but the book is not saturated with formulas. The interrelationships of these topics are left up to the reader.

The review is general, brief, and to the point. The extent to which each topic is discussed depends on the amount of published literature on the subject, and the author shows no original thought in presenting the subjects. His intentions could have been accomplished just as well by outlining the topics and listing the appropriate references under them. However, this book will be useful as a review for research workers and for those who are generally interested in social insects or in initiating research in this field. In view of the increased interest in population studies and the large amount of recent work, it serves as an adequate comprehensive survey of the subject.

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Geology

Controls of Metamorphism (Wiley, New York, 1965. 368 pp., $13.50), edited by Wallace S. Pitcher and Glenys W. Flinn, is a miscellaneous collection of essays on aspects of regional metamorphism considered against the background of experimental and analytical chemical data. Perhaps unavoidably, considering the broad scope implied by the title, the book is scrappy in content and uneven in quality. Much of its substance is accessible elsewhere; few of the ideas are new.

I found the following sections of interest: Part of chapter 3, on deformation paths (D. Flinn), in which a relatively new concept in interpreting strain in deformed rocks is presented; chapter 5 on metamorphism in metals (D. McLean), and chapter 12 on isotopic dating of metamorphism (S. Moorbath), which provide useful summaries of topics not previously treated in toto in geological literature; W. S. MacKenzie's concise, timely statement regarding equilibrium (stable versus metastable) in chapter 13; J. Sutton's model of regional metamorphism (chap. 2) based on his wide experience with its manifestations—especially structural aspects—in the Scottish Highlands; chapter 7 on reaction rates (E. D. Lacy) in which some aspects of reaction kinetics in ionic crystals are considered.

Mineralogical data are discussed in several chapters: chapter 14, iron-titanium oxides (M. I. Abdullah); chapter 15, garnets (M. P. Atherton); chapter 16, biotites (B. C. M. Butler); chapter 17, calc-amphiboles (B. E. Leake); chapter 18, pyroxenes in granulites (R. A. Howie); and chapter 20, feldspars (W. L. Brown). The chemical compositions of biotite and calciferous amphiboles are found to shed little light on metamorphic conditions. The inferences drawn from garnet composition are weakened by the recent demonstration of wide prevalence of zoning in garnet crystals. There is little new regarding feldspars. It is questionable whether these mineralogical essays are appropriate in a book on the controls of metamorphism.

The granite controversy still echoes in two chapters on migmatites: chapter 10, experiments on melting, said to prove anatexis (H. von Platen), and chapter 11, geological evidence, much of it exhumed from old sources, purporting to refute anatexis and to demonstrate postmetamorphic metasomatism (B. C. King). E. H. Hellner and others contribute a chapter, at most of minor interest, on synthesis of chlorites and amphiboles from unstable initial mixes. W. E. Pitcher, in chapter 19, extends generalizations on paragenesis of Al_2SiO_5 polymorphs into less valuable reflections on their possible stability relations. R. W. Rutland's 17-page chapter on tectonic overpressures adds little to Clark's two-page statement [*Amer. J. Science* **269**, 647 (1961)]. The reader should glance at the sections entitled "Conclusions," in chapter 9 on isograds (M. P. Atherton) and in chapter 4 on mineral nucleation and growth (N. Rast) before deciding whether to read them in full. They are too long and repeat ideas expressed more concisely and with greater insight elsewhere in the literature.

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Laboratory Design

Chemistry and Biology Laboratories: Design, Construction, Equipment (Pergamon, New York, 1965. 265 pp., $17.50), by Werner Schramm, is a translation of the second German edition of his *Chemische und Biologische Laboratorien* (1960); M. Jansen was the translator, and J. M. Leytham edited the translation. The volume is the German counterpart of recent English and Danish publications—*Laboratory Planning* (London, 1962) by James F. Munce and *Laboratorier—Projektering, Bygning, Indretning* (Copenhagen, 1961). The books are primarily intended as technical guides to what is best in building and equipping modern laboratories for chemical and biological work.

The Danish work covers all kinds of scientific and technical laboratories and is a useful source of references for architects and building committees who are concerned with the design of academic or industrial laboratories. It represents the viewpoint of 80 contributors, including civil engineers, architects, engineers, chemists, and biologists.

Schramm's book, on the other hand, contains 15 chapters and gives examples and basic rules for different types of laboratory equipment for use in academic laboratories. I do not believe it will be very helpful to an architect who is not familiar with the space requirements for laboratory facilities for modern courses in general chemistry, organic chemistry, physical chemistry, analytical chemistry, biochemistry, and molecular biology in the United States.

The inexperienced architect would be well advised to consult the books that have been sponsored by the Educational Facilities Laboratories (New York) or by the National Research Council (Washington, D.C.). These books include *Modern Physics Buildings* (Reinhold, New York, 1961) by R. R. Palmer and W. M. Rice; *Buildings and Facilities for the Mathematical Sciences* (Conference Board of the Mathematical Sciences, Washington, D.C., 1963); and *Laboratory Planning for Chemistry and Chemical Engineering* (Reinhold, New York, 1963; published for the Committee on Design, Construction, and Equipment of Laboratories, Division of Chemistry and Chemical Engineering, National Academy of Sciences–National Research Council), edited by Harry F. Lewis.

Schramm's book is based on German practice insofar as laboratory furnishings and services are described. Steel furniture is not commonly available in Germany, where it costs 35 to 50 percent more than traditional materials (wood is given a surface treatment—Desmophen-Desmodur varnish, or Resopal, for example, p. 59). Tops made of reinforced concrete tiles may be