on tensors was added. This chapter has been entirely remodeled in the present edition, while the remaining chapters show only minor changes.

T. H. GRONWALL.

Darstellende Geometrie des Geländes. Von RUDOLF ROTHE. Leipzig, Teubner, 1914. Small 8vo. iv + 67 pp.

THIS pamphlet, forming volume 14 of the "Mathematische Bibliothek" edited by W. Lietzmann and A. Witting, gives a very attractive presentation of that part of descriptive geometry known as the method of contour lines and familiar from its application to topographical maps. The treatment is of a quite elementary geometrical nature, and the main topics covered are: determination of distances and angles, lines of equal slope, intersections of curves and surfaces, and computation of areas and volumes. Numerous practical applications, mostly to engineering and geology, are given, and eighty-two diagrams illustrate the clear and concise text.

T. H. GRONWALL.

Le Hasard. Par EMILE BOREL. Paris, Félix Alcan, 1914. 312 pp.

THIS book belongs to the Nouvelle Collection scientifique published by Félix Alcan under the direction of Emile Borel. In it the author has given to the public the most interesting parts of his lectures and researches on the theory of probabilities. His principal aim has been to put in evidence the rôle of chance in various branches of scientific knowledge.

The work is divided into three parts. The first part contains a general exposition, remarkably free of formulas, of the principles of the theory of chance. The second part is concerned with the applications of the laws of chance to several sciences, including sociology, biology, physics and mathematics. Among the physical theories treated are some of the most recent, such as reversibility in thermodynamics and radioactivity. The third part is devoted to the philosophical basis of the laws of chance.

The book is not mathematical in its treatment. Only the most elementary mathematics, usually nothing but simple arithmetic, is needed for its reading. The discussions, however, are often illuminating. One interested in the general problems of science or in the theory of probability will find