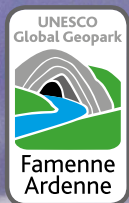
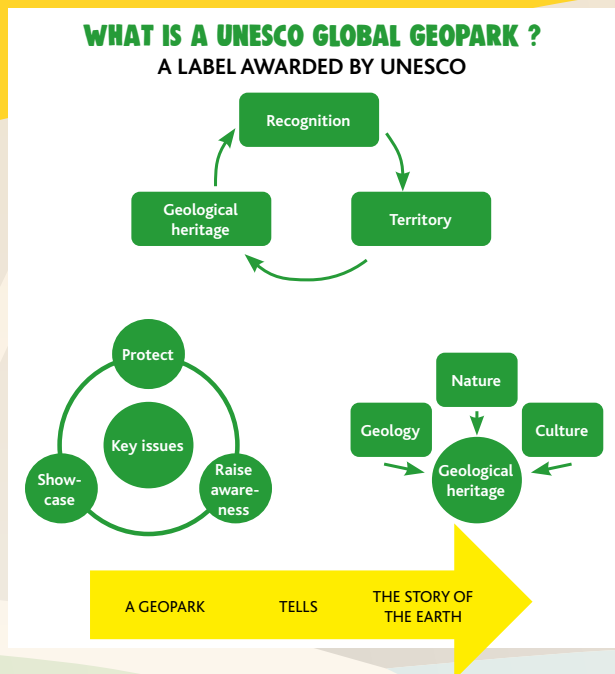


GEOTRAIL

HOTTON



WHAT IS A GEOPARK ?



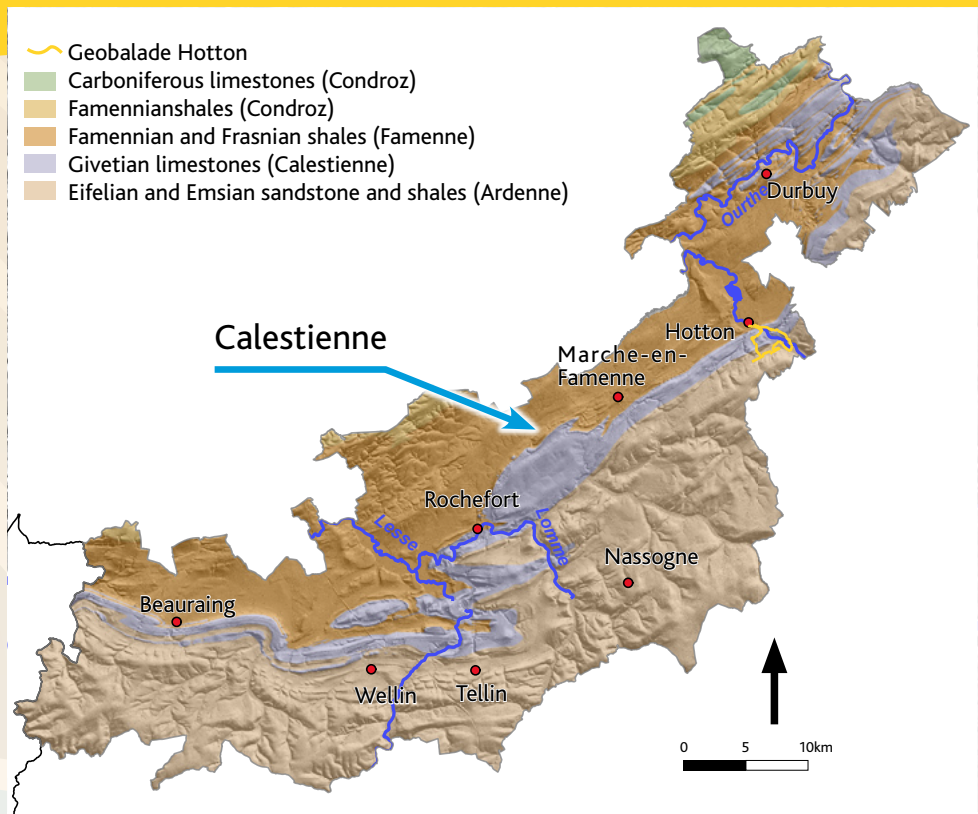
UNESCO Global Geopark is a label awarded by UNESCO to a single, unified geographical area where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development. At the end of 2019, there were 147 Global Geoparks in 41 countries around the world.

