

tion." The chapter on radiation effects and radiation measurement contains sections on ionization, luminescence, photographic effects, discoloration and extinction, and photoconductivity. X-ray, fast-electron, and γ - and β -dosimetry are discussed in the chapter on dosimetry, together with dosimetry of internal isotopes and neutrons. The chapter on radiation protection includes a section on the rather standard health physics problems as well as a section on raising radiation resistance of biological systems by chemical means. Under diagnosis and therapy, there is a discussion of conventional x-ray therapy as well as therapy with ultrahard x-rays, electrons, and some heavy particles. There are also basic chapters on radiation and matter, and on the production and characteristics of x-rays. The final chapter treats the application of radioactive isotopes in medicine and biology, including radioactive indicators and isotope therapy.

It is interesting to note that this book discusses the concept of "ion dose" which is used in Germany, but not in many other countries. Several references are made to recent reports by the International Commission on Radiological Units and Measurements (ICRU), which do not include this concept. ("Ion dose" is defined in reports of the German standards committee on radiology.) The book includes a good but brief discussion of the similarities and differences between "ion dose" and "exposure" as defined by ICRU.

The book is well illustrated with pertinent photographic material. The numerous graphs and tables are intended to give a concept of the magnitudes of the physical quantities discussed, and they are likely to be valuable for the reader's own scientific work as well. A number of the concepts presented in the body of the book are amplified and, in some cases, derived in the 70-page appendix, which also contains supplementary formulas and sample calculations. In addition, there are seven pages of English-to-German translations of technical terms.

The bibliography, with 1000 references, is conveniently and usefully organized according to subjects. There is a subject as well as an author index.

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Feldafing Summer School

Circadian Clocks. Proceedings of the Feldafing Summer School, September 1964. Jürgen Aschoff, Ed. North-Holland, Amsterdam, 1965. xx + 479 pp. Illus. \$15.

Looking for an expensive new conversation piece? If most of your colleagues are nonbiologists, then this volume, with its whimsical jacket motif of Disneyesque rodents meditating on an hour-glass and its stark title *Circadian Clocks*, is just the thing to brighten up your coffee table.

The initiated may also find some delights within, especially the thoughtful essays by Victor Bruce on the significance of mitotic rhythms *vis à vis* circadian rhythms, by Ludger Rensing on ontogenetic timing and circadian rhythms, by Felix Strumwasser on circadian rhythms in a single neuron, and by J. W. Hastings and Alex Kenyan on some molecular aspects of circadian systems.

One of the most valuable contributions is the short "circadian vocabulary" compiled by Aschoff, Klotter, and Wever; still it is somewhat surprising to find that such fundamental hardware as *clock*, *calendar*, and *escapement* are not in the list. About the remainder, one may say that the old war horses wrote dutiful papers, that for the most part they "belong" and are fit to be consulted here like so many miscellaneous entries in an unabridged collection. But because of this, the biologist who has grown accustomed to the novelty and the richness in the display of critical issues in the earlier Gatlinburg and Cold Spring Harbor volumes and who knows his Bünning (*The Physiological Clock*, 1964), with its singular verve and broad scholarship, will feel somewhat cheated. In view of the summer school's stated aim to stimulate students, one also asks where (apart from a few already cited) were all the bright Young Turks? Discussions after the papers would have been most helpful, else these papers could as well have been published in the open literature (and some in more expanded and advanced form have already been so published!). Time for a new journal?

The editor deserves credit for holding down the number of typographical errors of the sort that one expects in a work such as this in which French and German papers have been translated into English. More disturb-

ing than the errors is the poor quality of the reproduction of graphs and figures—some are reduced in size to the point of illegibility. All things considered, especially the volume's high cost and its small quantity of new information, the heuristic intent of the Feldafing Summer School might have been better accomplished had its faculty invited an editor who is familiar with popular science writing to sit in—perhaps someone from the *Scientific American* or the *Life Science Library* series. At this stage of the game, we should all have profited from such a volume, professionals, old prophets, and proselytes alike.

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Mathematics

Functional Analysis. Albert Wilansky. Blaisdell (Ginn), New York, 1964. xviii + 291 pp. Illus. \$9.50.

Functional analysis, which entered adolescence with the publication of F. Riesz's classic book in 1913 and began adulthood with the appearances of Banach's treatise (1931 and 1932), is now in a portly and fatherly, but still active and occasionally nimble, middle age. In this setting Wilansky's book may be regarded as a careful and expertly organized primer designed to instruct the grandchildren, newcomers to the family, and interested visitors in elements of the household's organization and accomplishments. "Primer" is not pejorative here; this text is an excellent introduction, with its only prerequisite a modest amount of advanced calculus and its intention that of serving seniors and beginning graduate students.

