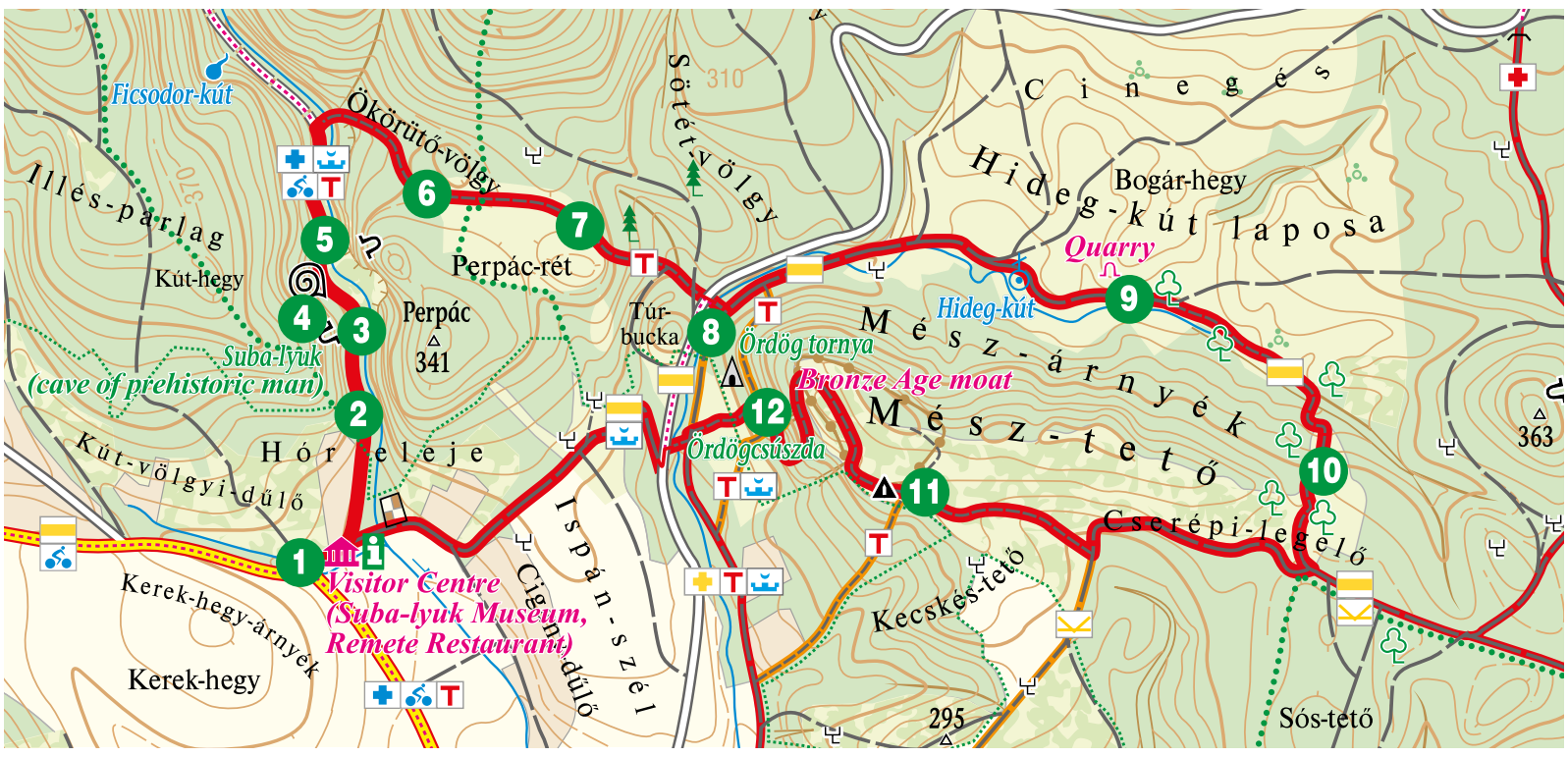
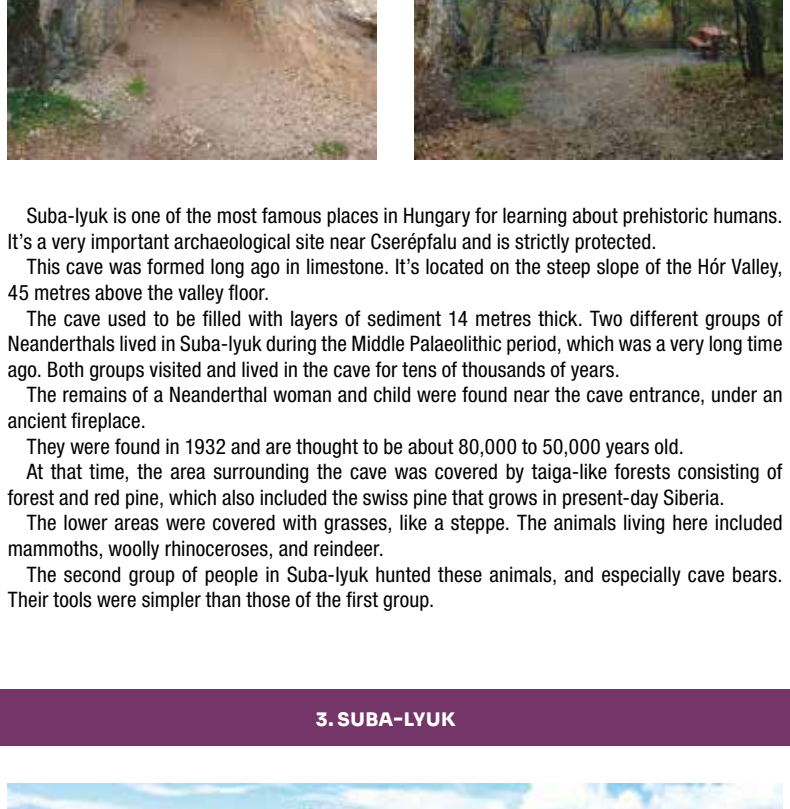
