



Along the Rake* Following the Trail of Idrija's Natural Scientists



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Along the Rake, the four-centuries-old water channel, there is a 2.5 km long nature learning path unveiling the region's treasures of geology, flora and cultural history. The world of natural beauties of the Zgornja Idrija Landscape Park starts here.



United Nations
Educational, Scientific and
Cultural Organization



Idrija
UNESCO
Global Geopark





The trail Along the Rake leads along the left bank of the Idrijca river. At the end of the 16th century, the Idrijca river had already been dammed and the first **Rake – water channel** had been built, having initially been laid till the centre of the settlement. Today it extends only from the dam at Kobilja to the Kamšt. Initially, the **Rake** water channel was wooden. In 1776 it was enclosed with stone.

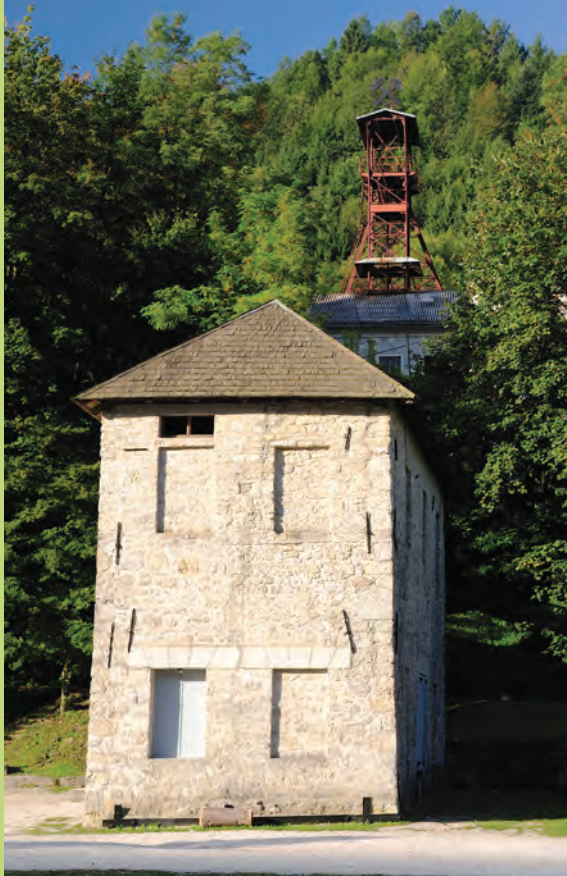
It is no secret that **Rake** was built to support the mercury mine operations. Nowadays the heritage of the two biggest mercury mines on Earth, Almadén and Idrija, is inscribed on the **UNESCO World Heritage List**.

The starting point at **Joseph's Shaft** offers several remnants of the mining times to admire.

For many centuries the water flow from the **Rake** propelled the **Kamšt** mining devices, which pumped pit water and lifted ore. The last **Kamšt**, which is still preserved, was constructed in 1790 and was in constant operation for 160 years. From a depth of 283 metres it pumped 300 litres of water per minute.

In the immediate vicinity is **Joseph's Shaft**, which is now filled. It once connected all fifteen levels to a depth of 380 metres. It was used as an entrance shaft for the miners and for the removal of ore from the pit. From there, ore was transported to the smelting plant by **locomotives**. Four of them have been restored and are on display beneath the **Joseph's Shaft** loading station. In 1957 the existing railway was replaced by a **cableway**.

* The Slovene pronunciation of Rake is /ra:ke/ and has no semantic connection whatsoever with the tool called rake /reik/.



The exterior of *Kamšt* with the *Joseph's Shaft* tower in the background.



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Heritage of Mercury,
Almadén and Idrija
inscribed on the World
Heritage List in 2012



Kamšt – the massive wooden water wheel with a diameter of 13.6 metres, one of the most significant technical monuments in Slovenia and the largest preserved device of its type in the world.



Scopoli's Memorial Garden

On the slope beside the Joseph's Shaft building there is **Scopoli's Memorial Garden** to commemorate the significance of the first natural scientists, physicians, pharmacists and explorers who lived in Idrija from the 18th century onwards and spread their findings and new knowledge throughout the world from here. The best known among them are physician Joannes Antonius Scopoli, surgeon Balthasar Hacquet and botanist Franc Hladnik. The garden hosts rare species that grow in the vicinity of Idrija and are important for the natural heritage of the region as well as many other plants.



