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## **“Ingenuous Investigators”: Antonio Vallisneri’s Correspondents and the Making of Natural Knowledge in 18<sup>th</sup>-century Italy**

### **1. History of Science in the Postmodern Age**

In the last two centuries, science has been regarded as the most important agent of change and progress in our society. The narrative of how and why it came to be such a commanding force contributed powerfully to this perception. The rise of modern science has long been portrayed as the triumph of human reason over superstition and authority; its history, a gallery adorned with the images of heroes like Copernicus, Galileo or Darwin who upheld self-evident facts against the prejudices of their times; experimental results and the laws of nature, the only objective “truths” that human beings could attain and agree upon.

This narrative still largely informs popular views of the scientific enterprise; yet, the image of science as a disinterested pursuit of truth has come increasingly under question during the last decades, to the point that mistrust of science as a source of objective knowledge is considered a defining feature of postmodernity. The history of science as an

academic discipline has long participated in this trend,<sup>1</sup> but it was not until the 1980s that it ceased to identify with the development of ideas and theories, as formulated by the most illustrious scientists. In their influential 1985 book *Leviathan and the Air Pump*, Steven Shapin and Simon Schaffer argued that experimental results ultimately represent no more than social constructions, negotiated according to the conventions that regulate the acknowledgement of authority and credibility.<sup>2</sup> A few years later, Mario Biagioli sought to explain part of Galileo's scientific activity (and even his trial) in terms of the courtly culture and values of his time.<sup>3</sup>

While many aspects of these and other works may appear debatable, they pioneered a more comprehensive (and certainly more constructive, in every sense) approach to the history of science. Recent literature on the early modern period has focused – rather than on its best known protagonists – on its social, cultural and material context; it has discovered how experimental philosophy drew from the culture of artists, artisans and alchemists;<sup>4</sup> and it has overturned the traditional preeminence of ideas and theories over empirical practices. As of late, authors such as Deborah Harkness<sup>5</sup> have begun to explore non-institutional networks of naturalistic research that extended beyond – and below, from a social point of view – the gentlemanly scientific societies traditionally studied by historians.

My work at the Italian Academy focuses on such non-institutional scientific networks. In particular, I intend to study the community of naturalists that in early 1700s Italy pivoted on the physician Antonio Vallisneri (1661-1730). A pupil of Marcello Malpighi's and a professor of medicine at Padua University, in the first decades of the 18<sup>th</sup>

century Vallisneri was the best known and the most authoritative Italian naturalist. In the last few years, most of his works and of his correspondence have been made available in critical edition or in transcriptions searchable on-line. In particular, the 12,000 letters inventoried so far (2,800 transcribed, many others reproduced in digital format) include an unprecedented amount of information on the dozens of little known physicians, pharmacists, amateurs, practitioners who regularly collaborated with him. The availability and easy access to these sources opens a unique window on the “underbrush” of early modern Italian natural history, and makes it possible to undertake a significant step beyond the present state of scholarship.<sup>6</sup>

In this paper, I will present a social and intellectual anatomy of the naturalistic network composed by Vallisneri’s correspondents. I will investigate how observations, instruments and specimens were produced and circulated; and how even a naturalist of European renown like Vallisneri was deeply embedded into, and ultimately depended on, a tightly-knit web of local and regional relations that largely defined his agendas and practices. I will analyze the criteria for credibility and trust of natural observations in early 1700s Italy, and I will compare them to the coeval British practices whose study has been instrumental in the renewal of history of science studies.

## **2. “How to observe small things with the microscope”**

Even a cursory glance at the list of Vallisneri’s correspondents reveals several notable features. From a geographical point of view, he entertained international

exchanges of specimens and letters with some of the most noteworthy naturalists of his time (like the Swiss brothers Johann and Johann Jakob Scheuchzer), and he was certainly an active member of the European Republic of Letters. However, it is also clear that the overwhelming majority of his scientific correspondence embraced an area no larger than northern Italy; only a small fraction of his letters travelled much north of Milan or south of Rome, and even fewer were written in Latin.

