moment and one which must be adopted sooner or later. If sooner, the reservations will be well timbered; if later, they will probably be wasted by fire in such a way that the timber must be allowed to grow up by the slow process of years. It is necessary, however, that this subject should be thoroughly understood by the public, for it is not the first time that this policy has been considered.

A "Forestry Reserve Act" was passed by the Province of Quebec in the year 1883, but, in order to make a selection of the lands to be reserved, detailed and lengthy inspections of each lot were undertaken, involving the suspension of sales in certain districts. This momentary suspension was interpreted as an act of prohibition, and complaints and attacks were made which brought about the repeal of the law. It is to be trusted that the Commission now appointed will be the beginning of a movement which will result in the permanent adoption and development of this the only rational policy for providing for the best interests of the agricultural settler as well as the lumber producer, and at the same time establishing on a sound basis the financial future of the province.



A committee of the Société Française de Photographie, appointed in 1898, has just reported the result of its experiments on the preservation of dry-plates. The conclusion is that the method of manufacture is by far the most important factor, but that other things being equal, plates will keep best if they are packed face to face with clean white paper laid between them. The paper should be cut a little smaller than the plates and previously kept in the dark for several

months. The use of separators which allow the admission of air between the plates, is condemned.

The Forestry and Colonization Commission of the Province of Quebec has been appointed. The Commissioners are: Mgr. Laflamme, Professor of Geology, Laval University, Quebec; Judge Bourgeois, Three Rivers, and Hon. G. W. Stephens, Montreal, with J. C. Langelier as Secretary.

Taxidermy.

(Concluded from the August issue)

TRAPS.

To an inexperienced person the selection of traps for use in collecting small mammals is always a source of perplexity. A good trap should be light, strong, and so constructed as to be readily sprung by the mere touch of a passing animal. Furthermore, it should be small enough to allow considerable numbers to be carried without occupying undue space.

For mammals of the smallest size the most useful traps are those which cause immediate death by a blow. They are much smaller than the choking traps commonly used for house mice, and have the additional advantage of allowing the animal to pass freely through from side to side. The latter feature permits them to be used either with or without bait, as occasion presents. These traps have the serious defect that they injure the skulls of a considerable number of specimens, but this is fully offset by their numerous good features. Three traps of this type have been widely used in field work—the Cyclone, Out o' Sight and Schuyler. The Cyclone traps are packed in wooden boxes $7\frac{1}{2}$ by $6\frac{1}{2}$ by 3 inches in outside dimensions, each containing three dozen traps. The base of this trap measures only $2\frac{3}{8}$ by $2\frac{1}{8}$ inches. On account of its small size and peculiar mechanism it is specially fitted for use with bait in cavities among rocks, or under the roots of trees. It will spring in a smaller space than either of the other traps. Its chief disadvantage lies in the tin base, which readily becomes rusty, and in this condition causes much staining of specimens. The Out o' Sight

and Schuyler traps are sold by the dozen in pasteboard boxes, $6\frac{1}{4}$ by $4\frac{1}{4}$ by 2 inches, and $4\frac{3}{4}$ by $3\frac{3}{4}$ by $2\frac{1}{4}$ inches in outside dimensions, respectively. The base of the Out o' Sight measures $3\frac{3}{4}$ by 2 inches, that of the Schuyler 3 by $2\frac{1}{2}$ inches. While these traps lack the compactness of the Cyclone, they are preferable to it for use in runways, as they may be so set as to be almost completely hidden from the passing animal. The base of the Out o' Sight is of wood, that of the Schuyler of galvanized iron. They are, therefore, not subject to rust. As furnished by the manufacturers, the bait wire of the Schuyler is bent. For field use this should be straightened. Both of these traps are made in larger sizes suitable for killing such animals as rats, squirrels, weasels. Of the Schuyler rat killers two forms are manufactured, of which that closely resembling the mouse killer is the more useful. A trap which may be mentioned here is that made for the capture of moles by the Animal Trap Company. It is less bulky than most mole traps and has the further advantage of causing little or no injury to specimens.

For all mammals larger than rats and squirrels the well-known steel traps should be used. These are made in two forms. The Newhouse trap is the stronger and more durable, but the Blake and Lamb is much more conveniently carried.

Full information concerning sizes and prices of all the traps mentioned above may be obtained by addressing the manufacturers.



