which he is unprepared. In former days training in Greek and Latin gave him an acquaintanceship with word-building from prefixes and suffixes, the compounding of roots, which helped greatly in understanding new words.

The medical terms with their descriptions are grouped under subjects beginning with *Anatomy*, just as the student would first encounter them in the preclinical years; then the vocabulary of the clinical subjects follows. It is perfectly obvious that the author has spent long hours in writing this book and that he derived a tremendous amount of pleasure from the task. The reader will have real difficulty in putting the book down once he has opened it to find the origin of a word. It is fascinating reading.

There are occasional errors, such as the designation of Sir James Bruce for Sir David Bruce in the creating of the genus *Brucella*. These can easily be changed in subsequent printings. The book should be in the hands of every student.

MALCOLM H. SOULE

University of Michigan

Supersensitivity of Denervated Structures: A Law of Denervation. Walter B. Cannon and Arturo Rosenblueth. New York: Macmillan, 1949, 245 pp. $5.50.

This book is a suitable companion to *Autonomic Neuroeffectors* published by the same authors in the Macmillan Series of Experimental Biology Monographs in 1937, and is the 21st and last of the joint publications of these two authors. Approximately half of the 22 chapters were completed by Prof. Cannon before his death; the remainder were written jointly or by Dr. Rosenblueth.

The phenomenon of sensitization of effectors as a result of denervation has long been known and has challenged such distinguished physiologists as Sherrington, Elliott, and Langley. Sixteen chapters of this book are devoted to detailed examples of the phenomenon of supersensitivity after denervation. Smooth muscle—for example, nictitating membrane and uterus—gives larger responses and has a lower threshold for sympathin and adrenalin some days after the sympathetic nerve supply has been cut than when normally innervated, and postganglionic denervation is more effective than decentralization. Depriving smooth muscle, like that in blood vessels, of its cholinergic nerve fibers, whether these normally excite or inhibit the muscle, accentuates the response to acetylcholine and related drugs. Similar supersensitivity is observed in melanophores of fish, in submaxillary and lacrimal glands, in vertebrate hearts, and in skeletal muscles after cutting the nerves which innervate them. Sympathetic ganglia show increased sensitivity to acetylcholine and potassium after the preganglionic fibers are cut; also to nerve impulses, as demonstrated by partial denervation. In the central nervous system there are several examples of increased responsiveness after transection of tracts impinging on certain regions; some of these instances can be interpreted as the functional opening of preexisting paths but some represent true supersensitivity of neurons. Spontaneous activity, such as muscular fibrillation and asynchronous impulses from sympathetic ganglia after denervation, is interpreted by the authors as indication of supersensitivity. In general the excitability and responsiveness increase gradually during several days after denervation.

> When in a functional chain of neurons one of the elements is severed, the ensuing total or partial denervation of some of the subsequent elements in the chain causes a supersensitivity of all the distal elements . . . and effectors if present, to the excitatory or inhibitory action of chemical agents and nerve impulses; the supersensitivity is greater for the links which immediately follow the cut neurons and decreases progressively for more distal elements.

In the final chapters several theories of sensitization are explored. These include: disuse or inactivity of the denervated structure, removal of trophic influences, decrease in cholinesterase content, and increased permeability of the cells of the denervated tissue. There is evidence for each of these theories but no one of them can account for all of the known facts of the supersensitivity after denervation. The phenomenon of sensitization has important implications with respect to persistent changes in excitability in the central nervous system—for example in reorganization of behavior after injuries. Clinical applications are mentioned but not considered in detail.

This book is a careful summary of the examples of supersensitivity after denervation, many of these examples coming from work done at the Harvard Medical School. The authors are cautious in their interpretation, and the reader is left with the feeling that here is a phenomenon ripe for investigation in terms of cellular physiology.

C. LADD PROSSER

University of Illinois

Scientific Book Register

The Sea and Its Mysteries: An Introduction to the Science of the Sea. John S. Colman. London: G. Bell and Sons; New York: British Book Centre, 1950. 285 pp. 12s. 6d. net.

Phenomena, Atoms and Molecules: An Attempt to Interpret Phenomena in Terms of Mechanisms or Atomic Molecular Interactions. Irving Langmuir. New York: Philosophical Library, 1950. 436 pp. $10.00.

An Introduction to the Study of Experimental Medicine. Claude Bernard; trans. by Henry Copley Greene. New York: Henry Schuman, 1949. 226 pp. $3.00.

Science and the Goals of Man: A Study in Semantic Orientation. Anatol Rapoport. New York: Harper & Bros., 1950. 262 pp. $3.50.

The Separation of Gases. 2nd ed. M. Ruhemann. New York: Oxford Univ. Press, 1949. 307 pp. $6.00.

Proceedings of the Inter-American Conference on Conservation of Renewable Natural Resources, Denver, Colorado, September 7–20, 1948. Department of State Publ. 3382. Washington, D. C.: U. S. GPO, 1949. 782 pp.

Laboratory Fractional Distillation. Thomas P. Carney, New York: Macmillan, 1949. 259 pp. $5.75.