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Prehistory of the Upper Rhône Valley:

from Neanderthals to Modern Humans

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Abstract

The drainage basin of the Upper Rhône Valley, whose Middle-Palaeolithic to Final-Neolithic prehistoric populations are the object of our proposed study, features a rugged, uneven landscape and significant altitudinal variation, leading to considerable variations in temperature. The climatic changes that took place over the period in question, i.e. from approximately 50 000 BC to 2200 BC, saw glacial periods alternating with periods of warming, in the course of which new lands that had emerged from the ice were taken over by vegetation, fauna and humans. The Upper Rhône Valley, as well as the side valleys, was occupied throughout this time, and the impact of human activities on the environment can be seen from the Neolithic onwards, with the emergence of land clearance and slash-and-burn cultivation.

Keywords: Archaeology, prehistory, the Alps, Upper Rhône Valley, Neanderthal, modern human, palaeoenvironment

Résumé

Préhistoire de la Haute vallée du Rhône, de l'homme de Néandertal à l'Homme moderne. – Le bassin versant de la Haute vallée du Rhône, dont nous nous proposons d'analyser les peuplements préhistoriques du Paléolithique moyen jusqu'à la fin du Néolithique, présente une topographie accidentée avec des variations altitudinales importantes, induisant des variations de températures marquées. Les changements climatiques pendant la période considérée, soit d'environ 50 000 ans av. J.-C. à 2200 av. J.-C., alternent glaciations et périodes de réchauffement, au cours desquelles de nouveaux terroirs seront colonisés par la végétation, la faune et l'homme. La Haute vallée du Rhône, de même que les vallées latérales, sont occupées pendant toute la période prise en compte et l'impact des activités anthropiques sur l'environnement sont perceptibles dès le Néolithique, avec le défrichement et la culture sur brûlis.

Mots-clés: Archéologie, préhistoire, les Alpes, Haute vallée du Rhône, homme de Néandertal, Homme moderne, paléoenvironnement

1. Introduction

From its source deep in the Alps, the Rhône empties into Lake Geneva at Le Bouveret, a village situated between the French town of Saint-Gingolph on the left bank and the Swiss Villeneuve on the right. These mark the boundaries of the Upper Rhône Valley, which consists of two stretches of unequal length linked by the town of Martigny. A distinctive feature of the two parts is their different geographical orientation. From east to west, the first section begins at the source of the Rhône at the bottom of Goms Valley and ends at Martigny. The second, lying

roughly south to north, begins at Martigny and continues all the way to the mouth of the Rhône at Lake Geneva.

The drainage basin of the Upper Rhône Valley features a rugged, uneven landscape, significant altitudinal variation (from 374 metres at Le Bouveret to over 4,600 metres at the summit of the Pointe Dufour), and differential exposure to the sun, which causes considerable variations in temperature. We should not forget the climatic changes that occurred during the period we are focusing on, i.e. from around 50 000 BC to approximately 2200 BC. These consisted of alternating glacial periods and periods of

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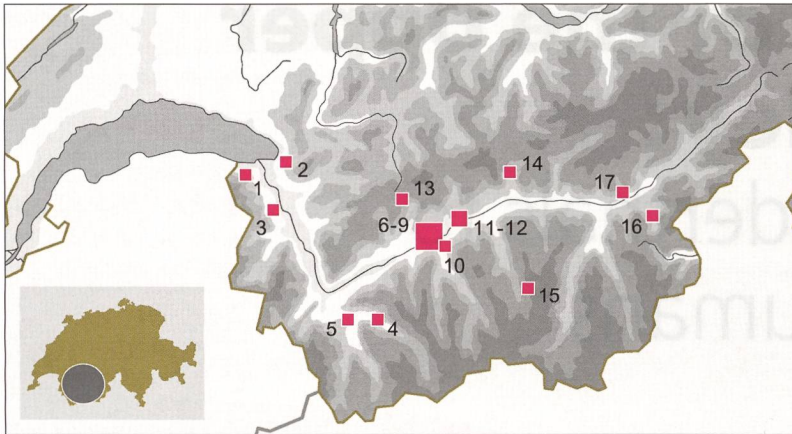


Fig. 1. Map of the Upper Rhône Valley drainage basin showing archaeological sites mentioned in the text:

1. Sur-les-Creux, Vouvry, Valais; Middle Palaeolithic
2. Scé du Châtelard, Villeneuve, Vaud; Upper Palaeolithic
3. Châble-Croix, Collombey-Muraz, Valais; Mesolithic
4. Les Dzardis, Villette, Valais, Val de Bagnes; Neolithic
5. Sembrancher, Valais; Neolithic
6. La Planta, Sion, Valais; Neolithic
7. Le Petit-Chasseur, Sion, Valais; Neolithic

warming, in the course of which new lands that had emerged from the ice were taken over by vegetation, fauna and humans. These would demonstrate their ability to adapt according to the different periods and biotopes.

