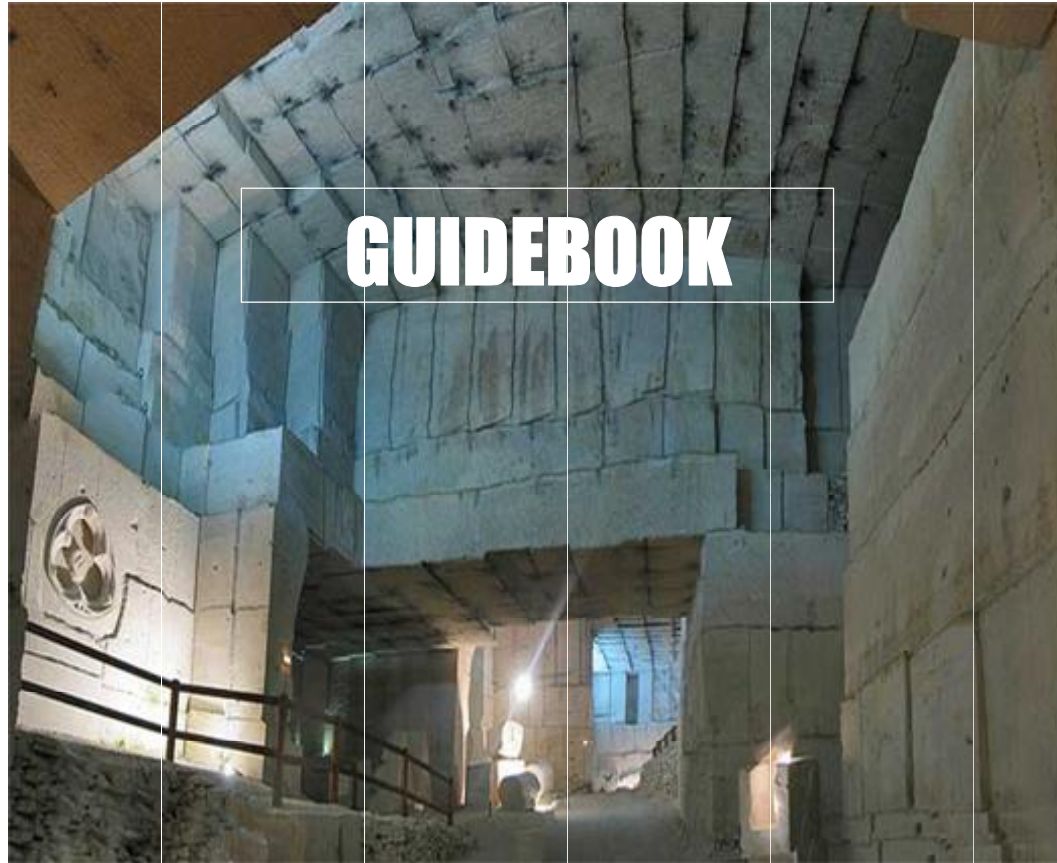




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Translations by Michel Fish and Alexandre Lainé - Any reproduction or utilization must obtain prior approval.

WELCOME to the Underground Quarry of Aubigny

You are presently at the borderline between the **Burgundy Duchies** and the **Nevers Earldoms**.

The region is known as **FORTERRE**.

Bordered by the Yonne Valley and the Puisaye, Forterre is a natural region of 45 000 hectares, characterized by its high plateaus dating from the Jurassic period containing huge deposits of oolitic limestone.

There are two hypotheses concerning the origin of the name FORTERRE, and both are certainly justified:

