

Other articles include one by Dr. Shields Warren on the contribution of atomic energy to health.

"The Changing Flora of Britain"

UNDER the above title, and under the general editorship of J. E. Lousley, the papers read at the third conference arranged by the Botanical Society of the British Isles in 1952 have now been made available in book form (obtainable from the Society, c/o Department of Botany, The University, Oxford; price 15s.). This unusually full and interesting conference has already been noticed at some length in *Nature* (169, 1076; 1952). Readers of the book will find that it contains much original information and thought on floristic topics by distinguished exponents. The several essays, some twenty-four in all, deal with the central theme in its many aspects, the evidence being drawn from ecology, palaeobotany, phytogeography and relating to such topics as the introduction and spread of aliens, special studies of trees and shrubs, etc. The wide casting of the net is perhaps indicated by the inclusion of such papers as those on "A Zoologist's Approach to a Changing Flora", "The North American and Lusitanian Elements in the Flora of the British Isles", and "The Conservation of British Vegetation and Species". This conference, together with the valuable text that has emerged from it, should do much to stimulate new interest in British field botany.

Wall Structure in *Valonia*

IN an investigation of the cell-walls of species of *Valonia* and *Dictyosphaeria*, using the electron microscope, a general similarity of structure and development has been demonstrated (F. C. Steward and K. Mühlethaler, *Ann. Bot.*, N.S., 17, 66, 296; 1953). The first cellulose laid down at a new surface, as on aplanospores, consists of a tangle of randomly arranged fibrils, these being embedded in a pectin-like amorphous material. As this first cellulose layer is either unable to grow enough by plastic flow or to stretch elastically, it is eventually torn and a new layer is formed within. At first the strands of the new layers are not exactly parallel, but they eventually acquire a high degree of regularity. In successive lamellæ the fibril direction shifts abruptly, apparently through an angle of 120°, that is, the direction is repeated every fourth layer. The bearing of these observations on the interpretation of the growth of the cell wall is considered.

International Institute of Refrigeration

COMMISSIONS I and II of the International Institute of Refrigeration held a joint meeting at Zurich during September 10-12. The main topics of discussion were: (1) liquefaction, distillation, rectification and adsorption; (2) properties of materials used at low temperatures. Prof. P. Grassmann was in charge of the local arrangements, which included visits to the laboratories of the University and to heat pump installations. A survey of the field of work of Commission I was given by Prof. F. E. Simon (Oxford) and that of Commission II by Dr. Ezer Griffiths (National Physical Laboratory, Teddington). The contributions on gas liquefaction, etc., included papers on liquid vapour equilibrium of the system argon-oxygen and the manufacture and use of tonnage oxygen. On the engineering side, apparatus for the liquefaction of air, hydrogen and helium was discussed. A group of papers was submitted on properties of materials: one dealing with the effect

of low temperatures on the engineering properties of metals, another on the metallurgy of iron and steel at -196° C., and a paper on the strength of aluminium crystals at low temperatures. Another group covered thermal conductivities of metals, moist cork, and porous materials under reduced pressures. Altogether nineteen papers were read and discussed. A bulletin containing the papers and discussions will be published by the Institut International du Froid, 177 Boulevard Malesherbes, Paris 17^e.

Zoological Society of London: Special Courses

THE Zoological Society of London, at the request of the Colonial Office, arranged a study-leave course during the month of September for selected members of the Colonial Service in Africa; those attending came from game, veterinary and forestry departments. The course was designed to help the members of those services who wish to do some serious work on the African fauna, particularly the mammals, but need some assistance and guidance in setting their steps in the right direction. The course consisted of lectures, demonstrations and practical work; it included instruction on elementary anatomy and physiology, reproductive cycles, parasites, classification, ecology and the techniques of field-work. Prof. E. C. Amoroso (Royal Veterinary College) and Mr. R. W. Hayman (British Museum (Natural History)) collaborated with the Society's staff: it is hoped that similar courses will be arranged in future years.

A course for school teachers has been provided, in conjunction with the L.C.C. Education Department, on "Animals at the Zoological Gardens". Lectures are given on Saturday mornings during October and November; after each lecture the class divides into small parties that are conducted by the lecturers around special sections of the menagerie for demonstration and further informal instruction. The course is designed as an aid to teachers who bring parties of children on educational visits to the Zoological Gardens, so that they may organize their work to the greatest possible advantage. Prof. H. R. Hewer, assisted by Dr. K. A. Kermack and Dr. D. M. Ross, is conducting the course. The Society is arranging its usual lectures for children of Fellows during the Christmas holidays.

Fifth Canadian High Polymer Forum, London, Ontario

THE fifth Canadian High Polymer Forum will be held in the auditorium of the London Public Library and Museum, Queen's Avenue, London, Ontario, during November 19-20. Seventeen papers have been arranged, and further contributions can still be accepted for the final programme by submitting a title and an abstract of two hundred words to the programme chairman, Prof. R. V. V. Nicholls, McGill University, Montreal, Quebec. Besides visits to the University of Western Ontario and to local industries, there will be a special dinner at which Dr. D. P. Riley, of the Royal Institution, London, England, will give an address. Hotel reservations and further information can be obtained from the secretary-treasurer of the Forum, Dr. H. Leverne Williams, Polymer Corporation, Ltd., Sarnia, Ontario.

Nature Conservancy: Awards

THE Nature Conservancy has made the following awards of research studentships for postgraduate training in ecology, tenable for periods of up to three years at the universities shown: *Botany*, Miss J. C.