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TREES, NUTS, AND WOODS AT THE END OF THE FIRST MILLENNIUM: A CASE FROM THE AMALFI COAST

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The cartulary of the Benedictine convent of S. Lorenzo al Piano, founded just outside Amalfi in the late 900s, is commonly known by the name of the Enlightenment lawyer from Angri who purchased it around 1780 for use in his practice, as an arsenal of legal precedent. The “Perris Codex” is comprised of almost six hundred documents and contains several early medieval charters, though the bulk of its content is late medieval, of deeper interest to the copyist who created the extant version.¹ Among the documents from the tenth and early eleventh centuries, several make reference to a characteristic land use of southern Campania in those times, the chestnut grove. This essay analyzes only one charter in any detail, but attempts to build on it a wider portrait of medieval chestnut cultivation around Amalfi. *Castanea sativa*, the European chestnut, remains a significant presence in Campania’s highlands today, yet the early charters suggest that along the Amalfi peninsula, in the Lattari mountains looming above the maritime zone and even in some low valleys there, just as further south and east around Salerno and the Picentini mountains, and in the vicinity of Avellino further inland, this tree was once more important than it became in the twentieth century.² In early

¹ In 1943 SS. Trinità’s original charters in the Archivio di Stato at Naples were destroyed. The “Perris Codex” was still in private hands then, and survived. It seems to be a fifteenth-century compilation: Jole Mazzoleni and Renata Orefice, ed., *Il codice Perris* (Amalfi, 1985), pp. xi–xii; and Antonio Allocati, “Il cartulario amalfitano detto comunemente ‘Codice Perris,’ e la sua edizione,” in *Convegno internazionale 14–16 giugno 1973. Amalfi nel medioevo* (Salerno, 1977), pp. 361–65.

² Though most of them reflect ecologies different from Amalfi’s, the Cava and Montevergine charters confirm the impression left by the “Codice Perris,” and the *Codice Diplomatico Amalfitano*, ed. Riccardo Filangieri di Candida (Naples, 1917). For a synoptic view, see ch. 3 in my *Dark Ages and Old Chestnuts in Europe* (forthcoming). On the decline of chestnut cultivation since the 1800s, see Massimo Becchi, *Discorso sul castagno* (Reggio Emilia, 1996), p. 27; and Marco Conedera et al., “Competition and Dynamics in Abandoned Chestnut Orchards in Southern Switzerland,” *Ecologia Mediterranea* 26 (2000), 101–12.

medieval Campania, it appears, the botanical properties of *Castanea sativa* suited prevailing economic and social conditions enough to create a distinctive woodland landscape different from what had come before and what was to come. In this dynamic landscape chestnuts did not occupy marginal terrain or preoccupy impoverished categories of people. On the contrary, chestnut cultivation in postclassical Campania was integral to the ebullient commercial activities that made the central Tyrrhenian so unlike the Pirennian stereotype of Dark Age Mediterranean stasis and autarchy. Thus the chestnuts were more than stolid occupants of the hillsides neglected by humans. They were agents in the environmental transformation of the early Middle Ages.

With the charters allotting so much space to what they called “castanieta,” it is quite logical that scholars have devoted some attention to chestnut cultivation in early medieval Italy and Campania. Conceptualizations of the place of chestnuts in the early medieval Italian economy and agriculture have, however, been varied. Because of their evaluation of Mediterranean economic stability between the Neolithic and Industrial revolutions, for example, Horden and Purcell opine that from ancient times *Castanea sativa* “provided an alternative economy” to grains, a fall-back food when sown crops failed, or a swine food in normal years, a means of turning less favored environments into cash through the sale of pork fattened on the nuts.³ In this version of chestnut history (or “castaneology”), nothing much changed in the early Middle Ages. More botanically informed accounts, like that of Grove and Rackham, note instead that chestnuts did increase in importance in the postclassical centuries, but also remark that this transformation is “ill-documented.”⁴ The recent account of Tuscan chestnut cultivation by Quirós Castillo refutes both of these positions by demonstrating that chestnuts not only rose to prominence in the Dark Ages as settlement shifted to new hillside locations, but also that archaeobotanical and documentary evidence for this rise exists.⁵

³ Peregrine Horden and Nicholas Purcell, *The Corrupting Sea: A Study in Mediterranean History* (Oxford, 2000), pp. 117, 199 and 203. Yet early medieval pigs ate acorns, and people kept the chestnuts for themselves (an example from AD 1001 is in Placido Tropeano, ed., *Codice Diplomatico Verginiano*, 13 vols. [Montevergine, 1977–2000], vol. 1, p. 74).

⁴ A. T. Grove and Oliver Rackham, *The Nature of Mediterranean Europe* (New Haven, 2001), p. 177.

⁵ Juan Antonio Quirós Castillo, “Cambios y transformaciones en el paisaje del Appennino toscano entre la Antigüedad Tardía y la Edad Media,” *Archeologia medievale* 25 (1998), 180–5.