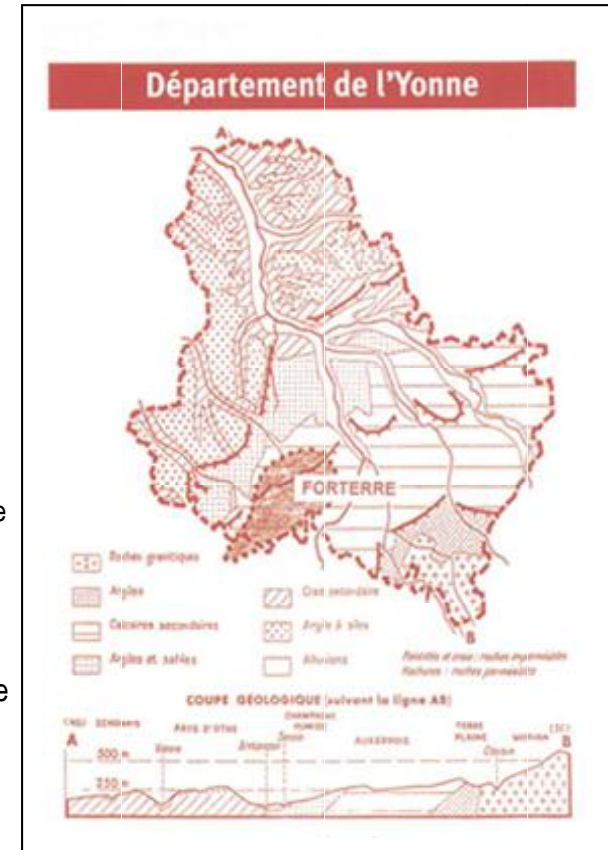
- TERRE FORTE, coming from « terre fortifiée » (fortified land), dating from our Gaelic ancestors,
- FORTE-TERRE, referring to a land difficult to till, the stones of which wore out the tools.

It would seem that Forterre was inhabited as early as the Neolithic period. Later, the **Celts** occupied the region, and two villages bear witness: **JEUILLY**, near the quarry, where excavations enabled the discovery of ancient tombs (the quarry once sheltered a sarcophagus workshop), and **COURSON**, where the location of their circular-shaped village can still be seen.

The word “cercle” (circle) seemingly meant fortified village and may have given the village its name (CURCELONUS in Latin, COURCON in ancient French).

TAINGY, the village where the quarry is located, reaches 386 meters at its highest point. Forterre was also the area where the **Battle of Fontenoy** took place in 841, when Charlemagne’s grandsons bloodily shared the old Carolingian Empire between them. Forterre is the land of stony earth. It is everywhere, on the ground of course, but more specifically underground, to a depth of more than 60 meters, and over an area of 50 hectares.

You will be in the center of a mass of 60 million tons of stone !



200 million year ago, this was a tropical region and the sea covered the entire area. It remained for nearly 100 million years. This huge stone bed was created by the deposit of the skeletons of sea animals and, more specifically, the shells of giant mussels and their sediments. This stone is a white oolitic limestone (from the Greek *ôon* “egg” and *lithos* “stone”), with a fine grain, and classified as tender to semi-hard by stone cutters.

It is perfectly adapted to sculpture and construction known as PIERRE DE TAILLE (ashlar). Its resistance to compression is of about 110 kilos per square centimeter. Extraction stopped in 1940, as the stone was supplanted by concrete and breeze-block.



16 underground quarries were opened over time and only 1/5th of the deposit was extracted.



The origin of these quarries is mostly unknown. Concerning the quarry you are visiting, excavations performed nearby, in the Merovingian village of Jeuilly, and in the quarry itself, uncovered various coins. One in particular bears the effigy of **DOMITIEN II**, Roman Emperor in the year 81 AD.

This quarry was thus being exploited 2000 years ago, in the Gallo-Roman period. At the beginning, the stone was most certainly for religious purposes, to make sculptures and stone coffins: two sarcophaguses can be seen in one of the halls. Later, it was used in the construction of the first churches and later still, the fabulous cathedrals.

