

Giuseppe Salviati's allegory of architecture for Daniele Barbaro's 1556 edition of Vitruvius

Louis Cellauro

Introduction

The purpose of this paper is to provide a detailed iconographical analysis of an important full-page figurative woodcut in Daniele Barbaro's 1556 Italian edition of Vitruvius, which may be entitled *Allegory of Architecture*, and which has not yet received the attention it deserves (FIG. 1). The general scheme of the woodcut is provided by female herms framing classical buildings and ruins shown in perspective, with in the foreground two men in antique dress among various instruments and machines described by Vitruvius in books IX and X of his *De architectura libri X* (Ten Books on Architecture). The plate includes, in the center of the composition and below a blank cartouche, a coat of arms, supported by personifications of Peace and Victory, identifiable as that of Daniele Barbaro. The importance of the woodcut is stressed by the fact that it appears twice: on the verso of the Palladian title-page (a triumphal arch above a standing figure of Architecture) as well as at the end of the volume, with the register added in a tablet at the top. Attributed to the Mannerist painter Giuseppe Porta, also known as Salviati the Younger (1520-1575), the woodcut of the *Allegory of Architecture* throws light on Barbaro's attitude towards the ancient treatise, and honors him as a new Vitruvius. Although the woodcut essentially confirms some intellectual aspects already known from Wittkower's *Architectural Principles in the Age of Humanism* (London 1949), it provides new visual evidence for this interpretation.

The Venetian patrician Daniele Barbaro (1514-1570), collector of works of art, books and mathematical instruments, was a prominent patron of the arts and sciences in sixteenth-century Venice.¹ As a patron of the arts, he promoted younger artists like Paolo Veronese and Battista Franco, in addition to Palladio and Salviati. Barbaro was an eminent humanist of encyclopaedic interests, learned in natural philosophy, medical botany, medicine, archaeology, religion and science, with particular emphasis on astronomy, mathematics and mechanics. His intellectual pursuits also included historical and musical studies. Barbaro's wide-ranging learning was acknowledged by contemporaries who often described it as embracing all the sciences.² His career is indeed illustrative of the place the sciences had come to occupy in the culture of the Venetian patriciate. The Venetians took a strong interest in the sciences from around the middle of the fifteenth century and by the sixteenth century, mathematics had been accepted as an important part of the culture of the Venetian patriciate.³ The importance attached to mathematics in patrician culture is to be seen in the activities of succeeding generations of Venetian humanists, as in the mathematical publishing program of the Accademia Venetiana (1557-61)⁴ and in the collections of Greek mathematical manuscripts and instruments amassed by Francesco Barozzi⁵ and Jacopo Contarini,⁶ Barbaro's contemporaries and friends. Barbaro was educated at the Medical or Arts Faculty of Padua University (medicine was the primary purpose of the exis-



FIG. 1 Giuseppe Salviati (attributed to), *Allegory of Architecture*, from the 1556 Marcolini edition of Vitruvius, fol. A2v (Courtesy of the Bibliotheca Hertziana, Rome)

tence of the Arts Faculty), where he studied a range of subjects, including Greek, Latin, natural philosophy, logic and mathematics.⁷ Contemporaries saw him as one of the intellectual lights of the Venetian Republic, some even considering him the finest mind of the time.⁸

Barbaro belonged to one of Venice's oldest patrician *case* or houses, which is registered as such in the *Libro d'Oro* (the book in which, from 1325, the names of the hereditary patrician class were inscribed, entitling them to membership of the *Maggior Consiglio* and participation in government). He received his first official appointment

in Padua, when in 1545 he was commissioned to supervise the planning and construction of the medically-oriented botanical garden, which was intended to introduce the students to medical "simples", that is the many substances, mostly botanical, that made up the *materia medica* of the time. In 1548 he joined the *Provveditori del Comune* in Venice to help oversee the administration of the guilds and monitor the fortunes of the poor in the city. From 1549 to 1551 he served as Venetian ambassador to the court of Edward VI in England. During his absence in 1550, Pope Julius III appointed him patriarch-elect of Aquileia as a potential successor to Giovanni Grimani (though he died before succeeding to the office), a position that did not require ecclesiastical authority and responsibilities but that led to his participation at the last sessions of the Council of Trent in 1562-1563.⁹ On this occasion, Barbaro participated in formulating policy for the Church's *Index of Prohibited Books*. In 1560 he was also appointed official historian

of the Venetian Republic. Succeeding Pietro Bembo in the role, he actually accomplished very little of his charge, writing the history of only three years (from 1512 to 1515).

Daniele Barbaro's main literary achievement lies in his Italian translation of and commentary on Vitruvius's *De architectura* - the only treatise on architecture handed down to us from antiquity - which was published in 1556 by the Venetian printing press of Francesco Marcolini.¹⁰ In the mid-sixteenth century, Francesco Marcolini da Forlì, renowned for his typography and his fine printing, was one of the most important Venetian

publishers. Marcolini had a particular interest in architecture: he composed treatises on clocks and on engineering, designed a much-praised wooden bridge in Venice, and published a number of architectural texts, including the early editions of Sebastiano Serlio's *Regole generali di architettura* (1537) and *Il Terzo Libro, nel qual si figurano, e descrivono le Antiquità di Roma, e le altre che sono in Italia, e fuori d'Italia* (1540).¹¹ Barbaro's 1556 edition of Vitruvius appeared in response to a widespread popular demand for a good and up-to-date illustrated Italian translation of the *De architectura*, which could provide correct information on classical architecture to practicing architects eager to master and interpret the classical text for modern practice. Although his edition had been preceded by other editions of Vitruvius, most notably those of Fra Giocondo (1511) and Cesare Cesariano (1521), it marks the splendid culmination of the Renaissance tradition of Vitruvian studies. A second revised edition of Barbaro's Vitruvius in a smaller format was published in 1567 by Francesco de' Franceschi, who also issued a Latin edition in the same year. From the beginning of the fifteenth century, the ancient treatise had attracted humanist scholars and architects because of the light it threw on the principles of ancient architecture which could be applied to contemporary design. Barbaro's interest in Vitruvius was representative of a general concern with ancient architecture among Renaissance architects and patrons which corresponded to the general interest in the classical past of the Renaissance. In the preparation of the work, begun probably in 1547



