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*Univerzitetni center
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Gorte vinske trte v tradicionalnih vinogradih na slovenskem Štajerskem

Grapevine Varieties in Traditional Vineyards of Slovenian Styria

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Predgovor



Takšna sreča, da imate v rokah tako bogato knjigo! Delo »Sorte vinske trte v tradicionalnih vinogradih slovenske Štajerske« združuje pomembno znanje o sortah grozdja te regije in jo ponosno uvršča v stoletno tradicijo ampelografskih monografij.

Jedro tega dela o ampelografiji se seveda osredotoča na opis (»grafijo«) vseh trt (ampelov«) slovenske Štajerske, pri čemer jih skrbno kategorizira glede na stopnjo zgodovinske razširjenosti ali redkosti, vse do dragocenih avtohtonih divjih trt. V zvezi s tem je treba opozoriti, da so bile nekatere tukaj predstavljene sorte ponovno odkrite v okviru izvirnega raziskovanja in potrpežljivega dela, a do sedaj niso bile še nikoli nikjer navedene ali opisane. Vsak opis ne združuje le klasične bibliografije, temveč tudi avtorjeva izvirna opažanja in ikonografije ter najnovejše genetsko delo. Tisti, ki so že napisali takšna dela o sortah vinske trte, vedo, koliko časa in strokovnega znanja zahteva takšna naloga. Njen rezultat pa je seveda zelo koristen za raznoliko bralstvo, ki zajema predvsem vinogradnike, trsničarje, enologe, vinogradniške tehnike, žlahtnitelje, raziskovalce, zgodovinarje in amaterje!

Vendar pa to delo ponuja tudi več uvodnih poglavij, ki nam omogočajo, da opisno delo natančno umestimo v botanični, zgodovinski, izobraževalni in bibliografski kontekst vinorodne slovenske Štajerske ter ga primerjamo z deli iz sosednjih regij. Branje teh poglavij me je veliko naučilo in prepričan sem, da se bodo drugi strinjali z mano. Brez dvoma bo to bogato, posodobljeno delo postalo referenčno besedilo za vse, ki jih zanimajo slovenske sorte grozdja in vinogradništvo.

Iskreno čestitam Stanku Vršiču za to pomembno delo in se mu zahvaljujem, da mi je izkazal čast, da vam ga s temi uvodnimi besedami predstavim.

Prijetno branje!

Thierry LACOMBE
Institut Agro Montpellier – Francija

Preface



How fortunate to have such a rich book in your hands! "Grapevine varieties in the traditional vineyards of Slovenian Styria" brings together a significant body of knowledge on the grape varieties of this region, placing it proudly in the centuries-long tradition of ampelographic monographs.

