

Mr. Dibblee is not afraid of frankly metaphysical hypotheses—nay, prophecies. He believes in the coming of telepathy: "We shall recognise as a commonplace fact, that unknown vibrations and waves are passing between individuals all the time. The method of physically tuning waves and vibrations, so as to be serviceable in personal communications, will no doubt be becoming as much a branch of psychology as now it is to study the internal mechanism of the eye or the ear." Whether this horrible prophecy will come true is, fortunately, not certain, as most physicists would agree. We should obviously be deprived of the last resort of privacy, morals, and decency, and life itself would become intolerable.

In the last paragraph of the book, Mr. Dibblee tells us that "the parallel capacity in our intuitive faculty brings us extra-consciously into intimate relations with minds or a mind quite probably very different from our own". Thus the book will no doubt be taken up by the metaphysical schools of thought in our modern culture, and if the argument be physiologically sound, it certainly provides a charter for a new psychology of religious revelation.

*Exploring for Plants.* By David Fairchild. From Notes of the Allison Vincent Armour Expeditions for the United States Department of Agriculture, 1925, 1926 and 1927. Pp. xx+591. (New York: The Macmillan Co., 1930.) 21s. net.

THE author of this work is the head of the Foreign Plant Introduction Service of the U.S. Department of Agriculture. To deserve his attention, plants must have at least some political economic value, though he delights in the charm of the settings where his subjects occur. Every effort must concentrate on the introduction and establishment of the plant within the United States; all standards and comparisons are by American values. It is given to few to be allowed to indulge their fancies; Dr. Fairchild had a unique opportunity to follow his hobby and the work in which he delights, thanks to the assistance of Mr. Allison V. Armour and his yacht the *Utowana*. His party visited the Canaries and Mediterranean countries, parts of Malay, and West Africa.

"Exploring for Plants" is the record of the expert economic botanist, who recounts, with the freshness of first impressions, the plants and plant products he observed and collected, the food, peoples, and customs of the countries visited, and the vicissitudes of the three expeditions. There was little that escaped the keen eye of Dr. Fairchild, and toll was levied of every plant bearing seed, in the hope of being able to establish it in some part of the United States.

The book is profusely illustrated with pictures, but the only maps are two line blocks tucked away towards the end. The author is an experienced traveller, and on the far eastern tour he, unfortunately, had several opportunities of proving his conviction that one must be ill in a foreign country in order to know what the civilisation of that country is like.

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*The Elements of Analytical Geometry.* By J. I. Craig. Vol. 1: *Straight Line and Circle.* Pp. xiv+415. (London: Macmillan and Co., Ltd., 1930.) 12s. 6d.

It is not often that the writer of a mathematical book is privileged to have such a varied experience as the author of this volume. Mr. Craig declares in the preface that he has been called upon to "deal with questions in fields as diverse as Celestial Mechanics, Sport, Geodesy, Hydrography, Meteorology, Ballistics, Census, Agriculture, Food Supply, Statistics, Pensions, Public Health, and Currency Theory". In all these, he pays a tribute to the value of the mathematical habit of thought, in general, and to the practical utility of analysis applied to geometry, in particular. The course embodied in the book is the immediate outcome of lectures delivered at the Royal School of Engineering, Cairo, and these are based to a large extent on a long experience in the application of analytical geometry to the solution of practical problems. The straight line and circle form the subject matter of this first volume, and the treatment is not only full—trilinear and tangential co-ordinates and vector equations of the circle being included—but also, as might be anticipated, is characterised by numerous practical applications. Amongst these, such interesting topics as railway curves, circular nomograms, and sound-ranging are excellently dealt with. Whilst, however, the book certainly has a practical bias, the theoretical side is not only well covered, but also appears to be mathematically sound. The volume, which has also been translated into Arabic, should be very useful, especially to the engineering student who desires more than a superficial knowledge of analytical geometry.

*Chemische Thermodynamik: Einführung in die Lehre von den chemischen Affinitäten und Gleichgewichten.* Von Prof. Dr. Hermann Ulich. Pp. xvi+353. (Dresden und Leipzig: Theodor Steinkopff, 1930.) 18-50 gold marks.

It is a pity that some universal agreement cannot be attained in the symbolism employed in thermodynamics. Prof. Ulich in this volume on chemical thermodynamics uses symbols which differ from those employed by Nernst, Gibbs, and G. N. Lewis, and thus does not subscribe to either a European or an American standard. This defect is to some extent mitigated by the fact that a compilation of the thermodynamic symbols employed by different authors is given in the introduction. Many books on chemical thermodynamics are inclined to stress the purely mathematical treatment, without bringing the significance of the various equations home to the physical chemical reader by examples. This volume may be commended, in that numerous applications of the three laws are given. It is agreeable to find entropy tables both for elements and compounds now included in a text-book on thermodynamics, as well as exemplification of the practical utility of Gibbs's chemical potential function  $\mu$ . The last chapter in the book, on surface phenomena, is the least satisfactory; but in the others the reader will find much of interest and of value. E. K. R.