changes in the types of samples encountered and in the nature of the analytical information demanded.

In general, I believe that volume 1 fulfills its objective of giving a group of tested procedures that, although they may not be the best methods available, will suffice for many cases in which certain relatively common determinations have to be made. While I would have liked to see more critical discussion of the sources of error in the methods given and of other available methods, these functions are not part of the primary objective of the work.

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Phycology in India

Proceedings of the Symposium on Algology. P. Kachroo, Ed. Indian Council of Agricultural Research, New Delhi, 1960 [1961]. 406 pp. Illus. Paper, $3.

This symposium, which met in New Delhi 7–11 December 1959, was organized jointly by the Indian Council of Agricultural Research and UNESCO's South Asia Science Cooperation Office. The stated purpose was to create interest in algae, especially as a source of food and as a factor in public health problems. That the importance of algae to the rapidly developing Indian civilization has been recognized, but not sufficiently, is clearly shown by the proceedings. Fewer than half of the papers deal with economic aspects, and most of these were given by participants from Europe, Japan, and the United States. The foreign guests were well chosen, all being competent investigators with significant messages to bring to India.

The symposium apparently accomplished its purpose, but the value of publishing the proceedings, other than for prestige, may be questioned. The resulting volume is a mixture of two types of contributions, rather than a group of closely related papers. Primarily, it presents a cross section of phycology in India; secondarily, it presents a partial spectrum of investigations on economic aspects of algae. While the papers by the foreign guests (on such topics as nitrogen fixation and mass culture) cover material that, in large part, has been treated more extensively elsewhere, those by Indian phycologists generally report fresh material and are of sufficiently high caliber to provide some justification for publishing the book, at least from the point of view of someone interested in the overall advance of phycology.

Because of her enormous human resources, India has a high potential for scientific productivity. In an effort to close the gap between actual and potential production, Indian governmental and academic authorities have chosen what appears to be, in my judgment, an unsound plan: the establishment of a series of national journals, covering the spectrum of science. The output of good work in India, now and in the foreseeable future, can easily be accommodated in the well-edited, internationally recognized journals already available. The mere existence of national journals does not increase the amount of good work; rather, it spreads production thin and thus encourages hasty, superficial, and trivial reports. For those, like myself, who have been depressed by this facet of Indian science, the high quality of the present symposium proceedings is reassuring.

The chairman of the organizing committee was M. S. Randhawa, whose lengthy address of welcome does not seem commensurate with his success in convening the symposium. After some entertaining remarks on the esthetic and emotional appeal of algae (an interesting subject rarely broached), Randhawa gives a biased, fragmentary, and often inaccurate history of phycology. Even when one bears in mind that Randhawa's main interest lies in the Zygnemataceae, the choice (and omission) of many items still seems curious. For example, he states, "Lately a good deal of interest has been taken in the U.S.A. in the study of algae. W. J. Hodgetts (1918–25) described conjugation in *Zygogonium ericetorum* and also a number of new species of algae." Hodgetts was British; moreover, there is no mention of such substantial American contributors as G. M. Smith, W. R. Taylor, G. F. Papenfuss, G. W. Prescott, and E. Y. Dawson. The British fare no better. The long list of references, inconsistently cited and riddled with errors, bears little relation to citations in the text. We find Svedelius (1906, 1906–07) in the text, but Svedelius (1939, 1945, 1946) in the bibliography; H. J. Carter (1858) and Nellie Carter (1926, 1932, 1933) are merged into one person; and the purpose of listing 37 references by Randhawa is all too apparent.

The contributed papers underscore the traditional Indian strength in morphology and cytology and their relative weakness in physiology and biochemistry. In the field of ecology new strength is shown. Of several good papers on both marine and freshwater algal ecology, the one by K. S. Srinivasan, "Distributional patterns of marine algae in Indian seas," is especially informative and scholarly. Based on highly dispersed literature as well as on original work, this account is the first picture of the marine algal flora of India as a whole, and it should prove of particular interest to those who plan to participate in the International Indian Ocean Expedition.

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Guideposts to Outer Space

The Stars. A new way to see them. H. A. Rey. Houghton Mifflin, Boston, Mass., ed. 2, 1962. 160 pp. Illus. $6.

Very frequently astronomers are asked to recommend a book that will help someone to learn the constellations. Most persons seem completely baffled by imagined intricacies of the celestial sphere and the way constellations come and go in the sky. This book can be recommended to such persons as a great aid to learning about the constellations.

What is meant by "knowing" a constellation may be a matter of debate. Most of us recognize them as geometrical patterns that bear no relation to their names. But the author, H. A. Rey, thinks that the star patterns should appear as the name of the constellation suggests, and because he has taken great pains to connect the stars in each constellation into appropriate figures, in this book Leo looks like a lion! This should make the identification much more appealing to the new generations just beginning to learn about the sky.

The author starts with a few simple ideas necessary for finding one's way among the stars, and he wisely leaves the complications until late in the book. The reader can learn to identify constellations without worrying about such terms as *declination* or *hour circle*. Only in the last part of the book does the author give what he calls the "hows