Vallisneri's network is thus best characterized as a regional one, to the point that even some of his most significant international relations actually originated in the area. That was the case of the French naturalist Louis Bourguet, who sojourned for long periods in the Republic of Venice attending his family business (silk trade) before settling in Neuchatel after 1715;<sup>7</sup> Vallisneri's significant correspondence with Vienna was occasioned by the presence of Bolognese physicians that held positions at court. There can be little doubt that local issues and relations played a large role in defining his scientific agendas and practices.

From a social point of view, Vallisneri's correspondence spanned across a broad range of statuses and conditions; it included for example members of the nobility and even of the highest Italian aristocracy, many of whom numbered among his patients. Their role often identified with patronage in various forms, but with notable exceptions: the most prolific among Vallisneri's correspondents was indeed a count from Mantua, who for 20 years and through more than 700 letters provided him with a steady stream of medical cases and natural observations.

The backbone of Vallisneri's network, however, was composed of physicians disseminated in large and small towns of the Venetian mainland, sometimes belonging to the small aristocracy but far more often to the so-called "condizione civile". This term, which does not have an obvious equivalent in English language or in coeval British society, denoted educated members of the urban elite, who could count on a substantial income from lands, financial rents or real estates; while not nobles, they tended to conform to aristocratic values and lifestyle and the acquisition of a title was often a definite goal for the family. They also had the option to practice notary or medicine, the only professions that were traditionally not regarded as degrading "mechanical arts".

The importance of this group in early modern Italian natural history cannot be overstated: having received university training and education, they could read and write Latin, entertain international correspondence, and had no qualms about publishing and taking part in heated controversies – something noblemen would normally refrain from doing, at least in public. One of the many that could be singled out among Vallisneri's correspondents was Bernardino Bono, a physician from Brescia who was especially interested in the study of human reproduction and in instrument making. The collaboration with Bono and other provincial naturalists and amateurs was crucial to Vallisneri's researches on generation, and to the essential work that he published on this topic in 1721.<sup>8</sup>

Like many naturalists of his time – including Vallisneri himself – Bono suspected that the "spermatic worms" first observed by Leeuwenhoek were parasites of the spermatic fluid, rather than active agents in the process of reproduction. A skilled

instrument maker who built microscopes for himself as well as friends and collaborators, Bono was likewise a much more experienced microscopist than Vallisneri: his first surviving letter to him is indeed a set of instructions on how to “observe small things with the microscope”.<sup>9</sup> The letter was followed a few weeks later by one of Bono’s microscopes, which at last allowed Vallisneri to routinely observe spermatic worms (something he had never been able to do in the previous decades); in spite of the availability of commercial instruments, Bono’s microscope became in the following years his “most efficient optical magnifying instrument”.<sup>10</sup>

Their collaboration always appears as an exchange between intellectual equals: Bono’s research agenda did not necessarily depend on that of Vallisneri’s, who – on the contrary – was often asked by Bono to verify observations and take part in his experimental program. For example, Bono claimed that he had observed spermatic worms not only in male sperm, but even in that “female fluid” which is “produced in the heat of the coitus”, and wondered whether there was any chance that his correspondent could repeat the same observation “without sin”.<sup>11</sup> Eventually, Vallisneri did not include any observations of his own in his later book on generation, but he reported Bono’s findings with complete assurance.<sup>12</sup>

While Bono and others provided Vallisneri with essential instruments and observations, as a university professor and close to a major trading center like Venice the Paduan physician enjoyed much better access to books, journals and international mail, which he shared with his correspondents in the peripheries of the Venetian state. This fact could reinforce the impression one receives from his correspondence that Vallisneri (and

the best-known natural philosophers of his time in general) acted as a central communication hub, through which information was collected and circulated. While this might have been true to some extent, Vallisneri's correspondence is also a highly selective source: these provincial naturalists are known mostly because of the letters that have survived as part of his epistolary, which obviously stands out. At a closer investigation, the network of Italian 18<sup>th</sup>-century natural history appears to have been highly interconnected, with little centralization or presence of privileged nodes. Rather than dominating the web of his correspondents, Vallisneri seems to have been immersed into it. The Veronese physician Sebastiano Rotari, for example, did not need his intermediation to correspond with the Dutch anatomist Frederick Ruysch or the already mentioned Louis Bourguet. Vallisneri's work on generation was encouraged by Leibniz, but he never wrote directly to him and one of the "communication nodes" was in fact a pharmacist from Venice who – unlike Vallisneri – was one of Leibniz's correspondents.

