

Ghetaldi (Ghettaldi), Marino | Encyclopedia.com

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(*b* Ragusa, Dalmatia [now Dubrovnik, Yugoslavia], 1566 [1568?]; *d.* Ragusa, 11 April 1626)

mathematics.

Ghetaldi was born to a patrician family originally from Taranto, Italy. Ragusa was then an independent republic and very jealous of its Latinism. Ghetaldi spent only the latter part of his life (from 1603) there, holding various public and legal positions. As a young man, after his education in Ragusa, he had moved to Rome and then traveled extensively through Europe, returning to Rome briefly in 1603.

Ghetaldi lived the peripatetic life of a scholar participating in the intense scientific awareness of early seventeenth-century Italian culture, a last flowering of the Renaissance spirit. Galileo was its most notable example. Archimedes and Apollonius were its inspiration. In Rome Ghetaldi came under the influence of Christoph Clavius, famous as teacher and editor of Euclid. He then went to Antwerp to study with Michel Coignet. Thence he moved to Paris, where he associated with Viète, who entrusted him with an unpublished manuscript to revise and edit, although Ghetaldi had as yet published nothing of his own.

Ghetaldi's first publications appeared at Rome in 1603 and were part of the beginning of research on Archimedes. The first, *Promotus Archimedis*, dealt with the famous problem of the crown; it also included tables that Ghetaldi calculated from experiments on the specific weights of certain substances, with results that were, for the time, remarkably accurate. For this and for research on burning glasses, a topic then of great interest, he also became known as a physicist. In his second work, *Nonnullae propositiones de parabola*, Ghetaldi treated parabolas which he had obtained as sections of a right circular cone of any proportions.

From the analysis of Apollonius' known work, Ghetaldi turned to the task of reconstructing the content of his lost works. He followed the example of his master Viète, who had attempted such reconstruction in his two books of 1600, *Tactionum* (Περί ἐπιπέδων), and was consequently nicknamed Apollonius Gallus. Ghetaldi took over and completed that work, although on less restricted problems, as *Supplementum Apollonii Galli* (1607). Ghetaldi later concentrated his attention on the last of Apollonius' books mentioned by Pappus, *πέρι νένσέων* (*Inclinationum libri duo*) and solved the four problems that were supposed to form the first book. The problems of insertion, as they were called, consisted of constructing certain segments with their extremes touching arcs of a circle or other given figure; the book was entitled *Apollonius redivivus seu restituta Apollonii Pergaei inclinationum geometria* (1607). Later, Ghetaldi reexamined the problem which, according to Pappus, made up the second book of *Inclinationum*; although it was rather complex, involving insertions between two semicircles, Ghetaldi declared he had needed only a few days to complete it. Published in 1613, it was entitled *Apollonius Pergaei de inclinationibus restituae Apollonii Pergaei de inclinationibus geometriae, liber secundus*.

Meanwhile, Ghetaldi had produced a pamphlet with the solutions of forty-two geometrical problems, *Variorum problematum collectio* (1607). The method used in some of the solutions suggests that he was already applying methods of algebra to geometry, such as first—degree and second-degree problems, determinate or not, which he later treated specifically in a volume that appeared after his death. *De resolutione et de compositione mathematica, libri quinque* (1630). Because of this work, possibly his most significant, Ghetaldi has been considered the precursor of [analytic geometry](#)—a hypothesis difficult to support, especially in the light of the methods used by Descartes and Fermat.

Ghetaldi wrote in Latin, and his works were well and widely known—some for a long time. Pierre Herigone, for instance, included in the first volume of his *Cursus mathematicus* (1634) the first of Ghetaldi's two works devoted to the problems of insertion, translating it in a notation anticipating modern mathematical logic.

Ghetaldi was held in great esteem not only as a scientist, but also as a man. While still young he had been offered a chair at the University of Louvain, which he did not accept; and in 1621 his name was included in a list of scientists proposed for membership in the flourishing new Accademia dei Lincei. He was not nominated, however, because he returned to Ragusa without notice and the Academy did not know his whereabouts.

In letters of that time Ghetaldi was described as having “the morals of an angel” and [Paolo Sarpi](#), his close friend, called him “a Ragusan gentleman of discernment.” For his exceptional skill and intelligence Ghetaldi was good-naturedly called “a mathematical demon.” Later, in Ragusa, he was even called a magician and gained the reputation of being a sorcerer because he made frequent astronomical observations and experimented with burning glasses; another explanation attributes the sobriquet to his using a nearby cave popularly called “the magician's den” for his research.

Ghetaldi had met Sarpi in Venice before 1600, during his frequent peregrinations between Rome, Padua, and Venice. In Rome his teacher Clavius had introduced him to another Jesuit scholar, Christopher Grinberg, author of a treatise on trigonometry and, later, famous as one of the four Jesuits whom Robert Cardinal Bellarmine consulted in April 1611 on the value of Galileo's *Sidereus nuncius*. Ghetaldi must certainly have met Grinberg again in Padua, where Grinberg lived from 1592 to 1610, and later the two maintained a correspondence, as shown by a letter of 1608 and another of 1614, which accompanied the second part of Ghetaldi's *Apollonius rediuius... liber secundus* which Ghetaldi declared he was sending the volume "as a sign of reverence and in memory of our old friendship."

In June 1606 the government of Ragusa charged Ghetaldi with a mission to the sultan of Constantinople. The task absorbed him considerably, and to it must be attributed the break in his scientific work that coincides with this period. The mission must have had its dangers, since rumors of his death began to circulate. So persistent were these rumors that even J. E. Montucla, in his *Histoire des mathématiques*, gave Ghetaldi's date of death as about 1609, "in the course of his mission to the [Sublime] Porte."

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See also A. Favaro, "Amici e corrispondenti de Galileo Galilei," in *Atti del Istituto veneto di scienze, lettere ed arti*, **69**, 303–324; E. Gelecich, in *Abhandlungen zur Geschichte der Mathematik*, **4**, 191–231; and H. Wieleitner, "Marino Ghetaldi," in *Bibliotheca mathematica*, **13**, 242–247.

Luigi Campedelli