

than by a simple collation of vocabularies — aided, where practicable, by grammatical comparisons — to ascertain the relationship of the various idioms, and to reduce them into the families to which they belong. It is probable enough that some isolated languages would be found, like the Basque in Europe and the Khasi in farther India, whose kinship could not at present be determined; and, of course, the 'language-map' would show many vacancies: but these are imperfections which belong to the earlier stages of all investigations. In spite of such drawbacks, a scientific classification could have been made, which would have gone far to bring this linguistic chaos into order, and would have thrown a flood of light upon African ethnology.

But while regretting these deficiencies in Mr. Cust's work, we must be thankful for what we have gained from him, which is not a little. In these two volumes we have a clear and readable account of the present state of African philology, and a complete list of the tribes and languages of the continent, so far as they are now known, with interesting details concerning many of them. The names of all the authors who have written on the subject, and the titles of their productions, are given with commendable fullness and precision. The work displays great industry and conscientious accuracy. The extensive 'language-map,' which has evidently been prepared with much care, aids materially in illustrating the text, and is in itself a most valuable contribution to philological science. In spite of the defects which have been indicated, Mr. Cust's treatise must be pronounced to be by far the best work which we possess on the subject to which it is devoted. Scholars who pursue this important branch of linguistic study will find in these attractive volumes a highly useful, and indeed almost indispensable, guide. H. H.

MINOR BOOK NOTICES.

The development theory: a brief statement for general readers. By JOSEPH Y. BERGEN, jun., and FANNY D. BERGEN. Boston, Lee & Shepard, 1884. 7+240 p. 24°.

No better evidence of the present general interest in biology could be wanted than is afforded by the growing demand for popular books on evolution. The latest of these is a little treatise of two hundred and forty pages, by Mr. and Mrs. Bergen, in which, to be sure, not much is original, except the form in which the facts are presented, and a few of the examples cited, as the authors confess; but a read-

ing of their book shows that they have given a good deal of thought to the presentation of the chief arguments upon which the modern development theory rests, with so few technicalities as to render it comprehensible to even young readers. With so many books of a similar character already in circulation, only the test of time can show whether this latest one meets, as the authors intended, a real need. So far as one not wholly unfamiliar with the subject can judge, the story is well and simply told.

Calcul des temps de pose et tables photométriques. Par LÉON VIDAL. Paris, Gauthier-Villars, 1884. 114 p. 16°.

THIS little book is made up very largely of tables, whose object is to enable the photographer, when supplied with a particular form of photometer, to give the correct exposure to his plate under all circumstances. The book is apparently written largely for amateurs in landscape-photography; but whether they will in general be willing to trouble themselves to procure such a photometer, and carry round the tables with them to consult whenever they wish to take a picture, in preference to relying on their judgment, is perhaps questionable. The photometer employed is similar to that used by carbon-printers, depending on the exposure of sensitized silver-paper, and the noting of the tint obtained after a definite time. The author refers to the application of the instrument to the case of enlargement, where it would seem to be more useful than when taking the original negative. There is one serious objection to its employment for the latter purpose, however, which our author seems to have overlooked. This is, that the exposure for a given landscape does not depend wholly on the total amount of light coming from it. If the background is the important portion, a certain definite exposure will be given. If, on the other hand, it is the foreground that is of interest, the same view may require two or even three times the exposure under the same conditions.

Leidraad bij het onderwijzen en aanleeren der dierkunde. Door Dr. JULIUS MACLEOD. Algemeene dierkunde. Met eene titelplaat en 61 door den schrijver gegraaverde figuren. Gent, 1883. 151 p. 12°.

THE author of this little school-book has written it in the Dutch language, in the patriotic belief that *dierkunde*, or zoölogy, may be taught in that tongue, which can supply all the necessary terms. The volume is really a

protest against the custom in Belgium of using so many French text-books. He carefully avoids all except real Dutch words: so we have *borstpijp* ('thoracic duct'), *tuschenwervelig* ('intervertebral'), etc., all of which are gathered into an alphabetical list at the end of the volume, where their French equivalents are also given.

The book is devoted almost exclusively to the anatomy and physiology of man as illustrating the general principles of animal life. The author's presentation of the rudiments of his science is excellent; but his illustrations, white lines on a black ground, are neither very clear nor always accurate.

ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS OF THE UNITED STATES.

At a meeting held in Philadelphia, Sept. 8, to consider the formation of a sub-section of agricultural chemistry of the American association, it was deemed inadvisable to apply to the standing committee; but a committee was selected to report a plan for the formation of an association of chemists who are engaged in the analysis of commercial fertilizers.

The committee's report, which was adopted, recommended that the Association of official chemists of the United States should be organized. To membership in this society, chemists of departments of agriculture, state agricultural societies, and boards of official control, are eligible; and each of these organizations is entitled to one vote, through its properly accredited representative, in all matters upon which the society may ballot. All chemists are invited to attend the meetings, and take part in the discussions, without the right to vote. The affairs of the association are managed by an executive committee of five, including a president, vice-president, and secretary (who acts as treasurer). There are also three standing committees, on the determination of phosphoric acid, nitrogen, and potash. They will distribute samples for comparative work, and report the results at the annual meeting, which takes place on the first Tuesday in September of each year, or at any special meetings which may be called.

After the acceptance of the constitution, the following officers were elected: President, Prof. S. W. Johnson of Connecticut; vice-president, Prof. H. C. White of Georgia; secretary and treasurer, Dr. C. W. Dabney, jun., of North Carolina; members of the executive committee, Dr. E. H. Jenkins of Connecticut, Dr. H. W. Wiley of Washington. The presiding officer then appointed the following members of the standing committees: On phosphoric acid, Dr. E. H. Jenkins of Connecticut, Dr. H. C. White of Georgia, Dr. W. C. Stubbs of Alabama; on nitrogen, Mr. P. E. Chazal of South Carolina, Dr. A. T. Neale of New Jersey, Prof. J. A. Myers of Mississippi; on potash, Dr. H. W. Wiley of Washington, Mr. J. W. Gascoyne

of Virginia, Mr. Clifford Richardson of Washington.

It was voted to adopt provisionally the Atlanta method for the determination of the various forms of phosphoric acid, involving the use of the usual neutral citrate solution at a temperature of 65° C. for a half-hour. The recommendations of Dr. Jenkins in regard to potash estimation were accepted; and Mr. P. E. Chazal of Columbia, S.C., was directed to have the proceedings and methods of the association printed for distribution among those who are interested in the subject.

THE AMERICAN HISTORICAL ASSOCIATION.

IN response to a call issued by Gen. Eaton and F. B. Sanborn of the Social science association, and by Professors Adams of Ann Arbor, Tyler of Cornell, and Dr. H. B. Adams of Baltimore, about twenty writers, students, and teachers of history in this country met at the United States hotel, Saratoga, on the morning of Sept. 9, and decided to form an independent organization for the advancement of the scientific study of history on this continent. Among others present at this and later sessions, were President White of Cornell; Charles Deane, LL.D., of Cambridge; Justin Winsor, librarian of Harvard university; General Walker of the Massachusetts institute of technology; William B. Weedon of Providence; Clarence W. Bowen of the New-York *Independent*; Professors C. K. Adams of Ann Arbor, Tyler, Crane, and Tuttle of Cornell, Austin Scott of Rutgers, Emerton of Harvard; Associate-professor H. B. Adams of Johns Hopkins; Dr. Channing and Dr. Francke of Harvard. Justin Winsor was elected temporary president, with Dr. H. B. Adams secretary.

In the afternoon President White of Cornell delivered the opening address in Putnam hall. He advocated a broader treatment of historical topics than is at present followed. Not that he undervalued the work of the specialist; but he thought that a view of the historical work now going on in the world showed the necessity of connecting critical analysis, on the one hand, with a synthesis of results on the other. Instruction in history, which is growing of more importance every day, should include both methods. He severely criticised Herbert Spencer's theory of historical study as confounding a mere search for statistics with the real study of the forces of civilization.

Professor C. K. Adams read a long paper, written by one of his pupils, in which the actions of several western states with regard to the lands which the nation had given them for purposes of collegiate education were most justly denounced.

Wednesday morning another session was held, at which a constitution was adopted, and permanent officers elected: Andrew D. White, president; Justin Winsor and C. K. Adams, vice-presidents; H. B. Adams, secretary; and C. W. Bowen, treasurer. The affairs of the association were confided to the care of an executive council consisting of the above *ex officio*,