continuously until 1914. His text-book on organic chemistry has been translated into many languages and is in use in many countries.

Greater than any other phase of his work has been his inspiration of the men whom he trained. To the younger students he appeared cold, distant, severe—an impression emphasized by his faultless dress, precise speech, perfect manner and dignified bearing. Later, when they became more familiar with the working of his mind, they perceived that this precision in habit and speech and gesture was, as a former student put it, "the polish of chilled steel and not a coat of varnish on wood." As soon as a student proved his interest in his work and showed a proper comprehension of what it meant he found Professor Remsen richly gifted with the ability to arouse curiosity and enthusiasm. It was then that reverence and affection began to grow together. The erstwhile cold and distant professor would gladly take hours in discussing a student's plans of study with him and count the time well spent.

The Committee on Award has done well to provide that the first Priestley Medal shall go to so great a teacher, so eminent a man of science, and withal so distinguished a gentleman and scholar.—*The New York Times.*

SCIENTIFIC BOOKS

A Comprehensive Treatise on Inorganic and Theoretical Chemistry. By J. W. MELLOR. Vol. I, 1065 pp, H. O; Vol. II, 894 pp, F, Cl, Br, I, Li, Na, K, Rb, Cs; Vol. III, 927 pp, Cu, Ag, Au, Ca, Sr, Ba. New York, Longmans, Green & Company. Price $20.00 per volume.

THE appearance of the first three volumes of this important work which "aims at giving a complete description of all of the compounds known in Inorganic Chemistry, and, where possible, these are discussed in the light of the so-called Physical Chemistry," permits a somewhat better estimate to be made of the value of the series (to contain six or seven volumes when complete) than was possible when only the first volume was available.

So unique a work in English has naturally attracted much attention, as is attested by the numerous reviews of the separate volumes which have appeared in the technical, and even in the popular press.

The first impression is one of admiration and wonder at the courage and industry of the author in attempting so tremendous a task, and the scientific world, particularly the English-speaking world, must be very grateful to Dr. Mellor for this important contribution to chemical literature.

Most large reference books have been written by a number of authors under the editorship of an individual or group; the present work represents a distinct departure from that system. Certain faults are inherent to either method. It is very difficult to bring about unity of treatment, and to avoid overlapping, where different chapters are written by different individuals; on the other hand, in the work of a single author it is almost inevitable that the treatise shall be somewhat colored by the individuality of the writer, and that emphasis shall be given to particular phases of the science in which he may be most interested. It can not be said that the "Comprehensive Treatise" has escaped entirely these latter faults, and they will seem more or less serious according to the individual who uses the book, and the purpose for which it is employed.

The method of treatment departs widely from the usual, the subject matter following almost the identical arrangement employed in the author's earlier text-book, "Modern Inorganic Chemistry," which the author declares in his preface to be an abridgment of the present work. The reviewer has already[1] expressed the opinion that this method of treatment is not a happy one. The elementary text-book, assuming little previous information on the part of the student, must of necessity limit its statements of theory to terms which may be understood by the student at that particular point in his development. This necessitates frequent incomplete treatment, which it is expected will be developed further at a later period. The same method in an advanced reference book leads to obvious disadvantages, for it means that the theoretical treatment will be subdivided and scattered. The first volume particularly of the "Treatise" illustrates this fault, for while entitled "Hydrogen and Oxygen," it really contains a large proportion of general historical and theoretical subject matter. As a characteristic example may be cited the section on "Valency," which gives a rather full discussion of the subject, but does not touch at all on the modern theory with its relation to atomic structure, as this subject is to be treated in a later volume. Similarly "Acids, Bases and Salts" are treated in the chapter on "Oxygen," but since the theory of electrolytic dissociation has not been introduced at this point, the subject is not discussed from this standpoint. "Equilibrium" is treated partially in Volume I but we find it somewhat amplified in Volume II under "Compounds of the Halogene with Hydrogen." "Colloids" are discussed under "Gold" in Volume III, but whether further attention will be paid to them will not be known until later volumes appear.

