

NATIONAL PARKS IN BRITAIN

THE fourteenth report of the National Parks Commission covering the year ended September 30, 1963, emphasizes once more the need for amendment of the National Parks Act. This it does in a manner similar to that which it has urged the Government for many years: if the Park Planning Authorities are to possess the status and increased powers and financial resources which are required to meet the growing threats from development and from the use and misuse of the countryside by the public, amendments must be made to the Act. Even to conduct the comprehensive analytical surveys of each park necessary to determine the best way to provide for future needs calls for more technical staff than the Commission possesses, and inadequate resources appear to be frustrating the forward plans of the Commission itself and the Park Planning Authorities. While the Minister has authorized discussions on the shape of possible legislation little hope is held out of Parliamentary time in the early future. Apart from this, the Commission is coming to the opinion that the kind of objectives it visualizes for the parks are unlikely to be achieved effectively unless there is some form or measure of public ownership, trusteeship or dedication over at least parts of these areas. The report stresses the importance of vigorous new thought about the future of the parks.

Appended to the report are some extracts from the speech of the chairman, Lord Strang, to the Conference of Park Planning Authorities at Scarborough in May 1963, in which he outlined some suggestions for positive policy, and with the extracts from Sir Keith Joseph's speech to the same conference this appendix of itself is a valuable contribution to constructive discussion. References are made to coastal preservation and development, on which the Minister has now issued a circular asking authorities with coastal boundaries to make a special investigation of their coastal areas in consultation with the National Parks Commission and the Nature Conservancy. Brief comments are included on the Conference on Water Resources in the North West, on the Water Resources Act, and on the Local Authorities Land Act, 1963, which will facilitate treatment of derelict land under an amendment to Section 89 of the National Parks Act, 1949. Thus the report is in the main a record of steady pursuit of the Commission's objectives, within the limit set by available resources. There is a note of appreciation of work done by senior boys from some Home Office approved schools.

The views of the Commission on the effect of the proposed railway closures are set forth in a letter to the Minister of Transport which is appended to the report. This letter asks the Minister to consider carefully certain matters relating to social benefit which may arise from the closure of lines or stations. If the closure leads to visitors forgoing their visits, a blow will be struck at the main purpose of the parks. Use of either public or private road transport is likely to lead to increased road congestion and a demand for more public transport, road improvements and parking places, which often cannot be met with-

out adverse effect on the character of many of the parks. These consequences need to be set against any savings in money terms arising from the proposed closures, and in view of the declared purpose of the National Parks Act, the Commission submits that, within limits, it would be equitable that national funds should be available to keep open lines or stations serving national parks.

A comprehensive survey was conducted of the tourist industry in the Peak District National Park and the warden service was further augmented. In the Lake District Park the voluntary warden service was also expanded, and the Planning Board advanced its plans for a caravan site at Neaum Crag, Skelwith Bridge. In Snowdonia an agreement was reached on the Joint Advisory Committee's Forestry Map under the voluntary scheme of consultation on private afforestation, and Prof. J. S. Allen's two reports on chalet development were approved by the Joint Advisory Committee. Orders designating the Isle of Wight and East Devon as areas of outstanding natural beauty were confirmed by the Minister, and Orders designating the Forest of Bowland and Chichester Harbour were submitted for confirmation. Improvements were made by local authorities in nine of the fifteen areas already designated, and proposals for the South Downs long-distance route were approved by the Minister as well as the Commission's report on the Dorset Coast Path from Studland to Lyme Regis, which completes the proposals for a South West Peninsula Coast Path.

