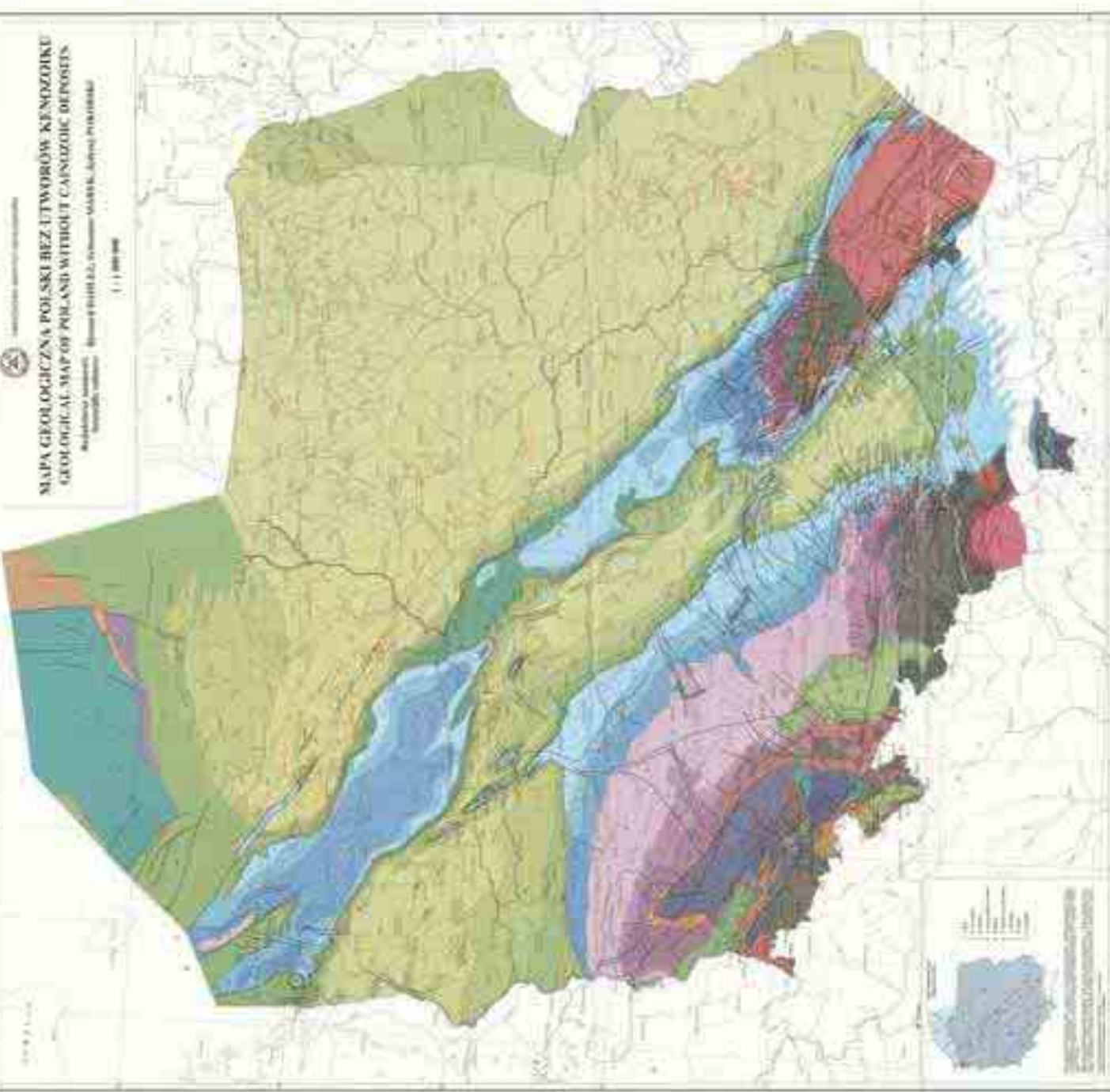


Tensional origin of the inversion in the Polish Basin with reference to the tensional development of the Bohemian Massif

