

Turbulence above the Ozone Layer

IN a paper dealing with turbulence above the ozone layer (*J. Brit. Interplanetary Soc.*, 15, 1; Jan.-Feb. 1956), Alan E. Slater gives a very comprehensive account of the subject, leading to the conclusion that the region of the atmosphere from 50 to 80 km. may not be turbulent, as is usually accepted. Discussing temperature distribution with height, patterns of convection and speed of vertical currents, he shows that there is no consistent evidence for instability in the upper regions of the atmosphere from 50 to 80 km. In addition, even if turbulence exists there, it is doubtful whether the vertical currents would be strong enough to affect significantly the passage of a winged vehicle through them. The discussion of the probable pattern of convection currents leads to the conclusion that uniform heating should give a regular pattern with the spacing between up-currents equal to two and a half times the thickness of the convection layer. Changes of wind with height in the region between 50 and 80 km. would cause the cells to be distorted and drawn out lengthwise in the direction of the wind shear, and it would be possible for a vessel flying parallel to the shear to remain in an up-current or a down-current for a long time. A discussion of the speed of the vertical currents leads to the conclusion that a winged vessel travelling at 6 km./sec. would not be affected to any noticeable extent unless the currents had a speed of several hundred metres a second. A rough calculation shows that for an up-current to reach a speed of 100 m./sec. after rising through 30 km., it would be necessary for it to be and to remain about 10 deg. C. hotter than its surroundings. It is considered unlikely that such a large temperature excess exists, and the conclusion is that there is some doubt whether the vertical currents are able to affect significantly the passage of a winged vehicle through them.

Diagnosis of Amoebiasis

AN illustrated article on the diagnosis of amoebiasis, by Sir Philip Manson-Bahr (*Central African J. Medicine*, 1, No. 6; November 1955), is one of great interest to all those who have to undertake the difficult task of laboratory diagnosis of this form of human dysentery. It explains, in simple language, all the pitfalls and difficulties that await the microscopist whose duty it is to decide whether or not *Entamoeba histolytica* or its cysts are present in the material he has to examine—material which may come from the intestine, the liver, the brain or from other organs. A useful plate gives line-drawings of most of the objects that may resemble the cysts of *E. histolytica*, and other drawings show the harmless amoebae which may be present on human faeces. This is, in fact, just the kind of article that the diagnostician needs, and it gives him much detailed information that text-books omit.

Sitka Spruce and Douglas Fir in America and Great Britain

A CONSIDERABLE proportion of the plantations undertaken in Britain by the Forestry Commission during its early years was made with Sitka spruce and Douglas fir, chiefly the former. These conifer species come from the Pacific coast of North America. In order to make a comparison of the growth of these species in their natural habitat with that in Britain, Mr. R. F. Wood, an officer of the Forestry Commission, with the help of a Nuffield travelling scholarship, paid a visit to the forests of British Columbia and the neighbouring territories to carry

out field studies, and has recorded his investigations in Forestry Commission Bulletin No. 25, "Studies of North-West American Forests in relation to Sylviculture in Great Britain" (pp. 43+35 photographs. London: H.M.S.O., 1955; 6s. net). A study was made of climatic zones comparatively similar to those in Great Britain from the point of view of seed collection for use in Britain. This referred more especially to the Douglas fir, which even in coastal forests occupies areas that are far more continental than those in Britain. But the results of the study showed that we still lack first-hand evidence of the advantages to be gained from close matching, and perhaps there are hints that flexibility in Douglas-fir is most likely to be found in regions one step removed from the most oceanic conditions. This does not apply to the Sitka spruce, which is largely confined to regions of some oceanicity and therefore more comparable to Great Britain.

Identification of an Endotrophic Mycorrhiza

AN account has been given by B. Mosse (*Ann. Bot.*, N.S., 20, 78, 349; 1956) of the identification of a hitherto undescribed species of *Endogone* which she found in organic connexion with mycorrhizal strawberry roots grown in pots in a greenhouse. By inoculating sterilized soil with these fructifications and with spores excised from them, it was possible to produce typical vesicular-arbuscular infections in strawberry, apple and a number of other plants. These inoculation experiments constitute the first record of the establishment of endotrophic mycorrhizal infection in plants raised under aseptic conditions.

Oversea Service Division, Colonial Office

THE following appointments have recently been made in the Oversea Service Division: J. Bowden (senior specialist, Department of Agriculture, Gold Coast), principal specialist, Department of Agriculture, Gold Coast; H. A. Darby and R. E. Osborne (senior agricultural officers, Jamaica), chief agricultural officers, Jamaica; D. F. Edwards and D. R. Goodrich (agricultural officers, Gold Coast), senior agricultural officers, Gold Coast; E. J. Gregory (deputy director of agriculture, Jamaica), assistant director of agriculture, Northern Region, Nigeria; F. E. Luscombe (agricultural officer, Tanganyika), chief agricultural officer, Nyasaland; E. R. H. Martin, A. G. Naylor, R. K. Richardson and L. K. A. Swaby (agricultural officers, Jamaica), senior agricultural officers, Jamaica; W. B. Collins (senior assistant conservator of forests, Gold Coast), conservator of forests, Gold Coast; M. Dinning and D. M. Duggie (assistant conservators of forests, Gold Coast), senior assistant conservators of forests, Gold Coast; G. J. Leggat (assistant conservator of forests, Uganda), conservator of forests, Uganda; E. W. March (conservator of forests, Eastern Region, Nigeria), chief conservator of forests, Eastern Region, Nigeria; G. Webster (assistant conservator of forests, Uganda), conservator of forests, Uganda; N. J. Guest (geologist, Geological Survey Department, Tanganyika), senior geologist, Geological Survey Department, Fiji; B. O. L. Duke (medical research officer, grade III, British Cameroons), medical research officer, grade I, West African Council for Medical Research, Western Region, Nigeria; A. M. Orhan (veterinary officer, class II, Cyprus), veterinary officer, class I, Cyprus; H. Batten (senior pharmacist, Western Region, Nigeria), chief pharmacist, Western Region, Nigeria; D. R. Glendinning,