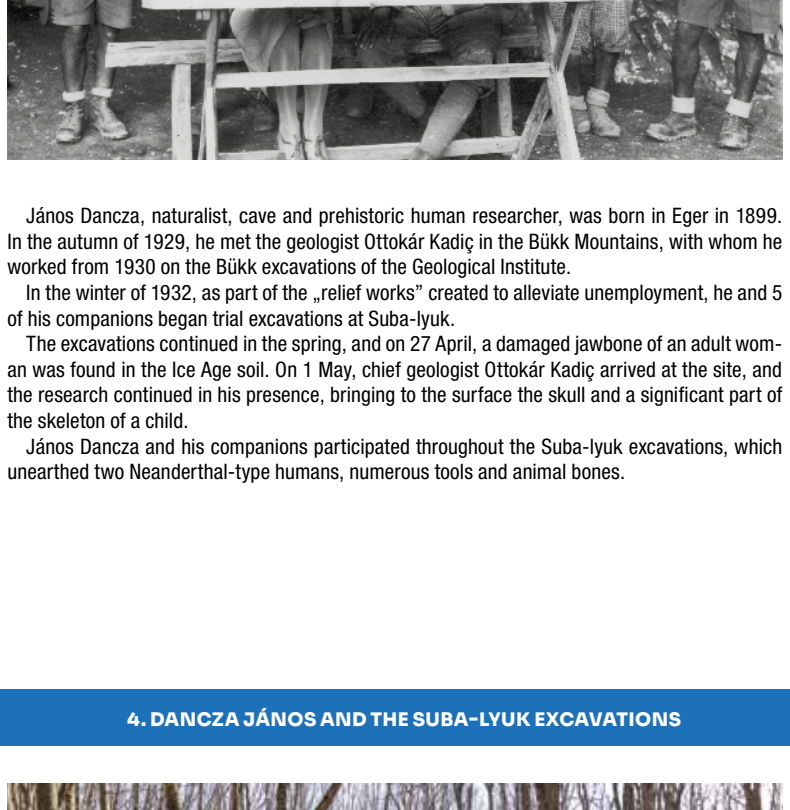
SUBA-LYUK STUDY TRAIL