Jan Koziar



MAPA GEOLOGICZNA POLSKI BEZ UTWORÓW KENOZOIKU
GEOLOGICAL MAP OF POLAND WITHOUT CENOZOIC DEPOSITS

Wydawnictwo Geologiczne Państwowego Zakładu Geologicznego
Warszawa, 1968

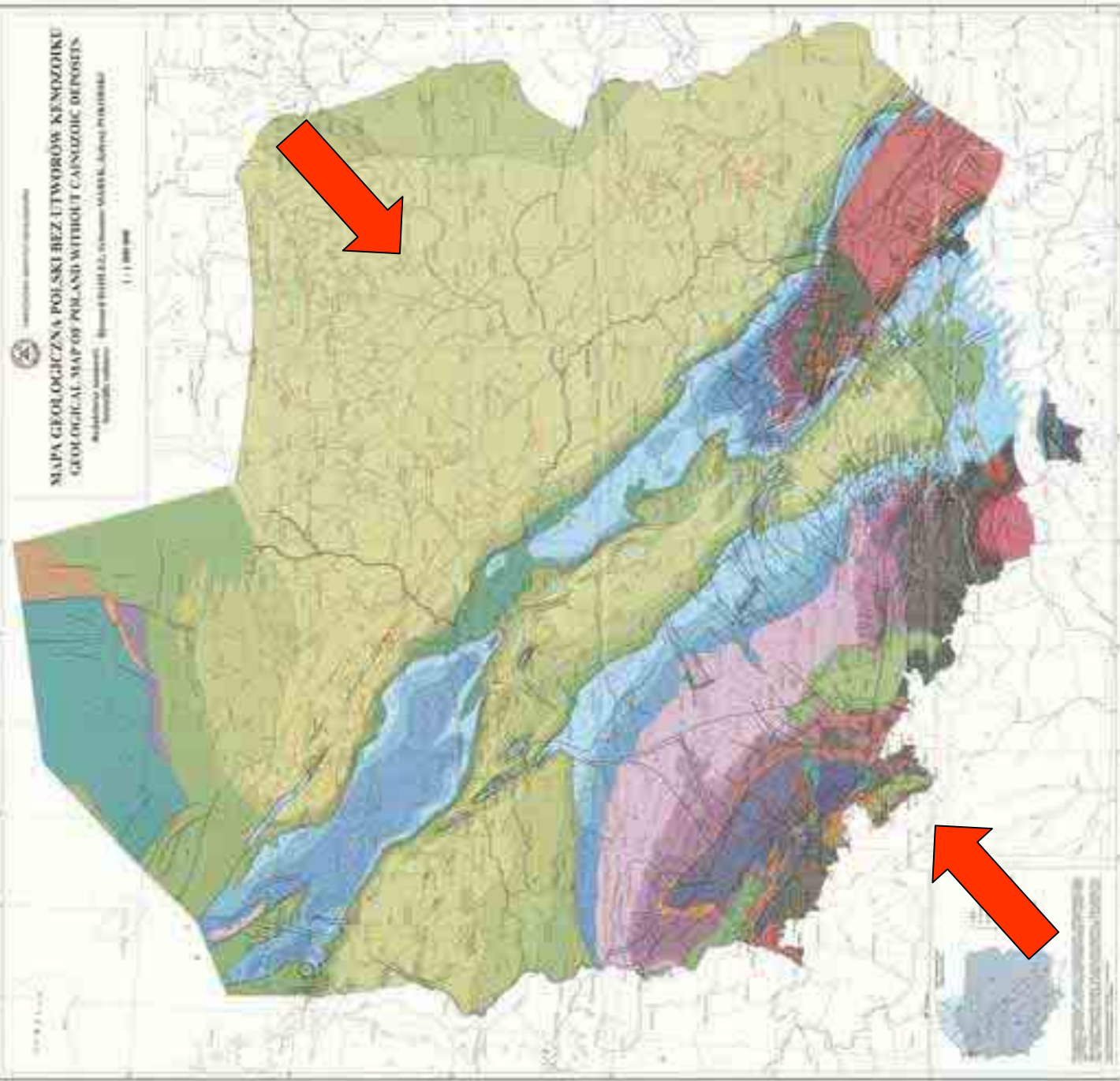
1 : 1 000 000

LEGENDA

[Green]	Włocławski
[Blue]	Warszawski
[Pink]	Lubliński
[Red]	Krakowski
[Yellow]	Wrocławski
[Brown]	Wielkopolski
[Grey]	Śląski
[Black]	Województwo

SYMBOLY

[Line]	Granica państwa
[Line]	Granica województwa
[Line]	Granica powiatu
[Line]	Granica gminy
[Line]	Granica miasta
[Line]	Granica wsi
[Line]	Granica miasta-wsi
[Line]	Granica miasta-gminy
[Line]	Granica miasta-powiatu
[Line]	Granica miasta-województwa
[Line]	Granica państwa



