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The “Vite Maritata” as a Landscape Catalyst. The Grapevine as Part of Edible Greenways

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Abstract

The grapevine on living trellises, or “vite maritata” in Italian, is an ancient grape growing technique that uses, instead of poles, trees as support for the grapevine to climb. Conceived by the Etruscans, it was a common element in the Italian rural landscape until the 1960s. As an agronomic practice, it has been abandoned mainly because of the ceasing of the socioeconomic forces that drove its expansion, summarized by sharecropping. Today, in evaluating the natural ecosystem and environment, we have the theory of ecosystem services as a powerful tool. This theory states that ecosystems impact human well-being. This impact affects four different categories that group the various services provided by ecosystems. These four categories are provisioning, regulating, cultural, and supporting. The grapevine on living trellises provides services in all four categories, with precise services regulating microclimate and supporting wildlife (Bigliardi, 2021). The linear arrangement of the grapevine on living trellises in the urban landscape could function as a helpful green infrastructure for wild species of animals and plants, but of course, also for human beings, contrasting territorial fragmentation and promoting biodiversity. As a greenway, it can be a source of recreational spaces and slow mobility and provide substantial food resources, becoming the protagonist of an edible landscape (Fabris, 2010). The Metropolitan City of Milan possesses already a substratum of dismissed railway yards that, united with the renovation of the Navigli canal system, define a favourable environment for the design of this kind of greenways that can contribute to the “ForestaMI” Reforestation Plan of the Lombard metropolis (Boeri, 2021). Moreover, the “vite maritata” fits well with this situation, being acclimated to the climate of the Po valley.

Introduction

The cultivation of grapevines has shaped the Mediterranean landscape since antiquity. Every major civilization, the Egyptians, the Greeks, the Phoenicians, to name only a few, were massively involved in winemaking, and wine was a significant trade. Several techniques and innovations were created, such as the Greeks who created the vineyard as architecture, with the grapevines carried by dry poles, the archetype of the modern vineyard.

The Etruscans created a form of grapevine cultivation different from the Greeks. In it, the grapevine is supported not by a wooden pole, also known as a “dry stake” because it is devoid of fluid, of life, but by a tree, a “living stake” or “living trellis”. This practice is known as the *Vite Maritata* as once “married” the two organisms, grapevine, and support tree, remain together for their entire life. In this form, the grapevine shoots are supported and carried by trees such as elms, poplars, maples, and other species native to the plains and the edge of woods. It is a method of growing grapevines on a large scale in areas that are not particularly suitable to it, connected with cereals (Sereni, 2017). In the *Vite Maritata*, the grapevine is carried by trees and is significantly higher than in the Greek model. This height difference is essential to keep the grapes away from the ground. Inland, the climate is much more continental than near the coasts. Especially in the first months of spring, soil

tends to release much moisture which with frosts represent the major limiting factor for the growth or even the survival of the grapevine. This technique meant that wine could be produced in significant amounts far from the coasts so, without having to compromise cereal production or cattle grazing, which coexisted with viticulture in farms and fields.

The Roman civilization underwent considerable cultural influences from both the Etruscan and the Greek. In their territories, the extensive “*arbustivae*” viticulture of Etruscan origin coexisted with intensive Greek viticulture, with low grapevines supported by poles (Fregoni, 2003, p. 838). In regions with a drier climate and accentuated slopes, the Greek model was preferred, while the Gallo-Etruscan model, so the *Vite Maritata*, was more suitable for the humid climates of the continental plains (Sereni, 2017). One can reasonably believe that the *Vite Maritata* was widespread beyond the Italian peninsula, although probably not as widely as in Italy. It seems that it was present in Gaul, in the Upper Garonne and the Pyrenees, but unluckily how much is unknown (Cavazza, 1914).

The decline and fall of the Roman civilization were a moment of crisis for the grapevine on living trellises. The abandonment of farmlands and countryside united with the decay of population led to many areas of Europe becoming wild and depopulated. Although there were many exceptions, things started to change substantially only in the XII-XIII century.

