SCIENTIFIC BOOKS

THE OPEN MIND

The Open Mind—Elmer Ernest Southard. By FREDERICK P. GAY. Publisher: Normandie House. $5.00.

IN a fascinating and excellently written biography, Dr. Gay has brought to life one of the unique and significant characters in American medicine of the past generation. This book is not merely the record of the scientific contributions to neuropathology of Ernest Southard nor the many ways in which he stimulated psychological thinking, but it is the portrait of a man whose inner vividness of *being* towered above his outer accomplishments.

To offer the reader an understanding of this singular person, the author has wisely selected much of his material from Southard's reflections about himself. Southard was irked by the fact that he was considerably over-weight, and in a letter to Mrs. Cabot remarked: "You know that in many people the soul is unlike the body—I, for instance, have a slim soul." What he was motivated by may be gathered by an excerpt from a letter to his mother: "It becomes increasingly difficult to figure out the technique of becoming a great man." The intensity with which Southard pursued the unusually wide trail of his many interests suggests that his impulse to be great sprang from an evolutionary flame that burned incessantly within him; this is revealed in Dr. Gay's book with incontestable clarity as a consuming interest in the unexplored. No one was more aware than he was himself of the multiple horizons on which he looked, as may be observed in this engaging admission: "Among psychologists I am known as a chess player . . .; among psychiatrists I am known as an anatomist; among philosophers I am known as a psychologist; and among clinicians as a neuropathologist . . . No man who has stayed within the recognized boundaries of his own field has contributed fundamentally to science."

His varied achievements in neuropathology, psychiatry and philosophy have been ably dealt with by the author, who was once his collaborator in research and always a lifelong friend. Southard's mind was early drawn to etymology and philology, and in his many later exhaustive studies of psychiatric and psychological formulations he employed his early training to classify disease types anew. In the opinion of the reviewer, his resistance to psychoanalytical theories can be traced to an urgent tendency to think of and define people in groups rather than to inspect a single individual in the prolonged, intensive analytical method of Freud. As Dr. Gay has pointed out, Southard strove to be fair as well as cautious in appraising Freud's major hypotheses. From the evidence provided by this book it must be acknowledged that his mind was not one to be easily harnessed to the hour-after-hour contemplation of a patient, often for years, which the psychoanalytical method requires for its therapeutic objective as well as for psychiatric research. He himself admitted a year before he died: "Perhaps it is in definition that I am most interested. Perhaps I believe that the world can get forward most by a clearer and clearer definition of fundamentals. Accordingly, I propose to stick to tasks of nomenclature and terminology, unpopular and ridiculous though they may be. A psychiatric dictionary (to include definitions of every near-lying psychological and philosophical term also) would do more to push mental hygiene on than any other single thing I can think of."

His interest in theories of integration of the personality led him to speculate and to write. To a house physician who asked him to see a patient on the ward, he replied: "Oh, I'm not interested in seeing a patient with that disease. I am writing a book on the subject." To a woman troubled with a disturbing tick or spasm of the face, which she thought might be a handicap in her career, he remarked: "My dear lady, we all have handicaps; my particular handicap is that I cannot make ward rounds." He was intensely interested in the possibility of demonstrating a relation between psychological function and anatomic structure, but it is in the field of pathology of the nervous system that he had his surest footing.

What was most startling about the man was the engaging charm and contagious enthusiasm which he emanated. An incredible number of his associates and pupils would subscribe to what Dr. E. T. F. Richards said of him: "I have not seen his equal in his remarkable ability to stimulate enthusiasm and the spirit of research in others." This subtle alchemy transmuted the interest of many of his friends from clinical practice into research into the unexplored domains of psychiatric medicine. Fortunately, Dr. Gay caught the virus Southard carried about with him and rescued it in a notable contribution to the biography of great personalities in American medicine.

ALVAN L. BARACH

FISH MANAGEMENT

The Improvement of Lakes for Fishing: A Method of Fish Management. By CARL L. HUBBS and R. W. ESCHMEYER. Bulletin No. 2, Institute for Fisheries Research, University of Michigan, Ann Arbor. 233 pp., 74 figs. May, 1938. $1.75.

