ACTA CARSOLOGICA	30/2	7	115-128	LJUBLJANA 2001

COBISS: 1.08

CONTACT KARST PHENOMENA ON THE EDGE OF THE GALYASÁG (GÖMÖR-TORNA KARST)

KONTAKTNI KRAS NA ROBU HRIBOVJA GALYASÁG (SLOVENSKÝ KRAS)

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Prejeto / received: 1. 9. 2001

Izvleček UDK: 551.44(439)

János Móga: Kontaktni kras na robu hribovja Galyaság (Slovenský kras)

Nižji del tega kraškega sveta, Galyaság, sestavljata nižje sredogorje in gričevje na južnem robu Slovenskega (= Slovaškega) krasa. Galyaság je mozaik različnih strukturnih in površinskih enot. Od zahoda proti vzhodu ga lahko razdelimo na 4 morfološko različna ozemlja. Zahodni del, ki spominja na planoto Aggtelek, gradijo apnenci, močno podvrženi zakrasevanju. Na robu kraške planote, okoli hriba Pitics, se pojavljajo tudi nekraške kamnine, ki dlje proti vzhodu prevladujejo. Planota Teresztenye (gozd Galya) je kraški otok obkrožen s spodnjetriasnimi škriljevci in sedimenti iz panona. Na vzhodnem obrobju Galyasága, blizu reke Bódve, so nekraške kamnine. Na Galyaságu je značilni alogeni kras s površinskimi in podzemeljskimi oblikami. Razen korozije zaradi padavinske vode, je opazno tudi korozijsko-erozijsko delovanje ponikalnic z vododržnega obrobja, ki izginjajo v ponore, ko pritečejo na kras. Prispevek govori o zapažanjih z robnega dela Galyasága, v sklopu preučevanja kontaktnega krasa.
Ključne besede: kraška geomorfologija, kontaktni kras, Galyaság, Madžarska.

Abstract UDC: 551.44(439)

János Móga: Contact karst phenomena on the edge of the Galyaság (Gömör-Torna karst)

The lowest part of the karst region, the Galyaság, incorporating low middle mountains and hilly territories is situated on the Southern border of the Gömör-Torna Karst. The Galyaság is the mosaic of diverse structural and superficial regions. Running from West to East it can be divided into 4, more or less morphologically diverse territories. Its Western part, resembling to the Aggteleki-plateau is built from limestone with strong inclination towards karstification. On the edge of the karst plateau, around the Pitics-mount, non-karstified rocks also appear, which become predominant towards the East. The Teresztenye-plateau (Galya-wood) is a karstic island in the ring of Lower Triassic slate and Pannon sediments. On the Eastern border of the Galyaság, on the territory neighbouring the Bódva-river no karstic rocks can be found. On the characteristic allogenic karst of the Galyaság, in the formation of the surface and sub-surface forms, besides the corrosion of the infiltrating waters, the corrosion-erosion effects of the outflowing and the dissappearing waters in swallow holes coming from the neighbouring non-karstic regions can be well observed. In the paper the observations accomplished on the border area of the Galyaság, during the research of the phenomena of the contact karst, are presented.
Key words: karst geomorphology, contact karst, Galyaság, Hungary.

INTRODUCTION

The karstic mountain range built up similarly to the Aggtelek plateau continues between the Jósva, and the Tóth (Henc) valleys. This region, mainly lower middle-mountainous, but to a lesser extend already hilly territory is referred to as the Galyaság.

The Galyaság is the mosaic of diversely constructed regions with various surfaces. Starting from West to East it can be divided into four morphologically more or less different territories. Its Western part, bordering the Hideg-valley, is most similar to the Aggtelek plateau, as it is mainly built up from rocks with a strong inclination towards karstification (Steinalm, and Gutenstein limestone). On the Western edge of the karstic plateau, towards Pitics mount, non-karstifying rocks also appear, which become more and more determining towards the East. The Teresztenye plateau is only a karstic island within the ring of Lower Triassic slate and Pannonic sediments. East from this plateau we cannot find carbonated rocks at all.

On the characteristic allogenic karst of the Galyaság, in the formation of the surface and subsurface landforms, besides the corrosion of the infiltrating waters, the corrosion-erosion effects of the outflowing and the disappearing waters in swallow-holes coming from the neighbouring non-karstic regions can be well observed. In my paper I would like to present my observations accomplished on the border area of the Galyaság, during the research of the phenomena of the Contact Karst.