The reclamation of uncultivated land was carried out by the feudal lords and by the communes, which were increasingly establishing themselves as political-administrative entities both in the Italian peninsula and in Europe. In general, all of Europe in the Thirteenth century is characterized by economic growth. Large areas were deforested because there was an endless hunger for wood as a material or a fuel. In this context, the *piantata* on the edge of the fields are the best compromise to achieve agricultural and timber production. The “*piantata*” is essentially a heterogeneous group of shrub and tree plant species. These have many uses, providing firewood, animal feed, vegetable fibres, herbs, and obviously grapes. The *Vite Maritata* is consequently a fundamental and recurring component of *piantata*.



Figure 1: The heritage value of the grapevine on living trellises has been recognized and inspired many artists, like the court painter of the Borbone of Naples, Jakob Philipp Hackert in his opera “Old-time grape harvest or autumn”, 1784, oil on canvas (courtesy of Wallraf-Richartz-Museum, Köln).

The main driving force behind the new expansion of the *Vite Maritata* was sharecropping. This is a rental contract between the owner of the agricultural land and the worker or, more precisely, his family. Owner and sharecropper, share the harvest based on rent quotas, hence the term sharecropping. Labor costs were divided in half, and at least, theoretically, the settler commits to protect the land from abandonment and to pay the rent, while the owner commits to maintain the farm, which also included its structures, embankments, and hedges. The real problem of sharecropping is the weakness and vagueness of the contract which lead, and historically it did, to abuses. The effectiveness of the contract is evidenced by the long duration it has had over the centuries, even if its economic and social equity is ambiguous. On the one hand, it was seen as a remnant of the feudal yoke, on the other as an effective tool for entrepreneurial evolution (Pandakovic, 2004).

The expansion of the *piantata* arrangement, and consequently of the grapevine on living trellises, continued during the Renaissance and the whole modern era until the industrial revolution and the abandonment of sharecropping. The grapevine on living trellises represents a memento, archaeology of ancient viticulture, its production system, and the socio-economic scenario in which it develops. Nevertheless, its importance and meaning don't end with cultural heritage value but go on many other functions and roles in the landscape (Bigliardi, 2021).

Importance of *Vite Maritata* for landscape ecology and ecosystem services

Vineyards are specialized plantations or, in modern words, intensive monocultures. Therefore, they possess all the issues and controversies related. Monocultures impoverish the soil. They constantly need fertilizers and pesticides because they are subject to many pests and diseases. This simplifies the landscape, with substantial changes in the local topography that leads to the disintegration of the landscape. Since landscape fragmentation and habitat loss are major threat to biodiversity (Farina, 1998), there is the need for actions and intervention that goes in the opposite direction. To strengthen landscape variety and functionality, a prime role is played by corridors. Corridors in landscape ecology are linear patches, natural or artificial, that allow the fundamental movement of species in the landscape that is crucial to ensuring their survival and prosperity. The linear ecological community established by a *piantata* row of grapevine on living trellises could function as an ecological corridor capable to provide many ecosystem services.

The theory of ecosystem services states that ecosystems provide humanity with a series of economically quantifiable functions, categorized into four macro-groups: I. Provisioning; II. Regulating; III. Supporting; IV. Cultural services.

The provisioning service does not differ much from the classical economy which sees ecosystems as a source of raw materials. Every material eventually comes from or was extracted from an ecosystem. The regulating service is intended as the control of temperature, humidity, and other environmental factors essential to life in general, but to ours and to the species that are relevant to us. The supporting service is more complex than the previous ones and mainly concerns the supply, by ecosystems, of habitats suitable for the life of this species. In the end, the cultural service is even more complicated to describe scientifically, but it is equally important. Usually, it remains in the background because cultural values are not very objective. However, it exists, and, in some places, it can be enormously more relevant than any other service for religious or historical reasons.

