THE UNIVERSITY OF OXFORD EXPEDITION TO PERU, 1961

THE University of Oxford Expedition to Peru, 1961, has recently returned to the United Kingdom after completing approximately three months field work in the Central Andean Region south of Huancayo. The investigated area covered 600 sq. miles between latitudes 12° 25′ and 12° 50′ S., and longitude 75° 15′ and 75° 30′ W., at altitudes from 13,000 to 18,000 ft. o.d. Six scientists completed an integrated study which concentrated on the geological and botanical features of the country.

No previous work had been done on the geology of the area, although the region was adjacent to country mapped by Dr. J. V. Harrison of the Department of Geology and Mineralogy, Oxford. R. C. Herrera constructed an initial geological map on the scale 1 : 50,000. This work was augmented by detailed stratigraphical sections of the Mesozoic and Tertiary, and by systematic collection of fossils, especially from the Cretaceous limestones. A small number of volcanic and acid intrusive specimens were collected for Prof. B. Giletti of Brown University, in conjunction with a programme of age determination of Andean rocks. The results of the investigation will be used by Dr. J. J. Wilson, of Lima, in his work on the Mesozoic history of the Andean Geosyncline.

The botanical work, carried out by J. R. Lloyd and J. K. Marshall, was divided into five parts. First, a collection was made of the flowering plants, ferns and bryophytes of the whole area. Concomitantly, a map and general survey of the plant formations in the region were completed. Thirdly, the quadrat method was used for a more intensive examination of samples from the formations of all districts. Completeness and precision were given to this phase by the detailed study of all the communities of a selected 10 sq. mile plot. Material comparable with the recently discovered fern-allay, *Stylites*, was found to be widespread in the *Distichia* bogs, and an autecological investigation was made of this and other genera. Finally, analysis of the changes of day and night temperature of four different flowering plant genera was carried out. The botanists were accompanied for a short time by Dr. O. Tovard, a Peruvian taxonomist, who aided in collecting and general survey.

S. R. S. Walker carried out work on the various soils, the majority of which were skeletal lithosols with a marked absence of horizons. His work was closely linked with the ecological programme of the botanists, and the samples will be analysed at the Department of Botany, Cambridge.

A 1 : 50,000 map of the north-eastern part of the area was compiled by the surveyor, M. R. Bewsher; this supplemented the smaller-scale published maps. Stadia methods were used to map at 1 : 5,000 a limited area of particular interest to the botanists. In addition, Bewsher recorded continuous meteorological observations at six stations.

M. J. Troughton undertook a geographical description of the study area, and in particular of the Ayhuicha Valley centred on the village of San José de Acobambilla. This is an isolated and particularly self-sufficient peasant community, and he was fortunate in being able to carry out the investigation during the 'faena' or collective community work period. At this time the men are recalled to the village from work among the herds on the puna grazing areas, thus presenting a good opportunity of observing the various activities of such a population.

Throughout the Expedition, great use was made of animal transport—mainly pack mules, which, in spite of their temperament, were ideally suited to the rough mountainous terrain. The mules, the extreme hospitality of the local Indians, and a working knowledge of Spanish were found to be great aids to exploration in the Andes of Peru. R. C. Herrera

ELECTRON MICROSCOPY IN THE UNITED STATES

THE nineteenth annual meeting of the Electron Microscope Society of America was held at the Pittsburgh Hilton Hotel, Pittsburgh, Pennsylvania, during August 23–26. The Local Arrangements Committee, headed by Dr. Robert V. Rice, is to be especially commended for the arrangement and success of this meeting, which brought together more than 706 active workers in electron microscopy from 24 American States, Canada, Australia, Great Britain, Belgium, Germany and Japan. It was the largest meeting in the history of the Society. There were ten general sessions of contributed papers, five in the biological fields, five in non-biological areas ; in addition, a special session on techniques and three symposia were features of the programme. Nineteen scientific exhibits were presented and twenty-one commercial exhibitors participated in the meeting. Some 180 authors contributed papers on the technique and applications of the electron microscope to work in biology, chemistry, medicine, cancer, metallurgy, electron diffraction and related fields.

A limited number of programme abstracts are still available from Dr. A. R. Taylor, Parke, Davis and Co., Detroit, Michigan. One hundred and three new members of the Society were elected, making the total membership 1,040.

In the symposium on "The Contribution of Electron Microscopy to Polymer Morphology", organized by Dr. R. G. Scott (Pioneering Research Division, DuPont Experimental Station, Wilmington 98, Delaware), seven experts in this field discussed X-ray diffraction applied to polymers, spherulites, electron diffraction applied to single crystals, morphology of polymers, fibre microscopy and electron diffraction applied to synthetic fibres. Arrangements for this symposium were planned over a period of two years and summarized the new phases of technology and applications of electron microscopy in the field of polymer science.

Dr. Rubin Borasky (Electron Microscope Laboratory, Graduate College, University of Illinois, Urbana, Illinois) arranged and directed the symposium on "Ultrastructure of Protein Fibers—Collagen, Muscle, and Keratin". The papers on physical, chemical and mechanical properties of protein fibres in muscle and keratin summarized the recent con-