

## A short history of »Kras«

### Kratka zgodovina »Krasa«

Andrej KRANJC, Slovenian Academy of Sciences  
and Arts, Novi trg 3, SI-1000 Ljubljana, Slovenia;  
E-mail: makranjc@siol.net

To clearly distinguish between »Kras« and »karst«, it would be useful to repeat what is essential for the karst in general. To develop a special type of surface and/or underground relief, the following four conditions must usually be fulfilled:

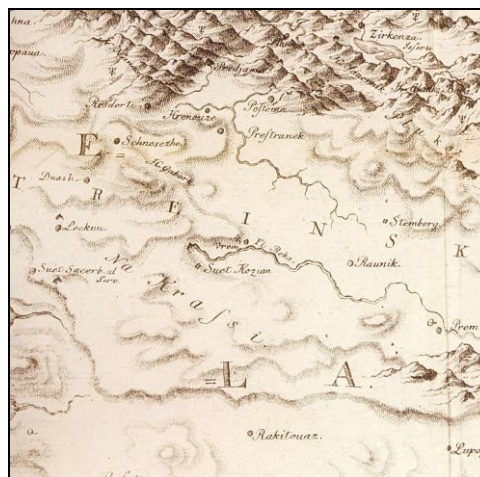
- the bedrock has to be of a soluble rock (carbonate, most frequently limestone);
- rock must be fissured by joint fissures (enabling the water to enter the fissure at one end and leave it at the other end);
- the prevailing process is corrosion (solution of carbonate rock by water);
- the special type of karst (underground) hydrology must exist;

When these conditions are fulfilled – adequate surface and underground features – karst relief develops. Good example is the subterranean connection of the Reka River which sinks into Škocjanske Jame and springs as the Timavo River on the Adriatic coast.

On a global scale, karst covers 15–25% of the Earth's surface (Salomon 2006). On the continental scale, despite the existence of numerous karst terrains, the Dinaric Karst, which stretches along the Eastern Adriatic coast, holds an important position with its 800 km long, 150 km wide and approximately 60,000 km<sup>2</sup> large surface area (Roglić 1965). On its NW tip, the Kras plateau is located. More than by its size, the Dinaric Karst is important for its outstanding karst features, while the Kras plateau is especially important for its history.

Springs of the Timavo River are mentioned in Pseudo-Skylax's *Periplus* (4<sup>th</sup> century BC) as an important source of drinking water. They are also referred to in Virgil's *Eneide*, and Poseidonios of Apamea is the first to mention the underground connection between the Upper Timavo River (the Reka River) and the springs of Timavo (Pfeiffer 1963). One of the first recorded tracing tests was performed by Father Pietro Imperato, living near the Timavo springs, by putting floats into the Reka

River in front of Škocjanske jame and trying to collect them in the river's resurgence. This test was erroneously attributed to the well-known Naples' naturalist and mineralogist Ferrante Imperato or his son Francesco (Shaw 1992), but was in fact performed by Pietro Imperato (Tavagnutti 2013). During the 17<sup>th</sup> and 18<sup>th</sup> centuries important books and reports, containing descriptions of Kras and Carniola's karst, appeared, their authors being: Valvasor (1689), Nagel (1748), Steinberg (1758), Hacquet (1778), and Gruber (1781) (Fig. 1). Nagel (1748) estimated the age of one of the columns in Vilenica cave, which most probably presents the oldest speleodating. During the 19<sup>th</sup> century the most important caves, specifically Labodnica (Abisso Trebiciano in Italian) and Škocjanske jame were explored. At the end of the century, two internationally renowned karstologists F. Kraus (1894) and E.A. Martel (1894) published their works which included fruitful discussions on the topic of Kras (Gams 2004).



**Figure 1.** On his map of Carniola, B. Hacquet used, inter alia, Slovene names »Na Krassi« (On the Karst) (Hacquet 1778).

**Slika 1.** B. Hacquet je na svoji karti Kranjske uporabljal slovenska imena, med drugim tudi »Na Krassi« (Na Krasu) (Hacquet 1778).

And how the name of the relatively unknown and unimportant Kras plateau became the international term for limestone terrains and their phenomena and features? In the 2<sup>nd</sup> century BC, Kras belonged to the kingdom of Histrians, and then fell into Roman hands. The Romans Latinized

the name into *Carsus* in which the original root \*kar- (\*gar-), meaning a stone, was retained (Snoj 2009). From the accusative form of the Latin name *Carsum* three actual names derived: *Carso* (as the so-called »inherited« name) in Italian, *Karst* in German taken from the Italian name, and *Kras* in Slovene. According to the Slavic language, the form \*Kars(u) changed via liquid metathesis into *Kras* during the 9<sup>th</sup> century at the latest (Snoj 2009). Since the only practicable road connecting Central European and Habsburg's lands with the Mediterranean – i.e. with the port of Trieste – passed the karst land between Vrhnika and Trieste and crossed the *Kras*, several travellers were writing about an unusual karst landscape (Kranjc 1998). As they predominantly wrote in German, they used the German form of the name – *Karst*. So anywhere else scholars began to compare limestone landscape with that of *Kras*. Finally, F.H. Hohenwart (Fig. 2) wrote that karst is not only the plateau of *Kras*, but that it stretches from the surroundings of Udine (Friaul) to the Greek island of Cephalaria (Hohenwart 1830). Thus the toponym *Kras* became the general term for karst.

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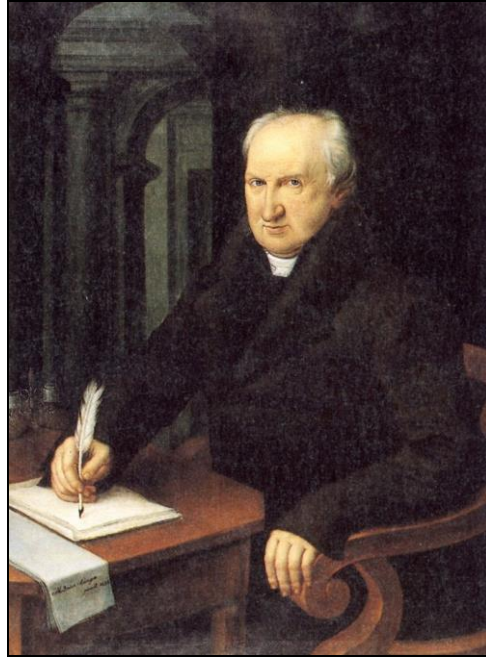
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**Figure 2.** F.H. Hohenwart is the first who clearly asserted that the phenomenon of Karst lies not just on the *Kras* (Karst) plateau (Hohenwart 1830). The author of the portrait from 1835 is Matevž Langus; the original is held in the National Museum of Slovenia.

**Slika 2.** F.H. Hohenwart je bil prvi, ki je jasno zapisal, da kraški pojavi niso le na planoti *Kras* (Hohenwart 1830). Avtor portreta iz 1835 je Matevž Langus; original je v Narodnem muzeju v Ljubljani.

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