

Eighth Step.—Concurrently with these constructive attempts of Chamberlin with futile results except as based on planetoidal lines, Moulton attempted a critical review of all recorded cosmogonic hypotheses, but unforeseen conditions caused the temporary suspension of work and prevented a final treatment and publication of the assembled material.^a

Ninth Step.—With (1) an open door for constructive work with nebulae of planetoidal dynamics made available in 1897, with (2) the controlling criteria defined, and with (3) the limitations of tenable hypotheses narrowed by the futile work, the planetesimal hypothesis was gradually given shape and working form chiefly by Chamberlin in the absence of Moulton, as set forth in Year Book No. 3, Carnegie Institution, 1904, pp. 208–233; but this shaping of the hypothesis passed under the criticism of Moulton before publication. The spirit and purpose of this constructive work is thus stated, pp. 232–233:

It has thus been my endeavor to develop the hypothesis into sufficient detail (1) to furnish a large number of points of contact with known phenomena and with recognized mechanical principles to facilitate testing its verity by those relations, if not now, at least in the early progress of investigation; (2) to furnish a basis for deducing the hypothetical stages of the earth that preceded its known history, and for drawing thence inferences as to the conditions of the interior which the earth inherited from the mode of its birth; and (3) to stimulate inquiry into the elements involved. In short, I have endeavored to give the hypothesis a working form under the conviction that so long as the complicated elements involved remain so imperfectly determined as at present its working value is its chief value.

Preliminary to this publication the essential features of the hypothesis had been discussed before several scientific societies and subjected to criticism. The hypothesis was also set forth by Moulton in a paper "On the Evolution of the Solar System," *Astrophys. Jour.*, October, 1905, pp. 165–181.

Later Steps.—The hypothesis was somewhat further elaborated and supplied with illustra-

tions for text-book use by Chamberlin for the chapter on the Origin of the Earth in Chamberlin and Salisbury's "Geology," Vol. II., Chap. I., pp. 28–81, 1905, and by Moulton for his "Introduction to Astronomy," 1906, pp. 463–487.

Subsequent work in further testing, developing and applying the hypothesis has been in progress as set forth in Year Book No. 4, Carnegie Institution, 1905, pp. 171–173 (Chamberlin), and 186–190 (Moulton); Year Book No. 5, Carnegie Institution, 1906, pp. 165–172, and in later Year Books. More specifically and concretely, the continuation of investigation on lines growing out of the planetesimal hypothesis is shown by Publication No. 107, of the Carnegie Institution, entitled "The Tidal and Other Problems."

T. C. CHAMBERLIN
F. R. MOULTON

CHICAGO,
October 14, 1909

AN ASSOCIATION OF AMERICAN CHEMICAL RESEARCH LABORATORIES

TO THE EDITOR OF SCIENCE: In connection with the second decennial celebration of Clark University, a special meeting was held on September 16 last "for the purpose of forming an Association of Chemical Research Laboratories, to systematically exchange chemicals urgently needed in research work." Many of your readers will doubtless be interested to know the outcome of that meeting.

Chemical research, especially organic research, in this country is greatly handicapped by the length of time it takes to import chemicals from Germany, when a need for them arises unexpectedly in course of an investigation. To quote a single opinion expressed at our September meeting, Professor Arthur Michael declared that his output of work, during the past twenty-five or thirty years, has been reduced fifty per cent. by this handicap.

Now, a chemical urgently needed in one laboratory is very often lying unused in some other laboratory. It would be gladly placed at the disposal of the investigator who hap-

^a Moulton in Year Book No. 3, Carnegie Institution, 1904, pp. 255–256.

pens to need it, if a definite system of communication and exchange were established between the laboratories.

Such a system will now be put in operation by the newly formed Association of American Chemical Research Laboratories, of which I have been elected secretary for the academic year 1909-10. A number of the more important chemical research laboratories, including those of Harvard University, the University of Chicago, the University of Illinois, Columbia University, the Massachusetts Institute of Technology, Brown University, the University of Toronto, and others, have already joined the association, and other laboratories are welcome to join at any time. Each laboratory desiring to join the association should send to the undersigned a copy of Kahlbaum's or some similar catalogue, with marks on the margins showing what chemicals, and roughly what quantities of them, are contained in its stock. If a preparation is needed by any member of the association, inquiry is sent to the secretary, who will return information as to where and in what quantities the chemical is to be found. Every member of the association is pledged to loan to any other member any chemical which he does not immediately need himself. On the other hand, a member borrowing a preparation is pledged to order it from abroad and to return it without undue delay to the laboratory from which it has been borrowed.

The warm approval with which the plan met when presented at the Clark University conference would seem to justify all hope for its complete success.

M. A. ROSANOFF

CLARK UNIVERSITY,
WORCESTER, MASS.,
October 12, 1909

FAMILY RECORDS

TO THE EDITOR OF SCIENCE: Last spring I asked, through SCIENCE, for volunteers from among American men of science to furnish records of certain characteristics of their families for three or more generations. The response was unexpectedly large

and a valuable lot of data was acquired that is now being worked up. Much more data could, however, be used to advantage and so I make this second call for volunteers. Two sets of blanks will be furnished to each person desiring them, of which one may be retained for personal use. Information is asked concerning some 35 characteristics of each individual recorded so that the task of filling the blanks is not inconsiderable. It appears that in many families the data asked for can be obtained by taking a little trouble and the indications, so far, are that the trouble is well worth while.

It would be a great help if those who have quite or nearly filled out the "Family Records" that they received last spring should return them to me as soon as convenient.

C. B. DAVENPORT

COLD SPRING HARBOR, N. Y.

SCIENTIFIC BOOKS

The Plankton of the Illinois River, 1894-1899.

Part II. *Constituent Organisms and their Seasonal Distribution.* By C. A. KOFOID. Bull. Ill. State Lab. of Nat. Hist., Vol. VIII., Article I., 361 pp., 5 pl., May, 1908.

This is the second volume based on the plankton investigations made by Professor Kofoid on the Illinois River. It gives the results of quantitative, numerical and qualitative studies made on plankton material which was collected in the channel waters, chiefly at weekly intervals, during the years 1894 to 1899.

As a result of the commingling of organisms from various and diverse sources, the plankton of this river has a markedly composite character, no fewer than 528 forms being represented. Notwithstanding this large number of forms, it still does not show so great a diversity of organisms as marine plankton. Fresh-water plankton is characterized by the almost universal absence of larval forms, the exceptions being the glochidia of the Unionidæ and the larvæ of dipterous insects; by the smaller number of invertebrate groups represented; and by the smaller size of the component organisms. In spite of the smaller number of forms in this