of producing electricity for the purpose of illumination, were regarded as having a practical bearing of very great value, and explained the way of facilitating the reversal of electro-motive power in secondary batteries at a minimum of cost.

Prof. W. H. Brewer, drew attention in a paper on the "Apparent Size of Magnified Objects," to a series of experiments he had made with many persons as to the relative size of objects as seen by the microscope and the naked eye. A magnified image having a theoretical value of 4·66 inches, appeared to one observer to be six inches, to another twelve inches, and to another (an experienced draughtsman), five feet in length. The practical conclusion was that, while much depended on a healthy condition of the eye, much was attainable by education, it being evident that an eye educated to use the microscope would be less liable to error than one that had never been trained.

Mr. W. Le Conte Stevens, who had made the subject of stereoscopy a study, read a paper describing the results attained by the use of the electric spark in binocular vision. When the relation between the visual lines was such as to imply no unusual muscular strain, it was found possible to interpret the binocular retinal image by the aid of a single spark.

Prof. A. Graham Bell's paper on a newly devised apparatus for the detection of bullets in wounds was listened to with especial interest, on account of its failure to show the true location of the ball lodged in the body of the late President Garfield. Prof. Bell explained his improvements, by which he was confident of more exact results on any future occasion of a similar nature.

In the Section of Geography and Geology, highly important papers were read of a variety of interesting topics; some of which will be noticed further on.

Prominent among foreign visitors present was the celebrated Dr. W. B. Carpenter, who delivered an interesting address in Queen's Hall, on the "Temperature of the Deep Sea." He stated that previous to his own investigations due allowance had not been made for the enormous pressure on the bulbs of thermometers at great depths, by which the mercury would be forced up into the tubes and record fallacious indications. His experiments led to the construction of the Miller-Casella thermometer, capable of bearing a pressure of five tons to the square inch, without affecting the temperature recorded. With this improved instrument his deep sea observations were made. The generally received impression had been that the sea had a universal temperature below a certain depth, of 39 degrees Fahr. But Dr. Carpenter found the temperature of the deep basin of the North Atlantic to be 35 degrees Fahr. while in the Färöe Channel, within a hundred miles of Scotland, it fell to 29½ degrees. This proved that, in the Färonese Channel, there was a tongue of the arctic current. In the Mediterranean Sea, while the surface temperature was 60 degrees, the great mass of water below, down to the depth of 2,500 fathoms, was unvaryingly 55 degrees. The reason of this temperature, 20 degrees higher than the mass of the Atlantic, was found in the fact that the Mediterranean was walled off by a ridge at the Straits of Gibraltar, by which the colder currents were shut off. A similar phenomenon was presented in certain partly inclosed seas in the Pacific Ocean. The Polar currents, however, swept without interruption through the great body of oceanic waters, obeying laws that could be easily demonstrated in the lecture-room, by applying a block of ice at one end of a tank, and a plate of hot iron at the other, the currents being indicated by coloring the water. The Arctic and Antarctic underflows meet and rise almost to the surface near the Equator in a very cold current, so that, while the surface may have a temperature of 78 degrees, it falls to 35 degrees only about 300 feet below. Receding from the Equator this submarine temperature gradually rises as the cold currents fall again toward the bottom of the sea.

In connection with this play of currents, Dr. Carpenter explained the Gulf Stream, which carries into the mid-Atlantic an enormous body of warm, not losing its velocity till it encounters the polar currents. The venerable physicist occasionally relieved the severity of his learning by bits of pleasantry that were very well relished by the hearers; as for instance, when he expressed apprehension that some ingenious Yankee might divert the Gulf Stream by cutting through the Isthmus of Panama, by which process Great Britain might possibly be rendered a howling wilderness. We were implored not thus to bring ruin on the British Isles.

