

Human Use of Caves in Périgord, Dordogne, France

Claude MOURET; Jean-Michel OSTERMANN

Abstract

All significant human uses of caves in Périgord are reviewed: by Prehistoric Man, as burial places, as shelters for people, domestic animals and food, religious purposes, water collect, etc. Man sometimes suffered in caves, or made illicit practices in them. Harm to the Environment exists. Tourism and speleology are very developed. The latter leads to the thorough study of hundred of caves and to their good protection.

Résumé

Les nombreuses grottes du Périgord ont souvent connu une longue utilisation par l'Homme: représentations préhistoriques, sépultures de toutes époques, abris (personnes, animaux et nourriture), captages d'eau, usage religieux, etc. L'Homme y a parfois souffert; des pratiques illicites y ont été parfois conduites; les atteintes à l'Environnement y sont visibles. Le tourisme est très développé et la spéléologie aussi. Celle-ci s'attache à étudier toutes les grottes et à les protéger avec leur Environnement.

Périgord is a world-famous area in the South-Central part of France, for its ornated prehistoric caves (Lascaux...), numerous chateaus, fascinating landscapes (and for its delicate food). Many foreigners, British and Dutch mainly, have settled there.

Périgord has been the land of Man for long. It is also an extensive karst area, with hundreds of caves. Such favourable factors have resulted in a long inhabitancy in the caves and in many activities related to them. Speleology is very active in the area and has led to the acquisition of a wide knowledge, available in around 150 issues of speleological magazines, the most famous being "Spéléo-Dordogne", and in many papers.

This brief paper is only an outline of the topic. It is based on authors' knowledge and bibliographic review.

Cave use During Prehistoric Times

Needless to say that Périgord caves were largely used by Prehistoric Man. Both Neandertal Man and Cro-Magnon Man inhabited the area, which is rich in eponym locations of prehistoric cultures. Ornated caves are numerous, no less than 40 of them, and encompass painted walls, carved walls or both. Lascaux is world-wide famous. Others have names such as Rouffignac, Font-de-Gaume, Villars, Bara-Bahau, La Mouthe, Comarque, etc. The topic is specially rich and we are here forced to consider it extremely briefly. A large part of the cave paintings and carvings was discovered by speleologists, such as Rouffignac, Villars, Bara-Bahau, Jovelle, Fronsac, Cadoin (in 2000), among others.

Many caves have been excavated, with numerous discoveries of industries and burials.

Archeological Remains

Such remains are not rare and cover almost the whole time span from Palaeolithic to present day. They encompass abundant prehistoric materials, such as stone tools, ceramic fragments, pottery of different styles, but also remains from the Gallic and Gallo-Roman periods, the Middle-Ages and younger periods, for instance:

Ceramic fragments of the Bronze Age at grotte de Jovelle and 4 nice bracelets of the same age in grotte de la Calévie.

Protohistoric ceramic fragments and other remains in a cave near the Fronsac castle.

abundant remains from Palaeolithic to the older Middle Ages including pottery, tools, bones, etc. in grotte de La Martine.

a 18 cm long bronze statue of the Roman god Apollo, discovered a few years ago by a speleologist who was digging a choked passage in a small cave near Saint-Amand-de-Coly.

Medieval ceramic fragments have been commonly uncovered, e.g. at grotte de Peyreblanque.

Coins, as old as the 14th Century in some cases: grottes de Pradellas, La Martine, Pech Curret, Péchialet. Coins of Gallic period in Rouffignac.

Underground Shelters

Caves were used as shelters quite a long time in Périgord, because of the frequent invasions and troubles during historic times, at least until the end of "Guerre de Cent Ans" in the 15th Century, a long and terrible war during which inhabitants were forced to live under frequently precarious conditions. Subsequent religious wars between Christians brought their own lot of trouble. For these reasons, caves were a good place where to find some safety. Man-made underground tunnels and chambers called "*cluzeaux*" were also largely dug out and widely used. Caves were commonly used after some specific organisation work was made, sometimes including a significant reshaping based on the *cluzeaux* digging techniques.

