

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.

Binney, W. G. Check list of the shells of North America. *Terrestrial Gasteropoda*. Washington, 1860. Second edition.

List number II of this work is general for that portion of the United States which includes Indiana.

—Check list of the shells of North America. *Fluviatile Gasteropoda*. Washington, 1860.

Rafinesque, Constantine Smaltz. The complete writings of, on recent and fossil Conchology. Edited by Wm. G. Binney and George W. Tryon, Jr. New York, 1864.

This work gives all the published work of Rafinesque in this department of science and is an indispensable adjunct where justice and fairness govern in determining the claims of authors. It has been misconstrued and misinterpreted: its value has not always been recognized.

Stimpson, William. Smithsonian Miscellaneous Collections. 201. Researches on the *Hydrobiinae* and allied forms. Washington, 1865.

Prime, Temple. Smithsonian Miscellaneous Collections. 145. Monograph of American *Corbiculadae*, recent and fossil. Washington, 1865.

Binney, Wm. G. Smithsonian Miscellaneous Collections. 143. Land and fresh water shells of North America. Part II. *Pulmonata Limnophila* and *Thalassophila*. Washington, 1865.

Tryon, George W., Jr. A Monograph of the Terrestrial Mollusca inhabiting the United States. New York, 1866.

Lea, Isaac. Rectification of T. A. Conrad's Synopsis of the Family of Naiades of North America. New edition. Philadelphia, 1872.

Tryon, George W., Jr. Smithsonian Miscellaneous Collections. 253. Land and Fresh-water shells of North America. Part IV. *Strepomatidae*. Washington, 1873.

Harper, George W., and Wetherby, A. G. Catalogue of the land and fresh water Mollusca found in the immediate vicinity of Cincinnati, Ohio. Cincinnati, 1876.

This brochure, which originally appeared in the Journal of the Cincinnati Society of Natural History, is very valuable as an indicator of what the collector may expect in the Ohio along the shores of Indiana. It lists seventy-four *Unios*, eight *Margaritanas* and nine *Anodontas*.

Lewis, James, M. D. On *Unio subrostratus* Say. In Proceedings of the Academy of Natural Science of Philadelphia. 1878. Reprint, p. 4.

Contains some valuable information concerning a shell originally described from this state.

Binney, Wm. G. Terrestrial Air-breathing Mollusks of the United States and the adjacent territories of North America. Bull. Museum

Comparative Zoology. vol. IV. 2 volumes, 1878.

Call, R. Ellsworth. Geographic Distribution of the *Unionidae* of the Mississippi Valley. Bull. Des Moines Academy of Science, vol. 1, number 1, pp. 5-56. 1885.

Binney, Wm. G. Bulletin United States National Museum, No. 28. A manual of American land shells. Washington, 1885.

Wright, Berlin Hart. Check list of North American *Unionidae* and other fresh water bivalves. Portland, Oregon, 1888.

B.—LOCAL LISTS AND SPECIAL REPORTS.

Plummer, Dr. John T. Scraps in Natural History (Mollusca). American Journal of Science and Arts, O. S., vol. XLVIII, No. 1, pp. 93-96. 1844.

This paper gives a list of shells found about Richmond. Wayne county, Indiana.

There are in it the names of twenty-one species of land shells, eight univalve fresh water forms, one *Anodon*, two *Margaritanas*, and one *Spherium*.

Pleas, E. Shells of Henry county. In "The Nautilus," vol. VII, No. 6, pp. 68-70. 1893.

This paper lists fifty-nine species and varieties of land mollusks and sixty-four

species and varieties of fresh water forms. They were all found within five miles of Dunreith. There will, doubtless, be some question of correct indentifications.

Department of Geology and Natural History. Indiana. 16th Annual Report, pp. 428-468. 1889.

This volume gives a mere list of the contents of certain cases in the State's Museum,

and is absolutely valueless for any conceivable purpose. Many of the forms listed are, doubtless, from this state, but in the absence of locality references the list has no value to the student. The proof-reading is a marvel of carelessness.

Moore, D. R., and Butler, A. W. Land and fresh water Mollusca observed in Franklin county, Indiana. See Bull. of the Brookville Society of Natural History, No. 1, pp. 41-44. 1885.

This really valuable paper gives a list of some thirty-eight species and varieties of

land shells, ten species of fresh water univalves, and fifteen species of fresh water bivalves. Of the latter, seven belong to *Unio*, three to *Margaritana* and four to *Anodonta*. One belongs to *Spherium*.

Say, Thomas. Descriptions of several new species of shells and of a new species of *Lumbricus*. Transylvania Journal of Medicine, vol. IV. 1831.

On pp. 525-529 occur several descriptions of shells, among which one *Unio* (*Unio capitulus*) from the Wabash river and one land shell (*Helicina occulta*) from near New Harmony are found.

Cox, E. T., State Geologist. Geological Survey of Indiana. Annual Report for 1875.

This volume contains a paper by G. M. Levette, entitled, "Observations on the Depth and Temperature of some of the Lakes of Northern Indiana." There is given in the paper a list of fifteen *Unios*, one *Margaritana*, four *Anodons* and nineteen species and varieties of fresh water univalves. The list, except the portion pertaining to the *Unionidae*, was prepared by Mr. John W. Brykit, of Indianapolis. It is intended to cover only northern Indiana.

Stein, Fred. Geological Survey of Indiana. Annual report for the year 1880. Pp. 451-467. Contains the molluscous fauna of Indiana.

There are listed the *Unioncs*, *Margaritanas*, *Anodontas*, and other fresh water bivalves, of several genera and species. Besides these there are given the genera and species of fresh water univalves, and all the known species and varieties of land shells. This list bears the distinction of being the very first to endeavor to present a complete view of the shell-life Indiana.

Species described from Indiana.

In collating the lists of mollusks known from this state it has been matter of great interest to note those which had an original habitat ascribed to some part of Indiana. This was to be expected, perhaps, since the earliest of the best known and most scientific writers in conchology, Thomas Say, was for a long time a resident of that interesting colony—the basal principle of which was a kind of Utopian doctrine of communism—which founded New Harmony. While resident here, under the inspiration of association with such men as Troost, Maclure, and the older Owen, opportunity was afforded Say to collect and examine very many of the mollusks of the region. He improved the occasion, as we well know, and gave to the world of science its best early American contributions to conchology. Since his day other species have been found, supposed to be new and described as such by various authors until the list has grown to very respectable proportions. While some of the names following are properly recognized as synonyms yet they are given with the reference to the forms which have priority, for it is but fair to the workers of other days that we recognize the disadvantages of long distance from scientific centers and the other untoward conditions of life in a practical wilderness.

LAND SHELLS.

HELICINA OCCULTA Say. Near New Harmony.

SUCCINEA VERMETA Say. New Harmony.

POLYGYRA FASTIGIATA Say. New Harmony.