Voigt 1963

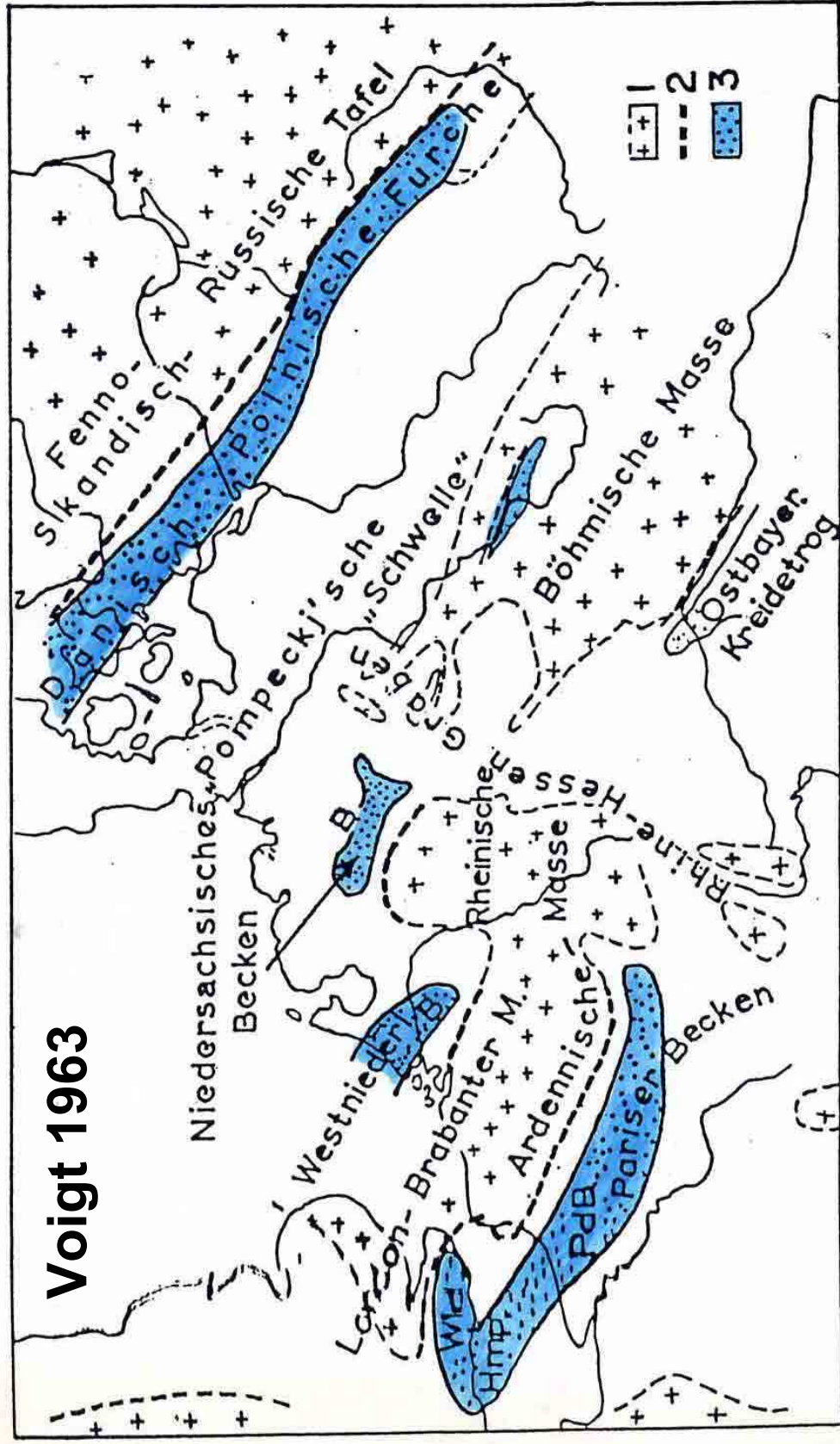


Fig.265. Schematic map of the "Randtröge" developed during the Jurassic in northwestern Europe.

1 = crustal blocks with rising tendencies, Hercynian uplands with their outliers; 2 = active boundaries in the younger sedimentary basins; 3 = "Randtröge".

Hmp = Hampshire; Wld = Wealden; PdB = Pays de Bray Basin; GF = Gifhorn Basin; H = Harz Mountain

(After Voigt 1963.)

