Theory, Practice, and Nature In-between

Antonio Vallisneri's *Primi Itineris Specimen*

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Francesco Luzzini

Sources 9

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Sources 9

Submitters: Benedino Gemelli, Dario Generali, Kerry V. Magruder, Kenneth L. Taylor

Cover image: Map of the Tuscan region of Garfagnana, from Antonio Vallisneri's *Primi Itineris per Montes Specimen Physico-Medicum* (1705). State Archive of Reggio Emilia, Archivio Vallisneri, 10, mazzo IV. Image courtesy of the State Archive of Reggio Emilia, Italy.

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In memory of Jackson R. Pope, III (1987–2016)
a passionate scholar
and a damn good friend

Contents

Foreword

Antonio Vallisneri's self-deprecating portrayal of himself as a serious and austere wandering doctor belies the charm of this narrative of a mountain journey. Vallisneri's account is at once literary, scientific, and humane. Francesco Luzzini's scholarship is suffused with a similar wit and unpretentious charm. During the two-year post-doctoral fellowship in which Dr. Luzzini devoted his energies to this project, we were charmed by his own serious and austere wanderings, not only between Oklahoma and Berlin, but also among the lofty intellectual trails by which he found his way through the high mountains of the multidisciplinary history of science. All of us are grateful for the lively thought, resourceful determination, and humane charm he brought to the community of scholars that is the history of science program at the University of Oklahoma. The warmth of his friendship we experienced during those two years makes his presence here severely missed. Yet we may now turn to this publication, in which Luzzini carries us along with him across those high mountain trails of thought that connect the Republic of Letters with virtually all of the field sciences.

In this publication, Luzzini places the history of the geosciences in the center of an interdisciplinary conversation. Vallisneri's travel observations encompass "the whole range of natural science," as Luzzini explains, "in a time when the borders among different disciplines were still easily and enthusiastically crossed." Vallisneri cites leading philosophical figures of the time, whether contemporaries (e.g., Scheuchzer, Marsili), historical writers (e.g., Pliny, Gessner) or even poets (e.g., Virgil, Lucretius), who are all woven into the fabric of the narrative. Moreover, Vallisneri's report exemplifies the practices that tied dispersed members of the Republic of Letters together through the exchange of letters, gifts of specimens, and offers of hospitality for others embarked on their own travel journeys. For these and other reasons, the generous publication of this work in Edition Open Sources will uniquely benefit diverse readers with varied interests representing multiple subject areas spanning the natural sciences and humanities.

Vallisneri's First Report of a Mountain Journey is of prime interest for the interdisciplinary development of methodologies in field research. Luzzini recognizes field research as "the very root of Vallisneri's work in the Earth Sciences." In this regard, the notion of experiment is crucial. As Luzzini explains: "just as his teacher Marcello Malpighi (1628–1694) and Francesco Redi (1626–1697) had extended the influence of Galilean experimentalism from physics to medicine and biology, so Vallisneri applied the experimental method to the Earth sciences, understanding mountains, seas, rivers, plains, caverns, and springs as giant laboratories where (more or less) controlled tests and observations could be performed." Vallisneri's account of his mountain journey is a key text for anyone wishing to tease out the ways experimental methodologies were extended to field research.

Geography and travel provided ancient models for the development of empirical approaches to field research. Geography was a part of natural history, and so Vallisneri cited Pliny's Natural History as well as the geographies of Ptolemy, Strabo, and others, especially when describing the region of Garfagnana.

One of the most frequent types of publications in the Earth sciences in the eighteenth century was the chemical analysis of spring water. Such analyses, performed on the spot or in laboratories, provide a clear case of the application of experimental methodologies

to questions in the Earth sciences, and unsurprisingly are frequently invoked by Vallisneri. No two hot springs were the same; thus, laboratory experiments could be linked with observations that were specific to particular places in the field. Another instance consists of Vallisneri's experiments designed to simulate the passage of seawater through various materials in order to test the ability of those earthy materials to filter out sea salt. Vallisneri concluded: "the way by which sea water is filtered, and becomes fresh, is doubtful and deceptive, according to our experiments. For it cannot lose its salt by percolating through any sand, or marble, nor through any vase which has been tempered with the fire of a furnace." Whether laboratory conditions might legitimately simulate conditions of the larger Earth remained a topic of vigorous discussion long after Vallisneri, with the plausibility of such experiments resting in part upon the perceived correlation of general results to particular field locations.

The practice of medicine also provided models for conjoining the general and the specific, including research laboratories with new techniques utilizing microscopes and other instruments, anatomical theaters designed to make hidden structures visible to gathered witnesses, or therapeutic trials featuring comparisons of various outcomes under specific conditions. Numerous publications in the seventeenth and eigheenth centuries likened field investigations of the Earth to the methodologies of dissection. Medical references unsurprisingly abound in Vallisneri's report. Speaking of the sulphureous caverns of Scandiano, Vallisneri recounted: "I have been the first to send those afflicted with the filthiest French scabies into that sulphurous laboratory, as if it was a panacea." Or, he explained, "the amazing properties of the waters of Bagno della Pieve were tested against rheumatic and arthritic pains, and against various diseases of the nerves; and others who witnessed those favorable experiments, […]." As in these examples, so in many similar comments, Vallisneri extended the language of experiment into the field.

Field research depends upon observations specific to the place. In a similar way, medical therapy depended upon the specific characteristics of particular places. Vallisneri observed, for instance, that "the sulphur of Scandiano" was more effective in its healing properties than other locations. Similarly, thermal springs varied greatly from one place to another, from the springs of Vitriola that dyed cloth black and made it more durable, to the Turrite baths which juxtaposed hot and cold springs so closely together that the temperature of the bath could easily be regulated. To extend the language of experiment to field and travel, Vallisneri compared various sites and their changes over time, as in a therapeutic trial. For example, he reported Robert Boyle's observations of a mine affected by exposure to air and not to sea. This provided, he noted, a "simple experiment" of the operation of the air and the sea in comparison with observations of diverse sites in Italy.

Vallisneri repeatedly affirmed the legitimacy of beginning with particular considerations in order to develop theories of general significance. Speaking of the relevance of his mountain journey for the meteoric theory of the water cycle, he wrote: "from a small journey, and from trivial observations, I shall ponder such immense issues." He conjoined evidence from sources as varied as his filtering experiments and the disposition and temporal behavior of specific springs and wells to construct a coordinated argument that "the mentioned wells receive their waters from the land, and not from the sea." Yet the particular character of the argument raised the need for collective investigation and community witness. The examination of other particular places would be necessary to confirm a general theory. Collective investigation would be spurred by forthright sharing of information and friendly debate among members of the Republic of Letters. Vallisneri described Ramazzini's description of the fountains of Modena as conducted "so learnedly and ingeniously, though supporting a different theory." Or, elsewhere, he wrote: "I con-

fess my ignorance on everything, but especially on these matters. Also, I beg you to let me know your opinion on the fresh water spring that, to the wonder of people, spilled out in Venice during the excavation of the Cannaregio […].” Vallisneri’s mountain journey suggested an “experiment that it can barely conceive”; as he was an eyewitness to a small area, truth would come from multiple eyewitnesses collectively examining larger areas, especially the valleys of the Danube, Rhine, and Rhône rivers. In a development that would surely please Vallisneri, Luzzini himself has joined the cloud of witnesses: “By the summer of 2010, I was even able to perform an in-person replication of the journey and of many observations and explorations reported in the manuscript.” So also many other historians of the Earth Sciences are now incorporating the evidence of replicated field excursions alongside their analysis of texts.

Luzzini explains, “since nature could not enter laboratories, these had to be brought to (and into) nature” so that “the very notion of ‘experimentalism’ needed to be reconsidered and reshaped.” In presenting to us “Vallisneri’s creative synthesis of experimental and empirical methods,” Luzzini has shown us how Vallisneri faced his greatest challenge in the “attempt to define a methodology of field research.”

The Edition Open Sources series was conceived for just such a project as this: the publication of a primary source with widespread appeal across many disciplinary boundaries, in a manner that fuses universal access on the open Internet with academic quality as a peer-reviewed publication. I am grateful to Francesco Luzzini for his embrace of the ideals of this series and for devoting himself wholeheartedly to bringing it to full realization in this project.

Kerry V. Magruder

PART I
Introduction

Chapter 1
On Context

The desk has always been
the ruin of philosophy.[1]

1.1 On Chance and Necessity, and How They Met

I have always marveled at how contingency affects human affairs. Such a consideration, of course, is especially valid when referring to battles, conquests, discoveries, inventions, explorations, and other impressive events. Yet, I dare to hold it as universally true: for a simple life, too, can provide anecdotes on the vagaries of chance.

As regards my humble self, I shall support this opinion by describing what happened one morning in September, 2009, while I was leafing through a bulk of dusty papers at the State Archive in the Italian city of Reggio Emilia. I had finished my Ph.D. a few months earlier, and had just entered that critical time in a scholar's life when a doctoral dissertation is supposed to evolve into a book and a student is expected to become a grown-up, autonomous researcher. In order to achieve these ambitious and not so obvious goals, I needed to delve even further into the topics I had been studying for about four years: the Earth sciences in early modern Europe and the work performed in this field by the Italian physician and natural philosopher Antonio Vallisneri (1661–1730).

I had been repeatedly warned by my mentor, Dario Generali, that this task would require *a lot* of research and the reading of *many, many* texts. Undoubtedly, my subject guaranteed a steady and menacing supply of both these resources. My apprentice years at the Edizione Nazionale delle Opere di Antonio Vallisneri ("National Edition of Antonio Vallisneri's Works") had made me aware of the breadth of this author's research interests and the astounding number of his published and manuscript writings. With two books explicitly devoted to hydrogeological and paleontological issues, dozens of articles and contributions which cover almost every field of the Earth sciences, and with a European-wide correspondence of more than 12,000 letters (which involved scholars like Johann Jakob Scheuchzer, Frederick Ruysch, Louis Bourguet, Luigi Ferdinando Marsili, Martin Lister, Thomas Dereham, Hans Sloane, and many others), Vallisneri was a perfect case study for significant interdisciplinary research. I was excited and motivated: I had an opportunity to shed new light on the scientific, philosophical, religious, and social issues that engaged the European intellectual community between the late seventeenth and early eighteenth centuries.

Still, despite this wealth of information and inspiring premises available to me then I missed something too important to overlook, for it lay at the root of Vallisneri's work in the Earth sciences: field research.

[1] "La ruina della filosofia è sempre stata il tavolino." Antonio Vallisneri to Gaston Giuseppe Giorgi, October 9, 1724 (Vallisneri 2005, 1091).

When he published the *Lezione Accademica intorno all'Origine delle Fontane* ("Academic Lecture on the Origin of Springs")[2] in 1715, the *philosophical* debate on the hydrologic cycle was at its peak. Indeed, Vallisneri's treatise matched the ideals promoted by the Republic of Letters, which upheld scientific progress as a a virtuous effort both collective and cumulative. By supporting the exclusively meteoric origin of fresh water with strong empirical evidence, he confirmed measurements and observations made previously by engineers, scholars, artisans, and experts all over Europe, and dealt a lethal blow to the competing (and still far from unpopular) theories of a compound origin—for example, those which supposed the existence of hidden channels connecting the oceans to the earth and the partial or exclusive distillation and/or filtration of sea water through rock layers.

The *Lezione Accademica* relied on a mass of data that the author had started collecting in the field since his early years as a general practitioner in the Duchy of Modena and Reggio. Even after he was appointed Professor of Medicine at the University of Padua, where his leisure time became an increasingly precious resource, he did not give up his "genial studies" (as he called them). Rather, he began devoting a significant part of his summer vacations in Scandiano, in the current Province of Reggio Emilia, to the exploration of nearby hills and their many natural features. Such was his delight in these activities, that soon his typically brief excursions could not satisfy his omnivorous curiosity. And so, in the summer heat of 1704, he bravely resolved to travel—with a "daring soul" and "trembling foot"—across the "silent horrors" of the northern Apennines: down the hills south of Reggio Emilia to northern Tuscany and the western edge of his native land, the Province of Garfagnana (Figure 1.1).

Once back in Padua, Vallisneri started writing a Latin report of his adventure. By January of the next year, he finished his *Primi Itineris per Montes Specimen Physico-Medicum* ("Physico-Medical Example of a First Journey through the Mountains").[3] He was so enthusiastic about his work that he sent a copy of it to the Royal Society of London, hoping eagerly for its publication in the "Philosophical Transactions." But this did not happen, and the manuscript disappeared from sight. Two decades passed before two summaries of the original version, called *Estratti* ("Extracts"), appeared in Italian in the "Supplementi al Giornale de' Letterati d'Italia."[4]

Thus, the *Estratti* seemed to be the most complete surviving records of Vallisneri's journey. Even in this condensed form, however, their contents were enough to tickle my imagination. From a preliminary study, I realized that the reports embraced far more than the (however crucial) debate on the origin of fresh water. I drafted a list of all the subjects I could identify; the result was amazingly eclectic, even for an eighteenth-century scholar. The *Estratti* encompassed the whole range of natural sciences, including topics such as mineralogy, stratigraphy, petrography, paleontology, geomorphology, hydrogeology, geography, mining technology, meteorology, chemistry, medicine, botany, and biology. Not to mention those humanistic forays which were a typical feature in texts written by early modern savants, and which embraced history, philosophy, literature, religion, archaeology, and even anthropology and folklore. Considering the mass of information contained in these two summaries, it was no surprise that the original text had been deemed by its author as being worthy of international prestige. Finding the original document would allow

[2] Vallisneri 1715.
[3] Vallisneri 1705, State Archive of Reggio Emilia, Archivio Vallisneri, 10, mazzo IV.
[4] Vallisneri 1722b; 1726.

Figure 1.1: Northern Italy, the Duchy of Modena and Reggio and Vallisneri's journey. Original map: *L'Italie: publiée sous les auspices de Monseigneur le Duc d'Orleans*, 1743 (Courtesy of the Norman B. Leventhal Map Center at the Boston Public Library, Boston (MA), USA).

me to recreate Vallisneri's itinerary with an accuracy unequaled, I hoped, in the history of early modern naturalistic explorations.

However, there was much more to research. Vallisneri was the dominant Italian figure of his time in the field of medical and natural sciences, and as such the centre of a European-wide epistolary network. Given his role in his contemporary Republic of Letters, a study of his manuscript would also add to our understanding of Italian experimentalism: how it impacted early modern natural philosophy, how it was transmitted across national and confessional boundaries, and how it had its roots in a Galilean school which branched out and expanded its influence on different disciplines.

How bright and inspiring my dreams of glory were; unfortunately, they did not take into account a prosaic fact: the manuscript was nowhere to be found. Supposedly, the official copy of the document was still held at the Archives of the Royal Society of London, though there was no trace of it in the collections database. In theory, an expensive excursion to London would have allowed me to gather more information. I felt that maybe, with (more than) a bit of luck, I would be able to find that precious manuscript.

Alas, since I lacked a regularly paid academic position I definitely could not afford to let words such as "expensive" and "travel" enter into my vocabulary. As for the National Edition, receiving a sponsorship from this institution was out of the question. Just a few weeks before, Italy's Ministry of Culture had informed us that, given the dire impact of the 2008 financial crisis on the Italian economy, our annual budget would suffer ("to our utmost regret," they said) a draconian reduction which would last "indefinitely." As we would learn in the following years, the boundary between the terms "indefinitely" and "forever" is not sharply delineated.

But there was another option—the draft copy. What if this earlier version of the *Primi Itineris Specimen* had survived? If so, this document was probably lurking somewhere in

the State Archive of Reggio Emilia, where the vast and still largely unexplored bulk of the author's unpublished writings—the Archivio Vallisneri or "Vallisneri Archive"—was held. In a kind and extreme act of optimism, Generali resolved to use the remaining public funds from the previous year for the scanning of a few carefully selected papers. So, we traveled at our own expense from Milan to Reggio Emilia: once there, we spent three days cataloging and describing the entire Vallisneri Archive, searching for all the useful material we could detect and acquire.

Of the archive's twelve parts, the tenth one—entitled *Scritti, minute e appunti scientifici e letterari d'Antonio Vallisneri sr.* ("Writings, drafts, and scientific and literary notes by Antonio Vallisneri, Sr.")—seemed the most promising. This section, in turn, was made up of four huge *mazzi* ("bundles"). It was in the fourth *mazzo* that, after having scrutinized a large pile of manuscript lesson plans with such charming titles as *Praelectiones de Urinis* ("Lectures on Urine") and *De Adiposis Ductibus* ("On Adipose Ducts"), I came across the stained brownish cover of a thin cardboard folder. This had a concise yet thorough title on it:

Iter Montanum ("Mountain Journey")

I turned the page, and my premonition proved to be true: there it was, in my hands, the original draft of the *Primi Itineris Specimen.*

In leafing exultantly through those ferociously reworked pages—replete with canceled text, slips of paper pasted here and there, confused corrections, and anxious margin notes—I realized that an exhaustive study of this document would take much more time than I had imagined. But fate seemed to have granted me a sort of compensation, or rather encouragement, for the challenging task I now foresaw. I found lying at the bottom of the stack of papers that made up the manuscript two perfectly preserved and neatly folded hand–drawn maps of the Tuscan region of Garfagnana, the place where Vallisneri's journey came to an end. Furthermore, an autographed note on the first document allowed me to identify its maker as Domenico Cecchi (1678–1745), a locally renowned cartographer from the town of Castiglione.

Undoubtedly, this finding was beyond my best expectations. Yet, such a wealth of sources had the paradoxical effect of making me feel overwhelmed by the mass of new data. This strange and unsettling feeling grew stronger a few weeks later when I obtained the digital scans of the *Primi Itineris Specimen* and started comparing its content with that from the *Estratti.* Though there was an almost perfect match between the itinerary described in the manuscript and the one in the published summaries, a number of features in the former document differed, qualitatively rather than quantitatively, from those found in the *Estratti.*

Language, of course, was the first and most important difference. In the early XVIII century, as earlier, Latin was the inevitable choice for those scholars who wished to make their research known throughout Europe. Yet this very desire, in turn, implied for Vallisneri the ambition of engaging an audience whose familiarity with Italian science—that is, with the Italian tradition of that peculiar form of inquiry which was commonly referred to as "natural philosophy," and which in Italy had been greatly influenced by Galileo's legacy—was not apparent. Hence the careful attention he paid to the description of the methods and practices of his field research, and also his strenuous upholding of this this still debated and largely neglected way to knowledge. In fact, just like his teacher Marcello Malpighi (1628–1694) and Francesco Redi (1626–1697) had extended the influence of Galilean experimentalism from physics to medicine and biology, so Vallisneri applied the experimental method to the Earth sciences by envisioning mountains, seas, rivers,

plains, caverns, and springs as giant laboratories where (more or less) controlled tests and observations could be performed.[5] From this point of view, his report was not just a philosophical enterprise but also a project which possessed an implicitly promotional and self-promotional purpose. By addressing the oldest and foremost scientific society in Europe, he aimed to establish himself as the leading Italian voice in the choir of the Republic of Letters and, therefore, as an acknowledged benchmark figure within this context.

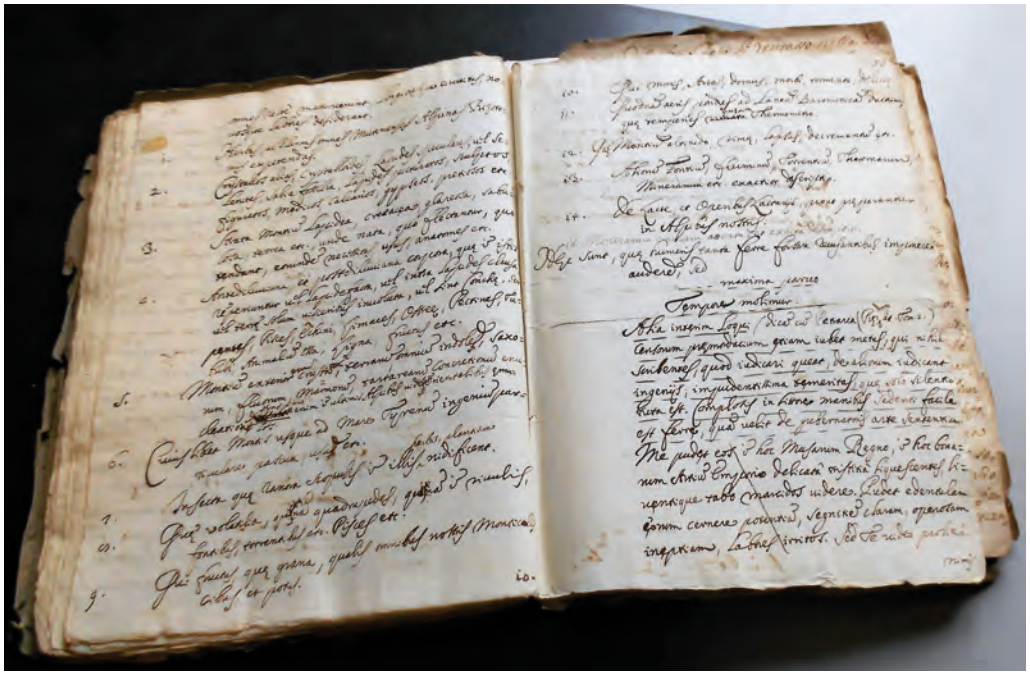

Figure 1.2: "I turned the page, and my premonition proved to be true: there it was, in my hands, the original draft of the *Primi Itineris Specimen*."

Eventually, I managed to work my way through the mountain of information provided by the *Primi Itineris Specimen* and succeeded in recreating Vallisneri's itinerary almost in its entirety. By the summer of 2010, I was even able to replicate in person his journey and many of the observations and explorations he reported in his manuscript. And, like Vallisneri, I was so proud of my work that I wanted to share it with that Republic of Letters of which I desired to become a part. In the following years, this experience became a central feature of several of my papers[6] and my first book,[7] and proved to be a decisive factor for my examination of Vallisneri's contribution to the development of the Earth sciences. In fact, as the manuscript clearly shows, field data and theories constantly interacted in his thought, and to a much greater extent than was the case for many of his Italian and European contemporaries. His was a virtuous synergy, one which led to an uncommon and not obvious understanding of a number of scientific, philosophical, medical, social, and religious issues: the genesis of springs and mountains, the organic origin of fossils, diluvialism, the discovery of deep-time in relation to geochronology, the constant search for new therapeutics (and the critical evaluation of traditional ones), the perception of man's place

[5] On this topic, see Monti 2011. See also Generali 2007a.

[6] Luzzini 2010; 2011a; 2014a; 2015b. On Vallisneri's journey (and, more generally, for a study of the birth and development of the practice of geological travels in Italy), see also Vaccari 2005; 2007; 2008; 2011.

[7] Luzzini 2013a.

in nature, and the tormented—though fertile and, undoubtedly, charming—relationship between science and religion.

Of course, Vallisneri's effort to provide his observations and explorations with a well-defined methodology was not exempt from ambiguities. I would have been surprised had the contrary been true. This was a trait typical of an epoch when technicians, practitioners and scholars were still far from defining common and univocal procedures and terminologies. Nor did this fact dissuade me from thinking that the *Primi Itineris Specimen* had the potential to offer a most precious insight into the requirements, criteria, and purposes to which field research should conform according to a natural philosopher of the early eighteenth century. As such, this document deserved to become the *main* subject of a study that would enhance the historical value of its content in all its richness and complexity, and would aim to break new ground in our understanding of knowledge, theories, and field research in the early modern period. In a word, it deserved a critical edition—and, as usual, I needed to find the financial support and academic stability necessary to produce one.

When, in late November of 2014, I received the news that my application for an Edition Open Sources Post-doctoral Fellowship had been successful, I realized that fate had granted me an opportunity to finish what I had started years ago. Once more, chance and necessity met at the right time in my academic life.

Let us now focus on the historical, cultural, and intellectual context from which the *Primi Itineris Specimen* took shape and developed.

1.2 Theory, Practice, and Nature In-between

The second half of the XVII century was not a peaceful time for the University of Bologna. In those years, the Palace of the Archiginnasio—with its courtyard, arcades, solemn halls, and beautiful anatomical theater—became the silent witness to a fierce battle which often overflowed the limits of the (however brutal) academic debate. Ink almost turned into blood, for much was at stake: intellectual hegemony over the most advanced medical center of its time in Italy, and one of the most advanced in Europe.

With good reason, this struggle could be considered a result of the immense impact exerted by Galilean experimentalism on medicine and natural philosophy. This new method of studying nature had aroused both strong opposition and enthusiastic support, and two radically different epistemological traditions had emerged and were now confronting each other. On one side stood empirical medicine, whose leading exponents were the Galenic physicians Giovanni Girolamo Sbaraglia (1641–1710) and Paolo Mini (1642–1693); on the other side was Marcello Malpighi, a renowned paladin of the rationalist school who had merged the experimental method with the theoretical frameworks of Baconian philosophy and Cartesian mechanism and corpuscularism, and who had upheld microscopic observation as a crucial practice for the advancement of anatomical studies.

It would be misleading (and way too simplistic) to dismiss Mini, Sbaraglia, and their followers as reactionary defenders of a backward and ineffective medicine which would soon be cast into oblivion by the relentless development of the new science. A number of studies have outlined how, in the last decades of the XVII century, the debate was far from being resolved in favor of the experimentalist side.[8] In fact, the constant and undeniable progress of anatomical knowledge had not yet had a proven positive effect on people's

[8] On this topic, see Cavazza 1990, 185–201; 1997; Crignon, Zelle, and Allocca 2014; French 2003, 215–221; Generali 2007a, 30–47.

health, and too many diseases and accidents still entailed much misery (if not a death sentence). Thus, the fierce opposition from the advocates of empiricism, and the persistence of traditional pharmacopoeias and therapeutics that were based essentially on empirical and statistical criteria, appeared reasonable to contemporaries. Significantly, these empiricist methods were still widely used by even those progressive physicians who rejected the theoretical principles of Hippocratism and Galenism; Malpighi was no exception.[9]

When young Antonio Vallisneri enrolled at the University of Bologna in 1682, the strife between the empirical and experimental factions was at its peak. Being a proud follower of Malpighi, he took the side of his mentor without hesitation: still, this stand did not imply for him an uncritical rejection of empirical medicine, which he carefully (and secretly) learned in Sbaraglia's classes.[10] This cross-pollination of experimental rationalism (itself the result of an original synthesis of Galilean and Baconian motifs) with traditional empiricism proved to be extremely fruitful for Vallisneri's research, which soon branched out from medicine to encompass a wide range of disciplines within natural philosophy. In the specific case of the Earth sciences, this approach led to his extreme dedication to field research, a steady interest in testing the chemical and physical properties of collected specimens, and a remarkable inclination to identify the connections and interactions between natural phenomena (with, moreover, special attention paid to the agreement between data and theoretical interpretation).

Important examples of this research method can be found in Vallisneri's early scientific notes. These date back to the last decade of the XVII century when, having become a doctor in 1687, he returned to the Duchy of Modena and Reggio and started serving as a general practitioner. Throughout this period, he made profitable use of his leisure time by performing a wide array of observations and experiments and by methodically writing them down in seven notebooks, now partially published by the National Edition of Vallisneri's Works as *Quaderni di osservazioni* ("Observation Notebooks").[11] His earliest geological report is a concise note dated February 24, 1694, concerning a "dreadful earthquake" that occurred in Mantua and Luzzara and which was felt "all over Europe" ("Some towers fell, along with almost all of the chimneys and many houses").[12] Another note from the same year—dated November 12—focused on the gypsum layers of Mount Gesso, a hill located in the gypsum-sulphur formation of the northern Apennines (and now part of Albinea, in the Province of Reggio Emilia). A new sulphur vein had been discovered, and the "Most Serene Prince" Luigi d'Este *Juniore* (1648–1698), Governor of Reggio and Marquess of Scandiano, had ordered the appointment of a "certain Mr. Raggi from Romagna" in order to find the vein and start digging to mine it.[13]

[9] Cavazza 1997, 140–141; Generali 2007a, 36.

[10] Generali 2007a, 36–40; Luzzini 2011b, 334–335; 2013a, 69–70.

[11] Vallisneri 1694, Biblioteca Estense di Modena, Raccolta Campori, 701–707, γ. D. 6,36–42. The first two volumes are now published in 2004; 2007.

[12] Vallisneri 2004, 37. This event may have been an aftershock of the distant and far worse earthquake of Val di Noto, which struck the eastern part of Sicily on January 11, 1693, and caused about 60,000 fatalities. The seismic sequence lasted two years, with a great number of aftershocks (almost 15,000), which occurred even in northern Italy. On the chance that Vallisneri made a mistake in noting down the year, or used the universal calendar "ab incarnatione Domini" (according to which the year started on March 25), I confirmed that in fact the event occurred a year later, on February 24, 1695. In this case, it could be identified as the earthquake of Santa Costanza, which had its epicenter in Treviso and spread all over northern Italy. This second hypothesis is confirmed by historical records, whereas—with respect to the Po Plain—there is no evidence of the earthquake reported by Vallisneri in 1694. See http://emidius.mi.ingv.it/CPTI15-DBMI15/index_en.htm; http://storing.ingv.it/cfti4med/.

[13] Vallisneri 2004, 35.

Vallisneri was particularly attracted by the peculiar lithology and geomorphology of Mount Gesso. He had been wandering in that area since May 1694, making observations and collecting specimens. He had also visited a "dark and cold place" where animals refused to drink the "clear and fresh water" from a nearby spring. That fact aroused his curiosity: he decided to taste the water, and found it extremely bitter. This was a result, he supposed, of the passage of water through the gypseous rocks which, "being bitter, give it their taste […and] their particles."[14]

Nearly seven months later, in December, he entered a cavern in the area surrounding the ancient Castle of Borzano.[15] There he observed "water coming down from above" and then "falling through large gypsum rocks, in one of which the remnants of an ancient, carved staircase" could still be seen. There was also the remains of an "old, blackened oven," on the basis of which he argued that this place "was once inhabited."[16]

It was indeed, but not in the way he thought. As the Catholic priest Antonio Ruffini (and the Abbot Gaetano Chierici (1819–1886), who later stole the discovery from him) found out in 1871, the cavern was a sepulchral site from the Eneolithic period (or Chalcolithic, 3300–2200 BC) and the "oven" was, in fact, an altar used for the ritual burning of human bodies.[17] Vallisneri, however, was more interested in natural history than in archaeology. What caught his attention, above all, was the mysterious path of the water in the cavern. It fell from above, and then disappeared down into the ground: a feature typical of karst environments, and one which—he remarked—"very well" supported the observations reported by Bernardino Ramazzini (1633–1714) in his "learned book" *De fontium Mutinensium admiranda scaturigine* ("Of the Wonderful Origin of the Springs of Modena").[18]

According to the *Quaderni*, 1694 was a very fruitful year for Vallisneri. In May, he studied one of the most peculiar and intriguing geological phenomena in the northern Apennines, the so-called *salse*. Since the late middle ages, and probably even earlier, these muddy mixtures of water, salt, clay, carbon dioxide and hydrocarbons (mainly methane and oil), which now still leak out from the ground in some areas between Reggio Emilia and Modena, became a matter of endless speculation for physicians and natural philosophers. Vallisneri, who was no exception, repeatedly explored the little mud volcanoes and the seemingly lunar landscape formed by their bubbling emissions. He focused in particular on the large *salsa* in Querciola (a few kilometers south of Reggio Emilia), where he collected many samples of the cold, oily mud that poured from the craters (Figure 1.3). Nor did he hesitate to test the therapeutic potential of this substance on a number of his patients, who obviously had been selected from the poorest—and, therefore, the least powerful and least vengeful—ranks of society. Actually, the mud proved to be "very effective to desiccate tumors, mainly those on the legs."[19]

This interdisciplinary foray into medicine was not an exclusive feature of Vallisneri's research. In a time when the borders between different disciplines were still easily and enthusiastically crossed, it was not uncommon for a physician to broaden his interests beyond the conventional (though flexible) limits of his professional competence and du-

[14] Vallisneri 2004, 42.

[15] A medieval castle, now in ruins, located close to Mount Gesso. Its original walls date back to the VIII century, at the end of the Lombard (or Longobard) dominion in Italy. See http://www.castellodiborzano.it/.

[16] Vallisneri 2004, 34–35.

[17] The cavern is now known as Tana della Mussina. On the identification of this place with the one described by Vallisneri, see Luzzini 2011b, 338–340; 2013a, 72–74.

[18] Vallisneri 2004, 34–35. Here, Vallisneri refers to Ramazzini 1691, 9–29.

[19] Vallisneri 2004, 40–41. On this topic, see Luzzini 2011b, 341–343; 2013a, 74–77; 2014a, 211; 2014b; http://www.comune.viano.re.it.

Figure 1.3: The *salsa* in Querciola (Viano, Reggio Emilia). Photo by Stefano Meloni.

ties.[20] It is undeniable, however, that Vallisneri seemed to have been more inclined than others of his contemporaries to identify the links between medicine and the many fields of natural philosophy and to strengthen and make profitable their use. A clear expression of this approach is to be found, for example, in the role he played in the re-edition of *De Thermis* ("On Thermal Baths"),[21] a sixteenth-century treatise written by the Roman doctor and philosopher Andrea Bacci (1524–1600), who examined and discussed the therapeutic effects of thermal waters. In an appendix to this book, Vallisneri included a study entitled significantly *De nova Methodo Thermarum explorandarum* ("On a New Method of exploring Thermal Springs"),[22] where he supplemented Bacci's text by reporting many of the field observations he had made since his early years of practice. Not surprisingly, a great many of these descriptions came from the Quaderni, where his effort to deepen his comprehension of the interactions between medicine and natural philosophy was constant and ubiquitous.

Not even methodology was exempt from this interdisciplinary approach. In fact, the key to understanding his role in the development of the Earth sciences lies in this crucial part of Vallisneri's work, and to such an extent that it may be worthwhile to devote a few more words to it.

As Malpighi, Redi, and other scholars and physicians had experienced in the previous decades, the passage from physics to medicine and biology did not occur without hurdles and criticisms for the Galilean experimental tradition. Vallisneri, who acquired this legacy,

[20] For some comprehensive studies on the relationship between medieval and early modern medicine and the Earth sciences, see Duffin, Moody, and Gardner-Thorpe 2013. See also Duffin 2005; Duffin and Pymm 2015a; 2015b.
[21] Bacci 1571.
[22] Vallisneri 1711.

tried to extend the use of the experimental method to cover an even more heterogeneous (and trickier) field of study, venturing forth into the vast and largely unexplored ocean of natural sciences. The challenge of this transition did not lie just in the different nature of the subject matter: it was also a question of its size. In fact, no matter how complex a human or an animal body could be, it was still possible to examine it in laboratories, in anatomical theaters, and in other environments where a series of controlled tests could be performed. Such a procedure was unthinkable, however, in the case of rivers, lakes, caverns, mountains, and other geological phenomena; especially when they were considered in their entirety and with all their mutual interactions. Accordingly, since nature could not enter laboratories, these had to be brought to (and into) nature.

This inverted approach implied an inverted perspective, one where the inquiring savant was forced to deal with an interpretive strain that greatly increased the tension between theory and practice. As a consequence of this struggle, the very notion of "experimentalism" needed to be reconsidered and reshaped, and its meaning stretched to the point that it could encompass activities—like the observation of geological phenomena or the exploration of caverns and mountains—which were more properly described as sensorial experiences than as contrived tests. Thus, in Vallisneri's investigations a vital role was played by empiricism, interdisciplinarity, and field research, and in their intersection he used and retained knowledge, practices, and most of the terminology from a number of technical and practical activities such as mining technology, chemistry, metallurgy, engineering, hydraulics, and even pottery and farming.[23]

Although the synthesis of experimental and empirical models often led to ambiguous and hybrid procedures, it also proved to be extremely efficient in addressing the great variety of natural phenomena. As such, it became the cornerstone of Vallisneri's research in the Earth sciences; even in those cases where geological samples could actually be brought into a laboratory and, therefore, the 'normality' of experimental inquiry could be preserved. This flexibility shines through in another long note from the *Quaderni.* Dated December 1694, it relates the analysis of a certain kind of "fossil coal" (probably a sort of lignite or low-carbon coal) found by the author in the Tresinaro River, close to Scandiano:

> Unlike unpetrified coal, [a piece of] petrified [coal] sinks immediately [in water] if deprived of those stone fragments which can be [usually] seen. Having ground a mixture of coal and stone chips into an extremely fine powder, and having poured spirit of vitriol[24] on it, it boiled vigorously, bubbling and swelling. It didn't boil with spirit of sal ammoniac.[25] It burns very quickly, produces a lot of smoke, and emits a foul smell. It can be presumed that the coal is from a pine wood that was not well consumed, or from another [kind of] wood.
>
> A piece of coal with stone streaks inside it was XII and XIIII grains[26] in weight. Once burnt, it became XXXX grains.
>
> [Likewise], a [piece of] pure coal with no streaks, which was 31 [grains in weight], became XXI grains.

[23] On this topic, see Generali 2007a, 221–223; Luzzini 2011a; 2011b; 2013a, 69–137; 2015b, 172–173, 181–184. For an in-depth discussion of laboratory experimentation and instrument-aided observation as applied to geology (especially with respect to the late XVIII and early XIX centuries), see Newcomb 2009.
[24] Sulphuric acid (H_2SO_4).
[25] Ammonium chloride (NH_4Cl).
[26] Grain (unit of mass).

Test what remains of the normal coal.

Once thrown into water, [some] red-hot, burning pieces of the above said petrified coal floated for a while and then sank to the bottom. The same happened with the normal coal, which also sank. Other pieces remained afloat (just like the normal coal does) after they had cooled down. The smell of petrified coal is different from that of naval pitch: the latter being more pleasant, and almost aromatic, while the former is very annoying and offensive. When burning, naval pitch is somehow similar to the above mentioned coal, though its flame is whitish (and, as I said, its smoke is not disgusting). Moreover, as they say, [pitch] slowly melts when burning, whereas [petrified] coal and normal coal do not. Normal coal, which is called "strong," does not produce a flame; only tiny sparks spray from it, and it turns to ash little by little. [Similarly, when using] the burning glass, our [petrified] coal does not produce flame, while it emits very small sprays of sparks; [moreover], the spot where the rays strike becomes hollow and turns to ash. Having been placed on burning coals, and having used the bellows on them, our [petrified] coal started smoking a lot before burning with a dirty, smoky flame. Once burnt, it produces stains (like normal coal does), whereas it did not before. When immersed in water, the normal coal hardens even more and doesn't stain that much. Try with cloudy and saltpetre water.[27]

When normal coal gets burned, and once the fire goes out, it becomes ash even in the inside, whereas our [petrified] coal does not: this [becomes ash] only on the surface, while the inner part remains unchanged. Also, both of them are equally light [in weight]. Etc.

Cook the above said coals in water, and also see if something floats to the top.

The finely ground coal sinks once it is soaked with liquid. Fabricius, Book 2 *De halitu, Physica,* tract. VI, pag. 264.[28]

[27] Water with potassium nitrate (KNO_3).

[28] Vallisneri 2004, 52–53: "Il carbone impietrito solo senza que' ramenti di pietra, che si vedono, subito va al fondo a diferenza del non impietrito. Gettato spirito di vetriolo sopra il carbone rimescolato con pietra e macinato impalpabile, bollì molto, e sollevossi in bolle. Non bollì collo spirito di sal armoniaco. Abbrugia benissimo, fuma molto, e mena un odore fetido. Può sospettarsi, che sia carbone di pino non ben padito, o di altro legno.

Un pezzo di carbone colle strisce di sasso inframezzo, che pesava XII, e gr. XIIII, abbrugiato restò gr. XXXX.

Carbone schietto senza strisce, che era 31, restò gr. XXI.

Provare, che cosa resta il carbone ordinario.

Gettati in aqua pezzetti del carbone sudetto impietrito rosseggianti di foco, ed accesi stettero alquanto a galla, poi piomborono al fondo. Il simile fece il carbone commune, e andò anch'egli al fondo. Lasciati raffreddare altri pezzetti stettero sempre a galla, come fa il carbone ordinario. L'odore del carbone impietrito è diferente da quello della pece navale, essendo quello della pece più grato, e quasi confortativo, e l'altro noiosissimo, ed offensivo. La pece navale nell'accendersi ha qualche simiglianza col carbone sudetto, ma la fiamma è più bianchiccia, ed il suo fumo non è fetente, come ho detto. V'è anche dicono, che nell'abbruggiarsi appoco appoco si liquefà, ma il carbone nulla, come pure il carbone ordinario. Il carbone ordinario detto forte non leva fiamma, ma solo da lui si spiccano minutissime faville, e a mano a mano s'incenerisce. Collo specchio ustorio il nostro carbone non leva fiamma, ma getta gentilissimi sprizzi di faville, e resta affossato il loco, ove ferirono i raggi, e diviso in cenere. Posto il carbon nostro sopra carboni accesi stuccicati dal soffietto incominciò fortemente a fumicare, poi ad ardere a fiamma torbida, ed affumata. Abbrugiato una volta tinge poi, come fa il carbone ordinario, dove prima non tingeva. I carboni ordinari gettati in acqua via più se indurano, e non tingono così bene. Provare in acqua torbida, e nitrata.

Il carbone ordinario, quando novamente si roventa, nell'estinguersi s'incenerisce sino nel centro, ma il

An expanded and improved version of this emblematic report was published six years later in the journal *La Galleria di Minerva*.[29] This piece, too, was a perfect example of methodological eclecticism. Vallisneri started by addressing the therapeutic properties of the mysterious "erba fumana" (*Fumana procumbens,* Family Cistaceae), a dwarf shrub native to rocky and sandy soils in central and southern Europe. After focusing his attention on Montegibbio, a low hill in the northern Appennines where this weed was supposed to be particularly abundant, he hinted at a certain "bituminous earth, mixed with a lapidescent juice" which (he supposed) had been somehow "baked in the warm bowels of the mountains" and transformed into "a sort of petrified coal."[30] This last substance was, in turn, constantly eroded by water and carried downstream by rivers and creeks—for example the Tresinaro, where the author had found the specimens which he had described in 1694.

As in the *Quaderni,* a main feature of this report was the attention devoted to both *primary* and *secondary* qualities. Vallisneri did not just consider the size, weight, and shape of the coal. He also reflected on such sensorial attributes as color, smell, and even the different kinds of smoke produced when burning the samples. In doing so, he marked a sharp methodological break from his teacher Malpighi who distrusted the use of subjective qualities in the study of natural phenomena.[31] Also, we can recognize here a clear imprint of the empirical principles advocated by Sbaraglia, who in turn—and not by chance—had been greatly influenced by the severe yet constructive criticism of experimental rationalism found in the writings of Thomas Sydenahm (1624–1689) and John Locke (1632–1704).[32]

Yet, unlike Sbaraglia, Vallisneri was an earnest and passionate supporter of his mentor Malpighi and of the experimental school. His assimilation and adoption of empiricism was not just the result of Sbaraglia's influence but also—and to a greater extent—of the decisive impact of Bacon's "practical philosophy" on the scientific and academic community in Bologna, the city where he studied medicine.[33] In any case, empiricism did not prevent Vallisneri from grounding his research in the solid theoretical framework and established practices of the Galilean tradition. Not surprisingly then, in his analysis of the "petrified coals" we can find an explicit reference to the use of an instrument that Sbaraglia would have considered the very emblem of the useless and idle technologies of the *moderns:*

> In observing it with the microscope, he didn't see the same wealth of pores that the Most Inquisitive Hooke had observed in common coal; the number of which is so great, and prodigious, 'that in a line of them, 1/18 part of an inch long, he found by numbering them no less than 150. Thus, he concluded that in a piece of coal an inch in diameter there must be no less than five million, seven hundred twenty-four thousand [pores].' Rather, he could only observe

carbone nostro non s'incenerisce, se non alquanto nella superficie, e internamente resta carbone. L'uno, e l'altro poi è simile, cioè leggiero. Etc.

Cuocere in acqua i sudetti carboni, e veder pure, se in cima nuota qualche cosa.

Il carbone ben trito, ed inzuppato d'umore va al fondo. Fabricius, lib. 2 *De halitu, Physica,* tract. VI, pag. 264."

The book mentioned at the end of the quote is Fabri 1670, tractatus VI, Book II, prop. IV, "Ex terra pura nullus halitus educi potest."

[29] Vallisneri 1700.

[30] Vallisneri 1700, 106. See also Luzzini 2013a, 77–81.

[31] On Malpighi, see Adelmann 1966; Bresadola 2011.

[32] See Generali 2007a, 37–39.

[33] Generali 2007a, 24, 31–42, 49–50, 141, 215–216, 329. See also Cavazza 1979; 1990; Giglioni 2011.

> that it was covered with many roughnesses, and in some parts was sprinkled with tiny stone particles.[34]

Most likely, Vallisneri could not see the "pores" mentioned by Robert Hooke (1635–1703) because he could not rely on a microscope powerful enough to magnify them or because he did not possess one as powerful as the one invented and used by the English polymath. The non-standardization of microscope parts, both optical and mechanical, was in fact a major issue in scientific debates throughout the early modern period. This problem challenged the technical and interpretive skills of many important savants, and forced a number of them to adopt an extremely cautious approach to the use of this device, often deemed to be a deceptive instrument.[35]

In 1700, Vallisneri's life and career underwent a radical change. The "Most Serene" Republic of Venice—as he noted exultantly in his diary—had lifted him "from the mud" and placed him "in a majestic theater" by appointing him Professor of Practical Medicine at the University of Padua.[36] This new role gave him the chance to step onto the glorious stage of the European Republic of Letters. It marked the beginning of a period of feverish activity when he began and cultivated the international connections and relationships which eventually enabled him to contribute to many scientific and philosophical debates. Nor did he waste time in pursuing this goal: just one year after beginning his professorship he was maintaining a steady correspondence with one of the greatest naturalists of the early XVIII century, the Swiss physician Johann Jakob Scheuchzer (1672–1733).

This collaboration involved much more than a mere exchange of ideas. It generated an unceasing stream of scientific news, books, documents, and specimens (mostly rocks, minerals, and fossils) to and from the Alps which greatly enriched both Vallisneri's and Scheuchzer's natural collections and libraries. Many letters from Vallisneri contained meticulous lists of the objects he was sending to his Swiss friend, along with equally detailed lists of his desiderata and exhaustive reports of his frequent *philosophical* wanderings in the territory of the Venetian Republic (where he now lived). Not surprisingly, in the years which followed much of these writings' content became the subject of published works. This was the case with his account of his visit to the thermal springs in the Euganean Hills, a low, volcanic range located a few kilometers southwest of Padua where Vallisneri, accompanied by his friends the "Most Illustrious and Most Virtuous" Sirs Apostolo Zeno (1668–1750) and Bernardo Trevisan (1652–1720), performed some of the most interesting and peculiar experiments of his career.[37]

His report of this experience, published in 1706 in the journal *La Galleria di Minerva*,[38] could be described as the epitome of Vallisneri's creative synthesis of experimental and empirical methods. As he himself acknowledged, he was not the first author to write

[34]Vallisneri 1700, 107: "Guardato col microscopio non vide quella quantità di pori, che osservò nell'ordinario carbone il curiosissimo Hook, il numero de' quali è sì grande, e prodigioso, 'que dans un rang long de la 18 partie d'un poulce en a contè jusq'a 150. D'où il conclud que dans un charbon d'un poulce de diametre il n'y on doit pas avoir moins de cinque millions sept cent vingt quatre mille' […]. L'osservò solo pieno di molte scabrezze, e seminato in alcuni luoghi di micolini di pietra." Vallisneri could not read English. In fact, the quoted passage from Robert Hooke's *Micrographia* (Hooke 1665) is from a review published in the *Journal des Sçavans*, 1666, XLII, pp. 491–501 (501).

[35]On the role played by the use of the microscope in Vallisneri's research, see Generali 2007a, 271–307; 2007b; Luzzini 2007.

[36]Vallisneri n.d.(a), State Archive of Reggio Emilia, Archivio Vallisneri, Busta 27, n. 1. On this topic, see Generali 2007a, 93.

[37]On this topic—and, more broadly, on Vallisneri's correspondence with Scheuchzer—see Luzzini 2013a, 81–90, 118, 165–170, 175, 179–180, 193, 208.

[38]Vallisneri 1706.

about these thermal waters. Not a few "ancient and modern poets, historians, physicians, and philosophers," including renowned ones such as Andrea Bacci (in his *De Thermis*), Gabriele Falloppio (1523–1562)[39] and Giovanni Graziani (1675–1744)[40] had already discussed the miraculous properties of the Euganean springs. Still, he commented caustically, in reading their works he realized "how little we get to the marrow of matters […] when we depart from experiments."[41] But, as Vallisneri asserted with proud, "philosophical candor," this was not the case with him.

Before starting his research, Vallisneri kept some thermometers in cold water in order to "reduce them to the same degree." He then placed a thermometer in each spring, carefully dipping them where "the water bubbled and boiled most." The "Spring of Abano" (arguably a spring in Abano Terme, which today is still the most renowned spa town in the Euganean Hills) proved to be the warmest. But, since it was a rather windy day, he suspected this factor could have altered the temperature of the air and, therefore, his measurements. Accordingly, he resorted to an expedient which, though "coarse and plebeian," was equally ingenious and efficient. He broke a fresh egg in each spring and checked from time to time how long they took to cook. And, once more, the spring of Abano stood out from the others ("no sooner said than done, the egg white coagulated completely in one minute and the yolk in four minutes").[42]

For now, he was satisfied with this "rough judgment," not having "more suitable devices" on hand. Then, in an attempt to determine the harmful effects of boiling water on living organisms, he threw a number of animals ("fishes, frogs, salamanders, lizards, snakes," and even "birds and dogs") into the hottest springs, measuring the length of their agony with detached and philosophical dispassion.[43] He went on to describe the therapeutic use of those "spirituous waters," mocking the "excessive scruples" of many doctors and the "pompous preparations" they made

> […] in prescribing them to wealthy patients; whereas he saw all those poor, deformed cripples drinking the water and using baths and springs alike, without any medical advice, and receiving much more benefit than those who were so majestically assisted by physicians, who tormented and exhausted them with so many drugs and syrups.[44]

And finally, at the very end of the report, Vallisneri ventured onto an extremely thorny and speculative ground, one where medicine and natural philosophy touched the dangerous borders of religion: he discussed the miraculous healing virtues of the most famous thermal spring in the Euganean Hills, the Fonte della Vergine di Monteortone ("Spring of the Holy Virgin of Monteortone").

As a matter of fact, religion had been bound to the Euganean Hills since before the Roman conquest. The Italic tribe of the Adriatic Veneti had been the first to use these thermal springs, ascribing their beneficial properties to a supernatural cause. Not by chance, the name "Abano" is a variation of the ancient Italic deity Aponus, who was later identified with the Greek and Roman god Apollo—and, as such, was regarded as the supreme

[39] Falloppio 1564.
[40] Graziani 1701.
[41] Vallisneri 1706, 114.
[42] Vallisneri 1706, 110.
[43] Vallisneri 1706, 111.
[44] Vallisneri 1706, 113: "Osserva pure gli scrupoli grandi, e le pompose preparazioni, che fanno fare i medici a' pazienti ricchi prima di prenderle, mentre egli vedeva que' poveri storpi, e mal fatti prendere sì l'acqua come usare i bagni, e fonti senza alcun medico aiuto, e ricavarne più beneficio di quegli, ch'erano assistiti

dispenser of health. Hence the name "Fonte d'Abano," which descends from the Latin "Fons Aponi."[45]

Christianity followed. New legends, suited to the new religion, replaced the old ones. In 1428, in the midst of an epidemic plague, the soldier Pietro Falco stopped at the foot of the Hill of Monteortone and implored God to be relieved from his suffering. All of a sudden, the Virgin Mary appeared and invited him to bathe in a nearby spring, which he promptly did. He was immediately healed, and the news of the miracle spread across the region: soon enough, the Spring of the Holy Virgin became a destination of pilgrimage for thousands of sick and disabled people. By the end of the XV century, a sanctuary (Santuario della Madonna della Salute, "Shrine of the Madonna of Health") was built on the site.[46]

The miracle of Monteortone had been recognized by the Catholic Church, and Vallisneri carefully refrained from mentioning it (let alone discussing it). However, nothing had been said about the *miraculous origin* of the spring and its lukewarm and beneficial water. This—he remarked—was but a fable invented by the custodian of that place, regrettably backed by "many long-bearded and not short-gowned men."[47] Actually, these peculiar virtues were "adventitious" (that is to say, infused into the water from the outside) and not "natural" (innate to it and, therefore, caused by a particular act of God).[48] For

> […] the almighty arm of God did not contribute, except in general terms. It is more glorious for Him to do so many and such [great] things, working in such a rare and admirable manner, that they seem like miracles to our too short and hazy sight. Contrary to what common people think, God does not so easily resort to His omnipotence every day, and even for the smallest trifles. He arranged this great machine with such order that it runs without showing unusual eccentricities, producing marvelous, yet not always miraculous, effects.[49]

The Cartesian influence is evident here. Understanding nature as a great and flawless mechanism where divine intervention was limited to a single act of creation at the beginning of time allowed Vallisneri to keep a safe and wise distance between dogmatic faith and natural philosophy while still conforming to religious orthodoxy (or, in any case, without incurring an excessive risk of censorship). In fact, he considered the very idea of miracles to be useless, unnecessary, and even dangerous for religion. God's omnipotence was to be recognized and admired in the regular, serene, immutable harmony of natural laws: a conclusion which not everyone could achieve, of course. This substantial yet not uncritical adherence to Cartesian principles was a distinctive trait of Vallisneri's early years of activity. Even in the decades which followed, after he was crucially influenced by the philosophies of Nicolas Malebranche (1638–1715)[50] and Gottfried Wilhelm Leibniz

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con tanta maestà da' medici, e logorati, e macerati da tante medicine, e sciloppi."

[45] On this topic, see Lazzaro 1981; Luzzini 2016a.

[46] See http://www.abanoterme.net/abano-citta.html; http://www.monteortone.it/3sto/app.htm.

[47] Vallisneri 1706, 114.

[48] Vallisneri 1706, 112.

[49] Vallisneri 1706, 112: "[…] risponde con candor filosofico, essere tutti naturali effetti, né concorrervi, se non in generale l'onnipotente braccio d'Iddio. Paregli più gloria di questo l'avere fatte cose tali, e tante, che operano in tal rara ammirabile forma, che paiono alla nostra vista troppo corta, e caliginosa, miracoli. Non essere così facile, come crede il semplice volgo, che Iddio metta mano alla sua onnipotenza ogni giorno, anche per leggerissime coserelle. Avere disposta con ordine tale questa gran macchina, che senza far apparire stravaganze nuove, gira, e produce gli effetti con maraviglia, non sempre con miracolo."

[50] Malebranche 1674.

(1646–1716),[51] a strong dislike for the concept of miracles—understood as a suspension of the otherwise immutable natural order—remained a steady feature in all of his mature works. Clear examples of this approach are found in the already mentioned *Lezione Accademica* and the *De' Corpi Marini, che su' Monti si trovano* ("Of Marine Bodies found on the Mountains"), a treatise where the author disproved conventional diluvialism and the biblical notion of a miraculous, universal Deluge, suggesting instead (though remaining within the narrow rhetorical borders of a careful self-censorship) that mountains and fossils were the results of multiple localized flood/emersion sequences.[52]

Like fossils, rocks, and minerals, treatises and journals on many different *philosophical* issues were frequently exchanged between Vallisneri and Scheuchzer. By the first months of 1704, according to the titles mentioned in their correspondence, the discussion had focused on one topic in particular: the study of springs and rivers. In a letter dated March 22 of that year,[53] Vallisneri informed his Swiss friend of the price of three books specifically devoted to this subject. The first one, *Della misura dell'acque correnti* ("On the Measurement of Running Waters"), by the Benedictine monk and Galilean disciple Benedetto Castelli (1578–1643), was a seminal work in the application of the experimental method to the study of streams.[54] The others, entitled *Della natura de' fiumi* ("On the Nature of Rivers") and *Aquarum fluentium mensura* ("Measurement of the Motion of Waters"), were both written by the physician, chemist and mathematician Domenico Guglielmini (1655–1710), whose studies on fluid dynamics played a key role in the development of hydrology and hydrogeology.[55]

Such a specific interest was not accidental. By the spring of 1704, Vallisneri was already devoting much of his field research to the study of a puzzling and elusive subject whose comprehension was a major challenge for natural philosophers from the sixteenth century to the first decades of the eighteenth: the origin of springs and fresh water. Nor was it by chance that in 1705 he added another crucial name to his list of correspondents: Count Luigi Ferdinando Marsili (1658–1730), former general of the Holy Roman Empire, naturalist, Fellow of the Royal Society, and founder and supporter of the Accademia delle Scienze dell'Istituto di Bologna ("Academy of Sciences of the Institute of Bologna").[56]

Various studies have highlighted the role played by Marsili in the development of the Earth sciences: his interests and contributions covered a wide range of topics such as geography, mineralogy, stratigraphy, petrography, mining technology, hydrography, and many others.[57] This eclectic knowledge was in large part a result of the nobleman's troubled military career spent at the service of Emperor Leopold I of Habsburg (1640–1705). From 1682 to the end of the century, Marsili was stationed in the Kingdom of Hungary where he oversaw the mapping of the entire Habsburg-Ottoman border. He also had access to several mines in the Danubian provinces of Hungary, Transylvania and Slovakia between 1693 and 1694, where he acquired knowledge first-hand of the mineralogical and lithological structure of that region while simultaneously assembling one of the largest

[51] Leibniz 1693; 1710. Although Vallisneri and Leibniz never corresponded directly, they came into contact thanks to Louis Bourguet (1678–1742), who was a common friend of the two. On this topic, see Dal Prete 2015, 65; Generali 1987.

[52] Vallisneri 1721. On this topic, see Luzzini 2009b; 2013a.

[53] Vallisneri 1991, 264–266. See also the letters dated February 6 and 23 (Vallisneri 1991, 259–264).

[54] Castelli 1628.

[55] Guglielmini 1690; 1697. For a detailed study of Castelli's and Guglielmini's works, see Maffioli 1994, 29–272; 2010, 151–319.

[56] On this topic, see Cavazza 1990; De Zan 1990; Sarti 2003; http://www.accademiascienzebologna.it/en/academy-of-sciences-of-bologna-institute.

[57] See Generali 2007a, 351–360; Luzzini 2013a, 88–90; Sarti 2003; Stoye 1994; Vaccari 2003; 2008; 2010.

natural history collections of his time. The huge mass of geographical, geological, hydrological and anthropological data gathered during his experiences would be published decades later in a monumental treatise in six volumes, the *Danubius Pannonico-Mysicus* ("Pannonian and Moesian Danube").[58]

Marsili's military career came to an abrupt end in 1703. Curiously enough, this happened while he was deployed to the opposite end of the Empire. Having been appointed second in command at Breisach, an Imperial outpost on the Rhine River, he and his superior Giovanni Filippo d'Arco (1652–1704) surrendered the fortress to French troops after a siege of just 13 days. As a consequence of this premature capitulation, d'Arco was charged with high treason and sentenced to death; as for Marsili, he was stripped of his rank and honors and discharged from the army.

Deeply upset by the incident, he retired to Switzerland. There he began a fruitful friendship and collaboration with Scheuchzer and Scheuchzer's brother, Johann (1684–1738), who became his assistant and helped him in his study of the lithology of the Alpine mountains.[59] Later on, he moved to southern France where he focused his attention on the hydrography of the Mediterranean Sea and on the structure of sea floors.[60] During his travels, Marsili of course collected countless fossil, mineral, and rock samples and thus further enriched his vast museum of *natural curiosities* that he eventually donated to the Institute of Sciences in Bologna.

Vallisneri considered Marsili an absolute authority on natural philosophy. He also admired his natural history collection, which he explicitly used as a model for his own museum.[61] His fervent admiration for the nobleman's "uncommon knowledge" was remarked on in a letter which he wrote to him on January 10, 1705, with the clear intention of establishing—just like he had done with Scheuchzer—a profitable exchange of books and specimens. But there was something else in the message—a very specific and peculiar request:

> […] I have turned my mind to the study of the mineral kingdom; and, to this purpose, in the past summer I wandered through a great part of our mountains up to the farthest Panie, those facing the sea. Now, I know that when it comes to this [subject], no one can give me more enlightenment than Your Most Illustrious Lordship […]; for you had all the opportunities to satisfy your worthy hunger for reliable information in the wealthiest mines of Hungary. […] Thus, for now I beg you to let me know if you have observed any perennial waters or springs in all those mines, and if you believe all springs to come from rainwater, or snow, or partly from these and partly from the sea. Nor do I require Your Lordship to prove what you write: just say 'yes' or 'no,' which shall be enough for me to support a great argument [of mine].[62]

[58] Marsili 1726.

[59] Marsili n.d., Biblioteca Universitaria di Bologna, Fondo Marsili, codice 1044, ms. 90, cartella C, c. 41v.

[60] Marsili 1711; 1725.

[61] See Generali 2007a, 351–360; Luzzini 2013a, 89–90, 161–162; Vaccari 2008.

[62] Letter to Luigi Ferdinando Marsili, January 10, 1705 (Vallisneri 1991, 282): "[…] ho rivoltato il mio animo allo studio del regno minerale, e per tal fine l'estate scorsa ho vagato gran parte delle nostr'Alpi, sino all'ultime Panie vicine al mare. Ora, in questo io so che non v'è alcuno che possa darmi lumi maggiori di V.S. Ill.ma, […] avendo ella avuta tutta la commodità di saziare la sua degna fame di sicure notizie nelle miniere ricchissime dell'Ungheria. […] La supplico dunque per ora a favorirmi di due notizie, se in tutte le miniere ha osservata acqua perenne, o fonti, la seconda, se crede che tutti i fonti vengano dall'acque piovane, o nevi, o parte da queste, parte dal mare. Né pretendo già che V.S. Ill.ma mi provi quanto scrive, ma solo brevemente dica, o il sì o il no, che a me basterà per un grande argomento."

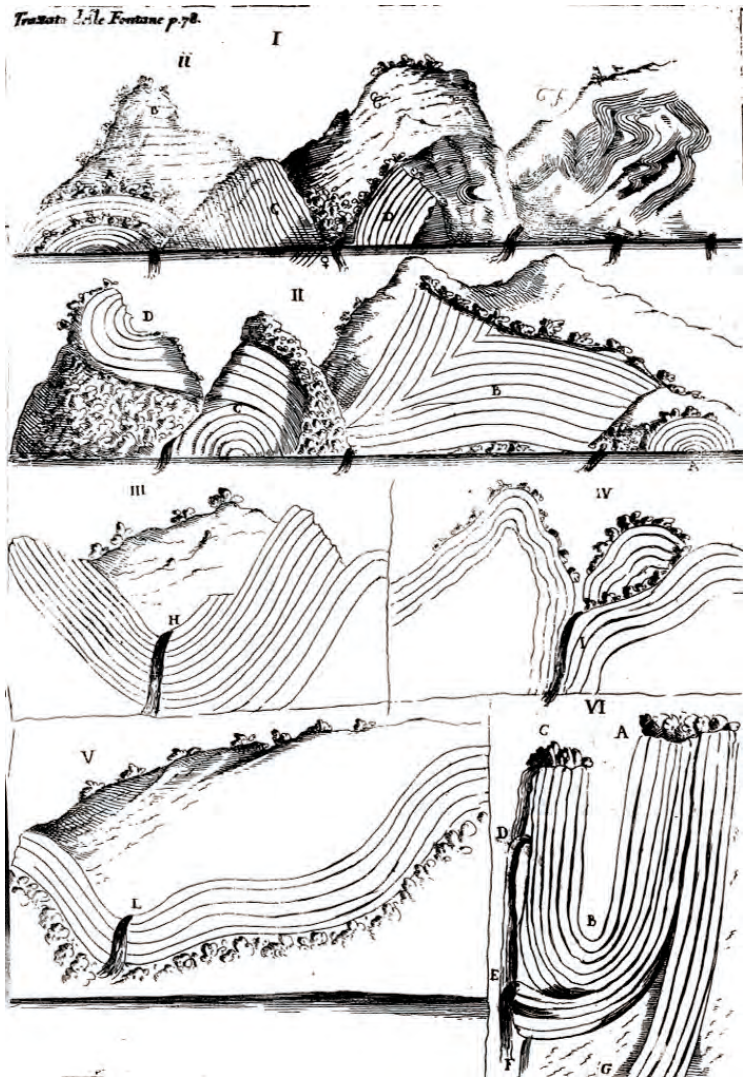

Figure 1.4: An engraving from the *Lezione Accademica intorno all'Origine delle Fontane* (1715).

The "great argument" was a new theoretical system on the exclusive meteoric origin of springs, which Vallisneri would completely explain (and support with plenty of field data) in 1715 in the *Lezione Accademica intorno all'Origine delle Fontane* (Figure 1.4). This was no small matter: with this work, he stepped into the middle of a heated debate which had been challenging the Republic of Letters (and countless other scholars and technicians all over Europe) for centuries.[63]

This interest was not just philosophical. Water management was, as it is now, a crucial topic for communities and governments. Droughts and floods often meant the difference between wealth and misery, civic stability and insurrection, abundance and famine, health and disease and, therefore, the difference between life and death (with all their related social, economic and political consequences). It is no wonder that such a vital resource became a subject of investigation and controversy evinced by a great number of texts of different kinds and lengths. These text were, in turn, produced by authors with different cultural, social, philosophical, religious and scientific values and backgrounds which—far from being mutually exclusive—often coexisted and interacted, leading to a heterogeneous mixture of theories, methods, and practices of inquiry. Already in the six-

[63] On this topic, see Luzzini 2015b; 2013a, 97–98, 109–111, 116–131, 141–153; 2014a, 208, 213.

teenth century, for example, the opinions advanced by many authors to explain the origin of fresh water relied on field research. And in fact, field research often persuaded them that water from precipitation was *not* enough to replenish springs and rivers. Hence, the idea originated that hidden channels existed which connected the oceans to the earth, and that sea water was drawn up the mountains by subterranean heat and lost its salt either by filtration through rocks or by condensation of vapor in the bowels of the mountains. This was the so-called theory of alembics, which would find its greatest champion in Descartes (1596–1650).[64]

Part of this knowledge came from the medieval elaborations of both Aristotelian and Platonic thought, which in the Renaissance interacted with different esoteric traditions. These theoretical models recognized in water and in the (supposed) subterranean passages a macroscopic analogy between them and human blood and blood vessels. Subterranean heat and other geological and atmospheric phenomena, therefore, were understood as macroscopic counterparts of metabolic processes. The evocative power of these notions spread across cultural, religious, and chronological boundaries, pervading to varying degrees the research of authors such as Georgius Agricola (1494–1555), Girolamo Cardano (1501–1576), Robert Fludd (1574–1637), Pierre-Jean Fabre (1588–1658), and Jan Baptist Van Helmont (1579–1644); of Lutheran scholars like Johann Johachim Becher (1635–1682) and Johannes Herbinius (1632–1676); and even of important Jesuits such as Mario Bettini (1584–1657), Gaspar Schott (1608–1666), and Athanasius Kircher (1602–1680).[65] It is worth noting, however, that not a few of them thought rain, snow, and glaciers to be at least *essential* causes of the origin of springs, if not the main or only ones. On the other hand, it was not uncommon that renowned and proud experimentalists—such as Edmond Halley (1656–1742), Robert Plot (1640–1696), Jacques Rohault (1618–1672), Bernardino Ramazzini, Domenico Guglielmini, and many others—partially supported the theories of alembics or of the filtration of sea water through rock strata: for, according to their measurements and observations, meteoric water alone could not completely refill the fresh water supplies.[66]

Nor was there a lack of those who maintained a strict adherence to the theory of the meteoric origin without any concession to alembics or rock filters. Already in 1580, the French potter and hydraulics expert Bernard Palissy (1510–1589) in his *Discours admirables de la nature des eaux et fontaines* ("Admirable Discourses on the Nature of Waters and Fountains") used the words of his assertive character—Practique—to reject any argument that sea water could rise up the mountains and be desalinated by passage through rock and clay strata.[67] In the second half of the XVII century, Pierre Perrault and Robert Hooke provided interpretations which, though widely differing, agreed in refuting the Cartesian concept of subterranean heat as a means to explain the rise of water.[68] In 1686, the French physicist and priest Edme Mariotte (1620–1684), a member of the Académie Royale des Sciences, published his *Traité du mouvement des eaux et des autres corps fluides* ("Treatise on the Movement of Water and Other Fluids") where he supported without hesitation (and with plenty of measurements on the flow rate of the Seine River) the mete-

[64] Descartes 1644.

[65] Agricola (Bauer) 1546; Becher 1669, 51–80; Bettini 1642, 24–25; Cardano 1550, 10–11; 1557, 33–44; Fabre 1639, 1–15; Fludd 1617, 199–200; Herbinius 1678, 69, 73–74; Kircher 1664, 226–233; G. Schott 1663, 131–354; Van Helmont 1682, 646–648.

[66] Halley 1687; 1691; Guglielmini 1697, 41; Plot 1685; 1686, 51–52, 74–75, 88; Ramazzini 1691, 29–39, 53–64; Rohault 1671, 249–252.

[67] Palissy 1580.

[68] Hooke 1678; Perrault 1674.

oric origin of fresh water.[69] Later on, in 1689 the Danish physician Caspar Bartholin (the Younger, 1655–1738) published a treatise whose title was more eloquent than any further description: *De fontium fluviorumque origine ex pluviis dissertatio physica* ("Physical Dissertation on the Origin of Springs and Rivers from Rains"). As expected, Bartholin refuted both rock filtration and distillation as natural means of producing fresh water. And like Mariotte (and, a few years later, Vallisneri), he pointed out that no springs existed on the very top of mountains. This phenomenon was simply impossible, as it would have "contradicted the very laws of hydrostatics and equilibrium" and therefore would have been "against nature itself."[70]

Such was the situation when Vallisneri entered the debate. A busy and lively debate indeed, where theory and practice, tradition and innovation, field research and speculation intermingled to form a turbulent stream of knowledge whose components—like creeks merging into a single, mighty river—would eventually contribute to the comprehension of the hydrologic cycle. However, this goal was still far from being achieved at the turn of the eighteenth century. Even though Vallisneri was convinced that his theory on the meteoric origin of springs had the potential to triumph over rival systems, he was concerned that it would conflict with the interpretations advanced by other prominent natural philosophers—especially the ones he admired most—on account of their first-hand experience of nature. Hence his urgency to know Marsili's opinion, which would have been an eminent support for his "great argument."

Actually, and contrary to what Vallisneri had hoped for, Marsili was more inclined to uphold the thesis of a compound origin for fresh water.[71] Moreover, this was also the opinion of other illustrious scholars from Italy such as Ramazzini and Guglielmini (who referred to the system of "the most ingenious Descartes" as "perhaps the most probable, and the closest to the truth").[72] However, despite the importance and influence of these judgments, none of them discouraged Vallisneri from presenting his theories to the distinguished audience of the Republic of Letters. His intellectual ambition was as great as his passion for natural philosophy; nor was the origin of springs the only issue he meant to discuss, given the countless number of natural phenomena that he had been studying over the years. From the gypsum outcrops and the sulphur mines of Mount Gesso to the mysterious *salse* of Querciola, and from the iron mines in Garfagnana to the badlands south of Scandiano; from the "petrified coal" found in the Tresinaro River to the dark, chilly caverns in Borzano and Fornovolasco, and from the discovery and therapeutic testing of new substances to the field observation of mountains and rock layers: these and other "genial studies," performed over two decades of frantic activity, had given him an unmatched knowledge of the Earth and of many different geological contexts.

From his early experiences as a general practitioner to his more recent wanderings in the northern Apennines, Vallisneri had dissected and studied the "great body"[73] of nature with tireless zeal. Now, in 1705, he felt ready to enter the international stage by thrusting himself into the forefront of the European scientific community.

He knocked at the door of the Royal Society of London, bringing with him a rich gift of new data, theories, and practices. This came in the form of an elegant and baroquely written Latin manuscript: the *Primi Itineris Specimen.*

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[69] Mariotte 1686.
[70] Bartholin 1689, 34.
[71] Marsili 1725, 13, 32–34; 1930, 57. On this topic, see the note from Dario Generali in Vallisneri 1991, 282–284; Luzzini 2013a, 98, 109, 114.
[72] Guglielmini 1697, 41.
[73] Vallisneri 1715, 29; 1721, 60.

1.3 A Physico-medical Journey

Vallisneri wrote the following to a friend of his, the physician Flaminio Corghi (16?–17?), in a letter dated June 1705:

> My alpine journey will probably come out this year and—for my part—I consider it most interesting, given the the new medical and physical things which I have observed in those mountains. It will be [written] in Plinian Latin, and first will be submitted to the eyes of the [reviewer], and then it will be published. In light of the furious work I have done, you will see that my Latin style has changed completely.[74]

In early February of the same year, the author had sent the official copy of his *Primi Itineris Specimen* to Sir Hans Sloane (1660–1753), secretary of the Royal Society and, since 1695, editor of the "Philosophical Transactions." Vallisneri had been a fellow of that glorious institution since 1703, though he had never had the opportunity to take part in any of the debates which were held in its journal.[75] But by now, matters seemed to have changed. He was impatiently waiting for a message which, finally, would confirm that his work was to be hosted in the pages of the scientific periodical *par excellence.*

As we know, events went differently and the manuscript was never published. The reasons behind this missed chance are shrouded in speculation, though both the considerable length of the text and the fact that it was written in Latin—by the early XVIII century, the Royal Society tended to favor the publication of English-language papers—are the most plausible culprits. With regard to this issue, Vallisneri's correspondence offers interesting, but not conclusive, clues. As he wrote to Sloane in a letter dated March 9, 1710, his works were for the most part "written in the Italian language."[76] Arguably, the English scholar had asked him for a shorter Latin version of the manuscript, which he could—or would—not provide. Also, the possibility that Vallisneri's strong and proud advocacy of the use of the Italian language by all Italian scholars (even when addressing the international company of the Republic of Letters) played an important role in his hesitation to comply with Sloane's request cannot be excluded.[77] In any case, what we know for sure is that the "furious work" mentioned in the letter to Corghi was not hyperbole. The frantically and ferociously (re)written papers of the draft copy are eloquent testimonies to an ornate and seamless stylistic effort, one which presumably lent a gracious charm to the—now lost—official version. Nor was *form* the only aspect of the manuscript which had been carefully crafted; for its content, too, was the result of a shrewd selection.

As the author's early notebooks (the *Quaderni*) attest, a significant number of the many explorations, observations, and experiments reported in the *Primi Itineris Specimen* had been performed well before the summer journey of 1704. This was the case, for example, with the bituminous *salse* in Regnano and with the gypsum layers and the sulphur mines of Mount Gesso, which had already been studied in 1694.

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[74] Letter to Flaminio Corghi, June 24, 1705 (Vallisneri 1991, 322): "Uscirà forse quest'anno il mio viaggio alpino, che per me stimo curiosissimo, per le cose mediche e fisiche osservate di nuovo in quelle Alpi. Sarà in latino pliniano, e passerà prima sotto gli occhi del Davino, e poi uscirà. Vedrete mutata affatto la mia maniera latina, per lo studio rabbioso che vi ho fatto."

[75] See Generali 2007a, 123, 195–196, 347–350.

[76] Letter to Hans Sloane, March 9, 1710 (Vallisneri 1991, 503).

[77] This ideal was publicly promoted and upheld in Vallisneri 1722a. The same work is now published in Vallisneri 2013. On this topic, see Generali 1985; 2006; 2007a, 384–386; 2011b; Luzzini 2013a, 217–226; Rappaport 1991; 1997, 218–219.

From this point of view, and especially with respect to the first part of the journey, Vallisneri's manuscript could be described more as an anthological collection of field experiences (enriched with a profusion of philosophical, historical, literary, archaeological, ethnographic, and theological notes and considerations, not to mention a good number of folkloristic stories and anecdotes) than the faithful report of a temporally circumscribed journey. But this does not imply, of course, that any of the descriptions in the text was invented. As I personally verified, all were the result of actual experiences and—as such—deserved to belong in the report, although more from a logical than a chronological point of view.[78] Also, the information contained in the draft copy was so detailed that I was able to successfully use it to replicate Vallisneri's entire itinerary (and his most remarkable explorations) through a series of excursions and journeys which I carried out from 2006 to 2010.[79]

Vallisneri's path stretched from north-northeast to south-southwest for a total distance of about 130 kilometers (Figure 1.5). From Scandiano, just south of the city of Reggio Emilia, he reached the Alp of Saint Peregrine, one of the highest peaks in the northern Apennines. From here, the author crossed the homonymous pass—which now links the Province of Modena with the Province of Lucca—and descended to the historical region of Garfagnana. He then followed the course of the Serchio River southward, from Castelnuovo to Gallicano. Once there, he headed west and climbed the valley of the Petrosciana Torrent (also known as Turrite di Gallicano, a tributary of the Serchio) before finally reaching the western end of Garfagnana in the Apuan Alps. In this area, he visited the iron mines of Fornovolasco and the renowned cavern known as Tana che urla ("Screaming Cave"), where he collected crucial data to support his theory on the meteoric origin of springs.

It was in the nearby sulphur mines of Mount Gesso, however, that Vallisneri started his account, resuming and extending his report of 1694 with new observations and data. And, not surprisingly, even then he found a wealth of *philosophical* subjects to feed his curiosity. In this "foul-smelling" cave, fruitful enough "to supply all the nearby and remote cities,"[80] he observed many different kinds of sulphur and other sorts of minerals and rocks and carefully noted the peculiar terms used by local miners (*canopi*) to describe them. Thus, a *cretone* was a "subcinereous, somewhat hard, scaly and bright clay or marl"; when sulphur was "fixed in very hard, tartareous stones" it was called *caninum* ("because, as they say, they have to work like dogs to dig it"); the "bright, colorful, [and] transparent" variety of sulphur was known as *vivum,* or "virgin"; and at the bottom of the mine there was a "tree-like piece" of sulphur, called *filone,* from which "a number of branch-like shapes spread everywhere," like "sparsely attached fruits."[81] Nor did he omit to discuss the therapeutic properties and uses of that place; for it was an established fact that the sulphur miners from Scandiano constantly lived lives that were "healthy, to the no small relief of the working people."[82] Besides—he proudly noted—he had been the

[78]This kind of narrative structure (a composite of accounts of distinct journeys stitched together as a fictitiously unified itinerary) was widely and commonly used among naturalists at least up until the end of the XVIII century, a notable and later case being the itineraries described by Horace Benedict de Saussure (1740–1799) in his *Voyages dans les Alpes* (Saussure (de) 1796). I am grateful to Ken Taylor for this important clarification.

[79]Luzzini 2008; 2010; 2011a; 2011b; 2011c; 2013a, 90–143; 2014a; http://www.vallisneri.it/osservazioni_geologiche.shtml.

[80]Vallisneri 1705, 3. Here and below, I refer to the page numbering of the transcribed and translated manuscript as it is provided in this critical edition.

[81]Vallisneri 1705, 4–IX.r.

[82]Vallisneri 1705, IX.r.

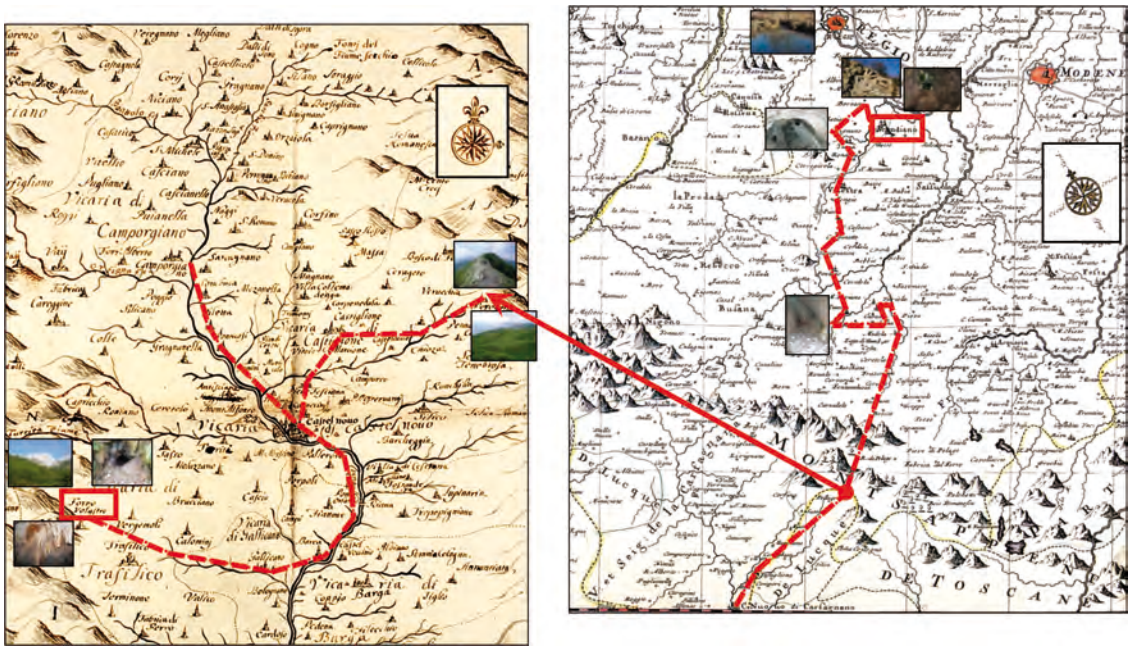

Figure 1.5: A detailed view of Vallisneri's journey: from Scandiano (top right) to Fornovolasco (far left). The red arrow connects the same point (i.e. the Alp of Saint Peregrine) on the two maps.

first to discover its "ubiquitous benefits" for the body, having sent "those afflicted with the filthiest French scabies into that sulphurous laboratory, as if it were a panacea";[83] and even "asthmatics and consumptives [were] certainly and unequivocally healed" once they inhaled the "balsamic and cleansing vapors" released from the burning sulphur.[84]

Having made a list of the many samples which he had taken from the mine (and which he had shared with the "Museum of the Most Illustrious […] Count Luigi Ferdinando Marsili"),[85] Vallisneri went on to describe the southeast slope of Mount Gesso; he found it to be sprinkled with pyrites and marls. He then followed a small creek downstream and reached the Rio Riazzone, a tributary of the Tresinaro River, whose banks held "countless treasures from the sea": tusk shells ("antales"), tube worms, pectens, oysters, gastropods ("buccinula" and "turbines"), shark teeth (or "glossopetrae," which some wrongly claimed to be "arrows" or "petrified tongues of snakes"),[86] and many, many more. Other fossils could be found on the western flank of the mountain, along with marcasites, marls, and flints. And, of course, gypsum rocks and selenite crystals of all sorts, and of various shapes and colors—a "beautiful specular stone" known as *scaiola;* another one called "lapis arabicus," very "similar to ivory"; "trapezoidal" and "specular" ones; other "chalky, caementarius, siliceous, sandy, tuffaceous" and "marble-like" specimens; and even one "with waves" that was "decorated with gold and many other colors"[87]—could be found everywhere in the area surrounding that hill.

[83] Vallisneri 1705, 5.
[84] Vallisneri 1705, XII.v.
[85] Vallisneri 1705, 7.
[86] Vallisneri 1705, 10.
[87] Vallisneri 1705, 12.

Figure 1.6: Gypsum outcrop, Mount Gesso (Albinea, Reggio Emilia). Photo by Stefano Meloni.

But "let us climb higher,"[88] as the author said. The journey continued along the Tresinaro River, where Vallisneri headed south and passed through the first slopes of the Emilan Apennines. There, five miles from Scandiano, he witnessed the barren landscape of the badlands (not improperly called Inferno by the inhabitants) where the "grim sight" of the eroded clay soil was enhanced by the "rude variety" of its colors "wrapping and adorning all the slopes with black, reddish, ferruginous, sallow, [and] white [hues]."[89] And—as if to reinforce the gloominess of this picture—on the other side of the river stood the mysterious *salse,* with their rumbling and their bubbling, smoking craters. What is horrible to common people, however, can be a "not unsightly source of pleasure for the eyes of philosophers": and Vallisneri, being devoted equally to natural philosophy and medicine, paid attention both to the oddities of these little volcanoes ("you could have […] called it a small Etna, if it is allowed to compare small things with great. For this, too, […] rumbles, strikes, and threatens destruction")[90] and to the medical properties of the mud leaking and spewing out of them, whose virtues he had been testing for years. Their waters, for example, were "a remedy for many diseases proceeding from viscous humours, especially from the cold ones"; and their "salty clay" dispelled "old tumors, […] scabies, […] and stagnant fluid, and was even "beneficial for nerves" ("when they are contracted by a too crude lymph") and for "edematous legs," especially when "unresponsive to other treatments."[91]

The day after, Vallisneri headed further south and reached Mount Valestra, which has a homonymous village lying at its feet. The mountain was "almost entirely made of

[88] Vallisneri 1705, 13.
[89] Vallisneri 1705, 13–14.
[90] Vallisneri 1705, 15.
[91] Vallisneri 1705, 15.

Figure 1.7: "The inhabitants […] call it *salsa,* from the salty mud which that pot, perpetual and incombustible by nature (so to speak), cooks and spits out." Photo by Stefano Meloni.

stone, with nearly perpendicular strata": not by chance, he noticed it was "dry, and devoid of springs."[92] But now the time had come to "disregard for a while the weight of physical studies, softening the severity of nature with an amusing break"—these words mark the first important foray into folklore that can be found in the *Primi Itineris Specimen.* This "not unfunny anecdote" concerned the local inhabitants who—like many others before and after them—firmly believed that a hidden treasure lurked in the bowels of the mountain.[93] According to these "rural minstrels," a long time ago a farmer was guided there by two strangers on black horses: once past invisible doors and a "soot-blackened gallery," they entered a "rough-vaulted, large room" full of "idols of pagan gods shining with gold and jewels, […] glass and marble urns with burnt human bones inside, […] vials and small caskets filled with various fluids and mysterious powders," and—last but not least—"coins, golden jewels, and a wealth of precious stones" in countless other chests.[94] The strangers generously invited the farmer to take as much gold as he wanted, which he promptly did. But, as often happens in folk tales, greed is the ruin of the poor. The farmer secretly "planned to return the following night with a cart, and to plunder that wealth of the underworld"; thus, "in the great silence of the night" he came back and sought the keys for the invisible doors, which the strangers had abandoned in a bush nearby.[95] And "scarcely had he thought that they were in his hand, when he grabbed a nest of twisting and fiercely hissing vipers."[96] Curiously, Vallisneri remarks that the descendants of that

[92] Vallisneri 1705, 16.
[93] Vallisneri 1705, 16.
[94] Vallisneri 1705, 16–17.
[95] Vallisneri 1705, 17–18.
[96] Vallisneri 1705, 18.

farmer still lived nearby and were among the wealthiest inhabitants of Valestra. And, since fortune had "smiled on their enterprise," their wealth—in accordance with a widespread and enduring belief among rural cultures all around the world[97]—was attributed to "the necromancy of some strangers."[98]

Other important details in the story make it interesting from an anthropological and ethnographic point of view. For example, it may be (though this is just a hypothetical conjecture, of course) that the caverns and the urns with "human bones inside" mentioned in the story were mythicized versions of vague memories of real but ancient events, places and/or objects, which—in turn—were connected to the area's sepulchral practices during the Eneolithic period.[99] However, this story was nothing more than a "pretty fable" to Vallisneri, who was more interested in natural than in human treasures.[100] Thus, he quickly mocked the mountaineers for their credulity and irredeemable greed ("many […] mutter, swearing that they will find it"), and abruptly returned to the noble ground of philosophy ("let's not wander from the subject, and let us return to the road from our digression").[101]

On the following day, the author proceeded southward to the town of Toano before arriving at the ancient baths of Quara, which were located on the western side of the Dolo Creek. These mineral springs, whose fame dated back to the Roman times and, up until the XV century, were widely and successfully used, now lay abandoned and in ruins, "barely known to the inhabitants themselves."[102] This was a real pity, as those waters—endowed with a "truly pleasant saltiness," a "very bright color," and the "smell of volatile sulphur (which someone erroneously associated with camphor)"—had effectively treated a wide array of ailments such as "weak stomach, shortness of breath, flatulence, hypochondria, painful colics, sterility (when caused by a too viscous lymph)," and even "dizziness, the pain proceeding from slow, especially polypous blood, glutinous phlegm," and many others.[103] Alas, none of these medicinal virtues were valued by modern doctors: consequently these ancient springs, once renowned all over Europe, were now full of stones, mud, and sand, the water being drunk "only by cattle, sheep, and goats."[104]

Still absorbed in these sad thoughts, Vallisneri crossed the Dolo Creek and headed east. He visited the ancient Romanesque church in the village of Rubbiano (now part of the municipality of Montefiorino), where he met a family of surgeons whose members were known for healing viper bites ("they carefully suck the inflicted venom as the Psylli […] used to do, and wash the fatal wounds with their own saliva").[105] They all had a snake-like mark on their shoulders; and, especially in springtime (when the sign had "a brighter color"), it portrayed "the rough image of a nest of vipers."[106] The author tried in vain to ascertain "with curious eyes" whether or not the mark was artificial.[107] He then resumed his journey, and, still going east, he soon came in sight of the springs of Vitriola, which were "provided by nature with gratuitous coloring properties."[108] These waters

[97] For some interesting considerations on this subject, see Hiebert 2008, 123–137.
[98] Vallisneri 1705, 18.
[99] These practices often involved the ritual burning of human remains, as attested by the discoveries in the Tana della Mussina (see note 17).
[100] Vallisneri 1705, 16.
[101] Vallisneri 1705, 16–18.
[102] Vallisneri 1705, 18.
[103] Vallisneri 1705, 19.
[104] Vallisneri 1705, 20.
[105] Vallisneri 1705, 20.
[106] Vallisneri 1705, 21.
[107] Vallisneri 1705, 21.
[108] Vallisneri 1705, 21.

Figure 1.8: Dolo Creek, the natural boundary between the Provinces of Reggio Emilia (on the west) and Modena (on the eastern side).

were clear and tasteless, and yet they colored the surrounding soil and aquatic weeds with a "yellowish, ferruginous dye" that was used by the people of the countryside to "blacken linen clothes and wool" (but not without "some previous preparation," whose (rather) complex procedures were meticulously described in the pages which followed).[109]

Being in Vitriola, he was now between the mountain ridge of Montefiorino (on the west) and, on the east, the Dragone Creek, so-called because of its "serpentine course" and the different colors of the stones "arranged like a mosaic in its gravelly bed" which resembled "the speckled back of a dragon."[110] Not a mile from there, "on the top of a dreadful cliff," lay the ancient citadel of Medola: formerly a powerful and impregnable stronghold, but now in ruins.[111] Where he stood he could see mountains on both sides; their slopes were "barren, made of sharp stones, and parched by mineral exhalations."[112] Vallisneri found "many silvery and bronze-colored pyrites, and many stones sprinkled with a green color"; countless rocks "filled the ground everywhere with tartar and small spherical pebbles." He could see the entrance to a mine which "stood open under a steep rock," a place where "some believed that a gold or silver vein could be exploited" (although he found it to contain only "rough, unprofitable copper").[113] At that time, just like today, hydrogeological events were particularly frequent in this area of the northern Apennines. The

[109] Vallisneri 1705, 21–XIII.r.
[110] Vallisneri 1705, 22.
[111] Vallisneri 1705, 23.
[112] Vallisneri 1705, 23.
[113] Vallisneri 1705, 23.

"unsteady foundations of the Earth" were so "weakened and eroded by the waters and by the melting snows" which sank "through cracks in the rock layers" that they were "loosened by the enormous pressure upon them," and signs of recent and old landslides could be seen everywhere, especially—he noticed with interest—where springs gushed out from the rocks.[114]

His path lay to the southwest. Finally, after "arduous efforts and a rough journey," the Alp of Saint Peregrine—the highest point in the northern Apennines, overlooking the homonymous Pass and the village of San Pellegrino in Alpe—came into sight (Figure 1.9).[115] Once the author reached this privileged viewpoint, a wealth of information was revealed to his eyes. Although it was the "scorching month of August," "cruel winter [still] raged" there "with snow and cold."[116] It was then that he "reconsidered the origin of springs and rivers from a higher [perspective]," and his mind "ventured to seek more in depth" by following the "immense mass of water that was absorbed by underground streams through the darkness of [those] paths"; thus, he realized that the different "nature and disposition" of rock layers was the key to understanding *where* and *how* springs emerged.[117] For example, the perennial springs flowed more copiously in the Apuan Alps (a mountain range of the Apennines at the western end of Garfagnana), where the strata were horizontal for the most part and "almost entirely made of hard rock": consequently, the "melted snows and the flowing waters" could "barely stay in their innards," wept "from small cracks," and formed "perpetual and inexhaustible springs" owing to the "dense structure and to the position of strata and mines."[118] The situation was quite different in the Alp of Saint Peregrine, where the "abundant earth, the bibulous sand, and the looser structure" absorbed the falling and flowing water and carried it "down to the deepest roots" of the mountains, thus forming "an invisible river" (hence the "dreadful slidings of the mountains themselves" and the "collapses proceeding from their flanks").[119]

The stage was now set for theoretical interpretation. For his considerations on *where* and *how,* in turn, were empirical premises to a following crucial step: *why.* It is in this part of the *Primi Itineris Specimen* that field research and natural philosophy come together in their most elegant, refined and ambitious form. In the next few lines, Vallisneri discloses and explains the core of his theory on the hydrologic cycle:

> From whence the mind is inclined to guess, why the waters hide themselves here and appear there; why the perennial springs are uncommon here and the course of rivers is more infrequent, while the both of them flow more abundantly in that [other place]. For this, I thought, is the only circulation of waters (in the bosom of these lands of ours, at least): from the sky to the earth, from the earth to the sea: and, in turn, from the sea to the sky, from the sky to the earth. That is to say, the cavernous mountains and the thirsty land absorb the waters pouring from the sky; [and these waters], flowing for the most part, and absorbed along the way, sink back to the sea through obscure paths. From there, they rise back to the clouds, which make them thin; and

[114] Vallisneri 1705, 23.
[115] Vallisneri 1705, 24.
[116] Vallisneri 1705, 24.
[117] Vallisneri 1705, 24–26.
[118] Vallisneri 1705, 25.
[119] Vallisneri 1705, 26.

from the clouds they descend once more, in a perpetual circulation of the liquid element, whose operation never fails.[120]

Figure 1.9: "After arduous efforts and a rough journey, we finally climbed to the highest point of the Apennine Mountains—which the Ancients called Letum, and some now call Alp of Saint Peregrine."

Descartes' theory of alembics, which suited "the Italian tastes" so much, was not appealing to Vallisneri.[121] In fact, these supposed alembics derived "the rise [of water] from the sea, rather than from transitory rains and melted snows"; but this system of filtration and distillation was both "doubtful and deceptive" according to experiments and observations performed by him and other members of the Republic of Letters.[122] Indeed, sea water could not lose its salt "by percolating through any sand or marble, nor through any vase […] tempered with the fire of a furnace" ("either the bond between the salt and the water particles is so strong that they can be separated only by gentle evaporation, or both

[120] Vallisneri 1705, 26: "Ex quibus coniicere gestit animus, cur hic abscondantur aquae, ibi exantlentur, cur hic rari appareant fontes aeterni, fluminumque rarior cursus, ibi utrumque luculentius effluat. Haec enim, me cogitante, fere sola in hoc saltem nostro terrarum gremio aquarum est circulatio. E caelo in terram, e terra ad mare: rursusque e mari ad caelum, a caelo in terram. E caelo scilicet fluentes aquas cavernosi montes, terraeque bibulae absorbent, fluxae ut plurimum, per obvias absorptae, per obscuras vias in mare devolvuntur. Ex hoc, et ab illis attenuatae rursus in nubes ascendunt, ex nubibus denuo descendunt, perpetua fluxilis elementi, incrementisque nunquam fallentibus, circulatione."

[121] Vallisneri 1705, 26.

[122] Vallisneri 1705, 27–28.

the shape and the mass are such that the draining pores would absorb the salts along with the water").[123]

As the author tactfully remarked, by questioning "such great [issues]" he did not expect "to insult the value and the authority of great men": for he meant "not to dispute, but to strengthen."[124] However, these and many other considerations had persuaded him of the value of refuting rock filtration and distillation, and he joined those who had already tried to provide an exclusively meteoric explanation for the water cycle and the origin of springs (for example, the already mentioned Mariotte, Hooke, Palissy, and Bartholin). He was even "pondering other things" which—he promised—would be revealed in the future.[125] However, now the time had come to "keep the promise" and finish the journey by making sure that the readers could "see, once again, everything" that had been witnessed by him with his "curious eyes."[126] Thus, after a description of the many "crystals and crystal-like" minerals that could be found in these mountains (all of them proving the existence of a "geometric design in nature, and of a somewhat indistinct vegetative power" caused "by an exhalation from the ground"),[127] the "highest summit of the Apennines" was passed.[128] Thereafter, brooks and torrents followed "an opposite course, as if the empire of the waters was divided," descending to the Tyrrhenian Sea. The beautiful Province of Garfagnana—with its "populous towns and villages"—appeared to the southwest.[129]

At this point in the manuscript natural philosophy merges with the "history of men," an additional stack of nine unnumbered papers (XIV.r–XXII.v) that is occupied by a long digression on history, literature, anthropology and folklore (a foray "which, although going beyond my scope, still I consider to be perhaps not useless, nor unnecessary").[130] This region was renowned for enjoying a "friendlier climate" thanks to "the high ridges of the Apennines" that warded off "the icy northern winds by receiving and breaking against them the furious rage of the air currents."[131] It was called "Garfagnana, from the Latin Caferoniana"—whose name, in turn, was borrowed from "Oppidum Caferonianum," an ancient Roman town established close to the Tyrrhenian outposts "of Lucca and of the destroyed Luna."[132] The name came from "Feronia, goddess of pastures, freedmen, fertility, and joy"; and the origin of its inhabitants was rooted in "those Etruscans, Greeks, and Romans who were dispersed and banished everywhere by fate" and by "people, who always (and still) foster cruelty."[133] This happened especially during the period of Roman rule, when countless civil conflicts scourged the late Republic in the I century BC, and many supporters of the losing factions were forced to escape from Rome. Not a few of them took shelter in these mountains: hence the many "foundations and ruins of citadels still

[123] Vallisneri 1705, 28.
[124] Vallisneri 1705, 27.
[125] Vallisneri 1705, 29.
[126] Vallisneri 1705, 29.
[127] With respect to the debated issue of mineral genesis and growth, Vallisneri's thought was not exempt from ambiguities and fluctuations. Though he supposed and—somehow—admitted the existence in minerals of such biological features as seeds (or "matrices") and nourishment, by the last decade of his life he did not seem to persist in supporting the view of a vegetative power in minerals. On this topic, see Luzzini 2011a, 109–110; 2013a, 132–137.
[128] Vallisneri 1705, 30–XIV.r.
[129] Vallisneri 1705, XIV.r.
[130] Vallisneri 1705, XVI.r.
[131] Vallisneri 1705, XIV.r.
[132] Vallisneri 1705, XVI.r.
[133] Vallisneri 1705, XVI.r.

standing out on the highest summits of hills and crags," where "gold, silver, and other precious Roman coins" could be "unearthed here and there."[134]

Destiny had endowed this province with a curious ship-like form. It was bathed by many "perennial and clear torrents, rills, springs, and rivers," and abounded with "most excellent fishes," among which trout were renowned for "enriching the tables, and for delighting the palates of magnates and princes."[135] Its main stream, the Serchio River, ran into the sea about three miles from the estuary of the glorious Arno; and like its noble neighbor, it was "swollen at times, and threatening."[136] The entire land was rich in metals; nor did it lack for "wheat, wine, hemp, fruits, vegetables, and fishes." Furthermore, the land had "plenty of meat, cheese, [and] chestnuts," so that, while it was "sufficiently furnished with the former [goods]," it had "far more than enough of the latter ones."[137] As to the inhabitants, the men were "generally short and—for the most part—dark, muscular, strong, always ready to fight, easily inclined to anger, vengeful, [and] mindful of injuries."[138] Still, they were "smart, clever, friendly to strangers, lovers of hospitality, loyal to their lord, inclined to literature, naturally gifted with the most beautiful Tuscan language" and even "cheerful, lively, skilled in mechanics, and constantly engaged in commerce."[139] And though these people had suffered "under various lords" in the past ("whom it would be tedious to list individually"), they now flourished happily "under the rule of the Most Serene House of Este, all the tragedies […] having been forgotten."[140]

After these and other digressions—including a rather long list of the many names of "Roman places and mountain summits" that had been "distorted by the injury of time with popular terms"—it was now time for Vallisneri to return to the main path of natural philosophy.[141] Thus, he resumed his *physico-medical* account by describing his descent from the Alp of Saint Peregrine into Garfagnana. The first town he entered was Castiglione: its surroundings offered him "all sorts of curiosities" like "silvery pyrites from an underground copper and silver mine" and many other mineral and rock samples.[142] Not far from there, on the lower plain on the eastern side of the Serchio River, he visited the thermal springs known as Bagno della Pieve. As he remarks, among the "many healthy ones" that gushed out in that area, these alone were still used by the inhabitants, for it was not possible ("as experience" attested) to find "better remedies" in that place.[143] Their waters (which were "clear, more than lukewarm, with a somewhat salty, bitter taste and a bituminous smell") were considered a "universal remedy," their "amazing properties" having been tested "against rheumatic and arthritic pains" and "various diseases of the nerves."[144] As for their internal use, waters from these springs were believed to get rid of an incredibly broad spectrum of ailments such as "persistent or often recurrent headaches, […] epilepsy, dizziness, deafness, […] lymphatic affections, […] palpitations of the heart" (especially the "spasmodic ones"), "ulcers in the lungs," and "asthma"; also, they were comfortable to the "worn-out stomach, or to the one suffering from dyspepsia"; they removed "jaundice," […] colic pains, hysterical passions, intestinal affections," and cured even those "affected

[134] Vallisneri 1705, XVI.v.
[135] Vallisneri 1705, XVIII.r.
[136] Vallisneri 1705, XVIII.r.
[137] Vallisneri 1705, XVIII.v–XIX.r.
[138] Vallisneri 1705, XIX.r.
[139] Vallisneri 1705, XIX.r.
[140] Vallisneri 1705, XX.r–XX.v.
[141] Vallisneri 1705, XXI.r–XXII.v.
[142] Vallisneri 1705, XXII.v–31.
[143] Vallisneri 1705, 32.
[144] Vallisneri 1705, 32–33.

by edema."[145] These waters also restrained "intestinal fluxes" and took away "gallstones and sandy matter" by "flushing the urinary passages"; moreover, by "promoting menstrual discharges" and by "opening the obstructed passages" they restored fertility and alleviated the "torments of gout"; finally, they were particularly effective at removing "worms, their slimy nests, and their offspring" from the "small, hidden recesses of the intestines."[146]

The causes behind such wonderful virtues were a matter of speculation. According to the amazed Vallisneri, most of the qualities possessed by the waters were probably a consequence of the "alkaline, calcareous salt" and of the bitumen which could be commonly found in the area.[147] In fact, "long ago the inhabitants extracted an excellent kind of bitumen from the mines above"; and not by chance, other "extraordinary" thermal waters—which were famous for being "similar to milk in taste and warmth" and "useful for gently subduing the sharp muriatic salt of the bile"—had been discovered in the past on the opposite side of the same mountain, although now they had almost fallen into disuse "in their very cradle."[148]

After proceeding on his journey, Vallisneri descended to Camporgiano, the former capital of Garfagnana. There he was received by his uncles the "Most Noble Sir Carlo Davini" and the "Most Excellent Sir Giambattista Terni," and also by his "fellow citizen and relative, the Most Illustrious Sir Giulio Rossi," who was Capitano di Ragione (that is, governor and chief magistrate) of the town. Now the author and his companions could relieve themselves of the "hard discomfort of the rugged journey" and restore their "shattered energies."[149] Everyone "competed with favors": and with their offerings of "merry banquets, bottles, and celebration toasts" they urged him to "set aside the philosophical seriousness and the austerity of the wandering doctor."[150] As he recalled with delight, "at that moment the thermal springs, the mines, and the entirety of nature lay drowned in wine, and we had fun as if we had seen a totally new [amusement]."[151] But alas, soon enough he and his companions had to take their leave "of such a lovely hospitality," and so they moved on to Castelnuovo, the new capital of the entire province.[152]

He then visited the ancient—and, unfortunately, half-ruined—Torrite baths, located just one milestone west of this city. These thermal waters were replete with "salt, sulphur, volatile matter, and spirit" (as was evident from "the taste, the smell, the experiments, the properties, the touch, and the analysis"): as such, they were well suited to ward off all the "enduring and obstinate ailments" derived from the "sealed channels" of the "[human] machine, and from the occluded sieves."[153] These were all the diseases which evaded the common remedies and responded to the name of "scourge of doctors": the fearsome "affections of the kidneys, of the ureter, of the bladder, and the uterine filth."[154] Nor did they "have a sure effect only internally, but also externally": for the "sulphurous and the saline particles, agitated by the spirit and by the activity of the heat," were surely able to "eject" such afflictions as the skin diseases originating "from the dregs of the blood," the

[145] Vallisneri 1705, 33–34.
[146] Vallisneri 1705, 34.
[147] Vallisneri 1705, 34.
[148] Vallisneri 1705, 34.
[149] Vallisneri 1705, 35.
[150] Vallisneri 1705, 35.
[151] Vallisneri 1705, 35.
[152] Vallisneri 1705, 35.
[153] Vallisneri 1705, 37.
[154] Vallisneri 1705, 38.

"pustules" and "small ulcers" caused by worms, the "polypous and indolent disposition of a vapid blood," the "torpor of lymph," and any other "cause of anomaly."[155]

Figure 1.10: "[Hiking] along barely passable trails, we finally reached the extreme boundaries of the [Apuan] Alps, called Panie […]."

His path continued south, following the course of the Serchio. After arriving in Gallicano, Vallisneri headed west along a small tributary of this river (the Petrosciana Torrent) and proceeded towards the western end of Garfagnana by climbing a steep valley. Having found himself at the top, among "such precipitous rocky ridges, and […] high lands, and rough crags," he saw "strong and brawny men living long and happily" and "charming women" who, at times, surpassed "even the urban Venuses in beauty and in gentle appearance"; and yet, they drank only the "clearest water" and filled "the growling stomach with the most rustic food."[156] At this point, the account lingers for a moment on his (quite intriguing) description of some peculiar habits of that "astute" people, who managed to flourish in a land where "neither Minerva, nor Ceres, nor Bacchus" dispensed gifts.[157] Given the scarcity of wheat, they prepared starch—"for stiffening linen clothes and mantles"—from the "arum root": after removing its "external peel" and dissolving its "corrosive salts" with water, the "shining white substance" resulting from this process could not be distinguished from common starch.[158] Moreover, in "times of famine" they even used it as a "healthy food," all of its "caustic power, and the corrosive strength […] having been absorbed by the aqueous particles."[159]

[155] Vallisneri 1705, 38.
[156] Vallisneri 1705, 39–40.
[157] Vallisneri 1705, 40.
[158] Vallisneri 1705, 40.
[159] Vallisneri 1705, 40–41.

Finally, after having walked "barely passable trails," the author reached the Apuan Alps—not far from which the "raging Tyrrhenian Sea" could be seen (Figure 1.10).[160] As he commented with pleasure, "a curious seeker of nature" would have wearied "body and mind alike" among those "barren rocks" by satisfying "his passionate hunger for knowledge, while increasing the one of the body."[161] He arrived in a small (and very poor) village called Fornovolasco, home to a "hard and most warlike people."[162] This place was made up of just some huts and a few houses lying at the base of the mountains; not far from there were the famous iron and vitriol mines that had been exploited on behalf of the the Dukes of Este since the second half of the XV century. In the early XVIII century, this iron was still extracted and widely used for military purposes: in fact, many of the workers were descendants of expert miners from the Lombard city of Brescia who the Duke Ercole I (1431–1505) originally hired to find and work the first ore veins. A "non-trivial proof of this" was that many dialect terms from Brescia could still be heard, which the "unaware people" combined with the "gracefulness" of the Tuscan language.[163]

Visiting the mines of Fornovolasco was not supposed to be an easy, let alone a safe task. The village and the nearby tracks were infested with bandits and robbers; and even its inhabitants and the miners, according to many rumors, had often proven to be unsafe company to strangers. However, once more in this story chance and necessity met at the right time—and did so by way of a "certain sagacious man," a "youngster" whose "unexpected politeness"

> […] overwhelmed [our] minds and eyes with sweet delight: having entered the small inn where I was staying, he covered me with devoted and trustworthy embraces, showing clear signs of joy […]. I was amazed at such kindness in such a rude place; and when I asked where so much courtesy […] could live among crags and caves, he openly revealed that he, too, was a foreigner, and that his name was Domenico de' Corradi d'Austria […]. Since, by an unexpected gift of fate, I was not unknown to him, he invited me to share dinner with him; nor did he want me to spend the night in [that] desolate tavern, which was often unsafe for strangers. As soon as I heard [that] name (which was equally familiar to me), […] I did not refuse the loyal hospitality and the friendly services of [my] host; and, with the promise of a safe shelter, and with the most pleasant conversation, I restored my energies, drained by the difficult journey. What a perfect knowledge of the natural things in a youthful mind, indeed! What an abundance of secrets! What an incomparable erudition! For, during the sweetest rest of the night, there was no rest at all: we conversed on the admirable structure of mines, on the inaccessible origin of springs and of thermal waters, and on the great inheritance of medicines and [natural] wealth […] that the Divine Protoplastes had stored in those chasms.[164]

[160] Vallisneri 1705, 41.
[161] Vallisneri 1705, 41.
[162] Vallisneri 1705, 42.
[163] Vallisneri 1705, 42.
[164] Vallisneri 1705, 42–43: "Complevit dulce mentis, et oculorum oblectamentum inexpectata urbanitas iuvenis, qui diversoriolum, ubi morabar, ingressus, […] certa laetitiae signa prodens me fidis, sanctisque amplexibus implicuit. Obstupui facilem in aspero solo humanitatem, ubi cautes inter, atque speluncas tanta comitas […] lateret, cum mihi quaerenti, se quoque advenam, se Dominicum de Corradis Austriae […] candide aperuit. Me sibi non ignotum incogitato fortunae favore suae mensae socium, non in sylvatico diversorio quandoque exteris infido, pernoctantem velle. Ut nomen mihi pariter perspectum audivi, […] fidelia

The young man was Domenico de' Corradi d'Austria (1677–1756), chief superintendent of artillery on behalf of the Duke—and a very expert miner himself. His peerless knowledge of the Apuan Alps played a key role in the success of Vallisneri's investigations in Garfagnana, for Corradi provided him with advice, direct assistance, helpers, and equipment for his explorations. Vallisneri, on his part, was not ungrateful to his new friend: this fortunate encounter marked the beginning of a long-standing and fruitful collaboration, and in the following years Corradi's work appeared in the pages of the "Giornale de' Letterati d'Italia," where he published several brilliant works on hydraulics, gunpowder, mines and minerals.[165]

Figure 1.11: "Not far from there are the iron and vitriol mines, which we inspected, to our utmost pleasure […]."

The information collected by Vallisneri in the iron mines was crucial for the development of his new theory on the origin of springs; and even for other theories, like his controversial one on the existence of seminal and vegetative principles in minerals.[166] For, even here, he found "perpetual waters": although ("in truth") he did not understand whether they came from the center of the Earth, or from above, or both.[167] He had cer-

tecta, benignumque hospitis officium non renuens fractas senticoso vires itinere, securi tessera hospitii, et amoenissimis recreavi colloquiis. Quanta enim in iuvenili pectore rerum naturae exacta cognitio, quanta arcanorum ubertas, quam incomparabilis eruditio? Dulcissima noctis quies fere tota fuit nulla quies, admirandam minerarum fabricam, inaccessam fontium, ac thermarum originem, tam grande remediorum ac divitiarum patrimonium, quod Summus Protoplastes […] specubus in illis condiderat, fere percurrimus."

[165]Corradi d'Austria (de') 1710; 1711; 1713; 1716; 1719. On this topic, see Luzzini 2012, 51; 2013a, 101.

[166]See note 127.

[167]Vallisneri 1705, 44.

tainly seen the "vertical, or celestial ones" flowing through "large and gaping fissures from above" and through "the broken ceilings of the [rock] strata" where the "main trunk of the iron vein" flourished: from here, he argued, "the seeds of the mines" took their nourishment.[168] Thus, he wondered if mines (just like the seeds of plants) could absorb their nourishment from rain, and especially from rain "impregnated with niter, different salts, and earthly moisture" and "tempered by the sun's rays."[169] As to any nourishment coming from alleged subterranean seas, he was still doubtful. Why seek in the sea what could be recognized in the air? Why look for something that was "hidden in the innermost part of the abyss" when it was surely in the "sunny cellar" above?

> The dried and exhausted seeds could flourish again in the air, but could not do so in the sea. [For] the [sea] mixes with salts of a certain kind, and not with all [kinds of salts]; while the [air] mixes with all [salts], and not just with that certain kind.[170]

As a logical consequence of this stance, the hypothesis invoking the rise and desalination of sea water through the mountains was excluded not only from the problematic (and not empirically grounded) generation and growth of minerals, but also from the origin of springs. In fact, if the waters "bathing and nurturing the mines" were filled with "such an abundance of sea salt," why then didn't they have "the bitter, salty flavor of the sea"? Why weren't the "cubic fragments" of salt found "everywhere in the mine"?[171]

Actually, Vallisneri's question was little more than rhetorical, as the answer was already clear in his mind: it would become even more so in the following days, when his loyal Corradi assisted him in the exploration of the most intriguing and mysterious cavern in Garfagnana: the renowned Tana che urla ("Screaming Cave," Figures 1.12 and 1.13).

> Many [springs] emerge from the stern boundaries of these mountains […]. Among the others, the one flowing in the Screaming Cave (commonly known as Grotta che urla), and which, in turn, hides in that same place, is the most famous. This cavern opens southward, a little above Fornovolasco: it is rough and dark, with much tartar, and is terrifying because of the confused noise of the roaring waves.[172]

The entrance to the cavern was "dirty, with much yellowish earth and sand" carried and deposited by an internal brook (especially when it was "swollen and turbid").[173] In fact, as the inhabitants claimed—and as the author himself attested—this stream swelled and overflowed with water from the melting snow from the peaks above whenever the south wind blew or the air was warmer than usual. Thus, the waters broke out from the entrance and, after subsiding, they laid down "the dirt and waste from the mountain" in that very place.[174] The practical and unpleasant consequence of this fact was that Vallisneri and

[168] Vallisneri 1705, 44.
[169] Vallisneri 1705, 44–45.
[170] Vallisneri 1705, 45: "Potuerunt exsucca, et effoeta semina reflorescere rursus in aere, non in aequore poterunt. Condit illud sui generis salia, non omnia, condit hic omnia, non sui tantum generis."
[171] Vallisneri 1705, 45.
[172] Vallisneri 1705, 46: "Plurimi e rigidis horum montium finibus emergunt […]. Inter alios celeberrimus est, qui in Antro ululante (vulgo la Grotta che urla) gemit, ibique rursus reconditur. Meridiem versus hoc antrum paulo supra Furnum Volastrum hiat, plurimo tartaro scabrum, tenebrosum, et incondito murmure strepentium undarum terrificum."
[173] Vallisneri 1705, 46.
[174] Vallisneri 1705, 46.

his companions had to bend over in order to enter—and, furthermore, they all soiled their backs because of the low ceiling.

Figure 1.12: "This cavern opens southward, a little above Fornovolasco: it is rough and dark, with much tartar, and is terrifying because of the confused noise of the roaring waves."

After about twenty feet, the narrow passage expanded into a much larger chamber where "various oddities, made of a lapidescent juice" came into sight; while admiring these products of a "playful nature," they saw a stream of water falling from a rocky wall in front of them which was being "swallowed down with spinning vortexes by a deep chasm" and "diverted through a hidden path into the nearby Petrosciana Torrent."[175] Although troublesome and unexpected, this obstacle did not mark the end of Vallisneri's journey. With steadfast resolution, and with the intention of crossing the water with no excessive damage to their noble persons (or clothes), he and Corradi promptly jumped "on the backs of porters"; and, being carried thus past "many rough, stony tracks," they arrived in a "large and vaulted room" where "countless tartareous concretions, and innumerable, hardened cements" could be seen.[176] Here they saw the origin of the subterranean brook which, by means of "lapidescent waves," partly "glued new stones to the old ones in an enduring fellowship" and partly "slid with a foaming course down through the described channel."[177]

From this final adventure in the deepest bowels of the mountains, the author took his cue to address the hydrogeological issue again by dealing a final blow to the rival theories

[175] Vallisneri 1705, 46–47.
[176] Vallisneri 1705, 47.
[177] Vallisneri 1705, 47.

of alembics and rock filters. "Whence" did the "flow of the perennial waters become now clear and calm, now dirty and swollen"? According to the inhabitants, these were "drawn out from the nearby sea" ("they rage when the south wind blows, and the sea rages; and, when it calms down, they, too, are still").[178] However, this was not Vallisneri's opinion. In fact, he had explored the summits of the mountains: he knew that the cause of this phenomenon was to be sought not in the depths below but in the clouds and snowy peaks above. It was from there that the "waters and the dissolved snows" percolated through "slightly adhering layers" and were absorbed by the "various chasms" that passed through "rocks and bibulous gravel"; and then, having moved through the furrows, they crept along this "hidden bed" to a "cavernous spring" which was thus constantly replenished.[179] For many unknown glaciers and snows lingered there "almost perpetually" and "untouched" in hidden recesses, "inaccessible to the sun's rays," and they melted not with the first heat of the season but only in late spring when the sun was "more furious."[180]

> [The snows] melt slowly and gently; and, as if filtered, descend without mud, crystalline, and for a long time. In fact, when the warm winds breathe, so [the snows], having been reduced at once to liquid, like wax in a fire, run (rather than flow) through underground waterfalls, and carry mud and sand with them. Hence, the above said fountain is now clear, and poor in water; and now muddy, and abundant. Similarly, having been collected in cisterns, and perhaps in hidden pits, they are gradually sifted through the wide pores of the earth and, after a brief delay, fall into the basin of the fountain, as if on a plate; or, if [the waters] swell enormously, they will fall into a more empty basin, having overflown the mounds.[181]

With an air of finality, Vallisneri concluded that any origin of springs other than the meteoric was not allowed in his model. He could find no means of persuading himself that the waters came from the nearby sea without resorting to evaporation as an explanation. In fact, if "veins and venules" and "channels and gutters" were so wide to "let the sand and gravel in," why didn't they also take in "salts, small shells, little fishes, and other marine trifles"?[182] And, with respect to those who believed that the "vapors" from the sea were condensed "into dewy drops" by the "coldness of the rocks" (this, he noticed, was the "general opinion among Italians"): had they ever entered the "bowels of the Earth" and proven the existence of such "immense alembics" and "perfect chemical laboratories"?[183] More probably, these condensed vapors would have run back into the sea rather than be found "flowing laterally through imaginary pipes or supposed gutters."[184]

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[178] Vallisneri 1705, 47.
[179] Vallisneri 1705, 47–48.
[180] Vallisneri 1705, 48.
[181] Vallisneri 1705, 48: "Lente, ac molliter tabescunt, velutique filtratae per longa temporis spatia descendunt illimes, atque crystallinae. Si vero calidis efflantibus ventis, sicuti cera ad luculentum ignem, ita in liquorem statim extenuatae per subterraneas catharactas ruunt potius, quam fluunt, secumque terras, arenasque transportant. Hinc praedictus fons modo limpidus, et aquarum pauper, modo lutosus, et aquarum dives. In cisternis etiam, occultisque lacunis forsan recollectae vel per laxa aggerum spiracula sensim cribrantur, velutique ad lancem, ac per iustas morulas in fontis pelvim cadunt, aut si enormiter turgeant, superatis aggeribus liberiore gurgite devolvuntur."
[182] Vallisneri 1705, 48–XXIII.r.
[183] Vallisneri 1705, XXIII.r.
[184] Vallisneri 1705, XXIII.r.

Enough with speculations, however. Antonio intended to explain his thoughts more thoroughly, of course, but not here. He would do that "elsewhere, in a particular letter."[185] As we know, his purpose was achieved successfully in 1715 with the publication of the *Lezione Accademica,* where the complex hydrogeological debate was described and discussed in full detail and on the basis of a constant and fertile interaction between field data and theories. Still, for the time being the author didn't go further and instead concluded by remarking, with his usual "philosophical candor," that his field experiences were confined to northern Italy. He was not "familiar" with the springs of such great rivers as the Danube, the Rhine, or the Rhône, nor with all the "enormous mountains" and "immense regions" in the other parts of Europe—let alone in the rest of the world.[186] Persuading the "eviscerate Earth" to disclose "what it had concealed for a long time" would take more time, more people, and more attempts: in other words, it would need the joint effort of many other members of the Republic of Letters (and "may this not be an arrogant dispute between intellectuals, nor a bitter logomachy which sets us one against the other"!).[187]

Figure 1.13: "[…] various oddities, made of a lapidescent juice, come into sight, [produced by] the playful nature: which […] equals art with its talent, and surpasses it in substance."

Yes, this quest required "longer journeys and new works," for his explorations had been geographically and chronologically limited.[188] But even so, Vallisneri did not give up his ambition of providing his field research with a well-defined and univocal methodology, one that he would follow in case of further travels in the mountains. This aspiration was described at the end of the manuscript in the form of a rather detailed list of instructions—

[185] Vallisneri 1705, 49.
[186] Vallisneri 1705, 49.
[187] Vallisneri 1705, 51.
[188] Vallisneri 1705, 52.

or "index of observations," as he would call it, in the Italian *Continuazione dell'Estratto* of 1726.[189]

According to the fifteen points of this peculiar sort of field handbook (and not surprisingly, given the eclectic content of the *Primi Itineris Specimen*), a worthy natural philosopher was expected to focus on an extremely heterogeneous range of subjects—and objects. First, he had to observe and describe all the "herbs and plants" that he could find in the mountains (1); next came the study of all the "crystals" and "crystal-like [minerals]," "specular stones," the many different "fossil salts," and the "variegated, sculpted stones" along with the "shaped, curative, chalky, gypseous, [and] precious ones" (2). These observations were to be followed by the examination of the "stony, chalky, gravelly, [and] sandy layers of the mountains," along with "those made of earth"; it was also important to ascertain "whence they originated," in which direction they stretched, and "their necessity, use, structures, etc." (3).[190] It was then time to look at the "so-called antediluvian and postdiluvian bodies" that could be found in rock layers: one must see if "mussels, snakes, fishes, sea urchins, snail shells, oysters, pectens, tube [worms], bones of animals, wood, fruits, etc." are present and then determine whether these are "petrified, or enclosed within the rocks, or barely enveloped in the bowels of the Earth" (4).[191] Also, attention should be paid to the "outer surface of the mountains," to the "quality of every soil" and to "the elucidation of every stone, streak, and concretion of tartar or marble" (5); then "the particular nature, the pastures, the use, etc., of any mountain" must be determined (6).[192] Even living animals deserved to be studied, of course: from the "rarest insects" that built their nests "among herbs and plants" in the rocks (7), to the many birds, fishes, and quadrupeds living in meadows, pastures, forests, crags, springs, and streams (8).[193] As to the countless "fruits and grains," it was important to know which ones were used "as food and drink" by mountaineers (9)—whose "customs, arts," and "buildings," in turn, had to be considered, along with their "diseases, torments, and delights" (10).[194] Points 11 and 12 deal with the measurement of sundry items: a mountain's height and its other features such as "fissures, slidings, [and] decreases"; the air's weight ("measured with a barometric device"); and "the climate" ("measured with a thermometer").[195] Point 13 recommends that the researcher provide a "more accurate description of the other springs, rivers, torrents" and "thermal waters," while point 14 focuses on "milk and dairy products" and how they are prepared in the mountains.[196] Finally, point 15 returns to the Earth sciences and prescribes the "careful and accurate description of every mine": for too many of these precious, hidden places were still unknown to natural philosophy.[197]

Such were the "things" that Antonio meant to carry on his "reluctant shoulders" if given a fortunate turn of events that would allow him to resume his wanderings in the northern Apennines.[198] But, he was well aware that performing these "genial studies" was no easy task. It would require a spectacular amount of time—much more than the busy Paduan professor could hope for considering his academic and medical obligations.

[189] Vallisneri 1726, 404–417.
[190] Vallisneri 1705, 52.
[191] Vallisneri 1705, 52.
[192] Vallisneri 1705, 52.
[193] Vallisneri 1705, 52.
[194] Vallisneri 1705, 52–53.
[195] Vallisneri 1705, 53.
[196] Vallisneri 1705, 53.
[197] Vallisneri 1705, 53.
[198] Vallisneri 1705, 53.

