THE OTTAWA NATURALIST

Vol. XXXII. NOVEMBER, 1918. No. 5.

A LIST OF THE TURTLES, SNAKES AND BATRACHIANS OF MANITOBA.*

By Ernest Thompson Seton.

THE PRAIRIE MUD TURTLE OR PAINTED TURTLE, *Chrysemys marginata bellii* (Gray).

This is the common turtle of Manitoba. It is a small inoffensive species, readily recognized by its size (about 4½ inches along the back—115 mm.), the bright red spots on the edge of its shell and the dark irregular blotch or cloud on the plastron, which last most readily distinguishes it from its near relative, the Eastern Mud Turtle.

I found it rather common in the Red river, near Winnipeg, and about Carberry in the large ponds and streams. It is also reported from many points in the prairie region—Boissevain, (A. S. Barton); Riding Mountain, (C. C. Helliwell); Austin, (Dr. Shaw).

Evidently, it is of general distribution in the south-west quarter of Manitoba, but is unknown at Shoal Lake or anywhere on the east side of Lake Manitoba. Richardson records it occurring at the south end of Lake Winnipeg and gives "Asaté" as its Chippewa name.

There is no available information on its breeding habits, but the female of the kindred species *picta* lays eggs during June, in a dry sunny bank, often remote from water. The eggs are white, leathery and nearly round; they measure about one inch (26 mm.) through, and number about half-a-dozen. All the eggs of the season are laid at one time and hidden in a single hole. This hole is three or four inches deep, scooped out by the hind feet of the mother; the eggs are left in several layers and covered with earth and leaves, so carefully as to be difficult of detection. The mother takes no further interest in the nest. The young hatch out after two weeks, crawl to the nearest swamp, and shift for themselves.

"The process of reproduction by laying is not commenced before the eleventh year . . . . . enough has been seen to warrant the assumption that from the eleventh to the fourteenth year is about the age at which most, if not all our native fresh water turtles lay their eggs for the first time; . . . . . not one of our turtles makes more than a single nest [each year]. They deposit all the eggs at once. The Painted Turtle has an almost identical period of incubation with the Snapping Turtle, namely, from the 11th to the 25th of June." [L. Agassiz, on Painted Turtle, 1857].

To this, Professor H. A. Surface adds (Turtles of Penna. 1908, p. 149): "The Painted Turtle is known to lay only from five to seven eggs a year, although more may be found within the body at any time. These do not all come to maturity during the same year."

The eggs are much preyed upon by skunks, raccoons, gray squirrels, etc., which search them out and devour them with keen relish.

The natural food of the turtle is insects, worms and fish, but it is known to add fruit and leaves to its diet.

In the autumn, it buries itself in the mud, at the bottom of a pond, below the frost line, and remains torpid till the following May.

The first sharp frost at Cos Cob, Connecticut, came about the beginning of December (?) one year. There was no snow; the ice was very clear; looking through it I saw on the bottom of the lake in three feet of water 20 or 30 Painted Turtles slowly crawling in one direction; that is, toward the inlet of the lake. They were not apparently associated.

The reappearance of the Mud Turtle is a sign of spring at its flood; but the Scriptural line, alluding to the "voice of the turtle in our land," refers not to

*The nomenclature is that of Stejneger and Barbour's Check List of N. A. Batrach. and Reptiles, 1917.

Acknowledgment is here made of kind assistance given by Karl P. Schmidt of Am. Mus. Nat. Hist., New York.

this, but to the turtle dove; the Mud Turtle is believed to be mute, except for the slight hiss it utters on retiring into its shell.

SNAPPING TURTLE OR SNAPPER,
Chelydra serpentina (Linn).

In 1848, Richardson wrote: "As a contribution to what is known of the geographical distribution of reptiles, on the east side of the Rocky Mountains, frogs may be set down as attaining the 68th parallel of latitude; snakes as reaching the 56th; and tortoises as disappearing beyond the 51st, at the south end of Lake Winnipeg. There the *Emys geographica* of Le Seur [probably this refers to the preceding *C. m. bellii*] named Asaté by the Chippeways, occurs; and also, one with a flexible neck, called by the same people, *Miskinnah*, which is probably the Snapping Turtle." (Arc. Search. Expd. 1851. Vol. I., p. 204).