Yellow and faded photographic prints on silver paper may be restored to their original lustre by the following process. Separate the print from the mount by soaking until it comes off itself. Im-

merse in a 5 p.c. solution of bi-chloride of mercury until bleached. Wash well and place in a 10 p.c. solution of sulphite of soda which will blacken and intensify the image. Wash well again and dry.

Nelson, B.C., Fishing.

BY A. F. ARMIT.

I have noticed of late that a good deal has been written and is being said regarding the excellence of the trout and salmon fishing in the vicinity of Victoria, on Vancouver Island. Now I would like to say a few words in favor of Nelson, in West Kootenay, as an angler's paradise.

Nelson, half mining town, half business centre of that particular portion of B.C., is situated directly on the Kootenay River, and some fourteen or fifteen miles from where it joins the Columbia. Nelson is a place easy of access, both from the States and from all Canadian points; the C. P. R. has a line in there, and the Nelson & Fort Shepard Railway connects it with Spokane; there are good hotels where the sportsman may put up, and there, above all, is the river at his feet and teeming with what I believe are the gamiest trout in British Columbia. In May and June one may have rare sport trolling for char through the narrows at Balfour—but a few miles distant from Nelson. These fish are a species of salmon, and run anywhere from four to eighteen and twenty pounds in weight. They are, however, rather an inferior fish from a chef's point of view.

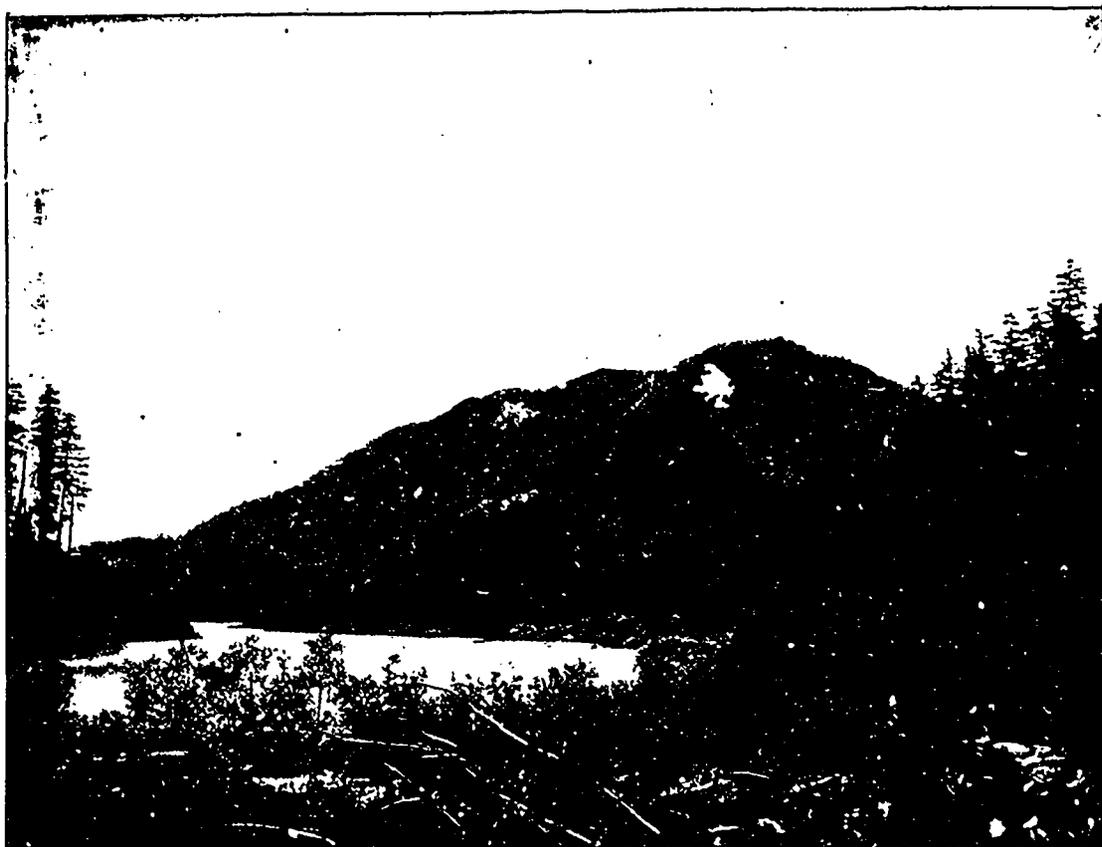
One great thing in favor of the Kootenay trout is that he has not yet become too shy through overfishing, the superiority of the river being as yet but little known, comparatively speaking.

