THE ACCLIMATIZATION OF THE FOX SQUIRREL AT PELEE ISLAND, ONTARIO

By HOYES LLOYD

IN NOVEMBER, 1922, I paid a visit to Point Pelee National Park, and while journeying westward called upon both Mr. J. H. Fleming, at Toronto, and Mr. W. E. Saunders, at London. Mr. Fleming called my attention to the fact that the Fox Squirrel, *Sciurus niger* subsp? occurred on Pelee Island, which was of interest, as this is apparently the only spot where it is found in Canada. The fact of this species being found at Pelee Island was also discussed with Mr. Saunders. In the course of my visit to Point Pelee the question of Fox Squirrels was naturally discussed with the Superintendent, Mr. F. H. Conover, who has long taken an interest in the wild creatures of his neighbourhood. From memory, Mr. Conover at once volunteered the information that the Fox Squirrel had been introduced on the island many years ago, and he kindly agreed to secure any details that might be available at this late date concerning the introduction. These came to me by letter of January 24, 1923, from which I shall quote:

"Dear Mr. Lloyd:—I have been casting about for a considerable time endeavouring to obtain definite information in respect to the 'Fox Squirrels' that some thirty years ago were first introduced upon Pelee Island by Mr. Charles Mills, of Sandusky, Ohio, U.S.

"The definite date cannot so far be given, only approximate.

"I am still at work seeking further information in this connection.

"Mr. Mills has since died, and as these squirrels were transferred by the American Fishing Club, the older members have passed out. If I can obtain anything I certainly will do so with pleasure.—F. H. Conover."

This information was supplemented later by a statement that Mr. Mills brought these squirrels from southern Ohio, near the Kentucky border After being brought to Pelee Island, they soon became plentiful, but dwindled later to such an extent that Mr. Conover doubted if one could be found by January, 1925. He has a specimen taken at Pelee Island about eight years ago by a hunter. Mr. Saunders saw none on his last visit to the island, and comments on this as remarkable—the time being midsummer.

Having survived in this new environment, which is undoubtedly almost identical with that from which it came, for such a long time, it must be considered that the Fox Squirrel became thoroughly acclimated, although apparently it was depleted by hunting later. It is to prevent the fact of its introduction being forgotten, and to protect future naturalists from thinking the species indigenous, should it persist, that these few lines have been written.

FURTHER NOTES ON CANADIAN FRESHWATER ISOPODS AND AMPHIPODS

By FRITS JOHANSEN

IN SEPTEMBER, 1923, I received from Prof. C. H. O'Donoghue, of the University of Manitoba, Winnipeg, some vials containing freshwater Crustaceans, which he had collected, in the end of May, 1923, in a pond named "Hydra Lake", situated at about 400 feet elevation, on the hill above Horswell Bluff, about 1½ miles north of Departure Bay, on the east side of Vancouver Island. Among these crustaceans (Copepods, Cladocera, etc.) were a dozen specimens (half-grown and adults) of the common, freshwater Amphipod, *Hyalella azteka* (Saus.). This is apparently the first record of this species from Vancouver Island; but I have already recorded it from the mainland part of British Columbia (*Canadian Field-Naturalist* for October, 1920, p. 131). I have recently seen specimens of this species, sent from the vicinity of Halifax, to the Department of Marine and Fisheries, Ottawa, which seems to be the first definite record of *H. azteka* from the part of Nova Scotia lying south of the Strait of Canso.

On August 3rd, 1924, I collected a number of adults (both sexes) and newborn young of the same species (*H. azteka*) among algae and stones in the bights below the old wharf on the Ontario side, at Deschenes Rapids, Britannia; and two weeks later I found a great many newborn and half-grown young of the same Amphipod, among Utricularia-plants in Black River, on the east side of Lake Simcoe, Ontario.

So late as October 19th, 1924, I found both the Isopod, *Asellus communis* and the Amphipod *Eucrangonyx gracilis*, exceedingly common among dead leaves and aquatic vegetation in the pond in Major Hill Park, Ottawa, Ont. The Isopods had a length of from ½ to 1½ cm., and showed their usual sluggish behaviour; it is perhaps worth mentioning here, that their latin, generic name (*Asellus*) means "the little ass", and refers to the

coloration of those isopods, greyish above and whitish below.

