ERCOLE CORAZZI, *Euclide Restituto Sei Primi Libri*
In Latin, illustrated manuscript on paper
Northwestern Italy (Turin) 1721
Illustrated title page, frontispiece, and numerous geometric figures

iv + 124 + ix folios on paper, armorial watermark (unidentified), original pagination in brown ink by the author-scribe, 1-247, complete (collation i^4 [front flyleaves] ii^{14} iii-xi^{12} xii^{11} [includes end flyleaves]), horizontal catchwords in brown ink in cursive handwriting, mainly cropped (visible on p. 124), no visible ruling (justification c. 205 x c. 125 mm.), written in brown ink in a clear eighteenth-century cursive script on c. 30 lines, headings and running titles in capitals, geometric graphs illustrating the text on most pages, a hand-drawn titlepage decorated with a wreath and three framed titlepages introducing the subdivisions (libri), a hand-drawn frontispiece representing Archimedes, a few stains and small holes on the frontispiece, some stains, especially from water damage in the upper and lower margins, but in overall excellent condition. Contemporary binding of brown calf over pasteboards, spine gold-tooled with foliage and the title "CORAZ / MATEM," very worn, leather missing from the extremities of the spine and the top corner of the upper cover, hinges very fragile. Dimensions 219 x 162 mm.

A leading eighteenth-century Italian mathematician Ercole Corazzi (1673-1726) wrote this important, still unpublished, work applying the principles of algebra to geometry. Only one other copy of the work is known, in an earlier version. The amelioration of the text, the elegance of the script, the inclusion of an illustrated frontispiece that celebrates the achievements of Archimedes, and the elaborate titlepage in our manuscript demonstrate the importance of the present copy, produced under the supervision of the author.

PROVENANCE

1. The manuscript was made at the University of Turin in 1721, as stated on the titlepage. Corazzi oversaw the making of the book for his student Polloni, whose name is found in the inscription on the blank page preceding the frontispiece (f. ii): "Ad Usum Polloni 1721," written in the same ink and handwriting as the rest of the manuscript.

2. Modern booksellers's markings in pencil on the pastedown of the lower cover.

TEXT

Title page (f. iv), "Euclide Restituto / Sei Primi Libri / del R^{mo} Padre Abbate / D. Ercole Corazzi / Monaco Ollivetano, / Publico Lettore dell'Analisi / e Professore delle Scienze / Matematiche / nell' Universita di / Torino / Parte Prima / 1721";

pp. 1-124, incipit, "Euclide Restituto. Libro Primo. Definizioni si chiamano in Matematica quei principii, che spiegano la natura delle cose, ed i vocaboli dell'arte. Definizioni. 1: La Matematica e la scienza della quantita, cio e tutta quella parte di filosofia, che riguarda la quantita ... [p. 2] Annotazione. Da quanto abbiamo detto si scorge come verificansi quelle cose, che Euclide espone nelle definizioni del punto, della linea, e della superficie, cioe a dire essere il punto cio ...

Fine del libro sesto. La sequente prattica via doppola 4ª proposizione di questo libro come a fog: 214″; [f. 124v-247v are blank].

Ercole Corazzi, lectures on Euclid's *Elements* delivered in Turin in 1721, divided into six books.

Ercole Corazzi (1673-1726), a leading figure in mathematics in eighteenth-century Italy, refers to our manuscript in his correspondence saying that he has composed "un nouvo Euclid" explaining Euclid's *Elements* with the help of algebra (Partegnani, 2017, pp. 277, 279, n. 4). An earlier less polished version of the work, also written in 1721, bears the title *Empedoteorie sive Planorum Doctrine Libri sex Accessere Precepta Logistice Quantitatum integrarum Auctore Don Hercule Corazzi Bononiense Abbate Olivetano Olim in Patrio Archigymasio Analyseos Lectore Nunc in Regia Taurinensi Accademia Matheseos Professore* (Biblioteca Nazionale di Torino, MS K3-IV-5, ff. 2-110; see Partegnani, 2017, p. 286).

Ercole Corazzi taught algebra at the University of Bologna from 1710 onwards and also taught military architecture at the new Accademia delle Scienze founded by Luigi Ferdinando Marsili. The main source on Corazzi and his numerous unpublished works is the recent study of his scientific manuscripts and correspondence held in various Italian libraries (Patergnani, 2017).

In 1720, Corazzi was invited to the University of Turin by Victor Amadeus II, duke of Savoy and king of Sardinia, and continued teaching there until his death in 1726. As Giovanni Fantuzzi explained in 1783, Victor Amadeus II wanted to introduce a new methodology at his university and invited Corazzi, who was one of the few intellectuals to associate mathematics with philosophy and to apply the science of algebra to philosophical matters (Fantuzzi, 1783, p. 205). Corazzi discusses the usefulness of combining mathematics with other sciences, including philosophy, in his work *De Pace, et perenni concordia inter Aristotelicam, et Cartesianam Philosophiam*, which was delivered as a public lecture at the Regio Archiginnasio of Turin on April 29, 1723, found in MS 1939 at the University of Bologna, ff. 77-80 (see Partegnani, 2017, p. 293).

The text in our manuscript presents the lessons Corazzi delivered at the University of Turin. They are based on Euclid's *Elements* (c. 300 BC), which remained the main textbook for teaching mathematics until the 20th century. The title of Corazzi's work, *Euclide Restituto Sei Primi Libri*, is the same as a work published in 1668 by the famous mathematician, Giordano Vitale, but the general structure as well as the presentation of the arguments of Corazzi's work are original. The author's numerous annotations (Annotazione) give his personal reflections and complex reasoning on the topics presented in the *Elements*. Corazzi composed this work, as well as another work on geometry in 1724, entitled *Lectiones Anni MDCCXXIV habite In Regia Taurinensi Academia a D. Hercule Abate Corazzi Matheseos Professore* (Biblioteca Nazionale di Torino, Ms. K3-IV-4; cf. Partegnani, 2017, p. 286), for the use of his students.

Corazzi's work in our manuscript is introduced by an intriguing frontispiece showing the great Greek mathematician, Archimedes, with an array of mathematical tools and a large globe of the world attached to a chain that runs across a lever. On the facing page is written the saying of Archimedes, "Da mihi ubi consistam terramque movebo" (Give me a place to stand on, and I will move the Earth), which he famously pronounced after having discovered the principle of the lever. The phrase explains the importance of providing the right tools, a fitting introduction for a textbook on geometry.

LITERATURE

Fantuzzi, G. *Notizie degli scrittori Bolognesi*, vol. 3, Bologna, 1783, pp. 204-205.

Patergnani, E. "Ecole Corazzi tra le Università di Padova, Bologna e Torino," *Bolletino di Storia delle Scienze Matematiche* 37:2 (2017), pp. 267-297.

Riccardi, P. *Biblioteca matematica italiana dalla origine della stampa ai primi anni del secolo XIX*, vol. 1, Modena, 1870, cols. 372-373.

Vallauri, T. *Storia delle università degli studi del Piemonte*, vol. 3, Turin, 1846, p. 11.

ONLINE RESOURCES

Bibiana García Visos and Daniel Arias Mosquera, "Euclid and The Pillars of Mathematics" https://www.bbvaopenmind.com/en/science/mathematics/euclid-and-the-pillars-of-mathematics/

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