Variety of interpretation also characterizes the older “castaneological” literature. Montanari’s classic description of the compenetration of cultivated and uncultivated sectors of the landscape in the early medieval economy had identified the chestnut as a special case, or a type of land use of peculiar relevance in postclassical times.⁶ To Montanari, the chestnut-filled portions of the landscape were ambiguous and liminal, neither wild nor agrarian. They were precious most of all for the peasant cultivators who ate their fruit, but were useful also to elites who could take rents and tributes of various kinds from the trees. To some extent, Montanari’s view of the evolution of chestnut woodlands in the postclassical centuries mirrored that offered a few years earlier by Pierre Toubert. Toubert’s great book on the structures of medieval Latium offered one of the first and most insightful reconstructions of the place of *Castanea sativa* in a medieval Italian landscape and launched medieval “castaneology” on its course. For Toubert, chestnuts were barely tolerated by the lords who reconfigured rural settlement in the Sabine hills during the tenth century and who exploited the new agrarian landscape thereafter. To the extent that chestnut groves existed in Toubert’s Sabina, they were relics of cleared woodlands, kept on the remotest edges of the productive agricultural space. In the Latial hills around 1000, chestnuts were a transitional land-use, between the wild woodland of the Dark Ages and the cleared, fully agricultural high medieval future. In this conceptualization, the chestnuts were a way for wily Sabine peasants to keep some marginal land more or less productive without great investment of labor. Demographic pressure and the more market-oriented seigneurial agriculture that prevailed in the high Middle Ages ineluctably cleared chestnut woods, replacing them with olive groves and especially with vineyards in the twelfth and thirteenth centuries.⁷ Toubert’s analysis of twelfth-century Campanian agriculture also stressed the innovations of the high medieval period and the unprecedented reliance on chestnuts as a way of extracting products from marginal, hilly land in a time of increased

⁶ Massimo Montanari, *L'alimentazione contadina nell'alto medioevo* (Naples, 1979), pp. 38–43 and 296–301 (see also his *Campagne medievali* [Turin, 1984], pp. 157–9). Giovanni Cherubini, “La ‘civiltà’ del castagno in Italia alla fine del medioevo,” *Archeologia medievale* 8 (1981), 247–80 focused on later times but was a milestone in medieval “castaneology” and makes many useful considerations.

⁷ Pierre Toubert, *Les structures du Latium médiévale* (Rome, 1973), pp. 177–9, 190–2 and 345–7.

demand for food.⁸ Toubert's view was in essence preserved in the overview Giovanni Vitolo offered of Campanian chestnut cultivation, with a rigid distinction between an early medieval period of low productivity and subsistence gathering of "wild" fruit, and a much more commercial and scientific cultivation of chestnut trees after 1000.⁹

The Amalfitan case presented here is an expansion of these earlier analyses of how chestnuts fit into the postclassical landscape. It differs by suggesting that the biological properties of chestnut trees were important historical agents and can help illuminate the transformation of the countryside in Campania. In particular, *Castanea sativa*'s productivity and its extraordinary amenability to human care proved to be a winning combination in the early Middle Ages. The case also suggests that some distinctions commonly made between early and late medieval land use bear reconsideration. Though we are accustomed to distinguish between an earlier medieval agrarian production for subsistence, and its special crops, and a later medieval agrarian production in response to market demand, with its own preferred plants, on the Amalfi coast chestnut trees managed to fill both roles.¹⁰ Thus I suggest that chestnut cultivation in this part of Campania began at the beginning of the Middle Ages, as a solution to labor scarcity and new settlement patterns. It continued to flourish even after the demographic and commercial revival of the late first millennium, finding new outlets and purposes in the increasingly market-oriented Campanian economy around 1000. One of the many insights offered by Richard Hoffmann's study of medieval European environmental relationships is that "Europe's medieval demographic experience ... is central to its environmental history."¹¹ By applying this idea to an early medieval case from near Amalfi recorded in the "Perris Codex," I intend to show that *Castanea sativa* was neither a marginal nor a transitional presence on

⁸ Pierre Toubert, "Paysages ruraux et techniques de production en Italie méridionale dans la seconde moitié du XIIe siècle," in *Potere, società e popolo nell'età dei due Guglielmi* (Bari, 1981), pp. 208–10.

⁹ Giovanni Vitolo, "Il castagno nell'economia della Campania medievale," *Rassegna storica salernitana* 12 (1989), 21–34. Earlier, Mario del Treppo, "Una città del Mezzogiorno nei secoli IX–XIV," in *Convegno internazionale*, pp. 44–5 and 53 had raised the same issues.

¹⁰ Chris Wickham, "Agricoltura, ambiente e sviluppo economico nella storia europea: il problema dell'alto medioevo," in *Agricoltura ambiente e sviluppo nella storia europea*, ed. Luciano Segre (Milan, 1993), p. 158.

¹¹ See his "Medieval Christendom in God's Creation," in *Northern Europe: An Environmental History*, ed. Tamara Whited et al. (Santa Barbara, Denver and Oxford, 2005), p. 47.

the hillsides of Campania, but interacted with people dynamically, always establishing an economic and environmental relationship with them in harmony with local demographic levels. In a nutshell, what I will propose is that the lighter population densities that seem to have prevailed in Europe, in Italy, and in Campania after the sixth century, formed ideal conditions for the propagation of *Castanea sativa*.¹² Once this propagation had occurred, *Castanea sativa* became rooted in the slopes of the Lattari and Picentini, firmly enough that it was relevant in the more densely populated high Middle Ages and indeed firmly enough that the tree remains a meaningful land use there today.¹³

The classic studies of medieval demography are decades old, and revision of them proceeds unevenly on account of the intractable evidence.¹⁴ Yet early medievalists accept that there were far fewer people in postclassical Europe than there had been at the height of Rome's imperial hegemony. Specialists in the history of the Italian peninsula are no different in this regard from scholars of the other former provinces of the Roman empire.¹⁵ If there was a Dark Age demographic collapse, and only slow, tentative demographic recovery in the last two centuries of the first millennium AD, we should expect the new demographic reality to have had environmental effects (as well as causes).

¹² Linking chestnut crops to subsistence, Cherubini, "La 'civiltà,'" pp. 268–9 argues the opposite, namely that higher population levels led to more chestnut cultivation in late medieval times. I agree with Ariane Bruneton-Governatori, "Alimentation et idéologie," *Annales: Economies, société, civilisations* 39 (1984), 1181, who thinks new chestnut plantations never derived from subsistence demand because of the length of time required for the trees to become productive.

