

Whipsnade Zoological Park.

THE new estate of the Zoological Society of London at Whipsnade was shown to the Press on May 21. There was a private view for fellows of the Society on the following day, and on Saturday, May 23, it was opened to members of the public, who in future will each day, including Sundays, be admitted on payment of one shilling, from 10 o'clock in the morning until 'lighting-up time'.

The Zoological Park, as it is called, considered merely as a place of resort in which to spend some of one's leisure, is most attractive, and from it there is a magnificent view over some eighty miles of country, rivalling that from the Malvern Hills. Much of the five hundred acres consists of downs and woodland, and it is very pleasant to think that so large a rural area is to be kept as a beauty spot.

The charm of the English landscape depends largely upon its vegetation, and the special Act of Parliament, which allows a charge for admission to be made on Sundays, forbids the picking of wildflowers, the damaging of trees and shrubs, and the throwing down of litter. "Blue-bell Wood", where there is no bush undergrowth, is at the time of writing a magnificent sheet of colour, broken only by the trunks of the trees, and there are bluebells too in the Bird Sanctuary, into which the interesting and rare plants of the neighbourhood, which are disappearing elsewhere, will be introduced. Wild birds are protected, and those which build in holes encouraged, by the provision of nesting boxes. No birds, other than those usually found in the sanctuaries near London, have as yet been recorded as breeding there. In the enclosure are a few tiny antelopes (Reeves' muntjac) and numerous peafowl. The writer here saw several nests of Amherst's pheasant, on which the hens were sitting, and the empty egg-shells of an Impeyan pheasant which had successfully hatched out her young. Perhaps the most interesting occupants are the brush turkeys, which it is hoped will build their mounds and leave their eggs to be hatched by the heat of fermentation, as has happened in the Gardens at Regent's Park.

In the disposal of the animals generally, advantage has been very skilfully taken of the conformation of the ground and what is growing upon it. Wolves are rearing their young in a dense wood of conifers, which makes an excellent setting for them. The more scattered trees and bushes make an appropriate home for graceful Indian deer. In a more open space adjacent, and looked down upon from a causeway, is a good collection of bears.

A herd of American bison has been given a large piece of the side of a down, and little dells elsewhere have been fenced round for marmots, wood-chucks, and wombats. It is intended to isolate a tableland of grass-covered chalk to form a home for lions, and a good beginning has been made with the work. "Wallaby Wood", consisting of deciduous trees, has as its name implies, been dedicated to the kangaroos. No attempt has been made to provide houses through which the public can walk for any of the animals mentioned, but shelters have been constructed into which the creatures can retire, and which can, if necessary, be warmed in winter by electric radiators.

The orchards, meadows, and the farm-land have been made into grass enclosures for the cranes and crested screamers; the wild horses, asses, and zebras; the camels and llamas; as well as the ostriches, emus, and rheas. The area of several of them is ten acres or more, and there is one of thirty acres, in which it is hoped that there will ultimately be seen a panorama of the large mammals of Africa.

In the Home Paddocks are English 'wild white cattle' of the Chartley strain, and among the herd is a black calf, which points to an occasional crossing in the past with some domesticated breed. There are also red deer, including an albino sport, and, nearby, some lion cubs bred in the Society's Gardens at Regent's Park.

The giving of considerable space to animals, the providing of them with surroundings (and in some cases, food) which approximate to those which they would enjoy in Nature, may be looked upon as mere common sense, seeing that their health should benefit and that they should look better and live longer, for many are costly and difficult, if not, nowadays, almost impossible, to replace. There are, however, other important aspects of the matter. It is allowed that people in Great Britain, at any rate, are gradually becoming more considerate towards animals. Possibly the acceptance of the theory of evolution has helped to create a fellow-feeling, and there are now many whose sense of justice is strongly developed who, when they see a wild creature cooped up in a cage or living in a sty unable to roam about and fulfil its functions, cannot help comparing it with a felon imprisoned for life for some crime against society, and consider the animal to be suffering punishment which is undeserved and quite unwarranted.

