production is not purely Indian; for it is of comparatively recent origin, and represents the corruptions of both the Spanish and Aztec tongues, combined in a vulgar way. It is interesting, however, psychologically, and shows what humor and spirit can spring from the union of the races, which its jargon typifies. The text of the original is accompanied by a rendering into English; and in an introduction and notes, Dr. Brinton takes occasion, fortunately, to make record of a large amount of his curious and apposite learning.

M'ALPINE'S ZOÖLOGICAL ATLAS.

Zoölogical atlas (including comparative anatomy), with practical directions and explanatory text for the use of students. By D. M'ALPINE. 2 vols. New York, *The Century co.*, 1883. 16; 24 pl. f°.

THIS is a handsomely bound and finished work in two parts, dealing respectively with the invertebrates and vertebrates. It is intended as a guide to the student in the dissection of representative forms. The number of plates devoted to the different types is, however, hardly proportioned to their importance, much less to the commonness of their occurrence. Thus, four plates are assigned to Protozoa, and, of these, one and a half to the Monera. Perhaps so much space is given to these because the author knows that most students will never have the opportunity of studying the living forms. Yet this is hardly a sufficient excuse for crowding out altogether the Porifera and Coelenterata. Of these, not a single figure or diagram is given; although they are of universal occurrence, and far more important objects of study to the student than mere figures of Monera. The figures of Vermes are limited to those of the liver-fluke, tapeworm, and leech, all on one plate, while annelids are entirely neglected. At least one molluscoid, either a polyzoan or ascidian, might well have been added.

In his selection of vertebrates, the author has been far more fortunate; and he is to be especially commended for giving the anatomy of the salamander in place of that of the common, but unfortunately in many respects so abnormal, frog.

The drawings, unfortunately, leave the student in entire ignorance of the relative size of the different objects. Different organs and organic systems of the same animal are often drawn on a very different scale, and the student left to imagine that they are all alike, life-size, except that in marked cases the word 'enlarged' is added. The Protozoa are prodigious, but whether magnified five hundred or five thousand diameters we are not informed. All this might very easily have been obviated by the use of a few figures or a simple scale.

Some mistakes in drawing or anatomy occur in each part. Thus the stone-canal of the starfish (plate v., diagram 1) is represented as connected directly with the top of one of the Polian vesicles. If any one will compare the other figures on this plate, especially Nos. 3 and 4, with the corresponding figures in Professor Brooks's 'Manual,' he will see immediately how the finer points of anatomy, especially of the haemal system, have been neglected. Fig. 3 is particularly unfortunate.

So, too, in plate xiii., figs. 4 and 5, the nervous system differs in the two drawings; and in fig. 5 the single parieto-splanchnic ganglion seems to be represented nearly midway between the anterior and posterior adductor muscles, but without name, and its name given to two siphonal (?) ganglia represented on the posterior adductor. One or two similar instances occur in the part devoted to vertebrates. Both in figures and notes, the author supports the theory of the development of an ovary and 'seminal capsule,' and the production of ova, in Paramoecium. This is certainly a bold position, in the face of such observations as those of Professor Bütschli on the conjugation of several species of the same genus, and described and supported by Professor Claus. But with few exceptions, and these, perhaps, more the fault of engraver than author, the anatomy seems generally correct.

The plates of the part on vertebrates are very fair and distinct; but in the figures of many of the smaller invertebrates the masses of color are far more noticeable than the correctness or clearness of the details. The internal anatomy of the crabs in plate viii. is so indefinite as to be of little assistance to a student. The figures in plate ix. are much clearer. All through both volumes, finer drawing and engraving, and a more judicious use of color, would have made a vast improvement. The engraving, particularly, is not so good as the price of the work would warrant; by no means so clear as in many text-books on zoölogy and comparative anatomy. The notes are usually good, though sometimes rather more literary than scientific. The description of the individual or species does not always emphasize the most important characteristics of the class which it illustrates, of the order or family to which it belongs.

