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MINING MIGRATIONS IN THE SOUTHERN VOSGES IN THE LATE MIDDLE AGES

Abstract: The mining boom in the southern Vosges at the end of the Middle Ages led to a revitalization of the region. The specific nature of this economic activity required special techniques and substantial financial investment, and migratory phenomena had a profound effect on the areas in which new mining deposits were discovered and then exploited. It made a strong impact on the population in the region. Migration has been economic and financial, but it has also involved the transfer of techniques and know-how. These migrations have been perceived in different ways. For the pre-existing populations, they could be intrusive, threatening demographic, cultural and economic balances. The owners of the deposits welcomed the migrants, as their activities provided them with extra income and boosted economic prosperity and of the region where the competition in mining industry was very strong. A study of mining migrations enables to illustrate the economic growth of the Upper Rhine and to analyze how this region emerged as one of the most dynamic parts of the Holy Roman Empire at the end of the Middle Ages.

Keywords: medieval mining, mining technologies, migrations, Upper Rhine, Basel

The growing demand for silver during the late Middle Ages gave a strong stimulus to the growing number of mining operations in western and central Europe. These were dominated by deposits in Saxony (Meissen, Freiberg),¹

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¹ H. Pforr, *Freiberger Silber und Sachsens Glanz. Lebendige Geschichte und Sehenswürdigkeiten der Berghauptstadt Freiberg*, Leipzig 2001.

Bohemia (Kutna Hora from the 1290s onwards), the Ore Mountains (Erzgebirge) between Bohemia and Saxony (Schneeberg, Annaberg in the fifteenth century),² the Harz (Goslar and the Rammelsberg in the tenth century), the Tyrol and the Alps, and Tyrol and Italy (the metal-bearing mountains of Tuscany, Veneto, Sardinia).³ The extraction of polymetallic ores (mainly silver, copper and lead) spread throughout the medieval Christendom. There were several major deposits in what is now France, notably in the Dauphiné, the Monts du Lyonnais and the Pyrenean mountains.⁴ In some cases, such as the discovery of metal deposits in the Freiberg region in 1168 or those at Schneeberg (1470) and Annaberg-Buchholz (1491–1492), the mining boom led to a peak in activity in the geographical areas concerned, accompanied by significant demographic movements, as in the Ore Mountains, for example. Freiberg (1185), St Joachimsthal (1516) and Marienberg (1521) are just a few examples of settlements founded following the discovery of mining deposits. The mining clamour, known as ‘Berggeschrey’, also points to the nature of the soil in which these deposits were exploited.⁵ The Upper Rhine region was no exception. There were many dynamic mining operations in the central Vosges. Sainte-Marie-aux-Mines and La Croix-aux-Mines on the Lorraine side of the mountain have been leading centres for silver mining since the middle of the Middle Ages, and probably even earlier.⁶ The eastern slopes of the Upper Rhine, in the Black Forest (Schwarzwald), were also the focus of intense mining exploration and the site of technical innovations. The Suggental deposit, north of Freiburg im Breisgau, had been mined since the twelfth

² S. Gerlach, *Sachsen. Eine politische Landeskunde*, Stuttgart – Berlin – Köln 1994.

³ P. Braunstein, ‘Les entreprises minières en Vénétie au XV^e siècle’, *Mélanges d’archéologie et d’histoire*, 77.2 (1965), 529–607; P. Spufford, ‘Le rôle de la monnaie dans la révolution commerciale du XIII^e siècle’, in *Études d’histoire monétaire: XII^e–XIX^e siècles*, ed. by J. Day, Lille – Paris 1984, 355–96.

⁴ M.-C. Bailly-Maître, J. Bruno-Dupraz, *Brandes-en-Oisans. La mine d’argent des Dauphins (XII^e–XIV^e siècles)*, Documents d’archéologie en Rhône-Alpes, 9, Lyon 1994; P. Benoît, *La mine de Pampailly, XV^e–XVIII^e siècles. Brussieu – Rhône*, Lyon 1997; C. Verna, *L’industrie au village. Essai de micro-histoire (Arles-sur-Tech, XIV^e et XV^e siècles)*, Paris 2017; C. Verna, *Le temps des moulins. Fer, technique et société dans les Pyrénées centrales (XIII^e–XVI^e siècles)*, Paris 2002.

⁵ S. Sieber, *Zur Geschichte des erzgebirgischen Bergbaues*, Halle 1954, 135.

⁶ P. Fluck, *Sainte-Marie-aux-Mines. Les mines du rêve. Une monographie des mines d’argent*, Les Editions du Patrimoine Minier, Soultz 2000; M.-C. Bailly-Maître, *L’argent: du minerai au pouvoir dans la France médiévale*, Paris 2002, 163.

century, and its twenty-two-kilometre-long mining canal, built in 1284, was one of the first in Europe.⁷ To the south of Freiburg, the Münstertal and Schauinsland had been mined since the thirteenth century, while the Todtnau (mentioned as early as 1283), Saint-Blaise (first half of the fourteenth century) and Badenweiler (eleventh century) veins were some of the most important in the region.⁸

In addition to demographic upheavals, the exploitation of these deposits was accompanied by transfers of mining skills. New laws which promoted the mobility of people enabled mining specialists to practise their art from one region to another, often to develop new seams.⁹ Such moves often involved miners of German origin. The regions where the art of mining was the earliest, the most accomplished or the most consistent were mostly located in areas within the Holy Roman Empire. The Saxon miners called to the mines in the Spiš region after 1241 were known as Zipser Sachsen. As in other parts of Italy, German miners also made a significant contribution to the growth of mining industry in the Veneto region.¹⁰ As Philippe Braunstein points out for Italy, mining in the Middle Ages was indebted to German technical and human contributions.¹¹

⁷ A. Haasis-Berner, *Wasserkünste, Hangkanäle und Staudämme im Mittelalter. Eine archäologisch-historische Untersuchung zum Wasserbau am Beispiel des Urgrabens am Kandel im mittleren Schwarzwald*, Freiburger Beiträge zur Archäologie und Geschichte des ersten Jahrtausends, 5, Rahden 2001.

⁸ A. Schlageter, *Geschichte des Todtnauer Silberbergbaus im Mittelalter 1250–1565*, Freiburg 1989, 181–212; A. Schlageter, 'Der mittelalterliche Bergbau im Schauinslandrevier', *Schau-ins-Land. Jahresheft des Breisgau-Geschichtsvereins Schauinsland*, 88 (1970), 125–212; A. Schlageter, 'Der mittelalterliche Bergbau im Schauinslandrevier II. Die zweite Blüte des Bergbaus im 16. Jahrhundert und sein Ausgang im 30jährigen Krieg', *Schau-ins-Land. Jahresheft des Breisgau-Geschichtsvereins Schauinsland*, 89 (1971), 95–176; A. Westermann, 'Die Bergbaue im südlichen Schwarzwald und den Vogesen im Hoch- und Spätmittelalter. Zur Problematik der langfristigen wirtschaftlichen Entwicklung', in *Der Tiroler Bergbau und die Depression der europäischen Montanwirtschaft im 14. und 15. Jahrhundert: Akten der internationalen bergbaugeschichtlichen Tagung Steinhaus*, ed. by R. Tasser, E. Westermann, Innsbruck – Vienna – Munich – Bozen 2004, 263–84.

⁹ G. Stöger, 'Die Migration europäischer Bergleute während der Frühen Neuzeit', *Der Anschnitt. Zeitschrift für Kunst und Kultur im Bergbau*, 58.4–5 (2006), 170–86.

¹⁰ G. Marcon, 'The Movements of Mining: German Miners in Renaissance Italy (1450s–1560s)' (unpublished doctoral thesis, European University Institute, 2022).

¹¹ Braunstein, 'Les entreprises minières en Vénétie au XV^e siècle', 530: '[...] the pioneers on terra firma were "Tedeschi", and the entire history of mining in the Venetian Alps bears the mark of Germanic influences'.

The southern Vosges was no exception to this trend. In the Upper Rhine, it was one of the last areas to be mined massively at the end of the Middle Ages. Although mines had already been opened in the tenth century (Steinbach) or the fourteenth century (Doller Valley), there was nothing comparable with those in the central Vosges, the Black Forest and even less so with other regions of Central Europe.¹² The real rise of this sector came after 1450. The mines at Plancher-les-Mines (henceforth called Plancher in this text) in 1458 were the starting point of this revival. This was followed in 1469 by the mines at Mont-de-Vannes, further west within the boundaries of the County of Burgundy but politically part of the Holy Roman Empire. Finally, the Auxelles mills in the neighbouring Rosemont valley, part of the County of Ferrette (Upper Alsace), were mentioned for the first time in 1472.¹³ In a highly competitive regional and international context, the rapid emergence of these mines and the expansion of those that had been in operation for a long time was no easy task. The mid-fifteenth century saw the emergence of mining all over Europe, and those in the Black Forest were in close competition with the Vosges mines. In the north of the Upper Rhine, the Counts Palatine of the Rhine developed an aggressive and deliberate mining policy in their lands in the Palatinate, Baden and Bavaria.¹⁴ These counts even operated a mine in central Alsace, at the foot of Haut Koenigsbourg Castle. In such a context, it was necessary to create favourable opportunities to attract mining professionals who knew the techniques of digging mine galleries, extracting the ore. They were also capable of enriching ore which was offered for sale. Migratory

¹² B. Bohly, 'Steinbach. Mines du Donnerloch', in *Bilan scientifique régional 2002*, Service régional de l'Archéologie, Direction régionale des Affaires culturelles d'Alsace, Strasbourg 2005, 54.