The Amphipods (*E. gracilis*) were represented by new-born (1 mm. long), half-grown young, and adults, the females carrying dark-blue eggs. The young, particularly the new-born ones, were pale (whitish), with the orange, intestinal tract shining through; in the older ones the margin of the body segments (somites) had the strongest (darkest) coloration.

This new record of *E. gracilis* proves that in the vicinity of Ottawa, there are at least three broods during the summer and fall, as I have suggested in *The Canadian Field-Naturalist* for October, 1920, p. 129, the time in the autumn, however, being in October, not in September. Future investigations may show that there new broods are still more frequent, during each season of about seven months (April-October inclusive).

From the records of *Asellus communis* around Ottawa (see *Canadian Field-Naturalist* for November, 1920, pp. 147-48), it would seem that the broods are less frequent, and the growth slower, than in *E. gracilis* and other freshwater Amphipods, perhaps owing to the more vegetarian diet of the Isopods. In lakes and rivers, which do not freeze to the bottom during the winter, both the Isopods and Amphipods probably occur all year round, and their broods are therefore more numerous than in more shallow water.

NOTE—Since this was written, and sent in for publication, I have received from Dr. S. C. Ells, of the Department of Mines, Ottawa, ten adult *Gammarus limnaeus*, including some females with eggs, collected by him in McClelland Lake, about sixty miles north of Fort McMurray, Alta., in the Athabasca River country, about lat. 57 degrees north, in June, 1924.

Dr. Ells kindly informs me that this lake, which is in township 98, range 8, west of the 4th meridian, is in size about 6 by 3 miles, at an elevation of about 900 feet, with an outlet to Athabasca River. These "shrimps" are considered a pest in the lake, as they devour all bait on fish-hooks, and clog the lines set there. The only commercial fish in this lake are pike (and perhaps pickerel).

This new record of *G. limnaeus* is valuable; for it shows that the species is as common in the subarctic parts of western Canada as further north and south.

My identification of these specimens has been kindly verified by Mr. C. R. Shoemaker, of the U.S.N.M., Washington, D.C.—F.J.

THE SPIDER COLLECTIONS OF F. W. WAUGH

By J. H. EMERTON

IN THE course of his studies of the language and customs of the Indians, which took him on long visits to out-of-the-way parts of Canada, Mr. Waugh was accustomed to observe and collect spiders, and so became well acquainted with the common kinds and discovered many facts of value relating to the distribution of these animals in North America.

In 1916 he visited Nipigon, Long Lake and Manitoulin Island, where he found the then little known *Linyphia nearctica*, *Linyphia limitanea* and *Theridion zelotypum* near their southern limits in the Great Lakes region. In the following year he collected around Winnipeg and there found *Pardosa greenlandica*, its most southern station except in the mountains.

In 1918 he spent the summer at the Six Nations' Reservation, near Brantford, Ontario, where he collected largely and found several southern species near their northern limits in Canada, the two species of *Argiope*, *Epeira hortorum*, *Hyctia bina* and *Epeira insularis*.

In 1919 he had a long season at Lac Seul, Ontario, where he collected from June to September and made a typical Middle Canadian collection of fifty species, including the western *Lycosa beanii* and the arctic *Lycosa albohastata*.

His most interesting collection, however, was that of 1921 and 1922 in Labrador. Starting in the summer of 1921 at Natashquan on the north shore of the Gulf of St. Lawrence, where he collected the common *Lycosidae* and *Epeiridae*, he moved northward to Voisey's Bay in August and in September and October followed up the Assiwaban River as far as Cabot Lake. At all stations the common spruce tree spiders *Linyphia phrygiana*, *nearctica* and *limitanea* were found in the immature condition in which they pass the winter, while *Lepthyphantes duplicatus* and *bihamatus* which live near the ground were in the adult condition in both sexes. At Voisey's Bay occurred the arctic species *Pardosa furcifera*, *Lycosa pictilis* and *Lycosa albohastata* and at Cabot Lake the transcontinental species *Hilaira brunnea* and *Pholodromus alascensis*.

At Nain, in May, 1922, all the spiders were in the same condition as in September, but after the middle of June all the *Linyphiadae* and *Lycosidae*, which wintered immature, were found as adults. The arctic *Lycosidae* and *Gnaphosa brumalis* were also mature. The rare *Lophocarenum quadricristatum*, known from the top of Mt. Washington, was also found and in meadows back from the shore *Singa variabilis* and *Tetragnatha laboriosa*, common species in New England and farther south.