in the Ordovician is at the top and near the bottom of the section. The alternating red and greenish yellow shales and sandstones (Bays) just beneath the Medina sandstone, occupying the position of the Juniata in the north, are here very fossiliferous, whereas in Pennsylvania and New York they are practically barren of life forms. Here it carries Orthoceratites, Gasteropods, Brachiopods, etc., in great abundance. The stratum here measures about eighty feet whereas in the north it is several hundred feet thick. The Hudson River is virtually the same as north. Just above the Trenton, however, occurs a heavy stratum of alternating sandstone and shale, Tellico of the south. The upper Trenton is massive rather impure light blue limestone, passing into thin bedded dark to black limestone with some shales intervening. The middle Trenton is characterized by a development of several hundred feet of black shale (Athens Shale) carrying Trilobites and many forms of Graptolites, among which are the whorled type described by Ruedemann from northeastern New York. This is followed by the Black River limestone, identical in almost every respect, lithologically as well as in fossil content, with that of New York. The same is true for the Birdseye beneath. The Birdseye terminates in a six-foot stratum of brecciated conglomerate, with fragments of limestone and chert ranging in size from one half inch to fifteen inches in diameter. The Chazy, which follows, agrees in its lithology and fossil content with that of Vermont, terminating in a ferruginous sandstone, which corresponds in position and character with the Isle La Motte sandstone.

Detailed work in the Beekmantown below has not as yet been completed, but thus far the divisions established by Brainerd and Seely of Vermont with their characteristic boundaries and fossils are believed to have been identified.

The "Undagraph," Its Use for the Study of Microseisms: OTTO KLOTZ. (Illustrated.)

Recent Backward Extension of the Life Record in Geologic Time: CHARLES KEYES.

The differentiation of life on our globe prior to the stage represented by the *Olenellus,* or Early Cambrian, zone, the oldest phase with which we have been acquainted, has lately passed from the realm of pure speculation to that of direct observation. The wide interest aroused by these recent discoveries of abundant well-preserved organic remains in rocks of undoubted pre-Cambrian, and hence pre-Paleozoic, age is secondary only to the enthusiasm produced a few months ago by the actual location of the fossiliferous horizons in the general geological column. As definitely determined these oldest fossil-bearing levels are stratigraphically more than two miles beneath all other known horizons yielding traces of life. The revelations, of course, materially modify all our previous notions on the subject. They open up a more inviting field of investigation than awaited paleontologists when the Paleozoics first revealed their secrets. Between the bottom of the Paleozoics and the old Azoic gneisses, as usually represented in the text-books of the science, we may now insert the complete schemes of two great fossiliferous successions each of greater stratigraphic and taxonomic importance than that of the entire Paleozoic sequence as now known.

Fauna of the Pleistocene Asphalt Beds at Rancho La Brea, California: J. C. MERRIAM. (Illustrated.)

Tertiary of the Great Basin Region: J. C. MERRIAM.

The Clinton-Niagara Sand Reefs, Dune Ridges and Lagoons—Bordering the Paleozoic Sea: COLLIER COBB.

GEORGE F. KAY,
Secretary

ATLANTA MEETING OF SECTION G

AT 2 P.M., Tuesday, December 30, the meeting of Section G was called to order by the chairman, Professor H. C. Cowles. In the absence of the secretary, Professor W. J. G. Land was made secretary *pro tem.* The following officers were elected. For member of the sectional committee for five years, Dr. D. T. MacDougal; for member of the council, Dr. C. Stuart Gager; for member of the general committee, Professor D. M. Mottier.

The Sectional Committee recommended and the association elected Professor G. P. Clinton, of New Haven, as vice-president and chairman for the Philadelphia meeting.

The following papers were read:

"The Evolution of a Botanical Problem: The Discovery of Sexuality in Plants," address of the retiring Vice-president, Duncan S. Johnson.

"The Water Requirements of Plants," by Lyman J. Briggs and H. L. Shantz.

"Samoan Vegetation," by W. J. G. Land.

W. J. V. OSTERHOUT,
Secretary