And yet, as we can see, he never abandoned the idea of defining unambiguously the goals and procedures of a philosophical field research. Not by chance, over the next two decades he enriched and refined his "index," which in its final version—published in 1726 in the *Continuazione dell'Estratto*—had 26 points.[199]

The "index of observations" marks the end of Vallisneri's report. However, in the same cardboard folder from the State Archive of Reggio Emilia I found other interesting documents: an additional group of eight loose papers, written by four different hands (Vallisneri, the cartographer Domenico Cecchi, and two unknown contributors), and two elegant, hand-drawn maps of Garfagnana, the first bearing an autographed dedication by Cecchi. The additional papers cover a broad range of topics that encompass history ("Reasoning about the many consular names assigned to the villages and towns of Garfagnana"; "Petition from the Community of Busana to Borso, Duke of Ferrara, for an exemption from taxes"), toponomastics ("Old and new names noted in the Province of Garfagnana"), poetry (a few quotes from Claudian and Virgil), engineering ("Proposal […] to send Master Carlo da Maleone, engineer, to the Lake of Ventasso in order to try to conduct the water of that same lake to Reggio"), and—not surprisingly—natural philosophy ("Strange fountain […] at the foot of the Panie"; "Little soil in plants"; "Salt in plants"; "Description of the Lake of Ventasso"; "Memorandum for the natural history"; etc.).[200] The notes report both experiences had by Vallisneri himself and information that he, Cecchi, and the unknown authors gathered from various sources. Most likely, these documents were material for further investigations that Vallisneri meant to, but could not, perform—and which, therefore, were not included in the main text.

The beautiful map by Domenico Cecchi is, in fact, much more than a simple map: it is framed on the left, right, and bottom sides by densely written text. According to the title, both the quoted passages ("Chronology of Garfagnana" and "Religion of Garfagnana") are from Book 2 of the *Silvae Feronianae,* a manuscript (now lost) composed by the antiquarian Timoteo Tramonti, "Chancellor of the Archive of Castiglione" (XVI–XVII century).[201] Relying on an intriguing mixture of facts and legends, these documents offer a great number of literary, religious, mythological and folkloristic anecdotes that relate the turbulent history of the province: from the foundation of the first "fortified huts" and the arrival of the Greek heroes Ogyges and Ligisto (son of the Greek demigod Phaeton) to the then recent dominion of the Princes of Este. The documents address the Etruscan kingdoms, the Celts, the Gauls, the Romans, the difficult transition from paganism to Christianity, the barbarian invasions and sackings, the fierce struggles for power between the Guelphs and the Ghibellines (who "almost destroyed each other and their belongings"), and the countless battles for independence from the Republic of Lucca.[202]

(Natural) philosophy and (natural) history; medicine and chemistry; geography and literature; anthropology, ethnography and material culture; archaeology, religion and folklore; and now, at the very end of the journey, cartography and mythology: the contents of the *Primi Itineris Specimen* match the versatile talents of its author, and his strong, colorful, and enthusiastic personality shines through every word of this amazingly deep and rich text. And, in light of all that has been said thus far, we can't help but regret the

[199] Vallisneri 1726, 404–417. On this topic, see Luzzini 2013a, 104–106; 2014a, 215–217; Vaccari 2005, 9–11; 2007, 7–8; 2008, 394–395; 2011, 104.
[200] Vallisneri 1705, XXIV.r–XXX.v.
[201] Vallisneri 1705, XXXII.r.
[202] Vallisneri 1705, XXXII.r.

unfortunate—and still unknown—circumstances which prevented this manuscript from being published and disclosed to the *literary* world. However, as already remarked, the importance of Vallisneri's report for the history of early modern science lies not just in the impressive amount of information it contains, nor in the variety of subjects it covers. Even its flaws and limits are valuable, as they are particularly revealing of the hurdles the Galilean experimental tradition had to overcome when it ventured into the mountains and turned its curious eye to the heterogeneous field of natural philosophy.

It was especially in his attempt to define a methodology of field research (an attempt equally interdisciplinary and unifying, we might say) that Vallisneri faced his greatest challenge. Unavoidably, the size and complexity of the natural phenomena he examined took a toll on the effectiveness of his efforts. But, it is not unreasonable to claim that all the difficulties he encountered do not affect the historical and scientific significance of his manuscript. For limits and failures, just like successes, are precious clues to the past: and, as such, they can teach us a lot about the events that shaped the path of human knowledge and the very idea(l)s and debates that caused these events to happen. Despite—or thanks to—all the lexical and descriptive inconsistencies, the frantically reworked pages, and the anxious margin notes, the *Primi Itineris Specimen* is a brilliant and charming proof of this fact.

Chapter 2
On Method

For one thing after other will grow clear, [...]
Thus things for things shall kindle torches new.[1]

2.1 Studies and Influences

It is by now widely recognized that early modern science is as much about theories as it is about communication, travel, fieldwork, and exchange of information and objects. As we have seen, the case of Antonio Vallisneri is no exception to this thesis. Interestingly, it also applies to the history of science. On my part (in all due proportion, and humbly), I am no exception.

With respect to medicine and natural philosophy, Vallisneri was the leading Italian scholar of his time. It was by appealing to shared experimentalist values, and by endorsing a view of science as a collective and cumulative enterprise, that he came into contact with a great number of savants throughout Europe and eventually became the center of a broad epistolary network. In 2000, when the National Edition of Antonio Vallisneri's Works was established,[2] it was in acknowledgment not only of his impact on contemporary and later scholars but also of the influence exerted *on* him *by* the many other members of the Republic of Letters. Nor was it by chance that Antonio's keen awareness of the collective nature of science allowed him to merge successfully different streams of knowledge and practice (the Galilean experimental legacy, the empirical model, and the theoretical frameworks of Baconian philosophy and Cartesian mechanism) into an extremely interdisciplinary (and yet consistent) approach to medicine and natural philosophy.

Obviously, I cannot claim the honor of having, or of having had, any long-lasting or significant impact on any scholar other than myself. However, in regards to *my* approach to the history of science, it is undeniably the result of many different academic, scholarly, and educational influences—which, in turn, derive from various professional backgrounds, experiences, suggestions, and points of view. I acknowledge this fact with pride and gratefulness.

In 2003, when I first became interested in historical research, I was still a MA student in natural sciences at the University of Milan. Although I was an aspiring naturalist, I had only a vague idea of what the history of science was. Before reading a textbook devoted

[1] "Namque alid ex alio clarescet, […] Ita res accendunt lumina rebus" (Lucretius 2018, I, 1115–1117. English translation: Lucretius 1916, http://data.perseus.org/citations/urn:cts:latinLit:phi0550.phi001.perseus-lat1:1.1083).

[2] See www.vallisneri.it; http://www.olschki.it/la-casa-editrice/collane-Olschki/edizioni-nazionali/edizione-nazionale-Vallisneri. For many years, the National Edition has produced many important studies, critical editions and digital humanities projects, thereby affirming itself as one of the most lively and renowned cultural institutions of this kind in Europe. As such, it has recently joined the ISCH COST Action IS1310—"Reassembling the Republic of Letters, 1500–1800," a digital framework for multi-lateral collaboration on Europe's Intellectual History (http://www.republicofletters.net/).

to this discipline,[3] all my notions were based either on my personal and desultory readings or on the concise and typically progressive lists of forerunners, pioneers, and triumphant discoveries that lecturers used to captivate us with at the very beginning of every course (in accordance with an unfortunate yet incredibly refractory habit of scientific faculties that nowadays still tends to pit "real" and "useful" science against "subjective" and mostly "ornamental" humanistic disciplines). In any case, the textbook I read was enough to arouse my curiosity and solidify my decision to prepare an MA dissertation in the history of science.[4] Thus, in a flagrant act of optimism I stepped into the office of one of the textbook's authors, Franco Andrietti; there, by chance, I found him talking with the other author, Dario Generali, who shortly afterwards would become my mentor.

Being an historian of science (and, furthermore, the coordinator of the Vallisneri National Edition), Generali introduced me to a scholarly tradition dating back to the beginning of the XX century. He himself had studied philosophy at the University of Milan, where he had been a student—and, later, a collaborator—of one of the main critical empiricist anti-metaphysical philosophers in Italy: Mario Dal Pra (1914–1992). This scholar belonged to the second generation of the so-called Scuola di Milano ("School of Milan"), a group of intellectuals that emerged in the 1920s and that followed the works of Piero Martinetti (1872–1943) and his pupil Antonio Banfi (1886–1957). In the decades which followed, even though the members of the Scuola explored an extremely wide range of subjects, their methodological approach relied on a set of well-defined common criteria: the adoption of critical rationalism and critical empiricism; a determined insistence on the centrality of sources and on the need for contextualization in historical inquiry (and, consequently, the scrutinizing of the methodological principles of philology and textual criticism); a general opposition to dogmatism of any kind; and, finally, a marked interest in interdisciplinary studies, with a special consideration for dynamic relationships and interactions between critical rationalism and scientific practices and technologies.

Throughout the first and second halves of the XX century, this school developed some strong (though partial) affinities with the concept of critical rationalism upheld by Karl Popper (1902–1994). Unlike Popper and his followers, however, the group in Milan relied predominantly (if not essentially) on a rather different epistemological model which—much more than the principle of falsifiability—supported the investigative potential of scientific objectivity and assertability for the development of human knowledge. Eventually, the Scuola became the vanguard of the philosophy and history of science in Italy, and trained a number of renowned academics: the aforementioned Dal Pra, Ludovico Geymonat (1908–1991), Giulio Preti (1911–1972), Paolo Rossi (1923–2012), and many others.[5]

Such was the cultural context from which the National Edition of Vallisneri's Works emerged, and by which—thanks to the teachings and advice I received from Generali, Maria Teresa Monti (who would become my supervisor at the University of East Piedmont from 2010 to 2013), Benedino Gemelli, Ivano Dal Prete, and other friends—I laid the foundation of my intellectual and professional identity. In learning the theoretical and methodological principles of historiography, philology, textual criticism, scholarly editing, and digital humanities (I joined Dal Prete in working on the electronic inventory of Vallisneri's correspondence, and transcribed and digitized hundreds of letters), I gradually acquainted myself with a research approach that was particularly suited to my inter-

[3] Andrietti and Generali 2002.

[4] Luzzini 2005.

[5] On this topic, see Assael 2009; Beretta, Mondella, and Monti 1996; Dal Pra and Minazzi 1992; Generali 2015; Micheli 2016; Papi 1990; http://sdm.ophen.org/progetto/.

disciplinary background. To my utmost gratification, I was enthusiastically encouraged to make profitable use of the scientific competencies I had acquired in previous years by merging them with my new skills. Thus, soon enough the replication—both in the field and in the laboratory—of Vallisneri's medical and *philosophical* explorations, observations and experiments became a pleasant routine for me and a distinguishing feature of my work.[6] I was also able to present and discuss my research on an international stage thanks to several conferences and workshops promoted by the National Edition from 2004 to 2010. And, needless to say, all of these experiences made me painfully aware of how much I still had to learn.[7]

A further crucial step in my scholarly development occurred in 2006, when I became interested in the Earth sciences in early modern Europe, and in Vallisneri's contribution to this subject, after starting my Ph.D. at the University of Bari. I needed a supervisor, of course; yet another fortunate circumstance allowed me to meet the right person at the right time. In fact, among the collaborators involved in the Vallisneri National Edition was Ezio Vaccari, Professor of the History of Science at the University of Insubria, and one of the handful of historians of the Earth sciences in Italy.

Like Generali, Vaccari persevered in encouraging me to replicate Vallisneri's travels and explorations in the field. In supervising my Ph.D. dissertation,[8] he made sure to acquaint me with all the essential studies focused on the birth and development of the geological sciences. Thus, I familiarized myself with the vast literature devoted to this complex and intriguing subject: the works of Martin Rudwick, Rhoda Rapparort, Ken Taylor, David Oldroyd, Nicoletta Morello, François Ellenberger, Paolo Rossi, Sally Newcomb, Claude Albritton, Norman Cohn, and many, many others (including the ubiquitous Stephen Jay Gould, the only one I knew from my student years in Milan).[9] Unexpectedly, I had the opportunity to meet some of these authors in person in 2007 when I attended the 32nd Symposium of the International Commission on the History of Geological Sciences (INHIGEO) in Eichstätt, Germany.[10] As I would soon discover, this event marked another turning point for me in my growth as an historian of science. In fact, in the years which followed I attended two more annual INHIGEO meetings: one (2010) in Madrid, Spain,[11] and the second (2014) in California's Asilomar Conference Grounds.[12] Meanwhile, in 2012 I had officially become a member of this organization.

By joining INHIGEO, I entered an uncommonly supportive and inspiring community. I met a great number of passionate, expert, and genuinely curious people whose help and interest in my work were decisive in increasing my knowledge and understanding of the many dominant topics in the history of early modern natural philosophy: for example, the hydrogeological debate, the study of mountains and fossils, the practice of geological journeys and field research, and the intricate issues of diluvialism and geochronology. The positive impact this new stream of knowledge and connections had upon me bore fruit a few years later when the support and advice I received from INHIGEO members

[6] See Luzzini 2007; 2008; 2010; 2011a; 2011b; 2011c; 2013a, 90–143; 2014a; http://www.vallisneri.it/osservazioni_geologiche.shtml; https://vimeo.com/102054014.

[7] The proceedings of the meetings were published by the Vallisneri National Edition in Dal Prete, Generali, and Monti 2011; Facchin and Spiriti 2011; Generali 2008; 2011a; Generali and Ratcliff 2007; Monti 2011.

[8] Luzzini 2009a.

[9] Albritton 1980; Cohn 1996; Ellenberger 1999; S. J. Gould 1987; Morello 1979a; 1979b; Newcomb 2009; Oldroyd 1996; Rappaport 1997; P. Rossi 1979; Rudwick 1972; Taylor 2008.

[10] The proceedings of the meeting were published in Kölbl-Ebert 2009.

[11] The proceedings of the meeting were published in Ortiz et al. 2011.

[12] The proceedings of the meeting were published in the journal *Earth Sciences History*, 34 (2), 2015.

Kerry Magruder and Martina Kölbl-Ebert played a key role in the success of my applications for two resident fellowships (2012 and 2014) at the Linda Hall Library of Science, Engineering and Technology in Kansas City (MO).

At the Linda Hall Library, I reached another milestone in my scholarly formation. Overall, I spent six months in this amazing place, enjoying unlimited and easy access to not just one of the best and largest history of science collections in the world but to *all* of the original sources that I needed for my studies. This enormously enriching experience boosted my research and paved the way for the publication of several papers,[13] the completion of my first book,[14] and for the events that led to my becoming interested in (and qualified for) participating in the Edition Open Sources project, the latest turning point in my intellectual and professional path.

The years I spent working as an EOS Postdoctoral Fellow at the University of Oklahoma Libraries (January 2015–June 2016) and at the Max Planck Institute for the History of Science (July–December 2016) changed my approach to scholarly work in a very profound way. By joining the EOS project, I took part in shaping an innovative method for the production of critical editions of scientific texts, a method where such terms as "digital humanities" and "interdisciplinarity" could mean more than just vague, rhetorically abused concepts.

Achieving this latter goal was no easy task for us. New skills had to be acquired, and new challenges had to be faced. We needed to harmonize the methodology used for the construction of a critical edition—which is typically meant to be the conclusive version of a given text[15]—with digital publication's new features which, by definition, imply the ideas of continuous improvement and change. Thus, I and my supervisors Kerry Magruder and Stephen Weldon, along with all of the scholars and faculty members involved in the project, were engaged in a constant dialogue with IT experts from both the OU Libraries and the Max Planck Institute (Logan Cox, Carl Grant, David Corbly, Klaus Thoden, and many others); consequently, the technical improvement of the EOS platform could proceed in concert with immediate feedback and iteration from users and developers alike. Not surprisingly, this activity required a mutual effort from both groups to become acquainted with each other's languages and research methods. It entailed plenty of discussions, meetings, seminars, and workshops and required countless notes, drafts, reports, last-minute rewrites, and emails. We all shared our knowledge and experience, and we all learned. And, sure enough, I had a lot to learn.

From this truly interdisciplinary, collective, cumulative, and scientific work I gained new competencies, a new book, and what so far is the most important landmark in my professional career. However, I also gained something even more precious, whose importance stretched well beyond the professional sphere and changed my personal life and my view of the world. I had become proudly aware, like never before, that I was an active part of a community and, before and above all else, that it was within this context that my work made sense.

All too often scholars forget—or worse, neglect—this simple and vital fact. On my part, I will not commit such an error again.

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[13] Luzzini 2013b; 2013c; 2014a; 2014c; 2014d; 2015a; 2015b; 2016b.

[14] Luzzini 2013a.

[15] This subject is still a matter of debate among scholars. A very interesting (though, in my opinion, not entirely convincing) point of view about the issues, goals, and methodologies of textual criticism and critical editions is provided by James Hankins, General Editor of the I Tatti Renaissance Library: http://nrs.harvard.edu/urn-3:HUL.InstRepos:6314663.

2.2 Note on the Text: Transcription

This critical edition of Vallisneri's *Primi Itineris Specimen* is based on a single source text, the draft version held at the State Archive of Reggio Emilia (Italy). The official copy of the document is, supposedly, still kept in the Archives of the Royal Society of London; however, no clear evidence of its existence and location has yet been found. Consequently, no collations of different manuscript versions were possible.

The text is written for the most part in Latin. Only a few significant paragraphs in the main manuscript (pp. V.r–VI.r) and in the additional papers (pp. XXVI.r, XXIX.r, XXX.r, and, partially, pp. XXVII.r, XXIX.v, and XXXI.r) are in Italian. The criteria used for the transcription conform essentially, though not entirely, to the editorial principles developed by the National Edition of Antonio Vallisneri's Works as these are extensively outlined and discussed by Concetta Pennuto's Note on the Text in the critical edition of the first volume of Vallisneri's *Quaderni di Osservazioni.*[16] The primary aim of these guidelines is to reach a reasonable compromise between two apparently conflicting, yet equally unavoidable, needs: an accurate, comprehensive and faithful edition of the original document which is intelligible to modern and even non-specialized readers. In order to achieve this dual purpose, the transcription has been provided with a double set of notes: one for the philological apparatus (notes are marked with lower-case letters in italics and numbered in alphabetical order: *a, b, c, ... z, aa, ab, ac, ... az, ba, bb, ...* etc.), and one for historical and scientific analyses (notes are marked with Arabic numerals: 1, 2, 3, … etc.). Both sets of notes are numbered independently for each chapter.

2.2.1 Transcription guidelines

As a general rule, the spelling, punctuation, grammar, capitalization, and paragraph formatting of the original manuscript have been preserved. With the exception of the parts in Italian, and with a few exceptions for the Latin text, original abbreviations—for example, contractions (the omission of medial letters: e.g. "obblig.mus" for "obbligatissimus"; "v.ae" for "vostrae") and suspensions (the omission of terminal letters: e.g. "lib." for "liber"; "tab." for "tabula")—have not been expanded. However, superscript and subscript letters, whether abbreviated or not (e.g. "ill.^{mus}"; "minerar^{um}"; "n^{on}"; "qua$_{e}$"; "pra$_{e}$dictam"; etc.), have always been lowered—or, accordingly, raised—to the line ("ill.mus"; "minerarum"; "non"; "quae"; "praedictam"; etc.). Likewise, cautious modernization and normalization have been made wherever the clarity of the original text was compromised by extremely difficult or uncommon (though correct) abbreviations and variants of Latin words, or by obvious misspellings and errors, or by misleading punctuation and/or capitalization. In any case, all editorial interventions and corrections have been conveniently specified and explained in the philological notes, where words and passages from the transcription are written in normal font, and editorial comments are rendered in bold (e.g. "**In the text:** Provincia"; "**In the text:** enucleatione"; "**These lines are written in regular font**"; "**From this point on, text at p. 22 continues on the recto of an additional, unnumbered paper (XIII)**").

In accordance with a widely held typographical convention, all the underlined words, phrases and passages from the manuscript have been rendered in italics in the transcription.

[16] http://www.vallisneri.it/criteri.shtml. Concetta Pennuto's Note on the Text is in Vallisneri 2004, LXXXV–XCIII. The same guidelines have been extensively outlined and discussed by other authors in Vallisneri 2007, IX–XXXV; Vallisneri and Cogrossi 2005, 25–27, 85–89; Vallisneri 2006, CXXXV–CXLVI; 2011, LXXI–LXXXI; 2009, CXCI–CXCVII; Vallisneri and Davini 2010, LXIX–LXXVIII; Vallisneri 2012, LXI–LXVI.

2.2.2 Variants

Many letters, words, passages, and—often—entire paragraphs in the manuscript are marked for deletion with either a strikethrough or with black ink scribbling. In most cases, the content of these deleted parts is as rich and significant as the content of the main text, providing the reader with crucial data on the author's original intention and on the development of his thought. In order to preserve the textual information in its entirety, all variants have been inserted in the philological notes: deleted text is rendered in italics and indicated in its phrase context, and normal text is rendered in normal font. For example, a variant in the manuscript is explained as follows:

Text in the manuscript (facsimile):

Transcription (main text):

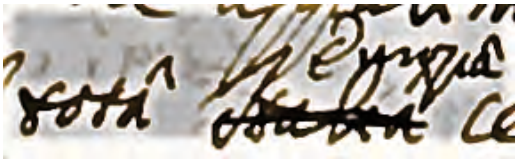
fontes, omnesque perennes qui

Transcription (philological note):

font*ium,* omn*ium*que perenn*ium copiarum* qui

When a word in the manuscript is marked for deletion and specifically replaced with another term, the new variant (in normal font) always follows the deleted one (in italics) at the end of the corresponding philological note. For example:

Text in the manuscript (facsimile):



Transcription (main text):

tota Europa

Transcription (philological note):

tota *Italia* Europa

2.2.3 Integrations

Editorial insertions are provided in case of uncertain readings, or in case of missing, illegible, or damaged text. Both in the transcription and in the philological notes, these integrations are indicated by angle brackets (e.g. “qui<bus>”; “<maxime acta>”). Ellipses within angle brackets indicate partially, totally illegible, or missing text (“<…>”; “<…>lino-nitrosum”; “<…d…>i”; “<…f…ex…>”). Editorial insertions can concern both the main body of the transcribed text and the philological notes.

A different kind of integration is provided in the historical and scientific notes, where editorial omissions in the quoted passages are indicated by ellipses within square brackets (e.g. “ammites vel ammonites […] ovis piscium similes”; “life was sustained […] through the presence of a life spirit”; “Leguminum specie lapidem quidam inveniuntur, pisis […] aut lentibus similes […]”).

2.2.4 Margin notes

The manuscript features several margin notes or “marginalia.” These have been transcribed and inserted in the philological notes where—as remarked above—transcribed text is in normal font and editorial comments are rendered in bold. For example, a margin note in the left (or right) margin is indicated with a reference number placed after the closest word in the main body of the manuscript and is explained as follows: “**Margin note (right):** Volve unam paginam”; “**Margin note (left):** De Thermal. Aq. Cap. 25, pag. mihi 324”; “**Margin note (left):** Nimis implicata <…> periodus.”

2.2.5 Page numbering

The manuscript pages are numbered with a combination of Roman and Arabic numerals. The Arabic numbering (1–54) is the one provided by the author, whereas the unnumbered folios (the several additional papers in the main manuscript, the eight additional papers not included in it, and both the maps) have been assigned by the editor with Roman numerals (I–XXXIII). Each unnumbered folio, in turn, has a recto (r) and a verso (v) side which are specified accordingly (I.r, I.v, II.r, II.v, III.r, III.v, … etc.). Both in the transcription and in the translation, the passage from one page to the next is marked by the number of the ending page, which is printed in bold charachters and followed by a closing square bracket in normal font (e.g. **17**]; **34**]; **XVIII.r**]; **XXVII.v**]).

In the facsimile section, manuscript page numbers are given in normal font at the top of each page. Each manuscript page number is followed by the sequence number (expressed in Arabic numerals, in normal font, and within parentheses) of the corresponding digital file (e.g. 26 (049); XVIII.v (063); XXIX.r (106)).

2.3 Note on the Text: Translation

The English translation of the *Primi Itineris Specimen* includes the same apparatus for historical and scientific notes that is featured in the transcription. Accordingly, this set of notes is also marked with Arabic numerals (1, 2, 3, … etc.), and each chapter is numbered independently.

The page numbering in the translation coincides with the numbering given in the transcription.

2.3.1 Translation guidelines

Unlike the transcription, where most of the original abbreviations in the Latin text have not been expanded, all contractions and suspensions have been silently extended in the translation. For example: "l./ lib./ libr.," i.e. "liber," is rendered as "book"; "c./ cap.," i.e. "caput," is "chapter"; "t./tab.," i.e. "tabula," is "table"; "a./an./ann.," i.e. "annus," is "year"; "f./fig.," i.e. "figura," is "figure"; etc. Accordingly, the same procedure has been followed for honorary and formal appellations (for example: "Ill.us/Ill.mus," i.e. "Illustrissimus," is rendered as "Most Illustrious"; etc.). The only exception is the Latin word "pagina" ("page"), whose abbreviations and plural form ("p./ pag./ pagina/ paginae") are rendered as "p./pp." in the translation.

As a general rule, toponyms (cities, provinces, regions, mountains, rivers, etc.) have been written in normal font—even when they are in italics in the transcription—and translated into Italian (e.g., "Regium" is rendered with the Italian name "Reggio"; etc.). Latin has been maintained in the case of names with no modern equivalents (for example, "Armorum Pratum"). Exceptions were made for English translations of Italian and European toponyms that are widely and currently used: for example, "Apeninus" is not rendered with the Italian name "Appennino" but with the English "Apennine"; "Roma" is translated as "Rome"; etc.

Technical and/or specific terms with modern English equivalents have been written in normal font (even those that are in italics in the transcription) and translated: thus, "nitrosum" becomes "nitrous"; "vitriolum" is "vitriol"; etc. Dialect and slang terms have been rendered in italics, and have not been translated (e.g. "*cretone*"; "*canopi*"; "*filone*"; "*scaiola*"; "*salsa*"; etc.).

2.3.2 Quotations

In the translation, all book titles are written in their original language, in full, and in italics (e.g. "as Jüngken attests in his *Chymia Experimentalis,* in the chapter on sulphur"; "Sir Fulvio Azzari, in *Compendio dell'historie della Città di Reggio,* writes that").

Prose quotations have been translated, written in normal font, and included within English quotation marks ("") in the main body of the text (e.g. "I shall use the words of Saint Jerome: "They do not embellish the face by artificial means, with purple, nor do they arrange towering crowns with strange ornaments." Neither Minerva, nor Ceres, nor Bacchus dispenses his gifts in that place").

Poetry passages have been translated, written in normal font, and placed in block quotations: these are indented and separated from the main body of the text, and are without quotation marks. For example:

"Claudian, in Panegyricus de Consulatu Manlii, De Monte Olimpo:

> He rises above the rains, hears the rushing clouds beneath his feet, and treads upon the roaring thunders.

So was I when I was in the mountains, etc."

2.3.3 Integrations

Like the transcription, editorial insertions are provided in case of uncertain readings or in the case of missing, illegible, or damaged text. These integrations are indicated by

angle brackets (e.g. "<I> pound"), and ellipses within angle brackets denote illegible or missing text (e.g. "<…>"; "of <…> false"; "did <…> <…> they"). In addition, the translation includes another kind of editorial insertions; these have been added wherever a strictly literal rendering of the Latin text was too unclear or ambiguous, and additional words were necessary to clarify the sense of a sentence. Such integrations are indicated by square brackets (e.g. "it covers about three hundred [square] feet"; "it can be seen not far [from there]"; "of which I will [speak] later").

As stated above, in the case of passages quoted in the historical and scientific notes editorial omissions are indicated by ellipses within square brackets (e.g. "ammites vel ammonites […] ovis piscium similes"; "life was sustained […] through the presence of a life spirit"; "Leguminum specie lapidem quidam inveniuntur, pisis […] aut lentibus similes […]").

2.3.4 Margin notes

Consistent with what has been done in the transcription, all margin notes have been translated and inserted in footnotes where they have been marked with lower-case letters in italics (and numbered in alphabetical order: *a, b, c, ... z, aa, ab, ac, ...* etc.). As for the philological notes, translated text is in normal font and editorial comments are rendered in bold. For example, a margin note in the left (or right) margin is indicated with a reference number placed after the closest word in the main body of the manuscript, and is explained as follows: "**Margin note (right):** Turn one page"; "**Margin note (left):** *De Thermalibus Aquis,* Chapter 25, p. 324 of my [book]"; "**Margin note (left):** The <…> sentence is too complicated."

2.3.5 Capitalization

In the translation, the capitalization of words conforms to English grammar rules. For example, the Italian term "agosto" is rendered as "August"; the Latin "gallicus" becomes "Gallic"; etc. All honorary and formal appellations have been capitalized whether or not they have an uppercase initial in the Latin text (e.g. "viri Gravissimi" is rendered as "Most Severe Men"; "amicorum optime" is "O Best Friend").

2.3.6 Numbers

The rendering of numbers—whether written in digits, in words, or in Roman numerals—conforms to the style of the Latin manuscript. For example, "bis centum" is rendered as "two hundred"; "vigintiquatuor mille" is "twenty-four thousand"; "XII" is "XII"; "189" is "189"; etc. This rule applies even to ordinal numbers (e.g. "tertium" is "third"; "5°" is "5°").

The rendering of numbers with decimal and thousands separators conforms to English writing conventions. Therefore, in the translation a period is used to indicate a decimal place and a comma is used to indicate groups of thousands (e.g. "1.000,012" is rendered as "1,000.012," etc.).

Acknowledgements

I knew writing this part would turn out to be a challenge. The fact is, I am a lucky man: I owe much to many, and it would be impossible for me to express properly the extent of my gratitude to all those who deserve it, and in just a few lines. Nevertheless, I will try—and I ask forgiveness in advance for any inadvertent omissions or negligences in this effort.

Thanks to Kerry Magruder and Stephen Weldon, the prime movers of it all, who believed in me since the very beginning of my postdoctoral fellowship at the University of Oklahoma Libraries. This book simply would not be without their unwavering guidance, support, and encouragement throughout the past three years. We walked a long distance together, and together we faced and overcame countless struggles and challenges. I hope my work could serve as a sincere, though inadequate, tribute to their friendship and to the trust they placed in me.

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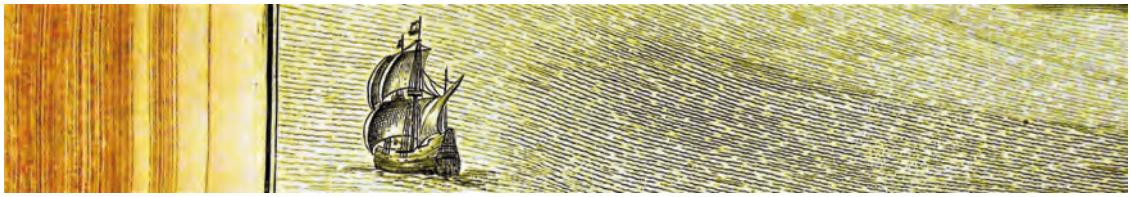
My family has been there with me every single day, through every single moment, no matter how hard or easy. They were there as they have always been, and as they always will. Nothing would have been possible without their love.

I hope Jackson is sitting somewhere, reading these clumsy lines in front of a good beer. And I like to imagine that he now raises his pint in a toast, with his usual gentle grin on his face.

Wherever he is, I hope my hug can reach him.

F.L.



PART II
Primi Itineris per Montes Specimen Physico-Medicum: Transcription

Chapter 3
Main Manuscript: Transcription

Iter montanum[a]

Quem tibi ego non essem ausus mittere, nisi eum lente, ac fastidiose probavissem. Ita Cicero ad Atticum de quodam suo libello.[1] **I.r] I.v]**

Garfagnana p. 31. **II.r] II.v] III.r] III.v]**

Primi itineris per Montes Specimen[b] Physico-medicum.

Ab Antonio Vallisnerio de Nobilibus de Vallisneria in Patavino Archyliceo Publico[c] Primario Theoricae Professore, ac Regiae Societatis Angliae sodali, Sapientissimis, ac Praeclarissimis eiusdem Societatis Sodalibus dicatum:

ab Italo Idiomate in Latinum versum a L.V.[2d]

Sapientiss.mi, et Praeclariss.mi Sodales toto Terrarum Orbe celeberrimi.

Quis putasset, Sodales Amplissimi, vim ingeniorum, atque praestantiam studiis obesse, quis rationem, rem divinissimam, nos obtundere, ac pene ineptos efficere ad assequendam veritatem? Dictu id mirum, et monstro simile, sed eventu facillimum, mentis enim curiosa subtilitas adeo pulchras effingit, et parturit opiniones, concinne adeo, arguteque mentitur, ut plerique hominum fucatis orationibus capti, et tanquam laqueis irretiti erroribus pro sapientia utantur, iisque semel placitis indormire malint, quam liberari. Conatae sunt aevi nostri Academiae, inter quas vestra eminet, torporem hunc nobis excutere ad experimenta lacessendo; mihi quoque fas sit ante pedes vestros rudem

[1] This is a passage from Marcus Tullius Cicero's *Epistulae ad Atticum* (Cicero 2018b, II, 1, http://data.perseus.org/citations/urn:cts:latinLit:phi0474.phi057.perseus-lat1:2.1.1).

[2] These anonymous initials seem to indicate that the manuscript was translated into Latin from a previous Italian version, and not by Vallisneri himself. However, there are important hints that this may be a pretense. The handwriting in the main manuscript is unmistakably Vallisneri's: since the document was draft (and a significantly reworked one, too), it is unlikely that he copied again the entire Latin text from another document, which in turn was a translation from an Italian text he had already edited. Furthermore, several studies prove that Vallisneri often used false names, or the names of his pupils, as a strategy to conceal and protect himself against potential criticisms—which in this case may have been addressed to the prose style of the document or to terminological misunderstandings. On this topic, see Generali 2004, 155–156, 176–177; 2007a, 383–412; Luzzini 2013a, 91; 2014a, 209. It is worth noting that the same initials (and, arguably, the same anonymous translator, whether real or not) appear—with an additional "S" in the end—in Vallisneri 1717c.

[a] Iter <...>*num* montanum
[b] Montes *mutinenses* Specimen
[c] Archyliceo *Practicae Medicinae in primo loco* Publico
[d] L.V. *Scandianensi*

IV.r] libellum proicere[e] non dissimilia tentantem, res quippe habet visu compertas, non ingenio. Horridulus quidem est atque incomptus, sed veniam dabitis inter Alpes nascenti. Per aestivas vacationes ea mihi vicinis montibus inerrandi cupido incessit; nec tela prae manibus ad figendas feras, sed calami, et pugillares gestabantur ad venandam veritatem. Praecipuam utilitatis discipulorum meorum rationem habui, arcanos latices, et inexploratas fontium medelas illis in reditu monstraturus.

Descendite paululum, viri gravissimi, de sapientia illa, qua Literariae Reipublicae consulentes maria, terras, caelum respicitis. Praebete vos faciles exiguis conatibus meis, et pavidum adhuc ob magnitudinem beneficiorum vestrorum, nova quadam benignitatis culpa, in maiores ausus erigite.

Datam Patavii 1705

Addict.mus, et Obseq.mus famulus, et Sodalis
Antonius Vallisnerius **IV.v]**

All'Accademia di Reggio. Etc.[3]

Sprezzerete forse,[f] o riveritissimi Accademici,[g] una filosofia, che si rampechi su per le balze più discoscese, e per inospiti monti cammini, e chiedendo risposte, dirò così, per imparare[h] il cupo genio della natura, e scoprir le sue leggi, da que' taciti[i] orrori; mentre non pare, che[j] abbian che fare né punto, né poco luoghi aspri, e deserti dalla[k] natura stessa abbandonati, col colto, e mite ingegno de' filosofi, e segnatamente col vostro, dato solo alle muse più dilicate, ed agli studi più ameni. Scarseggiamo, potrete per avventura rimproverarmi, talmente delle ricchezze del vero, che dobbiamo partirsi da città fioritissime, dove si[l] coltivano con tanto ardore le belle arti, e le scienze, e portarsi, per acquistar la sapienza, dove appena poche orme di fiere ci guidano? Che cosa apportano alti scogli, acque[m] spezzate fra dirupi disaggradevoli, e terribili[n] caverne, se[o] non una spezie di confusione, e di oscurità agli occhi nostri, e timore e orrore alle menti? Così parmi di sentirvi parlare,[p] né so, che ridire, se non che confido, che queste mie alpestri osservazioni portate avanti di voi perderanno molto della sua nativa rozzezza, mentre la verità, benché col tes-

[3] Accademia dei Muti ("Academy of the Mute Ones") of Reggio. Founded in 1673, it was mainly devoted to poetry and literature. It ceased to exist in 1751, after decades of senescence and—it seems—not particularly brilliant activity. On this topic, see Maylender 1929, 65–67. Vallisneri became a member of the Academy in 1711, after he was appointed the Chair of Theoretical Medicine at the University of Padua. See Porcia (di) 1733, LXXVII. See also the critical edition of this work: Porcia (di) 1986, 219–220, 220n.

[e] proi*j*cere
[f] Sprezzerete *probabilmente* forse
[g] o riveritissim*o amico* Accademici
[h] cammini, e *che da quelli chieggia dirò così* risposte *e notizie* per *conoscere* imparare
cammini, e *che da quelli chieggia dirà* risposte
cammini, e chiedendo *colà* risposte
[i] leggi, *fra* que*gli* taciti
[j] pare*ndo,* che
[k] deserti *ed che paiono* dalla
[l] dove *bollono cotanto* si
[m] scogli, *e dirupi immensi, sassi* acque
[n] e *sassi immensi* terribili
[o] caverne, *ne' quali urtano, e si dirompono con istrepito per non dire con isdegno le acque cadenti, che* se
[p] sentirvi *ridire* parlare

timonio de' monti, e delle voraggini scoperta, e quando sarà addimesticata[q] dalla gentile presenza di così nobile adunanza,[r] potrà facilmente cangiar aspetto, ed apparire più splendida,[s] e decorosa, nella maniera appunto, che veggiamo le deformi nuvole, se toccano la vicinanza del sole, divenir belle, e dilettevoli.

A mezzo agosto presi il cammino verso i monti, non solo, per rilassare alquanto l'animo mio oppresso da più severi studi, ma ancora, ad esempio degli oltramontani (che, per vero dire, indefessamente s'affaticano per illustrare la natura, e ci rimbrottano, e ci[t] rinfacciano un ozio vile, e infindo)[4][u] per rintracciare le nostre mediche, e naturali ricchezze, che senza invidia d'alcuno su quelli[v] abbondevolmente si trovano. Mi pare,[w] o Signori, anche una cosa, che non sia[x] priva del suo diletto, discendere[y] ora in profonde valli, ora calcare le somme cime de' monti, e porre il capo infin le nuvole, ora[z] guardarsi all'intorno, e non vedere, che asprezza di terreno, e di cielo, dove attorniato da sole fiere, e da solo orrore vi si fomenta un non so che di grande, e degno di tante difficoltà, e dove allora un filosofo[aa] come maggior di se[ab] stesso, posto sopra i popoli, e sopra le torri **V.r]** delle città, libero da ogni cura, e superiore ad ogni fortuna, senza lo strepito delle sonore scuole, tutto pien di natura tacito, e solo colla natura contrasta.[ac] **V.v]**

La prima cosa, che mi venne fatto vedere[ad] fu la nobile[ae] zolfatara lontana un miglio da Scandiano, posta[af] alle radici del *Monte* detto *del Gesso,*[5] dietro[ag] un piccolo rivo[ah] che

[4]Here, the author alludes to the French scholars. As a proud advocate of Italian science, language, and culture, Vallisneri was frequently involved in fierce debates with the "oltramontani" (literally, "those beyond the mountains"). On this topic, see Duchesneau 2009, CXII, CXXI, CXLV; Generali 1985; 2006; 2007a, 384–386; 2007b, 253–255; 2011b; Luzzini 2007, 74; 2013a, 217–226; Monti 2009, XLVIII, LII, LXVIII, LXXI, LXXVIII; Penso 1973, 194–201; Rappaport 1991 (now reprinted in 2011); 1997, 218–219. See also Vallisneri 1991, 519–520.

[5]Gypsum ($CaSO_4 \cdot 2H_2O$) is a mineral usually found in evaporitic deposits in association with sedimentary rocks. The gypsum layers of Mount Gesso are part of the gypsum-sulphur formation of the northern Apennines, whose thick evaporitic strata resulted from the Messinian salinity crisis which occurred in the late Miocene epoch (between 5.95 and 5.33 million years ago). During this epoch, a temporary closure of the Strait of Gibraltar made the Mediterranean Sea desiccate almost completely. This event originated the evaporitic rocks which are now visible along the northern borders of the Apennines, from Reggio Emilia to the Marche region. On this topic, see Bosellini 2005, 66–67; Luzzini 2011a, 105–107; 2011b; 2013a, 71–72; http://www.vallisneri.it/affioramenti_gessosi.shtml.

[q]scoperta, e *confermata confermata,* quando sarà *e* addimesticata
[r]nobile *congresso* adunanza
[s]più *speldente* splendida
[t]illustrare *le loro patrie,* e ci *rimproverano,* e *murmurano* ci illustrare la natura. *Filosofica storia* e ci
[u]e *infruttuoso* infindo)
[v]su *ne' monti* quelli
[w]pare*va*
[x]non *fosse* sia
[y]diletto, *come ora* descendere
[z]*l*ora
[aa]un <...> filosofo
[ab]*m*e
[ac]natura *solamente* contrasta
[ad]**Margin note (left):** S'aspetti d'essere a Scandiano etc.
[ae]la *g<rande> minera dello zolfo* nobile
[af]Scandiano *verso il monte,* posta
[ag]Gesso, *sopra cui si veggono ancora le fondamenta d'un'antichissima ca fortezza, che* dietro
[ah]piccolo *torrente* rivo

porta le acque nel[ai] vicino Torrente Tresinara.[6] Questo fu, che[aj] scoprì la minera, mentre col radere ora da[ak] un canto, ora dall'altro, strascinava uniti co' sassi, e terre, e arene, pezzi di puro zolfo, che osservati sino ne' tempi antichi diedero occasione di ricercare il luogo, dove[al] nasceva,[am] il quale, benché trovato, fu posto non so per quale scempiaggine[an] in una subita[ao] dimenticanza. Sotto il Serenissimo Principe Luigi d'Este,[7] verso il fine del caduto secolo, seguitando il rivo[ap] a portar tanto zolfo, quanto, accattandolo, bastava a povera[aq] gente di[ar] continuo lavorare zolfanelli da vendere, cadde in pensiero ad alcuni, di cercare[as] di nuovo questa minera, che facilmente fu ritrovata così[at] ferace, che da[au] sé sola soddisfa, per ogni bisogno, a tutte le vicine città. Due[av] sinora sono le cave fatte dall'arte, che comunicano insieme per[aw] lo giuoco necessario dell'aria, capaci[ax] di due uomini, che vi lavorino in piedi, e che co' loro ordigni portino fuora la cavata minera.[8] **VI.r] VI.v] VII.r] VII.v]**

Ill.mo, ac Spectatiss.mo viro etc.[9]

Reptantem[ay] inter invias cautes Philosophiam, et a montium iugis petita responsa despicies merito, amicorum optime. Quid enim horridis locis, et a natura ipsa desertis cum cultissimo, atque mitissimo ingenio tuo? Adeone, inquies, laboramus inopia veri, ut a florentissimis civitatibus, ubi literae fervent, eundum sit pro sapientia comparanda, qua vix pauca ferarum vestigia nos ducant? Quid saxa praerupta, et fractis fontibus ululantia, quid nisi tenebras oculis, et pavorem mentibus afferunt? Haec te mihi videor exprobrantem audire, neque aliquid contra mussito. Montanas[az] tamen observatiunculas, ubi manus

[6] The Tresinaro River flows in the Province of Reggio Emilia. It is a tributary of the Secchia River. It originates in Felina (Castelnovo ne' Monti, RE) and goes from southwest to northeast, eventually reaching Scandiano.

[7] Luigi d'Este *Juniore* (1648–1698), Governor of Reggio and Marquess of Scandiano. See Vallisneri 1991, 116.

[8] The sulphur (S) veins in the gypsum-sulphur formation of the northern Apennines result from the biochemical activity of bacteria. Under anaerobic conditions, sulfate reducing bacteria produce hydrogen sulfide gas (H_2S) from sulfate (SO_4) in gypsum. H_2S is then oxidized to elemental sulphur if exposed to oxygen. See Casati 1996, 518–519; Bosellini 2005, 66–67; Bosellini, Mutti, and Ricci Lucchi 1989, 133–169; Luzzini 2011b; 2011a, 106–107; 2013a, 72.

[9] The letter is addressed to Luigi dalla Fabra (1655–1723), Primary Lecturer of Medicine at the University of Ferrara until 1721. See Vallisneri 1991, 363.

[ai] acque *piovane di quel monte* nel*l*e
[aj] fu *quello,* che
[ak] ora *la superficie,* da
[al] **Margin note (right):** Zolfat<ara>, fumo di zolfo
[am] dove *onde* nasceva
[an] quale *balordagine* scempiaggine
[ao] una *cieca* subita
[ap] il *torrente* rivo
[aq] a *certa* povera
[ar] gente *per accatto venderlo* di
[as] di*l d*cercare
[at] ritrovata *della quale era* così
[au] che *basta per* da
[av] città. *Appena s'entra dentro la cava, che* Due
[aw] insieme *nel fine* per
[ax] dell'aria, *che vanno in* capaci
[ay] etc.
Aloiysio de la Fabra Pub.co Lycei Ferrariensis Professori. Reptantem
[az] mussito. *Alpinas* Montanas

tuas attigerint, horroris aliquid, et inconditae ruditatis posituras confido, nimirum veritas testimonio montium, atque voraginum indicata, contrectatione tanti viri, atque commercio facillime poterit in nitorem, decusque assurgere, quemadmodum videmus informes nubeculas, si tangantur vicinia solis, fieri formosas. Sed manus ad tabulam.

Ingressus sum iter dimidio Augusti montes versus, non solum relaxandi animi gratia, sed ut vix tactas a nostris opes medicas, et naturales, quibus abundant, rimarer. Sic Gesneri,[10] amici Scheuchzeri,[11] aliorumque transalpinorum vestigiis inhaerenti mihi iucundum fuit, modo per ima reptare, modo summa tenere cacumina, et usque ad ipsas nubes attolli. Videbatur **VIII.r]** mihi locorum, caelique asperitas, atque horror feris circumfusus fovere aliquid tantis difficultatibus dignum, et veluti maior me ipso supra populos locatus, et urbium culmina, humilesque curas despiciens, totus natura plenus cum natura solum ipsa per silentium rixabar.

Consideranti mihi occurrit primo **VIII.v]** antrum[ba] sulphuris a Scandiano uno lapide distans, quod in Collis Arcis Gypsi radicibus occidentem versus patet,[bb] brevibus tumulis circumseptum, atque graveolens. Excellens[bc] sulphuris minera est, ac[bd] ad omnes vicinas, longinquasque etiam civitates explendas satis, superque ferax. Fossoribus imperat D. Ippolitus Spallanzanus,[12] qui[be] rerum naturalium curiosus scrutator una cum Doctissimo D. Paolo Valla[13] Philosophiae, et Theologiae Doctore indefessus itineris etiam montani[bf] comes fuit. Vix primum caveae fornicem ingressus[bg] observabam multi[bh] iugas sulphuris glebas flavus-pallidiusculas magnitudinis diversae, variis striis, ac[bi] ramis sulphureis in-

[10] Conrad Gessner (1516–1565), Swiss naturalist and bibliographer.

[11] Johann Jakob Scheuchzer (1672–1733), Swiss physician and naturalist, friend and correspondent of Vallisneri. For comprehensive studies on the collaboration between Vallisneri and Scheuchzer, see Generali 2007a, 106, 118, 121, 124, 136, 294, 352–354, 356, 358, 360, 364–366, 384, 387, 389; Luzzini 2011d, 114–122; 2013a, 59–64, 69, 81–84, 118, 162, 165–170, 173, 175, 193, 208.

[12] Ippolito Spallanzani, from Scandiano, superintendent of the mines of Mount Gesso, friend and collaborator of Vallisneri. He wrote a letter on the changes that occurred in the mines between 1705 and 1714. This was published in Vallisneri 1718, 228–284 (269–278). See Vallisneri 1991, 163, 165–166; Generali 2004, 144.

[13] Paolo Valli, a canon from Reggio, correspondent of Vallisneri. See Vallisneri 1991, 408–409.

[ba] primo
Fervente Augusto.
Carpebam iter, adulto iam anno, montes versus, non solum relaxandi animi gratia, sed ut vix tactas a nostris opes medicas, et naturales antrum
primo
Fervente Augusto.
Carpebam iter, adulto iam anno, montes versus, non solum relaxandi animi gratia, sed ut medicas, et naturales opes vix a nostratibus tactas salutatas, quibus iuga nostra ditantur, rimarer. Sic Gesneri amici Scheuchzeri, aliorumque transalpinorum vestigiis inhaerenti inherenti mihi modo volupe fuit per ima reptare, modo excelsa calcans cacumina caput inter nubes attollere. Si enim ullibi Natura dives est, inibi est, ubi pretium facit horror, et cruda locorum asperitas, caelique inclementia socordes arcet. Tum mihi aliquando maior videbar me ipso, et supra graves curas, pompamque gentemque togatam caput elevans, cogitationibus vacuus, negotiis liber, totus natura plenus cum natura solum tacita rixabar. Occurrebat primo visendum antrum

[bb] versus *laxatur* patet

[bc] graveolens*, fumosum, asperum. Pauci sub hinc annis Principis generositate rursus detectum, licet antiquorum incuria saxis ingentibus obrutum, et sola incolarum traditione vix notum.* Excellens

[bd] est, *Romana pinguius, et coloratius, et* ac
est, *Romana pinguior, et coloration, et* ac

[be] Spallanzanus *amicissimus meus,* qui

[bf] etiam *alpini* montani

[bg] fornicem *supergressus* ingressus

[bh] observabam *cognatas* multi

[bi] variis *stiriis* striis, *vel* ac

tersectas deorsum versus tendentibus, **3]** inversi arboris instar, argillae,[bj] seu margae subcineritiae duriusculae, squammatae, lucidaeque[bk] infixis, quam vocant fossores *cretone.*[bl] Fig. 1.[14]

Tam striae,[bm] quam glebae purum putum sulphur sunt, quarum interdum nonnullas adeo enormis magnitudinis invenere, ut supra quatuor centum libras ponderarent. Ita per bis centum passus cuniculiforme antrum extenditur, in quo aggeratim hinc inde levorsum, ac dextrorsum[bn] modo maiori, modo minori copia luxuriat. Non tamen semper in creta, vel marga illa infixum[bo] est sulphur. Quandoque in saxis tartareis durissimis alte figitur, quod *sulphur caninum* vocant, ob *laborem,* uti dicunt, *caninum,* ut eruatur. Sulphureae stiriae cretae impactae secant transversim eiusdem lamellas assulatim dispositas, quae uligine quadam lucida quasi oleosa ubique levigantur. Frequenter etiam sulphur saturi coloris lucidum, transparens, succinique adinstar reperitur, quod *vivum,* vel *virginale* dicitur,[15] haeretque tartareis fluoribus, margae nunquam. Licet fere totus mons gypseus, interque patulos eiusdem hiatus, aut inter stratorum interstitia minera germinet, vix[bp] tamen aliquando sulphur intra gypsi viscera, vel eiusdem nudo cortici adhaerens invenitur.[bq] Imo ubi lapidis specularis, spati, gypsique fragmina[16] reperiebantur, ibi fere nullum sulphur. Aqua tenui[br] filo deorsum cadebat ab alto depluens[bs] inter cretam, lapidesque quosdam ita levigatos,[bt] ut aliquando a fluctibus agitatos diceres. Colorabat omnia, quae lambebat, progressu temporis ferrugineo quodam velo,[bu] salesque nitrosi[17] cruciatim ut plurimum dispositi hinc inde extuberabant. In ima *fodina* sulphuris truncus,[bv] quem vocant *filone,* residet, a quo tot **4]** veluti rami circumundique dispersi, cum[bw] pommis[bx] sparsim infixis nutrimentum sugunt, ac maturescunt. Latitudo eiusdem ad pedes sex, longitudo ad[by] centum, usque adhuc exporrigitur. Inter saxa quaedam calcaria reconditur, quae aliquando a gypseis, tartareis,[bz] terreisque stratis disterminatur. Differt[ca] a Romana, uti referebant

[14] The related image is missing. Still nowadays, the Italian term "cretone" refers to a thick clay layer which can be found inside or outside caves and mines.
[15] Mineral sulphur (S).
[16] Selenite ($CaSO_4 \cdot 2H_2O$), a crystalline mineral variety of gypsum. In most cases, and depending on the degree of purity, it is transparent and colorless, or variously whitish. A further, detailed description of this mineral can be found in Vallisneri 1733, 435–436. See also the critical edition of this work (Vallisneri 2012, 258–260).
[17] Potassium nitrate (KNO_3).

[bj] instar, *cretae* argillae
[bk] **Margin note (left):** Vide Fig. prima
[bl] fossores *vulgo* cretone
[bm] Tam *stireae* striae
[bn] ac *sinis*dextrorsum
[bo] illa *sedet* infixum
[bp] germinet, *namque* vix
[bq] adhaerens *viderunt* invenitur
[br] Aqua *filatim* tenui
[bs] alto *serpens* depluens
[bt] ita *rotundatos* levigatos
ita *rotundos* levigatos
[bu] quodam *amictu* velo
[bv] sulphur*eae minerae* truncus
[bw] dispersi, *ac veluti* cum
[bx] pomm<*ae*>
[by] longitudo *usque* ad
[bz] gypseis, *saxeis* tartareis
[ca] **In the text:** Difert

fossores, vulgo *canopi,* quoniam ibi vena inter stratum, et stratum *orizontaliter* explanatur, fodiuntque puteos, ut ipsam eruant, scandianensis vero oblique[cb] inter orizontalem, verticalemque occidentem versus sita[cc] sequitur stratorum, seu crustarum montis modo rectos, modo curvatos ordines. Hinc illa per puteos, haec per cuniculos facilius, minoribusque[cd] impensis eruitur.[ce] Nec adeo[cf] vastae purissimi sulphuris glebae romanis in fodinis reperiuntur, sed improbo labore illud excavant impurius, quod[cg] post ignem subviridi,[ch] ac diluta[ci] flavedine perfusum expertum est.[cj] Nostrum vero[ck] ad[cl] *citrinum* flavo[cm] saturum vergit, et *virginale* ad *croceum.* Acidis scilicet particulis vitriolum[18] redolentibus illud abundat, pingui magis istud, et inflammabili substantia. Hinc nostrum minorem olei sulphuris portionem per enchirisim[19][cn] donat. Ex quo sequitur, quod sulphurarii nostri morbis illis tentari non soleant, de quibus celeberrimus Ramazzinus in egregio[co] suo Opere de Morbis Artificum Cap. X scripsit.[20] Omnes perpetuo sani degunt, non ultimum plebis operantis solatium. Cum etenim aura sulphuris acida sit ea, quae gladiolis hostilibus tenellas nostri corporis fibras pungit, et lacerat, ramosis,[cp] ac plicatilibus copiosis involuta retunditur, viresque illae, quas in aliis exerit, edomantur. Hinc pro remediis pectori praecipue faventibus elaborandis Scandiani sulphur aptius aliis existimamus. **IX.r] IX.v]**

Novum[cq] aerem cavea[cr] haec a lateralibus cuniculis artefactis, sed ab alto romana bibit.[cs] Solstitio[ct] [cu] tamen aestivo ab operibus otiari necesse est, eo quod adeo densi vaporum glomi erumpant, haereatque ita turbidus inter utrumque finem aeris motus, ut et lumina extinguantur, et homines. Nullae hic aestuant thermae, nulloque incendio, ut vulcaniis quibusdam in agris, torrentur arva, aut quia contrariae, vel ignivomae salium glebae, ex quibus lucta incandescit, desunt, aut quia per obstructa montis spiracula libera aeris

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[18]The term "vitriolum" ("vitriol") refers to various kinds of metallic sulfates, including sulphuric acid (H_2SO_4).

[19]This is a latinization of the Ancient Greek word ἐγχείρησις (literally, "undertaking," "operation," or "task").

[20]Ramazzini 1700, Cap. X, *De morbis quibus temari solent sulphurarii*. Page references are to the second edition, Ramazzini 1703, 57–60. For a study of the bibliographical sources used by Ramazzini in this treatise, see Di Pietro 1981.

[cb]vero *fere transversaliter* oblique
[cc]versus *inclinata* sita
[cd]minori*s*que
[ce]impensis *extrahitur* eruitur
[cf]Nec *tam immensae* adeo
[cg]impurius *immixtumque saxo quodam tophaceo* quod
[ch]**In the text:** subviridique
[ci]dilut*aque*
[cj]expertum *macrius pallidiusculum, macriusque appellatusque caballinum* est
[ck]**From this point on, text at p. 5 continues on an additional, unnumbered paper (IX). This is written only on the recto.**
[cl]vero *commune* ad
[cm]citrinum *magis* flavo
[cn]per *analysim* enchirisim
[co]in *sudato* egregio
[cp]*copi*osis
[cq]**From this point on, text continues on p. 5.**
[cr]aerem *ista* cavea
[cs]*com*bibit
[ct]bibit. *In solstitio aestivo ab operibus otiari necesse est, eo quod adeo densi vaporum glomi erumpant,* Solstitio
[cu]**From this point on, text continues on the recto of a second additional paper (X.r).**

percolatio, ex qua necessarium flammae pabulum, desideratur. **X.r] X.v]**[cv] Millenas[cw] sulphuris libras quolibet anno elaborant, multosque opifices fodina recens ditat.

Nec sicco pede transire fas est, saluti labanti beneficia,[cx] quae passim porrigit. Primus ego foedissima etiam, et gallica scabie[21] laborantes ad sulphureum laboratorium, tamque ad anchoram sacram[22] misi, ut dum ignescit, ac percolatur sulphur fumo[cy] pannos, lintea, manus, subuculas, totum corpus imbuerent, ac saturarent, ex quo post paucos dies felicissime sanescebant.[cz] **5]** Primis sane diebus pustulae exasperantur, tumentque, despumato scilicet a scoriis, crudisque[da] recrementis sanguine, sed paulatim aridis cadentibus crustis, exuto veluti squammoso senio, reflorescit cutis. Interfectis enim vermiculis, qui rodendo, ac perforando scabiei primaria causa existunt, refermentatoque cruore, ac per hiantes volvulos[db] data illa occasione quicquid impuritatis in suo sinu fovebat, elutriato, voluptuosum illum Plinii dolorem,[23] ac inamabilem scalpuriginem exuunt. Id[dc] quod etiam obtinent, si, ea aqua, quae sulphuri fundendo,[dd] et in subiectos modulos <… > descensuro praeit,[de] pluries abluantur. Antequam enim sulphurea vena, vel frustillatim contrita minera in candentibus ollis liquescat, ac igne concepto tumens in contigua vasa fistulosum delabatur rostrum, ut exeat, pars aquea salibus multigenis, spirituque sulphureo imbuta prius attollitur, et e rudi veluti alembico per inferam cannulam stillans[df] in amaro-acidum, potuque immitem liquorem abit. Hunc[dg] sine medicorum consilio paucis ab hinc diebus haemopthyxicus excipulum bibebat rusticus, stulte sibi sapiens. Credebat enim, quod si solo sulphuris fumo morbosae pectoris partes revalescunt, eo[dh] magis, si se medicatis illis, ac minera imbutis[di] undis ingurgitaret. Sed res contraria[dj] voto successit.[dk]

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[21] Syphilis, a sexually transmitted infection caused by the bacterium *Treponema pallidum.* Also known as "morbus gallicus," "mal francese," or—in English—"French disease" or "French scabies," since one of the first epidemics occurred when the French troops invaded Italy in the last decade of the XV century, at the very beginning of the Italian Wars. See Gelmetti 2015.

[22] In early modern medicine, the term "anchora sacra" (literally, "sacred anchor") referred to what was considered to be the most effective medication for a particular disease. On this topic, see Vallisneri 2006, 61, note 172.

[23] The reference is to a passage from Pliny the Younger's Letters (Plinius (Minor) 2018, VIII, 16), where the Roman author reflects on the strange contradictory relationship between grief and pleasure: "Est enim quaedam etiam dolendi voluptas, praesertim si in amici sinu defleas, apud quem lacrimis tuis vel laus sit parata vel venia" (http://data.perseus.org/citations/urn:cts:latinLit:phi1318.phi001.perseus-lat1:8.16.5).

[cv] **On the verso (X.v) is a cancelled writing:** *Sulphur elevat scoriam ab omnibus de<tra> metallis, excepto auro, praecipue virginale, hinc si placet etc.*
Nigrum tingit nummos argenteos etiam in <...>a reconditos etc.

[cw] **From this point on, text continues on p. 5.**

[cx] benefi*t*ia

[cy] fum*m*o

[cz] san*i evade*bant

[da] scoriis, *incastigatisque* crudisque

[db] hiantes *spiracula* volvulos

[dc] **From this point on, text at p. 6 continues on p. XI.r, first of two additional, unnumbered papers (XI–XII).**

[dd] sulphuri *fusum* fundendo

[de] **In the text:** preit

[df] still*it*ans

[dg] abit. *Nec solum scabiem, sed ulcera antiquo etiam scatentia tabo delet.* Hunc

[dh] revalescunt, *a fortiori* eo

[di] minera *impraegnatis* imbutis

[dj] res *ex* contraria

[dk] voto *non* successit

Scissis[dl] nam ulterius[dm] a salibus illis acutis[dn] antrosi, facilisque visceris canalibus, fere totam evomuit purpuream[do] animam.[24]

Et quo coniicere licet, quanto errore plectantur illi, uti supralaudatus notabat Ramazzinus, qui sulphuris spiritum in morbis pectoris praescribunt, **XI.r]** autumantes, quod sulphuris acidum idem sit, ac totum concretum, ac pars easdem vires habeat, quas totum, quod maximae supinitatis indicium est. Balsamum nam pulmonum vulgo audit sulphur, quando acido suo, quo abundat, spoliatum est, uti Iunchen in Chymia sua experiment., C. de sulph.,[25] ac Etmullerus in sua Mineralogia testatur, ubi ait, *sulphur merito balsamum pulmonum vocari, quando illius pinguedo a parte acida corrosiva fuerit separata.*[26] Hinc mirari subit, quomodo Schröderus in sua Mineralogia *pulmoniacis, tussientibus,* ac similibus flores sulphuris *vitriolatos* commendet,[27] quoniam tantum abest, ut vitriolum addere, quin[dp] potius insitum attrahere[dq dr] debeamus, si balsamum pulmonum, et phthiseos praeservationem volumus. Nec solum scabiem[ds] aqua praedicta sed sordida etiam antiquo tabo ulcera,[dt] impetigines, ac herpetes delet. Tumores etiam duros immixta cum fodinae sulphurata[du] marga discutit, lichenes sanat, pruritus omnes mitescere cogit. Multi etiam immani tussi catarrhoque[dv dw] viscido anhelosi[dx] ex emplastro praedictae margae aqua calamo[dy] dissolutae pectori applicito citissime sani evaserunt. Eadem aqua, cui minera sulphurea excocta sit, deinde filtrata, erisipellata ruboresque faciei <maxime acta>, si tepidiuscula superimponatur; sulphur[dz] enim refertur[ea] inter cosmetica, vel quae cuti[eb] nitorem conciliant, sive infundatur in aquam frigidam, sive decoquatur. **XII.r]**

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[24] This is a passage from Virgil's *Aeneid* (Vergilius 2018a, IX, 349, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:9.314-9.366).

[25] Ramazzini 1703, 59: "Nec quis obtrudat, quod sulphur pulmonum balsamum vulgo audiat; nam id verum est quando sulphur acido suo, quo abundat, spoliatum fuerit." Like Ramazzini, Vallisneri refers to Jüngken 1681, Sectio IV, *De mineralibus,* Cap. VI, *Anatomia sulphuris*, 258: "In vitiis pulmonum, phthisi, peste, febribus malignis, &c. insigne praeservativum & curativum."

[26] The same quote is in Ramazzini 1703, 59. The (altered) passage is taken from Ettmüller 1688, Tomus II, Pars I, *Schröderi dilucidati Mineralogia, Sive Regnum Minerale,* Cap. 9, *De metallis*, 283: "Caeterum observatur, quod tunc temporis verum balsamum pulmonum mereatur vocari, quando pinguedo balsamica separata est a parte acida corrosiva."

[27] Ettmüller 1688, 284–285. The Latin term "flores" ("flowers"), in early modern medicine, refers to a preparation obtained by sublimation or crystallization of a substance which assumes "a flocculent or pulverulent form" (G. M. Gould 1904, see *Flores*). "Flores sulphuris" were particularly renowned and used as a rem-

[dl] successit. *Reserata enim* Scissis
[dm] nam <...> ulterius
[dn] illis *speculiformibus non <ad…>, pulmonum inoculato vulnere, scissisque ulterius* acutis
illis *speculiformibus non <ad…>, pulmonum inoculato vulnere, scissisque magis abitis* acutis
[do] evomuit*, ut cum Virgilio loquar,* purpuream
[dp] addere *debeamus,* quin
[dq] **In the text:** attrhaere
[dr] insitum *deradere* attrahere
[ds] **From this point on, text continues on p. XII.r.**
[dt] antiquo *etiam* tabo *scatentia tabo delet* ulcera
[du] fodinae *terra* sulphurata
[dv] **In the text:** catharroque
[dw] tussi *aspera* catarrhoque
[dx] viscido*, tusseque aspera graves* anhelosi
[dy] aqua *communi calentes* calamo
[dz] superimponatur; *ruboresque faciei tollit* sulphur
[ea] enim*, observante Ettmulero,* refertur
[eb] quae *faciei* cuti

Ludentem etiam[ec] videbamus amicum, qui sulphur virginale nummo[ed] cuiuslibet metalli superimponendo, deinde illud flammulae candelae accendendo, crustam bellule postea, remanente adhuc eadem effigie, ac characteribus[ee] in nummo[ef] defervefacto tollebat integram. Quod impostoribus fallendi, philosophis docendi campum praebet. **XI.v]**

Nec[eg] sola cutis[eh] externa[ei] opes accensi sub[ej] dio sulphuris sentit. Asthmaticos, phytisicosque saepe[ek] sanatos vidimus, prorsus, ac indecepto nostro eventu,[el] si diu balsamicos, ac detergentes illos halitus absorbeant, ac tolerent.[em] Tantae[en] molis est diversum mixtorum ingenium cognoscere, et dato tempore naturae, non morbo favere. **XII.v]**[eo] Nec[ep] antiqui[eq] nostri quando alias sulphuris fodina eruebatur, aeris medicati salubritatem ignorabant. Fundamenta extant adhuc xenodochii supra tumulum minerae proximum erecti pestilentiali quodam[er] tempore, provido sane consilio. Hippocratis scilicet exemplo,[28] et[es] legibus edocti, qui grassantem pestem igne, sulphuratisque remediis arcebat, solis ignis, sulphurisque halitibus una cum aere saluberrimo absorptis, morbi saevitiem[et] edomabant. **6]** Plures resinae terrestris seu sulphuris flores[29][eu] in extima vasorum exter-

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edy against various kinds of illnesses (especially against skin, bronchial, and lung diseases). On this topic, see Crosland 2006, 71; Vallisneri 2011, 72, notes 214 and 215.

[28] Vallisneri recalls the famous episode of the Plague of Athens (429–430 BC), when Hippocrates recommended the use of fumigation by burning aromatic substances (including sulphur, regarded as a powerful antidote against this disease) to treat and contain the epidemic. See Morens and Littman 1992; Blancou 1995.

[29] Here, the term "flores" seems to indicate small, naturally formed crystals, and not the previously described

[ec] **From this point on, text continues on p. XI.v.**

[ed] **In the text:** numo

[ee] **In the text:** charactheribus

[ef] **In the text:** numo

[eg] praebet.
Intendimi chi può, che m'intend'io.
Nec

[eh] **From this point on, text continues on p. 6.**

[ei] cutis *beneficia* externa
cutis *emolumentum* externa

[ej] opes *fumantis praecipue* sub
opes accensi *praecipue* sub

[ek] sentit. *Tabidos,* Asthmaticos, *et pulmone ulceroso squallidos* saepe
sentit. *Tabidos,* Asthmaticos, *tussiculosos,* phytisicosque saepe

[el] nostro *s<aup…>* eventu

[em] tol*l*erent

[en] **From this point on, text continues on p. XII.v.**

[eo] **This paper is the recycled scrap of a letter. On the right edge of the verso is written:**

"Um.mo
Andando Pietro"

[ep] favere. *Qui vero, sulphuris operibus incumbunt, omnes sani degunt, non ultimum misellae plebis solatium. Hinc non ut metallurgi damnati ad poenam, sed ad felicitatem existunt.* Nec
favere. *Deverso <haec>, ac <…> <…d…>i accentu, ac austico, quoniam diverso re<s> dedi<t> partum, apparatu m<etall…>* Nec
favere. *Tantae molis est, diversum mixtorum ingenium partis cognoscere, et dato tempore naturae non morbo favere.* Nec

[eq] **From this point on, text continues on p. 6.**

[er] pestilentiali *aut contagioso* quodam

[es] exemplo, *atque doctrina,* et

[et] morbi *tyrannidem* saevitiem
morbi *truculentiam* saevitiem

[eu] sulphuris *seu* flores **(in the manuscript, the order of the words "sulphuris" and "resinae terrestris**

norum superficie adhaerescunt, qui ex eodem cadente in substratum alveolum elevantur,[ev] fuliginesque ipsae sub tignis, nigroque tecto pendentes, praeter alia, plurimis sulphureis ramentis[ew] scatent. Igni namque admotae subitam flammam concipiunt caeruleam, sulphurisque naturam sapiunt, ex[ex] quibus quaenam nova, et efficacissima remedia parari possent, tu ipse, qui ad praxim tam[ey] sedulo incumbis, concipies.

Moleculis[ez] adeo activis, et penetrantibus pollet, ut, dum in primis internis ollis liquescit, per earundem porulos pars volatilior erumpens externum[fa] veluti velamen varios[fb] trahens colores a[fc] lambentibus flammis perpetuo accensum efformat.

Ut autem omnes huius minerae partes abiecto[fd] usque adhuc latentis silentio, vel natura, vel arte laboratas tibi breviter perstringam, liceat harum elenchum enumerare, quas nuperrime Ill.mi D. Comitis Aloysii Marsilii[30] Musaeo, cui doctissimus, meique amicissimus D. Victorius Stancarius[31][fe] praeest, communicavi. Ibi etenim quicquid exotici, pretiosique natura parens per totum orbem negligentia quadam, vel provido fatorum[ff] fine dispescuit, miro per compendia collectum ordine, quasi per legum, ac maiestatis nativae gradus, seposito immiscuae[fg] ruditatis horrore, connectitur; immensosque itinerum labores deludens[fh] sive maris, sive terrae, sive elementorum omnium partem optimam quaeras, in Marsiliano contracta ad miraculum obstupesces cimeliarchio.

Haec parvula igitur et ego lubens, sulphureae nempe nostratis minerae seriem, in obsequii tesseram maximo viro dicabam.

Primum: *Sulphuris puri* purissimam glebam media marga extractam, ponderis lib. VII.

2° *Gypsi fragmentum* ponderis lib. VI, cui tanquam ramum aliquod, sulphur nativum adhaeret.

3° *Margam scissilem,* seu cretam uliginosam lamellatam compactam ex sulphuris cavea. Lib. 3 unc. III.[32]

4° *Minores alias sulphureas glebas,* tanquam resinosa terrae tubera, margae adhuc infixas. Lib. V unc. VI.

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artificial preparations.

[30] Luigi Ferdinando Marsili (1658–1730), naturalist and former Holy Roman Empire officer. Correspondent and collaborator of Vallisneri, who considered him an authority on the Earth sciences (and greatly admired his museum of *natural curiosities*). On this topic, see Generali 2007a, 351–360; Luzzini 2013a, 88–90; 2014a, 207–208; Sarti 2003; Stoye 1994; Vaccari 2003; 2008.

[31] Vittorio Francesco Stancari, from Bologna (1678–1709), astronomer, mathematician, physicist, and naturalist. In 1708, he was appointed the first Chair of Mathematical Analysis ever established in Italy, at the University of Bologna. See Vallisneri 1991, 301.

[32] Arguably, a piece of marl. The noun "cretam" ("clay") and the adjective "uliginosam" ("wet," or "damp") suggest than the specimen is more argillaceous than calcareous.

seu" has been inverted by marking them with numbers).

[ev] alveolum*, sive modulum liquato sulphure* elevantur

[ew] sulphureis *moleculis* ramentis

[ex] sapiunt *observante id et cum amatissimo, et doctissimo viro D. Victorio Stancario,* ex

[ey] praxim *adeo* tam

[ez] concipies.
Ramentis Moleculis

[fa] erumpens *in* externum

[fb] varios*que*

[fc] colores *velamen* a

[fd] partes *inglorio* abiecto

[fe] Stancar*d*us

[ff] provido *quodam* fatorum

[fg] sep*p*osito *promiscuae* immiscuae

[fh] labores*, et incogitata vitae pericula* deludens

5° *Strias sulphuris vivi,*[33] aut virginis fere diaphani electriformis gypso inhaerentes, **7]** eodemque in segmento alias strias sulphuris communis pallidiusculi margae impactas. Lib. IIII.

6° *Terram pinguem* arcano sulphure imbutam,[fi] quae licet glebis, striisve sulphureis careat, igne tamen mollitur, ac in resinosum chalcantosa[34] parva[fj] licet, turgens aciditate liquamen[fk] tenuatur. Lib. VI.

7° *Cretam subalbidam* cum tartareis fluoribus, ac sulphure virgine. Lib. IIII unc. X.

8° *Elegans purissimi sulphuris glomeramen* saxi pallentis figuram referens. Lib. II unc. X.

9° *Tria virginei sulphuris fragmina*[35] colore, ac diaphaneitate succino simillima[fl] propriae matrici adhaerentia. Unc. VIII.

10° Aliam sulphuris virginis massulam[36] terrae subalbae lapidefactae, veluti dicunt tartarissatae implantatam. Unc. X.

11° Terram subalbam pinguem, et veluti butyrosam,[37] quam esse prima sulphuris rudimenta censent fossores. Unc. IX.

12° Sulphur evanidum friabile, pulvereum, quod putrefactum diceres, margae inustum, vel forsan nimis antiquum, aut in suis primordiis non bene coctum, aut in aliqua parte deficiens, quicquid nonnulli putent[fm] auctores. Lib. <I>.

13° Tartareos fluores eleganter sulphureis flosculis respersos. Lib. I.

14° Caput mortuum,[38] vel terram multicavam, quasi tophaceam, ex qua sulphur extractum fuit, in ollarum fundo residentem, quae dum exhauritur, si pinguis adhuc accensa est, laborantium vultum cadaverico inficit colore, per multumque temporis adhuc elegantissimis imbuta coloribus splendet. Lib. V.

15° Saxa viva diversae magnitudinis rotunda, quondam fluctibus fortasse agitata, quae adinvicem quasi manu superimposita variis in fodinae locis reperiuntur. Num. III lib. II.

16° Fuliginem fornacum sulphuris. Lib. V.

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[33] Mineral sulphur (S).

[34] The term "chalchantum" is a synonym for vitriol. See Fabri 1671, 192–193.

[35] Mineral sulphur (S).

[36] Mineral sulphur (S).

[37] Arguably, a sort of calcareous clay, as is suggested by the adjective "subalbam" ("whitish").

[38] "Caput mortuum" (in English, "dead head"), also known as "nigredo": alchemical terms referring to the residual substance produced from such operations as sublimation, distillation, or filtration (see Crosland 2006, 81). Here, Vallisneri uses this term in a broader sense, alluding to the residual earth from which sulphur has been extracted.

[fi] im*praegnatam*

[fj] chalcantosa *aliqua* parva

[fk] aciditate *gravidum* liquamen

[fl] **In the text:** similima

[fm] nonnulli *blaterent* putent

17° Flores sulphuris[39] ab extimis vasorum externorum parietibus derasos. Unc. VIII.
18° Sulphuris massam ignis torturam experti, ac percolati lib. IIII. **8]**

Parte[fn] montis sinistra,[fo] quae ad orientem, meridiemque vergit, pyrites[40] incertae[fp] figurae extant quamplurimi,[fq] sicuti lapilli aereo colore perfusi, ac viscosae, sterilesque margae multicolores, non incerta prorsus subditae minerae[fr] [fs] argumenta. Duplex[ft] pyritarum genus, alterum quod in humido frustillatim dissolvitur, nitroque aereo[41] facile florescit, alterum aeternum est, ac immutabile.[42] Sulcatur huius montis dorsum hinc inde a rivulis, qui omnes in unum rivum, vulgo *Riazzone*[43] coeunt, cuius ripae innumera maris cimelia reservant, antalos[44] nempe striatos, leves, asperos, tubulos vermiformes,[45]

[39] See note 29.

[40] Pyrite, an iron sulfide mineral (FeS_2) with a cubic crystallographic structure. However, the words "incertae figurae" ("with a strange form") suggest that the author refers also to marcasite, another iron sulfide (known as "white iron pyrite"). This mineral has an orthorhombic crystal structure, is lighter and more friable than pyrite, and is frequently associated with marl, gypsum, and clay, as typically happens in the gypsum-sulphur formation of the northern Apennines. See Luzzini 2013a, 94; 2014a, 210–211; Vallisneri 2012, 209–211, 277.

[41] According to the Hermetic alchemist, philosopher, and physician Paracelsus (Philippus Aureolus Theophrastus Bombastus von Hohenheim, 1493–1541), "life was sustained […] through the presence of a life spirit essential for both the organic and inorganic worlds. By the final decade of the sixteenth century this spirit was identified as an aerial niter" (Debus 2001, 12); and, by the early years of the seventeenth century, "the aerial niter had become associated with a life force requisite for man" that would be examined and debated by a great number of physicians and natural philosophers throughout the early modern period (Debus 1977, 108–109). In the XVII century, the chemist and physician John Mayow (1641–1679) further developed the research on the role played by aerial niter in combustion and respiration, paving the way for the identification of this substance with oxygen (see also Debus 1964). By acknowledging the existence of an aerial niter and the influence of this substance on mineral genesis and growth, Vallisneri is presumably referring to the Paracelsian tradition.

[42] Here, Vallisneri makes a distinction between marcasite ("frustillatim dissolvitur") and the far more stable pyrite ("aeternum est, ac immutabile").

[43] Rio Riazzone, a small tributary of the Tresinaro River. The two streams merge a few kilometers north from the city of Scandiano. Along its course, the Riazzone crosses clays, clay-schists, and arenaceous and calcareous shales. These rocks date back to the Late Cretaceous period (100–65 Ma) and contain a large quantity of marine fossils. Proceeding further, the Riazzone meets fossiliferous, blue-grey shale beds which date back to the Late Pliocene epoch (3.6–2.5 Ma). Cartographic source: *Carta geologica d'Italia, Foglio 86 (Modena)* 1963. See Luzzini 2013a, 95, note 95.

[44] Tusk shells, or scaphopods (Phylum Mollusca, Class Scaphopoda), once known as "antales" and "dentales." On this topic, see *Encyclopaedia Perthensis; or Universal Dictionary of the Arts, Sciences, Literature, etc., intended to supersede the use of other books of reference* 1816, 574. See also Vallisneri 2012, 130–131.

[45] From Buonanni 1681, 143: "Cannelletti di varie specie, detti tubuli vermiculares, poiché in tutti vivono alcuni vermi. Sogliono nascere sopra i sassi, o sopra gusci di altri testacei, e d'altri vegetabili del mare. Tutti si piegano, come i serpenti, ma senza regola di linea spirale, onde non si possono dire turbinati." See also Vallisneri 2012, 76–77. According to the images in Buonanni's treatise (Tab. 20), the "tubuli vermiformes" could be identified as both tube worms of the Family Serpulidae (Phylum Anellida, Class Polychaeta: sessile anellids which secrete calcareous tubes) and worm snails of the Family Vermetidae (Phylum Mollusca, Class Gastropoda: sessile molluscs with irregular, tubular shells).

[fn] **From this point on, text continues at the bottom of p. 6.**
[fo] montis *dextera* sinistra
[fp] pyrites*, marchesitaeve* incertae
[fq] quamplurim*ae*
[fr] **Margin note (right):** Volve unam paginam
[fs] **From this point on, text continues on p. 9.**
[ft] Dup*p*lex

pectines,[46] conchas, buccinula, turbines,[47] glossopetras, vel canis carcariae dentes (quos nonnulli male sagittas, alii linguas serpentis lapidefactas vocant),[48] maris umbilicos,[49] cochleas diversiformes, echinosque,[50] licet raro, marinos. Haec in arenaceo reperiuntur solo cinerei coloris, atque salsuginoso, palumbis, ovibus, capris, iumentisque omnibus, in cibum licet pessimum, gratissimo. Tota haec regio Gabellum[fu] usque (Secchia),[51] ubi huiuscemodi terra squallet, aequoreis ditescit exuviis. Nunquam lapidefactae salinis immixtae tabulatis[fv] reperiuntur, imo dum a cadentibus pluviis deraso terrae, sabulique cortice apparent, si diu sole,[fw] frigoribusque torrescant, friabiles primo evadunt, et tandem calcis adinstar in tenuissimum pollinem fatiscunt.[fx] Hinc non inconsulto a pharmacopaeo quodam, me[fy] annuente, pro edulcurantibus, ac sudoriferis febribus[fz] in malignis, aliisque morbis in quibus acidum praevalet, rustico praescribuntur popello, non improspero sane successu. Sabulum etiam aureis lamellis,[ga] bracteolisque talciformibus prope eruitur, quod cribratum, et lotum tum ad pulvereas clepsydras, tum ad vitra[gb] expolienda conducit. Carbo petrae, et ligna fossilia tum lapidefacta, tum adhuc[gc] intacta hinc inde excavantur,[52] vel in soli ruentis hiatibus deteguntur, ita ut ubique patentia **9]**

[46] Genus *Pecten* (Phylum Mollusca, Class Bivalvia). See also Vallisneri 2012, 251.

[47] Gastropod shells (Phylum Mollusca, Class Gastropoda). See Vallisneri 2012, 63, 373.

[48] Shark teeth. The popular folklore, along with not a few voices from the early modern medical tradition, endowed these objects with therapeutic and thaumaturgic properties. A legend claimed them as the petrified tongues of snakes (hence the term "glossopetrae") that had been cursed by a particularly vengeful Saint Paul when one of these animals dared to bite the Apostle in Malta. The recognition of the organic origin of these findings involved such authors as Nicolas Steno (1638–1686), Agostino Scilla (1639–1700), Fabio Colonna (1567–1650), and many more, and played a major role in the early modern debate on the age of the Earth. See Colonna 1616a, 31–39; Scilla 1670; Stensen 1667; 1669. For comprehensive studies on this topic, see Carpita 2006; Cutler 2009; Hsu 2009; Luzzini 2013a, 1–4, 10–12, 17–18, 24–32; Morello 1979a; 1979b; Oldroyd 1996, 66–67; Rudwick 1972, 50–53; Ziggelaar 2009. See also Vallisneri 2012, 168–169.

[49] According to the terminology of early modern natural philosophy, the term "umbilicus maris" ("sea navel," also known as "Venus navel" or "sea eye"), refers to the calcareous operculum of various species of gastropods. See Gimma 1730, Book V, 248; Rolfe 2013, 149. See also Vallisneri 2012, 394.

[50] Sea urchin skeletons (Phylum Echinodermata, Class Echinoidea). See also Vallisneri 2012, 140–141, 306–307.

[51] Secchia River, a main tributary of the Po River. For a terminological history of this name, see Tiraboschi 1825, 333–335.

[52] Fossil coal. It is the result of the build-up and sedimentation of organic matter (usually from plants) in an anoxic environment. The increasing thickness of organic layers leads to a gradual increase in temperature and pressure. Hence the ejection of volatile matter and water, along with the increase in carbon percentage. This is a gradual process, which starts from the lower sedimentary strata and passes through different phases. Depending on the increasing carbon percentage, the resulting matter is called peat, lignite, sub-bituminous coal, bituminous coal, and anthracite. Typically, coal seams form in lagoons, either coastal or in a river delta. The Po Plain was originally a lagoon that evolved into a wetland; however, since this zone is still geologically young, exploitable coal reserves have not formed yet. The "carbo petrae" and the "ligna fossilia" found by Vallisneri, therefore, were probably a sort of lignite or low-carbon coal. See Luzzini 2011b, 345–349; 2013a, 77–78.

[fu] G*l*abellum
[fv] immixtae *stratis* tabulatis
[fw] **In the text:** soli
[fx] pollinem *rediguntur* fatiscunt
[fy] quodam *non inerudito*, me
[fz] sudoriferis*, tanquam alchalica, et lepartica* febribus
[ga] aure*ulis* lamelli*bus*
[gb] v*e*tra
[gc] tum *illibata* adhuc

pelagi[gd] trophaea quondam haec montana littora diverberantis appareant. Non diversi enim ingenii, et[ge] structurae sunt, ac nuper a me observati tumuli, et colles, qui non procul ab Adriatico mare, quo[gf] Athesis[53] suum pensum vehit, existunt.

Plurimi in praedictis montium, colliumque fimbriis fontes a Ternario turrente (Tresinaro) usque ad Gabellum,[gg] amari, salsi, sulphurei, dulces. Facta humoris evaporatione sedimentum dedere primi gypseum, secundi salino-nitrosum,[gh] sulphureo-terreum[gi] tertii, candidum veluti terrae virginis ultimi.[54] In sanguinis profluviis, diarroeis, vomitu, et similibus morbis non sine laude pauperculis aliquando primas aquas praescripsimus, asthmaticis, cachecticis, hyppocondriacis, ac in verminosa colluvie secundas, et tertias, ac generaliter, ubi aestuat[gj] sanguis, ultimas. Sic ubique natura parens velificat, et egregia,[gk] nulliusque impensae praesidia languentibus aegris parat. Uvae, quae in gypseis collibus dulcissimae[gl] maturescunt, gypsum occulto redolent, quarum vina sensim sine sensu ad nephriticam affectionem deducunt. Sic epotae per longum tempus nonnullae horum collium aquae stomaci dolores, anxietates, obstructiones, virginibus pallores, et alias labes, ac scelera partibus invehunt.[gm]

Parte dextera[gn] montis Gypsi occidentem versus non procul a planitie supra inferiorem clivum expansa, quae vocatur *Armorum Pratum* (eo quod hispani milites gypsi arcem quondam aggressuri tentoria **10]** ibi explicuerunt)[55] ex marga minerali subrubra turbinati colles assurgunt,[go] in quibus *marchasitae* multae, et maximae molis reperiuntur, nigrique, ac vario colore intertexti durissimi lapilli. Silices etiam subcineritios inveni,[56] ignobile quoddam invisum adhuc pyritarum genus, scabro,[gp] et rimoso cortice indutum, quod chalybe allisum copiosae flammae semina emittit.[57][gq] Sed quod perrarum est, eodem in loco supra lapides ferrugineos mediocris consistentiae striatos, et particulari quodam succo terrestri confectos observabam veluti *ungulas lapidefactas* arcte adhaerentes modo solitarias, binas modo, modo quaternas, insolenti sane oculorum spectaculo. Quid sint, vel

[53] Adige River, in northeastern Italy. It flows into the Adriatic Sea. For a historical study on the regulation of this river during the XVIII century, see Luzzini 2016c.

[54] The terminology in this passage is clearly rooted in the alchemical tradition, as it recalls different stages of the sublimation process. The "terra virgo" ("virgin earth"), in particular, is what remains of the earth after it has been purified by sublimation. On this topic, see Newman 1982.

[55] Vallisneri is probably referring to an episode in the Italian Wars (1494–1559). In the region surrounding Mount Gesso, the only place with the word "prato" (from the Latin "pratum") in its name is Prato Mandeto, the origin of the latter term being unknown. Significantly, this place is located west of Mount Gesso. Cartographic sources: *Carta topografica d'Italia, Serie 25V, 086 – IV – NE (Scandiano)* n.d.; *Carta topografica d'Italia, Serie 25V, 086 – IV – SE (Viano)* n.d. See also http://www.pcn.minambiente.it/viewer/.

[56] Arguably, flint rocks with dark ("subcineritios") impurities.

[57] Pyrite, marcasite, and flints were widely used as fire starters.

[gd] patentia *diluviana, vel antediluviana* pelagi
[ge] *ac*
[gf] mare, *ubi* quo
[gg] G*l*abellum
[gh] <...>lino-nitrosum
[gi] sulphureo-*viscidum*
[gj] ubi *praeternaturaliter* aestuat
[gk] et *incogitata* egregia
[gl] collibus *ad fucatas palatus delicias* dulcissimae
[gm] in*h*vehunt
[gn] Parte *laeva* dextera
[go] ex marga*e* minerali*s* subrubra*e* turbinati coll*iculi* assurgunt
[gp] genus, *ac* scabro
[gq] semina *excudunt, inveni* emittit

quid fuerint dubius adhuc haereo. Figuram[gr] aspice secundam.[58] Semidigitum[59][gs] longitudine non excedunt in obtusum desinentes mucronem, qui prius fasciola veluti subalbida circundatur. Lineae omnes, veluti longitudinales fibrae a praedicta fascia superficialiter tantum involutae, in fastigium desinunt retusum. Basim versus cavitatulam habent ovalem alte impressam. Si lente aspiciantur admodum rugosae, velutique a vermiculis erosae intus, et in cute apparent. Mucro entali[gt] canini materiam, ac imaginem refert quodam lucido delinitam plasmate. Per medium scissae, quae fibrae videbantur, lamellae sunt adinvicem inosculatae tartaro lucido, terrestrique ferrumine induratae, atque intersectae, qua[gu] materia sine ordine disposita intus replentur. Saxum, cui adglutinantur friabile admodum est, variisque concretis tartareis lucidis fluoribus figurae diversae hinc inde refertum. Terra rubro-cinerea,[gv] bracteolis superimpositis, tartaro, salibusque conflatum videtur. Consului nuper magnum naturae magistrum Scheuchzerum dignissimum Academiae[gw] Anglicanae socium,[60] **11]** binasque unguiculas una cum aliis omnibus rarioribus misi, ut tanto iudice, quid essent, scirem.[gx] Dubie tamen et ipse phylosophico candore respondit, fassusque est, nunquam similes hactenus vidisse, nec in libris offendisse. Mihi tamen cominus suspicatur posse referri ad *ungulas caprarum,* et *suum fossiles* Column. Aquat. et Terres. p. 48,[61] vel ad *ichtyodontas cuspidatas plectronarias,*[gy] *seu plectronitas,* quorum aliquot in suo *Lithoph. Britt.* delineat Tab. 16, atque describit p. 63, 66.[62]

Cornicula pariter non longe in rivulo quandoque deteguntur, et[gz] eadem sunt, eodem adstipulante clarissimo viro, quae ad fungitas refert Rob. Plot Nat. Hist. of Oxfor. Cap. 5, p. 189, ac depingit Tab. XII, n. 3, 4,[63] quorum similia se ex Agro Bononiensi[ha] obtinuisse

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[58] The related image is missing.

[59] A "digitus" ("finger") was an ancient Roman unit of length, approximately equivalent to 1.85 cm (0.728 in). Therefore, a "semidigitus" ("half a finger") is about 0.925 cm (0.364 in).

[60] Johann Jakob Scheuchzer became a Fellow of the Royal Society in 1703. Given the lack of images, and despite the rather detailed description, it is difficult to ascertain the identity of the "ungulas lapidefactas" ("stony hooves," or "stony claws").

[61] Colonna 1616b, 48: "Habemus et non paucas alias res lapideas, veluti caprarum et suum ungulas […]." Colonna's treatise does not provide an image of these fossils. However, according to their name they could be ascribed to the bivalve species *Congeria ungulacaprae,* also known as "goat's hooves." See Főzy and Szente 2014, 350–351.

[62] Lhwyd 1699, 63–68, Tab. 16. The images in the treatise allow one to identify Lhwyd's "plectronites" as teeth from different fish species (see Parkinson 1811, 254; 1822, 275. However, according to paleontologists Arthur Smith Woodward and Charles Davies Sherborn, plectronites n. 1318 ("Plectronites maximus corticeus, seu Rostrago maxima, quod rostrum quoddam avis simulare videatur, sic dicta," Lhwyd 1699, 66) is an exception: this tooth does not belong to a fish, but to the pliosaur *Polyptychodon interruptus.* See Smith Woodward and Sherborn 1890, 298.

[63] Actually, the correct book is not Plot 1677 but Plot 1686, 189, Tab. XII, Figs. 3, 4. Vallisneri could not read English: most likely, he obtained this information from Scheuchzer. Not by chance, the same data appear in Scheuchzer 1708, 33–34. This essay was published well after Vallisneri wrote his manuscript; arguably, Scheuchzer gave him this information in a previous letter.

[gr] **Margin note (left):** Fig. 2
[gs] secundam*; ac tu quoque hariolare.* Semidigitum
[gt] ental*orum*
[gu] intersectae, *q* qua
intersectae, *cuius* qua
[gv] rubr*a*-ciner*osa*
[gw] dignissimum *meritumque celeberrimae* Academiae
[gx] essent, *tutarer* scirem
[gy] **In the text:** plectronarios
[gz] deteguntur, *quae* et
[ha] Bononiens*e*

monet,[hb] taliaque alicubi etiam offendisse sub titulo *caryophylli marini,* sed[hc] loci non recordatur.[64] Nec dubitat, quin et haec ad marina reduci debeant (Fig. 3).[65] Haec pariter delineata nuper videbam in Augustini Scillae[hd] Messanensis libro, cui titulus *La vana speculazione disingannata dal senso.*[66]

Primus hic[he] collium ambitus plurimo[hf] abundat, ut innuebam *gypso spato,* lapide speculari pulcherrimo vulgo *scaiola, arabico* etiam lapide ebori simillimo,[hg] calcario caementario siliceo, arenoso[hh] tophaceo vivo, marmoreo, undoso flaviusculis scilicet variis coloribus elegantissime picto, quorum nonnulli in mea *Lapidum Marmorumque Serie* non infimum obtinent musei locum.[67]

Lapis, seu *alumen speculare scandianense,* quod alii *selenitem,* et *talcum* vocant,[68] ut plurimum figura *trapeziades* dici potest, *quadrilateris irregularibus,* seu *trapetiis*[hi] *planis terminatum.* Misit ad me supradictus Scheuchzerus **12]** *lapidem specularem,* seu *selenitem rhomboidalem* subobscure diaphanam ex Monte *Gamor Abbatiscellanorum,*[69] cuius meminit *Specim. Helv. Lithograph.* p. 49,[70] cui repetundarum loco non solum nostratem misi, sed alium ex *Agro Vicentino* suo tempore longe minorem, sed lucidiorem, qui pene *paralellopipedum* sex paralellogramis rhomboidalibus terminabatur. Alias[hj] quoque *tessellas* eiusdem indolis *rubellas cubicas cum angulis inaequalibus* ex Agro *Rianensi*[71] misi, quas pergratas, quoniam rariores, nec sibi hactenus visas habuit. De hoc lapide nuper scripsit *Dialogum inter Plinium, et Salmasium,*[72] quo ostendit eundem esse cum *Androdamante Plinii Lib. XXXVII C. 10,* ubi ait *Androdamas argenti nitorem habet, ut adamas, quadrata, semperque tessellis similis. Magi putant nomen impositum ab eo, quod impetus hominum,*

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[64] A "Caryophyllus marinus fossilis prope Bononiam inventus" is mentioned in Scheuchzer 1708, 33, and in Scheuchzer 1723, 75: "Caryophyllus marinus fossilis. Ex Agro Bononiensi." Probably, the specimen came from Scheuchzer's collection. This could explain why Vallisneri was aware of its existence before the *Piscium querelae et vindiciae* was published.

[65] The related image is missing.

[66] Scilla 1670. The reference is probably to the figures in Tabs. XIV and XVII, described at p. 166. As the images in Scilla's and Plot's treatises clearly show, the terms "corniculum" ("little horn"), "fungites," and "caryophyllus marinus fossilis" are all names to describe fossil madrepores (Order Scleractinia): a group of stony corals (Phylum Cnidaria, Class Anthozoa). See Luzzini 2013a, 184–185, note 142; Vallisneri 2012, 207–208.

[67] All of these terms refer to selenite crystals with various degrees of purity. On Vallisneri's vast and renowned museum, see Dal Prete 2011; Generali 2007a, 351–382; Luzzini 2011a, 108; 2013a, 82–84, 90, 159–165. See also Vallisneri 2012, 258–260, 315–316.

[68] See the previous note. Here, it must be pointed out that the term "talcum" ("talc") does not exactly correspond to its modern meaning (i.e., the magnesium silicate with the chemical formula $Mg_3Si_4O_{10}(OH)_2$). At least up to the second half of the XVIII century, this word was used to describe a vast array of minerals with a sheet-like structure, such as micas (phyllosilicates), actual talc, or selenite.

[69] Mount Kamor (1,751 m/5,745 ft above sea level), in the Appenzell Alps (northeastern Switzerland).

[70] Scheuchzer 1702, 49.

[71] Riano (Province of Rome).

[72] Scheuchzer's *Dialogus* was eventually published four years later, in Scheuchzer 1709.

[hb] obtinuisse *refert* monet
[hc] **Margin note (left):** Fig. 3
[hd] Sc*y*llae
[he] h*aec*
[hf] ambitus*, ut ita dicam, corona* plurimo
[hg] **In the text:** similimo
[hh] siliceo, *py* arenoso
[hi] **In the text:** trapatiis
[hj] terminabatur. *Multa al* Alias

et iracundias domet.[73] Dicavit foetum hunc, ut ipse ait, insolitum favente Minerva prognatum Illustri Academiae *Inquietorum* Bononiae,[74] ut specimen haberet genii sui exotici.

Sed altius ascendamus, amice, ingratosque[hk] fines relictos a tergo salutemus.[hl] Post quinque[hm] circiter a Scandiano lapides asperrima, et sterilis[hn] terrae facies infra montium ruinas inexpectato horrore quosdam[ho] terret, quosdam delectat. *Infernum* monticolae vocant, non improprio naturae loci vocabulo. Praeruptae tumulorum ambages vorticoso, et inaccessibili circuitu in praecipites abyssos[hp] desinunt, vix sine timore oculis ipsis pererrandos. Nulla plantula, nec muscus quidem, scabros, ac inamoenos cortices induit, soli sterilitati sacros. Fastigiata ubique[hq] parvula iuga, creta adeoque viscosa, coacta,[hr] et **13]** compacta, ut a pluviis cadentibus vix paucis sulcis annorum gyro perarentur. Auget triste spectaculum rudis colorum varietas, quae diversis, alternatisque veluti zonis nigris, rubeis, ferrugineis, flaviusculis, albis modo striatim, modo cochleatim, modo undatim dispositis[hs] clivos omnes tumultuarie fasciat, et exornat.[75] Nigri, ac durissimi lapides hinc inde erumpunt,[ht] qui scissi[hu] plerumque micas aureas[hv] in suo sinu recondunt.[76] Hinc sub inospito illo squallore mineram aliquam auream, veluti thesaurum condidisse naturam non[hw] immerito suspicantur nonnulli.

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[73] This is a passage from Pliny the Elder's *Naturalis Historia* (Plinius (Maior) 2018, XXXVII, 50, http://data.perseus.org/citations/urn:cts:latinLit:phi0978.phi001.perseus-lat1:37.50). The identity of these specimens is uncertain. Besides, as Scheuchzer's *Dialogus* remarks, the legendary "androdamas" mentioned by Pliny had been identified by various authors with many different minerals (Scheuchzer 1709, 204–208).

[74] Accademia degli Inquieti ("Academy of the Restless Ones") of Bologna. It was founded in 1690 by the mathematician and astronomer Eustachio Manfredi (1674–1739). Reflecting the interests of its founder, the academy was devoted to the study of mathematical and scientific issues. Following the guidance of Luigi Ferdinando Marsili, in 1712 the institution moved to Palazzo Poggi, and in 1714 became the still existing Accademia delle Scienze dell'Istituto di Bologna ("Academy of Sciences of the Institute of Bologna"). On this topic, see Cavazza 1990; Cremante and Tega 1984; De Zan 1990; Sarti 2003; http://www.accademiascienzebologna.it/en/academy-of-sciences-of-bologna-institute.

[75] The barren, sterile landscape described by Vallisneri is easily recognizable as calanchi ("badlands"), heavily eroded clay soils that are particularly common in the hills between Scandiano and Carpineti. The spectacular display of colors ("rudis colorum varietas") in the layers reveals the presence of different minerals and rocks. See Regione Emilia-Romagna 2006, 77; Senna and Martinello 2000, 77, 86.

[76] Most likely, iron-rich sedimentary rocks containing pyrite grains. Not by chance, pyrite is also known as "fool's gold" (in Italian, "oro degli stolti").

[hk] amice, *Patriosque* ingratosque

[hl] **In the manuscript, the order of the words "salutemus," "tergo," and "relictos" has been inverted by marking them with numbers.**

[hm] Post *quatuor* quinque

[hn] steriliss*ima*

[ho] horrore *feroces animos* quosdam
horrore *curioso praecipuo suo modo* quosdam

[hp] praecipites *recessus* abyssos

[hq] Fastigiata *sunt* ubique

[hr] et *compacta* coacta **(in the manuscript, the order of the words "adeoque," "coacta," and "creta" has been inverted by marking them with numbers).**

[hs] undatim *ac tabellatim modo* dispositis

[ht] inde *disseminantur* erumpunt

[hu] qui *rupti quandoque* scissi

[hv] aureas *moleculas* micas **(in the manuscript, the order of the words "aureas" and "micas" has been inverted by marking them with numbers).**

[hw] naturam *autumant* non

Altera ex parte septentrionem versus trans[hx] *Ternarium* Torrentem[hy] aliud non iucundum philosophorum[hz] oculis oblectamentum. Ebullit, pallet, mugit solum[ia] perpetuo fumans, ac fluxile. *Salsam*[ib] (salsa) vocant locum illum incolae *Querzolae* ob *caementum salsum,* quod coquit, et expuit illa naturae perennis, ut[ic] ita dicam, et incombustibilis olla.[77] Diceres accensum continuo latitare ignem, cum nocturno praecipue tempore, quando furit, una cum saxis, fluidoque limo flammas eructet. Ter centum montis[id] pedes circiter occupat, sed fervoris locus non ubique turget, et sedem saepe mutat.[78] Proiecimus saxa, quae non sine profundo strepitu descenderunt in baratrum. Interdum et animalia minora,[ie] et incautos absorbuit boves, quos postea coctos, absumptos, et fere exosses evomuit. Cum ultra solitum[if] acrius mugit, tuto futuram pluviam praenunciat, sonusque bombardarum boatui aemulus etiam ad propinquiores terras, oppida, et *Regium* usque interdum extenditur. Tremit **14]** quandoque circumundique per milliaria quassata tellus, vidimusque largis hiatibus semidirutam domum secreto huius impulsu. Brevi contrahamus omnia stylo. Parvulam Aetnam ridens diceres, grandia[ig] si paucis assimilare licet. Et haec enim[ih] suo modo tonat, suo modo fulminat,[ii] ac ruinas[ij] minatur. Et haec

Interdum lapides, avulsaque viscera montis
erigit eructans, liquefactaque saxa sub auras

[77] Querciola, in the territory of Regnano (this place is now part of Viano, in the Province of Reggio Emilia). A *salsa* is a peculiar phenomenon of secondary volcanism. It is a cold, muddy mixture composed of water, clay, carbon dioxide and hydrocarbons (usually methane and oil) leaking out from the ground. Once the mud reaches the surface, it dries near the crater and accumulates, forming little mud volcanoes a few meters tall. The gas leak from the surface is caused by slow and constant movements of the Earth's crust: these trigger the underground sacks in which the mixture is enclosed to open or to compress. The volcanoes grow in height if the mud leak is faster than water erosion; oppositely, they tend to decline. The term "salsa" means "salty," as the mixture contains NaCl. Its salinity is equivalent to 1/2–1/3 of sea water. The *salse* are also described in Vallisneri 1711, 352–353; 1728, 65–70. On this topic, see Luzzini 2011b, 341–343; 2013a, 74–77; 2014a, 211; 2014b; http://www.comune.viano.re.it.

[78] During the XVIII century, the *salse* of Regnano were much more active than now. The last two considerable emissions happened in 1915 and in 1932, the former going on for 15 days. The—often—violent eruptions involved size enlargements of craters and the formation of vertical fissures in the ground. In one of the most significant episodes, described in 1796 by the physician Domenico Gentili (1744–1825), the mud mass collapsed and caused a landslide in the fields beneath (Gentili 1833). In the last few decades, the mud volcanoes have entered a phase of relative dormancy: the portion of land covered with mud, therefore, has gradually decreased. In 2007, during an excursion in Querciola performed together with Dario Generali, Stefano Meloni and Oscar Poli, only some small gas leaks were noticed in the main craters (http://www.vallisneri.it/salse_bituminose.shtml).

[hx] versus *citra* trans
[hy] Ternarium *fl* torrentem
[hz] iniucundum *curiosis* philosophorum
[ia] mugit *quandoque* solum
[ib] fluxile *solum.* Salsam
[ic] perennis, *et,* ut
[id] centum *terrae* montis
[ie] min*ima*
[if] *ex*tra solitu*s*
[ig] diceres, *cum comparatio ob tenuitatem, obscuritatemque loci subsannanda foret.* grandia
[ih] haec *tamen* enim
[ii] **In the manuscript, the order of the words "fulminat" and "tonat" has been inverted by marking them with numbers.**
[ij] ruinas*que*

cum gemitu glomerat, fundoque exaestuat imo.[79]

Non insalubris eiusdem aqua punctuo[ik] scaturiens armentis in potu gratissima, multisque morbis solamen a viscoso, praecipue frigidoque humore nascentibus.[80][il] Lutum eiusdem salsum tumores antiquos egregie resolvit, scabies delet, stagnans serum potenter exsiccat, nervis contractis ex cruda lympha vel synovia crassa prodest,[81] et crura aedematosa reliquis surda remediis recreat. Rustici erisipellati etiam eum[im] imponunt non sine fructu, maculasque tandem exteriores praecipue oleosas bibax illa terra delet etc.[82] Non procul petroleum e radice montis stillitat,[in] sed inobservatum, lutoque immixtum dispergitur.

Multa in vicino torrente qui Fassanus dicitur[83] saxa alba sylvis, arborum ramis, serpentiformibus gyris aliisque lusibus subfusce depictis reperiuntur, qui referri possunt[io] ad lapides *arborinos, dendritas,*[ip] *vel etiam phycites forte Plinii Lib. XLVII C. 10,*[84] de quo fusius *Scheuchzerus* meus disseruit in *Epist. Dissert. de dendritarum generatione inserta Ephem. An. 1697 et 98, Append.*[85] Vidimus, et multos lapides, qui vulgo aquiloni dicuntur ovalis figurae, marchesitas plurimas diversae indolis.

Nec globuli lapidei, quos non procul inveni, inglorio silentio involvendi sunt. Fatigarunt et isti, fatigantque eruditos scriptorum calamos. Candidi sunt, lucentes, atque adin-

[79] This is a passage from Virgil's *Aeneid* (Vergilius 2018a, III, 575–577, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:3.570-3.587). Here and below, the English translation follows Vergilius 1910.

[80] According to Hippocratic and Galenic medical tradition (which, still in the early XVIII century, had a strong influence on early modern medicine and on medical terminology), health depended on a balance between four basic fluids in the body, called humours: blood, yellow bile, black bile, and phlegm. Humours were the metabolic counterparts of the four basic elements (air, fire, earth, water), and were also related to a combination of four essential qualities: hot, cold, wet, and dry. Blood was thought to be hot and wet; black bile, cold and dry; phlegm, cold and wet; yellow bile was hot and dry. All diseases, as well as the existence of four main human temperaments (sanguine, choleric, melancholic, phlegmatic), were explained by the predominance of one humour over the others. For an introductory essay on this subject, see French 2003.

[81] Synovia, or synovial fluid: a viscous fluid which is found in the cavities of synovial joints (knees, elbows, hips, etc.) of mammals. By acting as a lubricant, it aids in the mechanical function of joints. Typically, synovial pathologies include rheumatic fever, osteoarthritis, gout, rheumatoid arthritis, tumors, and several other diseases.

[82] Vallisneri started studying the *salse* in 1694, when he was serving as general practitioner in Scandiano. As a physician, he also focused on the clinical effects of the oily mud pouring out from the volcanoes. This resulted to be "very effective to desiccate tumours, mainly those on the legs," as he scribbled down in one of his early field books, the *Quaderni di Osservazioni* ("Quella terra, che vomita fuori è bonissima per esiccare i tumori particolarmente delle gambe," Vallisneri 1694, Biblioteca Estense di Modena, Raccolta Campori, 701–707, γ. D. 6, 36–42; 2004, 41).

[83] Rio Faggiano, a small tributary of the Tresinaro River. The two streams meet in Rondinara, a village southwest of Scandiano.

[84] The book from the *Naturalis Historia* mentioned in the manuscript is incorrect (and, moreover, does not exist). The exact reference is Plinius (Maior) 2018, XXXVII, 49: "dendrachates, quae velut arbusculis insignis est" (http://data.perseus.org/citations/urn:cts:latinLit:phi0978.phi001.perseus-lat1:37.49).

[85] Scheuchzer 1700. Dendrites (from the Ancient Greek word δένδρον, "tree") are tree-like crystal structures, typically iron and/or manganese oxi-hydroxides that form on the surface of rocks or between sedimentary layers. They are quite common in limestone and sandstone beds. On this topic, see Rudolph 2014, 30–32. See also Vallisneri 2012, 129–130.

[ik] aqua *stillitans* punctuo
[il] humore *solamen* nascentibus
[im] etiam *lutum* eum
[in] montis *versus* stillitat
[io] possu*s*
[ip] **In the text:** dentritas

vicem novo superadveniente glutine ferruminati. Sunt et isti verus *stalagmites,* de quibus *B. de Boot L. II C. 238,*[iq] *et pisolithus,* cuius meminit idem *Cap. seq. 239.*[86] Consuli pariter de hoc lapide possunt *Gesner. De figur. lap. p. 71, 118, 121,*[87] *Ferrant. Imperat. Histor. Natur. p. 588, p. 55, 99.*[88] Huc referri etiam **15]** queunt[ir] *pisa illa in Agro Bethlehemitico reperiunda,* de quibus *Monconys. Voyag. T. I. pag. m. 313.*[89] De his *pisiformibus* concretionibus, earumque origine si sermo sit, putant multi (sed falso) esse *ova piscium in massas conglutinata, et petrificata,* alii guttas purissimi succi lapidescentis coactas, et deinde adinvicem novo tartareo fluore congestas, quales in *Thermis Bohemiae Carolinis*[90] id genus lapidis ex guttis concrescere vulgo dicunt.[91]

Balistam proximo mane tetigimus (*Valestra*),[92] quae celebris adhuc ob virgiliana carmina, quae saxei montis limbo insculpta, et ob temporis iniuriam fere erosa vix leguntur.

Monte sub hoc lapidum tegitur Balista sepultus.
Nocte dieque tutum carpe viator iter.[93]

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[86] De Boodt 1609, Liber II, *De Lapidibus et Gemmis in specie,* Cap. CCXXXVIII, *De Stalagmite,* 207: "Stalagmites e guttis rotundis in lapidem gypseae substantiae conversis, totus coagmentatur in terra arenosa, qui pro terrae et aquae fluentis qualitate, modo fulcus, candidus, aut griseus fabarum, pisorum, vel coriandri refert magnitudinem. Reperiuntur in una massa plurimi quasi favis inclusi. Copiose isti in Thermis Carolinis"); Cap. CCXXXIX, *De Hammite seu ammonite,* 207–209: "Ammites vel ammonites ex arenis ita componitur, ut ovis piscium similis videatur, nucis iuglandis est magnitudine, aliquando maior […]. Huius generis reperiuntur qui ex lapillis pisi aut orobi magnitude constant, quos ammites maiores aut pisolithos recte vocare possis."

[87] Gessner 1565, *De rerum fossilium, lapidum et gemmarum maxime, figuris & similitudinibus Liber,* Cap. IV, *De lapidibus et metallis, quae denominantur a rebus terrestribus inanimatis,* 71: "Hammites ovis piscium similis est, et alia velut nitro composita, praedura alioquin […]. Ammonites […] ex arenis ita componitur, ut ovis piscium quod ad figuram attinet, similis videatur esse: nitro interdum, quod ad substantiam et colorem"; Cap. VII, *De lithophytis, et rebus fossilibus illis, quae plantas imitantur,* 118–121: "Leguminum specie lapidem quidam inveniuntur, pisis […] aut lentibus similes […]."

[88] Imperato 1672, 588: "È anco un'altra differenza di pietra, o terra composta di piccole forme ritonde simili a pisi, de' quali ciascuno sino all'ultimo disfacimento si scioglie in cruste bianche, e sottili, che l'una abbraccia l'altra. Dunque ciascun grano è composto di più tuniche, e la pietra tutta composta di molti grani accozzati insieme […]."

[89] De Monconys 1665, 313: "[…] vis à vis à main gauche est un champ où l'on dit que la Vierge passant par là, trouva des païsans qui semoient des pois, elle les pria de luy en donner, ils luy dirent que c'estoient des pierres; à quoy elle repartit qu'ils en recueilliroient, et depuis il n'y peut rien croistre que des pierres lesquelles ont la figure des pois […]."

[90] Karlovy Vary (Carlsbad), a spa town in the western Czech Republic renowned for its thermal springs.

[91] The reference is to De Boodt 1609, 207; Gessner 1565, *De rerum fossilium, lapidum et gemmarum maxime, figuris & similitudinibus Liber,* Cap. IV, 71; Cap. VII, 118–121. As the images and descriptions in De Boodt's, Gessner's, and Imperato's treatises show, the terms "globuli lapidei," "stalagmites e guttis rotundis in lapidem gypseae substantiae conversis," "pisiformes concretiones," "lapides pisis aut lentibus similes," "piccole forme ritonde simili a pisi," etc. describe pisolite: a sedimentaty rock made of concretionary, calcareous grains that looks like a conglomeration of small pea-shaped spheres from 2–3 mm (0.08–0.1 in) up to a few cm in diameter. However, such descriptions as "ova piscium in massas conglutinata, et petrificata," "ammites vel ammonites […] ovis piscium similes," etc., refer to oolites, sedimentary rocks composed of very small, spheroidal grains of no more than 2 mm (0.08 in) in diameter. Hence their name, as they typically look like fish eggs. Arguably, the specimens ("globuli lapidei") described by Vallisneri are pisolites, these rocks being rather common in the in the gypsum-sulphur formation of the northern Apennines. See De Waele, Forti, and A. Rossi 2011, 46. See also Vallisneri 2012, 277–278.

[92] Mount Valestra (951 m/3,120 ft above sea level), in the territory of Carpineti (Province of Reggio Emilia).

[93] Virgil (attributed). English translation: Rose 1996, 258.

[iq] **In the text:** 138

[ir] etiam *possunt* queunt

Erat ille ludimagister, sed famosissimus latro, qui nomen Patriae, et cui Virgilius, ut fama est, epitaphium dedit.[94]

Fere totus saxeus est mons cum stratis fere perpendicularibus, hinc exsuccus, et nativis fontibus vacuus. Inosculantur se adinvicem ingentia saxa turres altissimas, et scopulos[is] minaces aemulantia,[it] meridiemque versus aliquantulum antrosa.[95] Firmiter incolae credunt ibi latitare thesaurum, multique saepe sacrilego murmurarunt ore, ut ipsum eruerent. Non iniucundam etiam narratiunculam effutiunt, quae apud me bella fabella est, apud bardos illos rusticos memorabilis historia. Liceat, amice carissime, seposito[iu] parumper rerum physicarum pondere, severitatem naturae interserta lepiditate mulcere. Arabat,[iv] inquiunt, in viciniis montis **16]** colonus terram, dum bini advenae nigris insidentes equis ipsum interpellarunt, *ubi Mons Balistae,* quo protenso licet digito demonstrato, sibi eum comitem voluerunt. Ut perventum est ad saxum,[iw] ubi specus sine postibus olim hiabat, inducit[ix] statim viso non amplius limen ostio, quod[iy] ut recluderent, claves inter vicinas vepres reconditas secura manu extraxere. Remotis pessulis, primisque foribus laxatis, novum ostium ferreum apparuit,[iz] quo pariter recluso, in porticum situ, et fuligine tetra squallidam derivabant, inde in amplum cubiculum fornice scabro, pendulisque tophis[ja] minax, ac dubia luce teterrimum. Ibi aureum erigebatur[jb] simulacrum, numinumque idola gemmis, et auro nitentia, quorum in ambitu stabant urnae vitreae, atque marmoreae humanis ossibus ustis, et cinereo[jc] pulvere luridae, variisque attonito rustico characteribus ignotis insculptae. Ad maioris simulacri pedes plumbeum iacebat scrinium, cuius distinctis in loculis phyalae, pyxidulaeque[jd] servabantur variis liquoribus, ac arcanis pulveribus refertae. Lychnus etiam prolymyxus accensus adhuc, sed fumosus magis, quam lucidus novum[je] terrorem quassatis pectoribus ingeminabat. Nec deerant aliis in arculis nummi, aurea monilia, gemmarumque grande patrimonium. *Tolle,* dixerunt advenae, *tolle quantum auri tuam possit implere famem,*[jf] primique, exemplo viam monstrante, sacculos[jg] equorum dorso imponendos gravarunt. Sequutus licet trepidans exemplum, sese quantum potuit, stipatis ubique nummis, implevit, spe **17]** concepta, ventura nocte, redeundi cum

[94] The epitaph on Balista is conventionally ascribed to Virgil, and is considered as one of his earliest works. According to Augusto Rostagni (Rostagni 1961, 40–43), Balista was Virgil's schoolmaster, who actually was not a robber; nor was he stoned to death for his deeds (as both the stanza and the legend claim). More probably, a young Virgil just made fun of him for his severity.

[95] Mount Valestra is mainly composed of arenaceous rocks dating back to the Miocene epoch (23–5.3 Ma). It is the northern extremity of a ridge stretching from northeast to southwest in the Carpineti territory, and whose tectonic origin is also the cause of the many caves in the area. Vallisneri explored one of these grottos, the Buca del Diavolo ("Devil's Pit"). This experience is not reported in the manuscript, but in Vallisneri 1722b, 282–283. On this topic, see Luzzini 2013a, 95–96; 2014a, 211.

[is] scopulos*que*
[it] aemulanti*s*
[iu] se*p*posito
[iv] mulcere *Parergo*. Arabat
[iw] ad *immane* saxum
[ix] **In the text:** induncit
[iy] ostio, *magicum limen,* quod
[iz] **In the text:** aparuit
[ja] pendulisque *saxis* tophis
[jb] aureum *fulgurabat* erigebatur
[jc] ciner*oso*
[jd] **In the text:** pixydulaeque
[je] lucidus *gelidum* novum
[jf] implere *crumenam* famem
[jg] monstrante *verum*, sacculos

vectorio curriculo, et sacras plutoni gazas, et regale, ac memorandum annalibus[jh] ruris depopulandi[ji] thesaurum. Interea discesserunt[jj] advenae, clausisque ostiis,[jk] claves rursus intra proximum vepretum iecere.[jl] Tunc avarus agricola curarum plenus, animoque magna spe saturo, nullis observantibus, summoque noctis silentio redivit ad asperum clavium reconditorium, manuque callosa spretis spinarum aculeis proiectas quaerebat claves. Sed, dum iam intra volam credebat,[jm] viperas in funiculum contortas, ac immane sibilantes[jn] strinxit, spe delusus inani

gelidus per[jo] *ima cucurrit ossa tremor.*[96]

Transivit vicissim[jp] in metum stupor, in stuporem metus, vixque vacabat timere miranti, aut admirari timenti. Vivunt adhuc talis rustici nepotes, inter Balistenses ditiores, quos[jq] quoniam suis arrisit fortuna negotiis,[jr] ingenio, et industria caeteris eminentibus,[js] arte quorundam externorum necromantica divitiae partae creduntur. Sed[jt] ne nimis *extra oleas divagemur,*[97][ju] e diverticulo rursus in viam.[98]

Ad *Quarae* thermas,[jv] [jw] vel ut antiqui ad aquarium balneum sequenti die appulimus, locum antiquitus medicatis aquis tota Europa[jx] celeberrimum, nunc ipsis conterraneis vix notum.[99] *Iacobus Vaccarius* in *Antidotario* **18]** suo harum mentionem facit,[100] Domi-

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[96] This is a passage from Virgil's *Aeneid* (Vergilius 2018a, II, 120–121, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:2.105-2.144).

[97] From the Latin saying "Ne extra oleas" ("don't [wander] from the olive trees"), which in turn derives from Aristophane's comedy *The Frogs* (Aristophanes/ Ἀριστοφάνης 2018, line 995: "ἐκτὸς οἴσει τῶν ἐλαῶν," http://data.perseus.org/citations/urn:cts:greekLit:tlg0019.tlg009.perseus-grc1:992-1003). See Miller 1914.

[98] "E diverticulo in viam," a Latin saying of uncertain origin.

[99] Quara, an ancient spa in the territory of Toano (Province of Reggio Emilia), whose mineral springs had been utilized since the Roman age. This water, rich in sodium ($NaHCO_3$) and potassium ($KHCO_3$) bicarbonates, was considered to be particularly effective for the treatment of skin diseases and digestive problems. In the XV century the springs were still widely utilized; however, when Vallisneri visited the spa it was abandoned and in ruins. See Luzzini 2013a, 96; 2014a, 212; http://www.appenninoreggiano.it; http://www.comune.toano.re.it/turismo/storia.htm. The mineral springs of Quara are also described in Vallisneri 1711, 353–354; 1728, 112–117.

[100] Wecker 1577, 14: "Apud Aquarium terra est a Regio Longobardo 25 miliaribus distans, balneum de

[jh] memorandum *saeculis omnibus* annalibus
[ji] depopula*t*
[jj] **In the text:** discescessunt
[jk] *h*ostiis
[jl] **In the manuscript, the order of the words "iecere" and "vepretum" has been inverted by marking them with numbers.**
[jm] volam *illas* credebat
[jn] contortas, *horrendumque* ac immane sibi*l*lantes
[jo] inani*, timore gelans, dolore fremens* gelidus*que* per
inani*, cui,* gelidus*que* per
[jp] Transivit *illico* vicissim
[jq] qu*i*
[jr] fortuna <...>*gies* negotiis
[js] eminent*es*
[jt] creduntur*. Et fortasse lepidam hanc inauditiunculam ipsi credulo popello imposuerunt, ut suspicionem omnem suas ex alienis opibus accumulatas opes averterent, invidiaeque, ac litium tela fabuloso clypeo retunderent.* Sed
[ju] divagemu*s*
[jv] **Margin note (left):** Vide Epist. 2 pag.
[jw] Quara*m balneum* thermas
[jx] tota *Italia* Europa

nusque *Fulvius Azzarius* in *Historiis Regiensibus* medicos[jy] Romanos multi[jz] has pendere scribit, quoniam suo aevo,[ka] ut Romam adveherentur pro desperatis sanandis aegris, curabant.[101] Nunc ingloriae clinicis etiam nostratibus ignotae sordescunt. Quasi et thermae habeant sua sydera, et adversi fati sentiant iras.[kb] Sic etiam tot aliae priscis saeculis cultae, nunc obsitae limo, aliae obscurae nunc spectatissimae. Nec virtutes thermarum *Quarae,* quas sub nomine Balnei Aquariani Gabriel Faloppi descripsit,[102] uti emarcuerunt senio confectae.[kc] Quales antiqui patres has descripserunt, tales adhuc inveni. Grata nempe salsedine affectae, frigidiusculae[kd] pauco volatilis sulphuris odore praeditae[ke] (quem falso nonnulli camphorae attribuerunt), colore pellucidae. Hinc eas pro deobstruendis obcaecatis internis canalibus, pro liquorum amurcis, crudisque saburris a corpore deradendis, pro vermibus intestinalibus extinguendis[kf] efficacissimas existimamus. Ita ventriculo effoeminato, pectori anhaeloso, flatulentiae,[kg] hypocondriae, colicae torminosae, sterilitati a lympha viscosa, capitis vertigini, atque dolori a repigrato polyposo praecipue sanguine, rheumatismis a glutinoso sero mederi, aliisque morbis a causa, uti dicunt scholae, frigida dependentibus, indubium est.[103] *Mutinensis Fallopius* de his non siluit, ut innuebam licet circa[kh] scaturiginis situm a[ki] vero aberrans.[104] In ripis *Draconis*[105] ipsas descripsit, et e ripa[kj] dextera *Doli*[106] scatent. Torrens vicinus, uterque rapax, ac praeceps, sed e diversis cryptis origo. Meruerunt et exterorum laudatores **19]** calamos, quae nostratibus ipsis ignotae tandem obmutuerunt. Septentrionem[kk] versus e saxorum montis hyatibus erumpentes per caecos tubulos in craterem, deinde intra marmoreum vas, quod adhuc ab

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Aquario nuncupatum: alumine participat. Viribus simile est balneo della Porretta. Idem." In the previous edition of Wecker's *Antidotarium Speciale* (Wecker 1574), Quara is not mentioned.

[101] Azzari 1623, voice *Quara*: "[…] quivi si trova il famoso bagno, tanto stimato da' medici Romani; l'acque del quale di continuo mandano a pigliar, per servirsene in diverse infirmità; il qual bagno vien preconizato da Giacomo Vaccaro nel suo Antidotario; è ne' monti." Azzari mentions Wecker's *Antidotarium.* Most likely, Vallisneri borrowed this reference from him.

[102] Falloppio 1606, Tractatus Septimus, *De Thermalibus Aquis,* Cap. XXV, *De balneo Aquariano in agro Regiensi,* 324–325.

[103] See note 80.