¹³ Landscape scholars often note the persistence of land uses after their original purpose has subsided: Tom Williamson, *Shaping Medieval Landscapes* (London, 2003), p. 193. On twentieth-century land use, Touring Club Italiano, *Carta dell'utilizzazione del suolo d'Italia 1:200000* (Milan, 1960), foglio 16.

¹⁴ Josiah Russell's studies, based on Karl Beloch's *Bevölkerungsgeschichte Italiens*, 3 vols. (Berlin, 1937–61), need revision. For an orientation on how this might look, see Jean Pierre Devroey, *Économie rurale et société dans l'Europe franque*, 2 vols. (Paris, 2003–05), vol. 1, pp. 42–8. Fabio Giovannini, *Natalità, mortalità e demografia dell'Italia medievale* (Oxford, 2001); and Irene Barbiera and Gianpiero Dalla Zuanna, "Le dinamiche della popolazione nell'Italia medievale," *Archeologia medievale* 34 (2007), 19–42, attempt for Italy the kind of "qualitative" demography Devroey advocates. Elio LoCascio and Paolo Malanima, "Cycles and Stability: Italian Population Before the Demographic Transition," *Rivista di storia economica* 21 (2005), 197–232 offer a new take on traditional quantitative analyses. The orthodox view: Michel Rouché, "Le haut moyen âge," pp. 133–67 and Giuliano Pinto and Eugenio Sonnino, "L'Italie," pp. 485–8, both in *Histoire des populations de l'Europe*, ed. Jean-Pierre Bardet and Jacques Dupâquier (Paris, 1997).

¹⁵ For instance, Neil Christie, *From Constantine to Charlemagne: An Archaeology of Italy, AD 300–800* (Aldershot, 2006), pp. 57–61, 249–51, 260–3 and 500–4.

In fact, early medievalists often propose that the Roman landscape was drastically altered by the relative absence of people and that natural woodland reoccupied many riparian and highland areas reduced to treelessness by Roman agriculture.¹⁶ In effect, the Italian peninsula after the Gothic Wars in the mid-sixth century traded people for plants. The change had repercussions on mentalities and economies, both of which became more sylvan than they had been in Roman times.¹⁷

Italy's early medieval woodland is not heavily frequented nowadays, but scholars agree that the wooded areas were anything but abandoned in the postclassical centuries. Aside from the people who gathered fuel and food in them, and those who hunted the mammals that lived there, the greatest utilization of the woodland was by pastoralists. Sheep and pigs, and their keepers, filled the treed landscape, to such an extent that (in one of the scholarly tropes about Italy's woods in the early Middle Ages) the standard measurement of woods' extent was by the number of pigs that found pasture in them. Woods like these were definitely not desolate wastelands. Instead they were fully integrated into the economic space of people, on par with cultivated fields and vineyards.¹⁸

The chestnut orchards dealt with here are therefore one of many uses of the woodland that the sparser populations of postclassical Italy devised. Still, Campania's chestnut woods differed from other woodlands in several ways. Perhaps the most significant difference lay in the amount of work that people lavished upon them: the "castanietà" of so many charters from Amalfi, Cava, and Montevergine were a human landscape, as well as a natural one, or at least mixed these two qualities in dosages unlike other woodlands. If they were not quite like a fruit orchard or a vineyard they were also not like the spontaneous woods of oaks, ash, or beech that hid behind what the notaries called "silva." The cultivation of chestnuts is a nice illustration of the flexibility of early medieval land use

¹⁶ Devroey, *Économie rurale*, pp. 27–34; Chris Wickham, "European Forests in the Early Middle Ages," *Settimane di studio del centro italiano di studi sull'alto medioevo* 37 (Spoleto, 1990), pp. 499–501, 530–35; and Romualdo Trifone, *Storia del diritto forestale in Italia* (Florence, 1957), pp. 20–9.

¹⁷ Massimo Montanari, "Dalla tardoantichità all'alto medioevo," in *Storia dell'alimentazione*, ed. Jean-Louis Flandrin and Massimo Montanari (Bari, 1997), pp. 215–23.

¹⁸ Wickham, "European Forests," pp. 479–545 offers a good synthesis. An antidote against suspiciously Edenic visions of early medieval land use comes from the selective deforestation chronicled by J. John Lowe et al., "Stratigrafia pollinica olocenica e storia delle risorse boschive dell'Appennino settentrionale," *Rivista geografica italiana* 102 (1995), 267–95.

and the inappropriateness of applying to it rigid classical agronomical and legal categories like “ager,” “saltus,” and “silva,” or even the more modern historiographical distinction between “incolto” and “coltivato.”

For *Castanea sativa* does not propagate itself at all easily without human assistance, not least because of its bulky seed, incapable of wafting very far from the mother tree. The clumsy method of reproduction that people call the chestnut is particularly detrimental to a plant that requires abundant sunshine to grow well: under the dense canopy of mature chestnut trees very few seeds manage to grow into saplings. Compounding the reproductive challenge, the chestnut tree tends to develop its leaves late in the Mediterranean season, sometimes as late as mid-May, so any nuts that managed to roll down hills or get a lift with an animal and thus escape the shade of the mother tree would suffer from the competition for light by more precocious and vigorous growers the following spring. Furthermore, chestnuts must cross-pollinate in order to be fertile, so while a grown tree makes it difficult for its offspring to grow nearby it also needs neighbors of its same species in order to reproduce itself. This set of conditions explains why chestnut woods do not exist “in nature” in the Italian peninsula, and therefore in Campania.¹⁹

Ironically, it was the European chestnut’s distinctive botanical characteristics that gave it a leg up in the competitive arboreal world of Dark Age Campania. *Castanea sativa* formed an alliance with people and through this alliance became one of the most prominent species in those woodlands people frequented and wrote about. For the charters leave little doubt that by the end of the first millennium cultivators in southern Campania inhabited woodlands in which the chestnut had a primary place.²⁰ This was because, duly encouraged, chestnuts offer their friends bountiful benefits. Amongst these the nut figures prominently, for it is sweet and highly nutritious. Although the charters mention some use of chestnut wood, and *Castanea sativa* has prodigious regenerative capacities that make it far and away the best producer of wood among Italian species of tree, it was the nuts that most interested the landlords and cultivators who compiled the Campanian charters from before 1000.

