RESULTS OF CONODONT INVESTIGATIONS IN HUNGARY UNTIL 1981 (EXCEPT THE TRIASSIC OF THE BÜKK MTS.)

S. Kovács

Summary

In the North Hungarian Paleozoic the age-determination of the formations of the Szendrő and Uppony Mts., so far debated except the corall-bearing Middle Devonian Szendrőlád limestone, has become possible by means of conodont-biostratigraphical investigations. The Lower Devonian to Middle Carboniferous (from Upper Lochkovian to Lower Bashkirian) age of the rocks underwent on very low and low grade metamorphism could have been proven. The most important geological result is that the Hercynian orogeny did not play an important role in the Bükkium; both its structure and metamorphism are of Alpine origin (cf. KOZUR - MOCK, 1977, 1979; KOVÁCS - KOZUR - MOCK, in press; KOVÁCS - PÉRÓ, in press).

From the classical Triassic outcrops of the Balaton Highland KOZUR and MOSTLER described a number of new conodont species in the early seventies and the Tethyan Middle Triassic conodont zones are also mostly based on this region. Related to the Anisian/Ladinian boundary problems, the reinvestigation of the ammonite- and conodont-rich sections is in progress (SZABÓ et al., 1980).

In the North Hungarian Triassic, where the author has done the most of his work, the stratigraphical range of the basinal formations formerly placed in the Ladinian has extended from the Bythinian, resp. from the Pelsonian to the Sevatian substages. In the Aggtelek Mts. (southern, marginal part of the Silice nappe) a Hallstatt-type sequence of outer shelf, resp. shelf-slope facies has become known, while in

the Rudabánya Mts., above a carbonate platform facies restricted to the lower part of the Anisian, a deep-water Triassic.

In southern Hungary, in the Mecsek and Villány Mts. BÓNA (1976) pointed out, that conodonts occur in a great number in the Pelsonian/Illyrian boundary beds, otherwise they are missing.

Conodonts, as indicators of low and very low grade metamorphism, together with the microfacies investigations made parallel, have a very important role in the separation of North Hungarian Paleo-Mesozoic non-metamorphosed and metamorphosed (greenschist facies and anchizonal) series during mapping. Alternation of metamorphosed and non-metamorphosed series within one mountains allows to conclude a very complicated folded, nappe structure instead of the previously assumed slightly folded and imbricated one.

