*La Méthode de Repère Mobile, La Théorie des Groupes Continus, et Les Espaces Généralisés.* By Elie Cartan. (Actualités Scientifiques et Industrielles, No. 194.) Paris, Hermann, 1935. 65 pp.

In this booklet based on a series of lectures delivered in Moscow in 1930, Cartan develops some of the ideas of modern differential geometry from the point of view of ennuples of vectors. He begins with an examination of the method of the moving trihedral in classical differential geometry, observing that underlying this method are the two following conditions: 1) The trihedral, defined at each point of the manifold under consideration, must be determined intrinsically by the differential elements of the manifold, and 2) corresponding trihedrals of congruent curves (or surfaces) must be congruent. Several problems of classical differential geometry—minimal curves, homothetic curves, plane curves equivalent under the group of unimodular affine transformations, surfaces whose two fundamental forms have one linear factor in common—are considered in the light of his analysis of the method of the moving trihedral, and by the application of this method such topics as generalizations of the Frenet-Serret equations, curvature, arc, for these manifolds are developed.

The reader is thus led very naturally and easily to the more general problem—the application of these ideas to the fundamental principles of the theory of continuous groups. The way is quickly opened for a number of general theorems, Lie's constants of structure, and the Darboux-Maurer-Cartan equations of structure. The author investigates the role of these equations in a number of particular cases, and observes that "*les équations de structure du groupe G contiennent en elles toute la géométrie différentielle de l'espace doué du groupe fondamental G*, . . . ." The last chapter is devoted to a brief, yet valuable, presentation of a number of questions in the theory of surfaces, Riemannian spaces, ruled spaces, and the more general linearly connected spaces.

This booklet, profusely illustrated with relatively simple examples, should be extremely valuable to all who wish to gain some insight into the meaning of the mass of generalizations that have been developed in this field in recent years. Unlike other works in this field, this one does not lose the reader in a maze of computations; yet the ideas are exhibited clearly and strikingly. The method of treatment employed serves to make this booklet unusually readable, while the emphasis on the geometric aspects not only adds to the lucidity, but serves to remind that modern differential geometry is geometry and not merely a branch of tensor analysis and differential equations.

HARRY LEVY

*Intermediate Mechanics; Dynamics.* By D. Humphrey. London, Longmans Green, 1930. xi+382 pp.

This is a good elementary text on analytical mechanics in the English tradition, offering a more explicit treatment of the elementary parts but not going as far as such standard texts as Jeans, Lamb, or Loney. Seven of the nine chapters are devoted to kinematics and dynamics of a particle in one or two dimensions, including the inevitable chapters on projectiles and simple harmonic motion; but two pages are given to motion under a central force, the reader being referred to more advanced books and advised that "the most important case is