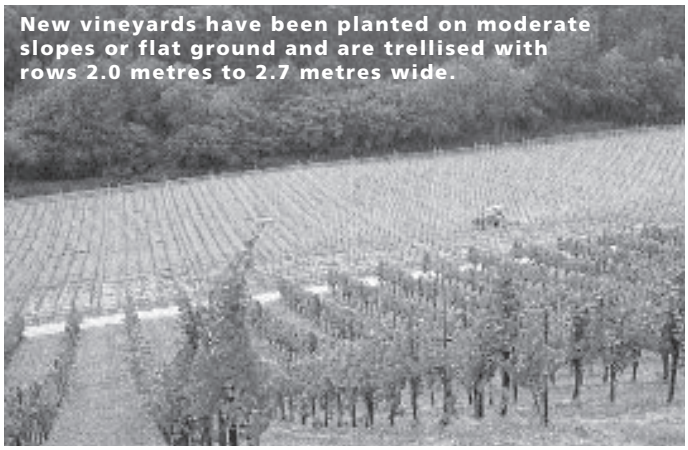
Peter Dry

THE VINEYARDS OF GERMANY'S MIDDLE MOSEL ARE amongst the most spectacular in the world. If you stand on the bridge at Bernkastel and look towards the northwest, you will see what appears to be a 200 m high wall of vines on your right, extending along the river as far as the eye can see. If you then look towards Bernkastel you will see the most famous vineyard of them all—the Bernkasteler Doktor—that appears to hang over the town itself. The quality of the Riesling wine from this and neighbouring vineyards is highly acclaimed.

What is so special about this site? For a start it is on a south-facing slope: in the northern hemisphere, a southerly aspect ensures maximum interception of radiation, particularly if it is combined with a steep slope. Slopes are really only beneficial for radiation interception at high latitudes, i.e. greater than 47° and where temperature is limiting: at nearly 50°N and with a mean July temperature around 18°C, the middle Mosel satisfies both criteria. Secondly, the vineyards extend from the mid-slope to the brow of the hill ensuring good thermal properties. Good air drainage also significantly reduces frost risk. The best vineyards in Germany are close to the rivers because the sides of the twisting river valleys provide steep slopes with their optimal thermal properties; the temperature-moderating effect of the water and the reflection of light from the river are likely to be of limited benefit.



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The other important characteristic of the site is the soil: it has a large amount of slate on the surface. The soil is well-drained and thus warms up rapidly in spring. Surface stone is particularly useful because it decreases the risk of erosion; this means that steep slopes can be planted which would otherwise be very susceptible to erosion. The stones absorb heat during day and re-radiate at night, resulting in decreased temperature variability. Surface stones can act as mulch leading to decreased water loss. Stony soils usually have a low to moderate fertility, therefore there is a better chance of vine balance. Perhaps the proximity to the town itself may confer some thermal advantage. In his *World Atlas of Wine*, Hugh Johnson claims that 'imaginative tasters detect the smoke from Bernkastel's chimneys in the flavour of the Doktor.'

While this is sounds romantic, there is a down side. The cost of operating these vineyards is enormous—everything must be done by hand. The only operation which can be mechanised in a sense is the aerial spraying of fungicides, usually by helicopter. However, it is likely that this operation will need to be phased out because the inhabitants of the towns are objecting to their use. It is hard to believe

that insecticides were sprayed on the vineyards by helicopter—and inadvertently the towns below—until relatively recently. The very survival of the traditional vineyards on steep slopes, with their high input of manual labour, is under threat as labour costs soar and increasing restrictions are imposed on aerial spraying, pesticide, herbicide and fertiliser use. The German government with the support of the people is very sensitive about environmental issues.

Vines have been grown in this region since Roman times—the remains of a Roman winery were recently unearthed not far from Bernkastel. In 1989, Riesling made up 55% of the area of Mosel-Saar-Rüwer followed by Müller-Thurgau (22%) and Elbling (9%). The average yield for the whole region in the 1980s was 20 tonnes per hectare. Riesling is planted on the best sites, Müller-Thurgau on the worst.

In traditional vineyards of the middle Mosel, vines are planted 1.3 metres × 1.3 metres and grown on single stakes up to 2.7 metres high. Pruning is to 2 to 4 canes of up to 12 nodes per cane; canes are arched and tied to the base of the trunk. Selected shoots (there may be as few as four per vine) are trained and tied to the stake and excess shoots are removed.

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Removal of leaves from around bunches and shoot tipping are standard practices. The steepness of the slope precludes most mechanical operations. There is a large proportion of small growers (less than one hectare) who tend their vineyards on a part-time basis.

According to Dr Wolf Englert of the Institute for Plant Protection at Bernkastel-Kues there is relatively little phylloxera in this region—apparently the soil is unsuitable—and most vines are grown on their own roots. If rootstocks are used, the main ones are 3309, SO4 and 5BB.

New vineyards have been planted in recent years on moderate slopes or flat ground: these are trellised with rows 2.0 metres to 2.7 metres wide. The vertically shoot positioned trellis is similar to that found in other parts of Germany with two pairs of moveable foliage wires. These vineyards can be mechanically harvested and potentially mechanically pruned although the latter is relatively rare in Germany at the present time. *wij*

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