

## PAPPUS'S COLLECTION

*Pappus d'Alexandrie. La Collection Mathématique. Œuvre traduite pour la première fois du Grec en Français, avec une introduction et des notes.* By Paul Ver Eecke. Paris and Bruges, Desclée De Brouwer, 1933. 2 vols. 128+364+507 pp.

It seems strange that such a notable classic as the *Collection* of Pappus should never have been completely translated into any modern European language until M. Ver Eecke undertook the task of preparing it for this French edition. Commandino had put it in Latin in 1588, this being the best way of making it known to scholars of that time; but even this translation, elaborate as it was, has since been shown to be quite imperfect. Three centuries had then to elapse before any attempt was made at a definitive edition of the work. This edition was the work of Dr. Friedrich Hultsch, a scholar of highest rank, and it presented both the Greek and the Latin versions based upon a critical study of the earliest and most complete manuscripts extant. Sir Thomas Heath speaks of it as "one of the first monuments of the revived study of the history of Greek mathematics in the last half of the nineteenth century." Upon this edition M. Ver Eecke bases his translation. It should be said, however, that there were numerous partial translations, such as that made by Dr. Gerhardt, of Books VII and VIII (Halle, 1871).

Since the publication of the Commandino edition the date of Pappus has been more clearly fixed, and we now know that he flourished in the reign of Diocletian (284–305). Out of his many works, most of which are lost, his *Mathematical Collection* (*Mathematikai synagogai*) is the best known. It is a kind of synthesis of mathematics as known in his time, with many historical notes, and is the source of much of our knowledge of the works of the classical period.

In an elaborate Introduction of more than a hundred pages M. Ver Eecke gives a general survey of the known facts relating to Pappus, a statement of the nature of each of the extant Books of the *Collection*, and a list of the various editions consulted. The great value of the translation lies not only in its apparently careful rendering of the Greek in French, but in the footnotes. The latter contain much information concerning the work itself, together with a large number of proofs in modern form and of bibliographical notes.

The contents of the several Books, beginning with the fragment of Proposition 14 of Book II, are so fully stated by Sir Thomas Heath in his *History of Greek Mathematics* (vol. II, pp. 361–439) as to call for little further notice of the subject. It should be said, however, that the arrangement followed by Pappus differed greatly from that of Euclid or of Apollonius. The work is rather, as the title indicates, a collection of notes on geometry, the number theory, and the geometric algebra of the Greeks, than a textbook on any one of these subjects. Of the several divisions, Book IV is of particular interest because of Pappus's treatment of the generalized Pythagorean Theorem; of the *arbelos* (shoemaker's knife) with its inscribed circles; of the spirals studied by Euclid, Archimedes, and Conon; of "a certain line used by Nicomedes for