[104] Falloppio 1606, Tractatus Septimus, *De Thermalibus Aquis,* Cap. XXV, *De balneo Aquariano in agro Regiensi,* 324: "Scire namque debetis, quod fluvius Draco appellatus, dividit Mutinensem agrum a Regiensi, in huius fluminis parte illa quae occidentem respicit solem, est hospitium quoddam non procul admodum ab Aquario pago."

[105] Torrente Dragone ("Dragone Creek"), in the Province of Modena. It merges into the Dolo a few kilometers north from Montefiorino.

[106] Torrente Dolo ("Dolo Creek"), a tributary of the Secchia. It forms a natural boundary between the Provinces of Reggio Emilia (on the west) and Modena (on the eastern side).

[jy] Regiensibus *a* medicos
[jz] mult*os*
[ka] *tem*vo
[kb] sentiant *incommoda* iras
[kc] **Margin note (left):** De Thermal. Aq. Cap. 25, pag. mihi 324
[kd] affectae, *tepidiusculae* frigidiusculae
[ke] odore *graves* praeditae
[kf] intestinalibus*, aut cuiuscumque speciei insectis extinguendis in nostri corporis latebrulis quandoque hospitantibus* extinguendis
[kg] **In the text:** flatulentae
[kh] licet *palmari* circa
[ki] situm *plectatur errore* a
situm *erraverit* a
[kj] ripa*s*
[kk] obmutuerunt. *Orientem* Septentrionem

iniuria temporis superest, derivabant. Solido plumbatis cardinibus operculo, pessulisque quondam firmato relligiose custodiebantur, indeque ex inferno foramine in[kl] substratum torrentem prolabebantur. Scala lapidi sculpta, ut facilis ad locum descensus,[km] adhuc visitur. Caeterum nec amplius in antiquum vas elutriant, nec ab advenis recollectae ad peregrina loca feruntur. Lapidibus, luto, sabula[kn] repletum est receptaculum, errant, quo libet, armentis nunc solum, ovibus, capellisque in potu gratissimae.

Tranato[ko] torrente *Rubianam*[107] tetigimus, ubi antiquissimum, et marmoreum non ignobile templum ab illustri *Matylde*[108] constructum, si colonis fides, erigitur. Hic frigidissimi, ac limpidissimi fontes ab una parte, ab altera foetentes sulphurei,[kp] fumosi, tepidi scatent sine usu, sine nomine. Parum[kq] distant et alii non ingrata salsedine conspicui, sed villicis solum, et pecori noti etc. Ibi[kr] chirurgorum est non obscura familia, *Raspona* dicta pro venenatis praecipue viperarum morsibus sanandis celebris. Psyllorum[109] enim more a quibus originem trahere venditant inflictum venenum avide absorbent, et propria saliva laethalia lavant vulnera, ex quibus salus tutissima, si statim demorsis occurrant. Macula serpentiformis omnibus **20]** ab hac stirpe natis super humeros insculpta visitur, quae verno praecipue tempore coloratior rudem viperini glomeris[ks] effigiem representat. Denudatis unius humeris hanc curiosis oculis, manibusque, ad examen[kt] revocavi quae an esset nativum stygma, an factitium, adhuc haereo.

Superato montis clivo meridiem versus *Vitriolae* tinctorios fontes, tanquam paratos a natura *gratuitos infectores,* admirati sumus. Hinc non inconsulto sagaces antiqui *Vitriolae* nomen ruri indiderunt, ob *vitriolicas,* aut *atramentosas aquas,* quibus abundat.[110]

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[107] Pieve di Rubbiano, an important Romanesque church in the northern Apennines. Now part of the municipality of Montefiorino (Province of Modena). Despite what the farmers told Vallisneri, the church was not built by Matilde di Canossa (see the following note), its origins dating back at least to the IX century. See Bucciardi 1930; B. M. Grazia and M. Grazia 1999; Montorsi 1987, 130–144.

[108] Matilde di Canossa, also known as Matilda of Tuscany (1046–1115). A powerful feudal lady, and one of the most powerful women in medieval Europe, she was a steady supporter of Pope Gregory VII (1020/1025–1085) during the Investiture Controversy: a conflict that opposed the Papacy and the Empire between the XI and XII centuries. At the height of her power, the "Grancontessa" ("Grand Countess") ruled over a vast part of current Lombardy, Emilia-Romagna, and Tuscany. In 1111, she was crowned Vicar and Vice-Queen of Italy by the Holy Roman Emperor Henry V (1081–1125). On this topic, see V. Fumagalli 1996; Golinelli 1997; 1999.

[109] Psylli, an ancient people who lived in Marmarica, a part of Northern Africa between eastern Lybia and Egypt. During the Roman age, they were renowned for being immune to snake venom and for their ability in the treatment of snake bites. See Bates 1914, 179–180; Ogden 2013, 6, 64, 209–214, 231–243, 296–297.

[110] Vitriola, a hamlet in the municipality of Montefiorino. It is located in an area delimited by the mountain ridge on which Montefiorino rests (on the west) and by the Dragone Creek (on the east). Arenaceous and calcareous rocks—typically turbidites—dating back to the Campanian, Maastrichtian, and Danian ages (Late Cretaceous-Early Paleocene, 83.5–61.6 Ma) dominate the lithology of this area. Most likely, the coloring properties of the springs described by Vallisneri result from high concentrations of iron oxides in the

[kl] foramine *vel in ulteriores usus, vel* in
[km] locum *reptatus* descensus
[kn] luto, *ruderibus* sabula
[ko] gratissimae.
Transmissa Tranato
gratissimae.
Transmitto Tranato
[kp] foetentes *qui vulgo putantur* sulphurei
[kq] nomine *scatent*. Parum
[kr] solum *noti,* et pecori*que* noti etc. *gratissimi.* Ibi
[ks] **In the text**: glomi
[kt] exam*inari*

Obstupesces, amice, si *Boeoticos amnes*[111] aemulaturos fontes prodo. Obscuri[ku] sunt, quia nullus adhuc scriptor montana nostra dignatus est delibare miracula. Oves ad quasdam prodigiosas lymphas nigrae tendant, albae discedant, hic albae vestes immerguntur, extrahuntur nigrae contrario eventu, aequali miraculo. Non spernenda beneficentia[kv] paupertati sylvestris populi sine impensis duraturos colores Magna Mater impertiens consulit, locorumque inclementiam rerum raritate compensat. Emergunt e prati fundo *Draconem* versus, orasque fontium superando per declive solum in dicti torrentis alveum devolvuntur. Horum aqua limpida est, saporis omnis expers, terram tamen, lacustresque herbas, quas lambit, flavo-ferrugineo colore inficit. Innatat ipsi, telae adinstar subtilissimae, materia levis iridis colores aemulans, quae exsiccata pollinem aureolum dabat. Lutum in imis nigerrimum est, aptissimumque tinctorio operi. In his medicatis fontibus agrestis populus pannos lineos, **21]** lanasque nigrat, non sine tamen praecedenti aliqua preparatione, ut intimius saturentur. Prius igitur tingendas vestes in aqua simplici una cum castanearum iulis, vel earundem phyliris,[kw] sive libris coquunt, et macerant, deinde hoc simplici magisterio paratas per horas 24 in luto fontium immersas abscondunt, quo bis, vel ter repetito nil nigrius apparet. Neque praetereundum est, quod vestes ita infectae diutius durant, quam non infectae, contrario prorsus exitu, ac illis[kx] accidit, quae a nostris tinctoribus communi methodo tinguntur. Erodit scilicet infusum atrox vitriolum occulto mucrone telarum filamenta, quae[ky] temporis progressu etiam in arculis reservata sensim truncantur. Cur autem infusum, non cognatis aquis innatum, sive furtim liquatum ita operetur, tibi cogitandum relinquo. Si ziziphinum[kz] colorem expetunt, pannos prius radicibus *mori,*[112] sive *salicis* alpinae[la] folio alni rotundo,[113] vel aliarum etiam salicum fluminibus innascentium decoquunt, deinde modo dicto immergunt. Alios etiam eruunt, ac eruerent[lb] colores, si diligens aliquis arcanorum naturae scrutator plura sedulo celebraret experimenta. Nondum[lc]

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water. Cartographic source: *Carta geologica d'Italia, Foglio 235 (Pievelago)* 2002. The springs of Vitriola are also described in Vallisneri 1711, 355; 1717b; 1728, 121–123. On this topic, see also Rampoldi 1833, 81; Ricci 1788, 257; Zuccagni-Orlandini 1845, 45.

[111] The reference is to the Greek myth of Trophonius' Cave, in Boeotia, where an oracle resided (Μαντείο του Τροφωνίου). According to the legend, those wishing to consult the oracle had to drink from two springs, bearing the names of the rivers of Hades: Lethe (Λήθη, "Forgetfulness") and Mnemosyne (Μνημοσύνη, "Memory"). On this topic, see Edmonds 2004, 52, 107; Ustinova 2009, 91–92; Vandenberg 2007, 236–242.

[112] Black mulberry, in Italian "gelso nero" (*Morus nigra* L.), Family Moraceae.

[113] From Tournefort (de) 1700, 591: "Salix Alpina, Alni rotundo folio." Dwarf willow, in Italian "salice erbaceo" (*Salix herbacea* L.), Family Salicaceae. It is a tiny, woody, creeping plant, adapted to cold mountain, arctic and subarctic environments. Once rather common in the northern Apennines, it is now very rare

[ku] Obscur*a*
[kv] spernenda *magnae matris* beneficentia
[kw] earundem *fructuum* phyliris
[kx] ac *nigrae vestes,* illis
ac *illae* illis
[ky] filamenta *telarum*, quae
[kz] Si *tabaccinum* ziziphinum
[la] salicis *pumicis* alpinae
[lb] eruerent*que*
[lc] **From this point on, text at p. 22 continues on the recto of an additional, unnumbered paper (XIII). This is the recycled cover of a letter. On the verso is written:**

"All'Ill.mo Sig.re Sig.re P.rone Col.mo
Il Sig.re Antonio De' Vallisnieri Pubb.o Prof.e
nello Studio di
Padova"

[ld] usque adhuc in usum venere medicum, sed nullus dubito, quod in omnibus illis morbis, in quibus aliae aquae[le] vitriolicae praescribuntur, non conveniant, imo aliis palmam non praeripiant. Vitriolum enim satis blandum, ac fere innocens[lf] in suo sinu fovent,[lg] non asperum, non fixum, non rigidum, non erosivum, hinc et renibus, et stomaco, et hepati aestuoso, et sanguini fervido, et[lh] utero laxo, aliisque corporis partibus suo tono languentibus[li] auxiliari posse, minime[lj] dubitamus. Si rursus aliquando pedem Patriae figam, eas experiri gestit animus, rogantes interim[lk] tot praestantissimos[ll] medicos concives meos, ut experientias[lm] celebrare non dedignentur, sibique famam aegris salutem, Patriae utilitatem asciscent.[ln] **XIII.r] XIII.v]**

Draconem[lo] ingressi propinquum, torrentem scilicet illum infidum, saxisque ingentibus asperum, cui quolibet anno sors[lp] adversa aliquem victimat, invenimus. Colores lapidum huius diversi, rubei nempe, virides, nigri, flavi, albi in glareoso fundo quasi tessulatim dispositi[lq] ad amussim maculosa draconis tergora aemulabantur. Hinc fortasse nomen, praeter serpentinos hinc inde gyros, reptatumque sursum versum, ac semper[lr] oblique fluentem.

In nulla marmora ab hoc *Medolam,*[114] cuius limbum torrens dictus undis lambit, accessimus.[ls] **22]** Arx erat[lt] antiqua, inaccessibilis hostibus, supra saxum horrendum, scopulumve[lu] rubro-livescentem[lv] posita, quae vicinis omnibus iura dabat.

E Medola regea Monte Fiorino.[115][lw]

Nunc exigua priscae gloriae fundamina rimis minacibus irreparabilia supersunt. Hinc, atque hinc vasti montes, quorum dexter fusca quadam rubedine perfusus, scruposus, sterilis, mineralibus exhalationibus torrefactus apparet. Multas pyrites argenteas, aeneasque

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and is regarded as a relict species as a consequence of the climate changes which have occurred in the past three centuries. On the identification of this species in the Italian mountains, see Parlatore 1867, 277–279.

[114] Medola, an ancient citadel (now part of Montefiorino) located in a crucial strategic point on the left shore of the Dragone Creek. Once a powerful stronghold (especially during the XII and XIII centuries), by the time of Vallisneri's visit it was in ruins. See Tiraboschi 1825, 39–40.

[115] Tassoni 1624, Canto III, 67.

[ld] experimenta. *Nullum* Nondum
[le] ac quae
[lf] fere *volatile* innocens
[lg] sinu *condunt* fovent
[lh] fervido, *aliisque* et
[li] tono *depauperatis suppetias allaturas* languentibus
[lj] posse, *non* minime
[lk] interi*s*
[ll] tot *celeberrimos* praestantissimos
[lm] ut *interim* experientias
[ln] utilitatem *procul dubio allaturo/is vindicaturi* asciscent
utilitatem *adsciscent* asciscent
[lo] **From this point on, text continues on p. 22.**
[lp] anno *mala* sors
[lq] tessulatim *veluti* dispositi
[lr] semper*que*
[ls] undis *flagellat* lambit, *pervenimus* accessimus
[lt] Arx *haec* erat
[lu] horrendum *ingens*, scopulumve
[lv] rubro-liv*idum*
[lw] **Margin note (left):** Tasson.

invenimus, multosque lapides viridi colore perfusos,[116] quorum lateribus materia quaedam flaviuscula, succini adinstar, adhaerescebat. Concreti cautes tartaro, minimis[lx] lapillis globulosis, mineramque redolentibus referti[ly] ubique solum exasperabant. Fodinae initium sub praerupto saxo hiabat, ex qua auream, vel argenteam[lz] venam exhaurire credentes, crudam, solum sterilemque cupream (uti referunt) inveneram.[ma] Parte laeva latus montis non adeo immensis saxis[mb] firmatum a subterraneis[mc] erodentibus aquis evisceratum in praeceps quondam ruens *Medolae* templum,[117] in inferna planitie positum, domosque inhumavit. Huiusmodi frequentes ubique apparent ruinae, ex quibus divulsis, ut ita dicam,[md] montium costis,[me] deiectisque rupibus[mf] summa decrescunt, ima surgunt, locorumque facie[mg] mutata, quaerit quaqua calcatur, sese antiqua natura, nec invenit. Ab aquis scilicet, nivibusque solutis a supremis vicini Apenini verticibus per tabulatorum[mh] scissuras ruentibus adeo lubrica terrae macerantur, rodunturque[mi] fundamenta, ut tandem ab ingenti superincumbente pressura laxentur. Vocant has incolae *salacte,* sive *lavine,*[118] quas praecipue, ubi fontium scaturigines extillant, nec strata lapidea subsunt passim vidimus. **23|**

Summum tandem Apeninum[mj] montes, quos antiqui Leti,[mk] *Divi Pellegrini* Alpes[119] vocant[ml] recentium nonnulli, post improbos labores, ac salebrosum iter ascendimus, Divique corpus[120] adhuc marcori resistens venerati[mm] sumus. Quot interea catharactas inaccessas,[mn] quot arcanos[mo] in montibus ipsis vallium recessus, quot abrupta rupium supercilia, clivosos tramites, impervios calles observabamus? Adhuc Augusti mensis aestuans,[mp] nostrisque regionibus torridus, et tamen multis in locis saeva hyems nive, geluque

[116] Arguably, copper-rich rocks. Many cupric salts have a typical blue-greenish hue.

[117] Church and fortified house of Medola, not to be confused with the homonymous fortress. It was located in the Modena Plain, and was destroyed in 1318. See Tiraboschi 1825, 39.

[118] Archaic Italian terms for "frana" ("landslide"). More specifically, the word "salatta" was used among the populations of the northern Apennines. See De Stefani 1875, 6.

[119] Alpe di San Pellegrino ("Alp of Saint Peregrine"), 1,701 m/ 5,581 ft above sea level. It overlooks the homonymous Pass, where is located San Pellegrino in Alpe (1,525 m/ 5,003 ft): the highest village in the Apennines. The pass links the Province of Modena (Emilia-Romagna) with Garfagnana (Province of Lucca, Tuscany). See Luzzini 2013a, 94, 96–97, 102, Tabs. X–XII; 2014a, 209, 212–213.

[120] The body of San Pellegrino delle Alpi ("Saint Peregrine of the Alps," ?–643), still preserved in the local shrine together with the body of San Bianco ("Saint Blancus"), his only companion. According to the legend, Pellegrino was a pious Irish prince who travelled to the Holy Land. On his way back, he settled in a hermitage on the Apennines. On this topic, see Angelini 1996.

[lx] tartaro, *cautes* minimis
[ly] refert*i*s
[lz] argenteam*ve*
[ma] sterilemque *aeream* cupream (uti referunt) *solum* invener*ant*
[mb] sa*licibus*
[mc] a *tacitis* subterraneis
[md] dic*e*m
[me] cost*ae*
[mf] rupi*s*
[mg] facie*s*
[mh] per *stratorum* tabulatorum
[mi] macerantur, *verrenturque* rodunturque
[mj] tandem *Alpium quas* Apeninum
[mk] Leti*s*
[ml] Alpes *(Alpe di S. Pellegrino)* vocant
[mm] resistens *non sine lacrymis* venerati
[mn] catharactas *impenetrabiles* inaccessas
[mo] quot *altissimos* arcanos
[mp] Adhuc *Augustus mensis* Augusti mensis *erat* aestuans

perhorrescebat. Congestae enim, ut plurimum per multos annos nives, vix aliquando urente acrius Syrio, flanteve austro tabescunt. Rara securi violatur annosa fagus, aeternum[mq] dumeta rigescunt, et ingentes ubique exuberant umbrae. Hinc iuge frigus, perpetui flatus, aeris ardor ignotus. Tunc mecum ipse fontium, fluminumque originem altius recolens tacitus mussitabam, *hic inobservata fontium perennium, ut ita dicam, corda, hic prima fluminum latent ubera.* Udo[mr] semper omnia squallent solo, carent fine stillantes[ms] aquae, et antrosa Alpium viscera machinas hydrophylaces[121][mt] aemulantia diu duraturum sugunt, ac servant liquorem. Hic castella non desunt, cisternae perpetuae,[mu] et aeterna tument aquarum reservatoria.

Nec locus ingenio est, oculi te iudice vincunt.[122]

Arbitrabamur etiam, uti Cyrus apud Xenophontem, *maiora, dum videbamus minora.*[123] Audebat enim tunc animus penitiora scrutari, et immensam aquarum molem a subterraneis gurgitibus absorptam per obscura viarum sequi. Non enim Scultemna[mv] (Panaro),[124] nec Gabellus[mw] (Secchia), nec ignobiliores alii torrentes, non **24]** fontium perennium raritas ab Apeninis emergens tantis nivium, aquarumque machinamentis respondent. Reconditum abyssis suis flumen efformant, quod montium minorum radices praeterfluens[mx] post tenebrosum emensum iter, laxatis tandem repagulis, hinc inde variis e tanquam[my] oris humilioribus egurgitans sui signa prodit, dum interim fluentum maius per arenosum, glareosumque stratum furtim praeterlabens *Admirandam Mutinensibus Fontibus Originem* praebet, de qua tam erudite, ac ingeniose clarissimus[mz] Ramazzinus olim collega meus[na] sem-

[121] By using this term, Vallisneri alludes—with evident, intentional irony—to the Jesuit scholar Athanasius Kircher (1602–1680) and to his theory of "hydrophylacia." In Kircher, Neoplatonic and Hermetic beliefs coexisted with field research and experimental practice, leading to intriguing results. In his *Mundus subterraneus* (Kircher 1664), the whole Earth is studied as a living organism, in which each part is interconnected with the others. Like in the human body, different vital fluids flow through the planet. Natural phenomena are the result of the interaction between these circulatory systems, called "fire networks" ("pyrophylacia"), "air networks" ("aerophylacia"), and "water networks" ("hydrophylacia"). Kircher acknowledges evaporation as a means to replenish springs and rivers. But the "hydrophylacia" are the main causes of this process—they connect the sea to the mountains, allowing the water to rise. On this topic, see Findlen 2004; Fletcher 1968; Parcell 2009.

[122] This passage is from the *Appendix Vergiliana* (Vergilius 2018b, 549, attributed, http://www.thelatinlibrary.com/appvergcomp.html). English translation: J. W. Duff and A. M. Duff 1934.

[123] Arguably, this is an adapted quote from Cicero's *Cato Maior de senectute* (Cicero 2018a, LXXIX): "Apud Xenophontem autem moriens Cyrus maior haec dicit: 'Nolite arbitrari, O mihi carissimi filii, me, cum a vobis discessero, nusquam aut nullum fore. Nec enim, dum eram vobiscum, animum meum videbatis, sed eum esse in hoc corpore ex eis rebus quas gerebam intellegebatis. Eundem igitur esse creditote, etiamsi nullum videbitis' " (http://data.perseus.org/citations/urn:cts:latinLit:phi0474.phi051.perseus-lat1:79).

[124] Panaro River (also known as Scoltenna), a main—and the last right-hand—tributary of the Po River.

[mq] fagus *securi*, aeternum
[mr] ubera *latent*. Udo
[ms] fine *carent* stillantes
[mt] machinas *hydraulicas* hydrophylaces
[mu] desunt, *hydrophylacia,* cisternae *foetae* perpetuae
[mv] enim *nec Scitula* Scultemna
[mw] G*l*abellu*m*
[mx] radices *lambens* praeterfluens
[my] inde *in Mutinensi planitie* variis e *tortibus artefactis locis* tanquam
[mz] ingeniose *sapientissimus* clarissimus
[na] collega *noster* meus

per colendus alio licet innixus fundamento disseruit.[125][nb] Eo magis ad hoc credendum cogor, quo magis fontes, omnesque perennes qui[nc] in ultimis *Furni Volastri* Alpibus[126] copiosiores fluunt, ad trutinam revoco. Ibi enim minor nivium copia ob maris vicini teporem, ibi minor ambitus, immo occidentem, idest mare versus, fere semper nive carent. Sed quoniam ibi maximus minerarum proventus, de quibus postea, montiumque strata fere ut plurimum orizontaliter posita, fereque tota lapidosa rigescunt, ideo sequitur, quod tabefactae nives, aquarumque fluxus in eorundem visceribus vix haerent, ac ab interpositis revolutae crateribus vel nutrimentum mineris ministrant, vel e rimulis sub imagine fontium plorant, ac perpetuos omnes, iugesque fontes efformant. Non enim istis ob densam stratorum, ac minerarum compagem, et situm, usque ad imas, et inconspicuas montium radices descendere datum **25]** est, ut in Alpibus D. Pellegrini contingit. Diversum ibi crustarum ingenium, diversa positio. Terra multa, sabulum bibax, laxior structura cadentes aquas, niviumque fluores devorat, ac in imas Alpium radices ad caecum efformandum flumen devehit. Hinc passim montium ipsorum horribiles lapsus, ac per plures quandoque lapides fluxae eorundem laterum ruinae pedibus ipsis trepidantibus observantur. Ex quibus coniicere gestit animus, cur hic abscondantur aquae, ibi exantlentur, cur hic rari appareant fontes aeterni, fluminumque rarior cursus,[nd] ibi utrumque luculentius effluat. Haec enim, me cogitante, fere sola in hoc saltem nostro terrarum gremio[ne] aquarum est circulatio. E caelo in terram, e terra ad mare: rursusque e mari ad caelum, a caelo in terram. E caelo scilicet fluentes aquas cavernosi montes, terraeque bibulae absorbent, fluxae[nf] ut plurimum, per obvias absorptae, per[ng] obscuras vias in mare devolvuntur. Ex hoc,[nh] et ab illis attenuatae rursus in nubes ascendunt, ex nubibus denuo descendunt, perpetua fluxilis elementi, incrementisque nunquam fallentibus, circulatione.[127]

Sed te ridentem video, amice carissime, quod parvo ex itinere, minimisque observatiunculis tam immensa metiar. Quod non amplectar vulgatam, Italisque praecipue ingeniis alte inhaerentem Cartesii,[128] aliorumque opinionem *de fontium, fluminumque*

[125] Differently from Vallisneri, Ramazzini supported a compound origin of fresh water in which precipitation was complemented by both condensation of vapor into caverns and desalination of sea water by filtration through rock strata (Ramazzini 1691, 56, 62). On this topic, see Luzzini 2011b; 2013a, 73–74, 98–99, 109, 114, 140, 142, 146, 151, 198–199.

[126] Fornovolasco, a village in the Apuan Alps (Tuscan Apennines), in the western end of Garfagnana. This place, now in the municipality of Fabbriche di Vergemoli, was once renowned for its iron mines. Still, in the XVIII century the mines were intensely exploited on behalf of the Dukes of Este, who used the iron for military purposes. See Bonini and Biagioni 2007; Luzzini 2010; 2011a, 107–108; 2013a, 100–102, 124, Tabs. XV–XVII; 2014a, 213–214; Rocchi 2010.

[127] This seems to be a reference to a biblical passage from the book of Ecclesiastes, Chapter 1, verse 7: "All the rivers run into the sea, yet the sea is not full; unto the place from which the rivers come, thither they return again."

[128] Here, the author refers to the influential Cartesian theory of "alembics," according to which hidden channels existed connecting the oceans to the earth, allowing sea water to rise up the mountains by effect of subterranean heat, and to lose its salt by condensation of vapor inside secret caves. In Descartes' opinion, these condensation phenomena gave a crucial contribution to the water cycle (Descartes 1644, 228–231). Vallisneri firmly opposed the "alembics" theory, persuaded as he was that all fresh water came from rain or from

[nb] **Margin note (left):** De Font. Mutin. Admiranda Scaturig. Tractatus Physico-Hydrostaticus, Mutinae 1691

[nc] font*ium*, omn*ium*que perenn*ium copiarum* qui

[nd] rarior *fluxus* cursus

[ne] terrarum *orbe* gremio

[nf] flux*es*

[ng] absorpt*e, ut plurimum,* per

[nh] *s*hoc

perennium origine ac eorundem circulatione, de qua tam erudite praeclarissimus tuus etiam Lanzonus disseruit.[129][ni] Quod[nj] nempe haec, **26]** et illi a mari,[nk] temporarii autem a pluviis, ac liquefactis nivibus ortum trahant. Non tamen in magnorum virorum pretium, auctoritatemque peccare contendo, si tanta nostris solis in regionibus quaerens ambigo, non ut ambigam, sed ut firmer. *Vetus est* (ait Platonis Sophista), *omniumque communis sententia, si quis ea, quae magna sunt, recte transigere velit, in parvis quibusdam prius illa, facilioribusque, quam in maximis considerare debere.*[130] Cum de veritate agitur, non quis, aut[nl] quot dixerint, sed quam bene et novi videndum. Non meum etenim[nm] calamum per universum terrarum orbem extendo. Ad nostros tantum fontes, ad exigua nostra flumina torrentesque minimas observatiunculas contraho. Forsan

> *...alid ex alio clarescet...*
> *Ita res accendunt lumina rebus.*[131][nn]

Quid tu, vir doctissime, qui tam claro polles ingenio, de istis cogites, scire peropto. Refrica, precor, non callosum adhuc ulcus, et me vel fac doctiorem, vel silere in posterum iube. Tu enim ex illis non es, qui veritatem ad suum arbitrium temperet, ac inter mendacia quicquid palato non arriserit, reponat. Iniurius est in homines, in universam[no] naturam, in Deumque scriptor ille, qui phylautia detentus aliorum omnia deridet, seque solum ad tacitam, fumosamque lucernam cuncta Caeli, Terraeque negotia videre credit. Ruditatem in omnibus, sed in istis praecipue fateor meam. Quid sentias etiam, **27]** ut aperias,[np] quaeso, *de Aquae dulcis fonte, Venetiis,* mirante populo, dum *Canalem Regium* excavabant, exantlato, uti te per litteras[nq] certiorem feci;[132] quid de prosilientibus aquis etiam dulcibus e fundo maris, observante *Simone Portio Neapolitano,* quando passibus

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the melting of glaciers in the mountains. See Luzzini 2011b; 2013a, 97–98, 109–111, 116–131, 141–153; 2014a, 208, 213.

[129]Lanzoni 1688, Animadversio LXXXVI, *De Aquae circulatione,* 335–336.

[130]This is a passage from the *Sophist* (Plato/Πλάτων 2018d, III, 218, http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg007.perseus-grc1:218c). The same quote is in Vallisneri 2009, 15.

[131]This is a passage from *De rerum natura* (Lucretius 2018, I, 1115–1117, http://data.perseus.org/citations/urn:cts:latinLit:phi0550.phi001.perseus-lat1:1.1083). English translation: Lucretius 1916. In an interesting comment on these passages, Ken Taylor remarked how Vallisneri's thought here "represents an attitude that is fundamental to the novel scientific viewpoint this author exemplifies. Like so many of his contemporaries, Vallisneri can hardly escape the impulse (Renaissance-humanistic in its basic character) toward rehearsal of the observations and opinions of respected authorities of the past. But he also declares that in the end, determination of what is true must depend not on authority but rather on facts and upon the capacity of a theoretical idea to account satisfactorily for those facts. A peculiar and interesting feature of Vallisneri's writing is that, while holding to this modern criterion of conformability of a theory to observed facts, he maintains a somewhat traditional attachment to exposition that appeals constantly to one's awareness of what both ancient and more recent authorities said" (my sincere thanks to Ken for this note).

[132]Unfortunately, the letters Vallisneri refers to are missing. This event occurred in 1680, during the excavation of the Cannaregio, one of Venice's main canals: suddenly, and unexpectedly, fresh water sprang from the ground. The same episode is mentioned in Vallisneri 1715, 69: "Narrommi un dottissimo nobil uomo di Venezia, che nello scavare certe altissime fondamente nel loro Canal Regio trovarono una larga vena

[ni]**Margin note (left):** Animad. 86
[nj]disseruit*, non amplectar*. Quod
[nk]**In the text:** mare
[nl]quis, *aut ubi,* aut
[nm]meum *cum* etenim
[nn]**Margin note (left):** Lucret.
[no]homines, *in Deumque,* in universam*que*
[np]aperia*e*
[nq]per *e*litteras

fere bis centum in celebri *Puteolana* conflagratione recessit?[133] A continenti per secretos canales aquas dulces illapsas auguror, eo modo, quo per apertos, ob soli humilitatem, in mare decurrunt. Flumina enim inconspicua, caecique rivuli per obliqua cretae, saxorumque dorsa e supremis montibus, non aperto[nr] solum, sed[ns] obscuro, coactoque per angustias itinere usque in intimos pelagi thalamos penetrantes[nt] quandoque emergunt. Quomodo enim mare in se revolutum, quibus, ut ita dicam, sacculis colatoriis portento simillimis, qua necessitate amaras exuit aquas, ut rursus easdem subito dulces absorbeat? Te etiam non latet, quod via filtrationis aquarum maris, ut dulcescant, ambigua est, et nostris experimentis fallax.[nu] Per nullum namque sabulum, per nullum marmor,[nv] nec per vasa etiam fornacum igne densata percolati latices marini salsedinem dediscunt. Aut cum aqueis particulis connubium salis adeo arctum est, ut nisi per placidam evaporationem disiungi queat, aut figura, molesque talis, ut pori bibentes aquas salibus etiam ingurgitentur. Vidimus etiam aridissima aestate transacta Clodiae nostrae, Liburnique puteos[nw] **28]** hortenses aequori proximos arefactos, licet maris superficies esset longe eminentior, quam ima puteorum profunditas. Argumento scilicet indubio,[nx] quod praefati putei aquas a continenti, non a pelago mutuentur. Alia[ny] etiam, praeter ea, quae *D. Perauult,*[134] *Casparque*[nz] *Bartholinus,*[135] aliique transalpini exposuerunt paulatim concoquo, tua felicissima mente in posterum vel ulterius digerenda, vel expungenda.[oa]

Ast incepti itineris vota sequamur, quidque denuo curiosis oculis devorabam faxo ut intelligas. Saepe videbam in substratis agris[ob] cadentes imbres, et humida, spissaque caligine caelum triste, me[oc] sudo aere fruente. Mihi aliquid tunc videbatur, habere caput non solum inter, sed supra nubes, et audire subiecta[od] pedibus tonitrua, infimumque Iovem,

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d'acqua dolce, la quale scorrente sotto le lagune salse colà sboccava, dove poteva farsi, con raro miracolo, una nobilissima fontana." See also Vacani di Forteolivo 1867, 168; Zendrini 1811, 177.

[133] Porzio 1551, 3: "[…] mare passibus fere CC recessit, quo quidem loco et ingentem piscium multitudinem accolae capere, et aquae dulces prosilire visae fuerunt." The passage is also quoted in Vallisneri 1715, 69.

[134] Perrault 1674. Pierre Perrault (1611–1680), a French hydrologist, in his treatise invoked the existence of a perpetual motion of water, according to which rivers refilled both oceans and fountains. But he denied the Cartesian concept of subterranean heat as a means to explain the rise of water, as it had no acceptable causal explanation. Hence the need for another process, as the "horror vacui," in obedience to which water could return—against gravity—from rivers to springs (Perrault 1674, 148–150). See Luzzini 2013a, 113–114; Rappaport 1997, 187.

[135] Bartholin 1689. Caspar Bartholin (the Younger, 1655–1738), a Danish physician, refuted both rock filtration and distillation as natural means of producing fresh water. And just like Vallisneri, he pointed out that no springs existed on the very top of mountains. This phenomenon was simply impossible since—Bartholin asserted—it would have contradicted the laws of hydrostatics and equilibrium and, therefore, it would have been against nature itself (Bartholin 1689, 34).

[nr] non *ex substratis* aperto
non *vicinis* aperto
[ns] solum *planitiebus, ut in nostris agris*, sed
[nt] penetra*ti*
[nu] experimentis *infida* fallax
[nv] nullum *porosum* marmor
[nw] Liburnique *manente Casteno* puteos
[nx] scilicet *evidenti* indubio
[ny] mutuentur *aquas*. Alia
[nz] Caspa*s*que
[oa] vel *expuenda* expungenda
[ob] substratis *planitiebus* agris
[oc] triste *caelum*, me
[od] audire *subposita* subiecta

ut ita dicam, fulmina vibrantem. Videbam,[oe] et immersas nubibus ipsis regiones integras, vastamque veluti nebulosam planitiem ad amussim orizontaliter positam, cuius variis in locis modo[of] unus vortex, modo alter ex improviso contortus hiabat. Tunc obscuro miscebatur caelum murmure, raucoque nostris auribus sono tonabat. Ex[og] quo tonitru, ac vorticosi fulminis generationem, fragorisque promiscui causam quasi fidis oculis exhauriebam. Non etenim ibi fabulosa antiparistasis[136] ultimis cogebat ignem frigoribus, sed omnia ex lege motus, corporumque contrario nisu prementium, ventorum etiam flabellis urgentibus exoriebantur. **29]**

In istis Alpibus saepe *crystalloides,* et *crystalli* reperiuntur, quarum color in nonnullis subniger, figura mirabilis. Nemo enim esset, qui laboratas arte non crederet, cum quaedam in medio sui circumambiantur elegantissima fascia ex sex paralellogrammis rectangulis, quae terminatur utrinque a tribus triangulis equicruris, seu isoselis, quam figuram tamen nuper etiam observabam, licet non adeo exactam, in quibusdam *hyacintis boemicis.*[137][oh] Adsunt et *crystalloides* partibus constantes, quarum aliae paralellopipedam figuram, aliae vero ad prismaticam accedere videntur, sicuti aliae, quae ad tetraedricam, aliae ad octaedricam vergunt. *Uteros etiam crystallinos* ab Euganeis non multum abludentes,[138][oi] nonnullosque a *Ferrante Imperato* delineatos[139] inveniebam, quae omnia naturam geometram, quandamque in istis a substrato fluore suboscuram vegetationem demonstrant. Ultimae enim crystallorum striae[oj] in hoc implantantur, velutique diaphanae radiculae videntur nutrimentum aliquando absorbuisse.[140] Misit nuper huiusmodi cimelia pro ditando meo

[136] A latinization of the Ancient Greek word ἀντιπερίστασις, literally, "against what stands around." In early modern medicine and natural philosophy, this term was used to describe the mutual resistance, and the resulting mutual reinforcement, of two opposite qualities (as, for instance, the increase of body temperature as a consequence of cold). On this topic, see Hesse 1961, 55–58, 64, 67–68, 84–86, 101; Pagel 1976, 74–76; Varvoglis 2014, 14, 17, 19, 25.

[137] Jacinth, a reddish variety of zircon ($ZrSiO_4$). Arguably, the crystals described by Vallisneri were a dark brown or grey variety of this mineral.

[138] Geodes: hollow, spheroidal rocks with crystals in the inside wall. They usually occur in igneous, quartz (SiO_2) rich rocks. This is the case of the geodes from the Euganean Hills ("ab Euganeis"): low, volcanic hills located a few kilometers southwest of Padua. On this topic, see Astolfi and Colombara 1990; Bosellini 2005, 98.

The term "uteri crystallini," used to describe geodes, comes from Mercati 1717, 259–265. Vallisneri wrote profusely (and anonymously) about this treatise in the "Giornale de' Letterati d'Italia." More specifically, see Vallisneri 1719, 173–174: "Se destramente rompiamo le lenti minori petrose descritte, e le maggiori dette numismi, troveremo, che quelle hanno per lo più nel centro certi minutissimi cristalletti, e per lo più nelle cavità degli angoli de' loro strati, onde si veggono tutte generate nella maniera presso a poco degli uteri cristallini, coperti anch'essi di più strati di lapidosa materia, nella cavità de' quali sono i cristalli appiattati, e alle pareti interne attaccati").

[139] Imperato 1672, 572–574.

[140] Vallisneri's thought about mineral genesis and growth was not exempt from ambiguities and fluctuations. As the assertions in the manuscript suggest, he supposed and, somehow, admitted the existence in minerals of such biological features as seeds (or "matrices") and nourishment. However, this theory (which was also a result of the strong influence that the Leibnizian doctrines of *scala naturae* and of the recognition of divine providence in creation exerted on him) was hardly compatible with empirical data and with his experimental beliefs. Moreover, one of his most important and influential scientific correspondents—the French philosopher, naturalist, and mathematician Louis Bourguet (1678–1742)—firmly opposed the idea that minerals would need a sort of nourishment. Not by chance, in the last part of his life Vallisneri did not

[oe] Videba*s*
[of] mod*us*
[og] tonabat. *Non etenim ibi fabul* Ex
[oh] bo*h*emicis
[oi] ab*similes*
[oj] st*i*riae

museolo toties laudatus *Scheuchzerus,* misit, et *crystallum hexagonam* magnitudinis conspicuae, cui mira viridis *chrysocollacea*[141] respersa est ex *Alpibus Uriis,*[142] aliam pariter *hexagonam* herbaceo colore saturam,[143] aliam *helveticam diaphanam, calcarium marmor sulphuratum,* cui *fluores insident crystallini Brugis Argoviae,*[144] *selenitem crystalloidem* candidum ex *Monte Pilati Lucernensium,*[145] fluoremque tandem crystallinum *trigonum saccharum candidum*[ok] *referentem*[ol] ex[om on oo] **30]** *Lapidicina Oniagensi,*[146] de quo in *Specimine Lithographiae Helveticae pag. 24.*[147] Ex *Rheticis* etiam *Alpibus*[148] aurei coloris, et egregie *diaphanam crystallum*[149] servo, sicuti varios fluores crystallinos guttatim supra *calcidonium crudum* respersos subobscuri rubicundi coloris ab *Euganeis* depromptos, diversosque naturae lusus ex *calcidonio,*[150] et *crystallis implicitos, herbasque crystallis ipsis, ut muscae in succinis incarceratas.* Sed de his alias.

Emenso primo Apeninorum iugo, rivuli, atque torrentes contrario cursu, diviso veluti aquarum imperio, *Mare Tyrrhenum* versus descendunt.[op oq] Tunc[or] oculis obiicitur *Caferoniana Provincia* frequentibus oppidis, vicisque[os] populosa, benigniori fruens caelo, terraeque uberiori fertilitate laetissima. Arcent enim septentrionales gelidissimos halitus praealta Apeninorum dorsa, quae furentem ventorum rabiem in se recipiunt, et frangunt. Sub imo montis limbo *Castrum novum*[151][ot] visitur, provinciae caput, tum nascente, tum vesperascente die nebulis, ut plurimum obductum. *Si montes enim montibus, si colles col-*

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seem to persist in supporting the view of a vegetative power in minerals. On this topic, see Luzzini 2011a, 109–110; 2013a, 132–137.

[141] Chrysocolla, a blue-green hydrous copper silicate ($(Cu,Al)_2H_2Si_2O_5(OH)_4 \cdot n(H_2O)$). However, this name may also refer to malachite, a green copper carbonate ($Cu_2CO_3(OH)_2$). On this terminological confusion, see Colombo 1995, 91; Ward 2008, 506.

[142] Uri Alps, in central Switzerland.

[143] An unspecified mineral from the hexagonal crystal system. According to the green ("herbaceo") color, it could be beryl ($Be_3Al_2Si_6O_{18}$), apatite ($Ca_5(PO_4)_3(F, Cl, OH)$), or even another kind of mineral.

[144] Brugg (a municipality in the Canton of Aargau, Switzerland).

[145] Mount Pilatus (2,128 m/6,982 ft above sea level). It overlooks Lucerne, in central Switzerland.

[146] The stone quarries of Öhningen, whose carbonate rocks date back to the Miocene epoch (23–5.3 Ma) and contain a large quantity of fossils. Here, in 1725, Scheuchzer found and described his famous *Homo diluvii testis* ("Man who witnessed the Deluge"): a fossil that he believed to be the remains of a man drowned in the biblical Deluge. Only in 1787 did the anatomist Petrus Camper (1722–1789) recognize the error, and in 1825 Georges Cuvier (1769–1832) identified in the *Homo Diluvii testis* the fossil remains of a giant salamander, which—in honor of Scheuchzer—was named *Andrias scheuchzeri.* On this topic, see Jahn 1969; Luzzini 2013a, 61–63; https://vimeo.com/46769954.

[147] Scheuchzer 1702, 29 (and not 24, as is written in the manuscript): "Fluor crystallinus trigonus, striis lateribus pyramidis cuiusque parallelis pulchre notatus. Fig. 41." According to the image in Scheuchzer's essay, this is probably a cluster of calcite crystals ($CaCO_3$). Calcite crystallizes in the trigonal system.

[148] Rhaetian Alps, a vast mountain range in the Central Eastern Alps.

[149] Probably a yellow variety of quartz (SiO_2), also known as citrine quartz.

[150] Chalcedony, a micro-cryptocrystalline form of quartz. It can occur in many different colors.

[151] Castelnuovo di Garfagnana (Province of Lucca).

[ok] **In the text:** candum

[ol] referengem

[om] **Margin note (right):** Volve ad pag. 31 dopo sette carte

[on] **Margin note (left):** Si voltino 7 carte etc.

[oo] **Margin note (right):** Volve ad pag. 31

[op] **Margin note (left):** Tunc oculis

[oq] **Margin note (right):** *Tunc oculis obiicitur etc. (volve retro septem paginas)

[or] **From this point on, text at p. 31 continues on nine additional papers (XIV–XXII), placed between pp. 30 and 31.**

[os] **In the text:** vicubusque

[ot] **This name is written in regular font.**

libus iungantur per flexuosa intervalla saepe mephitis exhalationum urbes incommodat. Hinc etiam saepius febricitat septicollis Roma,[ou] dicebat Celsus.[152]

Mellifluus noster Testi praedictum locum, ut otio beato, musisque aptissimum ita eleganter descripsit.[ov]

Qui, dove argenteo il corso
la Turrita discioglie, e seco viene
a maritarsi innamorato il Serchio,
e sul meriggio al dorso
del gran Padre Apenin opache scene
di rintrecciati faggi alzan coperchio;
merto mio no, soverchio
favor del gran Francesco[153] *ozio mi diede,*
e fe' ne' regni suoi regnar mia fede.
Qui lieto vivo, e mentre
di lui canta il mio plettro, Eco da lunge
ossequiosa il suo bel nome alterna:
pensier, che si concentre
a intorbidarmi il cor qua su non giunge,
e seren parmi il ciel, quando ancor verna. **XIV.r]**
Temer di spada esterna
questi monti non san: fiumi innocenti
portano al mar gli immacolati argenti.
Con voce bellicosa
curvo oricalco a travagliar non desta
l'inerme abitator d'umil capanna:
de la greggia lanosa
i mariti rival con dura testa
solo a pugnar tal volta amor condanna,
e la stridente canna
del pastorel, che non lontan rimbomba
ai cozzanti guerrier serve di tromba.
I preziosi umori,
di cui ferito il nobil seno allaga
negli arabici boschi arbor sovrano
perdon gli usati onori
qui, dove occhio mortal uscir di piaga
stilla non vede mai di sangue umano;
se pur incauta mano
non trafigge talor d'acuta spina
pungente spoglia di castagna alpina.
Maestre de' pensieri
rupi per nostro esempio al Ciel sospinte,

[152] The references in the margin note are incorrect. This is an adapted quote from Dieterich 1661, 1412.
[153] Francesco I d'Este (1610–1658), Duke of Modena and Reggio from 1629 until his death. In 1640, he appointed the poet Fulvio Testi (1593–1646) Governor of Garfagnana.

[ou] **Margin note (left):** Lib. 2, Cap. 1, p. 42, 43 videatur
[ov] **Margin note (left):** Ode al S.r D. Ascanio Pio di Savoia etc.

selve, in onta de' lussi, erme, et inculte,
oh come volentieri
tra i vostri orror le sue speranze estinte
l'ambizioso cor lascia sepulte,
che pur, che l'alma esulta
de la sua dolce libertà contento
fo di tutte mie glorie erede il vento.[154]*ow* **XIV.v] XV.r] XV.v]***ox*

Multa sane de hac regione vera, multa poetarum more figmenti, atque adulationis fuco delinit. De hac nos*oy* quoque minus eleganti, sed sincero magis calamo in rudem recollecta*oz* fasciculum nonnulla quae ad hominum historiam etiam extra meum scopum dicere, neque inutile, neque supervacaneum forsan existimamus, cum ab antiquis geographis, atque historicis vix delibatam, a recentioribus aut nominetenus tantum indicatam, aut, quasi obscura regiuncula, oscitanter praetermissam, non sine indignante stomaco reperiamus.

Dicitur vulgo *Garfagnana,* latine *Caferoniana* ab Oppido *Caferoniano* nomen mutuata, in Tirenis stationibus, agrisve sito *Lucam* inter, ac destructam *Lunam.*[155] Ita vocabatur illud a *Feronia* nemorum, libertorum, fertilitatisque, ac deliciarum dea, quam Iunonem arbitrabantur, sicuti Gyral. Synt. de Diis Gent. Lib. 1 scriptum reliquit.[156] Originem altam traxerunt incolae Caferonianae a dispersis, fatoque hinc inde pulsis Tuscorum, Graecorum, Romanorumque reliquiis, non sine populi feroces adhuc genios foventis laude. Tuncque primum fuit, cum mundus in romanae dominationis, idest humani generis conversione penitus intremuit, omnique genere discriminum civilibus, terrestribus, ac navalibus bellis omne imperii corpus agitatum est, ut Luc. Flor. Epit. testatur. Truculentissimas Marii, Scillae, triumque Monarcorum Lepidi, Marci Antonii, atque Octaviani proscriptiones **XVI.r]** fugiebant,[157] cui*pa* non leve rationis momentum addunt fundamenta, ac rudera multarum

[154]Testi 1666, 213–216, *Al Signor D. Ascanio Pio di Savoia* (First edition: Testi 1636).
[155]Ancient city of Luna, or Luni (Province of La Spezia), located in the historical territory of Lunigiana. It was close to the shore of the Tyrrhenian Sea and, therefore, was an important Roman harbour. On this topic, see Sforza 1910.
[156]Lilio Gregorio Giraldi (1479–1552), a scholar and poet from Ferrara. The reference is to Giraldi 1548, 169–170.
[157]This is a passage from Lucius Annaeus Florus (*Epitome Rerum Romanarum*, Florus 2018, II, 9–21, http://data.perseus.org/citations/urn:cts:latinLit:phi1242.phi001.perseus-lat1:2.9.21.1).

ow **These lines are written in regular font.**
ox **On a small scrap of paper (XV.r):**
Ariost. Satir. 7, parlando di C. Nuovo di Garfagnana

Piuttosto di', ch'io lascerò l'asprezza
di questi sassi, e questa gente inculta
simile al luogo, ov'ella è nata, e avvezza:
e non avrò qual da punir con multa,
qual con minacce e da dolermi ognora
che qui la forza alla ragione insulta.

e poco dopo

Se pur ho da star fuor, mi sia nel Sacro
Campo di Marte senza dubbio meno,
che in questa fossa abitar duro, ed acro.

Intende per C. Nuovo di Garfagnana.
oy hac *ego* nos
oz **In the text:** reccollecta
pa cui*us*

arcium in summis collium scopulorumque verticibus adhuc extantia, in quibus auri, argenti, metallique romana numismata passim excavantur.[pb] Antiqua etiam adhuc vigent nomina Silani, Silici, Silicagnani, Silicani, Trasilici, Roggii, Camporosciani, Cassiani, Cassinelli, Caesaranae, Brutiani, Petrognani, Niciani, et similia, cum castra,[pc] ac arces istae fuerint olim, ut incolae tradunt, aedificatae a Scilla, eiusque sequacibus, a Rossio, Cassio, Caesare, Bruto, Petronio, Nicia, aliisque nobilissimis Romanis a fortuna susque, deque perculsis.

Nec scriptores Prisci de hanc provincia penitus siluerunt. Marcus Cato in fragm. de Origin. C. 7, scripsit *Luca illustris, Luhccio Lucumone Rege Tuscorum, Lucus, et Montes Feroniani etc.*[158] A C. Sempr. in Divis. Ital. frag. 3, *Liguria Apuana* vocatur.[159] Antoninus Pius Itiner. apud Annium L. 2, vias indigitans, quas ducebant in Gallias, nunc Insubriam, *Cassiano itinere itur,* inquit, *per Politorium, Arcenum, Miniorem, Forum Cassii, Aruntes, Camillarios, Tudernum, Varentarum, Umbronem Montem, Senam Colmiam, Phocenses, Lucam, et Caferonianum transitur in Gallias.*[160] A *Ptolomeo* in 6. Europ. tab. L. 3, *Lucus Feroniae* vocatur,[161] uti a *Plinio Natural. Hist.* Lib. 3 C. 5, in Italiae descriptione,[162] quae alibi *Montes Tegulatos* appellavit,[163][pd] qui sicuti notavit *Giraldus* sunt *Pania,* montesque contigui,[164] inter quos *Anselmus Micottus* I.V.D. e Camporgiano (cuius ms. ingenue plura debere fateor), Caferonianae *Team* ob nominis similitudinem esse referendam existimavit.[165] Strabo De situ Orbis **XVI.v]** L. 5, *Ad Montes Lunae incumbentes,* scripsit, *urbs est Luca ubi plerique vicatim habitant,* quibus *Caferonianam* etiam amplexus est.[166] *Livius Ab Urbe Condita* pluribus in locis huius meminit, et praecipue

[158]This is a fake quote attributed to Cato the Elder's *Origines* (Cato maior 2018). Actually, the real author is the Dominican friar Annio da Viterbo (or Giovanni Nanni, 1437–1502). In this treatise (Nanni 1498), renamed in its many reprints as *Antiquitatum variarum*, Annio forged a great quantity of documents attributed to several ancient authors. Among them was Cato the Elder, with the supposed book *De origine gentium et urbium Italicarum.* Vallisneri, like other scholars of his time (and many other previous ones), was deceived by Annio's work (this note refers to the 1515 edition: Nanni 1515, Liber VII, LXVIIIr). On this topic, see Baffioni and Mattiangeli 1981; E. Fumagalli 1984; Pacchi 1785, 11–14; Stephens 2004.

[159]This is another quote from Annio da Viterbo, falsely ascribed to the Roman consul Caius Sempronius Tuditanus and to the forged book *De Divisione & Chorographia Italiae* (Nanni 1515, Liber IX, LXXVIIr, LXXXv). See also Pacchi 1785, 11–14.

[160]This is another quote from Annio da Viterbo, falsely ascribed to the Roman Emperor Antoninus Pius (Nanni 1515, Liber VIII, *Itinerarii Antonini fragmentum,* LXXIVv). See also Pacchi 1785, 11–14.

[161]From Ptolemy's *Geography* (Ptolemaeus/Πτολεμαῖος 2018, III, 1, http://penelope.uchicago.edu/Thayer/E/Gazetteer/Periods/Roman/_Texts/Ptolemy/3/1*.html).

[162]From Pliny the Elder's *Naturalis Historia* (Plinius (Maior) 2018, III, 26), http://data.perseus.org/citations/urn:cts:latinLit:phi0978.phi001.perseus-lat1:3.26.

[163]Plinius (Maior) 2018, III, 25: "Tigulia intus, Segesta Tiguliorum, flumen Macra, Liguriae finis," http://data.perseus.org/citations/urn:cts:latinLit:phi0978.phi001.perseus-lat1:3.25.

[164]Giraldi 1548, 169–170.

[165]Anselmo Micotti (1630–1695), a historian from Camporgiano, who wrote a manuscript on the history of Garfagnana (Micotti 1671). See also the critical edition of this work, edited by Polimio Bacci (Micotti 1980).

According to the priest and historian Domenico Pacchi (1733–1825), both Giraldi and Micotti—and, consequently, Vallisneri—are wrong: the "Tigulia" mentioned by Pliny are not the Panie Mountains, but the ones surrounding Lavagna and Sestri Levante, in the current Province of Genoa (see Pacchi 1785, 3, 19–21). Pacchi also disagrees on the etymology of Garfagnana from the deity Feronia (Roman goddess of forests, fertility, and health), considering it as a misconception caused by Annio da Viterbo.

[166]Strabo/ Στράβων 2018, V, 1, http://data.perseus.org/citations/urn:cts:greekLit:tlg0099.tlg001.perseus-grc1:5.1.

[pb]excav*e*ntur

[pc]cum *aedificata sint* castra

[pd]**In the text:** apellavit

Lib. 41, in quo Petilii[167] mortem oraculi verbo *Leti* ambigue intortam expressit. *Praefecti,* refert, *inde in diversas regiones Petilius adversus Balistae, et Leti iugum* (quod nunc Alpium D. Pellegrini nomen audit), *quod eos montes perpetuo dorso inter se iungit, castra habuit. Ibi adhortantem eum pro concione militem, immemorem ambiguitatis verbi ominatum ferunt, se eo die Lethum capturum esse.*[168] Pro monte autem Leti, Lethum omine fatali subivit.[169]

Sunt qui credunt Virgilium de hac regione intellexisse, quando Aeneid. Lib. 7, N. 800 cecinit

> *Circaeumque iugum, queis Iuppiter Anxuris arvis*
> *praesidet, et viridi gaudens Feronia luco.*[170]

Sed errore plectuntur, Micotto etiam supralaudato auctore, quoniam Dea Feronia, praeter locum, ubi nunc est Petrasancta[171] (non in Bientina,[172] uti Volateranus Com. Urb. Li. 5 existimat)[173] binos alios in Italia habuit lucos sibi sacros. Alter in Faliscis,[174] de quo Strabo De situ Orbis L. 5 *Sub Monte autem Soractae*[175] *urbs est Feronia, quo nomine a Dea quadam nuncupatur, quam finitimi miro dignantur honore. Eodem in loco ipsius est templum mirificum sacri genus habens, nam qui eius numine afflantur, nudis pedibus prunas, et copiosum inambulant sub hac* **XVII.r]** *daemone nulla laesione cinerem.*[176] Alter, de quo loquebatur Poeta[177] iuxta Dioniis. Alicarnas. Lib. 2,[178] Sipontin.,[179] supra

[167] Quintus Petilius Spurinus (III century BC–176 BC), Roman consul. He died fighting against the Ligures.

[168] Livius 2018, XLI, 18, http://data.perseus.org/citations/urn:cts:latinLit:phi0914.phi00141.perseus-lat3:18. In his treatise, Pacchi strongly disagrees with Vallisneri on the identification of the "Mons Letum" mentioned by Titus Livius with the Alp of Saint Peregrine (Pacchi 1785, 43–44). Actually, the exact identity of this mountain is still uncertain.

[169] "Letum" means "violent death," "ruin."

[170] From Vergilius 2018a, VII, 799–800, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:7.783-7.802. Arguably, Vallisneri refers to the quote in Giraldi 1548, 170.

[171] Pietrasanta (Province of Lucca).

[172] Bientina (Province of Pisa).

[173] Raffaele Maffei (1451–1522), a humanist and historian from Volterra. Maffei 1506. This note refers to Maffei 1530, 48v: "Deinde Feronia lucus Ptolemaeo, qui nunc Bientina cum lacu forte fuerit, nonnullis vero Petrasancta."

[174] Faliscans: an ancient Italic tribe who lived in central Italy from the VIII century BC to 241 BC, when their main city, Falerii, was destroyed by the neighboring Romans. On this topic, see Waldman and Mason 2006, 247–249.

[175] Mount Soratte (691 m/2,267 ft above sea level), in the Province of Rome.

[176] Strabo/ Στράβων 2018, V, 2, http://data.perseus.org/citations/urn:cts:greekLit:tlg0099.tlg001.perseus-grc1:5.2. The same quote (in Latin) is in Giraldi 1548, 170.

[177] Virgil.

[178] Halicarnassensis 2018, II, 49: "Delatos autem ad campos Italiae, qui Pomentini vocantur, et agrum, quo primum appulerant, Feroniam vocasse, ab ipsa maris navigatione, in qua ipsis contigerat ut huc illuc ferrentur; et deae Feroniae templum erexisse, cui vota nuncuparant: quam iam, unius literae immutatione, Faroniam vocant" (original Greek version: http://data.perseus.org/citations/urn:cts:greekLit:tlg0081.tlg001.perseus-grc1:2.49.5).

[179] Niccolò Perotti (1429/30–1480), Italian humanist, philologist, and Archbishop of Siponto (hence the Latin name "Sipontinus"). The reference is to Perotti 1489. Page references are to the 1502 edition (Perotti 1502, 37): "Vir. et viridi gaudens Feronia luco. […] et Iunonem quae Feronia vocabatur. Fontem aut fuisse in Campania iuxta Tarracinam: quae aliquando est Anxur dicta. Sed illud magis constat sub monte Soracte urbem fuisse Feroniam, et in ipso monte eiusdem nominis dea: quam finitimi mira religione venerabantur."

7 Aeneid. Virg. Servium,[180] et alios erat in Latio Tarracinae[181] propinquus, quem etiam Syl. Ital. de Bel. Pun. Lib. 13 carmine ornavit.

> *His fractus ductor convelli signa maniplis*
> *optato laetis habitu iubet, itur in agros*
> *dives ubi ante omnes colitur Feronia luco*
> *et sacer humectat fluvialia rura Capenas.*[182]

Variis regio haec finibus clauditur, quos verbis ex Fabritio Zum. in Inform. XI desumptis circumscribemus. *Provincia Garfagnana,* scribit, *posita est inter agrum Pistoriensem ab oriente, et agrum Lunensem ab occidente, quae ab illis agris dividitur per cacumina montium inter hanc, et illos existentium, et item inter summitates Montis Apenini a latere septentrionis, ubi Lombardia, et a meridie territorium Lucense, et est divisa in quatuor Vicarias, nempe Camporegianae, Castiglionis, Bargae, et illam Coregliae.*[183] Tunc temporis vero angustioribus est coarctata limitibus, etiam quo ad nomen, quod solum ea pars retinuit, quae sub Serenissimo Aestensi dominio fortunatissima viget.

Figuram navis provincia haec sortitur, quae inter Apenini radices, atque Paniam curvata laetae fertilitati[pe] velificat. *Pania* Mons[184] est asperrimus, sterilis, nudus, vix feris notus, ita forsan a *Poenia* paupertatis dea[185] vocatus. *Bargam*[186] nunc orientem versus habet, a meridie praedictam *Paniam,* Montem *Team*[187] a Ponente, qui eam a Lunensi agro disterminat, et a septentrione **XVII.v]** Apeninorum iuga tenet. Multis torrentibus, rivulis, fontibus, fluviisque perennibus, ac limpidis perluitur, qui variis exquisitissimis ditescunt piscibus, inter quos trutae celebres ad irritamenta gulae magnatum, principumque mensas exornant. Primum *Serchius*[188] sibi vindicat locum a *Ptolomeo* Geogr. Lib. 3 Tab. 6 *Boactus,*[189] a *Plinio* Hist. Nat. Lib. 3 *Auxer,*[190] a *Strabone Aesar* De situ Orb. L. 5 appel-

[180]Honoratus 2018, VII, 799–801, http://www.perseus.tufts.edu/hopper/text?doc=Perseus:text:1999.02.0053: " 'Circaeumque iugum.' Circa hunc tractum Campaniae colebatur puer Iuppiter, qui Anxyrus dicebatur, quasi ἄνευ ξυροῦ, id est sine novacula, quia barbam numquam rasisset, et Iuno virgo, quae Feronia dicebatur. Est autem fons in Campania iuxta Terracinam, quae aliquando Anxur est dicta. 'Et viridi gaudens Feronia luco.' Non vacat quod addidit 'viridi': nam cum aliquando huius fontis lucus fortuito arsisset incendio et vellent incolae exinde transferre simulacra deorum, subito reviruit. 'Qua saturae iacet atra palus.' Secundum hanc lectionem re vera Saturam paludem intellegimus; sed alii 'Asturae' legunt. Quod si est, paludem pro flumine posuit; nam haud longe a Terracina oppidum est Astura et cognominis fluvius."

[181]Terracina (Province of Latina).

[182]Silius Italicus 2018, XIII, 82–85, http://data.perseus.org/citations/urn:cts:latinLit:phi1345.phi001.perseus-lat1:13. Here and below, the English translation follows Silius Italicus 1934a; 1934b.

[183]Fabrizio Zumali, a lawyer from Lodi who lived in the XVI century. He defended the Republic of Lucca against the Duchy of Ferrara, Modena and Reggio in a legal dispute over the possession of Garfagnana. On this topic, see Molossi 1776, 187; Pacchi 1785, 3, 22. The quoted passage is arguably from a part (Informatio XI) of an unknown, larger text.

[184]Pania della Croce (1,858 m/6,096 ft above sea level). It is the highest peak in the mountain range known as Gruppo delle Panie ("Panie Group"), in the Apuan Alps.

[185]Penia (Πενία), Greek mythological goddess of poverty and need.

[186]Barga (Province of Lucca).

[187]Mount Tondo, once known as Mount Tea (1,782 m/5,846 ft above sea level). It divides the drainage system of the Serchio (in Garfagnana) from that of the Magra River, in Lunigiana.

[188]Serchio, the main river in the Province of Lucca (and, therefore, the main river in Garfagnana). It flows into the Tyrrhenian Sea, a few kilometers north from Pisa.

[189]Ptolemaeus/ Πτολεμαῖος 2018, III, http://penelope.uchicago.edu/Thayer/E/Gazetteer/Periods/Roman/_Texts/Ptolemy/3/1*.html. Arguably, the map number and the related name refer to one of the many Latin editions of Ptolemy's treatise. I refer here to Ptolemaeus/Πτολεμαῖος 1584, Europae Tabula VI.

[190]Plinius (Maior) 2018, III, 8, http://data.perseus.org/citations/urn:cts:latinLit:phi0978.phi001.perseus-eng1:3.8: "[…] Pisae inter amnes Auserem et Arnum."

[pe]fertilitat*e*

latus.[191]*pf* A duobus fontibus originem trahit, quorum alterum supra *Silanum,*[192] supra *Soraggium*[193] alterum rimosa tellus egurgitat, coeuntesque postea eorum rivuli, aliis rursus in itinere sociatis *Castrinovi* moenia una cum *Turritae*[194] undis, de quibus Testi, non sine strepitu diverberant. Corrivant in hunc novi rivi, novique torrentes, quibus in mare Lucae propinquius tumidus quandoque, ac minax, tribus lapidibus ab Arni[195] ostiis distans, non inglorius devolvitur.

Antiquitus cum Arno immiscebatur, ut innuere videtur Rutilius Poeta Numant. itiner. L. 1, qui de Pisis loquens inquit,

> *Alpheae veterem contemplor originis urbem quam cingunt geminis Arnus, et Auxer aquis.*[196]*pg*

Id quod etiam Strabo L. 5, De situ Orbis, affirmat.[197] Sed quoniam Lucensi Urbi plurima ferebat incommoda, fuit a D. Fridiano illius urbis Episcopo[198] **XVIII.r]** (uti pie creditur), ab anno 560 ad annum 575 solo rastro, stupente natura, divisus. *Hic,* scribit Volat. Comm. Urb. L. 5, De rebus pisanor., *Phridianus Praesul ante omnes colitur, cuius meminit Gregorius, cum in aliis Lucensibus benemeritus, tum quod Auxerim amnem agros inundatione vastantem divinitus compescuit, ex quo pars ea, quae Auxeris nunc dicitur, ab ea deducta aspicitur.*[199]

De hoc etiam Guido Vanninus Poeta Luc. Epigr. 12, et 19 cecinit, affirmans, quod

> *Rastro iussit parere furentem.*[200]

Amnis hic, ut multi alii, adorationem antiquorum meruit ob Strabonis fabellam De situ Orbis L. 5,[201] secundum Annium, ipsumque, tanquam particularem Etruriae Deum coluerunt, ut etiam ex Svetonio,[202] et ex Macrobio habetur,[203] de quo videatur Annius super 16

[191] Strabo/ Στράβων 2018, V, 2, http://data.perseus.org/citations/urn:cts:greekLit:tlg0099.tlg001.perseus-grc1:5.2.

[192] Sillano, the main hamlet of the municipality of Sillano Giuncognano (Province of Lucca).

[193] This name could refer either to Rocca Soraggio or Villa Soraggio, both hamlets in the municipality of Sillano Giuncognano.

[194] Turrite Secca, a western tributary of the Serchio. The two streams merge in Castelnuovo di Garfagnana.

[195] Arno, the main river of Tuscany. It flows into the Tyrrhenian Sea, after passing through Pisa.

[196] Rutilius Namatianus 2018, I, 565–566, https://www.hs-augsburg.de/~harsch/Chronologia/Lspost05/Namatianus/nam_red1.html. English translation: J. W. Duff and A. M. Duff 1934.

[197] Strabo/ Στράβων 2018, V, 2, http://data.perseus.org/citations/urn:cts:greekLit:tlg0099.tlg001.perseus-grc1:5.2.

[198] Saint Fridianus (Frediano di Lucca, circa 500–588), an Irish prince who travelled to Italy and became Bishop of Lucca. According to a legend, he miraculously diverted the course of the Serchio (which often flooded the nearby city) by using a simple rake. On this topic, see Fanucchi 1870; Puccinelli 1952.

[199] Maffei 1530, 48v.

[200] Vannini 1611, Liber Quartus, Epigramma XXIII, *De D. Fridiano, Episcopo Lucensi, rastro Aesarem flumen vertente,* 118 (the epigram numbers quoted in the manuscript are incorrect).

[201] Strabo/ Στράβων 2018, V, 2, http://data.perseus.org/citations/urn:cts:greekLit:tlg0099.tlg001.perseus-grc1:5.2.

[202] Suetonius 2018, II, *Divus Augustus,* 97 (2), http://data.perseus.org/citations/urn:cts:latinLit:phi1348.abo012.perseus-lat1:97.2.

[203] This quote is not clear. Here, Vallisneri may refer to a passage from the *Saturnalia* (Macrobius 2018, II, 4, http://penelope.uchicago.edu/Thayer/L/Roman/Texts/Macrobius/Saturnalia/2*.html), where Octavian Augustus ironically addresses his friend Gaius Maecenas as "Laser Aretinum." For a detailed comment on

pf **In the text:** apellatus

pg **These lines are written in regular font.**

fragm. Catonis.[204] Silentio tamen involvendum non est memorabile Augusti fatum Svetonio Tranquillo, in eiusdem vita, notante. *Sub idem tempus,* ait, *ictu fulminis ex inscriptione statuae eius prima nominis littera effluxit.*[ph] *Responsum est centum solum dies post haec victurum, quem numerum C littera notaret, futurumque, ut inter deos referretur, quod Aesar, id est reliqua pars e Caesaris nomine Etrusca lingua Deus vocaretur.*[205]

Laxatur haec provincia in aliquas valles, in multosque colles curvatur scopulis etiam praeruptis, saxisque ingentibus aspera nemoribus hinc inde sylvescit. Metallorum[pi] est dives. Granis, vino, canape, fructibus, oleribus, piscibus non caret. Carnibus vero, **XVIII.v]** caseo, castaneis ad abundantiam usque luxuriat, hic illa satis ad sobrietatem, haec ut plurimum ad satietatem pro vicinis etiam exuberant. Nec ibi venatica desiderantur, cum[pj] ad delicias, tum ad pecorum custodiam. Antiquitus enim[pk] saepe cum ursis, nunc cum lupis, taxis atque vulpeculis saepe[pl] res est.

Homines ut plurimum parvi corpore, colore maior pars subfusco, torosa, et fortis, semper ad arma parata, in subitam iram prona, vindictae avida, iniuriarum memor, acuti, ac versatilis ingenii, exteris amica, hospitalitatis amantissima, suo domino fida, literis apta, naturali amoenissimo Tuscorum pollens eloquio, hilaris cantu, saltuque vivida, in mecanicis ingeniosa, mercibusque sollicita. Hyeronimus Capugnanus Itiner. Part. prima paucis populum hunc delibat, *Natio haec,* inquit, *Garfagnanae martia, audax, et in bello assuefacta, indomitaque, Atestinis principibus devota,*[206] quod sane, si ullo tempore, praesenti armis exteris strepente, clarescit.[207]

Quinque,[pm] et nonaginta vicos, multasque villas, et rura tenet, quorum omnium caput primum *Castrumnovum* est, secundum *Camporgianus,*[208] tertium *Trasilicus.*[209] Viginti-quatuor mille circiter colonos alit, ut in notulis, aut catalogis scribarum, et cancellariorum anni 1626 legere est.

Dividitur nunc tota Caferoniana in tres partes pro gubernando aptius populo, quas antiquo vocabulo *Vicarias* adhuc appellant,[pn] quoniam a *Vicario,* idest Imperatoris, aut alterius Principis supremi vices gerente **XIX.r]** regebantur, qui nunc *Rationis Dux* (Capitano di Ragione) dicitur.

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the relationship between the word "lasar/laser" and the name "Aesar," see Macrobius 1870, 236–237 and notes.

[204] Nanni 1515, Liber VII, *De origine gentium et urbium Italicarum,* LXXv: "Aesar fluvius dictus: quia lingua Hetrusca Aesar dicitur deus, ut Sueton. dicit in Vita Octaviani."

[205] Suetonius 2018, II, *Divus Augustus,* 97 (2), http://data.perseus.org/citations/urn:cts:latinLit:phi1348.abo012.perseus-lat1:97.2.

[206] F. Schott and Giovannini 1600, 146.

[207] Vallisneri is referring to the War of the Spanish Succession (1701–1714), a great conflict that scourged Europe after the death of the last Habsburg King of Spain, Carlos II (1661–1700).

[208] Camporgiano (Province of Lucca).

[209] Trassilico. Once an autonomous municipality, now a hamlet in the municipality of Gallicano (Province of Lucca).

[ph] *a*ffluxit

[pi] Metall*um*

[pj] *t*um

[pk] Antiquitus *vero* enim

[pl] vulpeculis *quandoque* saepe

[pm] clarescit.
Aer non inclemens, sed <...> Alpes malus sub Alpibus <...f...ex...> <...> meridies.
Quinque

[pn] **In the text:** apellant

Prima est illa Castrinovi, ubi Gubernator residet cum octo militibus lanceariis,[po] vel hastilia ferentibus vario cultu ornatis continuo eidem adstantibus. Toti provinciae tum in civili, tum in politico generaliter praeest. Gubernatio vero particularis cuilibet Rationis Duci propriae Vicariae innititur.

Secunda est Camporgiani Vicaria, quae antiquitus erat prima, sed vel ob comodiorem Castrinovi, viarumque situm, vel fatorum clade ac temporum vitio exulcerata, atque depressa vix nunc secundum obtinet locum. Discerpitur in triginta tres vicos, vulgo *Terre,* qui habitatores circiter 1968 alunt.

Tertia est in Trasilico, quae multos pariter sub sua ditione vicos possidet, quorum incolae circiter sunt 4505.

Binae[pp] arces militibus,[pq] armisque continuo munitae[pr] regionem hanc defendunt, et fraenant, reliquis, quas antiqui erexerunt, vel dirutis, vel incustoditis. Prima dicitur *Arx Montis Alfonsi,*[210] quae in colliculo Castronovo superincumbente erigitur, affabre laborata, perpetuis excubiis, militibusque gregariis diligentissime custodita. Nomen sortitur ab Alfonso Secundo Aestensi Ferrariae Duce,[211] qui anno 1579 die 22 Aprilis aedificandam curavit, ut hostilia Lucensium, facinorosorumque hominum tentamina reprimeret. Marchioni Cornelio Bentivolio[212] munus hoc demandatum fuit, qui cum quatuor millibus granorum sacculis, tormentis varii generis bellicis, variaque ad arduum laborem supellectile Castrumnovum petens, superadditis etiam triginta quatuor millibus scutis a provincia solutis, pacis dulcedinem populo, vicinis hostibus terrorem, quietem **XIX.v]** omnibus caram promittens[ps] faelicissime memorandum opus absoluit. Arx altera vocatur *Verrucole*[213] antiquum[pt] servans adhuc nomen, atque structuram, situ inaccessibilis, armisque praecipue priscorum manu missilibus inexpugnabilis. Supra horrendum, altissimumque scopulum posita, undique praerupta, atque impervia, nisi per angustissimum tramitem, qui facile a defensoribus obtruncari, saxis, ac trabibus, paucisque aliis armis etiam a natura ipsa paratis defendi potest. Nomen sapienter ab antiquis inditum, quoniam *Verruca,* Catone monente apud Aulum Gelium Noct. Attic. Lib. 3 C. 7, altum, asperumque montis verticem significat, hinc *verrucosus mons,* qui multis verrucis, hoc est asperis, editioribusque iugis assurgit.[214] Ita et nos medici *verrucas* dicimus crudum quoddam tumorum genus, *cutemque verrucosam* tuberculis quibusdam exasperatam vocamus.

Stemma est *pila metallica,* ex cuius apice, ac latere utroque singulatim tres flammarum glomi erumpunt, quae genium populi bellatorem, igneumque spiritum facile

[210] Mont'Alfonso Fortress, now part of the municipality of Castelnuovo di Garfagnana.

[211] Alfonso II d'Este (1533–1597), fifth Duke of Ferrara, Modena and Reggio. On this topic, see Tiraboschi 1825, 131.

[212] Cornelio Bentivoglio, Marquess of Gualtieri (1519/20–1585). On this topic, see Tiraboschi 1825, 440.

[213] Verrucole Fortress, now part of the municipality of San Romano in Garfagnana (Province of Lucca).

[214] Here, Vallisneri refers to a passage from Gellius' *Noctes Atticae* (Gellius 2018, III, 7 (6–8), http://penelope.uchicago.edu/Thayer/l/roman/texts/Gellius/3*.html): " 'Censeo,' inquit 'si rem servare vis, faciundum, ut quadringentos aliquos milites ad verrucam illam'—sic enim Cato locum editum asperumque appellat—'ire iubeas, eamque uti occupent, imperes horterisque; hostes profecto ubi id viderint, fortissimus quisque et promptissimus ad occursandum pugnandumque in eos praevertentur unoque illo negotio sese alligabunt, atque illi omnes quadringenti procul dubio obtruncabuntur. Tunc interea occupatis in ea caede hostibus tempus exercitus ex hoc loco educendi habebis. Alia nisi haec salutis via nulla est' ."

[po] militibus*, vel* lanceariis
[pp] **In the text:** Binas
[pq] militibus *militibus*, armisque
[pr] **In the text:** munitas
[ps] **In the text**: prommittens
[pt] Verrucole *Arx verrucosa* antiquum

furentem demonstrat. Quod Alphonsi Primi Ferrariae Ducis[215] fuit ob partam Ravennae victoriam cum epigraphe *Loco, et tempore.*

Spirituale dominium partim est sub Dioecesi Episcopi *Serzanae,*[216] vel secundum alios *Cergiani,* aut *Lunae novae,* partim sub Dioecesi Episcopi Lucae.[217][pu] Dividit illud rivulus Podii (del Poggio), rivulusque Cavezzae[218] inter S. Romanum,[219] Silicagnanamque[220] percurrens. Sub variis ingemuit dudum dominis Caferonianae Provinciae,[pv] quos singulos enumerare taediosum foret et extra chorum saltarem nimis. Sub auspiciis nunc faelicissime floret Serenissimae Domus Aestensis, omnium oblita calamitatum, quae diu frementem, ac reluctantem **XX.r]** diverberarunt.

Supra Castrinovi portam insculpta marmore visitur aquila expansis alis, rostroque minax, quae leonis dorso superincumbens iras eiusdem imperio frenat, atque castigat. Quod victoriam Aestensium supra hostes, quos tacito calamo praetereundos existimamus, demonstrat.[221] Cui suis in Satyris Ludovicus Ariostus arrisit, quando die 20 Februarii anni 1522 gubernandae provinciae ipsi opus commissum fuit. Sic etenim in quarta Satyra, quae incipit

> *Per custodir, come al Signor mio piacque*
> *il grege garfagnin, etc.*[222]

Historiam leonis tangit, sacrumque ulcus refricat.

> *Dei*[pw] *saper la licenza in che è venuto*
> *questo paese, poiché la Pantera*[223]
> *indi il Leon l'ha fra gli artigli avuto,*[224]

Quae regio postea excusso exterorum iugo sub auspiciis Aestensis Aquilae respiravit, et ut cum Virgilio loquar

> *Rediere saturnia regna.*[225]

Sed extra oleas[226] me nimis divagantem increpas amicorum suavissime, dum non naturae, sed hominum historiam pando. Parce prurienti calamo, resque nondum editas scribenti,

[215] Alfonso I d'Este (1476–1534), third Duke of Ferrara, Modena and Reggio. On this topic, see Tiraboschi 1825, 130.
[216] Now the Roman Catholic Diocese of La Spezia-Sarzana-Brugnato.
[217] Now the Roman Catholic Archdiocese of Lucca.
[218] Rivo del Poggio e di Cavezza (Poggio and Cavezza Creeks), now both known as Cavezza di Verrucole: a small tributary of the Serchio. The two streams merge in Piazza al Serchio (Province of Lucca).
[219] San Romano in Garfagnana (Province of Lucca).
[220] Sillicagnana, a hamlet in the municipality of San Romano in Garfagnana.
[221] The sculpture is an allegory of the Este's victory over the Republic of Florence (whose symbol was a lion, known as "Marzocco") in 1521, when Alfonso I d'Este regained Garfagnana after the death of Pope Leo X (Giovanni di Lorenzo de' Medici, 1475–1521). Therefore, the lion could refer both to the emblem of Florence and to the Pope's name. On this topic, see Pacchi 1785, 82.
[222] Ariosto 1535, *A M. Sigismondo Maleguccio*.
[223] The panther was the symbol of the Republic of Lucca, which previously occupied Garfagnana.
[224] Ariosto 1535, *A M. Sigismondo Maleguccio*.
[225] This passage is from the *Bucolica* (Vergilius 2018c, IV, 6, attributed, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi001.perseus-lat1:4).
[226] See note 97.

[pu] Lu*n*ae
[pv] **In the text:** Provincia
[pw] De*v*i

quae curiosis forsan salivam movebunt, e tenebris abscondita eruent, spiritus excitabunt somniculosis. Pudebat claram adeo provinciam literario orbi ignotam, cui maternum non obscurum sanguinem, et ipsa natalia debeo. Natus enim ex caferoniensi matre ex nobili Davinorum familia die Martis 3 Maii, hora 14 anno[px] 1661, dum genitor meus utriusque Iuris Doctor in Arce Trasilici iura dabat, sentiebam me invitum a natura trahi extra naturae historiam. **XX.v]**

Patere etiam, ut parergon loco nonnulla antiqua Romanorum[py] locorumque nomina montium iugis adhuc illustria clade temporum plebaeis distorta vocabulis ad pristinum nitorem restituam, quae ex ms. Timothei Tramonti,[227] Anselmi Micotti,[228] Ioannis Bosii,[229] Bartholomei Morgantii[230] aliorumque sudato opere repertis avidus exhauriebam. Scias[pz] tamen exopto, me non adeo esse credulum, ut omnia antiqua nomina, quae leges a priscis consulibus, tyrannis, regulis, heroibus desumpta vera existimem.[qa] Multa mihi videntur ridicula, distorta multa, et violentia quadam ingenii potius expressa, quam sponte nascentia, quae (uti communis antiquitatis scriptorum mos est) nonnullis immixta veris historiam fabulis, fabulas historiis immiscent. Nolo candorem meum, nolo veritatem, nolo tuas aures offendere. Decerpe, quae credes vero consona, quae falsa reice. Dicam cum clarissimo viro Philippo a Turre *Non*[qb] *is ego sum, qui pronus induam confictas plerumque, et turbidis, caenosisque fontibus haustas nomenclaturas, et migrationes populorum.*[qc] De inscript. M. Aquilii Cap. 1.[231] **XXI.r] XXI.v]**

Villa[qd] di Marcione[qe]—Vicus Marcelli.
Castiglione—Castrum Lestrigonum.
Villa Calamandrina—Vicus Aemilii Mamercini.
Corfino—Vicus Valerii Corvini.
Soraggio—Vicus Sergii.[qf]
Canigiano—Vicus Canini Rebilii.
Pania di Corfino—Mons Valerii Corvini.

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[227] Timoteo Tramonti (circa XVI–XVII century), an antiquarian from Castiglione di Garfagnana (Province of Lucca). He wrote a manuscript on the history of Garfagnana (Tramonti n.d.). See Pacchi 1785, 179.
[228] See note 165.
[229] Giovanni Bosio (?–?). Arguably, another antiquarian from Garfagnana.
[230] Bartolomeo Morganti (circa XVI–XVII century), an antiquarian from Garfagnana.
[231] Torre (del) 1700, 9. Filippo del Torre (1657–1717), Bishop of Adria, was a learned historian, archaeologist, and a friend of Vallisneri. On this topic, see Vallisneri 1991, 463.

[px] 14 *die Martis* anno
[py] Roman*a*rum
[pz] **From this point on, text continues on a small scrap of paper (XXI). This is the recycled cover of a letter. On the verso is written:**

"All'Ill.mo Sig.r mio P.ron Colmo
Il Sig.r Antonio Vallisnieri
Franca per Venezia
Padua"

[qa] vera *tibi consona* existimem
[qb] Turre *Tam elegantissima praefatione ad lectorem versus finem* Non
[qc] **This phrase is written in regular font.**
[qd] **From this point on, text continues on paper XXII.r.**
[qe] di *S.* Marcione
[qf] Vicus *Cornelii Cetheghi* Sergii

Silano—Castrum Iunii[qg] Silani.
Fiumicello di Soraggio—Amnis Caii Atilii Serrani.
Camporgiano—Campus Roscianus,[qh] vel Calfurnianus.
Forno Volastro—Vicus Calpurnii Bestiae.
Silicano—Vicus Silii Silvani.[qi]
Rosciano—Vicus Roscii.
Cassiano—Vicus Cassii.
Cesarana—Vicus Caesaris.
Brutiano—Vicus Bruti.
Petrognano—Vicus Petronii.
Niciano—Vicus Anicii.[qj]
Alpe di S. Pellegrino—Mons Leti. **XXII.r]**

Valico—V. Valerii[qk] Poblicolae. Vergemoli—V. Servilii Gemini.[ql] Terminone—V. Minutiae Thermae. Trasilico—V. Virginii Tricosti.[qm] Mulazzano—V. Cornelii Maluginei.[qn] Massa—V. Valerii Messalae.[qo] Magnano—V. Pompei Magni.[qp] Cerageto—Vicus Tergemini Curiati.[qq] Mozanella—V. Menenii Lanati.[qr] Pian di Cerreto—V. Aurelii Ceretani.[qs] Chioza—V. Cai Acatii.[qt] Riana—Vicus Rheae Silviae. Trappignano—V. Lucreti Tricipitini.[qu] Albiano—V. Fabii[qv] Lebeonis. Tiglio—V. Statilii Tauri.[qw] Filecchio—V. Furii Phili.[qx] Oppio—V. Sp. Oppii.[qy] Coreglia—V. Aurelii Costae.[qz] Ghivizano—V. Cassii Viscellini.[ra] Tereglio—V. Elii Tuberi.[rb] Calavorno—V. Accilii Glabrii.[rc] Bolognano—V. Calfurnii Bibuli.[rd] Cardoso—V. Lucii Cethegi.[re] Gallicano—V. Galli Canini.[rf] Verni—V. Plauti[rg] Venni. Fiatton, e Campi—

[qg] Iu*l*ii
[qh] Campus *Regis Iani* Roscianus
[qi] Sil*ano*—Vicus *Sillae* Silic*is* Silvani*us*
[qj] Niciano. *Vicus Niciae*—Vicus *Niciae* Anicii. **This last word is written by a different hand (see the following note).**
[qk] Valeri*us* **(from this point on, the list is written and finished by a different hand. The author is Domenico Cecchi. His handwriting was recognized thanks to the the autograph inscription on the first map).**
[ql] Servili*us* Gemini*us*
[qm] Virgini*us* Tricost*us*
[qn] Corneli*us* Malugine*us*
[qo] Valeri*us* Messal*a*
[qp] Pompe*us* Magn*us*
[qq] Cerageto—*Vicus Curiati Targemini* V. Tergemini*us* Curiat*us*
[qr] Menini*us* Lanat*us*
[qs] Aureli*us* Ceretan*us*
[qt] Cai*us* Acati*us*
[qu] Lucreti*us* Tricipitin*us*
[qv] Fabi*us*
[qw] Statili*us* Taur*us*
[qx] Furi*us* Phil*us*
[qy] Oppi*us*
[qz] Aureli*us* Cost*a*
[ra] Cassi*us* Viscellin*us*
[rb] Eli*us* Tuber*us*
[rc] Accili*us* Glabri*a*
[rd] Calfurni*us* Bibul*us*
[re] Luci*us* Cheteg*us*
[rf] Gall*us* Canin*us*
[rg] Plaut*us*

V. Fonteii[rh] Capitonis. Perpoli—V. Papirii[ri] Masonis. Palleroso—V. Oratii Paluilli.[rj] Pieve Fosciana—V. Publii[rk] Flaccinatoris. Migliano—V. Marci Aemilii.[rl] Bargecchia—V. Aemilii Barbulae.[rm] Eglio—V. Elii[rn] Peto. Rontano—V. Aruntii[ro] Nepotis. Ceretolo—V. Luctatii[rp] Cereti. Gragnanella—V. Cornelii Dolobellae.[rq] Silico—Vicus Sillae. Antisciano—V. Hostilii Mancini.[rr] Careggine—V. Ebutii[rs] Cornicensis. Fabbriche—V. Caii Fabricii.[rt] Ponticosi—V. Publii Cossi.[ru] Sambuca—V. Fabii Ambusti.[rv] Cascianello—V. Ottacilli Crassi.[rw] Roggio—V. Lucii[rx] Regillensis. Puianella—V. Popilii[ry] Lenas. Vitoio—V. Ventidii Bassi.[rz] Vaii—V. Lucii Velleii.[sa] Corti—V. Curii Dentati.[sb] Corfigliano—V. Calfurnii[sc] Pisonis. Minucciano—V. Munatii Planci.[sd] Agliano—V. Eliani.[se] Castagnola—V. Fulvii Centimali.[sf] Giuncognano—V. Genutii Clepsinae.[sg] Capoli—V. L. Capitolini.[sh] Pontaccio—V. Gnei Petici.[si] Dalli—V. Caesi Duillii.[sj] Cogno—V. Gnei Genutii.[sk] Veregnano—V. Publi Verennii.[sl] Magliano—V. Lucii Emiliani.[sm] Gragnano—V. Geganii Mamercini.[sn] Metello—V. Caecilii Metelli.[so] Borsigliano—Brutus Bubulanus. Livignano[sp]—M. Levinus. Caprignano—V. Cornelii Aruini.[sq] Orzaiola—V. Aurelii Oresti.[sr] Sala—V. Livii[ss] Salinatoris.

[rh] Fontei*us*
[ri] Papiri*us*
[rj] Orati*us* Paluill*us*
[rk] Publi*us*
[rl] Marc*us* Aemili*us*
[rm] Aemili*us* Barbul*a*
[rn] Eli*us*
[ro] Aruntii*us*
[rp] Luctati*us*
[rq] Dolobell*a*
[rr] Hostili*us* Mancin*us*
[rs] Ebuti*us*
[rt] Cai*us* Fabrici*us*
[ru] Publi*us* Coss*us*
[rv] Fabi*us* Ambust*us*
[rw] Ottacill*us* Crass*us*
[rx] Roggio—*L* V. Luci*us*
[ry] Popili*us*
[rz] Ventidi*us* Bass*us*
[sa] Luci*us* Velleii*us*
[sb] Curi*us* Dentat*us*
[sc] Calfurni*us*
[sd] Munati*us* Planc*us*
[se] Elian*us*
[sf] Fulvi*us* Centimal*us*
[sg] Genuti*us* Clepsin*a*
[sh] Capitolin*us*
[si] Gne*us* Petic*us*
[sj] Caes*o* Duilli*us*
[sk] Gne*us* Genuti*us*
[sl] Verenni*us*
[sm] Luci*us* Emilian*us*
[sn] Gegani*o* Mamercin*o*
[so] Caecili*us* Metell*us*
[sp] Livignan*us*
[sq] Cornel*ius* Aruin*a*
[sr] Aureli*us* Orest*us*
[ss] Livi*us*

Piazza—V. Vibii[st] Pansae. Naggio—V. Nautii Rutilii.[su] Bibbiana—Fabius Vibulanus. Pugliano—C. Petilius. Etc.

Quae[sv] [sw] omnia solum eruditionis causa indigito, non ut, cum feret occasio iis utar nominibus, quae obsoleta iam, usuque deperdita necessariam elocutionis, ac historiae claritatem obtenebrant.

Sed e diverticulo in viam. *Castilionem* Paulo post ingressi **XXII.v]** sumus, ubi generose ab Ill.mi Prioris Guazzelli[232] benignitate excepti quicquid curiosi viciniis in illis extabat, magno animi solatio didicimus. Argenteos pyritas ob substratam cupri,[sx] argentive mineram exhausimus,[233] pilasque terrae flaviusculas, quarum[sy] in centro medulla auricolor lucidissima condebatur, cui[sz] quoniam igne resolvitur, et exhalat, *hyerarchiae* nomen, nescio qua ratione,[234] indidere. *Pyropum, sive carbunculum* monstruosae magnitudinis quodam in specu, ob torrentem praeterfluentem inaccessibili, noctu adeo splendescere affirmarunt, ut accensa lampas videatur, sed vel *ignem fatuum* esse, vel *putridum lignum noctilucum,* vel *lampyrim* aut cicindelam aliquam, suspicari[ta] etiam fas est.[235]

Non procul in substrata planitie citra *Aesarem*[tb] Torrentem (Serchio) thermales ubertim emanant aquae dictae *della Pieve,* quoniam sub **31]** ditione *Terrae Plebis* existunt.[236] Inter tot, quae in[tc] nostris montibus saluberrimae scatent, solae[td] istae nunc sunt in usu, aliisque palmam abripuerunt. Experientia enim teste, maxima etiam locum non invenere remedia, si tempestive potentur, male natam plurium morborum sobolem in dies licet[te] succrescentem demetunt.[tf] Nec tam facile remorbescunt, semel recte corpora salutiferis undis detersa.

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[232] The "Prior Guazzelli" could be identified as Michelangelo Guazzelli (1660-173?), a nobleman from Castiglione. He was appointed Podestà ("chief magistrate") of Sassuolo (Province of Modena) from 1720 to 1724, and later became Podestà of San Felice sul Panaro (Province of Modena), from 1724 to—at least—1731. See Cionini 1880, 214.

[233] On the great mineralogical diversity that can be found in Garfagnana (including such mineral species as—among many others—pyrite, marcasite, copper, and silver), see Biagioni 2009; Bonini and Biagioni 2007; Luzzini 2013a, 100, note 108.

[234] Arguably, mineral sulphur (S). When burnt, it produces sulphur dioxide (SO_2), a toxic gas (hence, probably, the expression "exhalat").

[235] Considering the location where this phenomenon was observed, Vallisneri's assumptions seem plausible. It could have been either an ignis fatuus (or "will-o'-wisp," in Italian "fuoco fatuo": weak flames produced by the decomposition and natural combustion of organic matter) or the bioluminescence of fireflies.

[236] Bagno della Pieve, a spa still used in the municipality of Pieve Fosciana (Province of Lucca). It is also described in Vallisneri 1711, 355–356; 1728, 105–107.

[st] Vibi*us*
[su] Nauti*us* Rutili*us*
[sv] **Vallisneri's handwriting restarts from this point.**
[sw] Etc.
Ex Timotheo Tramontio, et Bartholomeo Morgantio Antiquariis
Quae
[sx] substratam *aeris* cupri
[sy] qua*m*
[sz] condebatur, *quae* cui
[ta] aliquam *esse*, *potius* suspicari
[tb] citra *Serchium* Aesarem
[tc] quae *ex* in
[td] scatent *aquae*, solae
[te] lice*s*
[tf] demet*a*nt

Iacobus Lavellius harum[tg] virtutes Literato Orbi communicavit anno *1609 kal. Septembris.*[237] Medio lapide distat earundem scaturigo a *Castronovo.* Sunt[th] limpidae saporis subsalsi, subamarique, odoris bituminosi, et plus quam tepidae. Suas etiam longe a fonte virtutes servant. Eo modo, quo aquae *Tetutianae,*[238] sumuntur, praemissa nempe levi purgatione, expiatisque primis viis. Usque ad bis senos dies novantur,[ti] vel etiam ulteriores, si placet, iuxta saevam, antiquamve morborum tyrannidem. Dosis decem, duodecimve librae quolibet mane iuxta indigentiam, aut ventriculi capacitatem, et robur, atque id, quod nescio quid admirandi sapit, vires tunc recreant, neque tumet, nec extraneo pondere gravatur stomacus, nec torminibus ventrem exagitant, sed blande, placideque duarum horarum spatio praeterfluunt, lubricam alvum reddunt, sitim extinguunt.

Primi extrinsecus mirificas vires in doloribus rheumaticis, **32]** artrithicisque, ac variis[tj] nervorum morbis experti sunt, quibus faelicibus observatis experimentis alii, devorato ut ita dicam timore, speque[tk] maioris efficaciae, magisque prosperi effectus concepta, aquam ipsam animose biberunt, quam, cum non solum innoxium, sed incomparabile remedium turmatim[tl] advolarunt, ac sine praecedenti purgatione, sine sexus, aetatis, temporis discrimine generose potantes, fere omnes, tanquam miraculo sanescebant. Auscultabant eiusdem viribus saeviora fere quaecumque morborum semina, ita ut apud vicinos populos *medicinae nomen universalis* audiret. Deferbuit tamen insanus adeo bibendi cacoethes,[tm] cum nonnullos impuro corpore, ac sine debitis cautelis imprudenter bibentes maiori labe infecerint. More scilicet magnorum remediorum, quae intempestive sumpta sibi veneni naturam, interdum asciscunt.[tn] Eo tandem res devenit, ut prudenter cum medicorum administratae consilio, spes aegrotantium non fallant, et signate multis, non indiscriminatim omnibus opitulentur.[to] Sed ut ad offam proprius accedam.

Dolores[tp] capitis antiquos vel saepe recrudescentes, epilepsias, vertigines, surditates, lymphaticos fere omnes morbos, cordis palpitationes praecipue spasmodicas, pulmonum ulcera, et asthmata delent. Ventriculis effoeti, crudoque marcore tabescentis solatium sunt. Icteros detergunt, dolores colicos, passiones histericas, illiacos **33]** affectus, hydropicos quosdam sanant. Unda enim pellit undam,[tq] atque ad antiqua serositatum impluvia extravasatas lymphas corrivat. Ventris fluxus cohibent, urinariosque tubulos verrendo cal-

[237] Jacopo Lavelli (XVI–XVII century), a physician from Castelnuovo and Professor of Medicine at the University of Pisa. In 1609, he wrote a letter in Latin on these thermal springs. A partial transcription of this letter is reported in Paolucci 1720, 78. An Italian translation of the entire letter was then published in Vandelli 1760, 77–93, 102–103. Finally, a complete transcription of the original Latin text can be found in Pacchi 1785, *Lettera del Dottore Jacopo Lavelli di Castelnuovo intorno ai Bagni della Pieve di Fosciana, del 1609,* LXXVI–LXXIX. On this topic, see De Stefani 1879; Pacchi 1785, 197, 200–201. For a detailed chemical study of the thermal springs of the Serchio River valley, see Calvi et al. 1999.

[238] Terme Tettuccio, one of the most ancient and renowned spas in Montecatini Terme (Province of Pistoia). Here, Vallisneri refers to a passage from Lavelli's letter (Pacchi 1785, LXXIX): "[…] eo modo, et ordine sumitur, quo aqua Tettucciorum sumi consuevit."

[tg] Lavellius*, me fallor, primus fuit, qui* harum
[th] Castronovo *Caferonianae*. Sunt
[ti] dies *deglutiuntur* novantur
[tj] ac *aliis* variis
[tk] spe*m*que
[tl] remedium *sentirent,* turmatim
remedium *experirentur,* turmatim
[tm] cac*h*oetee*s*
[tn] a*d*sciscunt
[to] o*pp*itulentur
[tp] Dol*us*
[tq] unda*s*

culos, et arenosa sedimenta propellunt. Menstrua provocando, vel obstructos meatus reserando faecunditatem revocant, podagraeque tormenta levant. Vermes tandem, eorundem mucosa nidamenta, et semina certo certius a cellulatis intestinorum latebrulis exterminant.

Quid tantas donet his aquis vires, vix coniecturis locus. Nondum enim exactam harum analysim institui, quam, si meliora Deus otia dabit, et si *Regium Lepidi,*[239] ubi in posterum mea Patria stabit, post tot emensos labores iterum revisam, instituere gestit animus. Si tamen aliquid hariolari fas est, ex sale alcalico calcario, ac bitumine, quibus mons ille scatet, vires omnes mutuari, non abludet forsan a vero. Extrahebant enim antiquitus coloni a superincumbentibus fodinis quandam egregiam *bituminis* speciem, quae *gagatis* a Galeno descripti naturam redolebat.[240] Cum autem *gagates* virtutibus omnibus polleat, quibus dicta *Caferonianae Plebis* aqua, hinc salinis etiam, tanquam auxiliaribus copiis ulterius ditata,[tr] iure merito morbos omnes descriptos eminenter pessundare necesse est.

Parte montis opposita novae pariter *thermae* olim repertae sunt *lacteo sapore, atque tepore* conspicuae, quae ad sal acre muriaticumve bilis edomandum mite **34]** conducebant, sed in ipsis cunabulis pene obsoleverunt.[241]

Camporgianum tandem inexpectato devenimus, antiquam scilicet illam totius provinciae metropolim, ubi a generosissimo *D. Carolo Davinio,*[242] ab *Ex.mo D. Ioanne Baptista Ternio*[243] avunculis meis, atque ab *Ill.mo D. Iulio de Rubeis Praetore,*[244] concive meo, ac consanguineo perhumaniter excepti, dura salebrosi fastidia itineris, fractasque vires levavimus.[ts] Certabant omnes officiis,[tt] festivasque celebrando dapes, crateras[tu] magno omine

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[239] Reggio (Regium Lepidi), the ancient name of the city of Reggio Emilia.

[240] From Galen's *De simplicium medicamentorum temperamentis ac facultatibus* (Galenus/Γαληνός 2018, IX, *De lapidibus*, https://books.google.it/books?id=pswQcfcp4VkC&printsec=frontcover#v=onepage&q&f=false): "Est et alius lapis colore atro, qui ubi igni admotus fuerit, persimilem bitumini odorem exhibet, quem Dioscorides nonnullique alii in Lycia inveniri prodiderunt, ad fluvium nomine Gagatem, unde et ipsi lapidi nomenclaturam inditam dicunt […]." Here, too, Vallisneri refers to a passage from Lavelli's letter (Pacchi 1785, LXXVII): "Galenus enim, et Mesues, praecipui praeceptores nostri, asserunt oleum, quod de bitumine petrae gagatis extrahitur, talia beneficia afferre consuevisse; vim enim emolliendi, aperiendi, et discutiendi ei tribuit Galenus."

"Lapis Gagates"—"jet" in English, "gaietto" in Italian—is a type of lignite once used in jewelry (because of its relative hardness and translucence) and in medicine. On the chemical composition of the thermal waters in Pieve Fosciana, see Calvi et al. 1999, 50–52.

[241] Though the location of this second, unexploited thermal spring is not clear, Vallisneri is evidently referring to a passage from the last part of Lavelli's letter (Pacchi 1785, LXXIX: "Mille passus procul a dictis thermis, sed in opposita parte alterius montis, quaedam aquae thermales nuper inventae sunt, quae ad hepar refrigerandum summopere conducunt, et inter alias (quia tres sunt numero) una ipsarum reperitur lactis saporem referens, quod monstruosum dici potest; cum in terrae cavernis id gignatur, quod in pectore solummodo animalium naturae decreto gigni consuevit. Et haec insignem hepati affert refrigerationem; sed ob fluminis viciniam, et supereminentis montis oppressionem difficillime defendi possunt, quin aquae misceantur; et nondum intelligere potui, quid sit de ipsarum commodo usu sperandum." Pacchi (1785, 197) agrees with Vallisneri. But according to others (Calvi et al. 1999, 46–48; De Stefani 1904, 119–120; Paolucci 1720, 78; Vandelli 1760, 101–103), Lavelli's note refers to the Torrite thermal waters: these are located on the opposite side of the Serchio, and are described by Vallisneri later in the manuscript.

[242] Carlo Davini (16?–17?), uncle of Vallisneri. See Vallisneri 1991, 124.

[243] Giambattista Terni (16?–17?). Arguably, an uncle of Vallisneri.

[244] Giulio Rossi (16?–17?), from Scandiano, Capitano di Ragione (i.e., governor and chief magistrate) of Camporgiano. See Cionini 1880, 89, note 1.

[tr] ulterius *armata* ditata
[ts] vires *perurbana hospitalitate* levavimus
[tt] omnes *favoribus* officiis
[tu] crater*e*s

coronantes[tv] severitatem philosophicam, ac medici peregrinantis austeritatem exuere me cogebant. Tunc thermae, tunc minerae, tunc tota natura sepulta mero iacebat, calentemque vidisse,[tw] lusus erat.

Tam grata hospitalitate[tx] expediti *Turritae* balnea visebamus, quae uno tantum lapide a Castronovo occidentem versus distant.[245] Providam antiquorum sedulitatem, recentiorum incuriam obstupui. Elegantissima, et ad commodum balneantium magnifice quondam instructa aedificia, nunc fatali ruina quassata cernuntur. Limo, parietinis, saxis, immundoque caeno lavacrum unum repletum est, et secreta calidae commercia per incustoditas vias in subiectum flumen defluunt. Solium alterum **35]** paulo diligentius detersum est, adhucque[ty] aegrotantium solatio famulari potest. Quadrilaterae figurae est cum sedilibus circum, et in umbilico laboratis, et lateritio fornice tectum. Per occultum aquaeductum e montis pede in hydrophylacium[246] aqua saliens ferventissima cogitur,[tz] inde in canaliculum subgrundiae simillimum, in solium defluit. Embolo tamen, seu epistomio, si placet, clauditur, derivaturque per recurva demeacula circa lavacri labrum ad alios usus. Nec solum aqua calens extillat. Frigidissima prope funditur, quae ex eiusdem montis visceribus fistulato[ua] tramite emergens contiguum igniti aquaeductus lambit latus, quae pariter[ub] per diversos cuniculos ad lubitum diducitur. Ita temperant ad arbitrium modo aestuantem unius calorem, modo rigens alterius gelu. Non vulgari scilicet artis, ac naturae miraculo. Potest enim quis eodem in balneo modo gelidos artus concalefacere, modo exustos[uc] refrigerare, modo per gradus, vel laudabili temperie inter utriusque extrema corpus[ud] fovere. Non opus est, ut in Euganeis,[247] quod aqua longo itinere mitigata descendens, minaci ardore deposito, suavi temperatione mollescat. Torpet, multoque blandius fracta intepescit in ipso limine, visque illa medicatrix non longo elassescit[ue] itinere. Unde cum Cassiodoro, et de hoc fonte dicam *non tantum deliciosa voluptas acquiritur, quantum blanda medicina confertur, scilicet sine tormento cura, sine horrore remedia, sanitas inempta.*[248] His adnectitur cubiculum omni necessario quondam instructum et pro assistentium, et pro bal-

[245] Torrite thermal waters, an ancient spa in the municipality of Castelnuovo di Garfagnana. The spring was located on the Apuan (western) side of the Serchio River, along the Turrite Secca Torrent. It disappeared in 1948, as a consequence of the construction of a nearby hydroelectric power plant (Calvi et al. 1999, 46–50). The Torrite thermal waters are also described in Vallisneri 1711, 356–357; 1728, 108–111. On this topic, see also De Stefani 1904; Pacchi 1785, 197–200; Paolucci 1720, 78; Vandelli 1760, 95–104.

[246] For a comment on the use of this term in the manuscript, see note 121.

[247] Despite what could be argued, the hydrothermal activity of the Euganean Hills is not a consequence of their volcanic origin. Rather, the thermal and chemical features of these springs result from the penetration of water 3 kilometers (1.85 miles) deep into the Earth's crust through fractures in rocks. At this depth, the water meets a crystalline basement and is forced upwards by hydraulic pressure, eventually flowing at high temperature (up to 75°C) and enriched with mineral salts, including such elements as Cl, Na, K, Mg, Br, I, Si. On this topic, see Astolfi and Colombara 1990; Bosellini 2005, 98; Luzzini 2013a, 84; http://www.parcocollieuganei.it.

[248] This is a passage from Cassiodorus' *Variae* (Cassiodorus Senator 2018, II, 39, http://www.thelatinlibrary.com/cassiodorus/varia2.shtml). The same quote is in Vallisneri 2006, 291 and note 713.

[tv] omine <...> *coronantes* coronantes
[tw] *l*alentemque *Catonem* vidisse
*l*alentemque *minerarum* vidisse
[tx] grata *benevolentia, ac operosa liberalitate* hospitalitate
[ty] adhucqu*a*e
[tz] ferventissima *defluit* cogitur
[ua] visceribus *defluens* fistulato
[ub] parite*s*
[uc] exust*a*s
[ud] cor*f*us
[ue] elas*c*escit

neantium commodo, quod tamen semidirutum est. Calor **36]** aquae huius ferventis, sapor, odor, vires eaedem sunt, ac thermarum Euganeorum Montium,[uf] si[ug] eas excipias quae tartareo, mihique interne suspecto ferrumine lapidescunt.[249] Abundant scilicet sale, sulphure, volatili terra, spiritu, ut sapore, odore, experimentis, viribus, tactu et analysi patet. Hinc in cronicis praecipue, ac desperatis morbis ad has, tanquam ad sacram anchoram confugiendum existimamus, tum si interne, tum si externe a perito clinico praescribantur. Nemo enim tam hospes in medicina est, qui ignoret, longos, atque refractarios morbos, ab obcaecatis, ut plurimum huius machinae canaliculis, cribrisve infarctis dependere, pro quibus reserandis nil aquis thermalibus sale, sulphure, ac spiritu luxuriantibus potentius existit. Lavant enim, everruntque[uh] viscerum, partiumque tubulos, atque alte glandulosos acinos pereptando coagulatos succos dissolvunt, et urgent, hinc sanguineo latici, lymphae, fermentisque pristinum motum conciliando ad antiqua munia marcescentes inerti languore partes restituunt. Ita revocato suo omnibus tono,[ui] reseratis, detersisque organulis omnibus,[uj] ac edomitis succis ex chylo praecipue crudo sylvestribus, laudabilis in posterum ab universa massa fluidorum circulatio celebratur, despumatio eorundem,[uk] ac depuratio exacte perficitur, ex quo tota sanitatis beatitudo dependet. Ex quibus patet fere universam morborum sobolem ex dictis causis generaliter enascentem[ul] posse Turritae Thermas **37]** averruncare. Hipocondriacos igitur morbos, qui ut plurimum protheiformi, ut ita dicam, vultu[250] communia derident remedia, medicorumque flagellum audiunt, renum, ureterum, vescicae labes, uterique sordes[um] delere posse indubium est. Ob sulphur[un] amicas pectori, ob sal detersivum ventriculo, et intestinis, capitique ob spiritum nemo nescit. Si quis autem timidiusculus nimiam earundem activitatem perhorrescat, poterit facili negotio frigida temperare, easque thermis blande tepentibus et minus activis *B. Virginis Montis Orthoni*[251] prorsus aemulas reddere.

Neque solum interne, sed externe certas opes ferunt. Trahunt enim originem cutanei morbi vel a sanguinis exuviis per cutaneas glandulas[uo] non expulsis, reticularique

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[249] As is pointed out in the Italian synthesis of the *Primi itineris Specimen* (Vallisneri 1726, 382), Vallisneri is specifically referring to the Terme d'Abano: the most renowned spa in the Euganean Hills (now in the municipality of Abano Terme, Province of Padua). On this topic, see Luzzini 2013a, 84–87, 186; Vallisneri 1706.

[250] From Proteus (Πρωτεύς), a Greek mythological god of waters, who—just like water—constantly changed shape. Hence the Latin adjective "protheiformis" ("protean" in English, "proteiforme" in Italian), which means "versatile," "mutable."

[251] Fonte della Vergine di Monteortone ("Spring of the Holy Virgin of Monteortone"), in Abano Terme. According to a legend, in 1428 the soldier Pietro Falco bathed in it, and was miraculously healed from plague. Later in the XV century, a shrine was built on this site (Santuario della Madonna della Salute, "Shrine of the Madonna of Health"), becoming a popular destination of pilgrimage. See Luzzini 2013a, 86–87; Vallisneri 2006, 246 and note 636; http://www.abanoterme.net/abano-citta.html; http://www.monteortone.it/3sto/app.htm.

[uf] Monti*s* **(in the manuscript, the order of the words "Montium" and "Euganeorum" has been inverted by marking them with numbers).**
[ug] Montium, *exceptis illis,* si
[uh] e<*x*>erruntque
[ui] **In the text:** revocato suo omnibus revocato tono
[uj] organulis *tono* omnibus
[uk] *eius*dem
[ul] generaliter *succrescentem* enascentem
[um] uterique *scelera* sordes
[un] su*p*phur
[uo] cutaneas *miliares* glandulas

plexu,[252] aut areolis[253] interpositis irretitis, vel ab externis vermiculorum iniuriis caeca erosione pustulas, et ulcuscula excavantibus, aut a salium acutie, vel asperitate, aut a poliposa, pigrave vapescentis[up] sanguinis dispositione, aut a lymphae, serive acescentis torpore, vel ab alia rebelli, et alte etiam inhaerente causa, quae totius fere cutis compositam rationem coinquinet,[uq] sulphureae, salinaeque moleculae spiritu, caloreque agitativo vibratae poterunt affrictas labes explodere. Eius namque spiracula rursus aperiendo, crispatos, aut rigidos villos emolliendo, lentis **38]** humoribus motum conciliando insectorum cuiuslibet speciei turbam potenter exterminando, fibras tandem tabo marcidas roborando citius, tutius, blandiusque qualibet externa[ur] remediorum farragine ad pristinam sanitatem aegros restituent. Eadem ratione nervosis affectibus vel stillicidio, vel aspersione, vel immersione, vel alio quolibet modo prescriptae opitulantur.[us]

In dorso montis opposito trans torrentem aliae huiusmodi thermae, sive *fontes excocti, ac igniti,* ut cum *Cassiodoro* loquar,[254] emanant, qui neglecti per rudes fistulas rimosasque vias in declive devolvuntur. Et quamquam nullus honos medicatis his undis usque adhuc a scriptoribus exurgat, nihilo tamen minus nomen *Aponon*[255] et istae merentur, cum etiam in istis, ut in tot aliis esse possit

> *Publica morborum requies, commune medentum*
> *auxilium, praesens numen, inempta salus.*[256][ut]

His non sine medico examinatis solatio inceptum iter prosequebamur per cautes adeo praecipites, et crebra mortis imagine perhorrendas, ut quandoque paenituerit[uu] nimium curiositati litasse. Vincebat tamen acris cognoscendi[uv] cupido, trementemque interdum pedem erectus ad meliora animus novis ausibus castigabat. Tunc mirabar inter adeo praerupta saxorum iuga, inter tam ardua terrarum, et rudes scopulos, in quibus nulla oculorum, et praecipua **39]** palati[uw] oblectamenta vix sunt

> *Castaneae molles, et pressi copia lactis,*[257]

[252] Here, Vallisneri is supposedly referring to the vascular network of the skin.

[253] Areola: a circular, pigmented area in the skin. Usually, this term refers to the colored area which surrounds the nipple.

[254] This is an adapted quote from Cassiodorus Senator 2018, II, 39, http://www.thelatinlibrary.com/cassiodorus/varia2.shtml: "Haec perennitas aquarum intellegendi praestat indicium per igneas terrae venas occultis meatibus influentem imitus in auras erumpere excocti fontis inriguam puritatem"; "Spatium, quod inter aedem publicam et caput igniti fontis interiacet, silvestri asperitate depurga."

The location of this other, unexploited thermal spring is not clear, though Vallisneri (see also Vallisneri 1726, 383) places it on the eastern side of the Turrite Secca Torrent. In any case, according to Domenico Pacchi (Pacchi 1785, 200), by the second half of the XVIII century this spring no longer existed.

[255] Variation of Aponus, a deity of the ancient Adriatic Veneti, later identified with the Greek god Apollo (Ἀπόλλων) and, as such, dispenser of health. Hence the modern name "Fonte d'Abano" ("fons Aponi"). On this topic, see Lazzaro 1981.

[256] Claudianus 2018a, 69–70, http://www.curculio.org/Claudian/aponus.html. The same quote is in Vallisneri 2006, 291 and note 714.

[257] Vergilius 2018c, I, 82, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi001.perseus-lat1:1.

[up] pigrave *ac* vapescentis
[uq] rationem *consceleret* coinquinet
[ur] qualibet *sordida, ac foetenti* externa
[us] op*p*itulantur
[ut] **Margin note (left):** Claud.
[uu] paenitu*it*
[uv] acris *sacendi* cognoscendi
[uw] praecipua *palatis* palati

mirabar inquam fortes, et lacertosos homines diu, ac beate vivere, foeminasque lepidulas, Veneres[ux] ipsas urbium quandoque nitore, ac lenitate[uy] frontis excellere. Et tamen solam aquam limpidissimam ebibunt, et rudissimis alimentis latrantem stomacuhm saturant. *Non artis adminiculis,*[uz] ut Divi Hyeronimi verbis utar, *expoliunt*[va] *purpurisso faciem, nec extraneis exuviis turritos vertices struunt.*[258] Non Minerva, non Ceres, non Bacchus ibi sua munera dispensat,[vb] adhucque ibi vetustas diceres aetatis aureae latitare reliquias. Amylon tritici defectu pro lineis panniculis, vel amiculis, ad[vc] notam consistentiam indurandis *ari radice*[259] conficiunt, provido sagacis populi, ac naturae nullibi deficientis consilio. Detracto enim primo cortice contritas radices aqua fontis macerant, donec mollescant, deinde cremorem exprimunt, qui facile postea in fundo vasis subsidet. Prima decantata aqua, ut cum chimicis loquar, novam superaffundunt, quae salia quaelibet liquet rodentia, qua[vd] diligenter effusa candidissimum sedimentum exsiccant soli, quod ab amylo nostrate nec consistentia, nec colore, nec usu distinguitur. Annonae tempore pro cibo salubri **40]** quandoque usos affirmabant, cum tota vis caustica, rodendique robur,[ve] quod ex manuum dolorifica sensatione et ipsi primis expressionibus experiuntur, ab aqueis moleculis absorbeatur.

Ultimos tandem Alpium fines, quos[vf] *Panie* vocant per vix concessos tramites tetigimus, ex quibus non longe Tyrrhenum aequor aestuans visitur. Hic inter saxa nigro pumice primo in limine squallentia largus minerarum thesaurus, hic curiosus naturae ruspator et corpus, et ingenium fatigare, sollicitamque sciendi famem satiare, corporis autem augere potest. Neque inter horrentes cryptas coloni desunt. *Furnus Volaster* non improprio nomine vocatur pauperculus vicus, quem ferrea gens, armisque aptissima inhabitat. Antiquam, celebremque huius loci viam, regionisque asperitatem *Areostus* ita[vg] eleganter delineavit.

Lo scoglio, ove il sospetto fa soggiorno
alto dal mare da seicento braccia
di ruinose balze cinto intorno,
e da ogni parte di cader minaccia,
il più stretto sentier, che guida al Forno
là dove il Garfagnin il ferro caccia,
la via Flamminia, et Apia nomar voglio,

[258] This is an adapted quote from Saint Jerome's *Epistolae* (Hieronymus 2018, CXXX, 7, http://ctsstage.dh.uni-leipzig.de/text/urn:cts:latinLit:stoa0162.stoa004.opp-lat3/passage/130.7.11-130.7.14): "Polire faciem purpurisso, et cerussa ora depingere; ornare crinem, et alienis capillis turritum verticem struere."

[259] Italian arum, in Italian "gigaro chiaro" (*Arum italicum* Miller), Family Araceae. It is a herbaceous, perennial plant native to the Mediterranean region, growing 30 to 46 cm in height (12–18 in). Its tuberous rhizome is particularly rich in starch, which in Trassilico was once used as a substitute for the common wheat starch. On this topic, see Gastaldo 1987, 469–470; http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=y760.

[ux] foeminasque *comptas magis, quam sumptuosas,* lepidulas, *atque blandidulas,* Veneres
[uy] ac *maiestate* lenitate
[uz] **Margin note (left):** D. Hyeron. Epist.
[va] expol*l*iunt
[vb] munera *sudata* dispensat
[vc] amiculis, *collipendulis* ad
[vd] rodentia *liquet*, qua
[ve] **In the manuscript, the order of the words "roburque" and "rodendi" has been inverted by marking them with numbers.**
[vf] fines, *quas* quos
[vg] Areostus *tuus,* ita

che passa verso il mar va su lo scoglio.[260]

A Brixiensibus metallurgis primo mapalia, humilesque constructas casas asserunt incolae, cuius non **41]** ultimum argumentum est, multa adhuc brixiensia exaudiri vocabula, quae inobservantes villici Tusca lepiditate commiscent.[261] Parte laeva *Petrosanae* Torrentis,[262] qui ab occidente in orientem fluit, sitae sunt domunculae in scrupeis stratorum montis radicibus, e quibus asperrimae rupium moles extolluntur, colore, scabritie, sterilitate saxis ingentibus horridae.[263] Inflexis etiam crustis modo lunantur in arcum, modo elatis tumulis fastigiatae extolluntur, varieque lasciviente natura in rectum, in obliquum, in ambitum quasi novi montes per montium dorsa resurgunt. Non[vh] longe distant *minerae ferri,* atque *vitrioli,* quas summa cum animi voluptate, praeeunte sagacissimo[vi] quodam viro, lustravimus. Complevit dulce mentis, et oculorum oblectamentum inexpectata urbanitas[vj] iuvenis, qui diversoriolum,[vk] ubi morabar, ingressus, voce, vultuque certa laetitiae signa prodens me fidis, sanctisque amplexibus implicuit. Obstupui facilem[vl] in aspero solo humanitatem, ubi cautes inter, atque speluncas tanta comitas, tam eximia indoles lateret,[vm] cum mihi quaerenti,[vn] se quoque advenam, se *Dominicum de Corradis Austriae,*[264] mineris,[vo] nescio quo fato praepositum,[vp] candide aperuit. Me sibi non ignotum incogitato fortunae favore suae mensae socium, non in sylvatico diversorio quandoque **42]** exteris infido, pernoctantem velle. Ut nomen mihi pariter perspectum audivi, cum in hospitio inclementi inter orci familiam vel me quasi in ergastulo sepultum viderem, fidelia tecta, benignumque hospitis[vq] officium non renuens fractas senticoso vires itinere, securi[vr] tessera hospitii, et amoenissimis recreavi[vs] colloquiis. Quanta enim in iuvenili

[260] Ariosto 1548, 9r. English translation: Ariosto 1996.

[261] In the second half of the XV century, the Duke Ercole I d'Este (1431–1505) promoted the exploitation of the iron deposits in Fornovolasco. To this purpose, he availed himself of expert miners from the Lombard city of Brescia. See Luzzini 2013a, 100n.

[262] Turrite di Gallicano, also known as the Petrosciana Torrent: a western tributary of the Serchio. The two streams merge in Gallicano.

[263] The area of the iron mines in Fornovolasco has an extremely complex geological history. In particular, the mines are hosted in a Paleozoic outcrop whose quartz-muscovite phyllites (SiO_2; $KAl_2(Si_3Al)O_{10}(OH, F)_2$) date back to the late Cambrian and Ordovician periods (540–440 Ma), while the origin of the rich pyrite veins in this zone is related to evaporitic processes typical of coastal lagoons. Cartographic source: *Carta geologica del Parco delle Alpi Apuane, Tavola 1* n.d. On this topic, see Biagioni 2009; Bonini and Biagioni 2007; Luzzini 2013a, 100, note 108; http://www.vallisneri.it/osservazioni-ferro.shtml.

[264] Domenico de' Corradi d'Austria (1677–1756), chief superintendent of artillery on behalf of the Duke and a very expert miner. His practical knowledge played a key role in the success of Vallisneri's investigations in Garfagnana, as Corradi provided him with advice, direct assistance, helpers and equipment for his explorations. See Luzzini 2008, 351, 355; 2010, 97, 102, 104, 107; 2011a, 107–108; 2013a, 100–101, 124–129; 2014a, 214. On the fruitful editorial collaboration between Vallisneri and Corradi, see Luzzini 2012, 51; 2013a, 101; 2017, 134, 136.

[vh] resurgunt. *Nil crudius magna parens fabbricare potuit, atque innocentius.* Non
[vi] praeeunte *humanissimo* sagacissimo
[vj] inexpectata *generosa* urbanitas
[vk] urbanitas *illis nobilissimis* iuvenis, qui *in* diversoriolum
urbanitas *illis per honestissimi* iuvenis, qui *in* diversoriolum
[vl] Obstupui *munificam,* facilem*que*
[vm] indoles*, et venustissima forma* lateret
[vn] mihi *prono pariter interrogante* quaerenti
[vo] Austriae, *se* mineris
[vp] prae*esse*
[vq] benignumque *tam illustris* hospitis
[vr] itinere, *tutis dapibus,* securi
[vs] recreavi*mus*

pectore rerum naturae exacta cognitio, quanta arcanorum ubertas, quam incomparabilis eruditio? Dulcissima noctis quies fere tota fuit nulla quies, admirandam minerarum fabricam, inaccessam fontium, ac thermarum originem, tam grande remediorum ac divitiarum patrimonium, quod Summus Protoplastes[265] vulgo medicorum ignotum specubus in illis condiderat, fere percurrimus. Non semper, dicebamus, natura pingit in amoeno virore sub dio remedia, visuque ipso aegrotantes ad sanitatem alliciens delicias auxiliis immiscet.[vt] Condit et aliquando in cavernis tactu truci, fumosa[vu] facie, sapore ingrato teterrimis, quod iuvet, ac sub amaro aspectu salutem[vv] occulit. Pandam tibi lubens alibi exactam horum omnium descriptionem, quae liberiori stylo, vacuoque magis tempori reservo. Me iuvat interim, amice suavissime, te magna non parvi laboris solatia non deridere. Et in istis licet exiguis observatiunculis non exiguam latere naturae partem cognosces. Nulla sane fuit ante faelicissimum **43]** nostrum[vw] aevum sciendi genuinam, nulloque auditiuncularum fuco maculatam huius historiam cupido maior, sed multis intra urbium carceres clausis nulla cura minor. Sufficiat paucula haec festinanter quidem, sed sincere notata veluti pugillaribus, et palympsesto libasse, cum iam gymnasticae campanae sonitum audiam, meque crastina die, rursus ad publicos labores vocet Patavini pensum[vx] Lycei.[266] Praetereundum tamen non censeo, quae de fontibus et in illis cryptis, ut superius innuebam, iugis aquis scatentibus[vy] observavi, cum horum origo nunc praecipue tuum calamum adhuc[vz] exerceat, meamque curiositatem[wa] rursus titillet.

Et in illis perpetuae fodinis aquae. An vero, et *centrales* adsint, an *verticales* solum, an utraeque coeant in unum, ignoro. *Verticales,* nempe *caelestes,* ex quibus praecipuum alimentum, ut suspicor, lactis adinstar minerarum germina sugunt, per amplas, hiantesque superiores rimas, ac scissa stratorum tecta sensim[wb] gementes, ubi praecipuus venae ferreae truncus luxuriat, videbam. An aliud, pinguiusque ab infernis marinis subterfluentibus pabulum, ut in *tuo nobilissimo libro* decernis,[267] et ut mihi nuper *Ill.mus Comes Aloysius Marsilius* nobilitate, virtute, morum splendore spectatissimus[wc] per literas communicavit,[268] dubius haereo. A supernis enim depluentibus, nitro,[269] salibus variis, terrae

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[265] God.