These, and indeed every lover of animals, will welcome the new Zoological Park as a great advance, for here the animals can be given opportunities to produce their young, and this leads to further business and scientific considerations. Many animals, as has already been mentioned, are of considerable value, and this is especially the case where their export from their native country has been prohibited. The rearing of these and their subsequent sale or exchange may well help to maintain and improve the Zoological Park, for it is intended that any profits from it shall be used for its betterment. Then there are, unfortunately, animals which are dying out, and it may be that the only way to keep them from extinction will be to breed them in captivity.

Visitors to the Park should remember that it is only in its initial stage, and that a great deal of money had to be spent on making roads, although the Ministry of Labour supplied a hundred men from distressed areas and paid three-quarters of their wages.

There are at present but few ponds, though considering the accommodation there is a good series of swans and geese and duck, with some flamingoes. It is, however, part of the plan, when funds allow, to make at least one large lake.

The Park should be a great help to the Gardens at Regent's Park. Animals which need a change of food and air can be taken there to recuperate, and any that it is desired to keep but not at the moment to exhibit in London can also be sent into the country. It may not perhaps be too much to expect that those which remain in the Gardens will get a little more room as time goes on.

The moving spirit in the whole scheme has, of course, been Sir Peter Chalmers Mitchell, and he is to be congratulated upon his achievement. This should also gladden the hearts of those whose efforts to improve the conditions at Regent's Park, years ago, resulted in his appointment as secretary to the Society. Dr. G. M. Vevers, the Superintendent of the Zoological Gardens, has been staying at Whipsnade for some time, but the resident superintendent is Capt. W. P. Beal.

To follow the boundary of the estate on foot would

mean a walk of eight miles, and the Zoological Society has introduced a service of motor omnibuses of its own, inside the Park. The old farmhouse and its out-buildings have been made into excellent luncheon and tea rooms, but places have been set apart where visitors may picnic and enjoy the view, while refreshment kiosks have also been provided.

It is understood that motor omnibuses will bring visitors from Luton and Dunstable (which can be reached by train from London) and from the large towns within a convenient distance of the Park.

WILFRED MARK WEBB.

The Newfoundland Earthquake of Nov. 18, 1929.

THE Eastern Section of the Seismological Society of America (U.S. Coast and Geodetic Survey, Washington, D.C.) has issued two papers, by Dr. Arthur Keith and by Messrs. E. A. Hodgson and W. W. Dooxsee, read at the 1930 meeting, at Washington, D.C., on the earthquake which broke twelve of the submarine cables to the south of Newfoundland on Nov. 18, 1929.

The preliminary position of the cable fractures was marked in a map published in *NATURE*, Dec. 21, 1929, and in an accompanying communication Prof. J. W. Gregory explained the earthquake as due to the subsidence of a strip of the sea floor, probably about 400 miles long, in continuation of Cabot Strait. This view is fully supported by the new papers. The violence of the earthquake may be appreciated from Dr. Keith's remark that it was of the same order of magnitude as the disastrous Charlestown earthquake of 1885. He concludes "that all the evidence is in harmony with the theory that parallel faults produced the Cabot trench in the past, the Grand Banks Earthquake in the present, and minor breaks like that of Sherbrooke as aftershocks". He also quotes a report by Thos. S. Woods attributing the boundary of the continental shelf in that region to faulting.

The paper by Messrs. Hodgson and Dooxsee gives a useful collection of data as to the records of the earthquake, which was felt at all the chief observatories of the world. The authors determine the epicentre as at lat. $44^{\circ} 5' N.$ and long. $55^{\circ} W.$, and the time there at $20^h 31^m 55^s$ G.M.T. They conclude that "the evidence strongly supports the hypothesis of a down-dropped section of ocean floor bounded by two fault planes roughly parallel to the axis of Cabot Strait as defined by the 100-fathom contour, and extending from $45^{\circ} N.$ to about $39^{\circ} N.$ as a prolongation of that strait, the northern end being the more seriously displaced". The subsidence they suggest was about 25 feet.

