

EDITORIAL

IN December, 1898, Mr. G. K. Gilbert presented to the Geological Society of America a paper upon ripple-marks and cross-bedding in which he undertakes to explain the large ripples of the Medina formation.¹ Mr. Gilbert became satisfied that these ripples differ "in no respect except size from the familiar ripple-mark of the bathing beach and the museum slab." In order to account for the size of some of the large ripples upon this theory he has inferred that the waves producing them were sixty feet high and made in "a large ocean."

In the July number of the *American Geologist*, Professor H. L. Fairchild objects to the deep ocean theory of the origin of these ripples, and brings evidence to show that they are beach structures.²

Without going into the details of either of the articles mentioned the present writer wishes to call attention in this connection to a paper upon the origin of beach cusps published in this JOURNAL (September–October, 1900, Vol. VIII, pp. 481–484), and to suggest that the explanation of the giant ripples spoken of by Gilbert and Fairchild is to be found in the seaward extension of beach cusps. The beach cusps are from sixty to eighty feet apart, from a few inches to three feet in vertical height and extend oceanward in approximately parallel lines. They are formed by the interference of two sets of waves of translation, and are therefore to be looked for not only on the beach where they appear at the water's edge, but as far out as the waves drag upon the sea bottom, and always pointing away from the shore. This theory appears to account readily for all

¹ Ripple-marks and Cross-bedding, by GROVE KARL GILBERT. Bull. Geol. Soc. Amer. Vol. X, pp. 135–140.

² Beach Structures in Medina Sandstone, by H. L. FAIRCHILD. Amer. Geologist, Vol. XXVIII, pp. 9–14.

the phenomena observed in connection with the ripples in the Medina without doing violence to the theory of the shallow water origin of those beds.

J. C. BRANNER.

THE experiment of holding the summer meeting of the American Association for the Advancement of Science as far west as Denver may be regarded as a success. The attendance compared favorably with what has previously been realized at several meetings in the interior, though for obvious reasons it was less than the attendance at meetings held in the more populous and accessible centers of the East. The papers and discussions, so far as one could judge from listening to those of a single section and from current opinion, also compared favorably with those of average meetings. There was less diversion from the specific purposes of the association by formal social functions which were few, and there was correspondingly greater real social intercourse between fellow scientists, because the intersessional intervals were more largely left free for this, a most laudable feature. The provisions for scientific excursions, at least in geologic lines, were notably more ample than usual and were arranged for the afternoons of the regular session, the morning sessions being extended to make this possible. The facilities for general and varied excursions at the close of the formal sessions were exceptionally generous. Only one feature of the general appointments and of the environment needs to be singled out for adverse comment, and that was the dreary silliness of the Denver press which, apparently recognizing its limitations in reporting appreciatively and intelligently the real scientific news, tried to make up for its inabilities by stale witticisms and coarse cartoons, interspersed with extravagant personal laudations of "the-greatest-scientist-on-earth" type. A few subjects relating to the economic interests of the region and to popular themes were, however, well reported.

The general addresses were excellent; that of retiring-President Woodward was an incisive and discriminating discussion of the progress of science, graced with an artistic marshaling

of lights and shadows as wholesome as it was skilful; that of Vice-President Van Hise on the philosophy of ore deposition was clear, strong and effective, and especially laudable, as a popular address in a mining region, for its unhesitating advocacy of the unpalatable as well as the acceptable phases of his doctrine.

Previous to the meeting a ten-day excursion of geologists was planned by Professors Van Hise and Emmons and carried out in a most admirable manner. The selection of routes and places from among the phenomenal possibilities of Colorado certainly made no small demands upon the knowledge and discretion of those in charge, but no whisper of a possible improvement was heard. The climax of interest was reached in the San Juan Mountains, where the exemplification of many and varied phases of geological phenomena from the Archean to the Pleistocene is marvelously impressive. The aid rendered by prominent citizens at various points visited and the generous hospitality extended to the party were beyond all praise. It would be a delight to acknowledge our obligations in special and individual terms, if, beginning with the exceptional courtesies of Walsh, Lay, and Freeland, it were possible to find an end of the list. About two dozen geologists participated.

The four geological sessions were crowded with papers well distributed over the various departments of geology and embodying much of exceptional interest and value. The papers read before the Geological Society of America, presented on the first morning, were as follows: "Account of the Geological Excursion," C. R. Van Hise; "Junction of the Lake Superior Sandstone and the Keweenawan Traps in Wisconsin," U. S. Grant; "Hydrographic History in South Dakota," J. E. Todd; "The Still Rivers of Western Connecticut," W. H. Hobbs; "Geology of the Northeast Coast of Brazil," John C. Branner; "Classification of the Geological Formations of Tennessee," James M. Safford; "Horizons of Phosphate Rock in Tennessee," James M. Safford.

The following papers were presented before Section E:

"The Effect of Diurnal Heat on Glacial Activity," J. F. Todd ;
"On Extra Terrestrial Stresses," E. Haworth ; "On Stopping as
a Factor in the Formation of Terraces," T. C. Chamberlin ; "On
Campodus, Helicoprion, Acanthus and other Paleozoic Sharks,"
Charles R. Eastman ; "The Oscillations of the Coast Ranges of
California," A. C. Lawson ; "Some Features of the Geology of
Golden, Colorado," H. B. Patton ; "The Geological Occurrence
of Oil in Colorado," A. Lakes ; "Report on Some Studies Rela-
tive to Primal Questions in Geology," T. C. Chamberlin ; "A
Plea for Greater Simplicity in the Language of Science," T. A.
Rickard ; "Sandstone Intrusions near Santa Cruz, California,"
J. F. Newsome and J. C. Branner ; "On the Pleistocene Deposits
of Iowa," Samuel Calvin ; "Problems of the Quaternary
Deposits of the South Platte Valley," George L. Cannon ;
"Physiography of the Boston Mountains, Arkansas," A. H.
Purdue ; "Some Problems of the Dakota Artesian System,"
James E. Todd ; "A Quantitative Study of Variation in the
Fossil Brachiopod *Platystrophia biforta*, Schl.," E. R. Cumings
and A. V. Mauck ; "Interpretation of Some Drainage Changes
in Southwestern Ohio," W. G. Tight ; "The Minerals and
Mineral Localities of Texas," F. W. Simonds ; "The Minerals
Associated with Copper in Southeastern Arizona and South-
western New Mexico," G. H. Stone ; "The Extinct Glaziers of
New Mexico and Arizona," G. H. Stone ; "Note on Certain
Copper Minerals," A. N. Winchell ; "The Areal Geology of the
Castle Rock Region," W. T. Lee. The officers of the section
were: C. R. Van Hise, vice president, and H. B. Patton, secre-
tary. Those elected for the ensuing year are: O. A. Derby, of
San Paulo, Brazil, vice president ; and F. P. Gulliver, of South-
boro, Mass., secretary. C.