One of the most thorough discussed papers presented before the Geological Section was that by Professor Carril Lewis, on "The Terminal Moraine across Pennsylvania." The southern limit of the great ice sheet that once wrapped a large part of North America is marked by a terminal moraine. It is claimed that this deposit has been traced from Cape Cod, where it begins, across Rhode Island, Long Island and New Jersey, into New York State. It has also been traced across Ohio, Indiana, Illinois, Wisconsin, Minnesota, and Dakota, to the Saskatchewan region of the Dominion. Professor Lewis claims to have filled the gap in this long chain by his discoveries in Pennsylvania. He traced the moraine for 400 miles, across the great divide between the Atlantic and the Gulf of Mexico, where it exists at the height of 2,480 feet above the sea. Where it enters the State of Ohio it has descended to the height of 800 feet above the sea level. The line between the areas of glacial action and those where the ice had not been were so sharply defined that you could stand with one foot on the striated rock and the other on rock that had not been glaciated. All along this line of demarkation were found crystalline bowlders and masses of labradorite that must have come down from the Adirondacks and highlands of Ontario. Dr. Dawson and several other geologists of note took part in the discussion of this important paper.

Prof. F. W. Putnam read papers in the Anthropological Section on "The Exploration of Mounds in Ohio and Tennessee," in which flints were found, as well as fragments of pottery and numerous animal remains. The remains of a log cabin had also been discovered belonging to the "Stone Grave Period" in Tennessee. The first indication of the building was a piece of charcoal found in digging. This led to the unearthing of a mass of charcoal so fresh as to be plainly the remains of some burnt building. The clay between the logs was well preserved, and even the marks of fingers could still be seen. The antiquity of the structure was shown by the fragments of pottery amid the ashes.

Prof. Putnam also read a paper to show that copper implements and ornaments had been in use from the beginning of the so-called Neolithic Period. None of these were cast, but all were hammered out from pieces of native copper. Mr. R. P. Hoy held that the mound-builders were the immediate ancestors of our modern Indians. Some of the mounds are of very recent date, as is evinced by the brass kettles, iron tomahawks, beads, and other modern articles found in them.

A valuable paper, read by Mr. Horatio Hale, traced Indian migration by linguistic peculiarities. Curious resemblances between the Indian and the Basque languages lead to the conclusion that the ancestors of our Indian tribes were emigrants from Europe. It is also probable, as Mr. Hale thinks, that the inhabitants of modern Europe are people of a mixed race, forming a transition in mental and physical traits between the easter Aryans and the Aboriginal Americans.

Among the most entertaining papers read before Section H were those presented by Mrs. Erminie Smith and Miss Alice Fletcher, who have for a long time actually lived among the Indians and been adopted into their tribes, in order to gain information as to their home-life manners and customs, beliefs and superstitions, and any other peculiarities of interest to science.

Among the concluding papers in Section E was one by the writer on "Subterranean Map Making," particularly with reference to American caverns. A map of Mammoth Cave, Kentucky, was exhibited, being the completion of the diagram only partially shown at the Cincinnati meeting last year, and also a new map of Luray Cave, Virginia, made from a careful survey by the proprietors last winter. This was followed by a paper on the "Caves of Staffa and their Relation to the Ancient Civilization of Iona," by Mr. F. C. Whitehouse, of New York, who advanced the original idea that Fingal's Cave, and other grottoes in its vicinity, were artificial productions, instead of being caused by erosion. While there was a difference of opinion as to the validity of Mr. Whitehouse's conclusions, all who heard him were interested in the explanations he offered, and regret was expressed that more time might not have been allowed for the discussions of his novel views of this famous locality.

Minneapolis was chosen as the place for the next meeting. Prof. C. A. Young, of Princeton, was elected President. and the following were elected as Vice-Presidents: W. A. Rogers, H. A. Rowland, E. W. Morley, DeVolson Wood, C. H. Hitchcock, W. J. Beale, J. D. Cox, O. T. Mason, and F. B. Hough. The general Secretary is J. R. Eastman, with Alfred Springer as assistant. Treasurer, William Lilly.

In general, the Montreal meeting, which came to an end August 30th, may be regarded as one of the most interesting and successful ever held by the American Association for the