

by a group of Canadian scholars who have formed a "Canadian Pioneer Problems Committee," working under the auspices of the American Geographical Society and supported on the one hand by the Social Science Research Council and on the other by individuals, institutions, and bureaus of government in Canada. Two field seasons have been occupied in gathering information first hand according to a well-

defined but flexible scheme of investigation set up in the beginning. The successive annual reports of the committee have demonstrated the wisdom of the method, and within a year or two there will appear a number of volumes of results that can not fail to be of importance to Canada as a nation as well as to other countries having large areas of marginal lands which are or will soon be in process of development.

## SCIENTIFIC EVENTS

### THE ZOOLOGICAL SOCIETY OF LONDON

ACCORDING to the annual report of the Zoological Society of London, as reported in the *London Times*, the assets of the society amount to £177,708, a decrease of £493 on the corresponding figures for last year, but these do not include the capital of the De Arroyave Trust Fund, the chief item in which is a holding in consolidated 2½ per cent. stock of £123,889. The total income of the year was £141,525, an increase of over £7,000 on that of last year. The income from the Regent's Park Gardens was much less than in 1930, chiefly on account of the bad weather during the greater part of the season, but this was more than made up by the income from the new park at Whipsnade, opened for the first time last Whitsuntide. The total number of fellows decreased from 8,430 to 8,307, as the new fellows elected did not balance the number of deaths and resignations.

The gardens are again to be kept open until 11 P. M. on Thursday evenings from June 2 to August 25 inclusive, and the J. H. Squire Celeste Octet is to play during dinner. On Saturdays and Sundays from May 28 to August 28, inclusive, the band of the 65th (8th London) Field Brigade, Royal Artillery, will play in the afternoons. It is regarded as doubtful if the Thursday evening late openings actually cover the cost of the extra attendance and lighting, but they give an opportunity to many persons engaged during the day to see the collection.

Notwithstanding the bad weather, there were only 27 deaths among the animals from tuberculosis, the lowest since 1925, and of these only one was a monkey which had been 11 months in the gardens and had probably been affected before its arrival. Among the mammals bred and reared in the gardens were three kangaroos and wallabies, two opossums, three porcupines, three musquash, four agoutis, four coypus, a yak, bison, Mongolian wild horses, Grévy's zebra, sea-lion, lion, eland, black-buck, water-buck, nyloghaie and lemur, four ibex, 10 wolves, four Barbary wild sheep, and six thar. Among the birds bred and reared the most notable successes were four Cape penguins, one macaw, one cockatiel, 20 parakeets belonging to several species, and 138 budgerigars, including green,

yellow and blue varieties. At Whipsnade one wombat, one llama, one yak, one red deer, one fallow deer, two nyloghaie, two black-buck, two white red deer, two Chartley and five Highland cattle, and six wolves were bred and reared.

### RESEARCH COMMITTEES OF THE SECTION OF HYDROLOGY OF THE AMERICAN GEOPHYSICAL UNION

THE Section of Hydrology of the American Geophysical Union has announced the organization of nine permanent research committees. This section is concerned with the study of the waters of the earth from the time they are precipitated upon the surface as rain or snow until they are returned to the atmosphere or are discharged into the ocean. Each committee is to make an annual survey of work in progress in the field of hydrology which it covers and to maintain contact with the workers in its field. Following is a list of the committees and chairmen, together with brief statements of the field to be covered by each committee:

*Committee on Snow:* J. E. Church, meteorologist, Nevada Agricultural Experiment Station, and adviser, Nevada Cooperative Snow Surveys, University of Nevada, Reno. The quantity and distribution of the snowfall, the methods of making snow surveys, the melting and evaporation of the snow and the relation of the snow to run-off and absorption.

*Committee on Glaciers:* F. E. Matthes, geologist, Geologic Branch, U. S. Geological Survey, Washington, D. C. The hydrology of existing glaciers, as distinguished from the work and products of ancient glaciers. The committee is to obtain and interpret systematic records of the advance and retreat of glaciers in the United States, including Alaska; also, related records of the movement of the ice, weather conditions and the discharge of water from the glaciers.

*Committee on Evaporation:* G. F. McEwen, oceanographer, Scripps Institution of Oceanography, University of California, La Jolla. The rate of evaporation from free-water surfaces, the effects of weather and other conditions that influence evaporation, and the methods of determining evaporation; also, the fluctuations of lakes and their causes.

*Committee on Absorption and Transpiration:* C. H.