[266] The University of Padua.

[267] Fabra (dalla) 1700. In this treatise, Luigi dalla Fabra, who already studied the therapeutic properties of the renowned white, aluminium- and silica-rich clay of Nocera Umbra (now in the Province of Perugia), focused on a strange "tartareous substance" found in a fountain of that city. Once put in boiling water, he noticed the formation of "silvery, shining bubbles," and the following precipitation of an "extremely white and solid matter" (arguably, silica and/or aluminium salts) on the bottom of the bronze vases where the experiments were performed ("aheneorum lateribus, et fundo sensim adhaerens concressit, ut in materiam albam, densam, nonnihil ponderosam, nec de facili friabilem, asperioremque, et crystallinam, gustui aliquantulum subacidiusculam, dentes nonnihil exasperantem, et in aqua indissolubilem, indurescat"). On this topic, see Vallisneri 1717a.

[268] Unfortunately, the letters Vallisneri refers to are missing.

[269] Arguably, potassium nitrate (KNO_3).

[vt] auxiliis*, auxilia deliciis* immiscet

[vu] **In the text:** fumusa

[vv] aspectu *sanitatis mella recondit* salutem

[vw] felicissimum *hoc aevo nostro* nostrum

[vx] Patavini *munus amabile* pensum

[vy] scaten*d*ibus

[vz] calamum *meamque mentem* adhuc

[wa] meamque *mentem* curiositatem

[wb] *p*ensim

[wc] splendore*, (quicquid caeco impetu ferox, et nimium famae gravis latet invidia)* spectatissimus

uligine[wd] impraegnatis, solaribus radiis excoctis, et **44]** *luminoso illo,* quod totum Orbem animat, imbutis, ebibere nutrimentum subdubito. Analogiam habemus in plantarum seminibus. Tabescunt, si[we] solis aquis subterraneis crudo quodam, ac aspero imbutis ingenio irroratae, caelestibus careant. Observavit, te etiam notante, sagax *Boyleus,*[wf] *metallicam mineram effossam, ac e mineralibus cribratam, et tamquam inutilem aeri expositam post multos annos perfecte eiusdem generis, ponderis, et consistentiae nova reproduxisse mineralia, ac si in totali minerali terra matrice fuissent genita.*[270] Cur igitur dubie expiscamur a[wg] mari, quod evidenter cernimus in aere? Cur occultum in baratro penu quaerimus, si certum in aprico promocondum habemus? Potuerunt exsucca, et effoeta semina reflorescere rursus in aere, non in aequore poterunt. Condit illud sui generis salia, non omnia, condit hic omnia, non sui tantum generis. Ex utriusque enchyrisi,[271][wh] et effectu nudum clarescit experimentum. Adde, vir clarissime, quod si aquae mineras perluentes, atque foventes sunt[wi] tanta salis marini copia graves, cur degustatae salsum maris amarorem non sapiunt? Cur huius cubica ramenta qualibet in fodina saltem aliis permista[wj] non eruuntur? Cur ut plurimum aut insipidae, aut vitrioli naturam redolent? Crassam a rudi mea mente rubiginem deterge, nigroque tabo squallentia viarum secreta rursus perlustra. Sed iterum[wk] ad **45]** fontes.

Plurimi e rigidis horum montium[wl] finibus emergunt, et uti dicebamus, uberiores, quam ex vastioribus Divi Alpibus Pellegrini. Inter alios celeberrimus est, qui in *Antro ululante* (vulgo *la Grotta che urla*)[272] gemit, ibique rursus reconditur. Meridiem versus hoc antrum paulo supra *Furnum Volastrum* hiat, plurimo tartaro scabrum, tenebrosum, et incondito murmure strepentium undarum terrificum. Os eiusdem terra multa flaviuscula, sabuloque sordescens, quae ab interno plus quam rivulo quando tumente, ac turbido eructantur. Quando[wm] etenim flante austro, vel aere praeter solitum calente liquescentibus supremi verticis nivibus gliscit,[wn] et exorbitat, cum totus a caecis canalibus in antri latere excavatis absorberi[wo] non possit, reverberatus in se recurrens primo in viciniores oras, deinde quacumque parte mox potest inconcessus egurgitat. Ita e specus ostio violenter

[270] This adapted, recapitulatory quote refers to Boyle 1676, Latin edition of Boyle 1674. Boyle's corpuscularianism strongly influenced Vallisneri's early thought about mineral genesis and growth. On Boyle's theory, see Anstey 2002; Clericuzio 1990; Hirai and Yoshimoto 2005; Luzzini 2011a, 109–110; 2013a, 134–135; Pighetti 1988; Yoshimoto 1992. For a study on Boyle's alchemical interests, see Principe 1998. On the early modern debate about the existence of biological features in minerals and rocks, see Hirai 2005; Norris 2009; Oldroyd 1974.

[271] See note 19.

[272] Tana che urla ("Screaming Cave") of Fornovolasco, one of the most interesting and renowned karst caves in Garfagnana. An experimental replication of Vallisneri's exploration was performed in 2006. On this topic, see Luzzini 2008; 2010, 104–114; 2013a, 100–101, 124–129; 2014a, 214; http://www.vallisneri.it/osservazioni-tana.shtml.

[wd] uligin*a*e
[we] Tabescunt *subito*, si
[wf] **Margin note (left):** De Gen. Met.
[wg] Cur *cubo pede* igitur dubie *eam pede* expiscamur *ex* a
[wh] utriusque *analysi* enchyrisi
[wi] foventes *essent* sunt
[wj] permis*cu*a
[wk] Sed *rursus* iterum
[wl] horum *Alpium* montium
[wm] eructantur. *Cum* Quando
[wn] nivibus *turget* gliscit
[wo] abs*e*rberi

erumpens, ibi in fine dum detumescit, ac lentescentes undas revocat,[wp] montanas sordes, et recrementa deponit. Hinc ob humile laqueare nisi curvus advena, et persaepe dorso ipso lutulentus intrat. Emensis viginti circiter pedibus laxatur in latus, altumque spelunca, apparentque multiformia naturae ludentis e lapidoso succo ludibria, qui varias plasmando figuras arte licet nulla laboratas suo artem aequat[wq] ingenio, materia superat.[273][wr] Nullibi aptius arcuatum Regii horti[ws] spelaeum e lacunari inversis hinc inde pyramidulis, vivo **46]** pumice,[wt] durisque tophis decussata testudine inflexis elegans simulavit[wu] in obscuro natura. Tunc aquas tristi[wv] susurro furtive per obliqua cadentes exaudiebamus,[ww] quas tandem profundus hiatus in vicinam *Petrosanam* occulto itinere derivans intortis devorabat vorticibus. Neque hic itineris meta. Supra humeros baiuli rumigerulum translati[wx] [wy] torrentem, multisque scabris superatis callibus ad amplam, convexamque cameram devenimus, in qua complures velut encarpi, mille tartareae concretiones, indurata mille ferrumina, columnas, spiras, animalia, ramos aemulantia miris intexta modis conspiciebantur.[274] Hic origo rivuli[wz] ab alto fluentis, veluti ab epistylio, qui partim tardo coalitu saxis antiquis nova saxa lapidescentibus undis adglutinabat, partim spumoso[xa] cursu in praeceps per descriptum alveum prolabebatur. Non dispari sane modo, ac e supercilio rupis cadentes aquas saeva hyems aquilonibus asperat, aliis adhuc nativa fluxibilitate ruentibus.

Unde perennis aquarum fluxus modo limpidus, et modicus, modo sordidus, et tumens quaeris? A vicino mari exantlatas autumant coloni, cum flante austro, furenteque pelago furant, quiescente quiescant. Sed nos aliter suprema montis rimati, revocatisque ad trutinam crescentibus, et decrescentibus undis disserebamus.[xb] Inter strata negligenter cohaerentia, et inflexo latere **47]** curvata deorsum aquae, nivesque solutae percolantur absorptae prius a variis faucibus cautes inter, et bibulas glareas dehiscentibus. Per sulcos inde, ac quasi euripos serpunt secreto tramite ad antrosum fontem continuo scatentem, quia in quibusdam baratris radiis solaribus imperviis rupes a rupibus, montem a monte dividentibus fere perpetuo glacies, ac nives integrae morantur, quae non primis caloribus, cum sol vehementior inter extrema veris nives emollit, cedunt. Lente, ac molliter tabescunt, velutique filtratae per longa temporis spatia descendunt illimes, atque crystallinae. Si vero calidis efflantibus ventis, sicuti cera ad luculentum ignem, ita in liquorem statim

[273] The deposition of calcite ($CaCO_3$), the dominant mineral in karst environments, is controlled by the reversible chemical reaction $2\,HCO_3^- + Ca^{2+} \rightleftharpoons CaCO_3 + CO_2 + H_2O$. Consequently, the dissolution or precipitation of calcium carbonate is strictly influenced by changes in the chemical equilibrium of this reaction, which depends on the amount of carbon dioxide (CO_2) in the water (the lesser the amount of CO_2, the more $CaCO_3$ is deposited). In turn, the solubility of CO_2 in fresh water increases with increasing pressure and decreasing temperature. On the karst caves in Fornovolasco, see Bonini and Piantini 2001; Speleoclub 1999.

[274] On the wide array of speleological formations that can be observed in the Tana che urla, see Luzzini 2008; 2010, 104–114; 2013a, 124–129, Tabs. XIX–XXI; http://www.vallisneri.it/osservazioni-tana.shtml.

[wp] **In the manuscript, the order of the words "revocat" and "undas" has been inverted by marking them with numbers.**
[wq] aequa*n*t
[wr] supera*n*t
[ws] hort*us*
[wt] **Margin note (left):** Nimis implicata <…>i periodus
[wu] elegans *tacita* simulavit
[wv] aquas *non ingrato* tristi
[ww] per *cadentes* obliqua *cadentes* cadentes ex*h*udiebamus
[wx] **Margin note (left):** Vel transvecti
[wy] rumigerulum *tranati* translati
[wz] origo *torrentis* rivuli
[xa] adglutinabat *undis*, partim spu*m*moso
[xb] d*e*sserebamus

extenuatae per subterraneas catharactas ruunt potius, quam fluunt, secumque terras, arenasque transportant.[xc] Hinc praedictus fons modo limpidus, et aquarum pauper, modo lutosus, et aquarum dives. In cisternis etiam, occultisque[xd] lacunis forsan recollectae vel per laxa aggerum spiracula sensim[xe] cribrantur, velutique ad lancem, ac per iustas morulas in fontis pelvim cadunt,[xf] aut si enormiter turgeant, superatis aggeribus liberiore gurgite devolvuntur. A me assensum[xg] impetrare non potui, quod a propinquo pelago ortum, et incrementum trahant, quoniam[xh] si *venae, et venulae,* ut cum Agricola loquar,[xi] si *canales, et canaliculi*[275] adeo patent, ut arenam, lapillosque admittant, cur salia, conchulas, **48]** pisciculos, marinas quisquilias non excipiunt? At, regeris, amice doctissime, tolluntur in altum vapores, et a saxorum frigore densati in guttas roridas transeunt. Si quandoque turbantur aquae, non ex mari, sed ex superadvenientibus montis rivulis[xj] una immistis turbantur. Ita communis Italorum opinio. Sed vastissimos hos alembicos neque concipio, neque montium structura, stratisque, veluti assulatim, superimpositis elaborata patitur. Sed[xk] dato etiam, quod una, aut altera caverna stratorum ilia, ut ita dicas, discerpat, et antrosas cavitates efformet, concreti[xl] in guttas aqueas vapores rursus in ima vel perpendiculariter, vel perpendiculatim defluent, ut in obviis specubus, humidisque fornicibus continuo observamus, non circum alembici interna recurva labra[xm] recollectae in unum coibunt laterale foramen, ut exeant. Quis enim unquam ivit in viscera terrae, et laboratoria chimica adeo exacte perfecta vidit? Fingimus saepe, quae nostro sistemati, non quae rerum naturae congruunt. Casu, non polidedalae[xn] matris instituto excavantur antra, quae si secreta cum mari commercia teneant, quod etiam gratis dicitur, fractis scilicet, usque ad ultimas montium radices saxorum fibris, et ordinibus, vapores marini per obscura spatia ascendentes rursus in mare substratum probabilius ruent, quam per imaginarias fistulas, aut cogitatas subgrundas,[xo] tam affabre circum haerentia, delabentur in latus. Adde, quod aqua maris, uti nemo nescit, per alembicos distillata secum volatiles salium moleculas perpetuo rapit, ex quarum continuo potu sanguis cum urina cietur,[276] uti plurimo patuit experimento, qua labe praedicti montani fontes certo certius carent. Dulcissimae namque sunt, potuque

[275] Agricola (Bauer) 1546. The terms "venae," "venulae," "canales," and "canaliculi" can be ubiquitously found in Agricola's treatise. However, it is worth mentioning here a significant passage from the third book of the *De natura eorum quae effluunt ex terra* (Agricola (Bauer) 1546, 127), that clearly shows Agricola's opinion about the origin of fresh water: "[…] canales aquarum, quae fluunt aut propria earum vis effecit. Etenim fontanarum vis excavavit venas, suas charadras torrentium, rivorum et fluminum suos alveos: perpaucis exceptis, quos homines foderunt. Aut hominum manus eos canales effecit: sicuti fistulas, tubos, fossas aquae ductuum. Igitur aquae quae fluunt, omnes sunt aut fontanae, aut pluviae, aut nivales."

[276] Drinking sea water (or not adequately desalinated water) causes many dangerous and potentially lethal effects, including dehydration, the ingestion of harmful bacteria, and kidney damage. This may lead to urinating blood (hematuria), as Vallisneri probably observed in one or more of his patients.

[xc] **In the text:** transpostant
[xd] etiam, *subterraneisque* occultisque
[xe] spiracula *reconditer* sensim
[xf] pelvim *descendunt* cadunt
[xg] as*c*ensum
[xh] trahant, *sic* quoniam
[xi] loqu*o*r
[xj] montis *occultis* rivulis
[xk] **From this point on, text at p. 49 continues on an additional paper (XXIII). This is unnumbered, and is written only on the recto.**
[xl] concrete
[xm] recurva*e funes* labra
[xn] non *naturae* polidedalae
[xo] **In the text:** cogitata subgrundia

in longum aevum colonis omnibus saluberrimae. At alibi particulari epistola **XXIII.r]**[xp] **XXIII.v]**[xq] quid de his sentiam fusius enucleabo.[277] *Equidem,* dicam cum Platone in Protagora, *arbitror nos invicem nonnihil debere concedere, et de iis, quae dictentur, ambigere quidem simul, contendere vero nunquam. Ambigunt porro propter benevolentiam cum amicis amici, contendunt vero adversarii, et hostes.*[278] Patere igitur interim sine temeritatis nota, quod asseram nostrarum Alpium fontes, rivos, flumina, quae ad subiectum praecipue Padum suum tributum devehunt, omnes, et omnia pluviis, nivibusque liquatis deberi. Quid de Dannubio, de Rheno, de Rhodano, aliisque regiis fluminibus sentiam, ignoro. Obstupescimus sane magna nomina, et de origine grandia opinamur, quoniam eorundem initia non novimus. Si vastissimos montes, immensas regiones, solitudines maximas aeternis fere nivium[xr] glomis, et duratura in perpetuum bruma rigentes oculis ipsis perlustraremus, cederet[xs] forsan **49]** in risum stupor, nec montes mari, nec maria montibus immisceremus.

> *Nullum ver usquam, nullique aestatis honores,*
> *sola iugis habitat diris, sedesque tuetur*
> *perpetuas deformis hyems.*[279][xt]

Tantum enim illi nostras Alpes in omnibus superant, quantum

> *Delphino*[xu] *balena Britannica maior.*[280]

Assuetus nostris aestivis ardoribus[xv] animus, multis aridissimis mensibus involutus praeconcepta nescit deradere, dubitans repugnare experimento, quod vix concipere potest. Facilis est mendacio[xw] locus, quando ignota sunt extrema. Ut plurimum, quae longo regionum tractu dissita confusa quadam imagine arrectas trahebant mentes, visa, aut contrectata fatiscunt. Parva interim de parvis, sed oculo teste, diximus, tu faelicior magna de magnis. *Multo mihi maius benefitium conferes* (dicam cum Euthydemo, vel litigioso in Platone), *si inscitia liberaveris*[xx] *animum, quam si aegritudine corpus. Mirificum enim hoc habeo bonum, quod me servat, quoniam sine rubore verecundiae ad discendum me preparo.*[281] Non enim immortalitatem negotiaturus haec informi papyro

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[277] Eventually, Vallisneri realized his purpose ten years later, in 1715, with the publication of the *Lezione Accademica intorno all'Origine delle Fontane.* Not by chance, in this treatise many disputations and reports (as, for example, the field research in the Apennines and the exploration of the iron mines and of the Tana che urla in Garfagnana) recall and develop the content of the *Primi itineris Specimen.* On this topic, see Luzzini 2008; 2010, 104–114; 2011a; 2013a, 90–160, Tabs. VII–XXVIII; 2014a.

[278] Plato/Πλάτων 2018c, 337, http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg022.perseus-grc1:337b.

[279] Silius Italicus 2018, III, 487–489, http://data.perseus.org/citations/urn:cts:latinLit:phi1345.phi001.perseus-lat1:3.

[280] Iuvenalis 2018, X, 14, http://data.perseus.org/citations/urn:cts:latinLit:phi1276.phi001.perseus-lat1:4.10.

[281] Actually, the quoted passages are not from Plato's *Euthydemus* (Plato/Πλάτων 2018a, http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg021.perseus-grc1:271a), but from *Hippias minor* (Plato/ Πλάτων 2018b, 372, http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg026.perseus-grc1:372e).

[xp] **From this point on, text continues on p. 49.**
[xq] **This paper is the recycled scrap of a letter. Above in the verso is written:** "Orazione del S.r Cataneo"
[xr] niv*es*
[xs] *ca*ederet
[xt] **Margin note (left):** Silius Ital.
[xu] Delphin*us*
[xv] aestivis *intra urbes* ardoribus
[xw] menda*t*io
[xx] liberav*is*

levidensia scribo, sed[xy] ut a te veritatem detracto peplo percipiam, et ingenuis artibus vacem. Si conscientiae meae audivissem consilia, silere sane debuissem, sed sciendi cupiditas, non humana vetuit[xz] ambitio. Macte igitur animo, amicorum suavissime. Primitiae meorum **50]** itinerum, laborisque novi crepundia, quae plus naturae, quam artis sapiunt, tui sudata calami momenta sentiant. A te, cuius ingenium naviter in his materiis detritum est, maiorem suae lucis partem expectant. Non sit haec ampullosa ingeniorum digladiatio, non amarulenta logomachia, quae nos transversos agat, quae ob aestum pugnae dulce foedus amicitiae discerpat. Has despuimus curas, nec subtristi cartas aspergimus absintio. Eviscerata terra, quae diu ante dissimulaverat, te auctore[ya] prodat, me solum, ut altius refodias amica asperitate adversante. Fabulis alii antiquis suas adnectant imaginatas fabellas, et dura ingenii conditione occupatissimas inanitates effutiant. Miramur studia, miseramur labores. Tu medullam erue, quae dulce sapiat, quae plene nutriat, quae tota pectori sano accedat.

Urbium, populorumque luctamina, licet nos plectant, licet in insontibus agris in exitium sui mitissimis furor adhuc transalpini ferri mandata fatorum peragat, dulcesque Patriae reliquias immistis cum atro cruore lacrymis foedatas rursus videam, dolorem nihilominus literulis concoquo, musasque ob Iani templum tot iam annos apertum[yb] plorantes[282] naturae miraculis ad dulcia agrestis calami solamina provoco. Quid interim alia narrare[yc] paret epistola, tanquam secundarios fructus, accipe. Nondum tamen omnes **51]** recte maturuerunt, longioresque circuitus, novosque labores desiderant.

1° Herbas, ac plantas omnes mutinenses alpinas rizotomis expetendas.
2° Crystallos alios, crystalloides, lapides speculares, vel selenites, salia fossilia, lapides picturatos, sculptos, figuratos, medicos, calcarios, gypseos, pretiosos etc.
3° Strata montium lapidea, cretacea, glareosa, sabulosa, terrea etc., unde nata, quo flectantur, quo tendant, eorundem necessitas, usus, anatomes etc.
4° Antediluviana dicta, et postdiluviana corpora, quae in istis reperiuntur vel lapidefacta, vel intra lapides clausa, vel terrae solum visceribus involuta, vel sint conchae, serpentes, pisces, echini, limaces, ostreae, pectines, tubuli, animalium ossa, ligna, fructus etc.
5° Montium exteriorum crustam, terrarum omnium indolem,[yd] saxorum, fluorum, tartarearum marmorum[ye] concretionum enucleationem.[yf] Hyaspides[283][yg] enim in ultimis Alpibus videbam[yh] orientalibus aemulos.

[282] Ianus (or Janus) was one of the oldest and most important deities in ancient Rome and among the early Italic peoples. It was the god of beginning and transitions. Because of this symbolism, his effigy (typically consisting of two faces, looking both to the future and the past) frequently appeared on gates and passages. The doors of the main Temple of Ianus in Rome were kept open in time of war, and closed in time of peace. With this image, Vallisneri is referring to the War of the Spanish Succession, which in 1705 was raging in Italy and Europe. On the cult of Ianus, see Burchett 1918; Gasperoni Panella and Cittadini Fulvi 2008.

[283] Jasper (SiO_2): a microcrystalline, opaque variety of chalcedony. It can occur in different colors, depending

[xy] scribo, *ut* sed
[xz] vet*a*vit
[ya] **In the text:** autore
[yb] annos <...>*l*<...>*s*<...> apertum
[yc] alia *excipiet, vel excipere deberet* narrare
[yd] indole*s*
[ye] **In the manuscript, the order of the words "marmorum" and "tartarearum" has been inverted by marking them with numbers.**
[yf] **In the text:** enucleatione
[yg] enucleati*o*. *diaspr*<*ulos*> Hyaspides
[yh] videba*tur*

6° Cuius libet montis usque ad mare Tyrenum ingenium particulare, pascua, usum[yi] etc.
7° Insecta quae rariora scopulis in illis herbis, plantisve nidificant.
8° Quae volatilia, quinam[yj] quadrupedes, quinam[yk] in rivulis, fontibus, torrentibus etc. Pisces etc.
9° Qui fructus, quae grana, qualis omnibus nostris monticolis[yl] cibus, et potus. **52]**
10° Qui mores, artes, domus, morbi, tormenta, deliciae.
11° Quodnam aeris pondus ad lancem barometricam ductum, quae temperies quaesita[ym] thermometro.
12° Quae montium altitudo, rimae, lapsus, decrementum etc.
13° Aliorum fontium, fluminum, torrentium, thermarum, minerarum etc. exactior descriptio.
14° De lacte, et operibus lactariis, prout praeparantur in Alpibus nostris.
15° Minerarum omnium attenta, et exacta descriptio.[284]

Haec sunt, quae humeris tanta ferre forsan recusantibus imponere auderem, sed

maxima parvo
tempore molimur.[285]

Alia interim loqui (dicam cum Petrarca, Praefat. Tom. 2) *censorum praemordacium etiam iubet metus, qui nihil scribentes, quod iudicari queat, de aliorum iudicant ingeniis; impudentissima temeritas, quae solo silentio tuta est. Complosis in littore manibus sedenti facile est ferre, quam velit de gubernatoris arte sententiam.*[286] Sed[yn] te video prolixa **53]** nimis fatigatum epistola. Scias tamen velim, quod telam hanc soloci licet filo, ac diversicoloribus liciis contextam cupide, et quasi de industria protraxerim, quoniam vultum tuum, licet per tot terras dissitum praesentem fecit. Caeterum, si stabilis sedes, et frustra semper quaesitum otium contigerit, uti supralaudatus autor de se ipso scribebat, nobiliorem forsan, et certe uniformem tuo nomini meditor ordiri. Vale mei memor, teque sospitet[yo] Deus.

In Musaeo meo Patavino[yp] kal. Ianuarii 1705

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on the impurities in it. Red jasper, whose color is due to iron inclusions, can be commonly found in the Apuan Alps. On this topic, see De Stefani 1889, 330–333.

[284] In the next two decades, Vallisneri refined and enriched this list, in his effort to define the ideal goals and procedures of a *philosophical* field research. In the *Continuazione dell'Estratto* of 1726, the "Indice di osservazioni" ("Index of observations") listed up to 26 points (Vallisneri 1726, 404–417). On this topic, see Luzzini 2013a, 104–106; 2014a, 215–217.

[285] Seneca 2018, III, 1, http://www.thelatinlibrary.com/sen/sen.qn3.shtml.

[286] Petrarca 1581, *Epistolarium de Rebus familiaribus Lib. VIII,* Praefatio, 569. On the identification of this source, see Vallisneri 1726, 421.

[yi] usu*s*
[yj] qui*s*nam
[yk] qui*s*nam
[yl] montic*u*lis
[ym] temperies *rimata* quaesita
[yn] sententiam. *Me pudet eos in hoc musarum regno, in hoc bonarum artium emporio delicata tristitia liquescentes, liventique tabo marcidos videre. Pudet edentulam eorum cernere potentiam, segnitiem claram, operosam ineptiam, labores irritos.* Sed
[yo] teque *sartum tectum* sospitet
[yp] meo *Patavino* Patavino

Devictissimus, et Addictissimus Famulus
Antonius Vallisnerius de Nobilibus de Vallisneria
Publicus Medicinae Practicae Professor in Loco, et
Regiae Societatis Anglicanae Sodalis. Etc. **54]**

Chapter 4
Other Papers: Transcription

4.1 Paper 1

Ratiocinium[a] pro nominibus tot Virorum Consularium appositis ad Pagos, et Oppida Caferoniana.[b]

Non mireris lector, si tot nominibus consularibus vocata censeantur Oppida Feroniana; scribit enim Plutarcus in Syllam,[1] cum Appiano, L. 1,[2] ac Lucio Floro, Lib. 3, Cap. 23,[3] Dictatorem Syllam a Mario, eiusque fautoribus lacessitum exarsisse animo ulciscendi de inimicis suis; qua propter, ut eos omnes deleret de libro viventium, librum mortis composuit, in quo primum 40 Senatores notavit, deinde 1600 Equites perscripsit, postremo 2000 Nobiles morti destinavit, et ut ferale ostracismum celerius exequeretur a nefariis satellitibus suis, praemium statuit duorum talentorum occidentibus, aut revelantibus quemlibet proscriptorum.[4] Et quia plurimi civium Romanorum timore perterriti ad Hetruscos Marianorum amicos confugerant, illuc Dictator misit Lucretium Offellam[5] ducem suum ad devastanda Hetruscorum marittima, profugosque persequendos usquequaque, at illi relinquentes humiliora loca, ad altiora solliciti perexerunt, ubi per antra, et speluncas partim se occuluere, partim in praeruptis superciliis montium arces extruentes tutati sunt imminutam substantiam, nutantemque familiam. Prosper Fesulanus idem affirmat Lib. 4 Hetruscar. Antiquitat.[6] **XXIV.r]**

[1] Plutarchus/ Πλούταρχος 2018, XII, 28–32, http://data.perseus.org/citations/urn:cts:greekLit:tlg0007.tlg033.perseus-grc1:28.1.

[2] Appianus/Ἀππιανὸς 2018, XIII, 7–11 (59–101), http://data.perseus.org/citations/urn:cts:greekLit:tlg0551.tlg017.perseus-grc1:1.7.59.

[3] The reference in the manuscript is incorrect. The exact one is Florus 2018, II, 21, http://data.perseus.org/citations/urn:cts:latinLit:phi1242.phi001.perseus-lat1:2.9.21.1.

[4] In the aftermath of the civil war which opposed the Optimates (led by Lucius Cornelius Sulla, 138–78 BC) and the Populares (whose main leaders were Gaius Marius, 157–86 BC, and his son Gaius Marius Minor, 110–82 BC), and was won by Sulla in 82 BC, thousands of Roman citizens were proscribed. Many of them were killed; others escaped from Rome, taking refuge in inaccessible areas—as, in this case, Garfagnana.

[5] Quintus Lucretius Ofella (?–81 BC), a Roman general who served under Sulla's command. See Plutarchus/Πλούταρχος 2018, XII, 29 (8), http://data.perseus.org/citations/urn:cts:greekLit:tlg0007.tlg033.perseus-grc1:29.8; Appianus/ Ἀππιανὸς 2018, XIII, 11 (101), http://data.perseus.org/citations/urn:cts:greekLit:tlg0551.tlg017.perseus-grc1:1.11.101.

[6] The reference in the manuscript is incorrect. The exact one is C. Inghirami 1637, Liber II, pp. 120–128. Actually, the *Ethruscarum antiquitatum fragmenta* are a forgery. The real author (and self-proclaimed editor), Curzio Inghirami (1614–1655), was an archeologist and historian from Volterra. He claimed to have found these documents among his family papers, and that they had been written by a certain Prosper Fesulanus in the I century BC—hence this name is mentioned in the manuscript. However, already in 1640, the Greek-Italian scholar Leone Allacci (1586–1669) discredited Inghirami's book (Allacci 1640). On this topic, see Rowland 2004.

[a] **This paper is written by Domenico Cecchi.**

[b] **In the text:** Caferniana

In Hieronymo Bocchio Florentino in suo Monopanthon Cronol. L. 2, part. 1, centur. 40.[7] Item ex Floro, Appiano, et Salust. in Catilin.[8]

Praeter castra aedificata super cacumina montium a filiis, vel nepotibus Equitum Romanorum, vel etiam ab eisdem civibus in exilium actis tempore Marii, et Syllae, alia permulta extructa reperiuntur post cladem Catilinariam illatam Romanis in agro Pistoriensi[9] a Caio Antonio,[10] et Marco Petreio Legato,[11] Consulibus Iunio Syllano,[12] et Lucio Murena;[13] ex qua superstites tam de Romanis, quam de Etruscis fautoribus Lucii Sergii Catilinae fugerunt in montes vicinos, ubi Regio Feroniana distenditur; ibique oppidis munitissimis se fortificarunt, eisdem nomina imponentes vel ad arbitrium aedificantium, sive in memoriam suorum parentum, vel denique eorum intuitu, quorum expensis aedificabantur.

Videantur[c] Orsuccius,[14] Simon Morgantius,[15] Franchinus,[16] et Lazarus Tramontius,[17] qui fusius de origine locorum istorum pertractant. Etc. **XXIV.v]**

4.2 Paper 2

Nomina antiqua, et recentia, quae in Caferoniana Provincia notantur.[d]

M.M. Tegulii—Tea.
Montes Attilii Reguli—Tiglio.
M.M. Sp. Duilii et Antonii—Dalli, e…
Merendae—Magliano.
Livius Salinator—Sala.[e]
Orius Resiliensis—Roggi.
M.M. Violati—Pania Forata.
C.us Geganius—Gragnano.
Veientes Superiores—Vaii di Sopra.
Felicula—Felicaia.

[7] Bocchi 1654, Liber II, Centuria XL, 362–366.
[8] Sallustius 2018, XI, http://data.perseus.org/citations/urn:cts:latinLit:phi0631.phi001.perseus-lat1:11.
[9] After the failure of his conspiracy against the Roman Republic and the Senate, Catiline (Lucius Sergius Catilina, 108–62 BC) tried to reach Gaul by passing through Etruria. However, near Pistoia he was stopped by the legions led by Marcus Petreius (110–46 BC), where he was forced to fight (battle of Pistoia, or Pistoria), and where he eventually died.
[10] Caius Antonius Hybrida (106–after 42 BC), Roman politician and legate. A former ally of Catiline, he turned coat against him and took the side of the Senate.
[11] See note 9.
[12] Decimus Iunius Silanus (I century BC). In 62 BC, he was made consul with Lucius Licinius Murena.
[13] Lucius Licinius Murena (105–22 BC). In 62 BC, he was made consul with Decimus Iunius Silanus.
[14] Probably an unspecified and learned member of the Orsucci, an ancient and noble family in Lucca.
[15] Arguably, Bartolomeo (not Simone) Morganti.
[16] Perhaps the historian Niccolò Franchini Taviani (circa XVII century): a member of the Franchini Taviani, a noble family in Pistoia. See Capponi 1874, 144–145; 1878, 198; Moreni 1805, 497.
[17] Arguably, Timoteo (not Lazzaro) Tramonti.

[c] **In the text:** Vedeantur
[d] **This title is written by Vallisneri. The rest of the paper is completed by two different hands. The former writer, who lists the Latin toponyms, is unknown. The latter is Domenico Cecchi, who completes the list with the corresponding Italian names.**
[e] Salinator—*Livignano, o* Sala

Ospitolum—Ospidaletto.
M.M. Sagatenia—Pania di Corfigliano.
Turrita—Torrita.
Vallis Occo—Vallico.
L. Metranius—Motroni.
Panias M.—Pania.
L. Piso Caesonianus—Ceserana.
C.P. Lib. Visolinus—Vitiana: presso Coreglia. Etc.
Faide M.M.—Taiole.[f]
Vicaria[g] Borgae[h]—Vicaria di Barga.
M. Fegatensis—Fegatese.
Serulium Fl.—Soraggio o Seraglione.
Coiza Fl.—Coeza.
Penninus Fl.—Penninus.[i] Pennino.
Pallenus Fl.—Pollone.
Aesarulum Fl.—Esarulo.
Siliceus Fl.—Siliceo.
Cesarion Fl.—Cesarione.
Corsona Fl.—Corsona.
Opiter Fl.—Oppio.
Lanies Fl.—Lanio.[j]
Fegana Fl.—Fegana.
Ledron Fl.—Ledrone.
Turrita Fl.—Torrita.[k]
Brolium[l] Fl.—Broglio.
Terrida Fl.—Torrita.
Turita Cava Fl.—Tortecava.
Sarita Fl.—Sarrida. **XXV.r] XXV.v]**

4.3 Paper 3

Fonte raro.

V'è sotto le Panie un fonte, che sbocca[m] solo, quando vuole tirare il vento, e durante quello, e dopo 3 giorni, e poi si ferma, onde que' paesani predicono sempre il vento. Lo credono venir dal mare, ma è falso. Io stimo, che dipenda da una fermentazione sotterranea etc.[18]

[18] Probably, this was (or *is*—the vagueness of the note makes it impossible to verify the location of the spring, and whether it still exists or not) a secondary outflow of an underground karst channel.

[f] M.M.—*Faidi, o* Taiole
[g] Vi*s*aria
[h] **In the text:** Borrgae
[i] Fl.—*Pollone.* Penninus
[j] Fl.—*Loppia* Lanio
[k] T*u*rrita
[l] B*l*olium
[m] *p*bocca

Poca terra nelle piante. Osservazione.

Ne' boschi de' faggi si vedrà in terra, come un disegno di pianta col tronco, rami, e ramicelli, fatto di poca, e sottil terra nera, e non capivo, che cosa fosse. Interrogati i pastori, dissero, essere faggi caduti putrefatti, che lasciano quel sugno di poca terra nera. Mi certificai dipoi col vederne de' mezzi putrefatti e di quelli, che incominciavano. Da ciò cavo quanta poca terra sia nelle piante.

In un sepolcro trovato in campagna in volto, non v'era, che un disegno d'uomo disteso in terra fatto di poca, e sottilissima cenere.

Sali nelle piante.

Tutti sono volatili, e gli alcalici delle ceneri sono que,' che sono fusi dal fuoco, e raccolti. Etc.[19] **XXVI.r] XXVI.v]**[n]

4.4 Paper 4

Claud. in Consulatu Manlii De Monte Olimpo

Celsior exurgit pluviis, auditque ruentes
sub pedibus nimbos, et rauca tonitrua calcat.[20o]

Così io, quando era ne' monti etc. **XXVII.r] XXVII.v]**

4.5 Paper 5

Apeninus. Apenino.[p] Inter agrum Mutinensem, et Lucensem dictum Mons S. Peregrini, ibique arduus, et difficilis valde.

Virg. Lib. 12 Aeneid. *Vertice se attollens pater Apeninus*[q] *ad auras.*[21r] Et Lib. 11, *Apenninicolae bellator filius Auni.*[22s] **XXVIII.r] XXVIII.v]**

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[19] Because of its high calcium content (mainly CaO), wood ash is typically alkaline.
[20] Claudianus 2018b, 210–211, http://penelope.uchicago.edu/Thayer/L/Roman/Texts/Claudian/Manlio_Theodoro*.html.
[21] Vergilius 2018a, XII, 703, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:12.697-12.745.
[22] Vergilius 2018a, XI, 700, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:11.690-11.724.

[n] **This paper is the recycled cover of a letter. On the verso is written:**

"All'Ill.mo Sig.re Sig.r e P.ron Col.mo
Il Sig.r Dottor Antonio Vallisneri Pu.
Lettore nell'Univ.tà di Padova
Reggio"

[o] **These lines are written in regular font.**
[p] App*p*eninus. App*p*enino
[q] App*p*eninus
[r] **This line is written in regular font.**
[s] **This line is written in regular font.**

4.6 Paper 6

Descrizione[t] del Lago detto di Ventasso[23] nella Giurisdizione di Nigone[24] fatta da Fulvio Azzari nel Libro primo della sua Istoria di Reggio ove tratta della situazione di detta città, pag. 21.[25]

Ha dalla parte meridionale le cime dell'Alpi, da tramontana non più discosto di 18 miglia il Po re de' fiumi d'Italia, et quasiché dal pari lontano 8 miglia da levante il fiume Sechia, et altretanto da ponente quello di Lenza[26] detto da Plinio… L'uno originario come ho già detto da Pra' di Reno,[27] et l'altro dal Lago di Ventasso,[28] così detto dal monte nella di cui cima risiede sottoposto alla giurisdizione de' Conti Vallisneri,[29] monte in vero che per essere d'ogni intorno copioso de' più vari semplici che in Italia si ritrovino lo rende molto riguardevole; è il detto lago[u] di longheza, e largheza quasiché pari 200 braccia per tutti li quatro lati, et alle stagioni di preccioso pesce, et delicatissimi gambari copioso; alcuni dicono, che sia profondo, et altri gl'assegnano braccia 25 d'acqua, ambiguità causata dal non potervi nuotare, percioché chiunque vi entra resta come da una voragine rapito, e tirato al fondo, la cagione viene attribuita alla grande, et eccessiva frigidità delle sue acque, quali fanno, che gl'omini soprapresi da' granffi privi del nuoto se ne vadino al fondo; così questo con un suo canale, che precipitoso se ne cade fendendo la Lombardia[30] rende superbo, e molte volte corrozzato il detto fiume Enza, di cui l'acque etc. **XXIX.r]**

[23]Lago Calamone, also known as Lago del Ventasso ("Lake of Ventasso"). It is a glacial lake located on the northwestern slope of Mount Ventasso (1,727 m/5,666 ft above sea level). Both the lake and the mountain are now part of Ventasso (Province of Reggio Emilia). See http://www.parcoappennino.it/percorso.php?id_zona=7&id=107.

[24]Nigone, now a hamlet in the municipality of Ventasso. On this topic, see Tiraboschi 1825, 142–143.

[25]In Azzari's *Compendio* (Azzari 1623) there is no trace of this quote. We can find just a short hint at the voice Nigone: "Nigone, Monte Moscoso, Ramoseto, Buora, Lago di Ventasso, con titolo di Contea, di Claudio Valisneri, Regiano, a cui è sottoposto quel bellissimo lago detto Ventasso" (page not numbered). Given that Azzari's book is a *Compendio*—i.e., a "summary"—Vallisneri's quote likely refers to a longer, unpublished text from the same author.

[26]Torrente Enza ("Enza Creek"), a main tributary of the Po River. It forms a natural boundary between the Provinces of Parma (on the west) and Reggio Emilia (on the eastern side). It was once known as Incia, or Lenza. For a terminological history of this name, see Brambilla Ageno 2000, 582; Tiraboschi 1824, 390.

[27]The Secchia River originates on the slopes of the Alpe di Succiso ("Alp of Succiso"), at 1,450 m/4,757 ft above sea level. This location is now part of the municipality of Ventasso. Currently, in the surroundings of the Alp there isn't any place named "Pra' di Reno." This may be due to the extreme antiquity of such a toponym.

[28]Actually, the Enza does not originate from the Lake of Ventasso. Rather, its source is located on the slopes of Mount Palerà (at circa 1,300 m/4,265 ft above sea level), a few kilometers west of the Alp of Succiso.

[29]Since the XI century, the Counts of Vallisneri (also known as Vallisnera, or Vallisniera, or Vallisnieri, or Vallisneria) were the feudal rulers of this land and of many other nearby regions in the current Province of Reggio Emilia (see Tiraboschi 1825, 389–392). Not without a struggle, as Antonio himself attested in two private manuscripts (Vallisneri n.d.(a), State Archive of Reggio Emilia, Archivio Vallisneri, Busta 27, n. 1; n.d. (b), State Archive of Reggio Emilia, Archivio Vallisneri, 5, mazzo c, Busta II, Scheda n. 51), he succeeded in proving that his family descended from this ancient and noble lineage, whose roots date back to the Lombard (or Longobard) dominion in Italy. On this topic, see Generali 2007a, 1–4. Still today, Vallisnera is a hamlet in the municipality of Ventasso.

[30]The boundaries of the current administrative region of Lombardy are far different from medieval and early modern Lombardy, whose territory included a large part of northern Italy and covered the whole Po Plain, up to the northern Apennines. On this topic, see Andenna 1998; Black 2014.

[t]**The text in Papers no. 6 (XXIX) and 7 (XXXI) is written by a different hand. The writer is unknown.**

[u]detto *monte* lago

Propositione fatta nel Conseglio di Reggio di mandare Mastro Carolo da Maleone ingegnere[31] al Lago di Ventasso per procurare di condure l'acqua del medemo a Reggio l'anno 1453, 4 agosto.

Item ipsis sic existentibus Dominus Massarius[32] predictus dixit: vos Domini Anziani scitis quod iam diu fuit tractatum de conducendo aquam[v] de Lacu Ventaxii esse bonum; donec Magister Carolus ingegnerius est hic, facere quod ipse se transferat super dicto lacu, et ibi videre an esset possibile posse haurire[w] aquas[x] ex dicto lacu aliqua via, cum iam dictum fuerit quod ipse debebat hoc scire ex praxi, et si non opus quod nolebat aliquid, sic esset bonum videre, et capere partitum.

Qui Domini Anziani pergaraverunt, et cum habuerunt dictum per dictum Massarium, et deliberaverunt facere videre a dicto Magistro Carolo an sit possibile in premissis haurire,[y] et habere aquas[z] aliqua via, et se transfere ad dictum lacum cum dicto ingegnerio.

Item eligerunt Simonem de Calcagnis[33] et Fillippum de Rodelia,[34] qui habeant esse una cum ipso Magistro Carolo, et referre ipsis Antianis quando opus fuerit de mergensibus.

Item etiam habeant ire una statim ad Lacum Ventaxii et alibi ubi opus fuerit.

Ex Libro Provisionum Anni 1452 ad 54 Ill.mae Comunitatis Regii in Archivio eiusdem existente, pag. 111.[35] **XXIX.v]**

4.7 Paper 7

Supplica della Comunità di Busana[36] al Duca Borso di Ferrara[37] per l'esentione dalle tasse nella quale si adduce l'infrascritto motivo, cioè:

Stante quadam ruina incepta in Monte Ventassio, quae minando decurrit usque in flumen Situlae[38] destruendo castagneta, terras aratorias, et prativas, et domos, et segetes[aa] cum ecclesia dictae terrae.

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[31] No biographical data were found about this person.

[32] In the Duchy of Ferrara, Modena and Reggio (and, from 1597, in the Duchy of Modena and Reggio), a "Massaro ducale"—literally, "ducal estate Manager"—was the officer in charge of taxes and tolls, and the custodian of funds in a community. See Rezasco 1881, 612–614.

[33] Perhaps Simone Calcagni (XV century), who later became Archdeacon in Reggio (see Affarosi 1737, 93; Turchi 2007, 358).

[34] No biographical data were found about this person.

[35] *Oblatio facta de derivatione facienda de aqua Lacus Montis de Ventaxio* 1453, State Archive of Reggio Emilia, Consigli, Provvigioni del Consiglio Generale, dei Dodici Saggi e Difensori della Città; dei Deputati sulle entrate del Comune; e degli Anziani, Anni 1452–1454, 111r. The same text, though with some variations, is reported in *I canali di Secchia e d'Enza. Riassunto storico e giuridico. Parte I: Notizie e questioni riguardanti le derivazioni dei canali reggiani di Secchia e d'Enza dai Fiumi omonimi* 1886, 27–28.

[36] Busana (now part of the municipality of Ventasso).

[37] Borso d'Este (1413–1471), first Duke of Ferrara, Modena and Reggio. On this topic, see Tiraboschi 1825, 130.

[38] "Situla": Secchia River. See Tiraboschi 1825, 333.

[v] **In the text:** acquam
[w] **In the text:** aurire
[x] **In the text:** acquas
[y] **In the text:** aurire
[z] **In the text:** acquas
[aa] **In the text:** tegetes

Registrata nel registro delle lettere della Cancellaria della Comunità di Reggio dell'anno 1453, pagina 122. **XXXI.r]**

4.8 Paper 8

Proccurata dal Rev. Vallisneri.[39]
Memoria per l'Istoria Naturale.

Nel libro del Rev. Vallisnieri M.S. v'è una Proposizione fatta nel Conseglio della Comunità di Reggio di mandare un ingegnere alla visita del Lago detto di Ventasso situato nella Giurisdizione di Nigone, per proccurare di condurre quell'acqua a Reggio l'an. 1453, 4 agosto.[40]

Descrizione del suddetto luogo, e della di lui situazione. Ivi, si copi dal Rev. Vallisneri.
Tutto si vegga e si copi.

Memoria di una gran salatta, o lavina, o ammotamento, o scorrimento di terra colà seguito l'anno 1453. Ivi.

Memoria.
Si porti il libro delle croniche Vallisneri a casa, e si vada a Nigone, Ventasso etc. e si descrivino que' luoghi. **XXX.r] XXX.v]**[ab]

[39]Mauro Vallisneri (16?–17?), a Benedictine priest, historian, and a disciple of Benedetto Bacchini (1651–1721). He was a relative of Antonio, and helped him to prove the nobility of his ancestors. On this topic, see Generali 2007a, 1–3; Vallisneri 1991, 384–385.
[40]As this note clearly attests, Vallisneri found in this (currently lost) manuscript the "Propositione" on the Lake of Ventasso (see note 35).

[ab]**This paper is the recycled cover of a letter. On the verso is written:**

"<Ill.mo> Sig.r Sig.r P.rone Col.mo
<…> Antonio Vallisnieri Lett.re Pri.rio
dello Studio di
Padoa"

Chapter 5
Maps: Transcription

5.1 Map 1

Ill.mo Domino, D. Antonio Vallisnerio Nobili Regiensi, In Archigymnasio Patavino Practicae Medicinae Lectori Primario, Patrono suo Colend.mo dicabat hoc schema Corographus.[a]

Ill.me Domine,

Ut Iter vestrum Alpinum rhetorice, ac physico-medice descriptum externis etiam pateat legentium obtutibus, hanc mitto Topographiam Feronianae Provinciae spectabiliorem profecto futuram, egregio si vestro huic operi insertam contigerit apparere, dignatusve fuerit auctor acceptatione, ac inscribi

Dom.is V.ae Ill.mae

Servu.us Humill.us et Obseq.mus
Dominicus Cecchi Castilionus[1][b]

Chronicula Feroniaca
ex Timotheo Tramontio, Cancellario[c] Archivii Castilionei.
Lib. 2 Manusc.

Saeculum Feronianum.

[1] Domenico Cecchi (1678–1745), a renowned cartographer from Castiglione di Garfagnana. He drew several other maps of this region. See Cecchi 2007; Foschi 2013, 219–220; http://www.giornaledibarga.it/index.html?pg=8&id=923.

[a] **The author of this map is Domenico Cecchi.**
[b] **This autograph inscription allowed to recognize Cecchi's handwriting in several other parts of the manuscript.**
[c] Tramontio, *et Iosepho Franchino* Cancellario

Ab[d] Oenofrio Ogyge[2] fundata Kitim[3] ad meridiem Hetruriae, destinatur alendis gregibus aquilonaria hic regio[4] G<…>eranis nepotibus; per cacumina montium apparuerunt illico tentoria, circumsepta mapalia ad tuendum greges accomodata; ab Enachio Gygantum[5] proelio reversum Lygurem Foetontis filium[6] exceperunt pastores nostri, a quo venationem edocti feroces in monstra evaserunt; ad politiam suam Iovis[7] Osyridis[8] redacti bestiarum catabula in castra et oppida transmutarunt; Lestrigonum tyrannorum[9] immanitatem pertaesi, et Apino Foroneo[10] in protectorem assumpto montes Ciminos[11] Camesono[12] sanguine cruentarunt, placuitque ab Apim Apenninos, et a Foroneo Alpes dicere Faeronianos; Chorithis[13] Tuscorum a[e] Morgeto[14] usque ad Mezentium[15] crudelem fideles, perutilesque habiti sunt Faeroniani; Chorithatus Hetruscus

[2]Ogyges (Ὠγύγης). In Greek mythology, he was a hero from Boeotia and king of the Ectenes (Εκτένες), who were supposed to be the earliest inhabitants of this region. This myth is associated with the Ogygian deluge, a great flood which occurred during his reign. According to other myths, Ogyges travelled to Italy and reached Tuscany, founding several cities. On this topic, see Carbone 1840, 56–81; F. Inghirami 1825, 71, 83–84; Valeriani and F. Inghirami 1833, 25, 68.

[3]"Kitim": Volterra (Province of Pisa), once a powerful Etruscan city. Among the many studies on this topic, see Camporeale and Maggiani 2009. The use of the name "Kitim" for Volterra, as well as several other words and data in the following part of the text, suggest that Tramonti frequently relied on Curzio Inghirami's forged source. With respect to the word "Kitim," for example, see C. Inghirami 1637, 7–8, 14, 19–21, 60, 132, 142, 302.

[4]Garfagnana is here described as "northern" ("aquilonaria regio"), as compared to the more southern Volterra.

[5]From "Anakim" ("Sons of Anak"), a race of giants mentioned in the Bible. Arguably, "Enachio" comes from the distorted term "Enachii," from Curzio Inghirami's book (C. Inghirami 1637, 21–22), where this race is supposed to live in Etruria.

[6]Ligure, or Ligisto. In Greek mythology, he was son of Phaeton (Φαέθων), who—in turn—was son of the god Apollo. He became the legendary king of a part of western Italy (hence the names "Liguria" and "Livorno"). See N. Magri and Santelli 1769, 26, 69.

[7]Jupiter (Iuppiter/Ζεύς), Latin and Greek god of sky and king of the gods.

[8]Osiris, Egyptian god of the afterlife, resurrection, and of the underworld. According to Curzio Inghirami's book, he defeated the Enachii with the aid of Apis, an Egyptian king. See C. Inghirami 1637, 22.

[9]Laestrygonians (Λαιστρυγόνες), a race of giant cannibals from Greek mythology. In Homer's *Odyssey*—Homerus/ Ὅμηρος 2018, X, 103–134, http://data.perseus.org/citations/urn:cts:greekLit:tlg0012.tlg002.perseus-grc1:10.87-10.132—they destroyed Ulysses' fleet (except his ship) and ate many of his men. According to Curzio Inghirami's interpretation, Laestrigon was a grandson of Osiris. The Egyptian god gave him and his kin dominion over Etruria (C. Inghirami 1637, 22).

[10]In Greek mythology, Apis (Ἄπις) was an ancient king of Argos. He was son of the demigod Phoroneus (Φορωνεύς): first king of this land and inventor of fire, who contributed to the civilizing of the Italic peoples (see F. Inghirami 1825, 83–84). It is not clear whether or not Tramonti identifies the Greek Apis with the homonymous Egyptian king.

[11]Monti Cimini ("Cimini Hills"), a range of volcanic hills located in the Province of Viterbo, northwest of Rome (about 55–60 kilometers, or 34–37 miles). They are not part of the Apennines, having an independent geological origin. On this topic, see Peccerillo 2005, 17, 19, 27, 37.

[12]"Camesono": From "Cameseuna," which—according to Curzio Inghirami—was another name for Volterra. See C. Inghirami 1637, 142.

[13]"Chorithis Tuscorum": This term may refer both to the current Cortona (Province of Arezzo), once an Etruscan city, and to its legendary founder, king Coritus. See D'Aversa 1986; Valeriani and F. Inghirami 1833, 166. Here, this word could also indicate any generic Etruscan king or ruler.

[14]According to Curzio Inghirami's book (C. Inghirami 1637, 22, 29, 39, 50, 73, 193, 202, 206), Morgetes was the name of several Etruscan kings. In this passage, it is not clear which one Tramonti is referring to.

[15]Mezentius: a legendary, ungodly, cruel Etruscan king. He is mentioned in the *Aeneid* (Vergilius 2018a, VII–XI, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:7.647-7.654) as an enemy of Aeneas.

[d]**From this point on, the writer is unknown.**

[e]Tuscorum *Amor* a

in duodecim lucumonatos distractus[16] iuxta numerum primatialium[f] civitatum. Ocno Bianoro,[17] et reliquis thoparchis Lunensibus[g] adhaesere nostrates; adversus hostes Tyrrenae Reipublicae[18] ad proeliandum invitati plura de Caenomanis,[19] Allobrogibus,[20] et Celtis trophea reportarunt, spectante Tito Vulturreno, Cecinna, et Menippo Lalarthibus;[21] deleta per Q. Fabium Romuleum[22] Ianigenorum Democratia,[23][h] Lyguribus montanis manus dare decreverunt Dorchetes[24] Feroniani; commilitonibus his incredibilia sunt damna, quae intulerunt Ligures Alpini sociis Romanae Reipublicae, Pisanis, Lucensibus, Parmensibus,[i] et Mutinensibus; ad compescendos Lygurum Gigenios Consules triginta defatigaverat Roma, videratque inter alios Rutilium suum Balista in monte sepultum, quando desperatae legiones eius ex una, cohortes[j] Lentuli ex altera parte reliquias alpinorum obsidentes multis[k] satis vulneribus interemerunt, illis exceptis, quos densissimum[l] nemus abdiderat circa Montem Laetheum;[25] itaque novissimi omnium

[16]This passage alludes to the Etruscan League (or Dodecapolis), an alliance of twelve Etruscan cities that—according to the tradition—established a religious, economic, and military alliance in Etruria. The exact identity of these cities is still uncertain. On this topic, see Museo Claudio Faina 1985; Studi Etruschi ed Italici 2001.

[17]Ocnus (Ὄκνος), or Bianor. In Latin and Greek mythology, he was son of the god Tiberunus. He founded and was the first king of Mantua: according to Virgil (Vergilius 2018a, X, 198–203, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:10.198-10.214), he allied with Aeneas against the Italic tribe of the Rutuli.

[18]Arguably, the Etruscan League.

[19]Cenomani, also known as Aulerci Cenomani. This Celtic tribe once occupied a territory in the Cisalpine Gaul, between the Insubres (on the west) and the Veneti (on the east).

[20]Allobroges, an ancient Gallic tribe located between the Rhône River and Lake Geneva.

[21]The term "lalartes" (plural of "larth") is almost exclusively found in Curzio Inghirami's book. Arguably, this is a distortion of the Latin/Etruscan word "lares," plural of "lar," or "lars" ("lord"). According to this forged source (C. Inghirami 1637, 35–42, 48–54, 57–71, 74, 144, 183), the lalartes had administrative, military, and judicial powers in the Etruscan cities, and were elected by the kings ("lucumones") and/or by the people and the Senate. As Tramonti states, Titus Vulturrenus, Cecinna, and Menippus were Etruscan "lalartes."

[22]Most likely Quintus Fabius Maximus Rullianus (IV–III century BC), a Roman consul. From 310 to 295 BC, he fought and won several fierce and decisive battles against the Etruscans and their allies (Samnites, Umbrians, and Gauls), allowing Rome to dominate central Italy.

[23]Arguably, the author refers to the coalition defeated by the Romans. The name "Ianigeni" derives from the Italic deity Ianus, thus being a general definition for all the Italic peoples.

[24]According to several sources, in ancient Rome and in Etruria the dorchetes were the wisest augurs: high priests who interpreted the will of the gods by observing the sky and the flight of birds. On this topic, see Ciatti 1638, 540; Marcucci 1766, 177; Tola 1837, 230; Vedriani 1665, 9. However, this could be another forgery from Curzio Inghirami's book, where the word "dorchetes" is frequently used (C. Inghirami 1637, 42, 127, 235–238). Not by chance, all the above mentioned sources were published after the *Ethruscarum antiquitatum fragmenta.* Moreover, Pasquale Tola explicitly considers Inghirami to be a reliable author (Tola 1837, 230).

[25]This passage refers to a crucial episode in the Ligurian wars, when the Ligures were besieged by the Romans on "Mons Balista" (now Mount Valestra) and on "Mons Letum" (a mountain whose identity is still debated). According to Titus Livius in his *Ab Urbe Condita* (Livius 2018, XLI, 17–18, http://data.perseus.org/citations/urn:cts:latinLit:phi0914.phi00141.perseus-lat3:1), the two Roman consuls in charge at that time (176 BC) were Quintus Petilius Spurinus (who died in the battle) and Caius Valerius Laevinus.

[f] **In the text:** primatiulium
[g] **In the text:** Lunenensibus
[h] Democratia*m*
[i] **In the text:** Parmenis
[j] **In the text:** choortes
[k] mult*ae*
[l] densissi*ssi*mum

Hetruscorum Feroniani devicti, passi sunt antiquam Iapeti linguam[26] deserere quam non confunderat Babelica aedificatio, et patres nostri didicerant a Vadimone Vertunno:[27] hanc igitur emphaticis caracteribus exaratam posteris effodiendam occuluere; Romanae adscripti militiae, de hostili praeda participantes, de militari censu proficientes plurimi ditati sunt Feroniani; ad evitandam fluviorum alluvium a cultura collium prohibiti montani, abundanti[m] annona provisi sunt a Latinis, quos vicissim armentorum foetibus incrassarunt; civilibus[n] discordiis Marii, Sillae, Caesaris, Pompei, et Marci Antonii[28] senatorum plurimi[o] ad latibula confugientes in arcibus suis, et castris montanis tutati sunt Feroniani; nobilium esulum numismate ditati, nova[p] fortulitia vetustis addiderunt; ad capescenda ferociora animalia Pisano inferenda theatro destinati, latitantes Christicolae in antris, et speluncis verbo, et opere comparsi sunt; a Vandalorum, Gothorumque direptione immunes, Longobardorum tyrannidem primo, beneficentiam postremo nacti fuerunt;[29] a Lodoix 2° Imperatore[30] redacta in marcam Hetruria,[q] Adelberto,[31] et caeteris Marchionibus usque ad Guelforum ultimum Vicarium Imperialem paruere Foronei, sub Germanis Principibus facta libertate venali, quamplures Italae civitates assumpserunt democratiam, quam placuit nostratibus habuisse communem[r] cum Lucensibus; Guelforum, Gibellinorum, Alborum, Nigrorumve factionibus irretiti,[32] se suaque omnia vicissim pene consumpserunt; Castracano Lucensium Duci[33] tam cari fuerunt Feroniani, ut ex

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However, these names do not correspond to those mentioned in the manuscript. This discordance may be due to a transcription error by the author. "Rutilius" could be a distortion of "Pectilius"—which, in turn, could be a distorted version of "Petilius." Thus, this name may actually refer to Quintus Petilius Spurinus. On the other hand, "Lentulus" could be a distortion of "Laevinus," and, therefore, could mean Caius Valerius Laevinus.

[26] The Etruscan language. From Iapetus (Ἰαπετός), a Titan in Greek mythology, son of the primordial deities Uranus (Οὐρανός) and Gaia (Γαῖα, or Γῆ). He was associated with the west, and, therefore, with the western peoples (as the Etruscans).

[27] Vertumnus, an Etruscan and Roman god of seasons and change. According to several authors (including Tramonti), he was identified with the deity Vadimonus. See also Adami 1737, 68; Bardetti 1769, 4; Teoli 1644, 2–3.

[28] This passage refers to the great civil conflicts that scourged the late Roman Republic in the I century BC, resulting in the establishment of the Roman Empire: Sulla's civil war; the war fought by Julius Caesar (100–44 BC) against the Senate and Gnaeus Pompeius Maior (106–48 BC); and the last one, which opposed Octavianus (who would become the first Roman Emperor, Augustus, 63 BC–14 AD) and Marcus Antonius (83–30 BC). In the aftermaths of these fluctuating events, many supporters of the losing factions were forced to escape from Rome, and not a few of them took shelter in Garfagnana.

[29] According to Tramonti, Garfagnana was spared (relatively) from the destructive effects of the barbarian invasions of Italy during the fall of the Roman Empire.

[30] Louis II of Italy (also known as Louis the Younger, 825–875), King of Italy and Holy Roman Emperor from 844 until his death.

[31] Adalbert I (circa 820–884/6), Margrave of Tuscany and Tutor Corsicae from 846.

[32] During the XIII and XIV centuries, Garfagnana was discontinuously occupied by the Republic of Lucca. This troubled sequence of events was part of a wider and complex context of struggles which took place in central and northern Italy between Guelphs and Ghibellines (and later, in Florence, between White and Black Guelphs). On this topic, see Pacchi 1785, 127–140.

[33] Castruccio Castracani degli Antelminelli (1281–1328), military leader ("condottiero") and—formally—Duke of Lucca from 1325 until his death. He fortified the citadel of Castelnuovo di Garfagnana. See Pacchi 1785, 138–139.

[m] **In the text:** abbundanti
[n] incrassarunt; *ut* civilibus
[o] **In the text:** plurimis
[p] ditati, *in* nova
[q] Hetruria*m*
[r] **In the text:** comunem

ipsis centum custodes armigeros sui corporis elegerit, et Castrumnovum Feronianum auxerit; restituta Lucensibus libertate, paululum visa est respirare Feronia, sed altercantibus iterum Rebuspublicis Lucana, Florentina, Pisana, et Senensi, necnon affectante toparchiam Guinisio Lucensi,[34] status Reipublicae coepit fluctuare, et in deterius[s] habiturum veriti sunt Feroniani: quare deficientes a vacillante regimine, ut in solidiori Principe diuturnius tutamen haberent, sub spe participandi curialium officiorum, a quibus forenses excluserat[t] aristocratia, altera pars ad Atestinos, altera ad Medicaeos Principes se convertit, reliqua constans stabit viciniori dominanti; ergo unusquisque ad arbitrium electo sibi Principe geniali, ei famulatur usque in presens, immo idolatrat gens ista Principes suos, a quibus vicissim singulari beneficentia privilegiata iactat se feliciorem ceteris nationibus.

Religio Feroniana.

Antequam per Ninum[35] et Zoroastrum[36] inventa forent idola, unum deum sano doctore venerabatur Hetruria, grece dicta Tyrrenia, latine <…>cricola; per Chamesenos,[37] temerata religione ea, cultum in idolatriam transmutavit; inter <…> numinum somniatorum catervam elegerunt <si>bi Proserpiniam[38] incolae regionis istius, ut qui<bus> poenis inferorum se noverant digni, valerent tamen sacrificiis ad misericordiam flectere 10 ominum Haerebi;[39] ab Apenninis Foroneis, a feracitate regionis, a ferocitate efferatarum gentium, a ferendis arboribus, a ferratis cothurnis sacerdotum Feroniam dixerunt; tanta fuit religio oppidanorum, tantus amor erga Feroniam, ut non solum lucos, saltus, Palilios[40] dies festos, regionem ultra, citraque montium Lethaeum appellare voluerint nomine numinis, sed et se ipsos dicere Feronianos; Feroniani cultus ardore dilatandi, multos de grege sacricolas usque ad Montem Soractem non longe a mundi metropoleon direxerunt nostrates, ut in nova Feroniana Civitate nomen Hecathis[41] longe, lateque celebraretur, ad cuius Penum Romulea superstitio facilius posset appendere vota sua. Mirum fuit inter tot deorum pluralitates a caeteris nationibus admissas, solos Feronianos stetisse singulares in unius numinis veneratione: quare de his solum modo per sinedrion vaticinatus est Hieremias Propheta C. 2, cum de omnibus Italis, et maxime Hetruscis idolatris dixerit Hebreis: transite ad Insulas Chitim, et videte si mutavit gens deos suos:[42] et quod prophetale

[34]Paolo Guinigi (1376–1432), powerful lord and, officially, Captain and Defender of the People ("Capitano e Difensore del Popolo") of Lucca from 1400. See Pacchi 1785, 156–160.

[35]Ninus, legendary Assyrian king and alleged founder of Nineveh. His wife was the likewise legendary queen Semiramis, who succeeded him after his death. On this topic, see Seymour 2014, 61–78, 115–116, 231.

[36]Zoroaster, founder of Zoroastrianism.

[37]"Chamesenos": The inhabitants of Volterra. On this term, see note 12.

[38]Proserpina (or Persephone, Περσεφόνη), also known as Cora (Κόρη, "maiden"). Along with her mother Ceres (or Demeter, Δημήτηρ), she was the Latin and Greek goddess of agriculture, vegetation, harvest, and fertility.

[39]Erebus (or Erebos, Ἔρεβος), a Latin and Greek primordial deity, god of darkness.

[40]Parilia, or Palilia: an ancient Roman festival held in honor of Pales, the patron deity of shepherds and flocks. On this topic, see Beard, North, and Price 1998, 174–176.

[41]Hecates (Ἑκάτη), Latin and Greek goddess of sorcery and ghosts.

[42]Book of Jeremiah, Chapter 2, verses 10–11. Actually, this passage does not refer to Etruria but to Kittim (Citium/Κίτιον), an ancient settlement on the west coast of Cyprus. However, in Hebrew literature this name gradually acquired a wider meaning, referring to the whole island of Cyprus, to the Aegean Islands and, more broadly, to any invader coming from the Mediterranean islands (such as the Greeks, Macedonians, and the

[s]in *deterius habiturum* deterius

[t]exclu*dit*

sarcasmos de nostris tantum specialiter verificetur, prae ceteris argumentantur Romanum Panteon, et aliarum gentium recentes theogoniae, et revera praedicatio Apostolorum Petri et Pauli, deinde Sanctorum Episcoporum Paulini,[43] et Valeri[44] tot passis repulsa,[u] tantis violentiis interdicta, portentis licet grandibus illustrata patefecit quam tenaciter agglutinata erat Feronianis Feroniana religio. Nil protulerunt[v] in morte Christi ululatus ferarum, cacodaemonum strepitus, repentina armigerum[w] exclamatio, nil hecatombem[x] flebilis[y] colo<norum>, nil denique scissorum montium apertae voragines, <nil> <…>, <…>nus voluerint superstitionibus unum[z] cia<…> securum assueta relinquere! Versa erat in simpathia Feroniana pyromantia;[45] ad argumenta prothonotarum[aa] idoli Fides Apostolica recenter invecta regitura orat, ni Catholici antistites Theodorus,[46] Eutychianus[47] et Hybernensis Felicius[48] sustentassent, continuissentque Feronianos in sola Feroniaca nomenclatura; ergo relictis incantationibus, prostrato Proserpinae simulacro Baptismi gratiam suscepere; stetisset adhuc tamen luco et silvae umbrosae conterminae templo onomasis Feroniaca, ni sanctus regius romulides[ab] incolatu suo, praefata morte, sepulcroque venerabili mutasset in suum nomen Nemora et Alpes Sancti Peregrini. In admirabili inventione huius regii sacrati corporis conspexerunt[ac] nostrates iugali tentorio viginti septem thyaras, per quas, Caelo confirmante, statutum fuit adorabile pignus in solo Feroniano manendum; in Arriana persecutione, sicut autem[ad] in Neroniana, Domitiana et Maximiana,[49] fugitivos fideles in antris, et speluncis accessu difficillimis occuluere, pastique sunt Feroniani, ex quibus non defuerunt, qui tormentorum vi perterriti ad lucos anhelantes, ferarum morsibus laniati fuerint, vel in pendicibus inviis fame,

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Romans). See Finkelstein and Silberman 2001, 348–351; Kugel 1998, 366–367, 950. Probably, Tramonti's misinterpretation is due to the similarity between this biblical name and the word "Kitim," which—according to Curzio Inghirami's forged source—was the ancient name of Volterra.

[43] Saint Paulinus (or Paulinus of Antioch, I century AD), first Bishop of Lucca (circa 46–68 AD) and patron saint of this city. On this topic, see Beverini 1829, 1–2, 30–34; http://sacrumluce.sns.it/mv/html/MON/MON_990013000000000/frameset_cap3.html.

[44] Saint Valerius (I century AD), disciple and successor of Paulinus as second Bishop of Lucca (circa 68–96 AD). See Beverini 1829, 35; http://sacrumluce.sns.it/mv/html/MON/MON_990013000000000/frameset_cap3.html.

[45] Pyromancy, an ancient practice of divination by fire.

[46] Saint Theodorus, Bishop of Lucca (allegedly from 350 to 400 AD). See Beverini 1829, 2, 38; http://sacrumluce.sns.it/mv/html/MON/MON_990013000000000/frameset_cap3.html.

[47] Arguably, Pope Eutichianus (228–283 AD), who was from Luni. See Repetti 1843, 193.

[48] Felicius, Bishop of Lucca (circa 685–686? AD). See http://sacrumluce.sns.it/mv/html/MON/MON_990013000000000/frameset_cap3.html.

[49] The passage refers both to the violent struggles among Christians in the III and IV centuries AD, between the followers of the presbyter Arius (Arianism) and the supporters of the Nicene Creed (adopted after the First Council of Nicaea in 325 AD), and to the persecutions of Christians carried out during the reigns of the Roman Emperors Nero (37–68 AD), Domitianus (51–96 AD), and Maximianus (250–310 AD). However, this last name could also—and more likely—allude to Galerius (whose official title, in fact, was Gaius Galerius Valerius Maximianus Augustus, 250/260–311 AD): a renowned and fierce opponent of Christianity.

[u] **In the text:** passa repulsis
[v] pro*duxerunt*
[w] **In the text:** argerum
[x] **In the text:** heccatombem
[y] flebi*li*lis
[z] unum<...>
[aa] **In the text:** prothonnotarum
[ab] rom*ani*des
[ac] con*x*pexerunt
[ad] aute*a*m

sitique perierint: certum est enim plurimos martyres habuisse Feronia, sanguinis[ae] in atheismo, charitatis in morbo epidimico, quos ardor fidei, proximique dilatio praecoces misit ad gloriam; in ecclesiasticis scismatibus plures antistites[af] in Feronianis arcibus tutati sunt veteres nostri, quibus reddita Ecclesiae pace cura fuit restaurare templa, erigere parochias, fundare monasteria, oratoria construere, xenodochia dotare, ita ut Feroniani non minus apparuerint sanctitate conspicui, quam quod fuerint in idolotito ostinati; in processu temporis meruerunt habere corpora Sanctorum Blanci,[50] Viviani,[51] Terentii,[52] Primitivi,[53] Herculani,[54] Irenei,[55] et aliorum multorum reliquias. Insuper exemplarissima conversatione delectari Venerabilium Sacerdotum Ioannis Baptistae Atestini,[56] Iacobi Iacopucii,[57] Bartolomei Guidi,[58] Barsotti,[59] Bertachi,[60] Cillei,[61] in quorum fragrantia redolet adhuc Feronia. **XXXII.r]**

3. Lucius Murena—Lucignano.[ag]
4. Cassius Viscellinus—Ghivizano.
5. M. Attilius Glabrio—Calavorno.
6. Titus Annius Luscus—Vitiana.
7. Q. Elius Tubero—Tereglio.
8. Martius Figulus—Monte Fegatese.

[50]Saint Blancus, Saint Peregrine's only companion.
[51]Saint Vivianus (or Saint Vianus, VI–VII century), who settled in a still existing hermitage in the Apuan Alps. According to tradition, he met with Saint Peregrine and Saint Blancus.
[52]Arguably, Saint Terentius of Luni (circa 556–VII century?), martyr and sixth Bishop of Luni. See http://www.webdiocesi.chiesacattolica.it/pls/cci_dioc_new/consultazione.mostra_pagina?id_pagina=25138.
[53]Saint Primitivus (III century?), martyr. His cult is particularly vivid in Castelnuovo di Garfagnana. See Vinceti 2007, 86.
[54]Blessed Ercolano da Piegaro (?–1451), a Franciscan friar from Perugia who settled in Garfagnana. See Angelini 1990.
[55]Saint Irenaeus (?–?), martyr. His body, now preserved in Castiglione di Garfagnana, was carried from Rome and donated to the city in 1680 by the influential Guazzelli family (see http://www.castiglionenews.it/index.php?option=com_content&view=article&id=697:langolo-del-passato-piccola-ricerca-su-santireneo&catid=57:langolo-del-passato&Itemid=76).
[56]Alfonso III d'Este (1591–1644), Duke of Modena and Reggio from 1628 to 1629. He abdicated in favour of his son Francesco (1610–1658) and entered the Capuchin friars with the name of Giambattista da Modena. He died in Castelnuovo di Garfagnana. On this topic, see Tiraboschi 1825, 131.
[57]No biographical data were found about this person (arguably, he was a priest or a friar).
[58]Bartolomeo Guidi (XVII century), a priest from Barga. From 1651 to 1660, he was parish priest of the Pieve di Santa Maria, a Romanesque church in Loppia (now a hamlet in the municipality of Barga). On this topic, see P. Magri 1881, 71.
[59]Most likely, one of the many ecclesiastic members of the Barsotti, a powerful family from Lucca. On this topic, see Barsotti 1693; Catalano 2007, 120–121, 131–132, 148, 158.
[60]Probably Pellegrino Bertacchi (1567–1627), from Camporgiano. He was Bishop of Modena from 1610 until his death. See Al Kalak 2004; http://www.treccani.it/enciclopedia/pellegrino-bertacchi_(Dizionario-Biografico)/.
[61]No biographical data were found about this person (arguably, a priest or a friar).

[ae]**In the text:** sanginis
[af]**In the text:** anthistites
[ag]**The whole text on the verso of the map is written by Domenico Cecchi.**

Nomina,[ah] et cognomina Nobilium Romanorum, a quibus Oppida Feroniana coeperunt nomenclaturam, incipiendo ab altioribus.

Prima
In Vicaria Comporgiani Mutinensis.

[ah] Fegatese.

Ledron fiume di Vaii, e del Poggio. Sarida f. di Giovian.
Pedona f. di Diecimo. Segon. f. di Ghiviza.
Contesora f. di Fregionaia.
Lozzori f. di Vicopelago.
Rogio f. di Colognera, e Carraia.
Seravezza entra nel f. Versiglia, che sbocca in mare.
Tra Uzzano, e M. Carlo vi è Pescia su la piegatura del fiume.
O Regnano.
O M. Fiore.
O Verzano.
O Arzigliano.
O Casola.
O Codiponte. O Vugliacallo.
O Equi.
O Aiola.
O Vinca.
O Monzone.
O Isolana.
O Vocer, o Voleno.
O Pomezana.
O Farnochia.
O Fabrica.
O Pietra Santa.
O Ospidaletto.
O Silano.

Il fiume vicino a M. Carlo e Villa Basilica si chiama Clodo.

Tasso. Cant. 7.

> *Figlio, ei rispose, d'ogn'oltraggio, e scorno*
> *la mia famiglia, e la mia greggia illese*
> *sempre qui fur: né strepito di Marte*
> *ancor turbò questa remota parte.*
> *O sia gratia del Ciel, che l'umiltade*
> *d'innocente pastor salvi, e sublime,*
> *o che sì come il folgore non cade*
> *in basso pian, ma su l'eccelse cime,*
> *così il furor di pellegrine squadre*
> *sol de' gran re l'altere teste opprime;*
> *né gl'avidi soldati a preda alletta*
> *la nostra povertà vile, e negletta.*

Lima f.
O Villabasilica.

704 torri eran in Lucca. Castruccio fattosene Signore del 1316 ne distrusse 300 della parte guelfa.
Vite de' Santi di Cesare Franciotti, p. 488.
1266. Lucca entra sotto la protezione del Papa.
Avverti che li baloardi si fer del 1512, 13, 18, 19, 20.
Lucca ridotta in fortezza con 11 baloardi, posto dentro S. Frediano del 1265.
Del 1519 si spianta la chiesa di S. Colombano de licentia Papae, e si ci fa baloardo. Era degl'Agostiniani.

1. Genutius Clepsina—Giuncognano.
2. Quintus Capitolinus—Capoli.
3. Cneus Peticus[ai]—S. Pontaccio.
4. Caeso Duillius, et Lelius Balbus—Dalli.
5. Cneus Genutius—Cogno.
6. Publius Verennius—Veregnano.
7. Lucius Aemilianus—Magliano.
8. Curius Dentatus—Corti.
9. Anicius Romanus—Nicciano.
10. Geganius Mamercinus—Gragnano.
11. Iunius Silanus—Silano.
12. L. Sergius Fidenas—Soraggio.
13. Cecilius Metellus—Metello.
14. Brutus Bubulanus—Borsigliano.
15. Marcus Levinus—Livignano.
16. Cornelius Arvina—Caprignano.
17. Aurelius Orestus—Orzaiola.
18. L. Plautius, et V. Panda[aj]—Piazza.
19. M. Fabius Vibulanus—Bibiano.
20. Caius Petronius—Petrognano.
21. Q. Fabius Verucosus—Verucola.
22. Nauticus Rutilius—Naggi.
23. Attilius Calatinus—Casatico.
24. Ventidius Bassus—Vitoio.
25. L. Cornelius Cossus—Casciano.
26. Ottacillus Crassus—Cascianello.
27. Caius Petilius—Pugliano.
28. C. Lucius Regillensis—Roggi.
29. Popilius Lenas—Puianella.
30. Campus Regis Iani—Camporgiano.

2°

In parte Vicariae Minucciani Lucensis.

1. [ak] Lucius Munatius Plancus—Minucciano.
2. Germolaceon—Gramolazzo.
3. Aelianus Petus—Agliano.
4. Fulvius Centimalus—Castagnola.
5. Calfurnius Piso—Corfigliano.

Supradictae duae Vicariae subsunt in spiritualibus Episcopo Sarzanensi: sequentes[al] vero parent Episcopo Lucensi.

[ai] Petic*i*cus

[aj] Pan*c*a

[ak] Lucensis.

1. 1. Oratius Putuillus—Pulliano

1.

[al] Sarzanensi: *In Vi* sequentes

3°
In Vicaria Castilionis Lucensis.

1. Castrum Lestrigonum—Castiglione.
2. Menennius Lanatus—Mozanella.
3. Tergeminus Curiatus—Cerageto.
4. Lucius Verus—Verucchia.
5. Penus Cincinnatus—Penna del Ciuccio.
6. Caius Acatius—Chioza.[am]
7. Castrum Azii—Castellaccio.
8. Aemilius Mamercinus—Marcione.
9. Aurelius Cerretanus—Pian di Cerreto.
10. Ava Laurentia Lupa—Lupinaia.
11. Rhea Sylvia—Riana.
12. Lucretius Tricipitinus—Treppignano.

4°
In Vicaria Castri Novi Mutinensis.

1. Publius Corvinus—Corfino.
2. Caninus Rebilius—Canigiano.
3. Pompeus Magnus—Magnano.
4. Valerius Messala—Massa.
5. Attilius Seranus—Sarcagnano.
6. Fabius Ambustus—Sambuca.
7. Villulus Tapulus—Villetta.
8. Publius Cossus—Ponticosi.
9. Lucius Velleius—Vaii.
10. P. Ebutius Cornicensis—Careggine.
11. C. Fabricius Luscinius—Fabrica.
12. L. Verus Poticus—Poggio.
13. Hostilius Mancinus—Ospidaletto, e Antisciana.
14. Papirius Crassus—Capricchio.
15. Silius Sylvanus—Silicano.
16. Cornelius Dolabella—Gragnanella.
17. Luctatius Cereo—Ceretolo.
18. L. Aruntius Nepos—Rontano.
19. Elius Petus—Eglio.
20. M. Cornelius Malugineus—Molazzano.
21. Lucius Cassius—Cascio.
22. Oratius Paluillus—Palleroso.
23. Marcus Aemilius—Migliano.
24. C. Marcus Censorinus—Ceserana.
25. M. Aemilius Barbula—Bargecchia.
26. Cornelius Sylla—Silico.
27. Publius Flaccinator, et F. Nobilior—Pieve Fosciana, e Fossandera.[an]

[am] Chiozza
[an] **In the text:**

5°
In Vicaria Trasilici Mutinensis.

1. Virginius Tricostus—Trasilico.
2. Servilius Geminus—Vergemoli.
3. A. Virginius Coelimontanus—Calomini.
4. Iunius Brutus—Brucciano.
5. Calfurnius Bestia—Forno Volastro.
6. Valerius Poblicola—Valico.
7. Q. Minutius Thermo—Terminone.

6°
In Vicaria Gallicani Lucensis.

1. Papirius Maso—Perpoli.
2. Fonteius Capito—Fiattone, e Campi.
3. Gallus Caninius—Gallicano.
4. L. Plautus Venno—Verni.
5. Calfurnius Bibulus—Bolognano.
6. L. Cornelius Cethegus—Cardoso.
7. Metra Erictonia—Motrone.
8. Q. Fabius Rullianus—Gioviano.

[9.] Gellius Poblicola—Gello.[ao]

7°
In Vicaria Bargae Florentinae.

1. Summa Columna—Sommocologna.
2. Q. Fabius Lebeon—Albiano.
3. Spurius Oppius—C. Oppio.
4. Statilius Taurus—Tiglio.
5. P. Furius Philus—Filecchio.
6. Titus Q. Penenius—Pedona.

8°
In Vicaria Coreliae Lucensis.

[1.] Aurelius Cotta—Coreglia.[ap]

[2.] Minutius Augurinus[aq]—Gromignano.[ar] **XXXII.v]**

27. Publius Flaccinator, et F. Nobilior
28. Pieve Fosciana, e Fossandera.

[ao] **This entry is unnumbered, having been added later.**
[ap] **This entry is unnumbered.**
[aq] Augurin*a*s
[ar] **This entry is unnumbered.**

5.2 Map 2

XXXIII.r][as] XXXIII.v]

[as] **The author of this map is unknown.**

PART III
Primi Itineris per Montes Specimen Physico-Medicum: Translation

Chapter 6
Main Manuscript: Translation

Mountain journey

"I should never have dared to send it to you, if I had not revised it with leisure and care." So [wrote] Cicero to Atticum about a certain small book of his.[1] **I.r] I.v]**

Garfagnana p. 31. **II.r] II.v] III.r] III.v]**

Physico-Medical Example of a First Journey through the Mountains.

By Antonio Vallisneri of the Nobles of Vallisneria, Public Primary Professor of Theoretical [Medicine] at the Arch-Lyceum of Padua, and Member of the Royal Society of England, dedicated to the Most Wise, and Most Famous Fellows, of that same Society:
translated from the Italian language into Latin by L.V.[2]

Most Wise, and Most Famous Fellows, renowned all over the world.

Who would have thought, O Most Distinguished Fellows, that the strength and the excellence of talents would do harm to studies? Who [would have thought] that reason, that most divine trait, would deafen us, and would make us almost unable to understand truth? It is surprising, nearly incredible to say, yet very easy to happen; for the inquisitive subtlety of mind shapes and gives birth to such beautiful conjectures, and lies in such beautiful and eloquent ways, that most of men, bewitched with colored speeches, and—so to speak—trapped with snares, confuse errors with wisdom, and prefer to fall asleep over what they once agreed upon, than be liberated. In our age the Academies, among which yours excels, tried to shake off from us this numbness, in order to encourage experiments; let me, too, lay at your feet a rough **IV.r]** booklet, which deals with no different issues; for its content was verified by sight, not by imagination. It is ugly indeed, and inelegant: but be merciful to one born in the Alps. During the summer vacations, a desire arose to wander in the mountains near me; nor did my hands wield spears to pierce wild beasts,

[1] This is a passage from Marcus Tullius Cicero's *Epistulae ad Atticum* (Cicero 2018b, II, 1, http://data.perseus.org/citations/urn:cts:latinLit:phi0474.phi057.perseus-lat1:2.1.1).

[2] These anonymous initials seem to indicate that the manuscript was translated into Latin from a previous Italian version, and not by Vallisneri himself. However, there are important hints that this may be a pretense. The handwriting in the main manuscript is unmistakably Vallisneri's: since the document was draft (and a significantly reworked one, too), it is unlikely that he copied again the entire Latin text from another document, which in turn was a translation from an Italian text he had already edited. Furthermore, several studies prove that Vallisneri often used false names, or the names of his pupils, as a strategy to conceal and protect himself against potential criticisms—which in this case may have been addressed to the prose style of the document or to terminological misunderstandings. On this topic, see Generali 2004, 155–156, 176–177; 2007a, 383–412; Luzzini 2013a, 91; 2014a, 209. It is worth noting that the same initials (and, arguably, the same anonymous translator, whether real or not) appear—with an additional "S" in the end—

but styluses and writing tablets, so as to pursue truth. My main goal was the benefit of my students, as on my return I would show them hidden springs and new medical properties of the waters.

Climb down a little from that knowledge, O Most Severe Men, by the side where you look to the seas, lands, and sky as advisors to the Republic of Letters. Take heed to my weak attempts; and since I am still fearful, foster [me] to greater efforts by the magnitude of your favours: a somehow unusual guilt of indulgence.

Padua, 1705

Most Dedicated, and Most Obsequious, Servant and Fellow
Antonio Vallisneri **IV.v]**

To the Academy of Reggio. Etc.[3]

Perhaps, O Most Revered Academics, you shall despise a philosophy that climbs up the steepest crags, and walks through inhospitable mountains, seeking answers—so to speak—in order to understand the dark genius of nature, and discover its laws from those silent horrors; whereas such rugged and desert places, abandoned by nature itself, seem to have nothing in common with the learned and mild temper of philosophers, and especially with yours, which is devoted only to the most gentle muses, and to the most pleasant studies. "Are we so short of the wealth of truth," you may reproach me, "that we shall leave flourishing cities, where the fine arts and the sciences are so fervently fostered, and move where only a few footprints of wild animals guide us, in order to acquire knowledge? What do high cliffs, water shattering on awful rocks, and horrible caverns bring other than a sort of confusion, and darkness to our eyes, and horror to our minds?" I imagine you speaking like that; nor do I know how to reply, other than hoping that my alpine observations, once carried on by you, will drop much of their original roughness; while truth, though discovered by means of mountains and chasms, and once tamed by the gentle presence of such a noble assembly, shall easily change its appearance, and look more bright and fair, just like we see the misshapen clouds become beautiful and pleasant, as they draw near the sun.

Following the example of those beyond the mountains (who, to tell the truth, tirelessly strive to describe nature, and reproach us, accusing us of a miserable and unworthy laziness),[4] in mid-August I headed to the mountains; not just to relax my mind, which was burdened with the most severe studies, but also to discover our medical and natural treasures, which abound in those places, though with nobody's envy. Besides, Gentlemen, it seems to be not devoid of pleasure to descend deep valleys, and to step on

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in Vallisneri 1717c.

[3] Accademia dei Muti ("Academy of the Mute Ones") of Reggio. Founded in 1673, it was mainly devoted to poetry and literature. It ceased to exist in 1751, after decades of senescence and—it seems—not particularly brilliant activity. On this topic, see Maylender 1929, 65–67. Vallisneri became a member of the Academy in 1711, after he was appointed the Chair of Theoretical Medicine at the University of Padua. See Porcia (di) 1733, LXXVII. See also the critical edition of this work: Porcia (di) 1986, 219–220, 220n.

[4] Here, the author alludes to the French scholars. As a proud advocate of Italian science, language, and culture, Vallisneri was frequently involved in fierce debates with the "oltramontani" (literally, "those beyond the mountains"). On this topic, see Duchesneau 2009, CXII, CXXI, CXLV; Generali 1985; 2006; 2007a, 384–386; 2007b, 253–255; 2011b; Luzzini 2007, 74; 2013a, 217–226; Monti 2009, XLVIII, LII, LXVIII, LXXI, LXXVIII; Penso 1973, 194–201; Rappaport 1991 (now reprinted in 2011); 1997, 218–219. See also

the highest peaks of the mountains, putting my head into the clouds and looking around, seeing nothing but harshness of terrain and sky, whereas, surrounded only by wild beasts and horror, something arises that is great, and worthy of so many difficulties; and whereas, therefore, a philosopher placed above peoples and above the towers of cities, as if he were greater than himself, **V.r]** free from duties, and superior to fate, without the noise of the rowdy schools, and filled with nature, with nature quarrels alone and silently. **V.v]**

The first thing I was shown[a] was the precious sulphur mine that is one mile from Scandiano, placed on the slopes of the so-called Mount Gesso,[5] behind a small stream which joins its waters with the nearby Tresinaro Creek.[6] It was this [stream] that discovered the mine, since by eroding now on one side, now on the other, along with rocks, and sands, and gravels, it dragged pieces of pure sulphur which, having been noticed since the ancient times, allowed to locate the place where they had grown;[b] though once found, I don't know by which foolishness, it was soon left to oblivion. Under the Most Serene Prince Luigi d'Este,[7] around the end of the past century, as the stream continued carrying enough sulphur to be picked up by poor people to continuously produce and sell matches, someone thought about searching again for this mine, which was easily found, and is so fruitful, that it alone is enough to satisfy the needs of all the nearby cities. So far there are two artificial galleries which are interconnected for the necessary air flow, and are capable of hosting two men working upright with their tools in order to bring out the extracted mineral.[8] **VI.r] VI.v] VII.r] VII.v]**

Most Illustrious, and Most Esteemed, Sir etc.[9]

You shall deservedly despise, O best friend, a philosophy that limps among inaccessible rocks, seeking answers from the summits of the mountains. In fact, what do such horrid places, abandoned by nature itself, have in common with your most learned

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Vallisneri 1991, 519–520.

[5]Gypsum ($CaSO_4 \cdot 2H_2O$) is a mineral usually found in evaporitic deposits in association with sedimentary rocks. The gypsum layers of Mount Gesso are part of the gypsum-sulphur formation of the northern Apennines, whose thick evaporitic strata resulted from the Messinian salinity crisis which occurred in the late Miocene epoch (between 5.95 and 5.33 million years ago). During this epoch, a temporary closure of the Strait of Gibraltar made the Mediterranean Sea desiccate almost completely. This event originated the evaporitic rocks which are now visible along the northern borders of the Apennines, from Reggio Emilia to the Marche region. On this topic, see Bosellini 2005, 66–67; Luzzini 2011a, 105–107; 2011b; 2013a, 71–72; http://www.vallisneri.it/affioramenti_gessosi.shtml.

[6]The Tresinaro River flows in the Province of Reggio Emilia. It is a tributary of the Secchia River. It originates in Felina (Castelnovo ne' Monti, RE) and goes from southwest to northeast, eventually reaching Scandiano.

[7]Luigi d'Este *Juniore* (1648–1698), Governor of Reggio and Marquess of Scandiano. See Vallisneri 1991, 116.

[8]The sulphur (S) veins in the gypsum-sulphur formation of the northern Apennines result from the biochemical activity of bacteria. Under anaerobic conditions, sulfate reducing bacteria produce hydrogen sulfide gas (H_2S) from sulfate (SO_4) in gypsum. H_2S is then oxidized to elemental sulphur if exposed to oxygen. See Casati 1996, 518–519; Bosellini 2005, 66–67; Bosellini, Mutti, and Ricci Lucchi 1989, 133–169; Luzzini 2011b; 2011a, 106–107; 2013a, 72.

[9]The letter is addressed to Luigi dalla Fabra (1655–1723), Primary Lecturer of Medicine at the University of Ferrara until 1721. See Vallisneri 1991, 363.

[a]**Margin note (left):** Wait to arrive in Scandiano etc.

[b]**Margin note (right):** Sulphur mine, sulphur smoke

and mild temper? "Are we afflicted with such a lack of truth," you may say, "that from flourishing cities, where studies abound, we shall go where only a few footprints of wild animals guide us, in order to acquire knowledge? What do steep rocks, resounding with shattering waters, bring other than darkness to the eyes, and horror to the mind?." I can hear you reproaching me with these arguments; nor do I mutter anything in reply. Still, I am confident that my mountainous observations, once your hands touch them, will drop some of their horror and of their confused roughness; and indeed truth, revealed by means of mountains and chasms, and handled and managed by such a man, shall most easily rise in beauty and splendor, just like we see the misshapen clouds become beautiful as they draw near the sun. But let us start writing.

In mid-August, I headed to the mountains; not just to relax my mind, but also to probe the medical and natural treasures with which they abound, though barely touched by our [scholars]. Thus, it was a pleasure to follow the paths of Gessner,[10] of my friend Scheuchzer,[11] and of others beyond the Alps, now descending into abysses, now reaching the highest peaks, and rising up to the clouds. I saw **VIII.r]** harshness of terrain and sky, and the chill of being surrounded by wild beasts fostered [in me] something worthy of so many difficulties; and placed as I was above peoples and above the towers of cities, as if I were greater than myself, despising the lesser duties, and filled with nature, with nature quarreled alone and silently.

At first, it occurred to me to examine **VIII.v]** the foul-smelling sulphur cave which is one milestone from Scandiano, surrounded by low hills, and lying on the western slopes from the summit of Mount Gesso. It is an excellent sulphur mine, fruitful enough—and more than enough—to supply all the nearby and remote cities. The miners are supervised by Sir Ippolito Spallanzani:[12] a diligent investigator of natural things who, together with the Most Learned Sir Paolo Valla,[13] Doctor of Philosophy and Theology, has also been my tireless partner in the mountain journey. Upon entering the cave vault, I noticed clustered, yellowish masses of abundant sulphur of different sizes, intersected with various sulphurous streaks and branches stretching downwards, **3]** like an upside-down tree, stuck into a subcinereous, somewhat hard, scaly and bright clay[c] or marl, which miners call *cretone.* Figure 1.[14]

Both the streaks and the masses are made of purest sulphur, and some of them are occasionally found in such a large quantity that they weigh more than four hundred pounds. So, there is a cave tunnel extending for two hundred paces, on either side of which, both on the left and on the right, larger and smaller piles abound. However, sulphur is not always found in that clay, or marl. Sometimes it is deeply fixed in very hard, tartareous stones, and is called *sulphur caninum;* because, as they say, they have to work like dogs to dig it. By cutting through the clay, the sulphur streaks divide transversely its lamellae, which are

[10] Conrad Gessner (1516–1565), Swiss naturalist and bibliographer.

[11] Johann Jakob Scheuchzer (1672–1733), Swiss physician and naturalist, friend and correspondent of Vallisneri. For comprehensive studies on the collaboration between Vallisneri and Scheuchzer, see Generali 2007a, 106, 118, 121, 124, 136, 294, 352–354, 356, 358, 360, 364–366, 384, 387, 389; Luzzini 2011d, 114–122; 2013a, 59–64, 69, 81–84, 118, 162, 165–170, 173, 175, 193, 208.

[12] Ippolito Spallanzani, from Scandiano, superintendent of the mines of Mount Gesso, friend and collaborator of Vallisneri. He wrote a letter on the changes that occurred in the mines between 1705 and 1714. This was published in Vallisneri 1718, 228–284 (269–278). See Vallisneri 1991, 163, 165–166; Generali 2004, 144.

[13] Paolo Valli, a canon from Reggio, correspondent of Vallisneri. See Vallisneri 1991, 408–409.

[14] The related image is missing. Still nowadays, the Italian term "cretone" refers to a thick clay layer which can be found inside or outside caves and mines.

[c] **Margin note (left):** See first figure

arranged in pieces, and are polished everywhere by a sort of shiny, almost oily, moistness. Another bright, colorful, transparent sulphur, resembling amber, and called *vivum,* or virgin,[15] is frequently found sticking to tartareous veins, but never to marl. Even though the entire mountain is made of gypsum, and the mine grows through its gaping fissures, or through the interstices of the layers, yet sometimes sulphur is found in the bowels of the gypsum, or sticking to its bare surface. On the contrary, where fragments of transparent stone, spar, and gypsum were found,[16] there was almost no sulphur. A thin trickle of water fell down from above, pouring through the clay and through a few stones, which were thus smoothed, as if, so to speak, they once had been shaken by waves. With the passing of time, it stained everything it touched with a sort of ferruginous, thin layer; and nitrous salts,[17] cross-shaped for the most part, grew here and there. At the bottom of the mine there is a tree-like piece of sulphur, called *filone,* from which a number **4]** of branch-like shapes spread everywhere, and with sparsely attached fruits suck nourishment, and ripen. At present, it stretches six feet in width and one hundred in length. It lies hidden amongst some chalky rocks, which at times separate it from the gypseous, tartareous, and earthy strata. As the miners (commonly known as *canopi*) reported, it is different from the Roman one, since down there the lode within the layer, and the layer itself spread out horizontally, and they have to dig pits to exploit it; while the one in Scandiano, by stretching obliquely westward both in a horizontal and vertical direction, follows the sequences of the strata, or crusts of the mountain, which are now straight, now crooked. Hence that [in Rome] is dug out through pits; this, more easily, and with less expense, through tunnels. Nor are such great blocks of pure sulphur found in the Roman mines; for only after grueling work they extract a more impure one which, once [exposed to] fire, proves to be imbued with a somewhat green, pale yellowness. Instead, ours inclines to a full citrine yellow color, and the virgin one turns to golden. Undoubtedly, that [in Rome] abounds with acid, vitriolic smelling particles,[18] whereas this contains a more rich, inflammable substance. Thus, when tested,[19] ours gives a smaller quantity of sulphur oil. Whence it follows, that our sulphur miners usually are not affected by those diseases of which the Most Famous Ramazzini wrote in his excellent work, *De Morbis Artificum,* in Chapter X.[20] They all constantly live healthy, to the no small relief of the working people. In fact, though the sulphurous air is so sharp that it stings and damages the delicate fibers of our body with hostile, tiny knives, nonetheless it is blunted, having been enveloped by many flexible branches; and the very forces unleashed in other circumstances are [here] tamed. Therefore, among the medicines that can be prepared, and that are especially good for the chest, I consider the sulphur of Scandiano as more efficient than the others. **IX.r] IX.v]**

This cave draws fresh air from artificial side tunnels, but the Roman one [draws it] from above. Still, in the hottest part of the summer it is necessary to refrain from

[15]Mineral sulphur (S).

[16]Selenite ($CaSO_4 \cdot 2H_2O$), a crystalline mineral variety of gypsum. In most cases, and depending on the degree of purity, it is transparent and colorless, or variously whitish. A further, detailed description of this mineral can be found in Vallisneri 1733, 435–436. See also the critical edition of this work (Vallisneri 2012, 258–260).

[17]Potassium nitrate (KNO_3).

[18]The term "vitriolum" ("vitriol") refers to various kinds of metallic sulfates, including sulphuric acid (H_2SO_4).

[19]"Enchirisim": this is a latinization of the Ancient Greek word ἐγχείρησις (literally, "undertaking," "operation," or "task").

[20]Ramazzini 1700, Cap. X, *De morbis quibus temari solent sulphurarii*. Page references are to the second edition, Ramazzini 1703, 57–60. For a study of the bibliographical sources used by Ramazzini in this treatise, see Di Pietro 1981.

work: for the bursts of smoke are so dense, and the air flow at both openings remains so unclean, that lanterns and men alike would be extinguished. No thermal springs boil here, and the fields are not scorched by any fire, as volcanoes do in certain countries; either because there are no ignivomous and harmful masses of salts, from which fire grows, or because the obstructed vents of the mountain prevent the free passage of air, which is the essential nourishment for flames. **X.r] X.v]** [The miners] obtain wherever they please up to a thousand pounds of sulphur per year, and the new mine enriches many workmen.

Nor should we leave out the ubiquitous benefits that [sulphur] provides for an unstable health condition. Besides, I have been the first to send those afflicted with the filthiest French scabies[21] into that sulphurous laboratory, as if it were a panacea;[22] for when sulphur catches fire and percolates, clothes, linens, hands, shirts, and the whole body are permeated and saturated with smoke; hence, after a few days, they most successfully recovered. **5]** Indeed, in the first days the pustules worsen and swell, undoubtedly because the blood is cleansed from dregs and from rough impurities; but little by little, as the dry scabs fall off like a discarded, squamous envelope, the skin flourishes. In fact, once the minuscule worms—which, by gnawing and piercing, are the main cause of scabies—are killed, and the blood is lightened, and (given that opportunity) is purified through gaping burrows from any impurity it was nurturing in its bosom, [the patients] get rid of that pleasant Pliny's torment,[23] and of the hideous itch as well. The same [result] can be obtained if they wash themselves frequently with the water that precedes the sulphur when this is to be smelted, and <…> is about to pour into molds. For, before the sulphurous vein (or even the entire mine, crumbled bit by bit) melts inside incandescent pots, and, swelling because of the fire, sinks through a tubular rostrum into contiguous vessels, as if flowing, then the aqueous part, imbued with many kinds of salts, and with sulphurous spirit, is raised, and by dripping through a low reed, as if from a rough alembic, turns into a bitter-sour and harsh drinking fluid. A few days ago a peasant with hemoptysis, foolishly thinking himself wise, drank from this container without any medical advice. In fact, he believed that, since the affected parts of the chest heal with sulphur smoke alone, even more so if he would have flooded himself with those therapeutic waters, imbued by the mine. But something opposite happened. Indeed, he almost vomited his purple soul,[24] the vessels of the deep and tender viscera having been further lacerated by those sharp salts.

Hence, it can be concluded—as the above praised Ramazzini noted—how entangled in error are those who prescribe spirit of sulphur for chest diseases, **XI.r]** asserting that the acid of sulphur is evenly and equally formed, and a part has the same properties as the whole, which is a sign of the greatest superficiality. For sulphur is considered by the public as a balm for the lungs, when it is stripped of its acid (in which it abounds), as

[21] Syphilis, a sexually transmitted infection caused by the bacterium *Treponema pallidum.* Also known as "morbus gallicus," "mal francese," or—in English—"French disease" or "French scabies," since one of the first epidemics occurred when the French troops invaded Italy in the last decade of the XV century, at the very beginning of the Italian Wars. See Gelmetti 2015.

[22] In early modern medicine, the term "anchora sacra" (literally, "sacred anchor") referred to what was considered to be the most effective medication for a particular disease. On this topic, see Vallisneri 2006, 61, note 172.

[23] The reference is to a passage from Pliny the Younger's Letters (Plinius (Minor) 2018, VIII, 16), where the Roman author reflects on the strange contradictory relationship between grief and pleasure: "Est enim quaedam etiam dolendi voluptas, praesertim si in amici sinu defleas, apud quem lacrimis tuis vel laus sit parata vel venia" (http://data.perseus.org/citations/urn:cts:latinLit:phi1318.phi001.perseus-lat1:8.16.5).

[24] This is a passage from Virgil's *Aeneid* (Vergilius 2018a, IX, 349, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:9.314-9.366).

Jüngken attests in his *Chymia Experimentalis,* in the chapter on sulphur,[25] and [as does] Ettmüller in his *Mineralogia,* where he says: "Sulphur is deservedly called a balm for the lungs, once its oiliness has been separated from the acid, corrosive part."[26] Therefore, one has to wonder how, in his *Mineralogia,* Schroeder could recommend "vitriolated flowers of sulphur"[27] to "those with affected lungs, or coughing," and others of the like; since it is so inappropriate, that indeed we should draw the vitriol from inside, rather than adding more, if we wish a balm for the lungs, and preservation from phthisis. Nor does the above mentioned water eliminate scabies alone; but also the filthy, gangrenous ulcers, impetigo, and even herpes. When mixed with the sulphurous marl of the mine, it also gets rid of hardened tumors, heals lichens, reduces itches. Furthermore, many who were panting with a terrible cough, and viscous phlegm, swiftly regained health thanks to a plaster made of the above said marl dissolved in water with a stick and applied to the chest. The same water from the sulphurous mine, once boiled, and then filtered, is particularly effective against erysipelas and face redness when applied tepid; in fact, sulphur, either mixed with cold water or boiled, is included in cosmetics, or among those [substances] which increase the brightness of the skin. **XII.r]**

We also observed a playful friend who, by placing virgin sulphur on a normal coin, and then burning it with the small flame of a candle, eventually removed an intact crust from the hot coin, with the same image and marks still curiously printed. What for impostors is an advice to cheat, is a subject of learning to philosophers. **XI.v]**

Nor does the external skin alone feel the benefits of the sulphur burnt under the open sky. We often see asthmatics and consumptives certainly and unequivocally healed when they absorb and tolerate those balsamic and cleansing vapors long enough. Such is the importance of knowing the different quality of mixtures, and—at a given time—encouraging nature, not disease. **XII.v]** Besides, our ancestors did not ignore the wholesomeness of therapeutic air when the sulphur mine was dug. The foundations of a pilgrim hospital, built (with truly farseeing wisdom) on a hillock next to the mine, during a certain pestilential period, are still visible. Taught by the laws, and certainly by the example of Hippocrates,[28] who contained the spreading plague with fire and sulphurous medicines, they tamed the violence of the disease with just the exhalations of fire and sulphur, both absorbed in a most healthy air. **6]** Lots of flowers made of earthy resin, or sulphur,[29] which stick to the outer surface of the working vessels, fall into a small basin on the ground, where they are picked up; the layers of soot hanging from the beams and from the dark ceiling, more than

[25] Ramazzini 1703, 59: "Nec quis obtrudat, quod sulphur pulmonum balsamum vulgo audiat; nam id verum est quando sulphur acido suo, quo abundat, spoliatum fuerit." Like Ramazzini, Vallisneri refers to Jüngken 1681, Sectio IV, *De mineralibus,* Cap. VI, *Anatomia sulphuris*, 258: "In vitiis pulmonum, phthisi, peste, febribus malignis, &c. insigne praeservativum & curativum."

[26] The same quote is in Ramazzini 1703, 59. The (altered) passage is taken from Ettmüller 1688, Tomus II, Pars I, *Schröderi dilucidati Mineralogia, Sive Regnum Minerale,* Cap. 9, *De metallis*, 283: "Caeterum observatur, quod tunc temporis verum balsamum pulmonum mereatur vocari, quando pinguedo balsamica separata est a parte acida corrosiva."

[27] Ettmüller 1688, 284–285. The Latin term "flores" ("flowers"), in early modern medicine, refers to a preparation obtained by sublimation or crystallization of a substance which assumes "a flocculent or pulverulent form" (G. M. Gould 1904, see *Flores*). "Flores sulphuris" were particularly renowned and used as a remedy against various kinds of illnesses (especially against skin, bronchial, and lung diseases). On this topic, see Crosland 2006, 71; Vallisneri 2011, 72, notes 214 and 215.

[28] Vallisneri recalls the famous episode of the Plague of Athens (429–430 BC), when Hippocrates recommended the use of fumigation by burning aromatic substances (including sulphur, regarded as a powerful antidote against this disease) to treat and contain the epidemic. See Morens and Littman 1992; Blancou 1995.

[29] Here, the term "flores" seems to indicate small, naturally formed crystals, and not the previously described artificial preparations.

others, overflow with sulphur splinters. In fact, when set on fire, they produce a sudden blue flame, and smell like sulphur; you too, who so diligently commit yourself to medical practice, may understand how many new and effective cures could be prepared from them.

The [sulphur] abounds with such active and penetrating particles that, while melting in the first pots inside [the mine], the more volatile part breaks out through small pores, and forms a sort of film which takes on different colors, having been lit by constant flames.

But now, in order to describe in short to you all the parts of this mine (which until now have been passed over in a humble and lurking silence), produced either by nature or art, let me enumerate a list of the [samples] I just shared with the Museum of the Most Illustrious Sir, Count Luigi Ferdinando Marsili,[30] where my great friend, the Most Learned Sir Vittorio Stancari,[31] is curator. Indeed, all the exotic and precious things that Mother Nature dispersed around the world—either with a certain negligence, or by a providential will of fate—are assembled there, and collected with wonderful order in summaries, as if by law, and by rank of native dignity, the horror of rude confusion having been banished; and should you be looking for the best part of the sea, or earth, or of any element, but [want to] defy the endless pains of travels, in Marsili's treasure room you shall be astounded at the miracle of this collection.

So, I gladly dedicated these trifles (that is, the collection from our sulphur mine) as a tribute to that Greatest Man.

First: A purest mass of pure sulphur, removed from within the marl. Weight: VII pounds.

2° A piece of gypsum, VI pounds in weight, with a few branches (so to speak) of native sulphur stuck to it.

3° Scissile marl, or wet, scaly, dense clay, from the sulphur cave. III pounds and III ounces.[32]

4° Other smaller sulphur masses, resembling resinous, earthy tubers, still fixed in marl. V pounds and VI ounces.

5° Streaks of vivum, or virgin sulphur,[33] almost as transparent as amber, sticking to a piece of gypsum; **7]** and, in the same cut, other streaks of common, pale sulphur, painted on marl. IIII pounds.

6° A piece of thick soil, imbued with a mysterious sulphur, which could be said to lack sulphurous lumps, or veins; however, it is softened by fire and, raging with acidity, melts into a resinous liquid, similar (so to speak) to vitriol.[34] VI pounds.

7° Whitish clay with tartareous veins and virgin sulphur. IIII pounds and X ounces.

8° A fine round mass of purest sulphur, resembling the form of a pale rock. II pounds and X ounces.

9° Three fragments of virgin sulphur[35] attached to their matrix, and very similar in color and transparency to amber. VIII ounces.

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[30] Luigi Ferdinando Marsili (1658–1730), naturalist and former Holy Roman Empire officer. Correspondent and collaborator of Vallisneri, who considered him an authority on the Earth sciences (and greatly admired his museum of *natural curiosities*). On this topic, see Generali 2007a, 351–360; Luzzini 2013a, 88–90; 2014a, 207–208; Sarti 2003; Stoye 1994; Vaccari 2003; 2008.

[31] Vittorio Francesco Stancari, from Bologna (1678–1709), astronomer, mathematician, physicist, and naturalist. In 1708, he was appointed the first Chair of Mathematical Analysis ever established in Italy, at the University of Bologna. See Vallisneri 1991, 301.

[32] Arguably, a piece of marl. The noun "cretam" ("clay") and the adjective "uliginosam" ("wet," or "damp") suggest than the specimen is more argillaceous than calcareous.

[33] Mineral sulphur (S).

[34] The term "chalchantum" is a synonym for vitriol. See Fabri 1671, 192–193.

[35] Mineral sulphur (S).

10° Another small piece of virgin sulphur[36] implanted in a whitish, stony (or, as they say, tartareous-like) earth. X ounces.
11° A whitish, dense, and somehow buttery earth,[37] which the miners think to be the germinal elements of sulphur. IX ounces.
12° Evanescent, friable, dusty sulphur, which could be described as putrefied, and impressed in marl; it is perhaps too old, or its particles are not well ripened, or lacks some other part, whatever some authors may imagine. <I> pound.
13° Tartareous streaks elegantly sprinkled with small, sulphurous flowers. I pound.
14° Caput mortuum,[38] or porous, almost tuffaceous earth, from which sulphur has been removed, and which remains in the bottom of the pots; while being taken out, if still abundant, it is kindled, and keeps shining with the finest colors for a long time, dyeing the faces of the workers with a cadaverous tone. V pounds.
15° Loose pebbles of various sizes, perhaps once shaken by waves, and which can now be found in various spots in the mine, as if placed by hand. III in number, II pounds.
16° Soot of the sulphur furnaces. V pounds.
17° Flowers of sulphur,[39] scraped from the outer surface of the working vessels. VIII ounces.
18° A mass of sulphur, tested with fire and then filtered. IIII pounds. **8]**

A great quantity of strange pyrites, like small stones sprinkled with a copper color,[40] and viscous, barren, multicolored marls, can be seen on the left slope of the mountain (the one facing southeast); they are, by all means, not obscure clues to the mine[d] that lies beneath. There are two kinds of pyrite: one is dissolved into pieces by moisture, and grows easily with aerial niter;[41] the other is imperishable and unalterable.[42] The ridge of this mountain is crossed from different directions by several creeks, all merging into a single

[36]Mineral sulphur (S).
[37]Arguably, a sort of calcareous clay, as is suggested by the adjective "subalbam" ("whitish").
[38]"Caput mortuum" (in English, "dead head"), also known as "nigredo": alchemical terms referring to the residual substance produced from such operations as sublimation, distillation, or filtration (see Crosland 2006, 81). Here, Vallisneri uses this term in a broader sense, alluding to the residual earth from which sulphur has been extracted.
[39]See note 29.
[40]Pyrite, an iron sulfide mineral (FeS_2) with a cubic crystallographic structure. However, the words "incertae figurae" ("with a strange form") suggest that the author refers also to marcasite, another iron sulfide (known as "white iron pyrite"). This mineral has an orthorhombic crystal structure, is lighter and more friable than pyrite, and is frequently associated with marl, gypsum, and clay, as typically happens in the gypsum-sulphur formation of the northern Apennines. See Luzzini 2013a, 94; 2014a, 210–211; Vallisneri 2012, 209–211, 277.
[41]According to the Hermetic alchemist, philosopher, and physician Paracelsus (Philippus Aureolus Theophrastus Bombastus von Hohenheim, 1493–1541), "life was sustained […] through the presence of a life spirit essential for both the organic and inorganic worlds. By the final decade of the sixteenth century this spirit was identified as an aerial niter" (Debus 2001, 12); and, by the early years of the seventeenth century, "the aerial niter had become associated with a life force requisite for man" that would be examined and debated by a great number of physicians and natural philosophers throughout the early modern period (Debus 1977, 108–109). In the XVII century, the chemist and physician John Mayow (1641–1679) further developed the research on the role played by aerial niter in combustion and respiration, paving the way for the identification of this substance with oxygen (see also Debus 1964). By acknowledging the existence of an aerial niter and the influence of this substance on mineral genesis and growth, Vallisneri is presumably referring to the Paracelsian tradition.
[42]Here, Vallisneri makes a distinction between marcasite ("frustillatim dissolvitur") and the far more stable pyrite ("aeternum est, ac immutabile").

[d]**Margin note (right):** Turn one page

stream known as Riazzone,[43] whose banks hold countless treasures from the sea: grooved, smooth, rough antales;[44] tube worms;[45] pectens;[46] oysters; buccinula; turbines;[47] glossopetrae, or shark's teeth (which someone wrongly claim as arrows, others as petrified tongues of snakes);[48] sea navels;[49] snail shells of different forms; and sea urchins,[50] although rare. These [objects] are found in a sandy, ash-colored, and brackish bed which, though horrible, is greatly appreciated as food by pigeons, sheep, goats, and by all the beasts of burden. This entire region, up to the Secchia River,[51] where [the land] is covered with the same kind of soil, abounds with remains from the sea. The petrified ones are never found mixed with salt layers; for, as they appear on the surface, after this has been scraped of earth and sand by the falling rain, and if scorched long enough by sun and cold, they become friable at first, and eventually dissolve into thin dust, just like chalk. Hence, some not ill-advised apothecaries—with my approval, and with a not unfortunate outcome, indeed—prescribe them to rural plebeians as sudorific, and as edulcorant for malignant fevers, and for those other diseases in which acid prevails. Also, the sand that is found in the surrounding area, once mixed with sheet-like, golden plates and leaves, and after having been sifted and cleansed, is useful for dusty hourglasses, and for polishing glass. Stone-coal and fossil wood, either petrified or still intact, are dug here and there[52] or

[43] Rio Riazzone, a small tributary of the Tresinaro River. The two streams merge a few kilometers north from the city of Scandiano. Along its course, the Riazzone crosses clays, clay-schists, and arenaceous and calcareous shales. These rocks date back to the Late Cretaceous period (100–65 Ma) and contain a large quantity of marine fossils. Proceeding further, the Riazzone meets fossiliferous, blue-grey shale beds which date back to the Late Pliocene epoch (3.6–2.5 Ma). Cartographic source: *Carta geologica d'Italia, Foglio 86 (Modena)* 1963. See Luzzini 2013a, 95, note 95.

[44] Tusk shells, or scaphopods (Phylum Mollusca, Class Scaphopoda), once known as "antales" and "dentales." On this topic, see *Encyclopaedia Perthensis; or Universal Dictionary of the Arts, Sciences, Literature, etc., intended to supersede the use of other books of reference* 1816, 574. See also Vallisneri 2012, 130–131.

[45] From Buonanni 1681, 143: "Cannelletti di varie specie, detti tubuli vermiculares, poiché in tutti vivono alcuni vermi. Sogliono nascere sopra i sassi, o sopra gusci di altri testacei, e d'altri vegetabili del mare. Tutti si piegano, come i serpenti, ma senza regola di linea spirale, onde non si possono dire turbinati." See also Vallisneri 2012, 76–77. According to the images in Buonanni's treatise (Tab. 20), the "tubuli vermiformes" could be identified as both tube worms of the Family Serpulidae (Phylum Anellida, Class Polychaeta: sessile anellids which secrete calcareous tubes) and worm snails of the Family Vermetidae (Phylum Mollusca, Class Gastropoda: sessile molluscs with irregular, tubular shells).

[46] Genus *Pecten* (Phylum Mollusca, Class Bivalvia). See also Vallisneri 2012, 251.

[47] Gastropod shells (Phylum Mollusca, Class Gastropoda). See Vallisneri 2012, 63, 373.

[48] Shark teeth. The popular folklore, along with not a few voices from the early modern medical tradition, endowed these objects with therapeutic and thaumaturgic properties. A legend claimed them as the petrified tongues of snakes (hence the term "glossopetrae") that had been cursed by a particularly vengeful Saint Paul when one of these animals dared to bite the Apostle in Malta.

The recognition of the organic origin of these findings involved such authors as Nicolas Steno (1638–1686), Agostino Scilla (1639–1700), Fabio Colonna (1567–1650), and many more, and played a major role in the early modern debate on the age of the Earth. See Colonna 1616a, 31–39; Scilla 1670; Stensen 1667; 1669. For comprehensive studies on this topic, see Carpita 2006; Cutler 2009; Hsu 2009; Luzzini 2013a, 1–4, 10–12, 17–18, 24–32; Morello 1979a; 1979b; Oldroyd 1996, 66–67; Rudwick 1972, 50–53; Ziggelaar 2009. See also Vallisneri 2012, 168–169.

[49] According to the terminology of early modern natural philosophy, the term "umbilicus maris" ("sea navel," also known as "Venus navel" or "sea eye"), refers to the calcareous operculum of various species of gastropods. See Gimma 1730, Book V, 248; Rolfe 2013, 149. See also Vallisneri 2012, 394.

[50] Sea urchin skeletons (Phylum Echinodermata, Class Echinoidea). See also Vallisneri 2012, 140–141, 306–307.

[51] Secchia River, a main tributary of the Po River. For a terminological history of this name, see Tiraboschi 1825, 333–335.

[52] Fossil coal. It is the result of the build-up and sedimentation of organic matter (usually from plants) in an

are discovered in collapsing ground fissures, so that everywhere **9]** these mountain shores show up as apparent memorials of the once-split sea. In fact, they are not different in disposition and structure from the hillocks and hills that rise not far from the Adriatic Sea (where the Adige River[53] carries its load), and which I recently observed.

The ridges of the above said mountains and hills, from the Tresinaro River up to the Secchia, are [full of] bitter, salty, sulphurous, and fresh water springs. When performing the evaporation of the liquid, in the first case they will produce a gypseous sediment; in the second, a salty-nitrous one; in the third, earthy-sulphurous; and, finally, one with a bright white color, just like virgin earth.[54] Sometimes, and not without praise from the poor people, we prescribe the first [kind of] water for bloody fluxes, diarrhea, vomiting, and for similar disorders; the second and third, to treat asthmatics, consumptives, hypochondriacs, and verminous diseases; and the last, generally, when the blood is too warm. Such is the way Mother Nature works everywhere, providing exceptional medicines at no cost for the sick people. The grapes, which grow sweet in the gypseous hills, emit a subtle scent of gypsum; and little by little, their wines lead to a nephritic affection. Thus, if some of the waters of these hills are drunk for a long time, they can cause stomach aches, anxiety, obstructions, paleness in young women, and other ailments and troubles to organs.

On the right flank of Mount Gesso, the one facing west, and not far from a plateau spreading out on the top of the slope which is called Armorum Pratum (because of the Spanish soldiers who were once about to attack the stronghold on the mountain, and who **10]** camped there),[55] rise some cone-shaped hills made of a reddish, mineral marl in which several very large marcasites can be found, along with black, extremely hard stones sprinkled with various colors. I also found some ash-colored stones;[56] a somehow unknown and still unseen kind of pyrite, covered with a rough and cracked surface which, if dashed against steel, produces many sparks.[57] But, what is really uncommon, is that in the same place, upon rusty, striated, friable rocks which were produced by a certain particular, stony juice, I observed [something] like stony hooves, sticking tight now singly, now in couples, now in groups of four; an unusual sight indeed. I am still uncertain about what they are, or

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anoxic environment. The increasing thickness of organic layers leads to a gradual increase in temperature and pressure. Hence the ejection of volatile matter and water, along with the increase in carbon percentage. This is a gradual process, which starts from the lower sedimentary strata and passes through different phases. Depending on the increasing carbon percentage, the resulting matter is called peat, lignite, sub-bituminous coal, bituminous coal, and anthracite. Typically, coal seams form in lagoons, either coastal or in a river delta. The Po Plain was originally a lagoon that evolved into a wetland; however, since this zone is still geologically young, exploitable coal reserves have not formed yet. The "carbo petrae" and the "ligna fossilia" found by Vallisneri, therefore, were probably a sort of lignite or low-carbon coal. See Luzzini 2011b, 345–349; 2013a, 77–78.

[53] Adige River, in northeastern Italy. It flows into the Adriatic Sea. For a historical study on the regulation of this river during the XVIII century, see Luzzini 2016c.

[54] The terminology in this passage is clearly rooted in the alchemical tradition, as it recalls different stages of the sublimation process. The "terra virgo" ("virgin earth"), in particular, is what remains of the earth after it has been purified by sublimation. On this topic, see Newman 1982.

[55] Vallisneri is probably referring to an episode in the Italian Wars (1494–1559). In the region surrounding Mount Gesso, the only place with the word "prato" (from the Latin "pratum") in its name is Prato Mandeto, the origin of the latter term being unknown. Significantly, this place is located west of Mount Gesso. Cartographic sources: *Carta topografica d'Italia, Serie 25V, 086 – IV – NE (Scandiano)* n.d.; *Carta topografica d'Italia, Serie 25V, 086 – IV – SE (Viano)* n.d. See also http://www.pcn.minambiente.it/viewer/.

[56] Arguably, flint rocks with dark ("subcineritios") impurities.

[57] Pyrite, marcasite, and flints were widely used as fire starters.

have been. See Figure 2.[58][e] They are no more than half a finger long[59] in the extremity, ending with a blunt edge, which is previously surrounded by a whitish band. [Similarly], all the lines, or longitudinal streaks [departing] from the above said band, and which cover much of the surface, finish with a dull end. They have a small, deeply printed, oval hollow at the base. If carefully examined, they appear wrinkled, as if gnawed inside and on the surface by grubs. The point resembles the substance and the shape of a dog's fang, as if made from a faulty mold. If cut in half, where the lines were visible lamellae appear which are mutually joined with a light tartar, and hardened and divided by an earthly cement; they are filled with that substance, which is irregularly arranged inside them. The rock to which [the fossils] are attached is very friable; and, here and there, is filled with various hard, pale, tartareous veins of different shapes. It can also be seen a mixture of red and ash-gray earth, overlapping golden layers, tartar, and salts. Recently, I sought counsel from Scheuchzer, a natural philosopher and most worthy Fellow of the English Academy;[60] **11]** and I sent him two small hooves, along with all the other rarities, in order to know from such a great judge what they were. Yet, he himself doubtfully replied with philosophical candor, and confessed that he had never seen anything similar before, nor had he met them in books. As for me, however, I suspect that they may be related to the "goat's hooves," and to the "fossils" [described by] Colonna in *De aquatilibus, aliisque nonnullis animalibus* at p. 48,[61] or to the "ichtyodontes cuspidati plectronarii" or "plectronites," which a certain [author] illustrates in his *Lithophylacii Britannici Ichnographia* in Table 16, and describes at pp. 63 and 66.[62]

Sometimes, little horns are discovered not far from there in the stream; and, as that Most Famous Man himself agrees, they are the same [fossils] that Robert Plot refers to as "fungites" in *The Natural History of Oxford-shire,* Chapter 5, p. 189, and depicts in Table XII, n° 3, 4,[63] of which he [Scheuchzer] asserts to have acquired similar ones from the countryside of Bologna, and to have met them somewhere with the name "caryophylli marini," though he can't remember the passage.[64][f] Nor does he doubt that these, too,

[58]The related image is missing.

[59]A "digitus" ("finger") was an ancient Roman unit of length, approximately equivalent to 1.85 cm (0.728 in). Therefore, a "semidigitus" ("half a finger") is about 0.925 cm (0.364 in).

[60]Johann Jakob Scheuchzer became a Fellow of the Royal Society in 1703. Given the lack of images, and despite the rather detailed description, it is difficult to ascertain the identity of the "ungulas lapidefactas" ("stony hooves," or "stony claws").

[61]Colonna 1616b, 48: "Habemus et non paucas alias res lapideas, veluti caprarum et suum ungulas […]." Colonna's treatise does not provide an image of these fossils. However, according to their name they could be ascribed to the bivalve species *Congeria ungulacaprae,* also known as "goat's hooves." See Főzy and Szente 2014, 350–351.

