was Philip Leidy, the hatter, on 3rd street above Vine; my mother, Katherine Mellick, but she died a few months after my birth, and my father married her sister Cristina, who was all in all to me, the one to whom I owe all that I am. At an early age I took great delight in natural history, of which I have reason to think I know a little, and a little of that little I propose to teach you to-night.

One does not need to glance at the splendid head on the opposite page to realize that this great naturalist, whose "Rhizopods of North America," is one of our finest biological classics, was *echt,* in the exquisite Emersonian sense of living "from a great depth of being."

There are a few typographical errors here and there, but these things are of little consequence in a work which deserves to be in the library of every physician interested in the medical history of his country, and which will undoubtedly prove a valuable reference book in working scientific and public libraries.

F. H. GARRISON
SURGEON GENERAL'S LIBRARY

A Revision of the Cotylosauria of North America. By E. C. CASE. Washington, Carnegie Institution, Publication No. 145. 1911. Pp. 122, 14 plates.

It is now more than thirty-six years since the first Permian or Permo-Carboniferous reptiles were made known from North America by the late Professor Cope, who until his death twenty years or more later published at frequent intervals papers dealing with Paleozoic land vertebrates, coming chiefly from the famous deposits in northern Texas. As a pioneer, his work, here as elsewhere, was, of necessity, largely based upon fragmentary and imperfect material, material largely obscured by an obdurate matrix that only long and skilful preparation could remove. Few, if any, forms were known to him in anything approaching perfection or even completeness. As an inevitable result he left the subject in more or less confusion, notwithstanding the many important facts which he discovered. Many of his types were never figured nor even adequately described. In more recent years, beginning with Professor Case's collection in Texas in 1897, the additions to our knowledge of these old land vertebrates made by him and others have been very considerable and of profound importance in paleontology. But much of the confusion and doubt regarding many of the original types, for the most part preserved in the American Museum of New York City, could only be removed by a careful revision of the whole group, based upon original specimens. This Professor Case has given us of the so-called order Cotylosauria in the present paper. At the present time there is, perhaps, no group of vertebrates of deeper interest to the student of evolution than the primitive reptiles and amphibians of the later Paleozoic, the forms from which all later vertebrates, save the fishes, have been derived. The many problems of the evolution of the Amphibia, and the origin and "radiation" of the Reptilia, are, until other fields have been discovered, dependent chiefly if not almost wholly on the Permo-Carboniferous deposits of Texas and the Rocky Mountains. No classification of the reptiles and amphibians will ever command any great degree of respect until these faunas have been well worked out; and, inasmuch as many of the problems of these groups are fundamental ones in many respects for all higher vertebrates, the interest attached to such studies as the present may be easily understood.

Professor Case did a very acceptable piece of work in his revision of the Pelycosauria, or the higher reptiles of the same fauna, published a few years ago. In the present work he has revised systematically and morphologically the numerous genera and species that have been proposed of the cotylosaurian reptiles, a group usually called an order though not distinguishable by very important characters from the Pelycosauria or Theromorpha. The chief value of the paper is the information given of the fragmentary and often unrecognizable types of Cope, as interpreted in the light of a more advanced knowledge of the group, by descriptions, comparisons and illustrations. Not much new material has been described nor have many new forms been added that had not been published by himself

or others previously. He divides the order into four suborders, the Pareiasauria, Procolophonia, Diadectosauria and Pantylosauria, the last two new. While these terms will be convenient, the present writer doubts whether the distribution proposed of the families is really the best, or whether indeed there is really any need of classificatory terms between the family and order at present.

Dr. Case urges, what has now become apparent, that the Cotylosauria are far from being the beginning of the reptilian stem, that forms so diverse as those we already know from the base of the American Permian must have been long years in developing. Nevertheless they approach that beginning relatively close, and, until the actual beginning is found, must suffice as the basis for the classification of all later reptiles. The writer can not agree with the author in the interpretation of some of the cranial elements in these reptiles, but as that is a subject about which no two authors agree, Dr. Case's views are perhaps as good as those of others. Nor is he assured that the forms *Eosauravus* and *Sauravus* really belong among the Cotylosauria. And, as regards the attachment of the ribs in these "microsaurian" forms, they are really not different from those of all the known Permo-Carboniferous reptiles.

The work has been brought out in excellent shape by the Carnegie Institution, and it will long remain as an indispensable one for all students of the early reptiles.

S. W. WILLISTON

The Home-life of the Osprey. By CLINTON G. ABBOTT. London, Witherby & Co. 1911. Pp. 1–56; 32 mounted plates.

This volume forms the third of an admirably planned series, designed to present, through the aid of pictures and a brief text, the most interesting facts about celebrities of the bird world. The American osprey is worthy of this distinction, and the field-work, upon which this biography is based, although "necessarily limited to the brief opportunities of a business man," has been prepared with commendable care. We venture to express the hope that more business men, and representatives of the professions may in time come to reap the profits and enjoyments which an intelligent interest in natural history affords.

The author's studies were made on the coast of New Jersey, at Great Lake, North Carolina, and at that world-famous preserve for ospreys, Gardiner's Island, New York. This tract of 3,000 acres is three miles from the eastern end of Long Island, and is probably unique in that, as we are told, it has been in the possession of the same family for nearly 300 years, or since the time of its purchase from the Indians for "ten coats of trading cloath." It is now maintained as a general farm and preserve, with "a pleasing succession of rolling meadows, thick coverts, stately trees, lakes and grassy marshes." This remarkable island has been the immemorial home of fish hawks, and is now thought to harbor upwards of 200 of their massive nests. Moreover, these gigantic structures are reared with absolute freedom, in almost every conceivable situation, upon the shifting sands of the beach, upon great rocks, in trees or even upon the gable end of a deserted barn or shed. The author shows a nest built on a fence-post and another on a telegraph pole, while in parts of Connecticut these neighborly birds have often taken kindly to the old cart wheel reared aloft for their special benefit on the top of a high pole.

Ospreys are model parents, friendly to man, and exceedingly attractive at all times. Many characteristic attitudes in both young and adult are described and figured by Mr. Abbott, such as flying up the wind in returning to the nest, detouring, repeating and often alighting on any favorite perch other than the nest. Like other birds, they hold closely to the perch, upon which habit has fixed.

Mr. Abbott never saw the parents sprinkle their young with water, but Allen, an earlier observer of this species, found that they occasionally brought fresh seaweed to their eyrie. "Similarly, I have sincere doubts," says the writer, whether the "grateful shade, over the young, of the parent's outstretched wings, is not more accidental than inten-