

BOOK REVIEWS

A Contribution Toward a Bibliography of Ohio Zoology. *David Gerrick.* Bulletin of the Ohio Biological Survey, New Series, 1968, vol. II, no. 4, ix+273 p. Available from Ohio State University Publication Sales, 2500 Kenny Road, Columbus, 43210. \$3.00.

This bibliography of Ohio animals contains an estimated 3,500 entries, about 14 to a page, arranged under 20 headings: Limnology and General Invertebrates, 4.5 pages; Protozoa, 2 pages; Platyhelminthes, 3.6 pages; Miscellaneous Invertebrate Phyla, 4.3 pages; Arthropoda exclusive of Insects, 10.5 pages; Insecta—General, 8 pages; Odonata, 3.4 pages; Orthoptera, 3.3 pages; Hemiptera, 14 pages; Diptera, 13.3 pages; Lepidoptera, 11.5 pages; Coleoptera, 14 pages; Hymenoptera, 9.5 pages; Minor Insect Orders, 4.5 pages; Mollusca, 12.3 pages; Vertebrates—General, 9.1 pages; Pisces, 26.8 pages; Amphibia and Reptilia, 12.8 pages; Aves, 58.5 pages; Mammalia, 17.5 pages. Under these headings, entries are alphabetical and, if there is more than one paper by an author, chronological. There is one page explaining the abbreviations used and 14 pages of double-column index to the orders, families, genera, species, and vernacular names.

The work is printed by photo-offset from clear, typed master sheets, and has excellent legibility. The covers are the familiar gray paper of the series (very poorly attached in my copy), and the signatures are sewn through the center folds so that the volume lies flat when open—a real blessing. The vast majority of entries are from 1930 to 1965; most earlier entries are repeated from Herbert Osborn's "Bibliography of Ohio Zoology" (1930, Ohio Biol. Survey Bull. 23: 351-410).

The limits of this work are stated in the preface: "Included . . . are papers, pamphlets, books, and unpublished manuscripts on the taxonomy, distribution, life history, and ecology of Ohio animals. Publications exclusively devoted to anatomy, morphology, and physiology have been excluded. References to papers in popular periodicals or those of a purely local character have also been omitted. All materials listed, except those otherwise noted, can be found within the collections of the Ohio State University Libraries of the Ohio State Museum at the State Capitol." These limits are not followed strictly. A number of anatomical and physiological papers are included and are welcome, while the rich fossil fauna of Ohio is omitted except for two papers on mastodons (there may be other entries dealing with fossils, but if so they are few and far between). The important question is how useful and accurate and complete is the bibliography within its stated limits?

Usefulness. The beginner will find this work a gold-mine of references and a real eye-opener; it is to the beginner that I heartily recommend this as a starting point. The more advanced student will be familiar with many of the references, find a few of which he was not aware, and probably know of a few which were omitted; he can still benefit from Mr. Gerrick's labors. The professional zoologist, if he is literature-oriented, will be distressed by the incompleteness, the numerous typographical errors, and the lack of attention to detail.

Accuracy. The author states in his preface that "This publication incorporates the references included in the Osborn bibliography (of Ohio Zoology) through 1930 . . ." This sounds as though all of the Osborn entries are repeated; most are, but some are not. The many Christmas bird-count entries which occur on almost every page of the Osborn work are omitted. Numerous other entries are simply left out; for example, of the many Ohio bird notes by Lynds Jones, 17 entries listed in the Osborn bibliography are omitted in the present work. If there were reasons for these and other omissions, they should have been mentioned. In the section on Diptera, there is an average of over two typographical errors per page. In the section on Amphibia and Reptilia, there are numerous citations from the publications of the Ohio Herpetological Society, but a check of the Society's journals for the four years, 1958 through 1962, reveals: 18 papers on Ohio herpetology omitted, 9 papers incorrectly cited (wrong page numbers, misspellings, etc.), one paper included that has nothing to do with Ohio, and all of the abstracts (many containing important information) omitted. Among the major papers left out are Gehlbach's key to Ohio Salamanders, and Adler's important summary of new distribution data for Ohio reptiles and anurans, the bibliography of which contains entries not listed by Mr. Gerrick.

Several entries are misplaced: on page 38, a paper on molluscs is included in with the Odonata; on page 58, papers on wasps and beetles occur under Hemiptera; on page 85, a paper on beetles is listed under Lepidoptera; and on page 112, two papers on Odonata occur under minor insect orders.