The fish are of the rainbow variety, such as are to be found in California and in the Gunnison River, in Colorado, though they do not run quite as large as in the latter river; this possible defect, however, is amply counterbalanced by their remarkable fighting qualities. I have known it to take close on to half an hour to land a pound and a half trout in Kootenay River, and in smooth water at that.

Some few miles below Nelson, at a spot called Ward's Crossing, the very acme of the Kootenay fishing is to be had. Here the river has been forced through a narrow gorge in the mountains, thus

forming a series of tremendous rapids, and here in these rapids and swirling, foaming masses of water lie the kings of the Kootenay trout. They are of much larger size and far stronger and gamier than those in the upper part of the river, and they know not what it is to be timid and wary. Always battling with the rushing currents of the stream has apparently made them of a peremptory, not to say violent, disposition. They snatch at a fly with a dash and splash and whirl of gleaming sides that is often disconcerting to the newcomer, unused to their ways. The rough water helps them and lends them weight, and one has often been deceived into thinking he has hooked some real record-breaker, though when netted the fish on the end of the line may tip the scales at under two pounds. They are rare fighters, those trout, and game to the very last. Often when apparently safely landed on shore or in the boat, one last almost superhuman flap will place them in their native element once more. I think the largest trout I ever heard of as being taken at that point weighed $7\frac{1}{2}$ pounds, and the smallest, one pound; fish of lesser weight cannot live in the rough and boiling water there. The early morning and late afternoon and evening, even till dark, are the best times to fish at Ward's Crossing, and as a rule during the summer the trains to and from Nelson run at such hours as make this possible. I have more than once been one of a party of fishermen returning from Ward's, after an evening's sport, with creels, nets and even coat pockets full to overflowing with the speckled beauties. And these trout for eating are of a quality not to be excelled, I believe, by any trout in the world, bar none.

And in the matter of flies their tastes are extremely catholic. They will run to almost any fly, if they are on the rise at all. The writer, however, has had best luck with the "March Brown," "Red Ant," "Claret and Seal," and



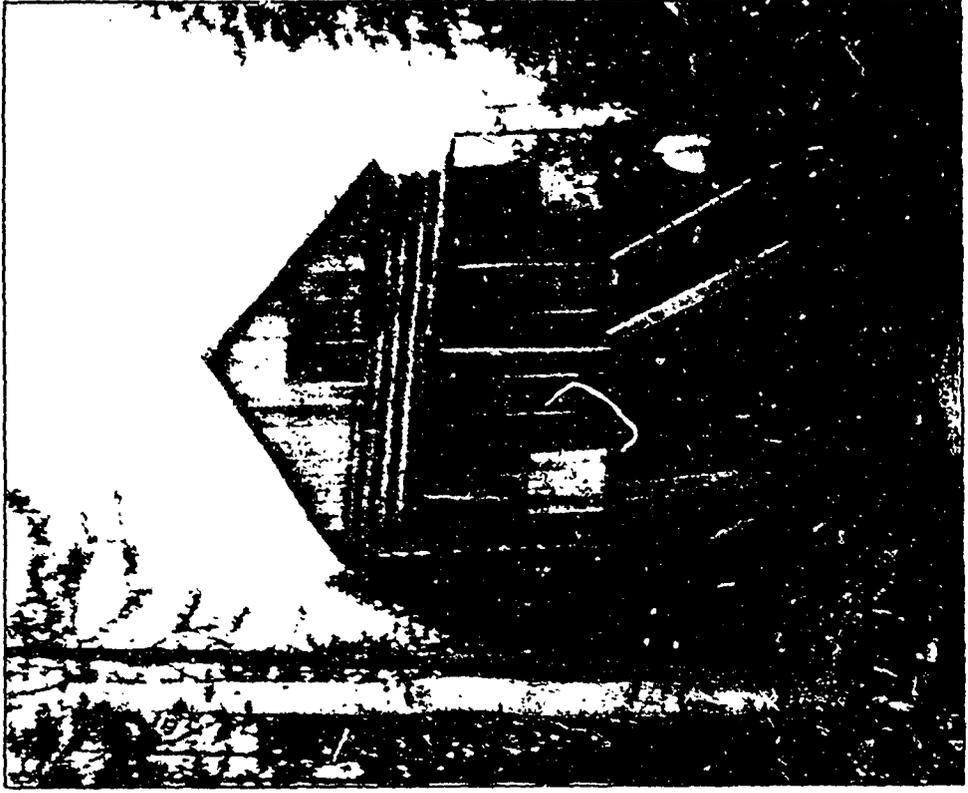
NANAIMO LAKE, B.C.

