Short Notices

Dip and Strike Problems Mathematically Surveyed. By Dr. Kenneth W. Earle. Pp. x+126. (London: Thomas Murby and Co., 1934.) 12s. 6d. net.

IT is not stated whether this book is intended for use as a textbook, although on perusal this seems to be the case. It would perhaps have been preferable to mention the degree of mathematical knowledge desirable in the reader; some of the workings given in the earlier portions are detailed, while later portions omit stages in the calculations, and in this way difficulty might be caused to students who seldom use plane and spherical trigonometry. The working on page 9, from which formulæ for finding the true dip of a bed from three points of outcrop are derived, would be easier to follow had a figure been appended.

The worked examples are extremely useful and clear, and are essential to an understanding of the use of the formulæ. The term "secondary tilt" might perhaps have received more detailed definition, and here also a figure would be useful. Some of the formulæ deduced for use in problems connected with borings are somewhat cumbrous, notably No. 64, and would take some little time to work out even by slide rule. It may also be doubted whether it is worth while calculating dips to minutes of arc, having regard to the manner in which dips change in the field in quite short distances, even in districts which have not been materially affected by major earth-movements.

One of the best chapters is that dealing with faulting. The figures here are well set out and informative, and the treatment is exceptionally clear in style. The glossary of structural terms which concludes the volume is also very useful, though it would be difficult to follow some of the definitions given without a fair knowledge of structural geology.

B. H. K.

Differential Equations. By Prof. H. B. Phillips. Third edition. Pp. vi+125. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1934.) 10s. 6d. net.

To conform with modern teaching practice, the text of this book has been carefully revised and a few new sections added. The treatment is essentially practical and designed to provide a working basis for the scientific student. There are four chapters; two devoted to equations of the first order, one to the special types of second order equations most frequently occurring in practice, and one to linear equations having constant coefficients. The theoretical aspect has not been wholly ignored, and, though inadequate for the needs of purely mathematical students, sufficient is discussed to give an intelligent grasp of the principles underlying the solution of differential equations. The text is well illustrated by worked examples drawn mainly from mechanics, chemistry, engineering and physics. Plenty of exercises are also provided for the student to solve. The notation 'ln' for '$\log_e$' will probably be somewhat strange to British readers.

Analytic Geometry. By Prof. F. S. Nowlan. Second edition. Pp. xii+352. (New York and London: McGraw-Hill Book Co., Inc., 1934.) 13s. 6d. net.

THIS volume is the second edition of the original book, published last year. It is designed for first and second year students in American and Canadian universities. Eleven chapters are devoted to a study of the conics, based upon a definition of the general conic, and in which extensive use is made of the principle of orthogonal projection. Parametric representation is freely employed, but the proof that the general equation of the first degree always represents a straight line is not thoroughly satisfactory.

There is a good chapter on higher plane curves, followed by quite an exhaustive treatment of determinants, which seems to come rather late in the course. Indeed, as a study of determinants belongs properly to algebra, a brief revision section at the beginning should have been sufficient.

The remainder of the book is concerned with the usual course in three-dimensional co-ordinate geometry, and is quite well written and developed.

Budgerigars in Bush and Aviary. By Neville W. Cayley. Pp. xv+148+14 plates. (Sydney: Angus and Robertson, Ltd.; London: Australian Book Co., 1933.) 7s. 6d. net.

ABOUT one hundred years ago budgerigars or love-birds were first bred in captivity in Australia; in 1840 Gould brought the first living examples to Britain, and by 1880 their breeding had become a considerable industry at Toulouse. But it was not until the present century that the burst of colour-varieties appeared, which made the budgerigar perhaps the most striking example of selection under domestication, and brought for a time the value of birds (in the sky-blue and cobalt series) to from £100 to £500 a pair. This book, with its six beautiful coloured plates, will probably long remain the standard guide to the habits and particularly to the keeping and breeding of these attractive birds.

The Nidification of Birds of the Indian Empire. By E. C. Stuart Baker. Vol. 3: *Ploceidæ—Asionidæ.* Pp. vi+568+8 plates. (London: Taylor and Francis, 1934.) 30s.

WITH commendable speed Mr. Stuart Baker's third volume follows the second (see NATURE, April 21, 1934, p. 591). Beginning with the weaver-birds, it completes the Passeres and the Coraciiformes, and some idea of the thoroughness with which the nesting of Indian birds has been investigated (as well as of blanks still remaining) may be gathered from the fact that of 704 species and subspecies included in these series, the nidification of 545 is here recorded. Like the earlier volumes, this also includes descriptions of some extremely interesting nests and their construction, of which we need mention only those of the weaver-birds, the bee-eaters, and the edible-nest swiftlets. The work is as thorough and comprehensive as its predecessors.