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CONTIGUOUS ZONE OF GEMERIDES AND VEPORIDES ENLIGHTENED BY WELL NEAR ROCHOVCE

(Fig. 1)

Abstract: In the contiguous zone of Gemerides and Veporides there acted also varied intrusive activity next to the development of folds, reverse faults and slices. It is corroborated by vertical well profile KV-3 (Rochovce).

Veins of diorite porphyrites in quick sequence get in the complicated fold — reverse fault structure of alpine age, developed in the known Markušovce hill region where the body of amphibolitic gabbros was formed, and, at last, there originated young alpine granites. In the contiguous zone there exist many rock series, whose pertinence to one or another unit is not so clear. We can judge only that this accumulation of them has deeper tectonic causes.

Резюме: В прилегающей зоне гемерид с веропидами произошла последовательно кроме развития сбросов, обращенных сбросов и чешуй также богатая интрузивная деятельность. Это подтверждает вертикальный профиль скважины KV-3 (Роховце).

До сложной сбросовой-обращенно-сброцовой структуры альпийского возраста, развитой в области известной Маркушской горы, проникают в быстрой последовательности жилы диоритовых порфиритов, сформировалось тело амфиболических габбро и наконец возникли здесь молодые альпийские граниты. В прилегающей зоне находится ряд породных целых, принадлежность которых к одной или другой единицы не ясна. Полагаем, что такое их накопление имеет более глубокие тектонические причины.

Introduction

Well KV-3 in Rochovce, deep 1600 m, shows a rock profile in the substratum of tectonic line — contiguity of Gemerides with Veporides. It shows that origination of complicated fold structures, reverse faults and slices which is found in the contiguous zone of two great tectonic units, is the function of a significant scar which „delimitated space" of successive activity — the intrusive activity. The knowledge follows from the many years studying of contiguous zone. Well near Rochovce does corroborate this.

Geological profile

In the segment 0—530 m there are biotite phyllites — mica schists, locally — nearly gneisses. These rocks are significantly schistic and often tectonically disrupted also in greater segments. Phyllites are broken through by thin dcm — m veins of diorite porphyrites. They are recorded in different horizons. They are fine-grained, massive and without any visible contact action on crystalline schists.

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Phyllites — mica schists with porphyrite veins are broken through by quartzeous and quartz-feldspathic veins of dcm — m thickness.

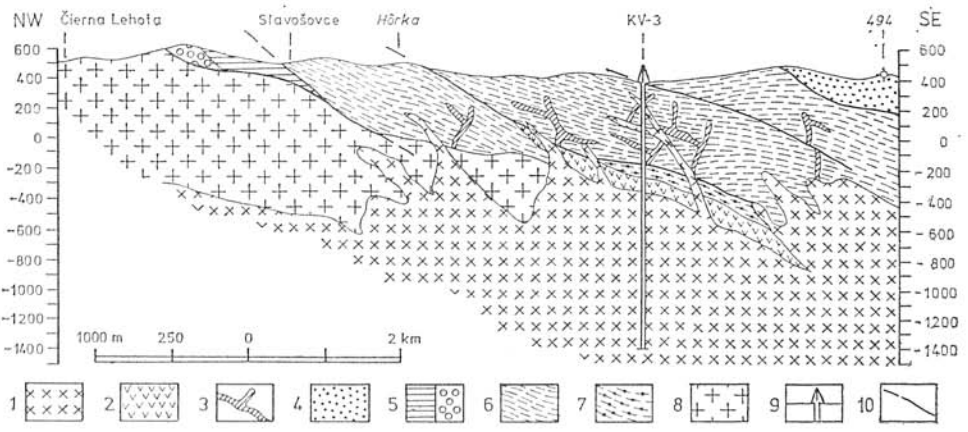
At different levels of crystalline schists can be noticed contact of granitoids in the form of stain development, minerals' accumulation and enrichment in light minerals. These events are in direction to depth — increasing. In the segment between 535 m—570 m they have character of eyed gneisses till migmatites. The age of crystalline schists was determined by E. Planderová on the base of different profile's levels. It is Early Paleozoic (Silurian — Devonian).

In segment of 570—607 m there are developed light fine-grained, nearly no mica granodiorites. Those have in their lower part paralelly pattern or weakly presented biotite.

From 607—702 m there is developed the body of amphibolitic gabrros. It is not homogeneous, inside exist fine-middle and also coarse-grained all-directions groups. It contains concentrations of sulphides and Ni—Co minerals.

Amphibolitic gabbros are broken through by quartz veins and pink quartz-feldspathic material. Veins are grouped mainly in segment 660—680 m. Their thickness varies in range cm — several meters. In the veinlets and veins there mostly occur utility minerals; They arl rich mainly in fluorite.