This charming sheet is in one of the best sporting districts of Vancouver Island.

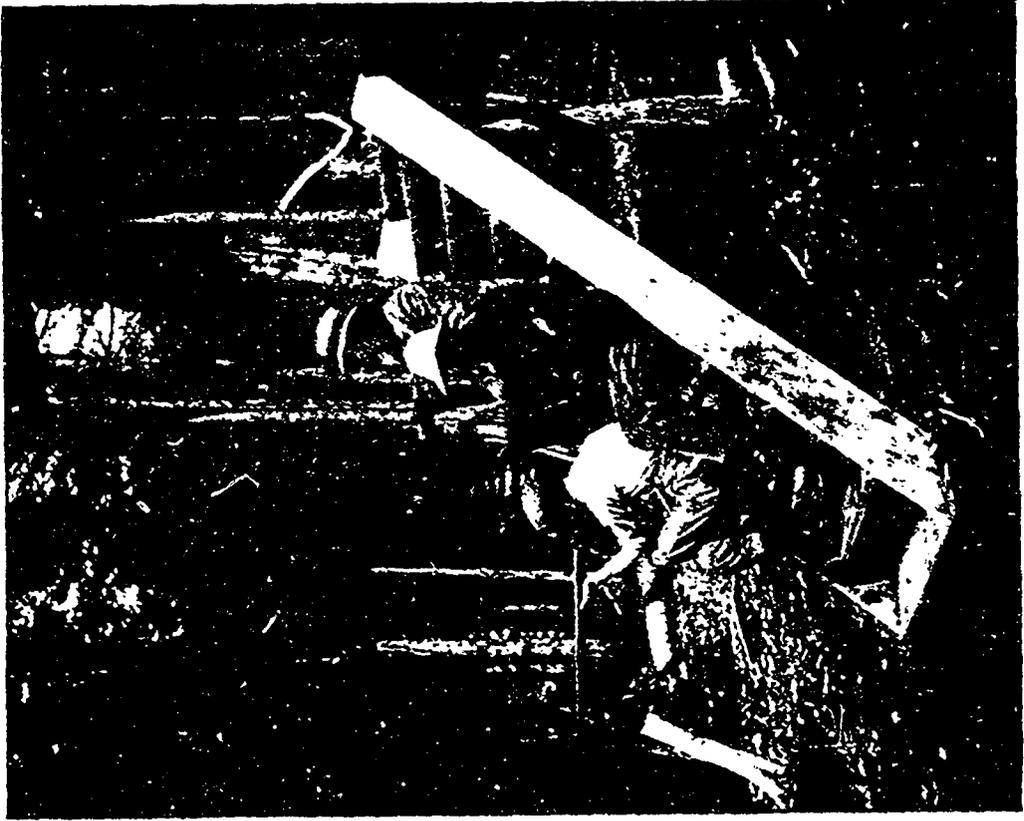


A TRUE FRIEND.

This was the most popular man in Commissioner Laird's outfit when he visited the Peace River to make treaties with the Indians.



FISHING CAMP AT LAC DES ISLES, QUE.



LOON SHOOTING, LAC DES ISLES, QUE.

that old standby, the "Coachman." Now and then some nameless fly, evolved from the imagination of some thoughtful fisherman, has met with great success, and flies with just a touch of red in wings or tail have been found to be very useful.

I think I am safe in advising all who have the time, the means, and who are true lovers of the sport, to make a trial

of the Kootenay River, making Nelson, which is an agreeable little town in which to pass a few weeks or even months, their headquarters. From there all the best fishing of the river is within easy reach, either by rail or steamer. Even directly in front of the town, for a mile or two in either direction, the fishing is not by any means to be despised.



