

and 'gang', that 'basaltgang' means 'basalt dike'. In spite of these criticisms, there can be no doubt that this is an extremely useful contribution to geological literature.

The comparative table of the nomenclature of the Lower Palæozoic formations included at the end is incorrect, and, in any event, is unnecessary in a work of this sort.

Mathematics

101 Problems in Drawing-Board Geometry

By Prof. Frederic G. Higbee. Pp. 14 + 59 plates + 26 blank pages. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1939.) 8s. 6d. net.

THERE is no more valuable exercise in clear thinking than the solution of a problem by a graphical method and, by presenting the problem in the form of a partial drawing accompanied by a brief description as Prof. Higbee has done, the value of the exercise is considerably enhanced. After receiving some explanation of the principle to be applied, the student is expected to complete the work in good quality draughtsmanship. He has, therefore, first to visualize the printed data in the few points and lines given, then to formulate a method of applying the principle involved and finally to work out a neat and accurate drawing-board solution. The principles had been demonstrated by the author in an earlier work "Drawing-Board Geometry" and are referred to in the present book, which consists of detachable drawing sheets ready for completion. It offers to the teacher opportunity to develop in his pupils the ability to recognize in the given points and lines the representation by projection of corners and edges of a geometrical figure or of an engineering detail.

Analyse mathématique

A l'usage des candidats au Certificat de mathématiques générales et aux Grandes Ecoles, d'après les Cours professés à l'Ecole centrale des Arts et Manufactures et à la Sorbonne. Par Paul Appell. (Cours de mathématiques générales.) Cinquième édition entièrement refondue par Prof. Georges Valiron. Tome 2: Equations différentielles, développements en séries, nombres complexes, intégrales multiples. Pp. vi + 389-694. (Paris: Gauthier-Villars, 1938.) 70 francs.

THIS volume deals with differential equations (ordinary and partial), Taylor's theorem, convergence, Fourier series, complex numbers, double and triple integrals, and the theorems of Green and Stokes. The treatment is much less abstract than in the usual "Cours d'analyse"; worked examples are frequent, and the author uses geometrical arguments whenever they appear simpler than the formal mathematical treatment. There are also references to mechanics and mathematical physics. One of

the concluding notes explains the principles of Amsler's and other planimeters, and of the integrator. The style is clear, the printing exceptionally good, and there are many diagrams.

Advanced Mathematics for Engineers

By Prof. H. W. Reddick and Prof. F. H. Miller. Pp. x + 473. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1938.) 20s. net.

AMONG the various text-books which have appeared during recent years and which endeavour to bring advanced mathematical methods within the reach of the engineer this one appears to the reviewer to be of outstanding merit.

The presentation is exceptionally clear and easy to follow, since it indicates always in which direction and for what purpose an argument is being pursued, and the various steps are frequently illustrated by simple well-chosen examples. Not less will the engineering reader value the fact that the authors have shown how these methods work by applying them to a large number of problems covering a wide field of physics and engineering, and that in presenting proofs as well as applications they have considered his limited formal technique.

It is impossible to enumerate all the subjects dealt with. They range from a refresher course in differential equations and infinite series to elliptic gamma and Bessel functions, to the theory of probability, functions of a complex variable and operational calculus.

A. B.

Tables of Addition and Subtraction Logarithms with Six Decimals

By Dr. B. Cohn. Second edition. Pp. viii + 63. (London: Scientific Computing Service, Ltd., 1939.) 10s.

IF we are given the logarithms of two numbers, to find the logarithm of their sum by the aid of ordinary logarithmic tables, we must use the tables three times and perform one addition. If, however, a table of addition logarithms is available, we have only to use them once and perform one addition and one subtraction. Similarly, we use subtraction logarithms to find the logarithm of a difference. The saving of time is appreciable in spherical trigonometry, as used in navigation and astronomy. Dr. Cohn's tables are clearly printed, and include brief instructions for their use, with numerical examples.

The Nomogram

The Theory and Practical Construction of Computation Charts. By H. J. Allcock and J. Reginald Jones. Second edition. Pp. viii + 224. (London: Sir Isaac Pitman and Sons, Ltd., 1938.) 10s. 6d. net.

THE nomogram is very convenient for representing the values of a function of two or more variables. In its simplest form it consists of three lines (possibly curved), two graduated to represent the values of the variables, and the third to represent those of the function. To use it we have only to place a ruler through the two points representing the variables,