GEOLOGICAL BUILDUP OF THE HUNGARIAN PART OF THE SOUTH GEMERIAN ALSÓHEGY (SILICA NAPPE, WESTERN CARPATHIANS)

by

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Abstract

The Alsóhegy Karstplateau extends along the Hungarian-Czechoslovakian boundary in a length of approximately 15 km. It is bordered by the Torna valley tectonic window from the north, and by the Derenk-Bódvaszilas imbricationzone and the Upper Bódva valley from the south.

S t r a t i g r a p h y

(Fig. 3)

The Lower Triassic is represented by Seisian and Campilian beds, outcropping only in the imbrication-zone. The Midle Triassic begins with Gutenstein limestones and dolomites.

Anisian Steinalm limestones and dolomites, as well as Ladinian — Julian Wetterstein limestones constitute the carbonate platform facies. The former is represented only by lagoonal facies with dasycladaceans, while the latter by both reef and lagoonal facies. The main reef-building organisms are non-segmented calcareous sponges (inozoans, mainly the genera Peronidella and Leiospongia). The Julian substage is proved by dasycladaceans (Macroporella spectabilis BYSTR. Physoporella heraki BYSTR., Poikiloporella brezovica

(BYSTR.), Uragiella cf. supratriassica BYSTR.), formerly known only from the environ of Silická Brezová, Czechoslovakia.

Pelagic basinal facies are present in two areas: on the eastern end of Alsóhegy and in the belt of Hallstatt limestones extending from the western neighbouring of Tornanádaska to the western end of Alsóhegy.

Basinal facies are present in two slices on the eastern end of Alsóhegy in the overlier of Gutenstein and Steinalm limestones and dolomites. They are middle-grey non-cherty Reifling limestones ("Reiflinger Bankkalk") of Upper Illyrian—Cordevolian (or partly Julian) age, middle- or darkgrey cherty Reifling limestones (Reiflinger Knollenkalk) of Cordevolian (or partly Julian) age and a new lithostratigraphic unit, the Nádaska Limestone Formation.

Description of the Nádaska Limestone Formation:

Varycoloured, thick-bedded (bed-thickness: 15—80 cm), aphanitic or fine-crystalline limestone. Its colour changes between red and grey, generally somewhat coloured grey: greyish-red, reddish-, brownish- or drabish-, sometimes purplish-grey, rarely with greenish shade. The bed-surfaces are even, although they may be nodular at red varieties. Other characteristic features are: protointraclastic-structure, which causes spots of different colour and microfacies within the same bed, and stromatactis-structures, filled with grey drusy calcite. This formation is in transitional position between Schreyeralm and Reifling limestones. More important microfaciestypes: filamentous biomicrite, filamentous pelbiomicrite, pelbiomicrite, radiolarian pelbiomicrite (the last occurs only in the cherty variation outcropping in a small area). The matrix is always microsparitic micrite. The Nádaska Limestone

begins in the Pelsonian in the lower slice, while in the upper slice in the Illyrian and ranges up to the Ladinian/ /Carnian boundary.

In the belt of Hallstatt limestones both "Hallstätter Buntfacies" and "Hallstätter Graufacies" occur. The members of the former are Ladinian "Grauvioletter Bankkalk", Ladinian—Carnian syndiagenetically brecciated limestone, Tuvalian brownish-grey limestone ("Massiger Hellkalk"?), Lower—Middle Norian pink "Massiger Hellkalk" and Middle--Upper Norian "Hangendrotkalk". (Alpian names after KRYSTYN's oral communication.) The "Hallstätter Graufacies" includes ?Upper Longobardian—Julian grey and greyish-brown limestones, Tuvalian non-cherty Pötschen limestones and Lacian—Alaunian cherty Pötschen limestones.

Limestones of pelagic basinal facies as fissure filling are not seldom in the carbonate platform facies. In the Steinalm limestones, they are Uppermost Pelsonian—Lowermost Illyrian red limestones, while in the Wetterstein limestones Tuvalian red crinoidal—brachiopodal, sometimes ooidal limestones (which are regarded here as equivalents of the Tuvalian crinoidal—brachiopodal limestones of the Silická Brezová section), Lower Norian pink "Massiger Hellkalk" and Upper Norian "Hangendrotkalk". They prove the sinking of the carbonate platforms, followed by deeper water sedimentation.