Explanation of figures

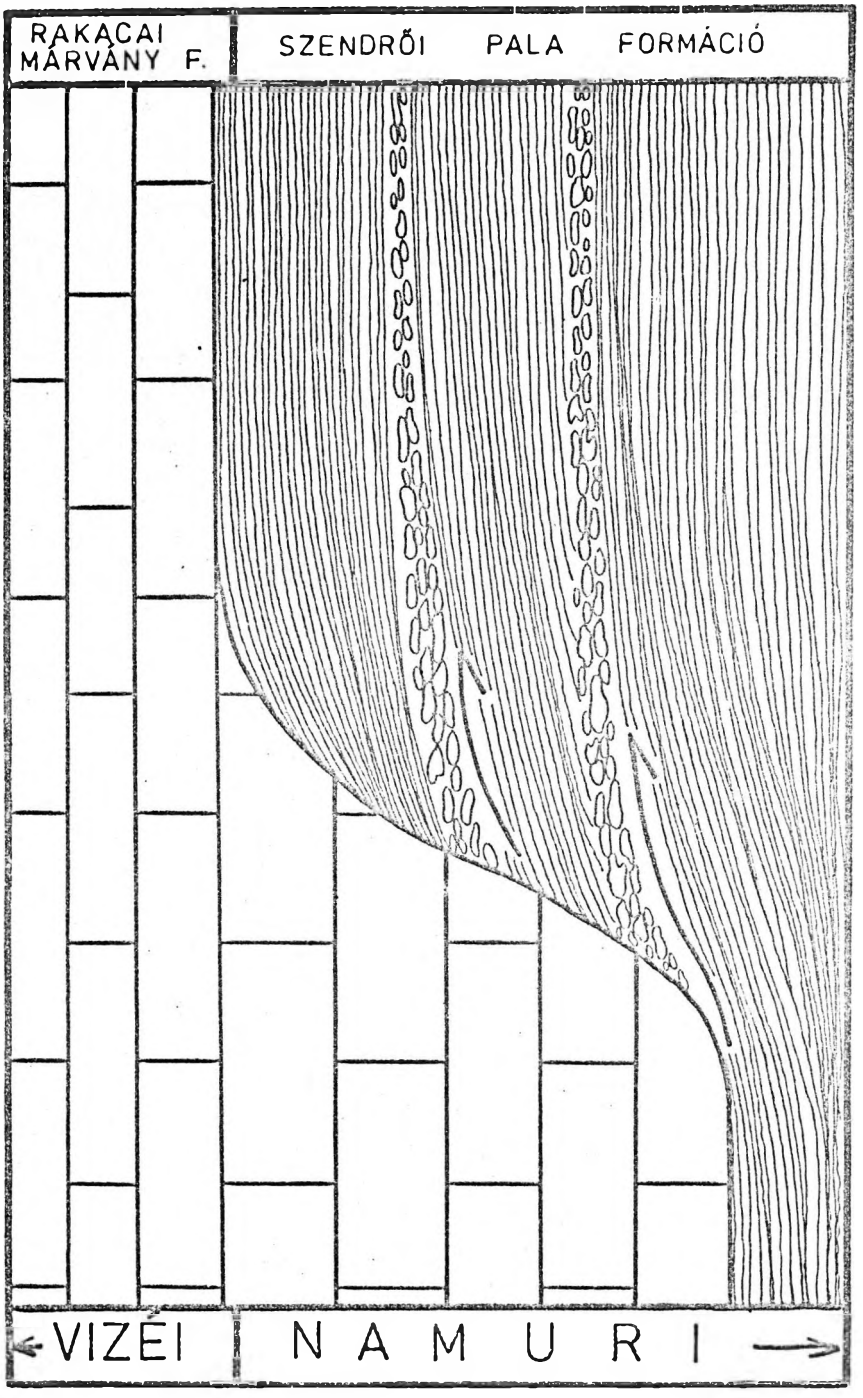
Fig. 1: Namurian paleogeographical sketch from the Szendrő Mts., with the limestone olistostrom levels.

Fig. 2: The Lower Devonian conodont zones.

Fig. 3: The Middle and Upper Devonian standard conodont zones, after ZIEGLER (1971) and KLAPPER and ZIEGLER (1979).

Fig. 7: Carboniferous conodont zones. A: Tournaisian - Viséan (shelf): AUSTIN (1974); Namurian: HIGGINS (1976); Westfálian: MERRILL (1973); Stefanian: KOZUR et al., (1979). B: Tournaisian: Sandberg (1979), Viséan (basin): AUSTIN (1974). (Westfalian - Stefanián part compiled by H. KOZUR.)

