

The fourth review, written in English by Dorothy Crowfoot Hodgkin, is a truly significant treatise, from a number of standpoints. It gives a concise account of the experimental data and the reasoning by which the investigators arrived at the complicated structure of vitamin B<sub>12</sub>, and it gives, in addition, a good appraisal of the present state of development of the tools available—x-ray analysis in particular—for solving such a formidable problem. Modern isolation techniques are reasonably adequate for study of a fairly complex structure, whether or not the substance of interest will crystallize. However, the organic chemist has always preferred crystalline preparations, and this account shows how important it can be to obtain crystals of a derivative suitable for x-ray study. In the case of vitamin B<sub>12</sub> it was possible to deduce the major features of the whole structure by x-ray studies, after approximately half the structure had been revealed by the methods of organic chemistry.

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**Economics of American Forestry.** Albert C. Worrell. Wiley, New York; Chapman and Hall, London, 1959. x + 441 pp. Illus. \$9.75.

Integrating subject matter from the social sciences with that from the natural sciences is one of the most challenging and vital assignments in university teaching. Worrell's new book will be a valuable aid to those who undertake to combine the principles of economics and the practice of forestry.

Written for undergraduate forestry students, specifically for students who know something about forestry but very little about economics, the book analyzes the operations of people who are engaged in producing or enjoying the products of forests. To do this, the author uses a multitude of practical examples from almost every phase of forestry activity.

Within the framework and terminology of economic theory, the book discusses such topics as why people own forest land, why they manage it as they do, why they operate their sawmills and wood-procurement facilities as they do, why others buy forest products, and how product prices are determined and what makes prices change. It also suggests ways in which economic analysis can be

used to determine more effective methods of using land, manpower, and capital in forestry activities.

The book effectively introduces the reader to the economics of forest production, marketing, valuation, and consumption. It also deals briefly with price theory and land economics. But with such a broad scope, the depth of treatment is necessarily shallow, and this quite clearly separates prospective readers into two groups. The book will be enthusiastically received by the student or practicing forester who is interested in an introduction to the workings of the forest economy. But the student, practicing forester, or researcher who wants a working knowledge of the tools of economic analysis must look beyond this text; this group will have to go directly to economics texts and journal articles.

Perhaps the most important single contribution of this book is the effective way in which it presents forestry in a broad frame of reference—giving forestry students a view of the people they are producing for, as well as information about the trees they are working with. It should also enable students to see more clearly how silviculture, protection, management, utilization and other forestry specialties fit together—how knowledge from each is needed if forest resources are to provide the products that people want most from them.

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### Miscellaneous Publications

(Inquiries concerning these publications should be addressed, not to Science, but to the publisher or agency sponsoring the publication.)

*Activities of the National Institutes of Health in the Field of Gerontology, January 1959.* Center for Aging Research, National Institutes of Health, Bethesda 14, Md. 121 pp.

*Adsorption, Dialysis, and Ion Exchange.* Chem. Eng. Progr. Symp. Ser., No. 24, vol. 55, 1959. American Inst. of Physics, New York, 1959. 219 pp.

*American Academy of Arts and Sciences, Records, 1958-1959.* The Academy, Boston, Mass., 1959. 122 pp.

*The Biographical Approach to John Dalton.* Frank Greenaway. Portico Library, Manchester, England, 1959. 98 pp. £1 1s.

*Chemistry and Biology of the Starch Granule.* vol. 2 of *Protoplasmatologia, Handbuch der Protoplasmaforschung*. N. P. Badenhuizen. Springer, Berlin, 1959. 74 pp. \$5.95.

*Differentiation des cellules sexuelles et fécondation chez les Phanerogames.* vol.

7 of *Protoplasmatologia, Handbuch der Protoplasmaforschung*. Bernard Varzart. Springer, Berlin, 1958. 158 pp. \$10.50.

*Educators Guide to Free Films.* Compiled and edited by Mary Foley Horkheimer and John W. Diffor. Educators Progress Service, Randolph, Wis., ed. 19, 1959. 639 pp. \$6.

*Frost, Drought, and Heat Resistance.* vol. 8 of *Protoplasmatologia, Handbuch der Protoplasmaforschung*. J. Levitt. Springer, Berlin, 1958. 87 pp. \$5.95.

*Die Gefässarchitektur der Niere.* A. Von Kügelgen, B. Kuhlo, W. Kuhlo, Kl.-J. Otto. Thieme, Stuttgart, Germany, 1959. 111 pp. \$8.95.

*Laboratory Manual for General Bacteriology.* Compiled by George L. Peltier, Carl E. Georgi, Lawrence F. Lindgren. Wiley, New York; Chapman & Hall, London, ed. 5, 1959. 295 pp. \$4.50.

*Nuclear Engineering* pt. 5. Chem. Eng. Progr. Symp. Ser. No. 22, vol. 55. American Inst. of Physics, New York, 1959. 199 pp.

*Ontogeny of the Inflorescence and the Flower in Drimys Winteri Var Chilensis.* Publ. in Botany, vol. 30, No. 4, Shirley Cotter Tucker. Univ. of California Press, Berkeley, 1959. 80 pp. \$1.50.

*Publications of Field Museum of Natural History.* Finding index. Zoological Ser., vol. 25, pt. 4. Reuben Myron Strong. Field Museum of Natural History, Chicago, 1959. 185 pp. \$2.75.

*Radioisotopes in the Service of Man.* Fernand Lot. United Nations Educational, Scientific and Cultural Organization, Paris, 1959 (order from Columbia Univ. Press, New York). 84 pp. \$1.

*Les Régulations Physiologiques.* Essai de revision biométrique du problème de l'homéostasie. Eugene Schreider. Office International de Documentation et Librairie, Paris, 1958. 89 pp.

*A Review of the Genus Hoplomys (Thick-Spined Rats), with Description of a New Form from Isla Escudo de Veraguas, Panama.* Misc. Collections, vol. 139, No. 4. Charles O. Handley, Jr. Smithsonian Institution, Washington 25, 1959. 10 pp.

*The Schoolhouse Disasters.* Family and community determinants of the child's response to disaster. NAS-NRC Publ. No. 554. Helen Swick Perry and Stewart E. Perry. National Acad. of Sciences-National Research Council, Washington 25, 1959. 66 pp. \$1.50.

*Science for the Academically Talented Student in Secondary School.* Robert R. Donaldson, chairman, National Education Assoc., Washington, D.C. 63 pp. \$0.60.

*Series of Syllabi in Social Gerontology.* No. 1, "The economics of an aging population," Walter H. Franke and Richard C. Wilcock, 57 pp.; No. 2, "The psychological aspects of aging," Raymond G. Kuhlen and Woodrow W. Morris, 30 pp.; No. 3, "The sociology of aging and the aged," Irving L. Webber and Gordon F. Streib, 35 pp.; No. 4, "Social welfare and the aged," Gordon J. Aldridge and Fedele F. Fauri, 51 pp.; No. 5, "An interdisciplinary course in social gerontology," Bernice L. Neugarten, Robert J. Havinghurst, Claire F. Ryder, 40 pp. Inst. for Social Gerontology, Univ. of Michigan, Ann Arbor, 1959.