

tion lists are included for strictly marine species, there are no maps that show collection locations for species living in tidal creeks and marshes. Six pages are devoted to a list of species of isopods described by Richardson (1905) that might be found in Georgian waters, but the synonymy of many of her species has changed so with time that the list will be of little use to any except experienced investigators. It is hoped that small errors, particularly those in generic descriptions, will be corrected in future printings.

This volume will be very useful. I commend the authors for their pioneering effort and trust that they will continue their work and that others will follow them.

W. D. BURBANCK

Department of Biology, Emory University, Atlanta, Georgia 30322

Plant Science

Diagnostic Criteria for Plants and Soil (Division of Agricultural Sciences, University of California, Berkeley, 1966. 799 pp., \$17.50), edited by Homer D. Chapman, is a compilation, by the staff of the University of California, of information concerning tissue analysis and its importance as a means of diagnosing nutritional disorders in plants, the fertility status of soils, and the methods of dealing with them. Essentially it is a handbook arranged chapter by chapter according to the chemical elements, aluminum through zirconium; it is concerned with chemical imbalance in plants and contains additional chapters that treat the total salt and water content of soils, the alkaline and saline soils, and organic soil toxins. The book contains a vast amount of empirical information that will be of use to a broad audience.

The author of each chapter was given a basic format to follow but could take considerable liberty in deviating and including additional information such as plant functions or soil-plant interrelations. Most chapters contain a table entitled "Tissue analysis values useful in indicating chemical status," arranged according to a vast variety of plants. The chemical status in the plant is indicated in parts per million or percentage of dry matter, and the concentration at which deficiency or toxic symptoms occur is given. Each

table contains explicit references for all items listed. Appendix I presents the same information in tabular form, except that it is grouped according to the plant rather than according to the chemical, as in the individual chapters. Each chapter provides a discussion of the chemical control of the particular element in the soil. The interrelationships of various chemical elements are clearly described.

Excellent halftones (which are supplemented by a few color plates) show photographically the symptoms of chemical toxicity. Although many modern techniques are mentioned as contributing information concerning the chemical constituents of plant tissue, certain obvious modern techniques for recording the plant symptoms are not discussed. Neither infrared photography nor infrared radiometry is mentioned. Nor is there mention of diagnostic techniques of spectrophotometry, a technique that may prove to be extremely useful. This is probably because many of these techniques were not used in the field of plant nutrition prior to 1960, which was the cut-off year for inclusion in the bibliography for this book. However, the appendix contains references to papers published in 1964.

The book is an indispensable reference tool for most research workers and students of plant science. Whether one wishes information about seleniferous forage plants, aldehydes in toxic desert shrubs, amino acid inhibition, or all types of chlorosis, the facts are available in this compilation. The book is sturdily bound and printed on high-quality slick paper.

DAVID M. GATES

Missouri Botanical Garden and Department of Botany, Washington University, St. Louis, Missouri

Indian Ocean Community

A man may feel loyalty to a sea as well as to a land, and Auguste Toussaint, the author of **History of the Indian Ocean** (University of Chicago Press, Chicago, 1966. 304 pp., \$6), is an Indian Ocean patriot. When he complains—correctly—that the Indian Ocean has received less than its share of attention from historians, it is with a sense of patriotic indignation as well as of intellectual regret. Toussaint comes from Mauritius, one of the many

crumbs of land in the Indian Ocean which belong neither to Africa nor to Asia. It is understandable that Toussaint, a Frenchman, living in a British colony which is close to Africa but chiefly inhabited by the descendants of Indian coolie immigrants and, with independence, about to be governed by them, should think of himself as a citizen of the Ocean and should look to an Indian Ocean community as the best form of political insurance for the future.

Alas for noble dreams. Since Toussaint's book was first published, in French in 1961, Indonesia has confronted Malaysia, the Chinese have invaded India, Zanzibar has been engulfed by Tanzania, formerly its reservoir of slave labor; and despite the bromides of Bandung, an Indian Ocean community seems more remote even than it did 5 years ago. Nevertheless, Toussaint thinks it too early to despair, and still appeals to history for evidence of oceanic unity. His book, however, is less a history of the ocean than a history of European activities there. Of its 15 chapters, the first is a geographical description, the next five condense the story of all the civilizations bordering on the ocean down to 1500, the remaining nine deal with a succession of European political and commercial empires. The five chapters are too sketchy and episodic to be much help to the ignorant. The nine, on the other hand, are competently done, if at times a trifle sententious, and they contain some arresting mnemonic phrases that have survived translation. Toussaint has a sound understanding of economic realities and the economics of long-haul transport, and he describes them neatly. His book is disappointing, however, on strictly nautical matters. He pays due respect to M. Poujade's wide archeological learning and to Commander Villiers, who knows Indian Ocean shipping at first hand, but his own account of local ship types is unsatisfactorily vague. The reader is left wondering whether Toussaint has ever seen a lateen-rigged craft, much less handled one.

Mention should be made of a brief but interesting appendix on the islands of the southern Indian Ocean, and of the translation, by June Guicharnaud, which is smooth and workmanlike, if at times a little pedestrian.

J. H. PARRY

Department of History, Harvard University, Cambridge, Massachusetts