

THROUGH THE SILVER ELBE VALLEY

*On the way through the wilderness
of Ústí nad Labem*



To see a World in a Grain of Sand
And Heaven in a Wild Flower,
Hold Infinity in the palm of your hand,
And Eternity in an hour.

William Blake



My field diary

Name:

Ústí nad Labem, a city with an industrial history and an image tarnished by smog and flying ash; yet it is a unique city among large ones. As you can see, you are only a few moments away from the woods or meadows, no matter where in the city you are. Moreover, the immediate surroundings of the city are **so picturesque!**

Many of us go the countryside to conquer steep slopes and summits, to challenge ourselves, and nature is merely a backdrop for us in such endeavours.

The „field diary“ that you are holding in your hand would like to draw the attention of the travellers through the Elbe Valley to the river, rocks, forests, hornbeams, buttercups and caterpillars nibbling on nettle leaves. It would like to be a **companion and guide in discovering the beauty of nature and admiring its perfection.**

And two (actually three) of the most competent guides agreed to help us to do this.



Elbe Valley

The following will accompany me on my expeditions through the Elbe Valley:

Vinnelou

Is there anybody who doesn't know the brave Apache chief, Old Shatterhand's strong, righteous and humble blood brother? Their spiritual father, the Saxon writer Karel May (25 February 1842 – 30 March 1912), stayed in the vicinity of Ústí nad Labem several times during his life. The untamed nature of the Elbe Valley with its jagged rocks, deep gorges and waterfalls inspired him when describing the landscape of the Wild West, which he only visited towards the end of his life. Vinnelou, representing peace and brotherhood among men, returns home to the Elbe Valley on the following pages.

Josef Emanuel Hibschi

(26 March 1852, Homole u Panny – 4 November 1940, Vienna)

One of the greatest European volcanologists specialising in the Central Bohemian Uplands, which he mapped in detail. He worked at the Agricultural Academy in Děčín-Libverda as a professor of mineralogy, geology and pedology for many years.

It is thanks to J.E. Hibschi that the Central Bohemian Uplands used to be the most explored volcanic area in the world. In the past, several natural attractions and the mineral hibschiite were named after him.

J. E. Hibschi was also instrumental in preserving the natural beauty of this area of Bohemia for future generations. He fought hard to save monuments such as Panská Rock near Kamenický Šenov or Vrkoč near Ústí n. L., which are now protected as national natural monuments, from being turned into a stone quarry.

*Vinnelou,
the Red Gentleman*



*J. E. Hibschi,
a classic geologist*



*and the cheeky
woodpecker that
could not be
chased away*



.....AND ME, AS WELL!"

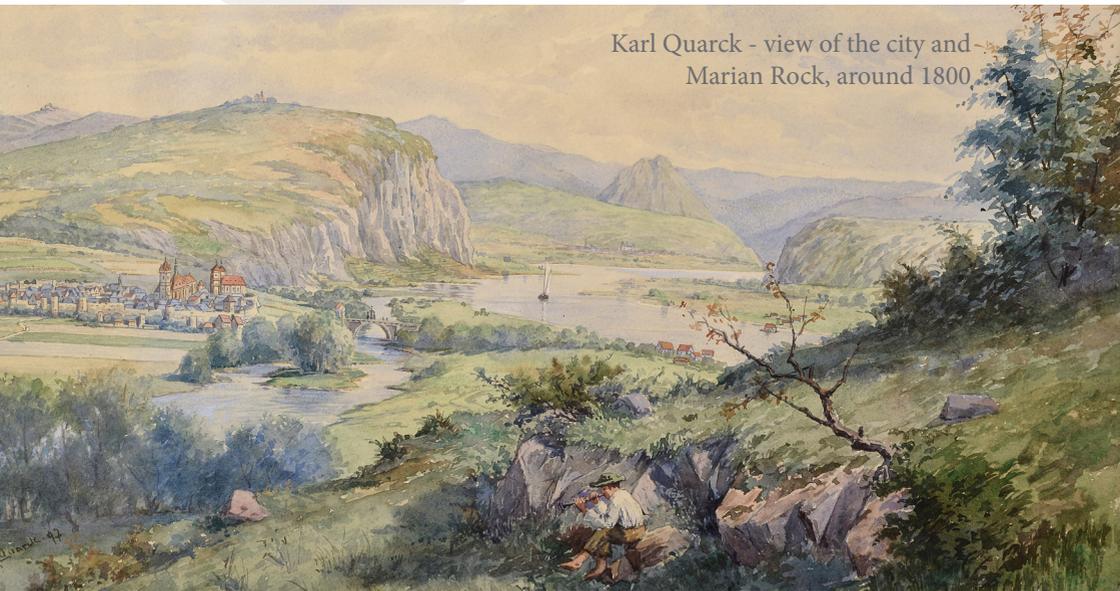
1 THROUGH THE SILVER ELBE VALLEY

Expedition One Větruše - Úrkoč

- Viewpoint at Větruše (50.6552258N, 14.0398758E)



„Marienberg... or Marian Rock (Mariánská hora). Look how the river cut Stone Hill (Kamenný vrch) off the huge phonolite body that appeared here some 20 million years ago. You can clearly see the smaller, long-abandoned quarries on the south side of the Mariana Rock from here. The stone quarried by hand here was used in the construction of the medieval Ústí. The still active quarry on the south-east side of the hill was opened in 1894 and God knows how long it will stay in use...“



Karl Quarck - view of the city and Marian Rock, around 1800.



Mariánská skála quarry, 2018



We woodpeckers also like to make holes but I think this hole is much too big now.

Try to think what a quarry like this could become when the quarrying is finished. You can draw your idea.



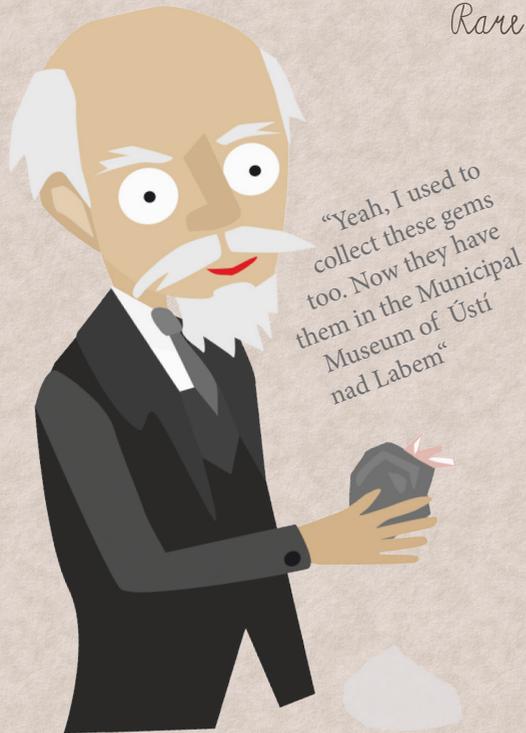
Stone Age Mill Lasts?

