

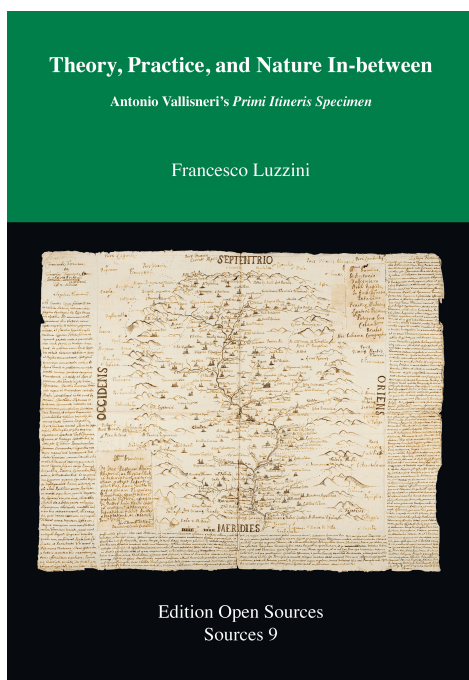
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Sources 9

Francesco Luzzini:

Main Manuscript: Transcription

DOI: 10.34663/9783945561324-05



In: Francesco Luzzini: *Theory, Practice, and Nature In-between* : Antonio Vallisneri's *Primi Itineris Specimen*

Online version at <https://edition-open-sources.org/sources/9/>

ISBN 978-3-945561-32-4, DOI 10.34663/9783945561324-00

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The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at <http://dnb.d-nb.de>

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 eminent, torporem hunc nobis excutere ad experimenta lacessendo; mihi quoque fas sit ante pedes vestros rudem

¹This 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>).

²These 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.

^aIter <...>num montanum

^bMontes *mutinenses* Specimen

^cArchyliceo *Practicae Medicinae in primo loco* Publico

^dL.V. *Scandianensi*

IV.r.] libellum proicere^e non dissimilia tentantem, res quippe habet visu compertas, non ingenio. Horridulus quidem est atque incomptus, sed veniam dabitur 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' tacitiⁱ 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 delicate, 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 terribiliⁿ 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-

³Accademia 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.

^eproicere

^fSprezzerete *probabilmente* forse

^go riveritissimo *amico* Accademici

^hcammini, 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

ⁱleggi, *fra quegli* taciti

^jparendo, che

^kdeserti *ed che paiono* dalla

^ldove *bollono cotanto* sì

^mscogli, e *dirupi immensi, sassi* acque

ⁿe *sassi immensi* terribili

^ocaverne, *ne' quali urtano, e si dirompono con istrepito per non dire con isdegno le acque cadenti, che se*

^psentirvi *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)^{4u} 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

⁴Here, 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.

⁵Gypsum (CaSO₄ · 2H₂O) 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.

^qscoperta, e confermata confermata, quando sarà e addimesticata

^rnobile congresso adunanza

^spiù splendida splendida

^tillustrare le loro patrie, e ci rimproverano, e mormurano ci
illustrare la natura. *Filosofica storia* e ci

^ue infruttuoso infindo)

^vsu ne' monti quelli

^wpareva

^xnon fosse sia

^ydiletto, come ora discendere

^zlora

^{aa}un <...> filosofo

^{ab}me

^{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 fuori 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 despicias merito, amicorum optime. Quid enim horridis locis, et a natura ipsa desertis cum cultissimo, atque mitissimo ingenio tuo? Adeone, inquires, 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

⁶The 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.

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

⁸The 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 (H₂S) from sulfate (SO₄) in gypsum. H₂S 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.

⁹The 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 nelle

^{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}dil dcercare

^{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.

Aloiyisio 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 circumfusis 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 Valla¹³ 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-

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

¹¹Johann 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.

¹²Ippolito 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.

¹³Paolo 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 inhaerenti 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 coloratior, et ac

^{be}Spallanzanus amicissimus meus, qui

^{bf}etiam alpini montani

^{bg}fornicem supergressus ingressus

^{bh}observabam cognatas multi

^{bi}variis 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 striae 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, gypsi que fragmina¹⁶ 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 agitados diceres. Colorabat omnia, quae lambebat, progressu temporis ferrugineo quodam velo,^{bu} salesque nitrosi¹⁷ 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

¹⁴The 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.

¹⁵Mineral sulphur (S).

¹⁶Selenite ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$), 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).

¹⁷Potassium 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} sulphureae *minerae* truncus

^{bw} dispersi, ac *veluti* cum

^{bx} pomm<ae>

^{by} longitudo *usque* ad

^{bz} gypseis, *saxeis* tartareis

^{ca} **In the text:** Difert

fossore, vulgo *canopi*, quoniam ibi vena inter stratum, et stratum *horizontaliter* explanatur, fodiuntque puteos, ut ipsam eruant, scandianensis vero oblique^{cb} inter horizontalem, 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 vitriolum¹⁸ redolentibus illud abundat, pingui magis istud, et inflammabili substantia. Hinc nostrum minorem olei sulphuris portionem per enchirism^{19cn} 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

¹⁸The term “vitriolum” (“vitriol”) refers to various kinds of metallic sulfates, including sulphuric acid (H₂SO₄).

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

²⁰Ramazzini 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}minorisque

^{ce}impensis extrahitur eruitur

^{cf}Nec tam immensae adeo

^{cg}impurius immixtumque saxo quodam tophaceo quod

^{ch}**In the text:** subviridique

^{ci}dilutaque

^{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}citrium magis flavo

^{cn}per analysim enchirism

^{co}in sudato egregio

^{cp}copiosis

^{cq}**From this point on, text continues on p. 5.**

^{cr}aerem ista cavea

^{cs}combibit

^{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 scabie²¹ laborantes ad sulphureum laboratorium, tamque ad anchoram sacram²² 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 squamoso 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 scalpurginem 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 haemophthixicus 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}

²¹Syphilis, a sexually transmitted infection caused by the bacterium *Treponema pallidum*. Also known as “morbis 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.

²²In 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.

²³The 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}benefitia

^{cy}fummo

^{cz}sani evadebant

^{da}scoriis, incastigatisque crudisque

^{db}hiantes spiracula volvulos

^{de}**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}stillitans

^{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 conicere 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 *pulmoniaca, tussientibus*, ac similibus flores sulphuris *vitriolatos* commendat,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 herpes 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]**

²⁴This 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>).

