

ZOOLOGICAL REPORT—1905-6.

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As a result of the year's work the leaders of the Zoological Branch have the following subjects of interest to lay before the members of the Club.

Two meetings were held during the early part of the season, the first at the residence of Mr. Halkett, the second at that of Prof. Prince. At the first meeting, held on 9th May, 1905, besides the chairman there were present Prof. Prince and Messrs. Lemieux, Campbell and Baldwin. Mr. Campbell, of the Collegiate Institute, exhibited specimens of a salamander in various stages of development. Mr. Halkett followed, shewing prepared specimens of the cranium of *Menobranchus* or the mud-puppy (*Nocturus maculosus*), and illustrated the comparative structure of the cranium of certain fishes by shewing specimens of that of the angler (*Lophius piscatorius*), the pollock (*Pollachius virens*), the cat-fish (*Ameiurus nebulosus*) and the yellow perch (*Perca flavescens*). Mr. Baldwin spoke of having seen a black snake (*Zamenis constrictor*) killed with a stone, some ten years ago, from the wounded place of which little young snakes made their exit—thus drawing attention to the apparent viviparous nature of that serpent. Mr. Lemieux shewed photographs of certain mammals, such as the black bear (*Ursus americanus*) and the red deer (*Cariacus virginianus*). Prof. Prince concluded the meeting by reading a paper on the function of the swim-bladder of fishes, of which the following is the substance.

None of the various views generally held, the professor pointed out, regarding the function of the swim-bladder of fishes appears to be perfectly satisfactory. According to these views the swim-bladder is supposed to aid in flotation, giving buoyancy to the fish possessing it, or it acts as a barometer informing the fish as to the pressure of the surrounding water, while it is also regarded as a resounding organ, in connection with the production of sounds, or again respiratory functions have been attributed to it. In some fishes it has connection with the ears by specially modified bones (the Weberian apparatus), and may aid in audition. Professor Prince stated that the following difficulties in accepting these views existed, viz. :—The most buoyant fishes, such as



sharks, mackerel, etc., do not possess a swim-bladder, hence it is not essential for flotation. Fresh-water suckers, cat-fishes, etc., have a swim-bladder, and are not exceptionally buoyant. If it is a barometer, why do so many species not possess it, while if it is of use in some cases in connection with voice, it must be noted that most fishes possessing a swim-bladder are voiceless, and again as an aid in hearing, it is no doubt of utility in rare cases, but such is not its common purpose. The features of the organ in young larval fishes indicate a glandular character and it may be a survival of a gland attached to the digestive system, whose utility has gone. In most cases pure aerated blood supplies the swim-bladder, and it cannot be respiratory excepting in rare instances, and being dorsal it is difficult to see how it can be homologous, as many authorities claim, with the ventrally placed lungs of higher vertebrates. Professor Prince also stated that while oxygen was often found in the swim-bladder, that organ frequently appeared to be filled with nitrogen, an element associated in many animals with the hibernating habit, or with change of food.

At the second meeting of the branch, held on the 22nd May, 1905, besides the chairman, Prof. Prince, there were present Professor Macoun, and Messrs. Lemieux, Baldwin, Campbell, and Halkett. Mr. Campbell showed some living specimens of branchiate larvæ, which appeared to be those of *Amblystoma*, and Mr. Lemieux brought a single antler of the Virginian Deer, which had been picked up beside a lake in the province of Quebec, soon after it had been shed. It was a fine example, and of unusual interest owing to the fact that shed antlers are very rarely found. The members present discussed the remarkable phenomenon, the annual shedding of deers' horns, the massive antlers of the moose being specially mentioned as surprising structures to grow in a single season, and then be cast away. Mr. Halkett shewed a specimen of the dor-mouse (*Evotomys rutilus*), which he caught with the hand, a year or two ago, at Madawaska, in the Nippissing district, and also a specimen of a bat (*Vespertilio subulatus*) which was found alive in the Fisheries Museum, and which is one of several specimens found there; and a scheme was discussed, led by Prof. Macoun, for securing specimens of small mammals in the vicinity of Ottawa. Small traps were described, which if set



in the evening, in suitable localities would in the morning be found to have secured interesting specimens. At most of the fishing clubs it was pointed out this work could be easily done, and specimens obtained from widely scattered localities. Professor Macoun offered to give information as to the best traps for the purpose, and it was agreed that the Muridæ, the Soricidæ, and the bats formed a most desirable line for the zoologists of the Club.