GEOLOGICAL CONSTRUCTION

The peaks of the lower mountainous region, mainly built up from the blocks of Middle Triassic limestone connected to the South. wing of the Jósva valley anticlinal, reach a height of 350 - 400 m. Even the peak of the Pitics mount rising well above its neighbourhood is only 452 m high. The fragmentation of the limestone is due partly to the movements taking part at the meeting point of the covered and open karst, partly to the NE-SW and SE-NW fractures dividing the Galyaság. NE-SW diagonal fracture lines indicate the main valleys of the Galyaság (Kecske well, Szövetény, Pározsa valleys), and the direction of the doline-lines (Piticsalja) as well. The Jósva valley on the Northern border of the Galyaság developed at a structurally premarked place (anticlinal valley), as well as the Tóth (Henc) valley on its Southern edge (Fig. 1). The latter breaks through the buried limestone horst in the environment of Szőlősardó with epigenetic valley sections.

The structural movements taking place in the Lower Pannonic period caused in the splitting of the limestone blocks of the Galyság different measurements. The blocks sinking in the Lower Pannonic were covered by sea-lake sediments during the Upper Pannonic and by continental sediments later. The Southern edge of the Gömör-Torna karst, including the territory of the Galyaság and the neighbouring Rudabánya mounts evolved into covered karst. (We have no data concerning the possible burial of the plateaus with Pannonic sediments lying North from the line between Aggtelek and Jósvafő.) In the depressions between the irregularly sank carbonated horsts, mainly towards the South. lignite and marshy ironcarbonate developed. According to the age of the lignite layers, the period of burial can be dated to the Sümegium of the Upper Pannonic. The horsts of the Galyaság covered by Upper Pannonic sediments, during the projection taking place under

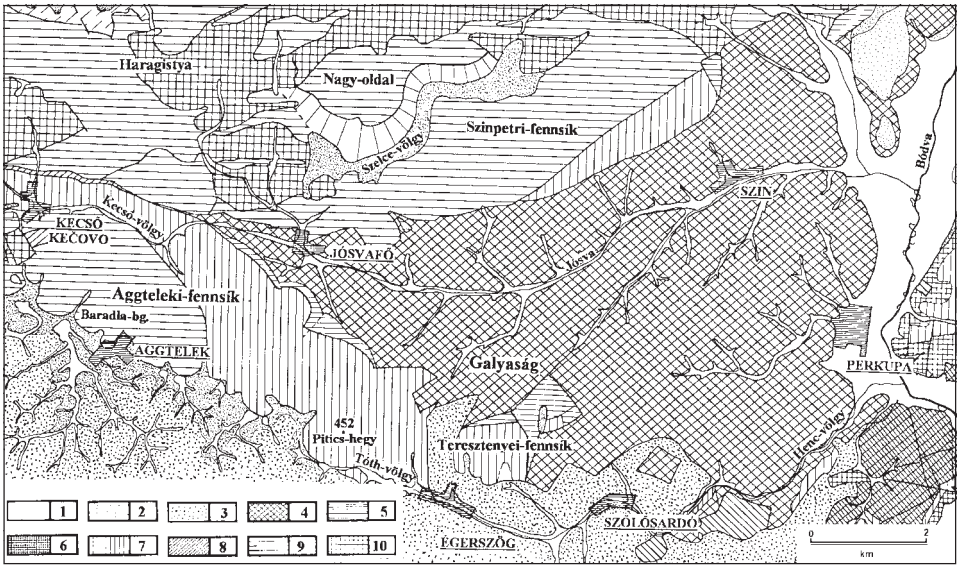

Fig. 1: Geology of the Galyaság (after Mello, J. 1996 and Less, Gy. et al. 1988):
Legend: 1. aluvium, 2. Quaternary eluviums and proluviums, 3. Pliocene gravels and sands (Borsod or Poltar Pebbles F.), 4. Lower Triassic shales and sandstone, 5. Gutenstein limestone, 6. Gutenstein dolomit, 7. Steinalm limestone, 8. Reifling limestones, 9. Wetterstein limestones, 10. Wetterstein dolomit.

the Pliocene and Pleistocene periods were formed into a hilly or lower middle mountainous territory. We can reconstruct the measurements of the movements (Roman and Baku) from the position of the embedded lignite layers in Upper Pannonic sediments. The height above sea level of the above mentioned layers are 260-270 m around the Rudabánya mountains, 200 m at Szuhogy, 160 m at Szendrő (Mezősi 1984). The rising was uneven; it was less prominent on the territory of the Putnok hills (the so-called covered karst), but in the Galyaság it could reach a 100 meters. The cover sediment was carried off at a quicker pace from the higher peaks, and these were exhumed nearly entirely by the present day. The Upper Pannonic/Ponthian sediments and mainly the relics of the pebble covers survived everywhere (series of dolines at Piticsalja, Dász doline, Teresztenye plateau etc). The above mentioned pebble occurrences and surface forms attached to cover sediments prove the earlier burial of the karstic plateau. The Galyaság, according to the classification of Hevesi (1986) is an exhuming, soil and vegetation covered, partly covered, mixed, allogenic karst.