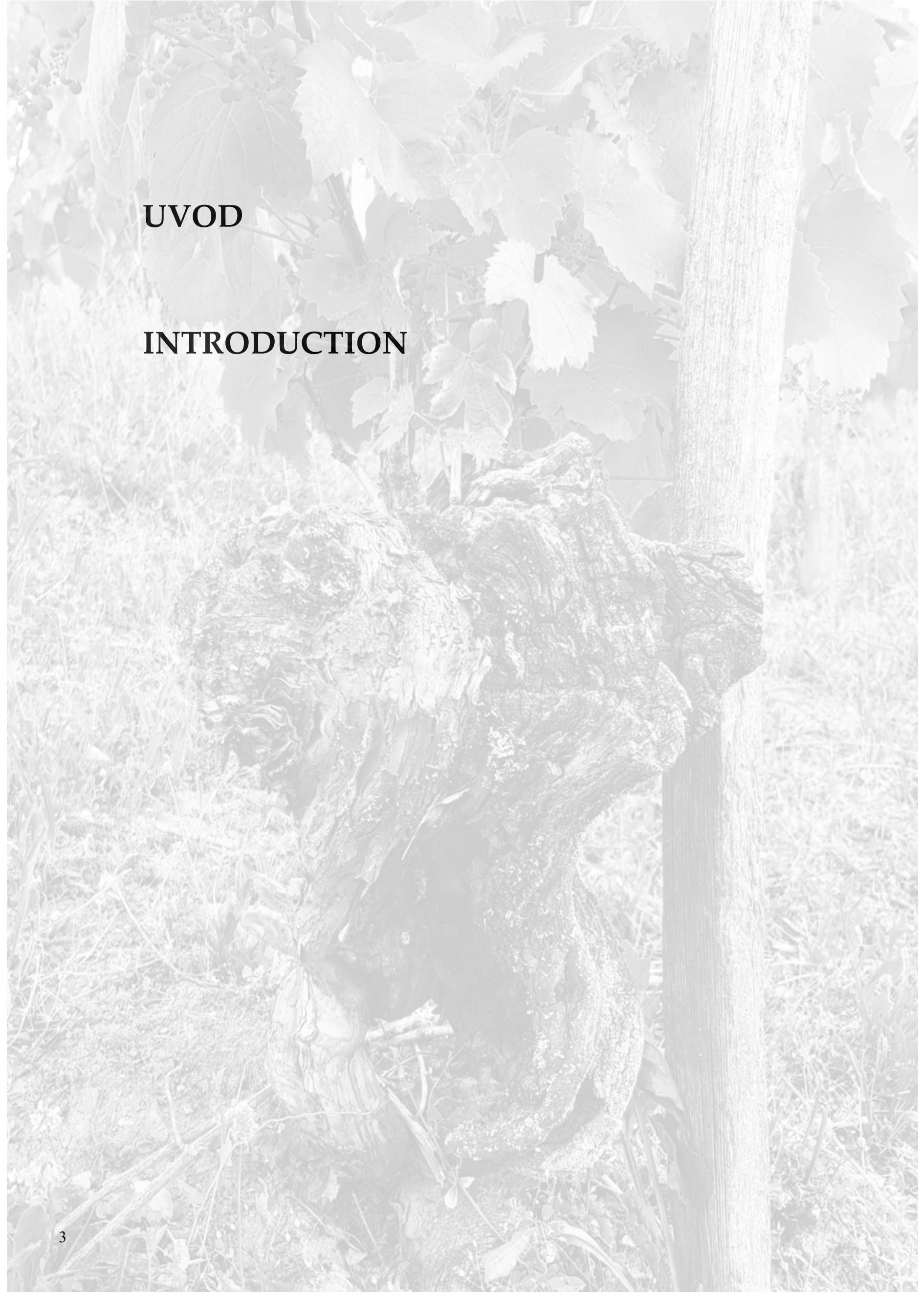
The heart of this work on ampelography naturally focuses on describing ("graphy") all the vines ("ampelos") of Slovenian Styria, carefully categorizing them according to their degree of historical diffusion or rarity, down to the precious native wild vines. In this regard, it should be noted that some of the varieties presented here, rediscovered after the patient work of original prospecting, have never been listed or described before. Each description synthesizes not only the classic bibliography but also the author's original observations and iconographies as well as the most up-to-date genetic work. Those who have already written such works on grapevine varieties know the time and expertise that such an exercise requires, the result of which is of great use to a varied readership that includes winegrowers, nurserymen, oenologists, viticultural technicians, hybridizers, researchers, historians, and amateurs!

This book, however, also offers several introductory chapters that allow us to precisely situate the descriptive work in its botanical, historical, educational and bibliographical context of wine-growing Slovenian Styria and view it in relation to neighboring regions. Reading these chapters has taught me a great deal, and I have no doubt that others will agree with me that this rich, updated work will become a reference text for all those interested in Slovenian grape varieties and viticulture.

For all these reasons, I extend my sincere congratulations to Stanko Vršič for this important work, and I thank him for having given me the honor of presenting it to you.

Happy reading!

Thierry LACOMBE
Institut Agro Montpellier – France



UVOD

INTRODUCTION



Izvor vinske trte



vetovno vinogradništvo temelji na sortah udomačene vinske trte vrste *Vitis vinifera* L., ki se je razvila na področju Evrope in zahodne Azije ter je gospodarsko najpomembnejša vrsta rodu *Vitis*. Po pojavu trtne uši (*Daktulosphaira vitifoliae* Fitch) v Evropi so za vzgojo podlag in tolerantnih sort na boleznih, kot sta oidij (*Erysiphe necator* Schwein.) in peronospora (*Plasmopara viticola* (Berk. & M. A. Curtis) Berl. & De Toni), postale pomembne tudi nekatere druge vrste iz tega rodu. Najpogostejše so bile uporabljene vrste *V. riparia* Michx., *V. berlandieri* Planc., *V. rupestris* Scheele, *V. cinerea* Engelman in *V. champini* Planch. Slednji dve sta pokazali zelo dobro toleranco na nematode. Azijske vrste rodu *Vitis*, kot sta na primer *Vitis amurensis* Rupr. in *Vitis davidii* (Rom. Caill.) Foex, se kot donorji genov uporabljajo pri žlahtnjenju novih sort, saj poleg tolerance na boleznih in mraz pri teh vrstah ni prisoten vonj hibridov (foxy flavor), kot je to značilno za nekatere ameriške vrste.