The first and only Snapper I ever saw in Manitoba, was taken in the Assiniboine, near the Little Souris, in 1896, by John S. Charleson (now in possession of John Riddington, of Winnipeg). It was 30 inches long; the shell 12 inches long and 11½ inches wide. I have heard of several specimens taken near Winnipeg, but the species must be considered rare in Manitoba; for this we should be thankful, for it is a ferocious reptile of great strength and insatiable appetite. It preys on fish, ducks, goslings, and, indeed, all aquatic animals big enough for its food and smaller than itself. I have seen this turtle take down a full-grown duck, seizing it by the legs from below; and, as an ordinary Snapper weighs ten or fifteen pounds, the duck, one-quarter his weight, has no chance of escape.

The nest of this turtle is much like that of the foregoing, but its eggs are larger and less round, and more numerous, as those of a single nest often number as high as two dozen.

In the latter part of August, 1917, a pile of building-sand was dumped about 100 feet from the lake on my land at Greenwich, Connecticut. Next morning, we found six good-sized Snappers on it. They were each about six or eight pounds in weight. We found no eggs and could see no reason for their congregating there, or how they all found it so quickly.

The Snapper is of very slow growth. The enormous specimens sometimes found are undoubtedly of great age.

COMMON GARTERSNAKE,
Thamnophis sirtalis parietalis (Say).

This Gartersnake is found at least throughout the southern half of Manitoba. I expect to find it in every part of the province, for Preble found it common about Edmonton, Alta. (N. A. Fauna No. 27, p. 500). I got two specimens in the Salt River County, near Great Slave river; and Richardson records it north to lat. 56, near Isle a la Grosse, Arctic Search. Exp., Vol. I., p. 98. In a footnote, p. 204, ibid, he records the killing of a snake on "Porcupine river far within the Arctic Circle." It is readily recognized by the two black stripes separated by green, that run the whole length of its body.

It is about two feet long when fully grown, but specimens over thirty inches long have been found. Though a small snake, it is the largest of those that have hitherto been found in the province.

It is perfectly harmless, and its usual prey is frogs, minnows and insects.

Near Carberry, I once heard a loud squealing, in a marsh. On going near, I saw a frog with a Gartersnake holding to its hind legs. The frog was kicking with the other leg and, at the same time, clinging to a tuft of grass with his arms and squealing lustily. According to the laws of the chase, he belonged to the Gartersnake; but the ancient quarrel of man and the snake put me on the side of the frog, and I saved his life.

When camping at Lake Winnipegosis in 1904, I was warned not to go near Snake Island, as it was "swarming with all kinds of venomous snakes." That was enough; I made straight for Snake Island, and camped there a day-and-a-half, with my friend E. W. Darbey, but saw only four harmless Gartersnakes. When we left the place, and were over two miles away, we found in the water two snakes swimming toward the island. They seemed perfectly at home in the water, and I doubt not the rocky cliffs of the island furnish attractive winter dens that bring many snakes from their summer range in the far-reaching marshy shores of the adjoining parts of Lake Winnipegosis.

There are several places in the province that are, or were, noted for their vast congregations of Gartersnakes, one of the most famous being that at Stony Mountain. These places are usually high, dry, rocky dens, surrounded by a region of swamps; the latter furnish the snakes with a congenial summer range, and the former a dry denning place for hibernation.

There is no doubt that Stony Mountain was an island at one stage of the ancient Lake Agassiz; as the lake grew shallow and marshy, the snakes would increase. The island became a natural gathering-place, and the annual resort thither of the snakes *en masse* to-day is, possibly, an instinctive local migration, established in those remote times.

In the early fall of 1881 or 1882, I am told, there was a general and fierce prairie fire between Winnipeg and Stony Mountain. After it, thousands of

snakes were found dead on the prairies; all, apparently, headed for Stony Mountain. In spite of this destruction, thousands of Gartersnakes were yet to be seen at Stony Mountain and Balmoral, till they were destroyed for nuisances, although all were of the same harmless, even beneficent, species.