Voigt 1963

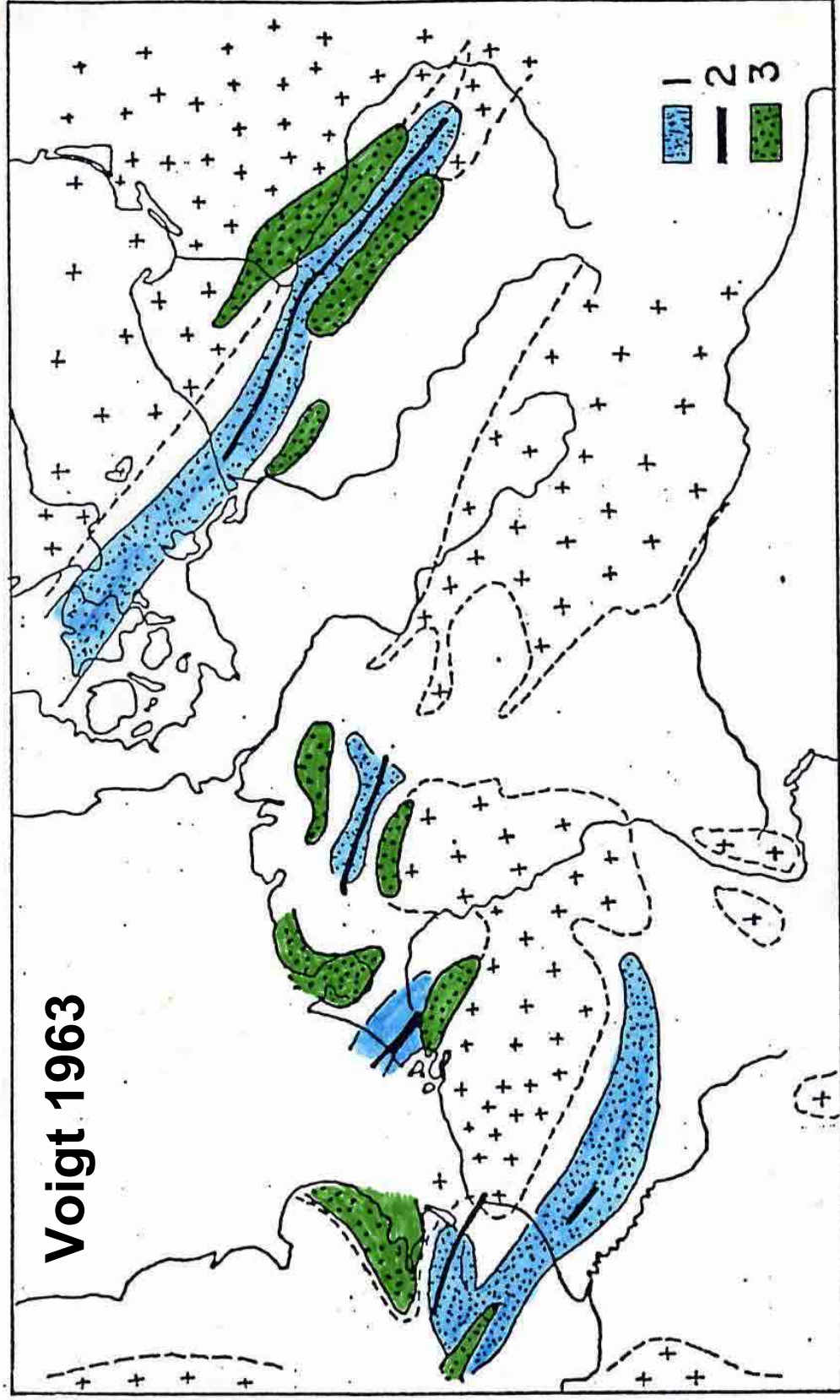
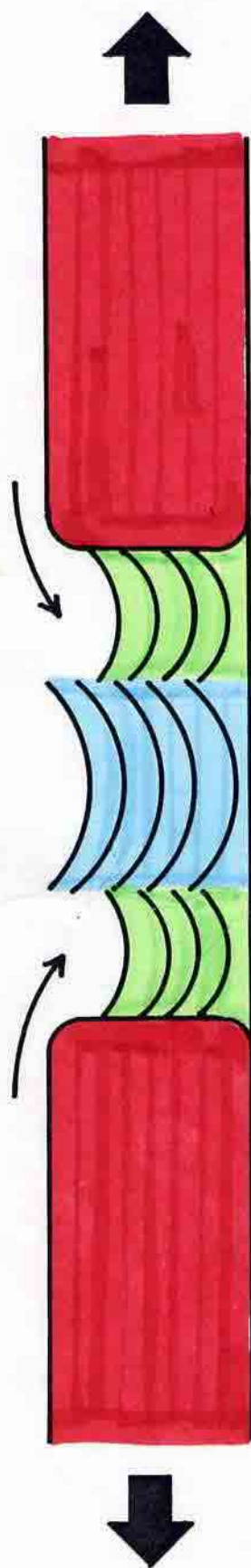
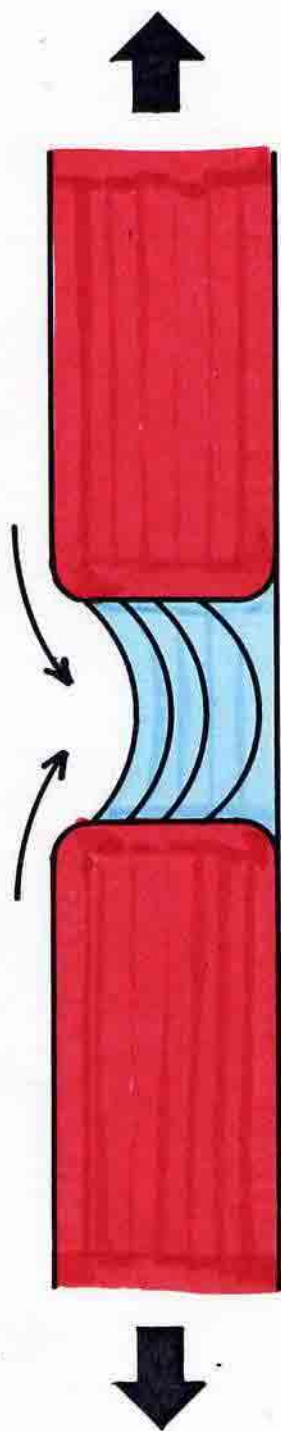
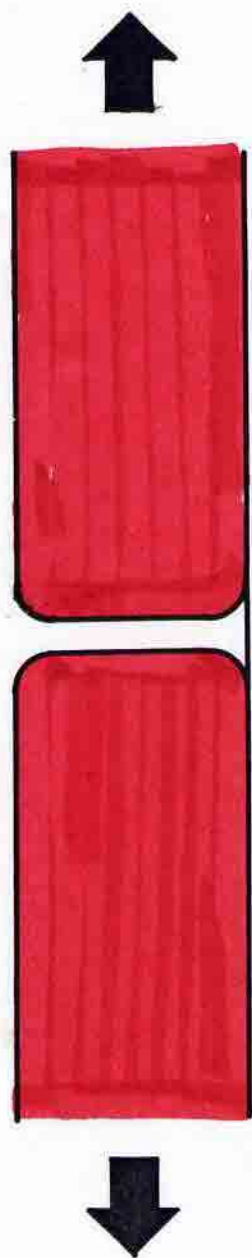
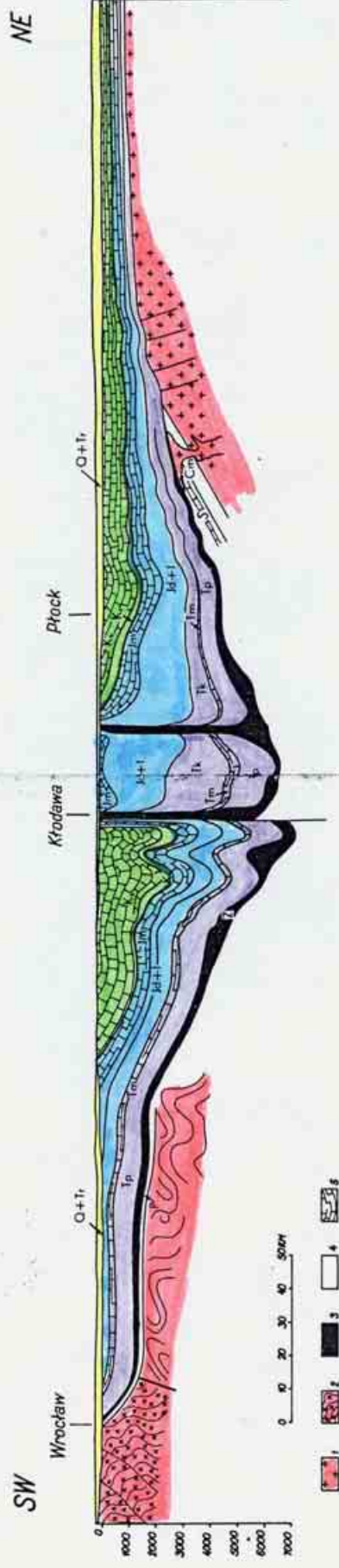


Fig.266. Development of subsequent troughs during Cretaceous and Tertiary times, parallel to some of the primary "Randtröge" of the Jurassic. Compare Fig.265.