V današnjih vinogradih se pretežno gojijo udomačene vinske trte *Vitis vinifera* L. subsp. *sativa* (de Candolle) Hegi, ki so se razvile v procesu domestikacije iz divjega prednika *V. vinifera* subsp. *sylvestris* (Gmel.) Hegi (McGovern 2003). Višja gospodarska vrednost plemenite trte in intenzivno gospodarjenje z gozdovi sta povzročila postopno zmanjševanje življenjskega prostora divje trte. Izolirane populacije divje trte so se ohranile na nekaterih rastiščih v Evropi, v gozdovih ob večjih rekah in na kraških tleh. Na nekaterih območjih je divja trta popolnoma izginila, dolgo pa je prevladovalo mnenje, da v Sloveniji ni več njenih rastišč (Tolar Korenčič in sod. 2008). Nekateri viri so nakazovali, da so bili posamezni primerki divjih trt najdeni na obrežju reke Drave pri Mariboru in v spodnjem toku reke Save, vendar pri monitoringu teh lokacij nismo našli nobenih primerkov. Izolirane populacije divje trte smo našli v gozdovih na levem bregu zgornjega toka reke Save (od Rašice do Hrastnika) in ob reki Dragonji, za kar nam je infor-

macije posredoval znani slovenski mikolog Andrej Piltaver. Identiteto teh divjih trt so potrdile genetske analize (Perko in sod. 2024). Divja trta ni primerna za gojenje, ker je dvodomna rastlina (moške in ženske rastline) in ima zelo majhne grozde ter jagode, vendar je zelo pomembna kot genski vir za adaptacijo, ki se lahko z načrtovanimi križanji in selekcijo prenese na žlahtno trto. Vsaka najdba samoniklih in spontanah populacij divje trte, ki so v naravi preživele brez človekovega posredovanja, ima velik pomen za botanično dediščino in znanost ter je lahko dragocen genski vir za odpornost proti biotskim in abiotskim dejavnikom.

Proces domestikacije trte se je začel v Zakavkazju in se pozneje nadaljeval s spontanimi križanji kultiviranih in divjih trt (This in sod. 2006). Domneva se, da je do udomačitve vinske trte prišlo pred 11.000 leti v zahodni Aziji in na Kavkazu za vzgojo namiznih in vinskih sort grozdja. Ni povsem jasno, kako je neolitsko prebivalstvo začelo gojiti te divje populacije vinske trte, vendar to štejemo za prvo stopnjo udomačitve vinske trte, imenovano »embrionalno vinogradništvo« (Dong in sod. 2023). Za natančnejši vpogled v potek domestikacije se danes poleg arheoloških in paleobotaničnih dokazov uporabljajo tudi rezultati molekularno-genetskih raziskav o sortah vinske trte in preostalih redkih populacijah *V. sylvestris*. Te sorte naj bi se iz zahodne Azije širile po človeških selitvenih poteh, po sledih glavnih civilizacij (Kartažanov, Etruščanov, Feničanov, Grkov in Rimljanov) (McGovern 2003), se križale s starodavnimi divjimi zahodnimi ekotipi (introgresija) in se do poznega neolitika razširile proti Sredozemlju (Dong in sod. 2023). To potrjujejo genetske ugotovitve, ki povezujejo divje populacije z zarodno plazmo gojenih vinskih trt na Siciliji (De Michele in sod. 2019).