Why so much stone? From the Middle Ages, the phonolite from the Marian Rock was used for construction purposes, also for strengthening roads, building retaining walls and later as an excellent material for railways. It is still used today as an admixture in concrete or as an additive in brick clay for roof tiles and in the production of container glass.

Stone from the quarry on Stone Hill was also used by our ancestors in the late 19th century to modify the Elbe riverbed.

Marian Rock is an important site of cavity minerals, which are part of the collections of almost all major European museums.

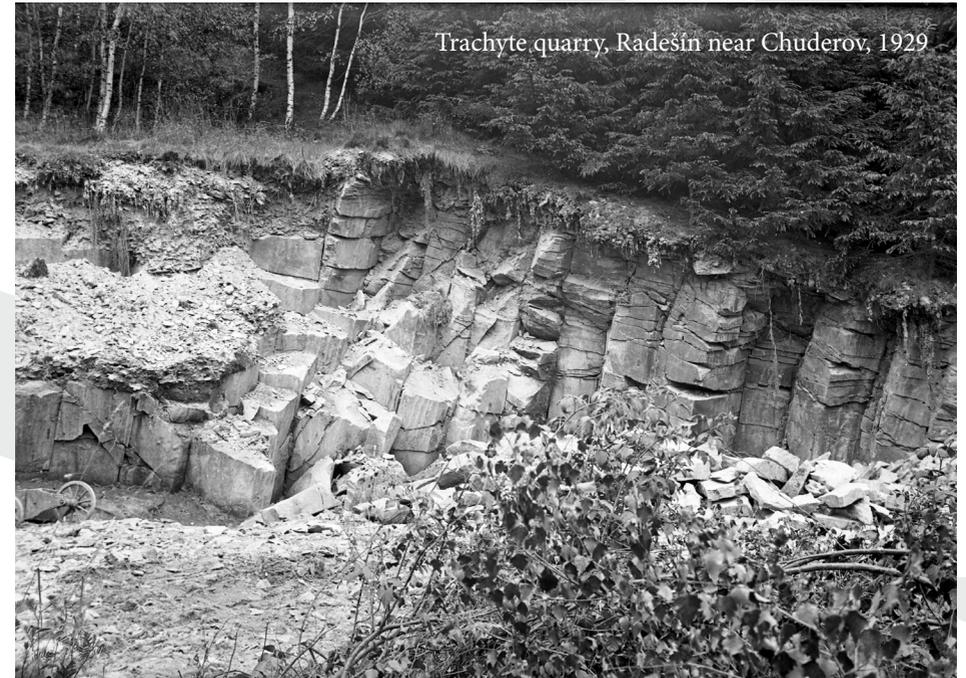
Rare minerals from Marian Rock



A large crystal of calcite with tiny needle-like natrolite



Pink natrolite with white apophyllite



Trachyte quarry, Radešín near Chuderov, 1929

Small quarries

If we look closely, we can find various old small quarries in the landscape, where the quarrying was done by hand in the past and the material was used to the place of quarrying as close as possible. These small abandoned quarries add to the diversity of the landscape. With their bare stony areas lacking nutrients for growth, and sometimes even pools, they can enrich the local fauna and flora with rare species linked to these habitats. However, quarries that are large and with low segmentation are difficult to integrate into the landscape.

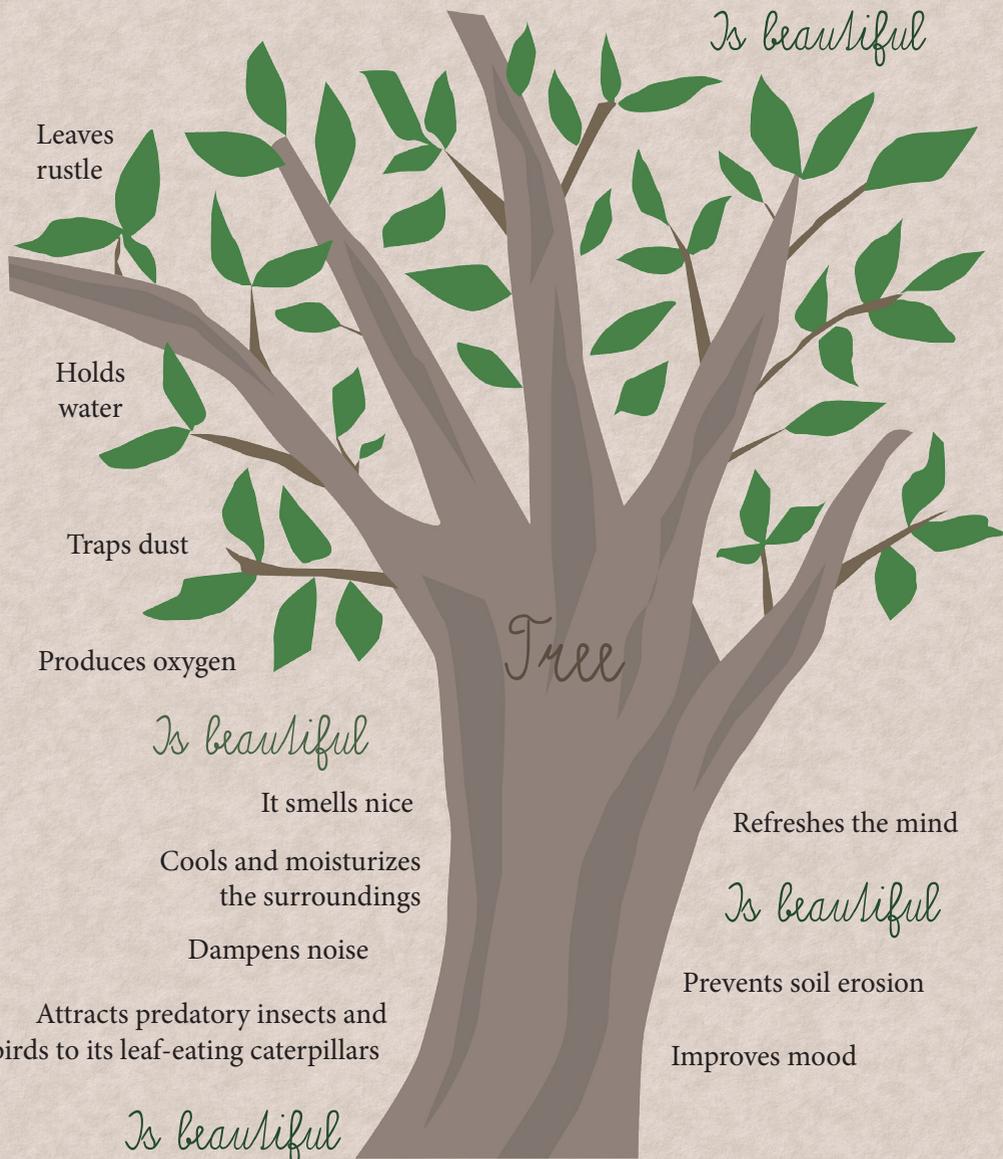
*There are more old quarries right in town,
have you noticed any?*