The indexing has problems, too. One entire page of entries has been omitted (from Hawks to Ibis). Numerous articles are not indexed at all, or incompletely. For instance, insects are not indexed by genus, species, or common name, but only by order or family; as a result, insect titles which do not mention order or family are not indexed. Non-insect entries are mostly

cross-indexed by scientific name and by vernacular name, regardless of which is used in the title (a useful feature, but not applied consistently). On page 177, Wood's paper on "An erythristic specimen of northern water snake from Geauga Co., Ohio" is not indexed under "snake," "water," "northern," or "*Natrix*;" on p. 239, Bole's paper on "The pine mouse in southern Ohio" is not indexed under "mouse" or "pine," but occurs under "*Pitymys*;" and on p. 103, Gahan's paper "*Climacia areolaris* (Hagen) parasitized by a new pteromalid (Hymenoptera: Chalcidoidea)" is not listed under "*Climacia*," "Neuroptera," "Sisyridae," "Pteromalidae," or "Chalcidoidea." Other examples could be cited. There are only two non-taxonomic subjects in the index, "Ecology" and "Parasites," and both are incomplete.

Even the list of abbreviations lacks attention to detail, for at least twelve (Archaeol., Assn., Biom., Comp., Geol., Hist., Jun., N., Palent., Rept., Res., Spec.) are omitted. Lest the reader think that I'm being overly harsh, it should be realized that over 100 pages of this work contain errors of commission, and this does not count errors of omission.

Completeness. During the course of investigating various eastern salamanders, I have accumulated a list of 82 entries mentioning Ohio specimens (there are certainly more than this). Of these, 52 are not mentioned in Gerrick's work. Simultaneously, Gerrick has three entries not mentioned in mine. The many missing references range from papers which simply mention the name of an Ohio salamander in the discussion of the fauna of another region, to classic studies like Dunn's *Monograph of the Family Plethodontidae*. Several titles in the bibliography of Ohio salamanders in Bishop's *Handbook of Salamanders* are not included here, and the entry for the *Handbook* itself is incorrect. The two printings of this publication by the Comstock Publishing Company were in 1943 and 1947; since they are identical, the contained information dates from 1943 and should be so cited. The unchanged Hafner reprint (advertised as a "corrected reprint") appeared in 1962.

Some other omitted works that come to mind are The Ohio State Museum Information Series, The American Society of Ichthyologists and Herpetologists' *Checklist of North American Amphibians and Reptiles*, Blatchley and Leng's *Rhynchophora of Northeastern America*, etc. Another omission appeared to be Langolis' important book, *The Western End of Lake Erie and its Ecology*, but it was finally found listed under "Vertebrates—General"; it is not indexed under "Ecology, Lake."

In summary, this bibliography represents a lot of very arduous work, but it is marred by multitudes of small errors, incomplete indexing, and what appear to be erratic search techniques. In the area of Ohio salamanders, over 60% of the literature has been omitted; the percentage for other animals has not been checked.

BARRY VALENTINE

The Apparatus of Science at Harvard 1755-1800. *David P. Wheatland* assisted by *Barbara Carson*. Collection of Historical Scientific Instruments at Harvard University. Distributed by Harvard University Press, Cambridge, Massachusetts, 1968. xi+204 p. \$20.00.

In this attractive work meant to be "fundamentally a book of illustrations" is a collection of pictures of scientific teaching and research apparatus of the latter part of the eighteenth century. After the fire on 24 January 1764 which destroyed Harvard Hall with its library and instrument collection, Harvard and its friends undertook the replacement and enlargement of its collection of scientific apparatus. Very quickly orders for instruments of the latest design were placed in England. Most of the instruments shown here are of British manufacture; however, Joseph Pope of Boston made an orrery, and the Reverend John Prince of Salem made a number of instruments, including a lucernal microscope and a "thunder house" which demonstrated the effects of an electric charge on a broken-circuit lightning rod (effects produced by igniting some gun powder and blowing off the roof and walls of an eight-inch-high model of a wooden house).

Each of the 94 pieces of apparatus is photographically illustrated, six by tipped-in color plates, and is briefly described, and often an illustration from a contemporary book is included. They are grouped into: telescopes, astronomical measurement, astronomical models, surveying and drafting, mechanics, hydraulics, vacuum, light, sound, electricity, magnetism, chemistry, microscopes, biological specimens, and mineralogical specimens. More background information about the history and uses of the apparatus at Harvard can be found in I. Bernard Cohen's *Some Early Tools of American Science*, Harvard University Press, 1950, which also contains a catalogue of about half of the instruments and smaller pictures of some of them. The flavor of eighteenth-century science and particularly its entertainment value, even for college students, is captured in this beautifully produced catalogue.

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