T e c t o n i c s

Three main tectonic units can be separetad within the mass of Alsóhegy:

1. The body of the Wetterstein reef complex.
2. The belt of Hallstatt limestones + the part of the imbrication zone between Derenk—Bódvaszilas.

3. The two slices on the eastern end of the Alsóhegy.

It has been proved, that the basinal facies of 2. and 3. tectonic units, extending along the southern foot of Alsóhegy was overthrusted from the north by the Wetterstein reef complex. It has certified K. Balogh's former (in 1948) opinion.

The imbrication-zone between the Wetterstein limestone ranges of Alsóhegy and that of the northern limb of the Jósvafő anticline was paleogeographically preformed by the Hallstatt facies channel existing already in the Ladinian.

The two overthrust-sheets of the eastern end of Alsóhegy (3. unit), with their Nádaska Limestone, containing conodonts of the dinaric conodont-province, can be interpreteted as frontal-sheets of the Silica nappe (which belongs to the austroalpine conodont-province, according to KOZUR et MOCK, 1973).

FIGURES

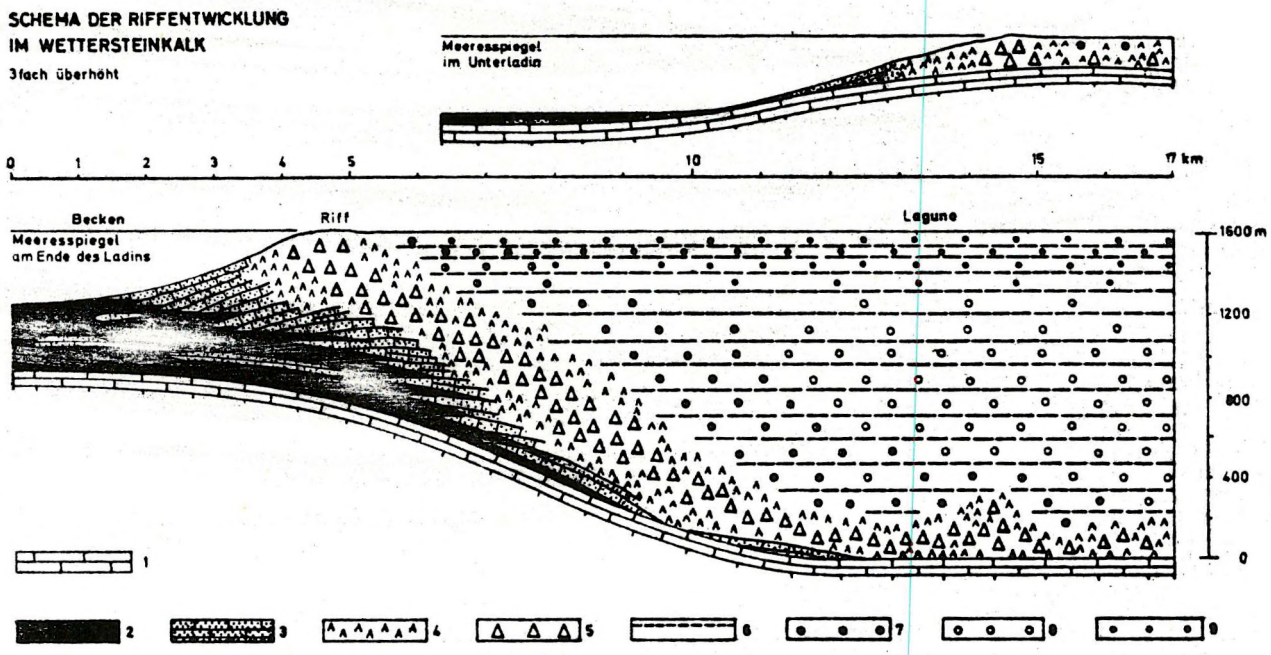
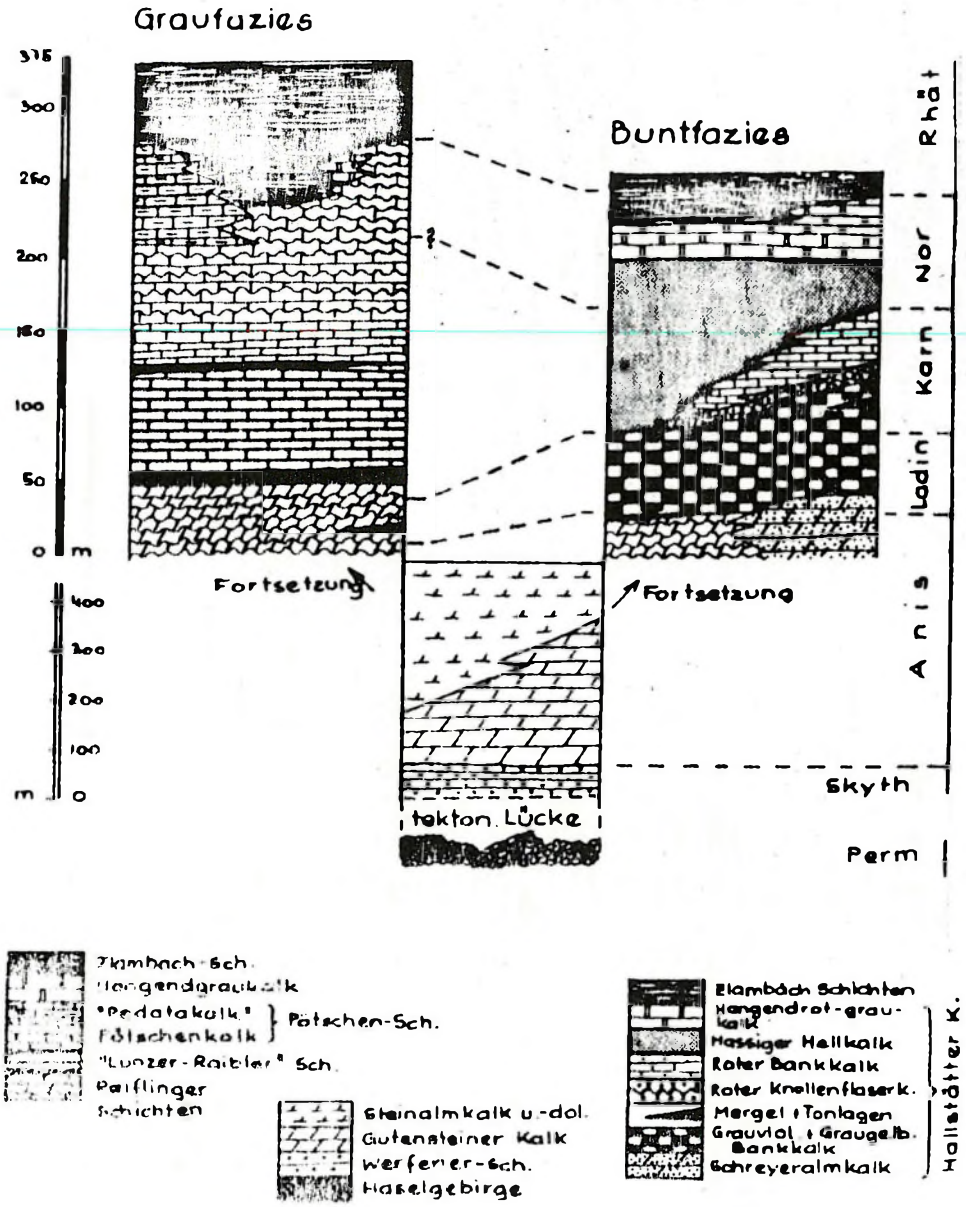


