

## THE 6<sup>th</sup> SINAGEO AND THE INSERTION OF THE KARST GEOMORPHOLOGY THEMATIC SESSION

Between September 6<sup>th</sup> and 10<sup>th</sup>, it took place in the city of Goiânia, Brazil, the 6th National Symposium of Geomorphology (VI SINAGEO), promoted by the Union of the Brazilian Geomorphology (UGB), simultaneously with the Regional Conference of Geomorphology, promoted by the International Association of Geomorphologists (IGA).

Such integrated event had as its objectives, to divulge and discuss the results of scientific studies, theories, models, methods and techniques, with emphasis in the tropical and subtropical environments. The studies were grouped in thematic sessions that synthesize the main currents of international trends and specialties of geomorphology.

Structuralized through the division of the subjects in 14 Thematic Sessions, the event counted on the presentation of about 550 works, between posters and oral communications, added by 18 lectures and 5 round table discussions, congregating more than 700 researchers, with greater importance given to the Thematic Session on Karst Geomorphology. For the first time, after six events of this kind, the Karst studies had its insertion due to the considerable number of papers in the formats of posters and oral communications.

The event was officially opened in September 7<sup>th</sup> with the lectures by professors Mike Thomas (Scotland) and Victor Baker (United States), both guided by the theme of the global climatic changes of the quaternary and its relation with geomorphology. Later on, in the same day, took place the round table on the subject "The Tropics: past, gift and future".

From September 8<sup>th</sup> to 10<sup>th</sup> the event was organized in lectures, oral communications and round tables according to the 14 existing thematic sessions. The biggest interest of the authors were the Thematic Session 5, related to Karst Geomorphology. This Session was presided by Andrej Kranjc of the Karst Research Institute (ZRC SAZU), together with the Heinz Charles Kohler, of the Post-Graduation Program in Geography of the PUC Minas, Brazil.

Under Kohler coordination, the karst studies started with the conference "*Kras - the Classic Karst (Slovenia-Italy)*", given by Kranjc. His lecture was developed in a very interesting format, with the history behind the origin of the name Kras, as well a historical overview of the first studies initiated in the region.

According to Kranjc (2006), kras is a limestone plateau located northwest of Slovenia (45°45' N, 14°00' W) part of the Dinaric Mountains, being well detached in

relation to the non-carbonatic adjacencies of the Triest Bay on the southwest, the alluvial plain of Friuli and the sedimentation valley of Vipava to the northwest. Such plateau is considered an anticlinorium of Cretaceous and Tertiary limestone, crossed by three main faults in "Dinaric" direction (NW - SE), with altitudes between 200 and 500 m covering an area of about 550 km<sup>2</sup>.

When talking about the history behind the evolution of the studies of the Dinaric Karst or the "Classical Karst", the impressions of the authors were reinforced by considering the Karst as a vast field for human and physical studies.

By making an epistemological reflection on the origin of the term *Kras* until the currently used terminology, Kranjc caught our attention to the existence of brief descriptions of the karst in works from the 4<sup>th</sup> century B.C., as well the impressions left in the works of Strabo, Polibios, Plinius, Livius, and Vergilius, among others. Posidonius of Apameia (135 - 50 B.C.), for example, said that "the river Timavus springs in the mountain, flows into an abyss, reappears after the distance of 130 stadia, and flows into the sea", a clear description of a river sink and a resurgence.

At the Medieval Age, the "Tabula Peutingeriana" already showed indications of a karstic region with human settlements next to it. At the same Era, the tourism in caves initiated, more specifically in the Cave of Sveta jama (Sacred Cave), in 280 A.C., where masses and marriages started to be common. The caves of Landarska (888 A.C.), Postojnska (1213 A.C.) and Vilenica (1663) also called the attention of people living near by them.

