

the social conditions in his own community as well as the client community are also discussed, as is the conflict which grows out of the divergence of views of administrators and field personnel.

The final two chapters describe the "Pitfalls of Cultural Ignorance" and highlight the need to become aware of the culture of the client.

WALTER S. WILSON

College of Guam

Miller, H. A., H. O. Whittier, and C. E. B. Bonner. *Bryoflora of the Atolls of Micronesia*. Beihefte zur *Nova Hedwigia*. Heft 11. 89 pages; 2 tables; 31 plates. Verlag von J. Cramer, Weinheim, Germany. 1963. \$10.00.

In this well written, beautifully printed, and expensive slim volume may be found a careful, full systematic and phytogeographic treatment of the known mosses and liverworts of the Micronesian atolls. There are keys to genera and species, full descriptions, illustrations (with anatomical detail), and maps of distribution, as well as a few habitat photographs.

The work is based on previous collections, which are cited, and new collections made on the cruise of the vessel "Collegiate Rebel", which visited Micronesia in 1960.

The work is divided into four parts, an Introduction, including a historical sketch and acknowledgements; the systematic treatment of the Musci (by H. O. Whittier); the systematic treatment of the Hepaticae (by H. A. Miller and C. E. B. Bonner); and a Conclusion by the three authors jointly. Some items from the Conclusion may be repeated here. There are ten rather narrow endemic species reported, and seven others endemic to the Micronesian area. Seven species are considered to be Pacific in their distribution. Eleven species are considered to be Western Indomalayan species; five are Eastern Indomalayan; two are Pacific-western Indomalayan; two are Pacific-eastern Indomalayan; and twenty are Pacific-Indomalayan. Eleven new species, three of them mosses, the remainder hepatics, are described. These are *Fissidens micronesicus* Whittier; *Syrrophodon bartramii* Whittier; *Splachnobryum stuartii* Whittier (mosses); and *Drepanolejeunea canceroides*, *Lejeunea trukensis*, *L. aloboidea*, *Cololejeunea micronesica*, *Riccardia atollica*, *R. micronesica*, *R. trukensis*, and *R. sorolensis*, all of Miller & Bonner.

This study adds to known bryoflora of the area 4 genera of mosses (now 16); and 3 genera of hepatics (now 12). Previously, 22 species of mosses were reported; 37 are now known; and now, 25 species of hepatics, instead of 12, are known.

This volume may be warmly recommended for its scholarly accuracy and splendid illustrations. One may hope that a similar treatment of the bryoflora of the high islands—the Marianas, Palau, Yap, Truk, Ponape, and Kusaie—will follow in due course. The sole disadvantage of the volume is its high price,

although to the bryologist it may seem hardly a burden.

BENJAMIN C. STONE
College of Guam

Li, Hui-Lin. *Woody Flora of Taiwan*. Morris Arboretum Monographs. Livingston Publishing Company, Narberth, Pennsylvania. 974 pages; endpaper maps; 371 figures (line drawings). \$18.75.

In this clearly written, well-illustrated treatment of the woody plants of Taiwan (Formosa), Dr. Li has given the field botanist a splendid introduction to the rich flora of this interesting island and a thoughtful summary of his taxonomic opinions. A geographical and phytogeographical introduction begins the work, in which notes on the topography, soils, climate, vegetation types, forest resources, exploration, and floristic composition are discussed. It is of interest to note that the island of Taiwan contains 48 mountain peaks which exceed 10,000 feet in height!

The flora treats members of 105 families (Gymnosperms and Angiosperms only) of which five are monocotyledonous, eight are gymnospermous, and ninety-two are dicotyledonous. Trees, shrubs, and woody vines are included; herbs are excluded. No ferns or other cryptogams are treated. Families follow the Engler system.

Taiwan is important phytogeographically in its position which mediates between the quite different floras of China, Japan, the Philippines, and Micronesia. According to Masamune (1936) there are in Taiwan 15 families, 95 genera, and 537 species of pteridophytes, and 175 families, 1079 genera, and 3304 species of spermatophytes. The specific endemism is about 40%. Generic endemics are much fewer, there being about ten, of which half are orchids. The families with the largest numbers of species are Orchidaceae (364), Gramineae (311), Compositae (200), Leguminosae (163), Cyperaceae (160), Rosaceae (104), Rubiaceae (98), Euphorbiaceae (86), Labiatae (79), and Urticaceae (66). About 33% of the seed plants are woody. Li treats 411 genera, and about 1030 species. Phytogeographically, the flora of Taiwan most resembles that of the Chinese mainland, but the lowlands contain Asian elements. The high peaks are allied with those of the China mainland, particularly western China, and the Himalayas. There are secondarily strong affinities with the floras of Japan and the Ryukyu Islands. Only the southernmost part of Taiwan, but there quite clearly, shows a floristic relationship to the Philippines. This relationship is not as strong as formerly thought, but still noticeable. The three endemic woody genera are *Formosia* Pichon (Apocynaceae), *Micheliopsis* Keng (Magnoliaceae), and *Sinopanax* Li (Araliaceae).

The volume is well made and in general well produced. The following minor errors were noted.

p. 21, line 1 of second paragraph; "endeavor" should read "endeavoring".
line 5 of the same paragraph, "genera" should read "genus".