L'UNESCO GLOBAL GEOPARK FAMENNE-ARDENNE

The Geopark encompasses the municipalities of Beauraing, Wellin, Tellin, Rochefort, Nassogne, Marchen-Famenne, Hotton and Durbuy, all sharing the distinction of being located on the Calestienne, a transitional strip of 910 km² separating the Famenne and the Ardennes, and home to a population of 67,250 inhabitants. The two outstanding geological features of the Geopark are its Calestienne limestones and their caves (karst systems) as they relate to the geological structure of the region.

The Calestienne

The landscapes found within the Geopark frequently reflect what lies beneath the surface. Among these landscapes, one particular strip stands out: the Calestienne, the common thread of the entire Geopark. This strip, consisting mainly of Givetian limestones, runs from Chimay in the west to Remouchamps in the east. It is bounded to the south by the Ardennes and to the north by the Famenne depression. The term Calestienne may be derived from the German Kalkstein (limestone), or from a prefix referring



A simplified map of the Famenne-Ardenne UNESCO Global Geopark superimposed on a relief map (LIDAR image), highlighting the link between the geology and the geomorphology. Sandstones are more resistant than limestones, which in turn are more resistant than shales, resulting in the relief visible on the map: to the south rise the heights of the Ardennes, ending in a narrow depression scooped out of the Eifelian shales, the limestone strip of the Calestienne standing out in relief (in blue) and to the north the shales of the depression (in brown). (Data sources: "Wallonia Public Service" <http://geoportail.wallonie.be>).

either to limestone or to heat (plants that grow on limestone are more thermophilic than those that prefer shale soils) – and from the Walloon word Tienne, meaning a high place.

Geological history

1. The geological history of the Geopark begins during the Devonian period (419 to 359 Ma) with the sedimentation of deposits of horizontal layers on the ocean beds.
2. These sediments will gradually become buried under their own accu-

System	Series	Stage	Age Ma
Devonian	Upper	Famennian	359
		Frasnian	372
	Middle	Givetian	383
		Eifelian	388
	Lower	Emsian	393
		Praguian	408
		Lochkovian	411
			419

En géologie, la chronologie se réfère souvent au tableau stratigraphique. Ici un extrait pour le système dévonien (qui fait partie de l'ère paléozoïque). Les étages portent les noms des lieux où ils sont décrits. Le Geopark se situe au cœur de ces lieux importants pour la géologie du Dévonien moyen et supérieur.

mulation and undergo a slow process of transformation into solid rock. The main rocks beneath the Geopark are thus sedimentary: shales, sandstones and limestones.

3. These rocks would later undergo severe deformation, some 320 Ma ago, during the formation of an ancient mountain chain (the Variscan orogeny), the remains of which form the Geopark. This event is what produced the many folds and faults now clearly visible in the landscape, such as the Durbuy anticline.

4. The mountain chain was soon eroded down to a vast flat surface known as a peneplain, which still constitutes the subhorizontal skyline visible throughout Upper Belgium. During the latter part of the Secondary era (Mesozoic) and the early part of the Tertiary (Cenozoic), a warm and humid climate profoundly altered the limestone rocks and formed ghost-rocks, the precursors to caves. In the second part of the Cenozoic, the Ardennes bedrock was uplifted, the river system became incised and caves formed.

