vague. What is biology? It is the science of living things. The world is populated by millions of kinds of plants and animals. Our purpose is to ask what they are, and what they do. Also, what they were, as indicated by the study of fossils or inferred from their structure and relationships. There is no reason why we should not, on this basis, recognize a framework into which all biological research may fit, and a plan of publication which will assemble all the data in a pattern approximating to the facts of nature. Only approximating, because our knowledge is defective, and in part must always remain so, and our judgments are not all sound. But with such a framework, the scientific worker may sense the meaning of his work, and its contribution, small as it may be, to the great system. Sometimes, as in the case of Mendel's peas, work done on one species will throw light on all species, or may at least have wide significance. Provision should then be made for the synthesis of results, and their publication in an adequate manner.

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SCIENTIFIC BOOKS

ELLIPTIC FUNCTIONS

Jacobian Elliptic Functions. By ERIC HAROLD NEVILLE. 332 + xvi pp. 33 figures. Oxford: Clarendon Press. 1944. $7.50.

IN this book the author has reworked his lectures into a careful and logical presentation of the subject, elliptic functions regarded as a branch of the theory of functions of a complex variable. The reader is assumed to be familiar with the elements of the theory of functions, but not necessarily with doubly periodic functions, the general theory of which is developed from the Weierstrass point of view in a fifty-page introduction. With this as a basis, the author constructs functions on lattices with two simple poles in each cell, develops their general theory, and later specializes the discussion to Jacobi's functions sn u, cn u, dn u, and the nine related functions introduced by Glaisher, or rather the generalizations of these with complex parameters. This development avoids the artificiality, if also the brevity, of the treatments based on theta functions which here are introduced near the end of the book. On the other hand, most brief treatments from the lattice point of view which make any reference to elliptic integrals and the inversion problem for complex parameters are logically incomplete, and the overcoming of this difficulty is the main virtue of the treatise under review. The author has introduced several convenient bits of notation which make for an efficient wholesale derivation of formulas, and has usually indicated the alternative classical notation, and also pointed out that for deriving a particular result first principles are usually more convenient than the generalized notation.

The text is followed by 57 exercises with notes. These are in part problems, and in many cases additional results and alternative proofs.

While the treatment has made contact with applications, these are not discussed as fully as the basic theory. For example, while the reduction of integrals of the first kind is briefly sketched, such details as the specification of constant factors are omitted. The author gives some sporadic references of a historical nature, but has not arranged these so as to be of much help to a reader who needs to be oriented in the literature of the subject. There is no index.

Thus this book is not suited to the reader who merely wishes to locate some particular result for a specific application. However, it will interest the pure mathematician as a systematic discussion from a unified point of view. Like their tolerance for pure science, the press work and typography of the Clarendon Press give no evidence of wartime deterioration.

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INDUSTRIAL PSYCHOLOGY

Handbook of Industrial Psychology. By MAY SMITH. 304 pp. Philosophical Library. 1944. $5.00.

THIS is an excellent book for executives or others who wish to learn quickly what industrial psychology has to offer toward improving the effectiveness and happiness of workers. The fact that most of the investigations reported were conducted in England does not materially affect their applicability elsewhere. The author's aim is to indicate practical applications and also, as she says, "to humanize industrial psychology, which sounds absurd, but which is necessary." She has done well both in factual reporting and in commenting wisely, with frequent touches of humor.

The first chapter sketches the origins of industrial psychology and particularly the impetus given it during the last war when efforts to increase the output of munitions workers by merely increasing the number of hours worked soon proved futile despite the patriotism and best efforts of the workers themselves. This experience prompted scientific investigations supported by the government, first by the Health of Munitions Workers Committee and subsequently by the Industrial Fatigue (later Health) Research Board.

The results of these studies and others by the National Institute of Industrial Psychology furnish most of the factual foundation for the book. They all point clearly to the ineptitude of the once popular phrase "the human machine," and hopefully to a better understanding of the human personality, in the broadest sense of the term.

The second chapter discusses fatigue and serves to show both the ramifications of the problem and the failure to apply quickly and widely in this war the knowledge gained from research during and after the last one.

The effects of the environment on the worker are then presented; the *material* factors being light, temperature, noise, hours and the *psychological* factors, the group, mental atmosphere and people in authority. In the reviewer's opinion this discussion of psychological factors and a later chapter (VI) on temperaments are the best parts of the book, although based on the least secure scientific evidence. Such evidence as there is, however, the author lets speak for itself. This is far more effective than the popular variety of psychological advice on how to develop personality. From her illustrative descriptions of behavior or "misbehavior," one can hardly fail to agree with her statement that "the person in authority who is not suited as a human being to his work is a tragedy."

Chapter III deals with vocational guidance and selection, and contains also a pertinent section on selection for management and one on training. Chapter V gives a brief but sensible account of the uses and implications of time and motion study. Chapter VI, as indicated, deals with temperaments and such methods as are now available, admittedly crude, for assessing them. Chapter VII and VIII discuss motives for work and measures of human well-being, and Chapter IX gives many good hints on methods of investigating.

The lack of an index seems unfortunate in a book entitled a handbook, but is partially offset by the subheads under chapter headings in the table of contents. The task of making research methods and findings understood and put to practical use is not an easy one, but this book deserves much credit as an attempt by an author who is herself a thoroughly scientific worker. Few readers, either laymen or scientists, will find it a waste of time, and most will find it worthwhile and refreshing.

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PSYCHOLOGICAL CORPORATION

REPORTS

SPONSORS OF WORLD EXPLORATION

BRITAIN'S Royal Geographical Society was founded in 1830; its origins, however, may be traced back at least to 1788. Its immediate forerunner was the Raleigh Dining Club, which served as an informal meeting place for travelers. At that time there was a widespread interest in exploration, following the check caused by the Napoleonic wars, and linked with the expansion of the Western nations.

This led to the cooperation of members of the Raleigh Club and other geographers in the foundation of the society on a broad basis. Four hundred members joined in the first year, and in the following year it absorbed the African Association, founded by Sir Joseph Banks in 1788. Among those active in its establishment was Sir Roderick Murchison, distinguished for his geological work in Russia, and later president for sixteen years.

After being housed in various quarters of London, the society was established at 1 Savile Row for many years (1871–1913), but its growth required larger quarters, and the present house in Kensington Gore was purchased in 1912. Through the generosity of its supporters, the society was able to mark its centenary in 1930 by considerable additions to the house, giving it for the first time its own lecture hall, to hold nine hundred persons, and better accommodation for the library and map room. At the outbreak of World War II there were approximately six thousand members.

The library now contains about eighty thousand volumes, including early narratives of travel and the reports of later exploration, books on survey, geographical science and related subjects, and the periodical publications of the geographical societies of the world. An extensive subject catalogue of all additions to the library is maintained for the use of students. The map collection includes the maps issued by nearly all the national surveys throughout the world—a total of over a quarter of a million maps in sheets. It is especially rich in early atlases, and has a large collection of photographs and lantern slides. The map room is open to the public, and the library deals with many requests for information both from members and from the public.

The objects of the society were clearly defined from the first; the diffusion of geographical knowledge; the formation of a library and map collection; assistance and advice to travelers and the maintenance of relations with similar bodies at home and abroad. For the first half century its energies were directed almost exclusively to the promotion and encouragement of exploration.