Some caves were inhabited for long periods, such as grotte du Péchialet, or grotte des Maquisards where were found flint tools (Palaeolithic), ceramic from Gallic period, and from the Middle-Ages. This cave was also used as a shelter during World War II.

At grotte du Poirier, the entrance was closed with a wall of juxtaposed large flagstones, which was likely hidden from the outside by the depressed landscape and likely earth covering. The cave itself is quite large and shows a number of man-dug holes in the cave walls which were used to support beams. Stone walls form the three sides of two large enclosures along the cave wall may have been used either as the bottom part of a covered shelter for people, or to shed and hide domestic animals, to prevent them from robbery.

The goule de Jean du Noir shows remains of a closing system of the entrance. This cave was a good place where to stay, with a narrow entrance corridor followed by spacious passages with dormant water. Another cave near the old castle at Fronsac also shows the remains of a closing system at the entrance, and it also shows numerous prehistoric engravings.

The Grange des Putes Cave also shows man-made holes in the walls, which were used during medieval times to support parting walls and perhaps blockades. In the trou du Huguenot, a thick wall was built and a carved eye was made on the cave wall. In the trou des Martres, a wall was erected to support a scree cone. A chamber located a little deeper in the cave was made accessible by a man-made passage following an initial karstified fracture. At grotte de Rouchatoux, cave walls were adapted to support wooden beams. At grotte des Bernoux de la Ferrassie, holes in both walls of the gallery indicate that a wooden floor was existing, likely during the Middle Ages. Grotte du Roc shows a chamber dedicated to area watching. At the grotte de la Font-Bargeix, the part near the entrance was largely reshaped by man, on the troglodyte way. In this cave, as in a number of others, the use during the Middle ages followed other uses, specially during the prehistoric times, the Magdalenian in the present case.

Grotte du Déroc was used not only at the Chalcolithic but also, at an unclear period, as a shelter.

Small caves in travertines in Sourzac were re-shaped and used as shelters during the Middle-Ages. Traces of use during the same period were found in grotte des Cluzeloux. In the 18th Century, grotte de Bara-Bahau was closed by a wall with a locked door, perhaps to store the equipment necessary to cultivate a nearby vineyard.

Modern use is present for instance at grotte de Haut-La-Maison: a house is built in the entrance and the rest of the cave is used as the cellar; medieval pottery was discovered in it.

Graffiti are plenty and of different types:

Dates and names: grotte du Poirier (dates around 1880 and names); grotte de La Martine (date of 1669); grotte du Cluzeau (graffiti more frequent in the proximal part, including some "modern" ones near the entrance, dated among others 1687).

Drawings and carvings: grotte du Cluzeau (geometric patterns); grotte de Gausson (crossbow-like engravings probably medieval); grotte des Fadettes (cross and modern animal engraving, among others; plus more ancient graffiti which are not clearly dated); cave near La Chapelle-Faucher (unclearly dated engravings); grotte de Larzac ("recently" made engravings, stairs in the rock, closing system and re-shaping).

Pencil portraits in grotte du Péchialet (1847).

Shelter for Domestic Animals

Ancient use of caves as animal shelters has been recognised: for cattle, pigs, sheep. This use has been perpetuated up to present times in some cases.

A very interesting cave, the grotte du Pigeonnier de Laussel, has been walled at the entrance to make a dovecote, with hundreds of places for pigeons and a nice architectural look. Grottes du Pigeonnier (West and East) at Saint-Front-de-Domme are beautiful dovecotes as well.

Grotte de la Sudrie shed chicken, after its cave fill removal in the 19th Century and grotte des Combarelles entrance had a cowshed (and a house).

Food Storage and Food Production

In grotte de la Millette, no less than 40 silos were dug out of the moderately regular cave floor fill over some 400 m long. The passage is no much larger than the silos and one has to step across them to move in it. Silos are not exactly similar in shape and size, as each was dug out with no care for being regular, just being useful and convenient. Commonly are silo walls overhanging and the narrower upper opening is convenient to place the protecting cover. The depth is up to 1.5 m and the width at the base up to 1 m.

Grotte du Cheyrat also shows silos, in the shaly floor near the entrance. A cave near La Rochebeaucourt bears a possible silo or a partially dug water well. Other silos are known in Périgord, as in *cluzeaux*.