¹⁹ The arboricultural literature is vast. For an orientation see Luigi Fenaroli, *Il castagno* (Rome, 1945); and Jean-Robert Pitte, *Terres de castanide* (Paris, 1986), pp. 8–37.

²⁰ Vitolo, “Il castagno,” p. 22 tabulates charter references to suggest chestnuts ranked third among Campanian land uses.

This was a considerable change from the preferences of ancient agronomists, and perhaps peasants too. Some Roman writers (and presumably their audiences) knew of *Castanea sativa*, but to the agronomists it was a tree whose sole interest lay in the poles it produced for viticulture, or at most in the feed it generated for pigs, while to poets like Virgil, Ovid, and Martial it represented crude and backwards people, especially shepherds, their occupations, and their scavenging ways. Pliny, who described the tree accurately in his *Natural History* (15.92), seems to have thought the chestnut was on earth to grow stout posts that could become fencing, and that for the most part the nuts were indigestible, except to swine.²¹ At the height of Rome's empire, when that other protagonist of Campanian environmental history, Mount Vesuvius, erupted, in an event Pliny witnessed, Campanian houses contained virtually no chestnut wood, and indeed such wood is conspicuous for its absence in Roman shipwrecks and excavated sites.²² A single house at Pompeii, one at Herculaneum, and the villa at Oplontis contained very small quantities of chestnuts when the volcano erupted.²³ Moreover chestnut pollens, sometimes used to chronicle the expansion of the tree's cultivation in Roman provinces, are virtually absent in southern Campania, though of course this datum is liable to change with new, more refined excavations. Overall it seems that the chestnut woods in the charters from the ninth and tenth centuries were an innovation, a major landscape change originating in the preceding centuries whose charters do not survive. Likewise new was the assiduous attention that landlords and cultivators gave to the nuts themselves, evidently an important Dark Age food in the region.

The edible nut of *Castanea sativa* appears with predictable rhythms. Each autumn, a mature chestnut tree produces many nuts, each season

²¹ Most ancient chestnut lore derived from Theophrastus, a student of Aristotle. Pitte, *Terres de castanide*, pp. 51–77 reviews the literary evidence. Always enlightening is Russell Meiggs, *Trees and Timber in the Ancient World* (Oxford, 1982), pp. 267–70.

²² Paola Pugsley, *Roman Domestic Wood* (Oxford, 2003), p. 153 found a single box-top of chestnut wood in her survey of the western Empire's wood use. Equally measly results come from synthetic works on Pompeii (*Homo Faber*, ed. Jürgen Renn and Giovanni Castagnetti [Rome, 2003]) and Herculaneum (Stephanus Mols, *Wooden Furniture in Herculaneum* [Amsterdam, 1999]). Meiggs, *Trees and Timber*, pp. 237–47 and 365–8 suggests chestnut was little used in building houses or ships. Wickham, "European Forests," p. 536 assumed chestnut woods were normal in Roman Europe.

²³ As the eruption occurred in late August, the nuts must be from the A.D. 78 crop: Wilhelmina Jashemski et al., "Catalogue of Plants," in *The Natural History of Pompeii*, ed. Wilhelmina Jashemski and Frederick Meyer (Cambridge, 2002), p. 97.

of course differing somewhat from the next, abundant years succeeding upon years of more modest production, though without the marked fluctuations that characterize grains. On average, a mature tree in Italy produces fifty kilos of chestnuts, though in favorable years when the weather is warm and still during flowering, a tree that is younger than 150 or so years in a favorable soil can bear some two hundred kilos of chestnuts, or 70,000 calories worth.²⁴ Most nuts ripen in October and November (but in modern Campania some gathering extends into December). A tree's productive life begins in earnest during its second decade of life, and in its fourth decade a tree reaches its full productive potential. As chestnut trees live enormously long lives, and indeed live longer than any other Italian tree save the olive, properly cared for they become a multigenerational and sustainable provider of food.²⁵ Proper care is not negligible and a young grove's maintenance can be quite laborious. In areas, however, where *Castanea sativa*'s fairly rigid requirements for moisture and acidic soil are met, mature chestnuts flourish with relatively little labor. This is truest when chestnut trees are compared with some other sources of food, especially with sown crops, but also when compared to that other favored Mediterranean arboricultural choice, the vine. Peasants who did the work will have appreciated this. Some calculations done on the basis of early modern Piedmontese evidence allow the conclusion to be drawn that chestnuts were vastly superior to grains in terms of their productivity in relation to the work expended on them.²⁶ When obtaining calories from the land efficiently was an object and when units of labor expended to obtain these calories were taken into account, *Castanea sativa* amply recompensed its cultivators for the relatively little labor they invested on the tree. In ninth-century Campania, where the chronicler Erchempert claimed labor was so scarce that at the end of summer urban folk abandoned

²⁴ Fenaroli, *Il castagno*, p. 30 claimed Campanian trees produced a measly average of 7 kilos of nuts per year in the 1930s. Cherubini, "La 'civiltà,'" p. 272 gives the much higher production statistics, in tune with Pitte, *Terres de castanide*, pp. 143 and 199–200. Chestnuts' caloric contribution is discussed by Bruneton–Governatori, "Alimentation," p. 1161.

