Elements and Compounds

A New Dictionary of Chemistry. L. MACKENZIE MIALL and D. W. A. SHARP, Eds. Fourth edition. Wiley, New York, 1968. x + 638 pp., illus. $14.

The Encyclopedia of the Chemical Elements. CLIFFORD A. HAMPEL, Ed. Reinhold, New York, 1968. viii + 849 pp., illus. $27.50.

Encyclopedias and dictionaries have a certain common pattern, and in this dual review it was felt that some comparison could be made between these two compendia. Actually there can be little if any comparison. There is only a minor amount of overlap in content between the books—rather they are complementary. The *New Dictionary of Chemistry* is largely a dictionary of organic compounds with a lesser coverage of inorganic materials and their properties. The *Encyclopedia of the Chemical Elements* is an excellent summary of the properties of all the known elements—and especially those of the more newly discovered ones—including their isotopic forms. While expert organic or inorganic chemists may not find answers to highly technical questions in their respective fields of interest, nevertheless most organic chemists will find the answers to many of their organic as well as general inorganic questions in the *New Dictionary of Chemistry*. The approximately 75 authors of the more than 100 separate sections in the *Encyclopedia of the Chemical Elements* include some of the outstanding experts in the areas in which they write, and their expertise lends particular authority to the material presented.

The *New Dictionary of Chemistry* does not identify the writers of individual entries; to do so would have been less practical, in view of the larger number of short descriptions the work includes. The writing staff of this latter volume is drawn largely from the United Kingdom, but the international character both of the facts of chemistry and the English language makes the volume of use to almost all chemists even though its "coloured" spelling may denote its national origin. This is the fourth edition of the *Dictionary*, which has, in the 28 years since the first edition, undergone gradual improvement and development. A considerable amount of deletion has been made from the materials in earlier editions so as to permit the inclusion of new items and still keep the work at more or less the same size. Both volumes are recommended for personal and library reference.

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The Infinite Variety of Haldane

Haldane and Modern Biology. K. R. DRONAMRAJU, Ed. Johns Hopkins Press, Baltimore, 1968. xviii + 333 pp., illus. $10.95.

JBS. The Life and Work of J. B. S. Haldane. RONALD W. CLARK. Coward-McCann, New York, 1969. 328 pp. + 8 plates. $6.95.

There is a story of the late J. B. S. Haldane playing a part in some charades at the home of Bertrand and Dora Russell. When he was absent from the room for a protracted period, G. P. Wells was sent to look for him. He found the great man (physically as well as intellectually great) seated naked on the floor of the hall with a tiger-skin rug around his loins and a rosebud between his lips. Questioned as to what he was doing, he murmured with his usual intensity, "I'm trying to look like Cleopatra." However incongruous the scene, Haldane was certainly, in Shakespeare's words, a human being of "infinite variety," as the volumes reviewed here amply testify.

Dronamraju has edited a volume of 27 contributions as a tribute to Haldane's memory. Some of these are original articles in fields in which Haldane worked; others describe and attempt to evaluate his contribution to a particular field; yet others consist simply of reminiscences of Haldane. The collection thus lacks any semblance of unity but contains a number of highly interesting articles and essays. The first two sections (entitled "Genetics" and "Evolutionary Biology and Biometrics") include 15 contributions by distinguished geneticists. Sewall Wright's article is especially valuable for its brief, clear exposition of the differences between the mathematical theories of natural selection put forward by himself, by Haldane, and by R. A. Fisher. This discussion is carried a stage further in the article of Kimura, who stresses the differences between the deterministic and stochastic approaches to population genetics. Haldane was the real originator of the concepts of "genetic loads" and the "cost of evolution" (especially in his 1937 paper "The effect of variation on fitness"); it is appropriate that this aspect is dealt with by J. F. Crow, although without reference to multiple-niche polymorphism ("annidation" in Ludwig's terminology). Jean Sutter, writing from the standpoint of a demographer, claims that in human population genetics Haldane had "the sharpest views by far" (by comparison with his great contemporaries).

T. C. Carter and A. G. Searle deal with Haldane's contributions to two fields of mammalian genetics, radiation genetics and the problem of homology in the coat color alleles of different species. The articles of Lerner and Inouye (on maze-running in *Tribolium*), Schull and MacCluer (on inbreeding in Japanese populations), and Cedric A. B. Smith (on testing segregation ratios) are all on topics that would have interested Haldane but are essentially papers that might have been published in almost any genetics journal.

Biochemical fields are dealt with by Haldane's nephew, N. A. Mitchison, in an article on antigens, and by Ernst Caspari ("Haldane's place in the growth of biochemical genetics"). Mitchison's article is full of interesting concepts and traces connections between modern ideas in this field and the arguments and work of Haldane and his protégé Peter Gorer. But he errs in attributing to Haldane the statement that the Gros Michel (not "Gran Michel") clone of bananas was wiped out by a single epidemic of a pathogen because of homozygosity. Haldane knew very well that Gros Michel is a triploid and probably highly heterozygous. Monomorphism $\neq$ homozygosity.

Haldane always stressed the importance of disease in evolution and natural selection. It is at least possible that if he had not done so the discovery of