FIG. 2 Andrea Palladio and G. Salviati (attributed to), Title-Page, from the 1556 Marcolini edition of Vitruvius (Courtesy of the Bibliotheca Hertziana, Rome)

and taking nine years to complete, Barbaro enjoyed the active collaboration of Andrea Palladio himself, who not only designed the most important woodcuts, but also contributed his own wealth of architectural and archaeological expertise. In Barbaro's acknowledgement of Palladio's assistance, he specifically cites his work on the ancient Roman theatre, the temples, the Roman basilica, and on the reconstruction of the Ionic volute. Equipped with Latin and Greek and with extensive classical and mathematical knowledge, Barbaro was the ideal editor of Vitruvius. However, he clearly lacked architectural and archaeological experience, which



FIG. 3 G. Salviati, *Title-Page*, from *Le Sorti di Francesco Marcolino da Forlì*, Venice 1540 (Courtesy from the Biblioteca Apostolica Vaticana)

probably prompted the collaboration with Palladio, who according to Barbaro, worked as an architect in the finest manner of the ancients. The collaboration of humanist and architect in this endeavor represented the climax of over a century of study on the ancient text. Owing to this long collaboration and their close association between ca. 1550 and 1556, Daniele Barbaro may have served as a major influence on Palladio's intellectual development and Venetian patronage. As many as seventy-three woodcuts in books I-VI of the 1556 edition of Vitruvius may be attributed to Palladio himself, while some of the other blocks in Books

VII-X may be the work of Giuseppe Salviati, as they involve figurative techniques. It is well known that Palladio, who was originally a modest stone cutter in the Pedemuro workshop in Vicenza, unlike most Renaissance architects, did not receive training in painting or sculpture. As a result, his ability as a draughtsman was strictly limited to architectural drawing.

The woodcut

On the verso of the title-page (A2v) of the 1556 Marcolini edition of Vitruvius is a full-page woodcut (mm 370 x 283), of two men in ancient dress among the ruins of buildings and examples of instruments and machines which are described by Vitruvius (FIG. 1). It includes a cartouche at the head bordered by two animal heads which can be interpreted a living version of the animal skulls that appear in the friezes of ancient buildings. The fact that the cartouche is left blank suggests that this woodcut may first have been intended to serve as a title-page for the book.

It seems likely that it was replaced in this function by a design by Palladio, with the title set in the upper part of a triumphal arch above a standing figure of Architecture (FIG. 2). In the attic of this triumphal arch are allegories of History, Geometry, Music and Astronomy, that are, in Vitruvius's view, all subjects relevant to the education and culture of architects. Between the half columns of the arch, the allegories of Astronomy (the bifrontal figure holding an armillary sphere) and Geometry (the figure holding compasses) are duplicated. The triumphal arch is a slightly modified version of the arch of the Gavii at Verona, designed in the first century of the Christian era by

Lucius Vitruvius Cerdo, a freedman of the same family as Vitruvius Pollio (in the Renaissance, the former was sometimes confused with the author of *De architectura libri X*, as in Torelli Saraina's *De origine et amplitudine civitatis Veronae*, published in Verona in 1540).¹² It is likely that Daniele Barbaro changed his mind during preparation for publication in favor of Palladio's title-page with its triumphal arch centered on the allegorical figure of Architecture, epitomizing the triumph of classical architecture in his own age.

The alternative title-page has been attributed, on the basis of its style, to Giuseppe Salviati, who was responsible - according to A. Selva - for the ornamental statues and reliefs in the woodcuts attributed to Palladio.¹³ Other blocks attributed to Salviati in Barbaro's Vitruvius include those on pages 268 and 269, to which the Martini catalogue adds blocks A6v, A7r, C2v, R5r, and E6r.¹⁴ Barbaro mentions Salviati, «Nobile Pittore», in his appended note on the Ionic capital.

Giuseppe Porta called Salviati was born in 1520 in Castelnovo della Garfagnana, Modena. Orphaned at an early age, he was adopted by the Florentine painter Francesco de Rossi, known as Cecco Salviati because of the protection which he had received from Cardinal Salviati.¹⁵ In 1539, Giuseppe Salviati accompanied his master to Venice and, except for a brief return to Rome in 1565 to paint frescoes left incomplete by his master for the Sala Regia in the Vatican, remained there for the rest of his career. Active as a painter, Salviati is known for his paintings and frescoes both at the Doge's Palace and at the Library of St. Mark in Venice (where



FIG. 4 Sebastiano Serlio, Title-Page, from Sebastiano Serlio's *Terzo Libro*, Venice 1540 (Courtesy from the Bibliothèque Municipale de Lyon)

he painted the *Sibyls*, the *Prophets*, and the *Cardinal Virtues*; and for the chapel, the *Dead Christ with his mother and Mary Magdalen*) and in several palaces and churches. Like Marcolini and Daniele Barbaro, he was also deeply interested in mathematics.¹⁶ Soon after arriving at Venice, Salviati began to cut xylographic decorated capitals for Marcolini's press, and produced the large woodcut plate which he signed in full for the title-page of Marcolini's major work, *Le Sorti di Francesco Marcolino da Forlì intitolate giardino di pensieri* (The Oracle called Garden of Thoughts) - a playing-card based fortune-telling



FIG. 5 G. Salviati (attributed to) detail of figure 1

book - published in 1540 (FIG. 3). He was probably also the designer of the hundred smaller illustrations within the book itself. Giuseppe Salviati continued to work at Marcolini's shop and in 1552 published his *Regola di far perfettamente col compasso la voluta et del capitello ionico*, also printed by Marcolini and dedicated to Daniele Barbaro. The *Allegory of Architecture* on the verso of leaf A2 of Barbaro's Vitruvius shows many stylistic analogies with Salviati's documented woodcuts.

