Book Reviews

Colloid Science. James W. McBain. Boston: Heath, 1950. 450 pp. $6.00.

Advances in Colloid Science, Vol. III. H. Mark and E. J. W. Verwey, Eds. New York-London: Interscience, 1950. 384 pp. $7.50.

These two volumes, though treating the same subject, offer the most marked contrast in type. *Colloid Science,* the work of a single active mind with a lifetime of experience and reading to nourish it, takes into judicial consideration the whole field of colloid science. The second volume is a composite of many minds, each considering a separate specialized aspect of colloid science. The first has breadth and unity—the second explores its special topics in greater detail, though they remain unrelated. The first has an appeal to the general reader, the second is for the specialist.

To many a reader the most important trait of McBain's book will be its readability. There is an intense preoccupation with the subject, coupled with an ease in discussing it which, however much they may differ in form and content, recalls Dr. Johnson's *Lives of the Poets.* Both books were written by men of high intellectual abilities and lifelong familiarity with their subjects. Like Johnson, McBain includes personal and historical reminiscences, naturally, gracefully, and with no loss of seriousness. Filled though it is with references, and evidence of hours of reading and reflection, the book reads as if it had been written straight from a copiously filled mind. An occasional flash of ironical humor rewards the discerning reader.

The student of the subject will find much more. McBain discusses no topic without first examining its intellectual credentials and pronouncing on them. No process is better designed to reveal the quality of an author's mind. The quality of greatness in men is not as hard to recognize as it is to admit, but there are few who will deny its presence in this book. The mental attitude of a practicing scientist is so naturally and consistently maintained throughout, even to minute applications, that it gives an intellectual tone to the work. It is shown in numerous ways, as, for example, in the author's sturdy refusal to wed himself to hypotheses, in his avoidance of mathematical jargon, in his preference for the presentation of facts rather than the discussion of hypotheses, and in the creative forward step by which the sum of what has been done is used to point out what is next needful to be done. That step is taken so readily and frequently that the book is in itself a contribution to original research. Better than any philosophical discussion of "scientific method" this book is a rare and inspiring actual example.

The third volume of *Advances in Colloid Science* meets the intention of the original founder, the late E. O. Kraemer, by presenting a survey that is truly international in scope. The wisdom of the idea is fully demonstrated in the first contribution alone: "Atomic and Molecular Forces in Adsorption," by J. H. de Boer of the Netherlands. This is a well-coordinated review of a large body of recent work, much of it done by the productive Dutch school of colloid scientists. This article and the one by J. Th. G. Overbeck of Utrecht, on the "Quantitative Interpretation of the Electrophoretic Velocity of Colloids," discuss two active interests of the Dutch school. The value of these surveys will be appreciated in this country.

A high standard is held throughout. The primary emphasis is placed in nearly every case on the fundamental science of the phenomena, rather than on immediate practical applications. This emphasis is less pronounced in the final article on "Flotation." The two articles with the greatest commercial importance are those of J. H. Dillon on "Fatigue Phenomena in High Polymers," and of S. R. B. Cooke on "Flotation." Recognition of the physicochemical phenomena that occur during a fatigue test will help both in the design and the interpretation of future tests. The author's conclusion is interesting: "It may be necessary to set the practical indexes aside . . . in order to pry deeper into the true nature of fatigue in high polymers."

The remaining reviews are "Surface Chemistry and Colloids," by A. E. Alexander (England); "Lyogels," by A. E. Hauser and D. S. le Beau (U. S. A.) and "Ultracentrifugal Sedimentation of Polymolecular Substances," by Per-Olof Kinnel and B. G. Ranby (Sweden).

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A Monograph of the Existing Crinoids. The Comatulids, Vol. 1—Superfamily Tropiometrida, Part 4c, the Families Thalassometridae and Charitometridae. U. S. National Museum, Bulletin 82. Austin Hobart Clark. Washington, D. C.: Government Printing Office, 1950. 383 pp., 32 plates. $2.25.

Parts 3, 4a, and 4b of this comprehensive monograph have been published previously, and the concluding Part 5 is in preparation. They include the systematic discussion of the species and higher groups of the living comatulids, or unstalked crinoids. The present volume contains systematic diagnoses of the 22 genera and 95 species comprising these two families, including keys to all the genera and species, historical data, detailed diagnostic features, habitat, localities in which each species has been found, and a complete synonymy.

On the 32 plates are excellent photographs and drawings of most of the species, including many type specimens. One genus, four species, and two varieties are described as new to science, and new names are proposed for two other species.

So thorough and comprehensive has been this study that it will not have to be repeated.

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