pounds and the information assembled indicates that further research is justified.

Any student or research investigator with an assignment in the area of biosynthesis of simple sugars soon becomes aware that the existing literature is bewilderingly complex. As is shown by L. Hough and J. K. N. Jones, the biosynthetic reaction sequences may very well be quite diverse. Their excellent critical examination of the field is certainly welcome.

Branched chain sugars were very rare when volume 1 of these *Advances* appeared; even now nomenclature has not been organized. Fortunately, F. Shafizadeh has collected the existing information and has proposed a reasonable system for deriving names. Since numerous branched sugars of biosynthetic origin have been described in recent years, this step was well taken. The nucleic acids represent a radically different situation. More than sufficient information existed to permit a survey for volume 1, and the tremendous literature growth since is ample justification for a new study. G. R. Barker gives special emphasis to synthesis, isolation, and fine structure examinations in a chapter on these "acids."

Earlier volumes have presented several phases of polysaccharide chemistry, but relatively recent physical-chemical studies have greatly expanded the general understanding of starch; this has been compiled for volume 11 by C. T. Greenwood. Although there is still incomplete agreement on such characteristics as molecular weights, relative modes of attack by acids, alkalies, and enzymes on amylose and amylopectin and the binding of iodine in helices, the quantity and quality of current investigations are encouraging.

The editors are to be congratulated for having produced another excellent volume in this valuable series of *Advances.*

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Features of Evolution in the Flowering Plants. Ronald Good. Longmans, Green, London–New York, 1956. 405 pp. Illus. $6.

"Whatever opinion may be held about the idea of evolution itself, or about its possible modes of operation, it cannot be denied that change with time is an all-pervading principle of the natural world" (p. v). With these words Ronald Good, of the University of Hull, begins a curious but interesting book on the evolution of the flowering plants. He feels that "Many particular problems require to be thought out again from the beginning, but the special need is for a new, objective, and sober consideration of the facts, and, above all, of the facts in some of those aspects of biology which have so far received less attention, and which are therefore less obscured by the patina of controversy" (p. v). Again, letting Good speak for himself, we find that he believes that ". . . when these neglected facts are taken properly into account, some, at least, of the best-known speculations about organic evolution are seen to have a less general applicability than is usually claimed" (p. v). Finally, after examining these facts, he draws the conclusion: "Little or nothing in this picture of evolution in the Flowering Plants supports the view that they are the product of any highly competitive and eliminative plan of nature. On the contrary, it suggests that no matter what new characters or combinations of old characters change with time may present they are all able to find an existence somewhere in the scheme of things" (p. 388).

Now these are strong words from a botanist of the reputation that Good enjoys. And one is thus led to examine with particular care the evidence on which his conclusions are based (the more so since the book is directed to students and nonbotanists). Unfortunately, it would appear that it is the "picture" which he draws that misrepresents the reality he wishes to portray.

After disabusing the reader of his zoological prejudices by making a rather carefully thought out comparison between the higher plants and animals, Good plunges into a general description of the higher categories of flowering plants and their presumed interrelationships. This is based, of course, upon comparative morphology. The last four chapters of the book develop some of those interesting and little-known facts of parallelism and convergence with which the taxonomist, but usually not the geneticist, is familiar. For example, Good discusses the monocotyledons which look like dicotyledons, and vice versa, the diverse instances of floral aggregation often leading to the formation of a pseudanthium, and the Compositae which have heads of several flowers resembling the single pendent flowers of a fuchsia or the bilabiate flowers of a mint. From the existence of such examples, Good concludes that natural selection has not played a role, or at least not an important one, in the evolution of the flowering plants. My own bias leads me to exactly the opposite view.

Two chapters of the book are devoted to a highly specialized and very interesting family, the Asclepiadaceae or milkweeds. In all plants of this family there are intricate structures concerned with obligate insect pollination, coupled with mechanisms of great complexity. Since I have been concerned with this family for a number of years, I was surprised to find that the structures which I consider to be highly adaptive and necessary to the successful completion of pollination, are thought by Good to be "functionless." Furthermore, he apparently finds the Asclepiadaceae to illustrate particularly well his ideas about evolution.

These facts, together with inaccuracies or loose or confusing statements when cytological or genetic facts are mentioned, seriously limit the value of the book. It does not discuss adequately evolution as a process; but it does present an interesting picture of what has been produced in the course of the evolution of the flowering plants.

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New Books

Arizona's Meteorite Crater. Past, present, future. H. H. Nininger. American Meteorite Museum, Sedona, Ariz., 1956. 232 pp. $3.75.

Out of the Test Tube. The story of chemistry. Harry N. Holmes. Emerson Books, New York, ed. 5, 1957. 313 pp. $4.50.

Rare Earths in Biochemical and Medical Research. A conference sponsored by the Medical Division, Oak Ridge Institute of Nuclear Studies. ORINS-12. Granvil C. Kyker and Elizabeth B. Anderson, Eds. Medical Division, Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tenn., 1955 (order from Office of Technical Services, Department of Commerce, Washington 25). 468 pp. $2.20.

Diophantische Approximationen Eine Einfuhrung in die Zahlentheorie. Hermann Minkowski. Chelsea, New York, 1957. 235 pp.

Bibliography of Russian Mathematics Books. George E. Forsythe. Chelsea, New York, 1956. 106 pp.

Elements of Partial Differential Equations. Ian N. Sneddon. McGraw-Hill, New York, 1957. 327 pp. $7.50.

Theophrastus on Stones. Introduction, Greek text, English translation, and commentary. Earle R. Caley and John F. C. Richards. Ohio State University, Columbus, 1956. 238 pp. $6.

Applied Analysis. Cornelius Lanczos. Prentice-Hall, Englewood Cliffs, N.J., 1956. 539 pp. $9.

Rauwolfia: Botany, Pharmacognosy, Chemistry and Pharmacology. Robert E. Woodson, Jr., Heber W. Youngken, Emil Schlitter, Jurg A. Schneider. Little, Brown, Boston, 1957. 149 pp. $5.50.

Engineering Uses of Rubber. A. T. McPherson and Alexander Kemlin. Reinhold, New York; Chapman & Hall, London, 1956. 490 pp. $12.50.

Handbuch der Physik. vol. XV. *Low Temperature Physics* II. S. Flügge, Ed. Springer, Berlin, 1956. 477 pp.

Contributions à l'Etude des Parasites et Phorétiques de Coléopteres Terrestres. Supplement No. 4 to *Vie et Milieu.* Jean Théodorides. Hermann, Paris, 1955. 310 pp. F. 1500.