²⁵ Catherine Bourgeois, *Le châtaignier, un arbre, un bois* (Paris, 1992), pp. 129–31 analyzes the long term effects of chestnut coppicing, which would only deplete the soil if regular removal of leafy biomass were pursued over centuries and cutting cycles were very brief. See also Fenaroli, *Il castagno*, pp. 98–9.

²⁶ Pitte, *Terres de castanide*, pp. 197–201. A modern, well-tended hectare of chestnuts requires 20 days of a person's labor every year. It generates on average 1000 kilos of nuts, or a little less than 2 million edible calories.

their cities for the vineyards in order to make sure the vintage was brought in, this would have been a very attractive characteristic.²⁷

Thus the European chestnut's vitality, high productivity, and long life span combined with the resurgence of woodland, the low demographic pressure of the early medieval period and the dearth of labor and lessened capacity of the powerful to coerce it, as well as with the new cultural predisposition to consider trees as economic assets, to create the Campanian landscape legible in the early medieval charters. No longer a marginal presence or an exotic plant, along the Amalfi coast and in the Cava valley that led north from the coast, *Castanea sativa* by 1000 had established itself as an unlikely dominant species.

The charter that the priest, Constantine, wrote "with his own hand" in January 1036 offers its readers a particularly dazzling glimpse into the world of southern Campania's chestnut cultivators.²⁸ Constantine was a well-connected individual and had several members of Amalfi's aristocratic families witness his agreement with Leo, son of Sergius of Palumola. That itself is a revealing circumstance that belies the image of chestnuts as the "bread" tree of poor and marginalized populations; it is a sign that instead chestnut trees and their fruits were not a marginal component of the local economies, but interested privileged Campanians who had other options.²⁹ The priest drew up the contract in his capacity as rector of the Amalfitan church of St. Mary; the property he assigned to Leo in a long-term lease, applicable to his own and to Leo's heirs "from generation to generation for all eternity" belonged to St. Mary through a donation by "lord Lupinus son of Count Maurus."³⁰ The land was agriculturally varied, and everyone expected it to produce diverse fruits, including figs, apples, pears, grapes, and "light cherries," in quantities large enough to warrant some charitable distribution of excess.

Two crops merited somewhat more consideration than the others, however. As this was an "ad pastinandum" contract, Leo was expected

²⁷ *Historia Langobardorum Beneventanorum*, ed. Georg Waitz, *MGH Scriptores Rerum Langobardicarum* (Hannover, 1878), p. 257. Admittedly the area had endured exceptional military depredations in the mid-800s.

²⁸ *Il codice Perris* 35, pp. 48–50. The older version destroyed in 1943 was less complete: *Codice Diplomatico Amalfitano* 44, pp. 67–8. For his edition Filangieri di Candida, who knew of the Codex Perris, preferred to use parchment originals that derived from SS. Trinità's archive and had entered the Neapolitan Archivio di Stato in the nineteenth and early twentieth centuries: Allocati, "Il cartulario," p. 364.

²⁹ As happened in the 1100s: Toubert, "Paysages ruraux," pp. 210–11.

³⁰ On the Comitibus Mauronis families, see Adolf Hofmeister, "Der Übersetzer Johannes und das Geschlecht Comitibus Mauronis in Amalfi," *Historische Vierteljahrschrift* 27 (1932), 256–7 and 493–4.

to improve the farm, and the wording of the deed suggests that improving the vineyard was a high priority: “[F]rom this day on you and your heirs shall take care to properly work the vineyard and stake it and plant vines in it and extend it and fence it in, as it deserves.”³¹ Most grapes would become wine, and Leo agreed to make the wine, aided by someone sent by St Mary. Together they would seal the wine in the church’s containers (though the verb “inbuctare” implies barrels, the wine would actually rest in the thoroughly cleaned and maintained vats called “organea” kept on the farm and belonging to St Mary). Constantine required Leo and his helper to deliver a portion of this wine to the sea’s shore, so we may deduce that autarchic consumption was not the destiny of the entire vintage.

The other crop to earn special attention from the contracting parties was the chestnut crop. The wood that this grove at “Insubrizzano” might yield attracted no interest, despite its obvious utility in the vineyard.³² St Mary’s chestnuts had value only for their nuts. This certainly was related to the nature of the trees, for they had been grafted at some earlier time, perhaps by Leo’s father who had tended the land before, but probably much earlier. Constantine identified the chestnut trees as “inserte” and “zenzale” (as we shall see, a cultivar) and the whole grove was called an “insertetum”: early medieval Campanians took very seriously the distinction between simple “castanieta” and the grafted, improved trees (or “inserte;” clustered, they formed an “insertetum”). Trees that were ungrafted, or wild, could and did produce nuts, but not as abundantly as grafted trees could, so they were better suited to producing wood. Trees that developed from a young plant onto which a shoot from a “proved” producer of bigger, or sweeter, or longer-lasting, or more abundant chestnuts had been grafted were altogether a superior agricultural prospect.³³ St. Mary’s grafted chestnut grove was thus

³¹ On contract types, Augusto Lizier, *Leconomia rurale dell’età prenormanna nell’Italia meridionale* (Palermo, 1907), pp. 75–104.

³² This locality probably lay up the Reginna torrent from Maiori, a village east of Amalfi. The *Codice Diplomatico Amalfitano* version read “in Sulfizzano,” which is how other charters in the Perris Codex refer to a site in the Tramonti highlands above Maiori: *Il codice Perris* 119, p. 209 (AD 1128), and 130, p. 232 (AD 1138), the latter being the sale whereby S. Lorenzo acquired the land, explaining why the nuns kept Leo’s contract.