### **3. An apothecary who "surpassed his own condition"**

In spite of their lack of a formal education, members of the lower classes like pharmacists and surgeons were indeed essential contributors to early modern natural history. One of the most striking examples in 18<sup>th</sup>-century Italy is that of Diacinto Cestoni, who ranks second among Vallisneri's correspondents with almost 600 letters. Born in central Italy from "poor parents", he worked as an apprentice at several apothecary shops in Italy, France and Swiss before finally settling in Livorno in 1668, where he run a

pharmacy until his death (1718). A self-taught naturalist, Cestoni managed to learn some Latin but he certainly could not write it. His lack of a formal education prevented him from publishing, a fact that largely explains his historiographical “invisibility”;<sup>13</sup> however, this did not prevent him from becoming a master of the experimental method in natural history, and a well-regarded collaborator to outstanding “philosophers” such as Francesco Redi and Marcello Malpighi.

When Cestoni got in touch with Vallisneri, soon after Francesco Redi’s death in 1697, the Paduan naturalist saluted him as “another Redi, a great man”<sup>14</sup> – and he meant it. Vallisneri’s correspondence provides insights on his reading practices: he often summarized the content of interesting letters in a couple of lines on their first page, but Cestoni’s case is rather unique: the margins of a large number of his letters are entirely covered with Vallisneri’s remarks, as if he was annotating the book of an important author he was learning from. This may have been more or less the case, since Cestoni did not publish anything (at least, not under his name) and his research was thus entrusted to his correspondence. However, Vallisneri included in his printed works excerpts of Cestoni’s letters, reported the observations he received from him, and did not hesitate to invoke his authority against that of Francesco Redi, the court physician of the Grand Duke of Tuscany, whose position and prestige were comparable to those of Galileo.

Redi had been a staunch denier of the spontaneous generation of insects still defended by Aristotelian naturalists, in particular within the Jesuit order. Some of his experimental results presented nonetheless inconsistencies that his adversaries were ready to exploit, and Cestoni was ready to point out: in 1685, Redi privately acknowledged

that the observations of the Livornese apothecary “put some doubts in my head, to the point that my previous opinion [on the generation of insects] falters... I say, that I need to repeat a lot of experiments”.<sup>15</sup> While Redi never publicly amended his position, Cestoni’s observations were crucial in the many writings that Vallisneri dedicated to the subject, including the publication of the epistolary exchange between Redi and Cestoni.

The kind of renown achieved by Cestoni was of course uncommon, but not at all unique. In the same years, the Venetian pharmacist Giovanni Girolamo Zannichelli assembled a celebrated collection of sea plants and animals, minerals and fossils that later merged with Vallisneri’s museum; he also figures prominently among his correspondents but unlike Cestoni, Zannichelli could write Latin, exchanged letters with Leibniz and published a number of Italian and Latin booklets on botany and fossils.

Well-preserved fossil fish were particularly sought after, being regarded as crucial evidence in the coeval debates on the age of the Earth and the Biblical flood. Together with other kinds of specimens, they fueled an economy of trade and exchange of natural objects that heavily relied on a network of obscure practitioners operating in the countryside. One of them was Bartolomeo Martini, who around 1710 made a living as a country surgeon in a village at the footsteps of the Alps, between Verona and Vicenza. While he “did not meddle” with Latin, he corresponded with Vallisneri, Zannichelli or Bourguet on matters such as botany, mineralogy and medicine; furthermore, he benefited from his geographical location to provide city dwellers with fossils extracted in the area and in particular, the exquisite ones from the fabulous “mountain of fish”. An exceptional paleontological site, the mountain on paper was situated only 17 miles from Verona, the second largest town in the

Republic of Venice; in practice, it was a remote place with no suitable access road that very few naturalists ever ventured to visit – sometimes, in spite of their claims to the contrary.

