working fact about which we should be thoroughly informed and which we should try to understand.

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Graphic Methods in Structural Geology. William L. Donn and John A. Shimer. Appleton-Century-Crofts, New York, 1958. viii + 180 pp. Illus. + plates. $4.

Thinking in terms of three dimensions is an essential skill for geologists, and graphic representation ranks with words and numbers as a means of transmitting geological thought. Therefore Donn and Shimer's subject is important. Their book is a convenient manual of those common graphic methods which should be mastered not only by students but by geologists engaged in practical work. The authors assume no previous experience and little knowledge on the part of the reader. They "lead the student by the hand" from extremely simple to more advanced material.

Although the emphasis of the book is upon graphic methods of solving problems, elementary means of geologic representation are also included. Geologic sections and block diagrams are introduced in a paragraph or two for beginners but are not fully discussed. Geologic maps are given more attention, particularly with respect to relations between structure, topography, and areal distribution patterns of rock units. This treatment could be readily understood by students who are just beginning structural geology, and some of it could be understood by liberal arts students or persevering laymen.

The greater part of the book is devoted to graphic methods of obtaining quantitative solutions to structural problems and is not intended to enthrall the nontechnical reader. Orthographic projection is completely described—from true and apparent dip to advanced fault problems in which inclined faults have oblique net slip. One of the ingredients of many solutions is the arbitrarily chosen structure contour, and the authors wisely introduce this conspicuously, early in the game.

Stereographic projection is explained briefly and well. The relative advantages of stereographic and orthographic methods are indicated. Stereographic solutions are developed for apparent dip, strike and dip from vertical drill-core data, intersecting surfaces, plunge, pitch, and certain fault displacements. In addition, there is an explanation of the procedure of rotating the sphere of projection about a horizontal or inclined axis to solve "two tilt" and other important problems which are almost uniquely amenable to stereographic treatment. The use of stereonets in structural petrology is not specifically described, but the basic principles are adequately covered.

The degree of accuracy of the presentation appears to be good, and only a few probable errors were noted. Several illustrations in the first 50 pages are rather crudely drawn, but the great majority of the 103 figures are clearly executed.

The authors and readers should be well satisfied with this book. It will be particularly useful to geology students who have not had courses in descriptive geometry and to those who wish to understand stereographic methods. Other, more complete, treatments are available, but many of these deal only with one segment of the subject matter which Donn and Shimer have compiled so compactly.

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Physics. Erich Hausmann and Edgar P. Slack. Van Nostrand, Princeton, N.J., ed. 4, 1957. x + 722 pp. Illus. $8.

Fundamentals of Physics. Henry Semat. Rinehart, New York, ed. 3, 1957. 914 pp. Illus. $8. (Also available in two vols.)

Physics. A textbook for colleges. Oscar M. Stewart. Sixth edition by Newell S. Gingrich. Ginn, Boston, ed. 6, 1957. viii + 756 pp. Illus. $6.50.

These three current revisions of well-known texts for a one-year course in college physics are evolutionary rather than revolutionary versions of earlier editions. In each there are refinements such as upgrading of the paper stock, re-drawing of figures with greater use of shading or perspective to make diagrams clearer, changes in the order of topics and chapters, and the omission or abbreviation of certain topics to make space for new material, with no significant change in over-all length or character of the work.

All three continue to adhere to the classical division of physics into mechanics, heat, sound, electricity and magnetism, light, and atomic physics, and in essentially this order. *Hausmann-Slack* has 26 pages on radiation and atomic structure and 17 pages on solid-state electronics; *Semat* has 104 pages on atomics and nucleonics and about a page on transistors and semiconductors. *Stewart-Gingrich* has 25 pages on atomic physics and makes little mention of modern solid-state theory. An effort has been made in each book to solve the problems of units—a matter of great concern to many physics teachers. The trend from centimeter-gram-second units to meter-kilogram-second units is clear, but the transition is not complete. Particularly in electricity, it would seem better for both *Semat* and *Stewart-Gingrich* to work with only one (meter-kilogram-second) system of units.

