

SOCIETIES AND ACADEMIES.

LONDON.

Royal Microscopical Society, April 16.—Mr. J. E. Barnard, president, in the chair.—**J. Strachan**: The chemistry of dendritic growths in paper. The formation of these interesting and curious growths was formerly attributed to the oxidation of a particle of bronze or brass included in the sheet of paper during manufacture. Later investigations have proved, however, that the chemical reactions producing these growths are more complex. The particle of bronze is attacked by chemical residues in the paper, chief among which is sulphate of aluminium, with the formation of soluble sulphate of copper. The latter creeps along the fibres in solution. The sulphate of copper is then reduced to insoluble black sulphide of copper, which constitutes the majority of recent dendrites in paper. This sulphide is further oxidised again to sulphate, and so by alternate oxidation and reduction insoluble copper compounds may be deposited along the fibres. The final action in old dendrites is oxidation, resulting in the formation of basic copper sulphate. The chemistry of these growths is important in that they indicate, by secondary reactions, the nature of chemical actions taking place in the deterioration of paper during ageing, in which the cellulose is attacked by chemical residues from various sources. A new micro-chemical test for the detection of copper sulphide consists in the application to the dendrite of a solution containing the double cyanide of potassium and cadmium. The black copper sulphide dissolves, but is exactly replaced by a brilliant yellow pseudomorph of cadmium sulphide, forming a yellow dendrite. The principle of this mode of testing by replacement appears to be capable of further applications in micro-chemical manipulation.—**Dr. E. Penard**: *Folliculina boltoni*, S. Kent. In spite of recent statements to the contrary, the genus *Folliculina* is undoubtedly represented in fresh-water, and the vermiform bodies (described as *Lagynus ocellatus* by Daday) represent, as already suspected by several authors, though contradicted by others, a free-swimming form produced by a metamorphosis of the whole individual.

Zoological Society, April 29.—Prof. E. W. MacBride, vice-president, in the chair.—**Dr. W. T. Calman**: Marine boring animals. Attention was directed to the economic importance of the scientific investigation of these forms of marine animals in relation to the serious damage caused by them to the timbers of wooden ships and to piers, and to the masonry of breakwaters and similar constructions.—**G. Jennison**: A chimpanzee in the open air in England. Attention was directed to the fact that the animal had lived in a healthy and vigorous condition for a period of some eight years in the private grounds of its owner, Dr. John K. Butter, of Cannock, Staffordshire.

Linnean Society, May 1.—Sir David Prain, president, in the chair.—**J. Smith**: Forms assumed by the pappus in Compositæ. As all the facts adduced in support of the phyllome theory can be explained by assuming that the pappus in certain cases is partly a development of the hairs which were inserted on the now aborted but once free calyx-segments, the evidence in favour of the trichome or emergence nature of the organ admits of no other conclusion than that which takes the pappus to be hairs, free or fixed, derived in their evolution from the hairs of the achene, or sometimes also from the hairs of the now aborted calyx-limb.—**J. M. F. Drummond**: The flora of a small area in Palestine. The author gave the route covered by the 52nd Division (of which he was a member) between El Arish and the neighbourhood of Jaffa. Collections were made at various points along this

route, and the area of Arsuf, fifteen miles north of Jaffa, was specially described, with the topography and climate. The edaphic plant-formations were dealt with, especially two—the “Calcareous Knoll” flora and the “Cistus Moor”; the former is of the nature of garigue, and contains many geophytes and annuals, with many minor xerophilous characters, but few extreme types, with only one switch-plant and no succulents. Cistus Moor has a closed carpet of vegetation, few geophytes or annuals. Cistinea and a tussock-grass predominate; possibly akin to the Cistus-maqui of Spain. Garigue and Steppe prevail in western Palestine; Maqui was not seen at all by the author. Possibly this state of affairs is partly due to man's interference.

DUBLIN.

Royal Irish Academy, April 28.—Dr. R. F. Scharff, vice-president, in the chair.—**N. Colgan**: The occurrence of tropical drift seeds on the Irish Atlantic coasts. Seeds or fruits of no fewer than eight tropical species have been found, cast up from time to time, on the Irish coasts. All the species are native or naturalised in the West Indies, and all have highly buoyant seeds, capable, as Dr. Guppy has shown, of floating for twelve months and upwards. The Irish stations for these drift seeds range from Donegal to Kerry, and the records of their occurrence are spread over a couple of centuries. It has been suggested that the passage of these ocean waifs is effected by human agency. The author decides in favour of the idea that the tropical drift seeds cast up on the Irish Atlantic beaches are wafted thither from their West Indian home by natural agencies. An account of the seeds and of the plants which produce them is given.—**D. P. Montagu**: A study in regeneration in wheat (*Triticum vulgare*). A number of simultaneous sowings of wheat were made, and shoots were amputated at various stages in their development. The various theories of regeneration were reviewed in the light of the facts disclosed in *Triticum*, and two hypotheses were put forward, viz. (1) the regeneration observed may be traced to the disturbance in the normal absorption-transpiration-equilibrium, following the removal of the shoots by amputation, and (2) the regeneration observed may be regarded as due to the disturbance, consequent on the injury involved in the amputation, of the normal enzyme-balance. Such a disturbance leads to hydrolysis of glucoside within the plant, the cyclic element functioning as the direct causal activator of the regenerating growths, while the carbohydrate split-product is utilised to build up the regenerating tissue.

BOOKS RECEIVED.

Outlines of Theoretical Chemistry. By Dr. F. H. Getman. Second edition. Pp. xiii+539. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall; Ltd.) 16s. 6d. net.

Applied Optics. The Computation of Optical Systems, being the “Handbuch der Angewandten Optik” of Dr. A. Steinheil and Dr. E. Voit, translated and edited by J. W. French. Vol. ii. Pp. vi+207+plates v. (London: Blackie and Son, Ltd.) 12s. 6d. net.

Reports of the Progress of Applied Chemistry. Issued by the Society of Chemical Industry. Vol. iii. Pp. 495. (London: Society of Chemical Industry.) 10s. 6d.

How and What to Read. Suggestions towards a Home Library. By R. B. Buckley. Pp. 176. (London: Williams and Norgate.) 2s. 6d. net.

Meteorologia Aeronautica. By Prof. G. Crestani. Pp. xv+315. (Milano: U. Hoepli.) 8.50 lire.