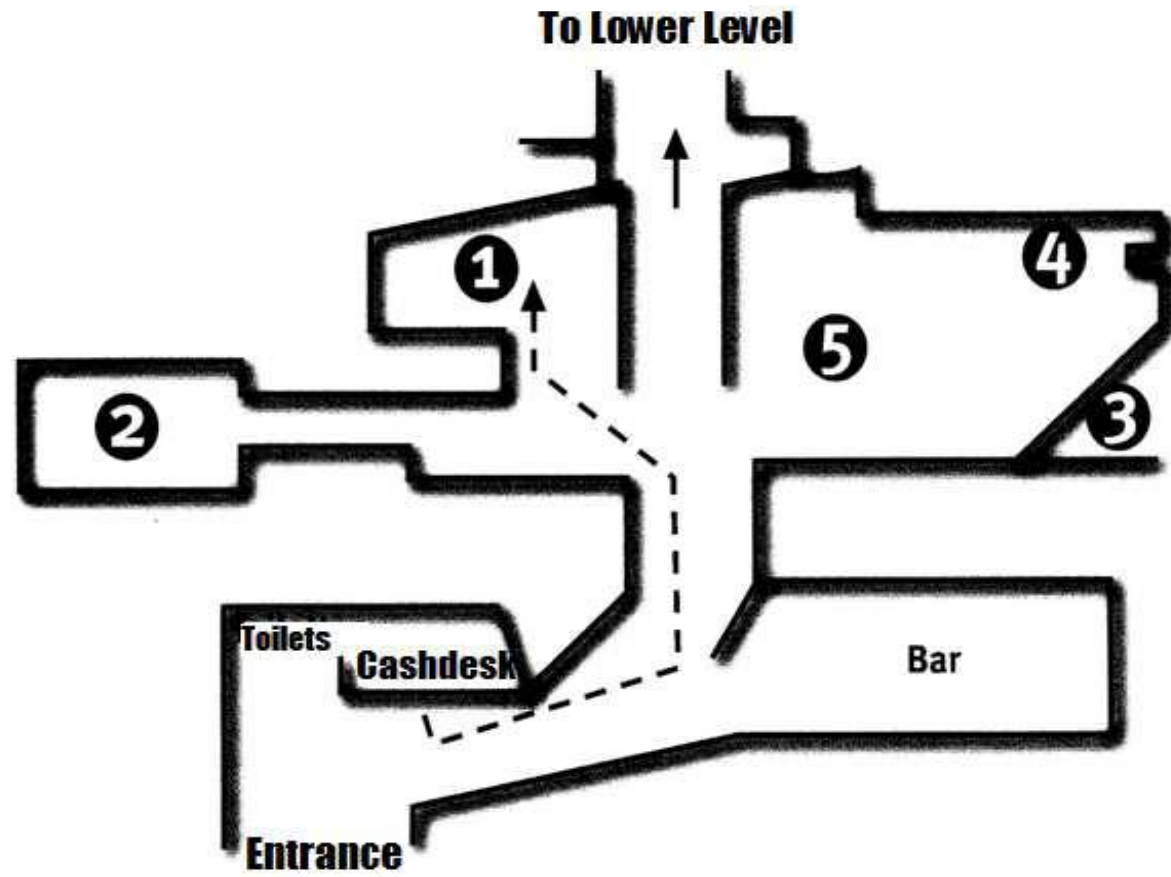
It is really in the 18th and mostly 19th centuries that an intensive extraction took place for it is at that time that, among others, the Baron HAUSSMANN launched the huge construction programmes of French public buildings. The need for stone became very important and the Forterre quarries contributed to the construction of local town halls, law courts, train stations and schools. They also supplied stone to build well-known buildings in Paris, such as the **City Hall**, the “**Conservatoire des Arts et Métiers**” (National School of Engineering and Technology), the “**Jardin des Plantes**” (botanical garden) and, of course, the **Opera**.

Le Conservatoire des Arts et Métiers

Around 1850, these quarries employed about 1000 workers.



Plan of Upper Level





The Quarry Cutting Face

The underground quarry of Aubigny was only exploited by craftsmen, meaning that mechanical tools were never used. Only two tools, dating from the beginnings of time, were used: the spear (**lance**), a heavy metal bar, pointed on one end, hanging from a chain, and the smaller needle (**aiguille**).