1 = inverted "Randtröge" of the Jurassic; 2 = anticlinal structures; 3 = subsequent troughs. (After Voigt, 1963)





Mapa geologiczna Polski
bez utworów kenozoiku

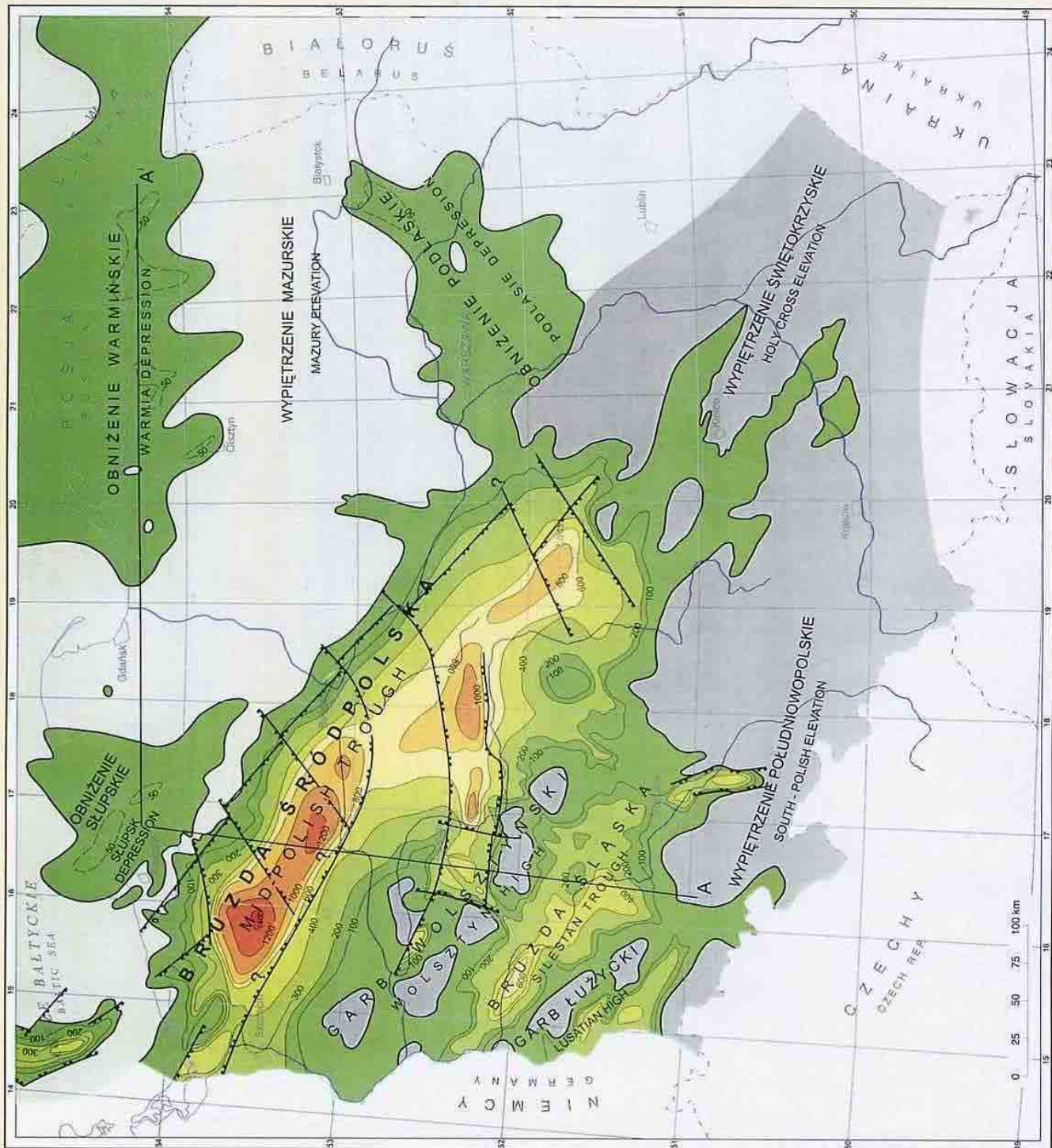
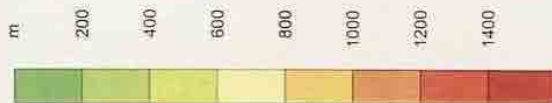
Rozwój bruzdy śródpolskiej i jej inwersji dokumentowany przez mapy i profile miąższościowe

Atlas paleogeograficzny
epikontynentalnego permu
i mezozoiku w Polsce
PIG, Warszawa, 1998