A Loon Hunt.

BY BERT DE WINTON.

Played out after a hot, busy August and an equally trying September, the quartette, in caucus one more than usually humid evening in the last days of the dying month, resolved on a short run up into the Laurentians. The "quartette" comprised two M.D.'s a C.T. and your humble servant. Very little discussion was necessary before our objective point was chosen, a delightful spot about seventy miles due north from Montreal, in the hills. A brief note dispatched to "Dan C." to meet us at Trembling Lake, and we repaired to our several abodes to overhaul tackle and guns, which, as we were only able to steal away for the week, comprised the extent of our outfit, with the exception of a blanket.

Leaving the cares of the daily grind to the tender mercies of the office boy, etc., we met, happy as school boys on a lark, at the old Dalhousie station, down at the "barracks," on a hot October afternoon and entrained at 5.45 for our destination. This was reached after a short run of about four hours, where Dan was waiting for us with his double and buckboard. Still another hour, right back into the teeth of the mountains, and we had reached the starting point of the Mecca of our hopes. Here we found that Dan's forethought had provided for us and we were joined, or rather we joined, Fred and George, who had arrived long enough ahead of us to provide a blazing log fire and its concomitants of boiled tea, thick hunks of jack-knifed homemade bread, fat pork and fried trout.

Our intentions had been of the best, having at first decided to push right on to our destination; but, whether it was that we had some regard, or thought we had, for the poor fellows who had paddled ten miles down the lake to meet us, or of the seductive influence of the fat pork, fried trout and "boiled" tea, I am not prepared to say, howbeit, we decided to make the kindly shelter of the birch and balsam our canopy and the placid lake our companion, for the night. And such a night. It seemed almost sacrilegious to so much as utter a syllable, so wonderfully peaceful and inspiring was that beautiful evening among the mountains.

Eight hundred yards across the glassy bay on which we were camped, which, for all the motion on it, might have been a mirror, old "Billy" ran sheer down from his lofty peak of one thousand feet nearly half as much more into the lake, and behind was another "hill" of about five hundred feet, while through the stillness of the night came the musical trickle and splash of the two small streams that made their way from the lakes on the top of either mountain to the big sheet below.

The stars, too, seemed to be brighter than was their wont, as the little dipper slowly pushed its way from one mountain to the other. Is it any wonder then, that, lost in the contemplation of such a scene, even our pipes were occasionally neglected and had to be retuned with the aid of a glowing coal from the blazing logs nearby,

and that the usual topics of conversation proved of too little interest to hold attention and were dropped one by one until absolute silence, only broken by the wierd two-hoo of an owl in some lofty pine, the ker-plonk of a contented frog, the splash of a restless trout, or the hoo-loo-loo of a loon away up the lake, prevailed?

The fire was pleasant, too, and notwithstanding we were but seventy miles away from the heated city, the blazing logs and blankets were very much appreciated.

With the first glint of steel from down the lake, we were up and had our rods impressed into active service, and by the time our bush friends, accustomed to what to us was living in another world, had replenished the logs and got the kettle to boiling, we had sufficient of the speckled beauties caught for our morning meal.

By seven o'clock the "barks" were ready, Dan's horses fed and on their return home, and our first day's journey had fairly started.

After a short council of war, we decided to leave the "bear's cave" and postpone the hunt for "silver mountain" until our return, and proceeded up the lake, making an occasional detour to run into some exceptionally pretty spot and take the kinks out of knees unaccustomed to kneeling. Never was Delmonico repast more appreciated than was that 11 o'clock midday meal. After this fortification of the inner man, we portaged across the "Razor-back," something like three-quarters of a mile, to another small body of water about two miles long.

Here we potted the muskrat by moonlight, tramped the beaver swamps by daylight, bagged an occasional brace of teal and canvas back, hooked the red and brook and gray trout (and were also lucky enough to secure a fine specimen of the silver trout), tramped and climbed through swamp and over mountain to Bass Lake to procure a change of pastime, for the better part of the week, until we were brown as walnuts and happy as urchins on a regular school day with an absent teacher.

"How'd you like a crack at a loon?" came the startling proposal from silent George.

"Giminy!"

"Holy smoke!"

