His reasons for reducing the Suctoria to ordinal status are convincingly based upon the infraciliature, considered by him to be structures of "stable" importance. His proposed scheme will, I believe, be generally well received by protozoologists. Critical discussion of all valid genera of ciliates is given, and these genera are placed in the present scheme of classification. The third part of the monograph deals largely with a survey of the literature on ciliates—structural, functional, genetical, and biochemical.

For his citations Corliss has chosen approximately 1700 (out of his estimated 10,000 to 12,000) original papers, for which complete bibliographic references are given. This incredible number provides the serious student of protozoology with a key to virtually all that has been done with, and to, ciliated protozoans up to the immediate present.

This little book is in no sense a text, but it will be valued as a reference to references. The illustrations are excellent, diagrammatic, and far too few.

I suppose it is too much to hope that others with the competence and inclination of Corliss will complete the series with monographs on the other subphyla of Protozoa.

GEORGE W. KIDDER
Biological Laboratory, Amherst College

Ciba Symposium

Quinones in Electron Transport. G. E. W. Wolstenholme and Cecilia M. O'Connor, Eds. Little, Brown, Boston, Mass., 1961. xii + 453 pp. $11.

This important Ciba symposium was proposed by Karl Folkers of Merck & Co., for the purpose of discussing some of the new quinones being discovered in animals, microorganisms, and higher plants. As he says, "Nobody anticipated that the Liverpool studies on Vitamin A deficiency in rats, and the Wisconsin studies on lipid extracts of beef heart mitochondria which function in the electron transport activities of certain particles, would build a bridge into the field of photosynthesis of higher plants." It was Crane's studies on coenzyme Q_{10} in mitochondrial electron transport which led him and others to find related quinones in plants and to suggest that they may have a corresponding role in photosynthetic electron transport. As Folkers emphasizes, the new discoveries in this rapidly developing field open a never-ending expansion of new problems.

The volume opens with a discussion by R. A. Morton of the University of Liverpool on the isolation and characterization of ubiquinone (coenzyme Q_{10}), and this report is amplified by F. L. Crane of the University of Texas. The chemistry of ubiquinone and related compounds is discussed by O. Isler and his associates of Hoffmann-LaRoche of Basle. Folkers and his associates at Merck, Sharp & Dohme Research Laboratories describe organic and biological studies. All this information is then well summarized by David Green of the University of Wisconsin in discussing electron transport by means of ubiquinone.

The coenzyme Q group consists of 2, 3-dimethy-5-methylbenzoquinones with an unsaturated isoprenoid side chain in the 6 position, with from 6 to 10 isoprenoid units. When these units are 10, the compound is coenzyme Q_{10}, and because of its wide distribution in living material, is given the appropriate name "ubiquinone."

The symposium considers the biosynthesis of the Q coenzymes and their relationship to such fat-soluble vitamins as A and K. An important study by L. W. Wattenberg of the University of Minnesota, on the effects of ubiquinone and menadinone on oxidative enzymes in normal and neoplastic cells, suggests the possibility of applying some of the growing knowledge on ubiquinone to our understanding and control of malignant growth. A contribution by Norman Bishop of Florida State University clarifies the role of quinones in the electron transport system of photosynthesis.

The symposium was enlivened by vigorous discussion. It is clear that much verifiable information is now being obtained on some of the amazingly complex intermolecular reactions occurring within plant and animal cells which are involved in energy production and are dependent upon electron transport. The wide range and distribution of the coenzyme Q series suggests many potentially useful applications in the control of biological functioning. Here is an interesting example of how the essential unity of biological activity can be demonstrated even as the over-all science of biology becomes split ever more widely into narrow specialties. Equally interesting is the way in which basic scientific information on a detailed problem of biology can be brought together on an international level by good-willed cooperation between major drug companies and universities.

As Folkers emphasizes in closing, agreement on nomenclature for this important series of quinone compounds is essential. The good humor of this symposium is indicated by Folkers' closing tribute to F. L. Crane's dedication to science by having isolated one of the quinones from his Christmas tree!

CHAUNCEY D. LEAKE
Ohio State University

Inherited Personality?

National Character and National Stereotypes. vol. 1 of Confluence: Surveys of Research in the Social Sciences. H. C. J. Duijker and N. H. Frijda. Humanities Press, New York, 1961. xi + 238 pp. $4.50.

Throughout the 19th century and down to World War I there was a lively tradition of writing about the character of foreign nations and races. Perhaps the greatest work in this tradition is de Tocqueville's *Democracy in America*. In these studies "character" might be defined by any feature of society or culture such as politics, manners, even climate and geography, but in most there was at least the suggestion that national differences rest fundamentally on the distinctive psychological properties of ethnic and racial groups. More than that, these differences were assumed to be inborn and hereditary. Obviously such assumptions lent themselves to abuse. One could take them more lightly when they rested on nothing more than casual observation. As psychological measurement became more precise, however, the opportunity for abuse was greatly increased. Inevitably there were attempts to use intelligence tests to prove "scientifically" that Negroes were genetically inferior to whites. After World War I, psychology commendably purged itself of this aberration, as Otto Klineberg and others used these same tests to show rather dramatically how dangerous it is to make any assumptions about inborn and racial psychological differences.

Under the impact of this research, and in keeping with the liberal spirit of the 1920's and 1930's, the study of group differences in personality was widely regarded as smacking of racism, and it virtually disappeared as a field for serious investigation. In the United States during World War II a group of anthropologists, notably Ruth Benedict and Margaret Mead, reintroduced stud-