

Our wines.

The origins of the cultivated grapevines.

Until a few years ago, wine historians believed that winemaking techniques and grapevine domestication emerged somewhere in the foothills of the Caucasus mountains and the Middle East, suggesting a single centre where wild grapes were domesticated.

From a historic point of view, the Neolithic seems to be the most fruitful period for the birth of agriculture. In fact, this era has produced the earliest evidence of plant domestication of species that have subsequently become fundamental for human nutrition. Archaeological excavations and the associated paleobotanical findings confirm that, starting from the Neolithic period, Man was greatly interested and fascinated by grapevines.

The history of grapevine domestication is, however, significantly different to the events that led to the origin of most other plants of agronomic interest. A peculiar aspect that characterizes the grapevine is its close association with the evolution of the human species, making its evolution a particularly interesting subject for research; there are many points of convergence and similarities between the two paths that led to the definition of human races on one hand and the numerous varieties of grapes on the other.

Viticulture has a long tradition in Central and Southern Europe. As early as 2300 BC, the Neolithic population of the Greek islands adopted farming techniques acquired from more oriental populations, who in turn had developed viticultural and winemaking techniques as early as 6000 BC. From 800 BC, Greeks and Phoenicians, during their colonization of the Mediterranean basin, spread viticultural practices further westwards in Europe. Similarly, the Roman Empire contributed to the spread of viticulture northwards, particularly to the colonized areas of France, Germany and Austria.

Given all this, it seems justified to consider that viticulture was born in one area and then spread to other regions through human migrations.

However, the abundance of wild vine populations in almost all wine-growing countries suggests that a good percentage of grape varieties grown in Europe have originated from the domestication of local wild vines and not through the migration of vines that had originated elsewhere. It is extremely difficult to tell, though, what proportion of the grape varieties grown in a certain region are native, i.e. derived from the local wild vines. This is the case, for example, of several varieties traditionally grown in northeast France that are considered to have been introduced into these regions during the third century by the Roman Emperor Probus whose Albanian origins made him a connoisseur of eastern Adriatic grape varieties. The varieties traditionally grown in this area were among the first to be put through DNA molecular analysis.

As part of these studies Pinot Noir and Gouais Blanc turned out to be the parents of Chardonnay. Gouais Blanc is not native to the area being analysed. The Gouais Blanc seems to be closely related, if not synonymous, to the variety Heunish, once widespread in Eastern Europe and probably of Croatian origin. This hypothesis is based on historical documents in which the aforementioned Emperor Probus is said to have given the Gauls a grape variety from his homeland. It is probable that the variety referred to is the Gouais Blanc.

Within the same research project, further relationships between French grape varieties were investigated. This led to the conclusion that 16 of the varieties traditionally grown in northeastern France (among them: Gamay Noir, Aligote, Auxerrois and Melon) are derived from the cross of the same pair of parents: Gouais Blanc and Pinot Noir.

Recent research carried out by Attilio Scienza and Serena Imazio, at the University of Milan, showed that genetic variability increases moving from east to the west for varieties traditionally cultivated in European regions. This finding confirms the hypothesis that there is the likelihood that several domestication events occurred in different times and places during the long evolutionary history of viticulture.

The increase of genetic variability indicates an increase of grapevine germplasm that could only have been caused by the participation of new individuals deriving from the European natural flora. One of the most interesting areas from this point of view is the Iberian Peninsula, where some of the varieties analysed display genetic characteristics that are quite different to the

rest of the European grape varieties. Furthermore, it was found that these cultivated varieties have genetic traits shared with specimens of local wild vine populations indicating that the former are probably originated from the latter through direct domestication.

For these reasons it would be advisable that local varieties continue to be farmed in their traditional areas of origin.

In the case of Teroldego, research led by Serena Imazio and Attilio Scienza on plastid and nuclear DNA has shown that the genetic structure of this variety is frequent in Italian varieties and completely absent in grape varieties considered to have an oriental origin. This suggests that Teroldego probably results from crossings between specimens with foreign origin and specimens found in the natural local flora. A situation that is somehow similar to that already mentioned for Chardonnay. Teroldego has also been shown to have features that are typical for the varieties traditionally grown in northeast Italy, suggesting that direct domestication of local wild plants could have taken place without the participation of germplasm from other areas.

The close relationship between Teroldego, Lagrein, Marzemino and especially Syrah opens up new interesting prospects. Recent research based on molecular markers and on the analysis of key DNA sequences have allowed us to identify the Mondeuse as the mother of Syrah. Furthermore, the former has also been found to be very close from a genetic point of view to the Refosco from Friuli. Lagrein, Teroldego's father, is probably derived from Pinot Noir; Pinot Noir represents a major link with the Syrah, as it is also considered to be the father of Dureza, which has been identified as Syrah's father based on molecular evidence.

This situation makes the definition and characterization of Teroldego's ancestors and parents particularly difficult and complicated, but also very interesting and fascinating.

Teroldego's pedigree probably includes varieties with different places of origin. Almost certainly there are varieties from Eastern Europe if not from the Middle or Near East as well. This is also the case for other important varieties, but in this case the role of the varieties with a Western origin seems to be significant especially for Syrah and Pinot Noir. The latter being a more or less distant relative to many other European grape varieties, proof of a strong east to west varietal migration of which Teroldego could be one of

the most interesting products.

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