The Upper Rhône Valley, as well as the side valleys, was occupied during the whole of the period in question (fig. 1) and the impact of human activities on the environment can be seen from the Neolithic onwards. It is not impossible and is even quite likely that the area was occupied not only more densely than we can tell today but also from earlier times, since the last glacial period, whose maximum glacial extent can be put at around 22,000 BC, eroded the whole of the Rhône Valley, with the result that only a few naturally protected caves at high altitudes survived.

12. From glacier to forest cover and from Neanderthals to modern humans

From a chronological point of view, the last glacial period happened sometime after 30,000 BC, and is generally put at between 27,000 and 22,000 BC (Bini et al. 2009).

Progressive warming began around 19,000 BC, releasing lands that would gradually be taken over by vegetation, fauna and humans.

The Upper Rhône Valley gradually emerges from the ice and the rivers generated by the melting ice reshape the landscape. The Rhône carves out its bed in the glacial trough at the highest part of the Rhône Valley, upstream from Fiesch. While alluvial and debris cones form at the ends of the side valleys, the Rhône plain is being covered with alluvial deposits. Some of these sedimentary deposits are substantial, particularly in terms of volume, and will gradually cover up all traces of previous human occupation. Signs of the earliest human presence, thought to be Neanderthal, were discovered in the “Sur-les-Creux” shelter in the Taney region (Vouvry, Valais) (Praz et Curdy 2000, Praz et al. 2000). The evidence is scant: a nucleus and some 15 pieces of debitage from local

8. Ritz, Sion, Valais; Neolithic
9. Chemin des Collines, Sion, Valais; Neolithic
10. Pranoé, Bramois, Valais; Neolithic
11. Sur-le-Grand-Pré, Saint-Léonard, Valais; Neolithic
12. La Crête-des-Barnes, Saint-Léonard, Valais; Neolithic
13. Col du Schnidejoch, Bern; Neolithic
14. Col du Lötschberg, Valais; Neolithic
15. Alp Hermettji, Zermatt, Valais; Mesolithic, Neolithic
16. Col du Simplon, Valais; Mesolithic
17. Bitsch, Gom Valley, Valais; Neolithic

quartzite. Still, Neanderthals occupied this shelter and shaped their tools here around 40,000–35,000 BC (fig. 2). No human remains have been found in the Upper Rhône Valley.

While in Europe Neanderthals are gradually being replaced by modern humans between 40,000 and 35,000 BC (the beginning of the Upper Palaeolithic), in the drainage basin of the Upper Rhône Valley the presence of modern humans only goes back as far as 13,000 BC. And only the Scé du Châtelard cave (Villeneuve, Vaud) on the edge of the Alps has yielded remains from this period, associated with reindeer and ibex bones.

The dry steppe-like environment of the Oldest Dryas is followed by progressively milder temperatures marking the beginning of the Bölling; the area is colonized by new species, such as juniper, birch and then pine. At the same time reindeer and horses – both species that thrive in open environments – are replaced by forest species, such as red deer, wild boar and roe deer. Around 9,500 BC, as warming continues, Mesolithic people are enjoying an increasingly diversified habitat; human settlements are growing in size, reflecting different choices and perhaps also different roles. Let us look at two contrasting examples. The first is the Châble-Croix site (Collombey-Muraz, Valais) situated at an altitude of 388 metres at the bottom of the Rhône Valley. Discovered under scree and a major deposit of sediment several metres thick on the alluvial plain, it yielded several occupation levels, structures for making fires and a cremation