Silos were used for cereal storage. According to Savinien d'Alguié, cited by CARCAUZON (1991), they were used at least up to the end of the 18th Century.

Some caves were used to store wine and occasionally other drinks: grotte du Rajol, which is closed by a wall with a door, was used at the beginning of the 20th Century by a wine merchant to store his goods. One cave shows an oven to cook bread, at some distance from the entrance. Mushrooms were grown some 20 years ago in grotte des Crozes.

Uses Related to Religion

Caves were used by Prehistoric Man and their nice art may have had a religious significance. This has been largely debated, but it is still a matter of controversy.

2000 years ago, Gauls used some circular natural wells for offerings: characteristic ceramic fragments were discovered at the base. In Trou du Merle was found a Gallic goddess head (2nd Century AD).

More recently, churches have occasionally been built under cliff overhangs, such at La Madeleine, or at Caudon. Indeed, in La Madeleine, a whole cliff-hanged village is located on either sides of the church, which reflects a need for defence during troubled periods.

Crosses and cross-like features have been drawn in several caves, such as grottes de Rouffignac and du Serpent and aven de Caudon.

Grotte de l'Eglise, near Excideuil, was used as a hidden church during the French Revolution (XVIIIth Century). Statues of the Virgin Mary have been placed in the entrance at: grottes de Sourzac, de Prunier, etc.

Burial Grounds

Burial has been frequent in Périgord caves since the Palaeolithic times. The Neandertal Man buried at La Ferrassie some 60000 years ago is at the origin of the recognition of such burials by the scientific community. In subsequent times, burial cave sites are known for nearly every period. At grotte de la Croix, Neolithic burials were made, but the cave was also rich in ceramic fragments of the Iron Age. At trou de la Louve, archaeological remains of the Iron Age or the Bronze Age were possibly associated to burials.

Grottes des Ormes (Tene III), de Rouffignac and de la Fontanguillère (Bronze and Iron), grottes du Déroc and de Campniac (Chalcolithic and Late Neolithic) and so many others have borne burial places.

Grotte de Présillac, which entrance is a small reshaped shaft, shed Roman burials.

War-Related Facts and Crimes

Caves were used during World War II, in relation with resistance to invaders. For instance, grenades were stored in grotte de la Fontanguillère and other caves sheltered warriors hiding from invaders. War crimes were dissimulated in caves. At the trou de la Chèvre near Coulaures, collaborators to invaders were shot dead and thrown into the entrance shaft; their remains were recovered only after the war. Also, in a narrow vertical shaft, from which filling stones were being removed by cavers, the remains of a man who was likely buried alive were found some 20 years ago.

During difficult circumstances of former centuries, some natural shafts were used to hide murdered people or to push down some unpleasant people, as for instance gouffre de Proumeyssac.

Illicit Man Activity in Caves

Illicit activities occurred in Périgord caves as in many others. Forgery existed in grottes de Rouffignac and in Croze à Gontran. Cannabis stored in a cave was incidentally found by cavers some years ago. Sects meetings were pointed out a few years ago in caves located in southern Périgord.

In the 19th Century, fills were removed from several caves, Campniac specially, with very rich Neolithic artefacts and burials, and La Mouthe, to fertilize fields around. This practice destroyed major prehistoric places. Very damageable was in the early days of prehistoric research the too quick search for prehistoric, noble, layers in caves: overlying ones, proto-historic, Gallo-Roman, medieval, etc. were neglected and left in disorder, and so lost for science.

Younger Man activity in caves has often resulted in the destruction of older remains: medieval re-shaping of grotte du Pigeonnier Est partly destroyed prehistoric engravings. In grotte du Mammoth, the prehistoric ground was subsequently levelled. This also happened in Lascaux ! Names were written centuries ago on top of prehistoric paintings in grotte de Rouffignac, and graffiti cover other paintings in Font-de-Gaume. In croze de Salvatou, recent graffiti made by children from a vacation centre have largely destroyed older man-made lines on the walls, possibly prehistoric.

Mysterious destruction of palaeontological remains happened in grotte de Sarconnat, where skulls of cave bears were partly destroyed.