The left bank of the Rake channel provides an exhibition of flowers throughout the year, from spring till late autumn. It has been named »Hladnik's shelf of botany«, to honour the founder of the Botanical Garden in Ljubljana, Franc Hladnik. Snowdrops (*Galanthus nivalis*) are followed by hepatica (*Hepatica nobilis*), Christmas roses (*Nelleborus niger*), primroses (*Primula vulgaris*), lungworts (*Pulmonaria officinalis*), wind flowers (*Anemone nemorosa*), Haquetias (*Hacquetia epipactis*), plains of Scopolias (*Scopolia carniolica*), wild garlic (*Allium ursinum*) and balm-leaved archangel (*Lamium orvala*), ladder-to-heaven (*Polygonatum multiflorum*), herb Paris (*Paris quadrofolia*) etc.



F. P. Hladnik



B. Hacquet



J. A. Scopoli



Hladnikia
(*Hladnikia pastinacifolia*)



Hacquetia
(*Hacquetia epipactis*)



Scopolia
(*Scopolia carniolica*)

1 Common/European Ash

This tree is the largest specimen of **ash tree** (*Fraxinus excelsior*) in Slovenia. It is 30 metres high and has a trunk of 1.3 metres in diameter. Even after almost three centuries, it remains vital.



2 Avenue of Pedunculate Oaks

Along the Rake enclosure (since 1770) an **avenue of Pedunculate Oaks** has been planted spanning from here to the well. A Pedunculate Oak is an oak with long-stemmed acorns. Individual mighty Pedunculate Oaks are still preserved.



3 Black layered limestone

This rock is approximately 233 million years old and forms the walls over the Rake. The **limestone** formed in shallow closed bays – lagoons, from the remains of countless dead sea creatures and smaller coral piles.



Here, blocks of **conglomerate** can be found. These blocks are comprised of limestone and dolomite gravel, bound together by sandy calcite connective deposits.

5 Beech and fir forest

In the area of Rake ground and relief conditions developed specific forest communities. The trail leads us through a well-maintained **forest of beeches and firs**, with additions of spruces, cherries, maples, hornbeams and the Pedunculate Oaks.



4 Bernik landslide and conglomerate

The trail slightly ascends to **Bernik landslide**, which, in 1959, due to heavy rain, slid down the impermeable carbon rocks and swept away the Bernik homestead and the trees beneath it, as well as the Rake channel. Since then, it has been overgrown with bushes and young trees, while the water has been plotted through in a tunnel.



Step onto the suspension bridge, where the **Idrijca river** is displayed in all its beauty. It springs underneath Mrzla Rupa in the northeastern part of Trnovo Forest at an altitude of 930 metres. After 58 picturesque kilometers it flows into the Soča at Most na Soči.





6 Well by the Rake

Drinking water springs from a well that appeared at a contact of permeable limestone and less permeable dolomite. Since it is »just right« with regard to temperature, the old experienced miners (locally named »knapi«) used it to make their traditional miners' drink – »geruš«.



7 Remains of Italian strongholds

Remains of military strongholds are part of the Italian Alpine wall from the early 1930s when Italian army was strengthening their border along the entire Alps from the Ligurian to the Adriatic Sea. **An antitank wall, bunkers and a guardhouse** have been preserved.



8 Lower Cretaceous limestone

At the spot before Podroteja, the world changes. The river deepens its bed into layers of light limestone, the slopes are steep, rocky and full of Karst features. **Grey limestone** of the Lower Cretaceous age formed 110 million years ago in shallow seas. The surface is inhabited by communities of Manna/South European Flowering Ash trees and black hornbeams, characteristic of the sunny position of the left bank of the Rake.



The surface of the rocks is covered with spots of rock-loving wart lichens (*Pertusaria* sp.).

9 Springs in Podroteja

In permeable and easily soluble limestone, characteristic Karst features occur. Look across the riverbed to the right and you will be able to spot strong **springs** at Podroteja.

The trail continues through a typical beech forest with fir trees growing from limestone grounds.



Crossing the suspension bridge over the Idrijca will bring you to the lake **Divje jezero (Wild Lake)**, our largest Karst spring.



10 “Jama nad Kobilu” cave

The cave is an effluent cave. Following strong rainfall, a mighty waterfall erupts out of its depths, flowing into the Idrijca river.



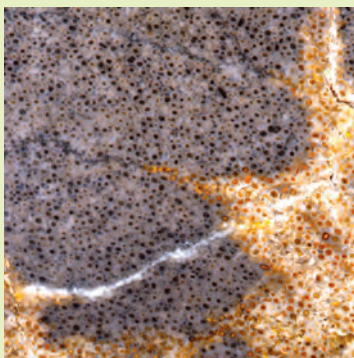
11 Upper Cretaceous rudist limestone

Just a few metres from the dam at Kobilu, we come to a limestone wall, where fossil remains of rudist shells can be found. The layered **rudist limestone of the Upper Cretaceous age** formed approximately 80 million years ago in a warm, shallow sea.