The general scheme of the woodcut, with female herms framing classical buildings and ruins shown in perspective, resembles Sebastiano Serlio's title-page for the *Terzo Libro* (FIG. 4), a book that documents the antiquities of the Roman Empire with magnificent woodcuts of temples, baths, amphitheaters, triumphal arches and other structures and which was also published by Francesco Marcolini in 1540. It is likely that Salviati took Serlio's woodcut as a point of departure for his own composition, although Daniele Barbaro may have been responsible for its elaborate and erudite iconographic program. The architecture shown in the woodcut includes

a round tower with a gnomon or sundial in the background, a ruined rusticated arcade resembling those found in ancient theatres and amphitheaters, an Ionic triumphal arch, and a circular domed building clearly modeled on Bramante's Tempietto at San Pietro in Montorio in Rome, the only modern building included later by Palladio in the fourth book of his *Quattro Libri dell'Architettura* (Venice 1570), which deals with ancient Roman temples. The buildings and ruins shown in the woodcut are not exact quotations of specific ancient monuments but are rather modern *all'antica* compositions, alluding to the programmatic role of an edition of Vitruvius for contemporary architectural design.

The coat of arms in the center of the composition and below the cartouche is that of Daniele Barbaro - a red ring over a white ground - as it appears, for example, in *Le armi ovvero insigne di tutti li nobili della magnifica città di Venetia, c'hora vivono* (Venice 1578, FIGS. 5-6). Two female figures holding an olive branch and a palm, personifying respectively Peace and Victory support the coat of arms and confer on the image symbolic meaning associated with Daniele Bar-

baro and his family. According to Cinquecento mythographers, such as Piero Valeriano¹⁷ and Vincenzo Cartari,¹⁸ Peace and Concord are one and the same, carrying attributes of olive branches and cornucopias. Cesare Ripa subsequently adds that the olive tree is an attribute of Pallas Minerva, Goddess of Peace.¹⁹ The palm - an attribute of the personification of Victory - alludes to religious triumph, as martyrs who carry the palm as symbol of eternal life, triumph over death.²⁰ In Mannerist art, Peace and Victory are connected as personifications of antiwar, as seen in Francesco Salviati's *Allegory of Peace* of 1544, a preparatory drawing from a *sopraporta* commissioned for the audience hall of Cosimo de' Medici in the Palazzo della Signoria in Florence.²¹ Giuseppe Salviati's imagery honors Daniele Barbaro in his religious and pacific political role of patriarch-elect of Aquileia, and recalls earlier representations of political leadership in achieving a peaceful government.²²

The standing man on the left holding a crown can be tentatively identified as Archimedes while the seated man holding compasses - the attribute of Architecture - may be Vitruvius represented in the likeness of Daniele Barbaro, as the bearded head resembles that in his contemporary portrait painted by Paolo Veronese, now at the Rijksmuseum in Amsterdam (FIGS. 7-8). The musical instruments behind the desk where the man holding compasses is seated - two straight trumpets, a *viola da braccia* and a lute - recalls the importance of music and musical theory in the education and culture of the architect, as expounded in Book I. 1. 8-10 of Vitruvius' treatise, and Barbaro's musical interests. Barbaro was indeed an outstanding expert in harmonics and musical theory, a field closely related to mathematics. Apart from his lengthy excursus on the subject in his Vitruvian commentaries, he was the author of an unpublished Italian treatise on musical theory and harmonic proportions.²³ He also was consulted by Antonio Cogava (1529-1569) when the latter translated into Latin, at the request of Gioseffo Zarlino, the texts of the *music scriptores graeci* (Greek Writers on Music), including works on musical theory by Aristoxenus, Ptolemy and Ar-

istotle, which were published in Venice in 1562. In Vitruvius' view, expressed in Book I, chapter one (*On the training of architects*),

The science of the architect depends upon many disciplines and various apprenticeships which are carried out in other arts²⁴ [...] [the architect] should be a man of letters, a skillful draughtsman, a mathematician, familiar with historical studies, a diligent student of philosophy, acquainted with music; not ignorant of medicine, learned in the responses of jurisconsults, familiar with astronomy and astronomical calculations.²⁵

Vitruvius, however, treated music and musical harmony in his treatise as an aid to acoustics and to the arrangement of certain mechanical devices such as *ballistae*, *catapultae* and *scorpiones* (all ancient military machines described by Vitruvius in Book X) that were thought to function most effectively when built with harmonic proportions. The detailed digression of Vitruvius into