Our nature trail offers a glimpse into the geological, botanical, zoological and landscape history of this transitional landscape between the Bükk Mountains and the Bükk Foothills. We start in a wooded environment, and the route leads us past former lime kilns, wooded pastures, and extensive orchards, where not only the soil and climate but also the wildlife are transitional in nature.

Entering the gorge of the Hór Valley in summer, everyone can feel the cool microclimate.

Many representatives of the deep gorge valleys owe their survival here to this, such as the perennial honesty, the mountain cow parsley, the Carpathian monkshood or the henbane bell. This contrasts with the south-facing slopes (e.g. Odor Castle), where only drought-tolerant species find their living conditions on the shallow soil layer.

Among the forest species, downy oak and mahaleb cherry are characteristic, while the species richness of the scrub forests and steppe meadows is outstanding even on a national level, with protected plant species such as the burning bush, the spring pheasant's eye, the steppe periwinkle and the variegated iris occurring in masses on the sunny hillsides.

In the Middle Ages, the valley was an important trade and military route between Diósgyőr and Mezőkövesd.

It was first mentioned in written sources after 1248. The route retained its relative importance and role until the appearance of the Turks and the fall of Eger Castle in 1596, after which it began to decline and was overgrown by forest.

The first inhabitants settled in the interior of the mountains only in the 18th century. At that time, the Treasury, which owned the area, and the Diósgyőr Crown Estate paid great attention to the utilisation of the forests.

At the same time, glassworks, charcoal burning, and lime burning were introduced to the area. In addition to glassmaking, the inhabitants of the Hór Valley settlements were engaged in lime and charcoal burning and forest management.

They collected many kinds of mushrooms and wild fruits and carried them on foot on their backs to the markets in Diósgyőr and Miskolc.

1. WELCOME TO THE SUBA-LYUK STUDY TRAIL!

Suba-lyuk is one of the most famous places in Hungary for learning about prehistoric humans. It's a very important archaeological site near Cserépfalu and is strictly protected.

This cave was formed long ago in limestone. It's located on the steep slope of the Hór Valley, 45 metres above the valley floor.

The cave used to be filled with layers of sediment 14 metres thick. Two different groups of Neanderthals lived in Suba-lyuk during the Middle Palaeolithic period, which was a very long time ago. Both groups visited and lived in the cave for tens of thousands of years.

The remains of a Neanderthal woman and child were found near the cave entrance, under an ancient fireplace.

They were found in 1932 and are thought to be about 80,000 to 50,000 years old.

At that time, the area surrounding the cave was covered by taiga-like forests consisting of forest and red pine, which also included the swiss pine that grows in present-day Siberia.

The lower areas were covered with grasses, like a steppe. The animals living here included mammoths, woolly rhinoceroses, and reindeer.

The second group of people in Suba-lyuk hunted these animals, and especially cave bears. Their tools were simpler than those of the first group.

2. HISTORY OF THE HÓR VALLEY

János Dancza, naturalist, cave and prehistoric human researcher, was born in Eger in 1899. In the autumn of 1929, he met the geologist Ottokár Kadiç in the Bükk Mountains, with whom he worked from 1930 on the Bükk excavations of the Geological Institute.

In the winter of 1932, as part of the „relief works" created to alleviate unemployment, he and 5 of his companions began trial excavations at Suba-lyuk.

The excavations continued in the spring, and on 27 April, a damaged jawbone of an adult woman was found in the Ice Age soil. On 1 May, chief geologist Ottokár Kadiç arrived at the site, and the research continued in his presence, bringing to the surface the skull and a significant part of the skeleton of a child.

János Dancza and his companions participated throughout the Suba-lyuk excavations, which unearthed two Neanderthal-type humans, numerous tools and animal bones.

3. SUBA-LYUK

The rock faces left behind after former mining operations bear a strong resemblance to natural cliffs.

Due to the lack of soil, the plant species most adapted to dry habitats are found here.

In such extreme habitats, mosses belonging to the „cryptogram" group gain a competitive advantage, with particularly beautiful patches formed by the wrinkle-leaved feather-moss and the whorled-moss species after rainfall.