[62]Lhwyd 1699, 63–68, Tab. 16. The images in the treatise allow one to identify Lhwyd's "plectronites" as teeth from different fish species (see Parkinson 1811, 254; 1822, 275. However, according to paleontologists Arthur Smith Woodward and Charles Davies Sherborn, plectronites n. 1318 ("Plectronites maximus corticeus, seu Rostrago maxima, quod rostrum quoddam avis simulare videatur, sic dicta," Lhwyd 1699, 66) is an exception: this tooth does not belong to a fish, but to the pliosaur *Polyptychodon interruptus.* See Smith Woodward and Sherborn 1890, 298.

[63]Actually, the correct book is not Plot 1677 but Plot 1686, 189, Tab. XII, Figs. 3, 4. Vallisneri could not read English: most likely, he obtained this information from Scheuchzer. Not by chance, the same data appear in Scheuchzer 1708, 33–34. This essay was published well after Vallisneri wrote his manuscript; arguably, Scheuchzer gave him this information in a previous letter.

[64]A "Caryophyllus marinus fossilis prope Bononiam inventus" is mentioned in Scheuchzer 1708, 33, and in Scheuchzer 1723, 75: "Caryophyllus marinus fossilis. Ex Agro Bononiensi." Probably, the specimen

[e]**Margin note (left):** Figure 2

[f]**Margin note (left):** Figure 3

should be ascribed to the sea (Figure 3).[65] Recently, I also found illustrations of them in a book written by Agostino Scilla, a native of Messina, entitled *La vana speculazione disingannata dal senso.*[66]

As I have mentioned, the surroundings of this first hill abound with gypsum spar, with a beautiful specular stone (commonly known as *scaiola*), with lapis arabicus (which is very similar to ivory), with chalky, caementarius, siliceous, sandy, tuffaceous, vivum, marble-like [gypsum], and one with waves (that is, most elegantly decorated with gold and many other colors), a good number of which occupy a not unimportant place in the Series of Stones and Marbles of my Museum.[67]

The specular stone (or alum) from Scandiano, which others call selenite or talc,[68] can be generally described as a trapezoidal shape, defined by irregular quadrilaterals or flat trapezoids. The above mentioned Scheuchzer sent me **12]** a somewhat obscurely transparent specular stone, or rhomboidal selenite, from Mount Kamor in the Appenzell Alps,[69] which he recalls in *Specimen Lithographiae Helveticae Curiosae* at p. 49;[70] for my part, I promptly sent him not only the corresponding payment, but also another [specimen] from the territory of Vicenza, which is far smaller, yet brighter, and almost shaped as a parallelepiped defined by six rhomboidal parallelograms. I also sent some small crystals of the same quality from Riano,[71] reddish, cubic, and with irregular angles, which he received with great pleasure; for they were very rare, nor had he seen them before. Recently, he wrote about this stone in his *C. Plinii Secundi et Claudii Salmasii Dialogus,*[72] where he points out that this is the same "androdamas" of Pliny, who in Book XXXVII, Chapter 10, asserts: "Androdamas has the shining color of silver, like diamond; it is always square, and similar to small cubes. Magicians suppose that it was thus named, because it is said to subdue anger and violence in men."[73] Having been fostered by Minerva, as he himself stated, he dedicated this work—an unusual descendant of him—to the Illustrious Accademia degli Inquieti of Bologna,[74] so that they could have a taste of his foreign talent.

But let's climb higher, my friend, and let's bid farewell to the unpleasant land that is left behind. About five miles from Scandiano, past the ruins of the mountains, a rough

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came from Scheuchzer's collection. This could explain why Vallisneri was aware of its existence before the *Piscium querelae et vindiciae* was published.

[65]The related image is missing.

[66]Scilla 1670. The reference is probably to the figures in Tabs. XIV and XVII, described at p. 166. As the images in Scilla's and Plot's treatises clearly show, the terms "corniculum" ("little horn"), "fungites," and "caryophyllus marinus fossilis" are all names to describe fossil madrepores (Order Scleractinia): a group of stony corals (Phylum Cnidaria, Class Anthozoa). See Luzzini 2013a, 184–185, note 142; Vallisneri 2012, 207–208.

[67]All of these terms refer to selenite crystals with various degrees of purity. On Vallisneri's vast and renowned museum, see Dal Prete 2011; Generali 2007a, 351–382; Luzzini 2011a, 108; 2013a, 82–84, 90, 159–165. See also Vallisneri 2012, 258–260, 315–316.

[68]See the previous note. Here, it must be pointed out that the term "talcum" ("talc") does not exactly correspond to its modern meaning (i.e., the magnesium silicate with the chemical formula $Mg_3Si_4O_{10}(OH)_2$). At least up to the second half of the XVIII century, this word was used to describe a vast array of minerals with a sheet-like structure, such as micas (phyllosilicates), actual talc, or selenite.

[69]Mount Kamor (1,751 m/5,745 ft above sea level), in the Appenzell Alps (northeastern Switzerland).

[70]Scheuchzer 1702, 49.

[71]Riano (Province of Rome).

[72]Scheuchzer's *Dialogus* was eventually published four years later, in Scheuchzer 1709.

[73]This is a passage from Pliny the Elder's *Naturalis Historia* (Plinius (Maior) 2018, XXXVII, 50, http://data.perseus.org/citations/urn:cts:latinLit:phi0978.phi001.perseus-lat1:37.50). The identity of these specimens is uncertain. Besides, as Scheuchzer's *Dialogus* remarks, the legendary "androdamas" mentioned by Pliny had been identified by various authors with many different minerals (Scheuchzer 1709, 204–208).

[74]Accademia degli Inquieti ("Academy of the Restless Ones") of Bologna. It was founded in 1690 by the

and barren landscape frightens some and delights others with an unexpected horror. The mountaineers call it Inferno: a not inappropriate name for the nature of the place. With a tortuous and inaccessible path, the steep convolutions of the hills end in precipitous abysses, barely roamed without fear by the mere eyes. Not a shrub, nor a moss covers those rough and inhospitable grounds, devoted to barrenness alone. Small, sloping ridges stand everywhere; and the clay is so viscous, compressed, and **13]** thick that only once in years are they ploughed with some furrows by the falling rain. The rude variety of the colors enhances this grim sight, confusedly wrapping and adorning all the slopes with black, reddish, ferruginous, sallow, [and] white [hues], like different and alternate zones, arranged now in grooves, now in spirals, now in waves.[75] Black, hard stones appear here and there which, if broken, often reveal golden crumbs in their inner part.[76] Hence, some believe (not without reason) that nature has hidden a gold mine under that inhospitable desolation, just like a treasure.

On the other side of the Tresinaro Torrent, the one facing north, there is a further not unsightly source of pleasure for the eyes of philosophers. The ground boils, turns pale, rumbles, smokes, and is constantly fluid. The inhabitants of Querciola call it *salsa,* from the salty mud which that pot, perpetual and incombustible by nature (so to speak), cooks and spits out.[77] You could have said that a lit fire constantly lurked [there] when, as it raged (especially by night), along with stones and fluid mud, it emitted flames. It covers about three hundred [square] feet on the mountain, though the hot spots don't swell out everywhere, and change place frequently.[78] We threw some stones [in it] which—not without a deep noise—sank into the pit. Occasionally, it sucked in small animals, and even

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mathematician and astronomer Eustachio Manfredi (1674–1739). Reflecting the interests of its founder, the academy was devoted to the study of mathematical and scientific issues. Following the guidance of Luigi Ferdinando Marsili, in 1712 the institution moved to Palazzo Poggi, and in 1714 became the still existing Accademia delle Scienze dell'Istituto di Bologna ("Academy of Sciences of the Institute of Bologna"). On this topic, see Cavazza 1990; Cremante and Tega 1984; De Zan 1990; Sarti 2003; http://www.accademiascienzebologna.it/en/academy-of-sciences-of-bologna-institute.

[75]The barren, sterile landscape described by Vallisneri is easily recognizable as calanchi ("badlands"), heavily eroded clay soils that are particularly common in the hills between Scandiano and Carpineti. The spectacular display of colors ("rudis colorum varietas") in the layers reveals the presence of different minerals and rocks. See Regione Emilia-Romagna 2006, 77; Senna and Martinello 2000, 77, 86.

[76]Most likely, iron-rich sedimentary rocks containing pyrite grains. Not by chance, pyrite is also known as "fool's gold" (in Italian, "oro degli stolti").

[77]Querciola, in the territory of Regnano (this place is now part of Viano, in the Province of Reggio Emilia). A *salsa* is a peculiar phenomenon of secondary volcanism. It is a cold, muddy mixture composed of water, clay, carbon dioxide and hydrocarbons (usually methane and oil) leaking out from the ground. Once the mud reaches the surface, it dries near the crater and accumulates, forming little mud volcanoes a few meters tall. The gas leak from the surface is caused by slow and constant movements of the Earth's crust: these trigger the underground sacks in which the mixture is enclosed to open or to compress. The volcanoes grow in height if the mud leak is faster than water erosion; oppositely, they tend to decline. The term "salsa" means "salty," as the mixture contains NaCl. Its salinity is equivalent to 1/2–1/3 of sea water. The *salse* are also described in Vallisneri 1711, 352–353; 1728, 65–70. On this topic, see Luzzini 2011b, 341–343; 2013a, 74–77; 2014a, 211; 2014b; http://www.comune.viano.re.it.

[78]During the XVIII century, the *salse* of Regnano were much more active than now. The last two considerable emissions happened in 1915 and in 1932, the former going on for 15 days. The—often—violent eruptions involved size enlargements of craters and the formation of vertical fissures in the ground. In one of the most significant episodes, described in 1796 by the physician Domenico Gentili (1744–1825), the mud mass collapsed and caused a landslide in the fields beneath (Gentili 1833). In the last few decades, the mud volcanoes have entered a phase of relative dormancy: the portion of land covered with mud, therefore, has gradually decreased. In 2007, during an excursion in Querciola performed together with Dario Generali, Stefano Meloni and Oscar Poli, only some small gas leaks were noticed in the main craters (http://www.vallisneri.it/salse_bituminose.shtml).

heedless cattle which, after being cooked, consumed, and almost deboned, were vomited out. When it rumbles more than usual, it is a sure prediction of coming rain; and the sound, rivaling the roar of cannons, spreads to the nearby lands, towns, and (now and then) even up to Reggio. Sometimes, **14]** the shaken earth trembles for miles around, and we [also] observed a house with great cracks, half demolished by the hidden impact. Let's make it short: you could have laughed, and called it a small Etna, if it is allowed to compare small things with great. For this, too, in its own way, rumbles, strikes, and threatens destruction. And

> Now huge crags of itself,
> out of the bowels of the mountain torn,
> its maw disgorges, while the molten rock
> rolls screaming skyward; from the nether deep
> the fathomless abyss makes ebb and flow.[79]

Its water, which gushes out in small streams, is not unhealthy, being drunk with great pleasure by cattle, and is a remedy for many diseases proceeding from viscous humours, especially from the cold ones.[80] Its salty clay excellently dispels old tumors, erases scabies, effectively dries up stagnant fluid, is beneficial for nerves (when they are contracted by a too crude lymph, or thick synovia),[81] and relieves edematous legs which are unresponsive to other treatments. Furthermore, peasants with erysipelas use it, not without benefit; and finally, that bibulous earth removes stains from all surfaces, especially the oily ones, etc.[82] Not far from there, some petroleum drips from the base of the mountain; but it disperses in the soil, ignored.

Many pale stones with forests, tree branches, sinuous lines, and other brownish shapes depicted on them can be found in the nearby stream, called Faggiano;[83] they may be related to arborescent stones, to dendrites, or also to the "phycites" once [described by] Pliny in Book XLVII, Chapter 10,[84] that my beloved Scheuchzer discussed more widely in *Dissertatio epistolica Acarnanis de Dendritis,* published in the Appendix to

[79]This is a passage from Virgil's *Aeneid* (Vergilius 2018a, III, 575–577, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:3.570-3.587). Here and below, the English translation follows Vergilius 1910.

[80]According to Hippocratic and Galenic medical tradition (which, still in the early XVIII century, had a strong influence on early modern medicine and on medical terminology), health depended on a balance between four basic fluids in the body, called humours: blood, yellow bile, black bile, and phlegm. Humours were the metabolic counterparts of the four basic elements (air, fire, earth, water), and were also related to a combination of four essential qualities: hot, cold, wet, and dry. Blood was thought to be hot and wet; black bile, cold and dry; phlegm, cold and wet; yellow bile was hot and dry. All diseases, as well as the existence of four main human temperaments (sanguine, choleric, melancholic, phlegmatic), were explained by the predominance of one humour over the others. For an introductory essay on this subject, see French 2003.

[81]Synovia, or synovial fluid: a viscous fluid which is found in the cavities of synovial joints (knees, elbows, hips, etc.) of mammals. By acting as a lubricant, it aids in the mechanical function of joints. Typically, synovial pathologies include rheumatic fever, osteoarthritis, gout, rheumatoid arthritis, tumors, and several other diseases.

[82]Vallisneri started studying the *salse* in 1694, when he was serving as general practitioner in Scandiano. As a physician, he also focused on the clinical effects of the oily mud pouring out from the volcanoes. This resulted to be "very effective to desiccate tumours, mainly those on the legs," as he scribbled down in one of his early field books, the *Quaderni di Osservazioni* ("Quella terra, che vomita fuori è bonissima per esiccare i tumori particolarmente delle gambe," Vallisneri 1694, Biblioteca Estense di Modena, Raccolta Campori, 701–707, γ. D. 6, 36–42; 2004, 41).

[83]Rio Faggiano, a small tributary of the Tresinaro River. The two streams meet in Rondinara, a village southwest of Scandiano.

[84]The book from the *Naturalis Historia* mentioned in the manuscript is incorrect (and, moreover, does not

the *Ephemeridum naturae curiosorum,* Years 1697 and 1698.[85] We also observed a large number of oval stones, commonly known as *aquiloni,* that are, for the most part, marcasites of various quality.

Nor shall the stony globules which I found not far [from there] be passed over in inglorious silence. These, too, troubled (and still trouble) the learned pens of scholars. They are shining white, and cemented together with a more recent substance. And they are, undoubtedly, the "stalagmites" described by B. De Boodt in Book II, Chapter 238, and the "pisolite" which he recalls in the following Chapter (239).[86] Likewise, Gessner in *De rerum fossilium, lapidum et gemmarum figuris & similitudinibus,* pp. 71, 118–121,[87] and Ferrante Imperato in *Historia Naturale,* pp. 588, 55, 99,[88] can be consulted about this stone. Even **15]** those "peas that are to be found in Bethlehem," of which Monconys [wrote] in the *Journal des voyages*, Tome I, p. 313,[89] can be related here. According to the rumors about the origin of these pea-shaped concretions, many people think, though erroneously, that they are glued and petrified masses of fish eggs; others [believe that they are] drops of purest lapidescent juice which have accumulated and have then been merged together by a new tartareous fluid, like that kind of stone in the Bohemian thermal springs of Carlsbad[90] which—people say—hardens from drops.[91]

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exist). The exact reference is Plinius (Maior) 2018, XXXVII, 49: "dendrachates, quae velut arbusculis insignis est" (http://data.perseus.org/citations/urn:cts:latinLit:phi0978.phi001.perseus-lat1:37.49).

[85] Scheuchzer 1700. Dendrites (from the Ancient Greek word δένδρον, "tree") are tree-like crystal structures, typically iron and/or manganese oxi-hydroxides that form on the surface of rocks or between sedimentary layers. They are quite common in limestone and sandstone beds. On this topic, see Rudolph 2014, 30–32. See also Vallisneri 2012, 129–130.

[86] De Boodt 1609, Liber II, *De Lapidibus et Gemmis in specie,* Cap. CCXXXVIII, *De Stalagmite,* 207: "Stalagmites e guttis rotundis in lapidem gypseae substantiae conversis, totus coagmentatur in terra arenosa, qui pro terrae et aquae fluentis qualitate, modo fulcus, candidus, aut griseus fabarum, pisorum, vel coriandri refert magnitudinem. Reperiuntur in una massa plurimi quasi favis inclusi. Copiose isti in Thermis Carolinis"); Cap. CCXXXIX, *De Hammite seu ammonite,* 207–209: "Ammites vel ammonites ex arenis ita componitur, ut ovis piscium similis videatur, nucis iuglandis est magnitudine, aliquando maior […]. Huius generis reperiuntur qui ex lapillis pisi aut orobi magnitude constant, quos ammites maiores aut pisolithos recte vocare possis."

[87] Gessner 1565, *De rerum fossilium, lapidum et gemmarum maxime, figuris & similitudinibus Liber,* Cap. IV, *De lapidibus et metallis, quae denominantur a rebus terrestribus inanimatis,* 71: "Hammites ovis piscium similis est, et alia velut nitro composita, praedura alioquin […]. Ammonites […] ex arenis ita componitur, ut ovis piscium quod ad figuram attinet, similis videatur esse: nitro interdum, quod ad substantiam et colorem"; Cap. VII, *De lithophytis, et rebus fossilibus illis, quae plantas imitantur,* 118–121: "Leguminum specie lapidem quidam inveniuntur, pisis […] aut lentibus similes […]."

[88] Imperato 1672, 588: "È anco un'altra differenza di pietra, o terra composta di piccole forme ritonde simili a pisi, de' quali ciascuno sino all'ultimo disfacimento si scioglie in cruste bianche, e sottili, che l'una abbraccia l'altra. Dunque ciascun grano è composto di più tuniche, e la pietra tutta composta di molti grani accozzati insieme […]."

[89] De Monconys 1665, 313: "[…] vis à vis à main gauche est un champ où l'on dit que la Vierge passant par là, trouva des païsans qui semoient des pois, elle les pria de luy en donner, ils luy dirent que c'estoient des pierres; à quoy elle repartit qu'ils en recueilliroient, et depuis il n'y peut rien croistre que des pierres lesquelles ont la figure des pois […]."

[90] Karlovy Vary (Carlsbad), a spa town in the western Czech Republic renowned for its thermal springs.

[91] The reference is to De Boodt 1609, 207; Gessner 1565, *De rerum fossilium, lapidum et gemmarum maxime, figuris & similitudinibus Liber,* Cap. IV, 71; Cap. VII, 118–121. As the images and descriptions in De Boodt's, Gessner's, and Imperato's treatises show, the terms "globuli lapidei," "stalagmites e guttis rotundis in lapidem gypseae substantiae conversis," "pisiformes concretiones," "lapides pisis aut lentibus similes," "piccole forme ritonde simili a pisi," etc. describe pisolite: a sedimentaty rock made of concretionary, calcareous grains that looks like a conglomeration of small pea-shaped spheres from 2–3 mm (0.08–0.1 in) up to a few cm in diameter. However, such descriptions as "ova piscium in massas conglutinata, et petrificata," "ammites vel ammonites […] ovis piscium similes," etc., refer to oolites, sedimentary rocks composed of

The next morning we reached Balista (Valestra),[92] still famous for the Virgilian verses that are carved on the edge of the rocky mountain, and which, almost eroded by the injury of time, can be barely read:

> Beneath this cairn Balista's corpse is laid:
> by day or night pass, traveller, unafraid.[93]

He was a school master, but also a very famous robber, who gave his name to his birthplace; and to which Virgil, according to tradition, gave the epitaph.[94]

The mountain is almost entirely made of stone, with nearly perpendicular strata; thus, it is dry, and devoid of springs. The huge rocks clump together to form high towers, and threatening crags and, on the southern side, a few caves.[95] The inhabitants firmly believe that a treasure is hidden there, and many of them often mutter, swearing that they will find it. They also tell a not unfunny anecdote, which to me is just a pretty fable, while those rural minstrels [regard it] as a memorable story. Let me, my dearest friend, disregard for a while the weight of physical studies, softening the severity of nature with an amusing break. A farmer, they say, was ploughing the earth in the nearby mountains **16]** when two strangers on black horses asked him where the "Mountain of Balista" was; and though he showed them, pointing at it with his finger, they wanted him to come along. After he arrived at a cliff where a cave with no visible doors stood, he stopped, not being able to see beyond the entrance; and they, so as to open it, calmly pulled out keys from a thorn bush close by. Having drawn hidden bolts, and past a first door, another iron gate appeared which, once equally opened, led them into an ugly, soot-blackened gallery, and thence into a rough-vaulted, large room, full of protruding and hanging tuff rocks, and with just a dim, gloomy light in it. There stood a golden statue, and idols of pagan gods shining with gold and jewels, among which (to the astonishment of the farmer) stood out glass and marble urns with burnt human bones inside, made ghastly by ashes, and with various, unknown carved marks on them. A leaden box lay at the feet of the largest statue, and inside it were separate receptacles which, in turn, contained vials and small caskets filled with various fluids and mysterious powders. There was also a three-lipped lamp hanging from the ceiling; it was still lit, but [made] much more smoke than light, so that it would have doubled the fear in the troubled hearts [of other witnesses]. Nor were coins, golden jewels, and a wealth of precious stones absent in the other chests. "Take," the strangers said, "take as much gold as you need to satisfy your hunger"; and, leading the way, they filled the small bags to be put on the horses' backs. Anxiously following their example, he loaded himself as much as he could by stuffing coins everywhere, and

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very small, spheroidal grains of no more than 2 mm (0.08 in) in diameter. Hence their name, as they typically look like fish eggs. Arguably, the specimens ("globuli lapidei") described by Vallisneri are pisolites, these rocks being rather common in the in the gypsum-sulphur formation of the northern Apennines. See De Waele, Forti, and A. Rossi 2011, 46. See also Vallisneri 2012, 277–278.

[92] Mount Valestra (951 m/3,120 ft above sea level), in the territory of Carpineti (Province of Reggio Emilia).

[93] Virgil (attributed). English translation: Rose 1996, 258.

[94] The epitaph on Balista is conventionally ascribed to Virgil, and is considered as one of his earliest works. According to Augusto Rostagni (Rostagni 1961, 40–43), Balista was Virgil's schoolmaster, who actually was not a robber; nor was he stoned to death for his deeds (as both the stanza and the legend claim). More probably, a young Virgil just made fun of him for his severity.

[95] Mount Valestra is mainly composed of arenaceous rocks dating back to the Miocene epoch (23–5.3 Ma). It is the northern extremity of a ridge stretching from northeast to southwest in the Carpineti territory, and whose tectonic origin is also the cause of the many caves in the area. Vallisneri explored one of these grottos, the Buca del Diavolo ("Devil's Pit"). This experience is not reported in the manuscript, but in Vallisneri 1722b, 282–283. On this topic, see Luzzini 2013a, 95–96; 2014a, 211.

secretly **17]** planned to return the following night with a cart, and to plunder that wealth of the underworld, and that royal treasure, to be remembered in the annals of the country. In the meantime, the strangers left; and again, having closed the entrance, they hid the keys in the nearby thorn bush. Thus, the greedy farmer, with great care and with a mind full of expectation, when no one was observing, and in the great silence of the night, came back to the prickly hiding place of the keys; and, heedless of the thorns, sought the keys, which had been abandoned there, with his calloused hand. But, scarcely had he thought that they were in his hand when he grabbed a nest of twisting and fiercely hissing vipers: and, as nothingness deceived his expectations,

> Cold doubt and horror through [his] bosom ran.[96]

Wonder turned into dread, and dread became wonder again, and he could not resolve whether he was more astonished by fear, or more afraid of astonishment. The descendants of that farmer still live [there], and are among the wealthier inhabitants of Balista; and since fortune smiled on their enterprise, and they are prominent for their talent and industry, their wealth is believed to be the product of the necromancy of some strangers. But let's not wander from the subject,[97] and let us return to the road from our digression.[98]

Like Ancients going to the bath house, on the following day we moved to the thermal springs of Quara:[g] a place once renowned all over Europe for its healing waters, now barely known to the inhabitants themselves.[99] Jacob Wecker mentions them in his *Antidotarium,*[100] **18]** and Sir Fulvio Azzari, in *Compendio dell'historie della Città di Reggio,* writes that many considered them like Roman doctors; for, in that time, they arranged to bring them to Rome, in order to heal the desperate patients.[101] Now they are becoming dirty, obscure, and unknown even to our physicians. As if the thermal springs, too, had their own constellations, and could suffer the wrath of adverse fate. Thus, also, so many other [springs] honored in the previous centuries are now covered with mud, and others, formerly obscure, are now greatly respected. Nor were the properties of the thermal waters of Quara—which Gabriele Falloppio described with the name of "Balneum

[96] This is a passage from Virgil's *Aeneid* (Vergilius 2018a, II, 120–121, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:2.105-2.144).

[97] From the Latin saying "Ne extra oleas" ("don't [wander] from the olive trees"), which in turn derives from Aristophane's comedy *The Frogs* (Aristophanes/ Ἀριστοφάνης 2018, line 995: "ἐκτὸς οἴσει τῶν ἐλαῶν," http://data.perseus.org/citations/urn:cts:greekLit:tlg0019.tlg009.perseus-grc1:992-1003). See Miller 1914.

[98] "E diverticulo in viam," a Latin saying of uncertain origin.

[99] Quara, an ancient spa in the territory of Toano (Province of Reggio Emilia), whose mineral springs had been utilized since the Roman age. This water, rich in sodium ($NaHCO_3$) and potassium ($KHCO_3$) bicarbonates, was considered to be particularly effective for the treatment of skin diseases and digestive problems. In the XV century the springs were still widely utilized; however, when Vallisneri visited the spa it was abandoned and in ruins. See Luzzini 2013a, 96; 2014a, 212; http://www.appenninoreggiano.it; http://www.comune.toano.re.it/turismo/storia.htm. The mineral springs of Quara are also described in Vallisneri 1711, 353–354; 1728, 112–117.

[100] Wecker 1577, 14: "Apud Aquarium terra est a Regio Longobardo 25 miliaribus distans, balneum de Aquario nuncupatum: alumine participat. Viribus simile est balneo della Porretta. Idem." In the previous edition of Wecker's *Antidotarium Speciale* (Wecker 1574), Quara is not mentioned.

[101] Azzari 1623, voice *Quara*: "[…] quivi si trova il famoso bagno, tanto stimato da' medici Romani; l'acque del quale di continuo mandano a pigliar, per servirsene in diverse infirmità; il qual bagno vien preconizato da Giacomo Vaccaro nel suo Antidotario; è ne' monti." Azzari mentions Wecker's *Antidotarium.* Most likely, Vallisneri borrowed this reference from him.

[g] **Margin note (left):** See Letter 2, p.

Aquarianum"[102]—consumed by old age, although they have dried up.[h] Just as the Old Fathers described them, so I have found them. Endowed with a truly pleasant saltiness, and being a bit cold, they have a smell of volatile sulphur (which someone erroneously associated with camphor), and a very bright color. Hence, I consider them particularly effective at flushing out the obstructed bowels, at scraping the dregs and the rough sands of liquids off the body, and at destroying the worms in the intestines. And, therefore, [they] certainly cure weak stomach, shortness of breath, flatulence, hypochondria, painful colics, sterility (when caused by a too viscous lymph), dizziness, the pain proceeding from slow, especially polypous blood, glutinous phlegm, and all the other diseases which proceed, as schools assert, from a cold cause.[103] As I hinted before, Falloppio, a citizen of Modena, was not silent about them, though he made a mistake about the location of the springs.[104] He wrote that they were on the banks of the Dragone Creek;[105] when, in fact, they gush from the right bank of the Dolo.[106] This is a nearby stream, and is equally wild and steep, but originates from different, hidden places. What attracted even the pens of foreign admirers, **19]** eventually became unknown to our people. [The springs], breaking out from fissures in the rocks of the mountain, were diverted northward through invisible pipes into a basin, and then into a marble vase, which still survives the injury of time. Anciently, they were scrupulously protected by a solid cover with leaden joints, and strengthened with bolts; thence, they poured from the lower opening into the stream below. A staircase in stone, carved to ease the descent to the place, can still be seen. As to the rest, the water does not flow into the ancient vase anymore, nor is it collected and brought to foreign countries by strangers. The receptacle is full of stones, mud, and sand; [the water] roams everywhere, and now is drunk with great pleasure only by cattle, sheep, and goats.

Having crossed the torrent, we reached Rubbiano,[107] where stands a most ancient and not unknown church that—according to the inhabitants—was built by the famous Matilde.[108] Here, very cold and clear springs from one side, and foul-smelling, sulphurous, steaming, and warm ones from another, flow without a name, nor any use. Other ones, which have a not unpleasant saltiness, can be seen not far [from there]; but they are

[102]Falloppio 1606, Tractatus Septimus, *De Thermalibus Aquis,* Cap. XXV, *De balneo Aquariano in agro Regiensi,* 324–325.

[103]See note 80.

[104]Falloppio 1606, Tractatus Septimus, *De Thermalibus Aquis,* Cap. XXV, *De balneo Aquariano in agro Regiensi,* 324: "Scire namque debetis, quod fluvius Draco appellatus, dividit Mutinensem agrum a Regiensi, in huius fluminis parte illa quae occidentem respicit solem, est hospitium quoddam non procul admodum ab Aquario pago."

[105]Torrente Dragone ("Dragone Creek"), in the Province of Modena. It merges into the Dolo a few kilometers north from Montefiorino.

[106]Torrente Dolo ("Dolo Creek"), a tributary of the Secchia. It forms a natural boundary between the Provinces of Reggio Emilia (on the west) and Modena (on the eastern side).

[107]Pieve di Rubbiano, an important Romanesque church in the northern Apennines. Now part of the municipality of Montefiorino (Province of Modena). Despite what the farmers told Vallisneri, the church was not built by Matilde di Canossa (see the following note), its origins dating back at least to the IX century. See Bucciardi 1930; B. M. Grazia and M. Grazia 1999; Montorsi 1987, 130–144.

[108]Matilde di Canossa, also known as Matilda of Tuscany (1046–1115). A powerful feudal lady, and one of the most powerful women in medieval Europe, she was a steady supporter of Pope Gregory VII (1020/1025–1085) during the Investiture Controversy: a conflict that opposed the Papacy and the Empire between the XI and XII centuries. At the height of her power, the "Grancontessa" ("Grand Countess") ruled over a vast part of current Lombardy, Emilia-Romagna, and Tuscany. In 1111, she was crowned Vicar and Vice-Queen of Italy by the Holy Roman Emperor Henry V (1081–1125). On this topic, see V. Fumagalli 1996; Golinelli 1997; 1999.

[h]**Margin note (left):** *De Thermalibus Aquis,* Chapter 25, p. 324 of my [book]

known only to farmers, and sheep, etc. There lives a rather famous family of surgeons that is called Raspona, renowned for healing those poisoned (especially) by viper bites. In fact, they carefully suck the inflicted venom as the Psylli[109] (from which they claim to descend) used to do, and wash the fatal wounds with their own saliva; they will completely restore the health of those who have been bitten, if they run to them immediately. A snake-like mark **20]** can be seen on the shoulders of all those belonging to this lineage and, especially in springtime (when it has a brighter color), it portrays the rough image of a nest of vipers. Having uncovered the shoulders of one of them, I examined it with curious eyes and hands, and I still doubt whether it is a natural image or an artificial one.

Once we had climbed the slope of the mountain, we admired to the south the dyeing springs of Vitriola, provided by nature with gratuitous coloring properties. Hence, and not by chance, the wise Ancients gave this place the name of "Vitriola": because of the vitriolic, or blackening, waters in which it abounds.[110] You shall be amazed, my friend, if I assert that these springs rival the ones in Boeotia.[111] They are unknown, since no author, so far, has deigned to consider the wonders of our mountains. Like black sheep approaching certain prodigious waters, and leaving with a white color, here—with an opposite outcome, but with an equally miraculous result—the white clothes are immersed, and look black when extracted. With not despicable kindness, the Great Mother [Nature] looked after the needs of that rustic people, bestowing durable colors at no cost, and compensates the harshness of those places with the preciousness of the goods. [The waters] emerge from the bottom of the field which faces the Dragone and, by passing the border of the spring through the sloping ground, flow into the bed of the said brook. The water of these [springs] is clear, with no taste; yet, it colors the soil and the aquatic weeds it touches with a yellowish, ferruginous dye. A light matter, reproducing the colors of the rainbow, spreads itself like a finest web; once it has been dried, it produces a golden powder. The soil is very dark at the bottom, and is most suitable for the dyeing process. The people of the countryside blacken linen clothes **21]** and wool in these dyed springs, but not without some previous preparation, so as to imbue them even further. Thus, at first they boil and soften the clothes that are to be colored in pure water, along with chestnut catkins, or with their inner barks, or liber; after [the clothes] have been prepared with this simple method, they are immersed in the springs for 24 hours and covered with mud, which is repeated twice or thrice, so that nothing will look more black. Nor is it to be omitted, that the so-dyed garments last longer than the untreated ones, that is quite the opposite of what happens to those ones which are colored by our dyers with the usual method. For the fierce vitriol, once poured in, erodes the threads of the fabrics with a hidden sharpness;

[109] Psylli, an ancient people who lived in Marmarica, a part of Northern Africa between eastern Lybia and Egypt. During the Roman age, they were renowned for being immune to snake venom and for their ability in the treatment of snake bites. See Bates 1914, 179–180; Ogden 2013, 6, 64, 209–214, 231–243, 296–297.

[110] Vitriola, a hamlet in the municipality of Montefiorino. It is located in an area delimited by the mountain ridge on which Montefiorino rests (on the west) and by the Dragone Creek (on the east). Arenaceous and calcareous rocks—typically turbidites—dating back to the Campanian, Maastrichtian, and Danian ages (Late Cretaceous-Early Paleocene, 83.5–61.6 Ma) dominate the lithology of this area. Most likely, the coloring properties of the springs described by Vallisneri result from high concentrations of iron oxides in the water. Cartographic source: *Carta geologica d'Italia, Foglio 235 (Pievelago)* 2002. The springs of Vitriola are also described in Vallisneri 1711, 355; 1717b; 1728, 121–123. On this topic, see also Rampoldi 1833, 81; Ricci 1788, 257; Zuccagni-Orlandini 1845, 45.

[111] The reference is to the Greek myth of Trophonius' Cave, in Boeotia, where an oracle resided (Μαντείο του Τροφωνίου). According to the legend, those wishing to consult the oracle had to drink from two springs, bearing the names of the rivers of Hades: Lethe (Λήθη, "Forgetfulness") and Mnemosyne (Μνημοσύνη, "Memory"). On this topic, see Edmonds 2004, 52, 107; Ustinova 2009, 91–92; Vandenberg 2007, 236–242.

and, with the passing of time, gradually cuts off even the ones that have been placed in chests. But, for what reason only the poured [vitriol] works in this way, and the one which can be found in the water (whether it originated there, or was secretly dissolved) does not, I leave you to ponder. If they wish to have a jujube color, they previously boil the clothes along with the roots of black mulberry,[112] or dwarf willow,[113] or of other willows that grow in the rivers; then, they dip them in the said manner. They obtain also other colors; and would obtain [even more], if any meticulous investigator of the natural secrets carefully performed a greater number of experiments. [These springs] have not yet been used for medical purposes, but I have no doubt that they are not appropriate for all those ailments for which the other vitriolic waters are prescribed; as, being weaker, they would not be more effective than the latter ones. In fact, they contain in themselves a rather mild and harmless vitriol [that is] not sharp, nor fixed, nor severe, nor erosive; hence, I doubt not that they could, [however], help to cure kidneys, stomach, hot liver, feverish blood, relaxed uterus, and other languishing parts of the body. Should I finally make my way back to my homeland, I shall be eager to test them; in the meantime, I shall exhort so insistently the most eminent physicians among my fellow-citizens, that they will not disdain to repeat the experiments, claiming glory for themselves, health for the sick, and profit for the country. **XIII.r] XIII.v]**

We then came upon the nearby Dragone: that is, a stream which is renowned for being dangerous and rough, full as it is of huge rocks, and in which every year an adverse fate sacrifices someone. The different colors of its stones—reddish, green, black, golden, white—arranged like a mosaic in its gravelly bed, copies with precision the speckled back of a dragon. Hence, perhaps, the name, as well as from [its] serpentine course, and from the [fact that it seems] to be crawling upwards, and that it always flows obliquely.

Not a mile from there, we approached Medola,[114] whose borders are touched by the said stream with its waves. **22]** It was formerly a stronghold: impregnable to enemies, placed as it was on the top of a dreadful cliff, on a livid, reddish crag, and ruling over all the neighboring [lands].

> And Medola ruled Montefiorino.[115][i]

Now the mere foundations, made irreparable by threatening cracks, are what remains of the ancient glory. Immense mountains are on both sides, and their right slope, sprinkled with a sort of dark redness, is barren, made of sharp stones, and parched by mineral exhalations. We found many silvery and bronze-colored pyrites, and many stones sprinkled with a green color,[116] on the sides of which adhered a certain yellowish substance, similar to amber. Hard rocks roughened and filled the ground everywhere with tartar and small spherical pebbles, emitting the [typical] smell of mines. [And indeed] the entrance of a mine stood

[112] Black mulberry, in Italian "gelso nero" (*Morus nigra* L.), Family Moraceae.

[113] From Tournefort (de) 1700, 591: "Salix Alpina, Alni rotundo folio." Dwarf willow, in Italian "salice erbaceo" (*Salix herbacea* L.), Family Salicaceae. It is a tiny, woody, creeping plant, adapted to cold mountain, arctic and subarctic environments. Once rather common in the northern Apennines, it is now very rare and is regarded as a relict species as a consequence of the climate changes which have occurred in the past three centuries. On the identification of this species in the Italian mountains, see Parlatore 1867, 277–279.

[114] Medola, an ancient citadel (now part of Montefiorino) located in a crucial strategic point on the left shore of the Dragone Creek. Once a powerful stronghold (especially during the XII and XIII centuries), by the time of Vallisneri's visit it was in ruins. See Tiraboschi 1825, 39–40.

[115] Tassoni 1624, Canto III, 67.

[116] Arguably, copper-rich rocks. Many cupric salts have a typical blue-greenish hue.

[i] **Margin note (left):** Tassoni

open under a steep rock, where (as they say) some believed that a gold or silver vein could be exploited, but which I had found to contain just rough, unprofitable copper. The flank of the mountain on the left slope, not hardened by immense stones, and torn apart by the underground waters, which eroded it, had once collapsed precipitously, burying the church of Medola[117] and the houses located on the lower plain. Frequent ruins of this kind can be seen everywhere, and from the broken ribs (so to speak) of the mountain, and from the destroyed cliffs, peaks shrink, and lowlands rise; and, having the face of the landscape been changed, [each rock] seeks to know which is the one pressing on it, and if [this] has its same ancient origin; nor can it understand. The unsteady foundations of the Earth are certainly so weakened and eroded by the waters and by the melting snows (which from the highest peaks of the nearby Apennines sink through cracks in the rock layers), that at length they are loosened by the enormous pressure upon them. The inhabitants call these [phenomena] *salacte,* or *lavine;*[118] and in all cases we noticed that they are more common where springs gush out, and where there are no stony layers beneath. **23]**

After arduous efforts and a rough journey, we finally climbed to the highest point of the Apennine Mountains—which the Ancients called Letum, and some now call Alp of Saint Peregrine[119]—and we venerated the still incorrupt body of the Saint.[120] How many inaccessible waterfalls did we observe? How many secret places, in valleys hidden to the mountains themselves? How many abrupt edges of cliffs, steep tracks, impervious paths? Besides, it was the scorching month of August, which in our countries is torrid; and yet, in many places the cruel winter [still] raged with snow and cold. In fact, the snows (which generally accumulate for many years) melt only when, sometimes, Sirius burns more vigorously, or the south wind blows. [Here], the old beech tree is rarely profaned by the axe, the thickets stiffen constantly, and huge shadows abound everywhere. Hence the eternal cold, the perpetual winds, the unknown warmth of the air. It was then that I reconsidered the origin of springs and rivers from a higher [perspective], and I silently told myself: "Here the unseen hearts (so to speak) of the perennial fountains, here the first breasts of the rivers hide." Everything is always covered with just wetness; the dripping waters have no end; and the cavernous bowels of the Alps continually suck, and preserve that everlasting liquid, equaling the function of *hydrophylacia.*[121] There is no lack of reservoirs here: perennial cisterns, and endless reservatories, are swollen with water.

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[117] Church and fortified house of Medola, not to be confused with the homonymous fortress. It was located in the Modena Plain, and was destroyed in 1318. See Tiraboschi 1825, 39.

[118] Archaic Italian terms for "frana" ("landslide"). More specifically, the word "salatta" was used among the populations of the northern Apennines. See De Stefani 1875, 6.

[119] Alpe di San Pellegrino ("Alp of Saint Peregrine"), 1,701 m/5,581 ft above sea level. It overlooks the homonymous Pass, where is located San Pellegrino in Alpe (1,525 m/5,003 ft): the highest village in the Apennines. The pass links the Province of Modena (Emilia-Romagna) with Garfagnana (Province of Lucca, Tuscany). See Luzzini 2013a, 94, 96–97, 102, Tabs. X–XII; 2014a, 209, 212–213.

[120] The body of San Pellegrino delle Alpi ("Saint Peregrine of the Alps," ?–643), still preserved in the local shrine together with the body of San Bianco ("Saint Blancus"), his only companion. According to the legend, Pellegrino was a pious Irish prince who travelled to the Holy Land. On his way back, he settled in a hermitage on the Apennines. On this topic, see Angelini 1996.

[121] By using this term, Vallisneri alludes—with evident, intentional irony—to the Jesuit scholar Athanasius Kircher (1602–1680) and to his theory of "hydrophylacia." In Kircher, Neoplatonic and Hermetic beliefs coexisted with field research and experimental practice, leading to intriguing results. In his *Mundus subterraneus* (Kircher 1664), the whole Earth is studied as a living organism, in which each part is interconnected with the others. Like in the human body, different vital fluids flow through the planet. Natural phenomena are the result of the interaction between these circulatory systems, called "fire networks" ("pyrophylacia"), "air networks" ("aerophylacia"), and "water networks" ("hydrophylacia"). Kircher acknowledges evaporation as a means to replenish springs and rivers. But the "hydrophylacia" are the main causes of this pro-

No place this for ingenuity: be you the judge, and your eyes will triumph.[122]

"We pondered greater things," as Cyrus said in the presence of Xenophon, "while observing the lesser ones."[123] For then my mind ventured to seek more in depth, and to follow the immense mass of water that was absorbed by underground streams through the darkness of [those] paths. In fact, not the Panaro,[124] nor the Secchia River, nor the other less known torrents, nor the scarcity **24]** of the perennial springs coming down from the Apennines, correspond with such a great quantity of snows and waters. In the hidden part of their abysses, [the streams form] a river that—by running past the roots of the smaller mountains, having travelled a dark journey, and having finally opened the gates—discloses its presence by spilling out here and there through different, lesser breaches; while the main stream, by flowing secretly through a sandy and gravelly bed, provides the "origin of the admirable fountains of Modena" that the Most Famous, and Always Honorable, Ramazzini (who was once my colleague) discussed so learnedly and ingeniously, though supporting a different theory.[125][j] Besides, the more I consider all the perpetual springs that flow more copiously on the farthest side of the Alps of Fornovolasco,[126] the more I become convinced of this [model]. In fact, snows are less frequent there, owing to the warmth of the nearby sea; and indeed, when getting even closer to the western slope, where the sea is, snow is almost always absent. But since in that place there are plenty of mines—of which I will [speak] later—and since the layers of the mountains are, for the most part, arranged horizontally, and are almost entirely made of hard rock, thence it follows that the melted snows and the flowing waters can barely stay in their innards; and by returning from those interposed basins, they either provide nourishment to the mines, or weep from small cracks as fountains, and form all the perpetual and inexhaustible springs. In fact, owing to the dense structure and to the position of strata and mines, such [waters] are not allowed to descend to the last, invisible roots of the mountains, **25]** as happens with the Alp of Saint Peregrine. There, the nature and the disposition of the layers are different. The abundant earth, the bibulous sand, and the looser structure absorb the falling waters and the flowing snow, and carry them down to the deepest roots of the Alps, forming an invisible river. Hence the dreadful slidings of the mountains themselves, here and

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cess—they connect the sea to the mountains, allowing the water to rise. On this topic, see Findlen 2004; Fletcher 1968; Parcell 2009.

[122] This passage is from the *Appendix Vergiliana* (Vergilius 2018b, 549, attributed, http://www.thelatinlibrary.com/appvergcomp.html). English translation: J. W. Duff and A. M. Duff 1934.

[123] Arguably, this is an adapted quote from Cicero's *Cato Maior de senectute* (Cicero 2018a, LXXIX): "Apud Xenophontem autem moriens Cyrus maior haec dicit: 'Nolite arbitrari, O mihi carissimi filii, me, cum a vobis discessero, nusquam aut nullum fore. Nec enim, dum eram vobiscum, animum meum videbatis, sed eum esse in hoc corpore ex eis rebus quas gerebam intellegebatis. Eundem igitur esse creditote, etiamsi nullum videbitis' " (http://data.perseus.org/citations/urn:cts:latinLit:phi0474.phi051.perseus-lat1:79).

[124] Panaro River (also known as Scoltenna), a main—and the last right-hand—tributary of the Po River.

[125] Differently from Vallisneri, Ramazzini supported a compound origin of fresh water in which precipitation was complemented by both condensation of vapor into caverns and desalination of sea water by filtration through rock strata (Ramazzini 1691, 56, 62). On this topic, see Luzzini 2011b; 2013a, 73–74, 98–99, 109, 114, 140, 142, 146, 151, 198–199.

[126] Fornovolasco, a village in the Apuan Alps (Tuscan Apennines), in the western end of Garfagnana. This place, now in the municipality of Fabbriche di Vergemoli, was once renowned for its iron mines. Still, in the XVIII century the mines were intensely exploited on behalf of the Dukes of Este, who used the iron for military purposes. See Bonini and Biagioni 2007; Luzzini 2010; 2011a, 107–108; 2013a, 100–102, 124, Tabs. XV–XVII; 2014a, 213–214; Rocchi 2010.

[j] **Margin note (left):** *De Fontium Mutinensium Admiranda Scaturigine Tractatus Physico-Hydrostaticus,* Modena, 1691

there, and the collapses proceeding from their flanks, which sometimes can be seen from many miles away, [causing] the very feet to tremble. From whence the mind is inclined to guess, why the waters hide themselves here and appear there; why the perennial springs are uncommon here and the course of rivers is more infrequent, while the both of them flow more abundantly in that [other place]. For this, I thought, is the only circulation of waters (in the bosom of these lands of ours, at least): from the sky to the earth, from the earth to the sea: and, in turn, from the sea to the sky, from the sky to the earth. That is to say, the cavernous mountains and the thirsty land absorb the waters pouring from the sky; [and these waters], flowing for the most part, and absorbed along the way, sink back to the sea through obscure paths. From there, they rise back to the clouds, which make them thin; and from the clouds they descend once more, in a perpetual circulation of the liquid element, whose operation never fails.[127]

But I can see you laughing, my dearest friend; since from a small journey, and from trivial observations, I shall ponder such immense issues. For I shall not embrace Descartes' common theory[128] (which especially suits the Italian tastes) about the origin of perennial springs and rivers, and about their circulation, which even your beloved Lanzoni discussed.[129][k] For indeed, this [theory] **26]** and those [authors] derive the rise [of water] from the sea, rather than from transitory rains and melted snows. Still, by questioning such great [issues], and only with respect to our regions, I don't expect to insult the value and the authority of great men: I mean not to dispute, but to strengthen. "It is a long standing and commonly held opinion," Plato's *Sophist* says, "that if great subjects are to be properly achieved, one should examine them in the lesser and easier cases, before proceeding to the greatest."[130] When we seek truth, we must consider how much [a theory] is agreeable and original, and not who, or how many, asserted it. And indeed, I don't extend my opinion to the whole world. I limit my irrelevant observations to our springs, short rivers, and torrents. Perhaps

> … one thing after other will grow clear…
> Thus things for things shall kindle torches new.[131][l]

I am eager to know, O most learned man, what you, whose intellect is so strong, think about these subjects. I beg you, rub a wound that is not healed yet, and either make me wiser or command me to remain silent in the future. For you are not one of those who

[127] This seems to be a reference to a biblical passage from the book of Ecclesiastes, Chapter 1, verse 7: "All the rivers run into the sea, yet the sea is not full; unto the place from which the rivers come, thither they return again."

[128] Here, the author refers to the influential Cartesian theory of "alembics," according to which hidden channels existed connecting the oceans to the earth, allowing sea water to rise up the mountains by effect of subterranean heat, and to lose its salt by condensation of vapor inside secret caves. In Descartes' opinion, these condensation phenomena gave a crucial contribution to the water cycle (Descartes 1644, 228–231). Vallisneri firmly opposed the "alembics" theory, persuaded as he was that all fresh water came from rain or from the melting of glaciers in the mountains. See Luzzini 2011b; 2013a, 97–98, 109–111, 116–131, 141–153; 2014a, 208, 213.

[129] Lanzoni 1688, Animadversio LXXXVI, *De Aquae circulatione,* 335–336.

[130] This is a passage from the *Sophist* (Plato/Πλάτων 2018d, III, 218, http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg007.perseus-grc1:218c). The same quote is in Vallisneri 2009, 15.

[131] This is a passage from *De rerum natura* (Lucretius 2018, I, 1115–1117, http://data.perseus.org/citations/urn:cts:latinLit:phi0550.phi001.perseus-lat1:1.1083). English translation: Lucretius 1916. In an interesting comment on these passages, Ken Taylor remarked how Vallisneri's thought here "represents an attitude that

[k] **Margin note (left):** Observation 86

[l] **Margin note (left):** Lucretius

conform truth to their will, and dismiss as a lie whatever does not suit their taste. Error lies in men, in nature, and even in the narrator of Creation who, possessed by vanity, mocks everyone else; believing that he alone, with just a hidden and smoky lamp, can understand the affairs of Heaven and Earth. I confess my ignorance on everything, but especially on these matters. Also, I beg you **27]** to let me know your opinion on the fresh water spring that, to the wonder of people, spilled out in Venice during the excavation of the Cannaregio (as I assured you in a letter);[132] and what about the waters—fresh, as well—which gushed out from the sea floor, as the Neapolitan Simone Porzio observed, when, during the famous conflagration in Pozzuoli, [the sea] retired about two hundred paces?[133] The waters, I suppose, flowed down from the mainland through hidden channels in the same manner as, according to the slope of the ground, they run into the sea through the open ones. Since obscure rivers, and invisible rills, [descend] from the heights of the mountains by sloping ridges of clay and rocks, and not only through outside paths, but by dark and narrow ones, too, all the way down to the inmost chambers of the sea; and, sooner or later, they emerge. How, in fact, could the sea take back in itself those altered vessels (so to speak), as if in a miracle? By what necessity does it deprive itself of the brackish water when, in turn, it absorbs the fresh one in no time? This [fact] does not elude you, too: the way by which sea water is filtered, and becomes fresh, is doubtful and deceptive, according to our experiments. For it cannot lose its salt by percolating through any sand or marble, nor through any vase which has been tempered with the fire of a furnace. Either the bond between the salt and the water particles is so strong that they can be separated only by gentle evaporation, or both the shape and the mass are such that the draining pores would absorb the salts along with the water. Even in the last, most arid summer, we observed that the garden wells of our Chioggia and of Leghorn **28]** (which are close to the sea) dried up, although the surface of the sea bed is far higher than the lowest depth of those shafts. It is certainly a sure evidence that the mentioned wells receive the waters from the land, and not from the sea. In addition to what Sir Perrault,[134] Caspar Bartholin,[135] and other Transalpines have explained, I am slowly pondering other things,

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is fundamental to the novel scientific viewpoint this author exemplifies. Like so many of his contemporaries, Vallisneri can hardly escape the impulse (Renaissance-humanistic in its basic character) toward rehearsal of the observations and opinions of respected authorities of the past. But he also declares that in the end, determination of what is true must depend not on authority but rather on facts and upon the capacity of a theoretical idea to account satisfactorily for those facts. A peculiar and interesting feature of Vallisneri's writing is that, while holding to this modern criterion of conformability of a theory to observed facts, he maintains a somewhat traditional attachment to exposition that appeals constantly to one's awareness of what both ancient and more recent authorities said" (my sincere thanks to Ken for this note).

[132]Unfortunately, the letters Vallisneri refers to are missing. This event occurred in 1680, during the excavation of the Cannaregio, one of Venice's main canals: suddenly, and unexpectedly, fresh water sprang from the ground. The same episode is mentioned in Vallisneri 1715, 69: "Narrommi un dottissimo nobil uomo di Venezia, che nello scavare certe altissime fondamente nel loro Canal Regio trovarono una larga vena d'acqua dolce, la quale scorrente sotto le lagune salse colà sboccava, dove poteva farsi, con raro miracolo, una nobilissima fontana." See also Vacani di Forteolivo 1867, 168; Zendrini 1811, 177.

[133]Porzio 1551, 3: "[…] mare passibus fere CC recessit, quo quidem loco et ingentem piscium multitudinem accolae capere, et aquae dulces prosilire visae fuerunt." The passage is also quoted in Vallisneri 1715, 69.

[134]Perrault 1674. Pierre Perrault (1611–1680), a French hydrologist, in his treatise invoked the existence of a perpetual motion of water, according to which rivers refilled both oceans and fountains. But he denied the Cartesian concept of subterranean heat as a means to explain the rise of water, as it had no acceptable causal explanation. Hence the need for another process, as the "horror vacui," in obedience to which water could return—against gravity—from rivers to springs (Perrault 1674, 148–150). See Luzzini 2013a, 113–114; Rappaport 1997, 187.

[135]Bartholin 1689. Caspar Bartholin (the Younger, 1655–1738), a Danish physician, refuted both rock filtration and distillation as natural means of producing fresh water. And just like Vallisneri, he pointed out that

which I will later [describe], so that your most fertile intellect may further consider or erase them.

However, in order to keep the promise, and to [finish] the journey we started, I will make sure that you see, once again, everything I witnessed with my curious eyes. Often, while I was enjoying fine weather, I observed the rains falling on the lands below, and the sky being covered with a humid and dense mist. At that time, it seemed to me that my head was not just among, but somewhat above, the clouds, and that I could hear the thunders under my feet, as a humble Jupiter (so to speak) who threw lightnings. Likewise, I saw entire regions immersed in the very clouds, and something like a vast, misty plain disposed horizontally, with great precision, where—in various places—now a vortex, now, suddenly, a confused whirl opened up. Then, an indistinct roaring echoed in the sky, and a grave sound thundered in our ears. From which, and as if with my truthful eyes, I deduced the origin of the violent thunderbolt, and of the confused rumble. And indeed, in that place there was no fabled antiperistasis[136] opposing the extreme cold with fire; but, according to the law of motion, everything originated from the opposite action of [two] bodies on one another; and it was the same with the persistent winds. **29]**

Crystals and crystal-like [minerals] can often be found in these mountains, some of them having a blackish color, and an exceptional beauty. For there is no one who would believe that these [crystals] are not made by the craft of [men], encircled as they are by a finest band in the middle, which is formed by six rectangular parallelograms, and is limited on both sides by three equicrural, or isosceles, triangles: and whose figure I have also recently observed, though not so perfect, in some jacinths from Bohemia.[137] The crystal-like [minerals] consist of a nearly constant [number] of parts: some of which have a parallelepipedic shape, while others seem to have a more prismatic one, and others, again, tend to be tetrahedral, or octahedral. I also found several geodes, that do not differ too much from the ones in the Euganean Hills,[138] and some others which have already been described by Ferrante Imperato:[139] all of them proving [the existence] of a geometric design in nature, and of a somewhat indistinct vegetative power in these [objects], [caused] by an exhalation from the ground. In fact, the lowest parts of the minerals are planted in it,

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no springs existed on the very top of mountains. This phenomenon was simply impossible since—Bartholin asserted—it would have contradicted the laws of hydrostatics and equilibrium and, therefore, it would have been against nature itself (Bartholin 1689, 34).

[136] A latinization of the Ancient Greek word ἀντιπερίστασις, literally, "against what stands around." In early modern medicine and natural philosophy, this term was used to describe the mutual resistance, and the resulting mutual reinforcement, of two opposite qualities (as, for instance, the increase of body temperature as a consequence of cold). On this topic, see Hesse 1961, 55–58, 64, 67–68, 84–86, 101; Pagel 1976, 74–76; Varvoglis 2014, 14, 17, 19, 25.

[137] Jacinth, a reddish variety of zircon ($ZrSiO_4$). Arguably, the crystals described by Vallisneri were a dark brown or grey variety of this mineral.

[138] Geodes: hollow, spheroidal rocks with crystals in the inside wall. They usually occur in igneous, quartz (SiO_2) rich rocks. This is the case of the geodes from the Euganean Hills ("ab Euganeis"): low, volcanic hills located a few kilometers southwest of Padua. On this topic, see Astolfi and Colombara 1990; Bosellini 2005, 98.

The term "uteri crystallini," used to describe geodes, comes from Mercati 1717, 259–265. Vallisneri wrote profusely (and anonymously) about this treatise in the "Giornale de' Letterati d'Italia." More specifically, see Vallisneri 1719, 173–174: "Se destramente rompiamo le lenti minori petrose descritte, e le maggiori dette numismi, troveremo, che quelle hanno per lo più nel centro certi minutissimi cristalletti, e per lo più nelle cavità degli angoli de' loro strati, onde si veggono tutte generate nella maniera presso a poco degli uteri cristallini, coperti anch'essi di più strati di lapidosa materia, nella cavità de' quali sono i cristalli appiattati, e alle pareti interne attaccati").

[139] Imperato 1672, 572–574.

and look like transparent, little roots which once absorbed the nourishment.[140] Not long ago, the so often mentioned Scheuchzer sent [me] something similar, so as to enrich my small Museum: he sent a hexagonal crystal of remarkable size, sprinkled with a wonderful, green chrysocolla,[141] which is from the Uri Alps;[142] another one, hexagonal as well, with a full grass color;[143] another transparent one from Switzerland; a chalky, marble-like sulphur from Brugg, in Aargau,[144] with crystals fixed in it; a shining white, crystal-like selenite from Mount Pilatus, in Lucerne;[145] and, finally, a cluster of trigonal crystals, as white as sugar, from[m n o] **30]** the stone quarries of Öhningen,[146] of which [he wrote] in *Specimen Lithographiae Helveticae Curiosae* at p. 24.[147] I also possess a golden-colored, singularly transparent crystal[148] from the Rhaetian Alps,[149] along with various clusters of crystals, sprinkled—as if drop by drop—over a rough chalcedony with a somewhat dark, ruddy color, brought from the Euganean [Hills], and different jokes of nature made from chalcedony,[150] and mixed with crystals, and herbs with the crystals themselves, like flies enclosed in amber. But there are many others.

Once the highest summit of the Apennines is passed, brooks and torrents [follow] an opposite course, as if the empire of the waters was divided; and descend to the Tyrrhenian Sea.[p q] Thereupon the Province of Garfagnana comes into sight, with its populous towns

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[140] Vallisneri's thought about mineral genesis and growth was not exempt from ambiguities and fluctuations. As the assertions in the manuscript suggest, he supposed and, somehow, admitted the existence in minerals of such biological features as seeds (or "matrices") and nourishment. However, this theory (which was also a result of the strong influence that the Leibnizian doctrines of *scala naturae* and of the recognition of divine providence in creation exerted on him) was hardly compatible with empirical data and with his experimental beliefs. Moreover, one of his most important and influential scientific correspondents—the French philosopher, naturalist, and mathematician Louis Bourguet (1678–1742)—firmly opposed the idea that minerals would need a sort of nourishment. Not by chance, in the last part of his life Vallisneri did not seem to persist in supporting the view of a vegetative power in minerals. On this topic, see Luzzini 2011a, 109–110; 2013a, 132–137.

[141] Chrysocolla, a blue-green hydrous copper silicate ($(Cu,Al)_2H_2Si_2O_5(OH)_4 \cdot n(H_2O)$). However, this name may also refer to malachite, a green copper carbonate ($Cu_2CO_3(OH)_2$). On this terminological confusion, see Colombo 1995, 91; Ward 2008, 506.

[142] Uri Alps, in central Switzerland.

[143] An unspecified mineral from the hexagonal crystal system. According to the green ("herbaceo") color, it could be beryl ($Be_3Al_2Si_6O_{18}$), apatite ($Ca_5(PO_4)_3(F, Cl, OH)$), or even another kind of mineral.

[144] Brugg (a municipality in the Canton of Aargau, Switzerland).

[145] Mount Pilatus (2,128 m/6,982 ft above sea level). It overlooks Lucerne, in central Switzerland.

[146] The stone quarries of Öhningen, whose carbonate rocks date back to the Miocene epoch (23–5.3 Ma) and contain a large quantity of fossils. Here, in 1725, Scheuchzer found and described his famous *Homo diluvii testis* ("Man who witnessed the Deluge"): a fossil that he believed to be the remains of a man drowned in the biblical Deluge. Only in 1787 did the anatomist Petrus Camper (1722–1789) recognize the error, and in 1825 Georges Cuvier (1769–1832) identified in the *Homo Diluvii testis* the fossil remains of a giant salamander, which—in honor of Scheuchzer—was named *Andrias scheuchzeri.* On this topic, see Jahn 1969; Luzzini 2013a, 61–63; https://vimeo.com/46769954.

[147] Scheuchzer 1702, 29 (and not 24, as is written in the manuscript): "Fluor crystallinus trigonus, striis lateribus pyramidis cuiusque parallelis pulchre notatus. Fig. 41." According to the image in Scheuchzer's essay, this is probably a cluster of calcite crystals ($CaCO_3$). Calcite crystallizes in the trigonal system.

[148] Probably a yellow variety of quartz (SiO_2), also known as citrine quartz.

[149] Rhaetian Alps, a vast mountain range in the Central Eastern Alps.

[150] Chalcedony, a micro-cryptocrystalline form of quartz. It can occur in many different colors.

[m] **Margin note (right):** Turn to p. 31, past seven sheets
[n] **Margin note (left):** Turn 7 sheets, etc.
[o] **Margin note (right):** Turn to p. 31
[p] **Margin note (left):** Thereupon
[q] **Margin note (right):** *Thereupon etc. (turn back seven pages)

and villages, enjoying a friendlier climate, and as happy as can be with the greatest fertility of its land. For the high ridges of the Apennines ward off the icy northern winds by receiving and breaking against them the furious rage of the air currents. Castelnuovo,[151] the capital of the province, can be seen in the deepest part of the valley: it is enveloped in fog, especially at dawn and dusk. "In fact, when the mountains link to each other through winding depressions, and so do the hills, then mephitic exhalations often afflict the cities. Hence, seven-hilled Rome is even more frequently feverish,"[r] said Celsus.[152]

Our mellifluous Testi described the above mentioned place, which is most suitable for a peaceful rest and for studies, with these elegant [words]:[s]

Here, where the silver trail
of the Turrite arrives,
and where it meets the loving Serchio, pale,
and when the midday sun
warms Old Apennine's bones,
the tangled beech disclosing secrets, stunned;
it's not my merit, but my Master's grace,[153]
that leaves me here to rest, far from all pain:
for, by His blessed will, He gave me reign.
I live in joy, and as my plectrum sounds
an echo lingers with obsequious tone
of songs whose pleasant titles still rebound:
no sorrow afflicts my heart,
and from these blessed heights,
and from this sky, harsh winter drifts apart. **XIV.r]**
No foreign swords are drawn,
nor are they feared: to bay
downstream the torrents bring their shining gray.
No horn, no piercing blast
wakes up the humble peasant, nor does it call
for battle, nor did it in the past:
except for woolly herds, when that great tyrant, love
commands the trembling rams to clash
in meadows far above,
until the shepherd's staff
suspends the horned fight,
and calls the fighters back into its sight.
And all the precious blood
that spills from wounded chests,
and which in Arab lands runs like a flood,
is not so valued, where
no mortal eye could see
human blood flowing out of human's heir;

[151] Castelnuovo di Garfagnana (Province of Lucca).
[152] The references in the margin note are incorrect. This is an adapted quote from Dieterich 1661, 1412.
[153] Francesco I d'Este (1610–1658), Duke of Modena and Reggio from 1629 until his death. In 1640, he appointed the poet Fulvio Testi (1593–1646) Governor of Garfagnana.

[r] **Margin note (left):** See Book 2, Chapter 1, pp. 42, 43
[s] **Margin note (left):** Ode to Sir Ascanio Pio di Savoia, etc.

except for those rash hands
succumbing to the rage
of chestnuts in their sharp and thorny cage.
And mountains, far and wide,
by stretching to the sky
with humble clothes, admonish human pride.
Oh, willingly would I
conceal all my vain hopes
in that shade-giving, peaceful, silent dye,
for, though my soul rejoices,
free as it is of ties
leaves all its glories to the wind, and flies.[154] **XIV.v] XV.r] XV.v]**

Certainly, much [of what is said here] about this region is true, and much has been embellished with invention and adulation, as poets do. I, too, shall describe it with a less elegant, yet much more sincere pen, for I have collected some [information] in [the following] unpolished digression that also tells about the history of people; which, although going beyond my scope, still I consider to be perhaps not useless, nor unnecessary, having found out (not without indignation) that ancient geographers and historians barely touched upon it, while the more recent ones either just mentioned or neglected it with indifference, as if it was an insignificant, lesser land.

It is commonly called Garfagnana, from the Latin Caferoniana: whose name, in turn, is borrowed from Oppidum Caferonianum, established close to the Tyrrhenian outposts, and in the territories of Lucca and of the destroyed Luna.[155] It was so called after Feronia, goddess of pastures, freedmen, fertility, and joy, who was identified with Juno, as Giraldi wrote in *De Deis Gentium,* Book 1.[156] The origin of the inhabitants of Garfagnana is rooted in those Etruscans, Greeks, and Romans who were dispersed and banished everywhere by fate, and not without the contribution of the people, who always (and still) foster cruelty. It was then that it all began: when the world was under the Roman rule—that is, when the conversion of humankind made it tremble from the inside out, and when the whole body of the empire was shaken by every sort of crisis, and by civil, land, and naval wars, as Lucius Florus attests in his *Epitome Rerum Romanorum.* [Those people] were fleeing from the fiercest proscriptions [imposed] by Marius, Sulla, and by the Triumvirs Lepidus, Marcus Antonius, and Octavianus;[157] **XVI.r]** which provides a strong explanation for the many foundations and ruins of citadels still standing out on the highest summits of hills and crags, and where gold, silver, and other precious Roman coins are unearthed here and there. Even now, the ancient names of Sillano, Sillico, Sillicagnana, Sillicano, Trassilico, Roggio, Camporgiano, Cassiano, Cassinello, Ceserana, Brucciano, Petrognano, Nicciano, and many others are still in use; for these castles and strongholds, according to the inhabitants, had been once founded by Sulla and his followers, by Rossius, Cassius, Caesar, Brutus, Petronius, Nicia, and by the other most noble Romans who, from time to time, were struck by fate.

[154] Testi 1666, 213–216, *Al Signor D. Ascanio Pio di Savoia* (First edition: Testi 1636).

[155] Ancient city of Luna, or Luni (Province of La Spezia), located in the historical territory of Lunigiana. It was close to the shore of the Tyrrhenian Sea and, therefore, was an important Roman harbour. On this topic, see Sforza 1910.

[156] Lilio Gregorio Giraldi (1479–1552), a scholar and poet from Ferrara. The reference is to Giraldi 1548, 169–170.

[157] This is a passage from Lucius Annaeus Florus (*Epitome Rerum Romanarum*, Florus 2018, II, 9–21, http://data.perseus.org/citations/urn:cts:latinLit:phi1242.phi001.perseus-lat1:2.9.21.1).

Nor were the ancient authors completely silent about this province. Marcus Cato, in a fragment from the *Origines,* Chapter 7, wrote: "Lucca was renowned during the reign of Lucus, King of Etruscans"; "Lucus, and Montes Feroniani"; etc.[158] Caius Sempronius Tuditanus, in fragment 3 of *De Divisione & Chorographia Italiae,* called it "Liguria Apuana."[159] Antoninus Pius, in *Itinerarii Antonini fragmentum,* in Annio's Book 2, while enumerating the roads that led to Gaul (now Insubria), asserted: "[We] took the path of Cassiano, which, [by passing] through Politorium, Arcenum, Miniorem, Forum Cassii, Aruntes, Camillarius, Tudernum, Varentarum, Mons Umbrone, Sena Colmia, Phocenses, Lucca, and Garfagnana, goes on to Gaul."[160] Ptolemy, in Book 3 of his [*Geographia,* Chapter] 6, Europa, and in the Table, called it "Lucus Feroniae";[161] whereas Pliny, describing Italy in another passage of the *Naturalis Historia,* Book 3, Chapter 5,[162] addressed those [places] as "Montes Tegulatos":[163] these—as Giraldi remarked—are the Panie, and the neighboring mountains,[164] among which Anselmo Micotti from Camporgiano, Doctor of Canon and Civil Law (to whose manuscript, I candidly confess, I owe a lot), supposed that [Mount] Tea of Garfagnana should be located, according to the resemblance of the name.[165] Strabo, in *De Situ Orbis,* **XVI.v]** Book 5, wrote: "Many people live in the districts of Lucca, which is near to the mountains overlooking Luna; and even Garfagnana is surrounded by them."[166] Livius recalled this [province] in many passages of *Ab Urbe condita;* and especially in Book 41, where he described Petilius' death,[167] [whose announcement] was ambiguously distorted with the oracle's word "Letum." "Being the commanders [located] in different provinces," he said, "Petilius set his headquarters in front of the ridge of Mount Balista and Mount Letum" (now responding to the name of Alp of Saint Peregrine), "which joins the mountains with a continuous crest. There, as they say, while encouraging his troops, forgetful of the ambiguity of the word, he pre-

[158]This is a fake quote attributed to Cato the Elder's *Origines* (Cato maior 2018). Actually, the real author is the Dominican friar Annio da Viterbo (or Giovanni Nanni, 1437–1502). In this treatise (Nanni 1498), renamed in its many reprints as *Antiquitatum variarum*, Annio forged a great quantity of documents attributed to several ancient authors. Among them was Cato the Elder, with the supposed book *De origine gentium et urbium Italicarum.* Vallisneri, like other scholars of his time (and many other previous ones), was deceived by Annio's work (this note refers to the 1515 edition: Nanni 1515, Liber VII, LXVIIIr). On this topic, see Baffioni and Mattiangeli 1981; E. Fumagalli 1984; Pacchi 1785, 11–14; Stephens 2004.

[159]This is another quote from Annio da Viterbo, falsely ascribed to the Roman consul Caius Sempronius Tuditanus and to the forged book *De Divisione & Chorographia Italiae* (Nanni 1515, Liber IX, LXXVIIr, LXXXv). See also Pacchi 1785, 11–14.

[160]This is another quote from Annio da Viterbo, falsely ascribed to the Roman Emperor Antoninus Pius (Nanni 1515, Liber VIII, *Itinerarii Antonini fragmentum,* LXXIVv). See also Pacchi 1785, 11–14.

[161]From Ptolemy's *Geography* (Ptolemaeus/Πτολεμαῖος 2018, III, 1, http://penelope.uchicago.edu/Thayer/E/Gazetteer/Periods/Roman/_Texts/Ptolemy/3/1*.html).

[162]From Pliny the Elder's *Naturalis Historia* (Plinius (Maior) 2018, III, 5), http://data.perseus.org/citations/urn:cts:latinLit:phi0978.phi001.perseus-lat1:3.26.

[163]Plinius (Maior) 2018, III, 25: "Tigulia intus, Segesta Tiguliorum, flumen Macra, Liguriae finis," http://data.perseus.org/citations/urn:cts:latinLit:phi0978.phi001.perseus-lat1:3.25.

[164]Giraldi 1548, 169–170.

[165]Anselmo Micotti (1630–1695), a historian from Camporgiano, who wrote a manuscript on the history of Garfagnana (Micotti 1671). See also the critical edition of this work, edited by Polimio Bacci (Micotti 1980). According to the priest and historian Domenico Pacchi (1733–1825), both Giraldi and Micotti—and, consequently, Vallisneri—are wrong: the "Tigulia" mentioned by Pliny are not the Panie Mountains, but the ones surrounding Lavagna and Sestri Levante, in the current Province of Genoa (see Pacchi 1785, 3, 19–21). Pacchi also disagrees on the etymology of Garfagnana from the deity Feronia (Roman goddess of forests, fertility, and health), considering it as a misconception caused by Annio da Viterbo.

[166]Strabo/ Στράβων 2018, V, 1, http://data.perseus.org/citations/urn:cts:greekLit:tlg0099.tlg001.perseus-grc1:5.1.

[167]Quintus Petilius Spurinus (III century BC–176 BC), Roman consul. He died fighting against the Ligures.

dicted that on that day he would take Letum."[168] Instead of Mount Letum, the fatal omen of death occurred.[169]

Some believe that Virgil referred to this region when, in Book 7, line 800 of the *Aeneid* he chanted:

> … or that Circaean range
> where Jove of Anxur guards, and forests green
> make fair Feronia glad.[170]

But they are entangled in error, as even the above praised Micotti [noted]; for the goddess Feronia, in addition to the place which is now Pietrasanta[171] (not Bientina,[172] as Volaterranus holds in *Commentariorum Urbanorum Libri,* Book 5),[173] had two other sacred groves in Italy. The first one was among the Faliscans,[174] of which Strabo, in Book 5 of *De Situ Orbis,* [wrote]: "Below Mount Soratte[175] lies Feronia: it has the same name of a certain goddess, who is greatly revered by the neighboring people. Her temple is in that place, and an amazing kind of ritual is performed there: those possessed by the spirit of this deity walk on a large bed of burning coal and ashes, barefoot, **XVII.r]** and with no harm."[176] The second, as the Poet[177] said (and according to Dionysius of Halicarnassus, in Book 2;[178] Sipontinus;[179] Servius Honoratus, in Book 7 of *Commentarii in Vergilii Aenei-*

[168]Livius 2018, XLI, 18, http://data.perseus.org/citations/urn:cts:latinLit:phi0914.phi00141.perseus-lat3:18. In his treatise, Pacchi strongly disagrees with Vallisneri on the identification of the "Mons Letum" mentioned by Titus Livius with the Alp of Saint Peregrine (Pacchi 1785, 43–44). Actually, the exact identity of this mountain is still uncertain.

[169]"Letum" means "violent death," "ruin."

[170]From Vergilius 2018a, VII, 799–800, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:7.783-7.802. Arguably, Vallisneri refers to the quote in Giraldi 1548, 170.

[171]Pietrasanta (Province of Lucca).

[172]Bientina (Province of Pisa).

[173]Raffaele Maffei (1451–1522), a humanist and historian from Volterra. Maffei 1506. This note refers to Maffei 1530, 48v: "Deinde Feronia lucus Ptolemaeo, qui nunc Bientina cum lacu forte fuerit, nonnullis vero Petrasancta."

[174]Faliscans: an ancient Italic tribe who lived in central Italy from the VIII century BC to 241 BC, when their main city, Falerii, was destroyed by the neighboring Romans. On this topic, see Waldman and Mason 2006, 247–249.

[175]Mount Soratte (691 m/2,267 ft above sea level), in the Province of Rome.

[176]Strabo/ Στράβων 2018, V, 2, http://data.perseus.org/citations/urn:cts:greekLit:tlg0099.tlg001.perseus-grc1:5.2. The same quote (in Latin) is in Giraldi 1548, 170.

[177]Virgil.

[178]Halicarnassensis 2018, II, 49: "Delatos autem ad campos Italiae, qui Pomentini vocantur, et agrum, quo primum appulerant, Feroniam vocasse, ab ipsa maris navigatione, in qua ipsis contigerat ut huc illuc ferrentur; et deae Feroniae templum erexisse, cui vota nuncuparant: quam iam, unius literae immutatione, Faroniam vocant" (original Greek version: http://data.perseus.org/citations/urn:cts:greekLit:tlg0081.tlg001.perseus-grc1:2.49.5).

[179]Niccolò Perotti (1429/30–1480), Italian humanist, philologist, and Archbishop of Siponto (hence the Latin name "Sipontinus"). The reference is to Perotti 1489. Page references are to the 1502 edition (Perotti 1502, 37): "Vir. et viridi gaudens Feronia luco. […] et Iunonem quae Feronia vocabatur. Fontem aut fuisse in Campania iuxta Tarracinam: quae aliquando est Anxur dicta. Sed illud magis constat sub monte Soracte urbem fuisse Feroniam, et in ipso monte eiusdem nominis dea: quam finitimi mira religione venerabantur."

dos libros;[180] and others), was near Terracina,[181] in Latium; even Silius Italicus, in Book 13 of his *Punica,* honored it with a play: "By these words Hannibal was discouraged. He ordered his men to pull up the standards, and they rejoiced, being eager to depart. They marched to the spot where Feronia's temple of surpassing wealth stands in a sacred grove, and where the sacred river Capenas waters the fields."[182]

This region is enclosed within several boundaries, which we draw thanks to a few chosen words from Fabrizio Zumali in his Informatio XI. "The Province of Garfagnana," he writes, "lies between the territory of Pistoia, on the east, and the territory of Luna, on the west, and is separated from those regions by the peaks of the mountains that stand between it and them; likewise, it [is delimited] to the north (where Lombardy lies) and to the south (from the territory of Lucca) by the summits of the Apennine Mountains, and is divided into four districts: namely, Camporgiano, Castiglione, Barga, and the renowned Coreglia."[183] In fact, having been once confined in narrower borders—so that it retained only that [last] district, other than the name—[now] it flourishes under the Most Serene Dominion of the Este.

Destiny has endowed this province with a ship-like form, with the base in the Apennines; and which sets sail towards the Panie [Mountains], as a curve of happy fertility. The Pania [della Croce][184] is extremely steep, barren, naked, barely known even to wild beasts; hence, perhaps, it is thus called from Penia, goddess of poverty.[185] At present, [Garfagnana] hosts Barga[186] in its eastern part; the above said Pania on the south; Mount Tea[187] (which divides it from the territory of Luna) on the west; and, on the north, **XVII.v]** it controls the ridges of the Apennines. It is bathed by many perennial and clear torrents, rills, springs, and rivers, that abound with different and most excellent fishes; among which trout are renowned for enriching the tables, and for delighting the palates, of magnates and princes. The Serchio[188] claims the first place for itself: it is called "Boactus" by Ptolemy

[180]Honoratus 2018, VII, 799–801, http://www.perseus.tufts.edu/hopper/text?doc=Perseus:text:1999.02.0053: " 'Circaeumque iugum.' Circa hunc tractum Campaniae colebatur puer Iuppiter, qui Anxyrus dicebatur, quasi ἄνευ ξυροῦ, id est sine novacula, quia barbam numquam rasisset, et Iuno virgo, quae Feronia dicebatur. Est autem fons in Campania iuxta Terracinam, quae aliquando Anxur est dicta. 'Et viridi gaudens Feronia luco.' Non vacat quod addidit 'viridi': nam cum aliquando huius fontis lucus fortuito arsisset incendio et vellent incolae exinde transferre simulacra deorum, subito reviruit. 'Qua saturae iacet atra palus.' Secundum hanc lectionem re vera Saturam paludem intellegimus; sed alii 'Asturae' legunt. Quod si est, paludem pro flumine posuit; nam haud longe a Terracina oppidum est Astura et cognominis fluvius."

[181]Terracina (Province of Latina).

[182]Silius Italicus 2018, XIII, 82–85, http://data.perseus.org/citations/urn:cts:latinLit:phi1345.phi001.perseus-lat1:13. Here and below, the English translation follows Silius Italicus 1934a; 1934b.

[183]Fabrizio Zumali, a lawyer from Lodi who lived in the XVI century. He defended the Republic of Lucca against the Duchy of Ferrara, Modena and Reggio in a legal dispute over the possession of Garfagnana. On this topic, see Molossi 1776, 187; Pacchi 1785, 3, 22. The quoted passage is arguably from a part (Informatio XI) of an unknown, larger text.

[184]Pania della Croce (1,858 m/6,096 ft above sea level). It is the highest peak in the mountain range known as Gruppo delle Panie ("Panie Group"), in the Apuan Alps.

[185]Penia (Πενία), Greek mythological goddess of poverty and need.

[186]Barga (Province of Lucca).

[187]Mount Tondo, once known as Mount Tea (1,782 m/5,846 ft above sea level). It divides the drainage system of the Serchio (in Garfagnana) from that of the Magra River, in Lunigiana.

[188]Serchio, the main river in the Province of Lucca (and, therefore, the main river in Garfagnana). It flows into the Tyrrhenian Sea, a few kilometers north from Pisa.

in *Geographia,* Book 3, Table 6;[189] "Auxer" by Pliny in *Naturalis Historia,* Book 3;[190] "Aesar" by Strabo in *De Situ Orbis,* Book 5.[191] It has its origin in two springs, the former of which is thrown up from the fissured ground above Sillano,[192] the latter above Soraggio;[193] then their streams merge together, and, after joining with other ones along their course, strike (not without noise) the city walls of Castelnuovo, together with the waves of the Turrite[194] (of which Testi [wrote]). New channels, and new torrents, merge into it; [hence] it runs into the sea, about three miles from the estuary of the Arno,[195] [passing] very close to Lucca; and, being far from obscure, it is swollen at times, and threatening.

Long ago, it mingled with the Arno, as the poet Rutilius Namatianus seems to hint in Book 1 of *De Reditu Suo* where, speaking of Pisa, he says:

> I scan the ancient city of Alphean origin,
> which the Arno and the Ausur gird with their twin waters.[196]

Which is also asserted by Strabo, in Book 5 of *De Situ Orbis.*[197] But, since it brought many disasters to the City of Lucca, it was separated by Saint Fridianus,[198] Bishop of that city **XVIII.r]** (as is piously held) from the year 560 to 575, with just a rake, to the astonishment of the natural world. "Here," writes Volaterranus in *Commentariorum Urbanorum Libri,* Book 5, On the events of Pisa, "Bishop Fridianus is honored above all others—as Gregorius remembers—for, when he was pastor among the inhabitants of Lucca, he miraculously confined the Serchio River, whose inundation was destroying the fields; and the part which is called Serchio, which can be now observed, was diverted from that [ancient course]."[199]

Even the poet Guido Vannini, from Lucca, chanted about this [episode] in Epigrams 12 and 19, affirming that

> With just a rake, he ordered the raging [river] to obey.[200]

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[189] Ptolemaeus/ Πτολεμαῖος 2018, III, http://penelope.uchicago.edu/Thayer/E/Gazetteer/Periods/Roman/_Texts/Ptolemy/3/1*.html. Arguably, the map number and the related name refer to one of the many Latin editions of Ptolemy's treatise. I refer here to Ptolemaeus/Πτολεμαῖος 1584, Europae Tabula VI.

[190] Plinius (Maior) 2018, III, 8, http://data.perseus.org/citations/urn:cts:latinLit:phi0978.phi001.perseus-eng1:3.8: "[…] Pisae inter amnes Auserem et Arnum."

[191] Strabo/ Στράβων 2018, V, 2, http://data.perseus.org/citations/urn:cts:greekLit:tlg0099.tlg001.perseus-grc1:5.2.

[192] Sillano, the main hamlet of the municipality of Sillano Giuncognano (Province of Lucca).

[193] This name could refer either to Rocca Soraggio or Villa Soraggio, both hamlets in the municipality of Sillano Giuncognano.

[194] Turrite Secca, a western tributary of the Serchio. The two streams merge in Castelnuovo di Garfagnana.

[195] Arno, the main river of Tuscany. It flows into the Tyrrhenian Sea, after passing through Pisa.

[196] Rutilius Namatianus 2018, I, 565–566, https://www.hs-augsburg.de/~harsch/Chronologia/Lspost05/Namatianus/nam_red1.html. English translation: J. W. Duff and A. M. Duff 1934.

[197] Strabo/ Στράβων 2018, V, 2, http://data.perseus.org/citations/urn:cts:greekLit:tlg0099.tlg001.perseus-grc1:5.2.

[198] Saint Fridianus (Frediano di Lucca, circa 500–588), an Irish prince who travelled to Italy and became Bishop of Lucca. According to a legend, he miraculously diverted the course of the Serchio (which often flooded the nearby city) by using a simple rake. On this topic, see Fanucchi 1870; Puccinelli 1952.

[199] Maffei 1530, 48v.

[200] Vannini 1611, Liber Quartus, Epigramma XXIII, *De D. Fridiano, Episcopo Lucensi, rastro Aesarem flumen vertente,* 118 (the epigram numbers quoted in the manuscript are incorrect).

This stream, like many others, earned the adoration of the Ancients, as reported by a story from Strabo's *De Situ Orbis,* Book 5;[201] according to him and to Annio, and as is also confirmed by Suetonius[202] and Macrobius[203] (on which see Annio, in fragment 16 of Cato's [*Origines*]),[204] they worshipped it as the particular god of Etruria. Nor is the remarkable fate of Augustus, as from the biography of him written by Suetonius Tranquillus, to be passed over in silence. "During that same time," he says, "the first letter of his name in an inscription on a statue disappeared, having been struck by lightning. According to the omen, he would live only a hundred days longer, the letter C meaning that number; and in the future he would be declared a god, since 'Aesar,' which is the remaining part of the name 'Caesar,' means 'god' in the Etruscan language."[205]

This province is divided into some valleys, and rises into many hills, with steep crags, and huge rocks; and, here and there, it becomes rough, and covered with groves. It is rich in metals. Nor does it lack for wheat, wine, hemp, fruits, vegetables, and fishes. And truly it flourishes with plenty of meat, **XVIII.v]** cheese, chestnuts: so that, while it is sufficiently furnished with the former [goods], has far more than enough of the latter ones, providing them even to the nearby [regions]. Nor are hunting dogs missed; not only for leisure, but also to protect the herds. In fact, many issues with bears occurred long ago; and many with wolves, badgers, and foxes still occur today.

The men are generally short and—for the most part—dark, muscular, strong, always ready to fight, easily inclined to anger, vengeful, mindful of injuries; [yet, they are also] smart, clever, friendly to strangers, lovers of hospitality, loyal to their lord, inclined to literature, naturally gifted with the most beautiful Tuscan language, cheerful, lively, skilled in mechanics, and constantly engaged in commerce. Geronimo from Capugnano, in the first Part of his *Itinerarium Nobiliorum Italiae regionum, urbium, oppidorum, et locorum,* briefly touches upon this people. "This nation of Garfagnana," he says, "is bellicose, audacious, accustomed to war, untamed, and devoted to the Princes of Este";[206] which was certainly evident at all times, and is even more now, amidst the roars of foreign armies.[207]

[The province] hosts ninety-five villages, and many country houses and farms, whose capital cities are: Castelnuovo (that is the first), Camporgiano[208] (second), and Trassilico[209] (third). It sustains about twenty-four thousand farmers, as it can be read in the marks, or catalogs, [written by] notaries and chancellors for the year 1626.

All Garfagnana is now divided into three parts, in order to rule more efficiently the people; these are still named with the ancient term Vicariates, as they were once governed

[201] Strabo/ Στράβων 2018, V, 2, http://data.perseus.org/citations/urn:cts:greekLit:tlg0099.tlg001.perseus-grc1:5.2.

[202] Suetonius 2018, II, *Divus Augustus,* 97 (2), http://data.perseus.org/citations/urn:cts:latinLit:phi1348.abo012.perseus-lat1:97.2.

[203] This quote is not clear. Here, Vallisneri may refer to a passage from the *Saturnalia* (Macrobius 2018, II, 4, http://penelope.uchicago.edu/Thayer/L/Roman/Texts/Macrobius/Saturnalia/2*.html), where Octavian Augustus ironically addresses his friend Gaius Maecenas as "Laser Aretinum." For a detailed comment on the relationship between the word "lasar/laser" and the name "Aesar," see Macrobius 1870, 236–237 and notes.

[204] Nanni 1515, Liber VII, *De origine gentium et urbium Italicarum,* LXXv: "Aesar fluvius dictus: quia lingua Hetrusca Aesar dicitur deus, ut Sueton. dicit in Vita Octaviani."

[205] Suetonius 2018, II, *Divus Augustus,* 97 (2), http://data.perseus.org/citations/urn:cts:latinLit:phi1348.abo012.perseus-lat1:97.2.

[206] F. Schott and Giovannini 1600, 146.

[207] Vallisneri is referring to the War of the Spanish Succession (1701–1714), a great conflict that scourged Europe after the death of the last Habsburg King of Spain, Carlos II (1661–1700).

[208] Camporgiano (Province of Lucca).

[209] Trassilico. Once an autonomous municipality, now a hamlet in the municipality of Gallicano (Province of

by a vicar: that is, a vice governor on behalf of the Emperor (or of another high prince), **XIX.r]** who is now called "Capitano di Ragione."

The first [city] is the renowned Castelnuovo, where the Governor resides with eight lancers, or spearmen clothed in various uniforms, who guard him constantly. Generally, he rules over the whole province, with respect to both civil and political [issues]. The local government of each Vicariate is entrusted to the respective Capitano di Ragione.

The second is the Vicariate of Camporgiano, which was formerly the first, but now holds only the second place: either because the location of Castelnuovo and of its roads is more suitable, or because it has been humbled, and drawn to destruction by fate, and by the faults that have occurred with the passing of time. It is divided into thirty-three hamlets, called *Terre,* that sustain about 1,968 inhabitants.

The third [Vicariate] is in Trassilico, which also has many villages under its jurisdiction, with about 4,505 inhabitants.

Two strongholds, constantly secured with armed soldiers, guard and control this region, the other ones (which were erected by the Ancients) being in ruins, or undefended. The first one is called Mont'Alfonso Fortress,[210] and stands on a small hill towering over Castelnuovo: it is skillfully constructed, and carefully guarded by constant sentries and soldiers. Its name is from Alfonso II d'Este, Duke of Ferrara,[211] who arranged its construction on April 22 of the year 1579, in order to suppress the hostilities of Lucca and the rebellions of the criminals. This task was appointed to the Marquess Cornelio Bentivoglio,[212] who with great labor reached Castelnuovo with four thousand bags of wheat, various kinds of cannons, and other supplies; and, having also added thirty-four thousand gold coins from the province, he promised the loveliness of peace to the people, terror to the nearby enemies, **XIX.v]** a beloved rest to everybody, and accomplished the work happily and memorably. The other fortress is called Verrucole:[213] it still keeps the old name and structure, being in an inaccessible place, and impregnable, especially to the ancient artilleries and armies. It lies upon a dreadful and highest cliff, everywhere precipitous and impervious; except for a very narrow footpath, which can be easily blocked by defenders with stones and tree trunks, and which can be protected with just a few other weapons, even provided by nature itself. The name was wisely chosen by the Ancients: for "Verruca," as Cato suggested in Aulus Gellius' *Noctes Atticae,* Book 3, Chapter 7, means the summit of a high and steep mountain; hence the [expression] "rugged mountain," that rises with many warts or rough and irregular ridges.[214] Thus, as physicians, we call "verruca" a certain rough kind of tumor, and name "verrucous skin" the one roughened with certain tubercles.

The coat of arms is a metallic sphere with three flames breaking, one by one, out of its top, and of both its sides; which refers to the warlike character of that people, and to

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Lucca).

[210]Mont'Alfonso Fortress, now part of the municipality of Castelnuovo di Garfagnana.

[211]Alfonso II d'Este (1533–1597), fifth Duke of Ferrara, Modena and Reggio. On this topic, see Tiraboschi 1825, 131.

[212]Cornelio Bentivoglio, Marquess of Gualtieri (1519/20–1585). On this topic, see Tiraboschi 1825, 440.

[213]Verrucole Fortress, now part of the municipality of San Romano in Garfagnana (Province of Lucca).

[214]Here, Vallisneri refers to a passage from Gellius' *Noctes Atticae* (Gellius 2018, III, 7 (6–8), http://penelope.uchicago.edu/Thayer/l/roman/texts/Gellius/3*.html): " 'Censeo,' inquit 'si rem servare vis, faciundum, ut quadringentos aliquos milites ad verrucam illam'—sic enim Cato locum editum asperumque appellat—'ire iubeas, eamque uti occupent, imperes horterisque; hostes profecto ubi id viderint, fortissimus quisque et promptissimus ad occursandum pugnandumque in eos praevertentur unoque illo negotio sese alligabunt, atque illi omnes quadringenti procul dubio obtruncabuntur. Tunc interea occupatis in ea caede hostibus tempus exercitus ex hoc loco educendi habebis. Alia nisi haec salutis via nulla est' ."

their fiery, easily raging pride. Because of the victory gained over Ravenna by Alfonso I d'Este, Duke of Ferrara[215] [the emblem carries] the inscription "in due time and place."

[The region] is partly under the spiritual dominion of the Diocese of Sarzana[216] (or, according to others, Sergianum, or Luna Nova), and partly under the Diocese of the Bishop of Lucca.[217] A small creek, called Rivo del Poggio[218] and—once it passes between San Romano[219] and Sillicagnana[220]—di Cavezza, divides the [territory]. Until not long ago, the Province of Garfagnana suffered under various lords, whom it would be tedious to list individually, and would make me digress too much from the subject. Now, it flourishes happily under the rule of the Most Serene House of Este, all the tragedies that **XX.r]** hit it everyday (and which made it rage, and struggle) having been forgotten.

An eagle, spreading its wings and with a menacing beak, can be seen engraved in marble over the gate of Castelnuovo: it leans over the back of a lion, imperiously restraining and punishing its rage. This refers to a victory of the Este over [certain] enemies which I prefer to pass over in silence.[221] Ludovico Ariosto smiled at [that eagle] in his *Satire* when, on February 20 of the year 1522, he began his work as governor of that very province. And, indeed, so he [speaks] in the fourth Satira, whose incipit is

> To guard, as my Lord wished
> the herds of Garfagnana, etc.[222]

He touches the story of the lion, and rubs the unmentionable wound again.

> Know thou, that many owned these lands:
> for the Panther[223] before, and then the Lion
> grasped them with clawed hands.[224]

Then, after the yoke of strangers had been shaken off, this region revived under the rule of the Este Eagle; and I may say, with Virgil, that

> Saturn's reign is restored.[225]

But you scold me, my sweetest friend: as I describe the history of men, not of nature, and I am wandering too much from the subject.[226] Forgive my pen, which is excited by writing things that have not yet been reported: and that, perhaps, will arouse the interest of the curious, unearth what is hidden in the darkness, and awake the sleepy minds. This beauti-

[215] Alfonso I d'Este (1476–1534), third Duke of Ferrara, Modena and Reggio. On this topic, see Tiraboschi 1825, 130.
[216] Now the Roman Catholic Diocese of La Spezia-Sarzana-Brugnato.
[217] Now the Roman Catholic Archdiocese of Lucca.
[218] Rivo del Poggio e di Cavezza (Poggio and Cavezza Creeks), now both known as Cavezza di Verrucole: a small tributary of the Serchio. The two streams merge in Piazza al Serchio (Province of Lucca).
[219] San Romano in Garfagnana (Province of Lucca).
[220] Sillicagnana, a hamlet in the municipality of San Romano in Garfagnana.
[221] The sculpture is an allegory of the Este's victory over the Republic of Florence (whose symbol was a lion, known as "Marzocco") in 1521, when Alfonso I d'Este regained Garfagnana after the death of Pope Leo X (Giovanni di Lorenzo de' Medici, 1475–1521). Therefore, the lion could refer both to the emblem of Florence and to the Pope's name. On this topic, see Pacchi 1785, 82.
[222] Ariosto 1535, *A M. Sigismondo Maleguccio*.
[223] The panther was the symbol of the Republic of Lucca, which previously occupied Garfagnana.
[224] Ariosto 1535, *A M. Sigismondo Maleguccio*.
[225] This passage is from the *Bucolica* (Vergilius 2018c, IV, 6, attributed, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi001.perseus-lat1:4).
[226] See note 97.

ful yet shy province was so far unknown to the literary world; and I owe to it my maternal lineage (which is not obscure), and my own birth. In fact, my mother was [a member] of the noble family of the Davini, from Garfagnana; and I was born on the fourteenth hour of Tuesday, May 3 of the year 1661, while my father, Doctor of Civil and Canon Law, was administering justice in the citadel of Trassilico; and, though reluctantly, I felt dragged by nature out of natural history. **XX.v]**

Also, allow me to revive, as an additional feature, the original splendor of several ancient, still famous names of Roman places and mountain summits, which have been distorted by the injury of time with popular terms; and which I have extracted, with great labor and desire, from the manuscripts of Timoteo Tramonti,[227] Anselmo Micotti,[228] Giovanni Bosio,[229] Bartolomeo Morganti,[230] and others. However, I wish you to know that I am not so naive to consider as true, and derived from old consuls, rulers, kings, and heroes, all the ancient names that you will read. Many seem to me ridiculous; many [seem] distorted, and more the expression of a certain fervour of imagination than spontaneously produced, mixing history (as was common custom among the writers of antiquity) with a combination of fables and truth, and fables with history. I don't want to insult my good faith, truth, and your ears. Reap what you believe to be true, and reject what is false. I shall say, along with the Most Illustrious Sir Filippo del Torre: "I am not one who is easily inclined to accept the people's descriptions, and names which are mostly invented, and drawn from murky and muddy springs" (*Inscriptio M. Aquilii,* Chapter 1).[231] **XXI.r] XXI.v]**

Villa di Marcione—Vicus Marcelli.
Castiglione—Castrum Lestrigonum.
Villa Calamandrina—Vicus Aemilii Mamercini.
Corfino—Vicus Valerii Corvini.
Soraggio—Vicus Sergii.
Canigiano—Vicus Canini Rebilii.
Pania di Corfino—Mons Valerii Corvini.
Silano—Castrum Iunii Silani.
Fiumicello di Soraggio—Amnis Caii Atilii Serrani.
Camporgiano—Campus Roscianus, or Calfurnianus.
Forno Volastro—Vicus Calpurnii Bestiae.
Silicano—Vicus Silii Silvani.
Rosciano—Vicus Roscii.
Cassiano—Vicus Cassii.
Cesarana—Vicus Caesaris.
Brutiano—Vicus Bruti.
Petrognano—Vicus Petronii.
Niciano—Vicus Anicii.
Alpe di San Pellegrino—Mons Leti. **XXII.r]**

Valico—Vicus Valerii Poblicolae. Vergemoli—Vicus Servilii Gemini. Terminone—Vicus Minutiae Thermae. Trasilico—Vicus Virginii Tricosti. Mulazzano—Vicus

[227] Timoteo Tramonti (circa XVI–XVII century), an antiquarian from Castiglione di Garfagnana (Province of Lucca). He wrote a manuscript on the history of Garfagnana (Tramonti n.d.). See Pacchi 1785, 179.
[228] See note 165.
[229] Giovanni Bosio (?–?). Arguably, another antiquarian from Garfagnana.
[230] Bartolomeo Morganti (circa XVI–XVII century), an antiquarian from Garfagnana.
[231] Torre (del) 1700, 9. Filippo del Torre (1657–1717), Bishop of Adria, was a learned historian, archaeologist,

Cornelii Maluginei. Massa—Vicus Valerii Messalae. Magnano—Vicus Pompei Magni. Cerageto—Vicus Tergemini Curiati. Mozanella—Vicus Menenii Lanati. Pian di Cerreto—Vicus Aurelii Ceretani. Chioza—Vicus Cai Acatii. Riana—Vicus Rheae Silviae. Trappignano—Vicus Lucreti Tricipitini. Albiano—Vicus Fabii Lebeonis. Tiglio—Vicus Statilii Tauri. Filecchio—Vicus Furii Phili. Oppio—Vicus Sp. Oppii. Coreglia—Vicus Aurelii Costae. Ghivizano—Vicus Cassii Viscellini. Tereglio—Vicus Elii Tuberi. Calavorno—Vicus Accilii Glabrii. Bolognano—Vicus Calfurnii Bibuli. Cardoso—Vicus Lucii Cethegi. Gallicano—Vicus Galli Canini. Verni—Vicus Plauti Venni. Fiatton, e Campi—Vicus Fonteii Capitonis. Perpoli—Vicus Papirii Masonis. Palleroso—Vicus Oratii Paluilli. Pieve Fosciana—Vicus Publii Flaccinatoris. Migliano—Vicus Marci Aemilii. Bargecchia—Vicus Aemilii Barbulae. Eglio—Vicus Elii Peto. Rontano—Vicus Aruntii Nepotis. Ceretolo—Vicus Luctatii Cereti. Gragnanella—Vicus Cornelii Dolobellae. Silico—Vicus Sillae. Antisciano—Vicus Hostilii Mancini. Careggine—Vicus Ebutii Cornicensis. Fabbriche—Vicus Caii Fabricii. Ponticosi—Vicus Publii Cossi. Sambuca—Vicus Fabii Ambusti. Cascianello—Vicus Ottacilli Crassi. Roggio—Vicus Lucii Regillensis. Puianella—Vicus Popilii Lenas. Vitoio—Vicus Ventidii Bassi. Vaii—Vicus Lucii Velleii. Corti—Vicus Curii Dentati. Corfigliano—Vicus Calfurnii Pisonis. Minucciano—Vicus Munatii Planci. Agliano—Vicus Eliani. Castagnola—Vicus Fulvii Centimali. Giuncognano—Vicus Genutii Clepsinae. Capoli—Vicus L. Capitolini. Pontaccio—Vicus Gnei Petici. Dalli—Vicus Caesi Duillii. Cogno—Vicus Gnei Genutii. Veregnano—Vicus Publi Verennii. Magliano—Vicus Lucii Emiliani. Gragnano—Vicus Geganii Mamercini. Metello—Vicus Caecilii Metelli. Borsigliano—Brutus Bubulanus. Livignano—M. Levinus. Caprignano—Vicus Cornelii Aruini. Orzaiola—Vicus Aurelii Oresti. Sala—Vicus Livii Salinatoris. Piazza—Vicus Vibii Pansae. Naggio—Vicus Nautii Rutilii. Bibbiana—Fabius Vibulanus. Pugliano—C. Petilius. Etc.

I recited this [list] just for the sake of knowledge, and not as a pretext to make use of these names: which are now obsolete, and so distorted, that they obscure the essential language and the clarity of history.

But let us return to the road from our digression. A little later, we entered Castiglione, **XXII.v]** where we were generously received by the kindness of Prior Guazzelli;[232] all sorts of curiosities—which we studied, to the great pleasure of our minds—could be seen in those surroundings. We took away silvery pyrites from an underground copper and silver mine,[233] along with some yellowish clay balls, in the center of which a very bright, golden core was contained: and since fire melts it, and turns it into smoke, they gave it (for what reason, I don't know) the name *hierarchia.*[234] They asserted that a red stone, or carbuncle of monstrous size, was in a certain cave (which was inaccessible, because of a torrent flowing past it), and it shined so much at night, that it looked like a lit lamp; still, it is also right to suspect that it was an ignis fatuus, or some decayed wood glowing in the dark, or even some fireflies, or glowworms.[235]

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and a friend of Vallisneri. On this topic, see Vallisneri 1991, 463.

[232] The "Prior Guazzelli" could be identified as Michelangelo Guazzelli (1660–173?), a nobleman from Castiglione. He was appointed Podestà ("chief magistrate") of Sassuolo (Province of Modena) from 1720 to 1724, and later became Podestà of San Felice sul Panaro (Province of Modena), from 1724 to—at least—1731. See Cionini 1880, 214.

[233] On the great mineralogical diversity that can be found in Garfagnana (including such mineral species as—among many others—pyrite, marcasite, copper, and silver), see Biagioni 2009; Bonini and Biagioni 2007; Luzzini 2013a, 100, note 108.

[234] Arguably, mineral sulphur (S). When burnt, it produces sulphur dioxide (SO_2), a toxic gas (hence, probably, the expression "exhalat").

[235] Considering the location where this phenomenon was observed, Vallisneri's assumptions seem plausible.

Not far from there, in the lower plain on this side of the Serchio River, the thermal waters known as [Bagno] della Pieve (because they fall under **31]** the jurisdiction of Terrae Plebis) flow abundantly.[236] Among so many, healthy ones that gush out in our mountains, these alone are now in use, and won over the others. In fact, as experience attests, it is not possible to find better remedies in that place: if taken in time, they get rid of the growing, evil shoot of many diseases from the beginning, and just in a few days. Nor do [the patients] relapse so easily, once [their] bodies have been properly cleansed with these healthy waters.

In early September of the year 1609, Jacopo Lavelli revealed the virtues of these [springs] to the literary world.[237] Their source is about half a mile from Castelnuovo. They are clear, more than lukewarm, with a somewhat salty, bitter taste and a bituminous smell. Moreover, they maintain their qualities even far from the source. They are taken in the same manner as are the waters of Tettuccio:[238] that is, after a mild purging and cleansing of the intestines. The [administration] can be repeated up to twelve times a day, or even more if needed, according to the gravity and to the duration of the disease. A dose of ten or twelve pounds, [administered] early in the morning in proportion to the need, or to the capacity and strength of the digestive cavity—or according to any [other] reason that I don't know, [but] which is understood to be important—restores the energies; nor does the stomach swell, nor is it burdened with a strange heaviness; nor is the abdomen disturbed by colic; rather, in the space of two hours, [these waters] flow gently and calmly, restore intestinal motility, and quench the thirst.

Considering at first the external [use], the amazing properties [of these waters] were tested against rheumatic **32]** and arthritic pains, and against various diseases of the nerves; and others who witnessed those favorable experiments, having—so to speak—swallowed the fear, and having conceived the hope of a greater efficacy, and of a more successful outcome, eagerly drank that same water, running in crowds to it, as if it was not just a harmless remedy, but an incomparable one; and without previous purging, nor any distinction of sex, age, or time, they drank copiously, and—as if a miracle—almost all of them healed. No matter how severe the symptoms of the diseases: they subsided with the strength [of the waters], so that the name "universal remedy" could be heard among the neighboring peoples. But the insane urge to drink faded away, when [they] poisoned with an even greater damage someone who unwisely drank them without due caution, and with an unpurged body. It is unquestionably typical of the great remedies to acquire a poisonous nature, when improperly used. Eventually, things went so far that [the waters] are wisely administered under the advice of physicians, without disappointing the expectations of the patients; and, having been prohibited to many, they don't bring help indiscriminately to everyone. But let us proceed to the main course.

It could have been either an ignis fatuus (or "will-o'-wisp," in Italian "fuoco fatuo": weak flames produced by the decomposition and natural combustion of organic matter) or the bioluminescence of fireflies.

[236]Bagno della Pieve, a spa still used in the municipality of Pieve Fosciana (Province of Lucca). It is also described in Vallisneri 1711, 355–356; 1728, 105–107.

[237]Jacopo Lavelli (XVI–XVII century), a physician from Castelnuovo and Professor of Medicine at the University of Pisa. In 1609, he wrote a letter in Latin on these thermal springs. A partial transcription of this letter is reported in Paolucci 1720, 78. An Italian translation of the entire letter was then published in Vandelli 1760, 77–93, 102–103. Finally, a complete transcription of the original Latin text can be found in Pacchi 1785, *Lettera del Dottore Jacopo Lavelli di Castelnuovo intorno ai Bagni della Pieve di Fosciana, del 1609,* LXXVI–LXXIX. On this topic, see De Stefani 1879; Pacchi 1785, 197, 200–201. For a detailed chemical study of the thermal springs of the Serchio River valley, see Calvi et al. 1999.

[238]Terme Tettuccio, one of the most ancient and renowned spas in Montecatini Terme (Province of Pistoia). Here, Vallisneri refers to a passage from Lavelli's letter (Pacchi 1785, LXXIX): "[…] eo modo, et ordine

[The waters] get rid of persistent or often recurrent headaches; of epilepsy, dizziness, deafness; of lymphatic affections in general; of palpitations of the heart, and especially the spasmodic ones; of ulcers in the lungs; and of asthma. They are comfortable to the worn-out stomach, or to the one suffering from dyspepsia. [Moreover], they remove jaundice, and cure colic pains, hysterical passions, intestinal **33]** affections, and even someone affected by edema. In fact, one wave pushes another wave, and leads the extravasated fluids back into the proper vessels. [Also, these waters] restrain intestinal fluxes; and, by flushing the urinary passages, take away gallstones and sandy matter. By promoting menstrual discharges, and by opening the obstructed passages, they regain fertility and alleviate the torments of gout. At last, they surely remove worms, their slimy nests, and their offspring from the small, hidden recesses of the intestines.

What gives these waters such great powers is a matter of uncertain conjecture. In fact, I have not yet established a precise analysis of them: I have in mind to do that, should God grant me some leisure, and should I (after so many labors) visit again Reggio,[239] where my home will be in the future. Yet, if I had to guess, it would not be so far from the truth [to say] that all the qualities derive from the alkaline, calcareous salt, and from the bitumen with which that mountain abounds. In fact, long ago the inhabitants extracted an excellent kind of bitumen from the mines above, whose smell resembled the "jet" described by Galen.[240] However, since jet is full of qualities, so the mentioned water of the Pieve in Garfagnana, which is already enriched with them, and even with the saline ones (as if they were auxiliary troops), shall with good reason be particularly effective at destroying all the [above] described ailments.

Other extraordinary thermal waters, which were famous for being similar to milk in taste and warmth, and were useful for gently subduing the sharp muriatic salt of the bile, were once discovered on the opposite side of the mountain; **34]** but they had almost fallen into disuse in their very cradle.[241]

Finally, and unexpectedly, we descended to Camporgiano: that is, the former ancient capital of the whole province, where we were most kindly received by my maternal uncles,

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sumitur, quo aqua Tettucciorum sumi consuevit."

[239] Reggio (Regium Lepidi), the ancient name of the city of Reggio Emilia.

[240] From Galen's *De simplicium medicamentorum temperamentis ac facultatibus* (Galenus/Γαληνός 2018, IX, *De lapidibus*, https://books.google.it/books?id=pswQcfcp4VkC&printsec=frontcover#v=onepage&q&f=false): "Est et alius lapis colore atro, qui ubi igni admotus fuerit, persimilem bitumini odorem exhibet, quem Dioscorides nonnullique alii in Lycia inveniri prodiderunt, ad fluvium nomine Gagatem, unde et ipsi lapidi nomenclaturam inditam dicunt […]." Here, too, Vallisneri refers to a passage from Lavelli's letter (Pacchi 1785, LXXVII): "Galenus enim, et Mesues, praecipui praeceptores nostri, asserunt oleum, quod de bitumine petrae gagatis extrahitur, talia beneficia afferre consuevisse; vim enim emolliendi, aperiendi, et discutiendi ei tribuit Galenus."

"Lapis Gagates"—"jet" in English, "gaietto" in Italian—is a type of lignite once used in jewelry (because of its relative hardness and translucence) and in medicine. On the chemical composition of the thermal waters in Pieve Fosciana, see Calvi et al. 1999, 50–52.

[241] Though the location of this second, unexploited thermal spring is not clear, Vallisneri is evidently referring to a passage from the last part of Lavelli's letter (Pacchi 1785, LXXIX: "Mille passus procul a dictis thermis, sed in opposita parte alterius montis, quaedam aquae thermales nuper inventae sunt, quae ad hepar refrigerandum summopere conducunt, et inter alias (quia tres sunt numero) una ipsarum reperitur lactis saporem referens, quod monstruosum dici potest; cum in terrae cavernis id gignatur, quod in pectore solummodo animalium naturae decreto gigni consuevit. Et haec insignem hepati affert refrigerationem; sed ob fluminis viciniam, et supereminentis montis oppressionem difficillime defendi possunt, quin aquae misceantur; et nondum intelligere potui, quid sit de ipsarum commodo usu sperandum." Pacchi (1785, 197) agrees with Vallisneri. But according to others (Calvi et al. 1999, 46–48; De Stefani 1904, 119–120; Paolucci 1720, 78; Vandelli 1760, 101–103), Lavelli's note refers to the Torrite thermal waters: these are located on the opposite side of the Serchio, and are described by Vallisneri later in the manuscript.

the Most Noble Sir Carlo Davini[242] and the Most Excellent Sir Giambattista Terni,[243] and by my fellow citizen and relative, the Most Illustrious Sir Giulio Rossi,[244] who is Capitano di Ragione; and we relieved the hard discomfort of the rugged journey, and [restored] our shattered energies. Everyone competed with favors; and, by offering merry banquets, bottles, and celebration toasts, they urged me to set aside the philosophical seriousness and the austerity of the wandering doctor. At that moment the thermal springs, the mines, and the entirety of nature lay drowned in wine, and we had fun as if we had seen a totally new [amusement].

Having taken our leave of such a lovely hospitality, we visited the Torrite baths,[245] which are just one milestone west of Castelnuovo. I marvelled at the farsighted diligence of the Ancients, and at the negligence of the moderns. Those most elegant structures, that once were splendidly equipped for the convenience of the bathers, now appear torn into pieces by a fatal destruction. One bath has been filled with mud, ruined walls, stones, and filthy dirt, and the secret substances [which promote] warmth [now] flow into the river below through neglected paths. The other bathtub **35]** has been cleaned a bit more carefully, and can still attend to the comfort of the sick. It has a quadrilateral shape, with seats built all around and in the middle, and an arched roof made of bricks. The water, springing hot from a *hydrophylacium*[246] at the base of the mountain, is forced through a hidden aqueduct; thence into a small channel, which is very similar to a gutter; and, [finally], it flows among the seats. However, it can be closed at will with a beak, or cover, and diverted to other uses through tortuous passages [which run] underground around the edge of the bath. Nor does warm water alone trickle out [from there]. A very cold one is poured nearby: by emerging through a tube passage from the bowels of the same mountain, it laps the contiguous side of the hot aqueduct, which, in turn, is dispersed through different passages, as needed. Thus, they regulate at pleasure the boiling heat of the former, and the freezing chill of the latter. An uncommon miracle of craft and nature, indeed. In fact, in the same bathing place, one can warm up the cold limbs, cool down the burnt ones, or cure the body, step by step, with an agreeable temperature between the two extremes. There is no need [to do] as in the Euganean [Hills]: where the descending water is mitigated by the long route, so that, having deposited the threatening heat, it softens down to a pleasant temperature.[247] This one is calm, and is weakened much more gently, and turns lukewarm in the very entrance of the [bath]; nor is the healing power diminished by the long journey. Whence, along with Cassiodorus, I shall say about this spring: "The delicious pleasure that is obtained is not as [good] as the pleasant medicine

[242]Carlo Davini (16?–17?), uncle of Vallisneri. See Vallisneri 1991, 124.

[243]Giambattista Terni (16?–17?). Arguably, an uncle of Vallisneri.

[244]Giulio Rossi (16?–17?), from Scandiano, Capitano di Ragione (i.e., governor and chief magistrate) of Camporgiano. See Cionini 1880, 89, note 1.

[245]Torrite thermal waters, an ancient spa in the municipality of Castelnuovo di Garfagnana. The spring was located on the Apuan (western) side of the Serchio River, along the Turrite Secca Torrent. It disappeared in 1948, as a consequence of the construction of a nearby hydroelectric power plant (Calvi et al. 1999, 46–50). The Torrite thermal waters are also described in Vallisneri 1711, 356–357; 1728, 108–111. On this topic, see also De Stefani 1904; Pacchi 1785, 197–200; Paolucci 1720, 78; Vandelli 1760, 95–104.

[246]For a comment on the use of this term in the manuscript, see note 121.

[247]Despite what could be argued, the hydrothermal activity of the Euganean Hills is not a consequence of their volcanic origin. Rather, the thermal and chemical features of these springs result from the penetration of water 3 kilometers (1.85 miles) deep into the Earth's crust through fractures in rocks. At this depth, the water meets a crystalline basement and is forced upwards by hydraulic pressure, eventually flowing at high temperature (up to 75°C) and enriched with mineral salts, including such elements as Cl, Na, K, Mg, Br, I, Si. On this topic, see Astolfi and Colombara 1990; Bosellini 2005, 98; Luzzini 2013a, 84; http://www.parcocollieuganei.it.

that is conferred: which is truly a cure without pain, a remedy without horror, and a costless health."[248] There is a room annexed to the [baths], which was formerly equipped with all necessary for the convenience of both the assistants and the bathers, but which is half in ruins. The warmth **36]** of this water is scorching; and the taste, the smell, and the virtues are the same as those of the thermal [water] of the Euganean Hills, except for the [fact] that the latter turns into stone, because of a tartareous and—I suspect—internal cement.[249] They certainly abound with salt, sulphur, volatile matter, and spirit, as is evident from the taste, the smell, the experiments, the properties, the touch, and the analysis. Hence, I think that—especially with respect to chronic and hopeless diseases—these [waters] should be appealed to as a panacea, whether an expert physician prescribes them for internal or external [use]. In fact, nobody is so unconnected to medicine to ignore that the enduring and obstinate ailments derive, from the most part, from the sealed channels of this [human] machine, and from the occluded sieves; and that, in order to open them, there is nothing more powerful than thermal waters abounding with salt, sulphur, and spirit. For they wash and clean the entrails, and, by infiltrating the small tubes and the glandulous bodies of the organs, dissolve and force the coagulated fluids; hence, by promoting the original movement of the blood, of the lymph, and of the ferments, they restore the organs (which are weakening with an idle feebleness) to their former functions. Thus, after the proper tone has been regained by every [body part], after all the small organs have been opened and cleaned, and after the untamed juices (especially the ones from the crude chyle) have been subdued, a praiseworthy circulation is then performed by the whole mass of fluids, and their purification, and their improvement, are properly carried out; from which follows the whole blessed, healthy condition. It is therefore clear, that the Torrite thermal waters can ward off almost all the progeny of those diseases arising from the said causes. **37]** Consequently, there is no doubt that they can put an end to the hypochondriac diseases that, in most cases with a protean face[250] (so to speak), evade the common remedies, and to those ones which respond [to the name of] "scourge of doctors": the affections of the kidneys, of the ureter, of the bladder, and the uterine filth. Nobody is unaware that [these waters] are comfortable to the chest, thanks to the sulphur; to the stomach, and to the intestines, thanks to the detersive salt; and to the head, thanks to the spirit. Yet, should any fearful [patient] recoil in terror from their excessive activity, it shall be possible to moderate the cold [waters] with an easy operation, making them entirely similar to the gently tepid, and less active, thermal springs of the Holy Virgin of Monteortone.[251]

Nor do they have a sure effect only internally, but also externally. In fact, the skin diseases originate from the dregs of the blood that have not been expelled through the

[248] This is a passage from Cassiodorus' *Variae* (Cassiodorus Senator 2018, II, 39, http://www.thelatinlibrary.com/cassiodorus/varia2.shtml). The same quote is in Vallisneri 2006, 291 and note 713.

[249] As is pointed out in the Italian synthesis of the *Primi itineris Specimen* (Vallisneri 1726, 382), Vallisneri is specifically referring to the Terme d'Abano: the most renowned spa in the Euganean Hills (now in the municipality of Abano Terme, Province of Padua). On this topic, see Luzzini 2013a, 84–87, 186; Vallisneri 1706.

[250] From Proteus (Πρωτεύς), a Greek mythological god of waters, who—just like water—constantly changed shape. Hence the Latin adjective "protheiformis" ("protean" in English, "proteiforme" in Italian), which means "versatile," "mutable."

[251] Fonte della Vergine di Monteortone ("Spring of the Holy Virgin of Monteortone"), in Abano Terme. According to a legend, in 1428 the soldier Pietro Falco bathed in it, and was miraculously healed from plague. Later in the XV century, a shrine was built on this site (Santuario della Madonna della Salute, "Shrine of the Madonna of Health"), becoming a popular destination of pilgrimage. See Luzzini 2013a, 86–87; Vallisneri 2006, 246 and note 636; http://www.abanoterme.net/abano-citta.html; http://www.monteortone.it/3sto/app.htm.

skin glands, and have been entangled either in the reticular plexus,[252] or in the interposed [skin] areolas;[253] from external injuries caused by worms, that produce pustules and small ulcers with invisible erosion; from the sharpness, and roughness, of salts; from polypous and indolent disposition of a vapid blood; from torpor of lymph, or of an acid fluid; or from any other highly related cause of anomaly that might contaminate the regular composition of the entire skin: and the sulphurous and the saline particles, agitated by the spirit and by the activity of the heat, shall be able to eject the contracted afflictions. For, by opening again the [skin] pores, by softening the curled or rough hair, by promoting the motion of the viscous **38]** humours, by effectively destroying a multitude of insects of any kind, and, eventually, by more quickly strengthening the fibers that have been weakened by the viscous fluid, [the waters] shall restore the sick to the original health more safely, and more gently, than any external mixture of remedies. For the same reason, whether administered by drops, aspersion, or immersion, they bring relief to the nervous temperaments.

Other thermal springs of this kind—or "boiled, and ignited springs," I shall say with Cassiodorus[254]—arise on the opposite ridge of the mountain, across the torrent; [but] they are ignored, and fall down the slope, passing through rough ducts and fissured ways. And though no honor from any author has yet been given to these healing waters, nonetheless these, too, deserve the name "Aponus";[255] since even in these, like in so many others, there might be

> A public shelter from diseases, an universal help for healers,
> a propitious god, a costless health.[256*t*]

Having examined these [waters], which are not without a medical effect, we continued the journey through such steep rocks, and with such a horrible and frequent thought of death that, now and then, I regretted to have granted too much to [my] curiosity. Still, the sharp desire for knowledge prevailed: and, from time to time, the daring soul encouraged with new ventures the trembling foot towards better [deeds]. Thereupon, among such precipitous rocky ridges, and among such high lands, and rough crags, in which there are no pleasures for the eyes, and especially **39]** for the palate, I admired

> … tender chestnuts, and abundance of dense milk;[257]

I admired, as I said, strong and brawny men living long and happily, and charming women surpassing, at times, even the urban Venuses in beauty, and in gentle appearance. And yet,

[252] Here, Vallisneri is supposedly referring to the vascular network of the skin.

[253] Areola: a circular, pigmented area in the skin. Usually, this term refers to the colored area which surrounds the nipple.

[254] This is an adapted quote from Cassiodorus Senator 2018, II, 39, http://www.thelatinlibrary.com/cassiodorus/varia2.shtml: "Haec perennitas aquarum intellegendi praestat indicium per igneas terrae venas occultis meatibus influentem imitus in auras erumpere excocti fontis inriguam puritatem"; "Spatium, quod inter aedem publicam et caput igniti fontis interiacet, silvestri asperitate depurga."

The location of this other, unexploited thermal spring is not clear, though Vallisneri (see also Vallisneri 1726, 383) places it on the eastern side of the Turrite Secca Torrent. In any case, according to Domenico Pacchi (Pacchi 1785, 200), by the second half of the XVIII century this spring no longer existed.

[255] Variation of Aponus, a deity of the ancient Adriatic Veneti, later identified with the Greek god Apollo (Ἀπόλλων) and, as such, dispenser of health. Hence the modern name "Fonte d'Abano" ("fons Aponi"). On this topic, see Lazzaro 1981.

[256] Claudianus 2018a, 69–70, http://www.curculio.org/Claudian/aponus.html. The same quote is in Vallisneri 2006, 291 and note 714.

[257] Vergilius 2018c, I, 82, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi001.perseus-lat1:1.

[*t*] **Margin note (left):** Claudian

they drink only clearest water, and fill the growling stomach with the most rustic food. I shall use the words of Saint Jerome:[u] "They do not embellish the face by artificial means, with purple, nor do they arrange towering crowns with strange ornaments."[258] Neither Minerva, nor Ceres, nor Bacchus dispenses his gifts in that place; still, you might say that the ancient relics of the Golden Age lurk there. Given the scarcity of wheat, they make the starch—for stiffening linen clothes and mantles to a certain consistence—from the arum root,[259] with provident advice of [that] astute people, and of nature, which never fails anywhere. In fact, after having removed the external peel, they soak the roots in spring water, until these become soft; then they squeeze out the juice which, after that, precipitates easily on the bottom of the vase. Once the first water—I shall say with the chemists—is decanted, they pour other [water] at will, which dissolves the corrosive salts; and, these having been carefully discharged, they dry the shining white substance under the sun; and its consistence, color, and use cannot be distinguished from those of our starch. They asserted that occasionally, in times of famine, they used [these roots] as healthy food, **40]** all the caustic power, and the corrosive strength (which they find out from the painful sensation in the hands, and by tasting the first pressings), having been absorbed by the aqueous particles.

[Hiking] along barely passable trails, we finally reached the extreme boundaries of the [Apuan] Alps, called Panie, not far from which the raging Tyrrhenian Sea can be seen. There is a large wealth of mines here, among the barren rocks, with dark stones at the entrance: here, a curious seeker of nature can weary body and mind alike, and satisfy his passionate hunger for knowledge, while increasing the one of the body. Nor are the inhabitants absent among [those] dreadful caverns. There is a poor village, called (with a not inappropriate name) Fornovolasco, where a hard and most warlike people live. Ariosto described the ancient and famous road [leading to this] place, and the harshness of the land, with these elegant [words]:

> The promontory where Suspicion dwells is six
> hundred yards above the sea, encircled by sheer
> cliffs, threatening a fall on every side. The
> narrowest path that goes to Forno, there where
> the Garfagnan seeks for iron, I would call the Via
> Flaminia or the Appian Way, beside the one
> which went to this ridge's summit from the sea.[260]

The inhabitants assert that, at first, huts and small houses had been erected by miners from Brescia, a **41]** non-trivial proof of this being that many [dialect] terms from Brescia can still be heard, which the unaware people combine with the Tuscan gracefulness.[261]

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[258] This is an adapted quote from Saint Jerome's *Epistolae* (Hieronymus 2018, CXXX, 7, http://ctsstage.dh.uni-leipzig.de/text/urn:cts:latinLit:stoa0162.stoa004.opp-lat3/passage/130.7.11-130.7.14): "Polire faciem purpurisso, et cerussa ora depingere; ornare crinem, et alienis capillis turritum verticem struere."

