SCIENTIFIC BOOKS

HEREDITY AND ENVIRONMENT IN MAN[1]

FOR eugenics' progress good stock is essential and its reproduction is to be promoted. But how shall we know good stock when we see it? Certainly, it must be able to breed offspring who are intelligent and who have a socially fitting personality. And we shall know the degree of intelligence and of socially fit personality when we can measure that degree. But even after we have measured the degree the question arises: In how far are intelligence and personality really bred and in how far dependent upon training or, in general upon environment? This is the problem that Mr. Frederick Osborn has set, and the answer is to be found in the volume by Miss Gladys C. Schwesinger.

With incredible industry Miss Schwesinger has sought in hundreds of papers and scores of books material for her answer. The history of mental measurement is traced from its beginning and the modern results skilfully classified and described. The measurement of personality is more difficult, but lines of approach are being followed; and these are fully set forth.

For the problem of heredity and environment recourse has been had to the data from "identical twins" reared apart, on the one hand, and unrelated children reared together, on the other. Of course, a trouble here is that, on account of the selective nature of the individual, twins reared under "dissimilar" environments are making most use of the similar elements in such environments and unlike children placed in the same environment are picking up very different things out of that environment. A similar treatment can not be given to dissimilars; nor, within limits, a dissimilar treatment to identical twins.

Finally, a chapter discusses view-points on personality. This is not quantitative. Here are considered endocrines, psychoanalysis and the views of the behaviorist, Gestalt psychologist, and the social psychologist. This chapter is necessarily somewhat unformed, as our views in this field are yet philosophical rather than scientific.

The book is an excellent guide to a difficult field. The author has been industrious, selective, critical. Of much help will be the bibliographies and recommended readings. Nowhere else, we venture to say, can so comprehensive a survey be found. The book is recommended to all who wish to understand the genetic basis for behavior and the way behavior may be studied.

CHARLES B. DAVENPORT
CARNEGIE INSTITUTION OF WASHINGTON

[1] "Heredity and Environment: Studies in the Genesis of Psychological Characteristics," by Gladys C. Schwesinger. (Ed. by Frederick Osborn), 479 pp. N. Y.: Macmillan, 1933. $4.00.

THE PHYLOGENY OF APES AND MAN

Functional Affinities of Man, Monkeys and Apes. A Study of the Bearings of Physiology and Behaviour on the Taxonomy and Phylogeny of Lemurs, Monkeys, Apes and Man. By S. ZUCKERMAN. Harcourt, Brace and Company, New York, 1933. Pp. xviii + 203, with 4 figs. and 12 plates.

THIS stimulating and novel attempt to throw more light on the ultimate problem of man's phylogenetic place among the primates ends with the cautious statement: "It is indeed plain that we have still to wait before the fossil record will be able to provide the answer to a question which studies of anatomy and physiology fail to reveal. The available evidence can not even deny the possibility of man's independent evolution from as far back as the Oligocene, and through the Miocene up to the present day."

The author deserves great credit for his courage and optimistic labors in having collected a fair part of the rapidly accumulating recent results of comparative studies on functional characters of primates. In a pioneering enterprise, such as this volume represents, the introductory chapters are of more than usual interest. This can best be indicated by the following few random quotations which reveal the author's critical and frank attitude: "A survey of the literature suggests that present-day morphologists, perhaps because of the greater age of their subject, are more cautious with regard to the phyletic bearings of their work than are students of function." ". . . the real meaning of taxonomy . . . has in some quarters been narrowed to mean classification on the basis of a few arbitrary structural characters." ". . . the phylogeny of the Primates is mostly a preoccupation of anatomists with a medical training, whereas animal phylogeny as a general study is a problem of professional zoologists." "The anatomist . . . usually approaches the problem from a totally different angle, long acquaintance with the human form giving him a somewhat unwarranted confidence in the systematics of the *Hominidae*." ". . . the main result of this arbitrary 'anatomical' treatment of the bony remains of archaic men is that to-day we accept an altogether irrational classification for the family *Hominidae*." ". . . primate material has a peculiar power of overweighting the conclusions of its students." After these and many other more or less deserved criticisms of methods and conclusions underlying the ineradicable and confusing controversies in regard to the descent of man the reader is prepared to listen to evidence of a new nature. This the author contributes by specializing in seldom used approaches to the problems of primate classification and evolution. The selection of topics can at present be only very incoherent and is not always restricted to really func-

tional characters. The wide variety of the subjects discussed is shown by the following abbreviated list: blood groups, serum precipitin reactions, purine metabolism, sexual skin, breeding season, menstrual cycle, nursing position, finger grooming, drinking by suction, behavior and intelligence in general, cortical physiology, different aspects of vision, facial movements and expression, diseases and parasites, and hybridization. Under the last-named heading are to be found specially noteworthy lists of inter-generic and inter-specific crosses in primates.