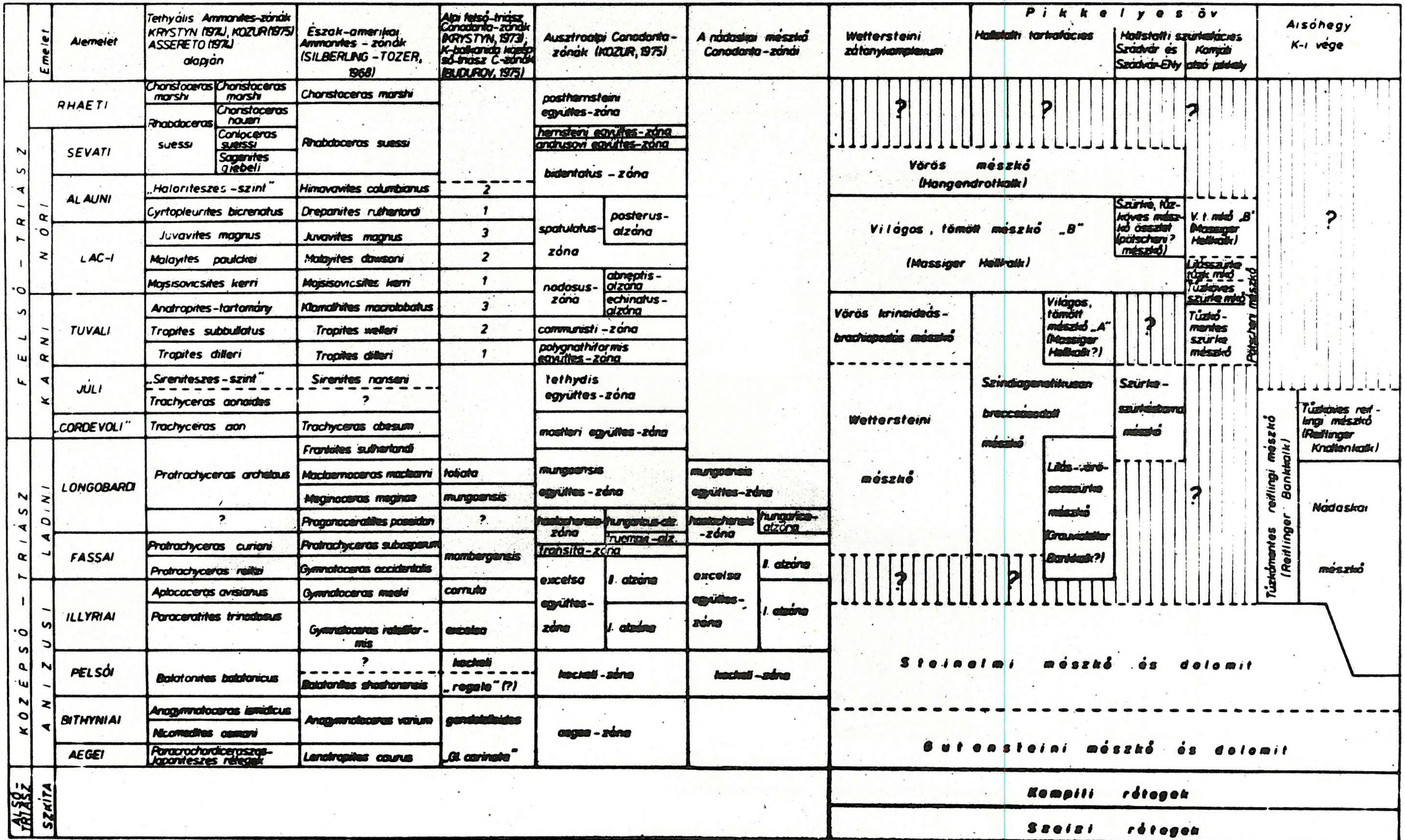
Abb. 8: Legende: 1 = unterlagernder Muschelkalk, hier nicht nach Mikrofazies differenziert ausgeschieden; 2 = Partnachschichten; 3 = Übergangskalk; 4 = Riffschutt, hier auch Vorriff-Brekzie; 5 = Riffkern; 6 = gebankte Lagunensedimente, Wechsel von Kompaktbänken mit Zwischenschichten; 7 = *Teutloporella herculea*; 8 = *Diplopora annulata*; 9 = *Poikiloporella duplicata*.

