in English, or been translated into that language. Its interest is scarcely less for the physiologist and for the botanist concerned with the problems of alterations and adaptations of structure. D. T. MacDougal.

New York Botanical Garden,
Bronx Park.

Lehrbuch der vergleichenden Entwicklungsgeschichte der wirbellosen Thiere. Allgemeiner Theil. Erste und Zweite Auflage. Zweite Lieferung. By E. Korschelt and K. Heider. Jena, Gustav Fisher. 1903.

The second instalment of the general part of Korschelt and Heider's 'Lehrbuch,' which has recently appeared, maintains the high standard of excellence which we have learned to expect from these authors. The instalment includes only the sixth chapter, that dealing with the maturation of the germ cells and with the phenomena of fertilization, but it runs to more than two hundred large octavo pages and contains over eighty figures. These numbers will give some idea of the comprehensiveness with which the subjects named have been treated, especially if it be remembered that not a little collateral material was considered in the first instalment of the work and is, therefore, omitted or merely referred to in the present part.

When all is of such general excellence it may seem invidious to make special mention of certain of the sections. In section IV., however, there is presented an admirable statement and discussion of the maturation divisions in their relation to the reduction question, and in its presentation certain new terms are introduced to indicate the three methods of maturation division recognized by Häcker. To the method, observed by Boveri in *Ascaris,* in which both the divisions of the chromosomes are longitudinal and in which, accordingly, there is no reduction division in the Weismannian sense, the term *eumitotic* is applied, since it is the method characteristic of ordinary somatic mitoses. For that method in which one of the chromosome divisions is transverse and the other longitudinal the term *pseudomitotic* is suggested, and this method is subdivided into a method of *post-reduction division* in which the so-called reduction division succeeds the equation division and a method of *præreduction division* in which the reduction division is the first to occur. The possibility of a fourth method in which both divisions are reduction divisions is admitted, but it is held that at present its occurrence is not proved.

An excellent section is also that on the maturation of parthenogenetic ova, in which the question of the development of ova with a subnormal number of chromosomes is considered.

As in the preceding instalment of the work the statement of facts is throughout thorough, clear and well arranged, and opportunity is taken to discuss fairly their bearing on general questions, sections of great interest being devoted to the significance of the numerical reduction of the chromosomes in maturation, to sex determination, to the significance of fertilization, and as an appendix there is added an excellent review of the theories of heredity and the allied theories of differentiation.

The figures are throughout well chosen and reproduced and there is an extensive bibliographical list. J. P. McM.

SCIENTIFIC JOURNALS AND ARTICLES.

The *American Anthropologist* for January–March (Vol. V., No. 1), recently published, contains an exceptionally large number of articles, in addition to the usual book reviews, periodical literature and anthropologic miscellanea. 'The Native Languages of California' are treated, with seven plates, by Drs. Roland B. Dixon and A. L. Kroeber, the classification of these interesting linguistic groups dealing with structural resemblances rather than with definite genetic relationships —the aim being to establish not linguistic families, but types of families. The illustrated article, 'Sheet-Copper from the Mounds is not necessarily of European Origin,' by Mr. Clarence B. Moore, with a discussion by Mr. Joseph D. McGuire and others, is an able presentation of both sides of a long-disputed question in American archeology. Bearing on the same theme is an article by Warren K. Moorehead, 'Are the Hopewell Copper Ob-