erated motion along a straight line are considered in detail but it is to be remarked that no reference is made to freely falling bodies. The ideas of the velocity and acceleration of any moving point are carefully explained and application is made to motion in a circle.

The study of translations, rotations, and screw motions occupies the third part, pages 119–154. The consideration of a number of machines and mechanical devices in which these motions occur shows the practical trend of the book.

Finally, in pages 155–171, the motion of a body relative to a system which is itself in motion is considered.

ARTHUR SULLIVAN GALE.

Annuaire pour l'An 1904, publié par le Bureau des Longitudes. Paris, Gauthier-Villars.

IN accordance with the plan foreshadowed in last year's issue, the Annuaire for 1904 does not contain any geographical or statistical details. Nor does it give astronomical information of "constant" value; only that part which varies from year to year is retained. These omitted portions are to be present in the volume for 1905, while certain parts which appear now will not be given then.

On the other hand, the information on the parts retained has been largely increased, so much so that, in spite of the omissions, the volume, apart from the appendix which consists of special articles, shows an increase of 64 pages. Most of the sections have been rewritten with additional tables, and the constants have, as far as possible, been brought up to date. A reference to the preface — too long to insert here — will show the directions in which alterations have occurred.

The notices are two: "Note sur la conférence internationale tenue à Copenhague en août 1903," by M. Bouquet de la Grye, which gives a full account of the work done at the meeting, and "Explication élémentaire des marées," by M. P. Hatt. In the latter, the writer attempts to set forth in an elementary way the various forces which produce the tides. He makes a careful distinction between the equilibrium theory and the dynamical theory and in general explains them more fully than Professor Darwin in his well-known work. M. Hatt, however, has hardly achieved the same success; even to one moderately familiar with the problem, his article is not absolutely easy reading. Nevertheless, it is to be welcomed as another excellent description, without complicated mathematics, of the forces which produce tidal phenomena and of the way in which those phenomena are produced.

ERNEST W. BROWN.

ACKNOWLEDGMENT.

My attention has been called to a paper by Darboux, page 55, volume 17, of the *Mathematische Annalen*, in which he proves that a one-to-one point transformation of all points of the projective plane (or of projective space) which carries over collinear points into collinear points is a projective transformation. So much of my paper in the February number of the BULLETIN as refers to the fact that it is unnecessary to require that the transformation be continuous leads therefore to no new result, although the method used is different from Darboux's. I mention in passing that all my results admit of easy generalization to space of three dimensions.

Near the close of his article Darboux shows that, also in the case of a circular transformation, it is not necessary to require explicitly that the transformation be continuous. The method which he uses applies equally well to the more general case in which the transformation is not defined for all points of the plane and leads at once, if we make use of the theorem I proved in the article referred to above, to the theorem:

Suppose we have a one-to-one correspondence between the points of two point sets S and S' (in the plane or in space) each of which has an interior point, such that four concyclic points in either set have concyclic images. Then the transformation of S into S' can be generated by the combination of inversions, including reflections on lines or planes, and rigid motions.

ELIJAH SWIFT.