³³ In the nineteenth and twentieth centuries prized qualities that earned chestnuts the chance to become a recognized cultivar were flavor (sweetness), consistency (silkeness), size, time of ripening, and preservability: Giovanni Vitolo, “I prodotti della terra,” in *Terra e uomini nel Mezzogiorno normanno-svevo*, ed. Giosuè Musca (Bari, 1987), pp. 175–6.

an economic asset equal to the church's commercial vineyard; this begins to explain the relatively high status of some of the people involved in the contract. In fact, the same clause that had specified how Leo should improve the vines continued to state "concerning the other asset, that is the grafted chestnut grove, you must take care to prune it well [...] every year and rake and, where appropriate, to graft it and fill it in from one boundary to the other, so that there are no empty patches in it, that it may be totally full of vines, of grafted trees, of zenzale type trees, and fruit trees..."³⁴

Like the grapes, the chestnuts too had to be processed. To begin, Leo and his heirs would have to gather them, probably from the ground as was customary in the Middle Ages. To facilitate this operation Constantine stipulated that the ground under the trees should be raked, and thus the undergrowth in the grove be kept low. The thick shade created by the leafy canopy of chestnut trees is inimical to many plant species but in Mediterranean climates, as we have seen, *Castanea sativa* often grows its leaves late. This meant more precocious plants could get a head start so that, by the time the chestnuts matured and fell off the trees in late autumn (around Salerno today, in November and early December, but in the early Middle Ages before the feast of St. Martin on November 3rd), a mantle of grasses and shrubs under the chestnuts might render the gathering of the crop difficult. In order for people to get a larger share of the fallen chestnuts, the prevenient priest Constantine asked that Leo labor on the wild grasses beneath the trees, improving visibility there and thereby also improving yields.

Once he had gathered them, Leo had to sort the chestnuts. This Amalfitan charter is the earliest Campanian charter to identify several different chestnut types and to reveal the discernment that eaters of the nuts brought to the act. Quite apart from the distinction between "zenzale" and other "inserte," both grafted chestnuts, Constantine also knew about green grafted chestnuts, and about vallania and verole varieties.³⁵

³⁴ *Il codice Perris*, 35, p. 49, "... de ipso alio qui est insertetum habeatis curam ad bene illud [lacuna] roccandum omni annue et rastillandum et ubi meruerit insertandum et implendum de fine in finem, ita ut vacuum ibidem non habeat set totum plenum siat de vinea et insertetum et zenzaletum et fructura..."

³⁵ Jean-Marie Martin, "Città e campagna: economia e società (sec. VII–XIII)," in *Storia del Mezzogiorno* 3, ed. Giuseppe Galasso et al. (Naples, 1990), p. 326 notes that "zenzala" was a cultivar Salernitans knew by 1010. See also Lizier, *L'economia*, p. 123. The cultivar "vallania" was still known to late medieval writers: Charles DuCange, *Glossarium mediae et infimae latinitatis* 6 (Paris, 1846), p. 730.

He wanted St Mary's share to include a *modium*, or about 51 kilograms, of these three types of chestnuts mixed together, and delivered directly to the church.³⁶ Evidently this payment was of fresh chestnuts, still with their shell on, which is why the contract specified that the delivery should occur "in chestnut season" (and, as we shall see, Constantine was quite precise about the other, dried chestnuts Leo would pay each year). In the vicinity of Avellino, twelfth-century landlords also occasionally insisted on obtaining "green" chestnuts.³⁷ Though it is not clear exactly what a green chestnut was in 1030s Campania, in late medieval Emilia Piero de' Crescenzi thought green chestnuts were those that one gathered before they fell off the tree, a practice that recommended itself where pigs roamed and might deprive people of their crop. Perhaps making a virtue of necessity, de' Crescenzi proposed that the green nuts were the most flavorful kind, and the kind that kept with the least risk of spoilage.³⁸ Indeed, superior preservation qualities appear to have been a significant benefit of immature (presumably green) chestnuts, justifying the added labor gathering them required. In the late Middle Ages, green chestnuts were stored with their spiny outer shell on, which made it possible later to eat them whole, not ground into meal.³⁹

Regardless, Constantine's green chestnuts would reach him along with the other two varieties, presumably chestnut brown and ripe. Unlike the green chestnuts, which may refer to the degree of maturation they had reached when they were knocked off the branches, the other two names for chestnuts refer to cultivars, as does "zenzale." Pliny the Elder had immortalized a Roman landowner and his freedman who had likewise created new cultivars of chestnut in Campania a millennium earlier, probably as a hobby, but such scientific arboriculture is not usually associated with early medieval peasants.⁴⁰ Indeed, the existence of these cultivars in early medieval Amalfi is somewhat surprising, given that in early medieval Sabina and in Lombardy chestnut

³⁶ Montanari, *L'alimentazione contadina*, pp. 167–9 sensibly reviews these measures.

³⁷ Martin, "Città e campagna," p. 326. Martin was unsure why "green" chestnuts were sought after. See also Vitolo, "Il castagno," p. 32.

³⁸ Piero De Crescenzi, *Ruralia commoda* 5.6.5–6, ed. Will Richter, 4 vols. (Heidelberg, 1996), vol. 2, pp. 106–107.

³⁹ Massimo Montanari, "Un frutto ricco di storia," in *La castagna sulle tavole d'Europa* (San Piero al Bagno, 2001), pp. 60–1.