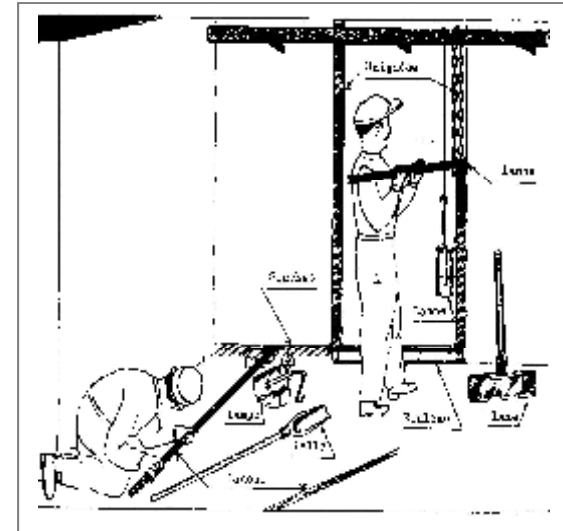
To extract a block of stone (**blot**), the quarryman (**carrier**) dug out two vertical slots to a depth of about one meter, by swinging the "**lance**". Then, with the "**aiguille**" that he held with both hands, he dug out the upper horizontal slot. On the ceiling, rectangular cuts can be seen, with a slight difference in level. In fact, the "**carrier**" worked with the "**aiguille**" oriented slightly upwards to avoid hurting his hands. In a third step, he used the "**lance**" to dig out the lower horizontal slot, with a much more important opening (this lower horizontal slot is called "**le four**"). The block of stone in front of you weighs 5 tons and required 5 to 6 days of work. Then, very dry wooden wedges were forced into one of the vertical slots. The atmosphere in the quarry is very damp – 80% of water. The wooden wedges absorbed the dampness and expanded. They thus "pushed" the block of stone to one side. It broke away from the wall and fell forward owing to the shape of the lower slot. To soften the fall, the "**carriers**" would place pieces of stone in front of the block, the "**chandelles**".

From the 19th century onwards, the "**carriers**" used the crocodile saw (**scie crocodile** or **croco de carrier**), to saw the back side of the block, in order to have a back face perfectly shaped and thus accelerate production. The stone blocks were pulled on metal rollers and placed on drays called "**fardiers**" with the help of a winch called "**crapaud**" (behind you). These blocks were then shipped in convoys pulled by mules or by waterways to various cities. When sent to Paris, the conveyors delivered the stone to the worksites, sold the mules and wagons, then walked home.

Un fardier

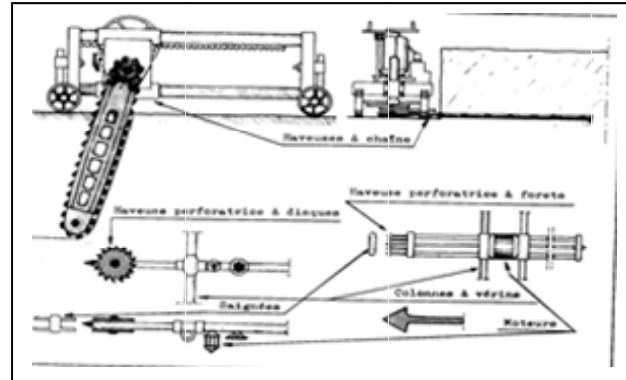
La scie crocodile

l'aiguille



Extraction began at the top layer called "**banc cadette**". Then, the "**carriers**" worked their way down.

You are standing on 15 meters of landfill made of stone powder and waste. This is known as "**repos**" and was formerly used by farmers to cover the ground of their stables. A "**carrier**" extracted ½ square meter of stone per day and was paid according to his output. Nowadays, a shearer (**haveuse**) can extract 4 square meters per day. This quarry was exploited to a height of about 12 to 16 meters. The vault above you is one solid piece of stone and its thickness varies from 15 to 25 meters. In the quarry, the stone is waterlogged. When it is exposed to air, the water evaporates, carrying away lime carbonate and other mineral salts from inside the mass, which are deposited on the surface. A thin layer is formed which hardens and protects the stone. This crust is calcite, and is known as "**calcin**".



This is the reason why extraction is performed underground.



Throughout the quarry, you will observe many marks. These grooves are the marks left by the "lances" and the "aiguilles"; the smooth faces of the stone are the result of the "croco"; the vertical holes served as racks for the supporting beams of the "lance". You will also notice black streaks on the ceiling. They are the marks left by the lamps. Until the mid 19th century, oil lamps, small copper or brass objects in which soaked a wick, provided little light and much smoke.

Acetylene lamps, also known as carbide lamps, appeared around 1830 (hanging on the tripod). An acetylene lamp is made of two watertight reservoirs. A solid block of calcium carbide is placed in the bottom one, and water in the upper one. The water falls drip by drip on the calcium, creating a chemical reaction and an inflammable gas – acetylene.

The marks left by acetylene lamps are much less visible than those left by the oil lamps. While walking through the quarry, keep an eye on the ceiling and according to the marks, you will know which epoch you are strolling through.