In June, 1902, at Shoal Lake, I got a female Gartersnake with 26 eggs ready for hatching; they were in one column of 21 and a short parallel column of 5. The stomach of this snake was examined by Dr. S. D. Judd, of the Biological Survey, Washington, D.C. He reported its contents as follows:—"Hind legs and pieces of stomach of *Rana pipiens*, one *Agonoderus pallipes* and another small carabid beetle, one tenebrionid beetle, one caterpillar *(Agrotis)*, two flies, one ichneumon fly (Hymenoptera), one aculeate hymenopter (*Pompilus*), eight spiders, one ragweed (*Ambrosia*), two seeds of *Polygonum*. The insects were in a finely comminuted state." Whether they were originally swallowed by the frog or the snake is not clear. A case in which the tables were turned, so that a small Gartersnake was even devoured by a Wood-frog is recorded by John J. Schoonhoven, in *Guide to Nature*, April, 1910, p. 400.

In late summer, as with all Gartersnakes, the young of the species are born alive. According to H. A. Surface (Serpents of Penna. 1906, p. 145), the young in Pennsylvania are born between July 25th and August 25th. The mother "lives near the young and guards them during the fall. They pass the winter in rubbish, in the earth, beneath stones, or in hollow logs; and in spring the young shift for themselves."

THE PLAINS GARTERSNAKE, *Thamnophis radix* (Baird and Gerard).

This species is much like *sirtalis;* but it has the light side-stripes on the third and fourth row of scales; whereas, *sirtalis* has them on the second and third.

A specimen that I took at Carberry, in 1883, was identified by Dr. J. H. Garnier as *radix*. Donald Gunn took another at Lake Winnipeg.

Dr. Stejneger gave this name to one I sent him from Winnipeg; and Dr. E. Coues reported it along the boundary at Pembina, Turtle Mountain and Souris River; so that it is probably of general distribution in southwestern or prairie Manitoba.

THE GREEN-SNAKE OR GRASS-SNAKE, *Liopeltis vernalis* (Harlan).

This brilliant little creature is abundant along the Assiniboine river, south of Carberry. During August, Green-snakes can be seen in numbers where the hot, sunny banks of the river valley rise near any grassy thickets, affording basking-places near coverts of safety. It is also reported from Winnipeg and Shoal Lake and Boissevain. Unfortunately, its exquisite green is lost in alcohol, being replaced very soon by a pale-blue. The species is perfectly harmless.

An individual that I caught on the banks of the Assiniboine, July 14, 1884, and kept captive at Carberry, produced six eggs on July 27th; it refused all food and died July 31st.

RED-BELLIED SNAKE OR COPPER SNAKE, *Storeria occipto-maculata* (Storer).

This species is rare, compared with the foregoing. I had heard of it several times before seeing it or securing a specimen. The one in my collection was captured at Carberry by Frank Dickie, in 1904; and it has been observed occasionally as far north as Shoal Lake. A. S. Barton reports it rare at Boissevain; but John S. Charleson says it is common at Blythe, near Little Souris river. Like the other snakes found in Manitoba, this species is perfectly harmless. Its food is chiefly insects, and its range seems to be the south-western part of the province.

MUD-PUPPY OR SPOTTED SALAMANDER, *Necturus maculosus* (Rafinesque).

The two specimens in my collection were taken by E. W. Darbey at Winnipeg.

WATER-LIZARD OR PRAIRIE SALAMANDER, *Ambystoma tigrinum* (Green).

This species is generally distributed in southwestern Manitoba, that is, all the prairie region. It is not a lizard at all, but a cousin to the frogs. It is well-known in two different stages; first, as a big, soft water-creature in the ponds and in the ditches along the railways; second, as a yellow-and-black spotted land-animal like a lizard; but it is not generally known that these are one and the same animal; the Water-lizard being the tadpole stage, the land-animal is the stage corresponding with the frog.

It is a remarkable fact that the species occasionally breeds in the tadpole as well as the adult stage.

In the autumn, when they are seeking a winter den, the crawlers are found in cellars and post-holes in numbers. I found them exceedingly numerous at Boissevain in September, 1904. I have several times found them in gopher holes where they had denned up for the winter. Notwithstanding their appearance, they are perfectly harmless

WOODLAND SALAMANDER, *Ambystoma jeffersonianum* (Green).

