

**Microcalorimetry**

By Prof. W. Swietoslawski. Pp. x+199. (New York: Reinhold Publishing Corporation, 1946.) 4.75 dollars.

THE author is professor *in absentia* of physical chemistry of the Institute of Technology, Warsaw, and senior fellow, Mellon Institute, Pittsburgh.

In the monograph under notice he reviews the methods which have been used for measuring small amounts of heat. Such methods find application in physics, physiology and kindred subjects. The reader will find it a valuable reference work when faced with a problem in micro-calorimetry, for in successive chapters information is given on the micro-calorimeters used in radiology; the use of the ice calorimeter in microthermal measurements; calorimetry of processes of short duration; adiabatic micro-calorimeters; and labyrinth flow calorimeters. To facilitate references to original sources of information, the author has collected 130 references to published work on the subject.

Throughout the book, stress is laid on the value of comparative measurements. Such methods may involve: (1) using twin calorimeters and in compensating the heat developed in one calorimeter by electrical energy introduced into the other; (2) carrying out two successive measurements in one calorimeter, so as to produce the same thermal effect by an electric current as that developed by the object under examination; (3) using two series of successive measurements as mentioned above, with the difference that in one experiment the heat is developed by the object only, and in the other by the object and an electric current; (4) comparing the heat liberated by the object with that produced by a standard substance. The use of all these methods is described in the book.

The author has had an extended experience in the development of micro-calorimeters, and his critical comments on the various designs constitute a substantial contribution to the subject.

EZER GRIFFITHS

**Between the Planets**

By Fletcher G. Watson. Pp. v+222.

**The Story of Variable Stars**

By Leon Campbell and Luigi Jacchia. Pp. v+226.

**Galaxies**

By Harlow Shapley. Pp. vii+229.

(Harvard Books on Astronomy.) (London: J. and A. Churchill, Ltd., 1947.) 18s. each volume.

THESE three volumes belong to the well-known series of Harvard Books on Astronomy. The first and second were published in 1941, the third in 1943; reprints of all three have been required, and some additions have been made to the second. The Harvard College Observatory is to be congratulated on its enterprise in arranging for the publication of a series of eight books, all by members of its staff, which together provide a comprehensive and up-to-date survey of astronomy. Each book is written by an authority in its particular field, is abundantly illustrated, and is well printed. The series has gained a well-merited success. Though intended primarily for students, teachers and amateurs, the books are useful also to the working astronomer for reference purposes, as recent developments in the respective fields are dealt with.

The first of the three volumes under notice is concerned with the minor planets, comets, meteors and the zodiacal light. The second deals with variable

stars, including novæ and eclipsing variables. The third includes a detailed account of the Magellanic Clouds, of the Milky Way considered as a galaxy, and of the neighbouring galaxies; the more remote galaxies are then dealt with, and finally the problem of the interpretation of the red displacements of the lines in the spectra of the distant galaxies is discussed.

H. S. J.

**A Text Book of Physical Chemistry**

By Dr. N. C. Sen Gupta and K. C. Sen. New edition. Pp. xv+526. (Calcutta: Mondal Brothers and Co., Ltd., n.d.) 10 rupees.

THIS is an interesting survey of physical chemistry up to the pass B.Sc. standard and a little beyond in places. It deals with the usual subjects, thermodynamics being given special prominence. In the section on electrolytes, activity coefficients are developed and used, and the treatment is modern. The sections on atomic and molecular structure are good. There are collections of questions and problems, with answers, and suggestions for further reading.

Although intended primarily for Indian students, this book is a very useful review of modern physical chemistry in reasonably small compass which would be quite suitable for most courses in the subject elsewhere. No serious errors were noticed beyond the statement (p. 98) that no work is done in Joule's experiment because the gas rushes into a vacuum. This is a common error; the fact is that the change occurs in a rigid vessel and so external work cannot be done. The book is well printed and illustrated on good paper, the production being Indian, but the binding is not so good.

**The Theory of Valency and the Structure of Chemical Compounds**

By Prof. P. Rây. (Cooch-Bihar Professorship Lectures for 1941.) Pp. vii+82. (Calcutta: Indian Association for the Cultivation of Science, 1946.) n.p.

THESE lectures deal with the development of the theory of valency from its origin to the latest quantum-mechanical views on the subject. The subject is discussed concisely, but the exposition is clear and interesting. Some of Prof. Rây's own work is dealt with, and there is a useful bibliography.

**Wonder of Wings**

A Book about Birds. By Nancy Price. Pp. 253+16 plates. (London: Victor Gollancz, Ltd., 1947.) 14s. net.

A PLEASANT book is this, a volume of chat, gossip and discussion concerning birds, bird matters and problems. It is a book that can be picked up and put down, and picked up again, to dip into here, there and anywhere, the reader each time finding something new, readable and interesting. Many of the chapters are dialogues between Miss Price and her neighbour, "the Birdman", their discussions ranging over a wide variety of bird topics, from how the gods punished the raven for its sins by turning it a sombre black, to legends concerning the wren, and the story of the willow pattern plate. The author is a little confused with regard to Capt. Knight's well-known eagle, "Mr. Ramshaw", which she refers to as a martial eagle. Capt. Knight had a martial eagle; but "Mr. Ramshaw", hero of many travels and adventures, was a golden eagle of Scottish origin.

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