CHAPTER 9

The Latin Tradition: *De quadratura circuli*

Just as in Arabic the prototype translation (AF*) of the Archimedean circle quadrature was adapted by later scholars like Abu 'l-Rashid and al-Ṭūsī, so in Latin the translation by Gerard (LG) formed the basis of a number of revised versions. In general, the Latin editors expand the text by filling out elliptical expressions, supplying the proofs of results in the proofs, inserting references to Euclid, and so on. They sometimes change the order of exposition, or adapt the terminology to a more natural Latin style. Occasionally, there appear insights on aspects of the logic of the proof—e.g., statements of certain postulates that it assumes. But unlike al-Ṭūsī or even the Banū Mūsā, the Latin editors only rarely incorporate new technical insights or alternative conceptions of the proof.

The Latin texts of 11 such adaptations have been edited by Marshall Clagett, who includes translations and commentary. It is thus unnecessary here to present a detailed description. I will attempt instead to examine the question of their textual affinities to one another, and to other technical works, in particular, the *De curvis superficiebus*. My approach will be primarily literary, rather than technical, for the source relations emerge most clearly through consideration of idiosyncrasies of style and expression.

Clagett arranges the versions in a loosely chronological order. A summary of his general claims will be useful as background for the present examination. (1) The Cambridge (C), Naples (N), and Florence (F) Versions appear to be the oldest, dating from the early 13th century, or perhaps even earlier (for C); they retain close connection to the basic text of Gerard, but improve its Latin style and supply gaps. (2) The Gordanus (Go), Corpus Christi (Cor), and Munich (M) Versions are somewhat later, perhaps from the late 13th or early 14th century; in effect, they are elaborations of elaborations, introducing a greater amount of detail and commentary than do those in the first group. M foreshadows the scholastic adaptations (group 3) in its interjection of comments on the logic of the proof.¹ (3) The Vatican (or pseudo-Bradwardine) Version (V), the Abbreviated

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Version of it (AV), and the Version of Albert of Saxony (QA) recast the proof in a manner characteristic of 14th century scholastic; indeed, Albert’s version is embedded within his *Questio* on the circle quadrature. In these, the commentary serves to highlight the logical structure of the proof, and certain elements—like the construction of inscribed and circumscribed polygons—are given alternative justification on the basis of general principles of continuity and divisibility. Clagett edits two supplementary versions: (4) The Glasgow Version (Gg) is a secondary elaboration, similar to those in (2), and may derive from the 14th century. (5) An adaptation of the Naples Version appears in a 15th century codex.

Of these versions, some exist only in a unique copy (e.g., N, Cor, M, Gg), but others in several (e.g., C, F, Go). Clagett’s estimates of dates assume for many of them a prototype made quite earlier, perhaps a half century or more, than the oldest extant copy. Only C and N are extant in 13th century copies, and for the former of these an older prototype is to be surmised.

In the following survey I will attempt to display the source relationships among these adaptations. Literary affiliations among the texts recommend a slightly modified ordering: first the Florence and Cambridge Versions; then the Naples, Gordanus, and Munich Versions; then the scholastic adaptations of group (3); and finally the Corpus Christi and Glasgow Versions. At the end of the survey I present a short “Synthesis,” recapitulating the principal findings and considering some of their implications.

The Florence Version

Clagett styles F in the plural, as the “Florence Versions,” to indicate the apparently composite character of this text. For it includes two different forms of prop. 1, the first (IA) remaining close to the basic Gerardian text, the second (IB) paraphrasing it rather more freely. Clagett argues that the inclusion of two such versions would be uncalled for, so that both cannot be due to the same editor; hence, one must have been attached to the other by the copyist. A certain disarray in the transmission of the text is evident from the fact that the propositions appear in an incorrect order, corresponding to LG prop. 3, 1 (IA), 2, followed immediately by the second version of prop. 1 (IB). But this cannot have been the order of composition; for prop. F II (corresponding to LG 2) ends with the statement, “which will be evident from the following (sequentem) proposition,” an allusion to the circumference estimate of prop. 3 which, however, appears earlier in the codex. Since prop. II also refers to IA in similar manner (per priorem propositionem), one would incline to accept props. IA, II, III as a unit, to which IB has been added by the copyist. This is Clagett’s preferred view, but he notes possible evidence for a different combination: since IB and III mark off sections of their proofs by the same term, redeamus (“let us return”), one might wish to assign these to the same editor, for the term is not found in IA.

Let us consider further this question of the possible groupings of the propositions of F. The association of IB and III is indicated not only by their shared use