zircon, apatite and opaque ore. The limonitic infiltration that has affected the rock has produced stainings, fissure-fills and displacements manifested in bands.

The source rock seems to have been a clayey-muddy sediment of basin facies. Deposited supposedly in Liassic time, the sediment involved altered to phyllite in the course of a low-grade greenschist-facies alteration associated with the Alpine orogeny.
The metamorphic rocks of the Köszeg Mountains belong to the Penninic Series.

Stop 3. Köszeg Mountains, Cák, Felsö Quarry

Aligned on the N side of the valley having its mouth NNW of Cák village, old and new quarries have exposed metasandstone-metaconglomerate beds included in a calcareous phyllite sequence. Access to the quarries is possible by motor vehicle and, from Köszeg, by regular coach service.

The characteristic metaconglomerate of this locality was named "Cák Conglomerate", for the first time, by JUGOVICS (1918). The rocks exposed in the quarries are assignable to the Velem Calcareous Phyllite - and Cák Conglomerate Formations.

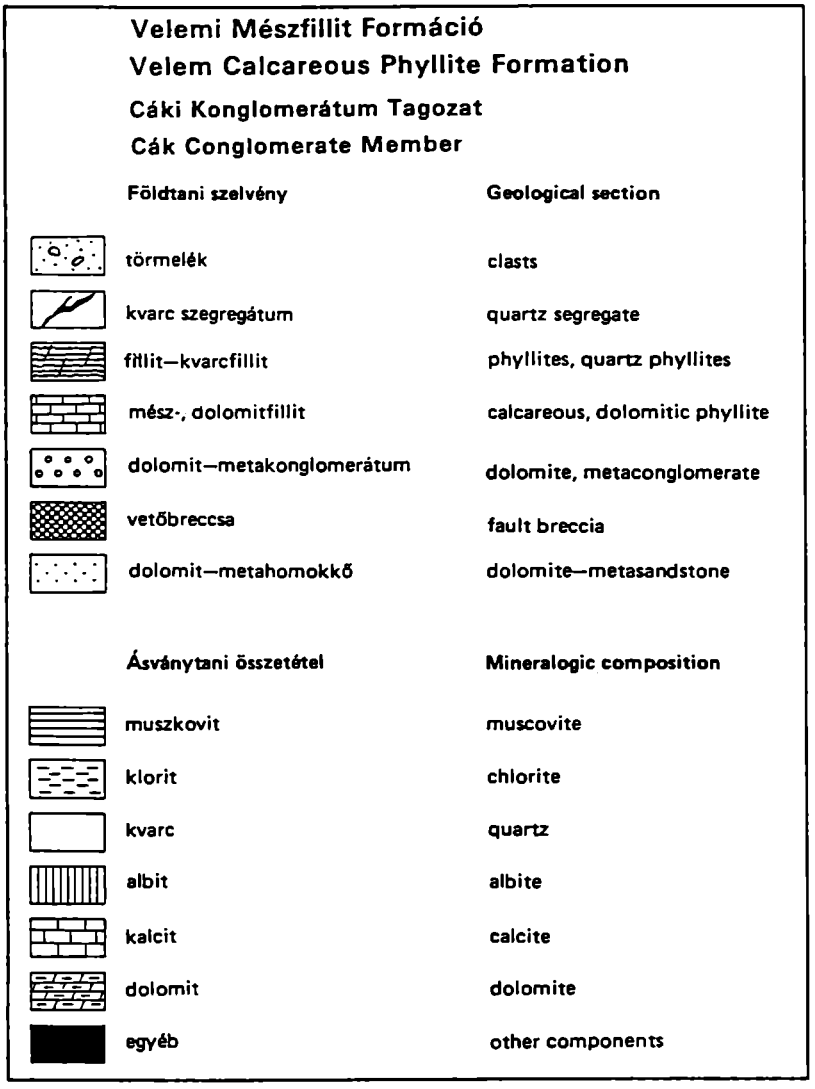
In the NW, NE and E walls of the abandoned upper (Felsö-)quarry, the metaconglomerate is always found exposed near the bottom, whereas the overlying rock is always calcareous phyllite. The underlying metaconglomerate forms a scarely foliated mass interbedded, in a lobate pattern, with the overlying rock.

From the overlying rock, the calcareous phyllites are slightly to fairly affected by schistosity and fined-grained. After a low-grade greenschist-facies metamorphism, the essential components of the rock are constituted by chlorite, muscovite, quartz, albite, calcite and - in some beds - dolomite minerals. The organic matter content of the parent rock has been converted into a graphitoid of meta-anthracite rank associated with the mica-rich parts.