Sodobne vinogradniške raziskave so potrdile gojenje vinske trte na južnem Kavkazu z odkritjem ene najzgodnejših arheoloških kultur (6000–4000 pr. n. št.) na območju južne

Origin of the grapevine



Worldwide viticulture is based on varieties of the domesticated grapevine (*Vitis vinifera* L.), which have developed over the centuries in Europe and the Middle East and which are the economically most important species of the genus *Vitis*. After the appearance of phylloxera (*Daktulosphaira vitifoliae* Fitch) in Europe, some other species of this genus rose to importance in the breeding of rootstocks and fruiting varieties tolerant to diseases such as powdery mildew (*Erysiphe necator* Schwein.) and downy mildew (*Plasmopara viticola* (Berk. & M. A. Curtis) Berl. & De Toni). The most frequently used species have been *V. riparia* Michx., *V. berlandieri* Planc. and *V. rupestris* Scheele, as well as *V. cinerea* Engelman and *V. champini* Planch. The latter two also showed very good tolerance to nematodes. Asian species of the genus *Vitis*, such as *Vitis amurensis* Rupr. and *Vitis davidii* (Rom.Caill.) Foex., are used as gene donors in the breeding of new varieties, as these species are not only disease-tolerant but also are free from the smell of hybrids (the “foxy” flavour), as is the case with some American species.

In today's vineyards, the domesticated grape varieties of *Vitis vinifera* L. subsp. *sativa* (de Candolle) Hegi are predominantly cultivated; these have developed in the course of domestication from their wild ancestor *V. vinifera* subsp. *sylvestris* (Gmel.) Hegi (McGovern 2003). The higher economic value of the noble vine and intensive forest management have led to a gradual reduction in the habitat of the wild vine. Isolated wild-vine populations have survived in some places in Europe, in forests along major rivers and on karst soils. In some areas, however, the wild grapevine has disappeared completely, and until recently it was believed that there were no wild grapevine sites left in Slovenia at all (Tolar Korenčič et al. 2008). Some sources in the literature suggest that individual specimens of wild grapevine have been found on the banks of the Drava river near Maribor and on the lower reaches of

the Sava – but no specimens of wild grapevine were found during the monitoring of these sites. Isolated populations of wild grapevine have been found in the forests on the left bank of the upper course of the Sava river (from Rašica to Hrastnik) and along the Dragonja river, about which the well-known Slovenian mycologist Andrej Piltaver has provided information. The identity of these wild vines was confirmed by genetic analyses (Perko et al. 2024). Wild vines are not suitable for cultivation because they are dioecious (i.e., they have both male and female plants) and have very small clusters and berries, but they are very important as a source of adaptation genes that can be transferred to cultivated vines through planned crosses and selection. Any discovery of wild and spontaneous populations of wild grapevines that have survived in nature without human intervention is of great importance to botanic heritage and science, as they can be a valuable source of genes for resistance to biotic and abiotic factors.

The process of domestication of the grapevine began in Transcaucasia and continued with spontaneous crosses between cultivated and wild vines (This et al. 2006). It is believed that grapevine domestication was taking place 11,000 years ago in Western Asia and the Caucasus to cultivate table grape and wine grape varieties. It is not entirely clear how Neolithic populations accomplished the cultivation of these wild grapevine populations, but it can rightfully be considered the first stage of grapevine domestication, referred to as “embryonic viticulture” (Dong et al. 2023). In addition to the archaeological and paleobotanical evidence, molecular genetic studies of grapevine varieties and the remaining rare populations of *V. sylvestris* are now being used to further clarify the domestication process. It is assumed that these grape varieties spread from Western Asia along human migration routes in the course of the great civilizations (Carthaginian, Etruscan, Phoenician, Greek and Roman) (McGovern 2003), interbred with

Gruzije, severne Armenije in zahodnega Azerbajdžana (Maghradze in sod. 2016). Trenutno najstarejši dokazi o pridelavi vina v regiji segajo v obdobje lončarskega neolitika in izvirajo iz dveh različnih območij: južnega Kavkaza (različna najdišča, tako imenovane kulture Shulaveri-Shomu) ter gorovja Zagros v severozahodnem Iranu (Haji Firuz Tepe). Do danes znani najzgodnejši absolutni datumi (okoli 6000–5800 pr. n. št.) izvirajo iz Gruzije (McGovern 2017), vendar lahko prihodnji podatki to sliko spremenijo, saj je verjetno, da je bilo vino takrat že poznano na širšem območju. Dokončne dokaze so zagotovile kemične analize starodavnih organskih spojin, absorbiranih v lončenih posodah (biomolekularni arheološki dokazi), drobcev vinske kisline in cvetnega prahu *Vitis vinifera* (McGovern 2017, Rova 2024). Jasni paleobotanični dokazi za udomačene vinske sorte pa še vedno manjkajo, saj so radiometrična datiranja najdenih pečk pokazala, da so iz novejšega obdobja. Prav tako je morfologija posameznih pečk še vedno negotova (McGovern 2017, Bouby 2020). To dopušča možnost, da so v tem obdobju vino pridelovali iz grozdja divje trte, gojenje divje vinske trte pa lahko štejemo za enega prvih korakov v proce-