¹³ D. Bourgeois, *La mine, un fait urbain? Traces du capitalisme médiéval dans le Rhin supérieur (XIV^e–XV^e siècles)*, (unpublished doctoral thesis, University of Upper Rhine, 2024).

¹⁴ Stuttgart, Landesarchiv Baden-Württemberg (henceforward quoted as: LABW), 67, No. 812, 55. Count Palatine Frederick I authorised seven miners to find ore in the mountains around Stromberg Castle (Palatinate) in 1456. LABW 67, No. 812 to No. 829 and No. 1662 are contemporary cartularies (Kopialbücher) in which, among other things, charters are transcribed that provide valuable information on the development of the Daimbach mines, Rheingrafenstein, Imsbach (Palatinate), Orschwiller (Alsace), Nabburg (Bavaria), Weinheim, Grosserlach (Baden-Württemberg) and others under the authority of the Palatine Counts of the Rhine.

movements enabled these mines in the southern Vosges to be opened, bringing about substantial changes in terms of territorial balance.

The impact of mining migration on local areas and population

In 1658 Archduke Leopold Wilhelm of Austria, administrator of the Abbeys of Murbach (Upper Alsace) and Lure (on the border between Upper Alsace and the County of Burgundy), issued an ordinance based on the oldest regulations drawn up by the Abbey of Lure for the management of its polymetallic mines (silver, lead, copper) at Plancher-les-Mines (now Plancher). He stated there that the Abbey owned the woods right up to the top of the mountains that bounded the valley in which the silver deposits were mined. With this act, Archduke Leopold Wilhelm attempted to end controversies between villages regarding the exploitation of woodland resources in the Vallée du Rahin.¹⁵ These disputes originated from mining operations in this remote area on the southern edge of the Vosges mountains.

In 1458, the abbot of Lure granted a concession to mine the polymetallic veins in the Rahin valley to three Basel citizens: merchant Wernlin Freidigman and the smelters and metallurgists Lienhart Kürsner and Jakob Schenck von Worms.¹⁶ As part of the Holy Roman Empire, the lands of the Lure abbey were traditionally Romance in culture and language. The exploitation of these deposits led to the creation of a new settlement, Plancher-les-Mines, a short distance from the existing village of Plancher-Bas. In the heart of this deep, isolated valley, created by glacial melting, mining led to a rapid population explosion. At the end of March 1488, exactly thirty years after the concession was granted, the archbishop of Besançon, to whom the area belonged, transformed the miners' chapel into a parish church.¹⁷ Thus, in an area where no human settlement had been established, the new parish came into being in just three decades.

¹⁵ Vesoul, Archives départementales de la Haute-Saône (henceforward quoted as: ADHS), H586 (Collection of documents relating to the village of Servance).

¹⁶ ADHS, H599 (Renewal of the Plancher-les-Mines mining concession, 1469).

¹⁷ ADHS, 413E-Dépôt 2 (Plancher-les-Mines et Plancher-Bas parish register (1659)).

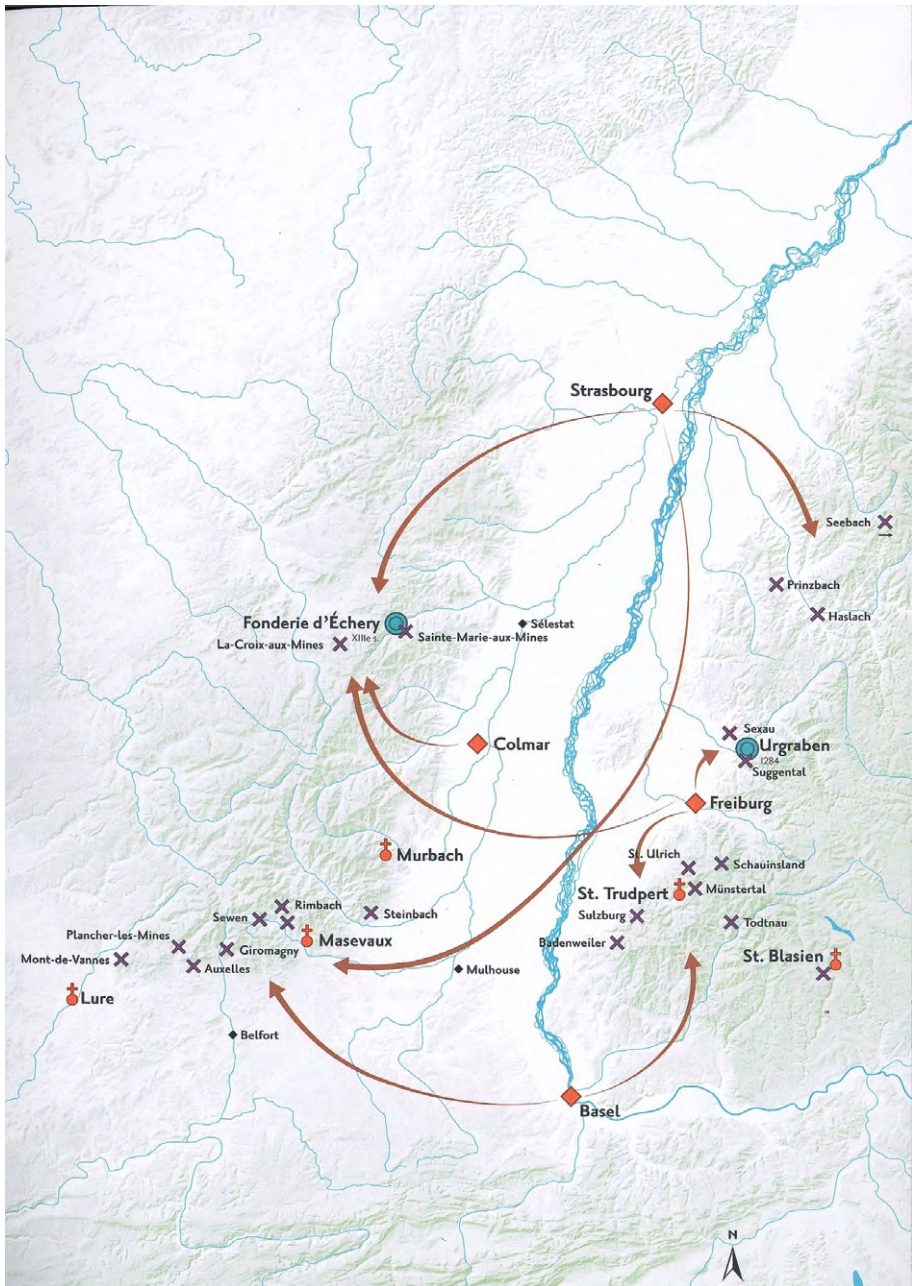


Fig. 1: Silver mines in the Upper Rhine (end of Middle Ages) and transfers of urban capital and the implications of monastic establishments. Author: Joseph Gauthier, David Bourgeois, Benjamin Furst

Without constituting a *Bergstadt* in the true sense of the term, Plancher quickly gained a sizeable population and was endowed with special rights and franchises. Like the *Bergstädte*, the rights of Plancher encouraged the rapid settlement of miners.¹⁸ However, it did not have town rights: there was no seal or coat of arms, and justice was administered by the abbot of Lure. The locality had no institutional independence through its submission to the abbey. This is the major difference between Plancher and the *Bergstädte* of Saxony, Bohemia, Harz or Hungary. The first *Bergstädte* were created in Hungary in the thirteenth century, and Freiberg had special rights as early as 1233 (*ius Fribergensis*). Freiberg was the first *Bergstadt* in Saxony.¹⁹ Although their development went hand in hand with that of the farms to which they were attached, their existence depended very much on sovereign power. In many cases, such as Plancher, the sovereign retained full control over the boundaries of the locality. The regulations in force in Plancher were intended solely to govern the activities and individuals involved. They were in no way intended to govern an autonomous urban institution born of the mines.