Hausmann-Slack, clearly a text for engineering students or science majors, uses a considerable amount of mathematical background and some calculus. The discussions are brief and to the point, and satisfactorily rigorous. Perhaps the best feature of the new edition is the inclusion of new problems—problems which are varied, interesting, and challenging and which involve many up-to-the-minute situations. *Semat* uses no calculus, some trigonometry. It should be sufficiently rigorous and complete for students majoring in sciences but not too difficult for nonscience majors. The discussions are particularly clear and accurate, and the problems are varied and not too difficult. The discussion questions at the end of each chapter (they are not merely review questions) offer a particularly valuable supplement to the more usual problems. Probably all science courses should require students more frequently to analyze situations clearly and accurately in words and symbols, in addition to learning to solve problems for numerical answers. *Stewart-Gingrich* is designed for a general college physics course for students with no special mathematical background. It uses a rather standard, classical approach. While some sections are extremely well written, it tends more often than the other two books to give oversimplified, and occasionally inaccurate, statements and underived or unexplained formulas. Most chapters conclude with a brief, factual summary.

All three books have been used and liked by teachers for some years; the new editions will continue to serve in essentially the same types of courses and for the same types of teaching.

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Biochemical Preparations. vol. 5. David Shemin, Ed. Wiley, New York; Chapman and Hall, London, 1957. viii + 115 pp. $4.75.

Biochemical Preparations is designed to provide reliable procedures for the preparation of substances of biochemical interest and to illustrate valuable techniques and methods. It presents information about stability, properties, purification, and assay of the compounds included. This series may be warmly recommended to teachers, students, and research workers in biochemistry and related fields.

Two years have elapsed since the publication of the preceding volume. The editors hope subsequent issues may

appear regularly each year. They "more than welcome suggestions and the submission of well-described preparations of biochemical interest for future volumes."

In this volume carefully checked methods are presented for: the isolation of two enzymes, aldolase and crystalline condensing enzyme, and the purification of another, cytochrome *c*; the isolation of phosphatidyl ethanolamine, and of ribo- and 5′-deoxyribonucleotides, by ion exchange chromatography after alkaline and enzymatic hydrolysis, respectively, of the appropriate nucleic acids; the enzymatic preparations of nicotinamide mononucleotide and of S-adenosylmethionine; the chemical preparations of derivatives of biochemicals, sodium phosphocreatine, S-succinyl coenzyme A, L- and D-glutamine, and the formimino derivatives of glycine, L-aspartic acid and L-glutamic acid; the synthesis of adenine-8-C^{14}, dibenzyl phosphorochloridate, D-glyceric acid 2-phosphate, 2-deoxy-D-ribose, cyanomethylimidazole, imidazoleacetic acid hydrochloride, DL-, L-, and D-homocystine, DL-, L-, and D-homocysteine, and the S-benzyl derivatives of DL-, L-, and D-homocysteine.

A cumulative index of volumes 1 through 5 and a listing of the compounds of biochemical interest which have appeared in *Organic Syntheses* (through volume 37) are included.

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Ion-Exchange Resins. J. A. Kitchener. Methuen, London; Wiley, New York, 1957. vii + 109 pp. Illus. $2.

This small book appears at a time when interest in ion exchange is growing at a rapid pace. Chemists, biologists, and those in related fields seeking an introduction to the subject should find this book useful.

The organization is fairly standard. The first two-thirds of the book contain chapters on types of ion exchange materials, preparation of ion exchange resins, and the thermodynamics and kinetics of exchange processes. Discussion of chromatographic plate theory is brief but pertinent. In the last third of the book, some typical applications of synthetic ion exchangers, particularly to column separations of inorganic and organic substances, are described. Ion exchange membranes and their applications are discussed. The treatment of the various topics is necessarily brief, of course, in a book of this size, and readers already familiar with the field will not find the discussions as valuable as those found in more detailed books and review articles which have recently appeared.