²⁵Ramazzini 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."

²⁶The same quote is in Ramazzini 1703, 59. The (altered) passage is taken from Etmüller 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."

²⁷Etmüller 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:** attrahere

^{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 Etmulero*, refertur

^{eb}quae *faciei* cuti

Ludentem etiam^{ec} videbamus amicum, qui sulphur virginale nummo^{ed} cuiuslibet metalli superimponendo, deinde illud flammulae candela 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 tolerant.^{em} Tanta^{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, sulphurisque remediis arcebat, solis ignis, sulphurisque halitibus una cum aere saluberrimo absorptis, morbi saevitiem^{et} edomabant. **6]** Plures resinae terrestris seu sulphuris flores^{29eu} in extima vasorum exter-

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.

²⁸Vallisneri 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.

²⁹Here, 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:** characteribus

^{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}tollerent

^{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. *Tanta 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 Marsilii³⁰ 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.

artificial preparations.

³⁰Luigi 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.

³¹Vittorio 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.

³²Arguably, a piece of marl. The noun “cretam” (“clay”) and the adjective “uliginosam” (“wet,” or “damp”) suggest that 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}concupies.

Ramentis Moleculis

^{fa}erumpens in externum

^{fb}variosque

^{fc}colores velamen a

^{fd}partes inglorio abiecto

^{fe}Stancardus

^{ff}provido quodam fatorum

^{fg}seposito 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. III.
- 6° *Terram pinguem* arcano sulphure imbutam,^{fj} quae licet glebis, striisve sulphureis careat, igne tamen mollitur, ac in resinosum chalcantosa³⁴ parva^{fj} licet, turgens aciditate liquamen^{fk} tenuatur. Lib. VI.
- 7° *Cretam subalbidam* cum tartareis fluoribus, ac sulphure virgine. Lib. III 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 forsitan 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.

³³Mineral sulphur (S).

³⁴The term “chalcantum” is a synonym for vitriol. See Fabri 1671, 192–193.

³⁵Mineral sulphur (S).

³⁶Mineral sulphur (S).

³⁷Arguably, 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.

^{fj}*impraegnatam*

^{fj}*chalcantosa aliqua parva*

^{fk}*aciditate gravidum liquamen*

^{fl}**In the text:** *similima*

^{fm}*nonnulli blaterent putent*

17° Flores sulphuris³⁹ 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, pyrites⁴⁰ 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 aereo⁴¹ 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, antalos⁴⁴ nempe striatos, leves, asperos, tubulos vermiformes,⁴⁵

³⁹See note 29.

⁴⁰Pyrite, an iron sulfide mineral (FeS₂) 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.

⁴¹According 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.

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

⁴³Rio 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.

⁴⁴Tusk 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.

⁴⁵From 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, *marchesita*eve incertae

^{fq}quamplurimae

^{fr}**Margin note (right):** Volve unam paginam

^{fs}**From this point on, text continues on p. 9.**

^{ft}Duplex

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 huiusmodi 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^{fv} annuente, pro edulcurantibus, ac sudoriferis febribus^{fz} in malignis, aliisque morbis in quibus acidum praevalet, rustico praescribuntur popello, non improspere 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]

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

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

⁴⁸Shark 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.

⁴⁹According 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.

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

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

⁵²Fossil 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}Glabellum

^{fv}immixtae stratis tabulatis

^{fw}In the text: soli

^{fx}pollinem rediguntur fatiscunt

^{fv}quodam non inerudito, me

^{fz}sudoriferis, tanquam alchalyca, et lepartica febribus

^{ga}aureulis lamellibus

^{gb}vetra

^{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} Athesis⁵³ 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, diarrhoeis, 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 stomachi dolores, anxietates, obstructions, 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.^{57gq} 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} *Glabellum*

^{gh} *<...>lino-nitrosum*

^{gi} *sulphureo-viscidum*

^{gj} *ubi praeternaturaliter aestuat*

^{gk} *et incogitata egregia*

^{gl} *collibus ad fucatas palatus delicias dulcissimae*

^{gm} *invehunt*

^{gn} *Parte laeva dextera*

^{go} *ex margae mineralis subrubrae turbinati colliculi assurgunt*

^{gp} *genus, ac scabro*

^{gq} *semina excudunt, inveni emittit*

quid fuerint dubius adhuc haereo. Figuram^{gr} aspice secundam.⁵⁸ Semidigitum^{59gs} longitudine non excedunt in obtusum desinentes mucronem, qui prius fasciola veluti subalbida circumdatur. 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 philosophico 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 *ichthyodontas 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

⁵⁸The related image is missing.

⁵⁹A “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).

⁶⁰Johann 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”).

⁶¹Colonna 1616b, 48: “Habemus et non paucas alias res lapideas, veluti caprarum et suum unguulas [...]” 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 unguilacaprae*, also known as “goat’s hooves.” See Fözy and Szente 2014, 350–351.

⁶²Lhwyd 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.

⁶³Actually, 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}entalorum

^{gu}intersectae, *q* qua

intersectae, *cuius* qua

^{gv}rubra-cinerosa

^{gw}dignissimum *meritumque celeberrimae* Academiae

^{gx}essent, *tutarer* scirem

^{gy}**In the text:** plectronarios

^{gz}deteguntur, *quae* et

^{ha}Bononiense

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 Scyllae^{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 specularis scandinavense*, 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 specularis*, seu *selenitem rhomboidalem* subobscurae diaphanam ex Monte *Gamor Abbatiscellanorum*,⁶⁹ cuius meminit *Specim. Helv. Lithograph.* p. 49,⁷⁰ cui repetundarum loco non solum nostratam misi, sed alium ex *Agro Vicentino* suo tempore longe minorem, sed lucidiorem, qui pene *parallelipipedum* sex parallelogramis 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,*

⁶⁴A “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.

⁶⁵The related image is missing.

⁶⁶Scilla 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 madreporae (Order Scleractinia): a group of stony corals (Phylum Cnidaria, Class Anthozoa). See Luzzini 2013a, 184–185, note 142; Vallisneri 2012, 207–208.

⁶⁷All 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.

⁶⁸See 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.

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

⁷⁰Scheuchzer 1702, 49.

⁷¹Riano (Province of Rome).

⁷²Scheuchzer’s *Dialogus* was eventually published four years later, in Scheuchzer 1709.