su udomačitve (Chkhartishvili in Maghradze 2012, Bouby 2020, Maghradze in sod. 2021). To izkoriščanje divje trte predstavlja trdno osnovo za začetna obdobja pridelave grozdja, vendar je prisotnost semen divjega grozdja z gojenim morfortipom v kasnejših zgodovinskih obdobjih mogoče pripisati tudi drugim razlogom. Eden od verjetnih razlogov, zakaj so divje grozdje uporabljali za pridelavo vina skupaj z udomačenimi sortami, je velika razpoložljivost divjega grozdja v gozdovih in na divjem rastlinju Evrope in Male Azije do sredine 19. stoletja. Nenazadnje so divjo vinsko trto nabirali in uporabljali tudi kot zdravilno rastlino (Ocete in sod. 2020, Maghradze in sod. 2021).

Po razvoju tradicije pridelave vina na omejenem območju se je pridelava vina v kasnejših obdobjih v tej regiji trdno uveljavila. To je verjetno posledica posebej ugodnih podnebnih razmer, ki jih je ustvarilo milo podnebje tako imenovanega »holocenskega podnebnega optimuma«, ko je bilo gojenje vinske trte mogoče na višjih nadmorskih višinah kot danes (Maghradze in sod. 2016). Neposredne dokaze o pridelavi vina na tem območju dopolnjuje izjemno odkritje iz Armenije, natančneje iz



Instalacija posod za vino iz 4000 let p. n. š. v Areni-1 v ptičji jami (Bird cave) v Armeniji.

(Foto: Stanko Vršič 2017)

Installation of a wine vessels from the period 4000 BC in Arena-1 in the Bird Cave in Armenia.

(Photo: Stanko Vršič 2017)

ancient wild western ecotypes (introgression) and then spread throughout the Mediterranean region up until the late Neolithic (Dong et al. 2023). This is confirmed by the genetic findings linking wild populations with the germplasm of cultivated vines in Sicily (De Michele et al. 2019).

Modern viticultural research has confirmed the cultivation of vines in the southern Caucasus with the archaeological discovery of one of the earliest cultures (6,000-4,000 BC) in the territory of southern Georgia, northern Armenia and western Azerbaijan (Maghradze et al. 2016). Currently, the oldest evidence of wine production in the region dates back to the Pottery Neolithic and comes from two different areas: the southern Caucasus (the various sites of the so-called Shulaveri-Shomu culture) and the Zagros Mountains in northwestern Iran (Haji Firuz Tepe). So far, the earliest absolute dates (ca. 6000-5800 BC) come from Georgia (McGovern 2017), but the introduction of new dates in the future could change our understanding, as it is likely that wine was already known over a relatively large area by that time. Definitive evidence is provided by chemical analyses of ancient organic compounds absorbed into ceramic vessels (biomolecular archaeological evidence), tartaric acid fragments and *Vitis vinifera* pollen (McGovern 2017, Rova 2024). However, clear palaeobotanical evidence for a domesticated wine variety is still lacking, as radiometric dating of the discovered seeds has shown that they date to a more recent period, and the morphology of the individual seeds is still unclear (McGovern 2017, Bouby 2020). This raises the possibility that wine was made from wild grapes during this period and thus, that the cultivation of wild grapes might be considered one of the first steps in the process of domestication (Chkhartishvili and Maghradze 2012, Bouby 2020, Maghradze et al. 2021). This use provides a solid basis for the early stages of grape cultivation, but the presence of both wild grape seeds and the cultivated morphotype in later historical periods can be attributed to other reasons. One of the probable reasons for the use of wild grapes for wine-making alongside their domestic relatives is the high availability of wild grapes in the for-

ests and wild areas of Europe and Asia Minor until the mid-19th century. Last but not least is the fact that wild grapevines were harvested for medicinal use (Ocete et al. 2020, Maghradze et al. 2021).