Uses Harming the Environment

Despite the prohibition by law, and despite strong and regular actions and information by speleologists, a number of caves and more specially shafts are still being used as wild garbage deposits or even as a convenient place where to throw animals dead from diseases. The "eydge" d'Ajat, the aven de Rouchatoux or the trou des Martres are good examples of this. The trou du Vent de Bouzic suffered similar problems for long, due to its 18 m deep entrance shaft. The gouffre de la Peytelie was nearly filled up with a variety of domestic waste, including animal corpses, cars, old washing machines, etc., despite its 15 m diameter and its depth. The gouffre (shaft) des Pénassoux was fully filled with domestic waste and was used to inject domestic effluents.

A few sinking streams bring some garbage and detritus into the underground realm. For instance, the pertes de l'Auvézère play such a role, despite repeated actions of polluting matter removal by Dordogne cavers. Faecal pollution entered grotte des Charreaux from the surface through karst fissures, as it was observed and denounced by speleologists.

Faecal pollution was also present in grotte de La Martine, which originated from the overlying city of Domme. Another infamous case was given by CARCAUZON (1991) who met with a sudden flood in the narrow grotte de la Javanelle during a sunny day. It appeared later on that this virgin cave was connected to a small sinkhole, into which waters from a treatment station were injected into the karst!

A re-shaped cave with stairs dug out of the rock (grotte des Canquilloux) receives waste water and animal slurry from a farm yard. It was discovered while digging foundations to build a large shed in the farm and 14th Century pottery fragments were discovered in it. At perte d'Aubas, the landowner used to direct run-off water into a small hole in the ground. A land collapse resulted and a large shaft devastated the nearby area.

Another harm to the environment is the gassing of animals such as badgers or foxes in their burrows. In a number of cases, burrows were indeed narrow cave entrances and it even happened that speleologists were in these caves when so-called hunters came to inject their deadly gases (chloropicrine or others)!

Finally, The walls of a small cave near Montignac were entirely tagged by unknown people.

Search for Water and Water Mills

On the karst plateaus where water is scarce, wells have been dug out, usually on the basis of divination. Several of them are the only access to caves:

Grotte de la Plansonnie: 27 m deep well; the underground stream is very regular and flows in a nice gallery broadly 2m wide and high.

Grotte de Beauronne (11 m deep well) and underground stream at Crabanac (9 m).

Grotte du Queyla, (5 m well, stream pumped by a hydraulic ram).

La Borie Well, cased down to 65 m depth, though the water table stands at -18 m; cave at -38 m.

Other wells are not the only access to the cave they reach: grotte de La Reille (stream), grotte de Patissou (stream, 4 m deep well), grotte de Queyssac (lake), grotte de Fonroque (stream reached at 100 m from the natural outlet; a small dam gathers the water below the well, as in La Plansonnie).

Karst springs are used to collect water for domestic purpose, after treatment: *résurgence des Moulinauds* (a spring with one in the biggest flows in Périgord), *source du Toulon*, *source de Glane*, *résurgence des Fonts*, *grotte du Plancat*, the outlet of the underground stream at *Sourzac*, *source de la Clautre*, *fontaine de Bouzic* (a spring derived from the *trou du Vent*, a formerly polluted cave), *source de Sarconnat* (despite it collects the polluted stream in *grotte des Charreaux*).

At *grotte de la Grèzelie*, a cave on a hill slope, the entrance is walled and the catchment has led to the elevation of the water level. In *grotte de Bridoire*, the water is pumped to the outside by a hydraulic ram.

A lot of springs fill open tanks where women used to wash clothes (wash houses = *lavoirs*): *fontaine du lavoir de Beaussac*, a karst spring at *La Bachellerie* (formerly used for domestic purpose), etc. At *Fonroque*, collected water also ensured cattle drinking.

Karst springs moved water mill ("moulins") wheels: *grotte droite des Douymes*, *Doux de Coly* (the longest dived sump in the world, more than 4,2 km long one way, end not reached), *résurgence de Bezan*. The "moulin de Soucy" is located along a sinking stream from *Auvézère River*.