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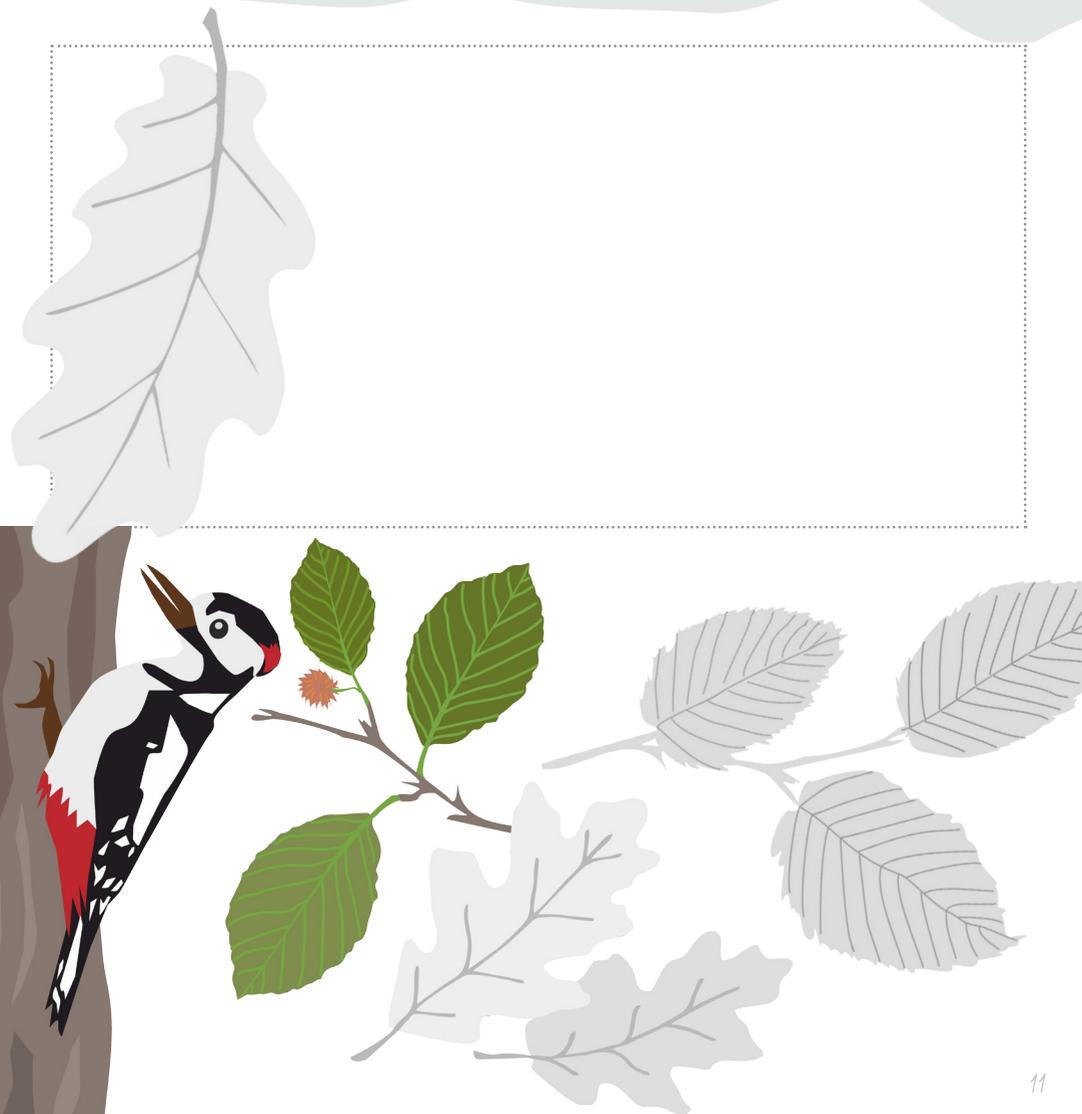
● *Mare* (50.6544853N, 14.0386717E)



It's just beautiful...



„Find and collect the leaves of different types of trees on the way to the Judgement Hill (Soudný vrch) crossroads. If you close your eyes, can you identify the leaves by touch? With your eyes closed, pick one leaf from the pile of different leaves and feel it with your fingers, then put it back on the pile. Try to draw the leaf you held in your hand from memory. Which leaf do you like best and why? Or you could try frottage of a leaf that appeals to you (place the leaf under the paper and gently run a pencil over the paper).“



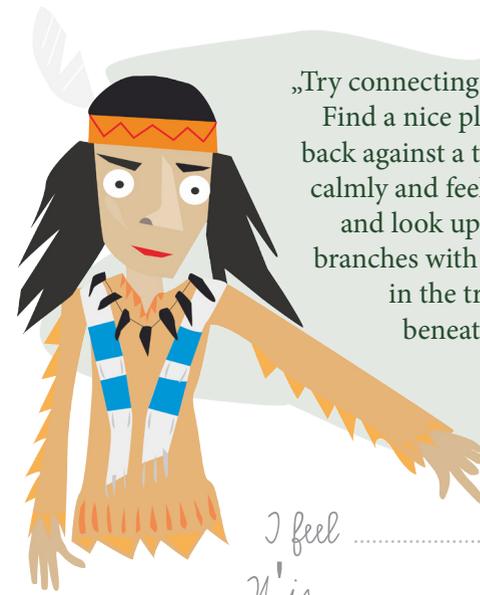
Can't see the forest for the trees

A forest is not just the sum of its trees. It's a complex network of interdependent organisms above and below ground that takes decades to create, but it is relatively easy to disrupt. Many of the laws of the forest ecosystem still remain hidden from us. Only recently, for example, have scientists discovered that plants, including trees, create their own „internet“ underground: **the wood wide web**. Connections are made by fungal fibres in various ways. In addition to information, plants send water and energy to each other through the network as needed.



Beechwood

So even plants have their own web and I still tap Morse code.