After the early emergence of the viticultural tradition, it went on to become established across the region in later periods. This is probably due to the favourable, mild climatic conditions of the "Holocene Climatic Optimum", when viticulture was possible at higher altitudes than today (Maghradze et al. 2016). Direct evidence of viticulture in this area is corroborated by an extraordinary find from Armenia, more precisely from Areni-1, one of the cave complexes in the province of Vayots Dzor. The flat clay vessels for pressing grapes and storing wine in the so-called Bird Cave show that people were already making wine at the end of the 5th millennium BC. Remains of grapes, grape seeds and vessels typically used to store wine, as well as chemical analyses of vessel contents (anthocyanins, tartaric acid), indicate that wine was being produced at this area as early as 4000 BC (Barnard et al. 2011). The fermentation of grape juice in large underground vessels, possibly one of the first examples of such practice in this region, was common throughout the Near East and the Mediterranean in the first millennium BC. In Georgia, this process of wine production in "qvevri" has been preserved in its original form to this day. There is a whole series of similar pieces of evidence for the cultivation (domestication) of vines in the Caucasus and Western Asia, including Turkey and Azerbaijan (Candar et al. 2021). In the third millennium BC, wine was known and appreciated throughout the Middle East and the eastern Mediterranean. Evidence for the production, use and symbolic value of wine accumulates from the late Bronze Age onwards, reaching its peak in the first millennium BC, when it became truly ubiquitous.

Slovenia is considered a traditional wine-growing country and this is confirmed by numerous cultural testimonies and historical records of winegrowers' gatherings. Although the prevailing opinion is that the Romans brought the vine to present-day Slovenia around 2000 years ago, paleobotanical finds indicate that

jame Areni-1, ki spada v kompleks jam v provinci Vayots Dzor. Instalacije, sestavljene iz plitvih glinenih posod za stiskanje grozdja in shranjevanje vina, v t. i. ptičji jami (Bird cave) kažejo, da so ljudje pridelovali vino že ob koncu 5. tisočletja pr. n. št. Ostanke grozdja, grozdnih pečk in posode, značilne za shranjevanje vina, skupaj s kemijskimi analizami vsebine v posodah (antocianov, vinskega kamna) pričajo o proizvodnji vina na tem območju že 4000 let pr. n. št. (Barnard in sod. 2011). Fermentacija grozdnega soka v velikih podzemnih posodah, kar je morda celo eden prvih primerov na tem območju, je bila sicer običajna praksa šele v prvem tisočletju pr. n. št. po vsem Bližnjem vzhodu in Sredozemlju. V Gruziji se je ta postopek pridelave vina v t. i. qvevrih ohranil v izvorni obliki vse do danes. Podobnih dokazov o gojenju vinske trte (domestikaciji) na območju Kavkaza in zahodne Azije je še več, na primer tudi v Turčiji in Azerbajdžanu (Candar in sod. 2021). Do tretjega tisočletja pr. n. št. je bilo vino znano in cenjeno po celotnem Bližnjem vzhodu in vzhodnem Sredozemlju. Vse več je dokazov o pridelavi, uporabi in simbolni vrednosti vina zlasti od pozne bronaste dobe dalje. Svoj vrhunec pa je gojenje vinske trte doseglo v prvem tisočletju pr. n. št., ko je vino postalo resnično vseprisotno.

Slovenija velja za tradicionalno vinogradniško deželo, kar potrjujejo številni kulturni dokazi in zgodovinski zapisi strokovnih vinogradniških srečanj. Čeprav prevladuje mnenje, da so na današnje območje Slovenije vinsko trto prinesli Rimljani pred približno 2000 leti, paleobotanični dokazi nakazujejo, da je bila trta na tem območju prisotna že v času koliščarjev na robu Ljubljanskega barja (Velušček 2002). Leta 2002 so južno od Ljubljane odkrili najstarejše leseno kolo na svetu, ki so mu z radiokarbonskim datiranjem določili starost 5150 let (Velušček 2002). Na območju Ljubljanskega barja so našli tudi semena vinske trte, ki so predstavljala približno četrtno vseh najdenih semen in segajo v 37. ali 36. stoletje pr. n. št. (Tolar Korenčič in sod. 2008). Iz tako starih vzorcev ni bilo mogoče pridobiti dovolj kakovostne DNK za izvedbo genskih analiz, s katerimi bi nedvoumno potrdili, ali gre za semena divje trte. Čeprav je bila večina pečk podobna pečkam divje trte, z biometričnimi metodami

tega ni bilo mogoče zanesljivo potrditi, saj je variabilnost pečk prevelika. Zato vprašanje, ali je bilo gojenje vinske trte v Sloveniji prisotno že v bronasti dobi, še vedno ostaja odprto (Tolar Korenčič in sod. 2008, Tolar in sod. 2010).