Jędrzej Pokorski

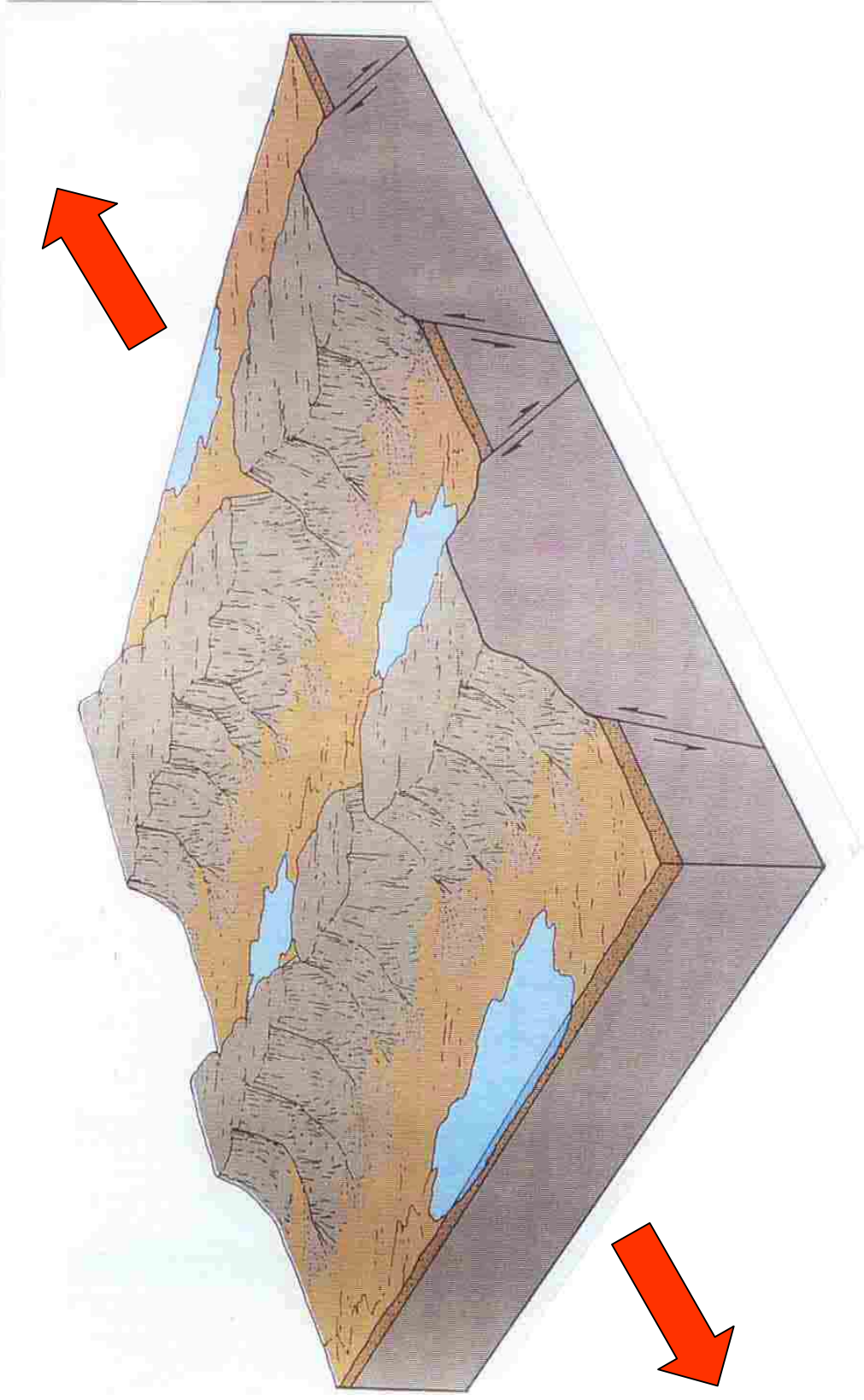
GÓRNY CZERWONY SPĄGOWIEC podgrupa Drawy i Noteć MIAŻSZOŚĆ

UPPER ROTILEGEND
Drawa and Noteć sub-Group
THICKNESS



Basin & Range

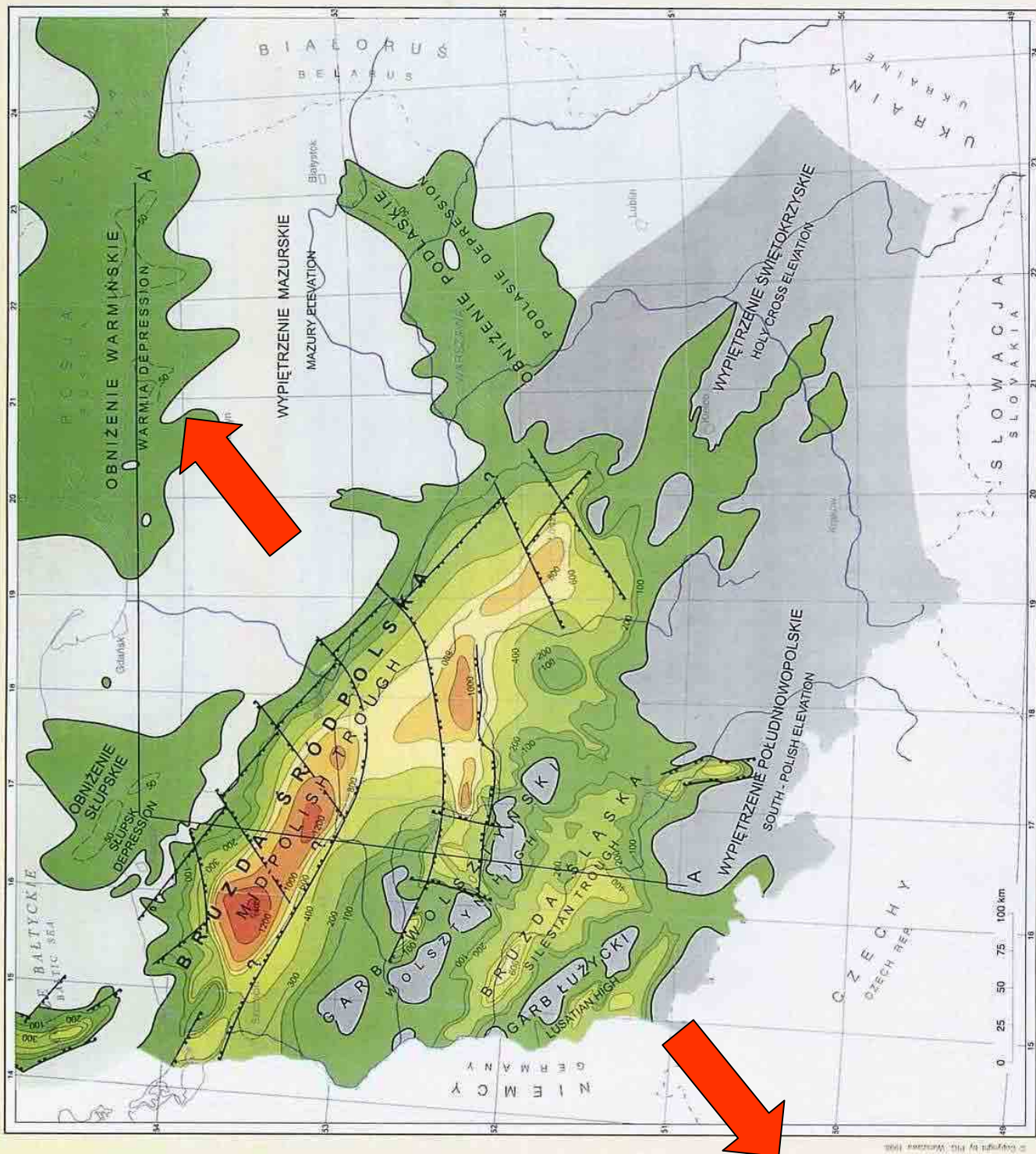
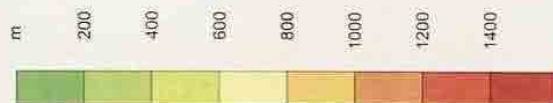
Morfologia i struktura typu „basenów i grzbietów”
wskaznik regionalnego rozciągania