^{hb}obtinuisse refert monet

^{hc}**Margin note (left):** Fig. 3

^{hd}Scyllae

^{he}haec

^{hf}ambitus, ut ita dicam, corona plurimo

^{hg}**In the text:** simillimo

^{hh}siliceo, py arenoso

^{hi}**In the text:** trapetiis

^{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.

⁷³This 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).

⁷⁴Accademia 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>.

⁷⁵The 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.

⁷⁶Most 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} *sterilissima*

^{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 iniucundum 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 flammam 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 absorbit boves, quos postea coctos, absumptos, et fere exossos evomit. 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*

⁷⁷Querciola, 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>.

⁷⁸During 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}*minima*

^{if}*extra* solitus

^{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}ruinasque

*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.^{80il} Lutum eiusdem salsum tumores antiquos egregie resolvit, scabies delet, stagnans serum potenter exsiccat, nervis contractis ex cruda lymphā 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 dicitur⁸³ saxa alba sylvis, arborum ramis, serpentiniformibus 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-

⁷⁹This 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.

⁸⁰According 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.

⁸¹Synovia, 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.

⁸²Vallisneri 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).

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

⁸⁴The 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>).

⁸⁵Scheuchzer 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

ⁱⁿmontis versus stillitat

^{io}possus

^{ip}In the text: dendritas

vicem novo superadveniente glutine ferruminati. Sunt et isti verus *stalagmites*, de quibus *B. de Boot L. II C. 238*,⁸⁶ *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 concrecere vulgo dicunt.⁹¹

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

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

⁸⁶De 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 magnitudine constant, quos ammites maiores aut pisolithos recte vocare possis.”

⁸⁷Gessner 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 [...].”

⁸⁸Imperato 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 [...].”

⁸⁹De 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 [...].”

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

⁹¹The 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,” “pisiiformes concreciones,” “lapides pisis aut lentibus similes,” “piccole forme ritonde simili a pisi,” etc. describe pisolite: a sedimentary 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.

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

⁹³Virgil (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 aemulantis,^{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 secreta 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 oculis 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

⁹⁴The 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.

⁹⁵Mount 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}scopulosque

^{it}aemulantis

^{iu}seposito

^{iv}mulcere *Parergo*. Arabat

^{iw}ad *immane* saxum

^{ix}**In the text:** inducit

^{iy}ostio, *magicum limen*, quod

^{iz}**In the text:** aparuit

^{ja}pendulisque *saxis* tophis

^{jb}aureum *fulgurabat* erigebatur

^{jc}cineroso

^{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*,^{97ju} e diverticulo rursus in viam.⁹⁸

Ad *Quarae* thermas,^{9v jw} vel ut antiqui ad aquarium balneum sequenti die appulimus, locum antiquitus medicatis aquis tota Europa^{ix} celeberrimum, nunc ipsis conterraneis vix notum.⁹⁹ *Jacobus Vaccarius* in *Antidotario* **18]** suo harum mentionem facit,¹⁰⁰ Domi-

⁹⁶This 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>).

⁹⁷From the Latin saying “Ne extra oleas” (“don’t [wander] from the olive trees”), which in turn derives from Aristophanes’s comedy *The Frogs* (Aristophanes/Αριστοφάνης 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.

⁹⁹Quara, 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 (NaHCO₃) and potassium (KHCO₃) 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.

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

^{jh}memorandum *saeculis omnibus* annalibus

^{ji}depopulat

^{jj}**In the text:** discesserunt

^{jk}hostiis

^{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 sibilantes

^{jo}inani, *timore gelans, dolore fremens* gelidusque per

inani, *cui, gelidusque* per

^{jp}Transivit *illico* vicissim

^{jq}qui

^{jr}fortuna <...>*gies* negotiis

^{js}eminentes

^{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}divagemus

^{jv}**Margin note (left):** Vide Epist. 2 pag.

^{jw}Quaram *balneum* thermas

^{ix}tota *Italia* Europa

nusque *Fulvius Azzarius* in *Historiis Regiensibus* medicos^{jy} Romanos multi^z 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 lymphā 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

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, voce *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 preconizzato 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

^z multos

^{ka} temvo

^{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:** flatulentiae

^{kh} licet palmari circa

^{ki} situm plectatur errore a
 situm erraverit a

^{kj} ripas

^{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 limpidiissimi 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. Psyllorum¹⁰⁹ 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

¹⁰⁷Pieve 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.

¹⁰⁸Matilde 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.

¹⁰⁹Psylli, 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.

¹¹⁰Vitriola, 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, *rueribus* sabula

^{ko}gratissimae.

Transmissa Tranato

gratissimae.

Transmitto Tranato

^{kp}foetentes *qui vulgo putantur* sulphurei

^{kq}nomine *scatent*. Parum

^{kr}solum *noti*, et *pecorique* noti etc. *gratissimi*. Ibi

^{ks}**In the text:** glomi

^{kt}*examinari*

Obstupesces, amice, si *Boeoticos amnes*¹¹¹ aemulatos 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}

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.

¹¹¹The 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.

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

¹¹³From 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}Obscura

^{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}eruerentque

^{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 Prone Col.mo
Il Sig.re Antonio De' Vallisneri Pubbl.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 convenient, 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 stomacho, et hepatis 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, sibi que famam aegris salutem, Patriae utilitatem asciscunt.^{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 serpentinus 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.^{115lw}

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

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.

¹¹⁴Medola, 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.

¹¹⁵Tassoni 1624, Canto III, 67.

^{ld}experimenta. *Nullum* Nondum

^{le}acquae

^{lf}fere *volatile* innocens

^{lg}sinu *condunt* fovent

^{lh}fervido, *aliisque* et

^{li}tono *depauperatis suppetias allaturas* languentibus

^{lj}posse, *non* minime

^{lk}interis

^{ll}tot *celeberrimos* praestantissimos

^{lm}ut *interim* experientias

^{ln}utilitatem *procul dubio allaturo/is vindicaturi* asciscunt

utilitatem *adsciscunt* asciscunt

^{lo}**From this point on, text continues on p. 22.**

^{lp}anno *mala* sors

^{lq}tessulatim *veluti* dispositi

^{lr}semperque

^{ls}undis *flagellat* lambit, *pervenimus* accessimus

^{lt}Arx *haec* erat

^{lu}horrendum *ingens*, scopulumve

^{lv}rubro-lividum

^{lw}**Margin note (left):** Tasson.

invenimus, multosque lapides viridi colore perfusos,¹¹⁶ quorum lateribus materia quaedam flaviuscula, succini adinstar, adhaerescibat. 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 salebrosus iter ascendimus, Divique corpus¹²⁰ 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

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

¹¹⁷Church 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.

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

¹¹⁹Alpe 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.

¹²⁰The 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}refertis

^{lz}argenteamve

^{ma}sterilemque aeream cupream (uti referunt) solum invenerant

^{mb}salicibus

^{mc}a tacitis subterraneis

^{md}dicem

^{me}costae

^{mf}rupis

^{mg}facies

^{mh}per stratorum tabulatorum

^{mi}macerantur, verrenturque rodunturque

^{mj}tandem Alpium quas Apeninum

^{mk}Letis

^{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 squalent solo, carent fine stillantes^{ms} aquae, et antrosa Alpium viscera machinas hydrophylaces^{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 tenebrosus 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-

¹²¹By 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.

¹²²This 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.

¹²³Arguably, 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>).

¹²⁴Panaro 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}Glabellum

^{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.^{125nb} 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 horizontaliter 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 conicere 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*

¹²⁵Differently 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.

¹²⁶Fornovolasco, 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.

¹²⁷This 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.”

¹²⁸Here, 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}fontium, omniumque perennium copiarum qui

ndrarior fluxus cursus

^{ne}terrarum orbe gremio

^{nf}fluxes

^{ng}absorpte, ut plurimum, per

^{nh}shoc

perennium origine ac eorundem circulatione, de qua tam erudite praeclarissimus tuus etiam Lanzonus disseruit.¹²⁹ⁿⁱ 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.*¹³¹ⁿⁿ

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} certiolem feci,¹³² quid de prosilientibus aquis etiam dulcibus e fundo maris, observante *Simone Portio Neapolitano*, quando passibus

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

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

¹³⁰This 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.

¹³¹This 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).

¹³²Unfortunately, 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 nobile uomo di Venezia, che nello scavare certe altissime fondamenta 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 universamque*

^{np}aperiae

^{nq}per elitteras

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. Perrault*,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,

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.

¹³³Porzio 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.

¹³⁴Perrault 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.

¹³⁵Bartholin 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} penetrati

^{nu} experimentis infida fallax

^{nv} nullum porosum marmor

^{nw} Liburnique manente Casteno puteos

^{nx} scilicet evidenti indubio

^{ny} mutuentur aquas. Alia

^{nz} Caspasque

^{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 horizontaliter positam, cuius variis in locis modo^{of} unus vortex, modo alter ex improvise contortus hiabat. Tunc obscuro miscbatur caelum murmure, raucoque nostris auribus sono tonabat. Ex^{os} quo tonitru, ac vorticosi fulminis generationem, fragorisque promiscui causam quasi fidis oculis exhaurebam. Non etenim ibi fabulosa antiparistasis¹³⁶ ultimis cogeat 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 circumambientur elegantissima fascia ex sex parallelogrammis rectangulis, quae terminatur utrinque a tribus triangulis equicruris, seu isoselis, quam figuram tamen nuper etiam observabam, licet non adeo exactam, in quibusdam *hyacintis boemicis*.^{137oh} Adsunt et *crystalloides* partibus constantes, quarum aliae paralleloipedam figuram, aliae vero ad prismaticam accedere videntur, sicuti aliae, quae ad tetraedricam, aliae ad octaedricam vergunt. *Uteros etiam crystallinos* ab Euganeis non multum abludentes,^{138oi} nonnullosque a *Ferrante Imperato* delineatos¹³⁹ inveniebam, quae omnia naturam geometram, quandamque in istis a substrato fluore suboscuram vegetationem demonstrant. Ultima enim crystallorum striae^{oj} in hoc implantantur, velutique diaphanae radicae videntur nutrimentum aliquando absorbuisset.¹⁴⁰ Misit nuper huiusmodi cimelia pro ditando meo

¹³⁶A 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.

¹³⁷Jacinth, a reddish variety of zircon (ZrSiO₄). Arguably, the crystals described by Vallisneri were a dark brown or grey variety of this mineral.

¹³⁸Geodes: hollow, spheroidal rocks with crystals in the inside wall. They usually occur in igneous, quartz (SiO₂) 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 rompiano 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”).

¹³⁹Imperato 1672, 572–574.

¹⁴⁰Vallisneri’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}Videbas

^{of}modus

^{os}tonabat. *Non etenim ibi fabul* Ex

^{oh}bohemicis

^{oi}absimiles

^{oj}stiriae

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 furem ventorum rabiem in se recipiunt, et frangunt. Sub imo montis limbo *Castrum novum*^{151ot} visitur, provinciae caput, tum nascente, tum vesperscente die nebulis, ut plurimum obductum. *Si montes enim montibus, si colles col-*

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

¹⁴¹Chrysocolla, a blue-green hydrous copper silicate ((Cu,Al)₂H₂Si₂O₅(OH)₄ • n(H₂O)). However, this name may also refer to malachite, a green copper carbonate (Cu₂CO₃(OH)₂). On this terminological confusion, see Colombo 1995, 91; Ward 2008, 506.

¹⁴²Uri Alps, in central Switzerland.

¹⁴³An unspecified mineral from the hexagonal crystal system. According to the green (“herbaceo”) color, it could be beryl (Be₃Al₂Si₆O₁₈), apatite (Ca₅(PO₄)₃(F, Cl, OH)), or even another kind of mineral.

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

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

¹⁴⁶The 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>.

¹⁴⁷Scheuchzer 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 (CaCO₃). Calcite crystallizes in the trigonal system.

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

¹⁴⁹Probably a yellow variety of quartz (SiO₂), also known as citrine quartz.

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

¹⁵¹Castelnuovo 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 Turrata 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 Francesco¹⁵³ 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'inerte 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,*

¹⁵²The references in the margin note are incorrect. This is an adapted quote from Dieterich 1661, 1412.

¹⁵³Francesco 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.*^{154ow} **XIV.v] XV.r] XV.v]**^{ox}

Multa sane de hac regione vera, multa poetarum more figmenti, atque adulationis fucio 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 forsitan existimamus, cum ab antiquis geographis, atque historicis vix delibatam, a recentioribus aut nominatenus tantum indicatam, aut, quasi obscura regiuncula, oscitanter praetermissam, non sine indignante stomacho reperiamus.

Dicitur vulgo *Garfagnana*, latine *Caferoniana* ab Oppido *Caferoniano* nomen mutata, in Tirenis stationibus, agrisque sito *Lucam* inter, ac destructam *Lunam*.¹⁵⁵ Ita vocabatur illud a *Feronia* nemorum, libertorum, fertilitatisque, ac deliciarum dea, quam Iunonem arbitrabantur, sicuti Gyr. Synt. de Diis Gent. Lib. 1 scriptum reliquit.¹⁵⁶ Originem altam traxerunt incolae Caferoniana a dispersis, fatoque hinc inde pulsus 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 agitata est, ut Luc. Flor. Epit. testatur. Truculentissimas Marii, Scyllae, triumque Monarcorum Lepidi, Marci Antonii, atque Octaviani proscriptiones **XVI.r]** fugiebant,¹⁵⁷ cui^{pa} non leve rationis momentum addunt fundamenta, ac rudera multarum

¹⁵⁴Testi 1666, 213–216, *Al Signor D. Ascanio Pio di Savoia* (First edition: Testi 1636).

¹⁵⁵Ancient 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.

¹⁵⁶Lilio Gregorio Giraldi (1479–1552), a scholar and poet from Ferrara. The reference is to Giraldi 1548, 169–170.

¹⁵⁷This 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:** recollecta

^{pa}cuius

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, Camporosiani, 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 percussis.

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 Annum 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,^{163pd} 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

¹⁵⁸This 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, LXXVIIIr). On this topic, see Baffioni and Mattiangeli 1981; E. Fumagalli 1984; Pacchi 1785, 11–14; Stephens 2004.

¹⁵⁹This 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.

¹⁶⁰This 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.

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

¹⁶²From 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>.

¹⁶³Plinius (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>.

¹⁶⁴Giraldi 1548, 169–170.

¹⁶⁵Anselmo 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.

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

^{pb}excavantur

^{pc}cum aedificata sint castra

^{pd}In the text: appellavit

Lib. 41, in quo Petilii¹⁶⁷ 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 Petrasancta¹⁷¹ (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 Poeta¹⁷⁷ iuxta Dionisi. 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 Giraldis 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 Giraldis 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 Tarracinae¹⁸¹ propinquus, quem etiam Syl. Ital. de Bel. Pun. Lib. 13 carmine ornavit.

*His fractus ductor convelli signa manipulis
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 Camporegiana, 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 forsitan a *Poenia* paupertatis dea¹⁸⁵ vocatus. *Bargam*¹⁸⁶ nunc orientem versus habet, a meridie praedictam *Paniam*, Montem *Team*¹⁸⁷ a Ponente, qui eam a Lunensi agro disternat, et a septentrione **XVII.v]** Apeninorum iuga tenet. Multis torrentibus, rivulis, fontibus, fluviisque perennibus, ac limpida perluitur, qui variis exquisitissimis ditiescunt 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-

¹⁸⁰Honoratus 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 Luno 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.”

¹⁸¹Terracina (Province of Latina).

¹⁸²Silius 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.

¹⁸³Fabrizio 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.

¹⁸⁴Pania 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.

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

¹⁸⁶Barga (Province of Lucca).

¹⁸⁷Mount 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.

¹⁸⁸Serchio, 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.

¹⁸⁹Ptolemaeus/ 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.

¹⁹⁰Plinius (Maior) 2018, III, 8, <http://data.perseus.org/citations/urn:cts:latinLit:phi0978.phi001.perseus-eng1:3.8>: “[...] Pisae inter amnes Ausere[m] et Arnum.”

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 Arni¹⁹⁵ ostiis distans, non inglorius devolvitur.

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

*Alphea 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 Episcopo¹⁹⁸ **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 annem 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 Annii super 16

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

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

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

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

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

¹⁹⁶Rutilius 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.

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

¹⁹⁸Saint 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.

¹⁹⁹Maffei 1530, 48v.

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

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

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

²⁰³This 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 Suetonio 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 mechanicis 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.

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

²⁰⁴Nanni 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.”

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

²⁰⁶F. Schott and Giovannini 1600, 146.

²⁰⁷Vallisneri 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).

²⁰⁸Camporgiano (Province of Lucca).

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

^{ph} *affluxit*

^{pi} *Metallum*

^{pj} *tum*

^{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:** appellant

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 ininitur.

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 Bentivolio²¹² 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, editoribusque iugis assurgit.²¹⁴ Ita et nos medici *verruca*s dicimus crudum quoddam tumorum genus, *cute*mque *verrucosam* tuberculis quibusdam exasperatam vocamus.

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

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

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

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

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

²¹⁴Here, Vallisneri refers to a passage from Gellius' *Noctes Atticae* (Gellius 2018, III, 7 (6–8), http://penelope.uchicago.edu/Thayer/I/roman/texts/Gellius/3*.html): “ ‘Censeo,’ inquit ‘si rem servare vis, faciendum, 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 occurrandum pugnandumque in eos praevententur 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 Ducis²¹⁵ 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 Cavezzae²¹⁸ inter S. Romanum,²¹⁹ Silicagnanamque²²⁰ 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 Pantera²²³
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 oleas²²⁶ me nimis divagantem increpas amicorum suavissime, dum non naturae, sed hominum historiam pando. Parce prurienti calamo, resque nondum editas scribenti,

²¹⁵Alfonso I d'Este (1476–1534), third Duke of Ferrara, Modena and Reggio. On this topic, see Tiraboschi 1825, 130.

²¹⁶Now the Roman Catholic Diocese of La Spezia-Sarzana-Brugnato.

²¹⁷Now the Roman Catholic Archdiocese of Lucca.

²¹⁸Rivo 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).

²¹⁹San Romano in Garfagnana (Province of Lucca).

²²⁰Silicagnana, a hamlet in the municipality of San Romano in Garfagnana.

²²¹The 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.

²²²Ariosto 1535, *A M. Sigismondo Maleguccio*.

²²³The panther was the symbol of the Republic of Lucca, which previously occupied Garfagnana.

²²⁴Ariosto 1535, *A M. Sigismondo Maleguccio*.

²²⁵This passage is from the *Bucolica* (Vergilius 2018c, IV, 6, attributed, <http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi001.perseus-lat1:4>).

²²⁶See note 97.