Interbedded with the calcareous phyllites are chlorite-muscovite phyllites which derive from a mainly clay-mud source material with little or no lime content. A similar grade of metamorphism affected them as the calcareous phyllites. Overwhelming muscovite and chlorite form bundles of tiny plates affected by rolling. The variation of their proportions to each other has resulted in a banded pattern. The enrichment of graphitoid and rutile has added a darker colour shade to the mica bands. Quartz forms lenticular schlier bodies. Albite and calcite may be added to it accessorily. The detrital dolomite of varying grain size deposited in the sedimentary basin underwent recrystallization in the course of metamorphism, but the detrital grains have preserved their original structure in direct proportion with the increase of grain size.
The fine-grained, i.e. completely recrystallized, dolomite-constituted rock shows a texture and structure that is similar to that of calcareous phyllite. Relictic dolomite sand grains are round with a heavily resorbed edge and a microcrystalline inner structure being slightly to fairly affected by graphitoid impurity admixture. Mica, quartz,

albite and carbonates are in most cases dissociated from one another, forming separate lumps. Originally present mainly as lime mud, calcite appears to have constituted the matrix which, however, has been completely recrystallized.

Forming a separate outlier in the exposure, the dolomite-metaconglomerate seems to have been emplaced as a result of tectonic deformation. It is made up of dark grey and black, very strongly rounded pebbles cemented by a matrix that is not or is just a little bit affected by schistosity. Averaging 4 cm in diameter (boulders attaining a maximum of 30 cm across may be encountered, too), the pebbles represent a microcrystalline or small-grained dolomite rock to which mainly graphitoid impurities were admixed. In very subordinate proportion, dolomitic limestone, gneiss and muscovite schists (mica-schist) are also encountered. Originally finegrained, the matrix was affected by infiltrations and completely recrystallized, thus being separated by a sharp contact from the rock fragments therein.

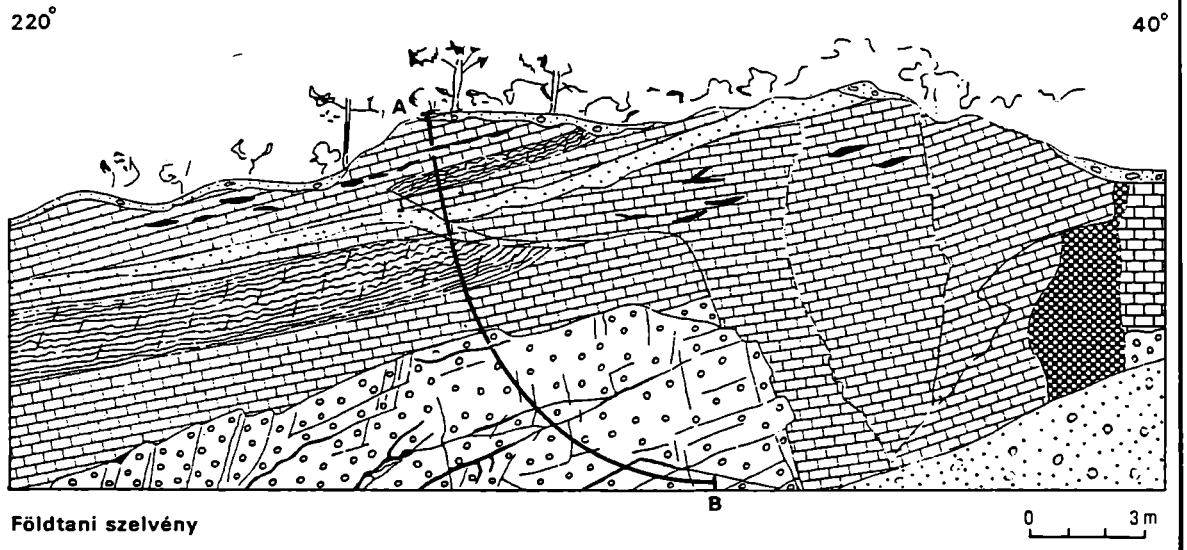


Legend to Fig. 3.

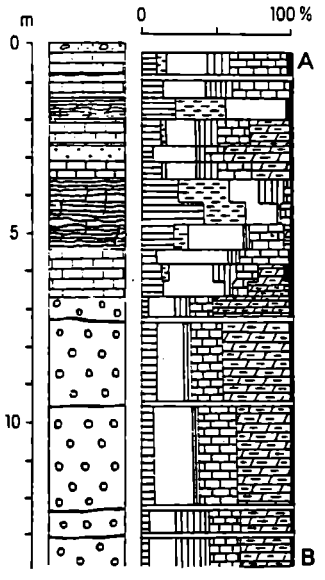
Laterally secreted quartz lumps, sills and transversal veins follow the older tectonic directions, being oriented 280°/40°. The transversal faults belong to the category of younger tectonic elements showing orientations of 40°/70-80° and 156°/60°. In the NE part of the wall the succession of rock beds ends with a crushed zone.

