



countries that also had a long tradition in viticulture. The genetic profiles of Greek and Italian varieties were already published and readily available on the internet (<http://www.boku.ac.at/zag/forsch/grapeSSR2.htm>). The analysis employed 32 Greek, 30 Italian, and an additional 15 Croatian cultivars (Babić, Debit, Gegić, Lasina, Bogdanuša, Pošip n., Žilavka, Hrvatica, Teran, Vela pergola, Žlahtina, Malvazija istarska, Kraljevina, Škrlet, Ranfol),³⁰ comprising a set of 30 Croatian cultivars— primarily from coastal Croatia. The results of the analysis, based on the relative frequencies of specific repetitive DNA sequences, indicated that Zinfandel is most likely to be found in the Croatian grapevine gene pool.

With the available genetic data, the probability of finding Zinfandel in a subgroup of Croatian cultivars, as opposed to a population of cultivars comprising the entire Meredith database at UC Davis, was also examined. The database contained more than 300 profiled varieties grown all over the world. More specifically, this time the comparison was targeted at identifying rare sequences of DNA found only in Zinfandel and Croatian cultivars. A pair of such rare DNA sequences was discovered to appear only in Zinfandel and the Croatian cultivars at an appreciable frequency.

Given the amassed scientific evidence, and likelihood ratios that added statistical weight to our findings, I felt content with the conclusion that Zinfandel has its roots in Dalmatia where today, its numerous relatives are continuing the “legacy” of their famous ancestor.

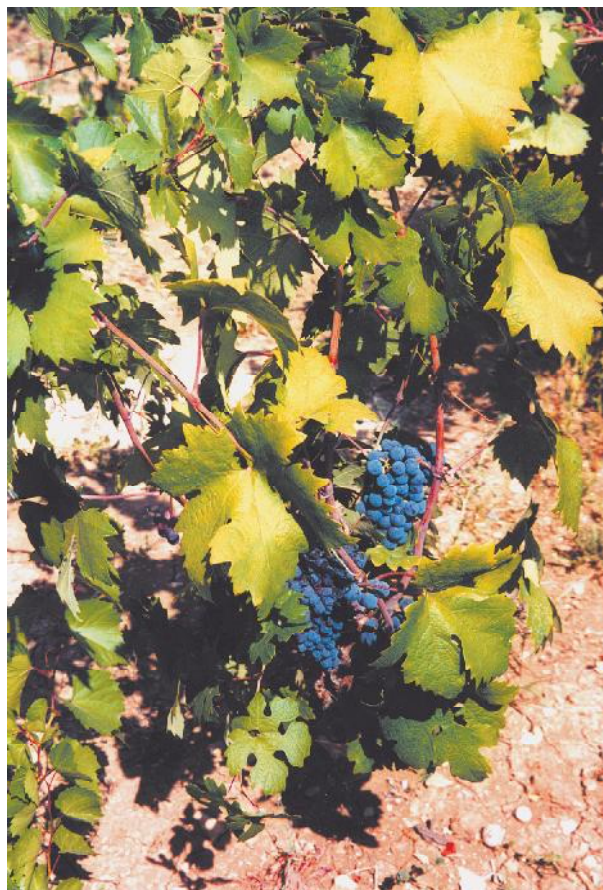
Kaštel Novi – the home of Crljenak and Zinfandel

