

Structure of Metallic Catalysts; by J.R. Anderson, Academic Press London, New York, ix + 469 pages, 1975, £12.80, \$33.25.

It is pretty rare these days to be treated to a worthwhile and readable monograph written by a single author; how much better this volume is compared to the more usual disjointed collection of papers presented at some conference.

The material, although admittedly descriptive and qualitative, is valuable reading for surface, catalytic and, indeed, organometallic chemists. A brief introduction to metals, their surfaces and chemisorption can only be faulted by its inevitable omission of the newest results on the energy levels of surface molecules, being provided now by photoelectron spectroscopy. The chapter on support materials is extremely informative and there is an admirably balanced discussion of "massive metal catalysts". An examination of dispersed metal catalysts is followed by a discussion which must interest most inorganic chemists: the structure and properties of small metal particles. Perhaps the choice of metal clusters, to illustrate a number of points, is somewhat eccentric and it is a pity not to read more about the organometallic chemistry of clusters; even so, there are useful thoughts and ideas to be picked up here.

Measurement techniques related to surface area, particle size and pore structure and, later, to surface composition and structure are finally described; the latter discussion is somewhat déjà vu since it was presumably written in 1973 or 1974 as the new spectroscopic techniques were beginning to come into their own. But this is really a minor drawback in a book which deserves to sell well.

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Physical Organic Chemistry. The Fundamental Concepts; by C.D. Ritchie, Dekker, New York, vii + 283 pages, Swiss Fr. 58.

This very good book really does, as the title implies, concentrate on the fundamental aspects of physical organic chemistry. That is, the emphasis is heavily on principles, with accounts of specific reactions limited to those which directly illustrate these principles. The chapter headings clearly indicate the scope: (1) Kinetics: integration of simple rate expressions; (2) Kinetics: characterization of transition states; (3) Combination of kinetics, stereochemical, and product studies; (4) Structure and reactivity: empirical relationships; (5) Structure and reactivity: molecular orbital theory; (6) Carbonium ion, carbanion, and base-equilibria; (7) Acid-base catalysis; (8) Equilibrium and secondary isotope effects; (9) Transition state theory and primary isotope effects; (10) Carbanion chemistry.

This is a scholarly work, with a difference in approach and coverage which makes it a most valuable addition to textbooks on physical organic chemistry. It demands careful attention from the reader, but the effort is well rewarded.