ciety. By his life and attitudes he gave us all a functioning model of the service that a citizen of a democracy can give to local, state, national, and, indeed, international governmental agencies.

Tufts College, the science of geology, our Nation itself, and the cause of real international understanding have lost a dynamic figure in the death of Alfred Church Lane.

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Book Reviews

Insects of Hawaii. (Vols. I–V.) Elwood C. Zimmerman. Honolulu: Univ. Hawaii Press, 1948. Vol. I: Pp. xx + 206, $3.50; Vol. II: x + 475, $5.50; Vol. III: 275, $4.50; Vol. IV: 300, $4.50; Vol. V: 500, $6.00.

If there is anyone left who does not believe in evolution, I would recommend to him the study of the fauna of the Hawaiian Islands.

On 6 major and a number of minor islands that are nothing but the tops of a chain of volcanoes rising from the undisturbed ocean bottom, a most remarkable fauna has evolved. Perkins, the grand old man of Hawaiian natural history, published a set of volumes on the insect fauna of these islands between 1899 and 1913, but so much additional information has been gathered by subsequent investigators that the publication of a new insect fauna became imperative. Dr. Zimmerman has undertaken this Herculean task. The new *Insects of Hawaii* will comprise some 12–15 volumes, of which the first 5 have just been published. They cover the lower orders including Orthoptera and Hemiptera and contain the descriptions of 1,100 species, with notes on their origin, distribution, hosts, predators, and controls.

The introductory volume discusses the history of the islands which geologists believe to have originated not earlier than in the late Tertiary. This conclusion seems contradicted by the amazingly diversified fauna, with its numerous endemic genera and subfamilies indicating extreme age. Unsuspectedly rapid evolution, as well as colonization by endemics from now-submerged archipelagoes, may be the solution of this puzzling contradiction.

Zimmerman shows that transoceanic dispersal is much greater in some groups of insects than was believed possible by earlier authors. There is no need to postulate former land bridges for which there is no geological evidence. The total insect fauna of Hawaii, consisting of more than 3,700 endemic species, seems to have descended from 233–254 original colonizations. About 95% of the endemics have Pacific affinities, and only 5%, American.

The extreme isolation of the islands permitted the evolution of a unique microcosmos. Aberrant species occur in every family, often exceedingly bizarre, but close study invariably reveals that they are members of some orthodox group. The most remarkable is perhaps a damsel fly, the larvae of which have given up the usual aquatic habits of this family and live in the litter of the forest floor. Such cases demonstrate graphically how new higher categories may originate.

It would lead too far to report on even a fraction of the many interesting biological phenomena discussed by Dr. Zimmerman. They include topographic isolation, the polyphyletic origin of flightlessness, of predacity and parasitism, rates of evolution, extinction, and many ecological phenomena. The Bernice P. Bishop Museum, the Hawaiian Sugar Planters' Association, and the University of Hawaii are to be congratulated on having sponsored this important publication.

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Proteins and life. M. V. Tracey. London: Pilot Press, 1948. Pp. x + 154. (Illustrated.) 10/6.

This little book, by a member of the Department of Biochemistry at the Rothamsted Experimental Station, provides an excellent brief account of the fundamentals of protein chemistry. It is well written and is characterized by clearness of statement and simplicity of presentation. The details of methods are for the most part omitted, although references to the original literature are provided for those who wish to go more deeply into a particular subject. References to review articles and other collateral material are also given. The book thus may well serve as a point of departure for the student of biochemistry at the undergraduate or graduate level. It can be read with profit even by those who have specialized in the study of proteins.

The first few chapters deal with the nature of proteins, their composition, and the more important present-day views on protein constitution. Chapters on proteins in nutrition, in industry, as components of living tissues, and as factors in disease follow. The factual information is well chosen and, in general, accurate; few errors having been detected. A valuable feature, especially for the beginning student, is the summarization of information into brief tabular statements after each section.

The reviewer questions the use of the technical term "residue" on page 19 and elsewhere. In American practice, at least, the residue of an amino acid is the part remaining when the hydroxyl group of the carboxyl and one hydrogen of the amino group are removed. The author appears to have confused residue with radical. On page 25 the essential role of the peptidases in completing the enzymatic hydrolysis of a protein is overlooked, although the matter is made clear subsequently. Despite such minor and fortunately rare imperfections as this, however, the book can be highly recommended.

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