1. ábra

SCHICHTFOLGEN DER HALLSTÄTTER TRIAS
DES SALZKAMMERGUTES (schematisch)



2. ábra



Emelet
Alemelet
Tethyális Ammonites-zónák KRYSTYN (1974), KOZUR (1975) ASSERETO (1974) alapján
Észak-amerikai Ammonites-zónák (SILBERLING-TOZER, 1968)
Alpi felső-triász Conodonta-zónák (KRYSTYN, 1973); K-balkanida közép-só-triász C-zónák (BUDUROV, 1975)
Ausztroalpi Conodonta-zónák (KOZUR, 1975)
A nádaskai mészkő Conodonta-zónái
Wettersteini zátonykomplexum
Pikkelyes öv
Hallstatti tarkafácies
Hallstatti szürkefácies Szádvár és Szádvár-ÉNy
Komjáti alsó pikkely
Alsóhegy K-i vége
FELSŐ-TRIÁSZ
NÓRI
KARNI
KÖZÉPSŐ-TRIÁSZ
LADINI
ANIZUSI
ALSÓ-TRIÁSZ
SZKITA
RHAETI
SEVATI
ALAUNI
LAC-I
TUVALI
JÚLI
„CORDEVOLI"
LONGOBARDI
FASSAI
ILLYRIAI
PELSÓI
BITHYNIAI
AEGEI
Choristoceras marshi
Choristoceras haueri
Rhabdoceras suessi
Cochloceras suessi
Sagenites giebeli
„Haloriteszes-szint"
Cyrtopleurites bicrenatus
Juvavites magnus
Malayites paulckei
Mojsisovicsites kerri
Anatropites-tartomány
Tropites subbullatus
Tropites dilleri
„Sireniteszes-szint"
Trachyceras aonoides
Trachyceras aon
Protrachyceras archelaus
?
Protrachyceras curionii
Protrachyceras reitzi
Aplococeras avisianus
Paraceratites trinodosus
Balatonites balatonicus
Anagymnotoceras ismidicus
Nicomedites osmani
Paracrochordiceraszos-Japoniteszes rétegek
Himavatites columbianus
Drepanites rutherfordi
Juvavites magnus
Malayites dawsoni
Mojsisovicsites kerri
Klamathites macrolobatus
Tropites welleri
Tropites dilleri
Sirenites nanseni
Trachyceras obesum
Frankites sutherlandi
Maclearnoceras maclearni
Meginoceras meginae
Progonoceratites poseidon
Protrachyceras subasperum
Gymnotoceras occidentalis
Gymnotoceras meeki
Gymnotoceras rotelliformis
Balatonites shoshonensis
Anagymnotoceras varium
Lenotropites caurus
2
1
3
2
1
3
2
1
foliata
mungoensis
mombergensis
cornuta
excelsa
kockeli
„regale" (?)
gondolelloides
„Gl. carinata"
posthernsteini együttes-zóna
hernsteini együttes-zóna
andrusovi együttes-zóna
bidentatus-zóna
spatulatus-zóna
posterus-alzóna
nodosus-zóna
abneptis-alzóna
echinatus-alzóna
communisti-zóna
polygnathiformis együttes-zóna
tethydis együttes-zóna
mostleri együttes-zóna
mungoensis együttes-zóna
hastachensis-zóna
hungaricus-alz.
truempyi-alz.
transita-zóna
excelsa együttes-zóna
II. alzóna
I. alzóna
kockeli-zóna
aegea-zóna
hungarica-alzóna
Vörös mészkő (Hangendrotkalk)
Világos, tömött mészkő „B" (Massiger Hellkalk)
Szürke, tűzköves mészkő összlet (pötschen? mészkő)
V. t. mkő „B" (Massiger Hellkalk)
Lilás szürke tűzk. mkő
Tűzköves szürke mkő
Pötscheni mészkő
Vörös krinoideás-brachiopodás mészkő
Világos, tömött mészkő „A" (Massiger Hellkalk?)
Tűzkőmentes szürke mészkő
Wettersteini mészkő
Szindiagenetikusan breccsásodott mészkő
Szürke-szürkésbarna mészkő
Lilás-vörössesszürke mészkő (Grauvioletter Bankkalk?)
Tűzkőmentes reiflingi mészkő (Reiflinger Bankkalk)
Tűzköves reiflingi mészkő (Reiflinger Knollenkalk)
Nádaskai mészkő
Steinalmi mészkő és dolomit
Gutensteini mészkő és dolomit
Kampili rétegek
Szeizi rétegek

