previously used. The woody species were not as effective as the grasses as sand binders.

The dunes (wooded and grass-covered), sand flats, and salt marshes are described. A list of the vascular species observed is included. The highlights of the report are the 50 illustrations, each 4 by 6 inches; the geographical and historical account is adequate, and there is a fairly complete bibliography pertaining to the vegetation of the area.

As a preliminary survey of the vegetation and as a report on sand-stabilization practices, the book is excellent. The title, however, is misleading in that the listing of 273 species, when there is a possibility that 400 species occur in the area, gives an inadequate picture of the vascular vegetation. The records at the University of North Carolina indicate a flora of at least 850 species. The author indicates (page 87) that "there are many phases of Plant Geography, and Ecology which remain to be unravelled by detailed studies of this interesting area" from a plant-community standpoint.

The figures, history, and geography should make this book of interest to tourists visiting the Cape Hatteras National Seashore Project, but as a scientific presentation, this is a preliminary study only.

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Progress in the Chemistry of Organic Natural Products. vol. 16. L. Zechmeister, Ed. Springer, Vienna, Austria, 1958. 226 pp. Illus. $9.50.

In the past this useful series of reviews has been noted for the wide variety of fields it has covered. Almost every conceivable technique or approach capable of yielding information regarding the structure of natural products, how they are made in nature, and their probable function has been touched upon in some way. Since each volume is a collection of relatively short reviews, there is little space for developing the subjects in such a way that anyone who is not a specialist in the particular field and even in the particular techniques used can always fully appreciate them. Perhaps this is inevitable, and the reader should at least be thankful that most of the more recent literature is given in the bibliography, which will serve as a starting point for a more penetrating study. Two of the reviews in particular in volume 16 appear to fall in this category—namely, the third and the fifth.

The first review, 25 pages in length and written in German by Von Karl Freudenberg and Klaus Weinges, covers a class of naturally occurring phenolic substances—the catechuic acids, hydroxyflavanes, and hydroxyflavenes—usually treated as part of a wider field of plant dyes and intermediates. As a class they merit treatment in this way.

The second review (62 pages), by Karel Wiesner and Zdenek Valenta, on the chemistry of the aconite-garrya alkaloids, is an exceptionally timely and interesting one, because much light has been thrown on this complicated group of natural products in recent years by the newer experimental methods such as infrared and x-ray analysis. For relatively small molecules of diterpenoid nature they are amazingly complicated. As the authors point out, a solid basis for the more recent structural conclusions was made mostly by W. A. Jacobs and his collaborators, working along classical lines of organic chemistry. It is only to be expected that the more recent work, with the greatly improved tools for interpreting chemical transformations, would make possible a more enlightened choice of key members of such a large group, but it would still be patterned after the original truly pioneering work. Some of the structures proposed will form the basis for deriving still more complicated structures in this field, while others already seem to be of doubtful validity on the basis of present information.

The third review, ably written by E. E. von Tamelen, suffers from the fact that it attempts to cover too large a field in too short a space. In 24 pages the structures of 24 different types of antibiotics are treated. Even though all are produced by the actinomycetes group of microorganisms, they range widely in structure from highly unsaturated straight-chain fatty acids to complex cyclic polypeptides containing ten amino acids and a heterocyclic nucleus. Since much space is occupied by the accepted structural formulas little is left for discussion of the unique structural features particularly characteristic of these compounds. To be sure, many of them are mentioned but, in my opinion, not with sufficient discussion for such a truly fascinating field. Does the fact that we now have so many new and different structures to consider mean that we are content to know but little of each one? Unlike the fields covered in the first two reviews, all of the substances considered have been isolated very recently.

The fourth chapter, by James Bonner, covers a field, "Protein synthesis in plants," which is developing so rapidly at the present time that workers not in the field will surely welcome this short review (29 pages) as a means of trying to keep informed. Protein synthesis is certainly one of the most important areas of biochemical research today. This is true in spite of the fact that we are still sadly lacking in knowledge of the detailed structure of proteins and know only the rougher outlines with regard to the structure of the nucleic acids. Since the interdependence of the two classes is now well established, an understanding of both on a molecular level must be achieved.

The final chapter, by Hans Kuhn, deals with the "Electron gas theory of the color of natural and artificial dyes: problems and principles." The first third of the review deals with experimental facts concerning color and structure. This will be of interest to organic chemists working in the field of natural products, but it is doubtful that many will have the background or even the inclination to become sufficiently well versed in quantum mechanics to properly understand the whole treatise. Even though an ultimate and complete understanding of the structure of an organic compound does require an understanding of the structure of each atom, it is seldom practical to try to treat all of such a mass of information in one short article.

Volume 16 of *Progress in the Chemistry of Organic Natural Products* is a worth-while addition to any chemical library.

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Manual of Insect Morphology. E. Melville DuPorte. Reinhold, New York; Chapman and Hall, London, 1959. xi + 224 pp. Illus. $5.

The appearance of a manual of insect morphology written by Melville DuPorte, an authority in the field, is an event of the first importance. The arrangement of the book is original and practical, from the viewpoint of the teacher. The idea of beginning each section with general considerations (which in the strict meaning of the term *morphology* is the morphological part of the book, the rest being straight anatomy)