Vite Maritata fits well in this model because it provides services in all four categories, but the most curious thing about the ecosystem services model is that it makes *Vite Maritata* worthy of economic

investment. The real revolution of the theory of ecosystem services may be the change of perspective about ecosystems that are no longer an inactive part of the economy, a market failure, but are now an active part of the economic system that makes a profit. This implies that poor ecosystems provide poor services, which in the end leads to a loss of economic wealth. Therefore, in this context the recovery of the grapevine on living trellises is not profitable in a purely capitalistic productive mindset, it is in an economic system that values all the ecosystem services that are capable to offer to humanity.

Contemporary prospects for the *Vite Maritata* in the urban landscape

The grapevine on living trellises historically had little or no relevance in the urban landscape and was instead characteristic of the rural one, as already described. However, the real innovation of *Vite Maritata* could be to propose it within the urban fabric. Contemporary cities, especially the larger ones, are subject to profound changes and restructuring. The difference between urban, rural, and natural landscape was once clear and instinctively recognizable. The urban space was delimited and separated from the surrounding territory, first by fortifications and more recently by infrastructures: railways and, subsequently, highways. Today, this boundary is becoming increasingly more and more permeable. It is because the urban fabric has spread so widely that it has become, in many territories, the matrix of the landscape itself through the phenomenon of continuous cities. Another factor is that because there is a need to break the continuity of the buildings and there's the collective feeling that "nature" is becoming scarcer and scarcer, even the artificial one of rural landscapes. The citizens ask to have the highest possible quality of life inside the cities, being aware that most of the world population lives nowadays in an urban or peri-urban context, being aware of the great continuity of the urbanized soil and that many kilometres will have to be covered before the landscape changes significantly towards a scenery perceived as more natural. There is no longer that compromise, present in the industrial cities of the past, in which even if the urban space was remarkably unhealthy, the possibility of being able to move, relatively quickly, in completely different and opposing landscapes made it acceptable to live there.

This need for quality of life is expressed not only with the great expansion of green and leisure areas within the urban fabric in recent years, which is unprecedented but also with the returning of family or individual-based food production. From the small plants of vegetables in vases to kitchen gardens, people are back to grow food for self-consumption or exchange with family and friends. This is also part of the larger scenario of the "zero kilometre" (zero-mile food) movement, a derivation of sustainable agriculture movement which of course is inserted in the larger people's call for sustainability.

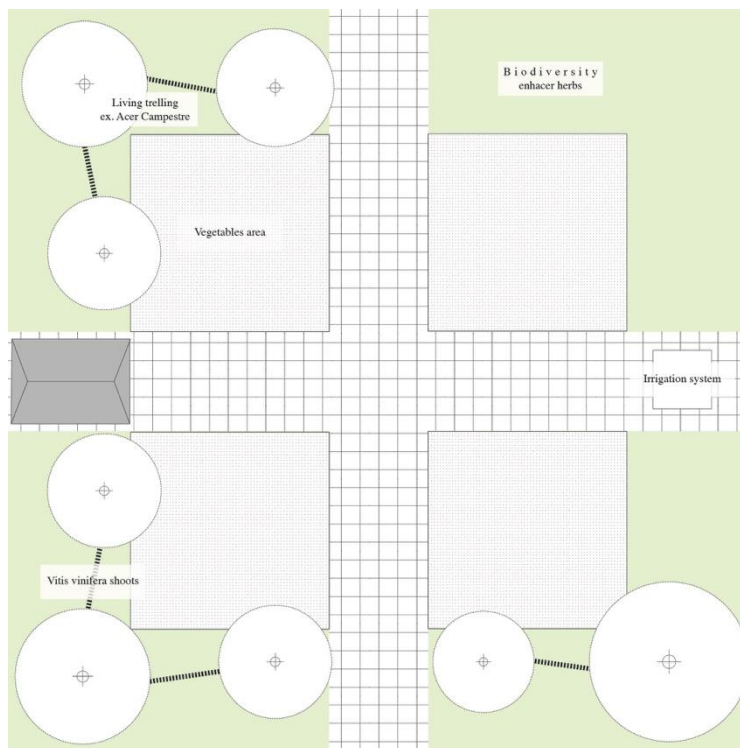


Figure 2: Sketch depicting the grapevine on living trellises’ role in an urban community garden, acting both as buffer and border for the garden. Elaboration by Riccardo Bigliardi.