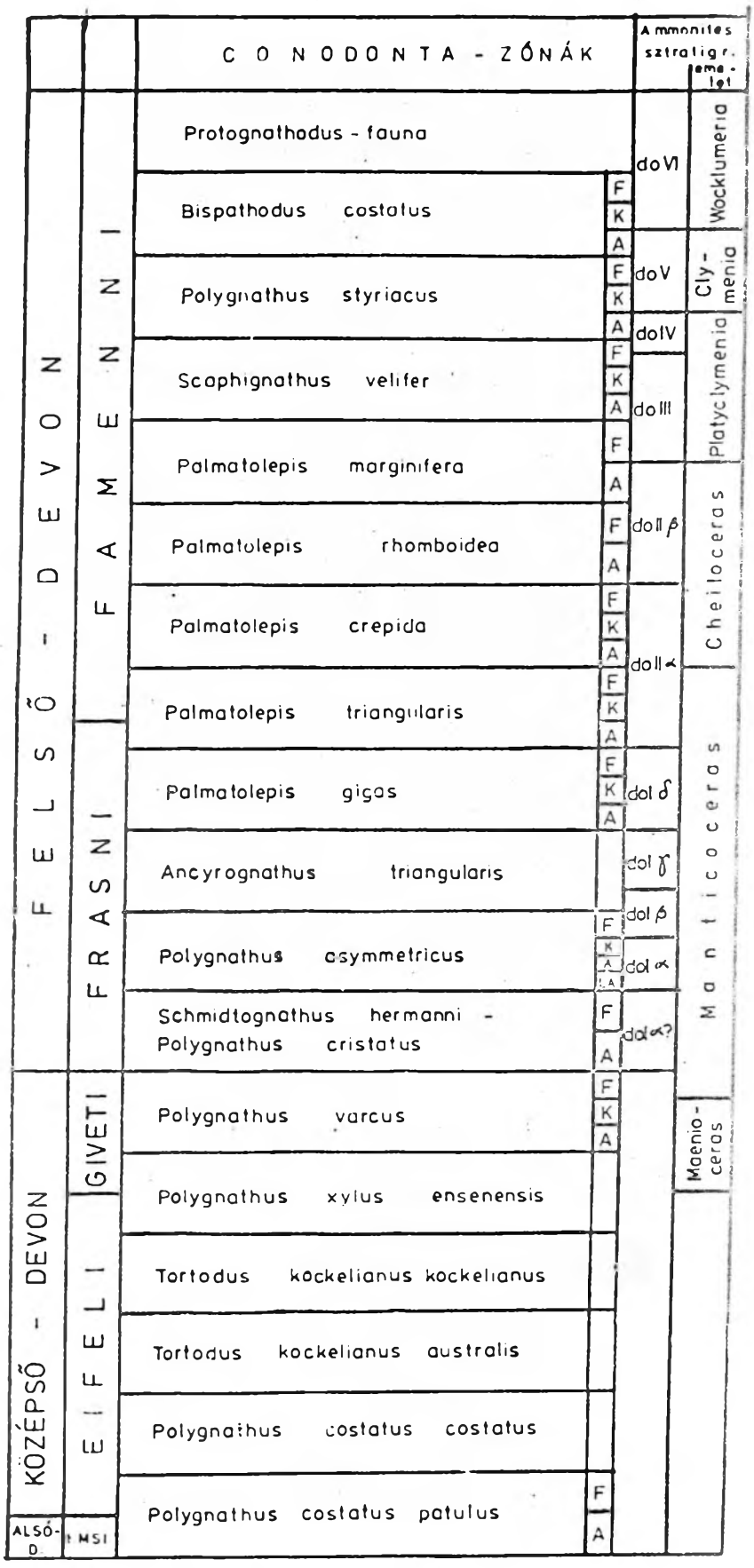
Fig. 5: Ranges of Middle and Upper Triassic conodonts (only platform elements). After KOVÁCS and KOZUR (1980).



