THE BRITISH AND AMERICAN ASSOCIATIONS.

TO THE EDITOR OF SCIENCE: Those members of the American Association for the Advancement of Science who went from Detroit to Toronto naturally made comparisons as to the methods by which the affairs of the two organizations were conducted. Permit me, therefore, as one who attended both meetings, to suggest three things which, if properly carried out, will tend to improve, at least to a certain extent, some features in the American Association.

First. The addresses of the President and Vice-Presidents of sections should be in type and ready for publication at the time of the meeting of the Association. By this means the addresses would be available to the daily and scientific press, and every address would be given out at the same time. At Detroit the President's address was not properly reported by any local newspaper, and of the Vice-Presidential addresses only that of Professor Mason was available in pamphlet form.

Second. All papers passed by the sectional committee should go through the hands of a competent press secretary, specially hired for the purpose, preferably a scientific man, who should prepare suitable abstracts of the same for publication. These abstracts should be duplicated by some convenient copying process and given to reporters as desired.

By the combination of these two methods a proper and dignified presentation of the work of the Association would be given to the public, and by using the same for the proceedings the publication of the volume could be begun at once at the close of the meeting. For with the addresses in type and the abstracts in manuscript the volume could be put together and issued as soon as it could be printed.

Third. In lieu of the single public reception given on the first evening of the meeting I would advocate a greater number of social functions at which the members could meet each other. At each meeting of the British Association, besides a reception, there is always a conversazione and a subscription dinner which is given in honor of the retiring President. Would not such gatherings tend to bring the members of our Association into closer relationship with each other? For, after all, it is often the spoken word rather than the formal paper that suggests a line of research or is most fruitful in aiding workers in science.

MARCUS BENJAMIN.

U. S. NATIONAL MUSEUM, November 6, 1897.

SCIENTIFIC LITERATURE.

Boletin del Instituto Geologico de Mexico. Nums. 7, 8 y 9. El Mineral de Pachuca.

Since the Geological Survey of Mexico was placed in charge of Sr. J. G. Aquilera, two or three years ago, the work has been prosecuted with great energy and several quarto bulletins, well illustrated, have been issued. These include a sketch of Mexican geology, studies of rocks and fossils as well as studies of special areas.

The volume named at the head of this note gives the results of detailed examination of a well-known region which, more than once, has attracted the attention of European geologists. There are chapters by nearly all members of the staff, illustrated with 8 large maps and diagrams and 6 quarto plates. These describe elaborately the physiography, general geology, veins, and microscopic character of the rocks as well as matters of economic interest.

The district of Pachuca, not far from Mexico, is almost midway in the Sierra de Real del Monte y Pachuca, on the lower half of the westerly slope and near the southwest border of the Sierra. It embraces about 20 square kilometers and its principal mines are in three ravines which unite to form the Rio de Pachuca. Its output of silver in former years was almost fabulous, but since 1895 it has been practically idle, owing to the flooding of the mines. Now, however, the drainage operations promise to be successful and the geological structure of the region becomes of much interest to Mexicans.

The rocks are all eruptives, though sedimentary deposits, most probably Cretaceous, are shown within a short distance. Andesites, rhyolites and basalts are the forms, and of each there occur numerous varieties in texture, color and composition. The chapter on the general geology by Aguilera and Ordoñez gives much detail respecting the macroscopic features of these rocks and their chronological relations. The authors feel justified in concluding that

there have been three periods of eruption since the Middle Tertiary: (1) That of basic andesites, terminating in outpourings of rhyolite. (2) That of spongy porous rocks and ashes, marking the beginning of a tranquil period. (3) That of the basalts, continuous with Quaternary volcanic eruptions in various parts of the Sierra. The second period was marked by circulation of thermal waters in the fissures leading to the deposition of quartz with the sulphides.

The intimate structure of the veins, their variations in relation to the adjacent rocks and to each other, as well as the distribution of ores, are considered in a chapter by the same authors. Sanchez contributes a mathematical discussion of the fracture systems, arriving at practically the same conclusions with Daubree. Ordoñez gives results of investigation of the rocks microscopically, which are illustrated upon a plate. Other chapters by Sanchez, Rangel and Castro discuss the more purely economic features, exploitation, drainage, machinery and metallurgical methods in such a way as to be serviceable to those for whose special advantage they were written.

The volume is creditable alike to the authors and to the Minister of Internal Affairs, who has encouraged the expansion of the work.

J. J. Stevenson.

Geologic Atlas of the United States, Folio 34. Buckhannon, West Virginia, 1897.

This folio consists of a descriptive text, a topographic map, a sheet of areal geology, one of economic geology, one showing structure sections, and finally a sheet giving a generalized section and table of synonymy. The authors are Joseph A. Taff and Alfred H. Brooks.

The quadrangle comprises an area of 931½ square miles and for the most part is located in the Appalachian coal field near the center of West Virginia, between latitudes 38°, 30′ and 39° and longitudes 80° and 80°, 30′. It embraces portions of Lewis, Upshur, Randolph, Webster, Braxton and Barber counties. The southeastern corner of the quadrangle lies in the district of parallel ridges which characterize the western border of the Great Valley, or central division of the Appalachian province. Rich and Mill, Back Fork, and Point mountains, which attain elevations or more than 4,000 feet, are the principal border ridges here mapped. From these elevated ridges the surface, an inclined peneplain, falls away toward the northwest, down to an elevation of near 1,700 feet. Six rivers have their sources within this quadrangle, West Fork of Monongahela, Buckhannon, Middle Fork, Valley, Little Kanawha, and Elk, all belonging to the Ohio drainage. These rivers, having their powers of corrasion augmented by the elevated and tilted surface of the country, have dissected the once nearly first country by deep, narrow channels.

The stratigraphy column makes a section of about 4,600 feet of rock. Sixteen hundred feet of interstratified Devonian sandstone and shale are divided nearly equally between the Jennings and Hampshire formations. Of the Lower Carboniferous there are about 1,100 feet, of which less than 100 feet is Pocono sandstone; 350 feet of Greenbrier limestone, and 650 feet of red shale, brown sandstone and conglomerate, making the Canaan formation. The remaining 1,900 feet comprises the coal measures known in this folio as the Pickens sandstone, Pugh formation, Upshur sandstone and Braxton formation, which are composed of conglomerate, sandstone and shale with beds of coal.

The structure of this district is typical of the two provinces which it includes. In the southeastern portion, east of Rich Mountain, the structure is that of the folded region of Great Valley, which is characterized by long parallel anticlines and synclines with north-southwest axes. West of Rich Mountain the typical Cumberland Plateau structure prevails. Here the strata are slightly inclined and gently folded.

The only product of economic importance is coal, of which there are seven workable beds. Two of these occur in the Pickens sandstone, three in the Upshur sandstone and two in the Braxton formation. The coals are from two to six feet thick. They have not been worked on a commercial scale, because other areas of productive coal lie between this field and the seaboard and nearer to large centers of coal consumption, both north and west.