

## A CONTRIBUTION TO A KNOWLEDGE OF INDIANA MOLLUSCA.

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The wonderful diversity of physical features in Indiana contributes to the development of an interesting molluscan fauna. Swamp, pond, creek and river each presents forms or groups of forms characteristic of such stations; hillside, river bottom, prairie, contributes each its own peculiar species. So that in a state of such widely different natural conditions it is not surprising that a great array of forms, most of which are by no means conspicuous, should have been discovered.

There has never been made a geographic study, within this state, of its mollusks. Nor have systematic collections ever been made of so much as even a single stream. One could name on the fingers of the hands the men and the places which have thus far yielded our sole knowledge of Indiana mollusks. It is the object of this paper to state, in a few words, the present condition of our information in this line and to indicate if possible, the direction along which future effort should be made.

It does not need words of mine to demonstrate that the first essential condition to a complete study of the geographic distribution of Indiana mollusca lies in complete and painstaking local collections. This is not the task of a week nor of a single season. The habits of our mollusks are so peculiar that certain seasons present sometimes many forms which fail to appear again for several successive years. Often, even in the case of the most common species, numbers of individuals are spasmodically great; then years go on and few of certain forms are to be found. No less interesting will be the life history of these retiring animals. Not the life history of a single Indiana species is known. And, so far as my information goes, there is not a student in the state who is doing more than collect the pretty and variously ornamented shells that they may grace a cabinet! What their biological significance may be in that great sum which makes up the animal life of Indiana no one seems to be investigating.

A further necessity for immediate action that the original inhabitants of the state may be listed lies in the danger of extinction of very many forms. The sewerage of towns and villages, the refuse of factories and other manufacturing plants, the gradual encroachment on the primitive forests, the drying up of streams, the drainage of swamps, the general increase in tilled lands, these all conspire against the chances of perpetuity of a rich molluscan fauna. What is done must be systematically done

and thoroughly and at once.

This "Contribution" seeks to do little more than to call attention to a neglected branch of animal life which will yield the student a mass of valuable data and prove a veritable mine of pleasure. In it there has been given simply, without attempt to discuss any scientific question, a list of the forms credited to the state. Very many of those mentioned have been seen within the state or in collections containing authentic specimens. Others are listed on the authority of undoubtedly correct writers. How much has been already accomplished and what yet remains to do the lists themselves will indicate.

The general plan of simply naming a single locality, at most two or three, has been followed in order that a definite locality within the state would fix the form as belonging to the Indiana fauna. Not a single form has been admitted that has been recorded from neighboring states notwithstanding that such a course would have been justifiable on the ground that the artificial lines imposed by state boundaries are unknown to mollusks, and species found in localities close to Indiana may reasonably be expected within its limits. This course would have largely increased our list, but it was preferred to make a record only of those shells known in the state. The student may rest assured that every species named herein has been found in Indiana and will be found again.

An attempt at a bibliography has been made. But works or papers dealing with our shells solely are very few in number. General works there are, quite numerous too, from which help may be had. These two classes of information are given below in separate lists. The paucity of literature pertaining to this state will be evident at a glance.

The Ohio river has been a prolific source of Unionidæ. From that stream come most of the forms of wide geographic distribution; indeed, most of them were originally made known from that river. The Wabash and the White rivers have contributed many forms but most of them are common to the Ohio. It has been the rule to insert in this list of Indiana shells all the species which were originally described from the Ohio whether there is special record of their occurrence within the limits of the state or not.

In every portion of the commonwealth it is hoped that persons will become interested in these animals sufficiently to collect locally and send to some central point what may be found, in order that a complete list, with distribution, varietal characters, and other facts of a biologic nature may

be eventually prepared. It is hoped every reader of this preliminary paper will become personally interested in the matter.

BIBLIOGRAPHY. A.—GENERAL WORKS.

This list includes general faunal lists and general descriptive works in North American Conchology. In all of them are to be found matters of more or less interest to the student of Indiana mollusca.

**Poulson, C. A.** A Monograph of the Fluvial Bivalve Shells of the river Ohio, containing twelve genera and sixty-eight species. 1832.

A translation of Rafinesque's older work, which see.

**Say, Thomas, F. M. L. S.** American Conchology, or Descriptions of the Shells of North America. New Harmony, Indiana. 1830-1834.

Illustrated by colored figures from original drawings executed from nature.

**Conrad, T. A.** Monograph of the Family Unionidæ. 1835-1839.

**Lea, Isaac. LL. D.** Observations on the Genus *Unio*. 13 volumes, 4to. 1830-1874.

These volumes were originally published as portions of the Transactions of the American Philosophical Society and of the Journal of the Philadelphia Academy of Sciences. They were afterwards collated and issued separately under the above title.

—A Synopsis of the Family Unionidæ. Four editions. 1830-1870.

This work has almost a complete bibliography of the Unionidæ, particularly the American forms. There are also tables of geographical distribution, but these are little more than a mere list of the original localities for the American species.

**Catalogue of the Unics, Alasmodontas and Anodontas of the Ohio river and its northern tributaries, adopted by the Western Academy of Natural Sciences of Cincinnati.** January, 1849, pp. 19.

There are listed in this remarkable little brochure fifty-six species of *Unio*, six of *Margaritana*, and five of *Anodonta*. The catalogue is remarkable as being the first open expression hostile to the claims of both Say and Rafinesque. It marks the beginning of a long and bitter controversy, from the effects of which American malacology has not yet fully recovered.

**Binney, Amos.** Terrestrial Air-breathing Mollusks of the United States. Boston, 1851. Three volumes—text, two volumes; plates, one volume.

**Lea, Isaac.** Check list of the shells of North America. *Unionidæ*. Washington, 1860.

This is a mere list of species without definite locality references.

**Prime, Temple.** Check list of the shells of North America. *Cyclades*. Washington, 1860.

Same limitations as the work last cited.