

of the first chapter (pages 8–11); it is too long for reproduction in the review. The whole treatment proceeds in intimate dependence upon this logical basis. Certain central results are first obtained in association with any group for which hypotheses  $H$  are satisfied.

Chapter II is devoted to a class of linear groups: for the case of one variable these became the fuchsian groups whose properties have been treated by Poincaré; for the case of two variables they become the hyperfuchsian groups of Picard; for the case of more than two variables they are groups which have been studied by Fubini. All the groups of the class are shown to satisfy hypotheses  $H$  of the first chapter. Further properties of this special class are developed. In Chapters III and IV there is a similar treatment of certain quadratic groups, and of certain groups formed from a set of several given groups. The treatment in these four chapters (pages 8–90) is general and abstract in character and is intimately dependent upon the basic postulates  $H$ . The final Chapter V (pages 91–123) is devoted primarily to the functions of Poincaré. On account of the special features of the more restricted theory, certain results become more precise than in the more general theory; and this fact is brought out by a derivation of the detailed results.

R. D. CARMICHAEL.

*Archimedes.* By SIR THOMAS LITTLE HEATH. Society for the Promotion of Christian Knowledge, London, 1920. vi + 60 pp.

AFTER becoming familiar with the larger works which have made Sir Thomas Heath so widely known, the reader who takes up the little work under review will do so with a feeling of surprise. The academic world has come to expect from his pen only such extended treatises as he has written upon Apollonius of Perga, Diophantus, Aristarchus, Euclid, and Archimedes,—treatises filled with erudition and written in that classical style of which he is a master. If the reader is a man of the cloister, the surprise will be unpleasant; if he is a man among men, it will be the opposite. Since the spirit of the time makes scholars more and more men of the world, the balance of judgment is certain to be in favor—shall we say of the appelland or the defendant?

What Sir Thomas Heath has done is to give a brief and