

mistakes. It must be realised that except for two or three species the commercial planting of exotic conifers in Great Britain is still in the experimental stage. It is essential to conduct such experiments with proper scientific control. Forest botany and forest pedology have been seriously and wastefully neglected in the past by those responsible for planting schemes in this country.

I should like to direct attention to a particular opportunity now available. I understand that the future of the Cambridge Forestry School is at the moment under consideration. That school, with proper support, would be able to initiate and carry through precisely the type of work required on the new plantations of the Forestry Commission in Breckland, and there is no other institution so conveniently situated for the purpose. The Cambridge School can never hope to compete with the Oxford School, associated as it is with the Imperial Forestry Institute, in general Imperial forestry work. But Cambridge is in almost an ideal position for undertaking fundamental intensive research on the Breckland forestry problems, and by doing so it will render a service of the first importance alike to science and to practical forestry. It behoves all the authorities concerned to give every possible support to the well-judged scheme of research which has been put forward by Dr. A. S. Watt, the University lecturer in forest botany at Cambridge.

A. G. TANSLEY.

Grantchester, Cambridge,  
April 4.

#### Segregation of Floral Characters in the Wild Oxlip.

IN quite a number of wild oxlip plants, presumably hybrids between the primrose (*Primula vulgaris*) and the cowslip (*Primula veris*), growing in situations where both the latter species abound, I find that the earliest formed flowers are borne on long peduncles of the primrose type, and are succeeded later, on the same plant, by flowers arranged on the unbelliferous type as in the cowslip. Now, the question arises whether this dimorphic arrangement also occurs in *Primula elatior* (Jacq.), the oxlip of East Anglia, which is regarded by some botanists as a distinct mutational variety or species. If this segregation of floral characters is not found in *Primula elatior*, then this fact would favour the supposition that this species is a real mutational form and not a hybrid.

The experience of field botanists working in East Anglia at this season of the year would be helpful in deciding this point. So far, after the examination of some hundreds of plants, I have failed to find this dimorphic floral arrangement in any true primrose or cowslip plant. The question is also important because it bears on the nature of segregation and the essential similarity of this process as it occurs in gametic and somatic cells.

C. J. BOND.

10 Springfield Road, Leicester,  
April 19.

#### The Stimulation of Spermatozoa by Drugs.

I HAVE for some years been investigating the action of drugs on mammalian spermatozoa, under the auspices of the Birth Control Investigation Committee. Finding that certain drugs seemed to stimulate sperms to higher activity, I have recently made a special study of this problem. I have used guinea-pig sperms taken from the epididymis and suspended in a glucose-saline fluid buffered at about pH 8. Sperms are so active when first suspended in this fluid that the

effect of stimulating drugs is not obvious. In these experiments the sperm suspensions were allowed to remain for 5-8 hours at the temperature of the body before the addition of the drug. After 5-8 hours, the activity of the sperms was markedly reduced. The drugs were tested at concentrations in the series 1,  $\frac{1}{4}$ ,  $\frac{1}{16}$ ,  $\frac{1}{64}$  per cent, etc.

Strychnine hydrochloride was found to have a marked stimulating effect at  $\frac{1}{16}$ ,  $\frac{1}{32}$ , and  $\frac{1}{64}$  per cent, especially at  $\frac{1}{32}$  per cent. For practical purposes such a poisonous substance as strychnine is to be avoided, even in minute quantities. Brucine hydrochloride was therefore tried, since its pharmacological properties are similar, while it is only about one-eighth as poisonous. It was found to stimulate sperms markedly at  $\frac{1}{4}$ ,  $\frac{1}{16}$ , and  $\frac{1}{64}$  per cent, especially at  $\frac{1}{16}$  per cent. At this concentration brucine hydrochloride has approximately the same stimulating effect on sperms as  $\frac{1}{32}$  per cent strychnine hydrochloride, yet it is only about half as poisonous. Brucine therefore seems preferable for practical use. Chloral hydrate was also found to stimulate sperms at  $\frac{1}{16}$  per cent, but far less than brucine and strychnine.

It is hoped that this discovery may find practical application in medicine and agriculture, whenever sterility is due to inactivity of sperms. Perhaps its most obvious application is in cases where sperms have been sent long distances for artificial insemination, and are found to be less than normally active on arrival at their destination. Further experiments along these lines are about to be undertaken.

JOHN R. BAKER.

Department of Zoology and  
Comparative Anatomy,  
University Museum, Oxford,  
April 20.

#### Geodesy in India.

ON page 170 of NATURE of Jan. 31, 1931, appears an article entitled "Geodesy in India", by G. T. McC., being in the nature of a review of Geodetic Report, vol. 5, of the Survey of India. May I correct a small misapprehension into which the reviewer has fallen?

In the sixth paragraph, reference is made to a decision "to re-map at least a portion of the Dependency". This is not the intention. The areas with which the Survey of India is concerned have been divided into a limited number of overlapping zones of 8° of latitude, to meet the military requirements. In certain areas the latitude and longitude of fixed points have been converted into the corresponding 'grid' co-ordinates and in some cases the grid lines have been or will be surprinted on the maps. But there is no general question of re-mapping at all.

The width of 8° of latitude results in a variation in scale of about 1/400 or 1/800 from the average scale; and for the object in view this has been accepted as negligible. However, in this orthomorphic projection it is a simple matter to apply a scale further varying with the latitude; and were this done, a much wider zone than 8° zone would give rise to little trouble or embarrassment. The gain in increasing the zone width is of course reduction both in number of changes from one grid to the next and the consequential need for duplication in areas of overlap.

J. DE GRAAFF HUNTER.

Survey of India,  
Geodetic Branch Office,  
Dehra Dun,  
Mar. 12.