Samples of beaver work, with chips of wood, and a skull, from the Algonquin National Park of Ontario, were recently displayed in the windows of the Messrs. Orme, along with two mounted beavers from the Fisheries Museum, and they attracted much interest by the general public. The samples of the work of those interesting rodents were sent by Mr. Robert Lett, an employee of the Park, and the following is an extract from his letter concerning them: "I am shipping you to-day two samples of beaver work. . . . . The larger of the two shews the tree a little more than half way cut through. The cut was towards the water so that their efforts to float or pull it under water to their house after having cut it up into short lengths would be lessened by a tree's length in distance when it came to the carry. Sample No. 2 shews a tree which has been felled completely. . . . . In the little tin box you will find some of the chips which these wonderful woodsmen made, when cutting on the larger tree. . . . . I took my lunch in pocket one day and located these samples and on another day took saw and sleigh and brought them in." One of the samples—part of a birch-tree—was 10 inches in diameter, and the other some 8 ins. in diameter.

Under protective restrictions, the beaver (*Castor canadensis*) is multiplying rapidly in the Algonquin Park. Furthermore a colony of those interesting creatures is said to have established itself at Green Creek, some distance away, east of Ottawa, and they ought to be left unmolested.

Two red and one silver-gray foxes (*Vulpes fulvus*)—the three from the same litter—from about 150 miles north of Maniwaki, Gatineau district, a prairie coyote (*Canis latrans*) from Edmonton, and two raccoons (*Procyon lotor*) from up the Ottawa near Shawville, P.Q., were recently displayed alive, and all together, in the windows of the Messrs. H. J. Sims & Co. One of the gentlemen



of that firm informs the leaders that the coyote was taken when two weeks old, and has become quite tame, so much so that it will answer a whistle and lick the hand. He runs loose in the yard and plays with the dog, and they are fast friends. The silver gray fox takes to the coyote in preference to the dog, although the fox and the dog were brought up together. There was also a muskrat placed in the window with these various creatures, but one of the foxes very soon bit it, necessitating its removal.

Although an exotic species, it may not be amiss to mention, that 13 specimens of the spring-bok (*Antidorcas euchores*) from South Africa, were recently exhibited in the windows of Mr. Slattery's store. These specimens of that beautiful antelope were sent to Ottawa for the annual dinner in commemoration of the battle of Paardeberg, held at Government House. Although outwardly very like deer, it may be pointed out, that the antelopes are more closely related to the oxen, sheep, and goats, and like these have hollow and permanent horns, instead of solid antlers, which are periodically shed, such as deer have. They are best represented in the continent of Africa which contains more species than any other part of the world. One species the prong-horn, or Rocky Mountain antelope (*Antilocapra americana*) is sometimes to be seen on the plains of our own far west.

The leaders of the branch desire to express their appreciation of the good which merchants and business men of the city occasionally do in attracting public attention to natural history objects, living or otherwise, by placing them in their store windows.

Mr. Lemieux contributes the following note in regard to: "Small Suckers in Lake Pembina, Lievre district."

"A small carp or sucker was discovered in the month of May in Morin's Creek. There were thousands and thousands of this fish, and they seemed to hide in the weeds, in fear of the trout that appeared to wage a war of extermination against those new comers. In September a smaller number were seen in front of the Club-house landing. This discovery is rather a surprising and unexpected one, as in the past no other fish than trout had been noticed in those lakes. Have these suckers been recently introduced, and how? This is a mystery, although I believe they were brought there in the egg-stage, by birds such as shell-drakes,



mergansers, &c., which visited other waters and returned to Pembina Lake with the eggs adhering to them. As is well known, suckers and carp are most destructive to spawn. However, I sincerely hope that the multitudes of trout in the Pembina will annihilate these suckers in a short time. Future observations on this subject will be eagerly expected and prove interesting. I have obtained a sample of this little fish."