Among the flowering plant species, patches of stonecrop species, such as biting stonecrop and tasteless stonecrop, are conspicuous.

On the warm, sunlit limestone areas, we can often catch a glimpse of the European green lizard hunting for its prey. Bird species associated with the natural cliffs of the Hór Valley can also be regularly observed in the quarry.

The rock bunting is a thermophilic species with a southern European distribution. It builds its nest at the foot of the rocks, on the ground.

The peregrine falcon nests on secluded, vertical cliff faces. It often consumes its prey while perched on rocky ledges, making it observable in the quarry.

The wallcreeper is a characteristic bird of the high mountains of Central Europe. In Hungary, it can only be seen in autumn and winter, when it migrates to lower areas to escape the harsh winters of the high mountains.

4. DANCZA JÁNOS AND THE SUBA-LYUK EXCAVATIONS

A sinkhole is a karst opening through which water flowing on the surface – intermittently or permanently – enters the interior of the rock.

A significant proportion of the precipitation falling on impermeable rocks – in our area clay slate, volcanic rocks – flows away on the surface, forming streams and rivers.

When this water reaches an uncovered karst area – typically a limestone surface – it enters the interior of the rock through the cracks in the rock, widening them. Therefore, sinkholes are particularly frequent at the boundary between covered and open karst.

In the Bükk Mountains, the sinkholes that open on the limestone surface today were formed by water flowing from the surface, which was once covered with impermeable rocks, slate and volcanic tuff.

A significant proportion of them are now clogged and filled with soil and debris due to the decrease in precipitation.

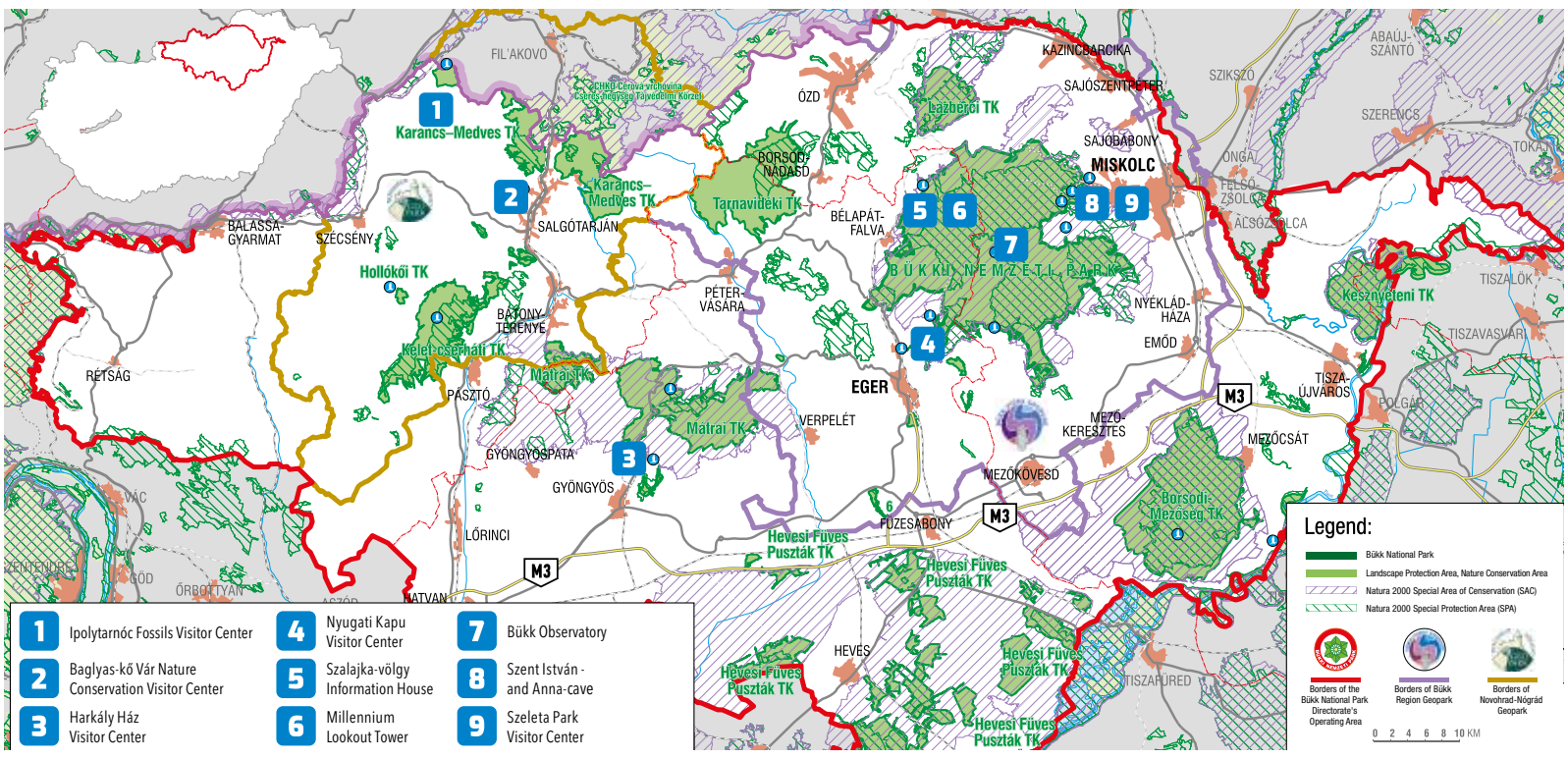
The clogged, inactive sinkholes are called dolines. There are sinkholes that only open and swallow water during major snowmelt or significant rainfall; these are the intermittent sinkholes.