The mining regulations on which Leopold Wilhelm based his actions were promulgated at an early stage in the mining history of the southern Vosges. In 1484, the Plancher mines were given a complete set of regulations, which enshrined the fact that the community of miners who had settled in this valley had not only duties but also important rights.²⁰ The geographical limits of the mining estate, its legality, and the miners' privileges were clearly defined. The geographical area defined the perimeter of the mining activity and its ancillary activities, encompassing not only the ore deposits but also the surrounding forests (the mines required large amounts of wood) and the new village, where inhabitants enjoyed a certain number of franchises. The reason for putting such regulations in writing was the competition that reigned on a continental scale to recruit personnel capable of operating

¹⁸ K. H. Kaufhold, W. Reininghaus, *Stadt und Bergbau*, Cologne – Weimar – Vienna 2004.

¹⁹ L. Asrih, 'Das synt gemeyne bergrecht...'. *Inhalte und Anwendung des Freiburger Bergrechts im Mittelalter*, Bochum 2017.

²⁰ Colmar, Archives d'Alsace – Site de Colmar (henceforward quoted as: AA-Colmar), 9G-Comptes 66. This account book from Murbach abbey contains a contemporary copy of the mining regulation for Plancher.

mines. Legislation and grants were the prerequisites for obtaining manpower and know-how technologies. There were many precedents for mining law within the Empire. After the *ius Fribergensis*, Freiberg mining law was transcribed and developed in two main texts around 1300/1306 and 1382. It can be considered one of the main sources of medieval mining law.²¹ In the Upper Rhine region, the rights granted by Landrichter Johann von Üsenberg for the Münstertal mines and those granted by Count Egino III of Freiburg for the Diesselmüt mines (12 km from Freiburg), both in 1372, were the first important texts on the subject in the region.²² The key aspect of the text adopted by Hans Stör, the Abbot of Lure for the Plancher mines was that it was based on the legal provisions of the Golden Bull of 1356 (the sovereign had exclusive sovereignty over the subsoil). As the abbot of Lure was also a prince of the Empire, he legitimately had the right to exploit these mines and to regulate their use. This legal basis was regularly used by sovereigns. The counts palatine of the Rhine mentioned it several times in their deeds.²³ Thanks to the Golden Bull, at the top of the hierarchy of norms, the sovereign could establish specific mining regulations for a given area. This is what the abbot of Lure did when he issued the first mining regulations for the southern Vosges, inspired by the mining laws of the pre-existing Germanic mining districts.

Furthermore, the mining regulations precisely detailed the times during which various types of mining work were carried out. The Plancher mining sector was in almost uninterrupted operation, twenty-four

²¹ *Codex Diplomaticus Saxoniae Regiae*, XIII: *Urkundenbuch der Stadt Freiberg in Sachsen*, ed. by H. Ermisch, Leipzig 1886, II, 267–76 (for *Freiberger Bergrecht A*) and 285–99 (for *Freiberger Bergrecht B*). For further study on the mining laws see: P. Braunstein, 'Les statuts miniers de l'Europe médiévale', *Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres*, 136.1 (1992), 35–56.

²² For a basic outline of the mining regulations issued by Landrichter Johann von Üsenberg of Breisgau for Upper Münstertal in 1372, see E. Gothein, 'Beiträge zur Geschichte des Bergbaus im Schwarzwald', *Zeitschrift für die Geschichte des Oberrheins, Neue Folge*, 2 (1887), 385–448. For the principles of the mining regulations of Count Egino IV of Freiburg for the Diesselmüt Mines (30 June 1372), see Karlsruhe, Generallandesarchiv Karlsruhe (henceforward quoted as: GLA – Karlsruhe), 229, 106172; Mining regulations issued by Count Egino IV of Freiburg for the mines on the Diesselmüt on 30 June 1372, GLA – Karlsruhe, 229, 106172.

²³ Between 1482 and 1499 Count Palatine Philip referred to the Golden Bull ten times when granting new mining concessions. GLA – Karlsruhe 67 (Kopialbücher, see above).

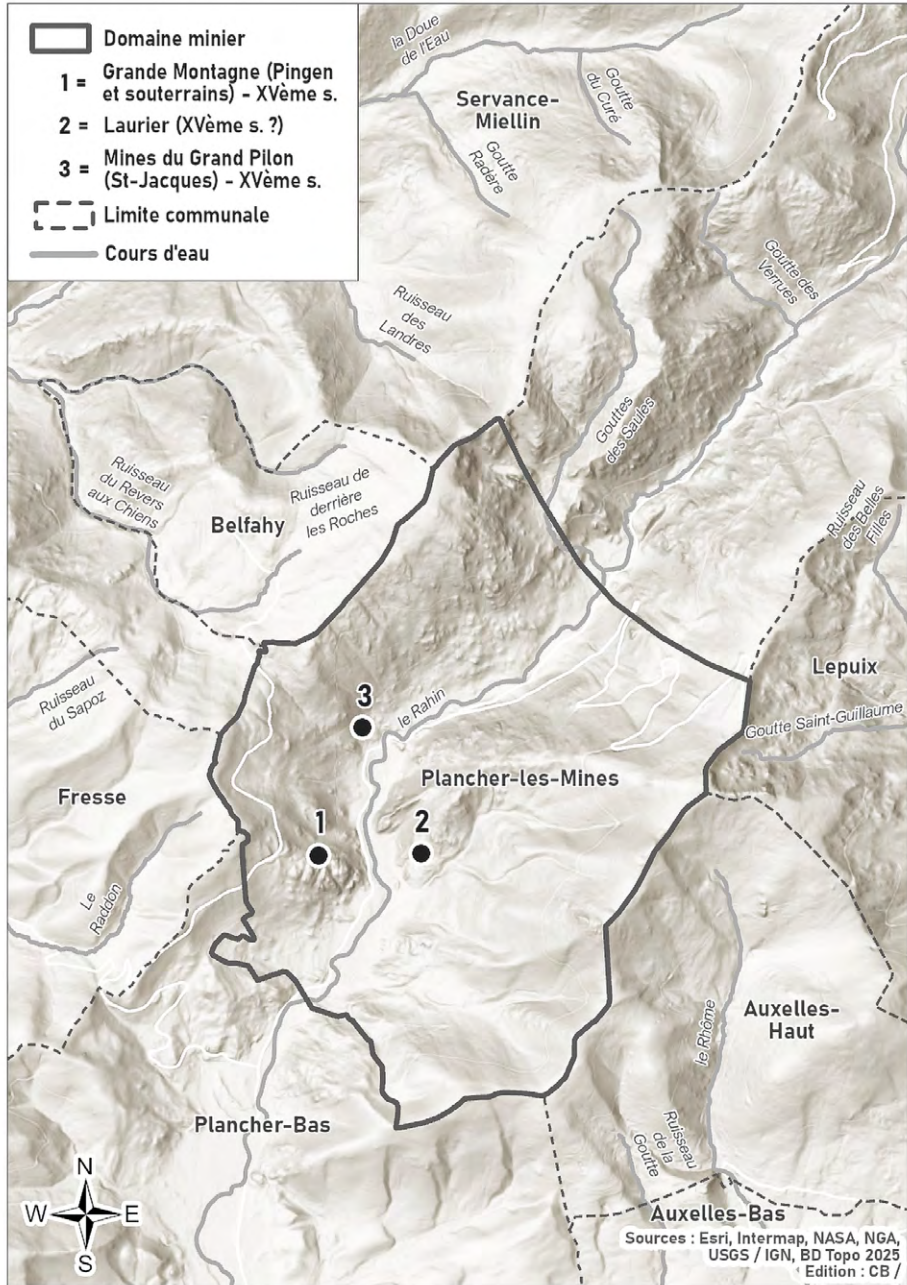


Fig. 2: Mining estate of Plancher. Author: David Bourgeois, Catherine Biellmann

hours a day, six days a week. Work was only halted on Sundays. Mine drilling unfolded in two-day shifts – one team of miners in the morning, another in the afternoon – while the smelters operated primarily at night. Ancillary activities (supplying wood to various work sites, repairing structures, washing and sorting ore) were carried out throughout the day. It must have been quite a shock for previously established neighbouring communities to see their land inverted by the arrival of miners and their families, who often did not speak the local language. As Denis Menjot has pointed out, ‘the ability of former residents to accept the new arrivals is undermined by stereotypes, beliefs or biased opinions’ which, in the case of the miners, were likely to be negative.²⁴ Mining catalysed major changes to the landscape – particularly to forests. The 1484 regulations removed nearly 20 km² of woods, fields, and river from people who had been living in the area for several centuries. Mining also changed people’s perception of the environment: clear-cutting of forests on mountain slopes altered the visual landscape while acoustic pollution was generated by a large, rapidly arriving population of miners. The mining regulations provide an estimate of the population present on site, i.e. around 500 people employed directly by the mine or indirectly associated with mining activities including tavern-keepers, miners’ wives and children, as well as prostitutes.