Vallisneri on occasions undertook naturalistic voyages (which he widely publicized) and was well aware of the importance of in-situ exploration; however, his correspondence makes it clear that he did not gather himself the vast majority of the specimens that composed his famous museum. Actually, the well preserved fossils “from the territory of Verona” that figure so numerous in the catalogue of Zannichelli’s<sup>16</sup> museum or in his own were usually dug out by local quarrymen, farmers or shepherds, familiar with the area and with the extraction techniques. They would then typically sell the rocks to local parish priests, who in turn resold them to amateurs such as Martini or to intermediaries that supplied other amateurs such as the Veronese physician Sebastiano Rotari.

Eventually, they would let a more famous naturalist like Vallisneri “loot”<sup>17</sup> their collections in exchange for books, journals or credit that could be gained through the publication of their observations in Vallisneri’s works. Martini was emboldened enough by Vallisneri’s support as to publish (in Italian) a couple of booklets on plants that he had newly discovered, and to initiate a short-lived academy of natural history with the help of a local nobleman. Cestoni himself profited from his location in Livorno – a free port and the main Italian gateway for colonial goods – to provide correspondents and patrons with exotic specimens, particularly chameleons.

Not unlike his book on generation, Vallisneri’s influential work on the history of the Earth<sup>18</sup> (1721) was hardly conceivable outside the local and regional community of

naturalists and collectors who provided observations, specimens, advice and intellectual debate. The network no doubt encompassed a plurality of opinions and approaches; Zannichelli and Bourguet backed for example the diluvial origin of marine fossils, while Vallisneri did not. Nonetheless, the public face of Vallisneri's natural history appears as the accurately negotiated product of a cooperative enterprise, organized and interpreted according to the personal views and deductions of the author. Like the tip of an iceberg, his work represents only the most visible surface of Italian 18<sup>th</sup>-century natural history; and exactly like the tip of an iceberg, it is not the only part we should pay attention to.

#### **4. "Ingenuous Investigators"**

This survey of Vallisneri's naturalistic network also offers the opportunity to reassess some of the most influential, as well as controversial explanatory models elaborated in the last decades. In *Leviathan and the Air Pump* (1985) and in *A Social History of Truth* (1994), Shapin and Schaffer argued that in the late 17<sup>th</sup>-century the possibility of producing undisputable "facts" through experiments was still questioned; Robert Boyle and the fellows of the Royal Society could turn experimental results into certain knowledge thanks to the high social status of the participants, the "modest witnesses" who transferred their personal credibility as members of the British elite upon the events they attended. Early modern experimental philosophy, therefore, was essentially a gentlemanly business.

However, as Lorraine Daston put it "One wonders about how so local an *explanans* as English gentlemanly mores could suffice for so global an *explanandum*".<sup>19</sup> Scholars have

remarked that “collective empiricism” and the associated “codes of conduct” were common features of early modern Europe rather than specifically British, but comparisons have been made difficult by the lack of detailed studies of the codes of trust and credibility in scientific communities elsewhere in Europe. How did, then, an observation get credit in Vallisneri’s network? Can we recognize, in early 18<sup>th</sup>-century Italy, the equivalent of the “modest witness”?