THE GEOMORPHOLOGY OF THE WESTERN GALYASÁG

The Western part of the Galyaság, which comprises of the catchment area of the Béke cave, shows characteristics that of the Aggtelek plateau (Csüllög-Móga 1997, Móga 1999). Its Southern border is the capture-line extending on the border of the covered and open karst, where well developed swallow-holes form a line (Szomor-hegyi, Nagy-völgyi swallow-holes, Bibic doline swallow-hole). According to water tracing experiments these swallow-holes feed the Komlós spring breaking forth in the Törőfej valley at Jósvafő, and form an underground water system parallel to the Domica-Baradla cave system, but independent from it. L. Jakucs (Béke-cave) and colleagues found the cave system hypothetically shown through water trace marks in 1952.

The karstic catchment area of the Béke cave is a typical allogenic karst (Jakucs 1971), where the corrosion of the infiltrating waters, as well as the dissolving activity of the flowing waters disappearing in swallow-holes from the neighbouring non-karstic territories take part in the formation of surface and underground forms. On the karstic plateau bordered by the Szomor mount (380 m), Nagy Jene peak (445 m), Láz peak (398 m) and the Hideg valley dissolved dolines partly filled in by red clay usually form groups of uvalas (Zámbó 1970) (Fig. 2, Photo 1). Protruding rocks rarely disturb the thin soil layer covering the peaks separated by doline groups. Karren

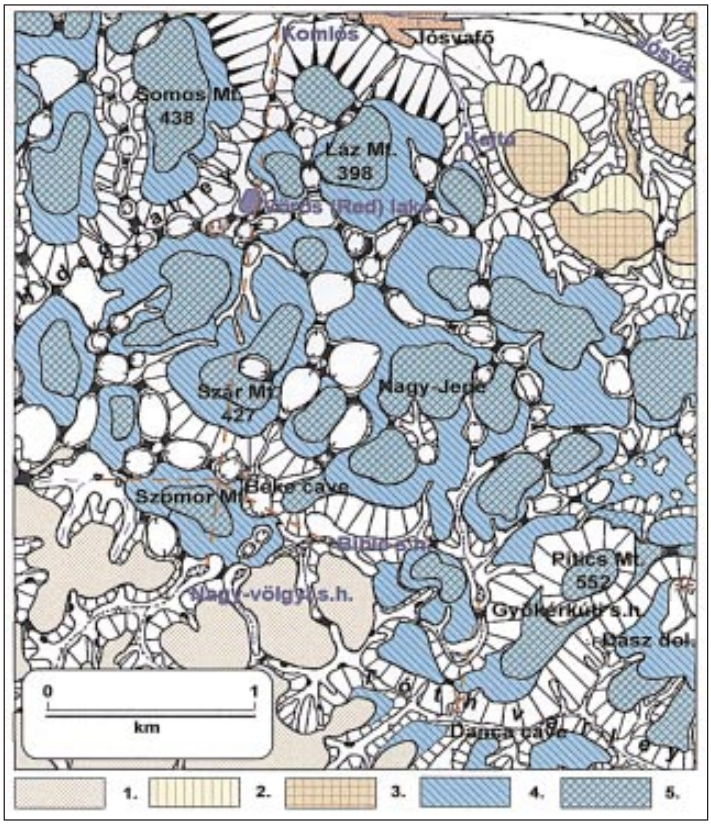

Fig. 2: Geomorphological map of the Western part of the Galyaság: Legend: 1. pannonian-pontian sediments, 2. intervalley back developed on non-karstic rocks, 3. the summit of the intervalley back developed in non-karstic environment, 4. karstic plateau or intervalley back developed on carstic rocks, 5. the higher back of the karstic plateau or the summit of the intervalley back (on karstic rocks).

Photo 1: The Red lake and its environment on the Western part of the Galyaság.