The Perpáci Sinkhole, which opens at an altitude of 293 m, was formed in the Triassic Bervian limestone and only operates intermittently.

Its catchment area is small, swallowing the precipitation that collects on the impermeable rhyolite tuff surface created by volcanic activity.

5. QUARRIES: SHAPING THE LANDSCAPE

6. PERPÁCI SINKHOLE



The quickly warming waters, rich in vegetation, are home to a diverse insect world and several vertebrate species. The water is teeming with microscopic creatures. Plants and these creatures form the basis of the food chains characteristic of such habitats. These are consumed by numerous small invertebrate species.

The inhabitants of the water body are almost nowhere safe. Predators such as dragonfly larvae, backswimmers, and smooth newts lurk beneath the water.

Water striders skating on the surface of the water are also predators. And in the air, large southern hawkers patrol all day, watching for flying insects.

The shallow pools also provide breeding opportunities for amphibians living in the surrounding forests and grasslands. In early spring, common frogs and common tods lay their eggs in these ponds.

The hatching tadpoles feed mainly on plant food until they reach adulthood by summer and then bid farewell to the habitat.

The Mész-stream, which only flows intermittently these days, has carved a narrow gorge into the soft, crumbly, whitish rhyolite tuff. After heavy rainfall, the stream surges through the gorge, carrying a significant amount of sediment. This narrow valley, often called Kőporos-gorge by locals, was shaped not only by the erosive power of the stream, but also by cart traffic and the locals' need for „kőpor" (grit). For most of the year, the gorge is relatively dry, revealing fascinating potholes and steps in the stream bed. Below the gorge's exit, the valley widens, and the stream bed is flanked by terraces formed by the deposits of past floods.

Almost a century ago, the gorge became difficult to pass through. Traffic shifted to the left side of the stream (looking downstream), onto the slopes of Mész-hill. The wheels of carts and the hooves of animals carved a deep path into the hillside, which is still used today by shepherds herding their sheep and cattle to pasture. A characteristic shepherd's hut, or „bújó", was carved into the side of this path. A paved forestry road was later built on the other side of the gorge, and today's vehicles use this route.

7. LIFE IN THE SHALLOW WATERS

Wooded pastures are one of the last remnants of the traditional landscape management of the past. Most pastures were created by clearing former forests. In the wooded pastures, mostly created in place of oak forests, the solitary trees, no longer competing with each other, developed into huge specimens with regular crowns.