Mineral and other Resources

No real mining activity is known to have occurred in Périgord caves. Nevertheless, calcite exploitation was going on for some time, at least at the end of the XVIIIth Century. Calcite vases were made of calcite from *grotte du Poirier* (*grotte d'Azerat*), in which large stalagmites are re-shaped as parallelepipeds. Extraction took place largely in *grotte de Roffy*.

Guano was collected during XIXth Century to fertilise poor soils around the *grotte de Vezac*. A trial was done after two priests killed almost all of the bats.

Caves are sometimes supposed to hide treasures, as is *grotte de La Mole*: the owner spent several years digging out the cave fill, searching for the "golden calf" of an old legend.

In Villars area, several paleokarst fills are presently extracted to make tiling tint and for silicium industry.

Caves and Public Works

Several caves were discovered during public works activity, such as railroad construction, road reshaping, telephone posts emplacement, quarrying and house building. One opened suddenly in the tarmac of a road and was plugged. Near *Saint-Germain-des-Prés*, a cave is accessible only from a bedroom!

Tourism

Tourism is a major activity in Périgord caves. No less than 30 of them are widely opened to visitors, without including troglodyte sites. Many are related to prehistoric art, such as Rouffignac, Font-de-Gaume, Les Combarelles, Bara-Bahau, Villars or to cave sites, such as Proumeyssac, Domme, Carpe Diem, or the exceptional geode of the Grand Roc, which is full of calcite speleothems, including spectacular helictites.

Underground tourism in the area has a quite old origin. Not taking into account questionable pleasure trips by the Prehistoric Man, famous visits with local guides were made to grotte de Rouffignac, and recorded since around 1570 (GUICHARD, 1993). Similar visits to other caves have been reported during the 18th Century.

Visits with local guides still exist, but these are highly qualified speleologists with a National diploma.

Science and Culture

Périgord caves have been widely used by prehistorians and other archaeologists, specially since the 19th Century until now.

At present, one cave, called grotte de La Faurie, is used for scientific research: speleothem growth is studied in detail in it by a specialist of carbonate deposition. Other measurements are made in Villars.

Ground stability is currently studied at gouffre des Fraux, a gravity-related cave made up of high, narrow passages which are the result of a gentle hill slide towards the adjacent valley: indicators of rock motion have been placed at critical locations and monitored. This cave is located below a nice castle and its surrounding village!

Vertebrae palaeontology was studied, but to a moderate extent. Usually, remains were studied when they were found associated with prehistoric human remains and/or artefacts. Purely palaeontological sites were not really studied, despite some nice discoveries by speleologists, such as the grotte des Borderies (Carcauzon, 1991), with cave bear, hyena coproliths, bison, auroch, horse, cervidae, capridae, etc. Cave bear remains were also discovered by speleologists in fossil passages of the Sarconnat Cave. Remains discovered in the entrance scree of the gouffre de Taille-Petit were dated in Lyon with the C14 method. Bison was unearthed from a cave near Meyrals.

Traces of life of cave bears are relatively common in Périgord caves, but they have not been studied for themselves. Bear footprints are not uncommon and wall scratches left by their claws are familiar to speleologists. Their oval pan-shaped places for hibernation (wallows) are also well known, in grotte de Rouffignac specially. Several biospeological studies have shown a rich troglobite fauna. For instance, Niphargus and Caecospheroma (troglobite Crustaceans) are found in numerous cave streams.

Of course, legends exist about caves in Périgord. Some movies and novels relate to them.

Speleology, Cave and Karst Protection

Extensive speleology has existed in Périgord for half a century, after a long period with less activity, and mainly prehistoric research in caves since the 19th Century. Thorough exploration, including digging and diving, cave mapping, study and reporting is very well advanced.

Protection has always been a major concern to speleologists, with good reasons. Doors were installed at a number of cave entrances, in order to protect them: Crobique (giant calcite crystals), La Roffy and Orliac (speleothems), Journiac (safety), Doline du Lavoir de Bussac (owner's request), Les Borderies (speleothems and paleontological remains), Sarconnat (water catchment protection), prehistoric and tourist caves, etc. placing doors is not a target but it is occasionally necessary.

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