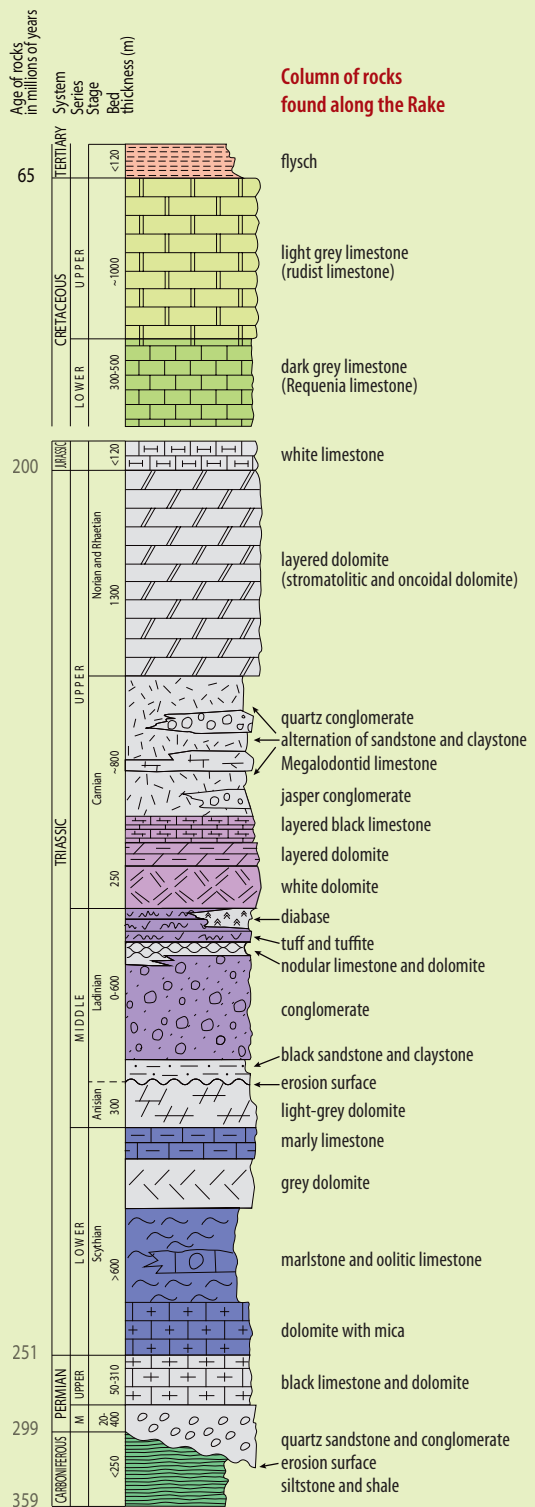


Diverse slopes that the channel runs along represent a typical section of the complex geological structure of the region. Rocks of various ages exchanging quickly, a diverse ground composition, faults and thrusts and complicated connections among various types of rocks are all typical phenomena of the area. The rocks straight along the path have decayed intensely and been overgrown, therefore they can hardly be seen.

The slopes consist of different types of rocks – limestone, dolomites, conglomerate, sandstone, claystone, tuff and flysch – their age ranging between 300 to 60 million years. If you observe these rocks closely and with some geological knowledge, they will tell you many stories. According to their features, you can determine how and where they arose. In case there are fossils there too, you can also define their age.



Oolitic limestone consists of balls no bigger than some tenths of a millimeter having a shell-like structure known as ooids. Unfortunately our cases of ooids are rare and tiny, so they can only be noticed by those with an eye of an eagle and a magnifying glass.





Hints for visitors

Information and booking:

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Zgornja Idrija Landscape Park

Highly diverse territory carved by the many streams is a true paradise for nature lovers and outdoor activities. Here you can enjoy the trickling of clear water, get to know rare plant species and interesting animals, admire various rocks and fossils as well as explore impressive and unique geological features.

The lake **Divje jezero** is one of the biggest and most striking Karst springs by far. After heavy rainfall huge amounts of water come up the slanting passage and rise in mushroom-shaped forms up to 0.5 m high.



Lake Divje jezero

Scopoli's Memorial Garden and »Flora Carniolica« Exhibition

Since flowers in Scopoli's Memorial Garden don't bloom all year long, members of the Museum Association have established an exhibition of Rafael Terpin's paintings of flowers from near and far in the premises of the former mine rescue services. You can also see an exhibition of lichen photographs and get to know the harmfulness of mercury. Guided tours need booking in advance.