This demographic explosion in the Vosges (the southern Vosges in particular) was not an isolated case. The Rosemont mining region, a neighbouring valley to the east of the Rahin valley, followed a similar path, albeit slightly later. The mine first opened in 1472 and led to the creation of a new town, Auxelles-Haut.²⁵ This mining village also grew rapidly: in 1582, less than a century after the ore was extracted, the town had 120 houses.²⁶ In the absence of personal data on miners at the end of the Middle Ages, other sources provide clues about migration. On 31 May 1483, the inhabitants of the Rosemont mining valley were questioned about the origins of local judicial institutions. Among them,

²⁴ D. Menjot, ‘Introduction. Les gens venus d’ailleurs dans les villes médiévales: quelques acquis de la recherche’, in *Arriver en ville. Les migrants en milieu urbain au Moyen Âge*, ed. by C. Quertier, R. Chilà, N. Pluchot, Paris 2013, 23. Denis Menjot’s contributions have a historiographical scope that extends far beyond urban boundaries and they may be cited usefully here.

²⁵ Dijon, Archives départementales de la Côte d’Or (henceforward quoted as: ADCO), B11199 (Concession of the Auxelles mines to Jean Pillet, 1472).

²⁶ AA-Colmar, 2E221 (Auxelles-Haut’s description).

some inhabitants of the village of Vescemont, located near the first deposits in this area, had German names alongside those whose names were of local Romance origin. Jean Hennemann, Jean Willehart and Pierre Schmidt could be counted among those of German origin who were involved in running the mines and their annexes. The managerial, technical, administrative and judicial staff were therefore certainly not the only ones to come from German regions.²⁷

Further east, in territory under the direct authority of the Habsburgs, the Doller Valley had experienced population movements linked to the mines to such an extent that one of the valley's central churches, in Kirchberg, was specifically dedicated to these communities.²⁸ The bell of this building offers a brief reminder through an inscription: 'XLI CIVI CUCULI' ('forty-one hooded men, miners').²⁹ The church, situated in the centre of the mining sector of the middle Doller Valley, was in the immediate vicinity of several mining operations. Mining migrations directly influenced the placement of religious buildings.

The negative perception that pre-existing populations might have had of contact with these mining communities was reinforced by the miner's unique reputation. Individuals capable of exploiting metal deposits were highly sought after, due to their specialized technical skills. As a result, they were particularly mobile and were attracted to those who offered them exclusive privileges.

One of these advantages was the specific legal status of miners and the geographical framework of mining areas. In addition to setting out the geographical limits of the mining estate and therefore its legal status, the Plancher regulations were extremely protective against anyone attacking the mines or assaulting their workers. It also enshrined the fact that individuals working in the mines were subject only to the rights of the abbot of Lure, the owner of the premises, and the Provost of the Mines if the action in question took place in the mining estate. Outside the area, they were not subject to the jurisdiction of any other

²⁷ Monaco, Archives princières de Monaco, T1188 (depositions of witnesses in Chaux from 31 May 1483).

²⁸ AA-Colmar, Deposit collection from Sewen's parish, 118J2 (Chronicle of Sewen). One document mentions that this church was built specifically for the use of miners (*a metallis fundata*).

²⁹ L. Uhlich, 'Kirchberg, église des mineurs et Pfennigturm?', *Patrimoine Doller*, 8 (1998), 25–35.

courts, which could lead to a negative perception of these populations due to the legal immunity they enjoyed. This privileged legal status which imposed on miners some rights but also duties, was enshrined in the oath that they had to swear to the abbot of Lure:

Un chacun ouvrant au lieu de ladite mine ou residant en icelle, avant toutes choses, doit prester serment de fidelite au prevost pour lors estant en icelle, pour et au nom de Monseigneur de Lure et autres seigneurs ayant part en icelle, assavoir de procurer leurs honneurs, biens et proffits et de eviter leurs damages ; et aussi de entretenir tous les poincts et articles sus declairees, et ceux que en apres seront escrit, de toute leur puissance et pouvoir.³⁰

(Each person working in the place of the said mine or residing in it, before doing anything else, must take an oath of loyalty to the incumbent provost, for the benefit and in the name of Monseigneur the Abbot of Lure and other lords having a share in it, namely to safeguard their honours, goods and benefits and to avoid causing any damage; and also to maintain all the points and articles above declared, and those which will be written hereafter, with all their power and authority.)

Foreigners working in the mines were granted franchises on oath which, apart from their special legal status, exempted them from mortmain and made their status much more advantageous than that of the existing populations. This special local law, which arose at the end of the Middle Ages with the advent of mining, was perpetuated in the 'Reconnaissances de la Principauté de Lure', a compilation of customary and regulatory rights completed in 1572. The mining nature of this migration is clearly established, confirming a situation that had existed for over a century:

Nonobstant que le lieu des Mynes dudit Planchier soit franc pour les ymanans et residans, néanmoins ceux qui sont de condition de mainmorte et y ayants meix ou biens et decedans sans hoirs de leurs corps légitimes, la succession compete et appartient audit Seigneur Reverend.³¹

³⁰ AA-Colmar, 9G – Comptes 66 (Article No 22 Plancher's mines' rules, 1484).

³¹ ADHS, H583. 'Reconnaissances de la Principauté de Lure' (Written codes of customary law), 1572, two manuscript volumes.

(Notwithstanding that the place of the Mines of the said Plancher is free for the inhabitants and residents thereof, nevertheless in the case of those who are subject to mortmain and have lands or goods there and die without having legitimate heirs of their bodies, succession rights fall and belong to the said Reverend Lord.)

The Plancher miners' statute, while particularly innovative in this part of the Vosges, was inspired by regulations already in force in the mining districts of the German lands: the Black Forest (Schwarzwald), Saxony, and the Harz. It is particularly detailed compared with the only pre-existing example in the region. In 1387, the diploma issued by Archduke Albert III of Austria to the Abbey of Masevaux merely mentioned archducal protection for miners working in the Doller Valley, without any further details.³² The law was therefore structured and adapted to agents and constraints of mining. The Plancher Regulations and German mining law quickly inspired the necessary regulations to accompany the mining boom that was affecting the eastern outskirts of the Vallée du Rahin towards Haute-Alsace. In 1517, Emperor Maximilian I instituted new mining regulations concerning the mining areas of Alsace, Sundgau, Breisgau, and the Black Forest.³³ This regulation was not as effective as the Mining Regulation since it did not outline the precise boundaries of the mining area. However, it was still particularly protective for those whose livelihood depended on mines.

The emergence of mining operations and the arrival of miners enforced the coexistence of people subject to ordinary law and newcomers endowed with privileged status. These rights were not limited solely to the administration of justice, but also dealt with the exploitation of natural resources, permission to build houses and outbuildings, and the right to move freely. This helped create tensions. Conflicts between the village of Servance and the abbot of Lure over the use of the forests on the ridges separating this village from the Vallée du Rahin broke out in the middle of the sixteenth century. They had their origins in logging carried out by the miners. A note in the Abbey of Lure archives lists the documents relevant to the resolution of this dispute. It highlights

³² AA – Colmar, 10G8 (Charter of Albert III of Austria for Masevaux Abbey).

³³ Monaco, Archives princières de Monaco, T1200; F. Liebelin, *Mines et mineurs du Rosemont*, Soultz 2015, 197–201.

the deed of confirmation of the concession of the Plancher mines to the three bourgeois from Basel.³⁴

In many cases, therefore, miners suffered the consequences of migration through conflicts with existing neighbouring populations. This migration upset the social, economic and environmental balance, destroying entire regions. The shocks also affected a region's culture and customs. For example, the Plancher Regulations set out the conditions under which prostitutes could be received by the men of Plancher. This rare mention of rural prostitution is more surprising given that it had come from a charter issued by an abbey. In fact, it was adapted to the social circumstances of the miners, who often did not travel with their families or were not married. Elsewhere, prostitution was not allowed. The mining regulations were therefore bound to accentuate the divisions in and around the mines. Distrust of local population towards miners reached a climax at the end of the Middle Ages with the rise of the Reformation movement. During the Peasants' War of 1525, movements from the mining areas were particularly frowned upon by some of the local population. An anonymous chronicler living in the small town of Villersexel reported on movements described as Lutheran from Val-de-Chaux, Champagny and Plancher, all mining towns:

Et le jour de la fête de la décollation St. J.-B. ils coururent tout le Vaulx de Chaux, Champanez, Planchier, parce qu'ils étoient luthériens, et ceux de Lure et de Héricourt étoient avec le sieur de Belfort.³⁵

(And on the feast of the Beheading of St John the Baptist, they ran through the Vaulx de Chaux, Champanez and Plancher, because they were Lutherans, and those from Lure and Héricourt were with the Sieur de Belfort.)

³⁴ ADHS, H579 (Trial between the Abbey of Lure and the village community of Servance (1541 and following)).

³⁵ J.-M. Debard, P. Grispoux, 'Une source "perdue" de l'histoire de la Franche-Comté: la *Chronique de Villersexel* (vers 1479-vers 1529)', in *La Franche-Comté à la charnière du Moyen Âge et de la Renaissance*, ed. by P. Delsalle, L. Delobette, Besançon 2003, 45-70. Fragments of this chronicle were collected by Désiré Monnier and Charles Duvernoy, historians from the Franche-Comté region, in the nineteenth century and compiled and studied in the publication referred to above. The passage published here is transcribed by Charles Duvernoy and recorded in Ms Duvernoy 20 (fols 13 et seq.) held by the Besançon municipal library.

