A series of examples gives in summary form many properties of the curve and its construction to satisfy various sets of conditions; for example, it is shown that two general space cubics have ten common chords and that there are six space cubics having six arbitrary lines as chords. The theory of self-polar tetrads and of self-conjugate pentads and hexads on the curve is also developed.

The final chapter is introductory to the theory of the general cubic surface, which it is intended to discuss later in connexion with a configuration in four dimensions. The well-known double-six theorem is first investigated and examples are considered of the figure of twenty-seven lines arising therefrom. A geometrical definition of the cubic surface is then given, and it is shown that there are families of space cubics lying upon it. This leads to the representation of the surface upon a plane. Other matters which are summarised in this chapter are the reduction of the equation of the cubic surface to the sum of six or five cubes, the bitangents of a plane quartic curve, the Hessian surface of a cubic surface, the four-nodal cubic surface and its dual, the Steiner quartic surface.

This book, it is safe to prophesy, will become one of the most treasured possessions of the student of geometry. F. P. W.

Our Bookshelf.

The Flora of the Malay Peninsula. By Henry N. Ridley. (Published under the Authority of the Government of the Straits Settlements and Federated Malay States.) Vol. 2: Gamopetalæ. Pp. vi+672. Vol. 3: Apetalæ. Pp. vi+406. (London: L. Reeve and Co., Ltd., 1924.) 42*s.* net each vol.

VOL. 1 of this series was noticed in NATURE of January 6, 1923, p. 6. Of Vols. 2 and 3 which have now appeared, the former deals with the Gamopetalæ from Caprifoliaceæ to Labiatæ, and the latter with the Apetalæ from Nyctagineæ to Salicineæ. The arrangement of the natural families is that of the "Genera Plantarum" except that in the second volume the Plantagineæ are inserted after the Plumbagineæ, and the Cardiopteridæ after the Convolvulaceæ. In the third volume the Aristolochiaceæ and Nepenthaceæ are transposed, the Hernandiaceæ are separated from the Laurineæ and the Opiliaceæ are included. The Urticaceæ are, however, still retained as one general family.

It is easy and perhaps somewhat ungenerous to criticise a work of the size and importance of this first complete flora of the Malay Peninsula. Moreover, it is rare that such an expert in field work as is Mr. Ridley should be equally at home in the herbarium, but it is undoubtedly due to this uncommon combination of capabilities that we find many points which are apt to provide difficulties to less fortunately equipped workers. For example, the contrasting in certain of the keys of comparative values only renders them valueless to a worker who may be in possession of one of the species only. Again, the frequent use of the abbreviation *l.c.* entails considerable search for the orginal quotation, and in the majority of cases is not a saving of space. Had the measurements been given in parts of a metre instead of tenths of an inch the work would have been more in accordance with present-day standards.

The work generally is of the nature of the old-time flora intended purely for the systematist. There must be a mass of information available which might have been indicated briefly, as for example on the ecology of the plants cited, for the very short extracts of field notes quoted are but little help to a worker who has not an intimate knowledge of the country and its vegetation. For workers in Malaya an index to the vernacular names cited would have been of great help, for in that country, where Malay is the common language, the plant names are first learnt in that language, and such an index would introduce the work to a much wider circle.

The references to the new species leave much to be desired. In the second volume there are one hundred and five and in the third volume twenty new species and new names given. The differential diagnosis is confined to a wholly inadequate line or mention in the key, and where the affinity lies with an extra-Malayan plant it is left to an occasional footnote to give assistance. Further, and what is perhaps worse, in scarcely any cases are specimens quoted, only collectors' names. The figures are well drawn by Mr. Hutchinson, and it is to be regretted that they are so limited in number. It is a pity there are so many minor imperfections to detract from the value of a work of first-class importance executed by an author with such a unique experience.

Differential Equations in Applied Chemistry. By Prof. Frank Lauren Hitchcock and Prof. Clark Shove Robinson. Pp. vi+110. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1923.) 7*s.* 6*d.* net.

THE problem of providing a student of one of the experimental sciences with a broad basis of mathematical knowledge coupled with the special technical facility in the subject required for the development of his own field is no mean one. Especially does it become acute, now that increasing demands of the teachers of his principal subject establish an ever-greater monopoly of his time during training. Hence, partly, the reason why so many chemistry, physics, biology, and engineering students return in later years to their mathematical masters for expert assistance: but this is not the whole truth. Teachers of mathematics must equally share the blame.

A reorganisation of mathematical teaching along "functional" lines is clearly indicated, and until that is undertaken seriously so that the methods are consciously directed to, and arrive at a concrete end with a detailed application to real and not "mathematician's" problems, much of our present teaching must be futile. The attitude of many teachers to their subject is false and cramped. In the introduction to this otherwise excellent book, for example, we are informed that the student (of chemistry) has two important needs in mathematical technique: