GIOVAN BATTISTA FIDANZA

Wood and Architecture
Pliny's Legacy in the Treatises of Alberti and Cataneo

> Et Aegypto multa genera quae non aliubi, ante omnia ficus ob id Aegyptia cognominata. [...] Materies proprii generis inter utilissimas. Caesa statim stagnis mergitur – hoc est eius siccari – et primo sidit, postea fluitare incipit, certoque eam sugit alienus umor qui aliam omnem rigat. Cum innatare coeperit, tempestivae habet signum.
>
> Egypt also has many kinds of trees not found anywhere else, before all a fig, which is consequently called the Egyptian fig. [...] The wood of this fig is of a peculiar kind, and is one of the most useful there is. As soon as it is cut it is plunged into a marsh, and at first sinks to the bottom, but afterwards begins to float, and it is clear that moisture not belonging to it, which soaks into all other timber, drains the sap out of this. When it begins to float on the surface, this is its sign that the timber is ready for use. (*Natural History* 13.57)

The piece of information regarding the Egyptian fig, otherwise known as the sycamore fig (*Ficus sycomorus L.*), is one of the most interesting among those taken from Pliny by Leon Battista Alberti in his *De re aedificatoria*, which deals with the use of different types of wood in building construction[1]. Alberti, together with Pietro Cataneo in the following century, was one of the very few writers of architectural treatises during the Italian Renaissance to specifically reference Pliny as one of his sources on matters regarding wood. Indeed, Alberti himself mentions Pliny, together with Theophrastus, Aristotle, Cato, Varro, and Vitruvius, as one of the learned Classical writers (*docti veteres*) who were his primary sources on building materials[2], a subject in which wood was extremely important. Wood was also widely used to make machinery and other tools that would have been employed on construction sites; for this reason, knowledge about the properties of wood was essential for an architect.

The example of the Egyptian fig is particularly significant because Alberti uses it as an opportunity to discuss the practice of immersing the wood in water: «Ficum Aegyptiam – scribit Plinius – stagno immergunt, ut siccetur atque levigetur: nam ea quidem prius aquis subsidit»[3]. In fact, this treatment, which is still used today, was fairly common for preventing fungal decay before the timber was used, since when the wood becomes waterlogged in the treatment

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1 The translation of *Natural History* 13.57 is taken from Pliny-Rackham 1960, pp. 131, 133.

2 Alberti-Orlandi 1966, p. 111. Translation: «the most learned among the ancients», Alberti-Leoni 1986, p. 25.

3 Alberti-Orlandi 1966, p. 119. Translation: «Pliny writes, the Aegyptian fig-tree is laid under water to dry and grow lighter, for at first it will sink to the bottom», Alberti-Leoni 1986, p. 27.

process the fungi do not have enough oxygen to survive. The sycamore fig is known to be particularly susceptible to fungal attack[4].

Pliny and, in turn, Alberti connected the immersion of wood in water to the seasoning process, however Alberti's interest lay not so much in drying the wood, but in its preparation to be worked, and this process applies not only to the sycamore fig but to all types of wood. In fact, once water enters the cellulose microfibrils, it helps to release the stress, especially in wood that has a tendency to fissure easily, making the wood more stable and therefore more workable.

Alberti does not seem to want to investigate this type of treatment in much detail, probably because he did not have any direct knowledge of this subject. For this reason, he used second hand information from carpenters' workshops, as he states in the sentence following the previously cited one: «Nostros fabros tignarios videmus aquis et luto submersam, qua praesertim torno utuntur, materiem servare dies triginta, quod maturius exsiccatam et fieri ad omnes usus habiliorem putent»[5]. The reference to a turning lathe is particularly apt: the working of wood using this machine requires the absence of stress in the material to avoid fissuring during the turning.

On another occasion Alberti also demonstrates an interest in passages from the *Natural History* that address the treatment of wood, a topic he evidently considered to be of primary importance in the field of technical knowledge for architects. When Alberti lists certain preventive measures against decay in wood taken from Classical treatises («Tum et contra vetustatem ac futuros morbos varia adhibebant remedia»)[6], he includes Pliny's reference to the Egyptian Labyrinth, whose beams, made from *spina*, were treated by being previously boiled in oil: «Ad Labyrinthum Aegyptium positas esse trabes ex spina Aegyptia incoctas oleo scribit Plinius»[7]. Alberti uses the example of an episode recounted by Pliny about the re-modelling of the Egyptian Labyrinth overseen by Chaeremon, an architect in the service of King Necthebis II: «Refecit unus omnino pauca ibi Chaeremon spado Necthebis regis, D ante Alexandrum Magnum annis. Id quoque traditur, fulsisse trabibus spinae oleo incoctae, dum fornices quadrati lapidis adsurgerent»[8]. Pliny mentions important pieces of building equipment, namely the supports necessary for lifting blocks of stone used in the construction of vaults, which were made from Egyptian thorn (*Acacia nilotica L.*), boiled in oil[9]. In this way Pliny highlights the importance of this type of treatment for this species of wood, which becomes very resistant to fungal decay after being boiled in oil. This practice, still used today for various types of timber, prevented the wood from weakening, which was of vital importance in this context. Indeed Alberti, referring to this passage from Pliny about the boiling of wood in oil, mentions the use of this treatment for both anti-aging purposes and the prevention of possible disease.

4 See Giordano 1997, II, p. 541. On the use of the sycamore fig in antiquity, see Nicholson, Shaw 2000, pp. 340–341.

5 Alberti-Orlandi 1966, p. 119. Translation: «We see that our workmen lay their timber under water or dung for thirty days, especially such as they intend to use for turning, by which means they think it is better dried and more easily worked for all manner of uses», Alberti-Leoni 1986, p. 27.

6 Alberti-Orlandi 1966, p. 117. Translation: «Moreover, they prescribe various remedies against their decaying and other infirmities», Alberti-Leoni 1986, p. 27.

7 Alberti-Orlandi 1966, p. 117. Translation: «Pliny writes, that in the Labyrinth of Egypt, there are a great many beams made of the Egyptian thorn rubbed over with oil», Alberti-Leoni 1986, p. 27.

8 *Natural History* 36.89. Translation: «The few repairs that have been made there were carried out by one man alone, Chaeremon, the eunuch of King Necthebis, 500 years before the time of Alexander the Great. There is a further tradition that he used beams of acacia boiled in oil to serve as supports while square blocks of stone were being lifted into the vaults», Pliny-Eichholz 1962, p. 71.

In a list of the positive and negative qualities of different species of wood used in architecture, Alberti cites two cases taken directly from Pliny, without making any further observations or comments. In relation to the use of external beams, he praises the value of juniper, immediately quoting Pliny, who stated that it had similar characteristics to cedar, but was more resistant: «Subdivalibus trabeationibus iuniperum omnibus praeferunt; et huic ait Plinius eandem esse naturam atque cedro, sed solidiorem»[10]. It is worth noting that, on this occasion, Pliny was not talking about juniper and cedar in relation to their use in building construction, but simply including them in a list of information regarding forest botany: «Iunipiro eadem virtus quae cedro. Vasta haec in Hispania maxumeque Vaccaeis. Medulla eius ubicumque solidior etiam quam cedrus»[11].

In an even briefer way, Alberti mentions Pliny's reference to the Fagaceae family, citing only two examples – the beech and turkey oak – underlining their tendency to rot quickly: «fagus et cerrus celeriter marcescunt»[12]. This reference is summarised in the *De re aedificatoria*, with the repetition of the adverb and verb used by Pliny, but using only the generic term *quercus* (oak), referring to a member of the Fagaceae family: «Plinius quercum item celeriter ait marcescere»[13]. The turkey oak and beech are mentioned by Alberti in the previous sentence to the one about the oak, but with a reference to Vitruvius, which relates to a similar topic to that discussed by Pliny: «Cerrum autem et fagum natura imbecillem esse contra tempestatem et non pervenire ad vetustatem affirmat Vitruvius»[14]. Therefore, it is possible that Alberti either confused the three species of wood belonging to the Fagaceae family, or that in the reporting of Pliny's remark he cited the oak in order not to repeat the two preceding species of the same family.

In relation to these last two references concerning juniper and oak, it can be noted that Alberti chose them in a way that might appear casual, drawing on the great quantity of information about different species of wood provided by Pliny in his sixteenth book. Why did Alberti select these and not other examples given in the *Natural History*? For Alberti, Pliny was a never-ending source of knowledge on species of wood, but since it was impossible to quote everything, he selected only a few examples that he thought the most useful to enhance his treatise on architecture. It should nevertheless be highlighted that Pliny provided information about many species of wood used in architecture, which was more important and relevant than the information concerning the juniper and the oak. Therefore, perhaps Alberti's choice of examples in these two cases was not particularly helpful for the readers of his treatise.

Another topic from the *Natural History* that seems to have interested Alberti concerns the best time for cutting down trees. This was of great importance to an architect because

9 On the identification of *spina* as *Acacia nilotica L.*, see Pliny-Bostock, Riley 1855, p. 183, note 84. On the Nile acacia, also called Egyptian thorn or prickly acacia, see CABI, pp. 23–24.

10 Alberti-Orlandi 1966, p. 125. Translation: «For beams and coverings exposed to the open air, the juniper is greatly commended; and Pliny says it has the same properties as the cedar, but is sounder», Alberti-Leoni 1986, p. 29.

11 *Natural History* 16.198. Translation: «The juniper has the same excellence as the cedar; this tree grows to a great size in Spain and especially in the territory of the Vaccaei; the heart of its timber is everywhere even more solid than that of the cedar», Pliny-Rackham 1960, p. 517.

12 *Natural History* 16.218. Translation: «beech and turkey oak quickly decay», Pliny-Rackham 1960, p. 529.

13 Alberti-Orlandi 1966, p. 127. Translation: «Pliny says, that the mast-holm (*sic*) soon rots», Alberti-Leoni 1986, p. 29.

14 Alberti-Orlandi 1966, p. 127. Translation: «Vitruvius says, that the holm oak and beech are very weak in their nature against storms, and do not endure to a great age», Alberti-Leoni 1986, p. 29.

the timber had to be in the best condition in order to be used in building construction. For this reason, it is possible to read a summary of Pliny's references on this subject in the *De re aedificatoria*, after those of Theophrastus, Vitruvius, Hesiod, Cato, Varro, Columella, and Vegetius: «At Plinius optime caedi arborem putat Cane maxime oriente lunaque coheunte, qui dies interlunium vocatur; et noctem ducit expectandam eius ipsius diei, quoad luna sub terra sit»[15]. Immediately afterwards, Alberti explains the reference to Pliny, saying that, according to astronomers, the presence of the moon encourages the sap to rise inside the trunk. Trees should be felled in the absence of the moon, that is to say, when (according to this belief) there would be no sap to rot the timber once cut and it would also not be exposed to the risk of woodworm infestation.

However, reading the *Natural History*, we can see that Alberti only selected certain parts of Pliny's writings about the best time for felling trees, omitting several pieces of his advice, including the best days for this activity (between the twentieth and thirtieth day of the lunar cycle); Alberti only attributed the latter piece of information to Columella. According to Pliny:

> Infinitum refert et lunaris ratio, nec nisi a vicesima in tricesimam caedi volunt. Inter omnis vero convenit utilissime in coitu eius sterni, quem diem alii interlunii, alii silentis lunae appellant. Sic certe Tiberius Caesar concremato ponte naumachiario larices ad restituendum caedi in Raetia praefinivit. Quidam dicunt ut in coitu et sub terra sit luna, quod fieri non potest nisi noctu. Si conpetant coitus in novissimum diem brumae, illa sit aeterna materies, proxume, cum supra dictis sideribus. Quidam et canis ortum addunt, et sic caesas materies in forum Augustum. (16.190–191)[16]

From Pliny, Alberti highlights the interlunation, which is the period between two lunar cycles when the moon is invisible because it is in conjunction with the sun and also when the two canine constellations (Canis Major and Minor) are ascendant. At these times, the absence of sap in the trunk would guarantee the durability of the timber.

In relation to Pliny's arguments on the subject of wood, it would appear that Alberti was most interested in the cutting of trees and the treatment of timber and not very concerned with the other knowledge about forest botany at his disposal, which would have been very useful regarding the various species of wood used in building construction.

There is a further reference to the *Natural History* in the *De re aedificatoria* about wood, concerning one of the main techniques of gilding. Here Alberti describes the use of a specific adhesive for gold leaf in relation to the carved decoration of the wooden ceilings in basilicas:

15 Alberti-Orlandi 1966, p. 115. Translation: «But Pliny thinks it a proper time to fell trees when the Dog-star reigns, and when the moon is in conjunction with the sun, which day is called an *Interlunium*, and says it is good to wait for the night of that day too, till the moon is set», Alberti-Leoni 1986, p. 26.

16 Translation: «It is also of enormous importance to take account of the moon, and people recommend that trees should be felled only between the twentieth and thirtieth days of the month. It is universally agreed, however, that the most advantageous time for felling timber is when the moon is in conjunction with the sun, the date which some call the interlunar day and others the day of the moon's silence. At all events those were the limits fixed in advance by the Emperor Tiberius for felling larches in Raetia for the reconstruction of the deck of the Naval Sham Fight when it had been burnt down. Some people say the moon ought to be in conjunction and below the horizon, a thing that can only happen in the night. If conjunctions should coincide with the shortest day of the winter solstice, the timber produced lasts forever; and the next best is when the conjunction coincides with the constellations mentioned above. Some people

«Aurum materiae adglutinari leucophoro pulte huiusmodi aiebat Plinius. Miscentur enim sinopidis Ponticae librae sex, silis lucidi librae decem; infunditurque mel Grecense; nec ponitur in opus ante exactum diem XII»[17]. This glue, based on red bole (*sinopis*), is the *leucophoron*[18], of which Pliny indicated the ingredients, along with the respective quantities, necessary for the adhesion of gold to wood: «Sinopidis Ponticae selibra, silis lucidi libris X et Melini Graecensis duabus mixtis tritisque una per dies XII leucophorum fit. Hoc est glutinum auri, cum inducitur ligno»[19].

The information provided by the *Natural History* regarding the use of wood in architecture is utilised even more by Pietro Cataneo, a Sienese writer and architect of the sixteenth century, in examples that have a particular importance. In *L'architettura di Pietro Cataneo senese* (1567), the second edition of *I quattro primi libri di architettura di Pietro Cataneo senese* (1554), it is possible to find references to Pliny almost exclusively in relation to wood. It is rare for Cataneo to refer to Pliny when discussing other construction materials. In fact, this only happens on two occasions: one in relation to serpentine marble and the other to lime[20]. For this reason we can consider the *Natural History* as Cataneo's main source in relation to wood, which topic he chiefly addresses in chapter seven of the second book of his treatise.

Cataneo seems to have been mostly interested in forest botany and its various building applications. In this context, Pliny provided him with a highly useful source of knowledge, which he fully understood and used in a meticulous manner. Like Alberti before him, the Sienese architect highlighted the relationship between wood and water in particular, citing Pliny's argument about this topic. Cataneo wanted to provide useful advice by emphasising a series of technological characteristics of different species of wood: the durability of sessile oak when placed underground and also its perishability when in contact with sea water; the durability of larch and black alder in damp environments; the durability of beech, walnut, and juniper in water or underground, with reference to piling work in an underwater context and foundations in the ground respectively; the predisposition of pine, spruce, and elder to be hollowed out to make water channels, highlighting both their durability when installed underground and perishability if left in the open air[21].

Reading the passages from Pliny upon which Cataneo drew, we can see that he did not mention either elm or oak, probably for the following reasons: Pliny only spoke about elm in relation to its exposure to air (and therefore not in an 'aquatic' context), and the omission of oak can be explained by its similarity to sessile oak, with which it shares the majority of its main properties. For this reason Cataneo may not have wanted to repeat unnecessary extra information.

add the rising of the Dog-star also, and say that this was how the timber used for the Forum of Augustus was felled», PLINY-RACKHAM 1960, pp. 511, 513. Pliny's passage relating to tree felling is accurately summarised by Vincenzo Scamozzi, see SCAMOZZI 1615, p. 254.

17 ALBERTI-ORLANDI 1966, p. 647. Translation: «Pliny tells us of an extraordinary cement for laying gold upon wood-work; which may be made as follows. Mix together six pounds of sinoper, or *terra pontica*, and ten pounds of red oker, mixed with two pounds of *terra melina* or white lead, which must be all ground together, and the past [last] kept full ten (*sic*) days before it is used», ALBERTI-LEONI 1986, p. 157.

18 See the entry *Leucophoron* in FORCELLINI, FACCIOLATI 1805, II, p. 699.

19 *Natural History* 35.36. Translation: «Half a pound of *sinopis* from Pontus, ten pounds of bright yellow ochre and two pounds of Greek earth of Melos mixed together and pounded up for twelve successive days make 'leucophorum' a cement used in applying gold-leaf to wood», PLINY-RACKHAM 1961, p. 287.

20 See CATANEO-BASSI, MARINI 1985, pp. 264, 271. The other occasions in which Cataneo refers to the *Natural History* concern the quality, characteristics, and uses of water: pp. 383–385, 387, 391, 398.

21 *Ibid.*, p. 273.

Pliny's writings about the characteristics of these species when in contact with water are particularly reliable, even from a modern wood technology perspective. He almost certainly based his knowledge of this subject on his own personal experience:

> Et quaedam tamen in aliis diuturniora sunt usibus quam alia: ulmus in perflatu firma, robur defossum et in aquis quercus obruta. Eadem supra terram rimosa facit opera torquendo sese. Larix in umore praecipua et alnus nigra. Robur marina aqua corrumpitur. Non inprobatur et fagus in aqua et iuglans, hae quidem in his quae defodiuntur vel principales, item iunipirus, eadem et subdialibus aptissima. […] Pinus, piceae, alni ad aquarum ductus in tubos cavantur. Obrutae terra plurumis durant annis, eaedem, si non integantur, cito senescunt, mirum in modum fortiores, si umor dextra quoque supersit. (16.218, 224)[22]

Using the *Natural History* as his main source, and occasionally adding his own corrections, Pietro Cataneo defined and clarified important technological characteristics of several species of wood. The first of these properties was flexibility, for which Pliny had identified the most suitable types of tree, namely those found growing in damp places, for example along river banks or on valley floors:

> Frigidissima quaecumque aquatica, lentissima autem et ideo scutis faciendis aptissima quorum plaga contrahit se protinus cluditque suum vulnus et ob id contumacius tramittit ferrum, in quo sunt genere fici, salix, tilia, betulla, sabucus, populus utraque. Levissimae ex his ficus et salix ideoque utilissimae. (16.209)[23]

Cataneo summarised Pliny's passage, leaving some things out and adding others: when discussing the most flexible species, he did not include linden, while when discussing the uses of these species, he included plaques in addition to shields. The Sienese architect also noted that the fig does not grow in damp areas, contrary to what Pliny had written, while adding that the irregular grain of the fig was a further element that made it more resistant. Furthermore, Cataneo seems to distance himself from Pliny's contention that the wood from trees growing close to water (*acquatili*) was very cold:

22 *Natural History* 16.218, 224. Translation: «At the same time also some woods last longer when employed in certain ways than they do otherwise: elm lasts best exposed to the air, hard oak when used underground, and oak when submerged under water – oak when above the ground warps and makes cracks in structures. Larch and black alder do the best in damp; hard oak is rotted by sea water. Beech and walnut are also well spoken of for use in water, these timbers indeed holding quite the first place among those that are used under the ground, and likewise juniper (which is also very serviceable for structures exposed to the air) […]. Pines, pitch pines and alders are hollowed to form pipes for conveying water, and when buried underground will last a number of years; but they age quickly if not covered over, the resistance they offer being remarkably increased if their outside surface also is covered with moisture», Pliny-Rackham 1960, pp. 529, 533.

23 *Natural History* 16.209. Translation: «The trees that have the coldest wood of all are all that grow in water; but the most flexible, and consequently the most suitable for making shields, are those in which an incision draws together at once and closes up its own wound, and which consequently is more obstinate in allowing steel to penetrate; this class contains the vine [Plinius-Mayhoff 1892–1909, III: *fici*], *agnus castus* [not present in Karl Mayhoff's edition], willow, lime, birch, elder, and both kinds of poplar. Of these woods the lightest and consequently the most useful are the *agnus castus* (*sic*) and the willow», Pliny-Rackham 1960, pp. 523, 525.

> Tutti gli arbori acquatili, secondo Plinio, sono frigidissimi, e molto facili a piegarsi, onde sono appropriati a fare scudi o targhe, imperoché, forati, per loro medesimi si richiudono, e difficilmente si forano o si passano col ferro. E di tale generazione sono oppio, salcio, betula e sambuco. Ma il meglio di tutti, ancora che non sia acquatile, è il fico, che per le traverse intrigature delle sue vene si fora o passa difficilmente, et è impossibile farlo drittamente aprire col ferro[24].

Cataneo also included information about the density of wood in his treatise. He further demonstrates his familiarity with Pliny on this subject, even if he only selected several species of wood from the *Natural History* to discuss. In fact, Pliny listed the palm, maple, cork oak, pear, and apple as particularly dense woods, as well as other trees with an irregular grain, highlighting their tendency to fissure easily[25]. On the question of density, Cataneo, drawing on his own knowledge and experience as an architect, omitted certain species and added others, not forgetting to underline details relating to their tendency to fissure due to their irregular grain («arbori crespi»): «Il pero, melo, sorbo, il legno del suvero, il bosso, ma più di tutti l'ebano, sono di molto denso overo serrato legname, ma schiantano volentieri: e così fanno, secondo Plinio, tutti gli arbori crespi»[26].

Cataneo's knowledge concerning durability in general, and more specifically, resistance to the biological agents of decay and fissuring, was taken directly from Pliny. This information is given in the section entitled «Arbori che non tarlano et altri che non fendono; e quelli che di tutti sono più eterni» («Trees that are resistant to woodworm and others that do not split; and those that are the most durable»), in which Pliny is cited no less than three times[27]. Based on the *Natural History*, Cataneo identified four categories of species of wood: those resistant to woodworm (cypress, cedar, ebony, lotus, box, yew, juniper, wild olive, olive); those that are woodworm resistant for a relatively long period (larch, sessile oak, chestnut, walnut); those resistant to fissuring (cypress, cedar, olive); and those that show significant characteristics of durability, which Cataneo called «i più eterni» (ebony, cypress, cedar). According to Pliny: «Cariem vetustatemque non sentiunt cupressus, cedrus, hebenus, lotos, buxus, taxus, iunipirus, oleaster, olea, ex reliquis tardissime larix, robur, suber, castanea, iuglans. Rimam fissuramque non capit sponte cedrus, cupressus, olea, buxum. Maxime aeternam putant hebenum, et cupressum cedrumque»[28]. The passage from the *Natural History* on this subject corresponds almost completely with Cataneo,

24 Cataneo-Bassi, Marini 1985, pp. 278–279. Translation: «The wood from trees which grow in an area characterised by the presence or proximity of water is, according to Pliny, very cold and can be bent easily, for this reason it is suitable for making shields or plaques. The wood from these trees is very difficult to pierce or be penetrated by iron and any fissuring repairs itself. The poplar, willow, birch and elder belong to this group of trees. The best species of wood with these characteristics is the fig, even if it does not grow close to water. Due to its irregular grain it is difficult to pierce and impossible to bore a straight hole in it with an iron tool».

25 See *Natural History* 16.211.

26 Cataneo-Bassi, Marini 1985, p. 279. Translation: «The pear, apple, sorb, cork oak and box, but above all, ebony are very dense, they split easily, like, according to Pliny, all species of wood with irregular grain».

27 *Ibid.*, p. 282.

28 *Natural History* 16.212–213. Translation: «The following trees do not experience decay and age – cypress, cedar, ebony, lotus, box, yew, juniper, wild olive, cultivated olive; and of the remainder the slowest to age are the larch, hard oak, cork, chestnut, and walnut. The cedar, cypress, cultivated olive and box do not split or crack of their own accord. It is believed that ebony lasts an extremely long time, and also cypress and cedar [...]», Pliny-Rackham 1960, p. 525.

who also added a particularly interesting point about the insect-repelling capacity of the cypress due to the presence of its strong-smelling resin («l'amaritudine di loro liquore»)[29].

The fact that Cataneo accepted Pliny's knowledge of species of wood without following it to the letter is shown not only by his correction of information regarding the fig, but also by his reference to his fellow townsman Pietro Andrea Mattioli, a great critic of Pliny (and not only on botanical matters).

The subject matter is not among the most important, but it is useful to mention in order to understand the plurality of sources used by Cataneo and his comparisons between them. When talking about the larch[30], he stated that, according to Vitruvius and Pliny[31], its wood did not burn, citing immediately afterwards other writers' opinions on this matter, such as Alberti (who asserted that he had seen larch wood burning, but with difficulty) and also the doctor, Pietro Andrea Mattioli. The latter, who, like Cataneo, was from Siena, spoke about this characteristic of the larch in his commentary on the treatise of Dioscorides Pedanius, where Mattioli considered Vitruvius's and Pliny's argument to be «una sciocchezza» (a foolishness)[32], a term then quoted by Cataneo, who admitted to not having personal experience of this particular quality of larch and therefore being limited to recording the different opinions of others.

We can deduce that the information included in Cataneo's treatise had been previously verified by the author himself, regardless of whether that information came from first-hand knowledge, his experience in his role as a military architect, or from previous writers. When this was not the case, as with the burning of larch wood, he makes this clear: «Noi, che di tal cosa non abbiamo fatto esperienza, lassaremo il tutto in cospetto del vero»[33].

29 Cataneo-Bassi, Marini 1985, p. 282.
30 *Ibid.*, pp. 274–275.
31 See *Natural History* 16.45.
32 Mattioli 1557, p. 77.
33 Cataneo-Bassi, Marini 1985, p. 275. Translation: «We, who have not had a direct experience, will leave everything in the presence of truth».

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