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In this context, nothing prevents *Vite Maritata* from playing an appropriate role. From urban greenways and parks to an organized community or neighborhood-based kitchen gardens, the grapevine on living trellises can be the keystone in shaping the so-called edible landscape. Particularly interesting is the presence of living trellises, whose leaves can sequester atmospheric pollutants, helping to overcome the criticality of the accumulation of heavy metals in fruit and vegetables exposed to intense traffic, which is the main argument against urban gardens. (Sevik, Cetin, Ozel, Ozel, & Cetin, 2020).

Urban forestry projects like “ForestaMI” Reforestation Plan of the Metropolitan City of Milan are a testament to this trend and the need to perceive the land and the landscape in a more direct, physical way, but also how the political institutions are today actively involved, at least on paper, in developing these themes (Fabris, 2010).

Conclusions

The *Vite Maritata*, in the form of *piantata* or *alberata*¹, is a grapevine growing technique that has been present in the Italian and, to a lesser extent, European agricultural landscape for centuries, until the Twentieth century. Its success is due to the socio-economic realities of pre-industrial societies, whose peak was defined by sharecropping: the maintenance costs of the *Vite Maritata* were borne by the owner, while the product, that is the wine, was used to pay part of the rent. Grapes, therefore, represented a secondary crop, but no less important because it was the currency to pay the rent of the land.

This situation means that *Vite Maritata* and sharecropping very often coincided, creating together with many other crops, the landscape of promiscuous agriculture. In today's agriculture, crops are specialized, so that in the same unit of surface, that is the field, there are the same species or a few very similar species, such as in cornfields. This allows maximum efficiency for nutritional needs, tillage, and other parameters but involves a rapid impoverishment of the soil. This means that trees, shrubs, and herbaceous crops are distinctly divided and easily recognizable. But it was not the case in promiscuous agriculture. In the field, there could coexist arboreal and herbaceous crops as in the case of the *Vite Maritata*, but also olive groves and orchards were associated with other crops or with grazing.

The industrial revolution, combined with the development of the capitalist economy and agricultural mechanization, led, in the mid-twentieth century, to a fast and consistent decline of the grapevine on living trellises inserted in winemaking industry, so much so that now in many places where it once characterized the landscape, like Tuscany, it is only a memory, more and more faded as time pass. As an agronomic practice, the *Vite Maritata* does not replace the vineyards as we know them today, but it adds to a body of knowledge and practices, developed over millennia, which is agriculture. A science where little or nothing becomes obsolete, just think of how organic farming relies on organic fertilization and crop rotation, practices that have existed for centuries, if not millennia. It will then be up to the farmer to choose what is appropriate or not to do on their farm and how much to draw inspiration from the past, based on their priorities.

The fact that the *Vite Maritata* is an extensive crop, opposed to intensive vineyards, has important consequences for the landscape. Across the globe, the intensification of crops has resulted in a general simplification and degradation of agricultural landscapes. Their ability to provide ecosystem services has declined sharply and action is needed to reverse this trend. There is a need to understand which design elements can have the greatest impact on the regeneration of the landscape and which are most efficient in this. (Landis, 2019)

The *Vite Maritata* can be one of these elements, thanks to its value in providing ecosystem services, that makes it economically viable. The *Vite Maritata* is ultimately a community, a biocenosis, which can take different forms and shapes in the landscape while remaining coherent in its components and the emerging properties. The ability to better withstand the consequences of climate change or to be a habitat for useful species, such as antagonist mites of grapevine parasites, derives entirely from the biodiversity contained in the community. The emerging properties cannot be attributed to a single individual plant, animal, or microorganism, but it is the complex relationships between individuals of different species that determine these properties. The *Vite Maritata* is a catalysis of the creation and maintenance of a resilient landscape, in which the patches can support human, animal, and plant life equally with ecosystem services emanation.

¹ *Alberata* is a disposition of the grapevine on living trellises that is more like an orchard, so in the landscape is more a polygon opposed to *piantata* which is more like a polyline.

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