The impact of the Peasants' War movements on the German-speaking world led to a break in the migration of miners.³⁶ Certain leaders of these uprisings made demands on miners. Thomas Müntzer addressed a letter to the miners of Freiberg.³⁷ In 1525 Michael Gaismaier led a rebellion in the Tyrol, and his Provincial Order of 1526 provided for the confiscation of the region's mines.³⁸ In Joachimsthal, Egranus fought against the cult of St Anne, prized by the miners,³⁹ while closer to the Upper Rhine, the *bergvogt* (warden) of Todtnau, Ruprecht Schorb, was one of the leaders of the unrest in the central Black Forest.⁴⁰

However much the presence of miners, whether specialists or labourers, may have been frowned upon by the local communities, it was welcomed by the mine operators. Granting them franchises and recording this right in writing demonstrated the desire to attract them to their sites. Indeed, competition to attract this workforce was fierce. There were many mining operations in the Vosges mountains (Sainte-Marie-aux-Mines, La Croix-aux-Mines), in the Black Forest (Münstertal, Todtnau) and throughout the Rhine Valley. In 1487 Count Palatine Philip I of the Rhine published general mining regulations for the area of his

³⁶ Stöger, 'Die Migration', 173.

³⁷ Letter from Müntzer to the inhabitants of Allstedt (Mühlhausen, 25 or 26 April 1525), published in: *Thomas Müntzer (1490–1525). Ecrits théologiques et politiques*, ed. by J. Lefebvre, Lyon 1982, 135–68.

³⁸ O. Vasella, 'Gaismaier, Michael', *Neue Deutsche Biographie*, 6 (1964) (online version) <<https://www.deutsche-biographie.de/pnd118537172.html#ndbcontent>> [accessed 16 July 2025]; L.-M. Berger, *Die Tiroler Landesordnung des Michael Gaismaier von 1526. Inhalt und Bedeutung*, Erfurt 2014. According to him, mines were to be transferred from the hands of princes and merchants to those of the people in an egalitarian state made up of peasants and miners.

³⁹ Johannes Wildenauer, known as Silvius Egranus (circa 1480, Eger – 1553, Böhmisches-Kamnitz). From 1521 to 1523 and in 1533–1534, he preached particularly in the Joachimsthal, where there was a large population of miners. His meeting with Müntzer was decisive in this aspect. See: K. Blaschke, 'Egranus, Johannes Sylvius', *Neue Deutsche Biographie*, 4 (1959) (online version) <<https://www.deutsche-biographie.de/pnd118688146.html#ndbcontent>> [accessed 16 July 2025].

⁴⁰ T. Scott, 'South-West German Towns in the Peasants' War: Alliances between Opportunism and Solidarity', in T. Scott, *Town, Country, and Regions in Reformation Germany*, ed. by A. C. Gow, Studies in Medieval and Reformation Traditions, 106, Leiden – Boston 2005, 149–88; G. Bischoff, 'Mines', in 1525 – *Dictionnaire de la Guerre des Paysans. En Alsace et au-delà*, ed. by G. Bischoff, Strasbourg 2025, 312. A preacher from Mulhouse even headed for the Rosemont mining district to provoke a new uprising in the autumn of 1525: D. Bourgeois, C. Danforth, 'Mulhouse', in 1525 – *Dictionnaire de la Guerre des Paysans*, 330.

Principality, i.e. part of the Duchy of Baden-Württemberg, Hesse and Rhineland-Palatinate which reflected his long-range policy towards the mining industry.⁴¹ He granted numerous gifts to miners who attracted by his privileges settled in his lands, such as the Alsatian Konrad Klotz of Kayzersberg in 1488.⁴² In this competitive environment, the owners of the ore deposits in the southern Vosges had to create the right conditions to attract capital and human resources to take advantage of new deposits, even if this meant jeopardising the demographic balance of areas that had previously been relatively isolated from migratory flows.

Mining and the resulting upheavals could be undesirable for local people. The integration of these populations could present several problems due to the miners' traditional mobility, their cultural differences and the very nature of their activities. Feelings of mistrust around subterranean work, felling of timber, and the use of fire around mine shafts.⁴³ For the surrounding populations, the mine and the miners were invasive. However, while some people were forced to endure these migrations, those who wanted to capitalise on these metal resources welcomed them.

Migration of capital and know-how

While the migration generated by mining development caused upheaval in newly exploited areas, it was also solicited by authorities calling for the development of underground resources. Two types of desired migration overlapped: human migration based on expertise, and a migration based on capital.

To be sufficiently attractive to attract the large workforce needed to extract ore from mines required specific legislation and substantial financial resources. Attracting the know-how needed to ensure the viability of these operations required even greater financial resources. The mining boom at the end of the Middle Ages also created extremely

⁴¹ GLA – Karlsruhe, 67 Nos 1662, 466, fols 448^r–470^r.

⁴² GLA – Karlsruhe, 67 Nos 820, 267, fols 306^v–309^v.

⁴³ C. Lecouteux, 'Les personnages surnaturels du Moyen Âge germanique', in *Fées, Elfes, Dragons & Autres créatures des royaumes de féerie*, ed. by C. Glot, M. Le Bris, Paris 2002, 24–29; B. M. Adelson, *The Lives of Dwarfs: Their Journey from Public Curiosity toward Social Liberation*, New Brunswick – New Jersey – London 2005.

competitive conditions between mines. The demand for master smelters, miners and surveyors was high, and attracting the right people could be a challenge without substantial financial and political resources. Competition was fierce. In the north of the Upper Rhine area, the counts palatine of the Rhine were particularly active in recruiting labour and skills. In 1456, when Count Palatine Frederick I granted prospecting rights around Stromberg Castle, he entrusted the task to a group of seven men, one of whom was a Bohemian miner (Franz Bergmann von Beheim).⁴⁴ In 1476 once again he entrusted the mines at Nussloch and Peterswald (Palatinate) to a master miner from Freiberg (Hans Kluge) and a master digger from Goslar (Vyt Smeltzer von Goslar).⁴⁵ He went even further, calling in specialists for very specific assignments. In January 1466, he brought in a master miner from Savoy (Antoine Febri) to demonstrate his art of alum purification to the miners at Stromberg.⁴⁶ Competition for manpower and skills was therefore fierce in European mines in general, and in the Upper Rhine mines in particular. Not all of them had the political clout or financial scale of the counts palatine of the Rhine. Nevertheless, the towns and mines of the Upper Rhine provided many specialists in the art of mining, some of whom left their native lands to export their own skills. On a continental scale, the market for mining skills was extremely open, rough and decompartmentalized, paving the way for a great deal of mobility.

Hans Brohart, a master smelter from Breisach, was hired in 1455 to work in the Pampailly mines.⁴⁷ Brohart, in turn, was responsible for attracting Claus Smermant, a master grader, who in turn deployed his

⁴⁴ GLA – Karlsruhe, 67, No. 812, 55.

⁴⁵ GLA – Karlsruhe, 67, No. 814, 210.

⁴⁶ GLA – Karlsruhe, 67, No. 813, 246.

⁴⁷ *Les Affaires de Jacques Cœur. Journal du procureur Dauvet, procès-verbaux de séquestre et d'adjudication*, ed. by M. Mollat, Paris 1952–1953. This document, which contains a wealth of information, particularly on the Pampailly mines, was drawn up after the seizure of Jacques Cœur's assets. It is a source used in Benoît, *La mine de Pampailly*, 91. Hans Brohart, 'maistre fondeur et affineur, Jehan Brouhart, du pais d'Allemaigne [...] qui est très noble homme et expert en son mestier et riche et puissant' ('Master smelter and refiner, Jehan Brouhart, from Germany [...] who is a very noble man and expert and rich and powerful'), is a bourgeois of Breisach. He was recruited in Brussieu in March 1455 and appears to have been active there until February 1456. He then left for Lombardy and the Kingdom of France.



skills in Jacques Cœur's former mines.⁴⁸ The diary of Jean Dauvet, Attorney General of the Parliament of Paris, mentions other German names among the workers at the Lyonnais mines, but two specialists stand out for their technical skills and expertise.⁴⁹

The 'German' technicians, whether from Basel or the Rhine Valley in general, possessed long-standing expertise that was rooted in the technical traditions of the

Fig. 3: Miners at work in the Vosges mountains. Gradual of Saint-Dié, Saint-Dié Library, circa 1490

⁴⁸ Claus Smermant had already worked in Pampailly before joining Hans Brohart in 1455. Jean Dauvet clearly mentions his origin: 'We had to send for a man called Maistre Claus Simermant, who is a good master and expert, and who has also worked on other journeys and mines in the said mountain [...] who is a Maistre Claus and lives near Basle [...]'. It seems that Smermant did not live in Basel. He did not appear to own any property there. Perhaps he was then active in the mines of the Vosges or the Black Forest.

