A Descriptive Catalogue of the Marine Reptiles of the Oxford Clay. Part I. By Dr. C. W. Andrews. Published by the British Museum. 1910. 4to, pp. 1–205, pls. i–x.

The marine Jurassic formations of England and Germany are exceptionally rich in fossils, both vertebrate and invertebrate. There is scarcely a museum in Europe and not many in America in which the visitor fails to see skeletons of ichthyosaurs, plesiosaurs or sea crocodiles from one or another of the classic localities. The British Museum collections of Jurassic marine reptiles far surpass those of any other institution, and preeminent among them is the splendid series of Upper Jurassic age, obtained from the clay-pits near Peterborough by Mr. Alfred Leeds. "Both in the number of species represented," Dr. Andrews observes, "and in the perfect preservation of their remains, the Leeds collection far surpasses any other single collection of Mesozoic vertebrates, especially one in which all the specimens are from one horizon and from a restricted area. Not only marine forms but remains of terrestrial reptiles, including several species of dinosaurs, have been obtained." The completeness and abundance of the material and fine preservation of the bones has enabled the author to give a very thorough description of the osteology of the principal genera, and he has exercised a commendable conservatism in the creation of new genera and species. In the present volume the ichthyosaurs and plesiosaurs are described; the second volume will comprise the pliosaurs and crocodiles.

There is but one genus of ichthyosaurs, *Ophthalmosaurus,* with which *Baptanodon* of the Jurassic of Wyoming is regarded by the author as congeneric. This is the most highly specialized member of the order, with extraordinarily large orbits, almost toothless, with broad short forepaddle, and hindpaddle much reduced in size. A swift and powerful swimmer, proportioned like the modern porpoises, it was also capable of diving to great depths, as shown by the peculiarities of the auditory apparatus, fitted to withstand great water pressure. In contrast to this swift pelagic reptile, the plesiosaurs were rather slow moving, comparable with the sea-turtles more nearly than any other modern animal, and in Dr. Andrews's opinion they lived mainly at the surface and at no great distance from the shore, and, as might be expected, show a much greater variety in form than the ichthyosaurs. All are referred to the Elasmosauridæ, but in *Muræosaurus* the neck is greatly elongate, the head relatively small and the whole animal about twenty feet long; in *Cryptocleidus* the neck is of more moderate proportions, the head relatively larger and forepaddle broader, while the total length is about twelve feet. Two new genera, *Picrocleidus* and *Tricleidus* are of intermediate proportions, but much smaller size. The definitive generic characters are chiefly based upon the structure of skull and shoulder girdle. The diversity of form in these Upper Jurassic plesiosaurs is much less than in their Cretacic successors, best known from the western United States, but they are decidedly more specialized than the Lower Jurassic *Plesiosaurus* and its allies, as is indicated in Dr. Andrews's reference of all the genera to the Cretaceous family Elasmosauridæ, and most clearly demonstrated in the progressive modification of the shoulder girdle.

Dr. Andrews's memoir is illustrated by ten plates and over ninety line drawings in the text, and by diagrammatic restorations of the skeleton of the three best known genera and a photograph of the mounted skeleton of *Cryptocleidus.* It is in most respects very near to the reviewer's ideal of what a monographic description ought to be—based upon abundant and well-preserved material, the amount and character of which is clearly specified and listed in detail, well illustrated, clear and concise in form, conservative in nomenclature and species making, failing not to distinguish fact from theory, certainty from probability. The British Museum and the author are to be congratulated upon the appearance of this fine monograph.

W. D. Matthew