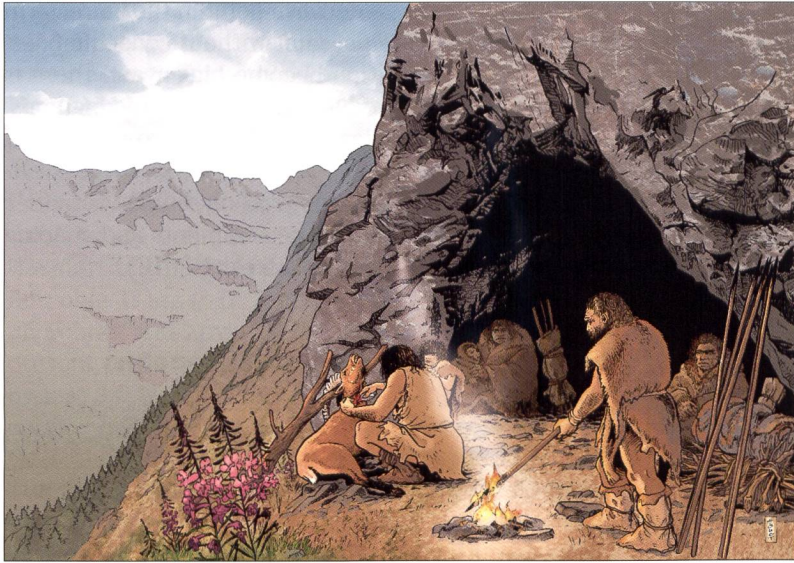


Fig. 2. "Sur-les-Creux" shelter (Vouvry, Valais) near Lac Taney, occupations by Neanderthals (drawing by A. Houot, from Gallay 2008).

burial site (Chaix et al. 2003). The second example is an occupation site in the high mountains at the Col du Simplon (Valais) at an altitude of 2,000 metres (Bullinger et al. 2010). With their expanses of smuts and numerous splinters of rock crystal, these Mesolithic occupations seem to be seasonal and of short duration. We should emphasize the fact that sedimentation is generally light.

13. The transition from a hunter-gatherer economy to a production economy

There is evidence of the first Neolithic communities from around 5500 BC. While the climate is relatively similar in the Mesolithic and Neolithic periods, technical, economic, social and ideological behaviours are changing. Whereas Mesolithic societies opt for a hunter-gatherer economy, Neolithic communities work with a production one.

Discovered for the first time in 1980 under six metres of alluvium on the Rhône plain, in the central La Planta part of the present-day town of Sion, the earliest Neolithic occupation levels indicate that they were raising goats and cattle (Gallay et al. 1983). Wheat cultivation completed the food resources. Only a small amount of evidence has come to light: fragments of pottery showing influences from the north of Italy; bone nee-

dles; flint knives displaying the shine typical of those used repeatedly for cutting cereals (Müller 1995).

The Middle Neolithic (in the broad sense of the term, between 4800 and 3300 BC) has been particularly well researched in the Upper Rhône Valley drainage basin, both in relation to its settlements and its burial sites. The villages were set up either on alluvial fans (fig. 3), which is the case for the Le Petit-Chasseur site in Sion (Besse and Piguet 2011), or on rocky outcrops, like the Sur-le-Grand-Pré settlement in Saint-Léonard (Winiger 2009). The post-framed houses have yielded pits for storage or waste, structures for making fires, and hearths and ovens as well as sleeping areas. Large quantities of carbonized wheat

grains have been found in a pit at the Le Petit-Chasseur site (Lundström-Baudais and Martin 2011). In addition to the children's graves often to be found within the houses themselves, the dead are buried in Chamblandes-type burial sites, which may consist of just a few graves or over a hundred, most frequently for a single occupant, but sometimes for more. Grave architecture may be simple, consisting of a pit or a cist made from slabs, and sealed with a capstone. The necropolises at the Avenue du Ritz and the Chemin des Collines in Sion are the oldest while the ones in Les Dzardis, in Villette in the Val de Bagnes, and in Sembrancher are more recent (Desideri and Besse 2009).

From the Middle Neolithic, the way society is organized is completely transformed. The size of human groups increases and villages are a recurrent arrangement; the economy now involves several habitats, such as the Rhône plain, where permanent settle-



Fig. 3. Stratigraphy at the Le Petit-Chasseur site in Sion, Valais (Photo M. Besse).