"Great Scott, man, why didn't you say so before?" asked Harry, all eagerness for new worlds to conquer.

Still further back into the mountains, until Mud Lake was reached, a long pull of seven miles, where each of the valiant four hoped to cover himself with glory by potting the most notorious loon in the mountains, whose record had become a by-word from the number of sharpshooters he had successfully stood off.

Now, did you ever try a shot at one of these beautiful birds? If you did, you will comprehend somewhat the feelings with which a fairly good centre shot will fire, only to be chagrined after his most energetic "That's got him," to hear from your extreme right his hoo-loo-loo at you.

Webster gives two meanings to the word Loon,—“a stupid man” and “a bird, the great northern diver,” and I am perfectly convinced, after that day's doings, that there is, after all, a connection.

This king of divers, or dodgers, had taken possession of a long, narrow lake, very properly named "Mud Lake," shaped much after the fashion of two sausages, the whole not being much more than three-quarters of a mile in length and perhaps four hundred yards at its greatest width. Here he had defied, for goodness knows how long, the best shots of the country, sailing around with perfect indifference to how many or how few were pelting at him, and he may be there yet, for all I know to the contrary.

The connection of the two definitions of the word comes in here: for the whole of that blessed afternoon we successively scrambled out of the mud or detached ourselves from the cedar snags into which predicaments our over-eager desires precipitated us, or pegged away at that loon. When we left the precincts of that lake, just before sundown, to start our long seven mile trek to camp and grub, by the aid of the stars and a pine torch, the last thing we heard was that loon's taunting hoo-loo-loo.

Sporting Dogs—The Pointer.

BY D. TAYLOR.

The pointer is one of the most useful dogs in the field, and no sportsman with the facilities for a week or two's shooting at his command can afford to be without one. To say that the dog should be well broken and under complete control is only repeating what every sportsman knows, but nevertheless it is not out of place to emphasize a condition which is going to make or mar a day's sport. There is nothing more exasperating to the shooter than to be out with a dog that is wild and erratic in his movements, and the strain on the man's temper is too often the cause of much unaccustomed blasphemy, as well as an indifferent bag. Before going forth, therefore, the sportsman should make sure that his dogs, if they have been broken by a professional handler, are under perfect subjection to himself—it will save a lot of trouble, worry and "cuss words."

The pointer is said to have originally come from Spain to Britain, and, whether or not, great efforts have been made during the past few years to improve the breed, and not without success, at least as far as external beauty goes. There is little doubt that, to a certain extent, the attention paid to the production of this quality alone has, in the opinion of a great many sportsmen, led to the deterioration of its usefulness as a field dog, at the same time it cannot be overlooked that many supporters of the show dog adopt the same lines in breeding as do the sportsmen for working dogs. And there is no earthly reason why the two should not combine and produce the desired result—beauty and utility—through scientific breeding. The numerous field trials now yearly held throughout the country, it is claimed, have to a great extent saved the pointer from becoming extinct save as a show dog, and the promoters of these events urge that our kennel clubs should give them more encouragement and assistance than they have hitherto done. It is pleasing to note, in answer to this suggestion,

that the Canadian Kennel Club recently took the question of field trials into consideration and now offer handsome cups and medals as prizes at these meetings. The effect of this new departure cannot be otherwise than to encourage a much greater extension of the sport in localities where conditions are favorable, as well as to promote the breeding of good pointers and setters.

The characteristics of the pointer are brains, nose and speed, the face being lit up with intelligence and lively in appearance. The head is rather finely drawn—a heavy head denotes coarseness and an unreliable disposition. The eyes are of medium size, not too far apart, and of the various shades of brown in color. The nose is an important part of a pointer's face, and should be large, long, broad and deep, with nostrils large and open. The ears should be moderately long and flat, filbert shaped, thin and flexible. Shoulders long, sloping and powerful. Good legs are most essential in a pointer; both front and hind should be straight and strong, and covered with well-developed compact muscles; cat-like feet, with plenty of hair between the toes. The tail is also another important feature. It should be set on well up and taper to a decided point; the straighter it is the better. Regarding color the order of preference usually is: Liver and white, black and white, orange and white, whole black or whole liver.

