
**FOSSIL LAND AND FRESH-WATER MOLLUSCA COLLECTED
IN DEFIANCE COUNTY, OHIO.**

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Four miles east of Defiance, Ohio, at the state dam, forming the north bank of the Maumee River, I found a deposit with fossil land and fresh-water mollusca. The material is fine sand, somewhat clayey, of light color, without any stones except in the top layer of about one foot, which is of different material, with broken stones (limestone), etc. Large trees are standing on it. So far as accessible, the bed is about eight to ten feet deep, and very rich in mollusca. What it is geologically, I do not know, but supposed it to be loess. In an hour and a half, I collected specimens of twenty-seven species, the large majority of them "land mollusca" and there is no doubt that many more will be found, and probably remains of other animals also.

At the same time, the recent mollusca of that vicinity should be collected carefully for comparison. It must be remembered, however, that most of the surface of north-western Ohio is now under conditions radically different from what they were only fifty to seventy years ago. It is safe to say that there are at present hardly more than five per cent of the mollusca living of what there were originally, that is, of individuals. Very probably also, the number of species has considerably decreased.

The following is a list of the mollusca found, with a few notes. All of the species are now living in Ohio.

1. *Gastrodonta ligera*, Say, one specimen.
2. *Zonitoides arboreus* Say, one specimen.
3. *Hyalina radiatula* Alder, one specimen.
4. " *indentata* Say, one specimen.
5. " (or *Zonitoides leviuscula* Sterki, a western species having the eastern limit of its recent distribution in Ohio, so far as known.
6. *Circinaria concava* Say, several specimens.
7. *Polygyra profunda* Say, several.
8. " *multilineata* Say, several.
9. " *albolabris* Say, one, large.
10. " *zaleta* Say (exoleta), a few.
11. " *clausa* Say, one fine specimen.
12. " *mitchelliana* Lea, one specimen.
13. " *thyroides* Say, a few.
14. " *elevata* Say, several, the commonest of all, except No. 25.
15. " *fraudulenta* Pilsbyr ("fallax Say" of authors), two.
16. " *inflecta* Say, two.
17. " *hirsuta* Say.
18. *Patula* (Pyramidula) *solitaria* Say, large, several.
19. " " *alternata* Say, a few.
20. " " *striatella* Anthony.
21. *Bifidaria contracta* Say, one. (*Pupa contracta* Say.)
22. *Succinea avara* Say, one, rather large.
23. " *retusa* Lea, one.
24. *Phyra* sp., one specimen, broken to fragments.
25. *Pomatiopsis lapidaria* Say, common.
26. *Pisidium compressum* Prime, two left valves.
27. " *fallax* Sterki, one valve.

Of *Unionidæ*, numerous fragments were found, but all too small to be identified; most of them were near the top layer. A large part of the shells were more or less damaged; few in perfect condition.

Fossil land and fresh water shells should be collected wherever found. But caution is necessary: they should not be cleaned more than required for identification, and under no condition should they be washed; water will damage them, especially will it loosen the outer layer of shell substance in the aperture, containing the characteristic parietal teeth of the *Polygyræ* etc.

New Philadelphia, Ohio.

Books Received.

"Boulder Reveries," by W. S. Blatchley, State Geologist of Indiana. A pleasing little volume bearing the title of "Boulder Reveries," is a late production of W. S. Blatchley, of Indianapolis. From the title one might be led to open the volume to read about boulders but the author makes it clear that living things have more attractions for him for on page 67 he writes: "I started alone this morn for my chosen rendezvous—the moss-covered boulder on the woodland slope. There I had an appointment with the squirrels, the marmots, the ants, the crows, the jays and all their kin. There I was to meet certain representatives which they were to send, and hold with them high communion on the peaceful Sabbath day. I started alone, and alone I wished to be, alone with my thoughts and the denizens of the woods."

"The little volume here offered was, with the exception of the last two articles, written in an old woods-pasture in Central-Western Indiana." It is an account of what the author saw of nature while strolling in the woods-pasture mentioned or while seated on one of the gray boulders which are reproduced from photographs for the book, and which Mr. Blatchley admires a great deal. Snakes, frogs, birds, insects and many other animals are mentioned and the brook, the trees and other plants come in for their share of attention now and then. The work is so written that the reader has no trouble in understanding the thoughts intended to be expressed and I am sure it will do much to stimulate the outdoor study of nature and interest in living things, no matter how lowly. One thought is put foremost, it seems to me, and that is, that all animals, even the snake, are much more interesting when alive, and when life is taken away there is nothing further in them to admire. The work is very commendable and should be read widely.

"Practical Zoology," by Professor Alvin Davidson, of Lafayette College. This book is sent out by the American Book Company as an elementary text-book treating of the structure, life history, and relation of animals. It is well illustrated and contains an abundance of facts taken largely from species that are of interest on account of economic habits. The idea is a good one for it seems that while a pupil is studying zoology it is well to use an economic species as a basis, and there is such a species of common occurrence to represent nearly every group of animals known. The book should have a wide usage in the place for which it is intended.

—J. S. H.