MARKED increases in the number of anglers in the past two decades without any corresponding expan-

sion of fishable waters have stimulated great interest not only in maintaining fish yields in inland waters but also in projects designed to raise the yields to maximum carrying capacities. For more than half a century, the standard method of aiding fish production was the stocking of lakes and streams with hatchery-reared young fish. In general little or no attention was given to the environmental conditions that obtained in the waters that were stocked until recent years. More and more consideration has been given to various factors that have some influence on fish production in natural waters during the past decade. Up to the present time, such factors as shelter and breeding conditions have been emphasized.

The senior author of this bulletin has been chiefly responsible for the development of devices designed to improve environmental conditions in these respects; he is also responsible for trying these devices out on a large number of Michigan lakes. These experiments and the broad ichthyological knowledge of the authors constitute the fundamental background of the book.

Lake improvement is defined as the creation and maintenance in lakes of conditions which favor the propagation, growth and yield of inland lake fish. The general requirements for the successful production of fish are considered first; these include the physics and chemistry of the water, such as temperature, dissolved oxygen, hardness, depth, spawning conditions, suitable shelter and food supplies. All these subjects are more or less fully discussed, especially with reference to their general bearing on fish production under optimal conditions. The spawning habits of the different species of fish vary widely, for example, and successful reproduction, therefore, depends upon meeting the diverse requirements either naturally or artificially. Food is also a vital factor, so that fish production is substantially proportional to the food supply in the various types of water.

The second, or main, section of the book (pp. 49–201) deals with the construction of brush, log and other artificial structures designed to serve as shelters for fish and their installation in suitable locations. Also the planting of large aquatic plants, which will furnish natural shelters and feeding grounds, is discussed, as well as devices for bettering the spawning conditions. The use of fertilizers is recommended in certain types of lakes for the purpose of increasing the food supply. Methods of aerating the waters of shallow lakes in winter where there is frequently a heavy winter-kill due to the lack of dissolved oxygen are included in this section as well as the control of fish movements, the handling of fish populations showing stunted growth, the removal of excess rough fish, controlling predators and the treatment and prevention of diseases. The final chapter deals with the practicability of lake improvement and its place in fish management. This is followed by an annotated bibliography of 18 pages. The book is a valuable contribution to that phase of aquiculture which is concerned with the production of fish, and it fills a great need in this important field of water utilization.

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STATISTICAL TABLES

Statistical Tables for Biological, Agricultural and Medical Research. By R. A. FISHER and F. YATES. London and Edinburgh: Oliver and Boyd. 1938. viii + 90 pp. 12s. 6d net.

THESE tables will be of great value to research workers in the fields indicated and also in several others. Some of them are important for economic and sociological statisticians. The volume will have a wide appeal not only because of the eminence of the authors and the adequacy of the tables for an extensive range of work, but because the paper, type and arrangement have been well chosen to minimize time and eye-strain. The tables presented are:

I. The normal distribution. (Abscissae in terms of areas.) II. Ordinates of the normal distribution. III. Distribution of t. IV. Distribution of χ^2. V. Distribution of z and the variance ratio. VI. The correlation coefficient—values for different levels of significance. VII. The correlation coefficient—transformation of r to z. VIII. Tests of significance for a 2×2 contingency table. IX. Probits—transformation of the sigmoid dosage mortality curve to a straight line. X. Probits—simple quantiles of the normal distribution. XI. Probits—weighting coefficients and probit values to be used in adjustments of special accuracy. XII–XIV. The angular transformation. XV. Latin squares. XVI. Complete sets of orthogonal Latin squares. XVII–XIX. Balanced incomplete blocks. XX. Scores for ordinal (or ranked) data. XXI. Sums of squares of these scores. XXII. Initial differences of powers of natural numbers. XXIII. Orthogonal polynomials. XXIV. Calculation of integrals from equally spaced ordinates. XXV. Logarithms. XXVI. Natural logarithms. XXVII. Squares. XXVIII. Square roots. XXIX. Reciprocals. XXX. Factorials. XXXI. Natural sines. XXXII. Natural tangents. XXXIII. Random numbers. XXXIV. Constants, weights and measures, etc.

There is an excellent introduction describing the use of the tables, including some ingenious new uses of old tables, such as that of the χ^2 and variance ratio distributions for obtaining partial sums of the Poisson and binomial series, respectively. Other fruits of the authors' remarkable ingenuity include the work on Latin squares and balanced incomplete blocks in biological experiments, as well as other statistical methods