„Try connecting to the forest internet. How do you do that? Find a nice place, sit there and close your eyes. Rest your back against a tree, put your hands on the ground. Breathe calmly and feel the forest life around you. Open your eyes and look up into the tree-top. See how it intertwines its branches with the surrounding trees? Can you see the life in the tree-top? There is an equally large web of life beneath you. You will realize that you too are part of nature and its energy. How do you feel? You can draw or describe your feelings.“

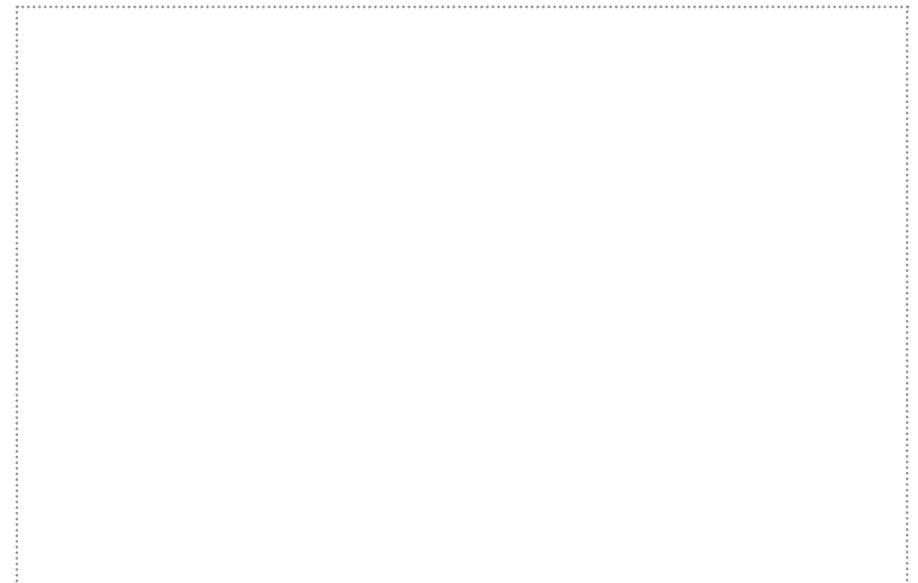
I feel

It is

I am aware

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Rubble forest

They are common on the steep slopes of the Elbe Valley, yet they are one of the main objects of protection of the Porta Bohemica Site of European Importance (see page 30).

Recipe for a rubble forest:

Ingredients:



Common polypody



Herb Robert



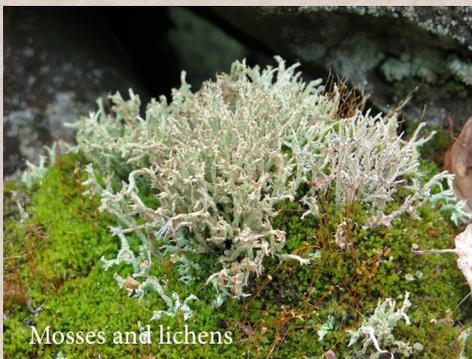
Small-leaved lime



Gooseberry



Dog's mercury



Mosses and lichens



Sycamore

Procedure:

First, scatter stones on a slope and wait for the lichens and mosses to become established. In the meantime, let the dust settle in the gaps between the stones for a few hundred years and watch the seeds from the surrounding area grow into sturdy trees. Plant herbs and shrubs in the shade of the trees.



Try to find all the mentioned "ingredients" of the rubble forest on your way to the waterfall.



„Find out a Central Asian alien among the forest herbs!“

Small balsam

How do you recognize it?

It flowers yellow (June – September).

Seeks shady and damp places.

It forms large growths that suppress natural herbaceous vegetation.

Watch out, it can shoot! Mature capsules burst and shoot the seeds.



Small balsam

See how far the seed will fly.

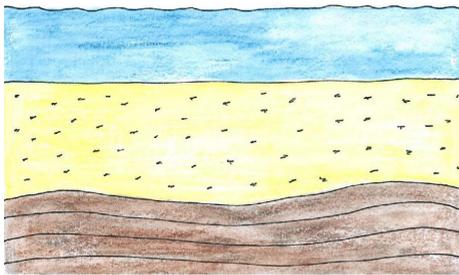
- *Elbe viewpoints* Try these two on your way to the waterfall:
N50.64413, E014.03911 or N50.64165, E014.03923



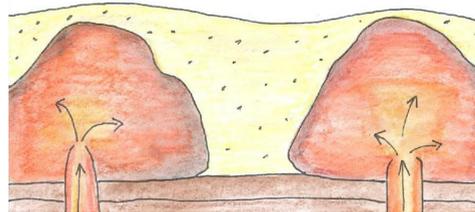
„Look how the Elbe River created this enchanting valley:

During alternating ice ages and interglacials, the Elbe River cut into Tertiary volcanic rocks, then into layers of sandstone and claystone deposited in the Mesozoic sea. During this period, the flow deepened by more than 100 metres, creating this enchanting valley.“

the Mesozoic Sea – sand deposition



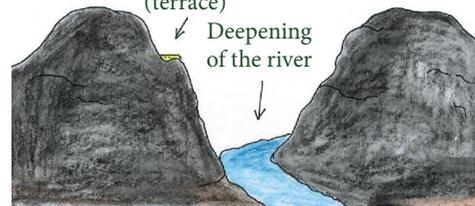
Tertiary volcanic activity



Erosion of less-solid rocks and scouring of the river bed



River deposits (terrace)
Deepening of the river



On the slopes of the valley, we can find remnants of river terraces. Even on the Marian Rock, 120 m above the river level, river deposits and sediments in the form of gravel-sand layers (in some places up to 3 metres thick) have been preserved. In 1929, a tooth of an elephant of the genus *Archidiskodon*, which lived here at the end of the Tertiary, was found.



The molar of a Tertiary *Archidiskodon*

„Explore the various viewpoints on the Elbe slopes. Write down their coordinates. Each viewpoint is slightly different; explore them and note the differences. What unique things did you see and experience here? Make up Indian names for the viewpoints accordingly.“



My observation:

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Indian names for viewpoints:

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- *Vaňovský Waterfall* (50.6304986N, 14.0415578E)



Vaňovský Waterfall, around 1900



„Estimate how high the waterfall is. Carefully examine the rocky stream bed. Observe a moss-covered rock for a while. What do you see? If you close your eyes and put your hand on the moss, how does it feel? Take off your shoes and walk barefoot...“

- *When there was still sea in Bohemia...*
(50.6312600N, 14.0432400E)



„Notice the white to light grey rocks along the trail. These are **sandstones** that were formed by the deposition of sands in the Mesozoic sea. Molten volcanic lava „bubbled through“ the layers of sandstone in the Tertiary and solidified into fan-shaped prisms. And the Elbe River then washed and crumbled the soft sandstones for millions of years until it exposed the entire basalt body of Vrkoč.“

Black rock, white rock, I can't get my head around it! And you can't peck at it anyway...



