

advance of the Turks—it was not re-founded until the present century. The town lies all on the slopes of a pleasant range of hills, and still has two mosques and a minaret among its architectural remains. The University consists primarily of the Faculties of Medicine and Law. Scientifically, it occupies a special position, as nearly all its professors are Academicians, and the National Academy of Sciences takes a particular interest in its progress. In the Department of Physiology, headed by Prof. E. Ernst, visitors were able to see ingenious apparatus for measurement of rapid volume changes using a piezo-electric quartz membrane, and micro-calorimeters for recording heat-production of muscles without contact between the tissue and the thermo-couples. One of the chairs of pathology is held by Prof. C. Donhoff (a pupil of the late J. J. R. McLeod at Aberdeen); under his leadership interesting work in nutritional science is proceeding, especially on the effects of many different factors on the selection and intake of food by the rat. In the Department of Neuro-physiology (Prof. K. Lissák) much work on conditioned reflexes is under way; this was naturally of great interest to the Russian and Polish specialists. The Institute of Anatomy and Embryology, under Prof. J. Szent-Agothay, was also full of activity, mainly on three lines: neuro-hormonal correlations studied by lesions of the central nervous system; a new approach to 'neuro-taxis' in the study of the means whereby outgrowing axons find their way to their presumptive connexions in ganglia or central nervous system; and developmental neuro-anatomy. Here Dr. G. Székely has obtained results of much interest by homoplastic heterotopic eye transplantations in the newt, giving reversed reflex reactions to prey after innervation. Learning to overcome this is possible with half an eye but never with a whole one. Lastly, in the Department of Histopathology (Prof. G. Romhányi) work is well advanced on the study of artificial birefringent fibrils of polymerized deoxy-ribonucleic acid.

Throughout the conference, Magyar hospitality was at its most charming, and the visitors carried away a deep impression of the vitality of Hungarian physiology and biochemistry.

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CROSSED LAMELLAR STRUCTURE IN HIGHER PLANTS

A. B. WARDROP has directed attention to the existence of crossed lamellar structures in the cell walls of higher plants, such structures having hitherto been known with certainty to occur in some green algae (*Australian J. Bot.*, 2, 2, 154; 1954). When a number of higher plants in which it was considered that this structure might be present were examined, it was demonstrated in the phloem fibres of *Vinca major* and the tracheidal elements of the aerial root of *Alstonia spathulata*. In the latter, two types of crossed structure are recognized: in one, bands of laterally associated micro-fibrils c. 0.5 μ wide intersect at variable angles, whereas, in the other, lateral association is complete, forming a crossed lamellar structure which approaches most nearly that occurring in the algae. In the outer layer of the secondary wall of wood fibres of *Eucalyptus*

elaeophora and *E. regnans* there is inconclusive evidence of a crossed structure similar to that observed in the cell walls of some vessels, which consists of a loosely formed meshwork of aggregates of microfibrils. This structure is considered to be distinct from the crossed lamellar and cross-banded structures. The paper is illustrated by a number of electron micrographs.

The same author has also reported on the mechanism of the surface growth involved in the differentiation of fibres and tracheids (*ibid.*, p. 165). An electron microscopic investigation was made of the differentiating xylem elements of *Pinus radiata*, *Eucalyptus elaeophora* and *Ulmus* sp. In the tips of fibres and tracheids there is a tendency for the microfibrils of cellulose to be oriented in the direction of growth. It is considered that this orientation can be disturbed by subsequent dimensional changes in the cell. The thin areas of the differentiating cells which are involved in the so-called 'mosaic growth' have been compared with the regions of the cell wall penetrated by plasmodesmata in the storage parenchyma of potato tubers. The suggestion is made that the thin areas are regions of the cell wall penetrated by plasmodesmata, or are developing primary pit fields. The implications of this concept, with respect to intercellular readjustment and to the differences between fibres and tracheids in extension growth, are discussed.

FORESTRY IN JAMAICA

ANNUAL REPORT FOR 1952-53

IN the annual report of the Forest Department of Jamaica for the year ending March 1953*, allusion is made to the devastation caused by the great hurricane of 1951 and the rehabilitation work, forestry and planting carried out in 1952. Jamaica's forest policy is outlined in the report as follows: protection and development of the Island's natural forest resources, that is, existing forest reserves and future extension thereof; afforestation of suitable accessible areas with the view of increasing timber production and eventually making the Island self-supporting; encouragement of afforestation and sound forest management on private lands; and research work on silvicultural and utilization problems.

It is obvious that considerable progress has been made by the Department, as a working plan for the production reserves has been drawn up and is being worked. It provides for three working circles—plantation, improvement and natural forest. The provisions are very similar to the earlier type of working plans drawn up in India and Burma during the latter part of the nineteenth century. However, there is a serious trouble, one which was also experienced in parts of India during the early days of the Department there. The general position regarding forest reserve boundaries, says the Conservator of Forests, continues to deteriorate and is directly attributable to land hunger of an ever-increasing population. Villagers deliberately remove the boundary stones and, when prosecuted, challenge the accuracy of the original survey, thus requiring a new survey to be made. The policy of the Department is

* Forest Department, Kingston, Jamaica, B.W.I. Annual Report for the Year ended 31st March, 1953. Pp. 12. (Kingston, Jamaica: Forest Department, 1953.)