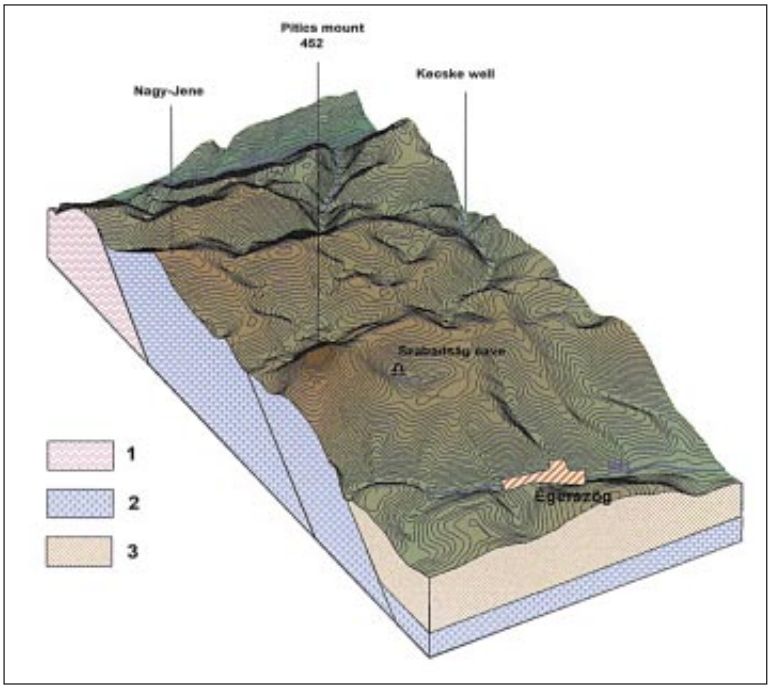

Fig. 3: The karst plateu around the Pitics mount: Legend: 1. Lower Triassic shales and sandstone, 2. Steinalm limestone, 3. Pliocene gravels and sands (Borsod or Poltar Pebbles F.).

appear on the narrow ridges between dolines and on steep slopes. Well developed swallow-holes generating on rock borders, characteristic to allogenic karst can be found at the foot of Szár mount (427) and Szomor mount, at the real edge of the karst plateau. The swallow-holes function in rainy and snow melting periods; even the water flow belonging to the Nagy-völgyi swallow-hole with the biggest catchment area is a dry valley without permanent water supply.

The Béke cave in reality is the 8743 m long underground bed of the Komlós spring's stream and is a stream cave without well definable cave stories or lavels. The stream, forming a tube system even today flows in the canyon-like main branch of the cave. The missing stories or layers can be explained with the different tectonical history of the Galyaság and the Aggtelek plateau. The uprising of the Gömör-Torna karst on the territory of the Galyaság was so scanty, that the incision of the underground water flow could keep pace with the rise of the limestone block, and instead of developing stories or levels, formed a deep, canyon-like passage.

During the rising periods, the deepening of the karstic water level was not as great as in the neighbouring Baradla. In the time of the development of the cave the karst water level was situated near the bottom of the passage, and this prevented the development of hollows of deeper layers. The evolution of the hollow system can be dated to the Pleistocene. According to the research of the undisturbed (in situ) sediments from the flooded high water erosion level, and the terraces of the Béke cave's passages, the first period of cave formation can be dated to the Günz-Mindel interglacial.

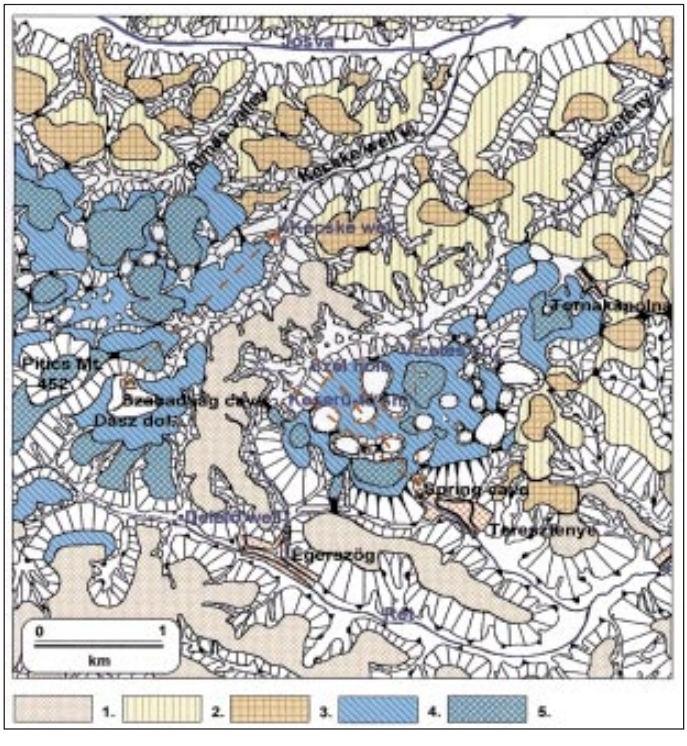

Fig. 4: Geomorphologycal map of the Teresztenye karst plateau and its environment.
Legend:
1. Pannonian-Pontian sediments, 2. intervalley back developed on non-karstic rocks,
3. the summit of the intervalley back developed in non-karstic environment,
4. karstic plateau or intervalley back developed on karstic rocks,
5. the higher back of the karstic plateau or the summit of the intervalley back (on karstic rocks).

