

*Diadophis punctatus* (Linné.) Ring-necked snake.

In the summer of 1913 we recorded six specimens of this species, mainly along the road to Dorset and on the cliff to the west of camp. In 1919 one was found in mid-August between Otter lake and Dorset.

*Liopeltis vernalis* (Harlan.) Green Snake.

Meek secured one at Gravenhurst and G. S. Miller, Jr., Aug. 6, 1896, saw a green snake at this same place. Several of the natives voluntarily described a "grass green snake not very common." We have not yet taken it.

*Natrix sipedon sipedon* (Linné.) Water Snake.

Meek took one specimen at Gravenhurst and the species is uncommon in the Lake of the Bays region. Many of the natives call it a "black snake." *Storeria occipito-maculata* (Storer.) Red-bellied Snake.

This and the ring-necked snake are of about equal occurrence in the region. Through 1913 and in August, 1919 we recorded four specimens

of this species.

*Thamnophis sirtalis sirtalis* (Linné.) Garter Snake.

Abundant; the snake of the region. On August 11, 1913 one of our captive garters gave birth to 19 young.

#### THE TURTLES.

*Chelydra serpentina* (Linné.) Snapping Turtle.

Uncommon. Found more in muddy creeks and ponds than in the open lake. We took one July 23, 1913, in Fletcher lake with a carapace length of 18-20 inches. On the road to Dorset in the last of August, 1919, another specimen was taken with head width of three inches. Sometimes called "Black-turtle" in this region.

*Chrysemys marginata marginata* (Agassiz.) Western Painted Turtle.

We have not seen this form in this region but the natives describe a small mud turtle other than the snapper and the description accords well with this species.

(To be continued.)

## THE LARGER FRESHWATER-CRUSTACEA FROM CANADA AND ALASKA.

By FRITS JOHANSEN.

(Continued from Vol. XXXIV, page 132)

### II.—ISOPODA.

This order of crustacea has a great number of representatives in the sea, some of which live parasitically on fishes, other crustacea, etc., and are correspondingly deformed, especially the females. Three families are known from freshwater on this continent.

They have the following characters in common with the amphipods; a many segmented body, no carapace, but the head and first thoracic segment united, and the eyes, when present, sessile. While the body of an amphipod is compressed that of an isopod is depressed thus making the latter a less capable swimmer, but admirably suited for dodging under stones, etc., and attaching itself to moving animals. It is true that certain of the marine forms (*Mesidothea* sp.) are good swimmers (using their legs), and live almost a pelagic life when they are very young (just after leaving the brood-pouch), but they soon change this for crawling over or burrowing in the sea bottom, the typical life for most of the isopods. The eggs are carried by the females on the underside of the body in a brood-pouch,\*

as in the amphipods, and the young ones also remain inside the pouch some time after hatching. The newborn young are practically like their parents though different in color and the proportional size of the various parts of the body, and the embryonal development inside the egg is said to be not quite so complete as with the amphipods. A popular name for the isopods is "sow-bugs," and it is well known that certain of them (*Oniscus*, etc.) live on land under bark or stones, etc. The marine and terrestrial forms are predacious, while those in freshwater feed upon decaying vegetable matter. Owing to their more hidden habit the freshwater forms are not quite so important an item in the food of fishes, birds, etc., though the marine or brackish water forms are decidedly so. Among the latter is the large interesting species *Mesidothea entomon*, which has a circumpolar distribution and also is found as a glacial marine relict in the large lakes of Sweden and in the Baltic. In the arctic it is a littoral form and one of the most characteristic and commonest invertebrates along the coast west of Hudson Bay. I have observed (arctic Alaska) how it will enter the estuaries of rivers or smaller water courses at high tide, remain there in quiet

\*Formed by lamellae from the thoracic legs.