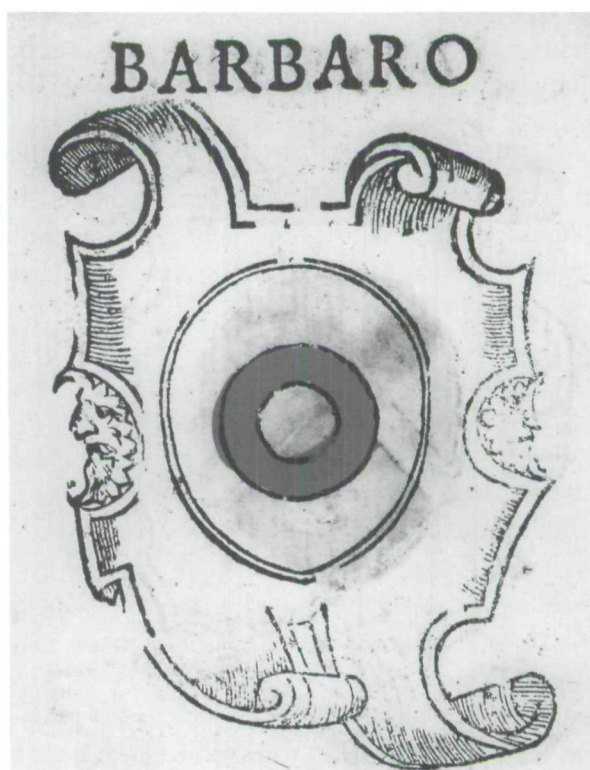


FIG. 6 Daniele Barbaro's coat of arms, from *Le armi ovvero insigne di tutti li nobili della magnifica città di Venetia, c'hora vivono*, Venice 1578 (Courtesy from Eton College, Windsor)

musical theory and the theory of harmonics was left unrelated to any broader architectural practice than such application. The application in



FIG. 7 G. Salviati (attributed to), detail of figure 1

Renaissance architecture of the proportions of harmonic intervals of Greek musical theory to spatial intervals and dimensions, which Barbaro seems to have pursued in his own Palladian villa at Maser, was therefore not derived from Vitruvius. Leon Battista Alberti's exposition of the role of musical theory in architectural design in his *De re aedificatoria* was an accessible source for Renaissance architects and humanists, including Daniele Barbaro, who quotes frequently from Alberti in his commentaries.

In book IX, chapter 5 of his treatise, Alberti states that: «the numbers by means of which the agreement of sounds affects our ears with delight, are the very same which please our eyes and our minds»,²⁶ thus establishing a clear correspondence between musical intervals and architectural proportions. This doctrine - as Wittkower has shown in his *Architectural Principles in the*

Age of Humanism - remained fundamental to the whole Renaissance conception of proportion. Barbaro's position is, in fact, similar to that of Alberti, since two references can be found in his Vitruvian commentaries to the use of harmonic proportions and to the role of musical theory in architectural design. One of these references appears in connection with the Vitruvian concept of *eurythmia*, and is merely a paraphrase of Alberti's statement quoted above:

The architect - writes Barbaro - should be aware of eurhythmy [*numero*] [...] Just as those proportions, whose sounds give delight to the ears, so the same applied to bodies delight the eyes.²⁷

The other reference is a similar statement, also clearly derived from Alberti, and reads: «What is consonance to the ears is beauty to the eyes».²⁸ A similar comment was made by Palladio in the context of his report on a model for the cathedral of Brescia in 1567, in which he may be echoing Barbaro's statements. On this occasion, he wrote:

just as proportions of voices are harmony to the ears, so those of measurement are harmony to the eyes, which according to their habit delight [in them] to a great degree, without it being known why, save by those who study to know the reasons of things.²⁹

The importance of mathematics and engineering in architecture is expressed by what should be identified as the allegorical representation of the Greek scientist Archimedes holding the crown of Hero, whose discovery of the law of floating bodies is recorded by Vitruvius in Book IX, preface, 9-12, and illustrated in Fra Giovanni Giocondo's edition of Vitruvius (FIGS. 9-10). Archimedes's works were gradually rediscovered in the course of the sixteenth century after the publication in Venice in 1501 of excerpts in Giorgio Valla's *De Rebus Expetendis et Fugiendis*. It was followed by the publication also in Venice in 1543 and in 1558 of two editions of Archimedes's works both entitled *Archimedis Opera* by the mathematicians Niccolò Tartaglia and Federico Commandino. Another important reference in the woodcut to



FIG. 8 Paolo Veronese, *Portrait of Daniele Barbaro*. Amsterdam, Rijksmuseum (Courtesy of the Rijksmuseum, Amsterdam)

mathematics is the illustration above the tortoise in the foreground of Archytas's *cylindrus*. This is copied from an illustration appearing in Fra Giocondo's 1511 edition of Vitruvius, illustrating Archytas' three-dimensional method for resolving the Delian problem of the duplication of the cube, mentioned by Vitruvius in Book IX,

preface, 14 (FIG. 11). The solution of Archytas is the most remarkable, because it is not a construction in a plane but a bold construction in three dimensions, determining a certain point as the intersection of three surfaces of revolution, (1) a cone, (2) a cylinder, and (3) a torus or anchor-ring. The intersection of the two latter sur-



FIG. 10 Fra Giovanni Giocondo, *Archimedes*, from the 1511 Latin edition of Vitruvius (Courtesy from the Bibliothèque Municipale de Lyon)

on left:

FIG. 9 G. Salviati (attributed to) detail of FIG. 1

faces gives a certain curve (which is in fact doubly curved), and the point required is found as the point in which the cone meets this curve. Vitruvius observed laconically in this respect that

Archytas solved the problem [of the duplication of the cube] by a diagram with cylinders [the *cylindrus* represented in the woodcut]; Eratosthenes by means of an instrument, the *mesolabium*.³⁰

A *mesolabium* literally means "mean-taking". But in antiquity it had a more limited meaning, designating a mathematical instrument ascribed to Eratosthenes for finding mechanically two mean proportional between two given lines. Pappus, in the first half of the fourth century A. D. provided a minute explanation of that instrument in Book III of his *Mathematical Collection*, clearly mentioning the names of both the instrument and its inventor. The problem of the duplication of the cube, according to legend, is the most important ancient example of a relationship between architecture and mathematics.³¹ The people of Delos were faced with an architectural conundrum concerning a reli-

gious monument. The oracle had told them to build an altar to Apollo twice as big as the previous one, which was of a cubic form. But what should be the width of the new cube be in order to obtain a cube twice the volume of the original one? After a first, wrong, attempt consisting in doubling the side of the cube, the architectural request was for mathematicians, who had not yet discovered the algebraic calculation of irrational quantities. The three most famous answers to the query are the work of three mathematicians of the platonic era: Archytas, Eudoxus and Menaecmus. These solutions were followed by several others, including one attributed to Apollonius that is particularly simple both conceptually and graphically. Apollonius' method is not among the two classic solutions that Vitruvius mentions in his treatise (those of Archytas and Eratosthenes), and that Barbaro was to illustrate in his commentaries on Vitruvius, adding Nicomedes's proposal, a more complicated method of doubling the cube involving a geometrical method, now called the conchoid of Nicomedes.