THE COUNTRYSIDE CODE :

- ▶ Respect nature, geological heritage, wildlife and plants; do not pick plants, flowers or fruit of any kind.
- ▶ Follow the highway code, which applies on country lanes just as much as on the rest of the road network, and obey any prohibitions or restrictions on traffic.
- ▶ Use the pavement wherever there is one, otherwise walk on the left-hand side of the road, facing oncoming traffic.
- ▶ Make sure you are visible to road-users at all times (wear light-coloured clothing).
- ▶ Opt for full-length trousers to ward off ticks.
- ▶ Stay on the paths by following and sticking to the permanent or temporary waymarking.
- ▶ Scrupulously respect private property: you must obtain the owner's permission before entering.
- ▶ When you meet other walkers, remain courteous at all times and be the first to offer a greeting.
- ▶ Keep noise to a minimum, to avoid causing nuisance to others.
- ▶ Do not startle or disturb grazing animals.
- ▶ Keep your dog on a lead and under control.
- ▶ Take all your litter home with you.
- ▶ Lighting fires is strictly prohibited.





Start/finish : car park at 4 rue Haute, 4 à 6990 Hotton

GPS (WGS84): Latitude : 50.268°

Longitude : 5.448°

Distance/Time : 8,5 km – 2h30

Elevation change : 250 m

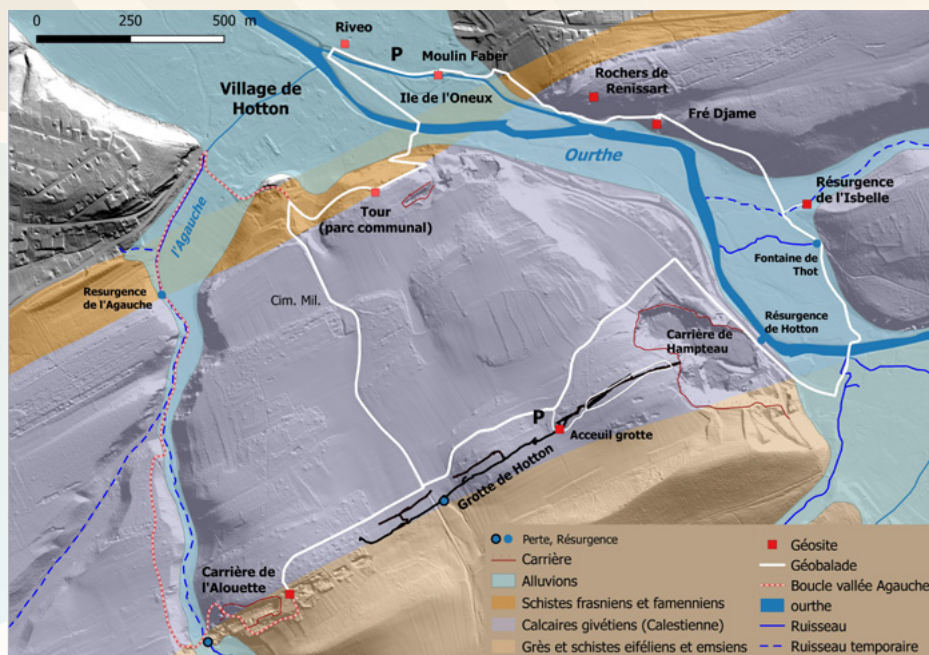
Level : intermediate

Helpful advice: the starting point, opposite the tourist office (Syndicat d'Initiative), is ideal if you took public transport (SNCB-TEC) to get to Hotton. Motorists may find it difficult to park at busy times, however, and impossible on market day (Saturday). We recommend using the Caves of Hotton car park (Chemin du Speleo Club, 1 - 6990 Hotton) and starting the trail from this point. It makes no difference to the route except that you begin the trail from the plateau rather than from the valley.



Hotton lies within the Famenne in the Ourthe valley, just downstream of where the river runs through the limestone layers of the Calestienne. This trail will take you from one side of the Calestienne to the other, on both sides of the Ourthe valley. In the river valleys (Ourthe and Agauche), erosion has revealed the limestone rock in spectacular fashion, perfectly illustrating the almost vertical inclination of the strata. Elsewhere, it is mainly disused quarries that provide a better understanding of the region's geology and the role it has played in shaping the landscapes and the development of local socio-economic activity: ancient buildings, mineral resources, agricultural methods. Capping it all, the Caves of Hotton offer visitors a chance to see for themselves what lies underground.