The chief value of most of the chapters consists in the convenient collection and condensation of previously scattered reports by specialists in many widely differing fields, rather than in the more or less tentative taxonomic and evolutionary conclusions. Even though it is quite evident that no systematic attempt was made to consider all the available information, this book is nevertheless sufficient proof that our knowledge of the functional characters of primates is still far too fragmentary to permit many deductions bearing upon the more specific questions of primate relationships beyond those already gained from far more extensively grounded morphological studies. It is very gratifying, however, that the phylogenetic conclusions from the data collected in this volume do in no way clash with the generally accepted classification of at least the various primate families. Such additional support of a provisionally established classification is of great significance, since any classification, to become reliable, must be based upon as many different characters as possible, ultimately representing the carefully weighed compromise between often apparently conflicting results.

Since a reviewer can rarely agree with all the minor assertions of another author, a few such differences of opinion or experience may be indicated here: There still exists a good deal of justification for doubting the author's flat denial of a breeding season in Old and New World monkeys (*e.g.,* in the reviewer's field experience *Oedipomidas* and *Saimiri* do not breed during the summer months). The chapter on facial expression would have greatly benefited by a consideration of the corresponding work by the late E. Huber. The table on brain- and body-weights of *adult* primates includes a considerable number of misleading records on extremely immature or else abnormal specimens. To mention but one instance: The mean body-weight of four "adult" male *Ateles geoffroyi* is given as 2.0 kgms, whereas the reviewer obtained an average of 7.4 kgms for a large series of really adult males of this species.

Dr. Zuckerman's excellently written book will be a great challenge for and help in future work on the comparative physiology and psychology of primates. The volume is illustrated by beautiful photographs of different types of primates and contains an extensive bibliography and a useful subject index.

ADOLPH H. SCHULTZ

SOCIETIES AND MEETINGS

THE INDIANA ACADEMY OF SCIENCE

THE forty-ninth annual meeting of the Indiana Academy of Science was held at Bloomington, Indiana, on Thursday, Friday and Saturday, October 12, 13 and 14, 1933, with Indiana University as host. The executive committee meeting was held on Thursday evening. At the general meeting on Friday morning, after an address of welcome by President W. L. Bryan, of Indiana University, the following three general papers were presented: "Indirect Contributions to the Promotion of Science," by Dean William M. Blanchard, DePauw University; "Some Botanical Aspects of the Hawaiian Islands" (illustrated), by Dr. T. G. Yuncker, DePauw University; "Moving Pictures of Leaf-Cutting and Army Ants," by Dean Howard E. Enders, Purdue University. In the sectional meetings a total of 101 papers on botany, bacteriology, chemistry, geology, physics, astronomy and zoology were presented.

The annual dinner was held on Friday evening in the Union Building, Indiana University, with about two hundred members and guests present. Following the dinner, the academy president's address, an illustrated lecture on "Origins of Indiana Mammals Living and Extinct," was given by Dr. Marcus W. Lyon, Jr., of South Bend. The Junior Academy held its meeting and exhibit on Saturday morning. Dean Howard E. Enders reported nine affiliated Junior Academy of Science organizations.

The following officers were chosen for 1934: *President,* J. A. Nieuwland, University of Notre Dame; *vice-president,* M. L. Fisher, Purdue University; *secretary,* R. C. Friesner, Butler University; *assistant secretary,* W. P. Morgan, Indiana Central College; *treasurer,* Paul Weatherwax, Indiana University; *editor of the Proceedings,* S. A. Cain, Indiana University; *press secretary,* Will E. Edington, DePauw University.

The semi-centennial meeting will be held next November in Indianapolis, with Butler University as the host. Special efforts are being made to have all living charter members, other prominent members and former members living outside Indiana present and participating in the program, which, it is hoped, will include scientific papers of unusual merit as well as several special papers of historical nature pertaining to the founding and early development of the Indiana Academy of Science.