Salviati's woodcut also alludes to the tripartite division of architecture as enunciated in Vitruvius's

Book I, III, 1-2: «The parts of architecture are three: *Aedificatio* or Building [Books I-VIII], *Gnomonica* or Dialing [Book IX], and *Machinatio* or Mechanics [Book X]». ³² In the woodcut, reference to *Aedificatio* is made by buildings and ruins and a column shaft in the foreground. *Gnomonica* or the making of time-pieces, discussed by Vitruvius in Book IX, is represented by an armillary sphere, a sextant, the dial of Ktesibios's water clock as reconstructed in Book IX of Barbaro's Vitruvius, and a sundial attached to the top of a round tower in the background. *Machinatio*, which deals with mechanical devices, is represented in the foreground by a crane, a clamp, a pulley, a tortoise (an ancient military machine the purpose of which was to fill ditches in order to make possible the breaching of the main wall of a besieged city) and by a miniature reconstruction of a *tympanum* or water-wheel for raising water (FIG. 12). All of these were described by Vitruvius in Book X and illustrated by woodcuts in Barbaro's edition. In his commentaries, Barbaro referred repeatedly to this Vitruvian tripartite scheme and considered also gnomonics or dialing and mechanical technology discussed in books IX-X as important subjects for contemporary architectural practice. Books IX-X, however, provided him with the opportunity to display his deep and encyclopaedic mathematical knowledge acquired in the Arts Faculty at Padua, for example, in hydraulics, astronomy, gnomonics, pneumatics and mechanical technology. This last subject was characterized by Barbaro as the «third principal part of architecture, which deals with the theory and practice of machines and scientific instruments; a beautiful, useful and marvelous part», ³³ a subject most popular among the Venetian élite and Barbaro's circle, as it was among Italian humanists in general. In his commentaries to books IX and X, Barbaro cites Greek mathe-

matical texts well-known to him, such as the pseudo-Aristotelian *Mechanica* and Hero's mechanical works, of which he completed an Italian translation with illustrations, now apparently lost. ³⁴

His deep interest in mechanical technology is further expressed in the mechanical experiments that he undertook in the Venetian arsenal with the collaboration of the Venetian patrician Niccolò Zen. ³⁵

Conclusion

Barbaro may well have been responsible for the erudite iconography of the woodcut, as he is credited at about the same time with other iconographic programs, such as that of the Sala del Consiglio dei Dieci in the Ducal palace, painted by Paolo Veronese between 1553 and 1556. ³⁶ If the identification of the seated man in ancient dress holding compasses as Vitruvius represented in the likeness of Daniele Barbaro is correct, he would thereby be claiming to be the new Vitruvius, as his audience would recognize. His direct involvement with architectural practice is, how-



FIG. 11 Fra G. Giocondo, *The duplication of the cube by Eratosthenes and Archytas*, from the 1511 Latin edition of Vitruvius (Courtesy Bibliothèque Municipale de Lyons)