⁴⁰ *Nat. Hist.* 15.94 records the Corelliana and Tereiana cultivars, named after their inventors (see 17.122). Pliny thought one more resistant, the other finer. Pliny also (15.93–4) listed the "popularis nigra," the "coctiva," the "Salariana," the "Tarentina," and the "triangula" varieties.

cultivation appears to have depended on the encouragement of wild trees and the removal of chestnuts' competitors in the woodland.⁴¹ Constantine's charter reveals a much more refined, arboriculturally informed management of the woods to obtain the desired quality and quantity of chestnuts. This was not just a matter of planting, transplanting, and grafting, for the mixture of several types of chestnut in the grove of St Mary at "Insubrizzano" was agronomically astute, as chestnuts from different cultivars cross-pollinate more effectively and consequently produce more nuts.⁴² Likewise, the intermixture of trees that had been planted recently with the older and nut-producing chestnuts, virtually required by the terms of the contract, also contributed to the health and long-term productivity of the grove.⁴³

Amalfi's chestnuts were different, then, a result of intelligent grafting procedures by Leo's predecessors working the farm. Their selection of desirable qualities, and subsequent transposition of shoots from the selected trees onto other (wild?) chestnut matrixes, by 1036 had created valuable differences in the chestnut crop, as well as in the grove itself. Such differences resulted in a vernacular knowledge and classification system that was evidently widespread enough at the beginning of the eleventh century to find its way into contracts without further explanation.⁴⁴ Everyone from the contracting parties to the witnesses understood what distinguished a verola chestnut from a zenzala or a vallania, and why a landowner would want all three in his grove and his pantry. That is a sign of the antiquity of these cultivars and suggests that the "scientific" arboricultural practices the names reflect were far older than the contract itself. They were probably not Roman, both because of the scanty evidence of Roman interest in chestnut cultivation in Campania, and because classical Latin lacked the botanical refinement displayed by the Amalfitan notaries: in Roman times people got confused because the same word covered chestnuts and walnuts.⁴⁵ The arboricultural practices revealed by the naming of cultivars were

⁴¹ Montanari, *L'alimentazione*, pp. 37–43 and 297–9; and Toubert, *Les structures*, pp. 177–9, 190–2 and 345–7.

⁴² Pitte, *Terres de castanide*, p. 171.

⁴³ Planting, grafting, transplanting, and pruning can kill a young tree even when climate is benign; the open spaces in the grove to which Constantine referred were likely the natural outcome of attrition.

⁴⁴ *Codice Diplomatico Amalfitano* 45, p. 70 (1036) also refers to "zinzale." This charter replicates some of the terms of Constantine's.

⁴⁵ Meiggs, *Trees and Timber*, p. 421.

instead rooted in the immediate postclassical centuries, when the Roman landscape made way for the boskier early medieval one.⁴⁶ Indeed, the genealogy of St. Mary's chestnut grove was long enough that some of it was recorded in the charter itself, through the reference to the previous owner of the trees, "lord Lupinus," and to its previous cultivator, Sergius "da Palumola," father of Leo.⁴⁷

In fact, Constantine's charter is exceptionally valuable as a shaft of light into early medieval arboricultural practice and into the sophisticated world of postclassical Campanian chestnut cultivation. By the end of the first millennium Campanian farmers had fashioned a new kind of woodland landscape through their labor. This new woodland was not exclusively a chestnut forest, but it drew on farmers' meticulous observation of chestnut trees' characteristics, their determination of which characteristics were valuable, and their propagation of desirable characteristics by excising, grafting and planting. When Constantine began writing, a managed woodland landscape was well established on the steep slopes of the Amalfitan peninsula, one that included several cultivars of chestnut recognizable and endowed with specific names. People who inhabited this landscape in the early eleventh century applied the names to the trees in a way that implies their ancient and commonly accepted presence, the result of habits and knowledge that pre-date the charter itself.⁴⁸ This sort of arboriculture, like the creation of the plump Lombard "marroni" chestnuts, whose inner cuticle does not divide the white flesh (as is the case with normal chestnuts), is usually associated with the high Middle Ages.⁴⁹

As surprising as the evidence in it of precocious variety selection and arboriculture is the reference in Constantine's charter to the dried chestnuts Leo owed St. Mary. Though there is no evidence that chestnuts were

⁴⁶ Vitolo, "I prodotti," p. 175 discusses some other cultivars named in Cavese charters. Like Martin (e.g. "Le travail agricole," in *Terra e uomini nel Mezzogiorno*, pp. 121–30) and other specialists, Vitolo considers the distinctive Amalfitan and Campanian woodland a post-1000 development.

⁴⁷ Other eleventh-century charters refer to previous ownership of groves, likewise pushing their origin back in time: *Codice Diplomatico Amalfitano* 50, p. 78; and 69, p. 110. Genealogical memory in Amalfi extended back about four generations, so many farms mentioned in tenth-century charters can be retraced to the 840s and exceptionally to the mid-700s: del Treppo, "Una città," pp. 102–5.

⁴⁸ And post-date classical antiquity that did not know these names: Jacques André, *Lexique des termes de botanique en Latin* (Paris, 1956), p. 76.

⁴⁹ Thirteenth-century Parisians prized Lombard "marroni": Roger Grand and Raymond Delatouche, *L'agriculture au moyen âge* (Paris, 1950). On their development, Montanari, *L'alimentazione*, p. 296.

preserved in Roman times, dried chestnuts (*castanee bene sicce*) are quite common in early medieval Campanian charters, and indeed in later, better documented times drying was the standard procedure among chestnut cultivators, the best means to ensure preservation of the crop. What surprises therefore is not the evocation of this product, but the prominence given to its “transport down to the sea shore.” Oddly, the clause obliging Leo to carry St. Mary’s share of the “properly dried” chestnuts to the sea appears to have occurred to the contracting parties after all other aspects of the agreement had already been settled. It is the very last stipulation before the witness list, and it comes after the standard concluding references to the landlord’s right of eviction in the event of unsatisfactory work by the tenant, and after the establishment of penalties for any attempt to alter the terms of the contract.⁵⁰ If not actually an afterthought, the phrase requiring Leo and his heirs to deposit the church’s dried chestnuts where they could be loaded onto a ship seems to reflect some last minute negotiations. The clause may have been decisive for Leo’s widow Marena who chose in 1112, seventy-six years after her husband had contracted to cultivate the chestnut grove, to relinquish the land because “we have become poor and cannot oversee and work this land and the chestnut grove.” For an old woman, evidently alone, the task of bringing the chestnuts down to the sea was too much.⁵¹