Look what you're walking on. In 1884, the Ústí tourist „Mountain Association“ built a path from Vrkoč to the waterfall out of local basalt. The path was damaged by a flood in 1904. In 1916, a unit of engineers of the Austro-Hungarian army built a new and thorough path to the Vaňov waterfall as part of their training. We can still use it more than a hundred years later, an admirable handiwork!

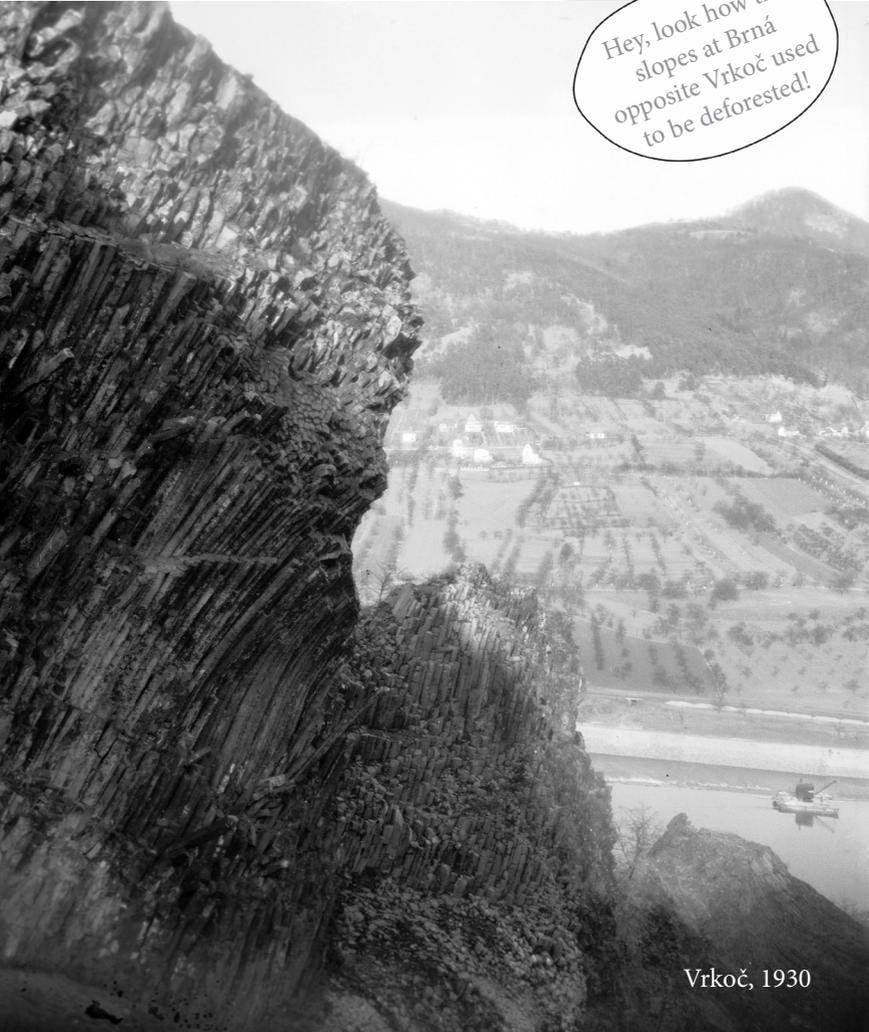
Vrkoč



„My beloved Vrkoč, a massive vein of basalt lava that originally extended into the Elbe River bed. Part of it was removed for the construction of the railway in the mid-19th century. This revealed basalt columns looking like a braid of a sleeping Central Uplands goddess.“



Hey, look how the slopes at Brná opposite Vrkoč used to be deforested!



Vrkoč, 1930

Geologists' excursion to Vrkoč led by J. E. Hibsch (far right)



„Think about it, do the Central Bohemian Uplands need protection? Why? What and who threatens it and how? Imagine what such a goddess of the Central Bohemian Uplands could look like. Try to draw or describe what she would do and how she would take care of our landscape. And while the mighty protector sleeps, how could we help?“

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Expedition Two Upstream

- Dr. Edward Beneš Bridge (50.6584550N, 14.0477686E)

The largest and most watery Czech river
The river with the largest catchment area

The level of the Elbe River near Hřensko is the natural point with the lowest altitude of Czechia

The unique Elbe River

The oldest migration corridor in Bohemia

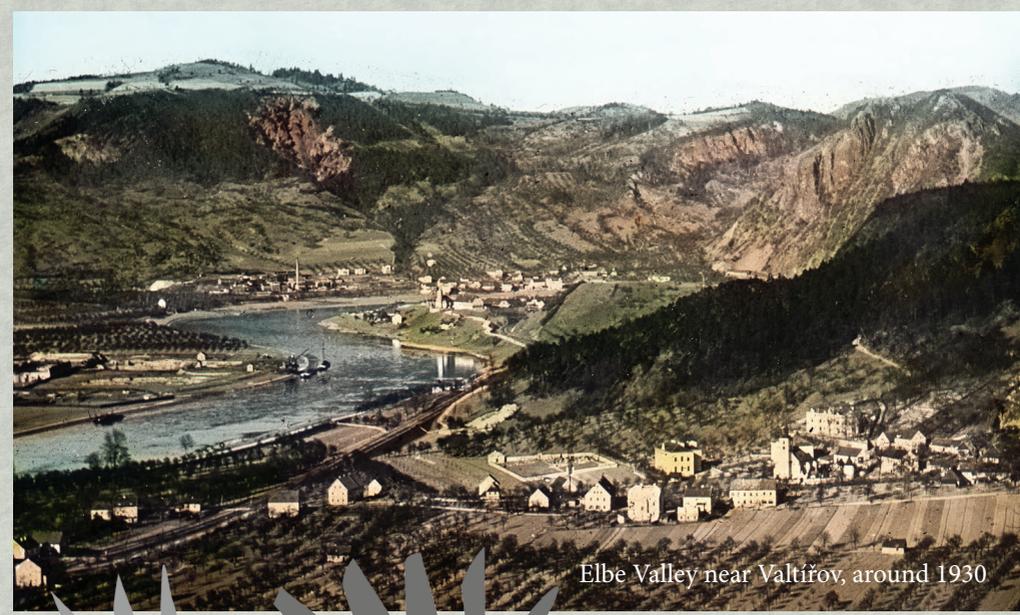
The only Czech river whose name is not feminine

The last place of natural occurrence of scrapwort in Czechia

Migration corridor



„For about 15 million years, Central Europe has been connected to Northern Europe by the Elbe River, which is the most important route for the movement and spread of plants and animals (migration). The Elbe Corridor is also an important flyway for birds, with many resting and wintering stops. Interventions in the river, riparian vegetation and construction obstacles in the river make passage difficult and, for some species, impossible.“



