

#### HRONICUM

In the area of the Strážovské vrchy Mts., the Hronicum represents the structurally highest Paleo-Alpine unit. In the past it was designated as the Choč Nappe and the Strážov Nappe, but these are presently included together to the Hronicum. They crop out in the northern part of the Zliechovská homatína Upland (the Strážov Mt. area) and form a substantial part of the Nítrické vrchy Mts. Hronicum can be divided to a number of partial thrust bodies. In the northern part of the region these are (from the top): the Považie Nappe, Ostrá Malenica Nappe and Homôľka Nappe. In the southern part of the territory they are built by the Považie Nappe and Ráztočno Nappe. The oldest member is represented by the remnants of volcano-sedimentary Ipotica Group, present in relics only in the southernmost part of the territory at the Nítrianske Sučany village. The Lower Triassic sediments of the Benkovský potok and Šuňava formations crop out only in the southern part of the territory. The most abundant are the Middle- to Upper Triassic carbonates, mainly Anisian Strážov Limestones and Ladinian-Carnian Wetterstein dolomites and Hauptdolomite. Locally there are present also Carnian Lunz Beds. These are best developed in areas of deep-water sequences. Their Middle Triassic sequences contain Reifling and Schreyeralim limestones and Partnach Beds. Above the Hauptdolomite there are locally preserved the Norian and Rhaetian Dachstein limestones. Younger sediments are known mainly in the Strážov Mt. area and the Biely potok Valley in the northern part of the territory as well as at the village of Diviaky nad Nítricom in the southern part. These are represented mainly by various Jurassic crinoid limestones and cherty limestones. The youngest members of the succession are grey marly limestones of the Oberalm Formation of Tithonian-Berriasian age. The Hronicum is transgressively covered by younger post-nappe sequences of the Súľov and Inner-Carpathian Paleogene.

#### CENOZOIC SEDIMENTS

In the investigated region, the Paleogene sediments represent the relics of basins, originating after the displacement of Inner-Carpathian nappes. The sediments of the Súľov Paleogene, or Myjava-Hričov Group reach the region only marginally in north-western part of the territory. They are represented by transgressive coarse-grained carbonatic Súľov Conglomerates, deposited in the overlier of Hronicum, prevailing in the Domanižská kotlina Basin and at the northern margin of the Zliechovská homatína Upland. Locally they are preserved also in tectonic structures of backthrusts at Fačkov locality.

The different Paleogene succession is present in the southern part of territory (Bánovce Paleogene and Bojnica Paleogene as part of Hornonitrianska kotlina Paleogene). In a wider sense, these sediments can be affiliated to the Inner-Carpathian Paleogene Basin. They are represented prevailing by marine facies of the basal Borové and Huty formations with prevalence of claystones, being described mainly from the borehole cores (superficially they form only small occurrences). The Terchová Beds (formerly described as a marginal facies) are recently assigned as a part of the Huty Formation. The Huty-Zuberec Formation of distinct flysch-like character as well as the uppermost Zuberec Formation of sandy-silty type type occur more extensively.

The Miocene sequences of the Hornonitrianska kotlina and Bánovce basins start with Eggenburgian Čausa Formation. After its deposition, the basin was disintegrated and eroded in the Early Miocene. In the Early Badenian the volcanosedimentary Kameneč Formation was deposited and in the Late part of Early Badenian the Handlová, Nováky and Koš formations, representing lake sediments affected by the contribution of volcanic material. The Middle Miocene sediments known only from the boreholes are not present at the surface in the investigated region. Superficially the more significant are the sediments of the Lelovec Formation (Mio-Pliocene age), cropping out in the area among municipalities of Ježkova Ves nad Nítricom, Opatovce nad Nítricom and the town of Nováky and below Quaternary sediments East of Malá Magura Fault, as well as in several smaller relicts.

Quaternary sediments include several genetic types. Areally the most significant are the fluvial sediments filling up the valleys and alluviums of Radiša, Nítrica and Rajčianka streams. Large accumulations of the Quaternary sediments are present mainly at eastern margin of the Malá Magura Fault. In mountain and foothill areas a large amount of deluvial sediments and screes occur. Landslides, locally of larger dimensions – e.g. in the surrounding of Strážov and Bojnica localities are also present. The proluvial or dejection cones have often developed at the mouth of smaller valleys in mountainous areas. A specific type of Quaternary sediments is represented by chemogenic limestones – travertines at Bojnica locality, but also smaller occurrences of tufas were found.