Mr. H. W. Huntington, a prominent authority on dogs, says, remarking on the pointer: "As all smooth, fine and short-coated dogs show their structural formation more clearly than the long-coated ones, their faults and deficiencies naturally are greatly accentuated, whereas a rough or long coat not infrequently covers a multitude of sins. The pointer is one of the most attractive of our sporting dogs, and his clean-cut features and outline will always secure to him many friends, even outside the

sportsman. The entire anatomy of the pointer is one that will bear the closest study, and when it is symmetrical and correct in all respects, it has no superior in the canine world. The head is one of the most striking features. It should not be snipy nor short in muzzle, and the absence of the stop generally mars the face. Ears that are large and thick in leather or set on very low are faulty, as are eyes that are other than dark, whatever the color of the body may be. Yellow, orange and lemon-colored eyes are really ugly to look at, as they are devoid of that pleasant expression which the pointer should have, and they should accordingly be penalized. A heavy neck, one that is not well set into the shoulders or shows throatiness, is properly objected to, and likewise are considered straight shoulders, flat ribs and front

legs that are not absolutely straight and of good bone. "Out at elbows" is a serious fault, and very often seen in this breed, yet it should not be. The back should not be too long nor weak, and weak hind-quarters never help a dog to do a hard day's work a-field. The cat foot is now generally considered to be the proper one, as being better suited for the kind of work a pointer is called upon to perform. A splay foot, as seen in some of our earlier dogs, is an abomination, some judges contending that it should penalize almost to disqualification. The tail that is coarse, shows an inclination to coil, or is carried over the back, is one that should prevent a pointer from ever getting into the money at a dog show. As the dog is to do a deal of work, his stifles should be well bent and muscular."



How to Rear Puppies.

Bitches about to whelp are better left entirely alone. They should be placed in a dry, warm kennel, containing a raised bench, so constructed that the bitch cannot get underneath it, and only just large enough for herself and her prospective litter. Bitches at this critical period get restless, and will crawl or creep into any hole or corner, and will sometimes whelp in the most unsuitable places—on a cold floor, for instance. The bench should be protected on all sides, so that the puppies are not subjected to the danger of being thrown overboard, and the bench should not be too large for fear of the puppies getting pushed away from their dam and getting cold before they are properly dry. This contingency frequently happens. While the earlier puppies are yet moist they are pushed away from their dam during the pangs of labor in giving birth to those succeeding, cold strikes into their tender systems, and they gradually lose the vigor which nature has given to assist them in first drawing from the dam their natural sustenance. Thus pushed aside, and unable to reach the

mother, they whine, and gradually pine away and die, to the consternation of an anxious and expectant owner.

Some breeders, in order to avert the possibility of what we have just described, take away the puppies as they are born, into a kitchen or other warm place where there is a fire, putting them back when the bitch has finished whelping or at intervals of rest from her labor, to get their natural nourishment.

A bitch, shortly before she is due to whelp and for sometime afterward, should be fed upon sloppy food, such as porridge and milk, bread and milk, hound meal soaked in sheep's head broth, etc. ; also a good dose of castor oil should be administered a day or two before she is due. While whelping she should simply be given scalded milk, lukewarm. The second day after whelping the bitch should be allowed out for a short run of a few minutes, increasing the period day by day.

As puppies are more or less nearly always affected with worms from their birth, it is a good thing to begin to treat them for these parasites before they

leave the dam, say about three weeks old. If a small worm capsule or pill be given at this age twice a week for three weeks, the probability is that they will be perfectly free from these pests when they leave their dam and start life on their own account. Worms are held to be responsible for quite half the mortality in young puppies, and have brought to an untimely end many flowers of the breeders' efforts.

Puppies rarely thrive or come to be any good if kept too long together in kennels, and especially in closed up kennels. It is a frequent cause of dis-

temper, no matter how much attention is paid to cleanliness and disinfection. The puppies bunch together and the hot, foetid breath of the whole is inhaled by each, making them weak and feverish, and good subjects for the much dreaded disease. The secret of success in rearing puppies is fresh air, pure water, free and unrestrained exercise, good food—given frequently and a little at a time, access to grass, and a dry, warm bed at night. The fewer the number of puppies kept in kennels the better, and the more chance there is of raising strong and healthy ones.



Bishop Doane, of Albany, N. Y., owns a handsome St. Bernard dog, of which he is very fond. Dog and man are inseparable companions, being always seen together on the streets, where they are a familiar sight. Indeed, the dog often accompanies the Bishop to church, and he is commonly known as "the Coadjutor Bishop." Bishop Doane pays the following affectionate tribute to his faithful companion :

"I am quite sure he thinks that I am God—
 Since he is God on whom each one depends
 For life, and all things that his bounty sends—
 My dear old dog, most constant of all friends ;
 Not quick to mind, but quicker far than I
 To Him whom God I know and own ; his eye,
 Deep brown and liquid, watches for my nod ;
 He is more patient underneath the rod
 Than I, when God His wise correction sends.
 He looks love at me, deep as words e'er spake ;
 And from me never crumb or sup will take
 But he wags thanks with his most vocal tail ;
 And when some crashing noise wakes all his
 fear
 He is content and quiet if I'm near.
 Secure that my protection will prevail !
 So, faithful, mindful, thankful, trustful, he
 Tells me what I unto my God should be."



That a dog has some rights has just been conceded by a St. Louis judge, in an action for damages against the owner of a dog which bit a boy while in the act of tying a tin can filled with stones to its tail. Said the judge : "Any dog has a legal and undeniable right to bite any man, woman or child who purposely and with intent to disturb said dog's tranquility and peace of mind does attach or cause to be attached to said

dog's tail a tin can or other weight which will impede the progress of said animal. A dog which bites its persecutor in such a case is acting purely and honestly in self-defence, and is justly immune from punishment." The action was dismissed.



The Montreal Poultry Association intends holding its annual exhibition in the Arena during the first week in November, and on this occasion will inaugurate a new feature, namely, a show of dogs, to embrace the more popular breeds. We believe this is a wise move on the part of the directors, and that it will tend to increase the gate receipts, inasmuch as the dog lover is more in evidence than those who take an interest in the egg producer. Money prizes will be given in the open classes, and the directors are sanguine that specials will be contributed by the friends of the society, and also by those who may be relied on at all times to encourage a dog show. First of all, what the directors want is to get a man to judge who has the confidence of the fanciers, and we have little doubt the show will be well supported by at least the local breeders.



We had a pleasant call last month from the well-known fox terrier breeder, Mr. Lynn, formerly of Port Huron, Mich, but now located in New York. He came here primarily to see the Yankee boat win the yacht race, but, having got into the hands of a good terrier man, he could not resist the tempta-

tion of taking in some of the kennels instead. As Mr. Lynn expressed it, he'd "rather any day see a good dog than a yacht race." Mr. Lynn had the pleasure of seeing, amongst other promising youngsters, Kincardine Piccolo, a grandson of Ch. Endcliffe Banker, a dog which he bred and sold to Mr. W. P. Fraser, of Toronto. The puppy is rising eight months old, and is unquestionably a wire-haired terrier of great merit. Mr. Lynn was highly pleased with him, and remarked that he was as sound a coated puppy as he had ever seen.

A correspondent from Mackeys, Ont., about 300 miles west of Montreal, writes :

There is splendid hunting here — partridge, deer, moose and bear ; besides there are to be found minx, muskrats, etc. Fishing is also good, there being red trout, pike, bass, doré. There are some pretty lakes and rivers ; we have here the beautiful Ottawa, which is only a few rods from the railway station. I have seen some

beautiful speckled trout since coming, and which were caught without trouble, and which afforded a good day's pleasure to some seven or eight anglers ; they were caught about two miles from here, and were reached by boat and canoe. I have also seen some very large pike, doré and maskinonge. There is a hotel here affording fairly good accommodations, and should we know of any intending sportsmen coming, arrangements can be made for canoes, guides, etc. Some wealthy New Yorkers have two or three limits a few miles to the north, in which they hunt and fish ; they are expected here this week. There is room yet for many hunters and anglers here.

Our front cover illustration gives a fair idea of one of the many thousand lakes and lakelets in the Province of Quebec, which in its area of 229,000 square miles, is estimated to contain at least 75,000 lakes, varying in size from the little gem to immense expanses of water, such as Lake Kipawa and Grand Lake Victoria. Nearly all the smaller lakes contain speckled trout.

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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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ROD AND GUN is the official organ of the Association, which supplies the articles relating to Forestry published therein.

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CANADIAN BIG GAME

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

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

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

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

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

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



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