The shorter option for this trail covers 7.3km, increasing to 8.9km if you take the routes via the Agauche stream, the Calestienne Garden and the Isabelle resurgence.



Représentation du parcours du sentier pédestre sur une image composée du fond IGN et du relief obtenu par procédé LIDAR (Sources des données : Service Public de Wallonie <http://geo-portail.wallonie.be>).

Leave the car park and head for the Hotton bridge. Just before the bridge, you will find to your left a narrow footbridge and a kiosk giving you access to the Ile de l'Oneux.

Bordered by the Ourthe on one side and the Bief du Moulin (a backwater of the Ourthe), the island of l'Oneux consists of 6 hectares ringed by tall poplars, in the very centre of Hotton. The soil of the perfectly flat island is made up of sediments carried along by the river and then deposited, known to geologists as alluvium. The island provides a setting for much of

the village's recreational and cultural activities. Walk across the island in a south-easterly direction to the second footbridge, which crosses the Ourthe. After the footbridge, cross the road and carry straight on along a narrow path that leads to the municipal park. Take the path that leads up to the top of the park (elevation gain 30 metres). For the first geosite on your route, head for the arboretum in Hotton's municipal park, and its observation tower. The park lies on the left bank of the Ourthe, on the outskirts of the village of Hotton. This wooded area is home to a



Easternmost point of the Ile de l'Oneux in the centre of the village, with the bandstand of the royal brass band "Les Joyeux Travailleurs", built in 1924 and restored in 1983.



The municipal park tower with its 60 steps offers a splendid view over the villages of Hotton and Melreux, the course of the Ourthe and, in the distance, the Condroz.

variety of different tree species, plus a picnic area. Unless you suffer from vertigo, climbing the 7 metre spiral staircase in the middle of the park tower is an experience not to be missed. Ideally positioned on the last remaining limestone beds of the Callestienne, the tower looks down over the Ourthe Valley and the Famenne. The vantage point from the top of the tower is one of the highest to be found in the Callestienne and offers wonderful views, not only of the villages of Hotton and Melreux but also of the Famenne depression and the Condroz (in the distance).

Continue westward and leave the

municipal park for Rue de la Libération. Take a left and after 200 metres you will come to the Second World War military cemetery containing the graves of Commonwealth soldiers, most of whom fell during the Battle of the Ardennes fought between December 1944 and January 1945. Carry on for a further 700 metres along Rue de la Libération, until you come to a dirt track on your right, leading up towards the woods. Follow this track for 400 metres and you will find the Alouette quarry on your left.

L'Alouette is a quarry, now abandoned, on land that forms part of the village of Menil-Favay, and was first worked in 1899. Unlike the region's other quarries, which extract limestone, L'Alouette quarried a layer of often extremely hard Eifelian sandstone (quartzite) some twenty metres thick. The quarry no doubt started out producing the fieldstone, rough or dressed, used in the construction of buildings in the village of Ménil-Favay. The quarry also produced aggregates for road-building, as witnessed by the remains of the crushing units still partially visible on the site. After quarrying was abandoned, the quarry was purchased by the municipality of Hotton (1983) and was used for some time as a tip (1985). In 2012, the site was officially declared a state-owned nature reserve (RND). Local wildlife is protected, and visitors



Suggested alternative: the Agauche valley

The Agauche valley offers an alternative route to the Alouette quarry, avoiding much of the road walking and the need to double back. This path (marked in red on the map) is more difficult, however, as it is not waymarked and is just under a kilometre longer.

If you prefer this option, turn right towards the village on leaving the municipal park and after 300 metres take Rue du Vallon to the left. The street follows the line of the Agauche streambed (Rau de Gauche), a section of which runs underground beneath your feet. After 140 metres, the street runs into a major GR footpath, marked out by the familiar red and white stripes on the waymarks.

You will cross a small bridge, and there will be some muddy sections. A little further on, you will see a small brick-built construction (a former catchment point), now in disrepair, just ahead of a small stretch of water: this is the resurgence of the Agauche. Before the days of mains water, the villagers of Hotton used to get their water from here. The spring is situated just where the shales and limestones meet.

