

UNPUBLISHED WRITINGS OF GIUSEPPE S. VERZAGLIA

*By Raffaella Franci and Laura Toti Rigatelli
University of Siena, Italy*

The development of the differential and integral calculus in Italy in the first half of the 18th century is due in large part to the contributions of a group of mathematicians centered at the University of Bologna. Among them may be mentioned the brothers Gabriele and Eustachio Manfredi, Vittorio F. Stancari, and Giuseppe S. Verzaglia. Most of the works of Verzaglia remain unpublished; of these, his treatise *Dialoghi intorno all'algebra* is worthy of attention as one of the earliest devoted to the differential and integral calculus.

The manuscript of this treatise, completed in 1726 according to manuscript documents [Andreini 1809] concerning the life of the author, is kept in the Biblioteca Malatestiana in Cesena (province of Forli), along with all the other writings of Verzaglia, whether published or unpublished, in a box labeled MSS 164-91-92-93.

Born at Cesena in 1669, Giuseppe Sentenziola Verzaglia studied medicine, philosophy, and mathematics at the University of Bologna, and it was in the last of these that he uncovered his creative genius. A student of Jakob Bernoulli (1654-1705), he was recognized by the most famous European scientific academies of the period, as is shown by correspondence kept with his writings. Memoirs of Verzaglia were published in the *Acta Eruditorum Lipsiae*, as well as in the *Giornale de'letterati d'Italia* in Venice [Riccardi 1870-1879].

Verzaglia's lively and critical mind may be seen in a long controversy concerning "problemi delle forze centrali nel voto e nel pieno," which resulted in the publication in Bologna in 1714 of a volume entitled: *Esame delle riflessioni geometriche pubblicate da un ultramontano professore*. The "ultramontano professore" has been identified as Gian Jacopo Ermanni of Basel, a professor at the University of Padua.

Verzaglia's fame was such that the emperor of Austria offered to take him into his service in Vienna at a lavish salary, but the offer was refused; the university in his home town established for him a chair of "Algebra e Matematica Sublime." Verzaglia died in 1730, leaving several of his works unpublished, among them, besides the treatise already mentioned, the short philosophico-mathematical dissertation "Speculazione sopra il Niente" (1725) and the oration delivered at the University of Cesena on 16 March 1716, on the occasion of the conferring of the chair.

The treatise *Dialoghi intorno all'Algebra* comprises 849 quarto pages, sewn into six fascicles, to which is joined a

fascicle of illustrations. The first page reads: "Dialoghi/ Intorno all'Algebra/ distesi/ da Giuseppe Sentenziola Verzaglia/ Nobile Cesenate." This is repeated on the third page, with the addition: "In quattro giornate, alle quali ha aggiunta la quinta, in cui si discorre d'una nuova Scienza attinente al Movimento ritardato da Mezzo di qualunque densità con resistenza che abbia qualsivoglia proporzione alla velocità colla quale in ciascun sito il Mobile si muove." [Dialogues concerning algebra, set forth by Giuseppe Sentenziola Verzaglia, a noble of Cesena, in four days, to which a fifth is added, in which is discussed a new science pertaining to movement slowed by a medium of a given density with a resistance having an arbitrary proportion to the velocity with which the object moves in each place.] The argument is developed in the form of a dialogue, whose three participants have the fictitious names Sartorio, Sempronio, and Sulpicio.

Although the manuscript is difficult to read, being almost entirely in the hand of the author, it appears complete and ready for the press; on page 7 there is even a dedication of the printer to the readers. It seems not to have been published, however, for reasons unknown at present. We note only that the author died nearly four years after completing the draft of the manuscript. We propose a more thorough study of the treatise as one of our next publications.

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