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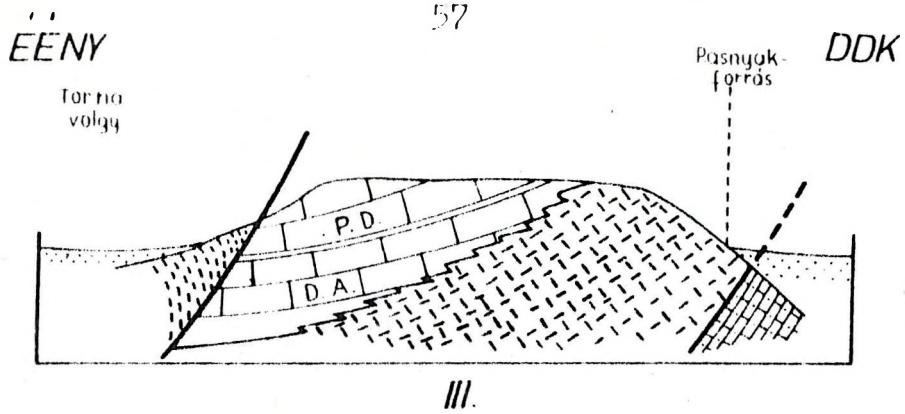
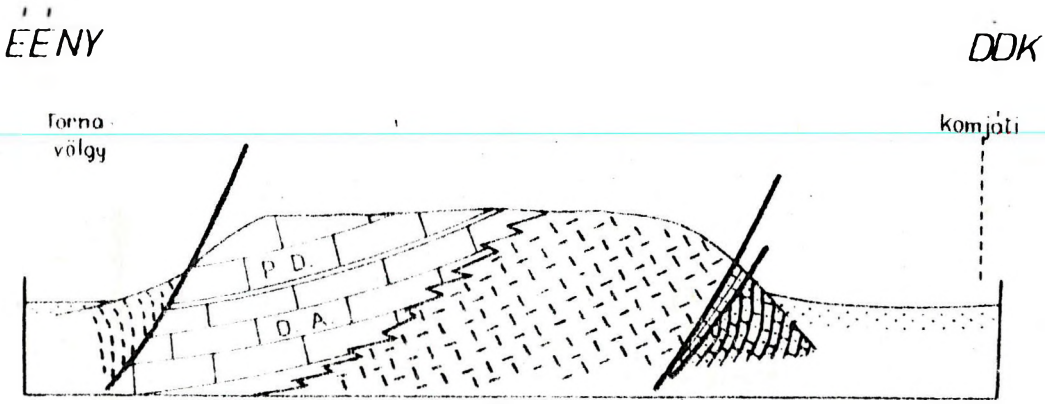
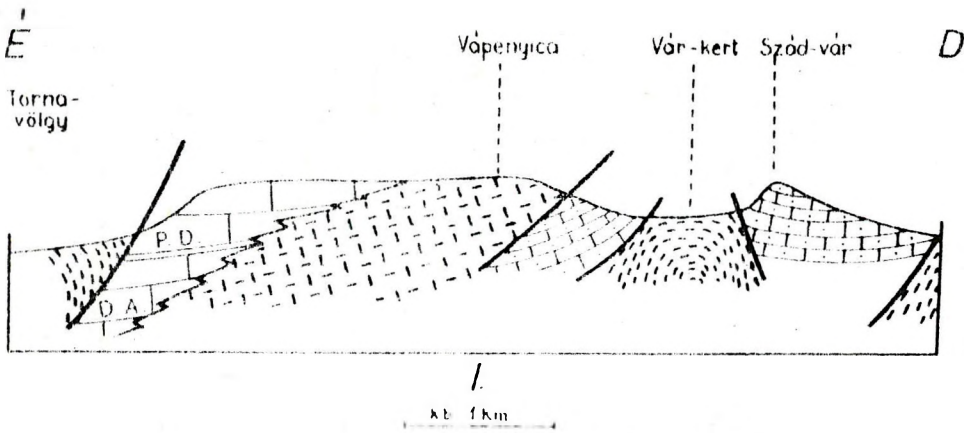
3. ábra