The large canopy helped the animals to find shady places to rest during the summer heat, and the grass did not burn out so quickly in the partial shade of the trees during hot summers. Shepherds were also grateful for their shade. As the freely standing sessile and pedunculate oaks aged, they provided an increasing amount of acorns.

This was especially beneficial for the grazing animals, which were happy to consume the readily available, nutrient-rich fruits of the oaks in preparation for winter.

Wooded pastures also play a prominent role as a habitat, as valuable species characteristic of both grasslands and forests occur here in large numbers. Oaks of this age in such density are unfortunately no longer found in our forests.

8. MÉSZ-STREAM GORGE

Standing or fallen trunks, different tree species, deadwood in different stages of decay all contribute to the well-being of different creatures.

There are animals that are content to rest under the slowly detaching bark (e.g. some bat species), while others have their larvae develop under the bark (e.g. some insects), or raise their offspring here. Other insects crawl in to feed on the other creatures living here.

The larvae of many insect species venture deeper: they bore long tunnels into the depths of the deadwood, feeding on the wood itself.

These tunnels later facilitate the settlement of other species. Fungi penetrate the entire trunk with their almost invisible threads. In addition to countless microscopic fungi, several species grow spectacular fruiting bodies that we can also admire.

Deadwood provides unique habitats within the forest. Most of its inhabitants can only live and reproduce in it.

A healthy forest ecosystem cannot function without the presence of sufficient quantity and quality of deadwood. Therefore, it is important to ensure the preservation of deadwood in forest management.

9. THE WOODED PASTURE OF HIDEG-KÚT

Rhyolitic explosive volcanic activity lasted for about 4 million years and brought more than 4000 cubic kilometres of volcanic material to the surface.

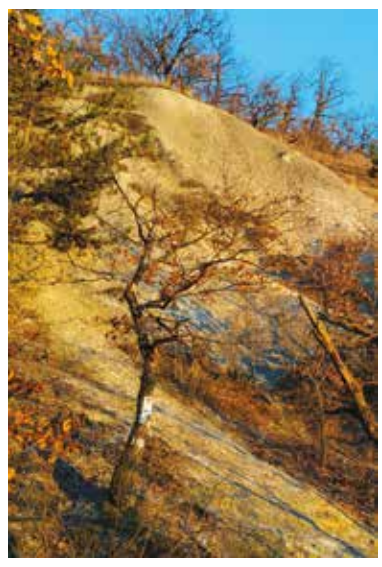
This was the largest volcanism in Europe in the last 20 million years! Its formations are mostly covered by young sediments below the surface, but in the Bükkalja area, in front of the Bükk Mountains, the material from almost every major eruption is exposed.

The most strongly welded rocks have an almost lava-like appearance.

After the volcanic activity, an extensive ignimbrite plateau was probably formed, which was then cut into by rivers, creating deep valleys.

The ignimbrite plateau of Mész-tető may be a remnant of this plateau.

10. THE SECRET LIFE OF DEADWOOD



In the rhyolite tuff range of the Bükkalja, there are several rock formations or cone-shaped rock towers with niches carved into their sides by people of ancient times. The „beehive rocks" (kaptárkövek) are particularly beautiful natural formations.

These geological formations thus bear the traces of human form-shaping activity and are at the same time interesting cultural-historical monuments, representing archaeological, ethnographic and historical value.

In the Bükk Foothills, we know of 82 beehive rocks at 41 sites, carrying 479 niches.

On the southwestern side of Mész-tető, below the edge of the plateau, is one of the most beautiful, slender rock towers, the beehive rock called Devil's Tower (Ördögtorony), which has 3 niches. Below Mész-tető, the decaying rock slope near the beehive rocks is called Devil's Slide (Ördögcsúszda) by the locals.

It is made up of soft rhyolite ash tuff, which is easily eroded due to its low degree of cementation and high pumice content.

The hillside is a kind of ‚badland' surface where fertile soil cannot form due to continuous erosion.

11. MÉSZ-TETŐ – IGNIMBRITE PLATEAU

12. DEVIL'S TOWER, DEVIL'S SLIDE

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