ing the material in two sections makes the treatment spotty. One finds the description of the microscopes in one place and their use in other parts of the book; filters are discussed in several places; objectives are discussed under microscope optics and defined under photomicrography, and so on.

The vocabulary could be improved by omitting the words which vary only slightly in spelling and including words like *manche à balai* ("joy stick"—that is, micromanipulator control) whose meaning is not obvious from the words themselves. Some of the preparation is a bit careless: *Kristall* is given as the English for *cristal,* some references include only month and year, a book reference lists the third author as the first, the origin of Fig. 4 is not acknowledged, and so on.

There is much valuable material in this book, which presents French microscopy as it is viewed by three experts.

OSCAR W. RICHARDS
American Optical Company

Corrosion and Wear Handbook for Water Cooled Reactors. TID 7006. D. J. DePaul, Ed. U.S. Atomic Energy Commission, 1957 (order from Government Printing Office, Washington, D.C.). 293 pp. $2.25, paper.

Corrosion and Wear Handbook for Water Cooled Reactors is the sixth report in an unclassified series on reactor technology sponsored by the Naval Reactors Branch of the Atomic Energy Commission.

The handbook supplies theoretical background as well as experimental data on corrosion and wear of materials in water-cooled nuclear reactors. These data were provided by both governmental and private organizations which were prime- or subcontractors for the *Nautilus* Submarine Reactor and the Shippingport Pressurized Water Reactor projects.

The book is organized in three parts. Part A (four chapters) states the problems of using high-purity, high-temperature water as a reactor coolant. This part generally discusses nuclear reactors for power plants, choosing reactor materials, fundamental facts of corrosion and wear, and water technology. Part B (four chapters) gives basic reference data for use in design work. Corrosion and wear properties of various materials and combinations of materials under specified conditions are listed, as are the effects of variable factors on corrosion and wear and on recommended testing procedures. Part C (six chapters) deals with such special problems as crevice, stress, and intergranular corrosion, and with application and manufacturing problems involving wear.

Dictionary of Microbiology. Morris B. Jacobs, Maurice J. Gerstein, William G. Walter. Van Nostrand, Princeton, N.J., 1957. 276 pp. $6.75.

The authors have been liberal in marking out the scope of this dictionary, the first in its field. It "defines the terms commonly used in microbiology and the related fields of bacteriology, mycology, virology, cytology, immunology and immunochemistry, serology and microscopy." The fence erected to define these areas proved to be permeable to many of the protozoa of medical importance, but most of the helminths were effectively excluded. There are an estimated 4700 entries, consisting mainly of brief definitions or descriptions, arranged in a pleasing double-column format with key words in bold-face type. An occasional helpful chart or diagram is included. Cross references appear to be ample.

There may be a need for an alphabetically arranged reference book in microbiology, but opinions will differ concerning the form it should take. Entries as brief as most of those in the present volume will certainly restrict its usefulness. Perhaps this degree of brevity was felt to be necessary in order to produce a book of moderate size. Nevertheless, space could have been saved by other means, such as the omission of numerous terms that are defined as well and more completely in an ordinary desk dictionary and the avoidance of unnecessary repetition in the description of the several species of one bacterial genus. The striving for brevity, with the breadth of scope indicated above, may have contributed to inadequate coverage (for example, *myeloblast* and *myelocyte* are included; *lymphoblast* and *erythroblast* are excluded) as well as to unfortunate ambiguities and outright errors of fact. Examples will be found in the definitions of *fluctuation test, macrophage,* and *vaccination, bacterial.*

A better effort than that represented by this book will have to be made before the question of the usefulness of a dictionary of microbiology can be adequately answered by practical test.

FRANCIS B. GORDON
Naval Medical Research Institute

The Modern Researcher. Jacques Barzun and Henry F. Graff. Harcourt, Brace, New York, 1957. xiii + 386 pp. $6.

This useful handbook for anyone who has to put his thoughts in writing, from a college freshman to a foundation president, is offered in the twofold conviction that poor expression is nothing more than poor thinking and that there is no substitute for hard work. All is explained—how to use a library, how to take notes from the books found there, how to compose a periodic sentence, how to give a paper a beginning and a middle and an end, how to correct galley proofs. In addition, considerable space is devoted to a discussion of history, its methods of research, its logic, and its laws (if such there are). This discussion represents, at least in part, good popularizing, but it is never made clear just why it is included in the book, unless the reason is that the two authors are both also professional historians.—J. T.

A History of Luminescence from the Earliest Times until 1900. vol. 44 of *Memoirs* of the American Philosophical Society. E. Newton Harvey. American Philosophical Society, Philadelphia, Pa., 1957. xiii + 692 pp. Plates. $6.

When an electron in a molecule or atom is raised to a high-energy level and then drops back again, radiant energy is emitted. In some cases the emitted rays are visible to the human eye. When heat furnishes the energy for excitation, as in the sun, a candle, or tungsten filament, low-efficiency incandescence is observed. When the excitation energy is supplied from other sources, such as a chemical reaction, luminescence or "cold light" is observed. Examples of luminescence are numerous. There is *electroluminescence,* resulting from a flow of current (fluorescent lights, aurora borealis, *ignis lambens,* and St. Elmo's fire). *Phosphorescence* is the lasting luminescence which results from the exposure of a substance to irradiation. When the light emission is of very short duration (10^{-9} sec) it is known as *fluorescence. Thermoluminescence* is the emission of light on slightly heating a substance to liberate excited electrons from a trapped state. *Triboluminescence* and *piezoluminescence* are light emissions that result from rubbing and pressing a material, respectively.

There are many other examples of luminescence, including light emission by organisms (bioluminescence), and the purpose of the present book "is to trace the discovery and the ideas regarding these lights without heat from the earliest times until the end of the 19th century." The book is divided into three parts. In the first part a general survey of our knowledge of luminescence is given, while parts 2 and 3 deal with special types of luminescence associated with the nonliving and the living world, respectively.

For students of luminescence, physical or biological, this book is required reading. To others, it will be the fascinating