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THE MAKING OF GREAT WINE

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Bernard J. Wood

As we set up the publication schedule for each year, the principal editors of *Elements* try to ensure that the journal maintains enough diversity to hold the interest of you, our readers. In this context, we sometimes accept proposals for issues on very well-known mainstream subjects (such as layered intrusions) which

we think can usefully be updated and summarised at a good level. We also try, however, to bring you subjects which are outside the mainstream yet still can be grouped loosely within the areas of geochemistry, mineralogy and petrology. That is how we categorise the current issue dealing with the environmental aspects of making high-quality wine.

In the current issue, Larry Meinert has, at our request, undertaken to guest-edit an issue on *terroir*, the loosely defined role of environmental conditions, especially soil and climate, in which grapes are grown and that are generally believed to give a wine its flavour and aroma. The principle of *terroir* and its importance in the production of high-quality wine is fundamental to the wine industry in many European countries. Wine laws are made to reflect the specific, narrowly defined, regions from which wines are produced (termed “*appellations*”) which officially sanction the idea that combinations of certain vineyard sites and grape varieties create unique wines which accurately reflect their geographical origins. France, for example, has over 300 such *appellation d'origine contrôlée* (AOC) regions, each with clearly defined grape varieties that may be grown and, frequently, the required proportion of each variety. There are restrictions on irrigation and on the volume of wine which may be produced per hectare of land area. All of these rules serve to emphasize the uniqueness of each tightly defined area. By contrast, in Australia, and to some extent the US, there was traditionally quite a bit of scepticism about the importance of *terroir*, with a feeling that European winemakers were emphasizing its importance as a means of protecting their prices and business. Until recently, many Australian winemakers made little attempt to correlate specific soils with particular grape varieties and, apart from some very broad parameters, made almost no attempt to link soil type and wine quality. Nevertheless, in Australia we learn that Clare Valley is best for Riesling wines, Hunter Valley for Semillon, and Barossa Valley for Shiraz. So, *terroir* influences are clear in the New World as well as the Old. And, as the approach to winemaking has become more scientific, the empirically derived rules of the French AOC and its equivalents in Spain (the DOC), Italy (the DOCG) and others, have been taken apart on a more quantitative basis so that the different parameters may be adjusted to enhance the quality of wine from almost any region without completely covering the influence



of *terroir*. Read this issue and you will find how such adjustments are made and the importance of pruning, irrigation and temperature, for example, at different times of the growing season.

My years of experience indicate that Earth scientists tend to be enthusiastic, if rather uncritical, wine drinkers. But even the most uncritical of us will have wondered sometimes why red wines from warm climates often taste of blackberries or why some Pinot Noirs have a distinct cherry flavour. Similarly, the acidity and asparagus odour of those famous Sauvignon Blancs from New Zealand and the pineapple and melon flavours of Chardonnays from warmer regions imply strong climatic effects on flavour. But what about the influences of soil and geology? We English have been led to believe that, because the Jurassic and Cretaceous sediments of the Champagne region reappear on the English side of the sea, England is able to produce sparkling wines which should compare well with those of the famous French area. The climate is also very similar and, indeed, slightly warmer in England during the winter. So, is there anything truly unique about the Champagne *terroir*? By the time you have finished reading this issue you will probably be disappointed by the conclusion that the distinctive *terroir* has much less to do with soil geology and more to do with climate, hillslope and timing of water supply to the vines.

Probably the biggest blow to the mystique of *terroir* was the “Judgment of Paris”, a competition that took place in 1976 and in which 11 judges, predominantly French, blind-tasted red Bordeaux and white Burgundy wines against, respectively, Cabernet Sauvignon and Chardonnay from California’s Napa Valley. In both cases, the California wines won overall. This demonstrated three things. First, that winemakers in Napa had made substantial strides in deconstructing the process scientifically in order to understand how great wines are made. Second, that the influence of *terroir* on wine quality was possibly overestimated. Finally, because the competition was organised by a Briton (Steven Spurrier) it tended to confirm the French view of *la perfide Albion*.

Reading the articles in this issue have, for me, been an enlightening and educational experience. How about another enjoyable but peripheral subject? Anyone for an issue on groundwater and beer?

Bernard J. Wood
Principal Editor