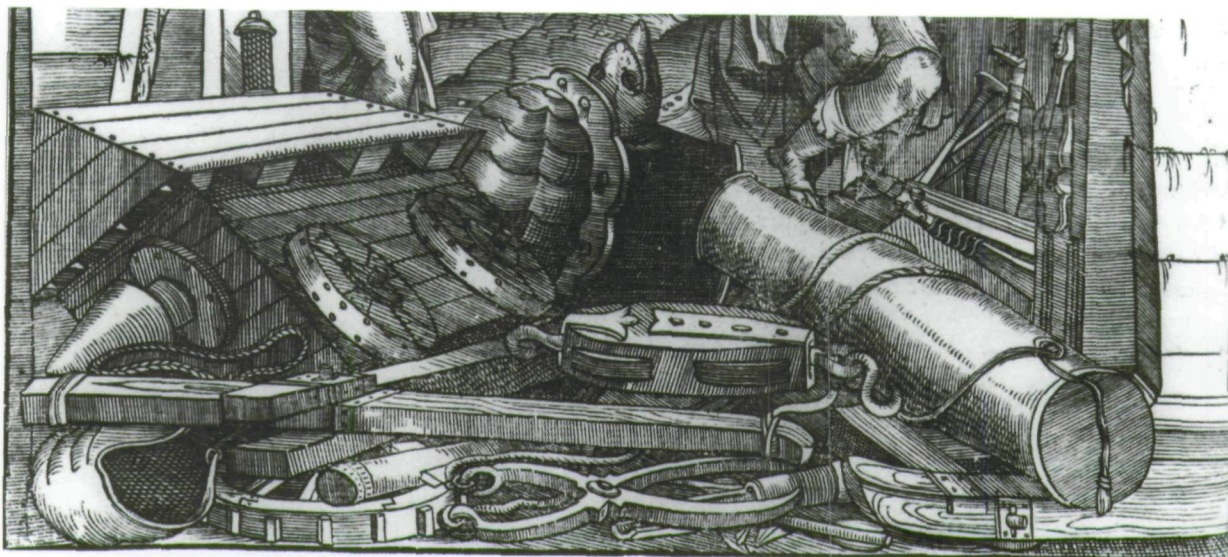


FIG. 12 G. Salviati (attributed to) detail of FIG. 1

ever, uncertain and in any case limited. Francesco Sansovino characterized him as «intend[en]tissimo» with regard to architecture and listed him, along with Palladio and his own father Jacopo among the leading architects and architectural experts in Venice.³⁷ In the seventeenth century, Ridolfi ascribed to him the design of the Palazzo Trevisan on the Fondamenta Andrea Navagero in Murano (1555-7),³⁸ and he probably had a share in the design of the botanical garden in Padua, designed by the architect Andrea Moroni in 1545.³⁹ He also may have been partly responsible for the design of his villa at Maser, although Palladio

published it in the *Quattro Libri* as his own work. The woodcut, which Barbaro did not republish in his 1567 Italian and Latin editions of Vitruvius, appears to be a summary of his approach to the ancient treatise and a “pictorial abstract” of his own architectural theory. Greek mathematics and classical mechanics are given a central place in this scheme and are doubtless important aspects of the architectural practice of contemporary Venetian architects, as confirmed, for example, by the inventory of the library of Giovanni Antonio Rusconi (ca. 1515/1520-1578), which included 37 books on these topics of the 146 listed in the inventory.⁴⁰

Notes:

¹ On Daniele Barbaro, see the short biographical article with a good bibliography by G. Alberigo, in *Dizionario biografico degli Italiani*, VI, Rome 1964, pp. 89-95. See also P. J. Laven, *Daniele Barbaro, Patriarch-elect of Aquileia, with Special Reference to his Circle of Scholars and to his Literary Achievement*, University of London, PhD thesis, 1957; P. Paschini, *Daniele Barbaro letterato e prelato veneziano del Cinquecento*, *Rivista di Storia della Chiesa in Italia*, 16, 1962, pp. 73-107; B. Boucher, *The last Will of Daniele Barbaro*, *Journal of the Warburg and Courtauld Institutes*, 42, 1979, pp. 277-82; and L. Cellauro, *Daniele Barbaro and his Venetian Editions of Vitruvius of 1556 and 1567*, *Studi Veneziani*, n.s. 40, 2000, 87-134.

² See, for example, N. Franco, *De le lettere di Nicolò Franco ... Libri Tre*, Vicenza 1604, f. 71 letter to Ermo-

lao Barbaro's (Daniele's brother) of 4 April 1537, and ff. 71-72v to Daniele Barbaro of the same date. Franco praised Barbaro's mastery of all the sciences. See also S. Speroni, *Opere*, Venice 1740, I, 295: «Daniele Barbaro gentilhuomo veneziano [...] uomo dottissimo in ogni genere di scienza, et non men buono che litterato».

³ For the Venetian humanist attachment to mathematics, see P. L. Rose, *The Italian Renaissance of Mathematics: Studies on Humanists and Mathematicians from Petrarch to Galileo*, Geneva 1975; Idem, *Bartolomeo Zamberti's Funeral Oration for the Humanist Encyclopaedist Giorgio Valla*, in C. H. Clough (ed.), *Cultural Aspects of the Italian Renaissance. Essays in Honour of Paul Oskar Kristeller*, London 1975, pp. 299-310.

⁴ On the Accademia Venetiana, see P. L. Rose, *The Ac-*

cademia Venetiana: Science and Culture in Renaissance Venice, Studi Veneziani, XI, 1969, pp. 191-242. In a publishing programme of ca. 300 texts, 103 were to be related to the sciences and included editions of the classical texts such as Aristotle, Plato (*Timaeus*), Euclid, Archimedes, Pappus, Strabo, Galen and Hippocrates.

⁵ See P. L. Rose, *A Venetian Patron and Mathematician of the Sixteenth Century: Francesco Barozzi*, Studi Veneziani, n. s. 1977, pp. 119-78.

⁶ On Contarini as a mathematician, see P. L. Rose, *Jacopo Contarini (1536-1595): A Venetian Patron and Collector of Mathematical Instruments and Books*, Physis, XVIII, 1976, pp. 117-30. See also M. Tafuri, *Daniele Barbaro e la cultura scientifica del '500*, in *Giovanni Battista Benedetti e il suo tempo*, Atti del Convegno Internazionale di Studio, Venice 1987, pp. 55-81; Idem, *Venezia e il Rinascimento*, Turin 1985, particularly ch. 5 (pp. 155-212): *Scienza, politica e architettura: anticipi e resistenze nella Venezia del Cinquecento*.

⁷ For a detailed survey of Barbaro's education at the University of Padua, see Cellauro, *cit.* (above, n. 1), pp. 92-99, section I: *Barbaro's education in the Faculty of Arts at the University of Padua and mathematical learning*.

⁸ See, for instance, B. Tomitano, *Quattro Libri della Lingua Thoscana*, Padua 1579, f. 79: «il più bel ingegno [Daniele Barbaro], che habbia la nostra età»; and A. di Fonte, *Somma della Natural Filosofia*, Venice 1557: in the dedicatory letter, Daniele Barbaro is characterized as «il principale lume di questo secolo».

⁹ For Barbaro's political and ecclesiastical careers, see Laven, *cit.* (above, n. 1).