[259] Italian arum, in Italian "gigaro chiaro" (*Arum italicum* Miller), Family Araceae. It is a herbaceous, perennial plant native to the Mediterranean region, growing 30 to 46 cm in height (12–18 in). Its tuberous rhizome is particularly rich in starch, which in Trassilico was once used as a substitute for the common wheat starch. On this topic, see Gastaldo 1987, 469–470; http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=y760.

[260] Ariosto 1548, 9r. English translation: Ariosto 1996.

[261] In the second half of the XV century, the Duke Ercole I d'Este (1431–1505) promoted the exploitation of

[u] **Margin note (left):** Saint Jerome, *Epistolae*

On the left bank of the Petrosciana Torrent,[262] that flows from west to east, some small houses lie at the rocky base of the mountain layers, from which rough boulder cliffs rise, dreadful in [their] color, ruggedness, barrennes, and with [their] enormous stones.[263] Now they are bent in an arc shape with curved strata, now rise upwards with high hills; and, as various sports of nature, they rise again: straight, obliquely, in circle, like new mountains above [other] mountains. Not far from there are the iron and vitriol mines, which we inspected, to our utmost pleasure, under the guidance of a certain sagacious man. [In fact], the unexpected politeness of a youngster overwhelmed [our] minds and eyes with sweet delight: having entered the small inn where I was staying, he covered me with devoted and trustworthy embraces, showing clear signs of joy with his voice and face. I was amazed at such kindness in such a rude place; and when I asked where so much courtesy, and such an excellent character, could live among crags and caves, he openly revealed that he, too, was a foreigner, and that his name was Domenico de' Corradi d'Austria,[264] superintendent of mines (I don't know by what fortune). Since, by an unexpected gift of fate, I was not unknown to him, he invited me to share dinner with him; nor did he want me to spend the night in [that] desolate tavern, which was often **42]** unsafe for strangers. As soon as I heard [that] name (which was equally familiar to me), and since it seemed to me that I was imprisoned in [that] cruel inn in the [company] of a deadly gang, or as if I was in a jail, I did not refuse the loyal hospitality and the friendly services of [my] host; and, with the promise of a safe shelter, and with the most pleasant conversation, I restored my energies, drained by the difficult journey. What a perfect knowledge of the natural things in a youthful mind, indeed! What an abundance of secrets! What an incomparable erudition! For, during the sweetest rest of the night, there was no rest at all: we conversed on the admirable structure of mines, on the inaccessible origin of springs and of thermal waters, and on the great inheritance of medicines and [natural] wealth, unknown to the medical community, that the Divine Protoplastes[265] had stored in those chasms. Nature, we said, does not always embellish [its] cures in beautiful vegetation under the open sky, mixing delights and remedies in its form, and restoring the sick to health. Rather, sometimes it hides health (though helpful) under an unpleasant look, in darkest caverns, [making it] rough in touch, smoky in appearance, and bad in taste. I shall be happy to provide you with a detailed description of all these [matters] in another place, saving them for a more free time, and a less busy pen. In the meantime, my sweetest friend, I am glad that you don't laugh at the great consolations of a not little work. You will learn that a not small part of nature hides even in these observations, for how small they are. And indeed, before our

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the iron deposits in Fornovolasco. To this purpose, he availed himself of expert miners from the Lombard city of Brescia. See Luzzini 2013a, 100n.

[262] Turrite di Gallicano, also known as the Petrosciana Torrent: a western tributary of the Serchio. The two streams merge in Gallicano.

[263] The area of the iron mines in Fornovolasco has an extremely complex geological history. In particular, the mines are hosted in a Paleozoic outcrop whose quartz-muscovite phyllites (SiO_2; $KAl_2(Si_3Al)O_{10}(OH, F)_2$) date back to the late Cambrian and Ordovician periods (540–440 Ma), while the origin of the rich pyrite veins in this zone is related to evaporitic processes typical of coastal lagoons. Cartographic source: *Carta geologica del Parco delle Alpi Apuane, Tavola 1* n.d. On this topic, see Biagioni 2009; Bonini and Biagioni 2007; Luzzini 2013a, 100, note 108; http://www.vallisneri.it/osservazioni-ferro.shtml.

[264] Domenico de' Corradi d'Austria (1677–1756), chief superintendent of artillery on behalf of the Duke and a very expert miner. His practical knowledge played a key role in the success of Vallisneri's investigations in Garfagnana, as Corradi provided him with advice, direct assistance, helpers and equipment for his explorations. See Luzzini 2008, 351, 355; 2010, 97, 102, 104, 107; 2011a, 107–108; 2013a, 100–101, 124–129; 2014a, 214. On the fruitful editorial collaboration between Vallisneri and Corradi, see Luzzini 2012, 51; 2013a, 101; 2017, 134, 136.

[265] God.

43] most blessed age, there was no greater desire to know the authentic history of [nature], unstained by the exaggeration of idle speech; still, no attention was lesser than the many ones [of those] closed in the cages of the cities. Let it be enough, then, to have hastily tasted these ones, which are few, but sincerely written, as if on writing tablets, or on a manuscript; for I can already hear the sound of the school bell, which tomorrow will call me back to my work, the public lectures of the Lyceum of Padua.[266] Nevertheless, I don't think that what I have observed about the springs, and in those caverns (which, as I hinted above, abound with perpetual waters), is to be disregarded; since their origin, especially now that [this issue] still keeps your pen busy, tickles my curiosity in turn.

Even in those mines there are perpetual waters. In truth, I don't know whether they arrive from the center [of the Earth], or just from above, or if both of them merge together. I certainly observed the vertical, or celestial ones (from which, I suspect, the seeds of the mines suck their particular nourishment, as if it was milk) flowing slowly through large and gaping fissures from above, and through the broken ceilings of the [rock] strata, where the main trunk of the iron vein flourishes. With regard to another, more abundant nourishment flowing from subterranean seas, as you declare in your most famous book,[267] and as the Most Illustrious Count Luigi Marsili (who is highly regarded for the nobility, the excellence, and the splendor of his manners) recently told me in letters,[268] I am still doubtful. In fact, I am somehow wondering if [the mines] can absorb nourishment from the rains above, that are impregnated with niter,[269] different salts, and earthly moisture, tempered by the sun's rays, **44]** and imbued with that [vital] light which gives life to the entire world. We have an analogy with the seeds of plants. If sprinkled only with underground waters—which are imbued with a certain crude and rough quality—and if deprived of the celestial [waters], they will rot. As even you remarked, the sagacious Boyle[v] observed "an ore mine that had been excavated, despoiled of [its] minerals, and exposed to air, as if unprofitable, which many years later had perfectly regenerated new minerals of the same kind, weight, and consistence, as if they had been produced in an entirely mineral, earthly womb."[270] Why, then, should we seek in the sea what we can clearly recognize in the air? Why do we look for what is hidden in the innermost part of the abyss, when we can surely have it in a sunny cellar? The dried and exhausted seeds could flourish again in the air, but could not do so in the sea. [For] the [sea] mixes with

[266] The University of Padua.

[267] Fabra (dalla) 1700. In this treatise, Luigi dalla Fabra, who already studied the therapeutic properties of the renowned white, aluminium- and silica-rich clay of Nocera Umbra (now in the Province of Perugia), focused on a strange "tartareous substance" found in a fountain of that city. Once put in boiling water, he noticed the formation of "silvery, shining bubbles," and the following precipitation of an "extremely white and solid matter" (arguably, silica and/or aluminium salts) on the bottom of the bronze vases where the experiments were performed ("aheneorum lateribus, et fundo sensim adhaerens concressit, ut in materiam albam, densam, nonnihil ponderosam, nec de facili friabilem, asperioremque, et crystallinam, gustui aliquantulum subacidiusculam, dentes nonnihil exasperantem, et in aqua indissolubilem, indurescat"). On this topic, see Vallisneri 1717a.

[268] Unfortunately, the letters Vallisneri refers to are missing.

[269] Arguably, potassium nitrate (KNO_3).

[270] This adapted, recapitulatory quote refers to Boyle 1676, Latin edition of Boyle 1674. Boyle's corpuscularianism strongly influenced Vallisneri's early thought about mineral genesis and growth. On Boyle's theory, see Anstey 2002; Clericuzio 1990; Hirai and Yoshimoto 2005; Luzzini 2011a, 109–110; 2013a, 134–135; Pighetti 1988; Yoshimoto 1992. For a study on Boyle's alchemical interests, see Principe 1998. On the early modern debate about the existence of biological features in minerals and rocks, see Hirai 2005; Norris 2009; Oldroyd 1974.

[v] **Margin note (left):** *De Generatione Metallorum*

salts of a certain kind, and not with all [kinds of salts]; while the [air] mixes with all [salts], and not just with that certain kind. A simple experiment is made clear in light of the operation[271] and the effect of both [air and sea]. And consider, O most famous man, that if the waters bathing and nurturing the mines are filled with such an abundance of sea salt, why then, once tasted, don't they have the bitter, salty flavor of the sea? Why cannot its cubic fragments be found everywhere in the mine, not even mixed with other [minerals]? Why, for the most part, do they emit a smell of a tasteless, or vitriolic, quality? Please, clean my mind from [all] the thick rust, and examine again the recesses of those paths, which are covered with a dark filth. But let us go back to the **45]** fountains.

Many [springs] emerge from the stern boundaries of these mountains; and, as I said, they are more abundant than the largest ones in the Alp of Saint Peregrine. Among the others, the one flowing in the Screaming Cave (commonly known as Grotta che urla),[272] and which, in turn, hides in that same place, is the most famous. This cavern opens southward, a little above Fornovolasco: it is rough and dark, with much tartar, and is terrifying because of the confused noise of the roaring waves. Its entrance is dirty, with much yellowish earth and sand that are emitted by the internal brook, especially when it is swollen and turbid. In fact, when the south wind blows, or when the air is warmer than usual, it swells, and overflows with the melting snows of the high peak [above]; and since it cannot be totally absorbed by the hidden channels that are excavated in the flank of the cavern, having been driven back, and returning into itself, it flows at first into the nearby openings, and soon later—having been [further] compelled—in all directions. Thus, by breaking violently out of the entrance of the cave, as it subsides, and calls the calm waves back, finally it deposits the dirt and waste from the mountain in that place. Hence, in order to enter, a stranger [must] bend over; and, very often, [his] back itself gets soiled, because of the low ceiling. After about twenty feet, [the passage] expands into a wide and high cavern, and various oddities, made of a lapidescent juice, come into sight, [produced by] the playful nature: which, by fashioning many figures, though by no art, equals art with its talent, and surpasses it in substance.[273] Nowhere was an arched grotto more suited to a royal garden, the tasteful nature imitating in the darkness small pyramids [hanging] upside down here and there from the ceiling, and a turtle marked with a cross, made of an uncut, **46]** porous rock,[w] and of curved, hard tuffs. Then we heard the waters, that were falling diagonally and secretly with a sad murmur, and, finally, were swallowed down with spinning vortexes by a deep chasm, and diverted through a hidden path into the nearby Petrosciana Torrent. Nor was this the end of the journey. Having crossed a curious torrent, carried[x] on the backs of porters, and past many rough, stony tracks, we arrived at a large and vaulted room, in which—like many floral ornaments—countless tartareous concre-

[271] See note 19.

[272] Tana che urla ("Screaming Cave") of Fornovolasco, one of the most interesting and renowned karst caves in Garfagnana. An experimental replication of Vallisneri's exploration was performed in 2006. On this topic, see Luzzini 2008; 2010, 104–114; 2013a, 100–101, 124–129; 2014a, 214; http://www.vallisneri.it/osservazioni-tana.shtml.

[273] The deposition of calcite ($CaCO_3$), the dominant mineral in karst environments, is controlled by the reversible chemical reaction $2\,HCO_3^- + Ca^{2+} \rightleftharpoons CaCO_3 + CO_2 + H_2O$. Consequently, the dissolution or precipitation of calcium carbonate is strictly influenced by changes in the chemical equilibrium of this reaction, which depends on the amount of carbon dioxide (CO_2) in the water (the lesser the amount of CO_2, the more $CaCO_3$ is deposited). In turn, the solubility of CO_2 in fresh water increases with increasing pressure and decreasing temperature. On the karst caves in Fornovolasco, see Bonini and Piantini 2001; Speleoclub 1999.

[w] **Margin note (left):** The <…> sentence is too complicated

[x] **Margin note (left):** Or "transported"

tions, and innumerable, hardened cements could be seen, which, interwoven in wonderful ways, emulated columns, bases, animals, and branches.[274] Here was the origin of the small stream flowing from above (as if from an architrave), that, by means of lapidescent waves, in part glued new stones to the old ones in an enduring fellowship, and in part slid with a foaming course down through the described channel. Besides, in a not dissimilar way, the cruel winter freezes the waters falling down from the edges of cliffs with the northern winds, while others still run with the original fluidity.

"Whence"—you [may] ask—"does the flow of the perennial waters become now clear and calm, now dirty and swollen?." The inhabitants believe that they are drawn out from the nearby sea: for they rage when the south wind blows, and the sea rages; and, when it calms down, they, too, are still. But, having explored the summits of the mountain, and having reflected on the rising and lowering waters, we had a different opinion. The waters and the dissolved snows percolate through slightly adhering layers (which are bent downwards **47]** on the side), being at first absorbed by the various chasms that pass through rocks and bibulous gravel. Thence, by [moving] through the furrows, as if [through] channels, they creep along [this] hidden bed to a cavernous spring that flows continuously: for in certain abysses, that are inaccessible to the sun's rays, the glaciers and snows linger almost perpetually, untouched, separating cliff from cliff, mountain from mountain; and they surrender not with the first heat, but when, in late spring, the sun is more furious, and softens the snows. These melt slowly and gently; and, as if filtered, descend without mud, crystalline, and for a long time. In fact, when the warm winds breathe, so [the snows], having been reduced at once to liquid, like wax in a fire, run (rather than flow) through underground waterfalls, and carry mud and sand with them. Hence, the above said fountain is now clear, and poor in water; and now muddy, and abundant. Similarly, having been collected in cisterns, and perhaps in hidden pits, they are gradually sifted through the wide pores of the earth and, after a brief delay, fall into the basin of the fountain, as if on a plate; or, if [the waters] swell enormously, they will fall into a more empty basin, having overflown the mounds. I could not persuade myself that [the waters] originated and increased from the nearby sea; for—I shall say with Agricola—if veins and venules, if channels and gutters[275] are so wide to let the sand and gravel in, why don't they receive salts, small shells, **48]** little fishes, and [other] marine trifles? But you, O most wise friend, may object that vapors are raised high above [the sea]; and, having been condensed by the coldness of the rocks, turn into dewy drops. [Thus], if sometimes the waters are disturbed [by an external cause, this] is from the small brooks of the mountain which descend from above and merge together, and not from the sea. This is the general opinion among Italians. Yet, I can't imagine these immense alembics; nor does the structure of the mountains permit [them], made as it is of superimposed layers, as if arranged in pieces. Nonetheless, even granting that a cavern or two ripped—so to speak—the guts of the strata, and formed some hollow cavities, the vapors condensed into water drops would still flow down back to the bottom, either perpendicularly, or almost perpendicularly (as we continually see in the

[274] On the wide array of speleological formations that can be observed in the Tana che urla, see Luzzini 2008; 2010, 104–114; 2013a, 124–129, Tabs. XIX–XXI; http://www.vallisneri.it/osservazioni-tana.shtml.

[275] Agricola (Bauer) 1546. The terms "venae," "venulae," "canales," and "canaliculi" can be ubiquitously found in Agricola's treatise. However, it is worth mentioning here a significant passage from the third book of the *De natura eorum quae effluunt ex terra* (Agricola (Bauer) 1546, 127), that clearly shows Agricola's opinion about the origin of fresh water: "[…] canales aquarum, quae fluunt aut propria earum vis effecit. Etenim fontanarum vis excavavit venas, suas charadras torrentium, rivorum et fluminum suos alveos: perpaucis exceptis, quos homines foderunt. Aut hominum manus eos canales effecit: sicuti fistulas, tubos, fossas aquae ductuum. Igitur aquae quae fluunt, omnes sunt aut fontanae, aut pluviae, aut nivales."

exposed caves and in the damp vaults), and would not meet and flow out through the side hole of an alembic, once collected from the inside of its curved edges. For who did ever enter the bowels of the Earth, and saw such perfect chemical laboratories? We often alter the truth, so that it corresponds to our system, and not to nature. Caverns are excavated by chance, and not by design of the inscrutable Mother [Nature]; and if they maintained secret communications with the sea, as is still easily affirmed, the marine vapors rising all the way up to the farthest roots of the mountains through obscure distances—that is, through the shattered entrails and sequences of the rocks—would more probably run back into the sea below, rather than flowing laterally through imaginary pipes or supposed gutters, as if skillfully adhering all around. Add then, that the sea water which has been distilled through alembics (as nobody ignores) always carries volatile particles of salts along with it; from whose constant drinking, blood is produced with urine,[276] as is well known from many experiments: a fault that the above said mountain springs most certainly don't have. For they are freshest, and most healthy for the inhabitants, who drink them since long time. I will explain more in detail **XXIII.r] XXIII.v]** what I think about these matters, but elsewhere, in a particular letter.[277] "For my part," I shall say with Plato in *Protagoras,* "I believe that we should concede each other something, and to dispute together about what is said, but without quarreling. For friends dispute with friends in terms of kindness; whereas enemies have quarrels with enemies."[278] Therefore, for the time being, accept without blame of rashness what I will declare about the fountains, brooks, and rivers of our Alps: that, for the most part, carry their load downstream to the Po [River], all of them owing everything to the rains, and to the melted snows. As to my opinion on the Danube, Rhine, and Rhône Rivers, I am unacquainted [with them]. I am truly astounded at such great names, and can [only] think great things about [their] origin, having not been familiar with their springs. Should we observe with our own eyes [those] enormous mountains, [those] immense regions, and [those] greatest wildernesses, with [their] almost eternal masses of snow, frozen by a perpetual winter, perhaps **49]** the astonishment will give way to laughter, and we will not mix the mountains with the sea, nor the seas with the mountains.

"There is no spring anywhere, and no beauty of summer; unsightly winter alone inhabits the gruesome heights, and dwells forever there."[279]*y*

In fact, those [mountains] surpass our [Apuan] Alps as much as

> The British whale exceeds a dolphin.[280]

[My] mind, accustomed to our summer heat, and overwhelmed by many torrid months, cannot get rid of preconceptions, or resist hesitation about an experiment that it can barely

[276]Drinking sea water (or not adequately desalinated water) causes many dangerous and potentially lethal effects, including dehydration, the ingestion of harmful bacteria, and kidney damage. This may lead to urinating blood (hematuria), as Vallisneri probably observed in one or more of his patients.

[277]Eventually, Vallisneri realized his purpose ten years later, in 1715, with the publication of the *Lezione Accademica intorno all'Origine delle Fontane.* Not by chance, in this treatise many disputations and reports (as, for example, the field research in the Apennines and the exploration of the iron mines and of the Tana che urla in Garfagnana) recall and develop the content of the *Primi itineris Specimen.* On this topic, see Luzzini 2008; 2010, 104–114; 2011a; 2013a, 90–160, Tabs. VII–XXVIII; 2014a.

[278]Plato/Πλάτων 2018c, 337, http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg022.perseus-grc1:337b.

[279]Silius Italicus 2018, III, 487–489, http://data.perseus.org/citations/urn:cts:latinLit:phi1345.phi001.perseus-lat1:3.

[280]Iuvenalis 2018, X, 14, http://data.perseus.org/citations/urn:cts:latinLit:phi1276.phi001.perseus-lat1:4.10.

*y***Margin note (left):** Silius Italicus

conceive. A subject can be prone to illusion, when the unknown is so great. In most cases, what drew the attention of excited minds from lands far away with some scattered, confused appearances, loses its interest after being seen or considered. I said a few words about small problems, but as an eyewitness: you, more fortunate, will say important things about important issues. "You will do me much more good," I shall say with the rather contentious Euthydemus, in Plato's [dialogue], "if you heal my spirit of ignorance, rather than my body of disease… for I have one significant good quality, which saves me: I am [always] ready to learn, nor am I ashamed of that."[281] In fact, I am not writing these trifles to earn immortality with an ugly manuscript; but to learn the truth, once it has been unveiled by you; and to discuss freely about honest topics. If I had listened to the advice of my conscience, I would have had to remain silent; but the desire for knowledge, and not human vanity, prevented [me from doing so]. Courage then, my amiable friend. May the first fruits of my **50]** journeys, and the plaything of this new work (that have a taste more for nature than skill), feel the sweating efforts of your pen. They expect a large share of [your] light from you, whose talent has been diligently employed on these subjects. May this not be an arrogant dispute between intellectuals, nor a bitter logomachy which sets us one against the other, or which breaks the sweet pact of [our] friendship for the fire of battle. Let us abhor these thoughts, and let us not stain [our] papers with the miserable absinthe. May the eviscerated Earth, you being the author, disclose what it had concealed for a long time; and may you direct your attention to me alone, with friendly severity, so that you may dig deeper. Let others add their imagined fables to the ancient stories, and utter useless babblings, occupied with the laboured invention of fantasy. We admire studies, but pity inventions. As for you, dig out the marrow: so that it shall have a sweet taste, nourish abundantly, and reach every part of [your] healthy heart.

Although the struggles of cities and peoples strike us; though the fury of their Transalpine arms carries out the will of fate by destroying the so far harmless and peaceful lands, and I look back at the dear remains of my homeland, sadly disfigured with blood and tears; nevertheless, I endure sorrow with letters, and I call forth the Muses, who are crying in front of the Temple of Ianus (that has been open for so many years, already),[282] to the sweet comforts of [my] rude pen, with the wonders of nature. In the meanwhile, accept whatever else the letter intends to report, as if lesser fruits. However, [know that] not all of them are **51]** properly ripe yet, and need longer journeys and new works.

1° All the herbs and plants, valued for [their] roots, [that are found] in the mountains of Modena.
2° Other crystals, crystal-like [minerals], specular stones (or selenites), fossil salts, and the variegated, sculpted stones, [along with] the [singularly] shaped, curative, chalky, gypseous, precious ones, etc.
3° The stony, chalky, gravelly, sandy layers of the mountains; those made of earth, etc.; whence they originated, where they are bent, in which direction they stretch, their necessity, use, structures, etc.
4° The so-called antediluvian and postdiluvian bodies which can be found in these [layers]: either petrified, or enclosed within the rocks, or barely enveloped in the

[281] Actually, the quoted passages are not from Plato's *Euthydemus* (Plato/Πλάτων 2018a, http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg021.perseus-grc1:271a), but from *Hippias minor* (Plato/ Πλάτων 2018b, 372, http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg026.perseus-grc1:372e).

[282] Ianus (or Janus) was one of the oldest and most important deities in ancient Rome and among the early Italic peoples. It was the god of beginning and transitions. Because of this symbolism, his effigy (typically

bowels of the Earth; and whether they are mussels, snakes, fishes, sea urchins, snail shells, oysters, pectens, tube [worms], bones of animals, wood, fruits, etc.

5° The outer surface of the mountains; the quality of every soil; the elucidation of every stone, streak, and concretion of tartar or marble. In fact, in the farthest part of the [Apuan] Alps, I observed some jaspers[283] resembling the eastern ones.

6° The particular nature, the pastures, the use, etc., of any mountain, all the way down to the Tyrrhenian Sea.

7° The rarest insects that build their nests among herbs and plants in those crags.

8° Which birds, and which quadrupeds [live there]; which ones [live] in brooks, springs, torrents, etc. Which fishes, etc.

9° Which fruits and grains are there, which ones are used as food and drink by all of our mountaineers. **52]**

10° Which customs, arts, buildings; which diseases, torments, and delights.

11° Which is the air's weight, measured with a barometric device; which is the climate, measured with a thermometer.

12° The height of mountains; their fissures, slidings, decreases, etc.

13° A more accurate description of the other springs, rivers, torrents, thermal waters, mines, etc.

14° On milk and dairy products; how they are prepared in our mountains.

15° A careful and accurate description of every mine.[284]

Such are the things that, perhaps, I will dare to carry on my reluctant shoulders; still,

> We undertake greatest deeds
> in a [too] short time.[285]

"Sometimes, the fear of sharp critics" (I shall say with Petrarch, [*De Rebus Familiaribus*], Preface, Tome 2) "commands me to speak of other things; for those who don't write anything that could be judged, judge the others' talents: a really shameless temerity, protected by silence alone. It is easy, for those who sit on the shore with clapping hands, to say what they want about the helmsman's skill."[286] But I understand that you **53]** are exhausted from [this] too long letter. Yet, I would like you to know that I would have eagerly lengthened this fabric with [my] coarse yarn, and with multicolor threads woven in, almost on purpose; since it has reminded me of your face, although widely scattered over so many lands. As to the rest, I intend to start weaving a perhaps better one, which would certainly be worthy of your name, if—as the above praised author wrote about himself—a steady residence coincided with leisure, which is always sought after in vain.

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consisting of two faces, looking both to the future and the past) frequently appeared on gates and passages. The doors of the main Temple of Ianus in Rome were kept open in time of war, and closed in time of peace. With this image, Vallisneri is referring to the War of the Spanish Succession, which in 1705 was raging in Italy and Europe. On the cult of Ianus, see Burchett 1918; Gasperoni Panella and Cittadini Fulvi 2008.

[283] Jasper (SiO_2): a microcrystalline, opaque variety of chalcedony. It can occur in different colors, depending on the impurities in it. Red jasper, whose color is due to iron inclusions, can be commonly found in the Apuan Alps. On this topic, see De Stefani 1889, 330–333.

[284] In the next two decades, Vallisneri refined and enriched this list, in his effort to define the ideal goals and procedures of a *philosophical* field research. In the *Continuazione dell'Estratto* of 1726, the "Indice di osservazioni" ("Index of observations") listed up to 26 points (Vallisneri 1726, 404–417). On this topic, see Luzzini 2013a, 104–106; 2014a, 215–217.

[285] Seneca 2018, III, 1, http://www.thelatinlibrary.com/sen/sen.qn3.shtml.

[286] Petrarca 1581, *Epistolarium de Rebus familiaribus Lib. VIII,* Praefatio, 569. On the identification of this source, see Vallisneri 1726, 421.

Farewell, my dear, and may God protect you.

Padua, in my Museum, January 1, 1705

Most Humble, and Most Dedicated Servant
Antonio Vallisneri of the Nobles of Vallisneria
On-Site Public Professor of Practical Medicine, and
Member of the English Royal Society. Etc. **54]**

Chapter 7
Other Papers: Translation

7.1 Paper 1

Reasoning about the many consular names assigned to the villages and towns of Garfagnana.

Don't be surprised, reader, if the towns of Garfagnana are listed with so many consular names; in fact, in *Sulla,* Plutarch[1] (along with Appian, in [*Historia Romana*], Book 1,[2] and Lucius Florus, in [*Epitome Rerum Romanorum*], Book 3, Chapter 23[3]) writes that the dictator Sulla, having been challenged by Marius and his supporters, decided to take vengeance on his enemies; on which account, in order to erase them all from the book of life, he compiled a book of death, in which at first he noted the names of 40 senators, then proscribed 1,600 equites, and, finally, wanted 2,000 nobles dead; and, so as to let the deadly ostracism be carried out more quickly by his nefarious followers, he established a reward of two talents to anyone who would murder the proscribed, or would denounce them.[4] And since many frightened Roman citizens had taken refuge among the Etruscan friends of the Marians, the dictator sent his general Lucretius Ofella[5] there to devastate the Etruscan coasts, and to chase the fugitives everywhere; whereas they abandoned the lowlands, and moved hastily to higher places, where some hid in caves and caverns, and others protected [their] diminished belongings and shaken families by building strongholds on steep crags. Prosper Fesulanus affirms the same in Book 4 of *Ethruscarum Antiquitatum Fragmenta.*[6] **XXIV.r]**

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[1]Plutarchus/ Πλούταρχος 2018, XII, 28–32, http://data.perseus.org/citations/urn:cts:greekLit:tlg0007.tlg033.perseus-grc1:28.1.

[2]Appianus/Ἀππιανὸς 2018, XIII, 7–11 (59–101), http://data.perseus.org/citations/urn:cts:greekLit:tlg0551.tlg017.perseus-grc1:1.7.59.

[3]The reference in the manuscript is incorrect. The exact one is Florus 2018, II, 21, http://data.perseus.org/citations/urn:cts:latinLit:phi1242.phi001.perseus-lat1:2.9.21.1.

[4]In the aftermath of the civil war which opposed the Optimates (led by Lucius Cornelius Sulla, 138–78 BC) and the Populares (whose main leaders were Gaius Marius, 157–86 BC, and his son Gaius Marius Minor, 110–82 BC), and was won by Sulla in 82 BC, thousands of Roman citizens were proscribed. Many of them were killed; others escaped from Rome, taking refuge in inaccessible areas—as, in this case, Garfagnana.

[5]Quintus Lucretius Ofella (?–81 BC), a Roman general who served under Sulla's command. See Plutarchus/Πλούταρχος 2018, XII, 29 (8), http://data.perseus.org/citations/urn:cts:greekLit:tlg0007.tlg033.perseus-grc1:29.8; Appianus/ Ἀππιανὸς 2018, XIII, 11 (101), http://data.perseus.org/citations/urn:cts:greekLit:tlg0551.tlg017.perseus-grc1:1.11.101.

[6]The reference in the manuscript is incorrect. The exact one is C. Inghirami 1637, Liber II, pp. 120–128. Actually, the *Ethruscarum antiquitatum fragmenta* are a forgery. The real author (and self-proclaimed editor), Curzio Inghirami (1614–1655), was an archeologist and historian from Volterra. He claimed to have found these documents among his family papers, and that they had been written by a certain Prosper Fesulanus in the I century BC—hence this name is mentioned in the manuscript. However, already in 1640, the Greek-Italian scholar Leone Allacci (1586–1669) discredited Inghirami's book (Allacci 1640). On this topic, see Rowland 2004.

From the Florentine Girolamo Bocchi, *Monopanthon Harmonicum, et Chronologicum,* Book 2, Part 1, Centuria 40.[7] The same [is affirmed] by Florus, Appian, and Sallust, in *De Catilinae Coniuratione.*[8]

In addition to the castles erected on the summits of the mountains by the sons and grandsons of the Roman equites, or even by the same citizens who were exiled at the time of Marius and Sulla, many others can be found which were built after the defeat inflicted by the Romans on Catiline in the territory of Pistoia,[9] [at the hands of] legates Caius Antonius[10] and Marcus Petreius,[11] being Iunius Silanus[12] and Lucius Murena[13] consuls; from which [facts], the survivors among both the Roman and the Etruscan supporters of Lucius Sergius Catiline fled into the nearby mountains, where the Province of Garfagnana lies; once there, they protected themselves with fortified towns, giving them names according to the will of the builders, or in memory of their parents, or, finally, after those who paid for their construction.

See [also] Orsucci,[14] Simone Morganti,[15] Franchini,[16] and Lazzaro Tramonti,[17] who investigate more extensively the origin of these places. Etc. **XXIV.v]**

7.2 Paper 2

Old and new names noted in the Province of Garfagnana.

Montes Tegulii—Tea.
Montes Attilii Reguli—Tiglio.
Montes Sp. Duilii et Antonii—Dalli, e…
Merendae—Magliano.
Livius Salinator—Sala.
Orius Resiliensis—Roggi.
Montes Violati—Pania Forata.
C.us Geganius—Gragnano.
Veientes Superiores—Vaii di Sopra.
Felicula—Felicaia.
Ospitolum—Ospidaletto.
Montes Sagatenia—Pania di Corfigliano.
Turrita—Torrita.

[7] Bocchi 1654, Liber II, Centuria XL, 362–366.
[8] Sallustius 2018, XI, http://data.perseus.org/citations/urn:cts:latinLit:phi0631.phi001.perseus-lat1:11.
[9] After the failure of his conspiracy against the Roman Republic and the Senate, Catiline (Lucius Sergius Catilina, 108–62 BC) tried to reach Gaul by passing through Etruria. However, near Pistoia he was stopped by the legions led by Marcus Petreius (110–46 BC), where he was forced to fight (battle of Pistoia, or Pistoria), and where he eventually died.
[10] Caius Antonius Hybrida (106–after 42 BC), Roman politician and legate. A former ally of Catiline, he turned coat against him and took the side of the Senate.
[11] See note 9.
[12] Decimus Iunius Silanus (I century BC). In 62 BC, he was made consul with Lucius Licinius Murena.
[13] Lucius Licinius Murena (105–22 BC). In 62 BC, he was made consul with Decimus Iunius Silanus.
[14] Probably an unspecified and learned member of the Orsucci, an ancient and noble family in Lucca.
[15] Arguably, Bartolomeo (not Simone) Morganti.
[16] Perhaps the historian Niccolò Franchini Taviani (circa XVII century): a member of the Franchini Taviani, a noble family in Pistoia. See Capponi 1874, 144–145; 1878, 198; Moreni 1805, 497.
[17] Arguably, Timoteo (not Lazzaro) Tramonti.

Vallis Occo—Vallico.
L. Metranius—Motroni.
Panias Mons—Pania.
L. Piso Caesonianus—Ceserana.
C.P. Lib. Visolinus—Vitiana: presso Coreglia. Etc.
Faide Montes—Taiole.
Vicaria Borgae—Vicaria di Barga.
Mons Fegatensis—Fegatese.
Serulium Flumen—Soraggio o Seraglione.
Coiza Flumen—Coeza.
Penninus Flumen—Penninus. Pennino.
Pallenus Flumen—Pollone.
Aesarulum Flumen—Esarulo.
Siliceus Flumen—Siliceo.
Cesarion Flumen—Cesarione.
Corsona Flumen—Corsona.
Opiter Flumen—Oppio.
Lanies Flumen—Lanio.
Fegana Flumen—Fegana.
Ledron Flumen—Ledrone.
Turrita Flumen—Torrita.
Brolium Flumen—Broglio.
Terrida Flumen—Torrita.
Turita Cava Flumen—Tortecava.
Sarita Flumen—Sarrida. **XXV.r] XXV.v]**

7.3 Paper 3

Strange fountain.

At the foot of the Panie [Mountains] is a spring which flows only when the wind is about to blow, and while [it blows], and until 3 days after [it has stopped], and which then ceases; hence, the peasants can always predict the wind. They believe that it comes from the sea, but this is false. I think it originates from a subterranean fermentation, etc.[18]

Little soil in plants. Observation.

Something like the outline of a tree, with trunk, branches and twigs, and made of scarce, thin, dark dirt, can be seen on the ground in the beech forests; and I could not understand what it was. Having consulted the shepherds, they said that these were [the remains of] beech trees that had fallen and rotted, leaving that scarce, dark soil. I then verified this by seeing some half–rotten trees, and others that were about to [decay]. From this I infer how scarce the earth is in the plants.

In the countryside, I found a tomb with just the outline of a man lying on the ground, made of a very thin ash.

[18] Probably, this was (or *is*—the vagueness of the note makes it impossible to verify the location of the spring,

Salts in plants.

They are all volatile, and the alkaline [salts] of the ashes are melted by fire, and then gathered. Etc.[19] **XXVI.r] XXVI.v]**

7.4 Paper 4

Claudian, in *Panegyricus de Consulatu Manlii, De Monte Olimpo:*

> He rises above the rains, hears the rushing
> clouds beneath his feet, and treads upon the roaring thunders.[20]

So was I when I was in the mountains, etc. **XXVII.r] XXVII.v]**

7.5 Paper 5

Apennine. The said Alp of Saint Peregrine lies between the Provinces of Modena and Lucca, and that place is steep, and quite inaccessible.

Virgil, Book 12 of the *Aeneid:* "Sovereign Apennine, that lifts in air his forehead."[21] And in Book 11: "The warrior son of Aunus, haunter of the Apennine."[22] **XXVIII.r] XXVIII.v]**

7.6 Paper 6

Description of the Lake of Ventasso[23] in the territory of Nigone,[24] made by Fulvio Azzari in the first Book of his *Istoria di Reggio,* where he addresses the situation of the said city, p. 21.[25]

It faces the peaks of the [Apuan] Alps to the south; the Po, king of Italian rivers, no further than 18 miles to the north; and it is almost equally distant from both the Secchia River, 8 miles to the east, and the Enza,[26] to the west, called … by Pliny. One [of these

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and whether it still exists or not) a secondary outflow of an underground karst channel.

[19] Because of its high calcium content (mainly CaO), wood ash is typically alkaline.

[20] Claudianus 2018b, 210–211, http://penelope.uchicago.edu/Thayer/L/Roman/Texts/Claudian/Manlio_Theodoro*.html.

[21] Vergilius 2018a, XII, 703, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:12.697-12.745.

[22] Vergilius 2018a, XI, 700, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:11.690-11.724.

[23] Lago Calamone, also known as Lago del Ventasso ("Lake of Ventasso"). It is a glacial lake located on the northwestern slope of Mount Ventasso (1,727 m/5,666 ft above sea level). Both the lake and the mountain are now part of Ventasso (Province of Reggio Emilia). See http://www.parcoappennino.it/percorso.php?id_zona=7&id=107.

[24] Nigone, now a hamlet in the municipality of Ventasso. On this topic, see Tiraboschi 1825, 142–143.

[25] In Azzari's *Compendio* (Azzari 1623) there is no trace of this quote. We can find just a short hint at the voice Nigone: "Nigone, Monte Moscoso, Ramoseto, Buora, Lago di Ventasso, con titolo di Contea, di Claudio Valisneri, Regiano, a cui è sottoposto quel bellissimo lago detto Ventasso" (page not numbered). Given that Azzari's book is a *Compendio*—i.e., a "summary"—Vallisneri's quote likely refers to a longer, unpublished text from the same author.

[26] Torrente Enza ("Enza Creek"), a main tributary of the Po River. It forms a natural boundary between the Provinces of Parma (on the west) and Reggio Emilia (on the eastern side). It was once known as Incia, or Lenza. For a terminological history of this name, see Brambilla Ageno 2000, 582; Tiraboschi 1824, 390.

two last streams], as I already mentioned, originates from Pra' di Reno;[27] the other from the Lake of Ventasso,[28] thus called from the mountain on which it lies, that is subject to the jurisdiction of the Counts Vallisneri:[29] [this] mountain is indeed very remarkable, being everywhere surrounded by the most various medicinal plants that can be found in Italy. The said lake is almost equal in length and width, all its four sides being 200 fathoms long; and, in the good season, it is full of precious fish and finest shrimp. Some claim it is very deep, and others believe that it is 25 fathoms [in depth]: the uncertainty is due to [the fact] that it is not possible to swim in it, given that all those who enter are somehow sucked in by an abyss, and dragged to the bottom. The reason is attributed to the great, excessive coldness of its waters, because of which those men who are seized by cramps can't swim anymore, and sink; hence this [lake], together with its outflowing stream (that flows precipitously down and cuts through Lombardy),[30] makes the said River Enza wild, and often [causes it to] rise; and its waters etc. **XXIX.r]**

Proposal made to the Council of Reggio to send Master Carlo da Maleone, engineer,[31] to the Lake of Ventasso in order to try to conduct the water of that same lake to Reggio; August 4 of the year 1453.

Thus, the above mentioned Sir Massaro[32] said to those who were present: "As you know, O Elders, since a long time it has been agreed to collect the water from the Lake of Ventasso; as long as Master Carlo is here, he shall climb up to the said lake, and there he shall consider if it is possible to draw the waters from the said lake through a channel (since it had already been declared that he was supposed to know this from experience; and that, if he did not refuse any part of the task, therefore it would have been useful to see, and to understand)."

The Elders strongly agreed, and, having consulted with the above mentioned Massaro, they resolved that he would let Master Carlo see if it was possible—as previously said—to draw and conduct the waters through a channel, and [ordered] him to move with the above mentioned engineer to the said lake.

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[27] The Secchia River originates on the slopes of the Alpe di Succiso ("Alp of Succiso"), at 1,450 m/4,757 ft above sea level. This location is now part of the municipality of Ventasso. Currently, in the surroundings of the Alp there isn't any place named "Pra' di Reno." This may be due to the extreme antiquity of such a toponym.

[28] Actually, the Enza does not originate from the Lake of Ventasso. Rather, its source is located on the slopes of Mount Palerà (at circa 1,300 m/4,265 ft above sea level), a few kilometers west of the Alp of Succiso.

[29] Since the XI century, the Counts of Vallisneri (also known as Vallisnera, or Vallisniera, or Vallisnieri, or Vallisneria) were the feudal rulers of this land and of many other nearby regions in the current Province of Reggio Emilia (see Tiraboschi 1825, 389–392). Not without a struggle, as Antonio himself attested in two private manuscripts (Vallisneri n.d.(a), State Archive of Reggio Emilia, Archivio Vallisneri, Busta 27, n. 1; n.d. (b), State Archive of Reggio Emilia, Archivio Vallisneri, 5, mazzo c, Busta II, Scheda n. 51), he succeeded in proving that his family descended from this ancient and noble lineage, whose roots date back to the Lombard (or Longobard) dominion in Italy. On this topic, see Generali 2007a, 1–4. Still today, Vallisnera is a hamlet in the municipality of Ventasso.

[30] The boundaries of the current administrative region of Lombardy are far different from medieval and early modern Lombardy, whose territory included a large part of northern Italy and covered the whole Po Plain, up to the northern Apennines. On this topic, see Andenna 1998; Black 2014.

[31] No biographical data were found about this person.

[32] In the Duchy of Ferrara, Modena and Reggio (and, from 1597, in the Duchy of Modena and Reggio), a "Massaro ducale"—literally, "ducal estate Manager"—was the officer in charge of taxes and tolls, and the custodian of funds in a community. See Rezasco 1881, 612–614.

Also, they chose Simone Calcagni[33] and Filippo Rodelia[34] to go with Master Carlo, so that they would report to the Elders when divers were needed.

In addition, both of them were also ordered to go at once to the Lake of Ventasso, and anywhere else it was needed.

From the Book of Provisions for the years 1452 to 1454, p. 111, in the Archive of the Most Illustrious Community of Reggio.[35] **XXIX.v]**

7.7 Paper 7

Petition from the Community of Busana[36] to Borso, Duke of Ferrara,[37] for an exemption from taxes, where the under mentioned reason is advanced, that is:

Given the ruin that has come from Mount Ventasso, and which flows all the way down into the Secchia River,[38] threatening and destroying chestnut woods, fields, meadows, houses, and crops, along with the church of the said land.

Recorded in the Register of Letters of the Records Office of the Community of Reggio for the year 1453, p. 122. **XXXI.r]**

7.8 Paper 8

Provided by the Reverend Vallisneri.[39]

Memorandum for the natural history.

A proposal made to the Council of Reggio, in the manuscript book of the Reverend Vallisneri, [asks] to send an engineer to inspect the said Lake of Ventasso, located in the territory of Nigone, so as to try to conduct that water to Reggio, on August 4 of the year 1453.[40]

Description of the above mentioned place, and of its situation. Therein, copy from the Reverend Vallisneri.

Consider and copy everything.

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[33] Perhaps Simone Calcagni (XV century), who later became Archdeacon in Reggio (see Affarosi 1737, 93; Turchi 2007, 358).

[34] No biographical data were found about this person.

[35] *Oblatio facta de derivatione facienda de aqua Lacus Montis de Ventaxio* 1453, State Archive of Reggio Emilia, Consigli, Provvigioni del Consiglio Generale, dei Dodici Saggi e Difensori della Città; dei Deputati sulle entrate del Comune; e degli Anziani, Anni 1452–1454, 111r. The same text, though with some variations, is reported in *I canali di Secchia e d'Enza. Riassunto storico e giuridico. Parte I: Notizie e questioni riguardanti le derivazioni dei canali reggiani di Secchia e d'Enza dai Fiumi omonimi* 1886, 27–28.

[36] Busana (now part of the municipality of Ventasso).

[37] Borso d'Este (1413–1471), first Duke of Ferrara, Modena and Reggio. On this topic, see Tiraboschi 1825, 130.

[38] "Situla": Secchia River. See Tiraboschi 1825, 333.

[39] Mauro Vallisneri (16?–17?), a Benedictine priest, historian, and a disciple of Benedetto Bacchini (1651–1721). He was a relative of Antonio, and helped him to prove the nobility of his ancestors. On this topic, see Generali 2007a, 1–3; Vallisneri 1991, 384–385.

[40] As this note clearly attests, Vallisneri found in this (currently lost) manuscript the "Propositione" on the Lake of Ventasso (see note 35).

Report of a great *salatta,* or *lavina,* or *ammotamento,* or landslide occurred there in the year 1453. Therein.

Reminder.

Bring home the book of chronicles of the Vallisneri family, and go to Nigone, Ventasso, etc., and describe those places. **XXX.r] XXX.v]**

Chapter 8
Maps: Translation

8.1 Map 1

The Cartographer dedicated this map to his Most Honorable Patron, the Most Illustrious Sir Antonio Vallisneri, Noble from Reggio, Primary Lecturer of Practical Medicine at the Arch-Gymnasium of Padua.

Most Illustrious Sir,

So that the rhetorical and physico-medical description of your mountain journey may be understood even by the foreigners among [your] readers, I send this Topography of the Province of Garfagnana: which shall be even more noteworthy, if, having been inserted and sent together with this excellent work of yours, it appears in it, and if the author is deemed worthy of acceptance; and I subscribe myself

Your Most Humble and Obedient Servant
Domenico Cecchi from Castiglione[1]

Little Chronicle of Garfagnana
by Timoteo Tramonti, Chancellor of the Archive of Castiglione.
Manuscript Book 2.

Chronology of Garfagnana.

When Ogyges[2] founded Volterra[3] in the southern [part] of Etruria, this northern region[4] was chosen by the descendants of G <…> as grazing land for [their] flocks; tents appeared in the peaks of the mountains: fortified huts, suitable to protect the

[1]Domenico Cecchi (1678–1745), a renowned cartographer from Castiglione di Garfagnana. He drew several other maps of this region. See Cecchi 2007; Foschi 2013, 219–220; http://www.giornaledibarga.it/index.html?pg=8&id=923.

[2]Ogyges (Ὠγύγης). In Greek mythology, he was a hero from Boeotia and king of the Ectenes (Εκτένες), who were supposed to be the earliest inhabitants of this region. This myth is associated with the Ogygian deluge, a great flood which occurred during his reign. According to other myths, Ogyges travelled to Italy and reached Tuscany, founding several cities. On this topic, see Carbone 1840, 56–81; F. Inghirami 1825, 71, 83–84; Valeriani and F. Inghirami 1833, 25, 68.

[3]"Kitim": Volterra (Province of Pisa), once a powerful Etruscan city. Among the many studies on this topic, see Camporeale and Maggiani 2009. The use of the name "Kitim" for Volterra, as well as several other words and data in the following part of the text, suggest that Tramonti frequently relied on Curzio Inghirami's forged source. With respect to the word "Kitim," for example, see C. Inghirami 1637, 7–8, 14, 19–21, 60, 132, 142, 302.

[4]Garfagnana is here described as "northern" ("aquilonaria regio"), as compared to the more southern Volterra.

herds. Our shepherds received Ligure, son of Phaeton,[5] who had returned from a battle with a giant of the Anakim;[6] and, having been taught to hunt by him, they survived the fierce monsters. Once converted to his cult of Jupiter[7] [and] Osiris,[8] they turned [their] cattle stables into castles and towns; having been disgusted by the cruelty of the Laestrygonian tyrants,[9] and having accepted Apis Phoroneus[10] as protector, they stained the Cimini Hills[11] with Etruscan blood,[12] and it was decided to name the Apennines after Apis, and [to call those] mountains Feroniani, from Phoroneus. The inhabitants of Garfagnana were considered to be loyal and very helpful to the Etruscan kings,[13] from Morgetes[14] to the cruel Mezentius;[15] the Etruscan kingdom was [then] divided into twelve provinces,[16] just like the number of the main cities. Our people allied with Ocnus Bianor,[17] and with the remaining rulers from Luna; having been summoned to fight the enemies of the Tyrrhenian Republic,[18] they won many victories against the Cenomani,[19]

[5]Ligure, or Ligisto. In Greek mythology, he was son of Phaeton (Φαέθων), who—in turn—was son of the god Apollo. He became the legendary king of a part of western Italy (hence the names "Liguria" and "Livorno"). See N. Magri and Santelli 1769, 26, 69.

[6]From "Anakim" ("Sons of Anak"), a race of giants mentioned in the Bible. Arguably, "Enachio" comes from the distorted term "Enachii," from Curzio Inghirami's book (C. Inghirami 1637, 21–22), where this race is supposed to live in Etruria.

[7]Jupiter (Iuppiter/Ζεύς), Latin and Greek god of sky and king of the gods.

[8]Osiris, Egyptian god of the afterlife, resurrection, and of the underworld. According to Curzio Inghirami's book, he defeated the Enachii with the aid of Apis, an Egyptian king. See C. Inghirami 1637, 22.

[9]Laestrygonians (Λαιστρυγόνες), a race of giant cannibals from Greek mythology. In Homer's *Odyssey*—Homerus/ Ὅμηρος 2018, X, 103–134, http://data.perseus.org/citations/urn:cts:greekLit:tlg0012.tlg002.perseus-grc1:10.87-10.132—they destroyed Ulysses' fleet (except his ship) and ate many of his men. According to Curzio Inghirami's interpretation, Laestrigon was a grandson of Osiris. The Egyptian god gave him and his kin dominion over Etruria (C. Inghirami 1637, 22).

[10]In Greek mythology, Apis (Ἄπις) was an ancient king of Argos. He was son of the demigod Phoroneus (Φορωνεύς): first king of this land and inventor of fire, who contributed to the civilizing of the Italic peoples (see F. Inghirami 1825, 83–84). It is not clear whether or not Tramonti identifies the Greek Apis with the homonymous Egyptian king.

[11]Monti Cimini ("Cimini Hills"), a range of volcanic hills located in the Province of Viterbo, northwest of Rome (about 55–60 kilometers, or 34–37 miles). They are not part of the Apennines, having an independent geological origin. On this topic, see Peccerillo 2005, 17, 19, 27, 37.

[12]"Camesono": From "Cameseuna," which—according to Curzio Inghirami—was another name for Volterra. See C. Inghirami 1637, 142.

[13]"Chorithis Tuscorum": This term may refer both to the current Cortona (Province of Arezzo), once an Etruscan city, and to its legendary founder, king Coritus. See D'Aversa 1986; Valeriani and F. Inghirami 1833, 166. Here, this word could also indicate any generic Etruscan king or ruler.

[14]According to Curzio Inghirami's book (C. Inghirami 1637, 22, 29, 39, 50, 73, 193, 202, 206), Morgetes was the name of several Etruscan kings. In this passage, it is not clear which one Tramonti is referring to.

[15]Mezentius: a legendary, ungodly, cruel Etruscan king. He is mentioned in the *Aeneid* (Vergilius 2018a, VII–XI, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:7.647-7.654) as an enemy of Aeneas.

[16]This passage alludes to the Etruscan League (or Dodecapolis), an alliance of twelve Etruscan cities that—according to the tradition—established a religious, economic, and military alliance in Etruria. The exact identity of these cities is still uncertain. On this topic, see Museo Claudio Faina 1985; Studi Etruschi ed Italici 2001.

[17]Ocnus (Ὄκνος), or Bianor. In Latin and Greek mythology, he was son of the god Tiberunus. He founded and was the first king of Mantua: according to Virgil (Vergilius 2018a, X, 198–203, http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi003.perseus-lat1:10.198-10.214), he allied with Aeneas against the Italic tribe of the Rutuli.

[18]Arguably, the Etruscan League.

[19]Cenomani, also known as Aulerci Cenomani. This Celtic tribe once occupied a territory in the Cisalpine Gaul, between the Insubres (on the west) and the Veneti (on the east).

the Allobroges,[20] and the Celts, in the presence of the kings Titus Vulturrenus, Cecinna, and Menippus.[21] After the Republic of Ianigeni[22] was destroyed by Quintus Fabius Rullianus,[23] the chief augurs of Garfagnana[24] ordered to yield to the mountaineers of Liguria; together with these comrades, the Ligures from the mountains caused incredible damage to the inhabitants of Pisa, Lucca, Parma, and Modena, who were allies of the Roman Republic. Rome exhausted thirty pairs of consuls [in the attempt] to crush the Ligures, having seen (among others) its [consul] Petilius being [killed and] buried in Mount Balista, when, while his desperate legions from one side, and Laevinus' cohorts from the other, were conquering the remnants of the mountain [regions], they wounded and killed many, with the exception of those who [Petilius] had banished into the thickest forest around Mount Letum.[25] And so the inhabitants of Garfagnana, having been the last of all Etruscans to be conquered, were forced to abandon the language of Iapetus,[26] which not [even] the construction of Babel had confused, and which our ancestors had learned from Vadimonus Vertumnus:[27] hence they kept this [language] secret, written with emphatic characters, so that it [still] needs to be revealed to posterity. After being enrolled in the Roman army, many people from Garfagnana became rich by looting enemies, and by profiting from military donations. Having been forbidden to cultivate the hills, in order to avoid the floods of the rivers, the mountaineers were provided with abundant wheat by the Latins; and, in turn, fed them with cattle. During

[20] Allobroges, an ancient Gallic tribe located between the Rhône River and Lake Geneva.

[21] The term "lalartes" (plural of "larth") is almost exclusively found in Curzio Inghirami's book. Arguably, this is a distortion of the Latin/Etruscan word "lares," plural of "lar," or "lars" ("lord"). According to this forged source (C. Inghirami 1637, 35–42, 48–54, 57–71, 74, 144, 183), the lalartes had administrative, military, and judicial powers in the Etruscan cities, and were elected by the kings ("lucumones") and/or by the people and the Senate. As Tramonti states, Titus Vulturrenus, Cecinna, and Menippus were Etruscan "lalartes."

[22] Arguably, the author refers to the coalition defeated by the Romans. The name "Ianigeni" derives from the Italic deity Ianus, thus being a general definition for all the Italic peoples.

[23] Most likely Quintus Fabius Maximus Rullianus (IV–III century BC), a Roman consul. From 310 to 295 BC, he fought and won several fierce and decisive battles against the Etruscans and their allies (Samnites, Umbrians, and Gauls), allowing Rome to dominate central Italy.

[24] According to several sources, in ancient Rome and in Etruria the dorchetes were the wisest augurs: high priests who interpreted the will of the gods by observing the sky and the flight of birds. On this topic, see Ciatti 1638, 540; Marcucci 1766, 177; Tola 1837, 230; Vedriani 1665, 9. However, this could be another forgery from Curzio Inghirami's book, where the word "dorchetes" is frequently used (C. Inghirami 1637, 42, 127, 235–238). Not by chance, all the above mentioned sources were published after the *Ethruscarum antiquitatum fragmenta.* Moreover, Pasquale Tola explicitly considers Inghirami to be a reliable author (Tola 1837, 230).

[25] This passage refers to a crucial episode in the Ligurian wars, when the Ligures were besieged by the Romans on "Mons Balista" (now Mount Valestra) and on "Mons Letum" (a mountain whose identity is still debated). According to Titus Livius in his *Ab Urbe Condita* (Livius 2018, XLI, 17–18, http://data.perseus.org/citations/urn:cts:latinLit:phi0914.phi00141.perseus-lat3:1), the two Roman consuls in charge at that time (176 BC) were Quintus Petilius Spurinus (who died in the battle) and Caius Valerius Laevinus. However, these names do not correspond to those mentioned in the manuscript. This discordance may be due to a transcription error by the author. "Rutilius" could be a distortion of "Pectilius"—which, in turn, could be a distorted version of "Petilius." Thus, this name may actually refer to Quintus Petilius Spurinus. On the other hand, "Lentulus" could be a distortion of "Laevinus," and, therefore, could mean Caius Valerius Laevinus.

[26] The Etruscan language. From Iapetus (Ἰαπετός), a Titan in Greek mythology, son of the primordial deities Uranus (Οὐρανός) and Gaia (Γαῖα, or Γῆ). He was associated with the west, and, therefore, with the western peoples (as the Etruscans).

[27] Vertumnus, an Etruscan and Roman god of seasons and change. According to several authors (including Tramonti), he was identified with the deity Vadimonus. See also Adami 1737, 68; Bardetti 1769, 4; Teoli 1644, 2–3.

the civil wars of Senators Marius, Sulla, Caesar, Pompey, and Mark Antony,[28] many inhabitants of Garfagnana fled to shelters in their strongholds, and protected themselves in mountain castles; having been enriched by the money of the exiled nobles, they built new fortifications upon the old ones. The Christians who had been sentenced to face the wild beasts in the arena of Pisa, and who hid in caves and caverns, were present in word and deed; being safe from the Vandal and Gothic sackings, [the inhabitants] encountered the tyranny of the Longobards at first, and—eventually—their benevolence.[29] After Etruria had been turned into a mark by the Emperor Louis II,[30] the people of Garfagnana were ruled by Adalbert[31] and by the subsequent margraves, down to the last Guelph imperial vicar; when an uncertain freedom was achieved under the German sovereigns, a great number of Italian communities adopted democracy, that our people agreed to share with the people of Lucca. Having been involved with the Guelph, Ghibelline, White, and Black factions,[32] they almost destroyed each other and their belongings. The inhabitants of Garfagnana were so dear to the Duke of Lucca, Castruccio Castracani,[33] that he chose one hundred of them as his body guards, and expanded Castelnuovo in Garfagnana. Once freedom from Lucca had been restored, Garfagnana seemed to revive a little; but as soon as the Republics of Lucca, Florence, Pisa, and Siena argued again, and, furthermore, [Paolo] Guinigi from Lucca[34] tried to seize the territory, [even] the situation of [this] Republic began to deteriorate, and the people of Garfagnana feared a worse future: hence, by rebelling against the weakening government, in order to have a more durable defense with a stronger leader, and in the hope to partake in public affairs (from which the aristocracy had excluded the public), one part joined the Este, others the Medici Princes, and the rest sided with the closer dominant [faction]. Therefore, after every single ruler had been chosen by each side, according to their will and preference, they have served him until the present [time]. Indeed, these people love their princes: by which, in turn, they are privileged with a particular benevolence, [that allows them to] declare themselves happier than the other nations.

Religion of Garfagnana.

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[28]This passage refers to the great civil conflicts that scourged the late Roman Republic in the I century BC, resulting in the establishment of the Roman Empire: Sulla's civil war; the war fought by Julius Caesar (100–44 BC) against the Senate and Gnaeus Pompeius Maior (106–48 BC); and the last one, which opposed Octavianus (who would become the first Roman Emperor, Augustus, 63 BC–14 AD) and Marcus Antonius (83–30 BC). In the aftermaths of these fluctuating events, many supporters of the losing factions were forced to escape from Rome, and not a few of them took shelter in Garfagnana.

[29]According to Tramonti, Garfagnana was spared (relatively) from the destructive effects of the barbarian invasions of Italy during the fall of the Roman Empire.

[30]Louis II of Italy (also known as Louis the Younger, 825–875), King of Italy and Holy Roman Emperor from 844 until his death.

[31]Adalbert I (circa 820–884/6), Margrave of Tuscany and Tutor Corsicae from 846.

[32]During the XIII and XIV centuries, Garfagnana was discontinuously occupied by the Republic of Lucca. This troubled sequence of events was part of a wider and complex context of struggles which took place in central and northern Italy between Guelphs and Ghibellines (and later, in Florence, between White and Black Guelphs). On this topic, see Pacchi 1785, 127–140.

[33]Castruccio Castracani degli Antelminelli (1281–1328), military leader ("condottiero") and—formally—Duke of Lucca from 1325 until his death. He fortified the citadel of Castelnuovo di Garfagnana. See Pacchi 1785, 138–139.

[34]Paolo Guinigi (1376–1432), powerful lord and, officially, Captain and Defender of the People ("Capitano e Difensore del Popolo") of Lucca from 1400. See Pacchi 1785, 156–160.

Before the idols were invented by Ninus[35] and Zoroaster,[36] Etruria (which was called Tyrrenia in [Ancient] Greek, <…>cricola in Latin) worshipped one god, as if [instructed] by a wise teacher; after that religion had been polluted through the people of Volterra,[37] it changed the cult into idolatry; among the crowd of <…> false deities, the inhabitants of this region chose Proserpina[38] for themselves: as if they had thought to be worthy of the punishments of hell, but also as if they could move the pity of 10 omens of [the god] Erebus[39] with [their] sacrifices. They called it Feronia, from the Apennines of Phoroneus, and because of the fertility of the land, the ferocity of the barbaric people, its forests, and the iron buskins of the priests; the piety of the inhabitants and the love for Feronia were such that not only did they want to call the sacred groves, the mountain passes, the festive days of Pales,[40] and the entire region on this side of Mount Letum with the name of the deity, but called even themselves Feroniani. [Driven] by the zeal to spread the cult of Feronia, our people sent many priests up to Mount Soratte, not far from the land of cities: so that the name of Hecates[41] would be celebrated far and wide in a new community [devoted to] the goddess, and so that the religion of Romulus could more easily pay its offerings to her temple. Surprisingly, among so many multitudes of gods that had been adopted by the other nations, the inhabitants of Garfagnana were the only people to continue worshipping just one deity: for this reason, the Prophet Jeremiah prophesied about them during an assembly (in Chapter 2 [of his Book]), when, while [speaking] of all the Italic [tribes], and especially of the Etruscan idolaters, he said to the Hebrews: "pass over to the islands of Kittim, and see if the people changed their gods";[42] and, above the rest, the Roman Pantheon, the new theogonies of other peoples, and even the preaching of the Apostles Peter and Paul, prove that the prophetic sarcasm was particularly true for our [people]; and then, after it had been rejected by so many sermons of the Saint Bishops Paulinus[43] and Valerius,[44] after it had been prohibited with so many violences, and though it had been explained with such great omens, the cult of Feronia revealed how tenaciously it was attached to the inhabitants of Garfagnana. When Christ died, no howling came from the

[35]Ninus, legendary Assyrian king and alleged founder of Nineveh. His wife was the likewise legendary queen Semiramis, who succeeded him after his death. On this topic, see Seymour 2014, 61–78, 115–116, 231.

[36]Zoroaster, founder of Zoroastrianism.

[37]"Chamesenos": The inhabitants of Volterra. On this term, see note 12.

[38]Proserpina (or Persephone, Περσεφόνη), also known as Cora (Κόρη, "maiden"). Along with her mother Ceres (or Demeter, Δημήτηρ), she was the Latin and Greek goddess of agriculture, vegetation, harvest, and fertility.

[39]Erebus (or Erebos, Ἔρεβος), a Latin and Greek primordial deity, god of darkness.

[40]Parilia, or Palilia: an ancient Roman festival held in honor of Pales, the patron deity of shepherds and flocks. On this topic, see Beard, North, and Price 1998, 174–176.

[41]Hecates (Ἑκάτη), Latin and Greek goddess of sorcery and ghosts.

[42]Book of Jeremiah, Chapter 2, verses 10–11. Actually, this passage does not refer to Etruria but to Kittim (Citium/Κίτιον), an ancient settlement on the west coast of Cyprus. However, in Hebrew literature this name gradually acquired a wider meaning, referring to the whole island of Cyprus, to the Aegean Islands and, more broadly, to any invader coming from the Mediterranean islands (such as the Greeks, Macedonians, and the Romans). See Finkelstein and Silberman 2001, 348–351; Kugel 1998, 366–367, 950. Probably, Tramonti's misinterpretation is due to the similarity between this biblical name and the word "Kitim," which—according to Curzio Inghirami's forged source—was the ancient name of Volterra.

[43]Saint Paulinus (or Paulinus of Antioch, I century AD), first Bishop of Lucca (circa 46–68 AD) and patron saint of this city. On this topic, see Beverini 1829, 1–2, 30–34; http://sacrumluce.sns.it/mv/html/MON/MON_990013000000000/frameset_cap3.html.

[44]Saint Valerius (I century AD), disciple and successor of Paulinus as second Bishop of Lucca (circa 68–96 AD). See Beverini 1829, 35; http://sacrumluce.sns.it/mv/html/MON/MON_990013000000000/frameset_cap3.html.

wild beasts, no sounds from the evil spirits, no sudden exclamation from the soldiers, no tearful sacrifice from the inhabitants; no chasms opened in the broken mountains, nor did <…> <…> they want to abandon one <…> of the thoughtless superstitions to which they were accustomed! Pyromancy[45] was a common practice in Garfagnana; the recently introduced Apostolic Faith would require to be included with the stories of idols in the acts of the martyrs, if the Catholic Bishops Theodorus,[46] Eutychianus,[47] and the Irish Felicius[48] had not endured, and had not kept the people of Garfagnana [within the limits] of a single [religious] nomenclature. Thus, once the magical enchantments had been abandoned, and after the statue of Proserpina had been torn down, they received the grace of baptism; yet, the name of Feronia would still linger in the sacred grove and in the temple of the adjacent, shady wood, if a royal, blessed Roman had not changed it with the name of the Forest, and Alp of Saint Peregrine, on account of his presence [in that place], and of [his] venerable tomb, after [his] death had been announced. Our people observed twenty-seven priests [carrying] his sanctified, noble body on a large tent, in admirable order; and, according to the will of Heaven, it was decided through them that the adorable hostage would remain on the soil of Garfagnana. During the Arian persecution, as well as during the Neronian, Domitian, and Maximian ones,[49] [the inhabitants] hid the fleeing Christians in inaccessible caves and caverns, and fed them; and, among the very people of Garfagnana, there was no lack of those who, having been frightened by the violence of the torments, had been torn by wild beasts while running into the woods, or had perished from hunger and thirst on remote slopes. In fact, it is certain that Garfagnana had many martyrs of blood (during the atheist [persecutions]) and charity (during epidemics), that the flame of faith, and the hesitation of others, had prematurely sent to glory. During the ecclesiastical schisms, our forefathers protected many bishops in the strongholds of Garfagnana; and when peace had been restored to the Church, they cared for the renovation of temples, the building of parishes, the foundation of monasteries, the construction of oratories, the provision of pilgrim hospitals, so that the people of Garfagnana proved to be no less remarkable for [their] piety, than for the obstinacy of [their early] idolatry. In the course of time, they obtained the bodies of Saint Blancus,[50] Saint Vivianus,[51] Saint Terentius,[52] Saint Prim-

[45] Pyromancy, an ancient practice of divination by fire.

[46] Saint Theodorus, Bishop of Lucca (allegedly from 350 to 400 AD). See Beverini 1829, 2, 38; http://sacrumluce.sns.it/mv/html/MON/MON_990013000000000/frameset_cap3.html.

[47] Arguably, Pope Eutychianus (228–283 AD), who was from Luni. See Repetti 1843, 193.

[48] Felicius, Bishop of Lucca (circa 685–686? AD). See http://sacrumluce.sns.it/mv/html/MON/MON_990013000000000/frameset_cap3.html.

[49] The passage refers both to the violent struggles among Christians in the III and IV centuries AD, between the followers of the presbyter Arius (Arianism) and the supporters of the Nicene Creed (adopted after the First Council of Nicaea in 325 AD), and to the persecutions of Christians carried out during the reigns of the Roman Emperors Nero (37–68 AD), Domitianus (51–96 AD), and Maximianus (250–310 AD). However, this last name could also—and more likely—allude to Galerius (whose official title, in fact, was Gaius Galerius Valerius Maximianus Augustus, 250/260–311 AD): a renowned and fierce opponent of Christianity.

[50] Saint Blancus, Saint Peregrine's only companion.

[51] Saint Vivianus (or Saint Vianus, VI–VII century), who settled in a still existing hermitage in the Apuan Alps. According to tradition, he met with Saint Peregrine and Saint Blancus.

[52] Arguably, Saint Terentius of Luni (circa 556–VII century?), martyr and sixth Bishop of Luni. See http://www.webdiocesi.chiesacattolica.it/pls/cci_dioc_new/consultazione.mostra_pagina?id_pagina=25138.

itivus,[53] Saint Ercolano,[54] Saint Irenaeus,[55] and the relics of many others. Furthermore, Garfagnana delighted in the most exemplary behavior of such venerable priests as Giambattista d'Este,[56] Giacobbe Jacopucci,[57] Bartolomeo Guidi,[58] Barsotti,[59] Bertacchi,[60] and Cillei,[61] of whose fragrance it is still redolent. **XXXII.r]**

1. Lucius Murena—Lucignano.
2. Cassius Viscellinus—Ghivizano.
3. M. Attilius Glabrio—Calavorno.
4. Titus Annius Luscus—Vitiana.
5. Q. Elius Tubero—Tereglio.
6. Martius Figulus—Monte Fegatese.

Names, and surnames, of the noble Romans from which the towns of Garfagnana inherited [their] denominations, starting from the older ones.

First
In the Vicariate of Camporgiano, Modena.

1. Genutius Clepsina—Giuncognano.
2. Quintus Capitolinus—Capoli.
3. Cneus Peticus—S. Pontaccio.
4. Caeso Duillius, et Lelius Balbus—Dalli.
5. Cneus Genutius—Cogno.
6. Publius Verennius—Veregnano.
7. Lucius Aemilianus—Magliano.
8. Curius Dentatus—Corti.
9. Anicius Romanus—Nicciano.
10. Geganius Mamercinus—Gragnano.
11. Iunius Silanus—Silano.
12. L. Sergius Fidenas—Soraggio.

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[53]Saint Primitivus (III century?), martyr. His cult is particularly vivid in Castelnuovo di Garfagnana. See Vinceti 2007, 86.

[54]Blessed Ercolano da Piegaro (?–1451), a Franciscan friar from Perugia who settled in Garfagnana. See Angelini 1990.

[55]Saint Irenaeus (?–?), martyr. His body, now preserved in Castiglione di Garfagnana, was carried from Rome and donated to the city in 1680 by the influential Guazzelli family (see http://www.castiglionenews.it/index.php?option=com_content&view=article&id=697:langolo-del-passato-piccola-ricerca-su-santireneo&catid=57:langolo-del-passato&Itemid=76).

[56]Alfonso III d'Este (1591–1644), Duke of Modena and Reggio from 1628 to 1629. He abdicated in favour of his son Francesco (1610–1658) and entered the Capuchin friars with the name of Giambattista da Modena. He died in Castelnuovo di Garfagnana. On this topic, see Tiraboschi 1825, 131.

[57]No biographical data were found about this person (arguably, he was a priest or a friar).

[58]Bartolomeo Guidi (XVII century), a priest from Barga. From 1651 to 1660, he was parish priest of the Pieve di Santa Maria, a Romanesque church in Loppia (now a hamlet in the municipality of Barga). On this topic, see P. Magri 1881, 71.

[59]Most likely, one of the many ecclesiastic members of the Barsotti, a powerful family from Lucca. On this topic, see Barsotti 1693; Catalano 2007, 120–121, 131–132, 148, 158.

[60]Probably Pellegrino Bertacchi (1567–1627), from Camporgiano. He was Bishop of Modena from 1610 until his death. See Al Kalak 2004; http://www.treccani.it/enciclopedia/pellegrino-bertacchi_(Dizionario-Biografico)/.

[61]No biographical data were found about this person (arguably, a priest or a friar).

13. Cecilius Metellus—Metello.
14. Brutus Bubulanus—Borsigliano.
15. Marcus Levinus—Livignano.
16. Cornelius Arvina—Caprignano.
17. Aurelius Orestus—Orzaiola.
18. L. Plautius, et V. Panda—Piazza.
19. M. Fabius Vibulanus—Bibiano.
20. Caius Petronius—Petrognano.
21. Q. Fabius Verucosus—Verucola.
22. Nauticus Rutilius—Naggi.
23. Attilius Calatinus—Casatico.
24. Ventidius Bassus—Vitoio.
25. L. Cornelius Cossus—Casciano.
26. Ottacillus Crassus—Cascianello.
27. Caius Petilius—Pugliano.
28. C. Lucius Regillensis—Roggi.
29. Popilius Lenas—Puianella.
30. Campus Regis Iani—Camporgiano.

2°
In the part of the Vicariate of Minucciano, Lucca.

1. Lucius Munatius Plancus—Minucciano.
2. Germolaceon—Gramolazzo.
3. Aelianus Petus—Agliano.
4. Fulvius Centimalus—Castagnola.
5. Calfurnius Piso—Corfigliano.

The two above said Vicariates are under the spiritual [dominion] of the Bishop of Sarzana: but the following ones are subject to the Bishop of Lucca.

3°
In the Vicariate of Castiglione, Lucca.

1. Castrum Lestrigonum—Castiglione.
2. Menennius Lanatus—Mozanella.
3. Tergeminus Curiatus—Cerageto.
4. Lucius Verus—Verucchia.
5. Penus Cincinnatus—Penna del Ciuccio.
6. Caius Acatius—Chioza.
7. Castrum Azii—Castellaccio.
8. Aemilius Mamercinus—Marcione.
9. Aurelius Cerretanus—Pian di Cerreto.
10. Ava Laurentia Lupa—Lupinaia.
11. Rhea Sylvia—Riana.
12. Lucretius Tricipitinus—Treppignano.

4°
In the Vicariate of Castelnuovo, Modena.

1. Publius Corvinus—Corfino.
2. Caninus Rebilius—Canigiano.
3. Pompeus Magnus—Magnano.
4. Valerius Messala—Massa.
5. Attilius Seranus—Sarcagnano.
6. Fabius Ambustus—Sambuca.
7. Villulus Tapulus—Villetta.
8. Publius Cossus—Ponticosi.
9. Lucius Velleius—Vaii.
10. P. Ebutius Cornicensis—Careggine.
11. C. Fabricius Luscinius—Fabrica.
12. L. Verus Poticus—Poggio.
13. Hostilius Mancinus—Ospidaletto, e Antisciana.
14. Papirius Crassus—Capricchio.
15. Silius Sylvanus—Silicano.
16. Cornelius Dolabella—Gragnanella.
17. Luctatius Cereo—Ceretolo.
18. L. Aruntius Nepos—Rontano.
19. Elius Petus—Eglio.
20. M. Cornelius Malugineus—Molazzano.
21. Lucius Cassius—Cascio.
22. Oratius Paluillus—Palleroso.
23. Marcus Aemilius—Migliano.
24. C. Marcus Censorinus—Ceserana.
25. M. Aemilius Barbula—Bargecchia.
26. Cornelius Sylla—Silico.
27. Publius Flaccinator, et F. Nobilior—Pieve Fosciana, e Fossandera.

5° In the Vicariate of Trassilico, Modena.

1. Virginius Tricostus—Trasilico.
2. Servilius Geminus—Vergemoli.
3. A. Virginius Coelimontanus—Calomini.
4. Iunius Brutus—Brucciano.
5. Calfurnius Bestia—Forno Volastro.
6. Valerius Poblicola—Valico.
7. Q. Minutius Thermo—Terminone.

6°
In the Vicariate of Gallicano, Lucca.

1. Papirius Maso—Perpoli.
2. Fonteius Capito—Fiattone, e Campi.
3. Gallus Caninius—Gallicano.
4. L. Plautus Venno—Verni.
5. Calfurnius Bibulus—Bolognano.
6. L. Cornelius Cethegus—Cardoso.
7. Metra Erictonia—Motrone.
8. Q. Fabius Rullianus—Gioviano.

[9.] Gellius Poblicola—Gello.

7°
In the Vicariate of Barga, Florence.

1. Summa Columna—Sommocologna.
2. Q. Fabius Lebeon—Albiano.
3. Spurius Oppius—C. Oppio.
4. Statilius Taurus—Tiglio.
5. P. Furius Philus—Filecchio.
6. Titus Q. Penenius—Pedona.

8°
In the Vicariate of Coreglia, Lucca.

[1.] Aurelius Cotta—Coreglia.
[2.] Minutius Augurinus—Gromignano. **XXXII.v]**

8.2 Map 2

XXXIII.r] XXXIII.v]

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Index of Names

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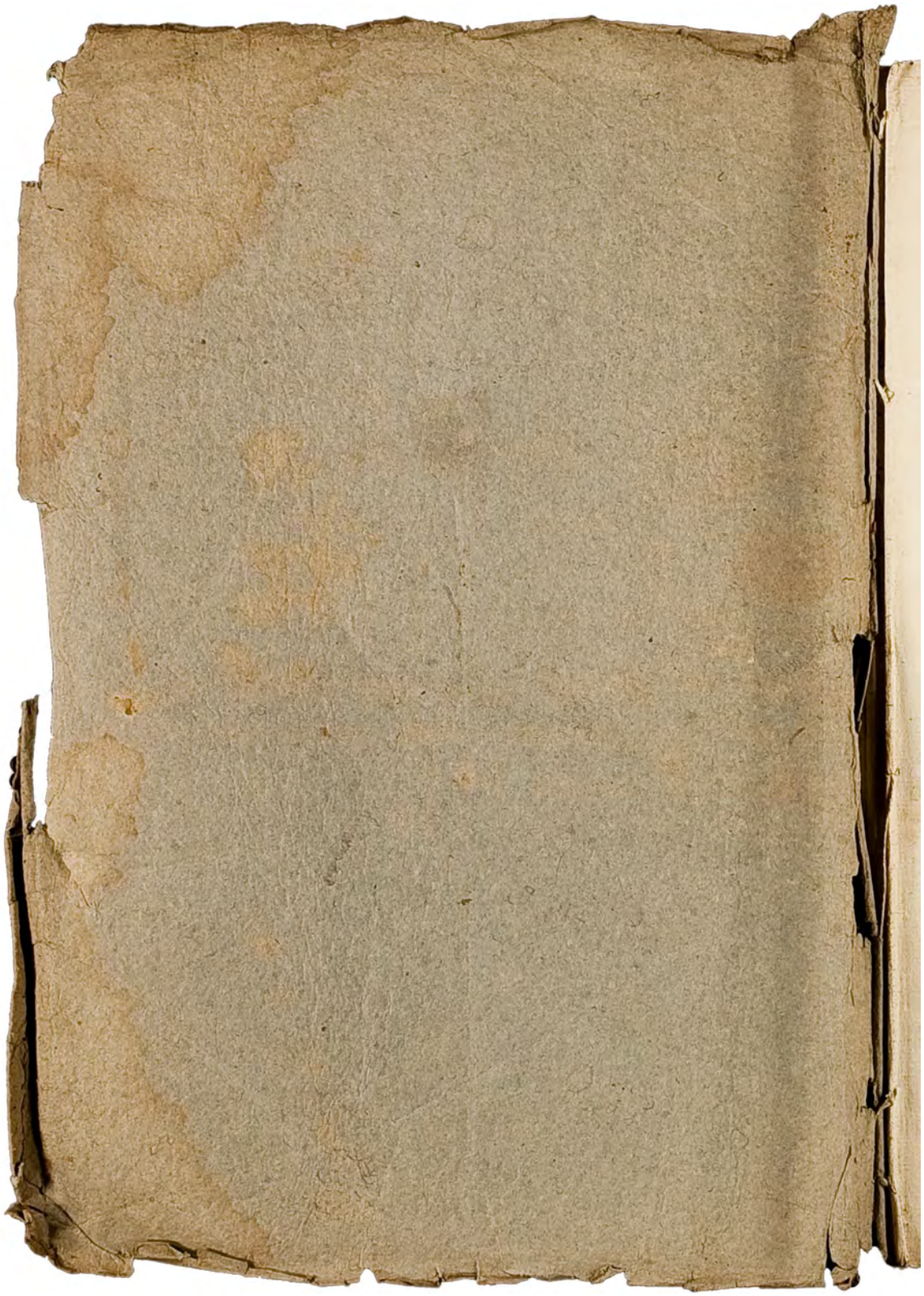
T

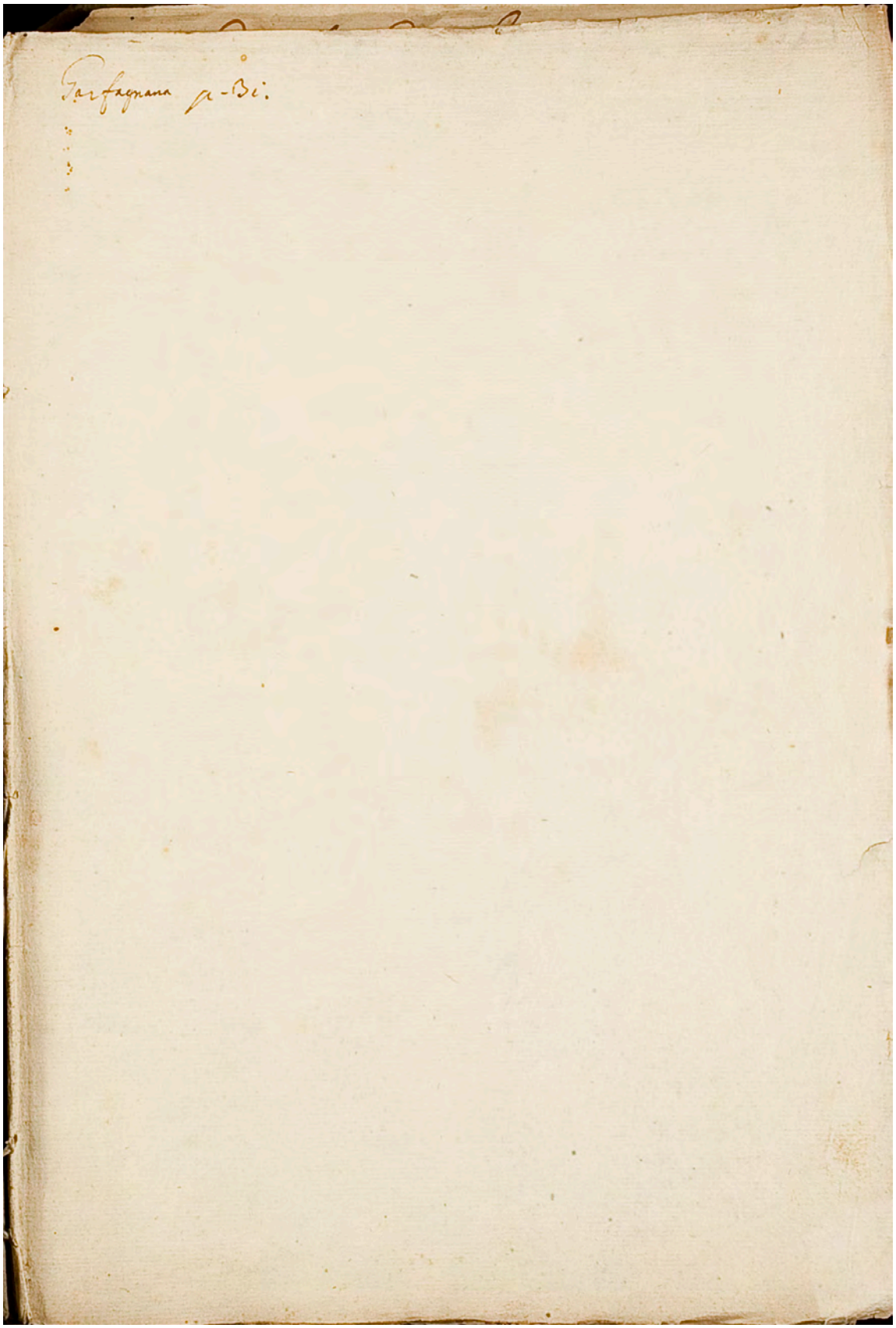
PART IV
Primi Itineris per Montes Specimen Physico-Medicum: Facsimile

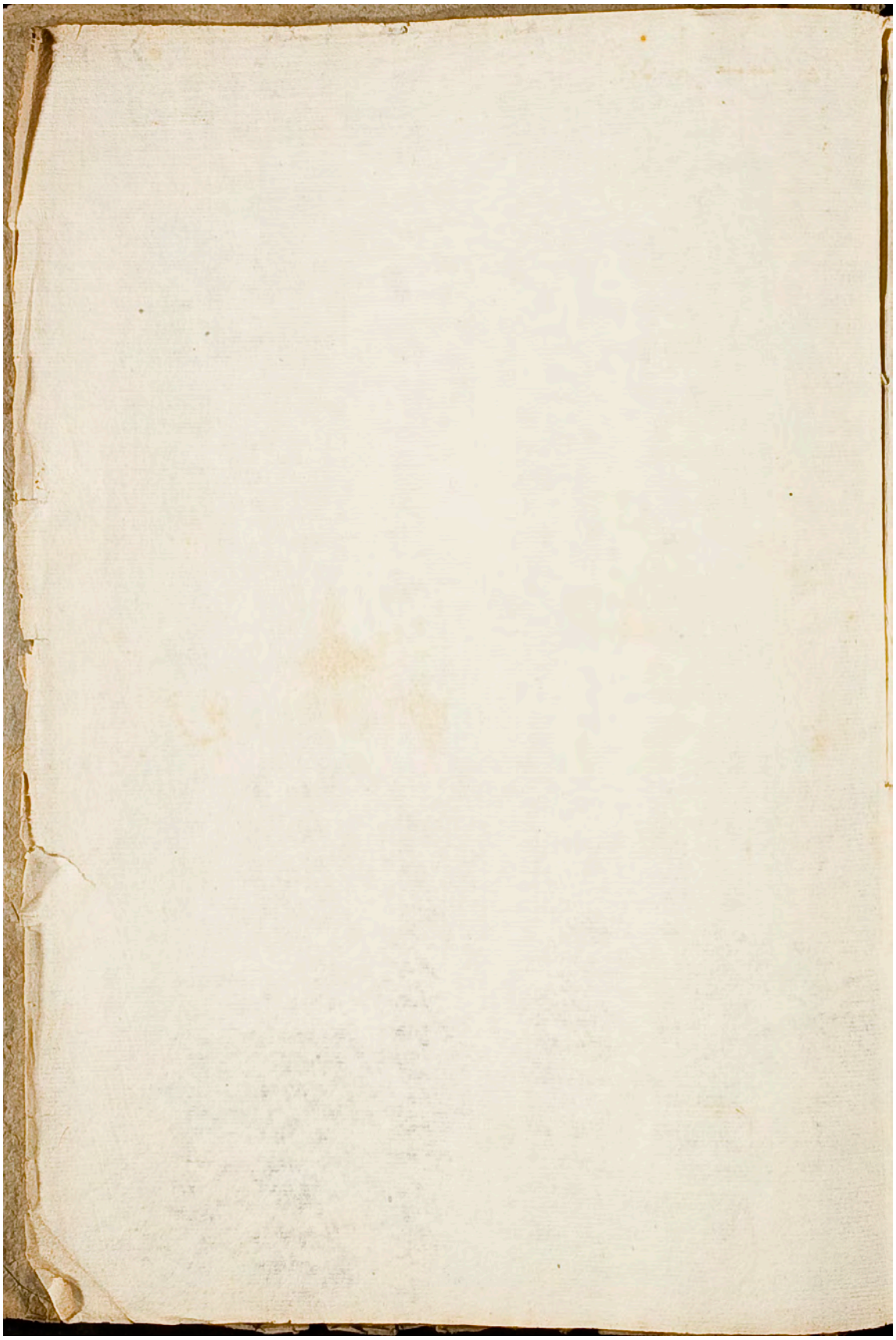

10
ARCH.
VALLISN.
10/IV
XVI.-XVIII
SCRITTI
VALLISN
2

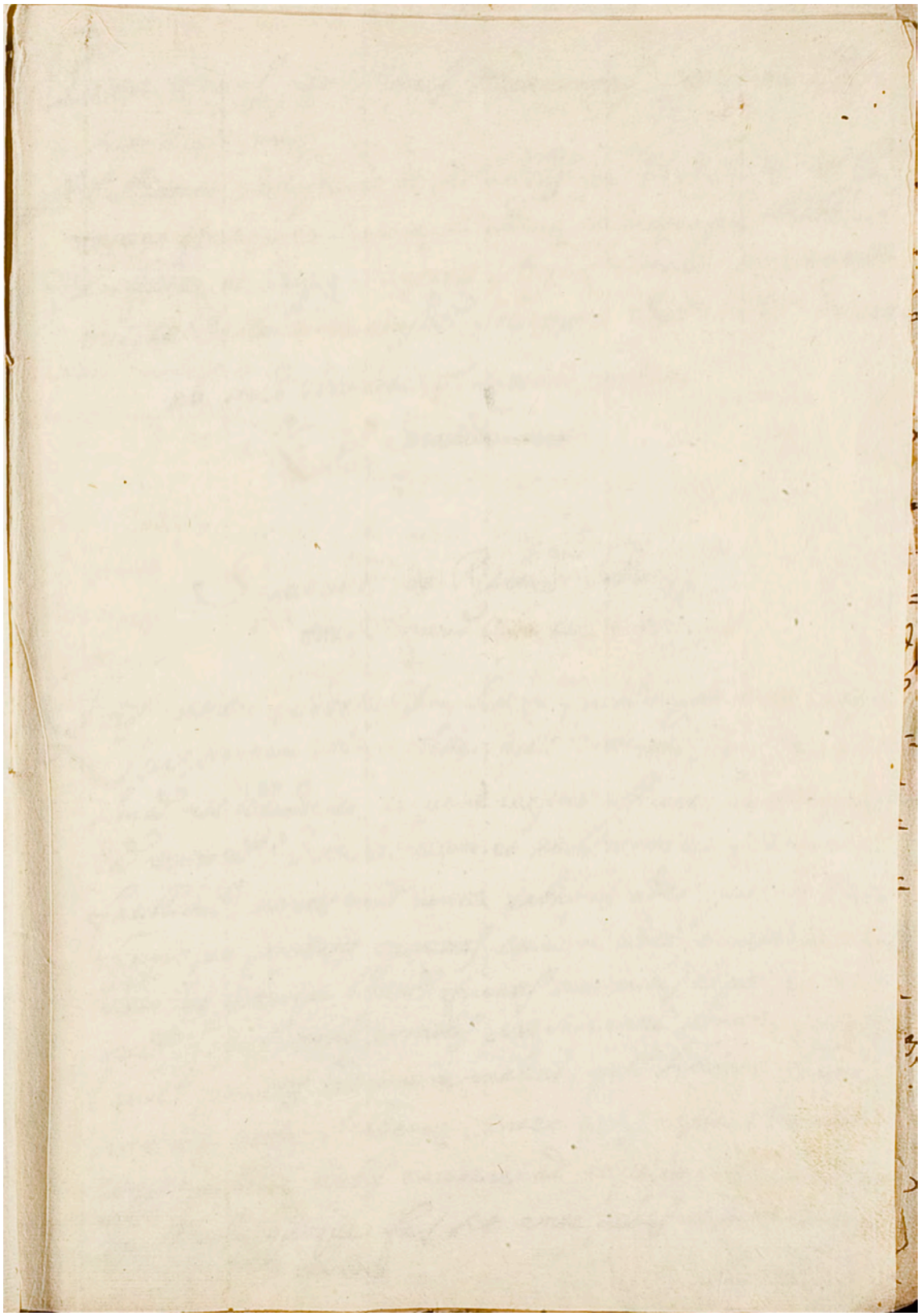
Iter [illegible] Montanum.

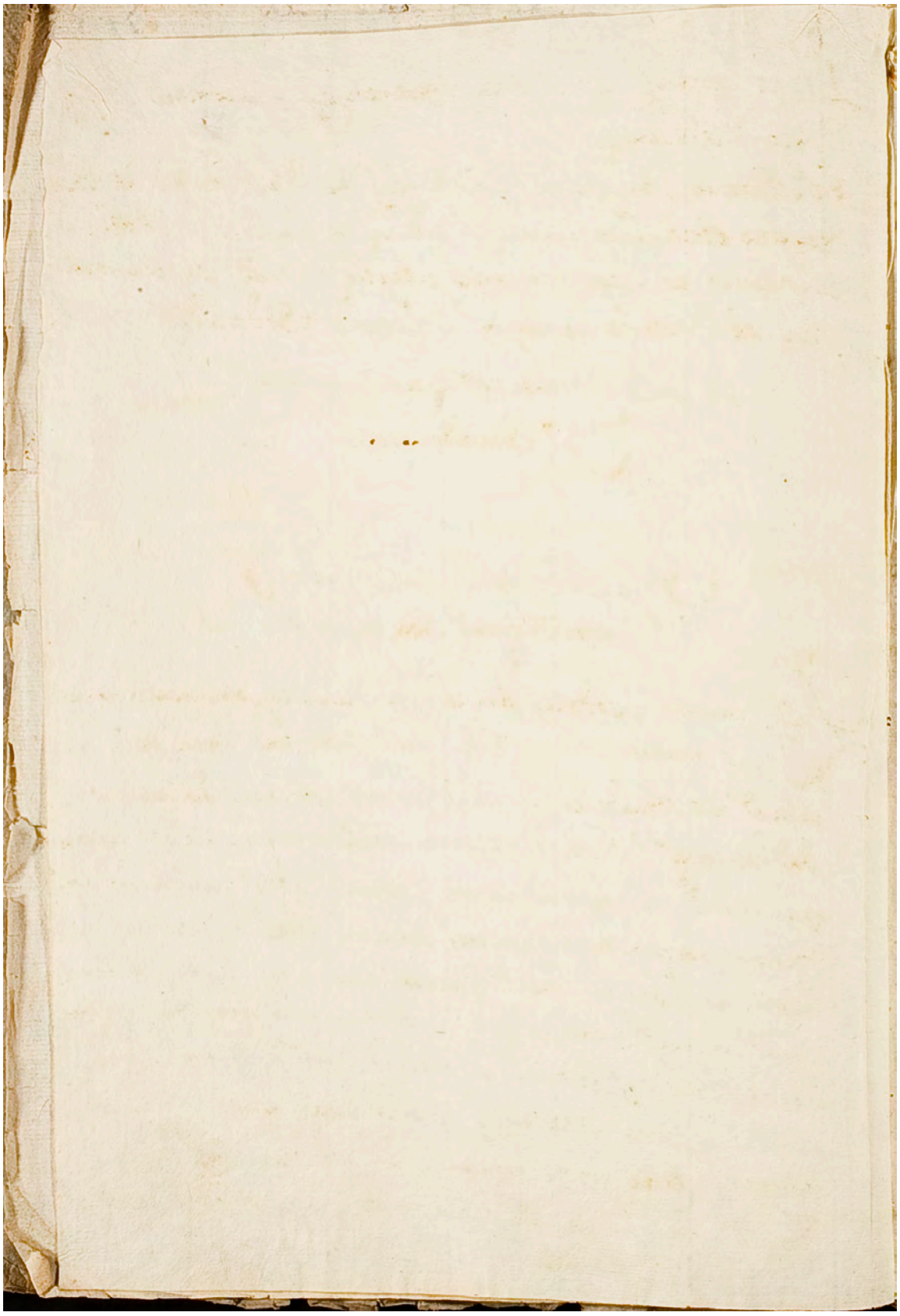
Quem tibi ego non essem ausus mittere, nisi eum lente, ac fastidiose probavissem. Ita Cic. ad Atticum de quodam suo libello.











Primi itineris per Montes ~~Mutinenses~~ specimen Phy=
sico-Medicum.
Ab Antonio Vallisnerio de Nobilibus de Vallisnerià in Pa=
tavino Archylyceo ~~Practicę Medicinę in primo loco~~ Publico
Primario Theoricę Professore, ac Regię Societatis Anglię sodali, sapientissi=
mis, ~~et~~ Preclarissimis eiusdem Societatis Sodalibus dicatum.

ab Italo idiomate in Latinum versum
a L. V. ~~Scandianensi~~.

Sapientiss.mi, et Preclariss.mi Sodales
toto Terrarum Orbe celeberrimi.

Quis putasset, sodales Amplissimi, vim ingeniorum, atque
prestantiam Studijs obesse, quis rationem, rerum divinis=
simam, nos obtundere, ac pene ineptos efficere ad assequen=
dam veritatem? Dictu id mirum, et Monstro simile, sed eventu
facillimum, mentis enim curiosa subtilitas adeo pulchros ef=
fingit, et parturit opiniones, continue adeo, arguteque men=
titur, ut plerique hominum fucatis rationibus capti, et tan=
quam laqueis irretiti erroribus, pro sapientia utantur, ijsque
semel placitis indormire malint, quam liberari. Conatę
sunt qui nostri Academię, inter quas vestra eminet,
torporem hunc nobis excutere ad experimenta lacessen=
do; Mihi quoque fas sit ante pedes vestros reddem

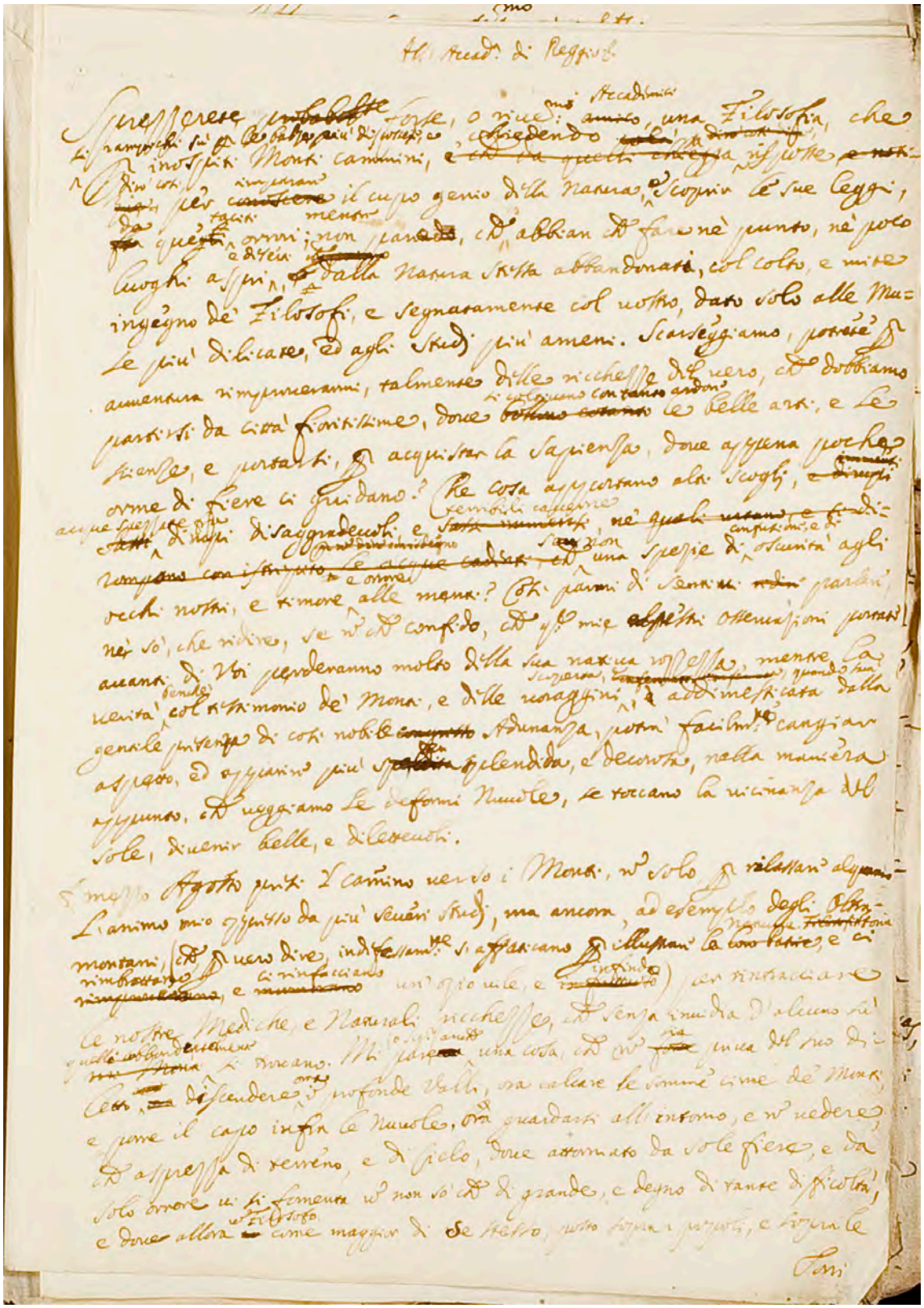
fi=

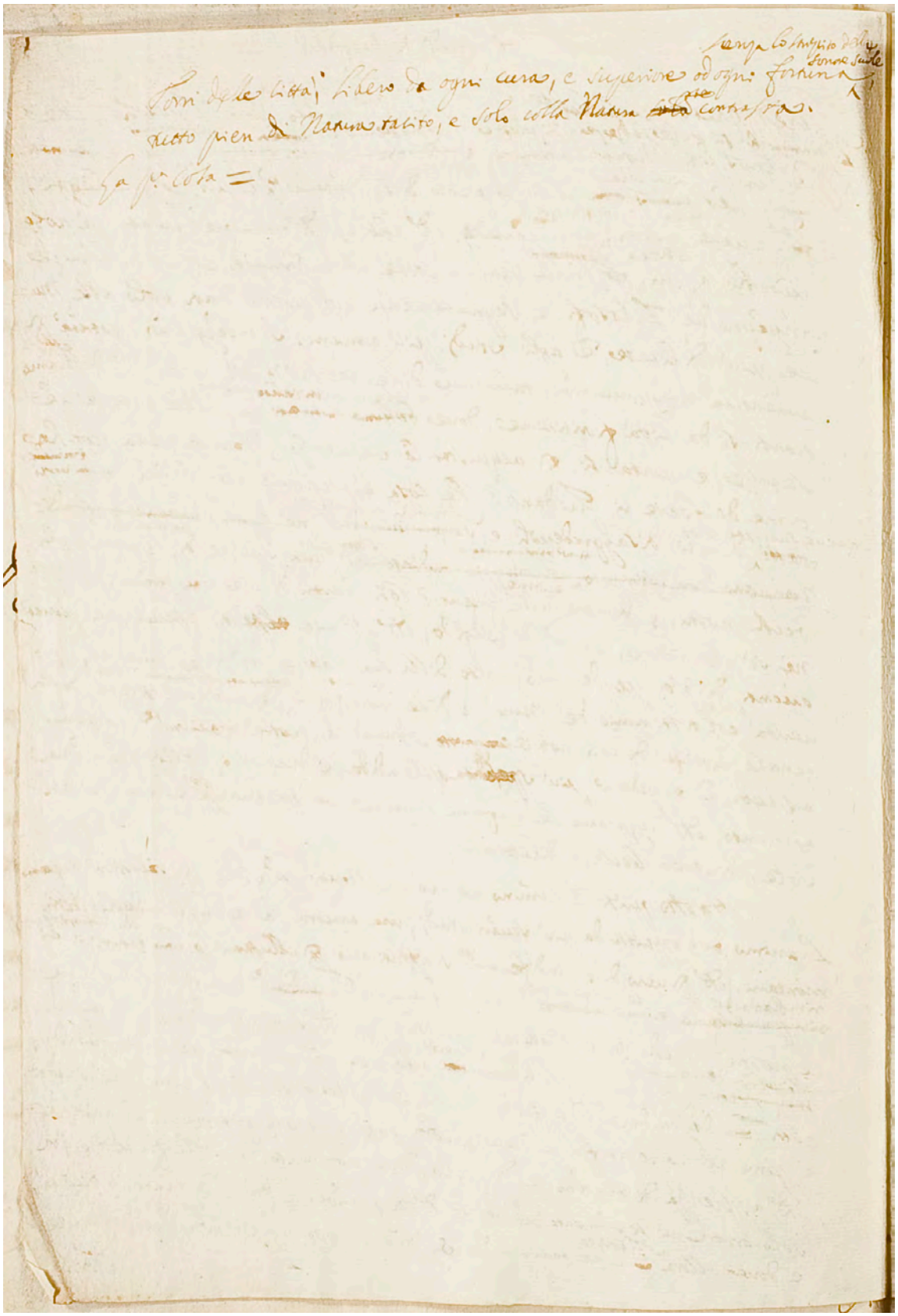
Libellum projicere non dissimilia tentantem, res quippe habet visu compertas, non ingenio. Horridulus quidem est, sed veniam dabitis inter alpes nascenti. Per aestivas vacationes ea mihi vicinis montibus inerrandi cupido incessit; nec tela pro manibus ad figendas feras, sed calami, et pugillares gestabantur ad venandam veritatem. Reliquum utilitatis discipulorum meorum rationem habui, arcanos latices, et inexploratas fontium medelas illis in reditu monstravimus.

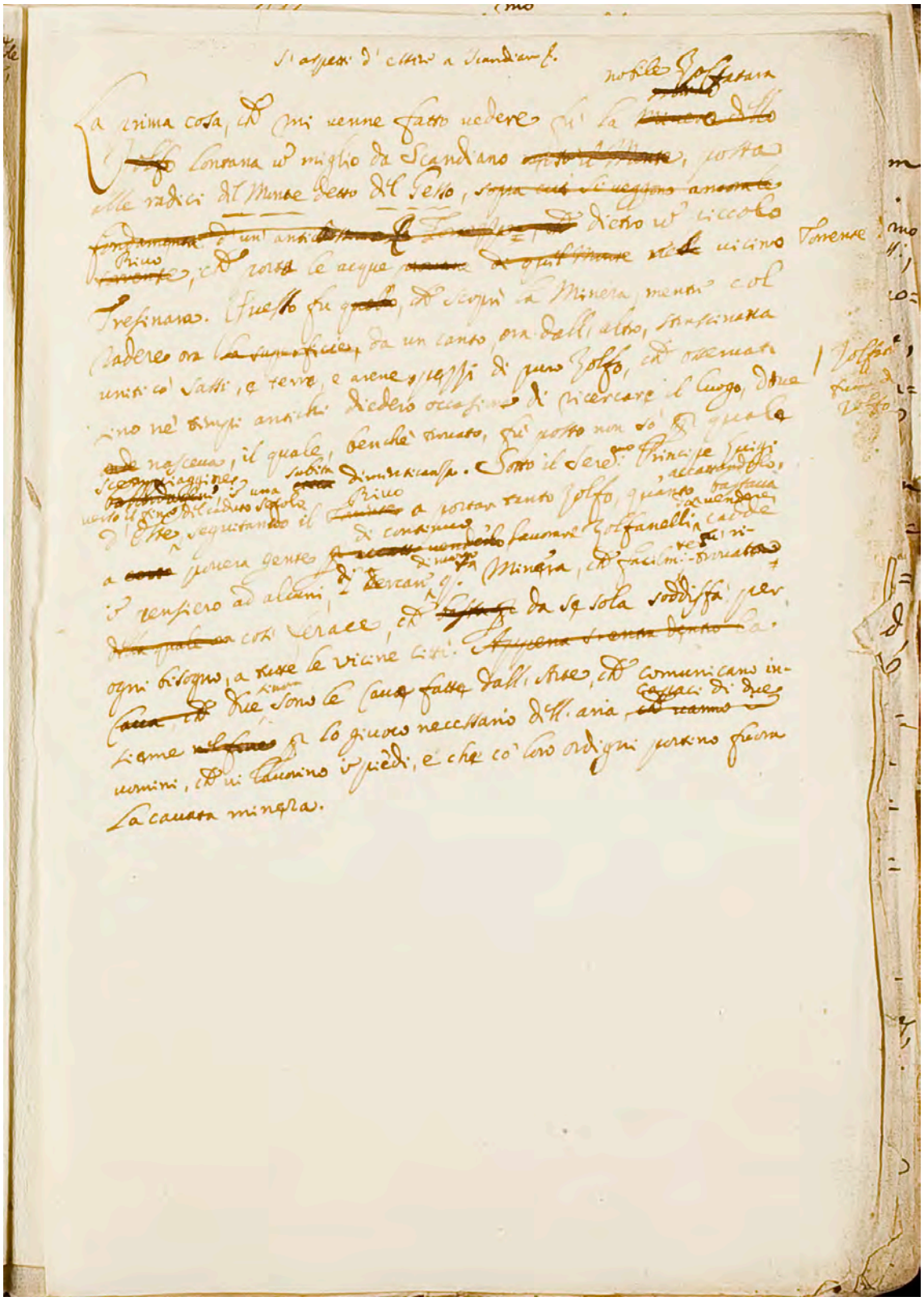
Descendite paululum, viri gravissimi, de sapientiâ illâ, quâ Litterariae Reipublicae consulentes maria, terras, caelum respicitis. Praebete vos faciles exiguis conatibus meis, et pauidum adhuc ob magnitudinem beneficiorum vestrorum novâ quâdam benignitatis culpâ ad maiores ausus erigite.

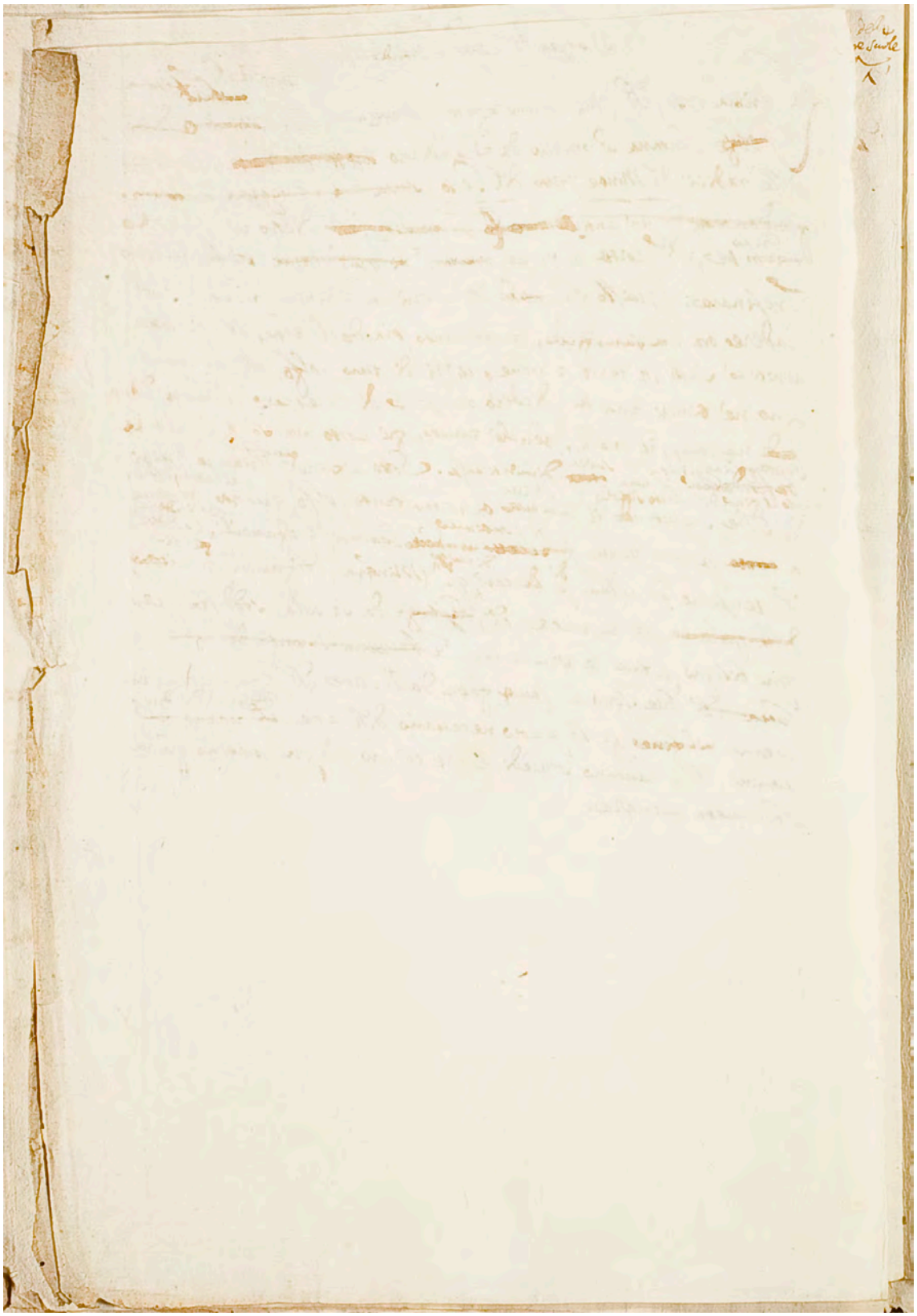
Datum Patavii 1705.

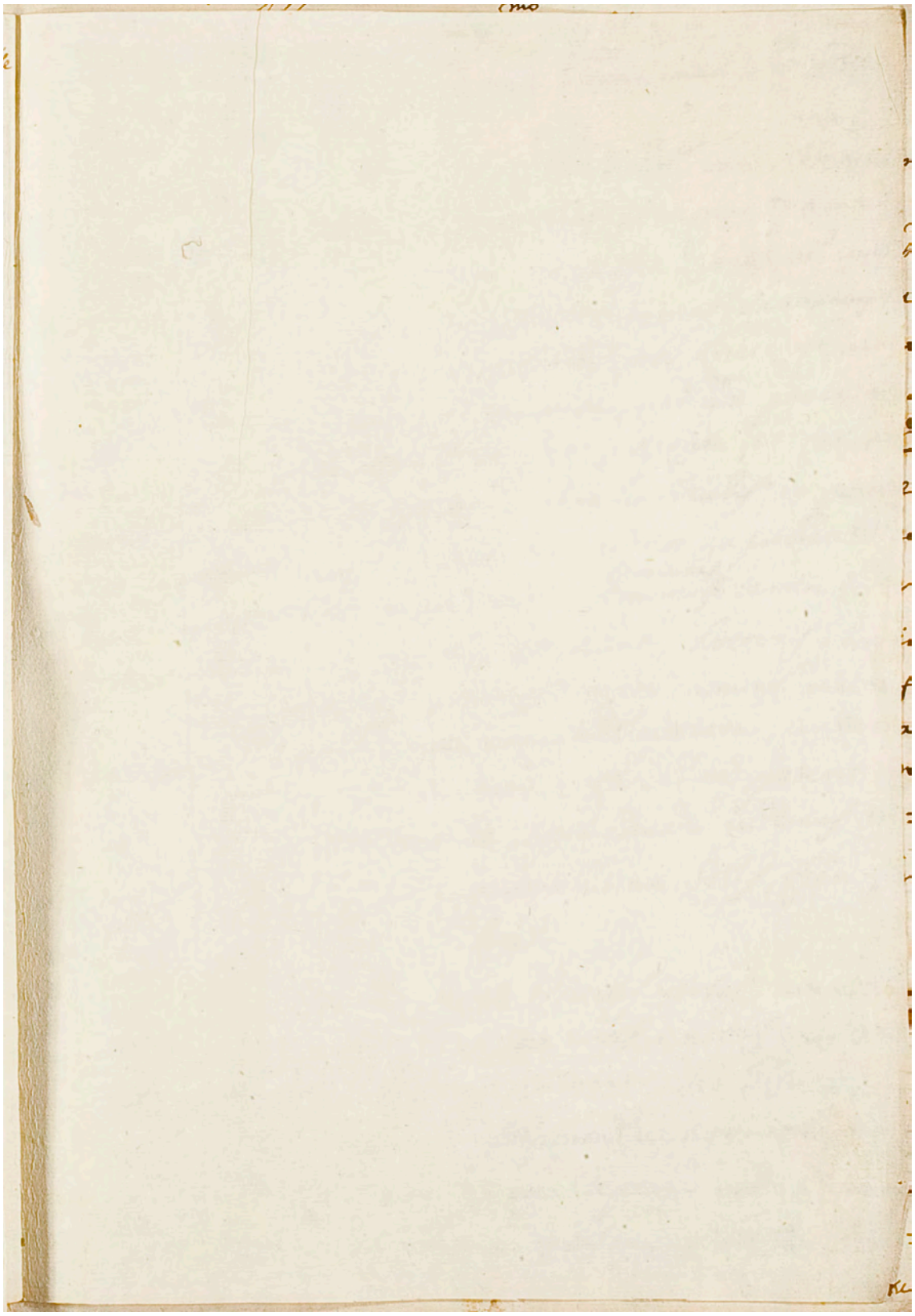
Addictissimus, et Obsequentissimus famulus, et Sodalis Antonius Vallisnerius

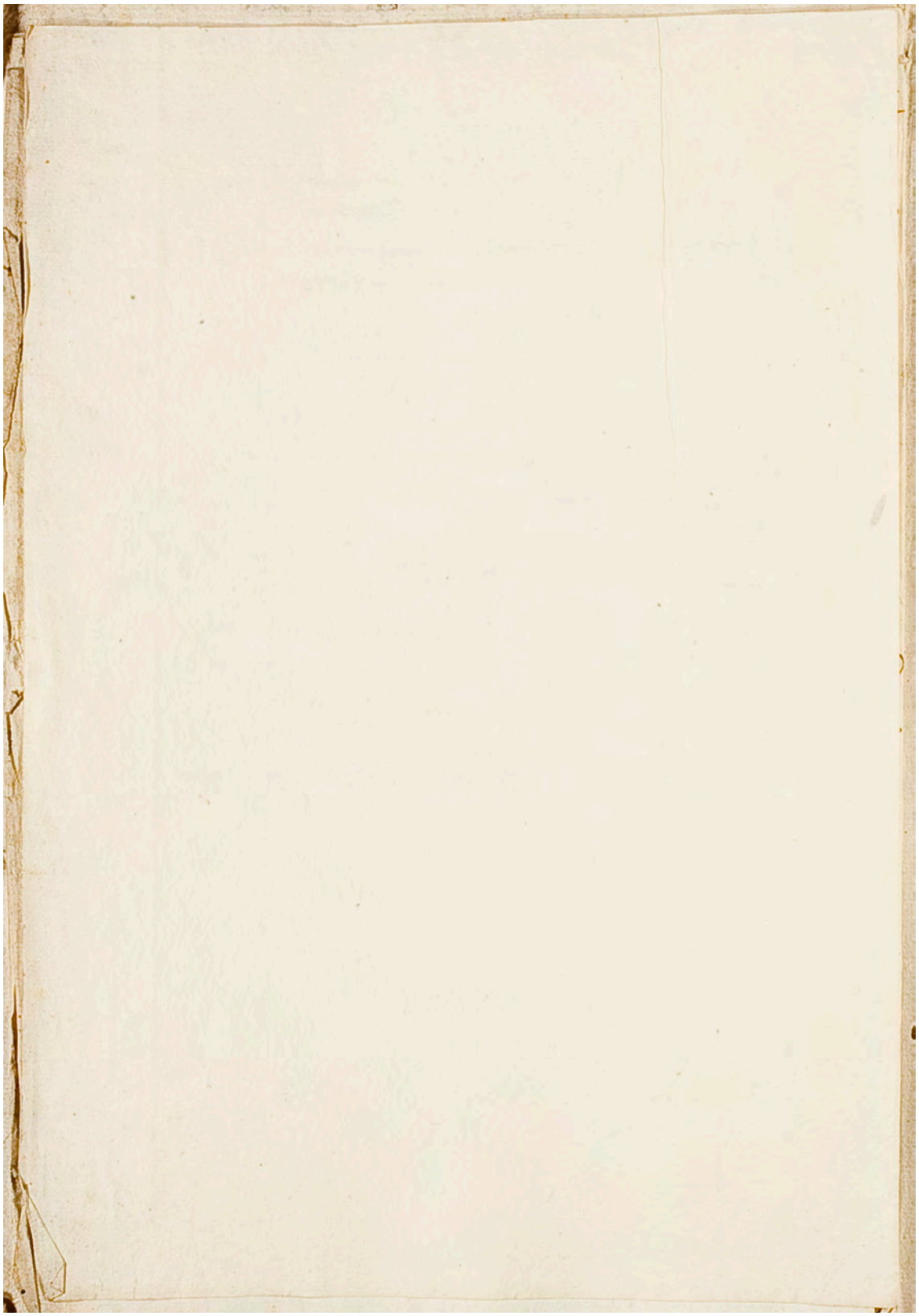










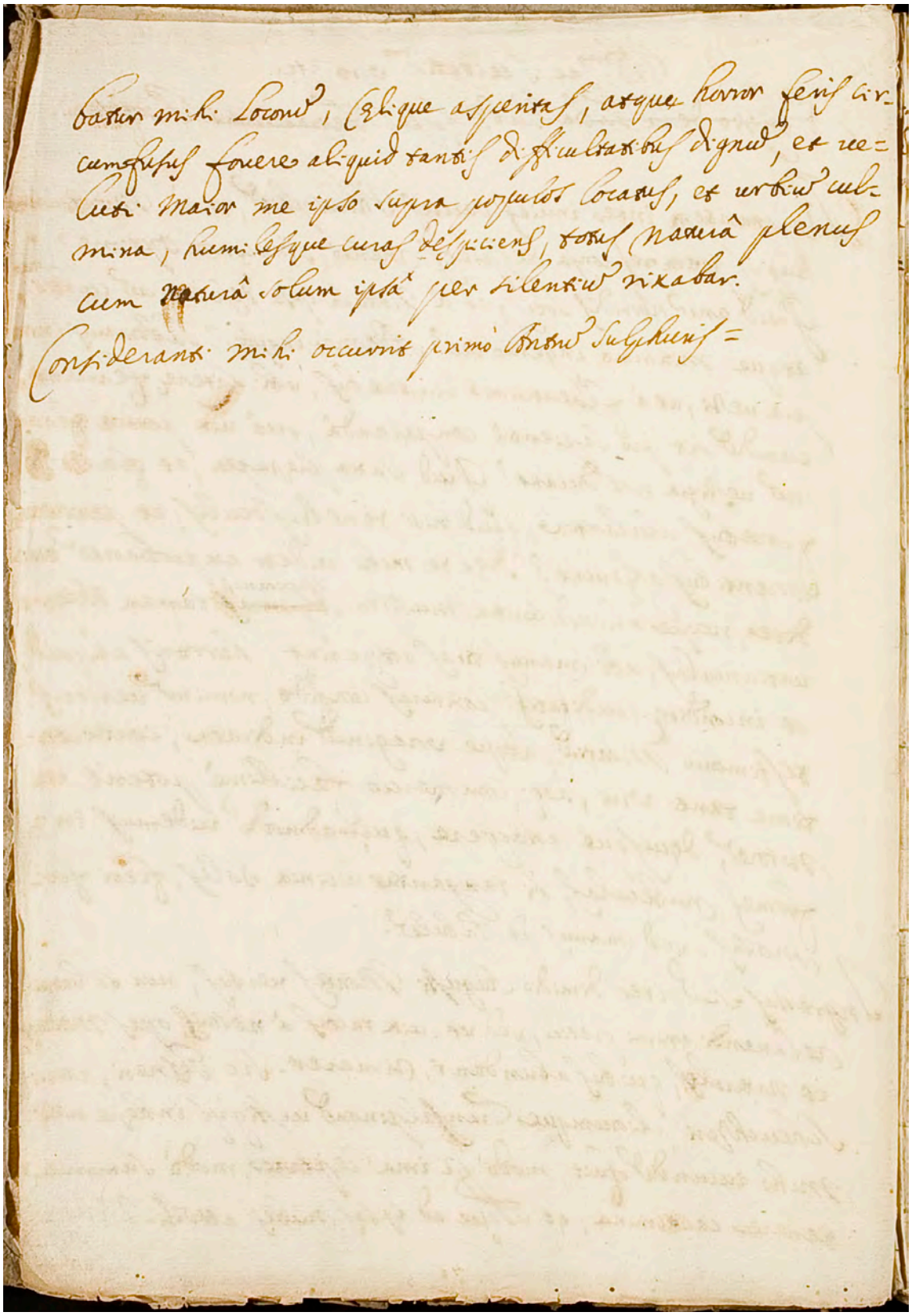


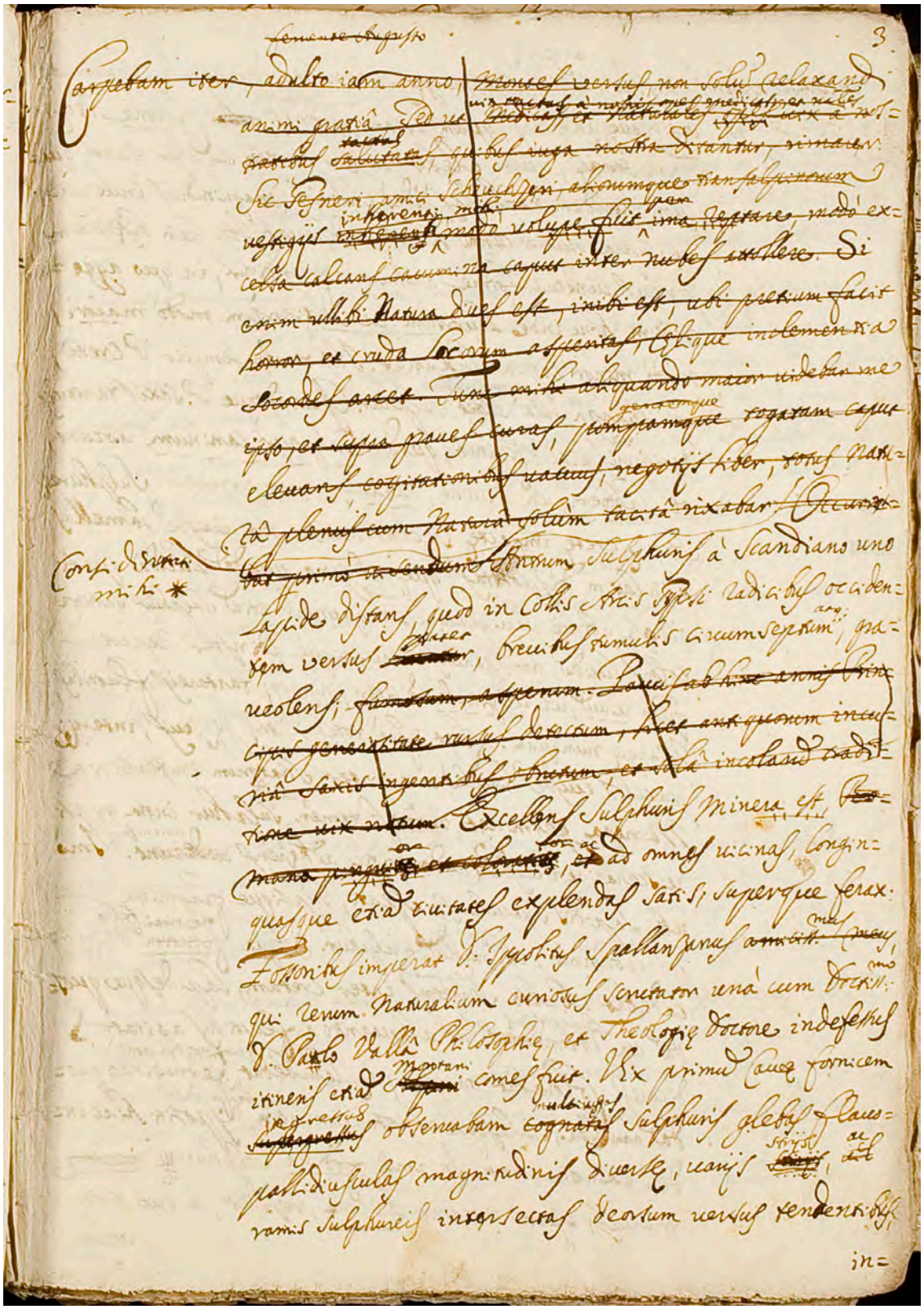
Ill.mo ac Spectatiss.mo viro etc.