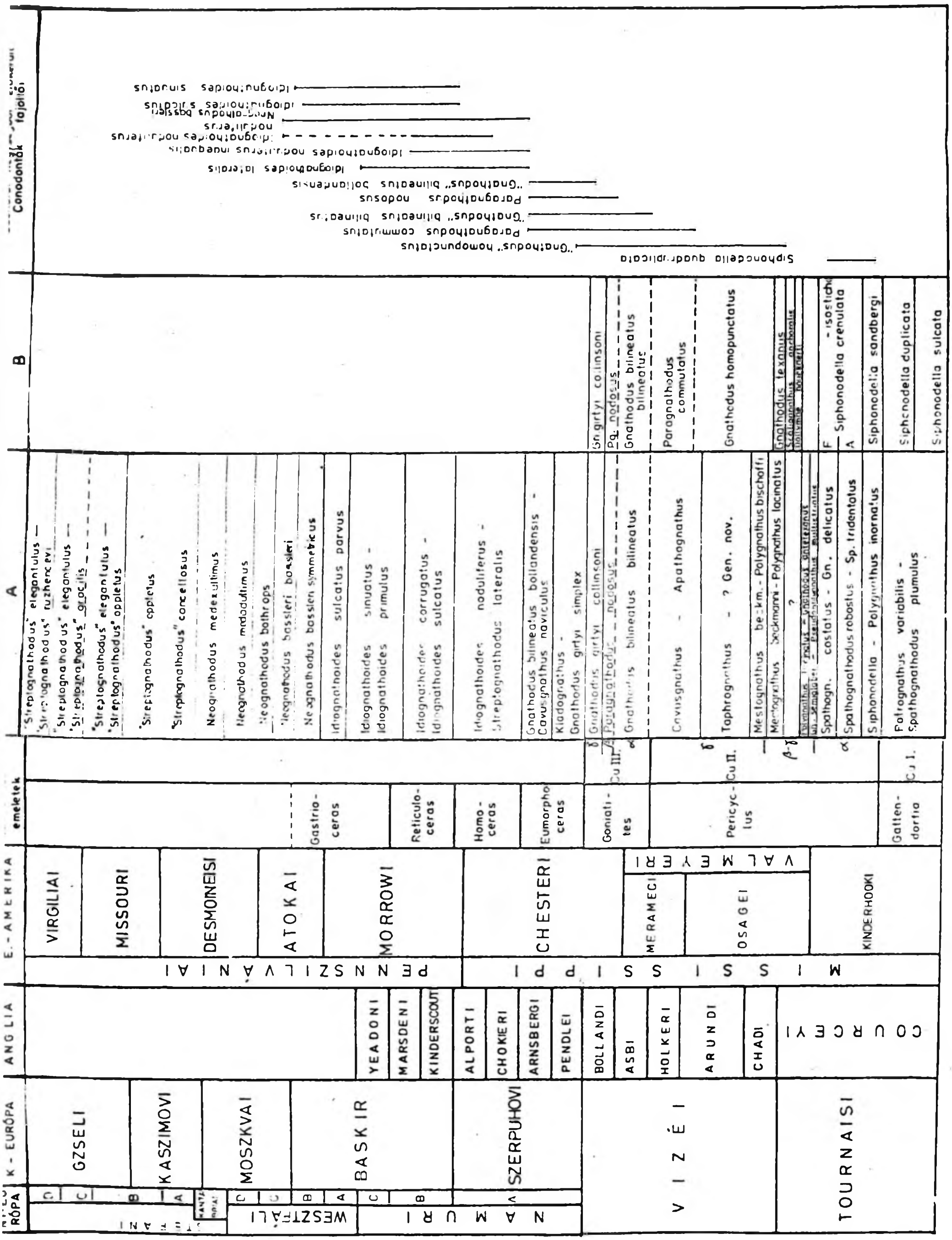
1. ábra (Fig. 1)

	Emelet	Conodonta-zónák	Emelet	Conodonta-zónák
	NY-EURÓPA	ÉSZAK - AMERIKA KLAPPER & JOHNSON, 1977 LANE & ORMISTON, 1979	BARRANDIUM	SZOVJETUNIÓ MASHKOVA, 1979.
KÖZ-DEVON	EIFELI		EIF.	
ALSÓ - DEVON	EMSI	Polygnathus patulus	DALEJI	Polygnathus patulus
		Polygnathus serotinus		Polygnathus serotinus
		Polygnathus inversus		Polygnathus inversus
		Polygnathus gronbergi	ZLICHOVI	Polygnathus perbonus
				Polygnathus gronbergi
		Polygnathus dehiscens		Polygnathus dehiscens
	SIEGENI	Polygnathus pirenae	PRÁGAI	Pand. steinhornensis miae
		Eognathodus sulc. kindlei		
		Eognathodus sulc. sulcatus		Pandorinellina exigua
		Pedavis pesavis	LOCHKOVI	Pandorinellina optima (Pedavis pesavis)
	GEDINNI	Ozarkodina delta		Icriodus eolaterirescens
		Ozarkodina eurekaensis		Icriodus postwoschmidti
		Icriodus woschmidti		Icriodus woschmidti
F-SZILUR				

2. ábra (Fig. 2)

