address of Lie's is published in French, the language in which it was spoken. (In volume III the French articles were published in French, all others appearing in German.) Some verbal changes have again been made in the articles on reprinting; and a list of these is given on pages 561–582.

The notes and supplementary matter in volume III made up more than a third of the whole. The editor stated in that volume that volume V would require much fewer notes; but the event has shown that he was mistaken, the space given to supplementary matter in volume V being only a little less than in volume III. On pages 583–614 we have an account of the beginnings of the theory of transformation groups as set forth by Lie in his letters to Adolph Mayer in 1873 and 1874. Pages 615–755 are given to the editor's notes on the separate memoirs (and include the address already mentioned). These notes contain numerous matters of detail, explanatory remarks, suggestions and cross references, together with a few discussions of considerable length (such as that on pages 643-668). An extensive index to the volume is given on pages 756–774.

The editorial work (here as in volume III) is marked throughout with evidence of that care and patience which belong only to a labor of love. It is done in such way as to render great service to all those who will have occasion to use the memoirs of Lie which are here reproduced. The next volume of the series which is to be printed is the sixth, and in the preface it is indicated that work upon it will begin immediately. We can not hope more for it than that it will be edited and printed with the same care as volumes III and V.

R. D. CARMICHAEL

Johannes Kepler. Mysterium Cosmographicum. Das Weltgeheimnis. Uebersetzt und eingeleitet von Max Caspar. Augsburg, Dr. Benno Filser Verlag, 1923. xxxi+150 pp.

The large increase in the number of students of mathematics and natural science who are unfamiliar with the Latin language makes it more and more useful and desirable to have the greatest works of the pioneers of modern science translated into modern tongues. Among these pioneers Kepler deserves a distinguished place, first because of his work in geometry, in which he prepared the way, through his "infinitesimal method," for the invention of integral calculus; and secondly because in astronomy he laid the foundation for the modern view of the solar system, through his famous three "laws."

Thus there is a real place in the literature of the history of science for such works as the one under review. The *Mysterium Cosmographicum* was Kepler's first work, and it attracted sufficient notice