Photo 2: Danca spring cave in the Tóth valley.

THE KARST AROUND THE PITICS MOUNT

The limestone zone carrying karstic surface forms, narrows East from the catchment area of the Béke cave, as on the North part of the Galyaság, bordered by the Jósva valley, the Lower Triassic weakly, or non-karstified rocks of the Jósva valley anticline surface (Szinpetri Limestone Formation, Szini Marl Formation, Bódvaszilasi Sandstone Formation) (Less et al. 1988) (Fig. 1). In the layered, slated limestone of the Lower Triassic Period (Szinpetri Limestone Formation), the karstic forms can be discovered in fragments (small dolines under the Huta peak), but towards the Eest, on the surface of insoluble sandstones and slates the surface water flows appear (Almás, Kecske spring, Szövetény, Pározsa valleys) (Figs. 2, 3, 4). The backward erosion of the Kecske spring valley reached and drained the Middle Triassic limestone zone. This drainage was so intensive in the Kecske spring valley that it could attract the sub-surface water flows of the many square km karstic plateau. The Kecske spring issuing from the slated, layered limestone is the most abundant spring of the neighbourhood (2000 l/min maximum, 100 l/min minimum, 400-600 l/min average water discharge) (Balázs 1961).

The backward erosion of the Tóth valley to the Southern edge of the narrow Steinalm limestone stops the swallow-hole line, situated between Hosszúszó and Szomor mount. The valley developing at the border of the covered and open karst in the continuation of the baticapture line,

from there on collects the waters flowing down from the pebble backs bordering the karst and continues its way on the surface towards the Bódva river. The deepening of the Tóth valley started from the surface of the Pannonic sediments, which in time was inherited in the limestone layers lying below. With the deepening of the epigenetic Tóth valley gradually the Southern directed subsurface drainage of the area neighbouring the Pitics mount of the Galyaság began.

The karst plateau according to the blocks of rocks moving along the fracture lines can be divided into lower peaks and projecting horsts. A thick layer of soil, red clay and pebble covers its surface, not counting the steepest slopes, so rocks surface rarely. The most characteristic surface forms of the karst around the Pitics mount developed along 2 parallel fracture lines following the NE-SW direction between the Jósva, and the Tóth valleys. The elongated horst of the Pitics mount (452 m) was formed by the rise of the above mentioned fault plain. The fracture of the edge of the SE part of the mount is the most frequent occurrence of the karren forms. The swallow-hole opening at the bottom of the Dász doline and the valley of the Kecske well is connected to the fracture line forming the steep slope of the Pitics mount. This fracture line appears in the deep in the first few 100 m of the Szabadság cave.

More or less parallel with the above, another fracture line runs on the NW side of the Pitics mount in the line of the Danca, Gyökérkúti swallow-hole, the Piticsalji uvala and the Almás valley. The Piticsalja uvala was formed by the corrosion of the infiltrating waters in the intersection of fracture lines crossing each other. In its vertical axis we can recognise the fault plain causing the rise of the Pitics mount. Terra rossa and clay of unknown thickness, which makes the infiltration of the waters difficult, cover the bottom of the uvala. In one of the dolines the water remains for a long time following snow melt, and a temporary lake develops. The uvala of an extend of about 0,3 km^2 is connected to the water system of the Kecske spring. Its only developed swallow-hole belongs to the branch of the Gyöngyfolyó of the Szabadság cave.

The waters infiltrating around the Pitics mount partly flow towards the Tóth valley (Danca spring cave, Mocsolyák spring and Delelő well) and partly towards the Kecske well (Photo 2). It is difficult to bind the exact catchment area of the karst plateau nearly fully exhumed from the cover deposits with its territory poor in swallow-holes, but it seems sure that the main watershed is the horst of the Pitics mount rising between parallel fracture lines.

The water tracing research conducted in the 1950s proved the relationship between the swallow-holes of the studied area and the springs in the neighbouring valleys. The most developed swallow-hole of the karst around Pitics mount opens in the Dász doline. The waters of the Dász doline swallow-hole expanding on an area of 0,13 km^2 and covered by Pannonic deposits surface in the Kecske well situated some 1550 m away. Following the water disappearing in the swallow-hole, D. Balázs and his colleagues discovered the third longest cave system of the Hungarian part of the Gömör-Torna karst region. The length of the passages of the Szabadság cave, along with the later excavated parts is 3300 m.

