for *Septomyxa affinis,* or the 6- to 8-page listings for the likes of *Streptomyces roseochromogenes, Rhizopus nigricans,* and *Curvularia lunata.*

A very interesting summary of information, showing the taxonomic distribution according to genus for the the various hydroxylations and for Δ^1-dehydrogenation, is sandwiched between tables 1 and 2, but should not be ignored. It is most impressive that one can see at a glance the listing of no fewer than 77 genera that have been reported to carry out 11α-hydroxylation, or the listing of 41 genera, representing 14 orders in seven classes, that have been shown to Δ^1-dehydrogenate steroids.

Unfortunately, the magnitude of the task forced the authors to limit their tabulations to information in the literature only through 1963. They counter this shortcoming, however, by including a remarkably effective annotated bibliographical appendix. The subject matter is updated well into 1967 by these 100 references and the descriptive comments made about each.

As is indicated by its title, *Microbial Transformation of Steroids and Alkaloids* by Iizuka and Naito has a somewhat broader scope. In addition to chapters on steroid hormones, bile acids, sterols, sapogenins, cardenolides, and bufadieniolides (all covered by Carney and Herzog), it includes brief chapters on the steroidal, ergot, indole, and morphine alkaloids and nicotine. It is one of the few available sources that summarize information on microbial transformations of the latter compounds. Each chapter lists, by type of reaction, many of the microbial transformations that have been reported. There are helpful author, microorganism, and substance indexes.

Although the Japanese book purports to summarize data accumulated up to 1966, a great deal of information in American journals and patents between 1960 and 1966 is not represented. Moreover, there are inexplicable gaps in the coverage. For example, the authors refer to the 15α-hydroxylation of estrone and of estradiol by *Fusarium moniliforme* (*J. Org. Chem.* **29**, 2731) but they apparently missed an earlier paper in the same volume of the same journal (p. 1333) that reports the same reaction (with other organisms). Moreover, the latter paper also refers to 6β- and 7α-hydroxylations of estrone and estradiol, examples of which are not presented by Iizuka and Naito. The coverage of the A-norsteroids provides another example. Although a few transformations are listed, others, several of which had been published earlier, do not appear. Many other gaps in their coverage could be cited, including some in the chapters on alkaloids.

A shortcoming common to the books is their inability to provide readily a listing of all the reported transformations for any particular compound. If one wanted, for example, to find references to all the known transformations of progesterone, the index of the Japanese book lists 49 pages that would have to be examined. The Charney and Herzog book does not have an index of substrates to turn to for this kind of information.

Although a few of the structures in Charney and Herzog's book have lost one angular methyl group or another somewhere along the line (see, for example, pp. 50, 57, 63), there are remarkably few errors apparent in either volume.

The Charney and Herzog book can be considered indispensable to anyone seriously interested in any aspect of the microbial transformations of steroids. For those whose requirements for comprehensive coverage are not stringent, or for those whose interests include the alkaloids, the Iizuka and Naito volume serves a useful purpose.

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Nuclear Instrumentation

Nuclear Structure. Based on lectures given at the International Seminar on Low-Energy Nuclear Physics, Dacca, East Pakistan, Jan. 1967. ANWAR HOSSAIN, HARUN-AR-RASHID, and MIZANUL ISLAM, Eds. North-Holland, Amsterdam; Interscience (Wiley), New York, 1967. xiv + 342 pp., illus. $17.

In January of 1967, a seminar on low-energy nuclear physics was held at the Atomic Energy Centre in Dacca, East Pakistan. Many eminent physicists attended. The 16 invited papers are published in this book.

About half of these papers are descriptions of modern tools of experimental nuclear physics: cyclotrons, Van der Graaf accelerators, semiconductor detectors, time-of-flight apparatus, and the like. Each author is the type of experimenter who really understands how his equipment works, as opposed to the fellow whose concern is only to use the equipment to do an experiment. I think this is a useful survey of the current state of nuclear instrumentation. It would serve as excellent supplementary reading in a graduate-level course in nuclear physics. However, it is misleading to give the title *Nuclear Structure* to a book so largely devoted to experimental technique.

Several other articles could be described as reviews of branches of nuclear theory related to the interpretation of nuclear reaction experiments. The remainder of the book consists of research papers on rather specific subjects. I believe that these papers would be more appropriate in the research journals. There they would be accessible to a larger audience, and would be more easily located in future literature searches.

At the seminar itself, the invited papers were followed by questions and discussion. It is unfortunate that none of these are included in this volume. Other papers contributed to the seminar will appear in a special issue of *Nuclear Science and Applications,* published from the Atomic Energy Centre in Dacca.

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Books Received

Actualités de Phytochimie Fondamentale. Troisième Série. C. Mentzer, O. Fatianoff, and C. Deschamps-Vallet. Masson, Paris, 1968. vi + 336 pp., illus. Paper, 180 F.

Advanced General Microbiology. Laboratory Methods. Robert G. Eagon. Burgess, Minneapolis, 1968. iv + 85 pp., illus. Paper.

Advances in Catalysis and Related Subjects. Vol. 18. D. D. Eley, Herman Pines, and Paul B. Weisz, Eds. Academic Press, New York, 1968. xvi + 416 pp., illus. $18.50.

Advances in Chemical Engineering. Vol. 7. Thomas B. Drew, Giles R. Cokelet, John W. Hoopes, Jr., and Theodore Vermeulen, Eds. Academic Press, New York, 1968. xiv + 413 pp., illus. $18.50.

Advances in Communication Systems. Theory and Applications. Vol. 3. A. V. Balakrishnan, Ed. Academic Press, New York, 1968. xiv + 209 pp., illus. $11.50.

Advances in Comparative Physiology and Biochemistry. Vol. 3. O. Lowenstein, Ed. Academic Press, New York, 1968. xiv + 416 pp. $18.

Advances in Food Research. Vol. 16. C. O. Chichester, E. M. Mrak, and G. F. Stewart, Eds. Academic Press, New York, 1968. x + 461 pp., illus. $17.50.

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