⁴⁹ Jean Dauvet was the King of France's ambassador to Rome and the Council of Basel. He was successively First President of the Parliament of Toulouse (1461) and Paris (1465). Having negotiated with the barons on behalf of Louis XI during the War of the Public Good, he died on 22 November 1471. His diary bears witness to his meticulous actions during the liquidation of Jacques Cœur's assets.

Upper Rhine.⁵⁰ They probably worked on the same farms or in the same sectors and were well-acquainted with one another. The confraternity they formed was illustrated when Hans Brohart was poached by Jacques Cœur. Thus, there was real competition in the Upper Rhine in the field of metallurgical and mining techniques and, given the number of veins being worked, there was a relatively large number of established and rising specialists. Basel-based Master Lienhart Kürsner, one of the Plancher licensees, represented this breeding ground of expertise. It is no coincidence that the oldest and most important mine in Plancher bears his name, the ‘Meisterlienhardsberg’, as he was its creator.⁵¹ It is possible that he crossed paths with Hans Brohart or Claus Smermant. At the very least, the circulation of knowledge in the Upper Rhine, as far as metallurgy and the art of mining are concerned, produced some convincing results. The transmission and application of this knowledge among technicians and craftsmen was mainly by word of mouth and experience. Half a century later, the Bergbüchlein bears witness to this method of transmission, from master to pupil against a backdrop of field experimentation.⁵² By the middle of the fifteenth century, the technical skills of the miners of the southern Upper Rhine had reached a sufficiently high level of maturity to enable them to supervise the exploitation of deposits that had previously remained untouched by any enterprise.

While it is undeniable that many miners and technicians flocked to Plancher, the fact remains that all the authorities owning the deposits did not hesitate to call on Germanic know-how to make the most of their underground riches. In medieval times, this Germanic know-how was virtually unavoidable and, failing to attract master miners, staff who were perhaps less reputed but experienced in mining work

⁵⁰ D. Bourgeois, ‘Savoirs et savoir-faire miniers et métallurgiques dans le Rhin supérieur au Moyen Âge’, *Revue du Rhin supérieur*, 4 (2022), 25–37.

⁵¹ Staatsarchiv Basel Stadt (henceforward quoted as: StaABs), Kartaus Q12. Hieronymus Zscheckenbürlin’s account book names the mine shafts bearing names of the Basel investors. Another deposit at Plancher was named after Hans Götterscher who made investments in the mines there after having worked earlier in the Münstertal mines in the Black Forest (Götterschenberg).

⁵² Calbus von Freyberg, *Bergbüchlein*, Bibliothèque patrimoniale, 8° res. 26, Ecole des Mines de Paris, 1505 <<https://patrimoine.mines-paristech.fr/exhibits/show/bergbuchlein/presentation>> [accessed 30 May 2025]. W. Pieper, *Ulrich Rülein von Calw und sein ‘Bergbüchlein’*, Berlin 1955.

could do the job. For example, at Mont-de-Vannes, in the County of Burgundy, west of Plancher-les-Mines, the accounts of the Faucogney Treasury show that the mines were sold to a certain Hans Landolt.⁵³ He was responsible for the operational use of the mines. His name, which sounds Germanic, seems to indicate that, once again, Germanic mining know-how was essential for anyone wishing to ensure the most favourable possible conditions for carrying out mining work. Hans Landol, or Landolt, was a burgher from Freiburg who later moved to Tunsel (a town in the immediate vicinity of Sankt Trudpert Abbey) and who, in 1480, traded goods with the blacksmith Blaise Kraft.⁵⁴ He therefore appeared to be the metalworker he had met in Mont-de-Vannes a few years earlier, who had settled in the Münstertal mining area. He is yet another case of migration based on mining techniques.

The mining expertise at work in the southern Vosges is indicative of Basel's interest in science and technology. Was it not at the press of the very famous Basel printer Froben that the most famous works by the Saxon Georgius Agricola were published, the *Bermannus* and above all the *De re metallica*?⁵⁵ Mining was not just an economic matter for Basel's interests. It was a sector of activity, a strategic one in which knowledge of the techniques involved was of paramount importance. The interest shown by Basel intellectual circles in the earth sciences and how they were used began with the incunabula published by the medieval encyclopaedists, before giving way to purely technical and vernacular knowledge in the first half of the sixteenth century. Even though Sebastian Münster did not depict the mines exploited by the inhabitants of Basel at the time, the spectacular view of the mines in the Sainte-Marie-aux-Mines' valley in his *Cosmographia* bears witness to the particular interest in mining issues.⁵⁶ This specific technical know-how therefore had a desired migratory effect. The example of Lienhart Kürsner, who worked in the Plancher mines, speaks for itself. Although in 1458 he is mentioned as a master foundryman based in Masevaux,

⁵³ ADCO, B4727 (Accounts of the treasury of Faucogney (1475–1476)).

⁵⁴ GLA – Karlsruhe, 22 No. 103. On 10 September 1487, Blaise Kraft's widow donated an annuity to the Oberried monastery from property acquired from Hans Landolt (GLA – Karlsruhe 22 No. 295).

⁵⁵ G. Agricola, *Bermannus, sive de re metallica dialogus*, Basel 1530; G. Agricola, *De re metallica*, Basel 1556.

⁵⁶ S. Münster, *Cosmographia*, Basel 1544.

which was as close as possible to the mines in the Doller valley, he further refined his skills in Plancher.⁵⁷ This experience prompted him to extend his field of action by involving himself in the Lötschental mines in 1474, in the Valais. He was accompanied there by his brother Mathias, also known as the 'Master'.⁵⁸ The know-how of mining technologies developed within small clusters of experts and was highly sought after. This technical and learned migration was chosen.

To implement a coherent mining policy in the southern Vosges, the operators also called on specialist management staff from outside the mining areas. Once again, the Plancher mines illustrate the migratory movements associated with mining development. The jurors responsible for monitoring the financial and technical operation of the mines all came from Basel or the southern Upper Rhine: Jacob Arbeiter, the nobles Conrad and Hans von Assell, Hans Becherer, Hans Fassnower, Ulrich Frisinger, Peter Graff, Fridlin Rimpflin and Hans Schenckel all came from areas far from the mines.⁵⁹ Furthermore, Hans von Assell was the clerk of the mines, responsible for the operation's day-to-day administration and therefore heavily involved in the local community. Thomas Harnscherer, warden or Bergvogt, was responsible for day-to-day order in the mines and was also from the Upper Rhine. The certificate he signed in 1487 indicates that he was a permanent resident of Plancher. The Plancher mining estate was therefore mainly exploited and managed by individuals from far afield, mainly from the Upper Rhine and other Germanic regions.

To exploit these valuable silver deposits, the landowners had to resort to another form of migration, that of capital. To attract this capital, they once again turned their attention to the Upper Rhine, Basel in particular, where the substantial merchant fortunes were best able to finance these costly projects. From the Doller Valley, the financial investment of these merchants was directed towards the virgin deposits of Plancher, before spreading to the neighbouring Rosemont Valley. This financial migration from Basel took place over three generations of merchants at the end of the Middle Ages.

⁵⁷ ADHS, H599.

⁵⁸ L. Carlen, 'Zur Geschichte der Bergwerke in Lötschen', *Blätter aus der Walliser Geschichte*, 17 (1980), 357–58.

⁵⁹ Frankfurt, Bundesarchiv Frankfurt, RKG, A867 (Certificate from the provost of the Plancher mines (21 November 1487)).

In 1494, Johann Bergmann, priest of the church at Sewen in the Doller Valley, gave his parish a book in which to record a chronicle, the anniversary masses and the members of the Confrérie Notre-Dame de Sewen, which had been active since the early fifteenth century.⁶⁰ The priest recorded dozens of names in the *Chronique de Sewen*, including those who had invested knowledge or capital in the mining industries. Some of them were already deceased, and three of them, active in the Doller Valley, were responsible for founding the mines of the Abbey of Lure in Plancher in 1458, namely Wernlin Fridigman, Lienhart Kürsner, and Jacob Schenk von Worms.⁶¹ These three people were the first generation of Basel investors to set up a business in the polymetallic mines south of the Vosges. The first of them, Wernlin Fridigman (circa 1400 – circa 1470), was the son of the cutler who had settled in Basel's Schifflande-port neighbourhood.⁶² A notable wine- and cloth merchant engaged in German- and French-speaking countries, he was close to the Halbysen Gesellschaft in Bern, in which he invested 4,000 *Rheingulden*, and was involved in diplomatic missions in the service of his town in Burgundy. When he obtained the concession for the Plancher mines, it was not the first time he had been involved in mining.⁶³ In fact, his name appears in an investigation by the Dijon Chamber of Accounts into the misappropriations of Jean de Prétin, treasurer of the Salins saltworks, in the exploitation of mines in the Münstertal in Breisgau in the early 1460s.⁶⁴ Freidigman also sought to expand his mining investments in

⁶⁰ AA – Colmar, Archives paroissiales de Sewen, 118J1-2. About Johann Bergmann von Olpe: V. Feller-Vest, 'Johann Bergmann von Olpe', *Dictionnaire historique de la Suisse (DHS)*, 2002 <<https://hls-dhs-dss.ch/fr/articles/021492/2002-07-02/>> [accessed 30 May 2025].