Development questions continue to figure largely in the report, and during the year nearly 450 such proposals affecting landscape beauty in national parks were referred to the Commission. As regards electricity, it is encouraging to note that at one of the enquiries the Minister of Power expressed concern that it should have been urged on behalf of the Electricity Board that the duty to have regard to the effect of proposals on amenities was subordinate to the Board's duty to maintain an efficient, co-ordinated and economical system of supply. The cost of undergrounding supply lines continues to be a difficulty, particularly in the North Riding of Yorkshire, where the North Eastern Electricity Board is reluctant to follow the practice of the North Western Electricity Board and spread this cost over all consumers in its area. The question has now gone to the Minister of Power, who elsewhere has refused consent to overhead transmission in the Glaslyn Estuary. It is obvious from the report that the routing of overhead transmission lines to avoid prejudice to natural beauty is of increasing difficulty and satisfactory alternative routes are often impossible to find. Aerial masts constitute a similar problem, and in the present report the Commission deplors the Minister's decision to allow the General Post Office to proceed with the erection of a radio tower at Goose Green, Wotton-under-Edge, in view of the great damage to unspoilt landscape. On the other hand, the Commission is encouraged by the care and forethought with which the route for the Lancaster-Penrith Motorway has been chosen by the Ministry of Transport to avoid the Lake District National Park except for a slight encroachment on the eastern edge.

* National Parks and Access to the Countryside Act, 1949. Fourteenth Report of the National Park Commission for the year ended September 30, 1963. Pp. vii+84+8 plates. (London: H.M.S.O., 1963.) 72s. net.

VERTEBRATE PALÆONTOLOGY IN ALBERTA

A CONFERENCE and field-trip on "Vertebrate Palæontology" was held in Alberta during August 29-September 3. The primary purpose of the conference was to review work done in vertebrate palæontology in

Alberta and adjacent Provinces, and to examine the possibilities for a more active programme of research in this field at the University of Alberta. It is well known that many dinosaurs have been collected during the past

fifty years, especially from sites in the Red Deer Valley. These specimens, mostly late Cretaceous, make up some fine exhibits in important museums such as the American Museum of Natural History in New York. However, most of the collectors who have worked in the Province have come from museums or universities in the East; the University of Alberta has not played a significant part in the development of vertebrate palaeontology in the Province.

The International Congress of Zoology in Washington provided an opportunity to bring to Alberta a group of vertebrate palaeontologists from various countries who could provide advice about the possibilities for developing vertebrate palaeontology in this Province. The Departments of Geology and Zoology, with the support of funds from the National Research Council of Canada and the University of Alberta, invited about fifteen visitors to come to Alberta for a programme of scientific meetings and a field-trip to visit sites of palaeontological interest. The visitors included Dr. A. S. Romer (Harvard), Dr. Bjorn Kurtén (Finland), Dr. Rosendo Pascual (Argentina), Dr. T. S. Westoll (Newcastle upon Tyne), Dr. W. E. Swinton (Toronto), Dr. W. A. Clemens (Kansas), Dr. Heinz Tobien (Mainz), Dr. Charles Devillers (Paris), Dr. E. H. Colbert (New York), Dr. Loris Russell (Ottawa), Dr. Wann Langston (Texas) and Dr. Charles Sternberg (Ottawa), of whom the last three had collected extensively in the area. A number of other palaeontologists attended from various parts of Canada and the United States, and, together with members of the staff of the University and the Research Council of Alberta, a full party of forty persons travelled on the field-trip.

The programme consisted of scientific reports on the following subjects: "The Cretaceous in Alberta", by Dr. Wann Langston, jun.; "The Tertiary in Western Canada", by Dr. Loris S. Russell; "The Pleistocene in Alberta", by Drs. L. A. Bayrock and W. A. Fuller (Edmonton). These papers were delivered in Edmonton and provided an excellent background for discussions and preparation for the field trip. All the speakers at this session expressed the view that great opportunities for vertebrate palaeontology exist in Alberta, and that, although the day of spectacular dinosaur collecting was not necessarily at an end, there were other aspects awaiting investigation which might be more rewarding scientifically. Dr. Langston stressed that results might be expected from an intensive search for fossil fishes and remains of early vertebrates in the Palaeozoic and Triassic exposures in the Rocky Mountains. He also reviewed the records of Cretaceous dinosaurs and stressed that there were many outstanding problems demanding further investigation.