^{pu}Lunae

^{pv}In the text: Provincia

^{pw}Devi

quae curiosis forsā salivam movebunt, e tenebris abscondita eruent, spiritus excitabunt somniculosus. 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 Morgantii²³⁰ aliorumque sudato opere repertis avidus exhaurebam. 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 Lestrignonum.
Villa Calamandrina—Vicus Aemilii Mamercini.
Corfino—Vicus Valerii Corvini.
Soraggio—Vicus Sergii.^{qf}
Canigiano—Vicus Canini Rebilii.
Pania di Corfino—Mons Valerii Corvini.

²²⁷Timoteo 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.

²²⁸See note 165.

²²⁹Giovanni Bosio (?–?). Arguably, another antiquarian from Garfagnana.

²³⁰Bartolomeo Morganti (circa XVI–XVII century), an antiquarian from Garfagnana.

²³¹Torre (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}Romanarum

^{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 Vallisneri
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 Sili 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} Publicolae. Vergemoli—V. Servilii Gemini.^{ql} Terminone—
 V. Minutiae Thermae. Trasilico—V. Virgini 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. Lucretii Tricipitini.^{qu} Albiano—V. Fabii^{qv} Lebeonis. Tiglio—V. Statilii
 Tauri.^{qw} Filecchio—V. Furi Philii.^{qx} Oppio—V. Sp. Oppii.^{qy} Coreglia—V. Aurelii
 Costae.^{qz} Ghivizano—V. Cassii Viscellini.^{ra} Tereglio—V. Elii Tuberi.^{rb} Cala-
 vorno—V. Accilii Glabii.^{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}Iulii

^{qh}Campus *Regis Iani* Roscianus

^{qi}Silano—Vicus *Sillae Silicis* Silvanus

^{qj}Niciano. *Vicus Niciae*—Vicus *Niciae* Anicii. **This last word is written by a different hand (see the following note).**

^{qk}Valerius (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}Servilius Geminius

^{qm}Virginus Tricostus

^{qn}Cornelius Malugineus

^{qo}Valerius Messala

^{qp}Pompeus Magnus

^{qq}Cerageto—*Vicus Curiati Targemini* V. Tergeminius Curiatus

^{qr}Menenius Lanatus

^{qs}Aurelius Ceretanus

^{qt}Caius Acatius

^{qu}Lucretius Tricipitinus

^{qv}Fabius

^{qw}Statilius Taurus

^{qx}Furius Philus

^{qy}Oppius

^{qz}Aurelius Costa

^{ra}Cassius Viscellinus

^{rb}Elius Tuberus

^{rc}Accilius Glabria

rdCalfurnius Bibulus

^{re}Lucius Cethegus

^{rf}Gallus Caninus

^{rg}Plautus

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 Peticii.^{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 Orestii.^{sr} Sala—V. Livii^{ss} Salinatoris.

^{rh}Fonteius

^{ri}Papirius

^{rj}Oratius Paluillus

^{rk}Publius

^{rl}Marcus Aemilius

^{rm}Aemilius Barbula

^{rn}Elius

^{ro}Aruntius

^{rp}Luctatius

^{rq}Dolobella

^{rr}Hostilius Mancinus

^{rs}Ebutius

^{rt}Caius Fabricius

^{ru}Publius Cossus

^{rv}Fabius Ambustus

^{rw}Ottacillus Crassus

^{rx}Roggio—L V. Lucius

^{ry}Popilius

^{rz}Ventidius Bassus

^{sa}Lucius Velleius

^{sb}Curius Dentatus

^{sc}Calfurnius

^{sd}Munatius Plancus

^{se}Elianus

^{sf}Fulvius Centimalus

^{sg}Genutius Clepsina

^{sh}Capitolinus

^{si}Gneus Peticus

^{sj}Caeso Duillius

^{sk}Gneus Genutius

^{sl}Verennius

smLucius Emilianus

^{sn}Gegano Mamercino

^{so}Caecilius Metellus

^{sp}Livignanus

^{sq}Cornelius Aruina

^{sr}Aurelius Orestus

^{ss}Livius

Piazza—V. Vibiist 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 genose ab Ill.mi Prioris Guazzelli²³² benignitate excepti quicquid curiosi viciniis in illis extabat, magno animi solatio didicimus. Argenteos pyritas ob substratam cupri,^{sx} argentine 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 abriperunt. 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.

²³²The “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.

²³³On 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.

²³⁴Arguably, mineral sulphur (S). When burnt, it produces sulphur dioxide (SO₂), a toxic gas (hence, probably, the expression “exhalat”).

²³⁵Considering 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.

²³⁶Bagno 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.

stVibius

^{su}Nautius Rutilius

^{sv}Vallisneri’s handwriting restarts from this point.

^{sw}Etc.

Ex Timotheo Tramontio, et Bartholomeo Morgantio Antiquariis

Quae

^{sx}substratam aeris cupri

^{sy}quam

^{sz}condebatur, quae cui

^{ta}aliquam esse, potius suspicari

^{tb}citra *Serchium* Aesarem

^{tc}quae ex in

^{td}scatent aquae, solae

^{te}lices

^{tf}demetant

Iacobus Lavellius harum^{tg} virtutes Literato Orbi communicavit anno 1609 kal. Septembris.²³⁷ Medio lapide distat earundem scaturigo a *Castronovo*. Suntth 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 posteriores, si placet, iuxta saevam, antiquamve morborum tyrannidem. Dosis decem, duodecimve librae quolibet mane iuxta indigentiam, aut ventriculi capacitatem, et robor, atque id, quod nescio quid admirandi sapit, vires tunc recreant, neque tumet, nec extraneo pondere gravatur stomachus, nec torminibus ventrem exagitant, sed blande, placideque duarum horarum spatio praeterfluunt, lubricam alvum reddunt, sitim extinguunt.

Primi extrinsecus mirificas vires in doloribus rheumaticis, **32]** arthriticisque, 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 marcere 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-

²³⁷Jacopo 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 Vandedi 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.

²³⁸Terme 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

thCastronovo *Caferonianae*. Sunt

^{ti}dies *deglutiuntur* novantur

^{tj}ac *aliis* variis

^{tk}spemque

^{tl}remedium *sentirent*, turmatim

remedium *experirentur*, turmatim

tmcachoetees

^{tn}adsciscunt

^{to}opitulentur

^{tp}Dolus

^{tq}undas

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 forsitan 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 *Caferoniana 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 *lacte* 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

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

²⁴⁰From Galen's *De simplicium medicamentorum temperamentis ac facultatibus* (Galenus/Γαληνός 2018, IX, *De lapidibus*, <https://books.google.it/books?id=pswQcfc4VkC&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.