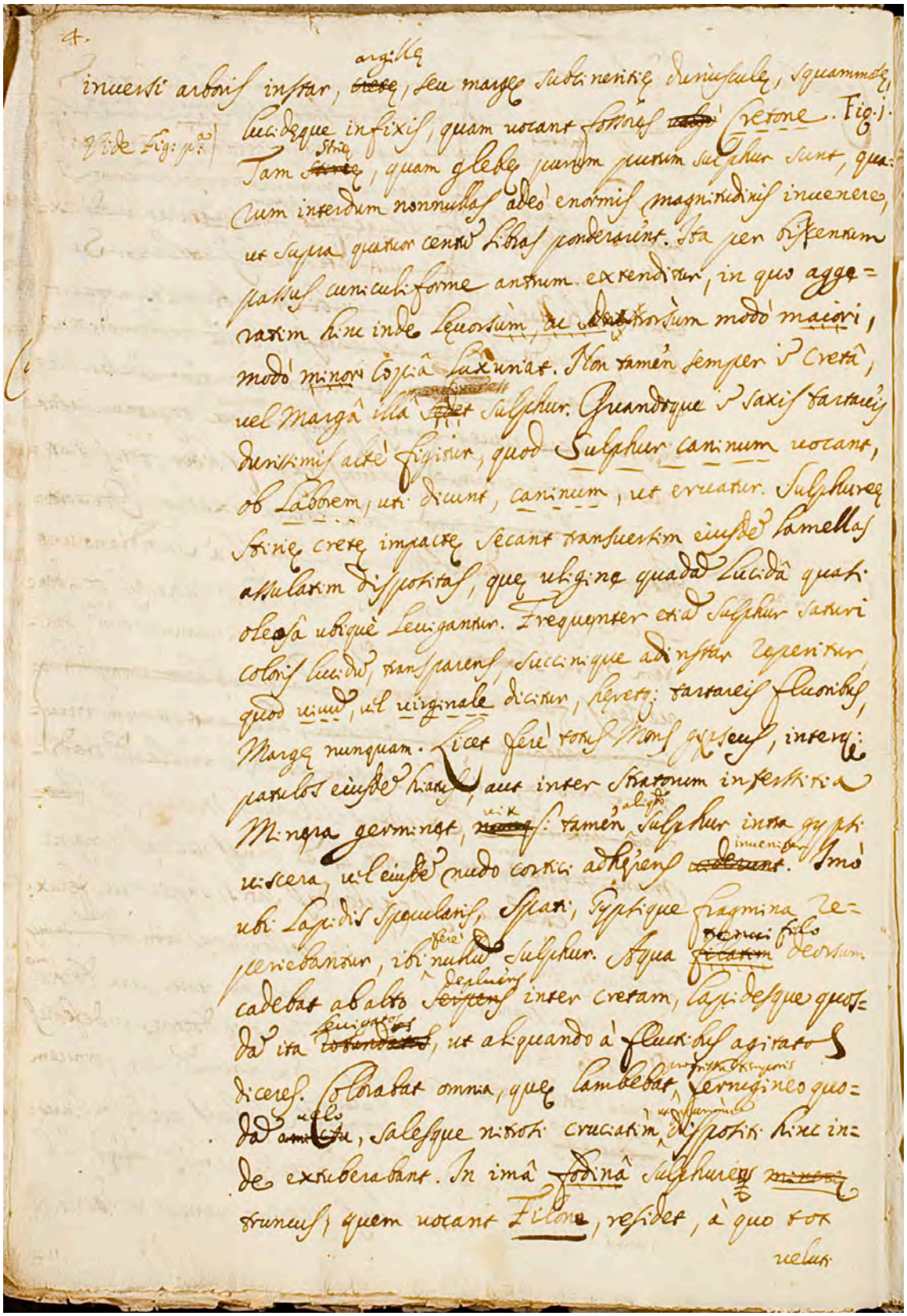
~~Aloysio de la Fabra Pub.co Phil.ae Ferrariensis Professori.~~

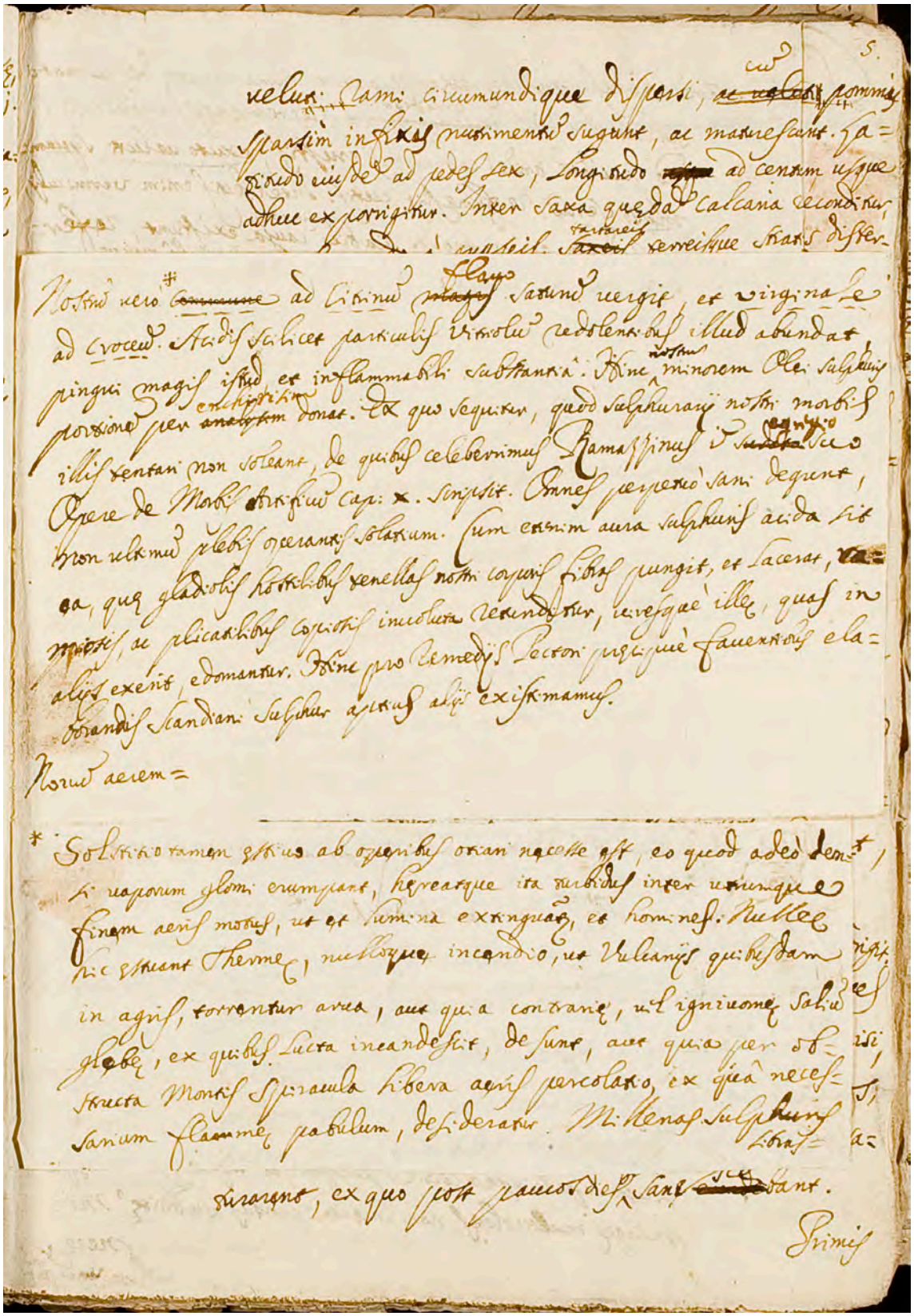
Restantem inter initias cautes Philosophiam, et à Montium iugis petita responsa despicies merito, Amicorum Optime. Quid enim horridis locis, et à Naturâ ipsa desertis cum cultiss.mo; atque mitissimo ingenio tuo? Adtone, inquies, Laboramus inopia veri, ut à florentissimis Civitatibus, ubi Literae ferveant, eundum sit pro Sapientiâ comparandâ, quâ vix pauca ferarum vestigia nos ducant? Quid saxa praerupta, et fractis fontibus ululantia, quid nisi tenebras oculis, et pavorem mentibus afferunt? Age te mihi videor exprobrante audire, neque aliquid contra mussito. Montanas tamen observatiunculas, ubi manus suas attigerint, horroris aliquid et inconditae ruditatis posituras confido, nimirum veritas testimonio Montium, atque voraginum indicata, contrectatione tanti Viri, atq: Commercio facillimè poterit in nitorem, decusque assurgere, quemadmodum videmus informes nubeculas, si tangantur vicinia Solis, fieri formosas. Sed manus ad Tabulam.

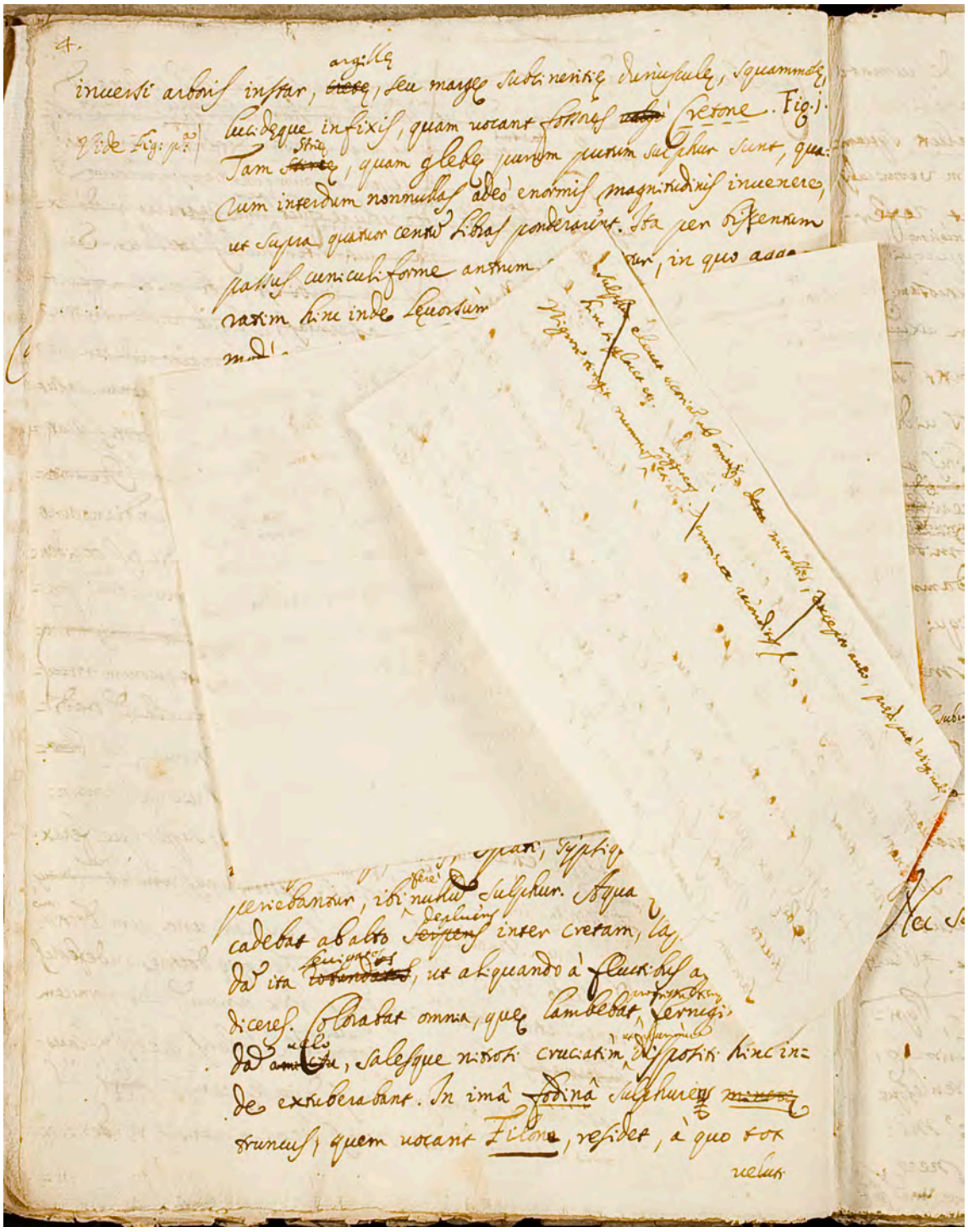
Ingressus sum iter dimidio Augusti Montes versus, non solum relaxandi animi gratia, sed ut, vix tactas à nostris opes Medicas, et Naturales, quibus abundant, rimarer. Sic Gesneri, amici Scheuchzeri, aliorumque Transalpinorum vestigiis inhaerens mihi iucundum fuit modo ima lustrare, modo summa terere cacumina, et usque ad ipsas nubes attolli. Videbatur

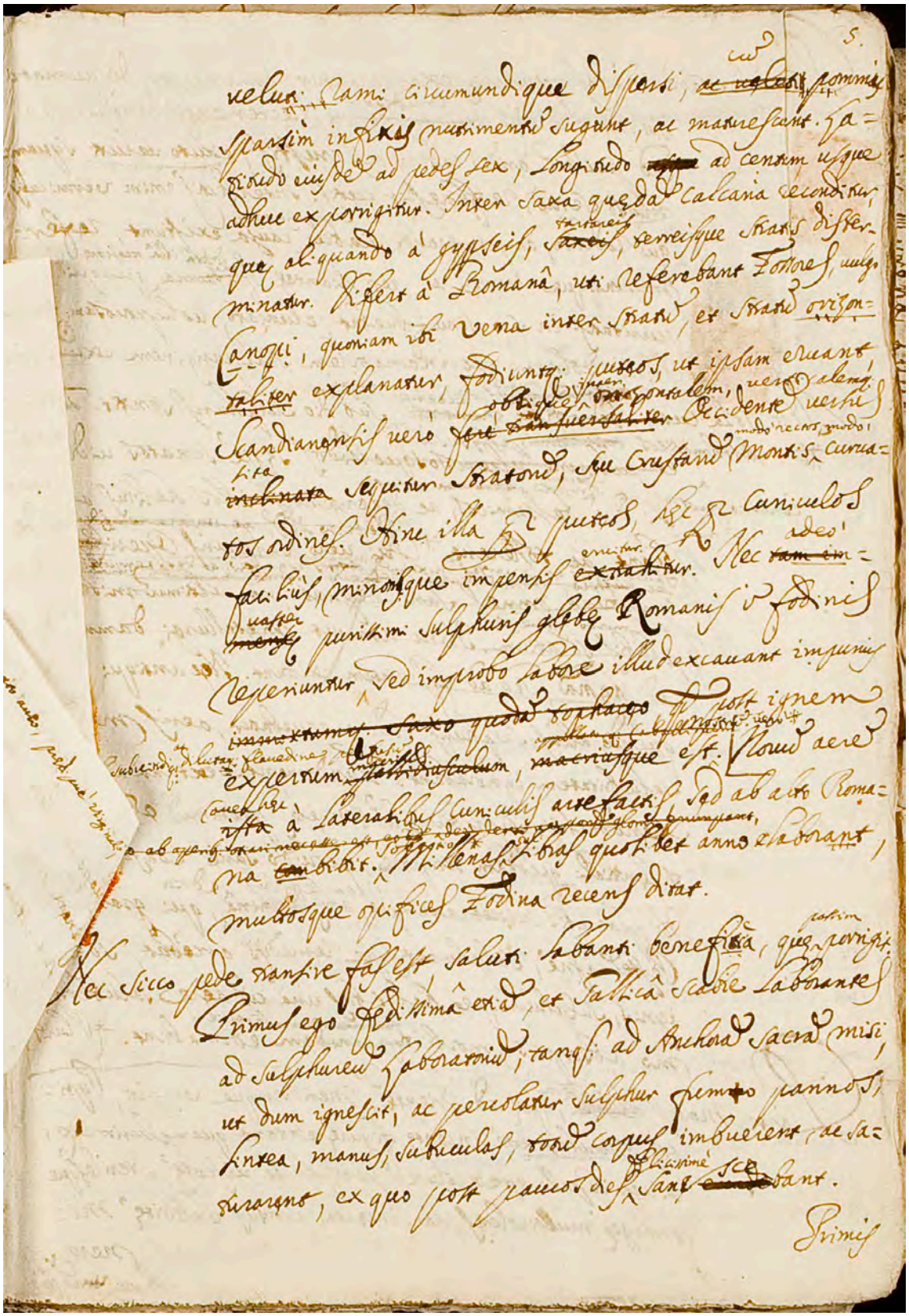


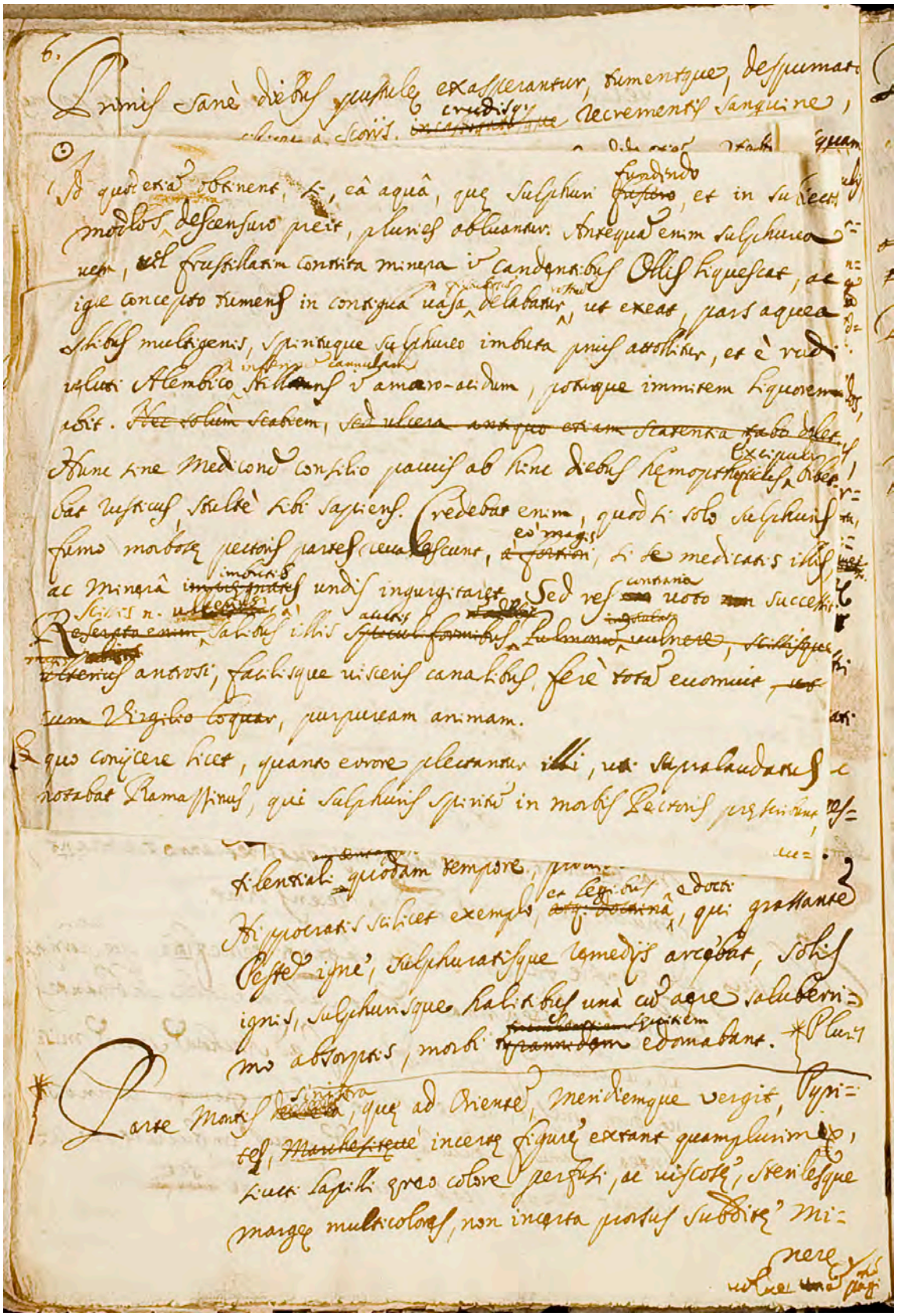


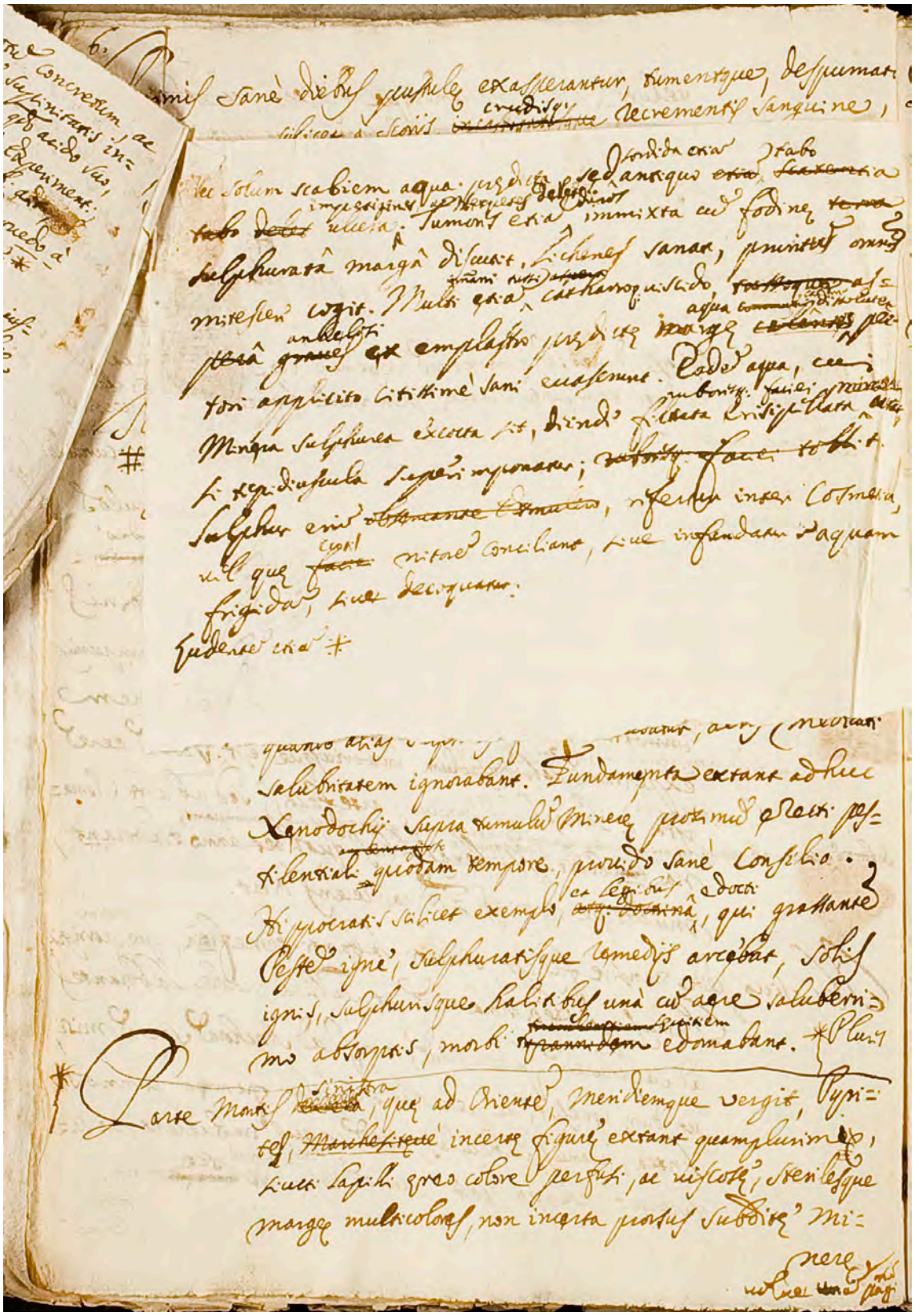


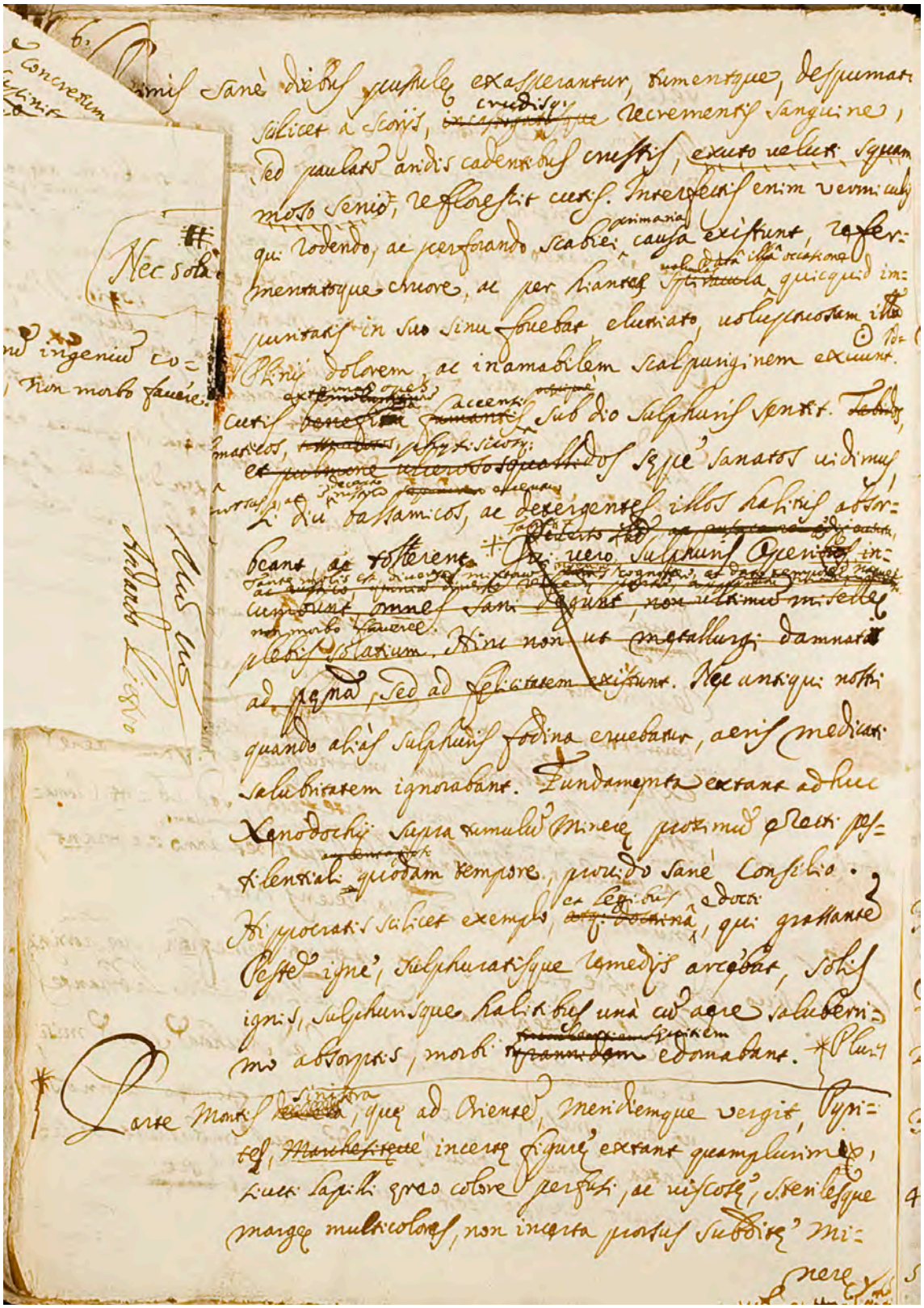


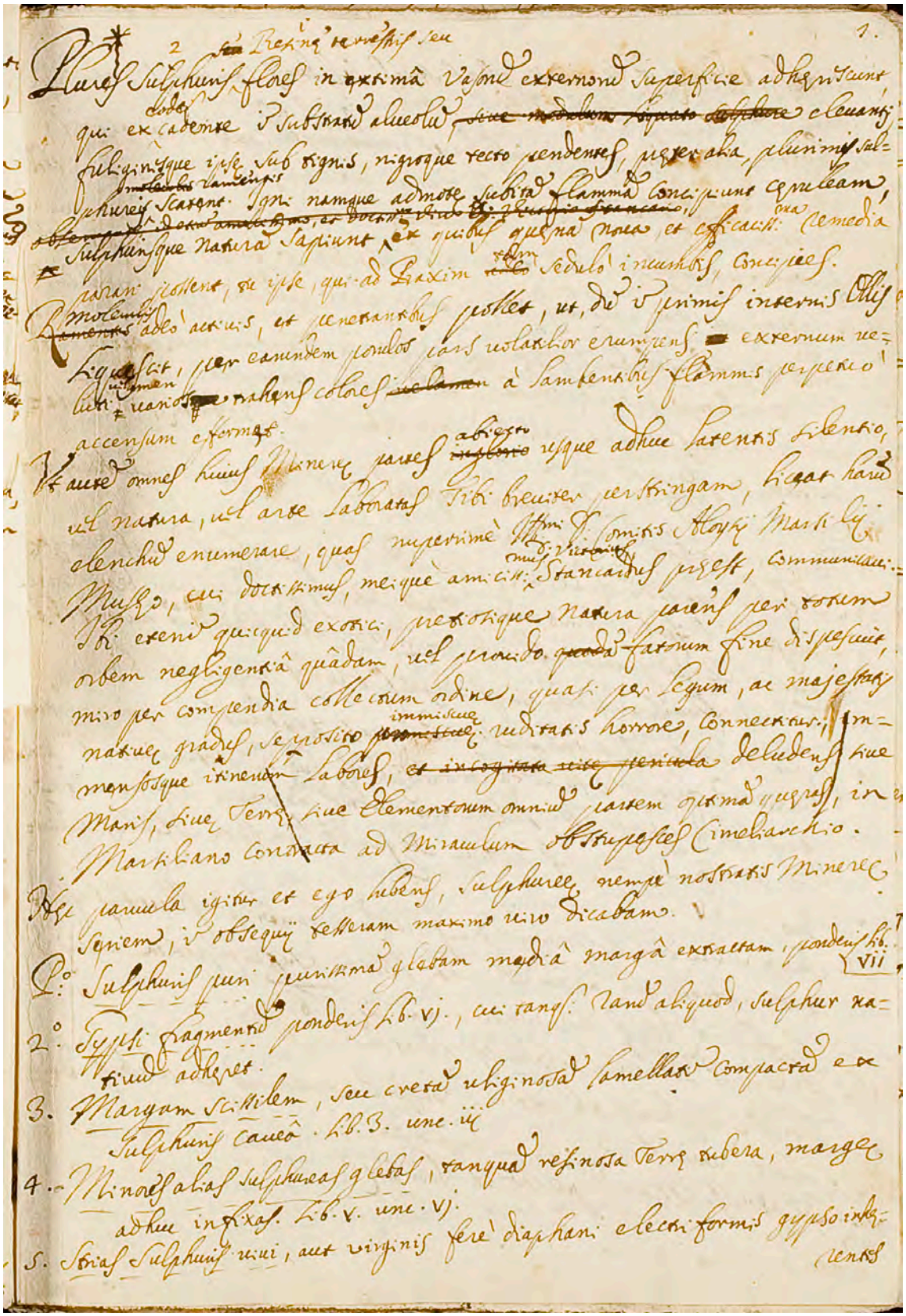


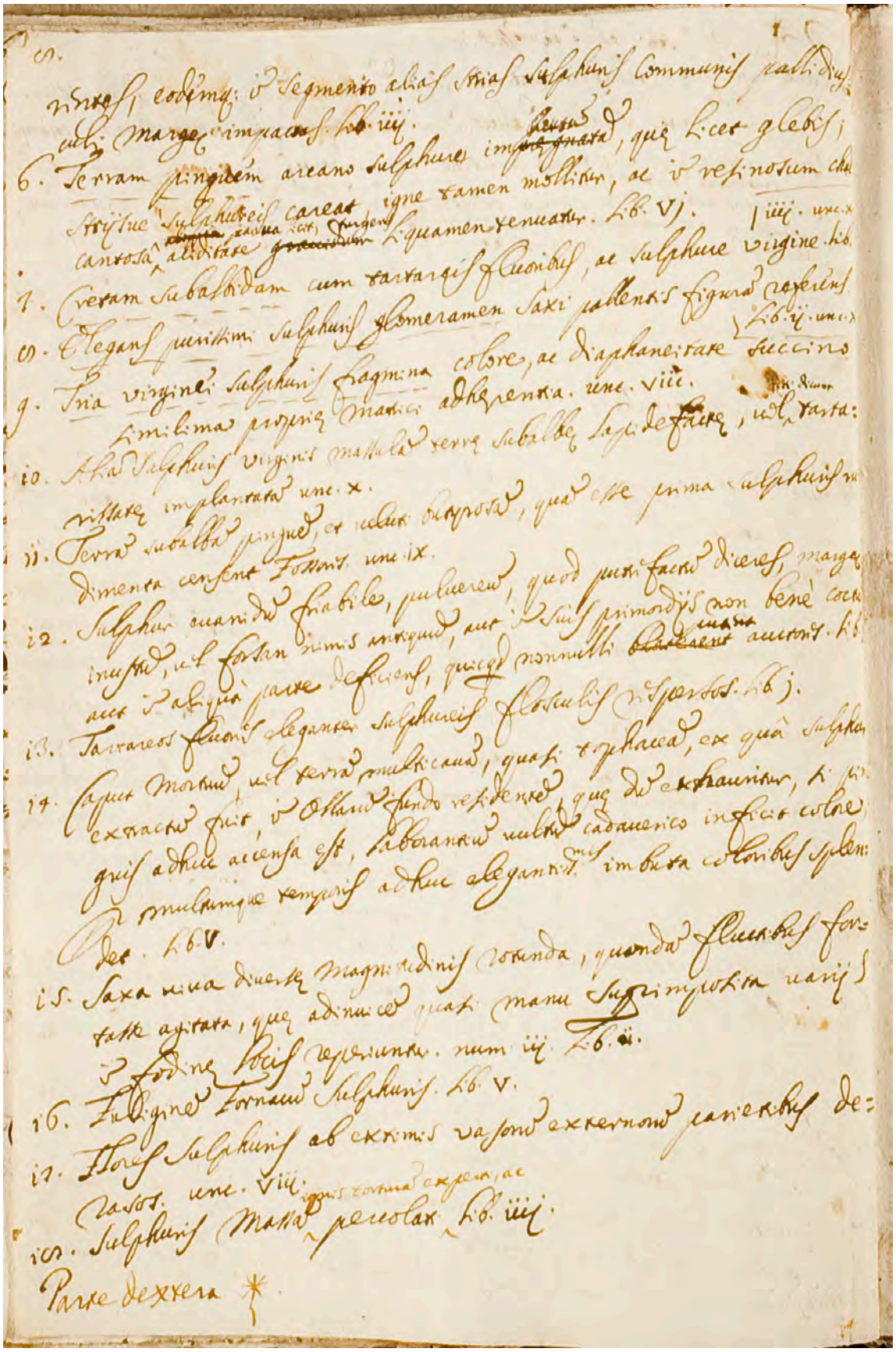


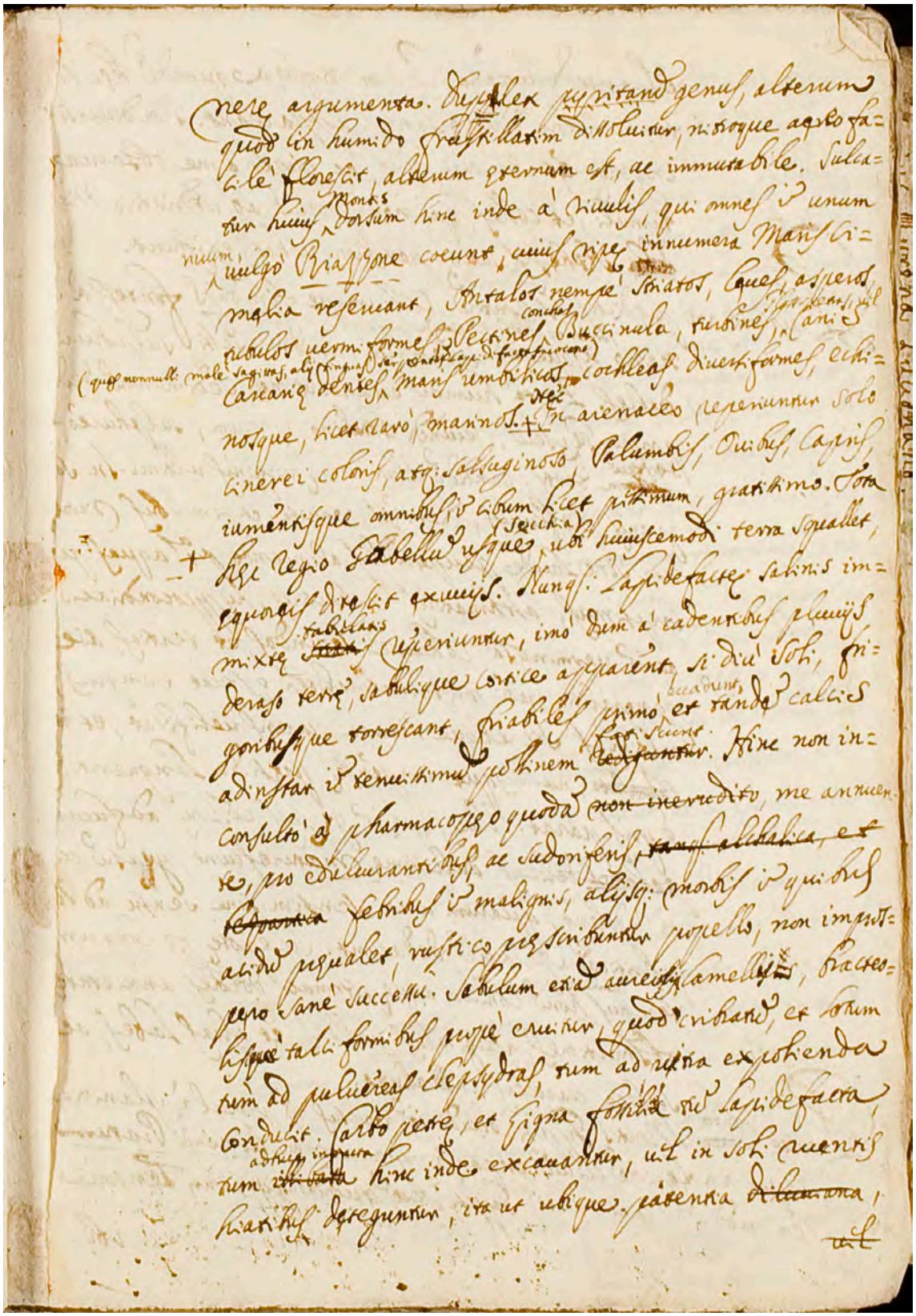










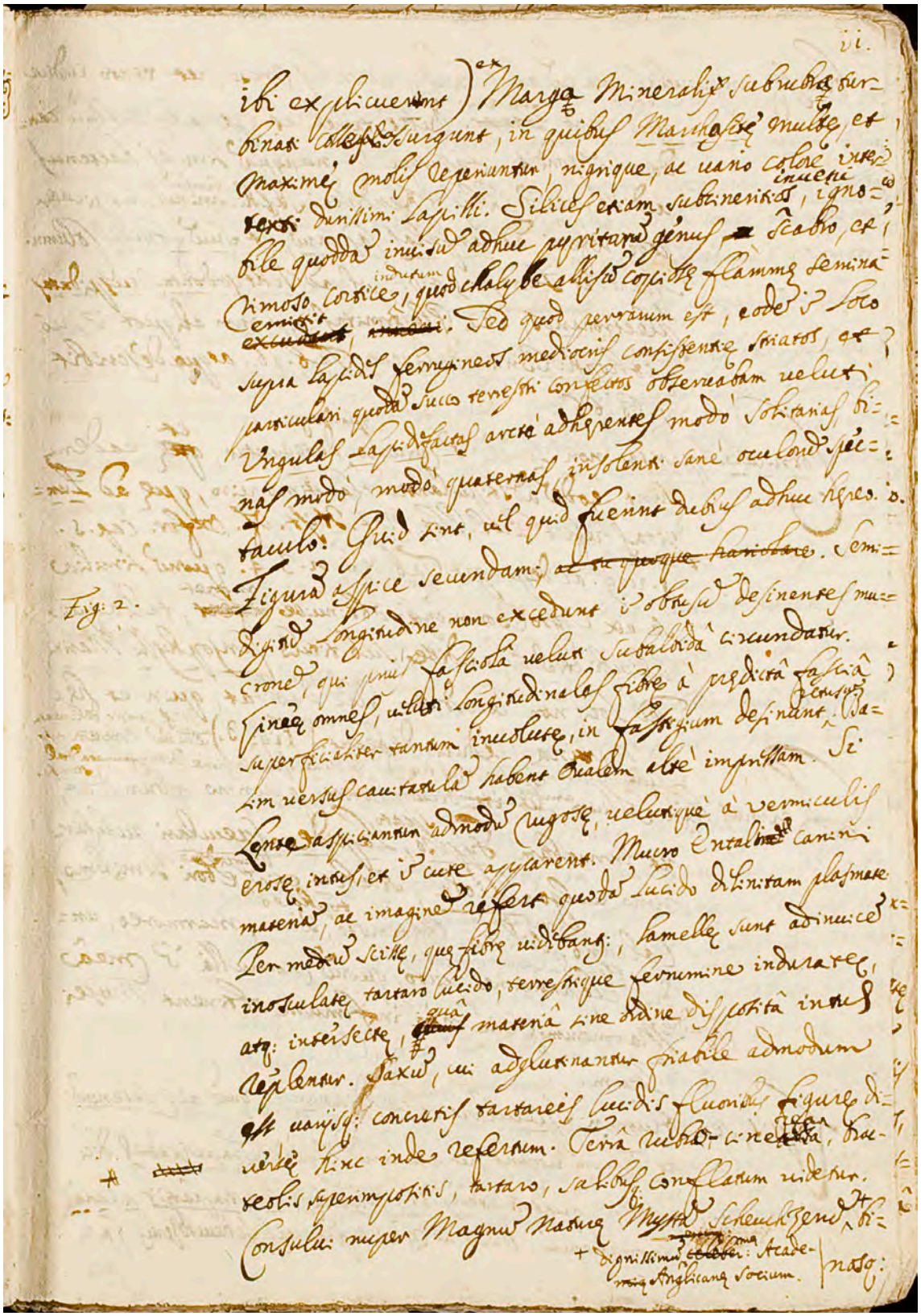


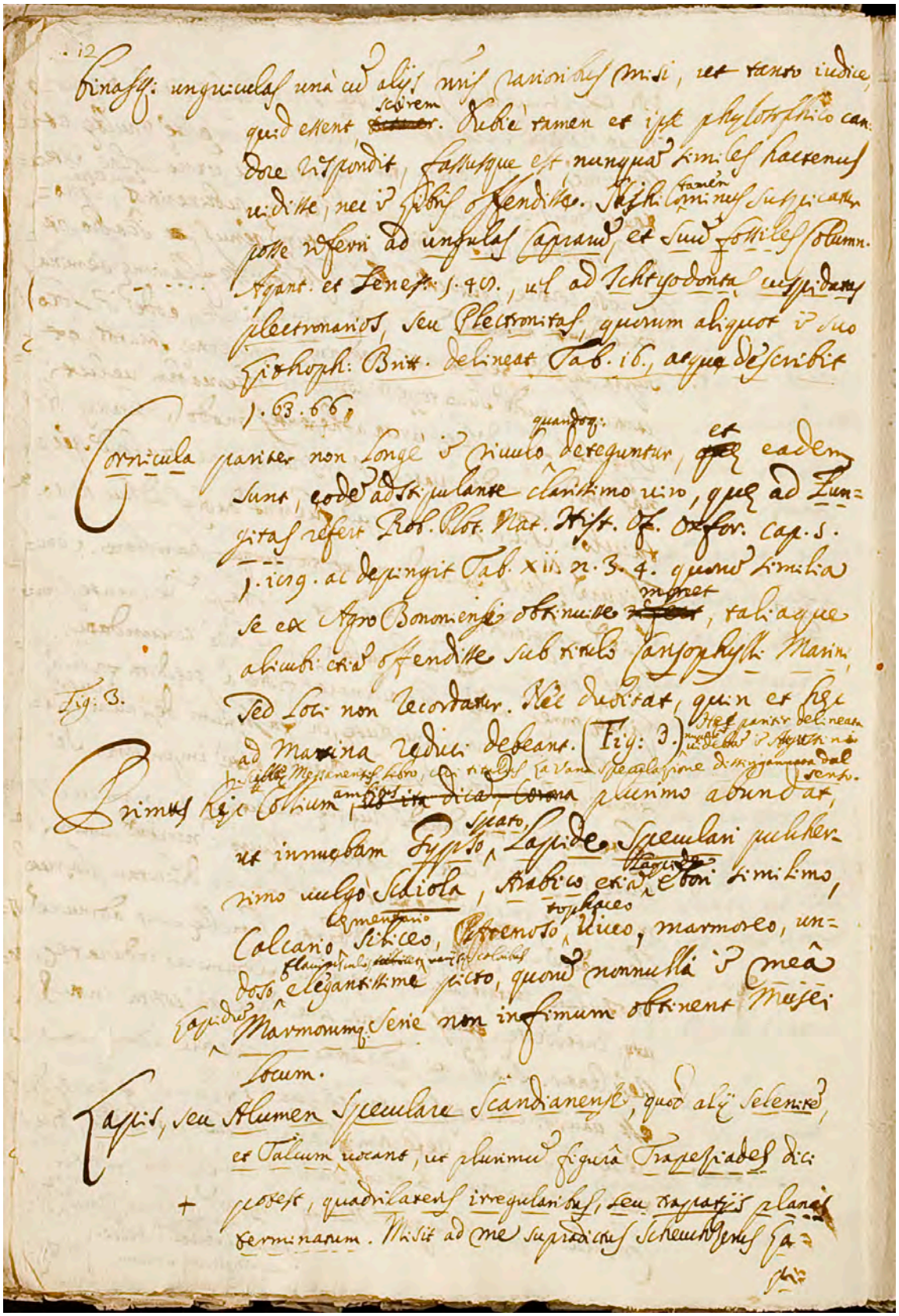
-10-

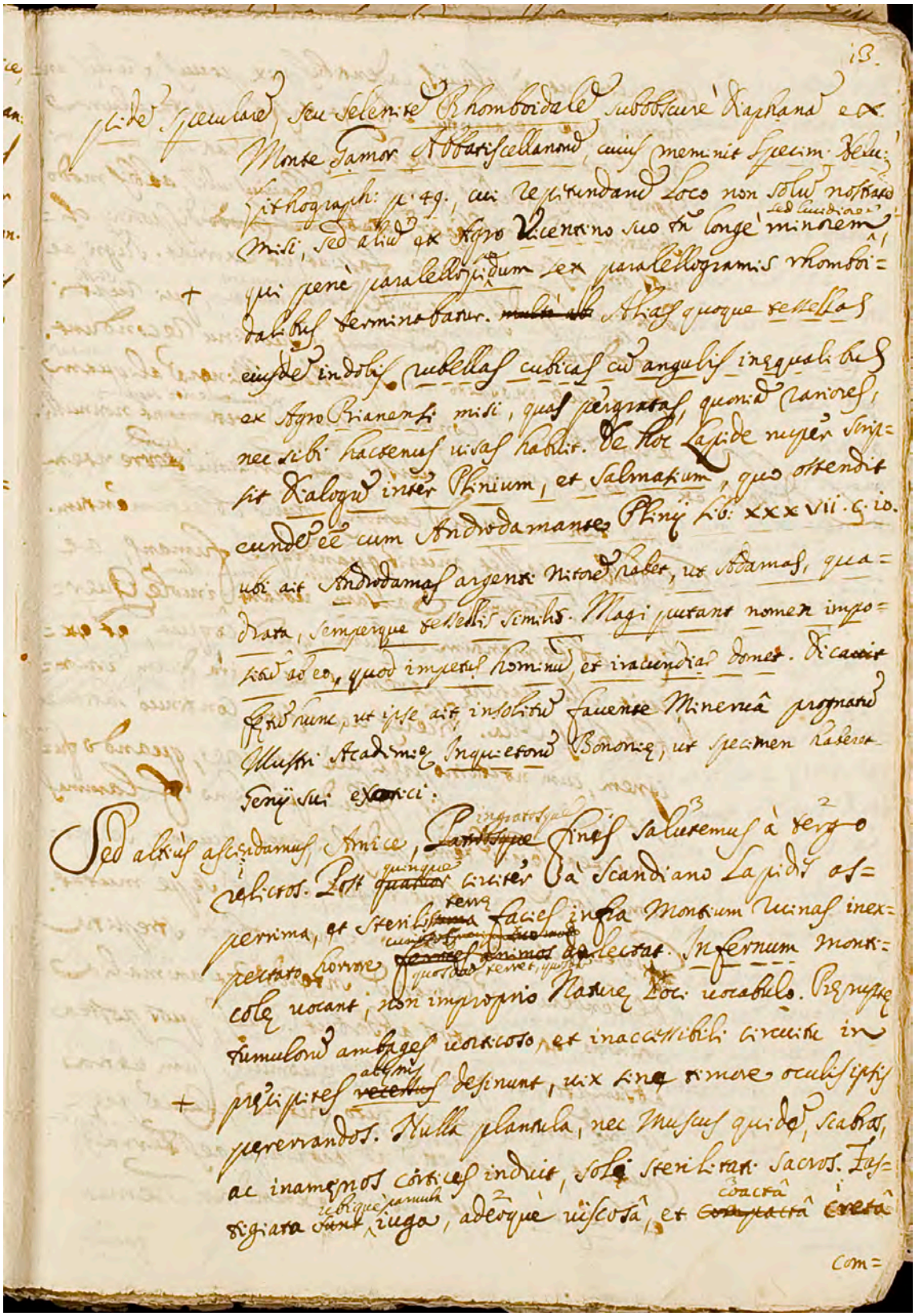
~~Lante dilucana~~ Pelagi trophea quondam haec Montana littora diverberantis appareant. Non dicipsi cru ingenii, et structurae sunt, ac nuper à me observati tumuli, et colles, qui non procul ab Adriatico Mare, quo Athesis suum cursum vehit, existunt.

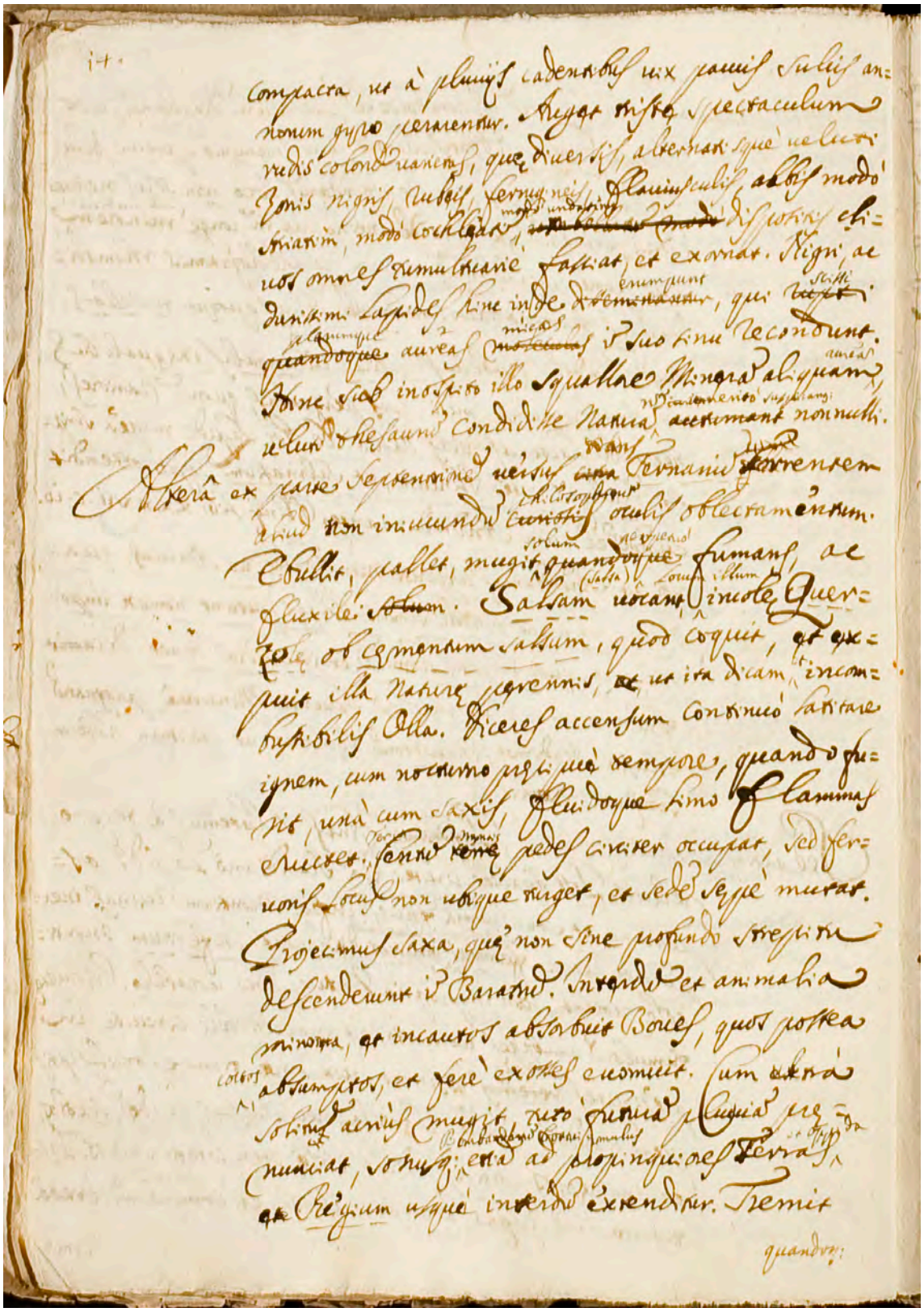
Plurimi in praedictis Montium Collium que finibus fontes à Ternano, Tornante (Tretnante) usque ad Stabellum, amari, salsi, sulphurei, dulces. Facta humoris evaporatione sedimentum dedere primi Riseum, secundi Stalino-nitrosum, sulphureo-terreum tertii, candidum velut terrae virginis ultimi. In sanguinis profluviis, Diarrheis, vomitu, et similibus morbis non sine laude pauperculis aliquando p. aquas praescriptimus, asthmaticis, cacheticis, hypocondriacis, ac in verminosa colluvie secundas, et tertias, ac generaliter, ubi ~~[illegible]~~ exstuat sanguis, ultimas. Sic ubique Natura parens velificat, et egregia, nulliusque impensae praesidia languentibus egris parat. Uvae, quae in praefatis collibus ~~ad fucatos palatos dolius~~ dulcissimae maturescunt, quasi ocult to redolent, quarum vina sensim sine sensu ad Nephriticam affectionem deducunt. Sic epotae per longum tempus nonnullis horum Collium aquae stomaci dolores, anxietates, obstructiones, virginibus pallores, et alias labes, ac scelera partibus inducunt.

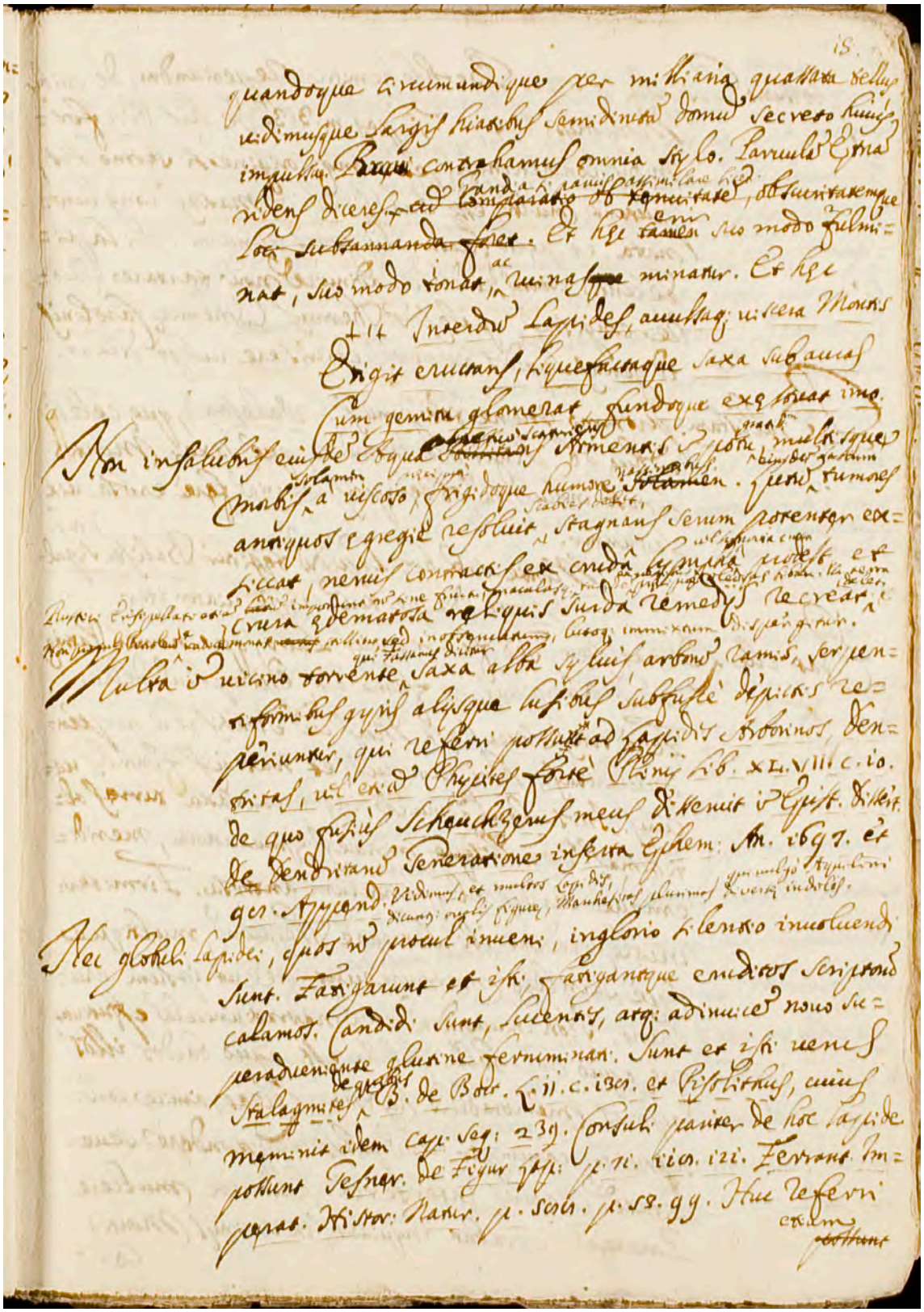
Parte dextera ~~[illegible]~~ Montis Sypti occidentem versus non procul à planitie supra inferiorem clivum expansa, quae vocatur Armonum Pratum eo quod Hispani milites Sypti Arcem quondam aggressuri tentoria ibi











16.

~~tollunt~~ queunt Pisa illa in Agro Bethlehemitico reperiunda, de quibus Monconys. Voyag. T. j. pag. m. 313. De his Pisiformibus concretionibus, earumq; origine si sermo sit, putant multi, esse dua (vel facta) Pisum in massas conglutinata, et petrificata, alii guttas purissimi succi lapidescentis coactas, et deinde adinvicem novo tartareo fluore congestas, quales in Thermis Bohemiae Carolinis id genus lapides ex guttis concrescere vulgo dicant.

Balistam proximo mane reliquimus (Valestra), quae celebris adhuc ob Virgiliana carmina, quae saxei Montis Limbo insculpta, et ob temporis iniuria fere erosa vix leguntur.

Monte sub hoc Lapidum tegitur Balista sepultus
Nocte dieque tuum carpe viator iter.

Erat ille Ludimagister, sed famosissimus Latro, qui nomen Patriae et cui Virgilius, ut fama est, Epitaphium dedit. Fere totus saxeus est Mons cum stratis fere perpendicularibus, sine exsuccus, et nativis fontibus vacuus. Insulanis adinvicem ingentia saxa turres altissimas, et scopulos ~~[illegible]~~ minaces aemulantia, meridiemque versus aliquantulum angusta. Firmiter incolae credunt ibi latitare Thesaurum, multique sepe sacrilego murmurarunt ore, ut ipsum eruerent. Non iniucunda est narrat. unicula effectum, quae apud me bella fabella est, apud bardos illos rusticos memorabilis historia. Liceat, amice mi carissime, seposito paulisper rerum physicarum pondere severitati Naturae interserta lepiditate mulcere ~~[illegible]~~. Arabat, inquiunt, in viciniis Montis

Co=

17.

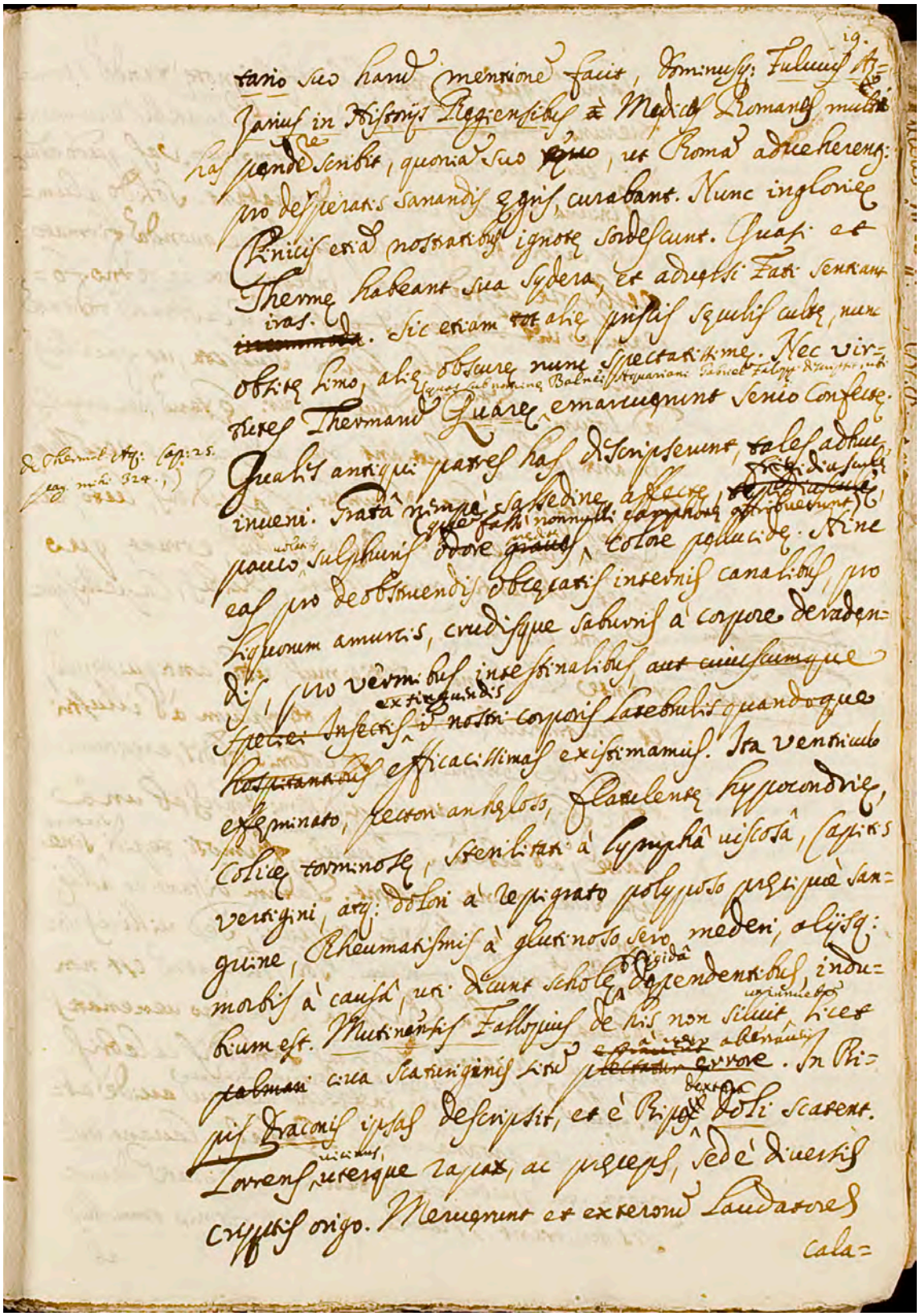
colonus terram, dum bini advenae nigris insidentes equis
ipsum interpellaunt, ubi Mons Balistae, quo protenso
licet digito demonstrato, sibi eum Comitem voluerunt. Ut
perventum est ad ~~immane~~ saxum, ubi specus sine Postibus
ostii habat, induncit statim viso non amplius ostio, ~~mag~~= limen
~~tum limen~~, quod ut recluderent, claves inter vicinas
vepres reconditas securâ manu extrahere. Remotis
pessulis, primisque foribus laxatis, novum ostium ferreum
apparuit, quo pariter recluso, in portam situ, et fuli=
gine terrâ squallidam derivabant, inde in amplum cubi=
culum fornice scabro, pendulisque ~~[illegible]~~ tophis mi=
nax, ac dubiâ luce teterrimum. Ibi aureum cernebatur ~~[illegible]~~
simulacrum, numinumque Idola gemmis, et auro nitentia,
quorum in ambitu stabant urnae vitreae, atque marmoreae
humanis ossibus ustis, et cine~~[illegible]~~ rea pulvere luridae, variisque
attonito rustico characteribus ignotis insculptae. Ad maioris
simulacri pedes plumbeum iacebat scrinium, cuius distinctis
in loculis phyalae, pixydulaeque servabantur variis li=
quoribus, ac arcanis pulveribus refertae. Lychnus etiam
prolixus accensus adhuc, sed fumosus magis, quam
lucidus ~~gelidum~~ noxium terrore quassatis pectoribus ingeminabat.
Nec deerant aliis in arculis nummi, aurea Monilia, gem=
marumque grande Patrimonium. Tolle, dixerunt advenae,
tolle quantum auri tua potest implere ~~[illegible]~~ famem, primique
exemplo viam monstrante ~~[illegible]~~, sacculos equorum dorso impo=
nendos gravarunt. Sequutus licet trepidans exemplum, se se
quantum potuit, stipatis ubique nummis, implevit, spe
con=

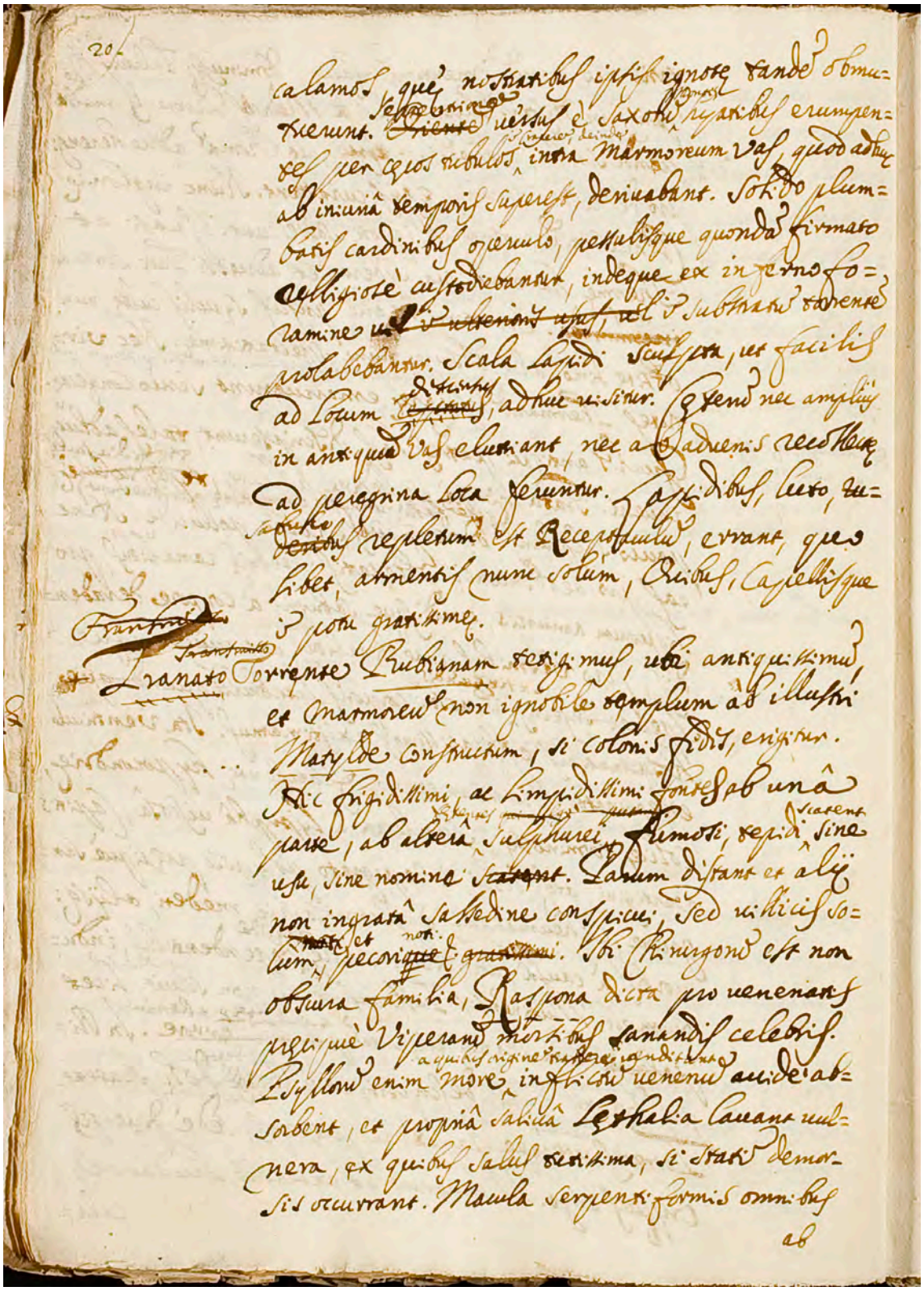
101.

conceptâ, ueniente nocte, redeundi cum uectorio curri=
culo, et sacras Plutoni gazas, et Regale, ac memo=
rando ~~singulis omnibus~~ annalibus nris depopulandi thesaurum. Interea
discessitum aduenê, claustisque rectis, claues rursus
intra proximum iecere Vepretum. Tunc auarus Agri=
cola curarum plenus, animoque magnâ spe saturo,
nullis obseruantibus, summoque noctis silentio redijt
ad asperum Clauium Reconditorium, manuque callosâ spre=
tis spinarum aculeis projectas quaerebat Claues. Sed,
dum iam intra uolam ~~illas~~ credebat, Viperas ī fruni=
culum contortas, ~~horrendumque~~ ac immanes sibilantes strinxit,
(~~tam~~ gelidus: per ima cucurrit ossa tremor.)
spe delusus inani, ~~timore gelans, dolore fremens~~.
Transijt ~~illico~~ uicissim ī metum stupor, in stuporem
metus, uixque uacabat timere miranti, aut admi=
rari timenti. Viuunt adhuc talis rustici nepotes,
inter Balistenses ditiores, ~~qui~~ quoniam suis auitis for=
tuna ~~eius~~ negotijs, ingenio, et industriâ caeteris emi=
nentes: arte quondam externorum Necromanticâ
diuitiae partae creduntur. Et fortasse Lepidam hanc in=
auditiunculam ipsi credulo imposuerant pojello, ut sus=
picionem omnem suas ex alienis opibus accumulatas opes
auerterent, inuidique, ac ictum tela fabulosi clypeo
retunderent. Sed ne nimis extra oleas diuagemur,
è diuerticulo rursus in uiam.

Ad Quarum ~~Balneum~~ uel ut antiqui Aquarias Balneum, sequenti die appulimus, locum antiquitus medi=
catis aquis totâ ~~Italia~~ Europa celeberrimum, nunc ipsis con=
terraneis uix notum. Jacobus Vaccarius ī Antidotario

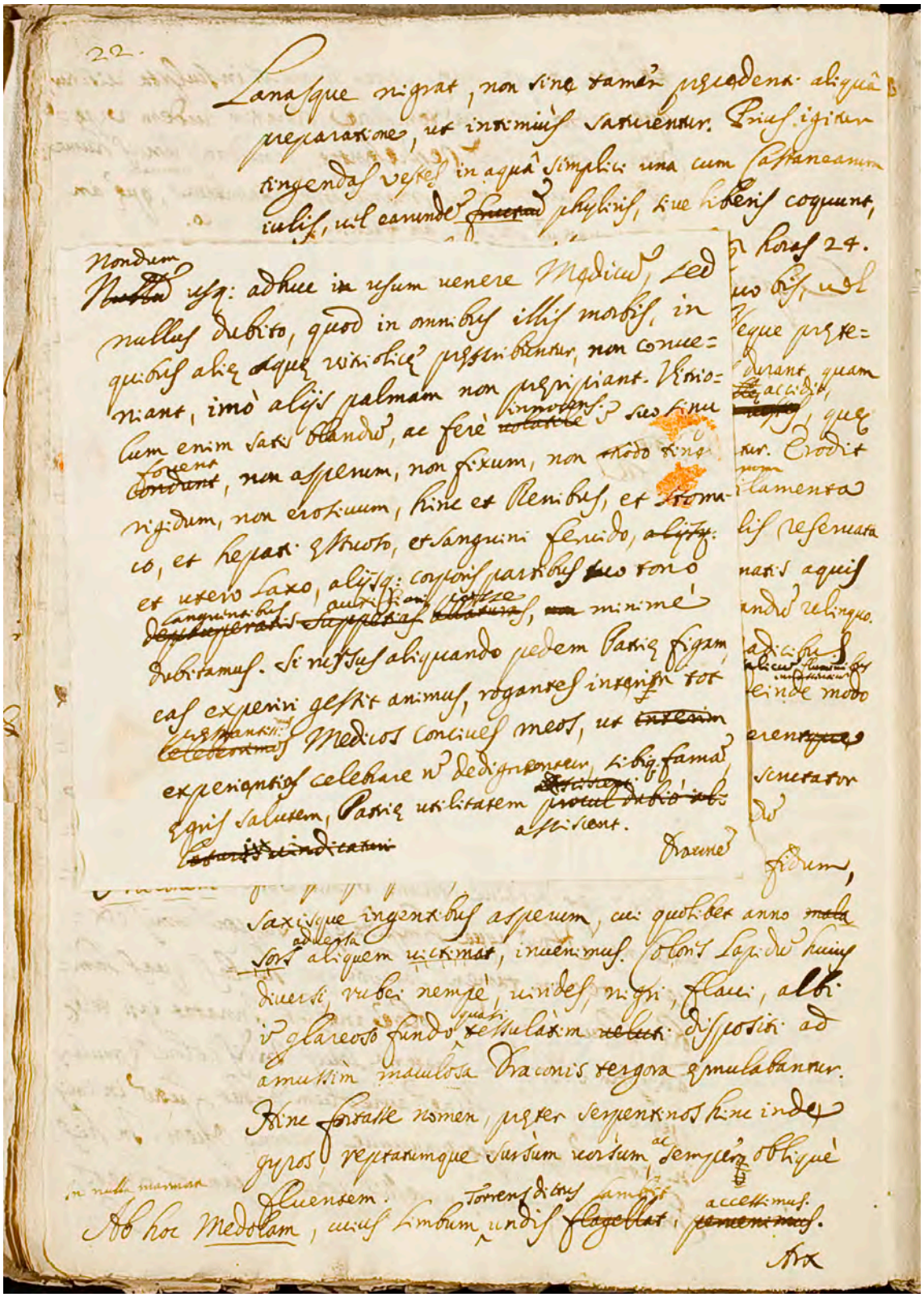
Vide Epist: 2. pag:

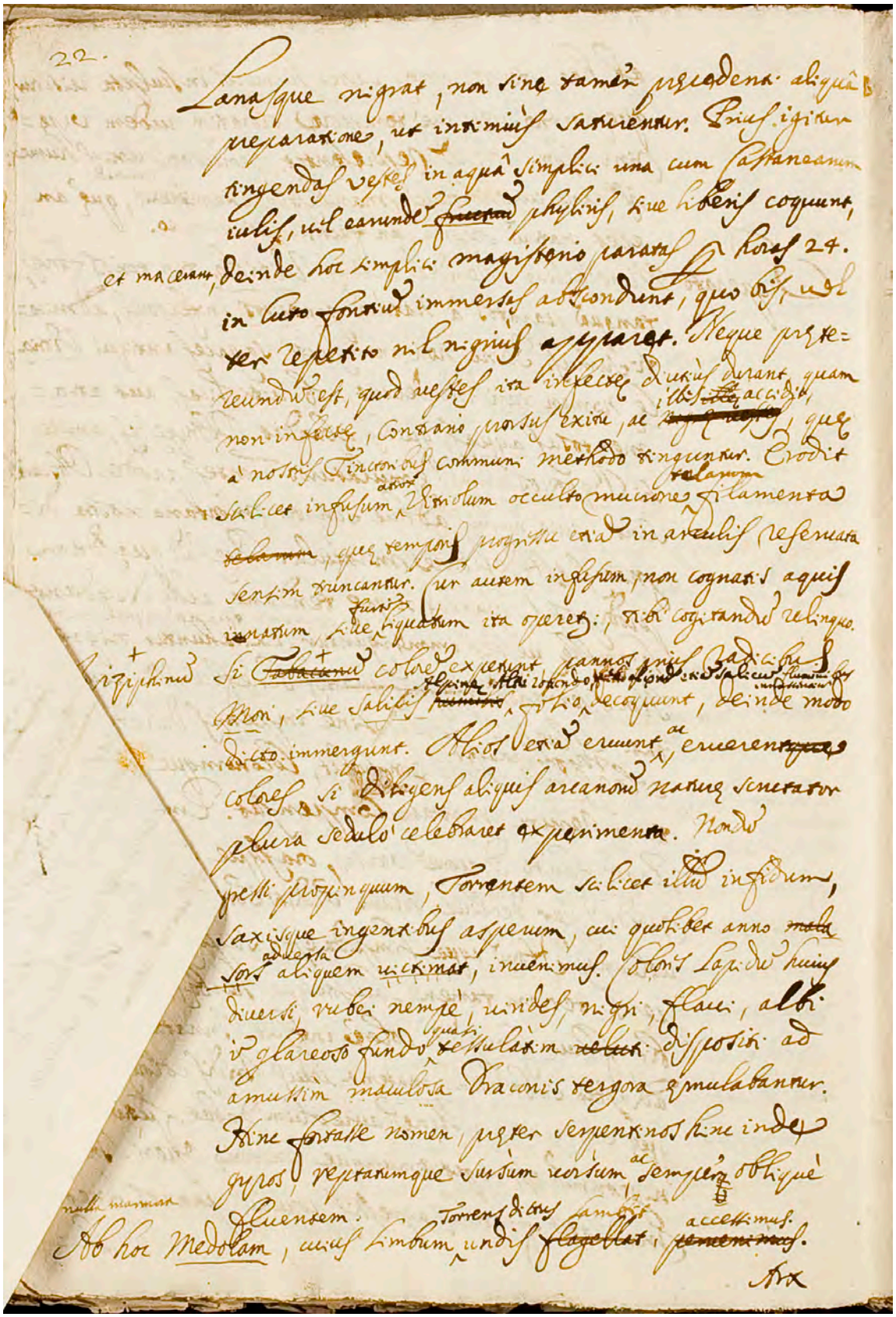




ab hac stirpe natis super humeros insculpta visitur,
quę verno aestivoque tempore coloratior videm viga=
rini glomi effigie repraesentat. Denudatis senius hume=
ris hanc curiosis oculis manibusque examinavi [renovavi], quę an
esset nativum stigma, an facticium, adhuc haereo.

Superato Montis clivo Mendię versus Vitriolę tinctorios fontes,
tanquam paratos à Naturâ gratuitos infectores, admira=
ti sumus. Hinc non inconsulto sagaces antiqui Vitrio=
lę nomen vici indiderunt, ob vitrioticas aut atra=
mentosas aquas quibus abundat. Obstupesces, amice,
si Boeticos amnes ęmulaturos fontes prodo. Obscuri
sunt, quia nullus adhuc scriptor montana nostra di=
gnatus est delibare miracula. Res ad quasdam
prodigiosas lymphas nigrę tendant, albę discedant;
contrario quem..., ęquali miraculo
hic albę vestes immerguntur, extrahuntur nigrę.
Non spernendâ ~~magnę matris~~ beneficentiâ pauper=
tati sylvestris populi sine impensis duraturos
colores [Magna Mater] impertiens consulit, coelorumque inclemen=
tiam terrenum varietate compensat. Emergunt è
Prati fundo Draconem versus, crassique fontium supe=
rando per declive solum in dict. Torrentis alveum de=
volvuntur. Horum aqua limpida est, saporis omnis ex=
pers, terram tamen, laevesque herbas, quas lam=
bit flavo-ferrugineo colore inficit. Innatat ipsi tele
adinstar subtilissimę materia Iridis colores ęmulans,
quę exsiccata pollinem aureolum dabat. Luteo in imis
nigerrimum est, aptissimumque tinctorio operi. In his
medicatis fontibus agrestis populus pannos lineos,
La=





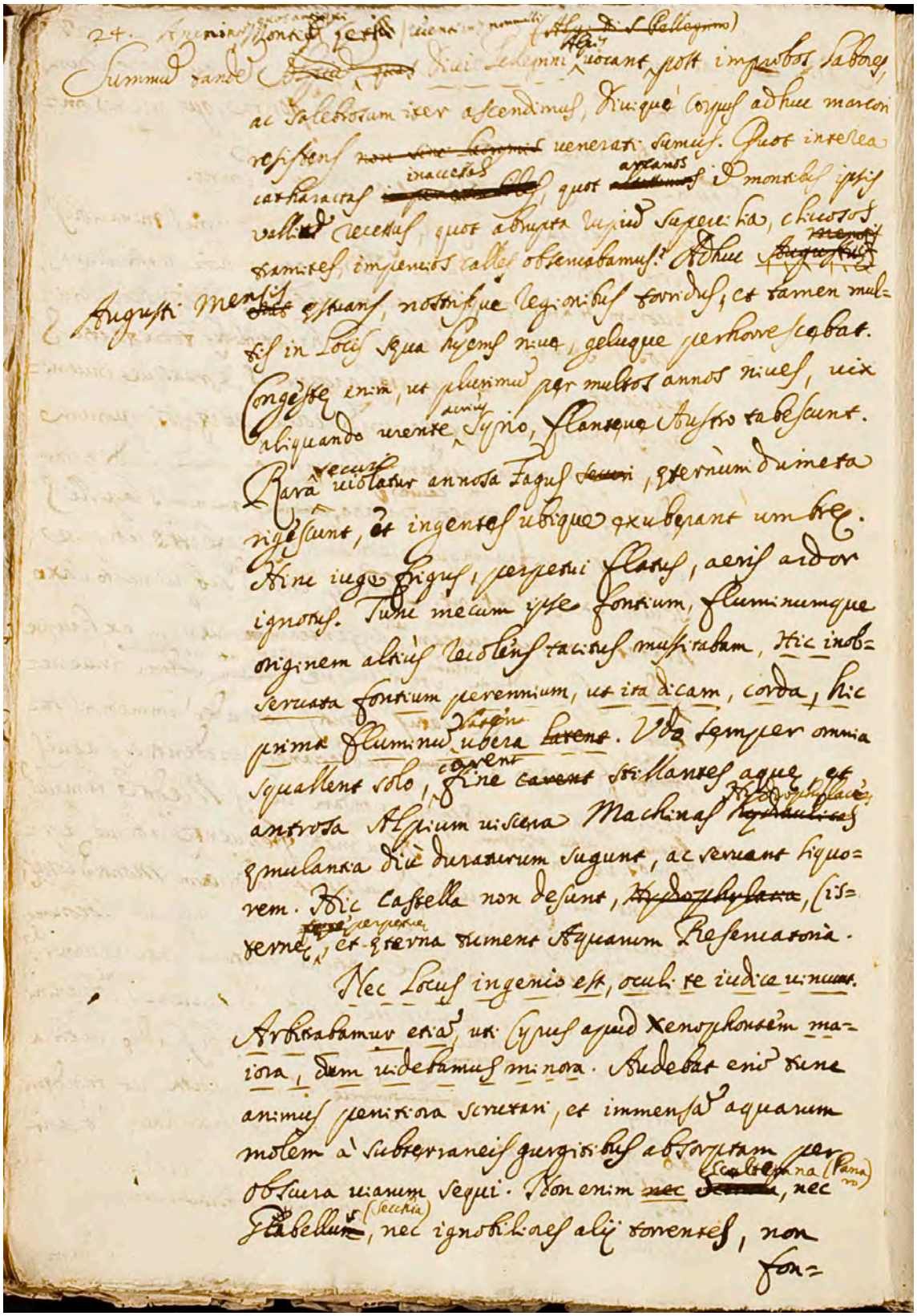
23.

Arx erat antiqua, inaccessibilis hostibus, supra saxum horrendum ingens, scopulumue rubro-liuidum [crassum] posita, quae uicinis omnibus iura dabat.

Tosson. De Medola Regea Monte Fiorino.

Nunc exiguae priscae gloriae fundamina nimis minacibus irreparabilia supersunt. Hinc atque hinc uasti Montes, quorum dexter fusca quadam rubedine perfusus, senio sus, sterilis, mineralibus exhalationibus torrefactus apparet. Multas pyrites argenteas, aeneasque inuenimus, multosque Lapides uiridi colore perfusos, quorum lateribus materia quaedam flauiuscula succini ad instar adhaerescebat. Concreti cautes tartaro, minimis lapillis globulosis, mixtamque redolentibus refertis ubique solum exasperabant. Fodinae initium sub praerupto saxo hiatat, ex qua auream uel argenteam uenam exhaurire credentes, crudam solum, sterilemque cupream (ut referunt) inuenerunt. Parte laeua Latus Montis non adeo immensis saxis firmatum a subterraneis erodentibus aquis euisceratum in praeceps quondam ruens Medolae templum, domosque inhumauit. [infernâ planitie positam] Huiusmodi frequentes ubique apparent ruinae, ex quibus diuulsae, ut ita dicam, Montium costae deiectisque superne summa decrescunt, ima surgunt, locorumque facies mutatur, quae sit quaqua calcatur antiqua natura, nec inuenit. Ab aquis scilicet, niuibusque solutis a supremis uicini Apennini uerticibus per fabularum stillatas ruentibus adeo lubrica terrae macerantur, roduntur fundamenta, ut tandem ab ingenti superincumbente pressura laxentur. Vocant has incolae Salaste, siue Lauine, quas praecipue, ubi fontium scaturigines extillant, uidimus.

Sum=



fontium perennium raritas ab Apenninis emergens tanta
nivium, aquarumque machinamentis respondeat. Re=
conditis abyssis suis flumen efformant, quod Montium
Minorum radices ~~lambens~~ perrosplicans post tenebrosum emensum iter,
Lacertis tandem repagulis hinc inde in ~~Mutinensi planitie~~ rarijs e ~~locis~~ tang[illegible]
onis humilioribus egurgitans sui signa prodit, dum interim flu=
entium maius per arenosum, glareosumque stratum
furtim praeterlabens Admirandae Mutinensibus Fon=
tibus originem praebet, de qua tam erudite, ac inge=
niose ~~sapientissimus~~ clarissimus Ramazzinus Collega ~~noster~~ olim meus sem=
per colendus alio licet innixus fundamento disseruit. [Eo magis ad hoc credendum
cogor, quo magis fontes, amnesque perennes,
qui in ultimis Furni Volastri Alpibus copiosiores
fluunt, ad trutinam revoco. Ibi enim minor nivium
copia ob Maris vicini teporem, ibi minor ambitus, im=
mo occidentem, id est Mare versus, fere semper nive
carent. Sed quoniam ibi maximus Minerarum pro=
ventus, de quibus postea, Montiumque strata fere
ut plurimum orizontaliter posita, fereque tota lapidosa
rigescunt, ideo sequitur, quod tabefactae nives, aqua=
rumque fluxus in eorundem visceribus vix haerent, ac
ab interpositis revolutae crateribus vel nutrimentum
Mineris ministrant, vel e tumulis sub imagine fon=
tium plorant, ac perpetuos amnes, ingentesque fontes
efformant. Non enim istis ob densam stratorum, ac
Minerarum compagem, et situm, usque ad ima,
et inconspicuas Montium radices descendere datum
est

[Margin note:] De Font. Mutin. Admiranda scaturig. Tractatus Physico-Hydrostaticus. Mutinae 1691.

26.

est, ut in Alpibus D. Pellegrini contingit. Diversum
ibi crustarum ingenium, diversa positio. Terra multa,
sabulum bibax, laxior structura cadentes aquas, ni=
viumque fluores devorat, ac in imas Alpium radices
ad equum (?) efformandum flumen devehit. Hinc pas=
sim Montium ipsorum horribiles lapsus, ac [redacted] plures
quandoque lapides fluxae eorundem laterum
ruinae pedibus ipsis trepidantibus observantur.
Ex quibus conijcere gestit animus, cur hic abscon=
dantur aquae, ibi exantlentur, cur hic rari ap=
pareant fontes aeterni, fluminumque rarior [redacted]
cursus, ibi utrumque luculentius effluat. Haec enim,
me cogitante, fere sola in hoc terrarum [salvo nostro Gregorio] aquarum
est circulatio. E Caelo in terras, e terra ad Mare:
rursusque e Mari ad Caelum, a Caelo in terram.
E Caelo scilicet fluentes aquas cavernosi montes, terrae=
que bibulae absorbent, fluxaeque ut plurimum, per obvias,
absorptae, [redacted], per obscuras vias in Mare
devolvuntur. Ex hoc, et ab illis attenuatae rursus in
nubes ascendunt, ex nubibus denuo descendunt, per=
petua fluxilis elementi, incrementisque nunquam
fallentibus, circulatione.

Sed te ridentem video, amice caris[si]me, quod parum ex itinere, mi=
nimisque observatiunculis tam immensa metiar. Quod
non amplector vulgarium, Italisque praecipue ingenijs altae inhaerentium (?)
Cartesij aliorumque opiniones de fontium, fluminumque
ac con[illegible] circulatione, de qua [illegible] praeclarius [illegible] ingenius [illegible],
perennium origine, non amplectar. Quod nempe haec,
Animad: 86.

et

et illi à Mare, temperanq aure à pluuijs, ac liquefactis
nubibus ortum trahant. Non tamen in Magnorum uirorum pre=
tium, auctoritatemque peccare contendo, si tanta nostris
solis in regionibus quaerens ambigo, non ut ambigam, sed
ut firmer. Vetus est (ait Platonis Sophista), omniumque
Communis sententia, si quis ea, quae magna sunt, recte
tractare uelit, in paruis quibusdam prius illa, facilio=
ribusque, quam in maximis considerare debere. Cum
de ueritate agitur non quis, ~~[illegible]~~, aut quot dixe=
rint, sed quam bene, et ueri uidendum. Non meum ~~etenim~~ calamum
per uniuersum terrarum orbem extendo. Ad nostros tantum
fortes, ad exigua nostra flumina Lorensesque minimas obscura=
tiunculas contraho. Forsan
... aliud ex alio clarescet ...
queret. Ita res accendunt lumina rebus.
Quid tu, uir doctissime, qui tam claro polles ingenio, de
istis cogites, siue perpetuo. Refrica, precor, non callosum
adhuc ulcus, et me uel fac doctiorem, uel silere in
posterum iube. Tu enim ex illis non es, qui ueritatem
ad suum arbitrium temperet, ac inter mendacia quicquid
palato non arriserit reponat. Iniurius est in homines,
~~in Deumq~~ uniuersam~~que~~ Naturam, Deumque Scriptor ille, qui
phylautia detentus aliorum omnia deridet, seque solum
ad tacitam, fumosamque Lucernam cuncta Caeli, Ter=
raeque negotia uidere credit. Ruditatem in omnibus, sed
in istis praecipue fateor meam. Quid sentias etiam,
ut a pe=

260.

ut aperiatur questo, de Aquæ dulcis Fonte, Venetijs mirante
populo, dum Canalem Regium excauabant, exantlato, uos te
per Literas certiorem feci; quid de prosilientibus aquis
etiam dulcibus è fundo Maris, obseruante Simone Portio
Neapolitano, quando passibus ferè bis centum in celebri
Puteolanâ conflagratione recessit? A Continenti per
secretos Canales aquas dulces illapsas augueror, eo modo,
quo per apertos, ob sol. humilitatem, in Mare decurrunt.
Flumina enim inconspicua, caeque riuuli per obliqua
Cretæ, saxorumque dorsa è supremis Montibus, non
~~[illegible]~~ apertos solum ~~[illegible]~~, sed ob-
scuros, coactosque per angustias itinere usque in in-
timos pelagi thalamos penetrant quandoque emer-
gunt. Quomodo enim Mare in se reuolutum, qui-
bus, ut ita dicam, sacculis colatorijs portento simili-
bus, quâ necessitate amaras exuit aquas, ut rur-
sus easdem subitò dulces absorbeat? Te etiam non
latet, quod uia filtrationis aquarum Maris, ut dul-
cescant, ambigua est, et nostris experimentis fallax.
Per nullum namque sabulum, per nullum ~~[illegible]~~ marmor,
nec per uasa etiam Fornacum igne densata fereolas La-
tices Marini salsedine dedignunt. Aut cum aqueis
particulis Connubium salis adeo arctum est, ut nisi per
placidam euaporationem disiungi queat, aut figuras
molesque talis, ut pori bibentes aquas salibus
etiam ingurgitentur. Vidimus etiam aridissimâ æs-
tate transactâ Ciuitatis nostræ, frequentes Puteos

Hor

29.

horrenses, quorum proximos arefactos, licet maris superficies esset longè eminentior, quam ima Puteorum profunditas. Argumento scilicet ~~euidenti~~ inductio, quod praefati Putei, aquas à continenti, non à pelago mutuentur ~~aquas~~.
Alia etiam, praeter ea, quae D. Perrault, Caspar'que Bartholinus, aliique transalpini exposuerunt, peculiaria concoquo, tuâ felicissimâ mente vel postmodum vel ulterius digerenda, vel ~~expuenda~~ expungenda.

At incepti itineris vota sequamur, quidque denuò curiosis oculis deuorabam, saxo ut intelligas. Saepè videbam substratis ~~[illegible]~~ agris cadentes imbres, et humidâ, stillâque caligine triste caelum ~~[illegible]~~, me sudo aere fruente. Mihi aliquid tunc videbatur, habere caput non solum inter, sed supra nubes, et audire ~~suppositis~~ subjecta pedibus tonitrua, infimumque Iouem, ut ita dicam, fulmina vibrantem. Videbam et immersas nubibus ipsis regionis integras, vastamque velut nebulosam planitiem ad amussim orizontaliter positam, cuius variis in locis modo unus vortex, modò alter ex improuiso contortus hiabat. Tunc obscuro miscebatur caelum murmure, raucoque nostris auribus sono tonabat. ~~[illegible]~~. Ex quo tonitru, ac vorticosi fulminis generatione, fragorisque promiscui causam quam fidis oculis exhauriebam. Non etenim ibi fabulosa antiquitatis ultimis cogebat ignem frigoribus, sed omnia ex lege motus, corporumque contrario nisu praementium, ventorum etiam flabellis urgentibus exorigbantur.

In ijs

30.

In istis Alpibus sæpè crystalloides, et crystalli reperiuntur,
quarum color in nonnullis subniger, figura mirabilis. Nemo
enim esset, qui laboratas arte non crederet, cum quædam in
medio sui circumambiantur elegantissimâ fasciâ ex sex
parallelogrammis rectangulis, quæ terminantur utrinque à
+ tribus triangulis æquicruris, seu Isoscelis, quam figuram tamen nuper
etiam observabam, licet non adeò exactam, in quibusdam hyacinthis
Bohæmicis. Adsunt et Crystalloides partibus constantes, quarum
aliæ Parallelopipedam figuram, aliæ verò ad prismaticam
accedere videntur, sicut aliæ, quæ ad hexaedricam, aliæ
ad octaedricam vergunt. Uteros etiam Crystallinos ab Euganeis
non multum ab [illegible], nonnullosque à Ferrante Imperato
delineatos inveniebam, quæ omnia Naturam Geometram,
quandamque in istis à substrato fluore subobscuram vegetationem
demonstrant. Ultimæ enim crystalloidum striæ in hoc im=
plantantur, velutique diaphanæ radiculæ nutrimen=
tum aliquando absorbuisse. Misit nuper huiusmodi Ci=
melia pro ditando meo Musæolo toties laudatus Scheu=
chzerus, misit, et Crystallum hexagonam magnitudinis
conspicuæ, cui mira viridis Chrysocollacea respersa
est ex Alpibus Urijs, aliam pariter hexagonam herba=
ceo colore saturam, aliam Helveticam diaphanam, Calcarium
marmor sulphuratum, cui Fluores insident Crystallini
Brugis Argoviæ, Selenitem crystalloidem candidum ex
Monte Pilati Lucernensium, Fluoremque tandem
Crystallinum trigonum saccharum candum referentem ex
La=

volue ad pag: 31. dopo sette carte

[Si volteno 7. Carte] revolve ad pag.) pag. 31.

*

descendunt. Tunc oculis obijcitur Carferoniana Provincia fre=
quentibus Oppidis, Vicisque populosa, benigniori
fruens Cœlo, terræque uberiori fertilitate lætissima. Ar=
cent enim Septentrionales gelidissimos halitus prealta
Apenninorum dorsa, quæ furentem ventorum rabiem in se re=
cipiunt, et frangunt. Sub imo Montis limbo Castrumnovum
visitur, Provinciæ caput, sed nascente, tum vesperascente
die nebulis, ut plurimum obductum. Si montes enim mon=
tibus, si colles collibus iungantur, et flexuosa intercalla
ipse Mephitis exhalationum urbes incommodat. Hinc etiam
sæpius febricitat septicollis Roma, dicebat Celsus.

Lib. 2. Cap. 1. p. 42. 43. videas.

Mellifluus noster Testi prædictum locum, ut otio beato, Musis=
que aptissimum ita eleganter descripsit.

Ode. Al Sig.r D. Ascanio Pio di Savoia &.

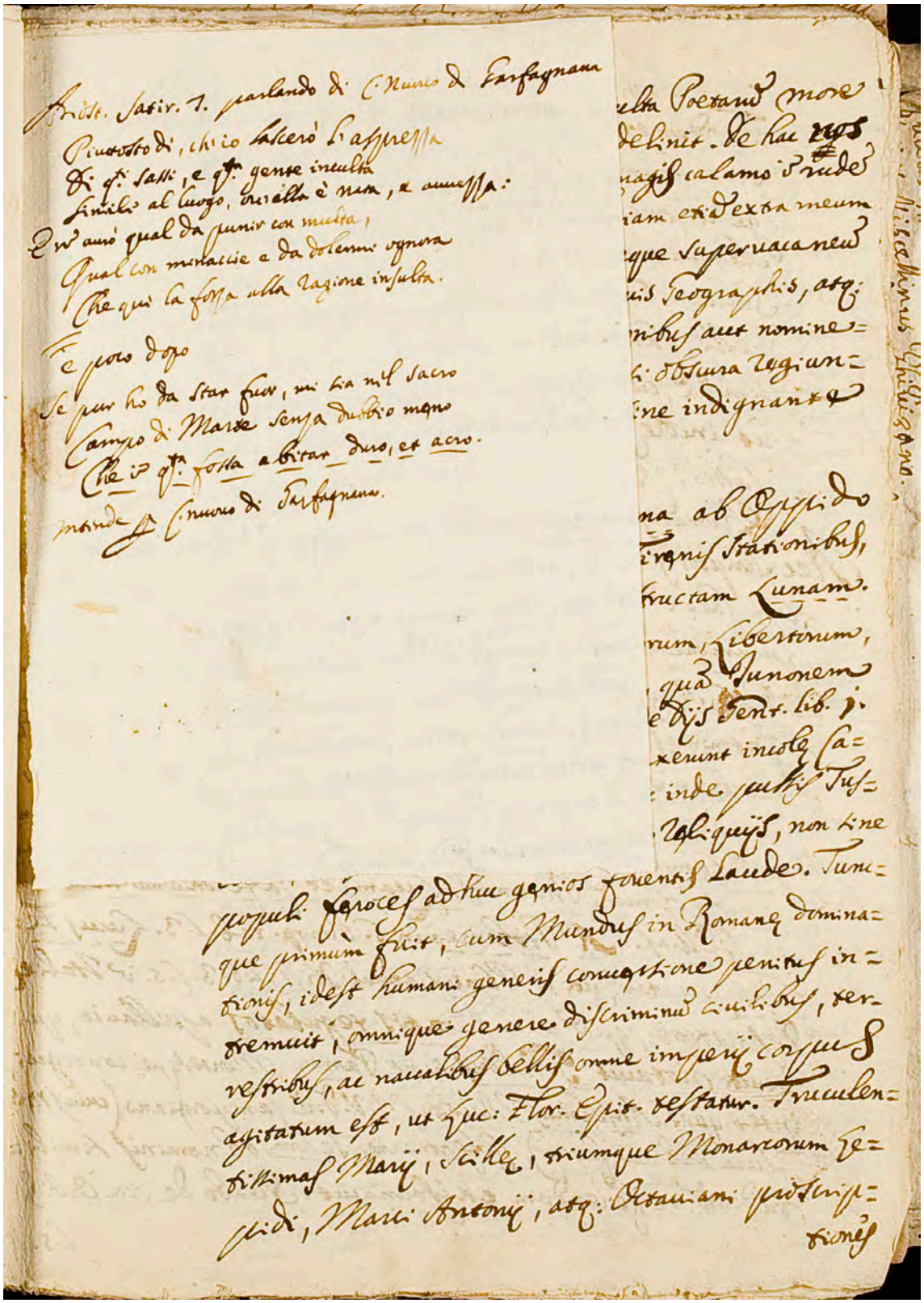
Qui, dove argenteo il corso
La Turrita discioglie, e seco viene
A maritarsi innamorato il Serchio,
E sul meriggio al dorso
Del gran Padre Apenin' opache scene
Di rintrecciati faggi alzan coperchio;
Merto mio nò, souerchio
Fauor del gran Francesco ozio mi diede,
E fè ne' Regni suoi regnar mia fede.

Qui lieto vivo, e mentre
Di lui canta il mio plettro, Eco da lunge
Ossequiosa il suo bel nome alterna:
Pensier, che ci concentre
A intorbidarmi il cor qua sù nè giunge,
E seren parmi il Ciel, quando ancor verna.

Te=

Temer di spada esterna
Questi Monti non san: Fiumi innocenti
Portano al Mar gli immacolati argenti.
Con voce bellicosa
Curuo Oricalco a trauagliar non desta
L'inerme abitator d'umil Capanna:
De la greggia lanosa
I mariti riual con dura testa
Solo a pugnar tal uolta amor condanna,
E la stridente canna
Del Pastorel, ch'non lontan rimbomba
Ai cozzanti guerrier serue di tromba.
I pretiosi umori,
Di cui ferito il nobil seno allaga
Negli Arabici boschi arbor sourano
Perdon gli usati onori
Qui doue occhio mortal uscir di piaga
Stilla non uede mai di sangue umano;
Se pur incauta mano
Non trafigge talor d'acuta spina
Pungente spoglia di Castagna alpina.
Maestre de' sentieri
Rupi per nostro essempio al Ciel sospinte,
Selue in onta de' lustri, erme, et inculte,
O come uolentieri
Tra i uostri orror le sue speranze estinte
L'ambitioso cor lascia sepulte,
Che pur, ch' l'alma esulte
Ne la sua dolce libertà contento
Fo' di tutte mie glorie erede il uento.

Mul=

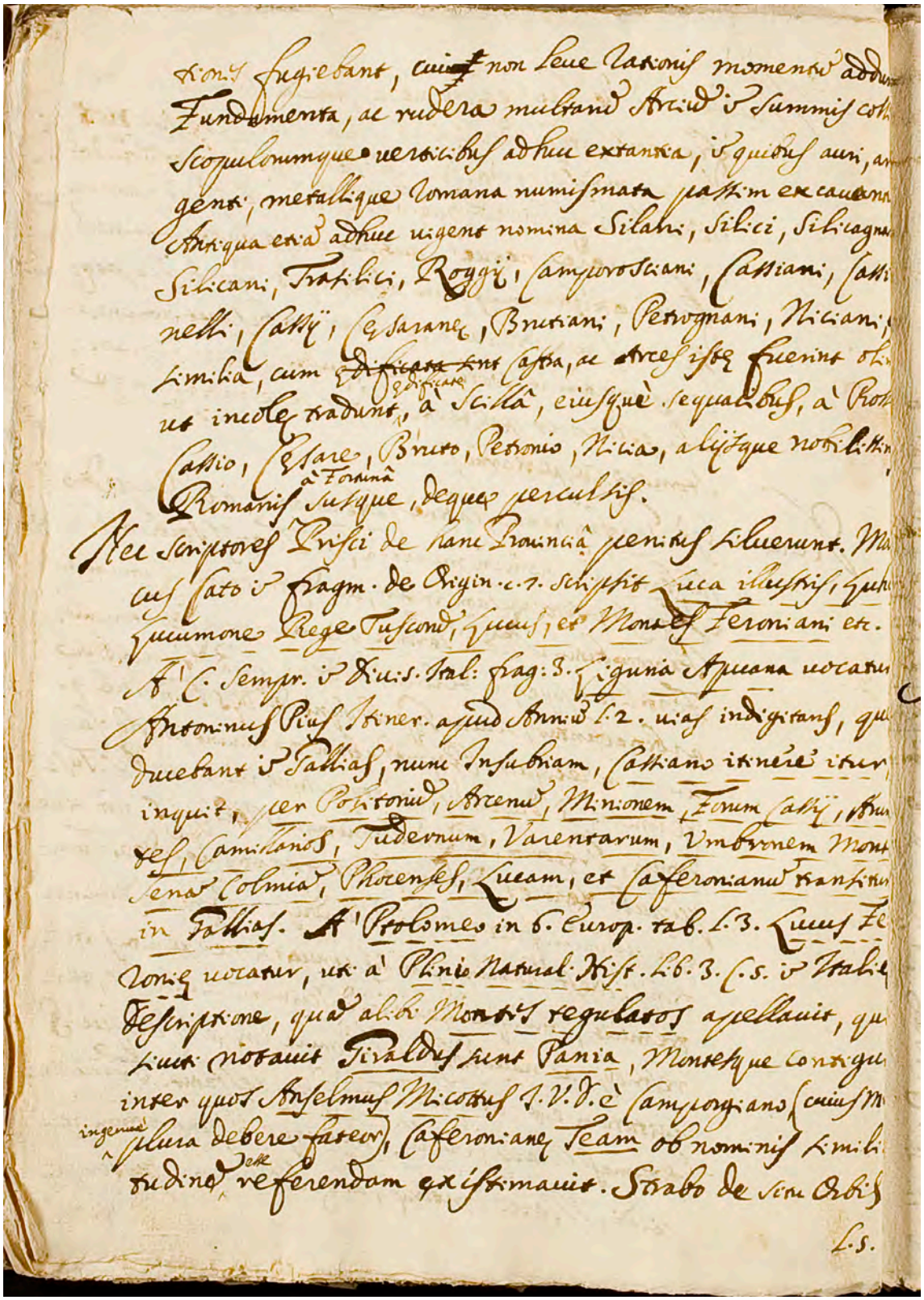


Temer di Spada es[...]
Questi Monti non sa[...]
Portano al Mar g[...]
Con voce bellicosa
Curuo Oricalco a trau[...]
L'inerme abitator[e]
De la greggia lan[...]
I Manti riual con[...]
Solo a pugnar tal[...]
E la stridente c[...]
Del Pastorel, ch'i[...]
Ai cozzanti gu[...]
I pretiosi umori
Di cui ferito il[...]
Negli Arabici[...]
Perdon gli us[...]
Qui doue occi[...]
Stilla non vede[...]
Se pur incauta mano
Non trafigge talor d'acuta spina
Pungente spoglia di Castagna alpina.
Maestre de' Sentieri
Rupi per nostro esempio al Ciel sospinte,
Selue, in onta de lumi, erme, et inculte,
O come uolentieri
Tra i nostri orror le sue speranze estinte
L'ambitioso cor lascia sepulte,
Che pur, ch'è l'alma esulte
De la sua dolce libertà contento
Fo' di tutte mie glorie erede il uento.

Mul=

Multa sanè de hac Regione vera, multa Poetarum more figmenti, atque adulationis fuco delinit. De hac nos quoque minus eleganti, sed sincero magis calamo, & rude recollecta fasciculo, nonnulla homini, quæ ad historiam extra extra meum scopum diceret, neque inutile, neque supervacaneum forsan existimamus, cum ab antiquis Geographis, atq; historicis vix delibatam, à Recentioribus aut nomine tantùm indicatam, aut, quasi obscura Regiuncula, oscitanter prætermissam, non sine indignante stomaco reperiamus.

Dicitur vulgò Garfagnana, latinè Caferoniana ab Oppido Caferoniano nomen mutuata, à Tirenis Stationibus, Agnisque sito Lucam inter, ac destructam Lunam. Ita vocabatur illud à Feronia Nemorum, Libertinum, Fertilitatisque, ac deliciarum Deâ, quam Iunonem arbitrabantur, Lucit. Gyral: Synt. de Dijs Gent. lib. j. scriptum reliquit. Originem altam traxerunt incolæ Caferonianæ à dispersis, fatoque hinc inde pulsis Tuscorum, Græcorum, Romanorumque reliquijs, non sine populi ferocis adhuc genios foventis laude. Tunc quæ primum fuit, cum Mundus in Romanæ dominationis, idest humani generis conuersione penitus intremuit, omnique genere discriminum ciuilibus, terrestribus, ac navalibus bellis omne imperij corpus agitatum est, ut Luc: Flor. Epit. testatur. Truculentissimas Marij, Sillæ, triumque Monarcorum scilicet, Marci Antonij, atq: Octaviani proscriptiones



L.S. Ad Montes Lunae incumbentes, scripsit, urbs est Luca
ubi plerique vicatim habitant, quibus Caferonianam
etiam amplexus est. Livius ab urbe condita pluribus in
locis huius meminit, et praecipue Lib. 41., in quo Pe-
tilij Mortem oraculi verbo Leti ambigue intortam
exprimit. Praefect, refert, inde in diversas Regiones
Petilius adversus Balistae, et Leti iugum (quod
nunc Alpium S. Pellegrini nomen audit), quod eos
Montes perpetuo dorso inter se iungit, castra habuit.
Ubi adhortantem eum pro concione milites, immemorem
ambiguitatis verbi ominantem ferunt, se eo die Le-
tum capturum esse. Pro monte autem Leti, Lethum
omine fatali subiuit.

Sunt qui credunt Virgilium de hac Regione intellexisse, qu-
ando Aeneid. Lib. 7. n. 800. cecinit

Circumque iugum, queis Iuppiter Anxurus [Tarvis]
Praesidet, et viridi gaudens Feronia luco.

Sed errore plectuntur; Micotto etiam supralaudato
auctore, quoniam Dea Feronia, praeter Lucum, ubi nunc
est Petrasancta (non in Bientinâ, ut Volaterra-
nus Com. Urb. Lib. 5. existimat) binos alios in Italia
habuit Lucos sibi sacros. Alter in Faliscis, de quo
Strabo de Situ Orbis L. 5. Sub Monte autem Soracte
urbs est Feronia, quo nomine à Dea quadam nun-
cupatur, quam finitimi miro dignantur honore.
Eodem in loco ipsius est templum mirificum sacri genus
habens, nam qui eius numine afflantur, nudis
pedibus prunas, et copiosum inambulant sub hac

Demo-

Demone nullā Lectione tinerem. Alter, de quo loquebatur Poeta
iuxta Dionys: Alicarnas. Lib. 2. Sipontin. supra 1. Æneid. Virg.
Servium, et alios erat in Latio Tarracinę propinquus, quem
etiam Syl: Ital. de Bel: Pun: Lib. 13. carmine ornauit.

> His gracilis ductor Conugli signa maniplis
> Ejectato Lectis habitu iubet, itur in agros
> Dites ubi ante omnes colitur Feronia luco
> Et sacer humectat fluuialia rura Capenas.

Varijs Regio hęc finibus clauditur, quos uerbis ex Fabritio
Gum. in Inform. XI. desumptis circum scribemus. Prouincia
Garfagnana, scribit, posita est inter agrum Pistoriensem
ab Oriente, et agrum Lunensem ab Occidente, quę ab iis
agris diuiditur per cacumina Montium inter hanc, et illos ex
ispensum, et item inter summitates Montis Apenini à la
tere Septentrionis, ubi Lombardia, et à meridie Territorium
Lucense, et est diuisa in 4.or Vicarias, nempè Camporegiane, Castiglionis, Bargę, et illam Coreglię. Tunc tem
poris uerò angustioribus est coarctata limitibus, etiam quo
ad nomen, quod solum ea pars retinuit, quę sub Serenissimo Estensi Dominio fortunatissima uiget.

Figuram Nauis prouincia hęc sortitur, quę inter Apenini ra
dices, atque Paniam curuata lęta fertilitate uelificat.
Pania Mons est asperrimus, sterilis, nudus, uix feris
notus, ita forsan à Penia Paupertatis Deâ uocatus.
Bargam nunc Orientem uersus habet, à meridie
prędictam Paniam, Montem Team à Ponente, qui
eam à Lunensi agro disterminat, et à Septentrio-
ne

ne Apenninorum iuga venat. Multis torrentibus, ri=
uulis, fontibus, fluuijsquè perennibus, ac limpidis
perluitur, qui uarijs exquisitissimis ditescunt Piscibus,
inter quos Truttae celebres ad irritamenta gulae Ma=
gnatum, Principumque Mensas exornant. Primum
Serchius Lib. vindicat locum à Ptolomeo Geogr. lib.
3. tab. 6. Boactus, à Plinio Hist. Nat. lib. 3. Auxer
à Strabone Esar de situ Orb. l. 5. appellatus.
A' duobus fontibus originem trahit, quorum alterum
supra Silanum, supra Soraggium alterum rimosa
tellus eguigitat, coeuntesque postea cum riuuli,
alijs rursus in itinere sociatis Castrinoui moenia
unà cum Turrite undis, de quibus Testi, non sine
strepitu diuerberant. Corriuant in hunc nonnulli riui,
nonnulique torrentes, quibus in Mare Lucae propin=
quius tumidus quandoque, ac minax, tribus la=
pidibus ab Arni ostijs distans, non inglorius de=
uoluitur.

Antiquitus cum Arno immiscebatur, ut innuere uidetur Ru=
tilius Poeta Rumanus. itiner. l. 1. qui de Pisis loquens,
inquit, Alphee ueterem contemplor originis urbem
Quam cingunt geminis Arnus, et Auxer aquis,
Id quod etiam Strabo l. 5. de situ Orbis affirmat.
Sed quoniam Lucensi Urbi plurima ferebat in=
commoda, fuit à D. Fridiano illius Urbis Episcopo,

ect.

(uti piè creditur) ab anno 560. ad annum 5707. solo Rastro, stu=
pente Natura, divisus. Hic, scribit Volat. Comm. Urb. L. 5. de
Rebus quanor. Phridianus Presul ante omnes colitur, cuius me=
minit Gregorius, cum alijs Lucentibus Benemeritus, item quod
Auxerim amnem agros inundatione uastantem diuinitus
compescuit, ex quo pars ea, quæ Auxeris nunc dicitur,
ab ea deducta aspicitur.

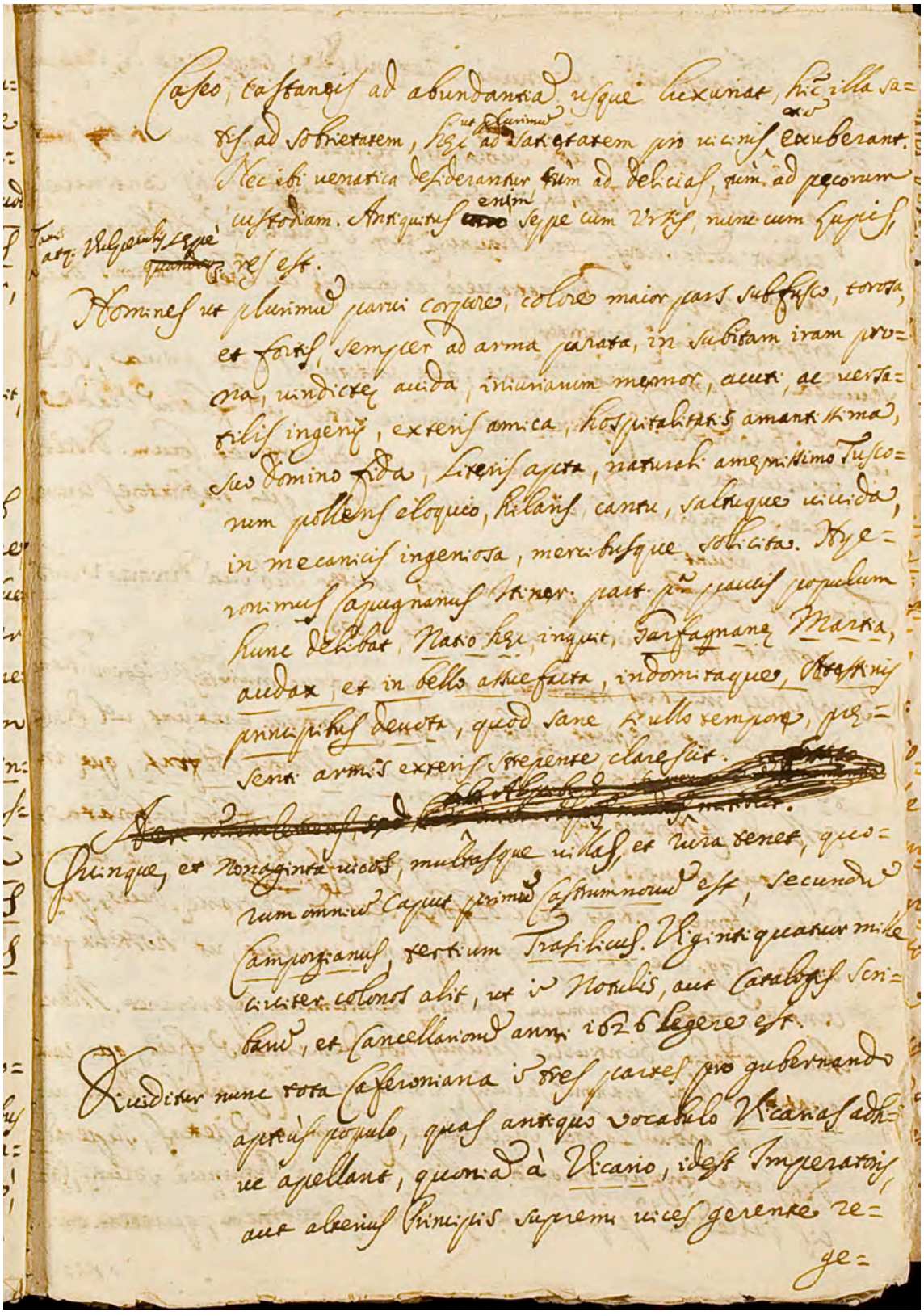
De hoc etiam Guido Vanninus Poeta Luc. Epigr. 12., et 19. cecinit,
affirmans, quod

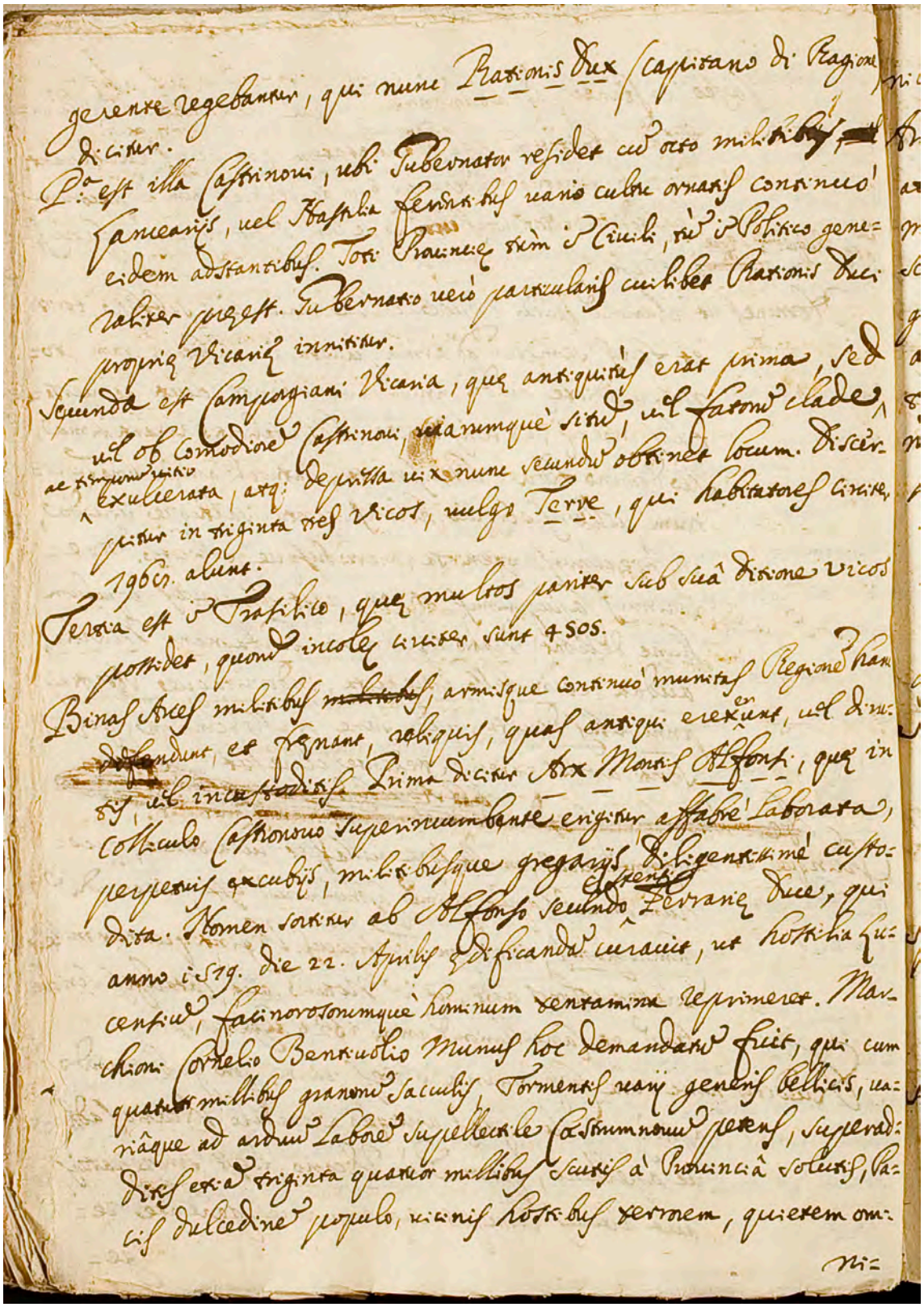
Rastro iussit parere furentem.

