

to the regrettable fact that the author has been obliged to abandon the use of a very important character in the definition of the higher groups, viz. the presence or absence of the mesocoracoid or "precoracoid" arch, the presence of which in the Isospondyli as understood by Cope had been duly emphasised in the diagnosis of this suborder at the end of the preceding volume. The Isospondyli are now made to include the Haplomi, an innovation with which the reviewer is unable to agree for the reason that the study of recent fishes proves their separation to be absolutely necessary. Even where the character of the "precoracoid process" is appealed to for the definition of families, error has crept in, at least in the case of the Gonorrhynchidæ, which are stated to be devoid of it, and hence are unjustifiably regarded as "only slightly modified Scopelids." Other points in the identification of the elements of the pectoral arch seem in need of revision, as in the *Thriaspater* figured on plate vii., where the bone named "postclavicle" either represents the supraclavicle or overlies the latter and the clavicle, in which latter case it does not, as I believe, answer to the definition of the Elopidae, and in the restoration of *Eurypholis boissieri*, p. 206, where the basalia of the pectoral fin are represented as attached to a bone termed "postclavicle." In the definition of the Apodes, "pectoral fin with more than five basalia" is true of *Anguilla*, but does not apply to Conger and other genera.

It is clearly often impossible to assign extinct fish-remains to their systematic position with that rigid precision which may be attempted in the case of living forms. Dr. Woodward, as he tells us in the introduction, has therefore deemed it advisable to adopt a broad conception of families and genera more in accordance with that of Dr. Günther than with that of later writers. But his classification, on the whole, is greatly ahead of that followed in Zittel's manual and in the text-books published in this country. He has amply availed himself of the reforms introduced by Cope and by Sagemehl. The arrangement of the great group of Acanthopterygians is still the most unsatisfactory, the definition of its subdivisions being of a very provisional nature and lacking in precision; groups like the Beryciformes, Chaetodontiformes and Blenniiformes are certainly quite artificial, and the new sense in which these terms are used must be regarded as a retrograde step. Some explanation might have been given by the author of the reasons that have induced him to place the Blochiidae among the Blenniiformes rather than among the Scombriformes.

The fossil forms dealt with under the Isospondyli offer a highly interesting and suggestive gradation from the later Ganoids to the earlier Acanthopterygians, such as the Berycidae, so abundant in Cretaceous formations, but we are unfortunately still without a clue to the derivation of the eels proper, or Apodes, degenerate fishes which are traced back to the Chalk. Among these, *Urenchelys*, from the Chalk of Mount Lebanon, is shown to differ from existing genera of the same family in having a small caudal fin supported by expanded hypurals, thus showing the "diphycercal" condition which prevails at the present time to have been derived from a "homocercal." The Percosocine genus *Cobitopsis* settles once for all the vexed

question of the systematic position of our sand-launce, *Ammodytes*, as it has retained the abdominal pelvic fins which have entirely disappeared in the existing genus; *Ammodytes* must hence be removed from the Ophidiid Anacanthines and placed near the Scombresocids or gar-pike and allies.

The publication of the "British Museum Catalogue of Fossil Fishes" marks a great advance in ichthyology, and we heartily congratulate Dr. Smith Woodward on its completion. It is announced in the preface that the author proposes to prepare, in the course of the present year, a supplement giving a list of additional important genera discovered and published since the earlier volumes were issued, the first dating as far back as 1889; also a stratigraphical table showing the appearance in time of families and genera of fossil fishes, together with a general index to the four volumes.

A last word as to the illustrations. The plates, as well as the outline figures in the text, are excellent, both from the point of view of artistic finish and scientific accuracy, and do the greatest credit to the artist, Miss G. M. Woodward. The intercalation of a collotype plate (xvii.) is, however, to be regretted, as not in keeping with the style of the other illustrations and quite superfluous, the figures having already appeared elsewhere, although no allusion to this is made in the accompanying explanation.

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OUR BOOK SHELF.

Tales of a Dying Race. By Alfred A. Grace. Pp. x + 250. (London: Chatto and Windus, 1901.)

THE title of this little book is somewhat misleading. Out of eight-and-twenty tales, only four are, properly speaking, Maori tales. The rest are stories of the contact between the Maories and the white settlers, traders and missionaries. Even the four Maori tales are retold in *pakeha* fashion, until there is little of the Maori left in them beyond the skeleton. The majority have already appeared in antipodean periodicals. They are all charmingly told, and, illustrating as they do many sides of the Maori character and the romance of earlier days of the colony, they form a worthy tribute to the noblest of savages, and cannot fail to rouse vivid feelings of regret that the race is doomed to extinction. Mr. Grace writes of the people and their surroundings with keen sympathy, the full secret of which is not disclosed until the last story, in which he relates an adventure of his early life as a missionary's son, when his mother and her children were rescued from an impending and horrible death by the unflinching courage and fidelity of a native chief. He has done well to preserve the narrative, as well as the other contents of this entertaining book, in a permanent form; but he himself would hardly claim scientific value for the collection.

Lehrbuch der Differentialgleichungen. Von Dr. H. Liebmann. Pp. vi + 226. (Leipzig: Veit and Co., 1901.)

THIS interesting and well-written book shows that the ideas of Sophus Lie are at last bearing fruit, even in elementary text-books. There are three chapters dealing respectively with ordinary differential equations of the first order, with similar equations of higher order and systems of such equations, and with partial differential equations of the first order with two independent variables. Besides this, there is an introductory chapter dealing mainly with existence-theorems, and a concluding one on partial differential equations of the second order.