

the "pericardium [from which the heart itself is produced] and epicardium originate as outgrowths from the archenteron." Comparing the two statements such a reader *might* conclude that the first statement quoted means that the pericardial sac and its invagination are *embedded in* mesoblast as their formation proceeds, but he would also be justified in understanding the one statement to mean that the pericardial sac and hence the heart are of mesoblastic origin, while the other means that they are of hypoblastic origin.

Again the statement (page 10) that the cavity of the pericardium and epicardium 'may be regarded as coelomic spaces' is not exactly clear when compared with the statement made a few lines below on the same page, that the cavities of the renal vesicles and gonads are sometimes interpreted as being formed 'by a splitting of the mesoblast (*coelomic*).'

But the book is an admirable résumé of our knowledge of a typical ascidian, and if the succeeding numbers are equally satisfactory, the series cannot fail to be a potent factor in promoting the study of natural history not only in Great Britain, but as well beyond its borders.

It is unfortunate that the volumes could not be bound a little more securely, for they will hardly withstand the rough usage which they are pretty sure to receive as laboratory guides. If this could not be done without increasing the price, and if the price could not be increased even by a small amount, then it seems to me that it would be better to cut down the text and illustrations, particularly the former, somewhat, and apply the saving in expense thereby to making the binding better.

WM. E. RITTER.

GENERAL.

A LIMITED number of the reports of the University Geological Survey of Kansas still remain for distribution among persons who are interested in mining and geology. The publications to date include five volumes bound in cloth, and two annual reports on the Mineral Resources of Kansas bound in paper. All these may be had for the asking, except Vol. I., the supply of which is entirely exhausted. Persons writing for any or all of the reports

should enclose the necessary postage, or request that they be sent by express. The volumes are: Vol. II., General Geology of Western Kansas, postage 26 cents; Vol. III., a Special Report on Coal, postage 28 cents; Vol. IV., Paleontology of the Upper Cretaceous, postage 32 cents; Vol. V., A Special Report on Gypsum and Gypsum Cement Plasters, postage 16 cents; Annual Report of Mineral Resources of Kansas for 1897, postage 4 cents; Annual Report on the Mineral Resources of Kansas for 1898, postage 7 cents.

MESSRS. D. APPLETON & COMPANY have nearly ready for publication *The International Geography*. Seventy authors have collaborated in its production, including the leading geographers and travelers of Europe and America. The work has been planned and edited by Dr. H. R. Mill, who also wrote the chapter on the United Kingdom. Among the authors are Professor W. M. Davis (The United States), Dr. Fridtjof Nansen (Arctic Regions), Professor A. Kirchhoff (German Empire), Mr. F. C. Selous (Rhodesia), Professors de Lapparent and Raveneau (France), Sir Clements Markham, F. R. S. (Ecuador, Bolivia, and Peru), Sir John Murray, F. R. S. (Antarctic Regions), Count Pfeil (German Colonies), Mr. James Bryce, M. P. (The Boer Republics), Sir H. H. Johnston, the late Sir Lambert Playfair, Sir F. J. Goldsmid, Sir Martin Conway, Sir George S. Robertson, Sir William MacGregor, Sir Charles Wilson, F. R. S., the Hon. D. W. Carnegie, Mrs. Bishop, Dr. A. M. W. Downing, F. R. S., Dr. J. Scott Keltie, and Mr. G. G. Chisholm. The book is illustrated by nearly five hundred maps and diagrams which have been specially prepared.

OTHER books announced for early publication by Messrs. D. Appleton & Co. include Comparative Physiology and Morphology of Animals, by Professor Joseph Le Conte; Some Great Astronomers, by Dr. Edward S. Holden, and the Story of Eclipses, by Mr. G. F. Chambers.

SCIENTIFIC JOURNALS AND ARTICLES.