Although the genetic analyses were sufficient to proclaim Dalmatia as the original home of Zinfandel, the drive to find original Croatian Zinfandel did not subside. Pejić and Maletić continued to search old vineyards in the surroundings of Split. They received great help from the knowledgeable local grape grower and manager of the Kaštelacoop wine cooperative, Ante Vuletin. The “suspect” Zinfandels were selected either in old vineyards, or vineyards whose owners used to collect native varieties. Disappointed to hear that the best Zinfandel candidate did not live up to their expectations, Pejić and Maletić decided to resample the “hot candidate” from 2000. In 2001, they went back to the same old vineyard recommended by Vuletin, located in Kaštel Novi, a coastal town north from Split. There they realized that, because of vigorous growth, the branches and leaves have intertwined themselves with the neighboring Babica vine, and that the candidate from 2000 was wrongly sampled. After a six-year-long search the persistence finally paid off in 2001, just before Christmas. In her lab in Davis, Dr. Meredith again analyzed this “suspect” Zinfandel, a vine locally known as Crljenak kaštelanski (meaning, “the red from the town of Kašteli”). This time, the DNA profile exactly matched Zinfandel! Professor Meredith sent e-mails from Davis, saying: “We have a match for Zinfandel. Quite convincing, finally!” An additional 40 vines from that vineyard, all resembling Crljenak, were subsequently also analyzed and nine additional ones matched Zinfandel. I was thrilled to have made a contribution to



such an important discovery, as the newspapers and wine magazines of California reported that the Zinfandel mystery had finally been solved!

The first official presentation of the research findings occurred at the 2002 Zinposium held on June 15, in Santa Rosa, California.³³ The American-Croatian team of scientists (Professor Carole Meredith, Professor James Wolpert and Drs. Ivan Pejić and Edi Maletić), including Professor Charles Sullivan, had finally assembled in California to reconstruct the trail of Zinfandel, from its early beginnings in Dalmatia to its California-born prosperity and glory. In the enology session of the symposium, parallel tastings of Zinfandel and Plavac mali wines were performed in order to explore the taste similarity warranted by their close genetic relationship. Based on the small sample, it was concluded that the Zinfandel wines are slightly richer and deeper, probably owing to the harvest year that resulted in lower yields. Many California winegrowers who attended the 2002 Zinposium have expressed an interest in obtaining the original cuttings of Crljenak kaštelanski from Croatia and visiting the original vineyard where it was discovered. Adding to their interest was Professor Meredith's own fascination with the Dalmatian coast, which reminded her of California's "Big Sur" in certain places, sloping right down to the sea.



One of nine vines of Crljenak kaštelanski, the Croatian counterpart of Zinfandel, found in the vineyard of Ivica Radunić in Kaštel Novi (photo by Jasenka Piljac).

The vineyard that will go down in history

Although, on many occasions, the participants of the Zinfandel search felt disappointed and hopeless, in the end, their luck and persistence had finally brought them to the vineyard of Ivica Radunić in Kaštel Novi. Had the search started a few years later, most probably, it would have been too late, because vineyards get replanted and the owner would not have noticed anything special about his



Ivica Radunić and Jasenka Piljac photographed next to the Crljenak kaštelanski vine in the summer of 2003 (photo by Hrvoje Matijević).

vines.³⁴ In fact, Radunić claims that, in the past, three types of Crljenak — Crljenak ljutun, Crljenak brački and Crljenak kaštelanski — were quite common in the vineyards of the seven Kaštela (seven small towns named Štafilić, Kambelovac, Novi, Stari, Sućurac, Lukšić and Gomilica), near Split. Although it is not known whether the three types of Crljenak are genetically distinct, each one exhibits different characteristics. High acid content is typical for grapes of Crljenak ljutun (“ljut” in Croatian means “bitter”), while Crljenak kaštelanski ripens unevenly and much earlier than the other varieties grown in this region (15th of August as opposed to 1st of October).

The particular nine vines of Crljenak kaštelanski discovered in Radunić’s vineyard, spread across 2.5 acres of land (1 ha), are the heritage of his family’s old vineyard in Kaštel Novi from which cuttings