The book would be a great help to any one wishing to take up a practical course of dissec-

tion without a teacher; but, for most students in such a situation, it is too expensive, while most of the teachers in advanced schools and colleges will prefer the finer plates of some of the foreign comparative anatomies, or the drawings to be found in the books of reference of the larger libraries. To teachers of zoölogy who have not such libraries at their command, or who, on account of ignorance of the language, are unable to use German text-books, the atlas would undoubtedly be a very great assistance.

NEW METEOROLOGICAL JOURNALS.

Meteorologische zeitschrift. Herausgegeben von der Deutschen meteorologischen gesellschaft. Redigirt von Dr. W. KÖPPEN. Heft i., January. Berlin, *Asher*, 1884. 8°.

American meteorological journal. Edited by Prof. M. W. HARRINGTON. Vol. i., no. 1, May. Detroit, *Burr*, 1884. 8°.

METEOROLOGY has received an impulse, both in Germany and America, by the almost simultaneous issue of a monthly meteorological journal in each of these countries. The two journals are intended, however, to cover different grounds, and so it will be necessary to state the position of each separately.

The *Meteorologische zeitschrift* has for its editor one of the greatest of living meteorologists, and it is intended to be a sort of co-laborer with the Austrian journal of meteorology. Much will be expected of this publication, and the first number leads us to believe that these expectations will be realized. In fact, but for the slight difference in appearance, one might think he was reading a number of its Austrian rival. We find such names as Neumayer, Zenker, Krankenhagen, Sprung, Van Bebber, and Köppen, appearing as contributors to this first number. Its first twenty-eight pages contain original communications, then come nine pages of correspondence and notices, then four pages concerning the founding of the society, followed by four pages of members of the German meteorological society, three pages of bibliography and book-notices, and two pages of plates. Although this January number is issued in April, yet the editor hopes to send out the successive numbers in such rapid succession, that after September they will appear at the proper time.

The American meteorological journal is edited by a professional astronomer, who has recognized the needs of American meteorologists, and is self-denying enough to offer his services for their benefit. From no journal of this kind can one derive any pecuniary benefit; and it is the duty of meteorologists to help the editor, not only by communications, but also by subscriptions.

The matter of this first number of the journal is principally meteorological, and the topics treated are varied. The principal article is one on barometric waves of short period, and is by a well-known astronomer. In the early stages this journal will need the support of all astronomers and physicists who take an interest in meteorology, because we have not enough working meteorologists in this country to supply material enough to make the undertaking a success. Similar first steps taken in foreign countries have required this same aid.

Heretofore American contributions to our knowledge of meteorology have been scattered through various periodicals; but now they can be published together, and where they will be brought soonest to the notice of those interested. Although the editor will be forced to deal with the popular side of meteorology in order to make the journal readable to enough people to make the circulation large enough to pay the expenses, yet it is hoped that he will aim to make its scope as purely professional as possible. There are so many journals devoted to meteorology now, that one can only read the most important articles in each; and quality is of greater importance than quantity. The contents of this American journal are divided as follows: editorial notes; current notes; original communications; translations, etc., distributed over forty pages.

THE STUDY OF HEREDITY.

Life-history album, prepared by direction of the collegiate investigation committee of the British medical association. Edited by FRANCIS GALTON, F.R.S. London, *Macmillan*, 1884. 8+172 p., 8 pl. 4°.

Record of family faculties; consisting of tabular forms and directions for entering data, with an explanatory preface. By FRANCIS GALTON. London, *Macmillan*, 1884. 4+68 p. 4°.

WE have become accustomed to look for care and thoroughness in Mr. Galton's work, and it is pleasant to say that the two volumes before us fulfil our expectations. We can but assign to them an uncommon importance; for it is indeed significant, that the novel duty of recording the biological history of ourselves, our parents, and our children, is thus made easy to us by Mr. Galton. It is mainly to his influence that we must trace the conviction of thoughtful and earnest minds that it is really a duty to record the characteristics of every