The Hall of Masterpieces

Three symbolic people are possibly at the mythological origins of guilds: **Salomon, Master Jacques** and **Father Soubise**. In the past centuries, hansas, brotherhoods and guilds have been incredible builders and rigorous educators. Nowadays, there are three guilds in France:

- **UNION COMPAGNONNIQUE DES DEVOIRS UNIS**
- **FEDERATION DES COMPAGNONS DU TOUR DE FRANCE, DES DEVOIRS**
- **ASSOCIATION DES COMPAGNONS DU DEVOIR**

Young stone-cutting journeymen, learning their trade with craftsmen or companies specialized in renovation of historical monuments, must regularly create a technical piece of work to show their level of know-how.

This work is called a “**maquette**” (model).

When the journeyman becomes a “**Compagnon**” (Companion), his last “maquette” is then called “**Chef d’oeuvre**” (masterpiece).

In this exhibition, the visitor can admire “maquettes” and “chefs d’oeuvres” made by journeymen and Companions from the Compagnons du Tour de France.

The **monumental gateway** under which you passed to access this exhibition was made by young journeymen, training during their “Tour de France” (a mandatory training period, in various geographical locations in France).

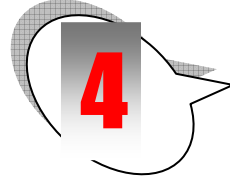




The Stone-Cutting Tools

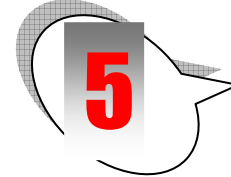
All the traditional stone cutters' tools are presented:

The **PIC**, probably dating from the metal age, the **MARTEAU TAILLANT** (cutting hammer: 1000 years BC), the **MARTEAU TETU**, the **POLKA**, the **MARTEAU GRAIN D'ORGE**, the **BRETTURE** and the **CHEMINS DE FER**.



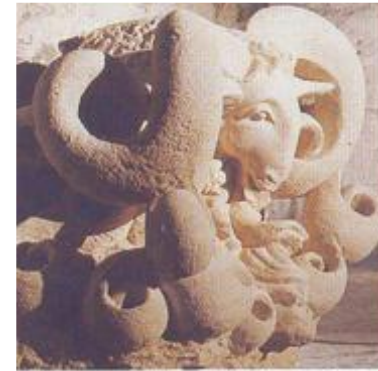
The Stone-Cutting Workshop

The workshops are open to pupils and youth groups, and welcome several thousand children each year; the participants learn to work with stone.



Several Achievements

The "**Bélier**" (Ram), masterpiece sculpted by Charles VAILLANT



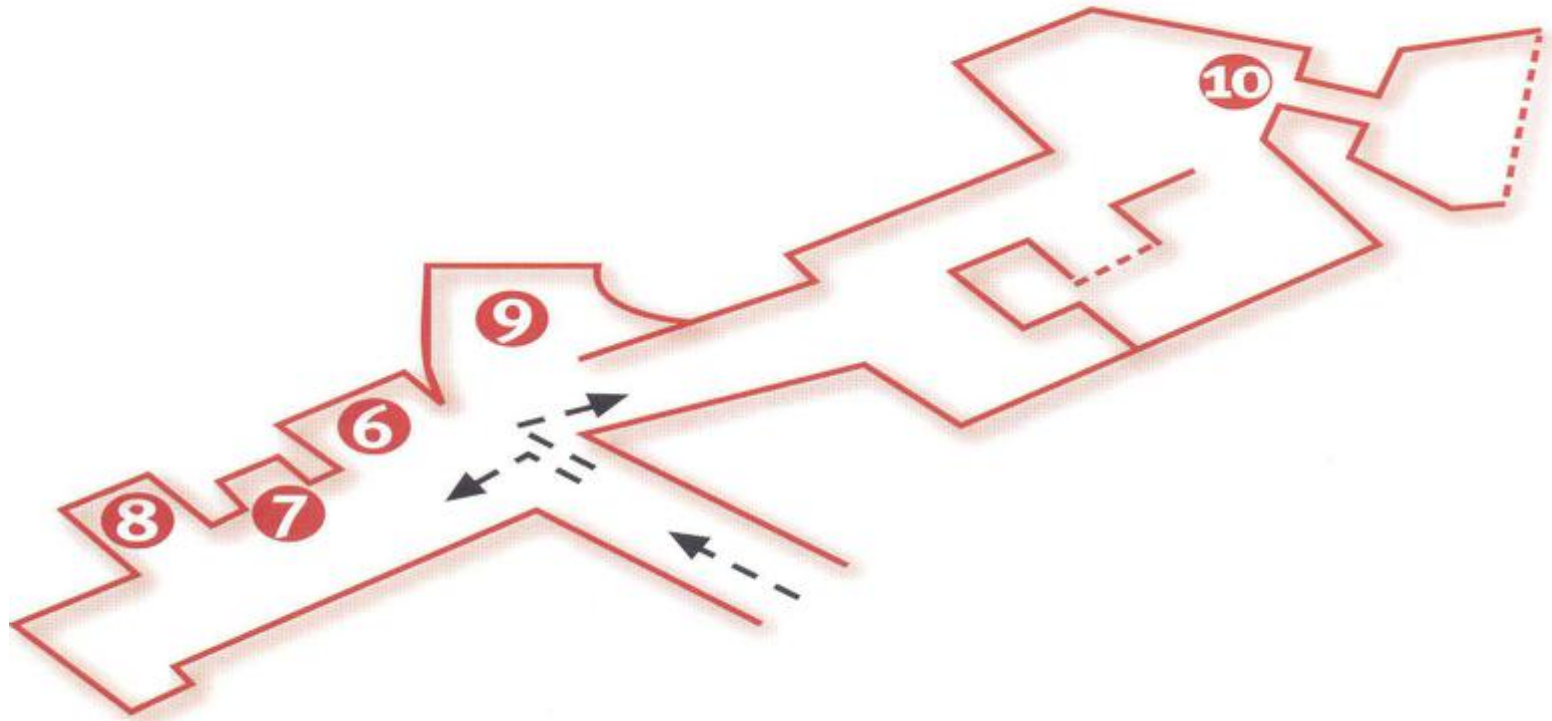
Nicolas Bonnet,
"Better Worker of France"



