Humid Tropics Vegetation

As a contribution toward the UNESCO Humid Tropics Programme, a group of scientists representing a number of fields came together from 14 to 20 September 1960, at Goroka, Territory of New Guinea, for a symposium on "The Impact of Man on the Vegetation of the Humid Tropics." Most of the participants were from southeast Asia and Australia and intermediate areas, but one, E. J. H. Corner, was from England and two, J. M. Blaut and F. R. Fosberg, were from the United States. The UNESCO Southeast Asia Science Cooperation Office and the Administration of the Territory of New Guinea cooperated in the enterprise, and the principal credit for superb local arrangements goes to John Womersley, of the Division of Botany, Lae, New Guinea.

The attention of the symposium was largely directed to the effects of the activities of man prior to the era of the chain saw and bulldozer. Goroka, in the middle of a vast area changed in prehistoric time from rain forest to grassland and cultivation by people who did not even have metal implements, was a truly appropriate place for discussion of such a subject. One had only to look out the window to see illustrations of what was being discussed. Present were literate representatives of peoples who, in 1930, had not yet seen a white man. Many of the participants and observers were members of the Administration of the Trust Territory of New Guinea, who deal daily with the matters under discussion. These factors gave a sense of reality that such conferences seldom have.

After a formal opening by J. T. Gunther, Assistant Administrator of the Territory, and discussion of the physical and human background, the subject was handled under seven broad headings, much more attention being given to the anthropological, social, and economic aspects than is indicated by the symposium title. (i) Consideration of the effect of selection and cultivation of food plants brought out that the exploitation of wild plants leads imperceptibly to cultivation, that wild species are changed by selection resulting in cultigens which may replace their wild ancestors, that the principal effect of food gathering on the forest is to increase the proportion of trees with edible fruits, and that gardening has far greater effect than this on the vegetation. (ii) The use of fire by early man, whether to get rid of debris, to destroy the forest because of its "nuisance value," to aid in hunting, or merely for fun, has been one of the strongest influences on vegetation and has played a large part in converting vast areas in the tropics from rain forest to grass and

agricultural land. (iii) Because grazing of domestic animals is not important in New Guinea, this topic received less attention than had been expected, but it was emphasized that in tropical grasslands intensive grazing is necessary, in the absence of fire, to prevent these man-made grass communities from reverting to woody vegetation. (iv) Shifting agriculture, admittedly of major importance in the alteration of tropical vegetation, came in for perhaps a disproportionate share of attention. It was asserted that an equilibrium between man and his environment is possible under this system of agriculture, but that population pressure leads to unbalance. One of the most interesting items brought out was the fact that in the highlands of New Guinea *Casuarina* has long been planted to increase soil fertility, even though its nitrogen-fixing properties were only recently determined scientifically. (v) It was pointed out that secondary plant communities resulting from man's activity are usually less mesophytic than the primary communities that they replace, that this often assists in the detection of such communities in an otherwise natural landscape, and that the reflection of the environmental pattern by vegetation becomes generally more obscured as a result of man's activities. (vi) A general review of the New Guinea grasslands showed that, of the two principal types, tall grass is a successional stage leading directly back to forest, while short grass results from much more profound alteration of the environment through man's activities. (vii) Public-health aspects of the alteration of the vegetation by man were noted, especially changed distribution patterns of disease vector populations.

As a result of the discussions a number of resolutions were formulated and sent to the UNESCO authorities. In essence, these called for the promotion, by UNESCO of (i) research into all aspects of secondary communities produced by human disturbance of the tropical forest; (ii) ethnobotanical research and cooperation in field work between anthropologists and botanists; (iii) investigations into traditional animal husbandry of preliterate societies, and into the psychosociological consequences of introduced pastoralism in primitive horticultural communities in the humid tropics, especially in Oceania; (iv) investigations into the susceptibility of humid tropical limestone soils and vegetation to damage by fire and other agents; (v) investigations into the ecological implications of root-physiology; and (vi) research into the socioeconomic adaptations to alien influence of recently contacted groups of people.

UNESCO was also asked to stimulate effective programs for conserving natural resources in the humid tropics, especially by creating nature reserves and national parks and by obtaining, through education and mass communications media, support of local populations for these measures. It was recommended that UNESCO convene, in two years' time, a symposium on the results of recent ecological research in the humid tropics.

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Forthcoming Events

April

17–18. Great Lakes Research, 4th conf., Ann Arbor, Mich. (C. F. Powers, Great Lakes Research Division, 1119 Natural Science Bldg., Ann Arbor)

17–19. Fluid Seal Meeting, intern., Ashford, Kent, England. (Information Officer, British Hydromechanics Research Assoc., South Road, Temple Fields, Harlow, Essex)

17–24. International Congress of Nurses, 12th quadrennial cong., Melbourne, Australia. (Miss D. C. Bridges, Secretary, 1 Dean Trench St., London, S.W.1, England)

18–20. Chemical Reactions in the Lower and Upper Atmosphere, intern. symp., San