Fig. 4. Jewellery from the Final Neolithic found at the Le Petit-Chasseur necropolis at Sion, Valais, Switzerland; silver hair ornament and shell necklace (Photo Musées cantonaux du Valais, J.-Y. Glassey).

ments are established, and areas of middle-ranging mountains, which are used seasonally to provide pasture for flocks, amongst other things. This complementarity in the occupation of home territory goes hand in hand with well-established networks for the movement of raw materials and imported finished products, such as flint arrowheads (flint being absent from the heart of the Alps). Specimens of siliceous raw material have been found that come from the Parisian basin, the south of France, the Po Valley and even southern Germany (Affolter 2011) and reveal a thorough knowledge of distribution and economic networks.

The sources of raw materials and imported objects are different from those of cultural influences since the latter, identified because of a pressure-cutting technique, come only from the south of France (Honegger 2011).

We should perhaps draw attention to the existence of two sites that provide evidence of unusual and/or ideological social practices: firstly, the alignment of standing stones at the Chemin des Collines in Sion, on standing stones 5 and 9 of which can be seen two representational carvings of people praying and a hafted axe, and, secondly, the La Crête des Barmes carved rock in Saint-Léonard (Valais), situated about ten kilometres up the Rhône (Bocksberger et Weidmann 1964, Corboud 2003).

Another characteristic feature of the Neolithic is its technical innovations, such as pottery, stone polishing and the wheel. Added to this, human use of an energy source other than their own, in this case ani-

mal traction, marks a decisive point in the increase in productive forces. This is not without consequences. Fields under cultivation become bigger and there is an increase in the production of cereals and legumes, which means prior clearing using an axe with a polished blade and intensive, regular work. There is evidence of slash-and-burn cultivation; human activities are leaving their mark in the sediments and shaping the environment (Colombaroli et al. 2012).

4. From regionalism to European politics

The end of the Neolithic in the Upper Rhône Valley, between 3300 and 2200 BC, is subdivided into two main phases: the first, commonly called the “Valaisian Final Neolithic”; the second, the Bell-Beaker period, whose unusual feature was the geographic spread of the associated culture across the European continent.

Although it is always difficult to answer “why” questions in archaeology, we try hard to understand “how”: to work out the ways in which new cultural elements are incorporated. Are these innovations due to the import of raw materials and finished products, to a transfer of skills between individuals or else to the movement of people either individually or in groups? These questions, which may elicit several different answers, are central to research into the Bell-Beaker culture, which was a major component of the European Chalcolithic. So, while in the first phase of the Final Neolithic (3300 – 2500 BC) we can detect influences coming from the Swiss plateau, from the Jura region, from the south of France and from the north of Italy, nevertheless the organization and cultural expression of these communities can be identified as coming from the Upper Rhône Valley (Desideri et al. 2012). This is no longer the case after 2500 BC, when the integration of this region in a European network, the Bell-Beaker one, is indisputable. What can be happening in Europe that should make both it and North Africa share a common membership of one same network? One cannot help wondering about the nature of this. Is it economic? Political? Ideological?

The exceptional Le Petit-Chasseur necropolis in Sion, with its dolmens and its 12 cists made and used in the Final Neolithic and Bell-Beaker periods, allows us to understand the mechanisms that established the Bell-Beaker culture, since the quantity and quality of objects found in it provide us with an opportunity to assess the importance of the Final Neolithic substratum in the emergence of the Bell-Beaker culture.

The finds reveal a major shift between these two periods. Pots resembling upturned bells, decorated with the imprint of a cord or a comb, are characteristic of the Bell-Beaker culture; they make their

appearance in the Le Petit-Chasseur necropolis from 2450 BC onwards. Their orangey beige colour contrasts with the grey-black pottery of the Valaisian Final Neolithic. Parallel changes occur with the provenance of flint and general tools: the big blades of the Final Neolithic, carved out of flint from Grand-Pressigny (Indre-et-Loire, France) and retouched as daggers, are only present in the earlier phase. From the start of the Bell-Beaker period, only a few small flint objects are to be found, such as crescent-shaped microliths and arrowheads. Metal, although already present in the neighbouring regions, is represented by just a few objects from the Bell-Beaker period: a copper awl, a silver hair ornament imported from Central Europe (fig. 4), some gold rings...

The architecture of burial cists, on the other hand, has not turned out to be a criterion for distinguishing between cultures. While the two dolmens with triangular bases were constructed in the first phase of the Final Neolithic, the use of at least one of the two continued during the Bell-Beaker period. All the same, deconsecration rites have been noted, which is a sign of a social and ritual shift over time.