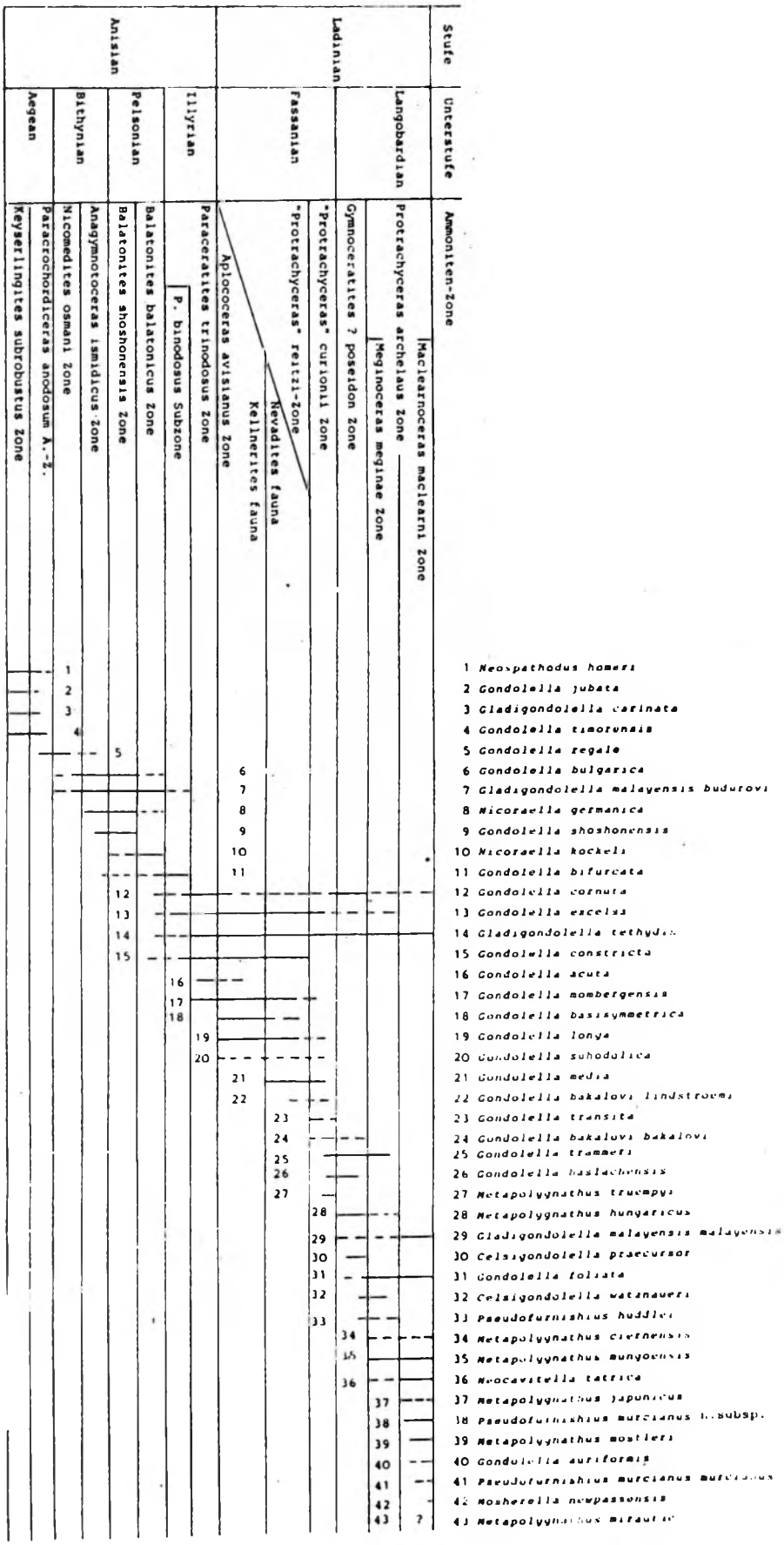

CONODONTA - ZÓNÁK
Ammonites sztratigr. emelet
FELSŐ - DEVON
FAMENNI
FRASNI
KÖZÉPSŐ - DEVON
EIFELI
GIVETI
ALSÓ-D
MSI
Protognathodus - fauna
Bispathodus costatus
Polygnathus styriacus
Scaphignathus velifer
Palmatolepis marginifera
Palmatolepis rhomboidea
Palmatolepis crepida
Palmatolepis triangularis
Palmatolepis gigas
Ancyrognathus triangularis
Polygnathus asymmetricus
Schmidtognathus hermanni - Polygnathus cristatus
Polygnathus varcus
Polygnathus xylus ensenensis
Tortodus kockelianus kockelianus
Tortodus kockelianus australis
Polygnathus costatus costatus
Polygnathus costatus patulus
F
K
A
doVI
doV
doIV
doIII
doII β
doII α
dol δ
dol γ
dol β
dol α
dol α?
Wocklumeria
Cly-menia
Platyclymenia
Cheiloceras
Maenio-ceras