The subject matter is presented in a clear and readable style. References to original literature are minimal, and those actually given should serve as an excellent starting point for a more detailed pursuit of the subject.

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The New India. Progress through democracy. Planning Commission, Government of India. Macmillan, New York, 1958. x + 412 pp. Illus. Cloth, $5; paper, $2.50.

This book is an abbreviated version of two recent official publications of the Government of India dealing with the achievements of the First Five Year Plan (1951–56) and the progress and objectives of the Second Five Year Plan, to be completed in 1961. It is written for the nonspecialist and is designed to give the general reader exhaustive information on what India has done, continues to do, and hopes to achieve in its efforts to improve its economic performance and the standard of living of its population. The book is written in a lively style, and since several Americans with long experience in India have collaborated with highly placed Indian officials in its composition, its contents not only have the ring of authenticity but also give due consideration to the interests of Westerners. The book is well illustrated, and some of the more important economic relationships are presented in well-designed tables. In addition, the main achievements and targets under the plans are summarized at the beginning of each chapter, under the general caption "highlights." Hence, by its presentation and its scope, the book forms an excellent introduction to the understanding of India and especially of India's efforts towards economic progress.

Since the book is put out by an official agency of the Indian Government its main strength consists in the facts and data it presents and not in the critical evaluation of these data. To be sure, the social and economic problems of India are well explained, but the solutions presented are only the official ones, and they are accepted without question as the best and most suitable. Thus, the picture that an ordinary reader without special firsthand knowledge about India gains is too rosy and too pat. The New India still has many facets of the Old India. In fact, India is a country in which practices and ways of acting characteristic of several different centuries coexist. There are religious practices which go back to the days of the Vedas, 3000 years ago. There are farming practices which have changed little in the last 2000 years. There are artisans who remind one of the craftsmen of the medieval world, and there are offices and shops which were up to date in the time of Queen Victoria. Next to them are buildings which foreshadow the 21st century, and factories and mills equipped with the most modern automatic machinery. In this book only these last are included in the New India, and very little is said about the tenacity and even the vigor of old institutions. This tenacity is bound up with the over-all cultural values of the Indian people, and in concentrating exclusively on the contents of the Five Year Plans and disregarding largely this cultural background, the book does not adequately convey a picture of all the forces at work in present-day India. Traditions of nonviolence, political factionalism, the caste system and its manifestations, and other forms of social behavior, many of which have deep roots in Indian life and culture, are either treated lightly or completely omitted. Yet the actual success of the plans—the meeting of the ambitious targets set out so clearly in the book—is contingent upon the changes which will occur in these cultural and social ways of behavior and not merely on the crores of rupees that will be spent on the manifold projects so clearly described in this work.

But apart from these shortcomings, which are due primarily to the official character of the work, this is an excellent, highly readable introduction to India's current economic problems and prospects.

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New Books

Loyalty and Security. Employment tests in the United States. Ralph S. Brown, Jr. Yale Univ. Press, New Haven, Conn., 1958. 541 pp. $8.

Le Volcanisme Lunaire et Terrestre. Origine des continents, des océans et des atmosphères; l'énergie géothermique. Alexandre Dauviller. Michel, Paris, 1958. 300 pp. Paper, F. 1200.

Nuclear Reactor Experiments. Staff of Argonne National Laboratory. J. Barton Hoag, Ed. Van Nostrand, Princeton, N.J., 1958. 495 pp. $6.75.

Standard Methods of Clinical Chemistry. vol. II. American Assoc. of Clinical Chemists. David Seligson, Ed. Academic Press, New York, 1958. 229 pp. $5.50.

A Comprehensive Dictionary of Psychological and Psychoanalytical Terms. A guide to usage. Horace B. English and Ava Champney English. Longmans, Green, New York, 1958. 608 pp. $10.75.

The Story of Archaeology. Agnes Allen. Philosophical Library, New York, 1958. 245 pp. $4.75.