Anthropological analysis provides an explanation for these changes, however. A study of non-metric dental traits carried out on individuals from the Final Neolithic as well as on people from the Bell-Beaker period shows a partial renewal of the population in the Upper Rhône Valley (Desideri et al. 2011). The arrival of people who were assimilated into the local population to the point of being buried with them is therefore backed up by evidence. Analysis of strontium isotopes is underway to identify the region of origin of each individual (Desideri et al. 2010).

Evidence of the Bell-Beaker period, over and above the funerary pieces in the Le Petit-Chasseur necropolis in Sion, is found in Bitsch, in the Goms Valley, where different habitation layers have been uncovered following rescue excavations. Only some isolated structures and fragments of archaeological artefacts have been identified. This is not surprising; traces in the soil are often scant for these periods and only rarely have footprints of houses been identifiable. This is not the case with the Valaisian Final Neolithic, however; on the left bank of the Rhône, level with Sion, three part-buried houses have come to light in Bramois (Mottet et al. 2011). This domestic space dates from the same time as the first burials at the Le Petit-Chasseur necropolis.

The arrival of outsiders in the Upper Rhône Valley during the Bell-Beaker period coincides with a change in ideology, which we can discern from the artistic expression seen on the 31 anthropomorphic stelae in the Sion necropolis. This is because there are two types of iconographic stelae corresponding to the two periods of the Final Neolithic: the older ones have depictions of daggers (fig. 5) and double-spiral ornaments while the more recent ones show richly



Fig. 5. Stela from the Le Petit-Chasseur necropolis at Sion, Valais, initially anthropomorphic then re-sculpted for a second use; type A stela from the older phase, with a belt, Remedello type daggers and the fingers of the left hand.

dressed people carrying bows and arrows; the sun motif is also represented. From the iconography of weapons, they have moved on to depicting a person equipped with hunting gear.

15. From Mousterian nuclei to Bell-Beaker adornments: diversification of resources

While the materials used by Neanderthals in our study area are limited to quartzite, modern humans have been helping themselves to numerous natural resources throughout prehistory. *Chaînes opéra-*

toires multiply and become increasingly complex and the knowledge and skills required become ever more demanding until, in the Bronze Age, specialists emerge who devote their efforts to the making of metal objects, a task that requires complete mastery of complex technical skills and plenty of available time, thus impinging on time needed for food production. Consequently, these specialists are looked after by society, which, amongst other things, ensures that their daily food needs are met.

Several types of rock are used in a selectively targeted way: rock crystal for making bladelets; nephrite for producing arrowheads, beads, polishing tools and axe blades; clay for making pottery and ovens; gneiss, granite, quartzite and serpentinite for quern-stones and handstones intended for the grinding of grain...

In addition to those plant species grown first and foremost for food, some varieties are sought after for making objects: yew for making bows, larch for building post-framed houses, birch bark for small receptacles, flax for weaving...

The use of domestic and wild animals goes far beyond merely meeting food needs; bones are used for making tools such as points, awls and needles (fig. 6); tendons are salvaged for fastenings; skin for leather; while teeth are drilled and made into beads and jewellery...



Fig. 6. Middle Neolithic bone awl from the Le Petit-Chasseur site in Sion, Valais, made from bear penis bones (1) and goat metacarpal bones (2-4). (Photo M. Vautraviers, Geneva University).

If some materials are widely found, used and exported in the drainage basin of the Upper Rhône Valley, others are imported via the economic and social networks developed all through prehistory. So

it is that different types of flint found in Valais, and used in the production of bladelets, blades, daggers, arrowheads and crescent-shaped microliths, sometimes originated hundreds of kilometres away. Copper, which seems to have been mined in the Alps from the end of the Neolithic (Cattin et al. 2011), will, from the early Bronze Age, be alloyed with tin from faraway regions to make bronze.

In this way, natural mineral resources from the area (clay, rock crystal, gneiss, nephrite, schist, granite and copper) are exchanged for materials not found locally (flint, shells, tin...).

16. Conclusions

If the earliest human traces are Neanderthal ones, this may be attributed to the obliteration of evidence caused by the last glacial period. *Homo erectus*, who was around particularly in the south of France, may well have adventured as far as the Alps before the Neanderthals.