The first eight chapters, totaling 135 pages and ending with Banach and Hilbert spaces, deal only with linear spaces having metric topologies; they form an excellent introduction to such spaces for anyone who does not wish to tackle Bourbaki, or Dunford and Schwartz, or Kelley and Namioka. The remaining six chapters are less classical; they begin with nets and end with local convexity, duality, and Banach algebras. The "three fundamental principles of functional analysis"—Hahn-Banach, uniform boundedness, and the closed graph theorem—occur on pages

65, 110, and 200, respectively. Such hardly perennials and necessities as the Stone-Cach compactification, the Gel-fand representation, and the Banach-Alaughlu and Tychonoff theorems are here, as are elementary but interesting applications to distributions, harmonic analysis, mapping theory, and (reflecting the author's well-known work and interests) summability of sequences. There are approximately 2000 problems; these range widely in their topics and vary from quite easy to moderately difficult. As carefully organized and as well written as this volume is, there is one unfortunate typographical omission in a key definition—that of *paranorm* on page 52; “with O ” should be replaced by “with $p(a_n - a) \rightarrow O$.”

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Cultural Anthropology

Eskimo Townsmen. John J. Honigmann and Irma Honigmann. Canadian Research Centre for Anthropology, Ottawa, Canada, 1965. xx + 278 pp. Illus. Paper, \$6.50.

During 1942 and 1943 the U.S. Air Force constructed an airstrip at Frobisher Bay on Baffin Island, the easternmost landmass of the Canadian Arctic. Previously, the site had not been occupied, not even by Eskimos. Within 20 years, more than 900 Eskimos (almost one-tenth of the entire Canadian Eskimo population) lived in the new town, together with about 700 whites. The Eskimos were drawn by the job opportunities offered by the military and transport operations of the United States and Canadian governments, and by the excitement of living in a new and, for them, a very large town.

Aboriginally, Eskimos (the Nugumiut who numbered about 80 in 1883) did live in the vast Frobisher Bay area, although not near the site of the new town. We are not told how many descendants of the Nugumiut came to be residents of the new community. Indeed, the authors do not mention the aboriginal occupants, nor do they identify the tribes or places of origin of the newcomers. The fact is that they came from all parts of the Canadian North and thus created an admirable laboratory in the field for interethnic studies and the analysis

of differential acculturation. However, the Honigmanns chose to make a different kind of study, and they relegate to a few lines and a table all ethnic and historic data preceding their visit, which lasted from March through August of 1963. They explain that their main concern was the town as it operated during their visit.

Within this framework, objectives are specified as the study of patterns of organization, attitudes and values, psychodynamic aspects of personality, and child rearing. These goals are intensively pursued, and the studies were highly productive. (Index entries under “personality” fill almost a page.) Properly and necessarily, inquiries were extended to include the whites and to encompass Eskimo-white relationships.

This book is significant as the first deep study of an aspect of one of the new towns of Eskimos (and whites) in Canada, where all major settlements are new towns, none located on the site of an aboriginal village. This phenomenon deserves the careful attention of scholars during the formative stages. The Honigmanns have made an admirable start in the realm of interpersonal relationships. It is to be hoped that their lead will be followed by scholars interested in ethnic and historical aspects.

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Geology

Rock Magnetism. Takesi Nagata. Maruzen, Tokyo; Plenum Press, New York, revised ed. 2, 1965. 350 pp. Illus. \$9.50.

Rock Magnetism by Takesi Nagata was published in 1953. This valuable book was amplified and brought up to date in 1961 as a “Revised Edition” under the same title. Now, in 1965, we are offered a “Second (Revised) Edition” by Plenum Press. The revisions are limited to two features only (apart from a pretty new dust jacket): the price is \$9.50 instead of \$7, and the need for the old three-page list of errata has been eliminated by correcting the plates first used in the 1961 version. Other mistakes could have been eliminated, but these do not lessen the appeal of the book nearly as much as the fact that it gives no coverage to the very extensive advances that

have been made in this field during the past 5 years. Despite these drawbacks, *Rock Magnetism* has its place in any laboratory that conducts research in this rapidly changing subject.

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Neurospora Literature

Neurospora Bibliography and Index.

Compiled by Barbara J. Bachmann and Walter N. Strickland. Yale University Press, New Haven, 1965. vii + 225 pp. \$4.

This useful volume contains a complete bibliography of the genetically important genus, *Neurospora*. It lists more than 2300 research papers, reviews, theses, abstracts, and patents, beginning with the oldest published descriptions (1843 is the earliest publication date that I noted) and extending to January 1964.

The first section of the book contains the bibliography proper, arranged alphabetically by first author. This is followed by an author cross-index that makes it possible to find all the papers on which an author's name appears. Finally, there is an extensive subject index that enables the reader to locate all references dealing with a particular topic, a particular mutant, or a species other than *crassa*. The accuracy of the listings is insured by the fact that, in nearly every case, the original article was consulted by the editors. Their completeness is suggested by the sheer number of references; it is doubtful whether any but the smallest fish—and not many at that—have escaped the compilers' net. Altogether, Bachmann and Strickland deserve our thanks and congratulations for a thorough and workmanlike job.

This book is indispensable to those who work with *Neurospora* and to all those who plan to use *Neurospora* in their research or teaching. It should also be very useful to those biologists and biochemists who would like to be better acquainted with the scattered literature on this organism, but who have had no convenient access to it heretofore. Let us hope that nothing hinders the authors' intention to issue supplements from time to time.

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