²⁴¹Though 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 hepatis affert refrigerationem; sed ob fluminis viciniam, et supereminens 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.

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

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

²⁴⁴Giulio 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}crateres

coronantes^{tv} severitatem philosophicam, ac medici peregrinantis austeritatem exuere me cogeant. 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, saxi, 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 hydrophylacium²⁴⁶ 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 elasciscit^{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-

²⁴⁵Torrite 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.

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

²⁴⁷Despite 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.parcocolleieganei.it>.

²⁴⁸This 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}alentemque *Catonem* vidisse

alentemque *minerarum* vidisse

^{tx}grata *benevolentia, ac operosa liberalitate* hospitalitate

^{ty}adhucquae

^{tz}ferventissima *defluit* cogitur

^{ua}visceribus *defluens* fistulato

^{ub}parites

^{uc}exustas

^{ud}corfus

^{ue}elasciscit

neantium commodo, quod tamen semidirutum est. Calor **36]** aquae huius ferventis, sapor, odor, vires eadem sunt, ac thermarum Euganeorum Montium,^{uf} si^{ug} eas excipias quae tartareo, mihiq̄ 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 inertis languore partes restituunt. Ita revocato suo omnibus tono,^{ui} reseratis, deterrentisque 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, vultu²⁵⁰ communia derident remedia, medicorumque flagellum audiunt, renum, ureterum, vescicae labes, uterique sordes^{um} delere posse indubium est. Ob sulphur^{un} amicas pectori, ob sal deterrentivum 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

²⁴⁹As 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.

²⁵⁰From 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.”

²⁵¹Fonte 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}Montis (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}eiusdem

^{ul}generaliter *succrescentem* enascentem

^{um}uterique *sclera* sordes

^{un}supphur

^{uo}cutaneas *miliares* glandulas

plexu,²⁵² aut areolis²⁵³ interpositis irretitis, vel ab externis vermiculorum iniuriis caeca erosione pustulas, et ulcuscula excavantibus, aut a salium acutiae, vel asperitate, aut a poliposa, pigrae 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 coinquinat,^{uq} sulphureae, salinaeque moleculae spiritu, caloreque agitative vibratae poterunt affricatas labes explodere. Eius namque spiracula rursus aperiendo, crispatis, 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 asperitione, vel immersione, vel alio quolibet modo prescriptae opitulatur.^{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.*^{256ut}

His non sine medico examinatis solatio inceptum iter prosequeremur 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

²⁵²Here, Vallisneri is supposedly referring to the vascular network of the skin.

²⁵³Areola: a circular, pigmented area in the skin. Usually, this term refers to the colored area which surrounds the nipple.

²⁵⁴This 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.

²⁵⁵Variation 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.

²⁵⁶Claudianus 2018a, 69–70, <http://www.curculio.org/Claudian/aponus.html>. The same quote is in Vallisneri 2006, 291 and note 714.

²⁵⁷Vergilius 2018c, I, 82, <http://data.perseus.org/citations/urn:cts:latinLit:phi0690.phi001.perseus-lat1:1>.

^{up}pigrae ac vapescentis

^{uq}rationem consceleret coinquinat

^{ur}qualibet sordida, ac foetenti externa

^{us}opitulatur

^{ut}**Margin note (left):** Claud.

^{uu}paenituit

^{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 stomachum saturant. *Non artis adminiculis,*^{uz} ut Divi Hieronimi verbis utar, *expoliunt*^{va} *purpurisso faciem, nec extraneis exuviis turrutos vertices struunt.*²⁵⁸ Non Minerva, non Ceres, non Bacchus ibi sua munera dispensat,^{vb} adhucque ibi vetustas diceret 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 chemicis 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 ruinate 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,*

²⁵⁸This 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 turrutum verticem struere."

²⁵⁹Italian 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. Hieron. Epist.

^{va} *expoliunt*

^{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 scrupis stratorum montis radicibus, e quibus asperrimae rupium moles extolluntur, colore, scabritie, sterilitate saxi 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, praeunte 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 Petrosiana 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 (SiO₂; KAl₂(Si₃Al)O₁₀(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 fabricare potuit, atque innocentius.* Non

^{vi}praeunte *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*, *facilemque*

^{vm}indoles, *et venustissima forma* lateret

^{vn}mihi *prono pariter interrogante* quaerenti

^{vo}Austriae, *se* mineris

^{vp}praeesse

^{vq}benignumque *tam illustris* hospitis

^{vr}itinere, *tutis dapibus*, securi

^{vs}recreavimus

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 Protoplastes²⁶⁵ 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.^{vi} Condit et aliquando in cavernis tactu truci, fumosa^{vii} facie, sapore ingrato teterrimis, quod iuuet, ac sub amaro aspectu salutem^{viii} 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^{ix} aevum sciendi genuinam, nulloque auditiumcularum 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^x Lycei.²⁶⁶ Praetereundum tamen non censeo, quae de fontibus et in illis cryptis, ut superius innuebam, iugis aquis scatentibus^{xi} observavi, cum horum origo nunc praecipue tuum calamum adhuc^{xii} exerceat, meamque curiositatem^{xiii} 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^{xiv} 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^{xv} per literas communicavit,²⁶⁸ dubius haereo. A supernis enim depluentibus, nitro,²⁶⁹ salibus variis, terrae

²⁶⁵God.

²⁶⁶The University of Padua.

²⁶⁷Fabra (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 concrevit, ut in materiam albam, densam, nonnihil ponderosam, nec de facili friabilem, asperioremq̄, et crystallinam, gustui aliquantulum subacidiusculam, dentes nonnihil exasperantem, et in aqua indissolubilem, indurescat”). On this topic, see Vallisneri 1717a.

²⁶⁸Unfortunately, the letters Vallisneri refers to are missing.

²⁶⁹Arguably, potassium nitrate (KNO₃).

