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Noble wines stem from humble roots, researchers find
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Mon Dieu! A grape variety once banned as inferior and unworthy is actually the ancestor of some of France's most highly prized wines, says a researcher who analyzed the genetic history of grapes from such legendary wine centers as Champagne and Burgundy.

Researchers at the University of California, Davis, analyzed the DNA markers of hundreds of French wines and found that 16 of the most popular, including Chardonnay, came from the genetic pairing of the classic Pinot variety and the humble Gouais blanc, a grape scorned by winemakers for centuries and banned from France. "It is shocking that all of those varieties did spring from the same two parents, and ... that one of the parents is a mediocre grape with such a bad reputation that it was abandoned," said Carole Meredith, a genetics expert and the senior author of a study appearing Friday in the journal *Science*.

French winemakers tried for centuries to kill off Gouais blanc "but it left behind all of these progenies," Meredith said. "It really reaped a sweet revenge on the nobility of the wine world."

It would be analogous to discovering that a grand champion show dog was sired by a mutt from the city pound, she said.

Wine experts were surprised and amused that wines held in such high regard, such as Chardonnay, known as "the queens of the whites," had such humble origins.

"I hope it puts some of the wine snobs in their place," Dan Berger, a well-known wine critic and editor of a wine newsletter, said with a laugh. "It's good news for all of us because it shows you can rise above your origins."

"This is quite shocking," grape geneticist Bruce Reisch of Cornell University said in *Science*. "No one would have imagined that all (the varieties) are from the same parents."

"The origin of these wines has been a matter of speculation for many, many years," said Meredith. "Now we know."

In looking for the genetic ancestors of the grapes, Meredith and her colleagues analyzed DNA from the leaves of 300 varieties of grapes, including some that are no longer commonly grown. The sample for Gouais blanc came from a botanical archive maintained near Montpellier, France, by the Institut National de la Recherche Agronomique.

The researchers employed classic DNA profiling techniques now widely used to link parents and children, or to connect a suspect with crime scene specimens. They compared DNA markers from each grape variety and found in 16 cases gene sequences that matched those from Pinot and Gouais blanc. The matching varieties include some of the most popular wines from northeast France, an area that includes Burgundy and Champagne.

"We are more than 99.99 percent sure that Pinot and Gouais blanc are the original parents for those 16 varieties," said Meredith. "There's less than one chance in a trillion that we're wrong."

Pinot, a prized grape grown on many continents, is used to produce some of the most expensive wines in the world. Gouais blanc, a white grape, is known in only a few small areas of Switzerland and Eastern Europe.

The Pinot-Gouais blanc cross that produced Chardonnay and others occurred centuries ago and was probably accidental, said Meredith.

Exactly how the Pinot-Gouais blanc crossing happened is not known, but Meredith suggests this sequence: Centuries ago, vines of Pinot and Gouais blanc were growing near each other. They exchanged pollen and produced a grape with genes from both parents. Seeds sprouted a vine with a unique hybrid grape that farmers liked. This could have happened a number of times, producing the different varieties through the random mix of genes from the two parents.

Since grapes do not breed true, all the varieties from the chance mating were maintained through the centuries by planted cuttings. Descendants of those vines now grow all over the world, all with the same genes of the original chance breeding, said Meredith.

Gouais blanc, the humble grape with the noble children, is thought to have originated in Croatia. Meredith said it is possible the Romans brought it to what is now France during the first century. Chardonnay has been grown in France since the third century, proving that Gouais blanc was there before that time, she said.

In the Middle Ages, winemakers believed Gouais blanc made such poor wine that they banned it. The wine's name is based on an old French adjective, "gou," a term of derision.

Meredith said Gouais blanc is still found in Germany, where it is known as "huenisch weiss." A small area in Switzerland uses the grape to make a wine called "Gwass."

Gwass, said Meredith, "is very ordinary. There is nothing really distinctive about it."

The 16 varieties that Meredith said were produced by the Pinot-Gouais mating are Aligote, Aubin vert, Auxerrois, Bachet noir, Beaunoir, Chardonnay, Dameron, Franc noir de la Haute Saone, Gamay blanc Gloriod, Gamay noir, Knipperle, Melon, Peurion, Romorantin, Roublot and Sacy.

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