Dr. Russell described his own experiences in collecting remains of Tertiary mammals in the Cypress Hills of Saskatchewan and underlined the need for the careful and painstaking collection of material found in bone beds that are exposed by quarrying and erosion. Dr. Bayrock described the new knowledge that is emerging about the extent of glaciation in Western Canada and showed how much we could learn about this from an exact knowledge of the mammalian fauna of Pleistocene times, a fauna which has left abundant evidence of its existence in a number of sites close to Edmonton. Dr. Fuller described the knowledge that exists already about different species of bison which lived in Alberta in glacial and inter-glacial times.

During the field-trip, the party visited sites in the Red Deer Valley, including Drumheller, where there is an active local museum society, and Steeveville, where the Provincial Government has established a park in which several dinosaur skeletons have been exposed *in situ* and protected from the weather. Visits were also made to the Cypress Hills in Saskatchewan, where an Oligocene bone bed was examined, and to the Milk River Canyon in South-eastern Alberta, where a magnificent set of dinosaur-bearing sandstones of the Upper Cretaceous is exposed.

The field-trip and the conference ended at the Calgary campus of the University of Alberta with an informal discussion of the impressions that the group had gained from the trip about the future of vertebrate palaeontology in Alberta. Almost all the views expressed were extremely encouraging and, as a result, the Departments of Geology and Zoology are hoping to appoint a vertebrate palaeontologist to the staff of the University in the near future. It is hoped also that field work with a new orientation will begin in the summer of 1964, concentrating on the Cretaceous mammalian fauna of the Upper Edmonton Formation, and collecting at localities where fossil fishes are known to occur.

Public lectures were given in Edmonton by Drs. Colbert and Russell and in Calgary by Dr. Romer. The Alberta Society of Petroleum Geologists participated in these events. Members of the conference were entertained by the Government of the Province of Alberta, by the Edmonton Zoological Society, by the Calgary Zoological Society and by the Principal of the University of Alberta, Calgary. A full report of the proceedings of the conference will be available shortly and will be sent on request to anyone interested. Persons desiring information about the further development of the programme of vertebrate palaeontology in Alberta should write to the Head of the Geology or the Zoology Departments, University of Alberta, Edmonton, Canada. D. M. Ross

PLANT POLYSACCHARIDES

A SYMPOSIUM on the chemistry and biochemistry of plant polysaccharides was recently organized by the Plant Phenolics Group. The meeting was held at the School of Pharmacy, University of London, on January 7.

The chairman for the morning session was Prof. J. W. Fairbairn (School of Pharmacy) and the first speaker was Prof. E. J. Bourne (Royal Holloway College), who reviewed the methods available for the determination of polysaccharide structures. The development of new techniques has been very rapid during the past twenty years. Paper chromatography was, without doubt, the most important contribution to polysaccharide chemistry, and in recent times the use of gas-liquid chromatography for the analysis of methylated sugars and trimethylsilyl derivatives has been an important break-through. Even more exciting possibilities may come from the full application of enzymatic and immunochemical techniques.

Dr. W. J. Whelan (Lister Institute of Preventive Medicine) discussed the structure of the two starch components, amylose and amylopectin. The main structures are now well known, but some aspects of the fine structures of these polysaccharides are in dispute and present-day interest is centred around these. Of particular interest are the few glucose residues in amylose which possess linkages in addition to α -1,4. The most recent evidence suggests that these 'anomalous' linkages are α -1,6. The original claim that α -1,3-linkages are present in amylopectin may be incorrect. One of the latest enzymes to be used for the examination of these fine structures is pullulanase, which is specific for the cleavage of α -1,6-linkages.

Prof. H. K. Porter (Imperial College of Science and Technology) followed Dr. Whelan and described the development of ideas regarding the formation and break-