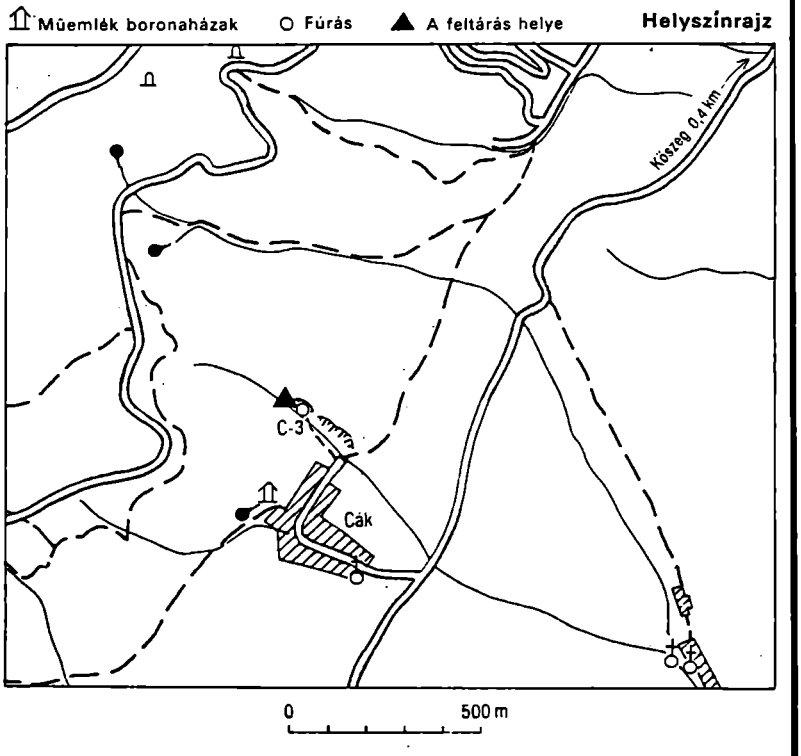
The Köszeg-Rechnitz Mountains are made up mainly of crystalline schists which W.J. SCHMIDT assigned, in 1956, to the Penninic by relying on analogies with the Hohe Tauern in Austria.

Kőszegi-hegység, Cák, felső kőfejtő



Földtani szelvény





Velemi Mészfillit Formáció, Cáki Konglomerátum Tagozat

Fig. 3: Kőszeg Mountains, Cák, Felső Quarry.

The origin of the Cák Conglomerate has been the subject of arduous debates from the very beginning and the problem has not been completely and exhaustively settled up to now. Geneticall, it was taken to be respectively mylonite (JUGOVICS, 1918), basal conglomerate (A. FÖLDVARI - J.NOSZKY - F. SZEBENYI - F. SZENTES), Liassic breccia (SCHMIDT, 1951), fluviatile detrital sediment (J. ORAVECZ) and coastal deposit (MOSTLER & PAHR, 1981). The opinions diverge even as far as its age is concerned: earlier authors assigned it to the Upper Paleozoic, W.J. SCHMIDT dated it as Jurassic, whereas, judging by its dolomite pebbles, J. ORAVECZ supposed a post-Permian, H. MOSTLER and A. PAHR a post-Middle Triassic age (such fossils were found by them in the pebbles).

What is certain is that the pebbles must have been emplaced from afar, as no dolomite-containing or dolomitic in beds other than these are known from the sequence here. The most probable explanation is that the pebbles were introduced by fluviatil transport from such an environment, where overwhelmingly Middle Triassic dolomite- or dolomitic rocks had been exposed (supposedly soon after being deposited).

Haltepunkt 4. Straße Rattersdorf nach Bernstein -- Kalkglimmerschiefer und Quarzphyllite

Nach Passieren des Grenzübergangs Köszeg (Güns)-Rattersdorf fahren wir das Günstal aufwärts in westlicher Richtung. Das Günstal ist in diesem Abschnitt in Quarzphyllit eingesenkt, die am nördlichen Hangfuß verlaufende Straße läßt dies erkennen. Knapp vor Lockenhaus durchschneidet sie den Quarzphyllitsporn (Flußschlinge der Güns), der die Burg Lockenhaus trägt. Nach etwa einem Kilometer weitet sich das Tal, sein nördlicher Hang besteht nun aus Tertiär, den Rabnitz-Schichten, einer pliozänen Schluff-Sand-Schotter-Ablagerung.

Haltepunkt 5. Polisberg -- Sinnersdorfer Konglomerat

Mit dem Polisberg, ca. 500 m östlich der Kreuzung mit der B 50, ragt älteres Tertiär (Sinnersdorfer Schichten, ~ Karpat) durch die Rabnitz-Schichten.

An der Basis des (künstlichen) Aufschlusses ist grobklastisches "Sinnersdorfer Konglomerat" vorhanden. Das gut verfestigte Konglomerat besteht vor allem aus Gesteinen der Grobgneiseinheit, vereinzelt sind unter den gut gerundeten Komponenten auch Wechselgesteine zu finden. An keiner Stelle dieses an den Grundgebirgsrändern weitverbreiteten tertiären Basiskonglomerats sind jedoch Komponenten aus dem Penninikum vorhanden! Dies wird als Beweis dafür angesehen, daß bei seiner Ablagerung (~ Karpat) die Rechnitzer Fenstergruppe noch von den ostalpinen Decken begraben war.