Začetek prave vinogradniške pridelave grozdja najverjetneje sega v čas, ko se je človek stalno naselil na določenih območjih, kjer je lahko organiziral gojenje večletnih kultur, kot je vinska trta. Čeprav se Bližnji vzhod šteje za primarno območje domestikacije vinske trte, obstaja velika verjetnost, da se je ta proces odvijal ločeno tudi na drugih območjih, kjer je rasla divja trta. Marsikje v Evropi sta bila trta in vino poznana že pred prihodom Grkov in Rimljanov (v Sloveniji v času Kelto). Rimljani so posodobili pridelavo vina, jo razširili na druga območja Evrope in prvi začeli ločevati vino glede na sorto vinske trte in geografsko poreklo. Predvideva se, da je 'Modri pinot' ena najstarejših sort vinske trte, ki so jo morda začeli gojiti in vinificirati v 1. stoletju v Galiji. Nekateri so postavili hipotezo, da so ga poznali stari Rimljani pod imenom '*Helvenacia Minor*' (Vršič 2008), vendar za to ni formalnih dokazov. Opise številnih sort najdemo že v delih starih grških in rimskih pisateljev.

Danes se po vsem svetu goji veliko sort, ki pripadajo vrsti *Vitis vinifera* subsp. *sativa*. Ugotovljeno je bilo, da se te sorte po genetski strukturi jasno razlikujejo od divjih populacij *Vitis vinifera* subsp. *sylvestris* (This in sod. 2006). Raznolikost današnjih vzhodnih sort je večja kot raznolikost zahodnih, kar kaže, da so vzhodne sorte prihajale v Evropo. Sorte, ki so nastale v primarnem centru domestikacije, so se širile proti zahodu in njihov vpliv je viden tudi v genotipu današnjih sort. Sorte, ki se danes gojijo, so namreč bolj sorodne vzhodnim tipom *V. sylvestris* kot tistim z zahoda. Zahodnoevropske sorte pa so bolj sorodne zahodnemu tipu *sylvestris*ov. To nakazuje, da je poleg introdukcije sort z vzhoda na razvoj sortimenta vplivala tudi introgresija iz lokalnih divjih populacij (Myles in sod. 2011).

Sorte so nastajale tudi z medsebojnim spontanym križanjem, vendar je na razvoj sortimenta znatno vplival tudi človek, ki je odbiral (včasih tudi križal) in naprej razmnoževal genotipe, ustrezne podnebnim razmeram in last-

the vine was already present in this area at the time of the pile-dwellers on the edge of the Ljubljansko barje (Velušček 2002). In 2002, the oldest wooden wheel in the world was discovered south of Ljubljana; its age, determined by radiocarbon dating, was said to be 5150 years (Velušček 2002). Vine seeds have also been found on the Ljubljansko barje, which make up about a quarter of all the seeds found and which date from the 37th or 36th century BC (Tolar Korenčič et al. 2008). It was not possible to obtain sufficient quality DNA from these old samples to carry out genetic analyses and thus clearly confirm that they were seeds from wild vines. Although most of the seeds certainly resembled those of wild vines, this could not be confirmed with sufficient reliability even using biometric methods, because the variability of the seeds was too great. Therefore, the question of viticulture in the Bronze Age in our country remains open (Tolar Korenčič et al. 2008, Tolar et al. 2010).

However, the beginnings of true viticulture most likely date back to the time when people settled permanently in certain places and were able to organize the cultivation of perennial crops such as grapes. Although the Middle East is the first place where grapes were do-

mesticated, it is very likely that this process also took place independently in other areas where there was a supply of wild grapes. In many places in Europe, grapes and wine were already known before the arrival of the Greeks and Romans (in Slovenia, at the time of the Celts). The Romans modernized wine production, expanded it to other areas in Europe, and were the first to designate wine according to grape variety and geographical origin. 'Pinot Noir' is considered one of the oldest grape varieties, and it was possibly already being cultivated and made into wine in Gaul in the 1st century AD. Some have put forward the hypothesis that it was known to the ancient Romans under the name '*Helvenacia Minor*' (Vršič 2008), but we have no formal proof of this. Descriptions of numerous varieties can be found in the works of ancient Greek and Roman writers.

