

officers possess great power of determining the fate of the inhabitants of the areas under their control, and while complaints have been made here and there of excessive shooting on the part of the officers themselves, in most areas their influence tells for the preservation of forest animals. Fluctuations in numbers must be expected, and in the United Provinces, while tigers appear to have increased in numbers, marked decreases seem to have taken place amongst nilgai, kakar, wild dog and black buck. The decreases are attributed to serious floods and rinderpest epidemics, and these may be temporary; but the decrease of wild dogs is due to the large reward paid for their destruction. It is unfortunate that the author speaks with two voices about the relative abundance of game at the present day.

#### Gradual Decrease of Game in Reserved Forests

IN the earlier part of his article, Mr. Champion gives as his definite conclusion that "taken as a whole the head of game shot recently has generally shown no marked decrease, except in the mountain reserved forests, where control is not so easy", and again "the impression of senior forest officers is that . . . the game in the United Provinces Reserved Forests as a whole has not markedly decreased during the last 25 years, except in the high hill forests". But before concluding his article he reconsiders the matter, and the result is by no means so encouraging: "I am not so certain as I was that the head of game inside the United Provinces Reserved Forests is not decreasing. . . . Although still a good place for animals in 1931, I would estimate that there had been at least a 25 per cent decrease in nearly all species during the previous decade." The decrease he puts down to the ease with which shooting can now be prosecuted owing to motor cars, and the destruction of game in areas outside the forests, which results in a smaller influx into the forests, and along with this the greater damage done to animals straying from the forests. Although the position in the reserved forests is not so serious as in outlying areas, it appears to have definitely deteriorated, and in view of this it is unfortunate that the earlier misleading statement was not deleted or modified before the article appeared in print.

#### Electrical Control of Road Traffic by Vehicle Actuation

THE control of road traffic by means of vehicle-actuated signals is making rapid progress. In a paper read to the Institution of Electrical Engineers on January 24 by Mr. T. P. Preist, the relative merits of the control of road traffic by traffic officers and by time-controlled signals are discussed. The great advantage of using traffic officers is that they are able to take advantage of any useful break in a heavy stream of traffic and so reduce the time interference to a minimum. A drawback is that they are not conspicuous; this could be reduced by mounting them on a raised platform or crow's nest, but even this is not always effective, and a driver in the rear has to deduce the signals from the movements of the vehicles ahead. They also favour unduly horse-

drawn vehicles and stragglers. With automatic lamps the signals are highly visible and control the traffic of vehicles before officers could see them from the cross-roads. On the other hand, the system is quite inflexible and may lead to much waste of time. Although railway practice has provided much valuable information to designers of road traffic control, there is a great difference between the fixed path of the railway train and the haphazard paths of the road vehicle. Mr. Preist pointed out a useful analogy between the road traffic problem and the problems that arise in telephony. Both arts have to select and control particular paths from the total available and ensure the orderly passage of the chance traffic arriving on those paths. In telephony the 'traffic' is concerned more with areas than with intersections, and future progress of road traffic control will probably lie in this direction.

#### Recent Acquisitions at the Natural History Museum

AMONG the recent acquisitions at the British Museum (Natural History) is a collection of 910 Coleoptera comprising 197 named species of Carabidæ (Trechinæ) and 257 species of Silphidæ (Bathyseiniæ and Catopiniæ) received from Dr. R. Jeannel, director of the Museum d'Histoire Naturelle of Paris. The main interest of these two groups of beetles is that they include the beetles that inhabit the extensive limestone caverns both of Europe and America. In the course of the ages that have elapsed since their ancestors left the free air and sunlight, various modifications for a cavernicolous habit have been evolved; thus, they have completely lost their eyes, their colour is an almost uniform reddish yellow, their legs have tended to lengthen while their wings have tended to disappear, and in some groups have been entirely lost, and their long isolation as separate colonies has brought about the evolution of distinct species in each different system of caverns. The Department of Mineralogy has received by exchange a portion (4,036 gm.) of a new meteoric stone from Lake Labyrinth in South Australia. A large series of specimens from the Libyan Desert has been collected by Dr. L. J. Spencer, keeper of minerals, while on the expedition of the Survey of Egypt to the Sand Sea in December. The object of the expedition was to investigate the origin of the lumps of pure silica-glass found on the surface in the stony or gravel 'streets' between the high (300 ft.) north-south dunes near the border of Italian Cyrenaica. Wind-worn pieces of clear glass were found in abundance over an area of 200 km. × 40 km., the largest lump weighing 16 lb. Many of the pieces had been broken by primitive man and were associated with hundreds of thousands of flakes of glass and quartzite. Querns and grinding stones were frequently found, and at one spot sixty fine palæolithic axes of quartzite, 8-10 in. long, were found. The region must at one time have supported a large population, but now not a living animal or plant is to be seen. Unfortunately, the glass could not be traced to any source. Another kind of silica-glass was found in the form of lightning-tubes or fulgurites, made by

the fusion of the sand when the dunes were struck by lightning. These are paper-thin tubes  $\frac{1}{8}$  in. to one inch in diameter and penetrating downwards to the depth of eight feet or more.