Messrs. Hodgson and Dooxsee (p. 76) give a list of the times of the earthquake at 32 observatories. The time records are of interest in connexion with the view that the floor of the Atlantic is of different material from that under the continents. The earthquake records include those at Budapest, 5567 km. to the east, and at Berkeley in San Francisco, 5600 km. a little south of west. Budapest is 33 km. nearer the epicentre than Berkeley; it recorded the *P* waves 6 seconds earlier and the *S* waves 7 seconds earlier. As the *P* waves travelled to Budapest in 9 min 1 sec. and to Berkeley in 9 min. 7 sec., the rates of transmission under North America and under the Atlantic were practically equal—the rate to Budapest being 10.29 km. per sec., and that to Berkeley 10.24 km. per sec. The rates were: to Munich, distance 5000 km., 9.9 km. per sec.; to Strasbourg, 4589 km., 9.3 km. per sec.; to Barcelona,

4700 km., 10 km. per sec.; and to Balboa, 4506 km., to which the direct route would have been across the deeper part of the North Atlantic basin, only 9.18 km. per sec., instead of the acceleration that would be expected if that ocean floor were underlain by sima at a slight depth.

University and Educational Intelligence.

CAMBRIDGE.—The Appointments Committee of the Faculty of Economics and Politics has appointed C. G. Clark to be University lecturer in statistics.

The Appointments Committee of the Faculty of Biology 'A' has appointed Dr. O. M. B. Bulman to be University demonstrator in geology.

Mr. John Hilton, Assistant Secretary to the Ministry of Labour, has been elected to the recently founded Montague Burton professorship of industrial relations.

The Buildings Syndicate has issued a report to the University on a site for the Royal Society Mond Laboratory and on accommodation for the future development of the physical sciences. It recommends that the sites of the present engineering workshops and the University power station be assigned for new buildings to contain the Royal Society Mond Laboratory, the reconstructed power station, and new workshops for the Cavendish laboratory, and that the drawing office and adjoining rooms to be vacated by the Department of Engineering be assigned to the Department of Physics.

DURHAM.—At a meeting of Convocation on May 20, Lord Londonderry was installed as Chancellor of the University, in succession to the late Duke of Northumberland.

LONDON.—New members of the Senate elected by Convocation include—Major A. G. Church, M.P., and Prof. William Wilson (science), in place of Prof. F. G. Donnan and Sir Philip Magnus, who have retired. Those reappointed by Convocation and the Faculties include—Sir Ernest Graham-Little, M.P. (medicine), Mr. Roger Smith (engineering), and Prof. A. L. Bowley (economics).

Dr. C. H. Lander, since 1923 Director of Fuel Research, has been appointed professor of engineering (Imperial College—City and Guilds College) as from Sept. 1, 1931. Dr. E. L. Kennaway, since 1921 chemical pathologist at the Cancer Hospital, has been appointed professor of experimental pathology (Cancer Hospital—Free) as from May 1, 1931.

It is announced by the Cape Town correspondent of the *Times* that, on May 19, the University of Cape Town conferred the honorary degree of D.Sc. on General Smuts, in recognition of his scientific achievements, and with special reference to his election as president of the 1931 meeting of the British Association.

THE Rockefeller medical fellowships for the academic year 1931–1932 will shortly be awarded by the Medical Research Council, and applications should be lodged with the Council not later than June 1. Fellowships are awarded by the Council, in accordance with the desire of the Rockefeller Foundation, to graduates who have had some training in research work in the primary sciences of medicine or in clinical medicine or surgery, and are likely to profit by a period of work at a university in the United States before taking up positions for higher teaching or research in the British Isles. In special circumstances, the fellowships may be tenable at centres of research not in America. Full particulars are obtainable from the Secretary, Medical Research Council, 38 Old Queen Street, Westminster, S.W.1.