comprehensive summary of mathematical meteorology. The society adopted a resolution expressing its appreciation of Dr. Humphreys' address and voicing the hope that "the frozen assets of meteorology may be speedily liquidated." C. F. Brooks and W. R. Gregg were reelected secretary and treasurer, respectively, for 1929, and Isaac M. Cline, Henry J. Cox, Alfred J. Henry, Robert E. Horton and Robert DeC. Ward were elected councilors for 1929–31. Sir Frederic Stupart, who retires this year from the directorship of the Canadian Meteorological Service, and Dr. William Morris Davis were elected life fellows. Outstanding features of the secretary's and treasurer's reports were the 10 per cent. increase in membership in 1928 and the gift to the society of $2,000 to start an endowment fund. The meeting closed with an appreciative resolution addressed to Columbia University and other institutions and to the local committee of the American Association for the hospitality and excellent facilities that made this meeting so successful.

SECTION C (CHEMISTRY)

(Report from Gerhard Dietrichson)

The program of Section C was made up mainly of joint sessions with other groups. At the first of these, held with Section N on Thursday afternoon, six papers were presented on recent development in the chemistry of naturally occurring medicinal agents. Professor Roger Adams gave his retiring vice-presidential address on "Synthetic Organic Acids as Substitutes for Chaulmoogra Oil." He reviewed extensive work by himself and his associates in attempting to find an effective remedy for leprosy. K. K. Chen presented the results of a study of ephedrine homologs and isomers with reference to the relationship between their pharmacological action and their chemical constitution and stereoisomerism. Charles E. Bills gave an extensive review of ergosterol chemistry, describing the methods used in attempts to produce vitamin D from ergosterol, with special attention to the use of the quartz spectrograph and the photoelectric cell. Oliver Kamm's paper on "Hormones from the Pituitary Gland" (abstracted in Science for January 25), which was awarded the annual American Association prize, was presented in this symposium. E. J. Cohn discussed the work that is being done toward isolating the active liver principle effective in the treatment of pernicious anemia. H. Jensen and John J. Abel gave a review of the chemistry of insulin, with special reference to the isolation and possible synthesis of the hormone which it contains.

On Friday forenoon Section C met with Section K (Social and Economic Sciences), the subject for discussion being "Economics and Chemical Progress." The chairman of Section C, Dr. C. E. K. Mees, called attention to the continual changes that are being made in chemical industries and to the economic problems involved. He was followed by L. V. Redman, who spoke about the cost of research and the ultimate possible returns in comparison with other forms of investment. The subject of research costs and accounting was presented by F. P. Byerly. In concluding the symposium, Charles H. Herty discussed cartels and combinations in the chemical industries, expressing the idea that combinations are economically sound if they do not lead to monopoly.

Section C met jointly with Section M (Engineering) for a discussion of "The Chemistry of Metals." F. F. Lucas described high-power microscopic equipment developed in the Bell Telephone Laboratories for studying the structure of alloys, showing lantern slides of remarkably beautiful photographs and emphasizing the value of these in interpreting crystalization phenomena. In a paper on "Elastic Failure and Fatigue Failure of Metals," H. F. Moore pointed out the characteristics of these two effects and discussed the observed structural changes and the possible atomic relations involved. John Johnston emphasized the limitations of purely chemical speculations in the metal industry, saying that these should generally be supplemented by suitable physical and mechanical tests. The influence of surface films on corrosion was discussed by F. N. Speller, who pointed out that the formation of a suitable film seems to be the principal factor in preventing corrosion. E. H. Dix gave an interesting account of the composition and properties of various aluminum alloys that have proved useful in aircraft construction.

At the Saturday forenoon session Professor A. Frumkin, of the Karpov Institute of Chemistry in Moscow (visiting professor of colloid chemistry at the University of Wisconsin), gave a paper on "Hydrolitic Adsorption of Charcoal," showing that adsorption of acids by activated charcoal was directly dependent upon the presence of oxygen, whereas the presence of hydrogen had a corresponding influence on adsorption of alkalis. H. V. Army outlined an extensive research problem undertaken by the American Pharmaceutical Association on the influence of light on medicinal chemicals. There was a well-attended luncheon meeting with the American Institute, with a series of talks on "Recent Advances in Synthetic Organic Chemistry." Roger Adams outlined many important developments in the field of synthetic medicinal chemicals. Charles H. Herty spoke of recent achievements in utilizing by-products, as in the lumber industry, and Edwin E. Slosson called atten-
tion, in his usual entertaining way, to some possibilities with respect to synthetic foods.