3. ábra /Fig. 3/

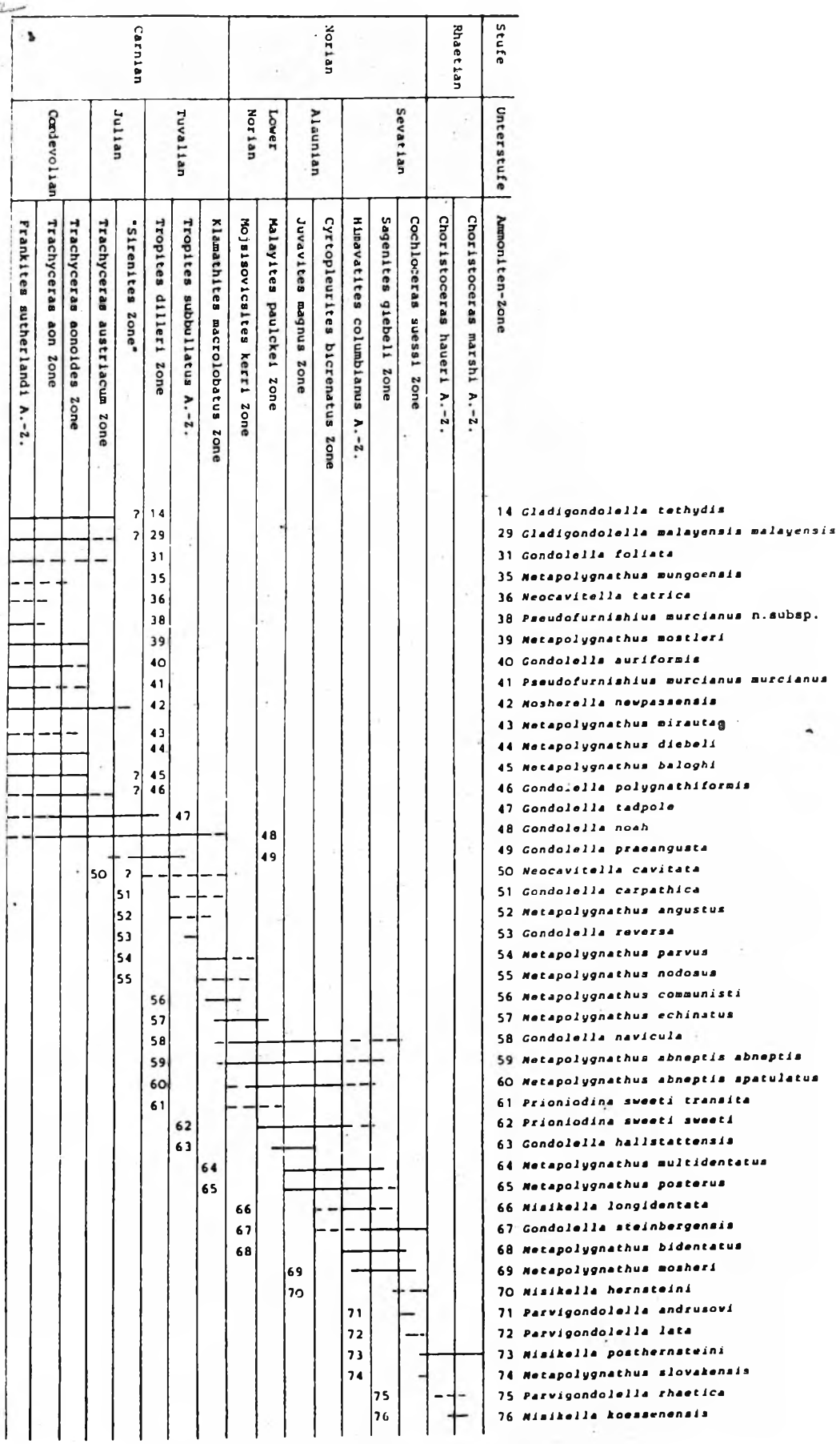


NYUGAT-EURÓPA
K - EURÓPA
ANGLIA
É.-AMERIKA
emeletek
A
B
Conodonták fajai
STEFÁNI
WESZTFÁLI
NAMURI
VIZÉI
TOURNAISI
GZSELI
KASZIMOVI
MOSZKVAI
BASKIR
SZERPUHOVI
YEADONI
MARSDENI
KINDERSCOUTI
ALPORTI
CHOKIERI
ARNSBERGI
PENDLEI
BOLLANDI
ASBI
HOLKERI
ARUNDI
CHADI
COURCEYI
PENNSZILVÁNIAI
MISSISSIPPI
VIRGILIAI
MISSOURI
DESMOINESI
ATOKAI
MORROWI
CHESTERI
VALMEYERI
MERAMECI
OSAGEI
KINDERHOOKI
Gastrioceras
Reticuloceras
Homoceras
Eumorphoceras
Goniatites
Pericyclus
Gattendorfia
Cu III.
Cu II.
Cu I.
"Streptognathodus" elegantulus - "Streptognathodus" ruzhencevi
"Streptognathodus" elegantulus - "Streptognathodus" gracilis
"Streptognathodus" elegantulus - "Streptognathodus" oppletus
"Streptognathodus" oppletus
"Streptognathodus" cancellosus
Neognathodus medexultimus
Neognathodus medadultimus
Neognathodus bothrops
Neognathodus bassleri bassleri
Neognathodus bassleri symmetricus
Idiognathoides sulcatus parvus
Idiognathoides sinuatus - Idiognathoides primulus
Idiognathoides corrugatus - Idiognathoides sulcatus
Idiognathoides noduliferus - Streptognathodus lateralis