^{vi}auxiliis, *auxilia deliciai* immiscet

^{vii}**In the text:** fumosa

^{viii}aspectu *sanitatis mella recondit* salutem

^{ix}felicissimum *hoc aevo nostro* nostrum

^xPatavini *munus amabile* pensum

^{xi}scatendibus

^{xii}calamum *meamque mentem* adhuc

^{xiii}meamque *mentem* curiositatem

^{xiv}pensim

^{xv}splendore, (*quicquid caeco impetu ferox, et nimium famae gravis latet invidia*) spectatissimus

uligine^{wd} impraegnatis, solaribus radiis excocctis, 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,^{271wh} et effectu nudum clarescit experimentum. Adde, vir clarissime, quod si aquae mineras perluentes, atque fovescentes 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 eruntur? 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

²⁷⁰This 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.

²⁷¹See note 19.

²⁷²Tana 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}uliginæ

^{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}fovescentes essent sunt

^{wj}permiscua

^{wk}Sed rursus iterum

^{wl}horum Alpium montium

^{wm}eructantur. Cum Quando

^{wn}nivibus turget gliscit

^{wo}absorberi

erumpens, ibi in fine dum detumescit, ac lentescens undas revocat,^{w_p} 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^{w_q} ingenio, materia superat.^{273w_r} Nullibi aptius arcuatum Regii horti^{w_s} spelaeum e lacunari inversis hinc inde pyramidulis, vivo 46] pumice,^{w_t} durisque tophis decussata testudine inflexis elegans simulavit^{w_u} in obscuro natura. Tunc aquas tristi^{w_v} susurro furtive per obliqua cadentes exaudiebamus,^{w_w} quas tandem profundus hiatus in vicinam *Petrosanam* occulto itinere derivans intortis devorabat vorticibus. Neque hic itineris meta. Supra humeros baiuli rumigerulum translati^{w_x} ^{w_y} torrentem, multisque scabris superatis callibus ad amplam, convexamque cameram devenimus, in qua complures velut encarpi, mille tartareae concreciones, indurata mille ferumina, columnas, spiras, animalia, ramos aemulantia miris intexta modis conspiciebantur.²⁷⁴ Hic origo rivuli^{w_z} ab alto fluentis, veluti ab epistyllo, qui partim tardo coalitu saxis antiquis nova saxa lapidescentibus undis adglutinabat, partim spumoso^{x_a} cursu in praecipue 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, furentequae pelago furant, quiescente quiescant. Sed nos aliter suprema montis rimati, revocatisque ad trutinam crescentibus, et decrescentibus undis disserebamus.^{x_b} 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 dividitibus 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

²⁷³The deposition of calcite (CaCO₃), the dominant mineral in karst environments, is controlled by the reversible chemical reaction $2\text{HCO}_3^- + \text{Ca}^{2+} \rightleftharpoons \text{CaCO}_3 + \text{CO}_2 + \text{H}_2\text{O}$. 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 (CO₂) in the water (the lesser the amount of CO₂, the more CaCO₃ is deposited). In turn, the solubility of CO₂ in fresh water increases with increasing pressure and decreasing temperature. On the karst caves in Fornovolasco, see Bonini and Piantini 2001; Speleoclub 1999.

²⁷⁴On 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>.

^{w_p}**In the manuscript, the order of the words “revocat” and “undas” has been inverted by marking them with numbers.**

^{w_q}aequant

^{w_r}superant

^{w_s}hortus

^{w_t}**Margin note (left):** Nimis implicata <...>i periodus

^{w_u}elegans *tacita* simulavit

^{w_v}aquas *non ingrato* tristi

^{w_w}per *cadentes* obliqua *cadentes* cadentes *exh*udiebamus

^{w_x}**Margin note (left):** Vel transvecti

^{w_y}rumigerulum *tranati* translati

^{w_z}origo *torrentis* rivuli

^{x_a}adglutinabat *undis*, partim spumoso

^{x_b}desserebamus

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 forsitan 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 quisquillas 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: per paucis 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 *descendant* cadunt

^{xg} ascensum

^{xh} trahant, *sic* quoniam

^{xi} loquor

^{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} *recurvae 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 dicentur, 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, rivus, 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} forsitan **49]** in risum stupor, nec montes mari, nec maria montibus immisceremus.

*Nullum ver usquam, nullique aetatis honores,
sola iugis habitat diris, sedesque tuetur
perpetuas deformis hyems.*^{279xt}

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

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-gre1:337b>.

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-gre1:271a>), but from *Hippias minor* (Plato/Πλάτων 2018b, 372, <http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg026.perseus-gre1:372e>).

^{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} *nives*

^{xs} *caederet*

^{xt} **Margin note (left):** Silius Ital.

^{xu} *Delphinus*

^{xv} *aestivis intra urbes ardoribus*

^{xw} *mendatio*

^{xx} *liberavis*

levidensia scribo, sed^{xy} ut a te veritatem detracto peplo percipiam, et ingenuis artibus vacem. Si conscientiae meae audivissem consilia, silere sane debuissim, 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} plorantes²⁸² 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^{283yg} enim in ultimis Alpibus videbam^{yh} orientalibus aemulos.

²⁸²Ianus (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 Janus 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 Janus, see Burchett 1918; Gasperoni Panella and Cittadini Fulvi 2008.

²⁸³Jasper (SiO₂): a microcrystalline, opaque variety of chalcedony. It can occur in different colors, depending

^{xy}scribo, ut sed

^{xz}vetavit

^{ya}**In the text:** autore

^{yb}annos <...>l<...>s<...> apertum

^{yc}alia excipiet, vel excipere deberet narrare

^{yd}indoles

^{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}enucleatio. diaspr<ulos> Hyaspides

^{yh}videbatur

- 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, quinquam^{yj} quadrupedes, quinquam^{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 attentata, et exacta descriptio.²⁸⁴

Haec sunt, quae humeris tanta ferre forsitan 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 ingenii; 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 forsitan, et certe uniformem tuo nomini meditor ordiri. Vale mei memor, teque sospitet^{yo} Deus.

In Musaeo meo Patavino^{yp} kal. Ianuarii 1705

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.

²⁸⁴In 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.

²⁸⁵Seneca 2018, III, 1, <http://www.thelatinlibrary.com/sen/sen.qn3.shtml>.

²⁸⁶Petrarca 1581, *Epistolarium de Rebus familiaribus Lib. VIII*, Praefatio, 569. On the identification of this source, see Vallisneri 1726, 421.

^{yi}usus

^{yj}quisnam

^{yk}quisnam

^{yl}monticulis

^{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]**