SECTION D (ASTRONOMY) AND THE AMERICAN ASTRONOMICAL SOCIETY

(Report from Philip Fox and R. S. Dugan)

Section D held all its sessions jointly with the American Astronomical Society. There were four sessions for the presentation of papers. Thirty papers were presented, covering a wide variety of astronomical thought, from the older, formal astronomy, including papers on double stars, stellar parallax and proper motion, and the extension of astronomy to geodesy, through the various fields of astrophysics, including spectroscopy, photometry and radiometry. Only a few will receive special mention here. The extension of the work on stellar proper motions to the fainter stars by van de Kamp and Vyssotsky is of great value, but it is to be regretted that their work does not also include the determination of the parallaxes of the faint stars under investigation. Professor R. H. Curtiss gave an interesting report of the progress of the Lamont Astronomical Expedition to South Africa. The double-star survey projected by Professor Hussey is now in full swing, with a cooperative program arranged with the Union Observatory at Johannesburg.

Under the title, "On the Present Sun-Spot Maximum and a Correlation with Radio Reception," H. T. Stetson and G. W. Pickard gave some very interesting results. The correlation between sun-spot numbers and radio reception is surprisingly striking. In the field of spectrophotometry N. W. Storer gave some interesting results on the continuous spectra of giant and dwarf stars, deriving therefrom consistent values for stellar temperatures. Detailed studies of the lines of stellar spectra are taking a more and more prominent part in astronomical programs. At this session there were several papers on this subject, among the most interesting of which was that by Charlotte E. Moore, "A Note on the Relation between the Degree of Anomalous Dispersion and Line Intensity." V. M. Slipher spoke on the continuation of his pioneer studies on the spectral emission of the light of the night sky, showing some exceedingly interesting slides, with variation in the absolute and relative intensities of the lines at different periods and even at different hours of the night. The thanks of the astronomers are due to Professor George C. Comstock for his address on "Atmospheric Refraction," admirable in scholarly content and choice phrasing, presented by him as retiring president of the Astronomical Society and read by Joel Stebbins. Comment must be made on the magnificent planetary photographs by E. C. Slipher, of the Lowell Observatory. Those of Jupiter show the amazing outburst of activity noted by many observatories in the last few months.

In Professor H. H. Turner's address on "The Scientific Retrospect," given at a general session of the American Association, he urged that we give more heed to the history of our subjects and to the sequence of development of scientific ideas. The general session Tuesday evening was also devoted to an address on a strictly astronomical subject, "The Galaxy of Galaxies," by Harlow Shapley, a brief account of which appeared in SCIENCE for January 25.

The hundred or more astronomers in attendance found interest in visiting the new observatory on the roof of the new physics laboratory of Columbia University, where a 12-inch refractor telescope is successfully mounted on the roof of a fourteen-story building. Also, they found much interest in the developing astronomical section of the American Museum of Natural History.

SECTION E (GEOLOGY AND GEOGRAPHY) AND RELATED ORGANIZATIONS

(Reports from G. R. Mansfield, Charles P. Berkey, R. S. Bassler, Frank R. Van Horn, Chas. C. Colby and Geo. J. Miller)

For the first time in eight years the Geological Society of America and its affiliated societies met with the American Association and about eight hundred persons were in attendance, which constitutes a record. The sessions of the geological group were all very conveniently housed in the School Service Building of the American Museum of Natural History. Professor Charles Schuchert, retiring vice-president for Section E, was unable to attend the meeting, but his address, on the "Geological History of the Antillean Region," was read by C. O. Dunbar, before a joint session of Section E with the Geological Society. Section E joined with the related societies in sessions at which the addresses of their retiring presidents were read and in the geological smoker Wednesday evening and the dinner Friday evening. Twenty-four papers were presented before the joint session on Wednesday, which were necessarily short but of very good quality. Discussion centered chiefly about the papers by R. F. Flint ("Glacier Stagnation and the Dissipation of the Last Ice Sheet"), L. E. Spock ("Pliocene Deposits of Central Mongolia"), Eugene Callaghan ("Geology of the Vertebrate Fossil Locality at Maragha, Persia"), Robert Balk ("Primary Structure of the Adirondack Anorthosite") and A. C. Swinerton ("Changes of Base-Level Indicated by Caves in Kentucky and Bermuda"). Thursday was marked by a symposium on the "Centenary of the Glacial Theory," given at a general session of the association, and another general session was devoted to geology.