Follow The Central Aisle

On your left, a contemporary sculpture by Nicolas FLESSIG, "**Assemblages**" (Assemblies) can be admired. It symbolizes the stone before extraction. A little further down, on the right, a masterpiece by Testuo HARRADA, a Japanese sculptor, who sculpted his interpretation of "**La Vie**" (Life).

Plan of the Lower Level





The Staircase to Ascension

This monumental masterpiece, called the **Stairs to Ascension**, was jointly created by about 60 members of the Union: Masons, stone cutters, sculptors, wrought iron craftsmen... Its construction, accomplished in public, each year, at Ascension and All Saints Day, lasted **10 years** (2001-2011) Concretely, it is a hollow core staircase with two helical stringboards and ornaments. In fact, it represents much more to its designers. Indeed, according to Bertrand LEBOISSELIER, one of its architects, "it is an autonomous entity that finds its meaning in its own existence. It was made to be seen and admired... but also to see the Quarry and, by physically rising into space, to become aware of the mass of stone and, consequently, the inherent vacuum. Thus, it is indeed the transient part of a whole, fully integrated in its environment. As a matter of fact, its shape reveals the paradoxical relationship between vacuum and fullness, these opposites which finally come together. To its usual function of staircase, as a means of physical access from one location to another, a more symbolical function can be added, allowing passage from one spiritual state to another... and allowing self-discovery."



This is an exceptional and unique masterpiece...

Please help us protect it by remaining outside the safety zone





The Rose Window

In 1994, young stone cutting trainees from the Unions worked during one week in front of the public, under the supervision of three “Compagnons” (companions). Starting with a rough piece of stone, and only allowed to use traditional stone-cutting tools, they had to create the parts of this trefoil rose window that was then embedded in the stone wall.

To the left, in a circle, the **marks of these stone cutters** can be seen. In the Middle Ages, these marks were in fact **signatures** that allowed foremen to recognise and **pay the workers**. This mark was always to be **placed on the side hidden** in the wall. It is apparent today because a reconstruction has been accomplished.





The Sarcophagus Room

First of a series relating the **great Architectural Orders**, this **Egyptian Column** was created by young sculptors of the “**Tour de France des Compagnons des Devoir**”. Notice the **plant-like ornaments inspired by the palm tree** that characterised the sculptures of that period. The exposed sarcophagus were excavated from **Merovingian graveyards** located in the Forterre region.



A contemporary masterpiece by **Yann LIEBARD**: **the eye** that watches over the quarry.