The path continues, and on your left, when you reach the raised hides used by hunters (visible only in winter, concealed by foliage in summer), you will see the "Maffe rocks", a fine collection of vertical limestone layers. Continue along the GR footpath, passing a limestone cross (RIP Jacques Gaillard), and cross a meadow before turning left at the fork onto a dirt path.

Follow this path till you come to the entrance to a meadow (barbed wire gate). To your left, a narrow path winds between the trees and will take you to the Alouette quarry.

You will see on your left some small limestone rocks and, on your right, fill from the quarry forming artificial heaps reminiscent of the slag heaps of coal-mining landscapes. Use the stone stile to cross the fence. You are now in the Carrière de l'Alouette nature reserve.

To rejoin the normal route, you will need to go through the quarry (please leave the gate as you find it, whether closed or open).



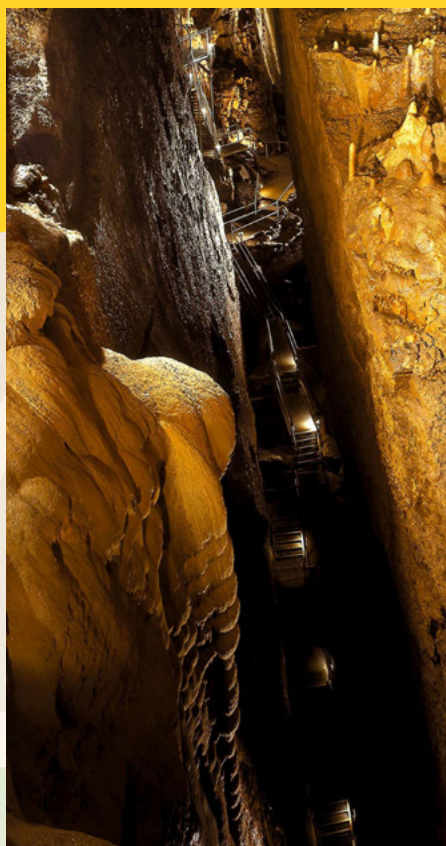
The main gallery of the Spéléo Club de Belgique (Caves of Hotton) is carved out between the limestone strata to a height of over 30 metres).

are asked not to pick flowers or disturb the peace and quiet of the site. Sheep and goats are regularly pastured here as a natural means of keeping the grass under control and thereby preserving the site's biodiversity. The quarry marks the point of contact with the limestone rocks already visible on the north face of the quarry. This point where sandstone, consisting for the most part of quartz, meets limestone, mostly consisting of calcite, is one of the factors explaining the outstanding flora to be found here, with a particular wealth of orchids. The site is also home to a number of reptiles and no fewer than 34 different spe-

cies of diurnal butterflies. The quarry looks down over the Agauche valley, and some of the spoil from the old workings has diverted the course of the water, masking a swallow-hole connected to the underground river that flows through the Caves of Hotton.

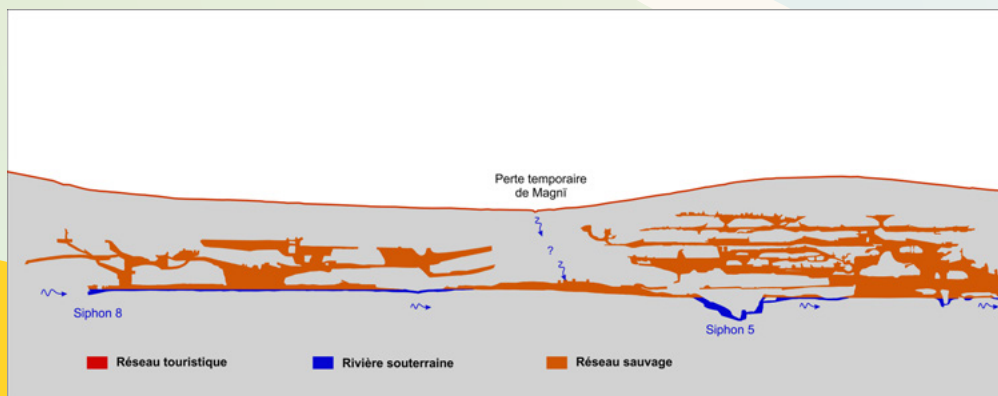
Turn back now to the main road and cross to take the path opposite you, [Chemin du Spéléo-club de Belgique](#). After 450 metres, you will find yourself at the entrance building to the Caves of Hotton, the next geosite on the trail.