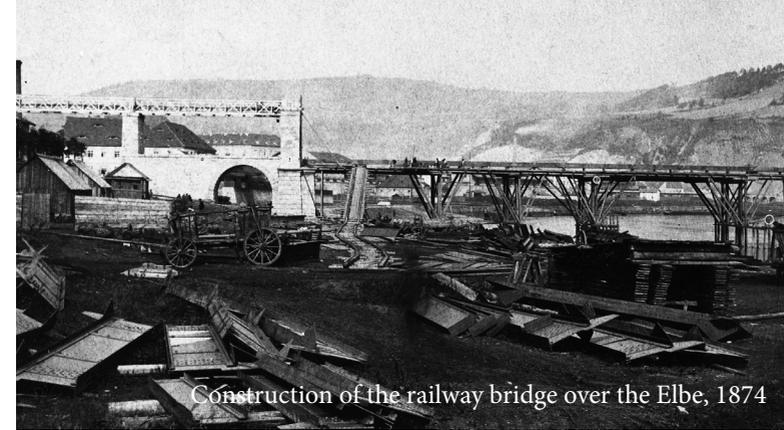
Such migration is no recreation! So the woodpecker says: "Smart is the one who stays!"

E. G. Doerel, The mouth of the river Bílina into the Elbe, oil on canvas, 1873



the Elbe was used as a trade route, mainly for the import of salt

Start of steam navigation on the Elbe: arrival of the steamer *Königin Maria* (Queen Mary) from Dresden to Děčín



Construction of the railway bridge over the Elbe, 1874

Beginning of major regulation works in the Elbe riverbed 1874

1316–1378 – During the reign of Charles IV – the first major interventions in the riverbed, breaking of rocks below Střekov, removal of dangerous boulders from the navigation path



Bohemia steamer on the Elbe, shooting target

Establishment of the Provincial Navigation Water Directorate (until 1938), which designed and managed water structures in Bohemia

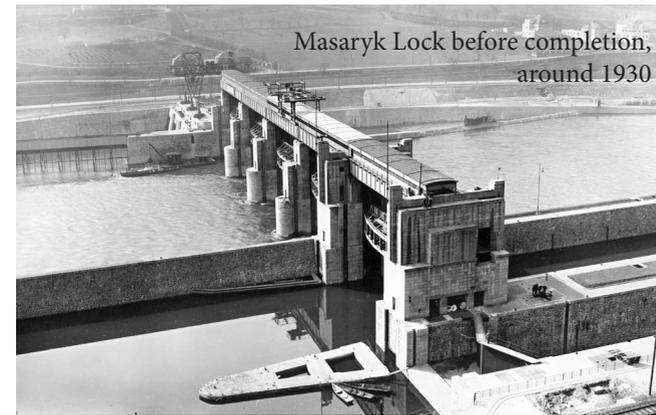
Construction of the railway bridge in Ústí nad Labem

The first chemical analyses of the Elbe water are carried out



Floods in Ústí nad Labem, 1890

Construction of the Masaryk Lock below Střekov



Masaryk Lock before completion, around 1930

The last record of the Atlantic sturgeon in the Elbe (below Střekov)

Ladislav Karel Feierabend flees illegally with his family into exile under the floor of a tugboat of the Czechoslovak Elbe Navigation Company, steered by Josef Novák

The Elbe Navigation Act signed by representatives of the Elbe states, guaranteeing free navigation (i.e. abolition of all landing and transshipment fees and tolls and introduction of a single municipal navigation fee)

Bohemia – the first steamboat made in Bohemia sails from Prague to Dresden

Establishment of the first water-gauging station in Ústí nad Labem

5 thousand years BC

1316-1378

1432

1750

1770

1771

1821

1827

1838

1841

1845

1851

1862

1867

1872

1873

1874

1876

1877

1890

1923-1936

1933

1940

1948

2002

flood

• *Elbe banks* (50.6574817N, 14.0460797E)

„What comes to mind when you say Elbe? What does the Elbe mean to you? Can you think of a nice experience connected with the river?“

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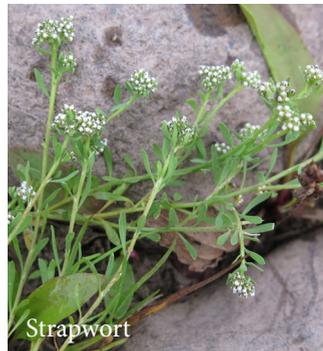
„The rarest habitats of the still unregulated stretch of the Elbe from the locks to Děčín can be found on the regularly flooded and re-vegetated banks of the river with gravel and muddy alluvial deposits. Rare species or species completely extinct elsewhere in the Czech Republic grow there. They depend on water level fluctuations during the year. If the water level were stabilised, for example after a construction of a weir, these unique habitats would disappear.“



Small fleabane



Brown galingale



Strapwort

Galingale

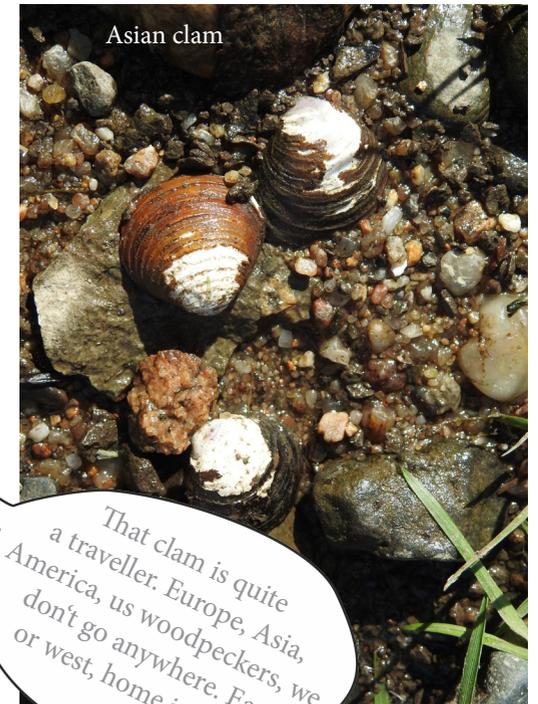


„Yes, the galingale indeed grows on the banks of the Elbe. But it's not the kind that papyrus was made of in ancient Egypt. It is its much smaller relative, the brown galingale, which you can find flowering from July to October on the sparsely overgrown and year-round wet banks of the Elbe. Take a photo of galingale, but don't pick it as it's an endangered species of our flora.“

Send a photo with the date and place of your find to the museum!

Uninvited guest

You may be surprised to find shells similar to those from the sea on the banks of the Elbe. The Asian clam, as this freshwater bivalve is called, came to us along the Elbe from Germany, where it spread with ships from North America. It was first documented here in 1999.