Among some alcoholic specimens sent me from Beausejour, Whitemouth river, eastern Manitoba,

by Walter Sidebottom, was an example of this species, the only one I know of taken in the province, although the species should be found in most of the wooded regions. It was identified by Dr. L. Stejneger. The specimen is now in the American Museum, New York.

LEOPARD-FROG OR SPOTTED GREEN-FROG,
Rana pipiens Schreber.

This is the common frog of Manitoba. I found it abundant at Winnipeg, Lower Fort Garry, Selkirk, Shoal Lake, Lake Winnipegosis, Carberry, Brandon, Whitewater Lake and Boissevain; Preble reports it from Norway House (N. A. Fauna No. 22, p. 133.) It is, doubtless, found throughout the province.

It is readily distinguished by the conspicuous black spots outlined in white with which its green skin is decorated.

On June 16, 1888, near Toronto, I killed a common Gartersnake. It had in its stomach a frog which had in its stomach a potato beetle and a large water shell.

W. L. Hine related to me a curious incident:—"One day," says he, "when out collecting, I shot a goldfinch. I marked it down, and, though there was little cover, I could not find it. A large green frog was hopping away from the place, and I saw something sticking from its mouth. This, on closer view, proved to be the legs and wings of the goldfinch. I recovered the specimen, but it was spoiled. Many specimens of small birds mysteriously disappear when shot near frog ponds; and I doubt not that the above contains the explanation."

Like most of the frogs, it winters deep in the mud, though not necessarily under water.

WOOD-FROG,
Rana cantabrigensis cantabrigensis (Baird).

This small frog is much less abundant than the preceding. I found it at Winnipeg, Lower Fort Garry, Selkirk, Shoal Lake and Carberry. Preble found it at Norway House, Playground Lake, York Factory and Fort Churchill (N.A.F. 22, p. 133), and notes it as the common frog of the Mackenzie River Basin (N.A.F. No. 27, p. 501). He calls it *latiremis*.

It is easily distinguished by the absence of conspicuous spots, except the broad black bar along the cheek. It is found in the woods, often far from water; in the early spring it makes the ponds resound with its short, harsh, quacking notes.

In late July, 1918, at my country home, Greenwich, Connecticut, four deep post-holes were dug for a fence and left open some weeks. During the last of July, or perhaps the first week of August, the Wood-frogs were performing their usual overland migration away from the water. About a score or more fell into each of the holes. During August I was away, but I returned in mid-September. The frogs were still hopping about in the holes, but hopelessly imprisoned. I now set them free; all seemed fat and lively; yet apparently all had been without food or water for six or seven weeks. With them were one or two Toads, also some beetles and a berry-bug.

NORTHERN OR MINK FROG,
Rana septentrionalis Baird.

Recorded by Kennicott as taken at Selkirk Settlement. So called because it smells like a mink.

BULL-FROG.(?)
Rana catesbeiana Shaw.

This has been reported to me from the Red River Valley, but I have not seen specimens, and enter it with a question.

In my Connecticut home I have seen great numbers of tadpoles of the Bullfrog, all winter long, in the ice, and washed up on the ice during January freshets. As they were strictly in tadpole stage, this illustrates the fact that they are two years in maturing.

The following interesting note on the age of Bullfrogs appears in the *Guide to Nature* for November, 1910, p. 277, quoted from *Brooklyn Museum News*:

"Our two Bullfrogs,*Rana catesbeiana*, after having been in captivity for eight years, died in August. Frequent mention of these frogs have been made in previous numbers of the *Museum News*, but as little seems to be known concerning the age of Bullfrogs, it may be worth while to record the following data: The frogs came to us from Elmhurst, L.I., in the summer of 1902, when fully grown. The male measured 12.6 inches and the female 14.4 inches total length. Three days before death the male weighed 15 ozs., and the female 25 ozs. Allowing two years for the tadpole stage and 3 years for the growth as frogs, our two captives must have been at least 13 years old, counting from the egg state. Under natural and favorable conditions, it seems possible that Bullfrogs live from 15 to 20 years."

SPRING PEEPER OR HYLA,
Hyla crucifer Wied.

According to Stejneger and Barbour, this well-known pond whistler ranges from New Brunswick to Manitoba; therefore, it is listed here, although I do not know of any specimens taken in the province.