¹⁰ D. Barbaro, *I dieci libri dell'architettura di M. Vitruvio, tradutti et commentati da Mons. Daniele Barbaro eletto d'Aquileggia*, Venice 1556. On Barbaro's editions of Vitruvius, see L. Cellauro, *Palladio e le illustrazioni delle edizioni del 1556 e del 1567 di Vitruvio*, Saggi e Memorie di Storia dell'Arte, 22, 1998, pp. 55-128, and Idem, *cit.* (above, n. 1); and Idem, *Daniele Barbaro and Vitruvius: The Architectural Theory of a Renaissance Humanist and Patron*, Papers of the British School at Rome, 72, 2004, pp. 293-329. See also M. Tafuri, *La norma e il programma: il Vitruvio di Daniele Barbaro*, in *I dieci libri dell'architettura tradotti e commentati da Daniele Barbaro*, Milan 1987 (reprint of the 1567 Italian edition), pp. XI-XL; M. Morresi, *Le due edizioni dei commenti di Daniele Barbaro 1556-1567*, in *Ibidem*, pp. XLI-LVIII; E. Forssman, *Palladio e Daniele Barbaro*, Bolletino del Centro Internazionale di Studi di Architettura "Andrea Palladio", 8, 1966, pp. 68-81; A. Becker, *Ammerkungen zu Barbaros Vitruv*, PhD Thesis, University of Mainz 1991; J. S. Ackerman, *Daniele Barbaro and Vitruvius*, in C. L. Striker (ed.), *Architectural Studies in Memory of Richard Krautheimer*, Mayence 1996, pp. 1-5; P. Caye, *Le savoir de Palladio: architecture, métaphysique et politique dans la Venise du Cinquecento. Précédé du Com-*

mentaire au «De Architectura» de Vitruve: livres 1, 2 et 3 par Mgr. Daniel Barbaro, Paris 1995; B. Mitrovic, *The Theory of Proportions in Daniele Barbaro's Commentary on Vitruvius' De Architectura*, PhD Thesis, University of Pennsylvania 1996; M. M. D'Evelyn, *Venice as Vitruvius's City in Daniele Barbaro's Commentaries*, Studi Veneziani, n.s. 32, 1996, pp. 83-104; Idem, *Varietà and the Caryatid Portico in Daniele Barbaro's Commentaries on Vitruvius*, *Annali di Architettura*, 10-11, 1998-1999, pp. 157-74; and V. Fontana, "Arte" e "esperienza" nei trattati di architettura veneziani del Cinquecento, *Architettura*, 7, 1978, pp. 49-72.

¹¹ See L. Cellauro, *Francesco Marcolini, l'architecture et la technologie mécanique*, in S. Deswarte-Rosa (ed.), *Le traité d'Architecture de Sebastiano Serlio: Une grande entreprise éditoriale au XVI^{ème} siècle, Volume I: Architecture et Imprimerie*, Lyons 2004, pp. 79-80.

¹² See G. Schweikhard, *Le antichità di Verona di Giovanni Caroto*, Venice 1977, p. 37; H. Burns, *Le antichità di Verona e l'architettura del Rinascimento*, in P. Marini (ed.), *Palladio e Verona*, exh. cat., Verona 1980, p. 103.

¹³ See G. A. Selva, *Delle differenti maniere di descrivere la volute Jonica*, Padua 1814, p. 18: «Le statue e bassirilievi che adornano le tavole architettoniche della prima edizione del Vitruvio [...] si riconoscono pur essere opere del Salviati [Giuseppe Porta] e tutte sue sono le tavole alla pagine 4, 268, 269»; S. Casali, *Annali della tipografia veneziana di Francesco Marcolini da Forlì*, Forlì 1861, reprint Bologna 1953, pp. 265-269.

¹⁴ G. Martini, *Bibliothèque Joseph Martini*, Milan 1934-35, II, no. 201.

¹⁵ For a comprehensive study of Porta's career, see D. McTavish, *Giuseppe Porta called Salviati*, New York and London 1981.

¹⁶ For Salviati as a mathematician, see B. Boucher, *Giuseppe Salviati, pittore e matematico*, Arte Veneta, 1983, pp. 170-174.

¹⁷ See P. Valeriano, *Hieroglyphica sive De sacris Aegyptorum*, Basel 1556, *passim*.

¹⁸ See V. Cartari, *Imagini delli Dei degl'Antichi*, Venice 1556, *passim*.

¹⁹ See C. Ripa, *Iconologia*, Rome 1603, with woodcuts, *passim*.

²⁰ See L. de Girolami Cheney, *Giorgio Vasari's Teachers. Sacred and Profane Art*, New York and Washington D.C. 2007, p. 71.

²¹ *Ibidem*.

²² Cheney, *cit.* (above, n. 20), p. 72.

²³ D. Barbaro, *Della Musica*, Biblioteca Comunale G. B. Martini annessa al Conservatorio di Bologna, Ms. B. 26.

²⁴ F. Granger, *Vitruvius on Architecture*, Cambridge 1962, I, p. 7: «Architecti est scientia pluribus disciplinis et variis eruditionibus ornata, [cuius iudicio probantur omnia] quae ab ceteris artibus perficiuntur».

²⁵ *Ibidem*, p. 8: «Et ut litteratus sit, peritus graphidos,

eruditus geometria, historias complures noverit, philosophos diligenter audierit, musicam scierit, medicinae non sit ignarus, responsa iurisconsultorum, noverit, astrologiam caelique rationes cognitatas habeat».

²⁶ L. B. Alberti, *De re aedificatoria*, Florence 1485, IX, chap. 5: «Certissimum est naturam in omnibus sui esse persimilem. Sic se habet res. Hi quidem numeri per quos fiat ut vobis illa concinnitas auribus gratissima reddatur, idem ipsi numeri perficiunt, ut oculi animusque voluptate mirifica compleantur».