This part of the quarry was exploited in the second half of the 19th century, at a time when the demand for stone was very important, particularly in PARIS, where Baron HAUSSMANN had launched gigantic construction projects.

Note the rigorous flatness of the ceilings, executed by quarry workers using “**aiguilles**” (needles). The manual technique had reached near perfection!





Backtrack,

and visit the Geologic Exhibition focusing on minerals, soils, sands and rocks of Burgundy and created by the pupils of the Jean-Roch-Cognet grammar school of Courson-les-Carières. Further down, facing the mass of fallen rocks including the **Dinosaur Eggs** (sculptor creations), you are 50 meters underground.

Nothing is exposed in this part of the quarry. Thus the quarry workers' skill can be admired and light was only added to enhance rooms' cubic architecture. A peculiar atmosphere radiates from this "negative" edifice, with a charming sensation.



Are you not in a **mysteriously buried cathedral** or the subterranean rooms of an ancient **Egyptian pyramid**?



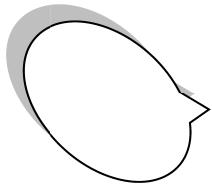
Bats' Alley

The subterranean passage that you are to take to reach the small quarry is the natural path used by the bats that live in the quarry. Of the 17 European insectivorous species, 15 live on site, where they quietly spend the Winter months sheltered from the cold and breed. The smallest species, the "**pipistrelle**", and the largest one, the "**grand murin**", whose wingspan can reach 30 cm, cohabit peacefully, and their number is in constant progression. Bats are essential to human life and are a legally protected species.



**Your visit is now over, but take the time to enjoy the charm of the quarry.
Upon leaving, an agent will be available to answer any question.**

Thank you for visiting the Underground Quarry of Aubigny



Schoolchildren Visiting the Quarry

The visit starts by a 20 minute commentary adapted to the children's school level. It stresses the origins of the stone, the history of the quarries, the underground work methods, the workers' life, stone cutting and the Companions, the ancient tools, and many other aspects related to the site...

Thanks to an initiatory journey, the children will progressively discover the huge rooms and the stone cutters' and sculptors' masterpieces, and will easily imagine they have penetrated the secret tunnels of an ancient Egyptian pyramid.

Then, they will have the opportunity to become novice stone cutters!!

A real, 40 workstation, stone cutting workshop, equipped with the adequate tools, has been installed in the quarry. In this specially adapted to youngsters, the pupils will have a hands-on opportunity to work the stone.

Under the supervision of an experienced supervisor, they will create a simple object **they can take away with them !**

Classes are supervised by a competent guide and the commentaries are adapted to the class level. The quarry welcomes several thousand pupils each year. Thus, **early bookings** are strongly suggested.



On the www.carriere-aubigny.com website, teachers can download the school work sheets adapted to each educational cycle.

The Village of Taingy : the Roof of Forterre

As fief of the Castgellany of Druyes, Taingy (2200 ha) belonged to the Counts of Nevers. At an altitude of nearly 400 meters, this village is truly the roof of Forterre.

Built on a steep slope, the village overlooks the valley of Taingy where a perfectly restored and charming 19th century wash fountain can be admired. Five principal hamlets, Aubigny, Lais, Jouilly, Richebourg, Vassy and a little further out, la Métairie, la Grance Mélois and Arcy make up the village's jurisdiction.

In the village itself, **the imposing 16th century church** is dedicated to St. Martin. This imposing, flamboyant gothic, white stone edifice is composed of a large nave, a simple seven-sided apse and a portal overhung by splendid chimeras.

Take a stroll through the narrow lanes and trails, where you will notice the **vertical architecture** typical to the Forterre region as well as the ashlar constructions. The latter are often embellished with brownish red bricks from the region of Puisaye.



The **monumental stone statue**, sculpted by Sylvain RAUD and symbolizing the hope of humanity in the 3rd millenium, with children climbing the stone, is located in the public garden.

An **enamelled lava viewpoint indicator**, allowing a 360° view of the area, is located at the village's highest point, the **Moulin Neuf** (new windmill). The gorgeous panorama will allow the visitor to see **Vézelay**, the **Chablis** vineyards, the village of **Druyes les Belles Fontaines** and its feudal castle, the **forest of Frétoy**,

the **Loire Valley** to the West.... and on a very clear day, **Paris** to the North