This is also the site of the alternative car park.



La grande galerie du Spéléo Club de Belgique (grotte de Hotton) est creusée entre les strates de calcaires sur une hauteur de plus de 30 mètres.

The Caves of Hotton were discovered by chance in 1958 in the eastern working face of the Hampteau quarry when blasting uncovered a highly concretionary underground gallery. This gateway to a vast underground network of caves marked the beginning of a long history of speleological exploration and scientific study that culminated in the founding of a company to exploit the tourist potential of part of the network. This meant that a new entrance had to be created on the plateau, and the quarry had to be closed, since it was demolishing the finest chambers. The Caves of Hotton now consist of 5km of galleries, through which an underground river runs, and a drop of 70 metres. The river water comes from a number of swallow-holes aligned along the plateau near the hamlets of Verdenne, Marenne and Menil-Favay, and emerges at the Ourthe. This type of karst system involving several swallow-holes feeding an underground flow is known as a swallow-hole-resurgence system. Ex-



ploration of the caves is ongoing, but has currently come to a halt at yet another sump, or siphon, the eighth so far. The cave complex is made

up of several superimposed layers, through the lowest of which flows the river. The higher levels feature a wealth of highly varied concretions.



Suggestion: Caves of Hotton and Calestienne Garden

This is a listed outstanding natural heritage of Wallonia site, part of which is open to the public. The tour of the caves will take you down to the underground river, 65 metres below the surface (the return trip involves gaining 30 metres of elevation on foot and then a lift for the remaining 35 metres). The absolute highlight of the visit is the sight of the Spéléo Club de Belgique gallery, one of the biggest underground spaces in Belgium.

Opening hours: April to October 10am to 5pm (6pm in July and August), last tour departs one hour before closing.

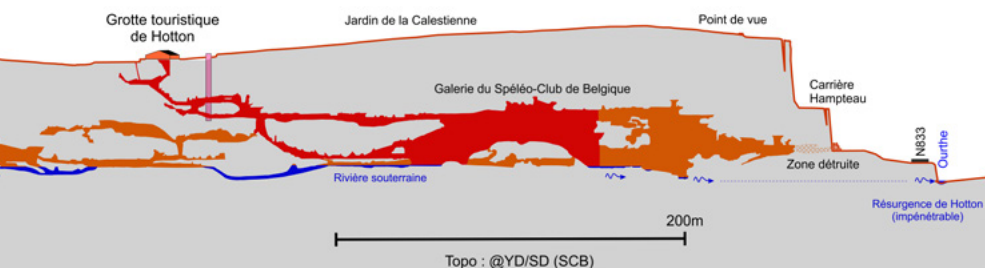
October to April: weekends at 12.30pm, 2pm and 3.30pm and by appointment for groups of at least 20.

Christmas and Carnival holidays: 11am, 12pm, 12.30pm, 2pm and 3.30pm. Closed on 25 December and 1 January.

Admission: adults -€10, children (aged 4 to 12) - €7

For further information, please visit the website: <http://www.grottesdehotton.be/fr/pratique.html>

Longitudinal cross-section of the Caves of Hotton from the small temporary swallow-hole at Magnî to its outlet in the Ourthe Valley. The galleries marked in red indicate the route of the tour, those in blue the course of the underground river, and those in brown the "caving" networks.