In a naturalistic community whose members rarely met, issues of credit were crucial: since collective witnessing was rarely possible, the credibility of the reports ultimately rested on that of the authors. However, the wide social latitude of Vallisneri’s network seems to imply that, unlike in Shapin and Schaffer’s model, a trustworthy natural philosopher did not need proper gentlemanly status. Even many university trained physicians were borderline at best, since their parents or grandparents often belonged to the mercantile class; furthermore, most of them made a living out of their profession, and could not afford not to do so. This would disqualify them as “modest witnesses”, since freedom from material preoccupation was an essential prerequisite for serenity of judgment. Apothecaries or surgeons such as Cestoni, Zannichelli or Martini, on the other hand, undoubtedly practiced “mechanical arts” and could not lay the slightest claim to gentlemanly status. This did not prevent Vallisneri from calling Cestoni “one of the first virtuosi in the world”,<sup>20</sup> considering him as authoritative as a court physician like Redi, and receiving and publishing with full assurance observations that came from “virtuous” plebeians.

Regardless of their social status, the naturalists that Vallisneri regarded as worth of credit were, in his own words, “ingenuous investigators” (“investigatori ingenui”). In current Italian, the adjective “ingenuo” unambiguously means “naïve”. In early 18<sup>th</sup>-century literary Italian, however, its meaning was radically different and much closer to the English “ingenuous”: namely, “candid”, “simple”, “undeceptive”. For Vallisneri, “ingenuousness” (“ingenuità”) was the essential quality of the true natural philosopher: it encompassed disinterestedness, impartiality, truthfulness and mindful curiosity. Vallisneri thus presented himself as an “ingenuous writer”, who plainly “relates, rather than praising”, and only related what he had actually seen.<sup>21</sup> Claiming the superiority of modern writers over the Aristotelian tradition, he celebrated the “ingenuousness, and accuracy” of their descriptions of natural phenomena.

It is interesting to note, however, that ingenuousness was a typical gentlemanly virtue; count Luigi Ferdinando Marsili thus displayed it naturally as a “true gentleman, and a true philosopher” in his geological works.<sup>22</sup> The fact that natural history could open its ranks to apothecaries or country surgeons, does not mean that the kind of rhetoric described by Shapin and Schaffer was not at play in early 1700s Italy. In order to gain credibility as natural philosophers, low-class practitioners were required to raise themselves “above their condition” (as Vallisneri wrote of Cestoni), an elevation that was regarded as moral as well as cultural. Becoming trustworthy members of the community of naturalists implied to partake to some extent into gentlemanly values; being credited with reliable observations was, in turn, an effective means of self-fashioning and self-promotion.

Talking money, for example, was out of the question – a typical trait of gentlemanly behavior. Vallisneri advised a correspondent who was looking for a good microscope that he could not simply buy one from Bernardino Bono, because that “ingenuous, and most learned man”<sup>23</sup> was “a gentleman” and would only give them away as gifts. In the same way, fossils were bought and sold but not in transactions between naturalists, which otherwise would have degraded themselves to the condition of unreliable “merchants”. The periodical “looting” by Vallisneri of Martini’s and Rotari’s collections never happened in exchange for money, but they certainly expected rewards and they could be equally tangible: Vallisneri’s book on marine petrifications (one of his two major works) opened indeed with a long letter by Rotari describing the site of the “mountain of fish”. The Paduan naturalist accepted to publish it, even though he suspected that the author actually “does not know much about natural history”.<sup>24</sup>

Gentlemanship was perceived as a typical masculine quality, to the point that the “modest witness” acts in an entirely male environment. However, in Vallisneri’s network even women could exceptionally become active contributors to natural philosophy. Clelia Grillo Borromeo, born into the highest Italian aristocracy and married into one of the most powerful families of Milan, benefited from her close relation to Vallisneri to be celebrated as the “heroine of the philosophers” and one of the most distinguished “femmes savants” in 18<sup>th</sup>-century Italy.<sup>25</sup> In spite of her birth and wealth, however, she too had to overcome the limitations of her condition (in this case, her sex) through virtue and study before she could become an accurate witness of the dissections of vipers, or of the biological experiments with the air pump that Vallisneri reported in his publications. Clelia herself

accepted the rhetoric that tied natural philosophy to manhood, and to the need for her to overcome the limitations inherent to her sex: the inscription she chose for the frame of her most famous portrait was the Latin motto “Contemptrix Cloelia Sexus” (“Clelia, who despises her own sex”).