By the end of the 17<sup>th</sup> century and the beginning of the 18<sup>th</sup> century, the region popularizes in consequence of descriptions made by geographers, topographers, scholars and travelers, and also by the fact of Trieste being turned into a "free trade" port in 1719. In this period, more systematic studies began to increase.

Thus, pioneers scholars dedicated to the study of the kras region, starting formally with a publication of Franc Jožef Hanibal HOHENWART (1830), where the term "karst" appears for the first time. Geographers and geologists of the 19<sup>th</sup> century started to use with more frequency the term *karst* and the works of Jovan Cvijić (1893) were considered to have given the scientific basis to the study of the "classical karst", followed by Grund (1805), Kraus (1894) and Martel (1894), for example.

After all this thoughts, Kranjc finished with the exemplification of its sayings with photos related to the karst geomorphology and human usage, since the use of

the endokarst for rituals, the exploitation of limestone in the region for house and terraces construction, the use of the exokarst for farming, water and ice catchment for food conservation, as well the inappropriate waste disposal in dolines.

Thus, all of those who went to the conference had the opportunity to have a general overview on the evolution of the Kras plateau, as well as understanding its complexity, management and need for preservation. In the afternoon the oral communications from the Thematic Session 5 took place under the coordination of K.H. Kohler.

Basically the papers presented had focused the geomorphology in sandstone and quartzite (pseudokarst) regions with the exposition of works that prioritized the deriving use of the concepts and definitions of the "classical karst" in regions where the development of caves took place silicateous rocks.

More important than the discussion on the terminology was the intention of the authors in proving its hypotheses through well structuralized and coherent works, fact that is appropriate to the academic discussion of the role of geochemistry as a key factor in the development of a karstic relief (classic) or not. The process of dissolution in detriment of the physical erosion was underlined, due to the premise that any rock is soluble, especially on tropical regions (water + heat).

On Saturday, the participants were able to attend the conference "*Brief considerations on the Brazilian Karstic Scenarios*" given by K.H. Kohler, under a. Kranjc coordination. As we all know, Prof. Kohler dedicated more than 30 years of his life in the study of the Brazilian tropical karsts, especially on the Lagoa Santa Karst, a widely studied region in the 19<sup>th</sup> century due to its karstological, paleontological, archaeological and speleological importance.

For him, the geomorphology contemplates the landscape in a spatial-time conception whose evolution (dynamic) in many ways is faster than the preventive intention of the man in conserve and preserve.

The origin of the Lagoa Santa's endokarst retraces to the Jurassic/Cretaceous, whereas the exokarst is shaped after the Rio das Velhas initiates the notch of the South American Plate in the Plio-Pleistocene, already in the outcrops of carbonatic rocks, remodeling the karstic scenario until present times.

An important anomaly in the current drainage system was also distinguished: the general drainage standard of the main river (Rio das Velhas) and its tributaries follows the N direction and, the Ribeirão da Mata is the only stream that flows in almost opposite direction, (SW). This anomaly suggests that the Rio das Velhas had already occupied the current course of the Ribeirão da

Mata, flowing northwest, originating the Lagoa Santa Karst (KOHLEK, 2006).

Through images and cartographic documents, the participants were able to observe this anomaly flow as well as understanding the genesis of the Lagoa Santa Karst plateau.

With the development of this Thematic Session, we could once more acknowledge the lack of researchers that are not necessarily speleologists that are interested on karst studies and its processes.

Even with the insertion, for the first time, of the thematic on Karst Geomorphology in an important national and international event, the number of papers submitted to us was still lower than the other papers sent to the other 13 Thematic Sessions.

Thus, we believe that a bigger integration between the scholars from the physical studies and human studies of karstic areas is necessary, because only doing this we'll contribute for an optimum development of the Brazilian karstology.

It's strongly recommended that, in the current stage of the karstological studies in Brazil, we started a systematic and detailed mapping of the Brazilian karstic areas, integrating those dedicated to the endokarst (speleologists) and those scientists of the exokarst (geomorphologists).

## REFERENCES

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