⁶¹ ADHS, H599.

⁶² He was the son of Hans Freidigman, who died in 1419. He shared the family property with his sister Agnès. His growing fortune enabled him to leave Schifflande and move first to Spalenberg, then to a larger property in the Faubourg Saint-Jean. His lifestyle was that of a comfortable and pious burgher; in 1441 he and his wife Wiberta were granted the papal privilege of having an altar in their house (Basel, Staatsarchiv Basel-Stadt St. Urk. 1245b).

⁶³ H. Dubois, 'Marchands d'outre-Jura en Bourgogne à la fin du Moyen Âge (vers 1340–1440)', in *Cinq siècles de relations franco-suisses: hommage à Louis Edouard Roulet*, ed. by G. Dethan, Neuchâtel 1981, 21–30.

⁶⁴ Archives départementales du Doubs, B2055 (Trial of Jean de Prétin, 1460–1464). H. Dubois, 'Un opérateur "international" au XV^e siècle: Jean de Prétin', in *Milieus naturels, espaces sociaux: Études offertes à Robert Delort*, ed. by F. Morenzoni, É. Mornet, Paris 1997, 543–53.

the massif, near Todtnau.⁶⁵ Limited by the competition or in search of untapped deposits, Freidigman focused his attention on the Vosges, close to a Burgundian world that he already knew well from his various businesses. His partners in Plancher were also from Basel. Lienhart Kürsner (died after 1478), a foundryman based in Masevaux, provided the major technical impetus for the development of the Plancher mines. Jakob Schenk von Worms (died around 1476) completed this trio of first-time investors. This first generation of investors in Masevaux and then in Plancher provided the decisive impetus for mining in this part of the Vosges mountain range.

Around 1477, the second generation of Basel investors entered the mines in the southern Vosges. Many members of the *Grosse Handelsgesellschaft*, the city's powerful trading company, invested heavily in the mines and began prospecting on a larger scale. Investment was made gradually in shafts in the Masevaux Valley and Plancher, followed by numerous attempts to open new deposits. First, the Zscheckenbürlin family, the town's wealthiest family, purchased many mining shares from 1477 onwards. They brought with them their allies, whether through marriage, such as the merchant and banker Ludwig Kilchmann, or through business, such as the famous Ulrich Meltinger.⁶⁶ Around them formed a conglomerate of individuals interested in the metal trade, who had already made their presence felt during the resounding Basel Mint Trial in 1475.⁶⁷ These individuals were imbued with a certain business acumen and were aware of the risks involved in mining. If the profits did not match their expectations, they did not hesitate to halt their investments. In 1484, when some of the mines in Plancher were not profitable, Hieronymus Zscheckenbürlin, one of the heirs of this powerful family, wrote at the bottom of one of the pages of his account register 'hab ich uffgeben' ('I gave up').⁶⁸ However, rather than abandoning his investment, he reoriented – these stubborn and determined businessmen never cancelled their investments completely. This same

⁶⁵ GLA – Karlsruhe, VIII.23.

⁶⁶ G. Signori, *Das Schuldbuch des Basler Kaufmanns Ludwig Kilchmann*, Stuttgart 2014; M. Steinbrink, *Ulrich Meltinger. Ein Basler Kaufmann am Ende des 15. Jahrhunderts*, Stuttgart 2007.

⁶⁷ F. Burckhardt, 'Der Basler Münzprozess von 1474/75', *Schweizerische numismatische Rundschau*, 38 (1957), 21–45.

⁶⁸ StaABs, Kartauss Q12 (Account book of Hieronymus Zscheckenbürlin (1484–1487)).

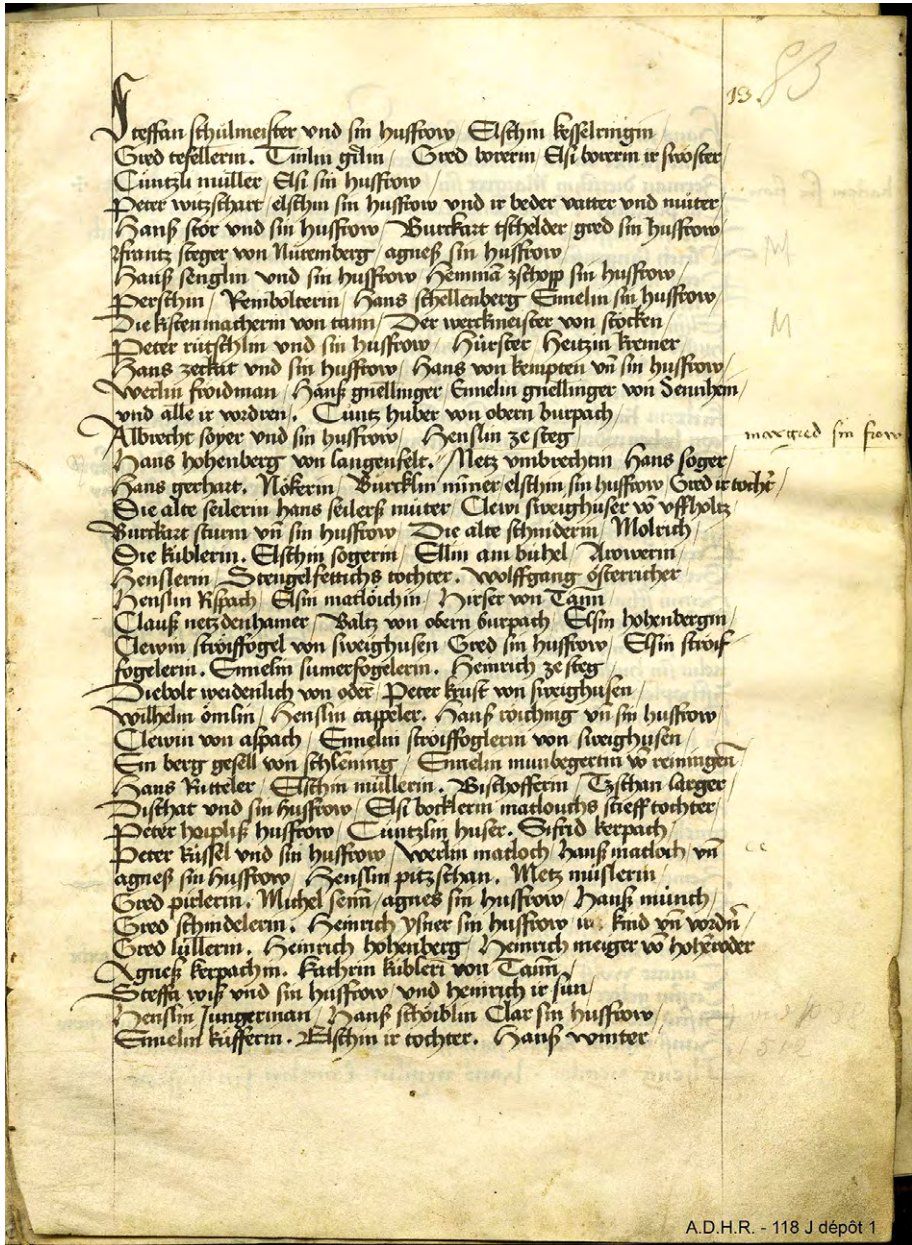


Fig. 4: List of the Virgin's Brotherhood, Sewen, 1494. Several miners and investors are identified. Archives d'Alsace, 118J1

individual, on entering a Carthusian monastery in Basel in May 1487, sold his shares in the mines at Todtnau, Masevaux and Plancher to his half-brothers.⁶⁹ Mining was one of the Zscheckenbürlin family's main interests, as can be seen from their archives. While mining transactions were scattered throughout the account books of Ludwig Kilchmann and Ulrich Meltinger, the Zscheckenbürlin family kept books dedicated to mining. Investing in mining was therefore a strategic, volatile, and long-term investment, with the potential to generate profits despite notable risks. The variable value of shares in mines reflects both the real economic interest of these operations and the desire of these businessmen to develop them. The example of Plancher around 1480, thanks to the Basel account books, speaks for itself. The Lienhartsberg mine on La Grande Montagne was extremely profitable and had a high value. In fact, it was the first and most productive mine (it was named after Lienhart Kürsner, who had opened it twenty years earlier). The other mines had a much lower value because they were very recent projects (and therefore not very profitable, if at all), spurred on by the latest investments of this second generation of Basel-based mining companies. The returns could be both profitable and ruinous. However, Basel interest in mining never waned and was sustained over time.⁷⁰

Economic pressure on Basel trading companies reached its climax in 1495. The city council halted their expansion and restored to the guilds and trades the influence they had lost. A third generation emerged: less wealthy but still dominant, like Gaspard Brand, a goldsmith and Basel middle-class citizen from Rüdesheim (Hesse), who made investments in Plancher and elsewhere in the 1490s.⁷¹ One may wonder whether this sort of enthusiasm made the southern Vosges a Basel hunting ground? Yes and no. Yes, Basel had a strong presence there. No, because the

⁶⁹ StaABs, Kartauss, Urkunden 360 (Transfer of Hieronymus Zscheckenbürlin's mining estate to his half-brothers (28 May 1487)).