Yet the transportation clause also certainly reflects the importance of dried chestnuts in postclassical Campanian commerce. Unlike the fresh chestnuts Constantine may have planned to eat himself, the dried chestnuts were destined for market, as their handling by Leo indicates. Drying chestnuts is laborious, far more than growing them. It requires firewood, which may be where the wood from the chestnut grove that Leo was supposed to prune annually would end up, even if that would not have sufficed to keep a smoky fire burning for two or three weeks, as was the standard practice in early modern times.⁵² Keeping the fire

⁵⁰ Landlords commonly worried about getting their rents to the shore: Romualdo Trifone, “Le prestazioni degli antichi coltivatori amalfitani,” *Rivista di diritto agrario* 8 (1929), 545.

⁵¹ *Il codice Ferris* 100, p. 70, “...venimus ad paupertatem et non potuimus continere et laborare ipsa suprascripta hereditatem et ipso predictum castanietum.” Leo must have married Marena late in his life for her to be alive in 1112. It is possible that Leo had contracted to farm another chestnut grove at Subrizzano, but given the nuns of S. Lorenzo’s preservation of his 1036 agreement, this charter probably involves the same land mentioned in the 1036 charter, even if the owners in 1112 were not the same ones as in 1036.

⁵² Martin, “Città e campagna,” p. 326; and Fenaroli, *Il castagno*, pp. 113–4.

at the requisite low smoldering level was tiresome, as was removing chestnut wood's abundant ash afterwards. In more recent times such drying has taken place in specialized buildings, subdivided horizontally with racks on which the chestnuts lie above a slowly burning fire. Constantine's charter actually records one of these structures, surely one of the earliest known in the Italian peninsula.⁵³ In his description of the farm he leased to Leo, Constantine reserved for St. Mary's exclusive use "those barrels and that house which I recently built there for the racks of the aforementioned chestnut grove..." The rack-house was again mentioned as the site for dividing the crop into shares, under the vigilant eye of someone sent by St. Mary, suggesting that it was a special structure on the farm, where the landlord's power over the operation of farm work could be manifested. The division took place after drying; this implies that what was divided were fully peeled nuts, for drying the nuts made their separation from outer shell and inner cuticle a simple operation, one done immediately after drying in early modern times. That is what Constantine meant by "properly dried" chestnuts, those that Leo would carry down to the Tyrrhenian, where the landlord would make sure to have them met by boats. The now preservable, lighter, less voluminous, and hence commercial chestnuts could be distributed to the right place by sea.⁵⁴

The agreement between Leo and Constantine is therefore another sign of coastal Campania's commercial vitality at the end of the first millennium. This corner of the Tyrrhenian was perhaps the liveliest part of the early medieval Mediterranean, where landlords shipped surpluses to markets as a matter of course, from the ninth century (when the documentation thickens) on.⁵⁵ Even as early as 836, government documents like the *Sicardi Pactio cum Neapolitanis* evince an unusual concern with the movement of goods and people across boundaries in the

⁵³ Vitolo, "Il castagno," p. 30 discusses some later racks.

⁵⁴ Drying removes a third of chestnuts' weight: Fenaroli, *Il castagno*, p. 105. Vitolo, "I prodotti," p. 177 links chestnut cultivation to Maghrebi market demand. Salerno and Naples are likelier markets. P. Bevilacqua, *Terre del grano, terre degli alberi: L'ambiente nella storia del Mezzogiorno* (Rionero, 1992), pp. 77–80 remarked on southern arboriculture's "dynamism" around 1900, when coastal production for export predominated, in contrast with inland "static" grain growing.

⁵⁵ Chris Wickham, *Framing the Early Middle Ages* (Oxford, 2005), pp. 737–41. See also P. Skinner, "The Tyrrhenian Coastal Cities Under the Normans," in *The Society of Norman Italy*, ed. G. Loud and A. Metcalfe (Leiden, 2002), 90–92; and G. Loud, "The Monastic Economy in the Principality of Salerno During the Eleventh and Twelfth Centuries," *Papers of the British School at Rome* 71 (2003), 169–70.

region.⁵⁶ This was also a part of the Italian peninsula where that shy tree *Castanea sativa* had become a major economic protagonist. At about the same time as Leo and Constantine were negotiating their terms, viticulture in Campania completed its steady rise to prominence as the preferred, most commercially viable investment for landowners. Southern Campanian vineyards did not, however, extirpate or marginalize chestnuts. If chestnut groves remained a viable presence in the wooded landscape, even at low altitudes, into the 1200s, this was probably not solely because they supplied viticulturalists with high quality poles. Though landlords began to replace their chestnut woods in the 1200s, the trees' resiliency and continued importance in the high medieval landscape derives from some of the patterns the 1036 charter suggests, namely the high degree of sophistication chestnut cultivation had attained in this region, the involvement in such cultivation of powerful people, the Campanian taste for high quality nuts, and the ability of dried chestnuts to serve as a cash crop. The managed woodland of the Amalfi peninsula, like that in Campania generally, was a sustainable response to market conditions. It was also a result of the remarkable properties of *Castanea sativa*, an unassuming tree that gives generations of people abundant fruit in exchange for minimal maintenance of its ecosystem.

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⁵⁶ Sicardi *Pactio cum Neapolitanis*, in *MGH Legum* 4, ed. Georg Heinrich Pertz (Hannover, 1868), pp. 217 and 219-20.

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