The catchment area of the Mocsolyák spring and the Delelő well, bursting forth in the environment of Égerszög is unsure; most probably they are fed by the waters infiltrating in the Pitics ridge. The swallow-holes of the Danca cave open in the dual swallow-hole doline below the Pitics mount ridge, and their catchment area is separated from the Bíbic doline of the Béke cave's Discovery (Felfedező) branch by a low peak. About 300 m from the spring the Danca swallow-hole, opening at an altitude of 328 m only functions in the rainy season and when the snow melts. The Gyökér well swallow-hole (353 m) situated further off is fed by a small spring during the

larger part of the year (Gyökér well). On the surface of the territory of the catchment area of the swallow-hole (some 450 000 m^2) covered by Pannonic sediments, red clay and at some places quartz pebbles, a dry valley of about a few 100 m deepened and conducts the waters of the non-karstic area into the swallow-hole.

The spring of the Danca hole operates 80-100 days a year, with a water discharge of 0-5000 l/min. The waters of the stream flowing from the 1,5 m high mouth of the cave are swallowed in the limestone gorge of the Tóth valley. The new appearance of the water is uncertain, most probably it emerges in the springs around Égerszög. Our hydrological research in the karstic environment of the Pitics mount (The deep bathicapture of the Tóth valley and its attachment to the Mocsolyák spring and Delelő well), show signs of a gradual displacement of subsurface waters.

THE KARSTIC PHENOMENA OF THE TERESZTENYE PLATEAU

In the Galyaség the limestone zone continuing from West to East, at the sharp bend between Égerszög and Kecske spring is suddenly interrupted (Fig. 1). The carbonated rocks surfacing round the Pitics mount, due to the differentiated structural movements taking place in the Lower Pannonic period sank down and on their surface the thick, multicoloured clay layers, dissected by sand and pebble benches were placed. The Pannonic sediments, as well as the Lower Triassic slated limestone and marl embrace the last karstic patch of the Galyaság the Teresztenye plateau or Galya woods. The small clip of the 350-370 m high Teresztenye plateau built up of Steinalm and Gutenstein limestone appears isolated in the environment of the villages Égerszög, Teresztenye and Tornakápolna (Fig. 1).

The Galya woods show the characteristics of the open, mixed, allogenic karst. The patches of Pannonic sediments and the pebble cover give evidence of the burial of the plateau. During the Lower Pannonic structural movements most probably the Teresztenye block sank as well and was buried under the Upper Pannonic transgression. By the end of the Upper Pannonic however it must have emerged as dry land from the surrounding lake and marshy environment. During the geological mapping of the Aggtelek-Rudabánya mountain the fine sand found at 300 m at the foot of the Teresztenye plateau refers to spring activity in the Upper Pannonic/Ponthian period. The karst plateau however did not rise high above its surroundings as later quartz pebbles covered it brought from the Gömör-Szepesi ore mountains which was named by the Slovak geologists and morphologists as Poltar Pebble Formation and its accumulation is dated to the Ponthian period. (Jakál 1975, Mello 1996) In Hungary the age of these pebble covers is dated to the Pleistocene (Láng 1955) or the Pannonic (Jakucs 1956). According to Less (1998) it was during the turn of the Pliocene-Pleistocene that it reached its present place.

Under the rise of the Teresztenye plateau in the Pleistocene-Holocene the greater part of the cover sediments decayed and remained in above mentioned small patches. The sediment cover could not have been thick and/or the exhumation took place quickly so the epigenetic valleys generating to limestone, which is characteristic to exhuming karst areas is missing. The territory of the karst plateau is too small to develop important water flows. Its tops are segmented by sink dolines characteristic to open karst. Plate like, deep dolines developed on the surface of the more soluble Steinalm limestone. (Veszettárpás doline, Boros doline etc) With the fusion of the dolines

situated on the border of the Steinalm and Gutenstein limestone the greatest uvala of the plateau was formed. The dolines of the less soluble Gutenstein limestone are smaller, shallow and less regular. Temporary water flows run into the dolines lying on the border of non-karstic neighbourhood. In the bottom of one of the dolines a layer spring issues (Mátyás well) and this water spreads at the bottom only to disappear in a nearby swallow-hole.

The most developed swallow-holes were formed at the foot of the Teresztenye plateau (Figs. 4, 5). On the surface of clay and pebble sediments deposited in the one time bay of the Upper Pannonic sea, sloping towards the karst edge, short water flows developed ending in swallow-holes. According to water tracing study of waters disappearing in swallow-holes (Balázs 1960) the waters remain at the Southern foot of the plateau and feed the stream of the Teresztenye spring cave.