Jędrzej Pokorski

GÓRNY CZERWONY SPĄGOWIEC podgrupa Drawa i Noteć MIAŻSZOŚĆ

UPPER ROTLEND
Drawa and Noteć sub-Group
THICKNESS



Jędrzej Pokorski
GÓRNY CZERWONY SPĄGOWIEC
UPPER ROTLEGEND

S

N|W

BRUZDA ŚRÓDPOLSKA
MID-POLISH TROUGH

BRUZDA ŚLĄSKA
SILESIA TROUGH

OBNIŻENIE ŚLĄPSKIE
ŚLĄPSK DEPRESSION

OBNIŻENIE WARMIŃSKIE
WARMIA DEPRESSION

m

0

200

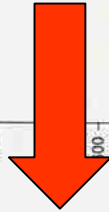
400

600

800

1000

1200



0 25 50 75 100 km

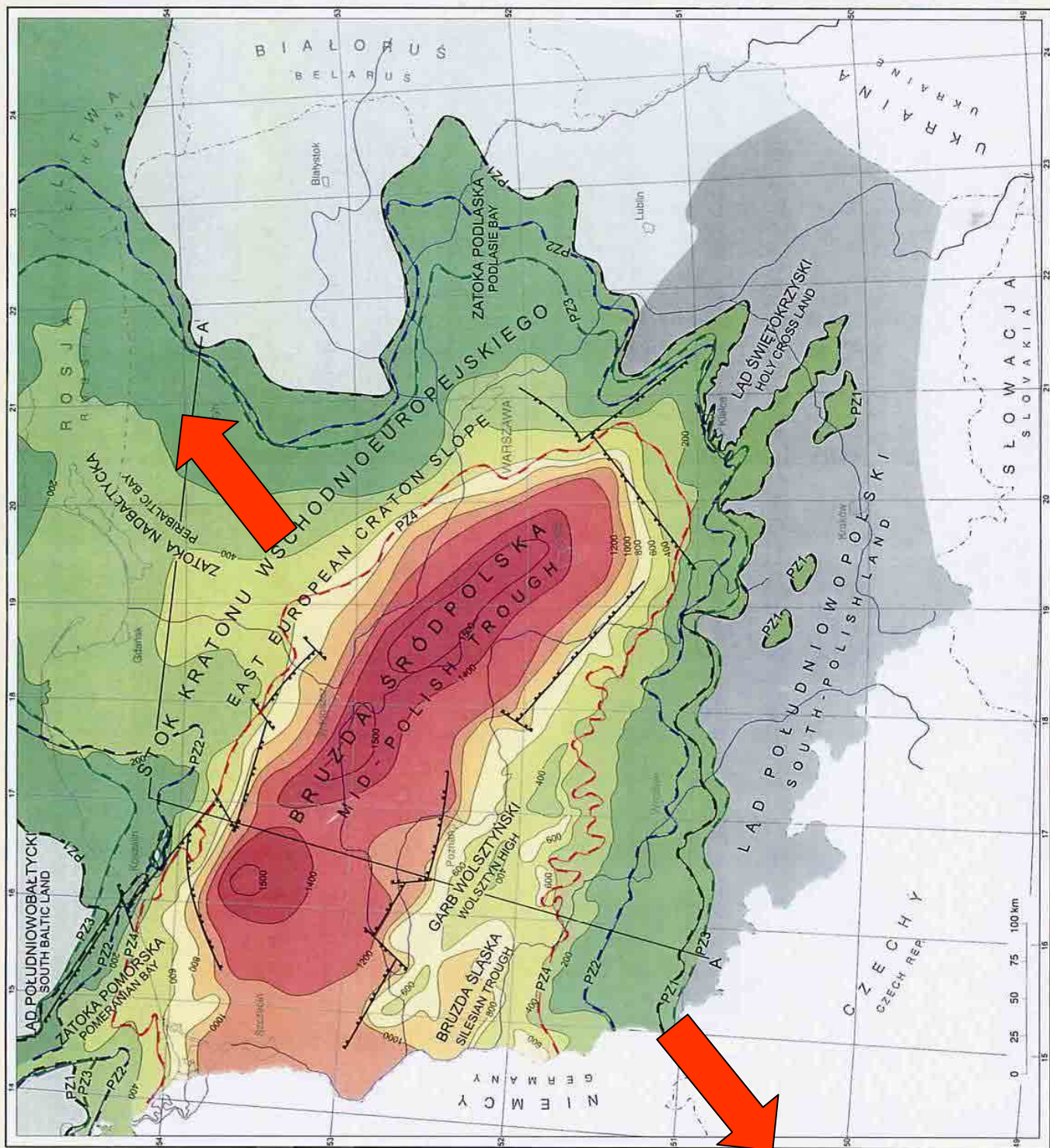
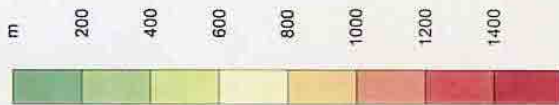
NC PODGRUPA NOTECI
NOTEĆ SUB-GROUP
DA PODGRUPA DRAWY
DRAWA SUB-GROUP