In the segment from 702 till 1563 m there were drilled granites of remorkable composition. Their development was complicated what was corroborated mainly by relations between minerals and structural relationships. They are analyzed in detail in geological works since 1980 as collective work of Dionýz Štúr Geological Institute, Institute of Slovak Academy of Sciences and Faculty of Natural Sciences of Comenian University scientific staffs. It is inevitable to remind that these granites are high-magnetic. Occurrence of magnetic minerals is 6-times higher than in the other types of granitoids of West Carpathians.



Explanations: 1 — Rochovce granites, 2 — gabbrodiorites, 3 — diorite porphyrites, 4 — quartzeous metaconglomerates, 5 — conglomerates and chloritic schists, (Late-Paleozoic), 6 — phyllites — mica schists of Hladomorná dolina series, 7 — migmatites, 8 — biotitc grandiorites, 9 — well KV-3, 10 — tectonic borders.

Tectonical pertinence of series and succession of processes

The well was situated in rocks of the Hladomorná dolina series. Those are considered by most geologists as Veporides. Border with Gemerides — Lubeník line — is lead 1 km SE from mouth of the well. By this aspect the tectonic pertinence in profile of ascending rock series should be clear. Opposite this the paradox is that only biotitic granodiorites in the zone from Čierna Lehota to south-west can be more definite determined as Veporides. The other rock series are not typical for Gemerides, or for Veporides. It seems to us as an occurrence of a fragment of some „transition zone" between both units.

In profile from south-east coarse-grained quartzites, nearly siliceuos conglomerates occur around the elevation point 494. They are schistose, atypical for Gemerides and for Veporides.

Phyllites — mica schists of the Hladomorná dolina series — are also the individual, atypic rock series both units. Veins of ascending lamprophyrite — diorite porphyrites in them occur only on this contiguous zone of units. (Similarly they ascend round the Čertovica line).

Dark phyllites and siliceous conglomerates of the Carboniferous occur in tectonic substratum of rocks of the Hladomorná dolina series. These are partly comparable with similar rocks in Gemerides. Their determination is rather subjective. They are situated in the south-west part of profile.

On deeper levels of profile are found — for this region — some atypic eyed-migmatites. Their substratum belongs to phyllites of the Hladomorná dolina series. Ascending neosom in them creates thin meandering veinlets of millimetre thickness. It reminds by its texture stromatitic types of migmatites. Younger veins of quartz — feldspathic material which certainly belongs to young — Rochovce granites break through these „complete migmatites".

We have no definite conclusions about pertinence of metabasites — gabbrodiorites from the segment 600 — 700 m, neither about their genesis. But in any case they are metamorphosed rocks which have already existed before intrusion of Rochovce granites. It is possible that the body was shifted here by tectonic way and then was metamorphosed.

Rochovce granites are young — alpine. In profile structure they are the youngest member. Their development was complicated; this was shown in the above mentioned work.

Many from mentioned knowledges can provoke the idea that fragments of ascending series here substitute an individual zone. Besides this opinion is supported by palynology and by its help was determined also the Early Paleozoic (Devonian) age of phyllites of the Hladomorná dolina. Comparing these coincident by age the Rakovecká and Hladomorná dolina series — we have to count with this eventuality.

It is possible that this contiguous zone with „content" of atypic elements „heal" the scar caused by „ascended" complexes of granitoids. These are found in tectonic position in northern parts of the Veporide zone. Another form of activity of this scar can be evident in rich intrusive activity which was consequently realized in this contiguous zone.

Translated by E. Lehotská-Halmová

REFERENCES

KANTOR, J., 1960: Kriedové orogenetické procesy v svetle geochronologického výskumu veporidného kryštalinika. Geologické práce, Zprávy, (Bratislava), 19, p. 5—26.

KLINEC, A., 1962: Vzťah kohútskeho kryštalinika ku gemeridám. Geologické práce, Zošity, (Bratislava), 62, p. 91—96.

KLINEC, A., 1966: K problémom stavby a vzniku veporského kryštalinika. Západné Karpaty, GÚDŠ, Bratislava, 6, p. 7—28.

KUBÍNY, D., 1962: Mladé granitoidy v Západných Karpatoch a ich vzťah ku granitom variským. Geologické práce, (Bratislava), 62, p. 33—58.

PLANDEROVÁ, E., 1979: in KLINEC, A.: Hlboký štruktúrny vrt KV-3 (Rochovce). Manuskript, archív GÚDŠ, Bratislava, p. 314.

VRÁNA, S., 1962: Nová hlediska v petrogenézi veporidného krystalinika v okolí Slavošoviec. Geologické práce, Zošity, (Bratislava), 62, p. 81—84.

ZOUBEK, V., 1938: Hranice gemerid s veporidami. Geologické práce, Zošity, (Bratislava), 46, p. 38—43.

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