general principles being given. The helicoidal motion of a set of moving axes is discussed and then it is shown that the most general motion of a rigid body can be described as a helicoidal motion. The helicoidal movement gives the velocities but not the accelerations. This is pointed out, but it might have been useful to account for this difference by pointing out the distinction between vectors and vector quantities.

Chapter III deals with the relative motions of different systems of axes and the composition of relative motions, and after developing the general principles makes various applications, including treatments of the methods of Poinsot and Roberval. The discussions here are principally for the two dimensional case, but in Chapter IV the application to sets of moving coordinate axes in space is made.

The remaining chapters deal with more detailed study of the motions of rigid bodies. Chapter V is devoted to plane motion. The theory of the instantaneous centre is developed, and also the method of describing continuous plane motion by the rolling of one curve on another. The formulas of Euler and of Euler-Savory are obtained, and the graphical construction of Savory for relating instantaneous centres is given. Several applications are made, including a discussion of various types of epicycloids.

In Chapter VI the motion of a rigid body with one point fixed is considered. This is done by studying the motion of a sphere, with centre at the fixed point and radius arbitrary, relative to a fixed sphere having the same centre and radius. This permits of the description of the motion by means of curves on these spheres rolling on each other, just as in the case of plane motion.

The final chapter deals with the general motion of a rigid body. Use is made of the line complexes formed by the normals to the trajectory of a point and by the tangents to a trajectory, and motion is described by the rolling of one surface on another.

All told, the author has given a very thorough and well organized development of his subject. The notation used is simple and consistent. Vector and coordinate modes of expression are intermingled, and the free and natural choices that have been made render the discussion easy to follow.

There are slight inconsistencies in two or three of the Figures but these are not serious, and the number of typographical errors noted was small.

J. W. CAMPBELL

Statistical Mechanics. By R. H. Fowler. Cambridge, University Press; New York, The Macmillan Company, 1936. Second Edition. 864 pp.

The publication of a new enlarged edition of Fowler's treatise on statistical mechanics brings forcibly to the reader's attention the rapidity with which work in this field has progressed since 1929. There is a wealth of new material presented both from the theoretical and experimental side and the order of presentation has been changed by introducing the quantum mechanical point of view from the outset and omitting all reference to the older Bohr theory.

The mathematical methods utilized in the first edition remain essentially unchanged, and as these have been reviewed so ably in this journal by M. H. Stone (vol. 39 (1933), p. 850) it is hardly necessary to comment further on