In the “modest witness” model status alone guarantees that the witness will be a “competent sensory agent”,<sup>26</sup> but the “ingenuous investigator” cannot do without competence in natural philosophy, one that does not come with lineage, rank or even a good but generic education. In 1722, a 9-head hydra appeared in Padua; a “letterato” wrote a learned dissertation on the strange animal, which he believed to be real. However, when Vallisneri later examined it, he “immediately discovered it to be an artifact, and I showed them the trick... Everyone has eyes to see, but not everyone to judge”.<sup>27</sup>

Vallisneri seemed to believe that a high social status could rather endanger than guarantee one’s “ingenuity”, and prevent an otherwise “ingenuous” philosopher from acknowledging mistakes and accept corrections – especially when they came from inferiors. Redi himself had not always displayed the “ingenuousness” one would expect from him: this quality encompassed the willingness to accept amendment and acknowledge mistakes, a virtue perhaps incompatible with the need to upkeep the prestige of the court he was part of. As Cestoni wrote to Vallisneri, Redi the philosopher ingenuously “acknowledged that he was wrong”; but Redi the courtier would not make it public, since “those who did not know the issues of the generation of insects would not have realized his mistake; and in any case, nobody meddled with these particular ones”.<sup>28</sup>

It is telling that unlike Malpighi, Redi or Galileo, Vallisneri declined the offer to join a court, to which he preferred his chair at Padua University; in spite of the heavy burden of teaching, he considered that position to be better suited to the exercise of “philosophical freedom”. Even though gentlemanly values still appear instrumental in the “technology of trust and assurance”<sup>29</sup> that contributed to the establishment of “facts”, Vallisneri’s “ingenuous investigator” only needed to *share in* some of those values: apothecaries, surgeons and even women can raise themselves to a status of credibility and trustworthiness thanks to their *virtue*, which allows them to overcome the limits of their condition. This possibility is not inconsistent with early modern representations of gentlemanship: Baldassare Castiglione’s *Book of the Courtier*, and much of later literature, already recognized that virtue could be learned, and was the truest mark of nobility. In practice, nobility could never go without birth and wealth; nonetheless, natural history was one of those spaces in which a virtuous plebeian could, to some extent, attain gentlemanly qualities and be trusted with an active part in the production of knowledge.

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<sup>1</sup> Already in the 1930s Robert Merton suggested (under the influence of Max Weber’s theories on the origin of capitalism) that early modern experimental science found legitimacy in the religious values of puritan England. The “Merton theses” kept being discussed throughout the rest of the century: I. Bernard Cohen, *Puritanism and the Rise of Modern Science*, Rutgers University Press, 1990

<sup>2</sup> S. Shapin, S. Schaffer, *Leviathan and the Air Pump*, Princeton University Press, 1985

<sup>3</sup> M. Biagioli, *Galileo, Courtier*, University of Chicago Press, 1993

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<sup>4</sup> See for example: P. Smith, *The Business of Alchemy. Science and culture in the Holy Roman Empire*, Princeton University Press, 1997; Id., *The Body of the Artisan. Art and Experience in the Scientific Revolution*, University of Chicago Press, 2006

<sup>5</sup> D. Harkness, *The Jewel House: Elizabethan London and the Scientific Revolution*, Yale University Press, 2007

<sup>6</sup> Unless otherwise stated, quotations from and references to Vallisneri's correspondence have been retrieved from: <http://www.vallisneri.it/inventario.shtml>

<sup>7</sup> On L. Bourguet's scientific interests, see: F. Ellenberger, *Bourguet, Louis*, in DSB, vol. 15, suppl. 52-59; F. Duchesneau, *Louis Bourguet et le modèle des corps organiques*, in M.T. Monti (a cura di), *Antonio Vallisneri. L'edizione del testo scientifico in età moderna*, Atti del Seminario di studi (Scandiano, 12-13 ottobre 2001), Firenze, Olschki, 2003, pp. 3-31; I. Dal Prete, *Scienza e Società nel Settecento Veneto*, FrancoAngeli, Milano, 2008, p. 215-230