Asian clam

That clam is quite a traveller. Europe, Asia, America, us woodpeckers, we don't go anywhere. East or west, home is best.“

• A healthy river floodplain - a reservoir and natural water purifier, landscape conditioning and home to plants and animals

(50.6470564N, 14.0466111E)



Common kingfisher



Yellow iris



Marsh frog



A tree cut down by a beaver

1. Main river course – a domain of stream-loving fish
2. Side branch – calmer water for bream
3. Meander – a bend in the river slowing the flow of water
4. Dead branch – standing water full of aquatic plants and home to marsh frogs
5. Washed-out bank – bare clay walls are used as nesting burrows by common kingfishers
6. Gravel bank (sturgeon) – sturgeon spawn in the shallow current, and strapworts grow on the bank
7. Large rocks in the stream – a place where fish can rest
8. A pool with vegetation – a paradise for the Northern crested newt
9. River tributary and alluvial deposits – gudgeon forage among the rocks on the bottom
10. Island – a little-visited place where birds are not disturbed during nesting
11. Riparian forest – regularly flooded forest in the river floodplain with willows and poplars
12. Riparian forest – occasionally flooded forest in the river floodplain with ash, oak, lime and elm trees
13. Shrubby willows – a feast for the Eurasian beaver
14. Reedbeds – dense stands of reeds in which, for example, the reed bunting lives

Use the colours you find in nature to paint a picture of a natural stream and match the habitat numbers from the previous page to the habitats in the picture.



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• Porta Bohemica - Site of Community Importance

(50.6431211N, 14.0477642E)

In 2016, the Elbe Valley from Lovosice to Děčín became part of the network of sites of European nature conservation importance.

And what on earth is so special and valuable about it?



- Sunny hillsides with thermophilic grasslands
- The remnants of flood-plain forests

- The preserved character of the course of a large river



Rock steppe with European feather grass

- Freezing rubble with species surviving here since the Ice Age



Gate of Bohemia

- Impressive rocks
- Rubble forests



Rubbles



Beech forest

- Salmon swimming down the river



Salmon

- Preserved oak and beech forests
- Sunny gravel banks



Beaver

- Beaver busily gnawing on willow wicker and trees on the banks

„Look how different the river and its banks are above and below the locks. Try to find the differences. What animals did you see above the locks and what animals did you see below them?“

Differences:

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Animals above:

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Animals below:

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3
TROUGH THE SILVER ELBE VALLEY

Expedition Three

Vysoký Ostrý and surroundings



„Take a few pieces of string (20-30 cm long, can be coloured wool for example) and find a suitable stick in the forest. During the expedition, use the strings to attach natural objects to the stick to remind you of what you saw and experienced during the expedition.“

„Observe the trees along the way. The droughts of recent years have weakened the trees and made them easily accessible to the insects that feed on them. Explore the different patterns made by the larvae under the bark and the cavities carved out by birds.“



You finally gave me some space!
We woodpeckers are amazing beauties. We have a strong beak and a long tongue for the larvae that live under the bark and in the wood of trees, yummy. Every spring, my wife and I carve a deep cavity together to keep the marten or other greedy critters from getting at our young. We warm and feed our children together too.

A woodpecker's menu:

Breakfast:
-.-.-|.-|.-.-|...-|.-.-

Lunch:
-.-.-|.-|.-.-|...-|.-.-

Dinner:
-.-.-|.-|.-.-|...-|.-.-



And don't forget me in winter, we'll be happy to visit your feeder with sunflower seeds or nuts.



Woodpecker's gallery

• Sunny Hillside (Pluměční stráně)

(50.6349094N, 14.0711361E)

„The steep rocky slopes where nothing can be grown were used in the past at least as grazing for goats. The Elbe Valley has thus created a fine mosaic of differently used areas, light forest and forest-free areas, which has been a welcome sight for all kinds of plants and animals.“



Gasplant



slow worm



Viper's bugloss



Insect companions

Insects are the base of the food pyramid in nature, right after plants. Due to the dramatic decline not only in species but also in the number of insects, relationships between organisms that have been functioning for millions of years are breaking down and entire ecosystems are threatened with disruption. Insects are disappearing because they have nowhere to live, not because they are being caught or consumed.

Insects need a very finely structured landscape: their different developmental stages often cannot survive without different types of environment, which must also be close to each other.



Imagine you're a butterfly caterpillar.

Your favourite food is the fescue grass that grows on the steppe. After eating, you like to bask in the bare soil, but when it is too hot, you like to hide in the shade. You pupate in the taller grass to get a good hiding place. And as a butterfly, you need to suck the nectar on the flowers. Since you do not fly very well, there must also be some bushes and trees nearby, where you can hide from the wind, heat or rain. Try to find a place in the landscape that meets all your needs in life.



„On the way from Sunny Hillside to the Na Výsluní viewpoint try to smell various products of nature – sniff flowers, fruits or crushed leaves of different kinds of trees and shrubs; find out how the dirt in the forest and meadow smells, melting twigs, mushrooms, wood split by a woodpecker... If you like, record your findings in a journal, or draw what struck you most.“



• Viewpoint „Na Výsluní“ (50.6354253N, 14.0739686E)



„See the rock steppe in the hillside. Come closer and smell. Can you smell anything?“

I smell

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„The steppe here resembles a heavily used pasture: rutted trails, plants grazed, a proliferation of species that seek out nutrient-rich spots in the soil, such as nettles, plants that animals don't like (thistles) and/or that can tolerate hoof stomps (knotgrass). Shh... There may be a mouflon leaping around somewhere.“



European fallow deer



Butterfly hood



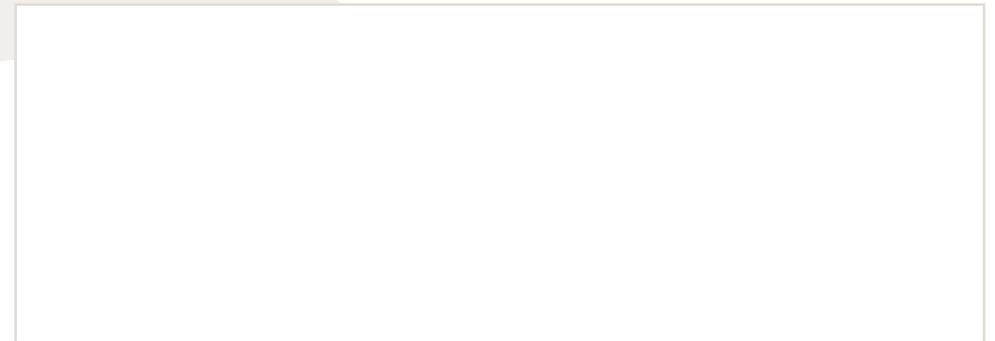
Spear thistle

Mouflons like rock slopes. When climbing the rocks, they grind their hooves so that they do not overgrow and restrict their movement.