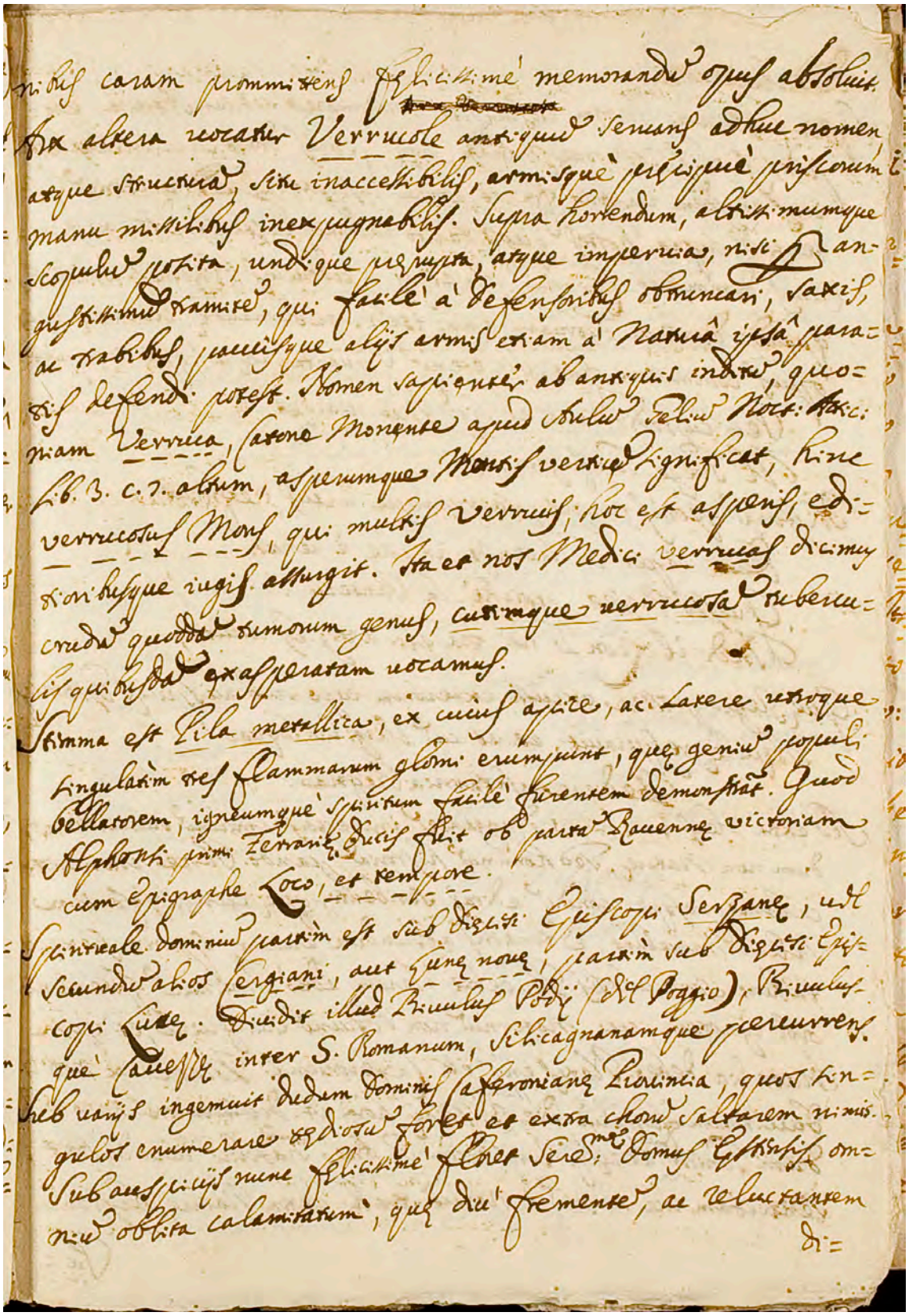
Annis hic, ut multi alij, adoratione antiquorum meruit ob
Strabonis fabellam de situ Orbis L. 5. secundum Annium, ipsumque
tanquam particularem Etruriæ Deum coluerunt, ut etiam ex Sue=
tonio, et ex Macrobio habetur, de quo uideatur Annius super
16. fragm: Catonis. Silentio tamen inuoluendum non est me=
morabile Augusti fatum Suetonio Tranquillo, id eiusdem
uitâ, notante. Sub idem tempus, ait, ictu fulminis ex in=
scriptione statuæ eius prima nominis Littera effluxit. Res=
ponsum est centum solum dies post hæc uicturum, quem
numerum C Littera notaret, futurumque, ut inter Deos
referretur, quod Æsar, id est reliqua pars è Cæsaris
nomine Etruscâ Linguâ Deus uocaretur.

Laxatur hæc Provincia in aliquas Valles, multosque Colles, curvos; Sco=
pulis etiam præruptis, saxisque ingentibus aspera nemoribus
hinc inde syluestrit. Metallis est diues. Granis, Vino, Cana=
pe, fructibus, oleribus, piscibus non caret. Carnibus uerò,

Caseo







diverberarunt.
Supra Castrinovi Portam insculpta marmore visitur Aquila ex:
pansis alis, rostroque minax, quæ Leonis dorso superincumbens
iras eiusdem imperio frenat, atque castigat. Quod victoriã Est-
ensium supra hostes, quos talito calamo prætendendos existima:
mus, demonstrat. Cui huis in Satyris Ludovicus Ariostus arrisit,
quando die 20. Februarij anni 1522. gubernandæ provinciæ ipsi
Ducis commissum fuit. Sic etenim in quarta Satyra, quæ incipit
Per custodir, come al Sig.r Mio piacque
Il Grege Garfagnin, etc.
Historiam Leonis tangit, sacrumque ulcus refricat.
Dei saper la licenza in che è uenuto
Questo Paese, poiche la Pantera,
Indi il Leon l'hà fra gli artigli auuto,
Quæ Regio postea excusso exterorum iugo sub auspicijs Estensis
Aquilæ respirauit, et ut cum Virgilio loquar
Redere Saturnia Regna.
Sed extra oleas me nimis divagantem increpas amicorum suavissime,
dum non Naturæ, sed hominum historiam pando. Parce prurienti
calamo, resque nondum editas scribenti, quæ curiosis forsan
salivam movebunt, è tenebris abscondita eruent, spiritusque exci:
tabunt somniculosis. Pudebat claram adeo Provinciam literario
orbi ignotam, cui maternum non obscurum sanguinem, et ipsa
natalia debeo. Natus enim ex Castronovensi Matre ex nobili
Vallinorum familiâ die 3. Maij Martis hora 14. ~~die Martis~~ Anno 1661,
dum Genitor meus utriusq: Iuris Doctor in Arce Trassilici iura dabat,
sentiebam me invitum à Naturâ trahi extra Naturæ historiam

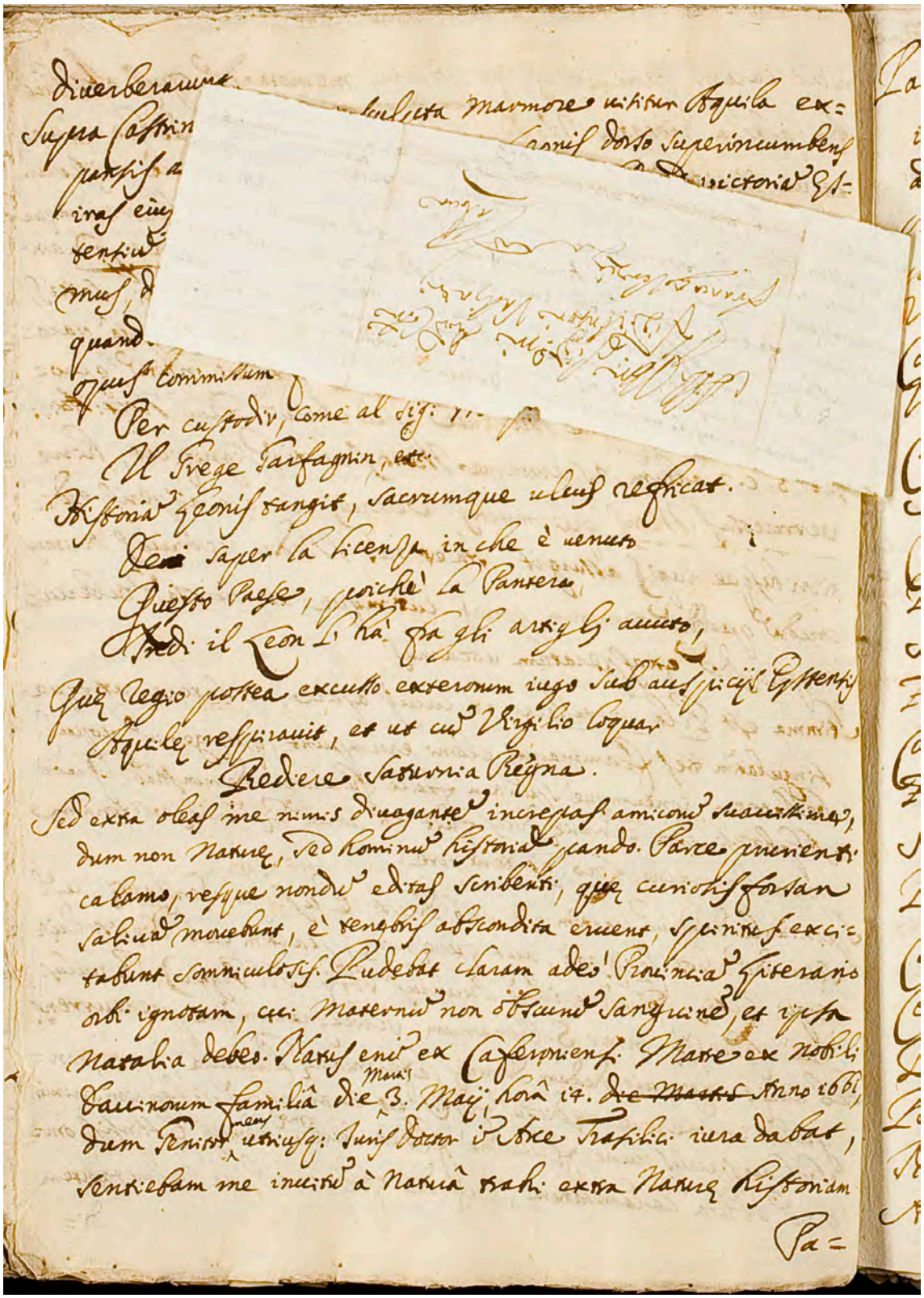
Pa=

Patere etiam, ut Parergon loco nonnulla antiqua Romanorum locorumque nomina montis iugis adhuc illustria clade temporum plebis distorta notabili ad pristinum nitorem restituam, quae ex M.S. Timothei Tramonti, Anselmi Micotti, Ioannis Boti, Bartholomaei Morganti aliorumque sudato opere re=

* Scias tamen exoptto, me non adeo esse credulum, ut omnia antiqua nomina, quae lego a priscis Consulibus, Tyrannis, Regulis, Heroibus depromta vera existimem. Multa mihi videntur ridicula, distorta multa, et violentia quadam ingenii potius expressa, quam sponte nascentia, quae (ut communis Antiquitatis Scriptorum mos est) nonnullis immixta veris historiam fabulis, fabulas historiis immiscent. Nolo candorem meum, nolo veritatem, nolo tuas aures offendere. Decerpe, quae credes vero consona, quae falsa reice. Dicam cum Clariss. viro Philippo a Turre ~~[illegible]~~ Non is ego sum, qui priorum inde confictas plerumque, et turbidis, cum otiisque fontibus hauttas nomenclaturas, et migrationes populorum. De Inscript. M. Aquilij Cap. 1.

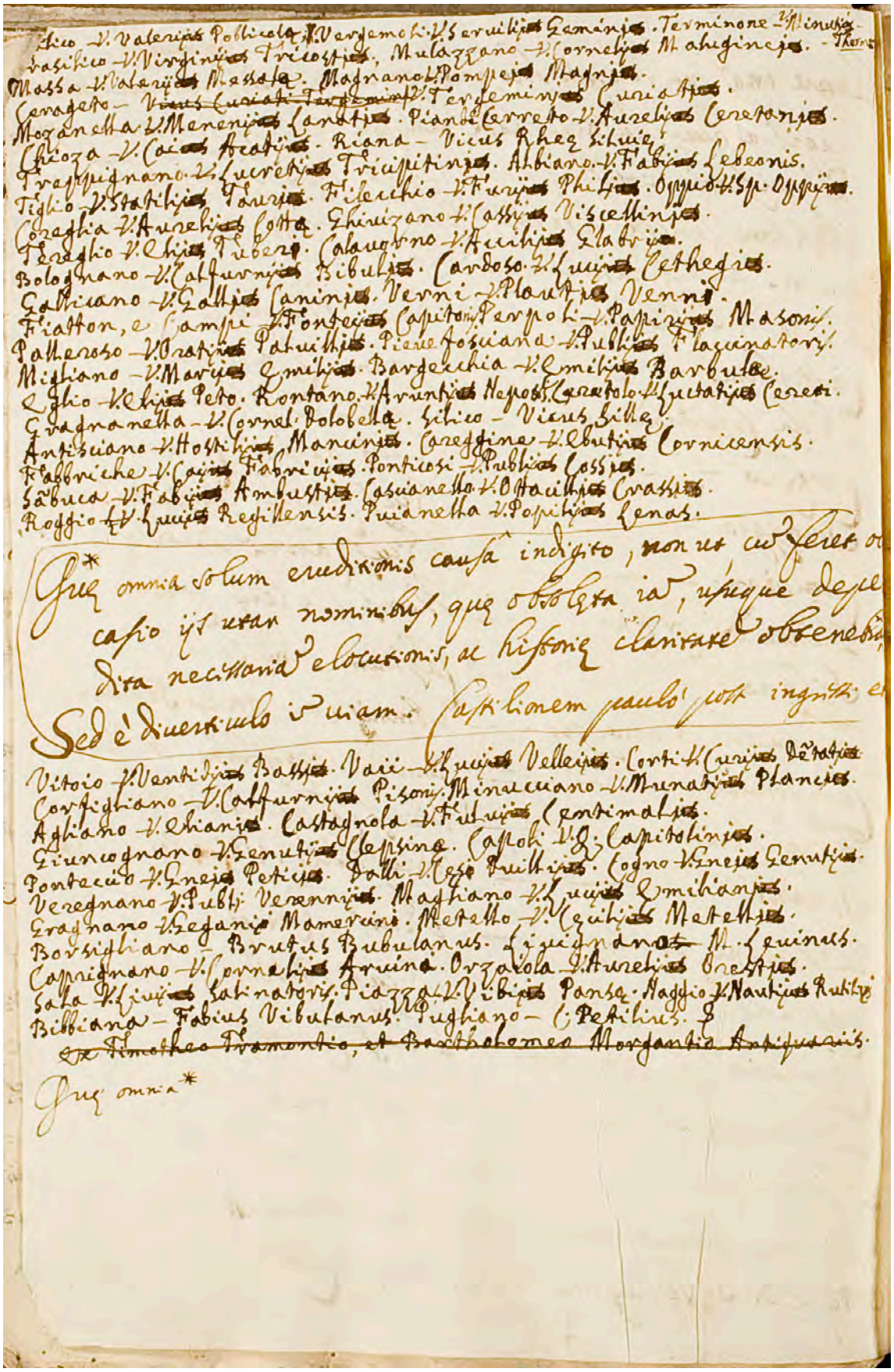
Villa etc. ii.

Soraggio	Vicus Canini Rebilij
Camigliano — — —	Mons Valerij Corvini.
Pania di Corfino — — —	Castrum Iunij Silani.
Silano — — —	Amnis Caij Atilij Serrani.
Fiumicello di Soraggio — — —	Campus ~~Regis Iani~~ Roscianus, vel Calfurnianus.
Campcorgiano — — —	Vicus Calpurnij Bestie.
Forno Volastro — — —	Vicus ~~Sibbe~~. Sibi ~~[illegible]~~ Sibuanitis.
Sil~~ano~~icano — — —	Vicus Roscij
Rostiano — — —	Vicus Cassij.
Cassiano — — —	Vicus Cesaris.
Cesarana — — —	Vicus Bruti.
Brutiano — — —	Vicus Petronij.
Petrognano — — —	Vicus Petronij.
Niciano. ~~Vicus Nitie~~ —	Vicus ~~Nitie~~ Anicii.
Alpe di S. Pellegrino — —	Mons Leti.



Patere extra, ut Parergon loco nonnulla antiqua Romanorum locorumque nomina montiagis adhuc illustria clade temporum plebeis distorta vocabulis ad pristinum nitorem restituta, quae ex M.S. Timothei Tramonti, Anselmi Micotti, Ioannis Botti, Bartholomei Morganti, aliorumque sudato opere recentis avidus exhauriebam. Scias =*

Villa di S. Marcione — Vicus Marcelli.
Castiglione — Castrum Lestrigonum.
Villa Calamandrina — Vicus Emilii Mamertini.
Corfino — Vicus Valerii Corvini
Soraggio — Vicus Cornelii ~~Cethegi~~ Sergii.
Canigiano — Vicus Canini Rebilii
Pania di Corfino — Mons Valerii Corvini.
Silano — Castrum Iunii Silani.
Fiumicello di Soraggio — Amnis Caii Atilii Serrani.
Camporgiano — Campus ~~Regis Iani~~ Roscianus, vel Calfurnianus.
Forno Volastro — Vicus Calpurnii Bestiae.
Sil~~ano~~icano — Vicus ~~Sillae~~. Silii ~~Silvani~~.
Rosciano — Vicus Roscii.
Cassiano — Vicus Cassii.
Cesarana — Vicus Caesaris.
Brutiano — Vicus Bruti.
Petrognano — Vicus Petronii.
Niciano. ~~Vicus Nicii~~ — Vicus ~~Nicii~~ Anicii.
Alpe di S. Pellegrino — Mons Leti.



31.

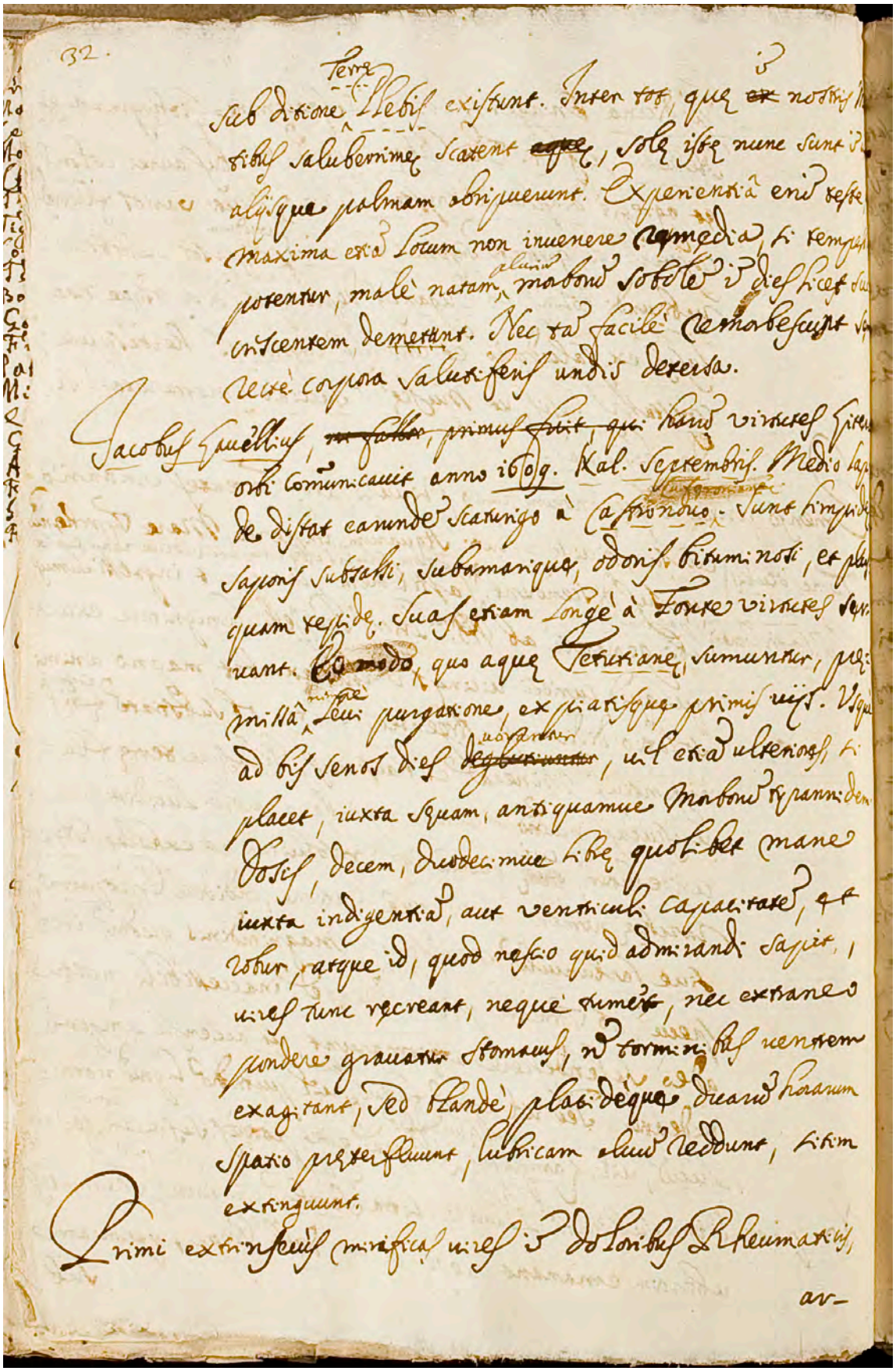
Lapicidinâ Oniagenti, de quo in Specimine Lithographiæ
Helvetiæ pag: 24. Ex Rhetiis etiam Alpibus aurei coloris,
et egregiè diaphanam crystallum servo, licet varios fluores
crystallinos guttatim supra Calcidonium crudum dispersos subobscuri
rubicundi coloris ab Euganeis depromptos, diversosque naturæ
lusus ex Calcidonio, et crystallis implexitos, herbasque
crystallis ipsis, ut Muscæ in Succinis, incarceratas. Sed
de his alias.

Dimenso primo Apenninorum iugo, rivuli, atque Torrentes contrario
cursu, diviso veluti Aquarum imperio, Mare Tyrrhenum
versus descendunt.* Castilionem paulo post ingressi sumus,
ubi generose ab Ill.mo Priore Guasselli benignitate excepti
quicquid curiosi vicinijs in illis extabat, magno animi
solatio didicimus. Argenteos Pyritas ob substratum cupri,
argentiuè mineram exhausimus, Pilasque terræ fla=
vicusculas, quarum in centro medulla auricolor lucidissima
condebatur, cui quoniam igne resolvitur, et exhalat, Pyre=
tarchiæ nomen nescio quâ ratione, indidere. Pyropum;
sive Carbunculum monstruosæ magnitudinis quoddam in
specu, ob Torrentem præterfluentem inaccessibili, nocturno
adeò splendescere affirmarunt, ut accensa lampas
videatur, sed vel ignem fatuum esse, vel putridum lignum nocti=
lucum, vel Lampyrum aut scintillas aliquas esse, suspicari etiam fas est.

Non procul in substratâ planitie citra Sarchum Torrentem (Serchio) Thermales
uberrim emanant aquæ dictæ della Pieve, quoniam
sub

*Tune oculis obijcitur et [illegible] (volue [illegible] paginas.)

Tune oculis | Castilione

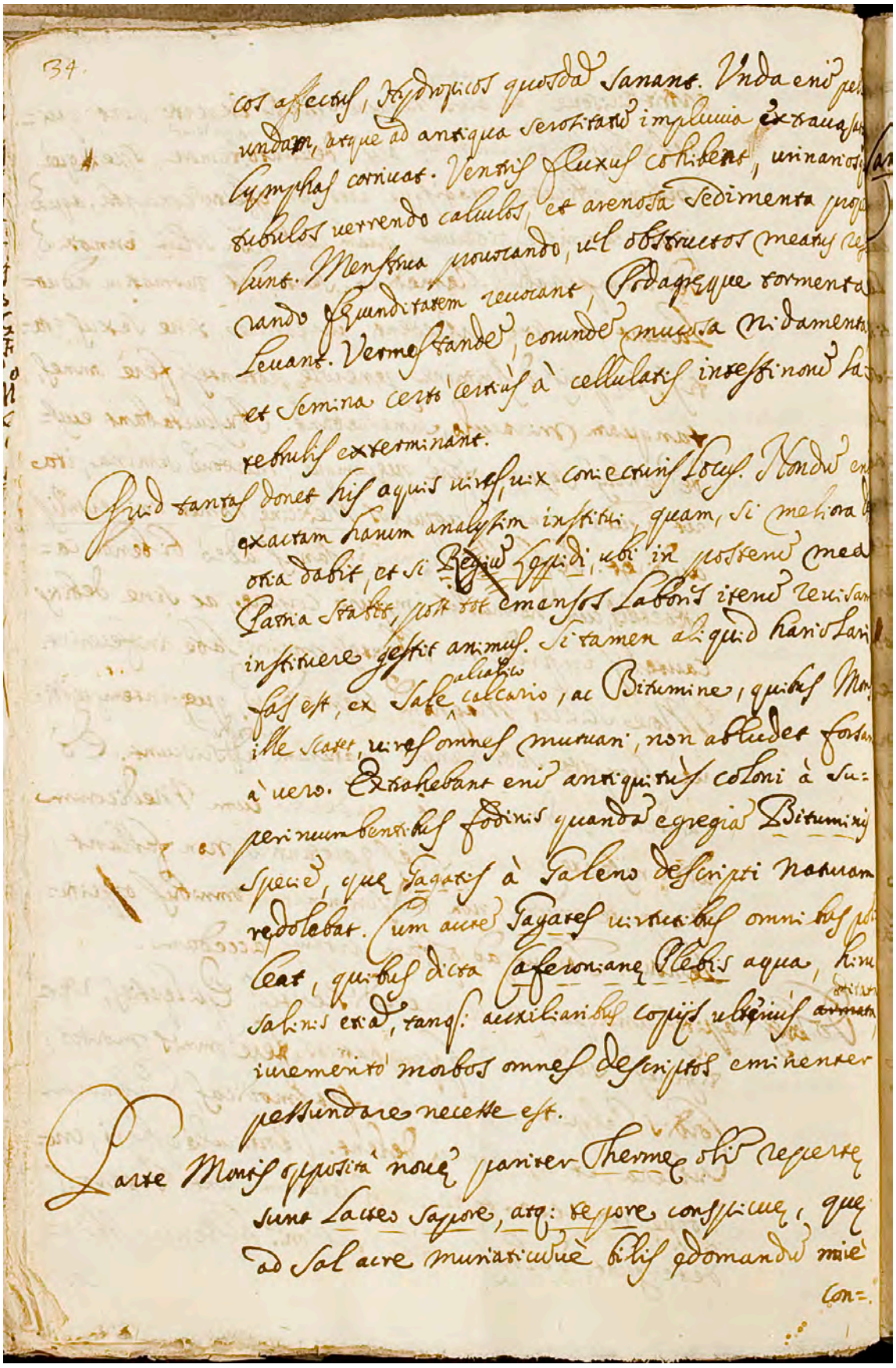


33.

arthriticisque, ac alijs variis nervorum morbis experti sunt, qui-
bus felicibus obtentis experimentis alij, deusato ex ipsa dicas timore, speque
maioris efficaciae, magisque prosperi effectus concepta, aquam
ipsam animose biberunt, quam cum non solum innoxiam,
sed incomparabile remedium experirentur, turmatim advo-
larunt, ac sine praecedenti purgatione, sine sexus, aeta-
tis, temporis discrimine generose potantes, fere omnes,
tanquam miraculo, sanescebant. Auscultabant eius-
de viribus sequiora fere quaecumque morborum semina, ita
ut apud vicinos populos Medicinae nomen universalis
audiret. Deferbuit tamen insanus adeo bibendi ca=
lor, cum nonnullos impuro corpore, ac sine debitis
cautelis imprudenter bibentes maiori labe infecerint.
More scilicet Magnorum remediorum, quae intempesti=
ve sumpta sibi venenti naturam incassum assciscunt. Eo
tandem res devenit, ut prudenter cum Medicorum
administrare consilio, spes aegrotantium non fallant,
et signate multis, non indiscriminatim omnibus opitu=
lentur. Sed ut ad operam propius accedam.

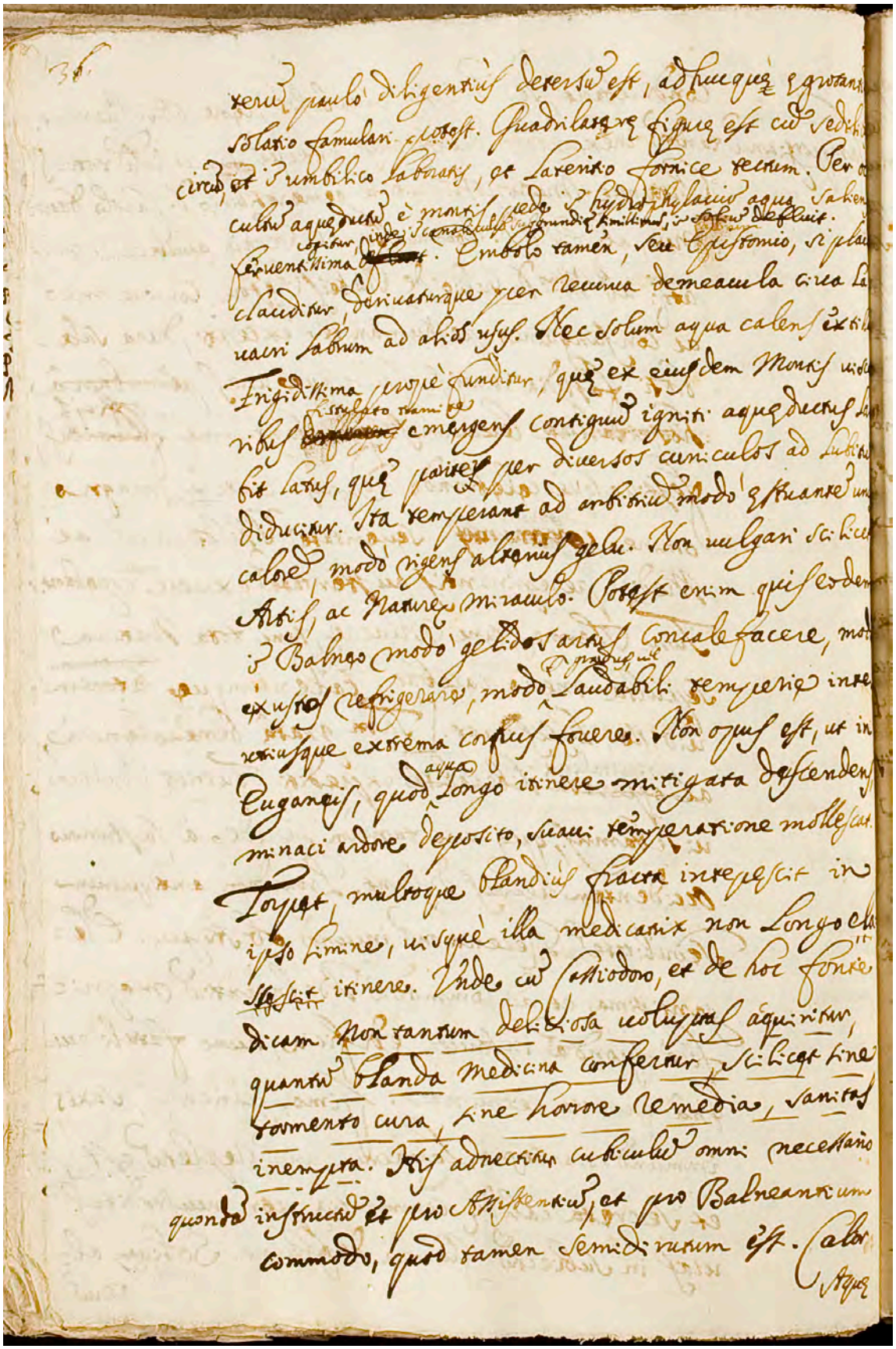
Dolores capitis antiquos ut saepe recrudescentes, Epilepsias, Ver-
tigines, surditates, Lymphaticos fere omnes morbos,
Cordis Palpitationes praecipue spasmodicas, Pulmonum
ulcera, et asthmata delent. Ventriculi effecti, cru-
doque marcore tabescentis solatium sunt. Scroto s
detergunt, dolores colicos, Passiones histericas, illia=

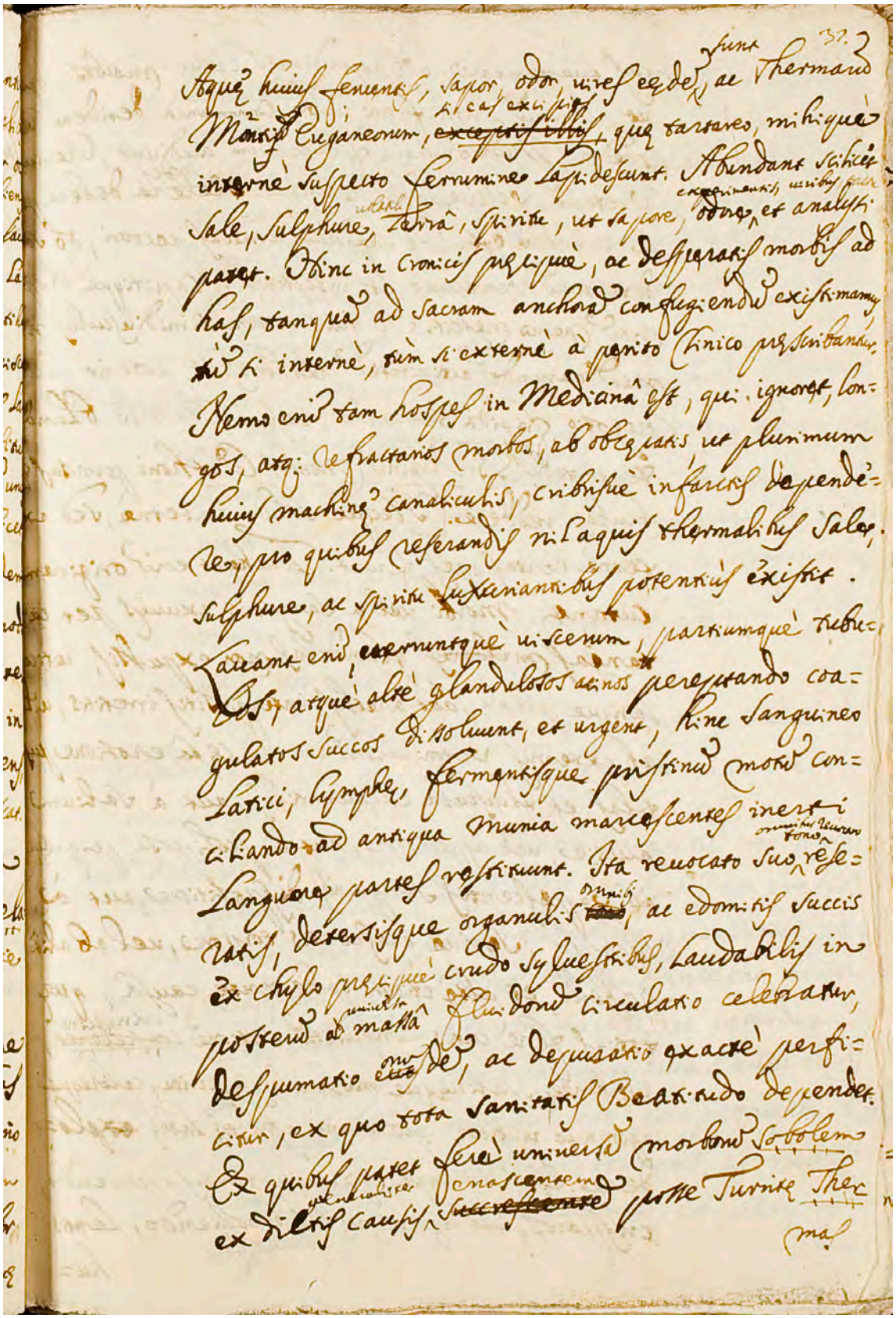
cos



35.

Conducebant, sed ī ipsis cunabulis pene obsoluerunt.
Campiorgianum tandem inexpectato deuenimus, antiquã scilicet illã totius
Prouinciæ Metropolim, ubi à generosissimo D. Carolo Dauinio, ab Ex.mo D. Ioanne Baptista Ternio auunculis meis,
atq: ab Ill.mo D. Iulio de Rubeis Pretore, Conuiue meo,
ac Consanguineo perhumaniter excepti, dura saltebroti fastidia itineris, fractasque uires ~~peruobaconã~~
~~hospitalitate~~ leuauimus. Certabant omnes ~~[illegible]~~ officijs,
festiuasque celebrando Dapes, crateres magno
omine ~~coronantes~~ congerendo seueritate Philosophicã, ac
Medici peregrinantis austeritate exuere me cogebant.
Tunc Thermæ, tunc Mineræ, tunc tota Natura
~~Mineram~~ Sepulta mero iacebat, Calentemque Latonem
uidisse, Lusus erat. [Tam grata beneuolentiã,
~~ac officiosa Liberalitate~~ hospitalitate Liberalitate expedita Turritæ Balnea
uisebamus, quæ uno tantum lapide à Castronouo
Occidentem uersus distant. Prouidam antiquorum
sedulitatem, Recentiorum incuriã obstupui. Elegantissima, et ad commodum Balneantium magnifice quondam instructa ædificia, nunc fatali ruinâ quassata cernuntur. Limo, parietinis, saxis
immundoque cæno Lauacrum unum replerum est,
et secreta calidæ commercia per incustoditas
uias in subiectum flumen defluunt. Solium al~~[illegible]~~
terum





30. mas auerruncare. Hipocondriacos igitur morbos, qui
ut plurimum Protheiformi, ut ita dicam, vultu Communia deridens Re-
media, Medicorumque flagellum audiunt, Renum
Vreterum, vesicae Labes, uterique ~~scelera~~ sordes delere po-
se indubium est. Ob sulphur amicas pectori, ob sal
depurtum ventriculo, et intestinis, Capitique ob spi-
ritum nemo nescit. Si quis autem timidiusculus ni-
mia eamunde activitate perhorrescat, poterit facili
negotio frigida temperare, easque Thermis blandi-
ter minus agentis dependentibus B. Virginis Montis Orthoni prorsus ae-
mulas reddere. Neque solum interne, sed ex-
terne certas opes ferunt. Trahant enim originem
cutanei morbi vel a sanguinis exuviis per cu-
taneas ~~miliares~~ glandulas non expulsis, reticu-
larique plexu, aut areolis interpositis irretitis, ut
ab externis vermiculorum iniuriis, cum erosione pu-
stulas, et ulcuscula excavantibus, aut a salium
acrie, vel asperitate, aut a pinguiosa, pigriore
ac vapescentis sanguinis dispositione, aut a
lymphae, serique acescentis torpore, vel ab alia
rebelli, et alte etiam inhaerente causa, quae
totius fere cutis compositam rationem ~~conficeret~~ constringeret,
sulphureae, salineque moleculae spiritu, caloreque
agitatius vibratae poterunt affectas labes explo-
dere. Cum namque spiramina versus aperiendo,
crispatos, aut rigidos villos emolliendo, lentis
hu-

39.

humoribus modo conciliando, insectorum cuiuslibet speciei turbam potenter exterminando, fibras tandem tabo marcidas roborando citius, tutius, blandiusque qualibet ~~sordida, ac~~ ~~[illegible]~~ externa remediorum farragine ad pristinam sanitatem egros restituunt. Eadem ratione nervosis affectibus vel stillicidio, vel aspersione, vel immersione, vel alio quolibet modo (mesimpte) oppitulantur.

In dorso montis opposito trans Torrentem aliae huiusmodi Thermae, sive Fontes excocti, ac igniti, ut cum Cassiodoro loquar, emanant, qui neglecti per (rudes fistulas) rimosas vias in declive devolvuntur. Et quamquam nullus honos medicatis his undis usque adhuc à Scriptoribus exurgat, nihilotamen minus nomen Aponon et ipsae merentur, cum etiam in ipsis, ut in tot aliis, esse possit.

Claud: Publica Mabonis requies, commune medentum Auxilium, praesens numen, inempta salus.

non sine Medico examinatis solatio inceptum iter prosequebamur per cautes adeò praecipites, et crebra mortis imagine perhorrendas, ut quandoque prae ~~nimia~~ nimium curiositate titatte. Vincebat tamen acris ~~[illegible]~~ (cognoscendi) cupido, trementemque interdum pedem erectus ad meliora animus novis ausibus castigabat. Tunc mirabar inter adeò praerupta saxorum iuga, inter tam ardua terrarum, et rudes scopulos, in quibus nulla oculorum, et praecipua ~~Pala~~

40.

~~Coloniis~~ Qualati oblectamenta uix sunt

Castaneae molles et pressi copia lactis,

mirabar inqua fortes, et lacertosos homines diu

beatè uiuere, foeminasque ~~compressas magis, quam~~

~~pictas~~, Lepidulas atque ~~blandulas~~, Veneri

ipsas urbium quandoque nitore, ac ~~maiestate~~ lenitate form

excellere. Et tamen solam aquam limpidissimam

bibunt, et crudissimis alimentis latrantem stomach

D. Hyeron. Epist. saturant. ut diui Hyeronimi verbis utar Non artis adminiculis expoliunt purpu

so faciem, nec extraneis exuuijs turritos uertices str

unt. Non Minerva, non Ceres ibi sua munera

~~sudata~~ dispensat, adhucque ibi uenustas diceres

ris aureae saltitare reliquias. Amylon Tritici def

pro lineis panniculis, uel amiculis, ~~collispendulis~~ ad n

ta consistentia indurandis Ari radice conficiunt, pr

uido sagacis populi, ac Naturae nullibi deficient

consilio. Detracto enim primo cortice contritas radices

aquâ fontis macerant, donec mollescant, deinde

cremorem exprimunt, qui facilè postea in fund

vasis subsidet. Primâ decantatâ aquâ, ut cum

Chimicis loquar, nouam superaffundunt, quae salia

quaelibet, Modenna ~~lupus~~ liquor, quâ diligenter effus

candidissimum sedimentum exsiccant Soli, quod ab

Amylo nostrate nec consistentiâ, nec colore, nec

usu distinguitur. Annonae tempore pro cibo salu-

bri

41.

bri quandoque ipsos affirmabant, cum tota vis caustica, roburque rodendi quod ex manuum dolorifica sensa= tione et ipsi primis experimentis experiuntur, ab aqueis moleculis absorbeatur.

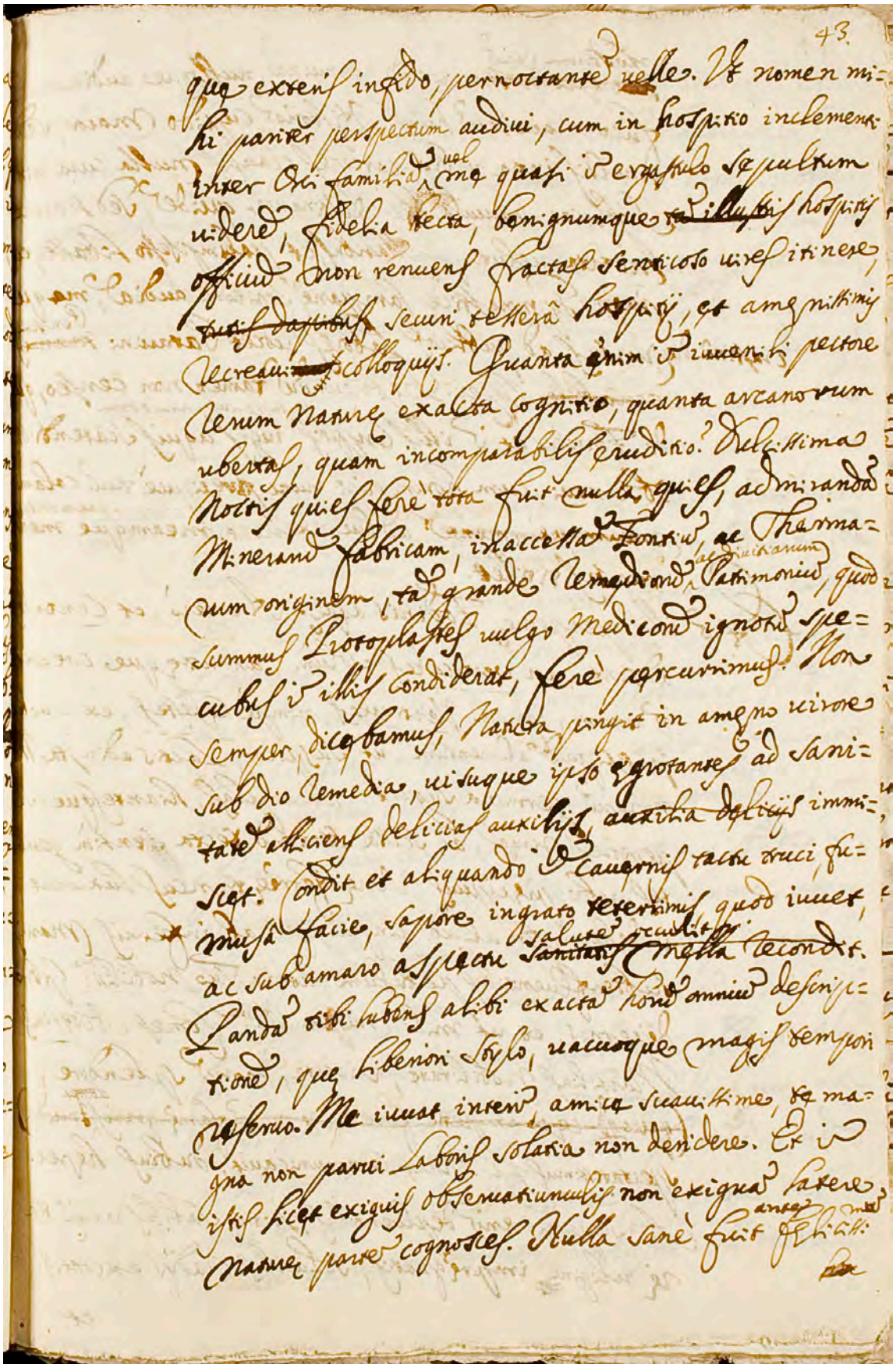
Extremos tandem Alpium fines, quos Panie vocant per vix con= cessos tramites, tetigimus, ex quibus non longe Tyrrhenum equor estuans visitur. Hic inter saxa nigro pumice primo limine squallentia largus Mineralium thesaurus, hic curiosus nature inspator et corpus, et ingenium fatigare, sollicitamque sciendi famem satiare complacenter augere potest. Neque inter horrentes cryptas co= loni desunt. Furnus Volaster non improprio nomine vocatur pauperculus vicus, quem ferrea gens, armis= que aptissima inhabitat. Antiquam, celebremque huius loci viam, Regionisque asperitatem Ariostus ita eleganter delineavit.

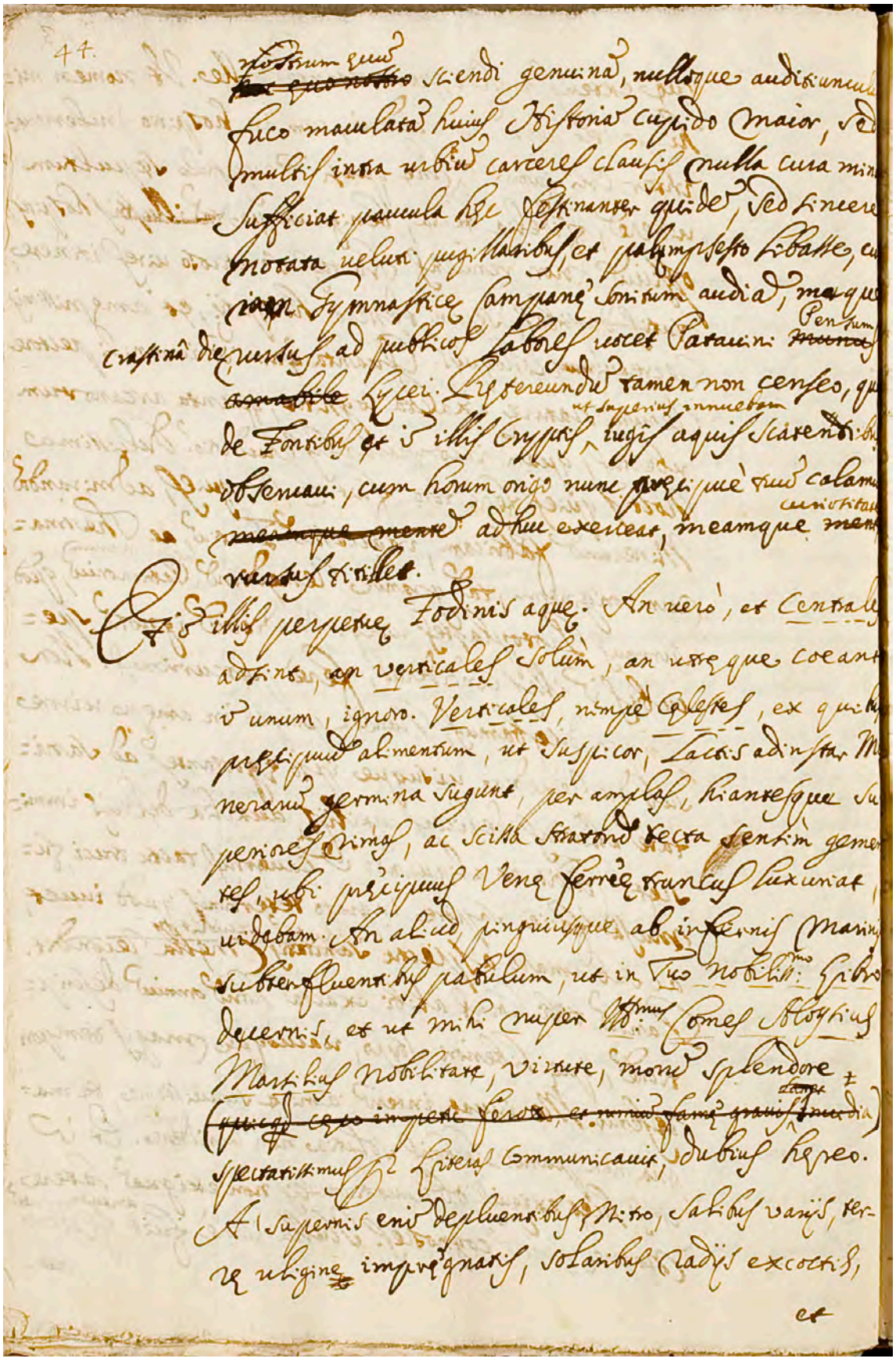
= Lo Scoglio, oue il sospetto fa soggiorno
= Alto dal mare da seicento braccia
= Di ruinose balze cinto intorno,
= E da ogni parte di cader minaccia,
= Il più stretto sentier, che guida al Forno
= La doue il Garfagnin il ferro caccia,
= La via Flaminia, et Appia nomar voglio,
= Che passa verso il Mar và sù lo Scoglio.

A Brixiensibus metallurgis primo Mapalia, humi= lesque constructas casas attenent incole, cuius non vl=

42.

ultimum argumentum est, multa adhuc Brixiensia
exaudiri vocabula, quae inobservantes illici Tuscâ le-
piditate commiscent. Parte laevâ Petrosanae Torrentis,
ab Occidente in Orientem fluit, sitae sunt domunculae i[n]
semiseis Stratonis Montis radicibus, e quibus asperrim[-]
arum rupium moles extolluntur, colore, scabritie, sterilitate
saxis ingentibus horridae. Inflexis extra crustis mo[do]
lunantur in arcum, modo elatis tumulis fastigiat[ae]
extolluntur, varieque ludente Naturâ in rectum,
in obliquum, in ambitum quasi novi montes per mon-
tium dorsa resurgunt. ~~Hic crudius magna Parens~~
~~fabricare potuit atque innocentius.~~ Non longe
distant Minerae Ferri, atque Vitrioli, quas summ[a]
cum animi voluptate, praeeunte ~~[illegible]~~ sagacissimo quodam viro, lu-
stravimus. Complevit dulce mentis et oculorum ob-
lectamentum inexpectata ~~generosa~~ urbanitas ~~[illegible]~~
~~[illegible]~~ iuvenis, qui in diversoriolum, ubi morabar in-
gressus voce, vultuque certa laetitiae signa proder[ens]
me fidis, sanctisque amplexibus implicuit. Ob-
stupui munifica, facilemque in aspero solo hu-
manitate, ubi caules inter, atque speluncas tan-
ta comitas, tam eximia indoles, ~~et venustissima~~
forma lateret, cum mihi ~~[illegible] interroganti~~ pariter quaerenti se
quorum: advenam, se Dominicum de Corradis Ausonia, Mine-
ris, nescioquo fato peregrinum, candide aperuit. Me
sibi non ignotum incogitato Fortunae favore suae
mensae socium, non in sylvatico diversorio quando-
que

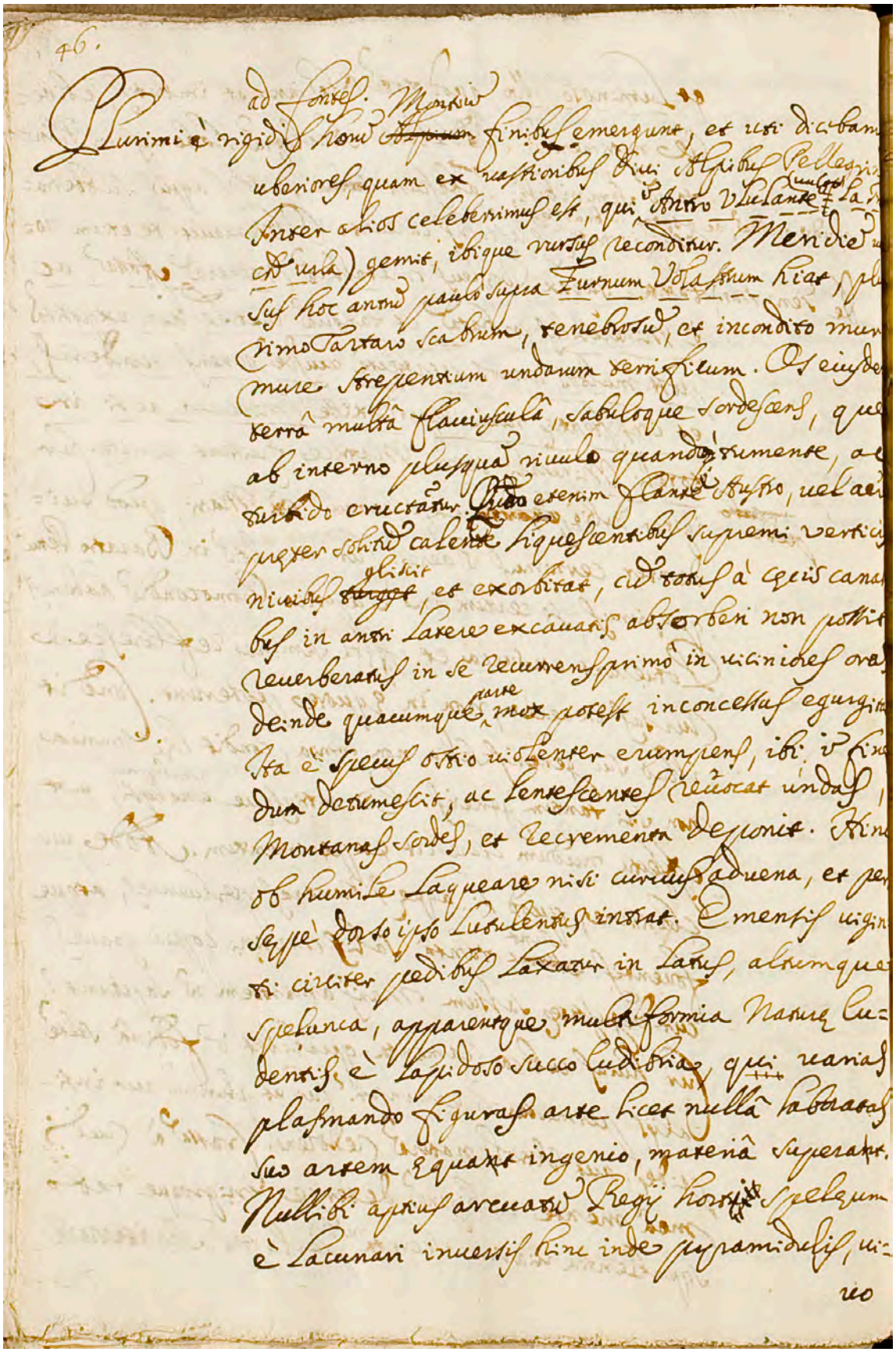




45.

et Luminoso illo, quod totum Orbem animat, imbutis, ebibe-
re nutrimentum sub debito. Analogiam habemus in Plan-
tarum seminibus. Tabescunt ~~[illegible]~~, si solis aquis subterra-
neis irrorate, ac aspergo imbuti insignio Celestibus careant. Obseruauit, te etiam no- (credo quodam, ac aspergo imbutis insignio)
(De Gen: Min.) tante, sagax Boyleus metallicam Mineram effossam, ac
è Mineralibus cribratam, et tanquam inutilem aeri expositam
post multos annos perfectè eiusdem generis, ponderis,
et consistentie noua reproduxisse Mineralia, ac si in
totali Minerali terrâ Matrice fuissent genita. Cur
igitur dubie ~~[illegible]~~ expiscamur à Mari, quod qui= ~~[illegible]~~
denter cernimus in aere? Cur oculorum in Baratro Penu
querimus, si certum in Aperico Promocondum habemus?
Potuerunt exsucca, et effeta semina reflorescere
Cursus in aere, non in equore poterunt. Condit
illud sui generis salia, non omnia, condit hic omnia,
non sui tantum generis. Ex utriusque ~~analysi~~ inductioni, et
effectu nudum clarescit experimentum. Adde, uir
clarissime, quod si aque Mineras perluentes, atque
fouentes ~~[illegible]~~ sunt tantâ salis marini copiâ graues,
cur degustate salsum Maris amarorem non sapiunt?
Cur huius cubica ramenta quâlibet in fodinâ salem
validis permissa non eruuntur? Cur et plurimum aer inti-
pidae, aut Nitrosi naturam redolent? Crassam à Crudi
meâ mente rubiginem deterge, nigroque tabo
squallentia uiarum secreta rursus perlustra. Sed ~~iterum~~

ad

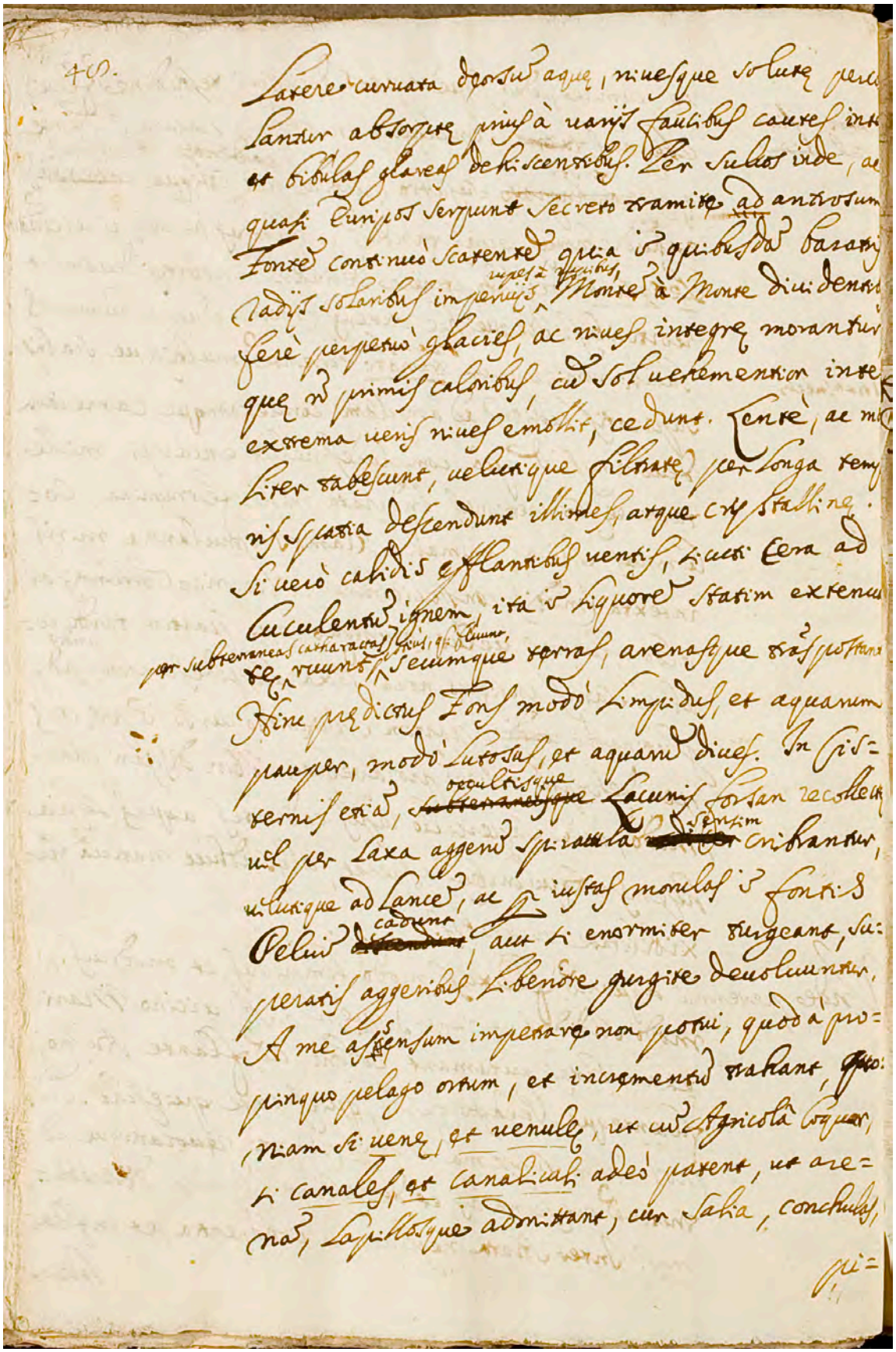


47

ro pumice, denique tophis decussatâ testudine inflexi-
elegans ~~tanta~~ simulavit in obscuro Natura. Tunc
aquas ~~non ingrato~~ tristi susurro furtive per obliqua ~~cadentes~~ cadentes [cadentes]
exaudiebamus, quas tandem profundus hiatus in vicina
Petrosana occulto itinere derivans intortis devorabat
vorticibus. Neque hic itineris meta. Supra humeros
baiuli nimigenulum ~~tranati~~ translati torrente, multisque scabris
superatis callibus ad amplam, convexamque cameram
devenimus, in quâ complures velut encarpi, mille
tartareae concretiones, indurata mille ferrumina, co-
lumnas, spiras, animalia, ramos simulantia miris
intexta modis conspiciebantur. Hic origo ~~torrentis~~ rivuli ab
alto fluentis, velut ab epistylio, qui partim tardo co-
alitu saxis antiquis nova saxa lapidescentibus undis ad-
glutinabat ~~undis~~, partim spumoso vertice in praeceps
per descriptum alveum prolabebatur. Non dispari sane
modo, ac è supercilio rupis cadentes aquas saeva
hyems Aquilonibus asperat, alijs adhuc nativâ flu-
xibilitate ruentibus.

Unde perennis aquarum fluxus modo limpidus, et modicus,
modo sordidus, et tumens quaeris? A vicino Mari
exantlatas autumant coloni, cum flante Austro,
furenteque Pelago furant, quiescente quiescant. Sed
nos aliter suprema Montis rimati, renovatisque ad
[illegible] crescentibus, et decrescentibus undis [illegible]
mus. Inter strata negligenter cohaerentia, et inflexo

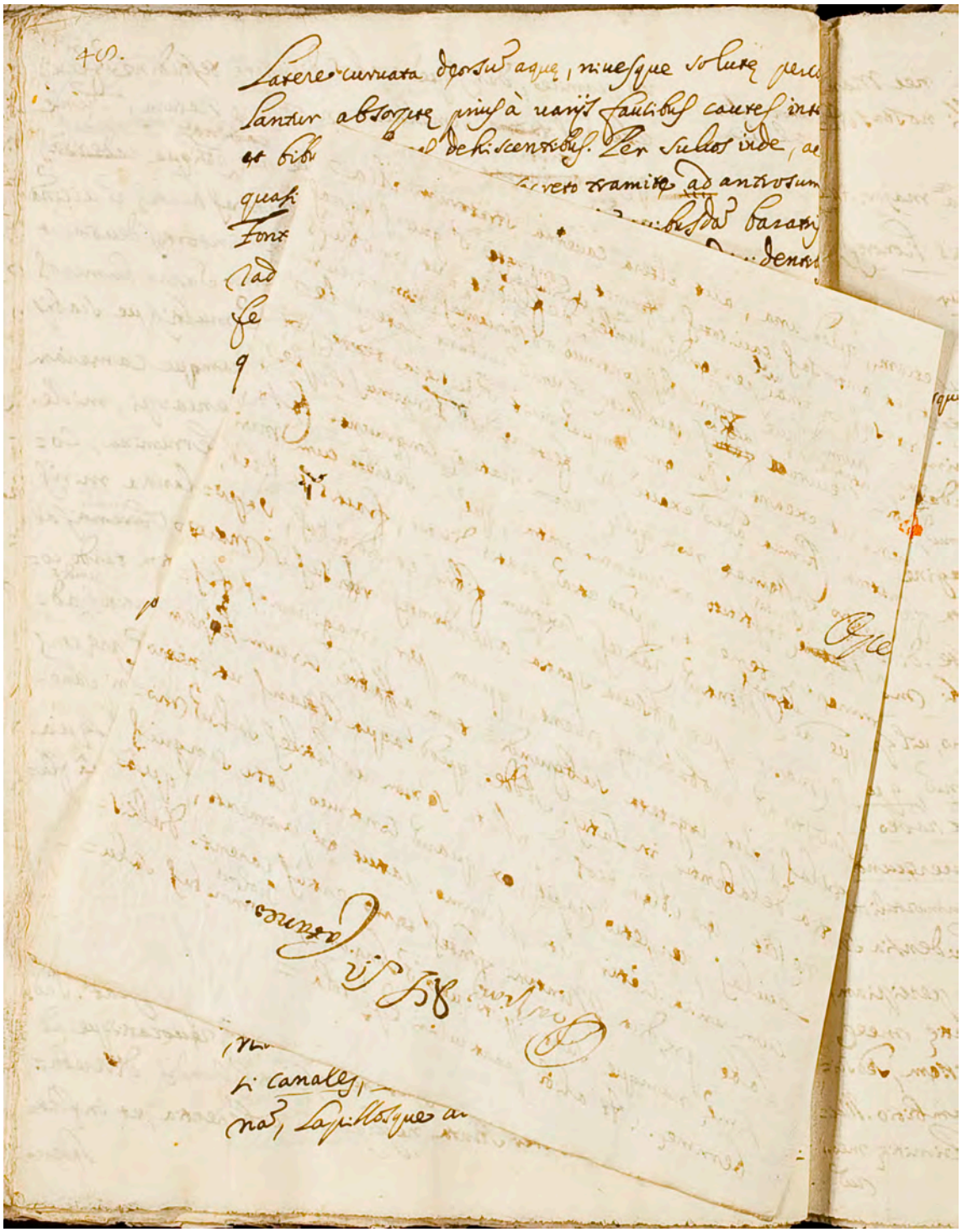
itinere



49.

pisciculos, marinas quisquilias non excipiunt? At
legeris amice doctissime, tolluntur in altum vapores, et
à saxorum frigore densati in guttas roridas transeunt.
Si quandoque turbantur aquae, non ex mari, sed ex super-
advenientibus montis ~~[illegible]~~ rivulis unà immistis tur-
bantur. Ita communis Italorum opinio. Sed vastissimos
in cavernas*

Sed dato etiam, quod una, aut altera caverna stratorum ilia
[vel fractas] discerpat, et antrosas cavitates efformet, congregati in guttas aqueas
vapores versus in ima [vel] perpendiculariter [vel perpendiculariter] defluent, ut in obviis
specubus, humidisque ~~[illegible]~~ fornicibus continuò observamus, non circum
Alembici [interna] recurvata ~~[illegible]~~ [latera] recollectae in unum coibunt laterale
foramen, ut exeant. Quis enim unquam ivit in viscera terrae, ex
laboratoria Chimica adeò exactè perfecta vidit? Fingimus saepe,
quae nostro Sistemati, non quae rerum naturae congruunt. Esto,
non ~~[illegible]~~ [Polidedalei maris] instituto excavantur antra, quae secreta cum Mari
commertia teneant, quod etiam gratis dicitur, gratis scilicet,
usque ad [internas] Montium radices saxorum fibris, et ordinibus, vapo-
res marini per obscura spatia ascendentes versus in Mare
substratum probabilius ruent, quam per imaginarias fis-
tulas, aut cogitata subterrandia tam affabrè circum repen-
tia delabentur in latus. Adde, quod aqua Maris, uti nemo
nescit, per Alembicos distillata secum volatiles salium mo-
leculas perpetuò rapit, ex quarum continuo potu sanguis
cum urinâ bibitur, uti plurimo patuit experimento, quâ
labe praedicti Montani fontes certo certius carent. Delicis-
simae namque sunt, potuique in longum quam [Incolonis] omnibus salu-
berrimae. At alibi particulari Epistolâ =



49.

pisciculos, marinas quisquilias non excipiunt? At
tegeris, amice doctissime, tolluntur in altum vapores, et
a saxorum frigore densati in guttas roridas transeunt.
Si quandoque turbantur aquae, non ex mari, sed ex super-
advenientibus montium ~~[illegible]~~ rivulis una immistis tur-
bantur. Ita communis Italorum opinio. Sed vastissimos
hos Alembicos neque concipio, neque montium structuram*
que, vel ... superimpositis elaborata * Sed dat[ur] ex...
plastiter. At tibi particulari Epistola quid de his sentiam
fusius enucleabo. Equidem, dicam cum Platone in Protagora,
arbitror nos invicem nonnihil debere concedere, et
de iis, quae dicentur, ambigere quidem simul, conten-
dere vero nunquam. Ambigunt porro propter be-
nevolentiam cum amicis amici, contendunt vero ad-
versarii, et hostes. Patere igitur interim sine teme-
ritatis nota, quod asseram nostrarum Alpium Fontes,
Rivos, flumina, quae ad subiectum praecipue Padum et
suum tributum devehunt, omnes et omnia pluviis, ni-
vibusque liquatis deberi. Quid de Danubio, de
Rheno, de Rhodano, aliisque regiis fluminibus
sentiam, ignoro. Obstupescimus sane magna nomina
et de origine grandia opinamur, quoniam eorundem
initia non novimus. Si vastissimos Montes, im-
mensas regiones, solitudines maximas aeternis fere
~~nivium~~ glomis, et diuturna in perpetuum bruma
rigentes oculis ipsis perlustraremus, cederet
fortan

50.

forsan in visu stupor, nec Montes Mari, nec Mari Montibus immisceremus. Tanto enim illi nostros Alpes omnibus superant, quantum
Delphinos Balena Britanica major. | Am.

Silius Ital. * Nullum ver usquam, nullique æstatis honores,
Sola jugis habitat diris, sedesque tuetur
Perpetuas deformis hyems. Tantum =

+ Assuetus nostris æstivis ardoribus animus, multis aridissimis montibus involutus, regione qua nescit deradere, dubitans repugnare experimento, quod vix concipere potest. Facilis est mendacio locus, quando ignota sunt extrema. Ut plurimum, quæ longinquo regionum tractu dissita confusa quadam imagine avecta trahebant mentes, visa, aut contrectata satisfiunt. Parva interim de parvis, sed oculo teste, diximus, felicior magna de magnis. Multo mihi maius beneficium conferes (dicam cum Euthydemo, vel litigioso in Platone), si inscitia liberaveris animum, quam ægritudine corpus. Minimum enim hoc habeo bonum quod me tenent, quoniam sine robore verecundiæ ad discendum me preparo. Non enim immortalitatis negotiatus hæc informi papyro credentia scribo, sed ut a te veritatem detracto peplo percipiam, et ingenuis artibus vacem. Si conscientiæ meæ audivissem consilia, silere sane debuissem, sed sciendi cupiditas, non humana vetuit ambitio. Macte igitur animo, amicorum suavissime. Primitiæ meorum

51.

rum itinerum, Laborisque noui crepundia, quae plus
Naturae, quam Artis sapiunt, tua sudata calami mo=
menta sentiant. At te, cuius ingenium nauiter in his
materijs detritum est, maiorem suae Lucis partem expectant.
Non sit haec ampullosa ingeniorum digladiatio, non ama=
rulenta Logomachia, quae nos transuersos agat, quae ob
gestum pugnae dulce foederis amicitiae discerpat. Ita S
despuimus curas, nec subtristi caroes aspergimus abstin=
tio. Euiscerata terra, quae diu ante dissimulauerat, te
autore prodat, me solum, ut altius refodias amicâ
asperitate aduersante. Fabulis alij antiquis suas adnec=
tant imaginatas fabellas, et durâ ingenij conditione,
occupatissimas inanitates efficiant. Miramur studia,
miseramur Labores. Tu medullam erue, quae dulce sapiat
quae plenè nutriat, quae tota pectori sane accedat.
Vrbium, populorumque Lucramina, licet nos plectant,
licet in insontibus agris in exitium sui mitissimis furor
adhuc transalpini ferri mandata fatorum peragat,
dulcesque Patriae reliquias immistas cum atro cruore
sanguinis foedatas rursus uideam, dolorem nihilominus
literulis concoquo, Musasque ob Iani templum
tot iam annos apertum plorantes Naturae miraculis
ad dulcia agrestis calami solamina prouoco. Quid
interim alia narrari ~~excipiet, uel excipere deberet~~ narret Epistola,
tanquam secundarios fructus, accipe. Nondum tamen

omnes

52.

omnes recte maturescunt, Longioresque circuitus, no=
vosque labores desiderant.

1. Herbas, ac Plantas omnes Mutinenses Alpinas Rizzoto=
mis expetendas.

2. Crystallos alias, Crystalloides, Lapides speculares, vel Se=
lenites, Salia fossilia, Lapides picturatos, sculptos,
figuratos, medicos, calcarios, gypseos, pretiosos etc.

3. Strata Montium Lapidea, cretacea, glareosa, sabu=
losa, terrea etc., unde nata, quo flectantur, quo
tendant, eorumque necessitas, usus, anatomes etc.

4. Antediluviana dicta, et postdiluviana corpora, quae in ipsis
reperiuntur vel lapidefacta, vel intra lapides clausa,
vel terrae solum visceribus involuta, vel sint Conchae, Ser
pentes, Pisces, Echini, Limaces, Ostreae, Pectines, Tu=
bili, Animalium ossa, Ligna, fructus etc.

5. Montium exteriorem crustam, terrarum omnium indolem, saxo=
rum, fluorum, marmorum, tartarearum concretionum enu=
cleationem. ~~[illegible]~~ Hyalitides enim in ultimis Alpibus videntur Orientalibus gemmae loci.

6. Cuiuslibet Montis usque ad Mare Tyrenum ingenium par=
ticulares, pascua, usus etc.

7. Insecta quae rariora scopulis in illis, herbis, plantisque nidificant.

8. Quae volatilia, quaenam quadrupedes, quaenam in rivulis,
fontibus, torrentibus etc. Pisces etc.

9. Qui fructus, quae grana, qualis omnibus nostris Monticolis
cibus, et potus.

10.

58.

10. Qui mores, Artes, domus, morbi, tormenta, delicię.

11. Quodnam aeris pondus ad Lancem Barometricam dicetur, quę temperies quęsita Thermometro.

12. Quę Montium altitudo, Rimę, lapsus, decrementum etc.

13. Accurata Fontium, fluminum, Torrentium, Thermarum, Mineranum etc. exactior descriptio.

14. De Lacte, et Operibus Lactarijs, prout pręparantur in Alpibus nostris.

15. Mineranum quorundam accurata et exacta descriptio.

Alię sunt, quę humeris tanta ferre forsan renuentibus imponere auderem, sed

– – – maxima parvis

Tempore molimur.

Alia interim Loqui (dicam cum Petrarca (Rer. lib. [illegible] Tom. 2.) Censorum pręmordacium etiam iubet metus, qui nihil scribentes, quod iudicari queat, de alionum iudicant ingenijs; impudentissima temeritas, quę solo silentio tuta est. Complosis in littore manibus sedenti facile est ferre, quam velit de gubernatoris arte sententiam. Me pudet eos in hoc Musanum Regno, in hoc bonarum Artium Imperio delicatâ critica liquescentes, livoreque tabo marcidos videre. Iuvet edentulam eorum cernere potentiam, segnitie claram, operosam ineptiam, Labres irritos. Sed Te video prolixâ

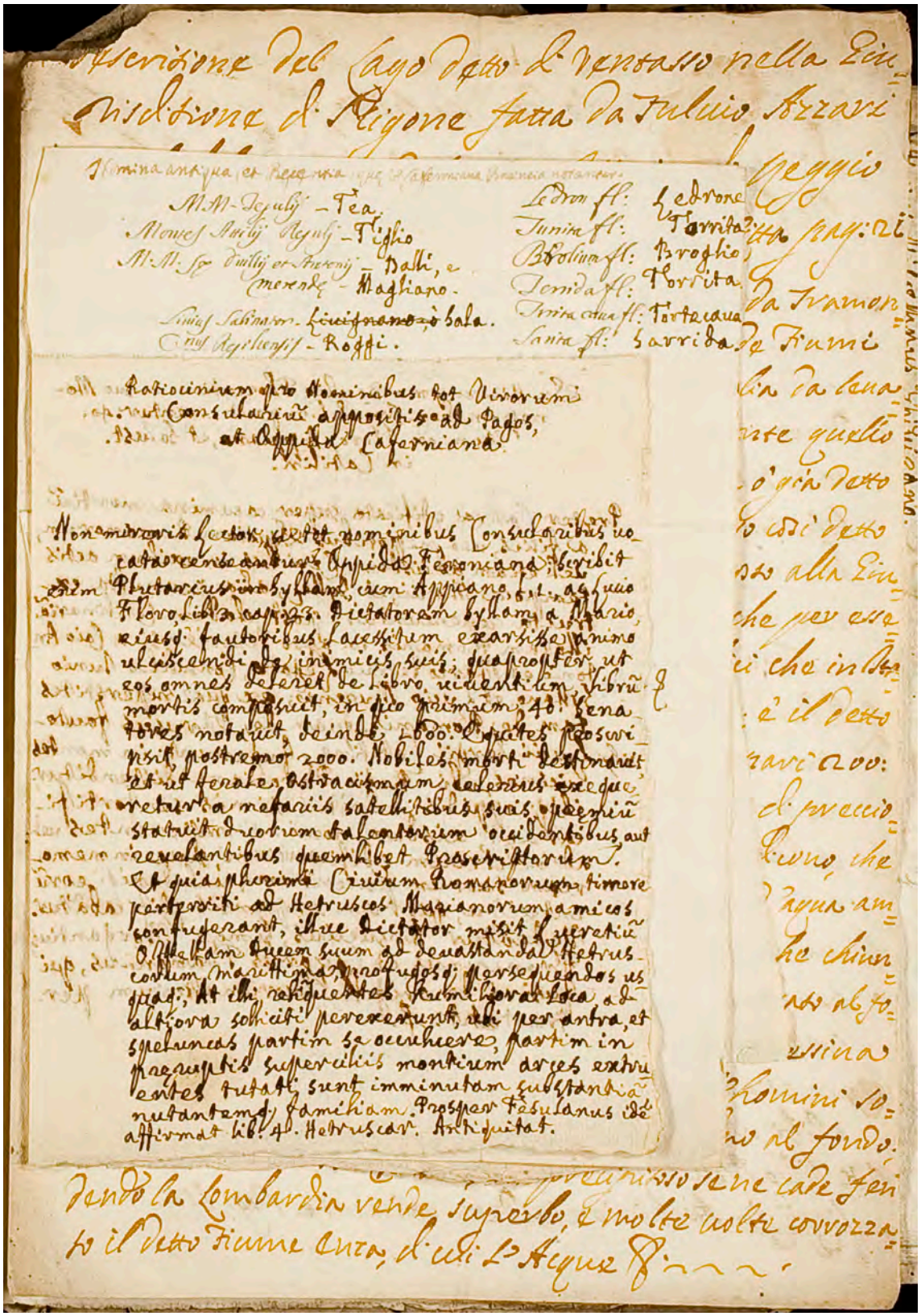
nimis

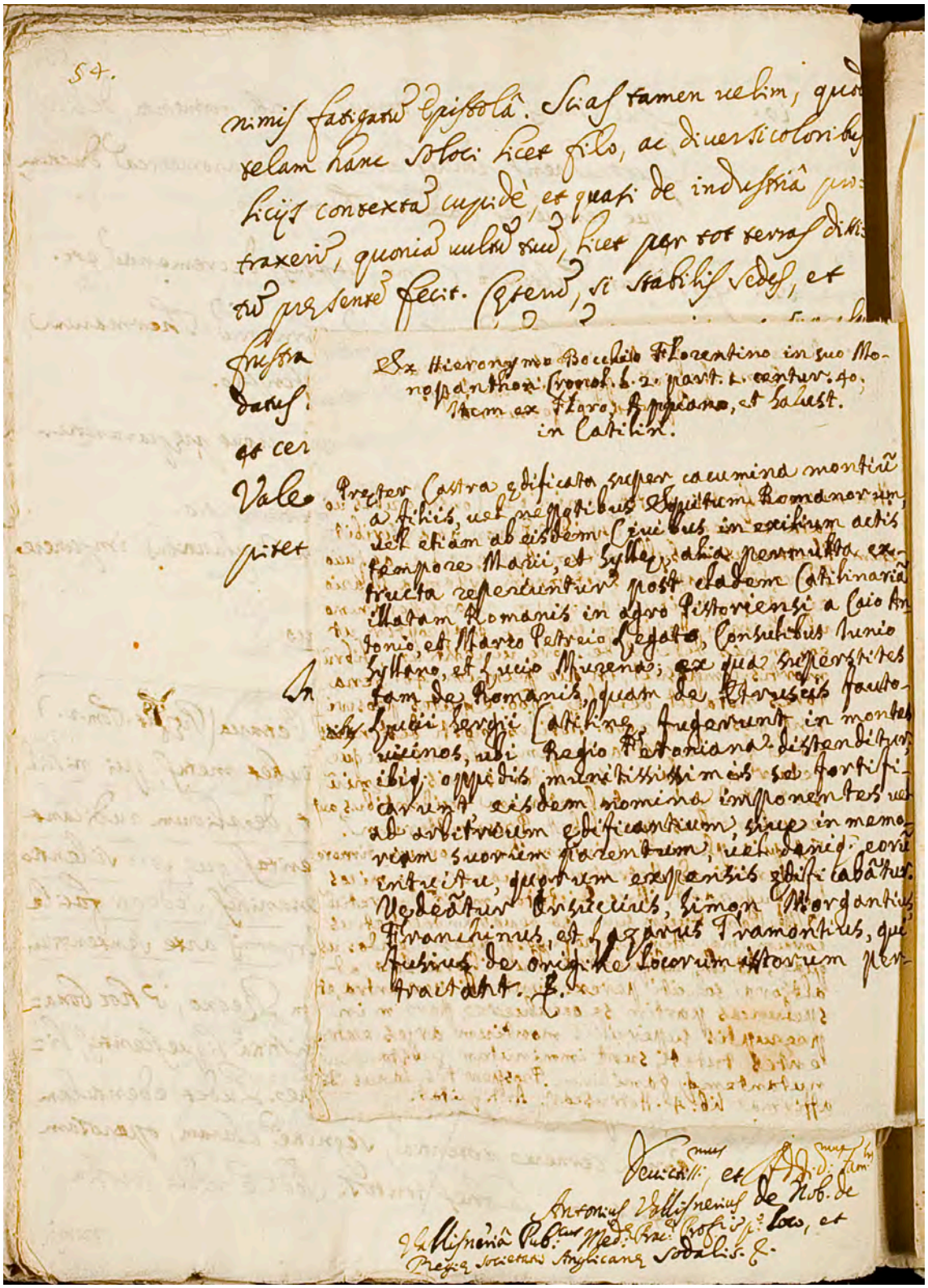
54.

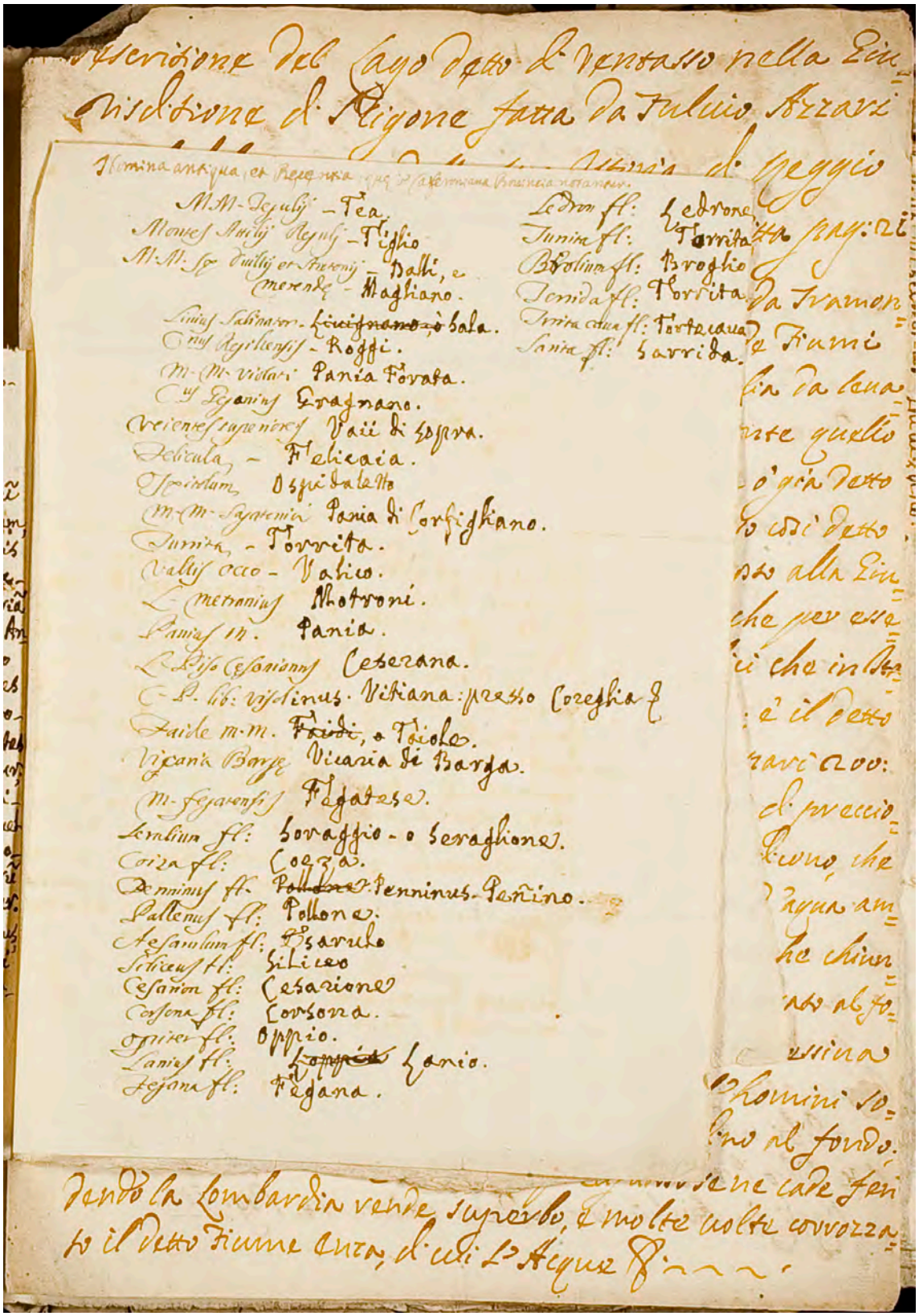
nimis fatigatus Epistolâ. Scias tamen velim, quod
telam hanc soloci licet filo, ac diversicoloribus
licijs contextam cupidè, et quasi de industriâ pro=
traxerim, quoniam vultum tuum, licet per tot terras dissi=
tum præsentem fecit. Cæterum, si stabilis sedes, et
frustra semper quæsitum otium contigerit, uti suspicabatur
dares autor de se ipso scribebat, nobiliorem forsan,
et certè uniformem tuo nomini meditor ordiri.
Vale mei memor, teque ~~Sartum tectum~~ sos=
pitet Deus.

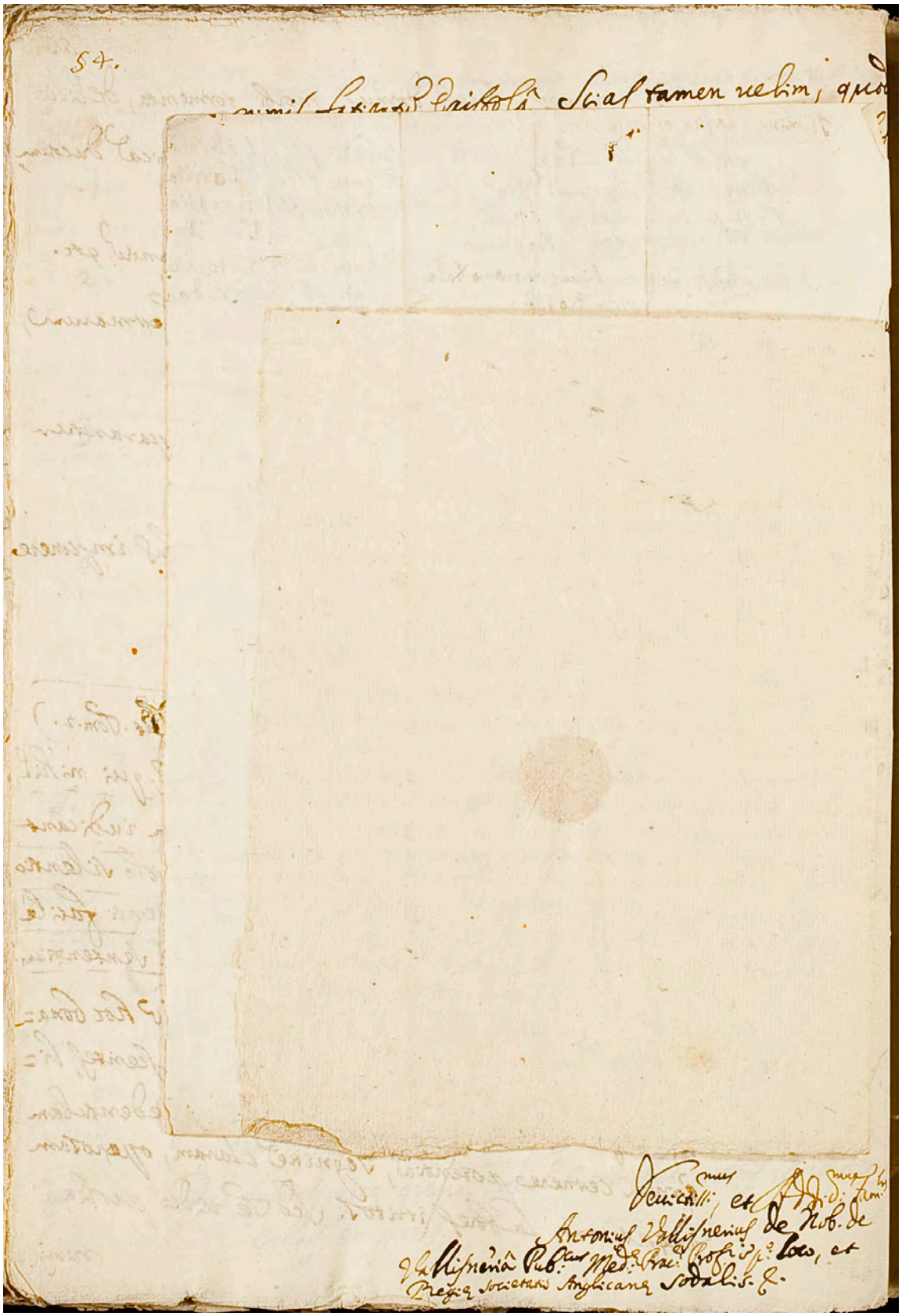
In Musæo meo ~~[illegible]~~ Octavino Kal. Januarij. 1705.

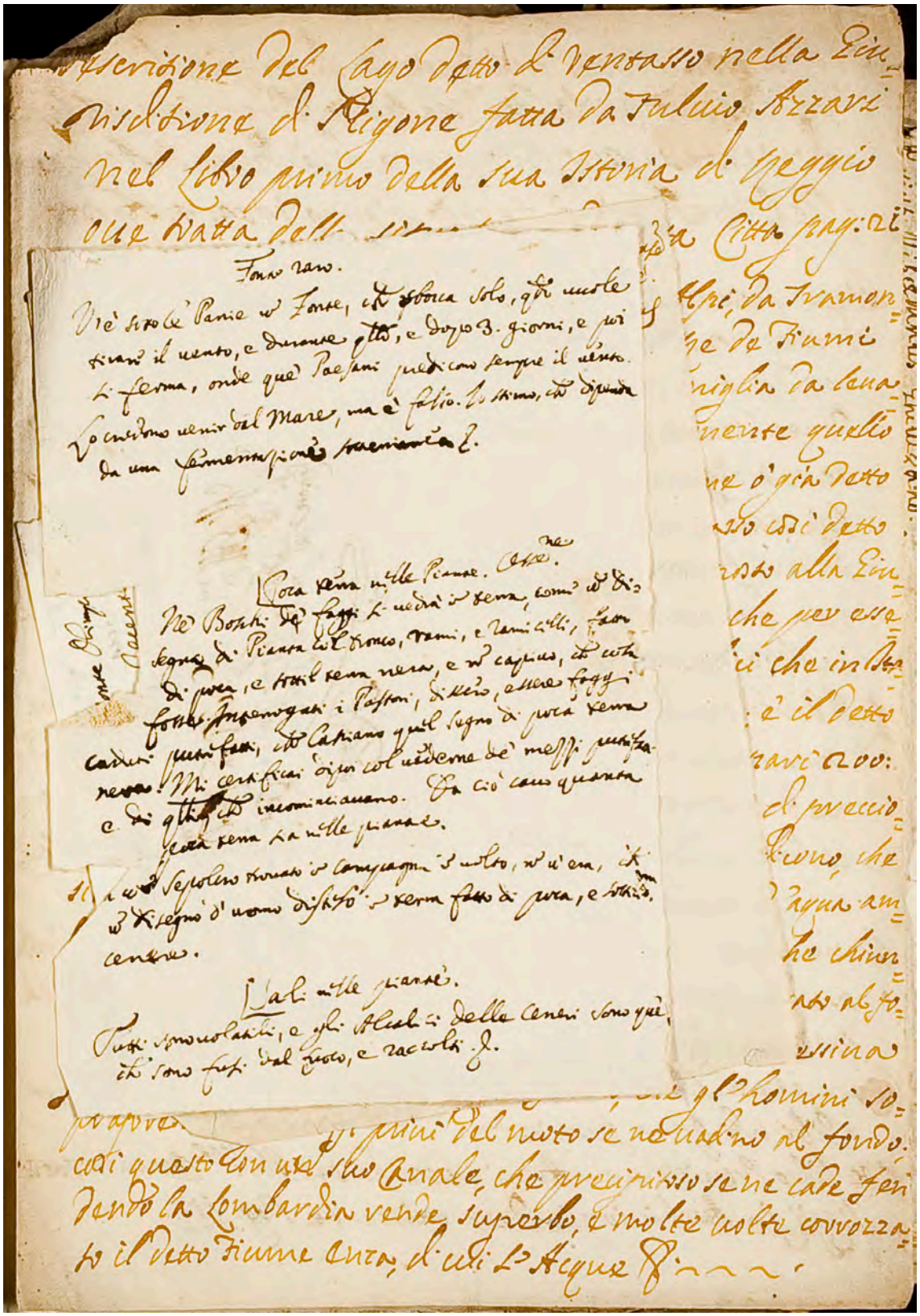
Tuus [illegible] Venerati, et [illegible]
Antonius Vallisnerius de Nob. de
Vallisnerià Pub. Med. Prac. Profess. [illegible] Loco, et
Regiæ Societatis Anglicanæ Sodalis. &c.

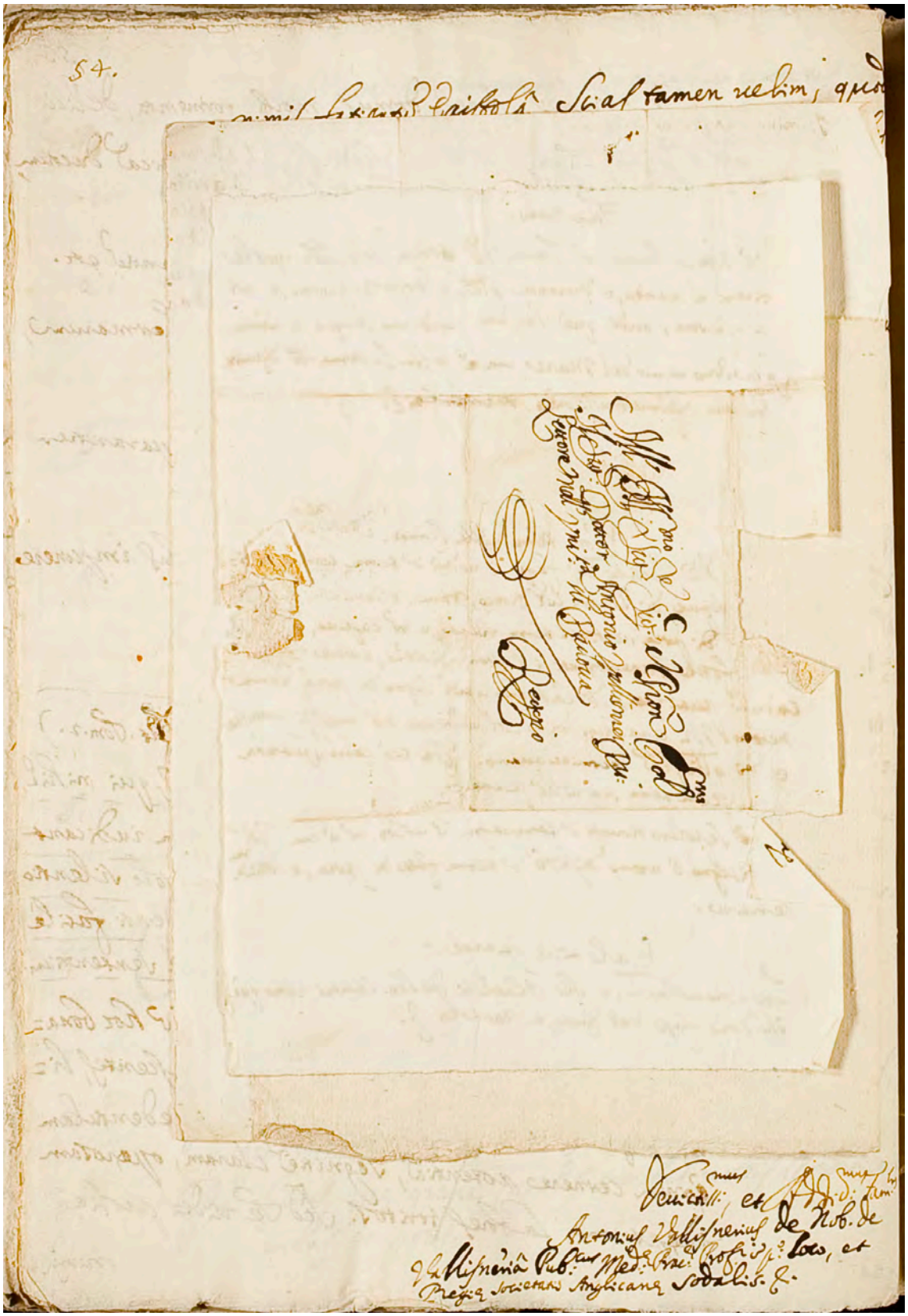


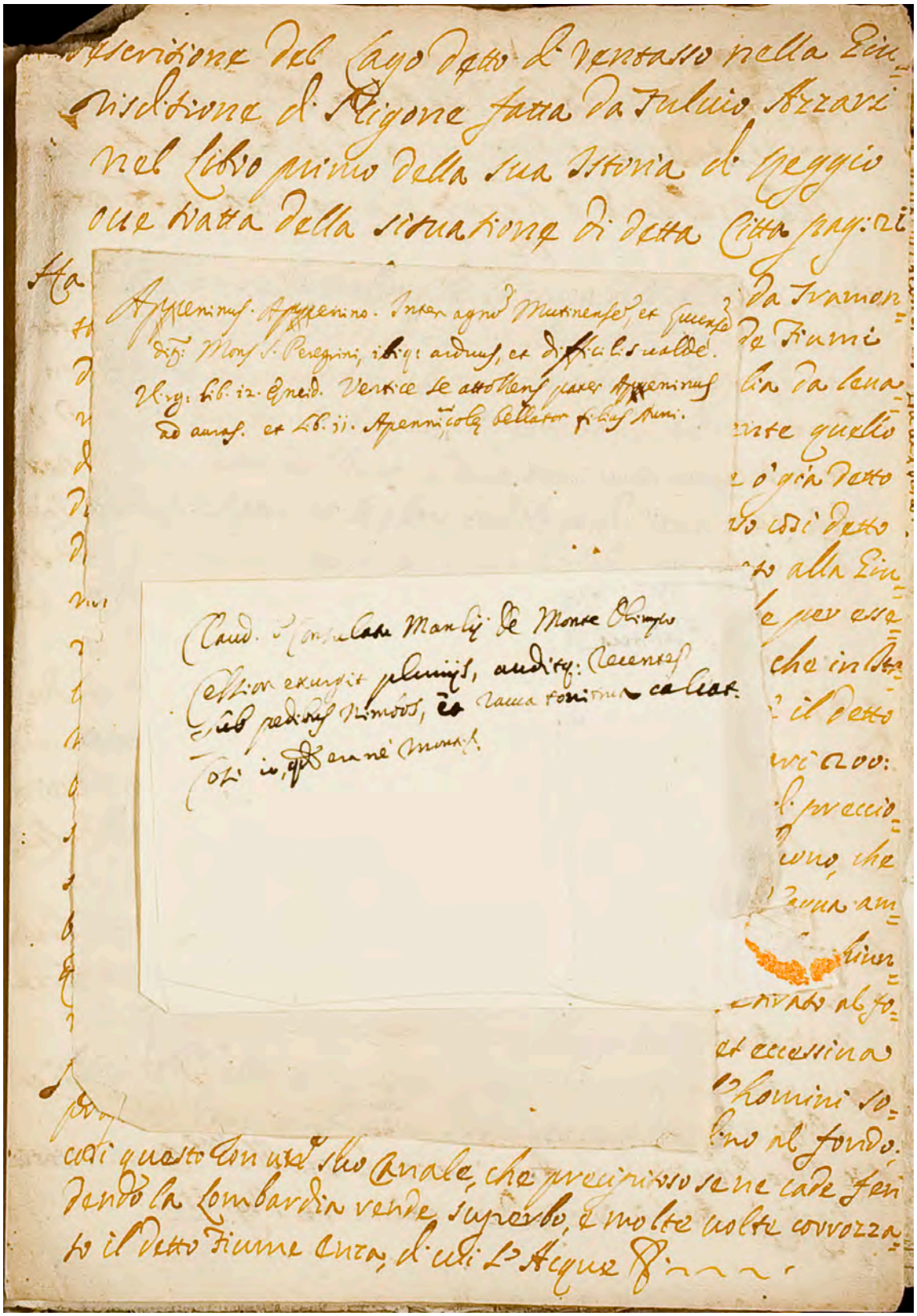


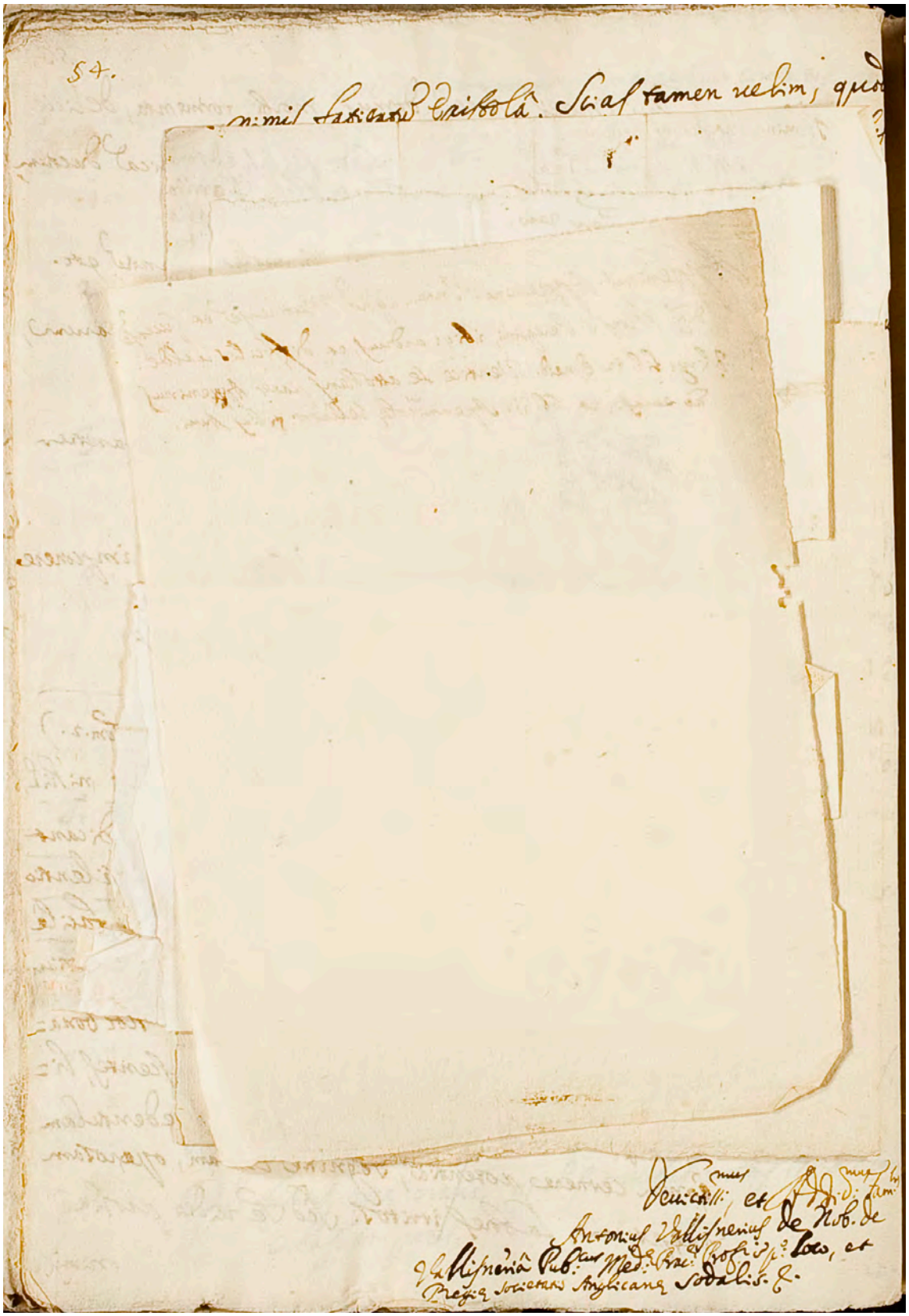












Descrizione del Lago detto di Ventasso nella Giurisdittione di Rigone fatta da Fulvio Azzari nel Libro primo della sua Istoria di Reggio oue tratta della situatione di detta Città pag: 21

Ha dalla parte Meridionale le cime dell'Alpi, da Tramontana non più discosto di 16: miglia il Po Re de Fiumi d'Italia, et quasiche dal pari lontano 6: miglia da leuante il Fiume Secchia, et altretanto da ponente quello di Lenza detto da Plinio:: L'uno originario come s'è già detto da Prà di Reno, et l'altro dal Lago di Ventasso così detto dal Monte nella di cui cima risiede sottoposto alla Giurisdittione de Conti Vallisneri, monte in vero che per essere d'ogni intorno copioso de più vari semplici che in Italia si ritrouino lo rende molto riguardeuole; è il detto ~~Monte~~ Lago di longhezza, e larghezza quasiche pari 200: braccia per tutti li quattro lati et alle stagioni di precioso Pesce, et delicatissimi Gambari copioso; alcuni dicono, che sia profondo, et altri gl'assegnano braccia 25: d'acqua ambiguità causata dal non potervi notare, percioche chiunque vi entra resta come da una voragine rapito, e tirato al fondo, la cagione viene attribuita alla grande, et eccessiva frigidità delle sue acque, quali fanno, che gl'homini soprarresi da granffi privi del moto se ne vadino al fondo. così questo con un suo Canale, che precipitoso se ne cade ferendo la Lombardia rende superbo, e molte uolte corrozzato il detto Fiume Enza, di cui l'Acque …

Proposizione fatta nel Conseglio di Reggio di ma-
tro Mastro Carlo da Malcone Ingegniere al Lag[o]
di Ventasso per procurare di condure l'Acqua
del medemo à Reggio l'anno 1453: 4: Agosto

Item ipsis sic existentibus Dominus Massarius predictus
dixit. Vos Domini Antiani scitis quod iam diu fuit tracta-
tum de conducendo Aequam de Lacu Ventaxii esse bonum
donec Magister Carolus Ingegnerius est hic facere quod ip-
se se transferat super dicto Lacu, et ibi videre an esset possi-
bile posse aurire Aequas ex dicto Lacu aliqua via, cum iam
dictum fuerit quod ipse debebat hoc scire ex praxi et si
non opus quod volebat aliquid, sic esset bonum videre, et
capere partitum

Qui Domini Antiani Rengarauerunt et cum habuerunt dic-
tum per dictum Massarium, et deliberauerunt facere vide-
re à dicto Magistro Carolo an sit possibile in premissis aurire
et habere Aequas aliqua via, et se transferre ad dictum La-
cum cum dicto Ingegnerio:

Item eligerunt Simonem de Caleagnis et Fillippum de Rodeli
qui habeant esse una cum ipso Magistro Carolo, et referre
ipsis Antianis quando opus fuerit de Mergentibus.

Item etiam habeant ire una statim ad Lacum Ventaxii, et
alibi ubi opus fuerit: —

Ex libro Provisionum Anni 1452: ad 54: Ill:me Comunitatis
Regii in Archiuio eiusdem existente Pag: 111.

Sup:plica della Comunità di Busana al Duca
Borso di Ferrara per l'esenzione dalle
tasse nella quale si adduce l'infrascritto
motivo cioè:

Stante quadam Ruina incepta in Monte Ventasio quae
minando decurrit usque in Flumen Situle destruē-
ndo Castagneta terras aratorias, et prativas, et Domos,
et tegetes cum Ecclesia dicte terre:

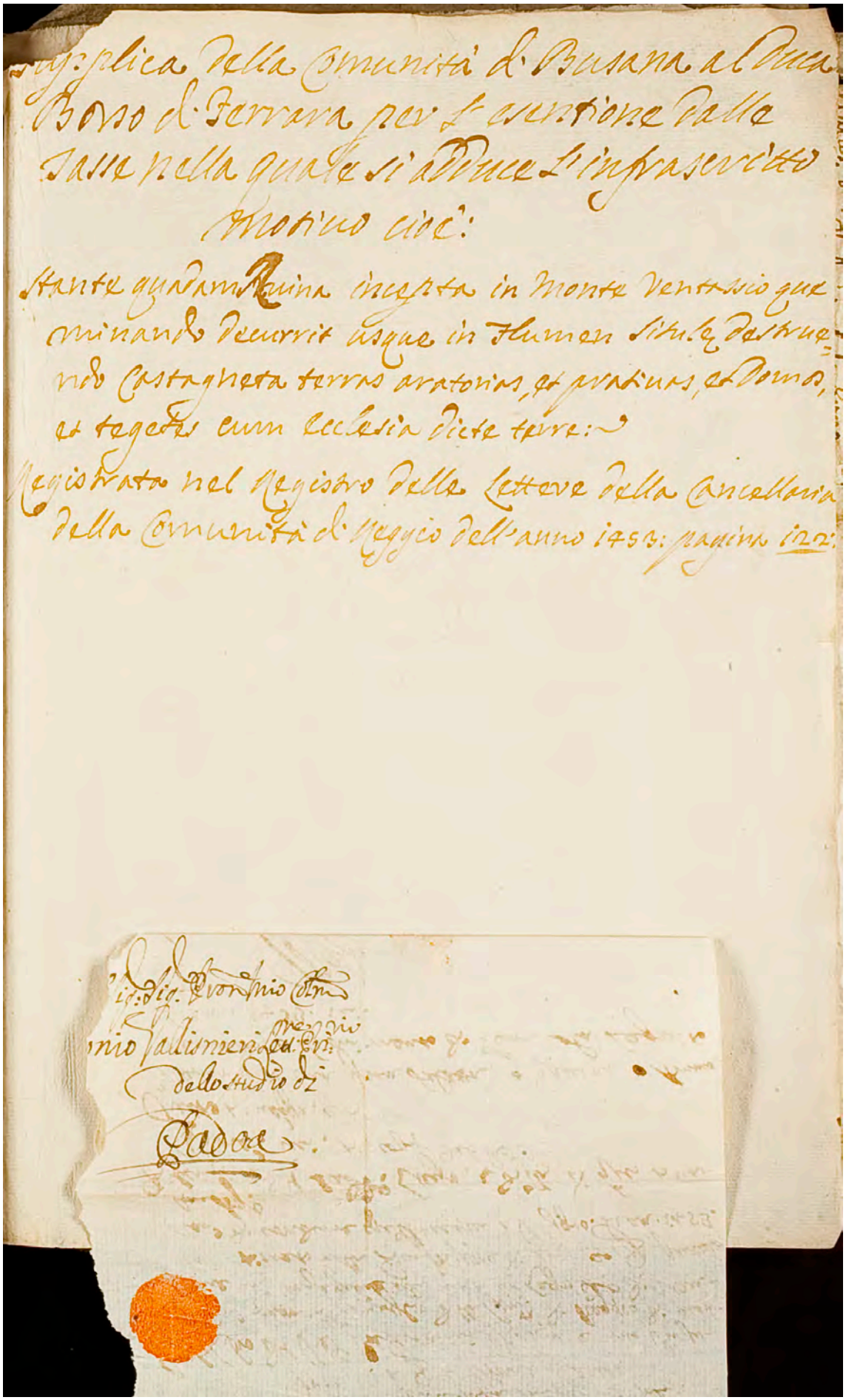
Registra[...] [...]cellaria
dello [...] [...]ino 1202:

Memoria Pervenuta dal Sig.r Vallisnieri.
a Pp. l'Istoria Naturale.

Nel Libro del Sig.r Vallisnieri M.S. v'è una Propo-
sizione fatta nel Consiglio della Comunità di Reggio di man-
dare un'Ingegniere alla visita del Lago detto di Ven-
tasso situato nella Giurisdizione di Nigone, per procu-
rare di condurre quell'acqua a Reggio. L'an. 1453.
4. Ag.to
Descrizione del sud.to Lago, e della di quel situa-
zione: ivi, e copia dal Sig.r Vallisn.
Tutto l'acqua, e la cop[...]
Memoria di una gran Frana, o Lavina, o Ammot-
tamento, o Scoscimento di Terra colà seguito
l'anno 1453. ivi.

Memoria

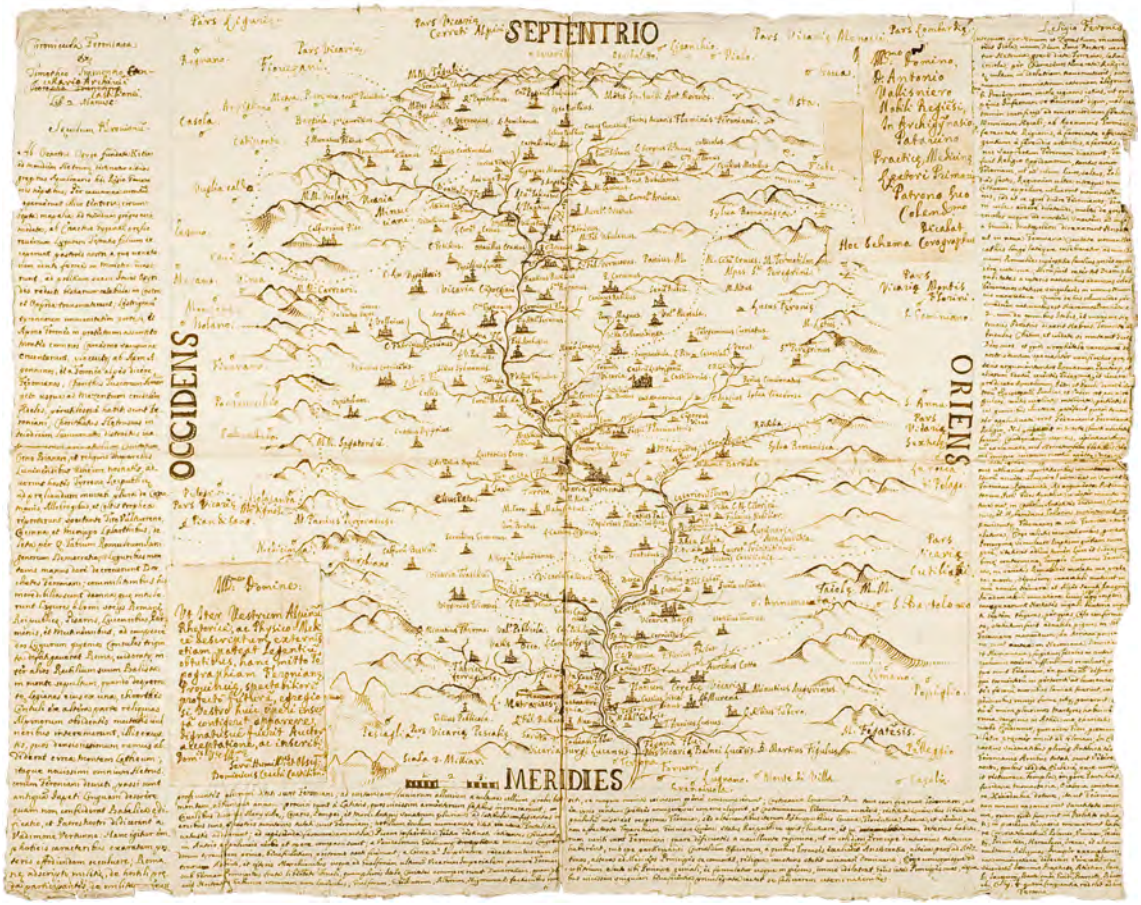
Si porti il Libro delle Croniche Vallisn. a casa,
e si vada a Nigone, e vedere ... che descrivino
quei Luoghi.

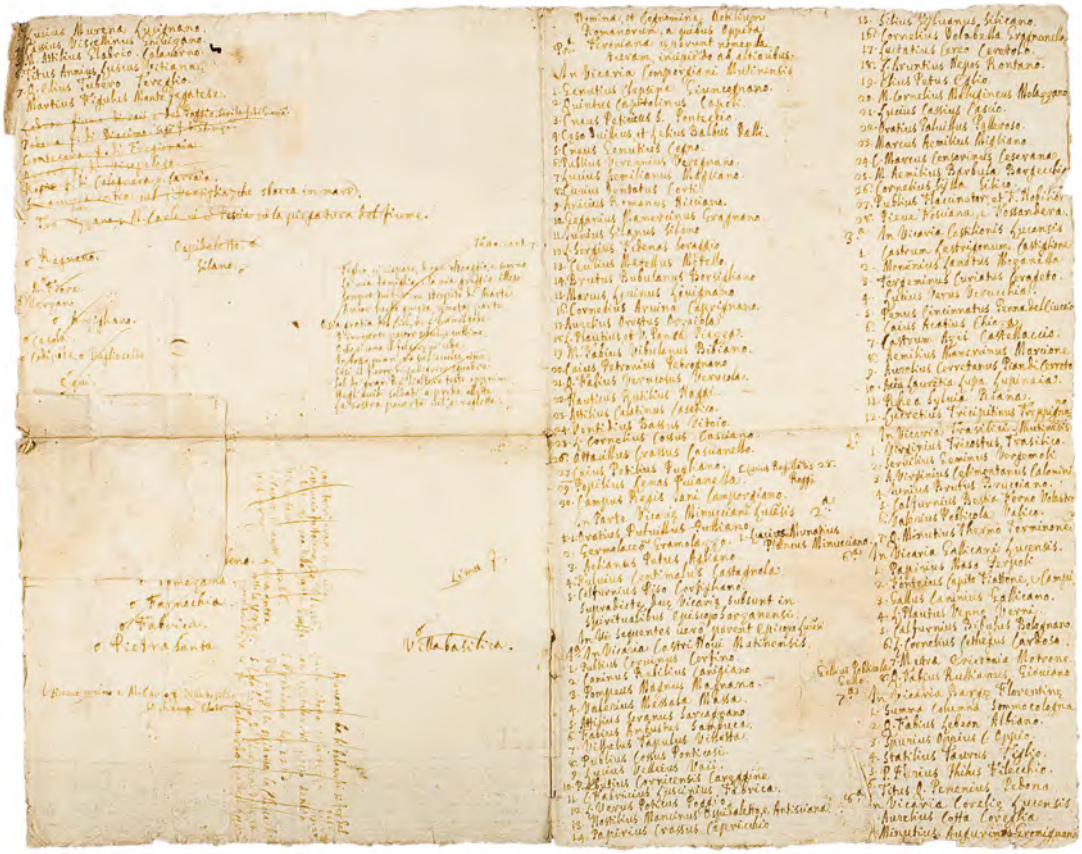


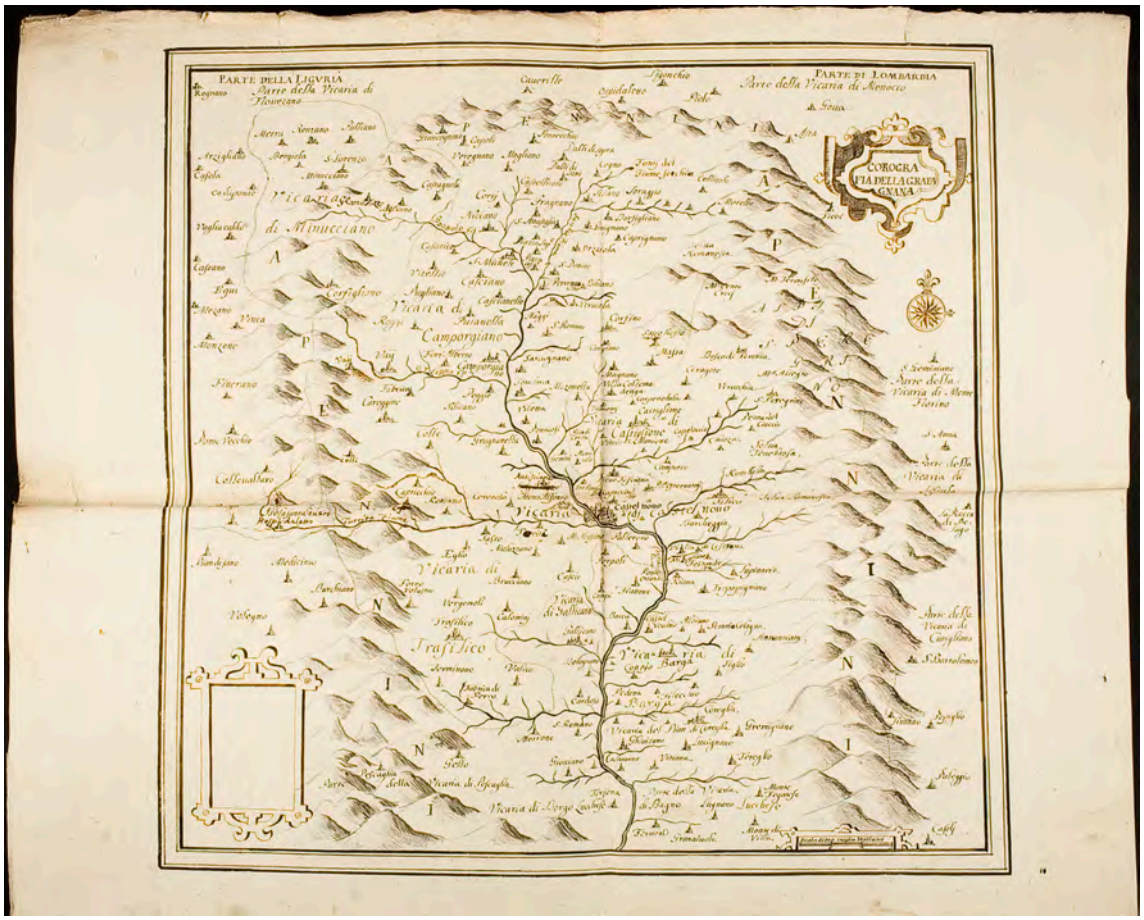
Supplica della Comunità di Busana al Duca Borso di Ferrara per l'esenzione dalla taglia nella quale si adduce l'infrascritto motivo cioè:

Stante quandam ruina incepta in Monte Ventasio que minando decurrit aque in flumen Situle destruendo castagneta terras aratorias et prativas et domos et tegetes cum ecclesia dicte terre:

Registrato nel Registro delle Lettere della Cancelleria della Comunità di Reggio dell'anno 1453: pagina 122:


SEPTENTRIO
OCCIDENS
ORIENS
MERIDIES




PARTE DELLA LIGVRIA
PARTE DI LOMBARDIA
COROGRA
FIA DELLA GRAVI
GNANA
Vicaria di Minucciano
Vicaria di Camporgiano
Vicaria
Vicaria di Trassilico
Vicaria di Barga