Lee, consulting hydraulic engineer, San Francisco. The absorption of rain, snow and stream water into the earth and its penetration to the water table; the discharge of water by evaporation from the soil and by the transpiration of plants, and the effects of intake and discharge on the ground-water levels.

*Committee on Run-off:* L. K. Sherman, consulting engineer, Randolph-Perkins Co., Chicago. The quantities of water discharged by the streams and the fluctuations in the rates of discharge; also, the geographic, climatic and other conditions that influence the rate of discharge.

*Committee on Physics of Soil Moisture:* F. J. Veihmeyer, professor of irrigation investigations and practice, College of Agriculture, University of California, Davis. The molecular forces that control or influence the occurrence and movement of water in the interstices of the soil and rock formations, including the dynamics of soil moisture in land slides, mud-flows, subsidences and frost action.

*Committee on Underground Water:* D. G. Thompson, geologist, Water Resources Branch, U. S. Geological Survey, Washington, D. C. The occurrence, head and movement of the water in the zone of saturation.

*Committee on Dynamics of Streams:* L. G. Straub, professor of hydraulic engineering, University of Minnesota, Minneapolis. The laws of flow of water in rivers and smaller streams, the forces which the water exerts, the work which it does in erosion, transportation and deposition, and the relations between the streams and the channels that they occupy.

*Committee on Chemistry of Natural Waters:* C. S. Scofield, agriculturist in charge, Division of Western Irrigation Agriculture, U. S. Bureau of Plant Industry, Washington, D. C. The chemical composition and chemical work of the natural waters, both above and below the surface; also, the relation of the fresh water to the salt water, both above and below the surface.

### THE NATIONAL PARKS ASSOCIATION

PLANS for rounding out and developing the nation's system of national parks were discussed at the annual meeting of the National Parks Association held at the Cosmos Club, Washington, D. C., on May 9. Presided over by Dr. Wallace W. Atwood, president of Clark University, this meeting was attended by many of the leaders in conservation who constitute the board of trustees of the association.

Dr. Ray Lyman Wilbur, Secretary of the Interior; Frederic C. Walcott, United States Senator from Connecticut; Dr. John C. Merriam, president of the Carnegie Institution of Washington; Horace M. Albright, director of the National Park Service, and Dr. Atwood were the principal speakers at the annual dinner which followed the afternoon business session, and was attended by more than 150 persons interested in the welfare of the national parks.

Describing the national parks and monuments as the most unique educational agencies in our national life, Dr. Wilbur praised the work of the association

in furthering interest and support for the work of the National Park Service in developing and protecting these important educational and recreational areas and asked for its continued interest. Beauty in the national parks, both natural and man-made, was emphasized by Mr. Albright, director of the National Park Service, in an illustrated talk which included colored slides of beautiful scenes in the park system. Special interest was manifested in the pictures of Great Smoky Mountains National Park, the newest in the system, and the proposed Shenandoah Park in the Virginia Blue Ridge, the Everglades, which, if established, will be the only tropical park in the system, and Isle Royale, a beautiful Michigan island in Lake Superior. All these projects have been authorized by the Congress.

Preservation of wild life in our national parks was the subject of Senator Walcott's address. Dr. Merriam stressed the relation of the citizen to the national parks.

Since the establishment of the National Park Service as a bureau of the Department of the Interior in 1916, more than 25,000,000 persons have visited these parks and monuments. With one exception during the war the total number of visitors for each succeeding year has established a new record.

### THE AMERICAN PHYSICAL SOCIETY

THE American Physical Society will hold its one hundred and seventy-ninth meeting at New Haven, Connecticut, on June 23, 24 and 25.

On Friday morning, June 24, there will be a program of invited papers on "X-rays and What They Suggest about Atomic and Other Structures." The speakers will be J. A. Bearden, J. W. M. DuMond, J. A. Gray and J. D. Hanawalt.

On Saturday morning there will be a program on "Plasticity" arranged by the division of applied mechanics of the American Society of Mechanical Engineers. Physicists have been invited to present papers on this subject from the point of view of physics and the Physical Society has been asked to join with the engineers in this session. The invited papers will be by F. Zwicky, Francis Bitter and R. L. Wegel.

Most of the contributed ten-minute papers will be read on Thursday morning. If necessary, a few may be carried over into Friday and Saturday mornings at times not conflicting with the hours of the symposia, or they may be presented before special conference groups. Conferences or round-table discussions on topics selected by request will be a feature of this meeting.

On Thursday afternoon, before a tea to be given out of doors or in the library, there will be an inspection of the Sterling Memorial Library, including spe-