THE Department of Botany has been presented with the remainder of W. Barton's herbarium excepting the genus *Rosa*. The present consignment is of about 12,000 sheets with carefully mounted and well-arranged plants, the whole in an excellent condition. The herbarium includes that of H. J. Riddelsdell and Mrs. Foord Kelsey. It is chiefly British, but includes some Alpine collections. The 20,000 sheets make an extremely valuable addition to the collections. Mr. N. Douglas Simpson has presented about 500 flowering plants from the Anglo-Egyptian Sudan. These form a most useful gift as they supplement the collection made by J. E. Dandy, assistant keeper in the Department, on his recent expedition. A collection of 750 flowering plants by H. H. Slater from Iceland, Nova Zembla, Kolquiev, has been purchased; it fills some gaps in the Department's extensive series of northern plants. Seven note-books which formerly belonged to Edward Forster (1765-1849) have been purchased from the Saffron Walden Museum. They contain a good deal of information about the plants he collected, and can now be again associated with his herbarium which has been in the Department of Botany since 1849. Robert Brown purchased it at the sale of Forster's books and herbarium, and it formed the nucleus of the British Herbarium.

#### Cambridge University Botanic Garden

CONSIDERABLE publicity has been given in the Press to the will of the late Mr. R. R. Cory, who was, in his lifetime, a generous benefactor of the Botanic Garden in Cambridge. He bequeathed the residue of his estate to the University for the benefit of the Garden, with the provision that the income from £30,000 of the residue should be used for certain specific purposes. This has led to the impression that the Garden would now be provided with an adequate income. Prof. A. C. Seward, professor of botany in the University of Cambridge, informs us, however, that "because of annuities created by Mr. Cory's will, the University should not expect any income for the Garden from his estate for many years to come. This means that the help hitherto given by the 'Friends of the Botanic Garden', by the promoters of the Somerset Employment Fund and by others interested in the Garden will be as urgently needed and as gratefully received as in the past."

#### Fireball of January 3, 1935

MR. A. KING, 53 Victoria Road, Ashby, Scunthorpe, Lincs, sends us the following particulars of this object: At 9h. 24 $\frac{1}{2}$ m. in the evening of January 3 a fireball, which was nearly as bright as the full moon, shot across south-west England. There were about sixty observations, ranging in place from Peterborough to 10 miles south of Falmouth. From the best of these the following path was deduced:

Began, 55 miles high over English Channel, 23 miles south of Christchurch; mean deviation, 3.0 miles. Ended, 20 miles high over 4m. south-east of Wotton-under-Edge, Glos.; mean deviation, 1.8 miles. Length of visible track, 92 miles; speed, 13 miles per sec. Radiant, 76°-15°, altitude, 22.6°. The fireball exhibited remarkable colour changes during its flight, and drew out a red tail. A double detonation was heard at Dursley; at Crewkerne the object was seen to split into two halves towards the end of the path, which would seem to account, on the assumption that each piece set up its own shock-wave, for the Dursley observation. The velocity, allowing for air-resistance, was of the parabolic order. Assuming parabolic speed, the application of the correction for zenith attraction brought the radiant-position to 77°-20° and yielded the orbit:  $\iota$ , 20.5°;  $\pi$ , 139.2°;  $\Omega$ , 102.6°;  $q$ , 0.8865. The theoretical parabolic speed was 14 $\frac{1}{2}$  miles per second.

#### Bibliography in Entomology

THE annual meeting of the Royal Entomological Society of London was held on January 16. In his presidential address, Dr. S. A. Neave took as his subject the development of bibliographical work relating to entomology. After dealing briefly with the growth of bibliographical compilations on the subject, Dr. Neave described the organisation responsible for the production of the monthly issues of the *Review of Applied Entomology*. His own very close connexion with the founding and growth of this periodical enabled him to give to his audience an intimate explanation of the manner in which the literature is surveyed and abstracted: the details of editorial duties and the work of preparing the elaborate indexes which are so prominent a feature in each completed volume. This well-known publication enjoys a world-wide circulation, and aims at keeping workers posted, by means of summaries, in the vast literature pertaining to the agricultural, medical and veterinary aspects of entomology.

#### Vocational Guidance in the United States

THE vocational guidance scheme which has been in operation in Great Britain for twenty-one years was recently reviewed at the request of the Minister of Labour by a committee of the juvenile employment councils. On the other side of the Atlantic also the 'coming of age' of vocational guidance as a function of the State has been recognised, and the very wide implications of the 'new deal' in this regard are discussed by the associate professor of education and sociology in the University of Pittsburgh in an article in *School Life* of September. It is pointed out that, in the past, vocational guidance has to a large extent been stultified by the gross inequalities in occupational rewards—inequalities which it is one of the purposes of the 'new deal' to reduce. Further, it has been a matter of national pride that everyone has the right to aspire as high as he will, regardless not only of social position and antecedents but also of apparent qualifications of intellect and character, and however obvious it may be to a vocational adviser