III.



II.



I.

kb. 1 km

JELMAGYARÁZAT

- Alsó-triász
- Wettersteini mészkő lagunafácies
- Wettersteini mészkő zátonyfácies
- Hallstatti mészkő
- Pliocén - pleisztocén
- P.D. Porcellaporella duplicata
- D.A. Diploporo annulata

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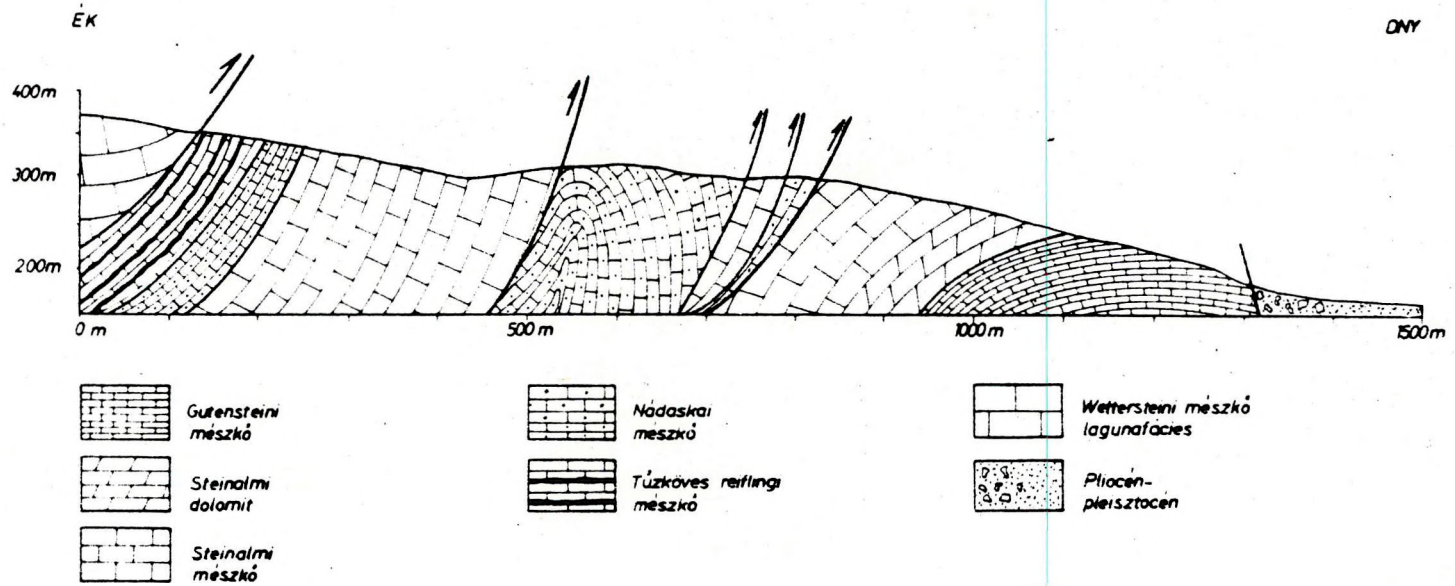
4. ábra

FÖLDTANI SZELVÉNY AZ ALSÓHEGY K-I VÉGÉRŐL AZ I.sz. RÉTEGOSZLOP CSAPÁSÁBAN



5. ábra