WITH the December number the *American Naturalist* completes its twenty-third volume. Hermon C. Bumpus has the leading article, on

'Facts and Theories of Telegony,' which gives a brief review of the subject in general and of the recent experiments by Professor Ewart in particular. Edward Thorndike in a 'Note on the Psychology of Fishes' tells of a simple experiment by which it was shown that the common *Fundulus* could readily learn the proper route of escape from the compartment of an aquarium in which it was confined. C. E. Mead discusses '*Collops bipunctatus* as an Enemy of the Colorado Potato Beetle,' concluding that it is an important agent in protecting the potato crop. 'The Egg-Carrying Habit of *Zaitha*' is described by Florence W. Slater, and Robert T. Edes treats of the 'Relation of the Chirping of the True Cricket (*Oecanthus niveus*) to Temperature,' showing that the rapidity of the chirps increases with the temperature. 'Regeneration in the *Hydromedusa*, *Gonionemus vertens*' is discussed in detail by T. H. Morgan, whose experiments show that, although pieces smaller than one-eighth of the medusa may make new individuals having the medusa form, the remodeling does not include the internal organs. Richard C. McGregor has an article on '*Salvinia coccinea*, an Ornithophilus Plant,' describing the manner in which pollination is effected by humming birds, and the sixth instalment of 'Synopsis of North American Invertebrates,' by W. P. Hay, is devoted to the *Astacidæ*. The reviews are numerous, and under Correspondence Henry B. Ward puts in a plea for the use of Mesenchyme.

THE *Journal of the Boston Society of Medical Sciences* for December has for its first article an abstract of a paper by Charles S. Minot on the 'Classification of Tissues,' which takes the ground that this should be based on embryological data. W. F. Whitney describes some 'Malformations of the Kidneys,' and Thomas Dwight some 'Remarkable Skulls.' The final article 'Experiments on *Saphrolegnia ferax*, and their Application to the Trout Hatchery,' by J. H. Cunningham, Jr., is of much interest to fish culturists.

The *Osprey* for December opens with some 'Notes from Northern Counties of California,' illustrated by Milton S. Ray; this is followed by a reprint of J. E. Harting's article on 'The

Largest Bird that Flies,' which is the subject of some interesting editorial comment. There is a brief biographical sketch, with portrait, of the late D. W. Prentiss. The editorial columns contain a description of the recent meeting of the American Ornithologists' Union, and among the letters is the prospectus of the Third International Ornithological Congress, to be held in Paris during the coming year, and a record of the bird arrivals at Dawson.

SOCIETIES AND ACADEMIES.

NEW YORK ACADEMY OF SCIENCES.

SECTION OF GEOLOGY AND MINERALOGY.

At a meeting of the section on December 18, 1899, in the absence of the Chairman, Professor J. J. Stevenson was elected temporary chairman. Twenty-six persons were present.

Professor J. F. Kemp presented a paper on 'Recent Theories Regarding the Cause of Glacial Climate.' During the subsequent discussion of this paper by Professors R. E. Dodge, D. S. Martin and others, Professor Stevenson called attention to the fact that the great excess in the area of the peat bogs on the surface of the earth, during the present period, over that of the swamps which prevailed during the Carboniferous, shows the little foundation for the hypothesis of an excess of carbon dioxide in the atmosphere during the formation of the coal. Dr. Julien also pointed out, in reference to the theory of the refrigerating influence of the absorption of carbon dioxide from the atmosphere, during the decay of rocks, that this effect may have been more than offset by the heat produced during the accompanying absorption of oxygen.

Professor Kemp then read a paper on 'Metamorphosed Dikes in the Mica Schists of Morningside Heights.' This paper was discussed by several members. Dr. Julien acknowledged the resemblance of this outcrop of black hornblende schist to a sheared dike, produced by its strong contrast in color with the enclosing light gray micaceous gneiss, and by the sharp lines of separation of the schist from the highly tilted beds on either side, as if thrust up from below. Yet this is but one of hundreds of exactly similar outcrops in New York and Westchester