classification—for which Engelmann had marked the way. Occasionally, as of Canby in 1904 and Greene in 1916, he wrote appreciative sketches of botanists whom he had known.

It is chiefly through his comprehensive handling of the difficult succulents, tuberose-like Amaryllids and Umbelliferae that his memory will be kept fresh in science; but those who knew him well will remember him also as a devoted public servant and a sympathetic and helpful friend, whom the last call found still active at the end of a long and successful professional career.

WM. TRELEASE

SCIENTIFIC EVENTS

THE GLASGOW MEETING OF THE BRITISH ASSOCIATION

THE British Association for the Advancement of Science has issued the preliminary program of its meeting to be held in Glasgow from September 5 to 12, under the presidency of Sir William Bragg, who in his address will deal with modern developments of the physical sciences and their relation to national problems. The subjects of the presidential addresses and discussions in the various sections include the reflection of electrons by matter, the photography and measurement of radiation, ancient geography in modern education (by Professor J. L. Myres), the nature of skill (by Professor T. H. Pear), the influence of engineering on civilization (by Sir William Ellis), the archeology of Scotland (by Sir George Macdonald) and increasing returns and economic progress (by Professor Allyn Young). Dr. Cyril Norwood will give the presidential address in the education section, which also will hold a discussion on broadcasting in the service of education, opened by Sir John Reith.

One of the customary evening discourses will be given by Professor E. A. Westermarck, on the study of popular sayings; this will be the Frazer lecture in social anthropology, which is due for delivery in Glasgow, and to which members of the association will, by the courtesy of the university authorities, be admitted. The other evening discourse will be given by Professor F. G. Donnan under the title of "The Mystery of Life," the subject being considered from the viewpoint of physical chemistry. The delegates of corresponding societies, under the presidency of Dr. Vaughan Cornish, will discuss the preservation of scenic beauty in town and country. All the meetings, except those in the evening, will be held in the university, an unusually convenient arrangement. The Lord Provost and Corporation of Glasgow will give a reception and dance in the city chambers, and the local committee a reception in Kelvingrove Art Galleries.

Ample opportunity will be provided for visits to places of scientific interest in the country around Glasgow, and for studying the manifold economic interests of the city and the Clyde area, with their many outstanding examples of the value of applied science in industry and social conditions. Saturday, September 8, is, as usual, devoted entirely to excursions, but in addition there will be numerous half-day and afternoon excursions during the week. Many of these will be of special sectional interest, or will be devoted to visits to particular works and industrial centers. The Port of Glasgow, with its quays and docks and shipyards, will be of special interest to many visitors, and to facilitate its inspection the Clyde trustees are proposing to place their steamer *Comet* at the service of members of the association.

CENTENARY OF THE LONDON ZOOLOGICAL SOCIETY

THE Zoological Society of London will celebrate the completion of its hundredth year of work next year, as it received its royal charter in 1829. The London *Times* gives the following details of the early history of the society:

As is often the case with an institution which came into existence by stages, there are several dates on which a centenary celebration might have been justified, but, as the council has announced in its annual reports for some years, 1929 was selected as the most appropriate.

The first possible date was 1822, for in November of that year some fellows of the Linnean Society, meeting at the house of William Kirby, the entomologist, gratified their discontent with the disproportionately small attention given to zoology by the Linnean Society by deciding to form a Zoological Club. They were still tied by loyalty to their parent society, and when they drafted the rules of the new body they limited membership to fellows of the Linnean Society, and arranged that their scientific work should be published by that society. The work they contemplated and for some time carried out did not include the maintenance of a living collection. There is still uncertainty over the transition from the Zoological Club of the Linnean Society to a Zoological Society with the chief object of establishing a zoological garden, and there is reason to believe that the latter had an independent origin, largely at the instigation of Sir Stamford Raffles, who, although a fellow of the Linnean Society, does not appear to have been a member of the Zoological Club.

The first known prospectus of the Zoological Society was issued in 1825 and announced as its object the formation of a society that should have the same relations to zoology and animal life that the Horticultural Society bore to botany and the vegetable kingdom. There were 77 original subscribers, among whom may be mentioned Sir Stamford Raffles, Sir Humphry Davy, president of the Royal Society, the Duke of Bedford, the Marquis of Lansdowne, Robert Peel and Alexander Baring, M.P. In this prospectus there was no suggestion of the existence

of the Zoological Club of the Linnean Society, or of limitation of the members of the new society to fellows of the Linnean Society. But there was overlapping of interest, and Mr. Vigors, who was the first secretary and last chairman of the Zoological Club, was the first secretary of the Zoological Society. The club was dissolved, apparently, in 1829, by which time most of its members had joined the new society.