²⁷ D. Barbaro, *I dieci libri dell'architettura di M. Vitruvio, tradotti et commentati da Mons. Daniele Barbaro, eletto d'Aquileggia, da lui riveduti et ampliati et hora in più comoda forma ridotti*, Francesco de' Franceschi e Giovanni Criegher, Venezia 1567, p. 282: «L'Architetto [...] haverà avvertito al numero [...] & che quelle proportioni, che danno diletto alle orecchie nelle voci, le istesse applicate a i corpi diletano a gli occhi».

²⁸ *Ibidem*, pp. 124-125: «Quello che è consonanza alle orecchie è bellezza a gli occhi».

²⁹ See G. Zorzi, *Le chiese e i ponti di Andrea Palladio*, Venice 1966, p. 88: «Le proporzioni delle voci sono armonia delle orecchie, così quelle delle misure sono armonia degli occhi nostril, la quale secondo il suo costume sommamente diletta senza sapersi il perchè fuori da quelli che studiano di sapere la ragioni delle cose».

³⁰ Granger, *cit.* (above, n. 24), II, p. 206: «Itaque Archytas cylindrorum descriptionibus, Eratosthenes organica mesolabi ratione idem explicare vult».

³¹ On the duplication of the cube, see S. Duvernoy, *Leonardo and Theoretical Mathematics*, Nexus Network Journal, 10/1, 2008, pp. 39-49.

³² Granger, *cit.* (above, n. 24), I, p. 32: «Partes ipsius architecturae sunt tres: aedificatio, gnomonice, machinatio».

³³ Barbaro, *cit.* (above n. 27), p. 439: «terza parte principale dell'Architettura posta nella cognitione, & nella dispositione delle machine, & de gli strumenti, bella, utile, & meravigliosa pratica».

³⁴ See F. Argellati, *Biblioteca degli Volgarizzatori, o sia Notizie dall'Opere Volgarizzate che scrissero in lingua morte prima del secolo XV*, Milan 1767, IV, p. 290: «Erone

Alessandrino degli Automati, traslati, emendati e figurati: Opera di Monsignor Daniello Barbaro MS», and Barbaro, *cit.* (above n. 27), p. 466: «noi per diletto posto havemo nella lingua nostra i libri di questo autore [Hero]».

³⁵ Barbaro, *cit.* (above n. 27), p. 271: «ma hora dal giudicio del Magnifico messer Niccolò Zeno il tutto è stato ridotto in un ordine sì bello, & comodo, che non meno ci dà meravigliare il numero, & la grandezza delle cose, che l'ordine antedetto; cosa nata da uno amorevole studio, & industrioso giudicio di quell gentiluomo, col quale io era solito di andare molto spesso nell'Arsenale a far prove di levar pesi smisurati con poca fatica». For further information on Zen, his function at the Arsenal and his relationships with Daniele Barbaro, see E. Concina, *L'Arsenale della Repubblica di Venezia*, Milan 1984, pp. 122-124 and 146ff.

³⁶ For Barbaro's role in the program of the paintings on the ceilings of the chamber of the Council of Ten, see F. Sansovino, *Venetia città nobilissima et singolare*, Venice 1581, fol. 123v. See also J. Schulz, *Venetian Painted Ceilings of the Renaissance*, Berkeley 1968.

³⁷ F. Sansovino, *Delle cose notabili che sono in Venezia, libri due*, Venice 1562, fol. 28v: «Se volete Architetti ci è il Sansovino capo di tutti gli altri, Andrea Palladio, eccelente in questa professione, Mons[ignor] Daniel Barbaro intend.issimo e che ha tradotto il Vitruvio nella nostra lingua volgare».

³⁸ See C. Ridolfi, *Le meraviglie dell'arte, ovvero le vite degli illustri pittori veneti e dello stato*, Venice 1648, I, p. 322: «In Murano nel palagio del signor Camillo Trevisan, che dicono fosse eretto coi modelli di monsignor Daniel Barbaro, che scrisse sopra Vitruvio». For a summary of attributions of the Palazzo Trevisan, see E. Bassi, *Palazzi di Venezia*, Venice 1976, pp. 538ff.

³⁹ See M. Guazzo, *Historie ... di tutti i fatti degni di memoria nel mondo successi dell'anno MDXXVIII sino a questo presente*, Venice 1546, where Barbaro and Pietro da Noale, superintends to the botanical garden of Padua, are described as «inventori» of its architecture

⁴⁰ See L. Cellauro, *La biblioteca di un architetto del Rinascimento: la raccolta di libri di Giovanni Antonio Rusconi*, *Arte Veneta*, 58/59, 2001, pp. 222-241.

COMPENDIO

L'autore fornisce un'analisi dettagliata dell'iconografia dell'incisione con l'*Allegoria dell'Architettura* eseguita da Giuseppe Porta detto il Salviati, che fa da frontespizio dell'edizione «vitruviana» del 1556 di Daniele Barbaro. Umanista, letterato, collezionista, mecenate, e soprattutto studioso di matematica e di architettura, Daniele Barbaro è stata una delle figure più eminenti del Rinascimento Veneziano. La sua opera maggiore, a cui dedicò nove anni di lavoro, è l'edizione e la traduzione italiana del *De Architectura* di Vitruvio pubblicata da Francesco Marcolini da Forlì con l'inserimento di incisioni di Palladio. L'incisione è attribuita al Salviati per confronti di stile, e avvalorata dagli intensi rapporti dell'artista con Daniele Barbaro. Il frontespizio è decorato da figure di animali, motivi architettonici, rovine, strumenti musicali, e da allegorie della Storia, Geometria, Musica e Astronomia indicate da Vitruvio come elementi essenziali dell'educazione dell'architetto. Tra le figure ve ne è una che potrebbe essere il ritratto del committente rappresentato come Vitruvio, committente che probabilmente è stato l'erudito suggeritore del progetto.

Copyright of *Storia dell'Arte* is the property of CAM Editrice Roma and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.