NORTHERN SPRING PEEPER, PEEPER FROG, OR SWAMP WHISTLER, *Pseudacris triseriata* (Wied).

This tiny frog, an inch long from nose to stern when full grown, is abundant in all places of the

province where I have collected in summer; that is, Winnipeg, Lower Fort Garry, Selkirk, Shoal Lake, Carberry and Boissevain. As, according to Preble, it is distributed northwest to York Factory and Great Bear Lake (N.A.F. No. 22, p. 134), it is to be looked for in all parts of Manitoba.

The *crucifer* is easily recognized by the dark St. Andrew's cross on its back; whereas, the *septentrionalis* has only a number of long blotches or stripes.

Though its piercing "*prreep prreep*," from the chilly pond, in early springtime is familiar to all, very few have seen the originator of the noise or know that it is a tiny frog that makes this small steam-whistle. While uttering it, his throat is blown out like a transparent bladder and is nearly as big as himself At Shoal Lake, in 1901, I found them still singing in the first week of July. The note is more rattled than that of *H. crucifer*. The Peeper is in full song about the first of May; they are very abundant; sometimes there are hundreds of them singing in one pond, with their noses above water; and yet, any one who succeeds in seeing one while it sings may congratulate himself upon having achieved a difficult exploit in woodcraft.

A specimen that I took at Lower Fort Garry, August 22, 1904, was a brilliant grass-green on all its upper surface; but this, Dr. Stejneger said, was merely an individual variation.

COMMON TOAD,
Bufo hemiophrys (Cope).

The Common Toad is abundant everywhere from Winnipeg and Shoal Lake to Brandon, from Boissevain to Winnipegosis, and, probably, throughout the province. Its spring note is a soft trilling, uttered about twice a minute and lasting about three seconds each time.

An interesting article on the homing power of the Common Toad appears in *Guide to Nature* (Oct., 1918, p. 142). The writer, F. H. Sidney, mentions instances of marked Toads returning to their home places from distances of 3 to 10 miles, to which they had been carried; and doing this within a few days.

AN OTTAWA BEACH OF THE CHAMPLAIN SEA.

BY E. M. KINDLE.

INTRODUCTION.

Before the advent of the science of geology men lived in what was supposed to be a completed or dead world. Except for the waggon ruts in the roads and a few other minor alterations by man the earth was believed to have been created, just as we see it, a few thousand years ago. Historical geology has enabled us to peer "far back into the night of time." In place of the finished world of a few generations ago we now recognize a constantly changing world which has been tenanted by an endless succession of plants and animals, each unlike and a little in advance of those which preceded it. The geography of to-day we now know to be no more permanent than the cloud forms of yesterday. Familiarity with geological concepts has contributed enormously to mobility of mind and broad intellectual hospitality. The man who can visualize clearly the physical geography of eastern Canada as it was some ten thousand years ago is prepared to comprehend as well as to meet and direct the great changes incident to the evolution of the social, economic, and political world in a way that his brother who still lives in the finished world of yesterday cannot. It is perhaps something more than a coincidence that the science of geology and the principles of political liberty first took root in England.

In the light of these considerations it should be clear to the non-professional reader that historical geology has a broad cultural value which will well repay one for the trouble of acquainting himself with the salient features of his local geological environment. There are few localities where the recent chapters in the geological history of the continent can be more easily read than in the Ottawa district. This is because the Ottawa and St. Lawrence valleys were invaded by the sea at a very recent period, geologically speaking,—perhaps not more than 10,000 years ago.

AN ANCIENT SEA BEACH.

The deposits of the latest marine invasion of the Ottawa valley are of two distinct types, fine textured blue clay and beds of sand. The sand deposits, which are widely distributed throughout the Ottawa river valley, represent, frequently and perhaps generally, deposits of an ancient sea shore. These beaches are not of the type which the reader may have seen at Cape Anne or some other rock bound part of the exposed Atlantic coast where a ridge of granity boulders six or eight feet high shows unmistakably the border of the sea and the prowess of its waves. The beaches of the arm of the Champlain or Pleistocene sea, which invaded the Ottawa and St. Lawrence valleys shortly after the retreat