⁷⁰ In 1549, the famous Basel jurist and humanist Boniface Amerbach complained that he was unable to enjoy the mining shares he had inherited in Plancher. He was a descendant of the Zscheckenbürlin family. Letter from Claudius Cantinucula to Boniface Amerbach (27 February 1549), in *Die Amerbachkorrespondenz*, VII: (1548–1550), ed. by A. Hartmann, Basel 1973, 205.

⁷¹ *Basler Chroniken*, IV: *Chronikalien der Rathsbücher 1356–1548*. Hans Brüglingers *Chronik 1444–1446*. *Die Chronik Erhards von Appenwiler 1439–1471, mit ihren Fortsetzungen bis 1474*. *Anonyme Zusätze und Fortsetzungen zu Königshofen 1120–1454*, ed. by A. Bernoulli, Basel 1890.

Steinbach mines appear to have been under Habsburg control and partly exploited by the Tyroleans. The burghers of Strasbourg also made a brief incursion into the Doller Valley, exploiting the Saint-Wolfgang mine.⁷² Later, the Plancher mines were taken over by the Abbeyes of Lure and Murbach as part of their union, and the Rosemont mines saw Basel and other investors coexist. The migration of capital from Basel to the mines in the southern Vosges took place over a long period of time. Providing know-how and capital, economic players in Basel and the Upper Rhine in general made a major contribution to the development of the region's proto-industry, contributing to protean migratory flows that sometimes took on a virtual form when it came to contributing to financial currents.

However, the mining companies in the Upper Rhine towns were never as successful as those in other towns in the German-speaking world, such as Augsburg. The constitution of the Basel companies was too fragile. On the one hand, by limiting the companies' room for manoeuvre, the city council prevented substantial combined investment in the mines. Secondly, as mining investments were made using personal funds, the sums available did not allow too many prospecting projects to be launched simultaneously. What the Fugger family could afford to exploit and market Tyrolean silver was beyond the reach of Basel merchants.⁷³ Despite the efforts of these companies, and despite the structuring of the mining regulatory framework, the migration of capital to the deposits was undoubtedly not sufficient to meet the initial ambitions. The quality of the veins and the quantity of ore available must also be questioned. Nevertheless, mining in this area of the Vosges mountains continued and increased until the Thirty Years' War without any major interruption.

⁷² Strasbourg, Archives de la ville et de l'Eurométropole de Strasbourg, III 16/9 (List of Froner (mining shareholders) involved in the Zum grünen Schild mine – Masevaux Valley (1490)).

⁷³ F. Braudel, *Civilisation matérielle, économie et capitalisme, XV^e–XVIII^e siècles*, III: *Le Temps du monde*, Paris 1979, 172; M. Häberlein, *Die Fugger. Geschichte einer Augsburger Familie (1367–1650)*, Stuttgart 2006.

Conclusions

The migratory movements triggered by mining activities caused a strong upheaval in the southern Vosges at the end of the Middle Ages. On the one hand, the geography of settlement was profoundly altered by the arrival of new settlers to these areas. Structurally, the transformation of these areas has had a long-term impact. Some mining operations lasted for centuries, though their dynamics and economic impact varied.⁷⁴ Almost systematically, the mining tradition gave way to an industrial tradition that marked these regions until the end of the twentieth century. On the other hand, medieval mining activity in the southern Vosges highlights the economic importance of Basel and its merchants in the southern Upper Rhine.⁷⁵ The initiative to dig mine galleries was in part taken by these urban economic elites, who worked in the mines as they did in other sectors of the medieval economy. In the Vosges, as elsewhere they did their utmost to attract mining specialists as close as possible to the deposits; all this in an extremely competitive environment for specialist skills.⁷⁶

The mines in the southern Vosges were part of a major economic trend in the West at the end of the medieval period. The thirst for money encouraged economic players to invest, and the Basel merchants, who played a predominant role in the region, logically embarked on this mining epic. They contributed to the European mining boom in an original way. While the first merchants put their networks into action to exploit the Vosges deposits, their successors tried to make their investments last, but the financing system based on individual or family investment was limited. The amount of money that these merchants were prepared to invest was perhaps not enough to develop the mines sufficiently. The importance of Basel economic circles in the mining history of the medieval West is nevertheless remarkable and original.

⁷⁴ The last call for projects to mine polymetallic metals was launched in 1839 for the Plancher and Rosemont valley concessions (Archives départementales de Haute-Saône, 297S26).

⁷⁵ H. Polivka, *Basel und seine Wirtschaft: eine Zeitreise durch 2000 Jahre*, Lenzburg 2016.

⁷⁶ S. R. Epstein, 'Labour Mobility, Journeyman Organisations and Markets in Skilled Labour in Europe, 14th–18th Centuries' in *Le technicien dans la cité en Europe occidentale, 1250–1650*, ed. by P. Arnoux, P. Monnet, Publications de l'École française de Rome, 325, Rome 2004, 255.

Silver from the Doller Valley and Plancher flowed into the mints of Thann, Colmar and Basel. However, this was not enough, as the mints also obtained supplies from the markets in Nuremberg and Frankfurt, while at the same time turning to the Sainte-Marie-aux-Mines mines.⁷⁷ Although modest compared with the districts of Saxony or Bohemia, the southern Vosges nevertheless continued to develop, and only the Thirty Years' War succeeded in putting a serious brake on this development.

As well as generating the migration of technical know-how and capital, the development of the mines in the southern Vosges gave rise to population movements that began in the second half of the fifteenth century and continued until the Thirty Years' War. Although there are no sources of names for the late Middle Ages, it is possible that the communities of miners who passed through the mines of the southern Vosges were not destined to settle there permanently. Hans Landolt, active at Mont-de-Vannes in 1475, had already returned to the right bank of the Rhine in 1480. Medieval societies were not immobile; they were in fact on the move.⁷⁸ The case of mining in the medieval West is a particularly telling example. On a continental scale, the movement of miners was particularly numerous, thanks to the growing development of mining. It should also be noted that the bulk of these flows came from miners of Germanic origin, who were particularly skilled and possessed a know-how that was both ancient and innovative. At the level of our case study, these migrations also saw the settlement of individuals from Germanic areas, some of which were regions with a Romance culture.⁷⁹ The migrants came mainly from the Upper Rhine from the areas economically dominated by major cities like Basel. The history of the mining industry in the southern Vosges in the late Middle Ages and in the early modern period, like that of the southern Black Forest, is strongly influenced by the Upper Rhine towns. They consolidated their areas of economic influence thanks to the mines.

The mines in the southern Vosges provide fragile evidence of their prosperity. A mining regulation shows the supposed number of people involved in mining activities and in providing a livelihood for these communities. These clues suggest the conditions under which certain

⁷⁷ Archives municipales de Colmar et de Thann (sous-séries CC, 'Monnaie'). STAaBS, Münz sub-series, D3.

⁷⁸ Menjot, 'Introduction', 4.

⁷⁹ Braunstein, 'Les entreprises minières de Vénétie', 530.

mining companies got off to a rapid start, and the initial successes that led to other initiatives. In the absence of statistical data for the late Middle Ages and early modern period, these indirect clues give an idea of the extent of migratory movements.⁸⁰ Although the mining areas in the southern Vosges did not play such a significant role in the medieval mining industry as the deposits in Saxony or Bohemia, they did have a major impact on the economic history of the Upper Rhine. They give an insight on the migratory flows of men, women and technologies that left a unique imprint on the migratory history of late medieval Europe.

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⁸⁰ I. Burghardt, C. Hemker, 'Das Archiv-Net Projekt: Bergbau und Mobilität im Erzgebirge im Mittelalter und in der Frühen Neuzeit', *Der Anschnitt. Zeitschrift für Kunst und Kultur im Bergbau*, 72 (2020), 240.

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Fig. 1: Silver mines in the Upper Rhine (end of Middle Ages) and transfers of urban capital and the implications of monastic establishments. Author: Joseph Gauthier, David Bourgeois, Benjamin Furst

Fig. 2: Mining estate of Plancher. Author: David Bourgeois, Catherine Biellmann

Fig. 3: Miners at work in the Vosges mountains. Gradual of Saint-Dié, Saint-Dié Library, circa 1490

Fig. 4: List of the Virgin's Brotherhood, Sewen, 1494. Several miners and investors are identified. Archives d'Alsace, 118J1