

The Leopard's Spots: Scientific Attitudes toward Race in America, 1815-59. William Stanton. University of Chicago Press, Chicago, Ill., 1960. 245 pp. \$4.

This study is centered around the "American School" of anthropology and ethnology which arose in the antebellum period. The most distinguished member of the group was Louis Agassiz, the Swiss-born naturalist, but the leading figures in developing the school were Samuel G. Morton of Philadelphia and Ephraim G. Squier, whose genuine contributions to the development of anthropology have been largely obscured by the fallacious conclusions drawn from their researches. The group supported a theory of polygenesis for the races of man and held that the divisions between the races were permanently established at their creation. Furthermore, in the "Scale of Nature," these races of man were ordered with the Caucasian at the top and the Negro at the bottom.

Stanton does a splendid job of placing the scientific problem in its social and intellectual context. He shows the character of the men involved in attempts to find a quantitative measurement of racial diversity, the inadequacy of the existing scientific knowledge, the social pressures working on scientific judgments, the interplay of research findings and attitudes toward race, and the ultimate failure of the school following the publication of Charles Darwin's *Origin of Species*. Although Stanton feels that the anti-Biblical crusade that accompanied the teachings of the school neutralized its support of racism among the slaveholders, one cannot help wondering how much of its "scientific proof" of the biological inferiority of the Negro filtered down into the popular mind of the post-Civil War period. Obviously, this book will interest anyone concerned with the background of the color line in the democratic ethos.

On the whole, the American school was a scientific failure, a blind alley, but in selecting it for study, Stanton has been better able to illustrate the complexity of scientific advances. In spite of fallacious conclusions, the work of the school on the nature of hybrids, the transmission of racial characteristics, the contradictions in the environmentalistic theories of biological change, and the inadequacies of the received Biblical account of the creation of races, helped focus attention on vital problems which had to be

faced by the Darwinians. The school also helped in the subtle process of transforming the climate of opinion toward an active interest in the problem of racial origins.

Without wishing to quibble over minor points of interpretation, Stanton does attach considerable importance to the idea of *economy* in nature, meaning the frugality of nature, as a part of the outlook of the period (for example, pages 99, 109, 133), and he attributes the recognition of nature's "shocking waste" to Darwin (page 133). The word *economy* was commonplace in the language of natural religion and meant design. The design could include enormous wastefulness as well as frugality, and after the graphic pictures of fossil strata presented by Cuvier, the wasted productions of nature were widely acclaimed. Tennyson, for instance, in his *In Memoriam*: "So careful of the type?" but no. / From scarped cliff and quarried stone / She cries, 'A thousand types are gone; / I care for nothing, all shall go . . .'."

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Teaching Comprehensive Medical Care.

A psychological study of a change in medical education. Kenneth R. Hammond and Fred Kern, Jr. Published for the Commonwealth Fund by Harvard University Press, Cambridge, Mass., 1959. xxii + 642 pp. \$10.

The decade of the 50's has been a period of experiment in medical education. A number of medical schools have modified their programs and are trying to evaluate the results. This book is a comprehensive report of one of these experiments.

In 1953, the University of Colorado School of Medicine established a General Medical Clinic designed to teach senior medical students "the techniques and philosophy of comprehensive medical care" (page 4). The staff of the clinic (in Denver, directed by Fred Kern, Jr., associate professor of medicine) collaborated with the behavior research laboratory at the university (in Boulder, directed by Kenneth Hammond, professor of psychology) in planning and executing a 5-year research project designed to evaluate the effects of the program. Although Hammond and Kern were the principal investigators

and are now the senior authors, it is evident that their staffs contributed significantly to this very thorough and detailed work. The study and the report emerge as fine examples of interdisciplinary effort.

The subtitle, "A psychological study of a change in medical education," comes closer to describing the book than the title itself. About three-fourths of the volume (including the 60-page appendix) is concerned with details of the research. The reader is likely to learn more about the problems of *how* to study the effects of a change in curriculum than about *what* the effects actually are. Its careful and lucid account of research methods used in the study of parts of the educational process in medicine constitutes the book's major contribution. Particularly appealing are the authors' candid reflections on the difficulties met in the several stages of the research.

The authors are conscious of the dual audience for whom the book is intended: "the medical educator" and "psychologists and sociologists." There is enough material, however, to keep these and other groups (for example, educationists) busy for some time to come. Medical educators will read it; so will psychologists and sociologists interested in medical or professional education. But the book deserves a wider audience. Any scientist concerned with the measurement of change in human behavior in a specific (educational) environment will find this a very useful reference work.

One is inclined to agree with the authors that the research itself represents a "pioneer effort." It is unusual on two counts: (i) No other medical school has had a part of its program studied so exhaustively (although others have instituted more extensive changes in program). In no other institution, to my knowledge, has the plan to initiate a curriculum change been so closely intertwined with a research program carefully designed to study its effects. (ii) The design of the study followed classical lines, that is, each of three successive senior classes was divided into an experimental and a control group, the former attending the clinic, the latter the usual senior clerkships. The use of experimental and control groups within the same class over several years knows no parallel in experiments in medical education.

As might be expected, the strengths in the design also contributed weaknesses. Problems appeared in the course