<sup>8</sup> M.T. Monti, F. Duchesneau (eds.), *Antonio Vallisneri. Istoria della Generazione dell'uomo, e degli animali*, I, Olschki, Firenze, 2009; D. Generali, *L'uso del microscopio in Vallisneri*, in D. Generali, M.J. Ratcliff (eds.), *From Makers to Users. Microscopes, Markets and Scientific Practices in the Seventeenth and Eighteenth Century*, Olschki, Florence, 2007, p. 231-270

<sup>9</sup> B. Bono to A. Vallisneri, February 23, 1713

<sup>10</sup> D. Generali, *L'uso del microscopio in Vallisneri*, in D. Generali, M.J. Ratcliff (eds.), *From Makers to Users. Microscopes, Markets and Scientific Practices in the Seventeenth and Eighteenth Century*, Olschki, Florence, 2007: 231-270, p. 232

<sup>11</sup> B. Bono to A. Vallisneri, February 23, 1713

<sup>12</sup> M.T. Monti, F. Duchesneau (eds.), *Antonio Vallisneri. Istoria della Generazione dell'uomo, e degli animali*, I, Olschki, Firenze, 2009, p. 126-127

<sup>13</sup> D. Generali, *Uno speciale che "superava la sua condizione". Il caso dell'invisibilità postuma di Diacinto Cestoni*, in M.T. Monti, M. Ratcliff, *Figure dell'invisibilità. Le scienze della vita nell'Italia d'Antico Regime*, Olschki, Firenze, 2004, p. 8-118

<sup>14</sup> A. Vallisneri to D. Cestoni, Mantua, June 27, 1697

<sup>15</sup> "La Galleria di Minerva", 1708, p. 69; I. Dal Prete (ed.), *Antonio Vallisneri. Miglioramenti, e correzioni d'alcune esperienze ed osservazioni del Signor Redi*, Olschki, Firenze, 2005, p. 5-16

<sup>16</sup> G.G. Zannichelli, *Enumeratio rerum naturalium quae in Musaeo Zannichelliano asservantur*, Venice, typis Antonii Bartoli, 1736

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- <sup>17</sup> I. Dal Prete, *Scienza e Società nel Settecento Veneto*, FrancoAngeli, Milano, 2008, p. 235
- <sup>18</sup> A. Vallisneri, *De' corpi marini, che su monti si trovano*, Venezia, Lovisa, 1721
- <sup>19</sup> L. Daston, *A Social History of Truth: Civility and Science in Seventeenth-Century England*. By Steven Shapin, Review, "Journal of Philosophy", Vol. 92, No. 7 (Jul., 1995): 388-392, p. 391
- <sup>20</sup> A. Vallisneri to A. Magliabechi, Mantua, May 24, 1698
- <sup>21</sup> A. Vallisneri to G.G. Vogli, Padua, June 24, 1721
- <sup>22</sup> A. Vallisneri to A.F. Marsili, Padua, February 20, 1705
- <sup>23</sup> M.T. Monti, F. Duchesneau (eds.), *Antonio Vallisneri. Istoria della Generazione dell'uomo, e degli animali*, I, Olschki, Firenze, 2009, p. 126-127
- <sup>24</sup> A. Vallisneri to P.C. Zeno, Padoua, December 10, 1726
- <sup>25</sup> See the articles published in: D. Generali (ed.), *Clelia Grillo Borromeo Arese. Un salotto letterario settecentesco tra arte, scienza e politica*, I, Olschki, Florence, 2011
- <sup>26</sup> S. Shapin, *A Social History of Truth*, University of Chicago Press, 1995, p. 75
- <sup>27</sup> A. Vallisneri to U. Landi, Padua, January 22, 1722
- <sup>28</sup> D. Cestoni to A. Vallisneri, Livorno, September 30, 1697
- <sup>29</sup> S. Shapin, S. Schaffer, *Leviathan and the Air Pump*, Princeton University Press, 1985, p. 60