Today, many varieties of the species *Vitis vinifera* subsp. *sativa* are cultivated worldwide. It has been found that these varieties differ significantly in their genetic structure from the wild populations of *Vitis vinifera* subsp. *sylvestris* (This et al. 2006). The diversity of the eastern varieties is greater than that of the western varieties, indicating that these varieties originated in the east. The varieties originating from the primary centre of domestication spread westward, and their influence is visible in the genotype of today's varieties. The cultivars grown today are more closely related to the eastern types of *V. sylvestris* than to those from the west, while the western European cultivars are more closely related to the western types of *sylvestris*. This suggests that the evolution of the assortment was influenced by introgression from local wild populations in addition to the introduction of cultivars from the east (Myles et al. 2011).

Some varieties arose through spontaneous interbreeding, but the evolution of assortment was also significantly influenced by humans, who selected (sometimes crossed) and further propagated genotypes that suited climatic conditions and their own needs. In this way, many varieties have emerged that are tied predominantly to the areas in which they originated ("autochthonous" varieties). Research has shown that there are also areas in Slovenia



Najstarejše pečke grozdja (*Vitis vinifera* ssp. L.) v poznoneolitskem (bakrenodobnem) koliščarskem naselju Hočevarica na Ljubljanskem barju; 37. in 36. stol. p. n. š. (Tolar-Korenčič in sod. 2008)

The oldest grape seeds (*Vitis vinifera* ssp. L.) in the Late Neolithic (Copper Age) pile-dwelling settlement of Hočevarica in the Ljubljansko barje; 37th and 36th centuries BC. (Tolar-Korenčič et al. 2008)

SORTE VINSKE TRTE V TRADICIONALNIH VINOGRADIH NA SLOVENSKEM ŠTAJERSKEM

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To delo o ampelografiji se osredotoča na opis ("grafijo") vseh trt ("ampelov") na slovenski Štajerski, pri čemer jih skrbno kategorizira glede na stopnjo zgodovinske razširjenosti ali redkosti, vključno z dragocenimi avtohtonimi divjimi trtami. Rezultat je zelo uporaben za raznoliko bralstvo, med katere sodijo vinogradniki, študenti, trsničarji, enologi, vinogradniški tehniki, žlahtnitelji, raziskovalci, zgodovinarji in amaterji. Med letoma 2019 in 2024 so bile v starih vinogradih in naravnih habitatih izvedene obsežne terenske raziskave. Genetske analize so identificirale 69 različnih genotipov, vključno z zgodovinskimi sortami in prej neznanimi avtohtonimi genotipi. Slovenska populacija divje trte je najtesneje sorodna balkanski in srednjeevropski skupini *sylvestris*. Poleg tega je bila v Univerzitetnem centru za vinogradništvo in vinarstvo Meranovo, Fakultete za kmetijstvo in biosistemske vede, Univerze v Mariboru, vzpostavljena varnostna zbirka zgodovinskih sort in akcesij divje trte.

Ključne besede: vinska trta, ohranjanje genskih virov, ampelografija, stare sorte, divja trta

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GRAPEVINE VARIETIES IN TRADITIONAL VINEYARDS OF SLOVENIAN STYRIA

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The heart of this work on ampelography naturally focuses on describing (“graphy”) all the vines (“ampelos”) of Slovenian Styria, carefully categorising them by their degree of historical diffusion or rarity, including valuable native wild vines. The result is highly useful to a diverse readership, including winegrowers, students, nurserymen, oenologists, viticultural technicians, breeders, researchers, historians, and amateurs. Extensive field surveys were conducted between 2019 and 2024 in old vineyards and natural habitats. Genetic analyses identified 69 distinct genotypes, including historical varieties and previously unknown autochthonous genotypes. The Slovenian wild grapevine population is most closely related to the Balkan and Central European *sylvestris* groups. In addition, a safety duplication of the historical varieties and wild grapevine accessions has been established at the University Centre of Viticulture and Enology Meranovo, Faculty of Agriculture and Life Sciences, University of Maribor.

Keywords: grapevine, conservation of genetic resources, ampelography, old varieties, wild grapevine

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