As it emerges bit by bit from the ice, the drainage basin of the Upper Rhône Valley is colonized by modern humans in the Upper Palaeolithic; there then follows a denser occupation from the Mesolithic, as they make use of the resources available in these contrasting biotopes.

Particularly in its middle phase, the Neolithic marks a period of general stability in the use and settlement of the land, an increase in the size of habitats, and, above all else, a discernible harnessing of the environment thanks particularly to land clearing and slash-and-burn agriculture. And animal power, now identified for the first time, contributes greatly to the acceleration of modern humans' hold on their environment.

In this apparently peaceful occupation of the Upper Rhône Valley, the mobility of people needs to be highlighted. Firstly, mobility within a community, ranging over different territories in search of raw materials, in order to hunt, to allow flocks to pasture, to farm... Also interregional mobility, as individuals or groups pass from one valley to another or from one region to another (fig. 7). Evidence of regular crossings between Alpine Valleys in the Mesolithic and Neolithic is provided by the high-altitude settlements (such as the Alp Hermettji one in Zermatt), the objects found on passes (such as the Mesolithic microliths at the Col du Simplon), the bow discovered at the Lötschberg pass, and the archer's equipment, complete with bow, birch-bark sheath and arrows, at the Col du Schnidejoch (Besse et al. 2010, Curdy et al. 2003). Two Neolithic people demonstrate the importance of prehistoric movements in the heart of the Alps: the first is the mummified "Ötzi" discovered with his clothes and his equipment at an altitude of over 3000 metres in 1991 during the glacier

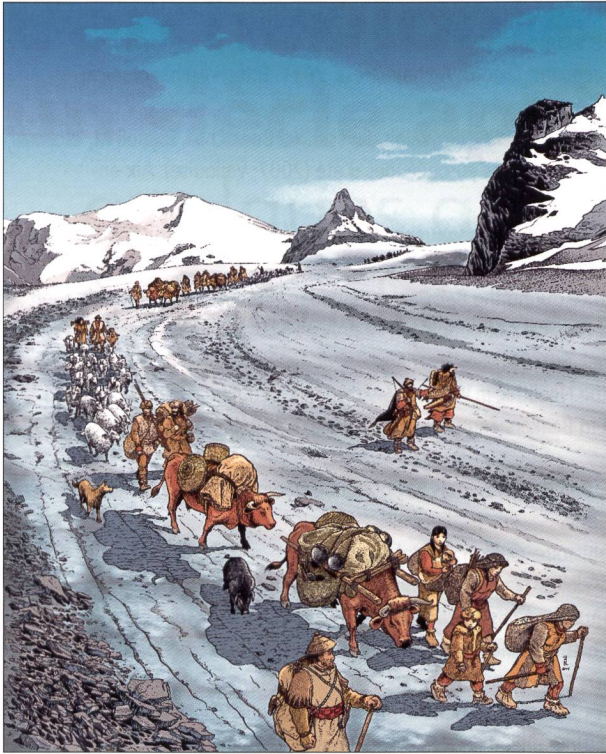


Fig. 7. Alpine migration in the Neolithic up at the level of Col du Collon (Arolla, Valais), occupations by modern humans (drawing by A. Houot, taken from Gallay 2008).

melt in the Tyrolean Alps. The second is the archer from Amesbury in the south-west of England, who is nicknamed *the King of Stonehenge* and whose grave yielded, as well as his skeleton, very rich grave goods. Isotopic analysis of the oxygen in his tooth enamel allowed his place of origin to be identified as the Swiss Alps (Fitzpatrick 2011). Perhaps he grew up near the Le Petit-Chasseur burial site in Sion...

Social structure is already complex. Economic networks intersect with cultural ones and the way society operates indicates that there is an undeniable social hierarchy. People of high rank, represented by the anthropomorphic stelae erected over several centuries, are venerated at ceremonies in which cultural practices and funerary rituals are intimately bound together.

So, despite the glacial erosion that wiped out evidence of prehistoric occupations before the last glaciation, and despite particularly thick sedimentation especially in the Rhône Valley, as well as major erosion of rocky outcrops causing compaction of prehistoric occupation layers, nevertheless, thanks to exploration programmes, archaeological rescue excavations and research programmes that include planned excavations, we can chart the prehistory of the Upper Rhône Valley from Neanderthals to modern humans.

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