The hill Hleviška planina

Several paths of various lengths lead up to the top of the hill (908 m) with a slightly overgrown top that still provides great views. From there you can see the Golaki, the Javornik, the Kamnik and Julian Alps and the Karavanke. Just below the top there is a nice and cosy hut (808 m altitude) where you can relax and quench your thirst and hunger.



Info (Slovene only): www.planinsko-drustvo-idrija.si

Natural swimming pool Lajšt offers refreshment and entertainment in the warm part of the year. On foot, by bike or by car it can be reached along the Idrija on either bank and is only 7 km away from the lake Divje jezero or the Kobilja dam.

Traditional events



A Run to Bela (in May)

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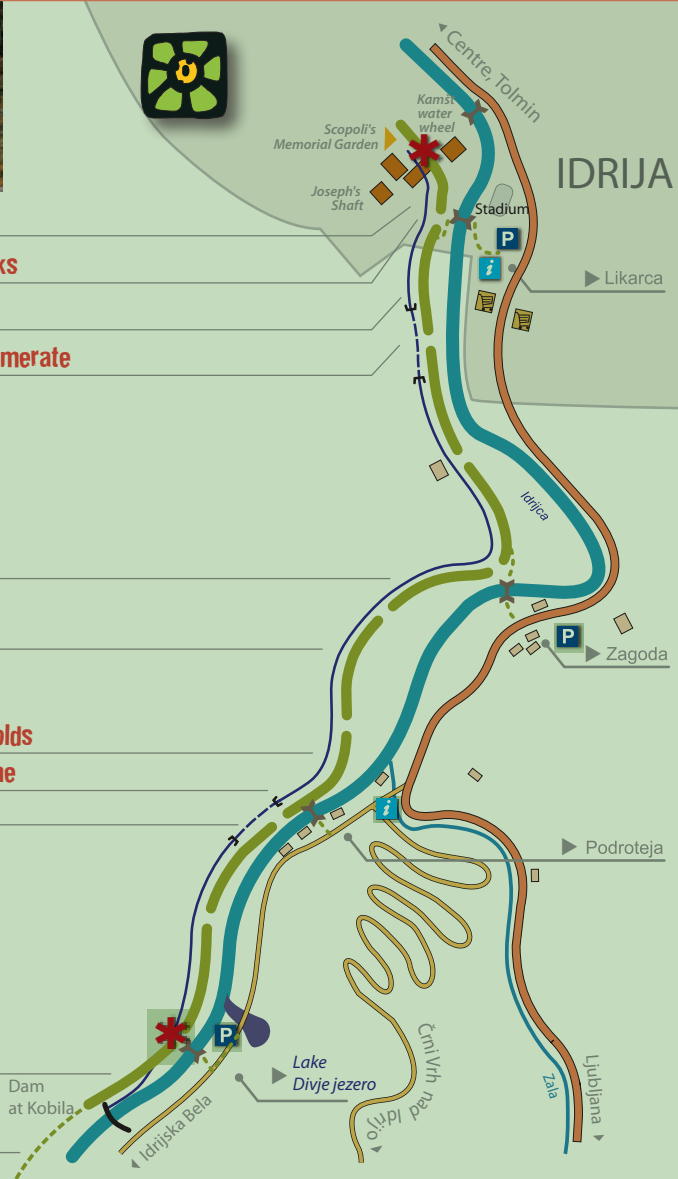
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9 Sources in Podroteja

10 "Jama nad Kobilu" cave

11 Upper Cretaceous rudist limestone



Legend



Duration – 1 hour



Distance – 2.5 km



Path Along the Rake



Rake water channel



stream



starting point



tunnel



car park



info board



suspension bridge



dam

state road

local road



shop

Area along the Rake

Length: 2.5 km

Altitude difference: 6 m

Main rock types:

limestone, conglomerate, shale

Site: Dinaric fir-beech forest (*Abieti-Fagetum dinaricum*)

Botanical features: Hacquetia (*Hacquetia epipactis*) and Scopolia (*Scopolia carniolica*)

Watercourse: the Idrijca



Marked by Hacquetias, perennial plants that are among the first spring flowers in the forest, the gradual natural learning path will lead you along the Rake, a popular walking trail and meeting point for people of Idrija and other visitors at all times of the year, a recreation paradise for sports people, a quiet haven for couples and a starting point for hikers entering the Zgornja Idrijca Landscape Park. Under the lush green vaults of the treetops, along the refreshing bubbling of the Idrijca and the sounds from the environment it takes you past giant trees, the meander at Zagoda homestead and the waterwell all the way to the Kobilja dam or across the suspension bridge over the Idrijca to the lake Divje jezero. Visitors of all ages, from kindergarden children, pupils, students to adults taking part in guided tours of these and other UNESCO heritage sights in Idrija again and again become aware of the fact that nature truly is the best of teachers.



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