#### GEOLOGICAL EVOLUTION AND TECTONICS

The territory of the eastern part of the Strážovské vrchy Mts. has overcome a complex development from Paleozoic to Quaternary. The rock sequences of the crystalline basement originated during Hercynian orogeny by metamorphic overprint of older Paleozoic rocks, which partially underwent the migmatitization processes and granitoid magma intrusions with different composition and different time relationship to the main Hercynian collision event. Granitoid magmatism, being preceded by regional metamorphism, had culminated at the boundary of Upper Devonian and Carboniferous. The rocks of crystalline basement were uplifted during Late Carboniferous and Permian and deeply eroded. From the Early Triassic the subsequently deposited continental and later shallow-water clastics was replaced by the marine sedimentation ongoing in Tatricum, Faticum as well as Hronicum from the Middle Triassic up to Cretaceous.

During the Alpine orogenesis the former Jurassic-Cretaceous extension basins in the area of Hronicum, Faticum and Tatricum were gradually incorporated to newly formed orogenic wedge. Hronicum, structurally representing the uppermost Paleo-Alpine unit, was imbricated into the system of partial nappes, from which in the area of Zliechovská homatína Upland we observe the uppermost Považie Nappe, lower situated Ostrá Malenica Nappe and the lowermost Homôľka Nappe. The Považie Nappe and lower Ráztočno Nappe occur

in the Nítrické vrchy Mts. The rootless nappes of Hronicum were displaced in Early Cretaceous. Their emplacement over Faticum ended during Cenomanian. Faticum, named also as the Krížna Nappe, forms individual cover nappe. The dominantly deep-water Zliechov Succession is present here. In the lesser extent – also the shallow-water Beľá Succession is present in the western part of the territory. The emplacement of Faticum over the Tatic Malá Magura Unit took place during Cenomanian to Turonian, possibly it could continue to a Late Cretaceous. The typical feature of the Faticum is a presence of more distinct synforms and antifolds, parallel with the axis of the Alpine orogeny. The Malá Magura Unit represents Mesozoic sedimentary cover of consolidated Hercynian crystalline basement. Due to its lowermost structural position, it has undergone tectonometamorphic overprint and compression. After the nappe stacking in the Middle to Late Cretaceous, the multistage decomposition of Paleo-Alpine nappe-stack took place. It was followed by sedimentation of the Paleogene sequences of the Myjava-Hričov Group in Lower Eocene in northern part of the territory, as well as the Bánovce and Bojnica Paleogene in Eocene to Oligocene in the southern part of the region. Probably in the period of Oligocene to Early Miocene the shortening processes caused the origin of back-thrusts, registered in northern and southern zones of the territory. The sedimentation of Eggenburgian clastics took place in wedge-top basin, destructed during the later parts of Early Miocene or in the Middle Miocene. The Middle Miocene was a period of widespread subsidence of the Hornonitrianska kotlina Basin, distinctly affected by the sea retreat, persistence of the lake sedimentation and the supply of volcanic material from the Vláčnik Mts. In the latest Miocene to Pliocene the alluvial and fluvial sediments were deposited in relatively large thickness. The Strážovské vrchy Mts. were formed to its current form during the Miocene evolution. The faults have conditioned the uplift of the crystalline cores of atypical triangular shape. The mountain range is segmented by distinct faults trending NW-SE – the Závada and Šútovo faults, and N-S, or NNE-SSW – Radiša, Kšinná, Diviaky and Malá Magura faults. The Malá Magura fault in its eastern part manifests also a current subsidence tendency. The youngest Quaternary faults as well as NW-SE trending reactivated faults have also caused the ascent of thermal waters in the Bojnica area.



# REGIONÁLNE GEOLOGICKÉ MAPY SLOVENSKA

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## GEOLOGICKÁ MAPA STRÁŽOVSKÝCH VRCHOV (VÝCHODNÁ ČASŤ)

## GEOLOGICAL MAP OF THE STRÁŽOVSKÉ VRCHY MTS. (EASTERN PART)

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