were taken 35 years ago. In addition to the three types of Crljenak, Radunić and his father also transferred the cuttings of Babica, a high-yielding variety well adapted to the red-soiled fields of Kaštela. Considering the long-treasured tradition in viticulture, Radunić approximated that Crljenak ran through the generations of vineyards in his family for at least a hundred years. As a curiosity, I should point out that in 2000, one year before the discovery of Zinfandel in his “backyard”, Radunić was awarded the first prize for exemplary maintenance of a large number of autochthonous varieties in the County of Split. While Ante Vuletin from Kaštelacoop, in cooperation with the Institute for Adriatic Crops in Split and the Faculty of Agronomy in Zagreb, regulates the production of Crljenak cuttings intended for overseas shipment to interested California winemakers, Radunić has a small project of his own underway. Alongside the 35-year-old vineyard, he plans the planting of a new vineyard intended mostly for Plavac mali, Maraština and, of course, Crljenak. He had prepared 200 rootstocks for this year’s grafting of Crljenak and hopes to have his first varietal wine released in 2007. A larger planting of Crljenak (several thousand cuttings) is planned for the south-facing vineyards in Sveta Nedilja on the island of Hvar, where Zlatan Plenković, a renowned winemaker famous for his Plavac, has the necessary infrastructure and available land to undertake such a project.



Although he always had a market for his wine, Radunić noted quite an impact of Zinfandel's discovery on his popularity among the local winemakers. With a sudden increase in sales, his cellar has become too small to meet the local demand. Currently, he produces approximately 6,000 liters of wine, of which white varietal Maraština accounts for 650 L, and the remainder is split in a 1:2 ratio between rosé and the reds (Crljenak, Babica). Unlike many high-quantity producers, Radunić always emphasized the quality of his wine and never considered dropping the standards in exchange for greater quantity. On his recent visit to Radunić's small estate in Kaštel Novi, David Gates, the vice president of Ridge vineyards in California, encouraged Radunić to continue with wine production and concentrate on the reds. He believes that with a slight change in technology, high quality wines suitable for export might be the future of winemaking in Kaštela. In the coming years, Radunić plans on expanding his small winery, increasing the number of canes (his vineyards currently totals about 6000) and establishing a small business, with tastings and souvenirs available to tourists throughout the summer season.

On a curious note, Radunić often jokes about the discovery of Zinfandel in his vineyard. As a small child, his friends in Kaštela nick-named him Billy the Kid, and ever since, he is known by the name "Kid" in the local community. Radunić believes that serendipity brought Zinfandel from the former Wild West back to his vineyard. As an active fireman, Radunić leads a very hectic life in the summer months, when his duties call on him to protect and safeguard not only his own vineyard but the vineyards of the surrounding Kaštela where more Zinfandel vines might be waiting to get discovered.

In the past, Kaštel Novi and Kaštel Stari were well-known ports from which large amounts of wine, especially red, were exported to France in the mid-1800s. The need for Dalmatian exports became even more pronounced when phylloxera infected large vineyard areas across Europe and a new, larger port was built in Kaštel Novi whose capacity could handle greater quantities of wine. Today, the ports in Kaštel Novi and Kaštel Stari mostly serve the tourists and local fishermen, since a rapid decline in winegrowing affected the seven Kaštela in much the same way as the rest of Dalmatian towns.

Continuing the search

The search for additional Crljenak vines in Croatia continues and, since the original finding in Kaštel Novi, several other vines in the hinterland of the coastal town of Omiš have been identified as Zinfandel matches. In the local community, these vines are known under the name Pribidrag. During her last visit to Croatia, in the summer of 2002, Meredith visited the island of Šolta where Dobričić was found, and the island of Čiovo where she believes she saw some promising Zinfandel candidates.³⁴ Being able to compare the Crljenak, Pribidrag, Zinfandel and Primitivo growing conditions, including climate, soil and vineyard maintenance styles, will give powerful insight into the ways the winegrowers in different countries are managing this variety.



ZINFANDEL: A CROATIAN-AMERICAN WINE STORY



The canyon of the river Cetina in the hinterland of the coastal town of Omiš - this region is particularly suitable for vine cultivation (photo by Jasenka Piljac).