A stone's throw from the Caves, the Calestienne Garden (admission free) showcases the calcicolous (chalk-loving) plants characteristic of the Calestienne. This route will take you to the top of the Hampteau quarry where the Caves of Hotton adventure first began. From this vantage point, you will enjoy a remarkable view over the valley of the Ourthe as it carves its way right across the limestone band. Further afield, the view extends to embrace, from north to south, the Condroz, the Famenne depression, the village of Hotton, the Renissart Rocks, the valley of the Isbelle



View from the Calestienne Garden lookout point, looking down on the working face of the disused Hampteau quarry: the Ourthe Valley, the Renissart Rocks, the village of Hotton marking the Famenne depression and, in the far distance, the Condroz.

tributary, the village of Hampteau and the Ardennes.

Danger : no matter how tempting it may seem, we strongly discourage the more adventurous visitors from climbing over the fence in an attempt to get closer to the edge of the precipice. Not only is there the risk of a 30-metre fall, but the quarry walls are particularly unstable given the vertical inclination of the strata and the method of quarrying once used (blasting); rock falls are a common occurrence, which is why the quarry itself is also off limits to the public.

Continue walking along Chemin du Spéléo-club de Belgique. After 550 metres, turn right at the fork. 300 metres on, the view opens out on your right to afford a fine panorama of the 6-hectare Hampteau quarry. Make your way down to the main road and continue straight on. After 85 metres, opposite the petrol pump, cross the road and take the narrow road leading to the Château du Héblon. Just after the bridge over the Ourthe, carry straight on along a dirt path along the edge of the fields. 280 metres further on, this path brings you parallel to an initial resurgence (spring), the Fontaine de Thot. Carry on for another 200 metres to the small bridge and ford across the stream of the Isbelle. Turn right onto a path

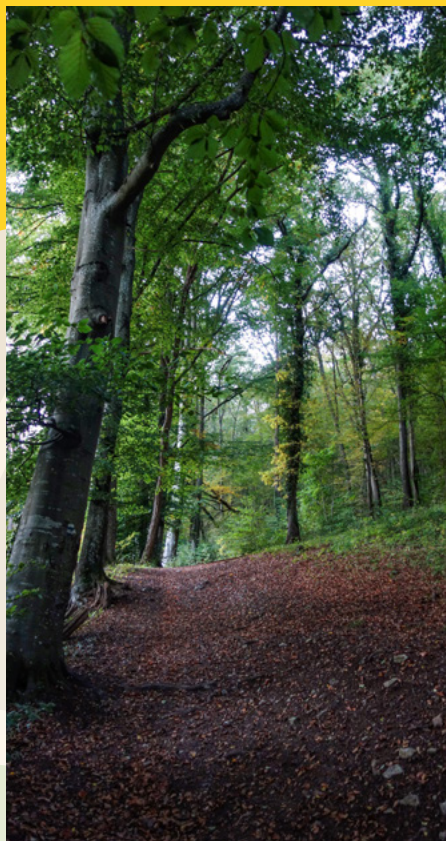
that runs along the side of the field. After 150 metres, you will find the resurgence on your right.

The Isbelle resurgence can only be accessed by divers. It is a visible sign of an underground river most of which is still unknown to humankind. The spring is fed from swallow-holes higher up the valley. The spring ceases to flow in dry weather, but after heavy rainfall the Isbelle resumes its course above ground.

Now turn back and before you reach the little bridge over the Isbelle, take the path on the right, which climbs gradually up to the summit of the Re-nissart Rocks (450 metres). From here,



La resurgence de l'Isbelle à l'étiage.



The Voie des Morts.

the "Voie des Morts" on the left takes you on a detour to the Trou Fré Djame. For the next part of the trail, carry straight on down to the level of the Ourthe.