Gnathodus bilineatus bollandensis - Cavusgnathus naviculus
Kladognathus - Gnathodus girtyi simplex
Gnathodus girtyi collinsoni
Paragnathodus nodosus
Gnathodus bilineatus bilineatus
Cavusgnathus - Apatognathus
Taphrognathus - ? Gen. nov.
Mestognathus beckmani - Polygnathus bischoffi
Mestognathus beckmanni - Polygnathus lacinatus
Spathogn. costatus - Gn. delicatus
Spathognathodus robustus - Sp. tridentatus
Siphonodella - Polygnathus inornatus
Polygnathus variabilis - Spathognathodus plumulus
Gn. girtyi collinsoni
Pg. nodosus
Gnathodus bilineatus bilineatus
Paragnathodus commutatus
Gnathodus homopunctatus
Gnathodus texanus
Siphonodella crenulata
Siphonodella isosticha
Siphonodella sandbergi
Siphonodella duplicata
Siphonodella sulcata
Idiognathodus sulcatus
Idiognathoides sulcatus
Neognathodus bassleri
Idiognathoides noduliferus
Idiognathodus noduliferus inaequalis
Idiognathoides lateralis
"Gnathodus" bilineatus bollandensis
Paragnathodus nodosus
"Gnathodus" bilineatus bilineatus
Paragnathodus commutatus
"Gnathodus" homopunctatus
Siphonodella quadruplicata

4. ábra (Fig. 4)



5.a. ábra /Fig. 5a/



5.b ábra (Fig. 5b)