The European mouflon, as well as another non-native species, the European fallow deer, has taken up residence in the Elbe Valley. High numbers of game are currently causing considerable damage to forests and steppes.



Lie down in the grass and just watch the sky.
(You can sketch a cloud that catches your eye here.)



Dead wood

„For a forest to be truly alive, it needs dead wood, no „cleaning up“ dead trees, dry branches or stumps, we are not in the living room. Are you unsure of this?“



It is estimated that 30-50% of all forest organisms are linked to dead wood.

It helps retain water.



Dead wood – branches, blow-down trees, stumps

In the process of slow decomposition, it returns nutrients back to the soil.

It is a habitat, shelter and food source for amphibians, reptiles, birds, small mammals and many insects.

It provides a home for fungi, lichens, mosses and other plants.



Beech forest with dry trees

Me, the woodpecker, yum, yum, eh, I wuiked my warvae sooo muuch, yum, yum, eh...



Dead tree full of life

Ouch

Ha, ha, I'm outta here...

You can't listen to him talk with his mouth full.



Test the sounds of different woods. Find more products of nature for the forest orchestra. Which sound do you like best?

- *Průčelská gorge*
(50.6240436N, 14.0970514E, 373 m)

Peregrine Falcon

The falcon – a worldwide bird of prey, which thanks to its speed, sharp eyesight, strength and elegance became part of the mythology of various nations: the ancient Egyptian God of the sky, sun and light, Hor, was depicted as a man with a falcon's head, in Greece the falcon was the messenger of Apollo, for the Celts the falcon symbolized victory, for the Chinese the Sun and also war. It also appears in the mythology of the American Indians.

Falcons nesting on cliffs such as here in Průčelská Gorge are often disturbed by climbers and hikers, which can cause nesting failures. Falcon nesting sites should be avoided, especially between March and June.



Falcon with a hunted dove

- *Afflux of Průčelský Stream* (50.6227306N, 14.0936014E)

„Stop, close your eyes and just listen. What can you hear? Do you think there is any place around the city where you can hear only „natural“ sounds without „civilization“ background? Is there a difference in winter and summer when there are leaves on the trees?“

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„Take a look at your walking stick. Which attached natural product reminds you of your most interesting experience today?“

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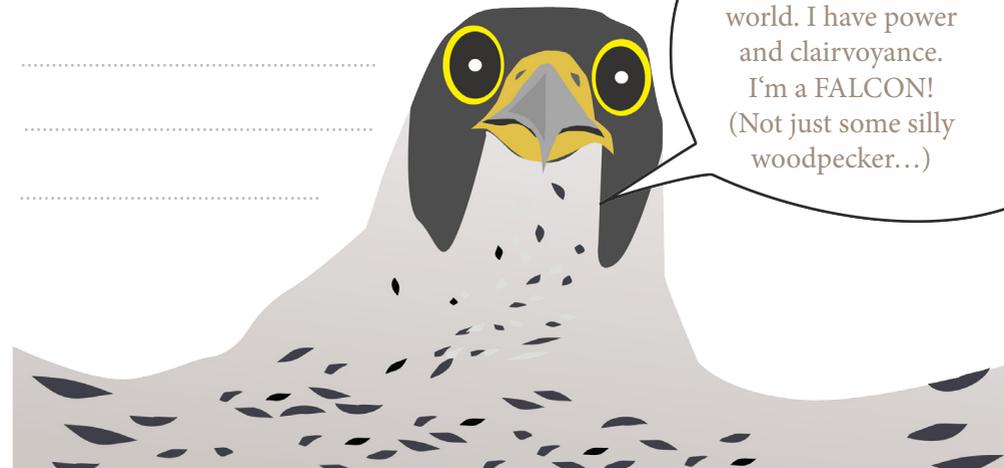
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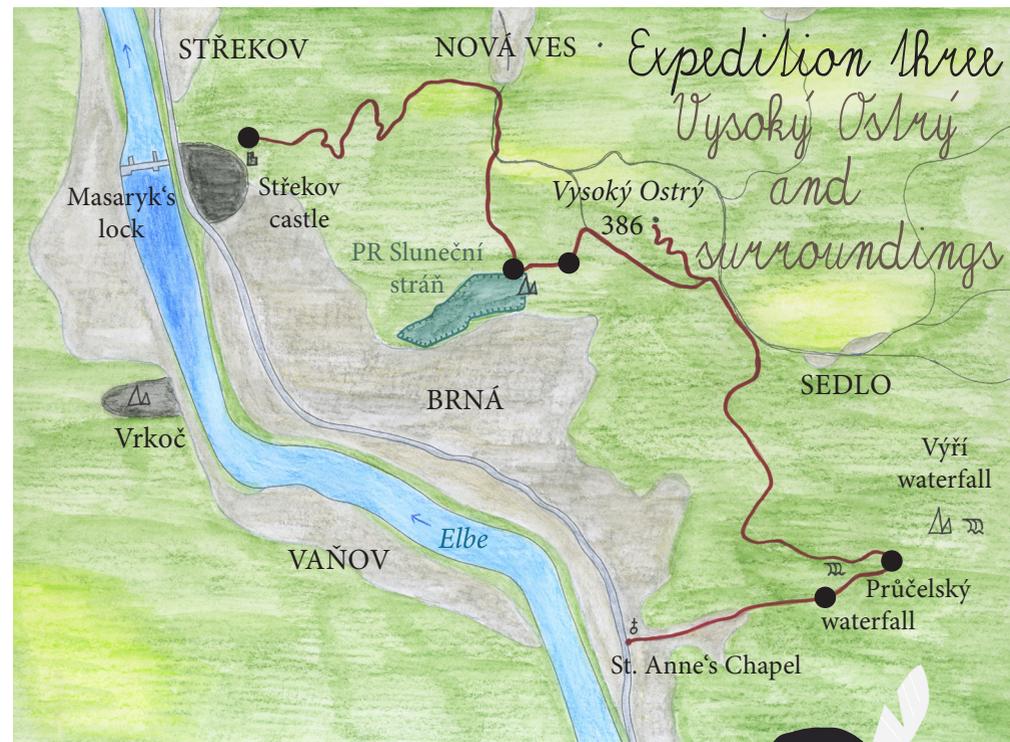
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.....



I am the messenger of the Indian spiritual world. I have power and clairvoyance. I'm a FALCON! (Not just some silly woodpecker...)





„May the Manitou be with you and don't forget how beautiful it is in the hills and by the river!“



What a ride! What you don't learn when you go out with a stone-ologist and a red gentleman. The bad thing is, though, that I'm hungry again...



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Answers to Expedition 1 and 2 questions:



Literature and resources:



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*If you want to be young forever,
If you want to save the World,
Break the mirror.*



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