A house was obtained in Bruton-street for the new society, where meetings were held, a museum established, and a certain number of living birds and mammals kept. In the course of 1826 negotiations with the Crown were successfully conducted for the use of part of Regent's Park, and the latter part of 1826 and 1827 were occupied with the laying-out of the new Zoological Gardens. Early in 1828 there were a few pinioned wild duck on a lake, an emu, an otter, some silver-haired rabbits and several birds of prey. It is reported that on February 25, 1828, there were four visitors to the gardens, but under what conditions they were admitted is not known. On April 27, 1828, a superintendent was appointed, and it was decided that visitors should be admitted on the presentation of a voucher from a fellow and the payment of 1s. Considerable progress was made during the remainder of 1828 in stocking and laying out the gardens. The first report of the council appeared in 1829, when the society received its Royal Charter, and the oldest voucher for admittance that has been traced was signed by a fellow who did not join the society until 1829.

EXHIBIT OF OPTICAL INSTRUMENTS AND PRODUCTS

UNDER the joint auspices of the Optical Society of America and the Bureau of Standards there will be an exhibit of optical instruments and optical products in the buildings of the bureau at Washington, D. C. This exhibition will be open from 9:00 to 4:30, October 31, November 1, 2 and 3 and for one evening session to be designated later by the Optical Society.

It is the desire of the committee to include in this exhibit all the newer instruments which have been developed by scientific investigators and our commercial firms. Research workers are particularly invited to contribute exhibits designed to illustrate the progress of their work and their attention is called to the fact that such an exhibit is often more useful than the presentation of a formal paper for emphasizing the significance and importance of an investigation. All American made instruments or products in which the application of optical principles is an important part in design, construction or use are eligible for exhibition. The following lists will serve to partially indicate the contemplated scope of the exhibit: optical and colored glasses, fused silica, optical components, spectacle lenses, ophthalmic instruments, binoculars, microscopes, photographic apparatus, colored photographic processes, motion-picture apparatus, astronomical instruments, interferometers, spectral apparatus, metrological instruments, surveying and nautical instruments, search lights, telescopic gunsights, photometric apparatus, optical pyrometers, colorimetric instruments, vacuum discharge tubes, special systems of illumination, etc.

I. C. GARDNER, *Chairman,*
Committee on Optical Instruments Exhibit
BUREAU OF STANDARDS

THE PLACE OF SCIENCE IN EDUCATION

THERE has just been published a report of the committee of the American Association for the Advancement of Science on "The Place of Science in Education."

This report is organized under seven headings as follows and the summarizing sentence is given for some of them:

I. The Committee's Understanding of its Functions.

II. The Search for Enduring Facts and the Growth of Confidence in the Guidance of Scientific Truth. Science instruction both in school and out needs better organization, more effective cooperation to make even the health knowledge now available function more completely in the lives of people generally.

III. Obligations of Science Knowledge. Science, not to be discredited, must devise effective ways and means of developing, in its devotees first and in the whole people ultimately, a sense of moral obligation that will prevent the newly acquired knowledge and method of science serving base ends.

IV. The Science Subjects in Educational Programs. The hopeful element is that the stereotyped science courses of the college are being replaced in the earlier years at least by new types, tentative at present but frankly experimental, looking toward a more satisfactory college science sequence. The whole problem needs careful study.

V. Summaries of Types of Specific Studies Relating to the Educational Uses of Science. The above represent but a beginning in the application of the objective scientific method to the problems of science teaching. Such investigations must be multiplied and verified by those truly interested in the scientific solution of such questions.

VI. Those who Teach Science. A more thoroughgoing preparation in the fundamentals of science is needed by all who aspire to teach it.

VII. Those who have Developed Science. Science as method is quite as important as science subject-matter and should receive much attention in science instruction.

The committee offers the following recommendations:

(a) That some organization of national scope such as the United States Bureau of Education, or the Research Division of the National Education Association, be asked by this committee to undertake a comprehen-