Numerous other examples may be cited, but these

[1] J. Am. Chem. Soc., 44, 1836 (1922).

may serve to illustrate what seems to the reviewer a serious fault in the treatment of theory, making it frequently incomplete, scattered and difficult to find.

The statistical information is much more satisfactory. An enormous amount of information is given, much of which is not available in any other reference book with which the reviewer is familiar. The historical method of treatment is employed, and an unusual amount of the older data is introduced. This may sometimes lead to a little confusion, as it is frequently followed by conflicting subsequent data, without comment by the author.

The references seem extremely full. They are given at the end of each minor subdivision, and may prove difficult to use unless a complete author index is to be included eventually. Many subjects are brought quite up to date; in others ten or twenty years may have elapsed since the latest reference quoted.

The style is that associated with the author's previous works—vigorous, entertaining, and interwoven with philosophy and humor, making the treatise unusually "readable" for a work of its type. In fact, it may be that it fulfills the purpose of providing outside reading for the advanced student better than most other purposes for which such a work may be used. Errors and misprints seem rare; rather curiously most of the errors which the reviewer has detected occur in the form of statements which say exactly the opposite of the author's intention. The book is very well printed and attractively designed. In the text words of particular importance are printed in heavy type, which aids the eye in locating particular subjects on the page.

The three separate volumes may be discussed briefly.

Volume I is somewhat introductory in nature, containing several historical chapters, together with such subjects as "The Physical Properties of Gases," "Solutions," "Crystals," "Thermodynamics and Thermochemistry," as well as the chapters devoted to "Hydrogen," "Oxygen" and their compounds. The volume is most satisfactory, in the opinion of the reviewer, in the purely historical chapters, and in the excellent chapters on "Ozone" and "Hydrogen Peroxide."

Volume II treats the halogens as a group, with comparison and contrast of their properties and those of their compounds, over four hundred pages being devoted to them. As an example of the large number of references it may be noted that seven pages of references in fine print follow forty pages of text on the subject of "Metallic Halogenates." The alkali metals (including ammonium compounds) are given treatment similar to the halogens.

Volume III treats "Copper," "Silver," and "Gold," separately and in much detail, while the alkaline earths are treated as a group.

Volumes II and III contain, naturally, a much larger proportion of statistical information than is the case with Volume I. They are therefore less subject to the criticisms indicated above, and seem to the reviewer more satisfactory for reference purposes.

On the whole the "Comprehensive Treatise" undoubtedly represents a most important contribution to chemical literature, and one that will prove invaluable to the investigator as a source of information and suggestion, and to the advanced student and teacher as a source of "outside reading" which will prove interesting and valuable.

The remaining volumes of the series will be awaited with much interest.

GRAHAM EDGAR

THE UNIVERSITY OF VIRGINIA

SPECIAL ARTICLES

A NEW OCCURRENCE OF THE BLACK-EYED YELLOW MUTATION IN RATS

IN 1914 a strain of black rats was developed in the animal colony of the Wistar Institute from several black individuals obtained in the F_2 generation of a cross between a wild Norway male and an albino female. The strain has been maintained through some 25 generations in which many hundreds of rats have been reared that have always bred true to type.

On January 14th, 1922, a litter of eight young was cast by a young black female that had been mated to a male taken at random from the black stock; all of these young later developed into seemingly pure blacks. Three days after the birth of this litter a ninth individual, apparently less than 24 hours old, was found in the nest. This individual, a female, was about to be discarded when it was discovered that the eye were a much lighter color than those of normal black rats at birth. It was reared by an albino female, and developed into a light grayish colored rat with dark red eyes. A color variety of this kind had never been seen in the colony.

When mature, this mutant female was mated with a "dilute gray" male.[1] The offspring of this mating, three males and two females, were all of the wild gray type, indicating that the new mutation was not one of the color-albino series of allelomorphs like dilution. When these grays were inbred they produced, among other color varieties, black-eyed yellow young. Yellow varieties of rats had previously been obtained only from the stock originally imported from England by Dr. Castle in 1914. As the Wistar colony

[1] P. H. Whiting and Helen Dean King, "Ruby-eyed dilute gray, a third allelomorph in the albino series of the rat," *Jour. Exper. Zool.*, vol. 26, 1918.