sashcord passing through a pulley permits the screen to be lowered into the operating position, in which it is accurately stopped by two chains, attached to the wall and the screen with screw eyes. At the distances shown in Fig. 1 a lens of 4¼″ focal length makes the image of a full standard slide cover the screen.

In Figs. 2 and 3 are shown the details of the well and the unique counterpoise for the projector. Each of the two 7-lb counterweights is attached to a stainless steel braided cable which passes over two pulleys attached to the underside of the desk top, and fastens through a steel grommet near the top of a 7″ tall steel bracket screwed to the trap door. Details of the pulleys are shown in Fig. 4. The trap door is mounted with concealed hinges, thus eliminating all projections above the desk top when the trap door is closed. A countersunk hinged ring in the top of the trap door enables one to lift it easily.

The two counterweights counterpoise the trap door with attached projector before the projector gets to the operating position. The same counterweights also counterpoise the trap door and attached projector before the trap door is closed (see dotted line position). This arrangement prevents accidental slamming of the door on either opening or closing.

A 24″×19″×16″ sheet-metal box screwed to the underside of the desk top forms the well for the projector. It protects the projector and also forms a storage space for the easily removable lens and mirror

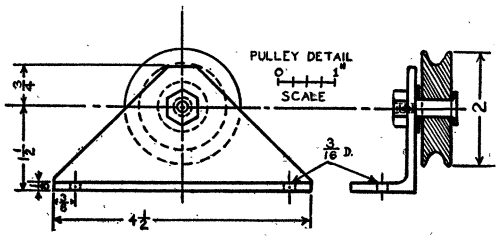

FIG. 4. Detail of pulleys for counterpoise assembly.

assembly. Two 2½″-diam metal tubes welded to the box form the guides for the two counterweights.

The electric power line to the projector bulb is permanently wired through a suitable snap switch and also through a microswitch. The microswitch is normally closed, but when the trap door is shut this switch is opened, thus preventing overheating of the projector in the closed well. The finger-operated snap switch enables the lecturer to turn the projector on and off at will.

It should be pointed out that the horizontal platform on which the lantern slide rests must be fastened to the body of the projector with two sheet-metal screws, and that the recessed glass plate should be cemented to this platform to hold them in place when the trap door is closed.

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Book Reviews

The Chemistry of Uranium: The Element, Its Binary and Related Compounds, Part I. Joseph J. Katz and Eugene Rabinowitch. New York–London: McGraw-Hill, 1951. 609 pp. $7.25.

This volume covers the "dry" chemistry of uranium and other pertinent data. The solution chemistry of uranium is to be dealt with in a subsequent volume. The first major section of the book has three chapters that deal, respectively, with the isotopic composition and the atomic weight of uranium, the x-ray and optical spectra of the element, and a survey of the occurrence of uranium in nature.

The second major section has chapters devoted to a brief account of the extraction of uranium from its ores and the major types of methods for the reduction of uranium compounds to give the metal (Chap. 4). The conventional physical and chemical properties of metallic uranium are the subjects of Chapters 5 and 6. A six-page chapter is devoted to alloys of uranium.

The third section has four chapters (8–11) that discuss the binary compounds other than the halides. Novel and interesting findings with regard to uranium hydride are presented in Chapter 8. Descriptions of uranium-boron and uranium-carbon, as well as the uranium-silicon system, are the subjects of Chapter 9; for the latter system a phase diagram is presented. A brief chapter covers the properties of compounds of uranium with nitrogen, phosphorus, arsenic, and antimony. The final chapter of this section deals at length with the oxides and hydroxides of uranium, with much new and authoritative data. The sulfides, tellurides, and selenides are briefly discussed.

The final part of the volume (Chaps. 12–16) deals with uranium halides and oxyhalides. A special chapter is devoted to the nonvolatile fluorides, with major emphasis on the tetrafluoride and its double salts with alkali fluorides. As might be expected, a rather lengthy chapter (53 pp.) is devoted to a thorough discussion of uranium hexafluoride. A full coverage of the chlorides is given in Chapter 14, with much new and interesting information. The bromides, iodides, mixed halides, and borohydride are treated in Chapter 15, which concludes with a discussion of the various attempts that were made to prepare uranium carbonyl. The oxyhalides of uranium form the subject matter of the concluding chapter.

The general impression given by this treatise is that the earlier literature has been critically reviewed and

that the new findings are presented with good balance as to the extent of treatment of various topics. A good cross section of the physical and general chemical properties is given, and much worth-while data and theory are collected and correlated with previous information.

