Mountain landscape—the Vosges[1]

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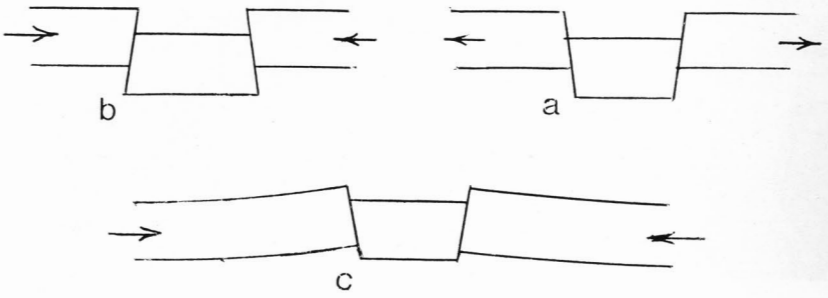
The Vosges Mountains form the W bank of the River Rhine for some 150 miles between Basle and Mainz. The Belfort Gap separates them from the Jura in the S, while in the N they end where the Rhine bends westwards towards Holland. Facing the Vosges on the E bank, and of identical form (steep slopes towards the river, gentle slopes on the side away from it), is the Black Forest of Germany. Both sides have forests on the lower slopes with pasturage and rounded summits above.

The whole is classical rift-valley country, the block of land forming the floor of the Rhine valley having been let down between the mountain blocks on either side. But how did this come about? Early theories were divided between tension forces in the crust letting down a downward-pointing wedge (a in fig) and compression forces driving down an upward-pointing wedge, (b in fig) in both cases between crustal faults. The solution depended on knowing the slope of these faults between the valley block and the mountain blocks, and this could not be determined until 1929 when a railway tunnel was driven through the Lorettoberg, near Freiburg. The fault was found to slope towards the valley, indicating that crustal tension was the cause.



Formation of the Rhine valley

During the 1930s a German geologist, Hans Cloos, carried out a series of experimental investigations. He made a model using layers of clay of appropriate consistency (representing the crustal rocks) on two wooden boards which were slowly moved apart. All the features of the rift valley were produced except for the mountain blocks on either side; the solution, therefore, was not quite so simple. He next tried, not pulling, but arching up the crust, a process which does in fact stretch the upper side (c in fig). Now all the landscape features, including the marginal mountain blocks, were reproduced in

[1] We are deeply indebted to Serge Saumier and Vincent Moreau for much of the mountaineering information given in this paper.

the model and it became possible to ascribe the process with some certainty to the uplift of the whole Rhine region.

Fracturing through the crust, as described, is likely to have led to local volcanic activity while movements of the blocks were taking place. This would not necessarily occur in the rift valley itself, where the weight of the rift block would have tended to keep the cracks closed. The Kaiserstuhl near Freiburg is the only volcanic formation in the main valley but there are extensive remains further N in the Vogelsberg and the Eifel district.

60 *Turckheim village, Alsace* This and next photo: French Government Tourist Office

From S to N the Vosges are divided into four areas—the Grandes Vosges between the Belfort Gap and the Col de Saales, the Central Vosges from the Col de Saales to the Col de Saverne, the Lower Vosges running on to the source of the Lauter river and, farthest N, the Hardt Mountains. S of the Col de Saverne the peaks are granitic bosses rising above massive beds of sandstone; the Lower Vosges take the form of a sandstone plateau.

Some of the highest summits of the Grandes Vosges are called *ballons*. The Ballon d'Alsace on the main chain rising to 1250 m, gives a wide-ranging view extending to Mont Blanc. Nearby in the Lac du Ballon a gold waggon,

deposited by the retreating Attila fifteen centuries ago, still awaits recovery. The highest peak, the Ballon de Guebwiller (1424 m), which is somewhat to the E of the main chain, has a similar view embracing the Jura, the Alps and the Black Forest. Other summits include Hohneck (1361 m), Gazon du Faing (1303 m), the Petit Ballon (1267 m) and the Brézouard (1228 m). All these peaks are readily accessible from motor roads, with access times between 20 and 40 minutes of walking. Several of the cols carry motor roads—Col de Bussang, Col de la Schlucht and Col du Bonhomme. In the Central Vosges the highest point is Mont Donan (1008 m); the Col de Savarne carries the Rhine–Marne Canal and the Paris–Strasbourg railway.

61 *Haut Koenigsburg*

Parallel to the main range on the Alsatian side of the Rhine minor faulting has produced a series of foot-hills, whereon are sited many world-famous vineyards growing the famous Chasselas, Riesling, Sylvaner, Muscat, Pinot and Traminer grapes. The higher slopes are dotted with the ruins of numerous castles perched on rocky pinnacles and buttresses of sandstone in every variety of picturesque situation; there are several dozens of them in ruins, while the huge modern reconstruction (by the Kaiser) of Haut Koenigsbourg gives some idea of their former splendours.

There are two scenic motor roads which throw open the Vosges scenery to the motorist. The Route des Crêtes, which runs for 83 km from the Col du Bonhomme to Thann by way of the Col de la Schlucht, passing close to all the highest summits, was constructed by the French during the 1914-18 war to serve the front lines. At the foot of the scarp the Route du Vin passes the length of the wine-growing district in some 180 km between Marlenheim, through Chatenois and Colmar, to Thann.

The Sentier de Grande Randonnée No 5, which parallels the eastern frontier of France from Strasbourg to Nice, runs from end to end of the ridge. G R 53 extends the line northwards from Saverne to Wissembourg.

The principal ski-resorts with up-to-date amenities are La Bresse and Gerardmer. There are several others of lesser importance. The distance from Paris is approximately the same as that of the rival minor ski areas of the Massif Central and the Jura.

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There are some entertaining climbers' crags at the S end of the range in cirques carved out by glaciers in the Quaternary Period. The granite cliffs of Hohneck, situated close to the Col de la Schlucht on the central crest of the chain about 25 miles W of Colmar, afford some of the best rock-climbs. The cliffs form the walls of several adjacent cirques which constitute the E face of the mountain. The most northerly of these, the Martinswand, boasts some 40 routes varying in standard from PD to ED, all of them with the necessary pitons in place and only a handful needing additional aid from étriers and so on. The average height of these climbs is 80 m. With its chimneys, *dièdres*, cracks and overhangs, the Martinswand is an ideal training ground, with the added advantage of a CAF hut nearby (Refuge des Trois Fours, places for 42, resident guardian, open all the year).

The southernmost cirque, the Petit Hohneck, also provides interesting climbs, with passages of sustained difficulty; while there are three further sites—Rochers Verts, Spitzenfels, the Arête des Spitzkoepfe and the Rochers du Haut-Fourneau—which all offer routes on good rock within a radius of two miles of the Col de la Schlucht. This col has hotel accommodation and is accessible by car or bus from Colmar and Epinal.

In contrast to the porous limestone of the Jura, the granite of the Vosges retains the abundant rain-water. Lakes and peat bogs are plentiful, and the resulting rich vegetation includes many species of flowers. In 1965 chamois were introduced at the S end of the chain and there is now a wild life reserve sheltering 300 of them.

References

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62 *Rysy (the highest peak of the Polish Tatra) with behind Gierlach (the highest peak of the Czech Tatra)* Photo: R. Ziemak