From the scientific point of view, knowing the origin of a certain variety is useful for finding the subtypes or clones that have developed in the past through slow changes in the genetic make-up. If the origin of a vine can be traced down to a certain region, then most of its variants will be distributed in the vicinity of that locale. Until now, scientists had no place to look for Zinfandel subtypes and could not compare them with the California Zinfandel. The variants that are potentially still hiding in Croatian vineyards might be interesting for their advantageous properties that often become expressed after prolonged vegetative propagation, such as disease resistance, high temperature tolerance, more intense berry color, etc.

The scientists from the University of Zagreb are hopeful that they might even be able to trace down the parents of Zinfandel. The exact path of this vine from Croatia to America is still debatable, although Professor Sullivan's claim that it was imported to the east coast from the Schönbrunn imperial collection in Vienna seems the most plausible. Professor Meredith³⁴ does not exclude the possibility



mentioned by Burton Anderson, an American wine writer living in Italy, and Darrell Corti, a wine merchant from Sacramento, that the monks who emigrated from Croatia, in order to escape religious persecution in the eighteenth century, brought the grape with them to Italy. There it became known as Primitivo.

However, it is also possible that in one of their numerous migrations to California, in search of a better living after the vineyard devastation in the early 19th century, along with their customs and traditions, Dalmatians packed a few cuttings of Crljenak kaštelanski. One thing is certain, Zinfandel was born in Croatia a long time ago, when Dalmatia alone numbered more than 200 autochthonous varieties and represented the Mediterranean breeding ground for wine grapes. On the fertile Californian grounds it flourished and eventually became a classical American success story - a symbol of not only the Californian wine industry, but the Land of Opportunities itself.

A wine road across the Atlantic

A famous old saying claims that “Water separates, and wine unites the nations”. Owing to Zinfandel, the town of Kaštela has witnessed the uniting power of wine that is so often stressed by *connoisseurs*. On the 18th of October, 2002, on the same day when the town of Kaštela was awarded the prestigious European award for the development and advances achieved in tourism, Mary Lou Holt, the mayor of Yountville, arrived in Kaštela. The objective of her trip was establishing a sisterhood between the Kaštela and Yountville towns. The major initiator of this idea was, once again, Mike Grgich. Grgich felt that, after five decades of winemaking experience marked by dedicated promotion of his native Croatia and its viticultural tradition in California, he managed to bring the two countries together through Zinfandel.

Yountville and Kaštela are similar in many ways, according to Holt, the added beauty of Kaštela is the Adriatic sea.³⁵ Yountville is situated in the heart of Napa Valley, the most prominent Californian viticultural region and is known for its long viticultural tradition, the center of which has been occupied by Zinfandel for a very long time. The winegrowing roots of Yountville extend back to 1838, when George Yount, its founder, planted the first vines in Napa Valley. This was the year that marked the beginning of the viticultural history of Napa Valley. The viticultural tradition of Kaštela and its surroundings extends even further back in time, but, just as many other Dalmatian towns, Kaštela experienced its rises and falls, and the continuity of winegrowing was often interrupted by natural and human factors, such as migrations, wars and industrialization.

In both towns, separated by hundreds of miles with the Atlantic in between, the inhabitants live similar peaceful lives in harmony with nature. Through the newly founded friendship between the two towns, the mayors, Mary Lou Holt and Ante Sanader, opened up a special kind of wine road, the one connecting Zinfandel on one continent and Crljenak kaštelanski on the other. According to Holt,³⁵ this road will give numerous opportunities for the two communities to build strong



ZINFANDEL: A CROATIAN-AMERICAN WINE STORY

ties and learn from each other's experiences. Sanader sees the new bond between these small towns as a challenge for the people of Kaštela to turn back to viticulture and revive this old tradition in order to meet the new expectations set by their colleagues from Napa Valley. After all, the land in Kaštela is a God-given home for the vine.



*The mayor of Yountville, Mary Lou Holt, and the mayor of Kaštela, Ante Sanader, holding a signed Charter of sisterhood confirming friendship between the two viticultural centers.
(Source: Mike Grgich).*