The journal and text literature is assembled chronologically at the end of each chapter, referred to by author and by year. The extensive project literature follows the foregoing and is indexed alphabetically by sites—e.g., British, Brown University, C.E.W.–T.E.C. (Clinton Engineering Works, Tennessee Eastman Co.), etc., with work from each site listed chronologically and serially numbered. In the text, reference is made to these project reports by site and number—e.g. MP Chicago, 2, or U.C.R.L. 35.

There is a rather brief subject index of 9 pages that has rather few cross references on detailed matters. However, the logical arrangement of subject matter in the book is such that the reader should have no great difficulty in finding detailed information.

The lithoprint process has produced a clear and readable text, with adequate emphasis on topics through judicious use of center and side headings.

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Biological Actions of the Adenine Nucleotides. H. N. Green and H. B. Stoner. London: H. K. Lewis, 1950. 221 pp. 25s.

In recent years a number of excellent monographs have appeared on the biochemistry of adenine nucleotides. However, little attention has been given to the pharmacological and pathological aspects of these substances. Most of the available reviews in this latter field are outdated. The recent book of Green and Stoner will, therefore, be welcomed by research workers. The authors, members of the British Traumatic Shock Team during World War II, have published many papers on their original investigations in the past decade dealing especially with the significance of adenine nucleotides in traumatic shock. This book, aside from review material, contains many heretofore unpublished experimental data from the authors' laboratory.

The first chapters review briefly the chemistry and enzymatic decomposition of the adenine nucleotides. Absorption and fate of adenosine triphosphate (ATP) injected into the organism are discussed. Experimental data are presented on the absorption and decomposition of intraperitoneally injected nucleotides. These data are of special interest because of recent attempts to use ATP injections in the therapy of various pathological conditions.

Subsequent chapters describe the actions of ATP and other purine derivatives on the cardiovascular and respiratory systems, body temperature, oxygen consumption, carbohydrate metabolism, etc. Tables are presented on LD_{50} and shock-inducing doses. Autopsy findings are described in detail. All these data are compared with the effects of ischemic shock.

The central concept of the book is to demonstrate analogy between the action of parenterally administered adenine nucleotides and ischemic shock. Such similarities are pointed out in each section. In the last chapter the literature on the possible role of nucleotides in pathological states is reviewed. The authors and their collaborators observed increased inorganic phosphate, acid labile phosphate, and pentose levels in different types of shock in humans and in rabbits. Kalckar and Lowry, however, obtained contradictory results using the differential ultraviolet spectroscopic method of the senior author. The recent studies in this field of Hoffman, Rottino, and Albaum (SCIENCE, **114**, 188 [1951]) and Zahl and Albaum (*Proc. Soc. Exptl. Biol. Med.*, **77**, 388 [1951]) could unfortunately not be included.

The effect of different substances and conditions on ATP shock was also investigated. Magnesium and infections dramatically potentiated ATP shock, calcium increased the cardiac effects, myoglobin the nephrotoxic action, and embolism potentiated the respiratory damage. On the other hand, ATP increased the production of thrombi and retention of emboli in the pulmonary circulation and sensitization to various infections. Isotonic sodium chloride infusions and warm environment proved to be the most effective therapeutic measures in ATP shock of mice. Quinine and mepacrine showed some antagonistic effect toward adenosine derivatives, whereas paludrine was ineffective.

Although the point the authors most emphasize—the role of adenine nucleotides in traumatic shock—seems to be largely controversial, this book will be a valuable reference for those interested in the pharmacological actions of these compounds.

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Scientific Book Register

Diptera of Patagonia and South Chile: Mycetophilidae, Part III. Based mainly on material in the British Museum (Natural History). Paul Freeman. London: British Museum (Natural History), 1951. 138 pp., 49 plates.

Die Grundlagen der Theorie des Mikroskops. Kurt Michel. Stuttgart: Wissenschaftliche Verlag, 1950. 314 pp.

The Psychoanalytic Study of the Child, Vol. VI. Ruth S. Eissler *et al.*, Eds. New York: International Univ. Press, 1951. 393 pp. $7.50.

Higher Chemical Arithmetic. F. W. Goddard. New York–London: Longmans, Green, 1951. 221 pp. $1.60.

Experiments in Biochemistry. Max S. Dunn and William Drell. New York–London: McGraw-Hill, 1951. 197 pp. $5.00.

Progress in the Chemistry of Organic Natural Products, Vol. 8. L. Zechmeister, Ed. Vienna: Springer-Verlag, 1951. Distributed by Walter J. Johnson, New York. 400 pp. $16.00; $16.80 bound.