

that it is "highly probable that the cœlom was originally a series of segmental diverticula derived from inflexions of the hypoblast," while no attempt at all is made to discuss the difficult question of the significance of germinal layers. The chapter on the placenta might perhaps have passed muster ten or fifteen years ago.

The epiblastic origin of the pronephric duct is treated as an established fact, and the vertebrate kidney tubule compared to the nephridium of the annelids.

The writer appears to have quite misunderstood the results of recent work on the segmentation of the vertebrate head. On p. 221, for example, it is said that the motor nerve of the fourth cranial segment, comparable, therefore, to the nerves which supply the muscles of the eyeball, is the seventh, and the chorda tympani its sensory root; while the last-mentioned is spoken of here, and in the diagram on p. 35, as pre-spiracular in position, a statement which, however true it may be for some reptiles, is certainly at variance with Broman's careful account of its development in the human embryo.

Again, it would be gathered from the wording on p. 238 that the interventricular septum in Sauropsida is homologous with the similar structure in the mammals; and in chapter xiv. the author has been completely led away by a very dubious theory, to say the least, of the origin of the rods and cones of the retina.

Minor inaccuracies are the ascription of only one dentition to the marsupials (p. 67), the omission of any reference to the possible paired origin of the pineal eye, or to the paraphysis, the derivation of the Eustachian valve from the right valvula venosa alone, and the statement that in fishes the "mesial element" of the diaphragm is alone developed.

Such work as this can hardly be taken as a serious contribution towards the solution of those problems which beset the vertebrate embryologist, and it would have been wiser for Dr. Keith, who appears to intend his book preeminently as a *vade mecum* in the hospital wards, to have resisted the temptation to deal with questions which are beyond the scope and cannot be answered by the methods of mere surgical anatomy. Still, as a practical handbook we hope that this treatise may be a success, especially when, in a future edition, certain orthographical slips—"epiphyseal," "fasiculi," "anastomatic," "systematic" (for "systemic"), "embryoes," "Turicæ" (for "Turcica"), "hypopophysis"—are duly amended.

AN EDUCATIONAL COMPARISON.

The Making of Citizens. A Study of Comparative Education. By R. E. Hughes, M.A., B.Sc. Pp. viii + 405. (London and Newcastle: The Walter Scott Publishing Co., Ltd., 1902.) Price 6s.

THE educationist anxious to keep pace with all that has been written on the very wide subject with which he is concerned has had an almost impossible task during recent years. The annual reports of the Commissioner of Education, Washington, are so bulky—the last, that for 1899-1900, runs to 2348 pages—and the special reports of our own Board of Education are

published so frequently, that one is tempted to give up in despair the effort to master their contents. In addition to these official publications there are the books written by private persons who have studied foreign methods of education on the spot. Mr. Hughes has, in the book before us, endeavoured to meet this difficulty, and to provide students with "a complete and accurate account of the present position of education in the four principal countries of the world," by which he means England, France, Germany and the United States of America. In the compilation of the volume, free use has been made of the official reports mentioned, and numerous quotations from many writers show that the author has a good knowledge of recent educational literature.

The plan of the book is very simple. After some preliminary pages, separate chapters are devoted to the primary school systems of each of the countries under comparison; after this a general view of the working of primary schools is followed by an account of higher elementary schools. The secondary schools of the four countries are allotted a chapter each, and the book is completed by a *résumé* of the provisions made for the education of girls and for the training of defective children.

With the wealth of material he had from which to select, it was not to be expected that Mr. Hughes would please everybody; naturally the same subjects do not appear of equal importance to all authorities. For instance, in our opinion too little attention is paid to the question of the science teaching in the schools described. The prominence given both in England and America to the need for rational methods in the teaching of science, and to the desirability of the inclusion of some instruction in the methods of science in schools of every grade, is scarcely mentioned by Mr. Hughes. We are told that the science side and master of the best English secondary schools are only tolerated (p. 307), and that chemistry is the favourite and first science taken up (p. 320), though it does not seem to be mentioned that this preference for chemistry as the initial science study is less marked year by year. It is pointed out that the German teacher relies upon the lecture rather than upon the laboratory method (p. 253), that the heuristic method is becoming the accepted way of teaching science in American high schools, and that in them it is usual to begin with the study of physics (p. 280); but these odd paragraphs exhaust all that is said on this important subject.

In view of the influence which science has exerted upon manufacture, commerce and thought generally, a careful comparison of the place which science teaching takes in schools of every grade in the four countries concerned would have been most valuable. The book is intended, however, for the ordinary person with a general interest in education, and this may explain why Mr. Hughes has given more prominence to administrative matters than to questions of curriculum. It only remains to be said that the author's personal acquaintance with English education and his wide experience of schools have enabled him to bring together in convenient compass very much of interest and importance about American, French and German systems of education.