A line of surface tapped cavities, swallow-hole dolines encircle the island like block of the Galya woods. Two permanent water flows feed the Vizetes swallow-hole with the biggest catchment area. The small spring issuing in the neighbourhood of Tornakápolna, after a 1 km long

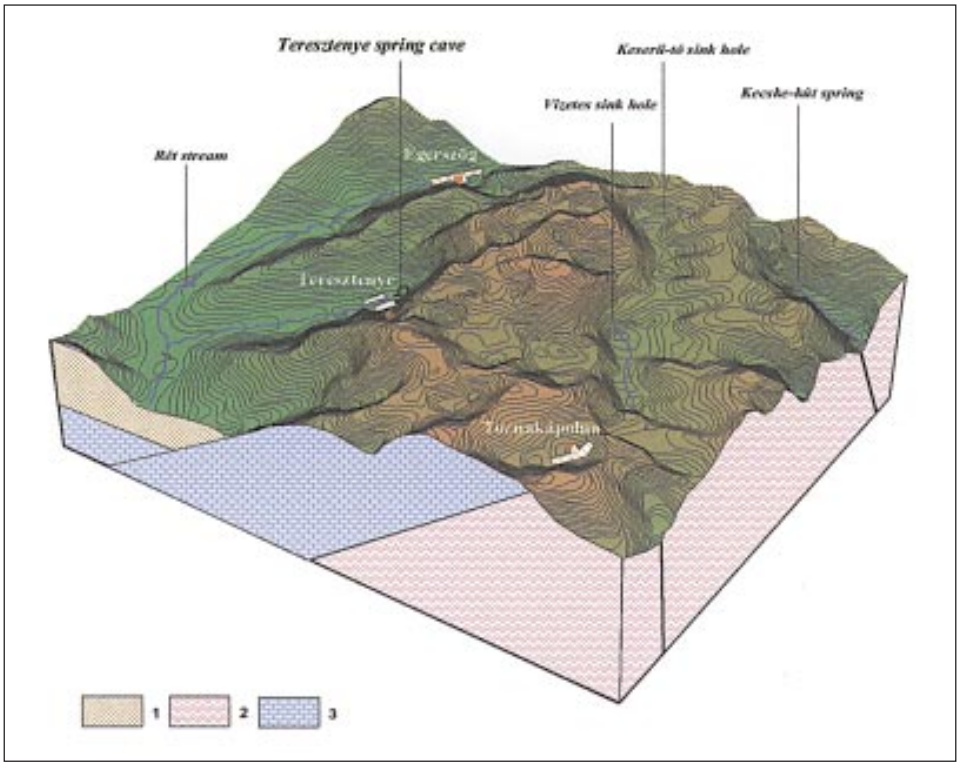

Fig. 5: The Teresztenye-plateau:
Legend: 1. Pliocene gravels and sands (Borsod or Poltar Pebbles F.), 2. Lower Triassic shales and sandstone, 3. Steinalm limestone.

journey accross the swallow-hole doline, reaches the swallow-hole opening at the deepest point of the valley. The water of the Kút spring issuing from the nearby marshy land also feeds the swallow-hole. The swallowing capacity of the Vizetes swallow-hole is really small, according to estimations around 50-60 l/min (Balázs 1960). In time of showers and melting of snow the elder, higher situated swallow-holes also function, but altogether are unable to swallow the water from the many km^2 territory. In such periods a temporary lake with a depth of 5-8 m develops around the swallow-holes.

On the bottom of the swallow-hole dolines situated on the Western edge of the plateau temporary swallow-holes open (Keserű-tó swallow-hole doline, Szél hole, Beszakadás). The swallow-hole opening in the Keserű-tó swallow-hole doline is the most developed swallow-hole of the Teresztenye karst spring. Though its catchment area today is small, but it can swallow an unlimited amount of water without swelling.

The Vizetes swallow-hole's poor capacity can be connected with its young age. At present the evolution of the unexcavated part of the Teresztenye cave system is to a large extend still unknown, but it seems liable that its swallow-holes were formed with the periodical bathicapture and the backward erosion of its valley.

According to my research, the water accumulating on the surface on the more or less similarly high Lower Triassic limestone and Pannonic sediment at the end of the Pliocene and the beginning of the Pleistocene partly flowed down through the Szövetény valley towards the Jósva valley and partly towards the Tóth valley. The later water flow could have reached the main valley at Égerszög. With the gradual deepening of the stream running towards the Jósva valley and the Vizetes stream, by the time of the early Pleistocene the position of the watershed was slowly fixed (325 m) at its present place, in the neighbourhood of Tornakápolna. The Szövetény stream deepening into the slated surface, remained a surface water flow and it reaches the Jósva between Szin and Szinpetri. The Vizetes stream cutting into the Pannonic sediments on the other hand became an underground water flow on its lower section, when during its deepening at the Keserű-tó swallow-hole doline reached the limestone, and the rocks fracture line system gradually tapped the waters of the stream. With the baticapture of the water flow, the development of the lower part of the valley stopped. With the further deepening of the valley ending at the Keserű-tó swallow-hole doline, between the doline and the Tóth valley, in the place of the earlier valley, a watershed was formed with a 327 m high saddle-back, which provides facts about the height of earlier valley bottom.

