

Gordon Riley's "Biological Oceanography" flows along in an admirable way and is a pleasure to read. Dr. Riley's emphasis is on ecological matters, and some might wish that he could bring a little more specific information to bear on the intricate problems of life in the ocean.

Erwin Bünning, who has written extensively in German on morphogenesis and related matters in higher plants, has prepared an English summary of his views for this volume. Bünning is a hard master, and the reader must follow his involved arguments with care if he is to follow them at all. This author does, however, present extraordinarily lucid and specific chemical interpretations of the forces that control and guide the course of morphogenesis. To Bünning, we have in higher plants clear evidence of induction of differentiation by specific substances. An important part of his discussion is that concerned with his principle of mutual incompatibility of regions of vigorous protoplasmic growth—a principle which again finds its basis in Bünning's mind in competition for specific chemical substances. He also takes care to differentiate between regulators, which bring about cellular activity in general, and determiners, which channel differentiation along particular pathways. It is high time that a clear distinction of this kind be made in the discussion of plant morphogenesis.

The review by L. G. Nickell concerns the rapidly developing field of the chemical regulators of plant growth. He considers the auxins and related compounds in weed control and in other agricultural problems and deals briefly with certain auxiliary matters such as the toxicity of these compounds to animals. The whole discussion is on a descriptive basis, however, and does not attempt to synthesize the thoughts of various workers concerning why these compounds act the way they do; nor does he consider the systematization of our knowledge of chemical structure and biological activity in these compounds.

Histochemistry is now undergoing rapid development along two rather distinct lines. Florence Moog adheres to the school of thought which proposes to study the cellular localization of enzymatic reactions in tissue slices as followed under the microscope. Her paper stresses this approach rather than the approach of physical separation of cellular constituents, which has proved so fruitful. To the reviewer it would seem that Moog's discussion merely establishes again that the classical methods of histochemistry are less sure in application to the living cell than are those of differential centrifugation.

Cell structure also plays an important role in L. H. Bretschneider's review, "The Fine Structure of Protoplasm." Bretschneider presents a cogent and closely reasoned argument for the supposition that protoplasm does indeed possess a structure of submicroscopic strands, each with a diameter of roughly 50–200 Å. These fibrillar structures can be seen in electron micrographs of many types of dehydrated cytoplasm. To the reviewer it is still open to question

whether these same units, designated by Bretschneider as "leptons," are in fact to be found in the native hydrated cytoplasm.

The final contribution, by Aubrey W. Naylor, "Physiology of Reproduction in Plants," includes not only a summary of past work in the reproduction of fungi and algae, but also a considerable discussion of reproduction of higher plants.

If one general criticism might be leveled at the present volume, it would be that several of the papers are diffuse, general, and overly talkative. They lack the initial clear delineation of the problem and the concise treatment that have become characteristic of reviews in chemistry and biochemistry. The subjects presented here are important and interesting ones. They deserve treatment in a precise, brief manner, and with clear terminology.

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Scientific Book Register

- Elsevier's Encyclopaedia of Organic Chemistry*. Series III: *Carboisocyclic Condensed Compounds*, Vol. 14, Suppl. 2: *Triterpenes*. F. Radt, Ed.; Dora Stern, Co-editor. Amsterdam-Houston: Elsevier, 1952. 407 pp. + 50 pp. index. \$40.00; set subscription price, \$30.00.
- The Trichoptera (Caddis-Flies) of Australia and New Zealand*. Described and figured by Martin E. Mosely and D. E. Kimmins. London: British Museum (Natural History), 1953. 550 pp. Illus. £4 10s.
- Ciba Foundation Colloquia on Endocrinology*. Vol. I, *Steroid Hormones and Tumour Growth and Steroid Hormones and Enzymes*; Vol. II, *Steroid Metabolism and Estimation*. G. E. W. Wolstenholme, Gen. Ed.; Margaret P. Cameron, Asst. New York: Blakiston; London: J. & A. Churchill, 1952. Vol. I: 315 pp. + plates; Vol. II: 429 pp. Illus.
- The Principles of Line Illustration*. With emphasis on the requirements of biological and other scientific workers. L. N. Staniland. Cambridge, Mass.: Harvard Univ. Press, 1953. 212 pp. Illus. \$5.00.
- Organic Chemistry*. Melvin J. Astle and J. Reid Shelton. New York: Harper, 1953. 771 pp. Illus. \$7.50.
- What Is Science?* Repr. Norman Campbell. New York: Dover, 1952. 186 pp. \$2.50; paperbound, \$1.25.
- The New Force: The Story of Atoms and People*. Ralph E. Lapp. New York: Harper, 1953. 238 pp. \$3.00.
- Statistical Theory in Research*, Part I: *Basic Statistical Theory*; Part II: *Analysis of Experimental Models by Least Squares*. R. L. Anderson and T. A. Bancroft. New York-London: McGraw-Hill, 1952. 399 pp. \$7.00.
- Dating the Past: An Introduction to Geochronology*. 3rd ed. Frederick E. Zeuner. London: Methuen; New York: Longmans, Green, 1952. 495 pp., illus., and 24 plates. \$8.00.
- Lectures on Cauchy's Problem in Linear Partial Differential Equations*. Repr. Jacques Hadamard. New York: Dover, 1952. 316 pp. Illus. \$3.50; paperbound \$1.70.
- Advanced Statistical Methods in Biometric Research*. C. Radhakrishna Rao. New York: Wiley; London: Chapman & Hall, 1952. 390 pp. \$7.50.