On the heights of the Renissart Rocks once stood the Roman camp of Ti-Château, covering an area of 1.7 hectares. From this strategic vantage point, the garrison was well placed to keep a watch on the River Ourthe and stand guard over the farms clustered below. A number of coins and gold artefacts dating from the days of the Roman Empire have been discovered on the site. Close by is the Trou Fré Djame (Brother William's hole), a feature standing 20 metres above the Ourthe and named after a monk said to have lived there as a hermit long ago. The feature consists of a corridor beneath a rock arcade that cuts right through the rock, providing protection for a 5-metre long rock platform. The smooth sur-



The Renissart Rocks

face of the passage and its virtually circular cross-section indicate that it was formed by limestone dissolving (karstification) and represents the remains of a former karst system now exposed by erosion. Traces of Neolithic remains have been found at the site. The Rochers de Renissart geosite consists of a limestone massif with karst cavities that rises above the Ourthe, facing south. The site is of great interest on many fronts, as part of the landscape, geologically, biologically, archaeologically and historically, not to mention the leisure opportunities it provides. Some sections of the rock are suitable for climbing, and very popular with climbers in the Geopark. A to-



The Faber Mill

tal of 102 climbing routes are available to members of Belgian climbing clubs. A climbing guidebook can be purchased from the tourist office (syndicat d'initiative) in Hotton. The beach at the foot of the rocks is ideal for spending a relaxing day by the waterside.

Carry on along the narrow path through the woods. Another 600 metres will bring you back to Rue Haute. Carry straight on and in 80 metres you will come to the Moulin Faber water-mill on your left.

Built in 1729, the mill is still in working order, although it now operates purely for the benefit of admiring visitors, recreating the very essence of bygone days. It was built on the bank of a mill-pond, a branch of the Ourthe that created an island (the Ile de l'Oneux). In those days, it was a communal mill and residents were supposed to have their grain milled at the seigneurie mill, for which they would have to pay a milling tax according to the quantity of grain milled. The mill continued to operate until the early 1960s, and owes its name to its last owner, a Monsieur Fabre, who wanted the building to be opened to the public. Ownership passed to the municipality of Hotton in 1989. The interior bears witness to the ingenuity of the millers of yesteryear, and consists of four floors housing the machinery,

the pairs of millstones, the sifter, the granary, etc. Outside the building, admire the two water-wheels, powered by the mill-race. The mill was listed by the Royal Commission for Monuments and Sites in 1948. Visits can be arranged on application to the tourist office.

Carry on along Rue Haute for 200 metres to Riveo (on your left) and your car (on your right).

You have now reached the final geosite on your geotrail through Hot-

ton. Riveo, the River Interpretation Centre, stands ready to unveil the river's secrets just for you. In the centre of Hotton, Riveo offers a variety of discovery areas, including a 12-metre long reconstruction of a branch of river, different aquariums, a pond (with underwater viewing gallery), and an entertaining themed exhibition. By appointment, Riveo will initiate you into the unsuspected treasures of the river world and all its biodiversity via a wide range of nature and fishing activities.

References :

DEJONGHE, L. et JUMEAU F., 2007. Les plus beaux rochers de Wallonie - Géologie et Petite histoire. Collection Geosciences du Service Géologique de Belgique, 358 p. ISBN : 978-2-9600676-0-6

DEJONGHE L., 2008. Carte géologique de la Wallonie à 1/25 000 : Hotton - Dochamp n°55/5-6. Ministère de la région wallonne, Namur, 88 pp., 1 carte.

Bureaux d'informations

Maison du Tourisme Famenne-Ardenne

Place de l'Étang, 15 à 6900 Marche-en-Famenne (B)

T.+32(0)84/34.53.27 - info@famenneardenne.be - www.famenneardenne.be

Ouvert du lundi au vendredi de 8h30 à 17h30. Ouvert les week-ends et jours fériés de 9h30 à 17h00. Fermé les 01/01, 01/11 et 25/12

Royal Syndicat d'Initiative de Hotton

Rue Haute 4, à 6990 Hotton (B)

T. +32 (0)84/46.61.22 - info@hotton-tourisme.be.

Ouvert du mardi au dimanche de 10h à 17h (ouvert en juillet et août tous les jours de 10h00 à 18h00).

Geopark Famenne-Ardenne, asbl

Place Théo Lannoy, 2 à 5580 Han-sur-Lesse (B)

T.: +32(0)84/36.79.30 - geopark@geoparkfamenneardenne.be - www.geoparkfamenneardenne.be