The deepening of the Vizetes valley continued, but the waters of the stream still disappeared at the Keserű-tó swallow-hole doline (300 m). In the later period of valley formation the baticapture was several times repeated and with the development of further swallow-holes a gradually greater sections of the old valley were cut off from the active, watery section of the Vizetes stream. On the other hand the number of swallow-holes gradually grew in the bottom of the valley (Szél hole, Beszakadás etc.).

The valley of the Vizetes, possessing a permanent water flow was shortened by every bathicapture until it reached its present level. The deepening process of the valley sections cut off and waterless slowed down as they could only collect and conduct waters generating from rainfall towards the swallow-hole from their close environment. Thus the developed swallow-hole line widened. The waters running down the Western slopes of the former valley covered by Pannonic

clay and pebble deepened ditches in the loose deposit, and by carrying away the sediments, widened a bit the nearest section of the one-time valley. The swallow-hole dolines were created during this process. Thus the Vizetes swallow-hole is the youngest in the line and developed with the last bathicapture. Though the biggest catchment area belongs to this swallow-hole, its water-conducting gallery is rather undeveloped.

THE EASTERN PART OF THE GALYASÁG

East from the line connecting Szőlősardó with Tornakápolna only the Lower Triassic rocks remain on the surface. Towards the East the lower-lying, older formations of the Lower Triassic period (Szini Marl Formation, Bódvaszilasi Sandstone Formation) take part in the construction of the low mountain region between the Henc, and Jósva valleys (Fig. 1) The seemingly simple occurrences of the surface rocks conceal a tectonically complicated situation, which became known through the analyses of the deep drilled material of Tornakápolna. Below the Lower Triassic layers of the Szilice cover heavily tectonised bloks of oceanic crusts (serpentinite, metabasalt) can be found.

The highest peaks of the Eastern Galyaság (Zabanyik 410 m, Bérc 409 m) emerge from the watershed back between Tornakápolna and Varbóc villages. From the Bódva river to Varbóc village the backward eroded Víz-völgyi stream with its tributaries slashed through entirely the southwards tipped mountain region. This hilly and low mountain region dissected by techtonically preformed erosion valleys and rich in derasional forms, falls into the tectonical ridge of the Bódva with a steep slope.

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KONTAKTNI KRAS NA ROBU HRIBOVJA GALYASÁG (SLOVENSKÝ KRAS)

Povzetek

Nižji del tega kraškega sveta, Galyaság, ki je podoben planoti Aggtelek, se nadaljuje med dolinama rek Josva in Tot (Henc). Sestavljata ga nižje sredogorje in v manjšem obsegu gričevje na južnem robu Slovenskega (= Slovaškega) krasa. Galyaság je mozaik različnih strukturnih in površinskih enot. Od zahoda proti vzhodu ga lahko razdelimo na štiri morfološko bolj ali manj različna ozemlja. Zahodni del, ki meji na dolino Hideg, spominja na planoto Aggtelek, saj ga gradijo apnenci (Steinalm in Gutenstein), močno podvrženi zakrasevanju. Na zahodnem robu kraške planote, okoli hriba Pitics, se pojavljajo tudi nekraške kamnine, ki dlje proti vzhodu počasi prevladujejo. Planota Teresztenye (gozd Galya) je kraški otok obkrožen s spodnjetriasnimi škriljevci in sedimenti iz Panona. Vzhodno od planote Galyaság, blizu reke Bódve, sploh ni več karbonatnih kamnin. Na Galyaságu je značilni alogeni kras s površinskimi in podzemeljskimi oblikami. Razen korozije zaradi padavinske vode, je opazno tudi korozijsko-erozijsko delovanje ponikalnic z vododržnega obrobja, ki izginjajo v ponore, ko pritečejo na kras. Prispevek govori o zapažanjih z robnega dela Galyasága, v sklopu preučevanja kontaktnega krasa. Podrobneje so obravnavani geološka sestava ozemlja, geomorfologija zahodnega dela Galyasága, kras okoli hriba Pitics, kraški pojavi na planoti Teresztenye in vzhodni del Galyasága. Sintezo raziskav predstavljata geomorfološki karti obravnavanega ozemlja.