

Leçons d'algèbre et de géométrie à l'usage des étudiants des Facultés des Sciences

Par Prof. René Garnier. (Cours de la Faculté des Sciences de Paris.) D'après la rédaction de Badrig Guëndjian. Tome 3 : Élimination, éléments de géométrie réglée, transformation de Lie, applications à la géométrie conforme. Pp. vi+280. (Paris : Gauthier-Villars, 1937.) 80 francs.

THIS is the third volume of a series of "Leçons d'algèbre et de géométrie" written by Prof. Garnier for the use of students in the Faculty of Science at Paris.

The subject-matter in the present volume should appeal to the analyst who desires to study some higher geometry by his own favourite methods. The course starts with a chapter on algebraic equations, and consists of two main sections devoted respectively to symmetric functions and elimination. This provides a foundation for the remaining part, which deals, in seven chapters, with higher geometrical conceptions treated algebraically. The notion of a locus is first carefully developed and extended to conoidal surfaces as well as to those of revolution. Then follow chapters on Plücker's line co-ordinates, the linear complex, the tetrahedral complex, Lie's transformation, in which is included a discussion of pentaspherical co-ordinates, and an application of the transformation to curvature. Parts of the text are amplified in four short notes and additions given at the end.

The text is clearly written with great care and precision, and is quite easy to follow in spite of the fact that the subject-matter is by no means of an elementary character. There are, as usual in many French mathematical text-books, no exercises, but the whole course is both interesting and stimulating.

F. G. W. B.

Das Sammeln, Konservieren und Aufstellen von Wirbeltieren:

Leitfaden für Sammler, Liebhaber und Fachleute nach neuzeitlichen Gesichtspunkten. Von Gerhard Schröder. Pp. viii+93+32 plates. (Berlin : Paul Parey, 1936.) 4.80 gold marks.

SO far as precept, in place of the experience of watching a taxidermist at work, can instil methods of preserving and mounting vertebrate animals, this little book by the taxidermist of the zoological museum in the University of Berlin is a useful guide for collectors and amateurs. It describes the methods of skinning birds and mammals, the mounting of birds' skins, and the making of models and plaster casts of the larger mammals in the modern method for use as the foundation of the final mount.

The progressive stages of these processes are well illustrated by photographic reproductions. Plaster and paraffin moulds are recommended for fishes and reptiles, but no mention is made of the celluloid coatings which have proved so life-like in the construction of reptilian models in some American museums. Hints are given regarding the construction of large habitat groups.

Descartes' Discourse on Method

By Prof. Leon Roth. Pp. viii+142. (Oxford : Clarendon Press ; London : Oxford University Press, 1937.) 6s. net.

THE year 1936 marked the tricentenary of Descartes' "Discourse on Method", so Prof. Roth's study is both timely and welcome. A turning point in European thought, the "Discourse" has a story of its own, which is carefully recounted : we are shown that if it is formally true to look upon it as the introduction to Descartes' philosophy, this short work is materially a retrospect, a summing-up of a life's achievement, rather than the laying down of a programme ; hence its primary importance for the understanding of Cartesian philosophy.

The method proposed by Descartes is typical of philosophical rationalism : the rule of 'division' and of the unilateral 'order' is its keynote. But the method itself proved to be inadequate to Descartes' purpose, which was to substitute a physics based on metaphysics for a metaphysics based on physics, and to treat physics as a part of mathematics. The linking of the "Method" with physics proved to be disastrous. Their dissociation, effected by Descartes' critics, saved his philosophy from a total eclipse. Thus, Cartesianism has survived, not as a system of physics or metaphysics, but as a general method of analysis.

In estimating the nature and fate of Cartesianism, Prof. Roth is thus led to discuss the whole problem of the value of the mathematical outlook and the general competence of the mathematical mind. His excellent study may be considered as a lucid introduction to the history and problems of modern thought.

T. G.

Introduction to Mathematical Probability

By Prof. J. V. Uspensky. Pp. ix+411. (New York and London : McGraw-Hill Book Co., Inc., 1937.) 30s.

PROF. USPENSKY'S treatise on mathematical probability is a very comprehensive one and includes every theoretical aspect of the subject, with several chapters on modern developments. Only those investigations in theory which touch the philosophical borderline and researches such as those of Reichenbach concerning possible connexions with the polyvalent logical systems, are not reviewed. Chapters i-xii of the work do not presuppose any advanced mathematical knowledge, while Chapters xiii-xvi present all the chief results of modern investigations. There are three appendixes to the book, in one of which an outline of the famous Tsebysheff-Markoff method of moments applied to the proof of the fundamental theorem previously established by another method in Chapter xiv is given.

Problems are appended to every chapter, and for an advanced student there could not be a more admirable text-book from the purely mathematical and theoretical point of view. For just as no philosophical discussions are included, neither does the book go into any of the applications of probability to other sciences.