The following is a list of fishes of the Ottawa District preserved in formalin in the collection of the Fisheries Museum, with the localities where they were found :

Silvery lamprey (*Ichthyomyzon concolor*). Ottawa River.

Rock sturgeon (*Acipenser rubicundus*). Lac des Chêne.

Gar-pike (*Lepidosteus osseus*). Vicinity of Ottawa.

Dog-fish (*Amia calva*). Ottawa River.

The two specimens of dog-fish have been long in the museum, and are labelled Ottawa River. Possibly they may have been found beyond the limits of the district, but are included in the list as shewing that that species exists in the Ottawa.

Horned pout (*Ameiurus nebulosis*). Gilmour's Mills, P.Q., Rideau Canal near Ottawa, and Kinburn, Ont.

White sucker (*Catostomus commersonii*). Vicinity of Ottawa.

Eel (*Anguilla chrysypa*). Gilmour's Mills.

Brook Trout (*Salvelinus fontinalis*). Gatineau District, near Ottawa.

Pike (*Esox lucius*). Gilmour's Mills, and a large head from Shirley's Bay.

Killifish (*Fundulus*). Hull, P.Q.

Brook stickleback (*Eucalia inconstans*). Stittsville, Ont.

Grass or calico bass (*Pomoxis sparoides*). Lewis Dam and Gilmour's Mills, P.Q.

Rock bass (*Ambloplites rupestris*). Near Hog's Back.

Pike perch (*Stizostedion vitreum*). Upper Ottawa River.

Ling (*Loto maculosa*). Lac des Chêne and Rideau River, near Ottawa.

There is also a large mounted maskinonge (*Esox nobilior*)



and specimens of various species in the collection which await determination.

A specimen of a muskrat (*Fiber zibethicus*) from the Rideau River, near St. Patrick's Bridge; and a specimen of an otter (*Lutra canadensis*) from Smoky Falls, some 9 miles from Sturgeon Falls, Ont., have been acquired by the Fisheries Museum. The former is of a cinnamon colour, the hairs being edged with white, and approaches an albino in its contour; whilst the latter manifests the opposite of this—a case of melanism, the specimen being almost jet black, and this is most striking when it is put beside a mounted otter of the usual brown colour.

A leopard frog (*Rana virescens*) was found jumping about near the Rifle Range, on the outskirts of the city, on the 27th January, 1906, during the unusually mild weather. It was handed alive into the museum of the Fisheries and is now preserved in formalin.

An article entitled; "The Eggs of the Scarlet Water-mite (*Hydrachna sulcata*)" by Prof. Prince, was published in the August issue of the OTTAWA NATURALIST, and since then Mr. O'Dell has been making some remarkable discoveries in regard to the metamorphosis which this mite, or perhaps an allied form, undergoes in the course of its life history, and he hopes shortly to publish what he has discovered.

Another thing of interest was the finding recently of the remarkable eggs of the fresh-water ling (*Lota maculosa*), an account of which will appear in the forthcoming number of THE NATURALIST.

An official list, prepared by Mr. Halkett, representative of such fishes of the Dominion as are preserved in formalin, as well as a list of specimens of other aquatic vertebrates, and of aquatic invertebrates, in the collection of the Fisheries Museum, forming Appendix XIV of the Fisheries Report, is now in the hands of the King's Printer, and will shortly be issued.

E. E. PRINCE.

ANDREW HALKETT.

W. S. ODELL.

E. E. LEMIEUX.

Ottawa, 6th March, 1906.



Prince, Edward Ernest et al. 1906. "Zoological Report 1906." *The Ottawa naturalist* 20(3), 56–61.

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