Book Reviews

Graphics in Engineering and Science. A. S. Levens. Wiley, New York; Chapman & Hall, London, 1954. viii + 696 pp. Illus. $7.

Graphics in Engineering and Science is unique in that it embraces in one volume three distinct aspects of graphical expression. The author has, therefore, properly divided the book into three parts. Part I deals with the fundamental principles of projection, or what may be termed the grammar of graphical language; part 2, on drawing practices, shows methods of expression in that language; part 3 is concerned with the coordination of graphics with the language of symbols in the solution of problems in mathematics and physics. It is felt that the book can best be reviewed by treating the three divisions separately.

Part I, "Fundamentals and applications of orthogonal projection," consists of material that in general may be found in any modern textbook on descriptive geometry. The nomenclature has been modernized so that it is almost completely divorced from Mongean terminology. The author has perhaps gone too far in this direction. For example, the terms *grade* and *bearing* used in defining lines, are not too fitting when they are applied to problems in machine design.

The treatment of visibility as a separate chapter (chap. 6) is excellent. The importance of reading is not emphasized enough in most textbooks.

There is not enough space devoted to problems in rotation about line axes. The use of supplementary projections on two adjacent coordinate planes is not always practical from the standpoint of working space. A solution by means of a rotation and perhaps one supplementary plane may be completely satisfactory and occupy far less space.

In part 2, "Technical drawing practices," the presentation, illustrations, and exercises are good. The material conforms to the most modern A.S.A. standards and practices. Sections, conventions, thread forms, fasteners, cams, and gears are admirably presented. There is adequate space devoted to dimensioning. The treatment of limit dimensioning is particularly well handled.

In part 3, "Graphical solutions and computations," Levens performs a distinct service in pointing up the value of graphical solutions to various types of problems encountered by engineers. The explanations of charts and nomographs and methods of setting up graphic scales for the solution of mathematical equations are succinctly and lucidly expressed.

The force diagrams in the chapter on "Graphic statics" are exceptionally good. The use of orthogonal projection in the solution of concurrent noncoplanar force systems is very well presented.

Not the least valuable section of Levens' book is the large appendix with its wide range of factual material and its carefully selected bibliography.

Graphics in Engineering and Science goes beyond its basic function as a textbook for college courses. It has an important function as a reference book in practical design and research.

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The Genus **Euglena.** Mary Gojdics. Univ. of Wisconsin Press, Madison, 1953. 268 pp. Illus. $6.50.

Mary Gojdics' monograph meets a need long felt by students of the genus *Euglena*. It includes a general discussion of the morphology and cytology of the genus, an artificial key to the species, a description of each species with original drawings by the author or reproductions of illustrations from original descriptions of the species, an annotated check list, and a complete bibliography to the taxonomy. The annotated check list of *Euglena* and citations to the literature are significant contributions to workers in the field, new and old.

The key to the species, based on the characteristics of the chloroplasts, is well thought out but, as in the case of most keys, it will be effective only in the hands of the expert. Cytologic procedures are often necessary before the chloroplast structure can be discerned. The initiate in protozoology or algology will be able to use the descriptions and illustrations for species identification.

The author has been effective in fusing her observations with those described by others. Her interpretations appear to be valid in light of the present literature. Future publication will undoubtedly clarify some of the cases of speciation and synonymy discussed.

A second monograph on the physiology of the genus and its taxonomic implications is needed. Until this appears, the present morphologically centered work is a fitting and an excellent initiation to our present knowledge of the taxonomy of the group and a noteworthy contribution to the field.

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Artificial Fibres. R. W. Moncrieff. Wiley, New York, ed. 2, 1954. xii + 455 pp. Illus. $6.

The author is well known for his achievements in the synthetic fiber field and for his wide experience. The book, now in its second edition, attempts to introduce the outsider to the fundamental and technologic aspects of "artificial" fibers—that is, fibers prepared by man from natural or synthetic polymers. At the same time, some technologic information of interest to the specialist is offered. In spite of such conflicting tendencies, Moncrieff has solved the problem in a very competent manner. He has succeeded in presenting clearly