

BOTANY

Endemism in Manchester

from a Correspondent

A CONFERENCE on the taxonomy and phytogeography of higher plants in relation to evolution, held at the University of Manchester from September 9 to 11, was organized for the Botanical Society of the British Isles, the Linnean Society and the International Organization of Plant Biosystematists by Professor D. H. Valentine (University of Manchester), who gave a short opening address.

Endemism was perhaps the most dominant theme which emerged, and several speakers related this phenomenon to past geological and climatic history. In the Aegean area, endemism is clearly a consequence of fragmentation of the land mass, and this was described in some detail by Dr W. Greuter (Jardin Botanique, Geneva) for Crete and Dr A. Strid (Lund University) for the Cyclades. In older islands such as the Canaries (Dr D. Bramwell, University of Reading) the proportion of endemics is higher and good examples are found at all taxonomic levels. Professor C. Favarger (University of Neuchâtel) provided an analysis which showed higher proportions of endemic species in the southern European mountain ranges than in the central mass of the Alps, as a result of the greater isolation in the former. Dr S. M. Walters (University of Cambridge) outlined the special case of the almost totally apomictic *Alchemilla*, many of whose agamospecies are narrow endemics yet show some ecotypic differentiation. Professor H. Lewis (University of California, Los Angeles) distinguished between recent endemics of California which have arisen as a result of hybridization and those which have resulted from other sorts of isolating barriers. In the West Indies (Dr B. Morley, National Botanic Gardens, Dublin) the pattern of endemism in *Columnea* varies between the Greater and Lesser Antilles because of differences in geological history and the distribution of bird pollinators between the two areas.

As might be expected, differences of opinion were expressed concerning the mechanisms which have given rise to disjunct distributions, although the diversity of ideas is no doubt to be partly explained by one of the examples chosen. These ranged from bipolar (Dr D. M. Moore, University of Reading) to amphi-Pacific (Professor H. Hara, Tokyo University) distributions. Professor J. K. Morton (University of Waterloo, Ontario) considered that the scattered distribution of montane species in West Africa can be explained by cool periods during which the montane

species extended to lowland areas and migrated freely. Professor O. T. Solbrig (Harvard University) described semi-desert areas of great overall similarity in Mexico and Argentina, and outlined the aims and methods of an international team who are attempting to shed light on such situations by defining as precisely as possible the characteristics and relationships of the taxa and conditions involved. Dr F. Rose (King's College, London) presented evidence to show that the territory immediately north of the Somme Valley of northern France has been a greater barrier to the northern migration of species into Britain than has the English Channel, and that a number of continental species in southern England probably arrived from the former area direct and not by way of the Pas de Calais.

Hybridization is playing a major part in the modern rapid evolution of Hawaiian taxa. Dr G. W. Gillett (University of California, Riverside) pointed out that in many cases hybridization does not seem to be related to recent human activity, because it occurs in wind as well as in insect-pollinated genera (and is hence not related to human effects on pollinators) and the open communities favoured by hybrid progenies and segregates are provided by natural phenomena such as lava flows. Professor H. G. Baker (University of California, Berkeley) expounded his ideas on weed evolution with reference to California and described many different methods by which plants had become successful weeds there. Native species are most likely to become weeds in man-made situations which mimic natural ones, whereas alien weeds more often colonize new sorts of habitats.

The migration of taxa was the theme of several other contributions. Professor G. L. Stebbins (University of California, Davis) discussed the notion that angiosperms had originated in mesic conditions and subsequently migrated to areas showing extremes of temperature and water availability. Such a theory is based on the belief that the major characteristics of taxa and their evolution are similar now to when the angiosperms arose. Professor C. van Steenis (Rijksherbarium, Leiden) described the "hour-glass" type of world distribution in which there are wide temperate ranges linked by a narrow tract through Malaysia. Such situations are often accompanied by vicariousness at the family, genus or species level, for example, *Fagus* and *Nothofagus*. *Nothofagus* is now southern temperate, but probably arose further north and migrated to the south by way of Malaysia. A similar route was postulated for *Epilobium* by Professor P. H. Raven (Missouri Botanic

Garden), because the genus is in many ways more stereotyped in Australasia than in the northern hemisphere even though there are more species compared with the area covered. Professor T. W. Böcher (University of Copenhagen), on the other hand, discussed east-west migrations in the Arctic region.

Inter-continental similarities and differences have often been investigated by anatomical means, and two contributions exemplified different facets of this sort of study. Dr D. F. Cutler (Royal Botanic Gardens, Kew) showed how a superficially similar stem anatomy in the Restionaceae is accomplished by quite different developments, and Dr A. W. Exell (British Museum (Natural History)) and Dr C. A. Stace (University of Manchester) described situations in the Combretaceae where certain apparently non-adaptive features were limited to one continent or another throughout a wide taxonomic spectrum.

MYCOLOGY

International Liaison

from a Correspondent

AT the First International Mycological Congress held at the University of Exeter from September 8 to 14, an International Mycological Association was established for the encouragement of mycology in all its branches, particularly international aspects, by promoting international mycological congresses and by liaison with other relevant international and national bodies. Membership of the association is open both to international and national societies or groups having mycological interests and to individual mycologists in countries lacking a mycological society.

According to the *International Mycological Directory* (published for the congress by the Commonwealth Mycological Institute, Kew, Surrey, and available at £0.50, post free), there are already a dozen series of international meetings devoted to special branches of mycology, and there are at least an equal number of recurring international congresses or meetings which include some mycology. An important task of the new association will therefore be to attempt to rationalize these events.

The first officers of the association are: president, Professor C. J. Alexopoulos (USA); treasurer, Dr J. A. von Arx (Netherlands); secretary, Dr C. Booth (Commonwealth Mycological Institute, Kew, Surrey, England).