yet it may be questioned whether even this position is not merely a stepping-stone toward a more general view of humanization beginning with many varieties of the unknown prototype in different regions, coming up through the multifarious tribes of scientific record, and approaching the dominant types of to-day. Certain it is that when a race or congeries of tribes measurably similar in physical features—*e. g.*, the Amerinds—are considered with respect to the intertribal relations established by record and tradition, their history is found to be one of coalescence, through the growth of stronger groups and the assimilation or elimination of weaker, through the interchange (whether inimical or amical) of artifacts and industrial processes, through more or less frequent intermarriage, through the giving and taking of linguistic elements, through the interchange of custom, faith, ceremony, law and other factors of culture which react on mental and bodily exercise and thus shape development; the interchange and coalescence may be slow and incomplete, as between the Seri and Guayaqui tribes and their respective neighbors, or rapid and comprehensive, as in the Iroquois and Dakota confederacies, yet it is ever-present, and when the lines of development are traced backward they are invariably found to diverge more or less widely and point toward more or less distinctive origins.

What is true of the Amerind tribes in this respect is even more conspicuously true of the African tribes, ranging from the pigmy Akka to the gigantic Zulu and other widely diverse physical and cultural types; most of these tribes, too, have been observed in actual coalescence with their neighbors, while not a single satisfactory indication of differentiation or increasing distinctiveness has ever been detected; so that here, too, the developmental lines traced backward are found to diverge and multiply up to the very verge of the unknown—the prehistoric, or at least the scriptless, past. And what is true of America and Africa is more or less conspicuously true of other continents and other peoples; everywhere the developmental lines converge forward and diverge backward, just as the lines of biotic development diverge forward and converge backward. How this discrepancy is to be removed is a question whose importance increases with every advance in the science of anthropology.

It seems not too much to say that the leading question before the anthropologist of to-day is that relating to the trend of human development and its bearing on the alternatives (postulate and inference, respectively) of monogenesis and polygenesis; for it is easy to see that most of the other questions are affected by this primary one. The definition of race, the discussion of human antiquity and various civil problems of the day are all involved; and while it is too much to hope for general agreement concerning the fundamental question at any early day, it is none the less desirable to note the trend of multiplying facts and observe their steady set toward the inductive hypothesis of polygenesis rather than toward the deductive assumption of monogenesis.

W J MCGEE.
BUREAU OF AMERICAN ETHNOLOGY.

THE ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS.

THE eighteenth convention of the Association of Official Agricultural Chemists held its meetings in Columbian University, Washington, D. C., November 14, 15 and 16, 1901, under the presidency of Dr. L. L. Van Slyke, Chemist of the New York Agricultural Experiment Station, at Geneva. The attendance at this meeting was the largest in the history of the Association, reaching 118 members, representing nearly all the States and Territories of the Union.

A notable change has taken place in the character of the meetings of the Association of Official Agricultural Chemists, which at first was organized chiefly for the unification of methods of the analysis of commercial fertilizers. This branch of the work has now reached such perfection as to require little or no attention. The great work of the Association is now directed to other subjects, especially to investigations, researches and studies of foods and food adulterants.

The two most important events of this meeting were the reports of the committee on uniform methods of food investigation, of which Dr. W. D. Bigelow, of the Bureau of Chemistry, of the U. S. Department of Agriculture, is chairman, and of the committee on food standards, of which Dr. Wm. Frear, of the State College of Pennsylvania, is chairman. Since nearly all the States have pure food laws, it is of the utmost importance, from both a scientific and a legal standpoint, that uniform methods of investigation be followed and that some definite standards may be fixed whereby the court and jury may follow a uniform method in determining variations from the normal.

The officers elected for the ensuing year are Dr. H. J. Wheeler, Chemist of the Rhode Island Experiment Station, Kingston, R. I., president; Professor R. J. Davidson, Chemist of the Virginia Agricultural Experiment Station, Blacksburg, Va., vice-president; Dr. H. W. Wiley, Chief of the Bureau of Chemistry, U. S. Department of Agriculture, Washington, D. C., secretary; Dr. C. G. Hopkins, Chemist of the Illinois Agricultural Experiment Station, Urbana, and Mr. Fred. D. Fuller, Assistant Chemist at the Agricultural Experiment Station of New York, at Geneva, additional members of the executive committee.

The next meeting of the Association will be held in Washington, at the call of the executive committee, probably in November, 1902. H. W. Wiley.

SCIENTIFIC BOOKS.

Tierleben der Tiefsee. Von Oswald Seeliger, Professor der Zoologie an der Universität Rostock. Leipzig, Verlag von Wilhelm Engelmann. 1901. Pp. 44.

While it can hardly be claimed that this work is a distinct addition to our knowledge of deep-sea life, it nevertheless serves an important purpose in presenting a compact resumé of the more notable facts relating to the animals of the deep and the conditions under which they exist. The author has been fortunate in his method of treatment, which is popular rather than technical, and covers the field as well as could reasonably be expected in the space occupied. There is hardly any 'padding,' and the more technical parts of the work are wisely segregated under the heading 'Anmerkungen' at the end.

An introductory sketch of the development of deep-sea investigation, from the ancient pearl fisheries of the Indian Ocean to the recent German deep-sea expedition, includes notices of the work of John Ross, Edward Forbes, Michael Sars, Lovén, the cable surveys and the resultant discoveries of animal life in abyssal regions, and the expedition under the direction of the naturalist Chun. It is, to say the least, unexpected to find no mention whatever of such notable expeditions as those of the *Porcupine*, *Challenger*, *Travailleur*, *Blake* and *Albatross*. A similar surprise awaits the reader who peruses the pages devoted to a description of methods and instruments of deep-sea research without finding the slightest mention of the many instruments of precision invented by British and American investigators, such as Sir William Thomson, Alexander Agassiz, Professor Brooke, and Captains Sigsbee and Tanner of the U. S. navy.

The discussion of the physical conditions of the deep sea includes a presentation of the more important facts regarding temperature, but presents to greater length the matter of pressure. The author estimates that the total pressure exerted on a human body, if sunk to a depth of 4,000 m., would equal the weight of ten loaded freight trains, each consisting of an engine, tender and 32 cars. The American reader should remember, however, that these are con-