linia przekroju na tabl. 4
cross-section line on Plate 4

Ryszard Wagner

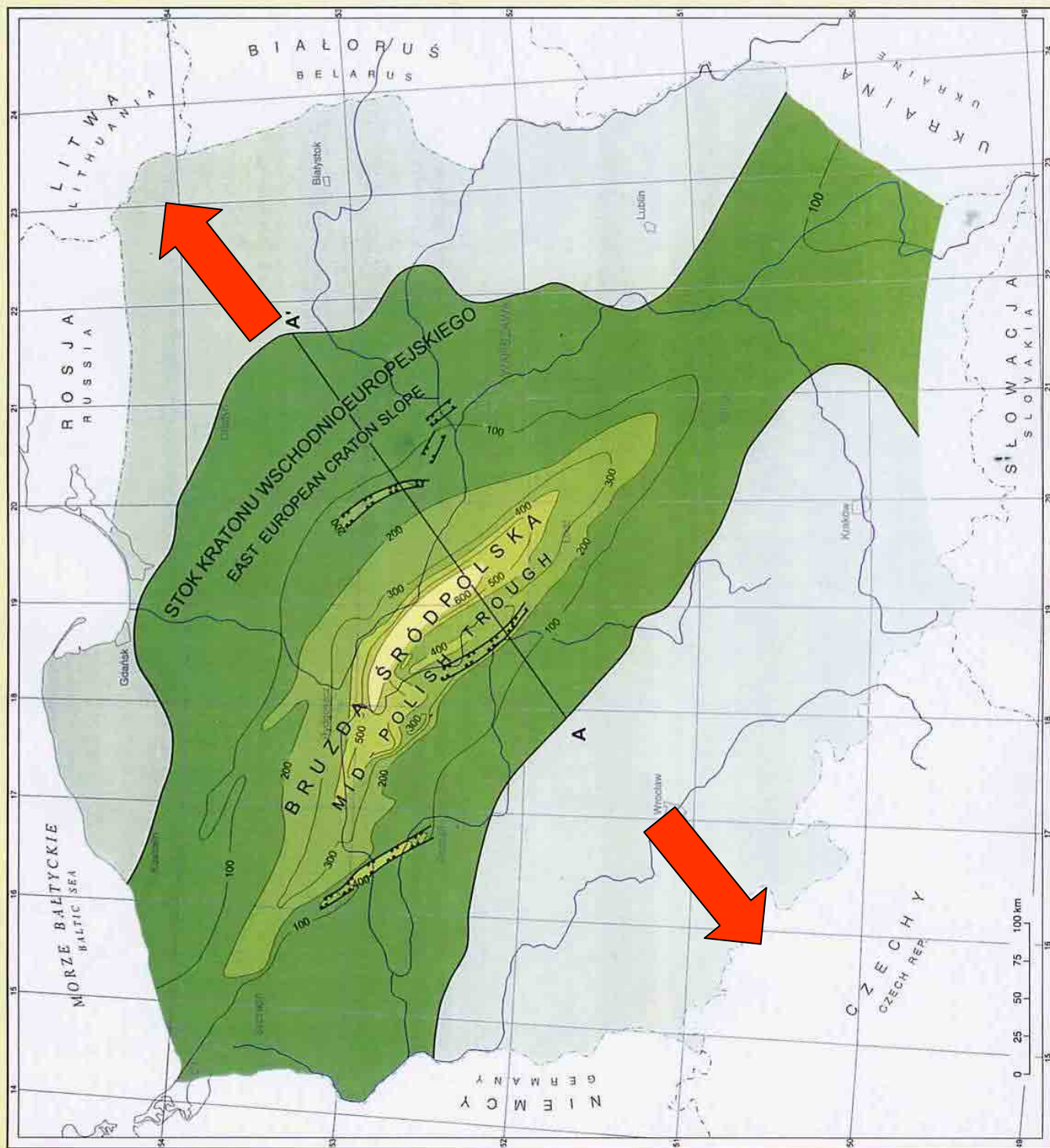
CECHYSTYN
MIAŻSZOŚĆ

ZECHSTEIN
THICKNESS



Krzysztof Leszczyński

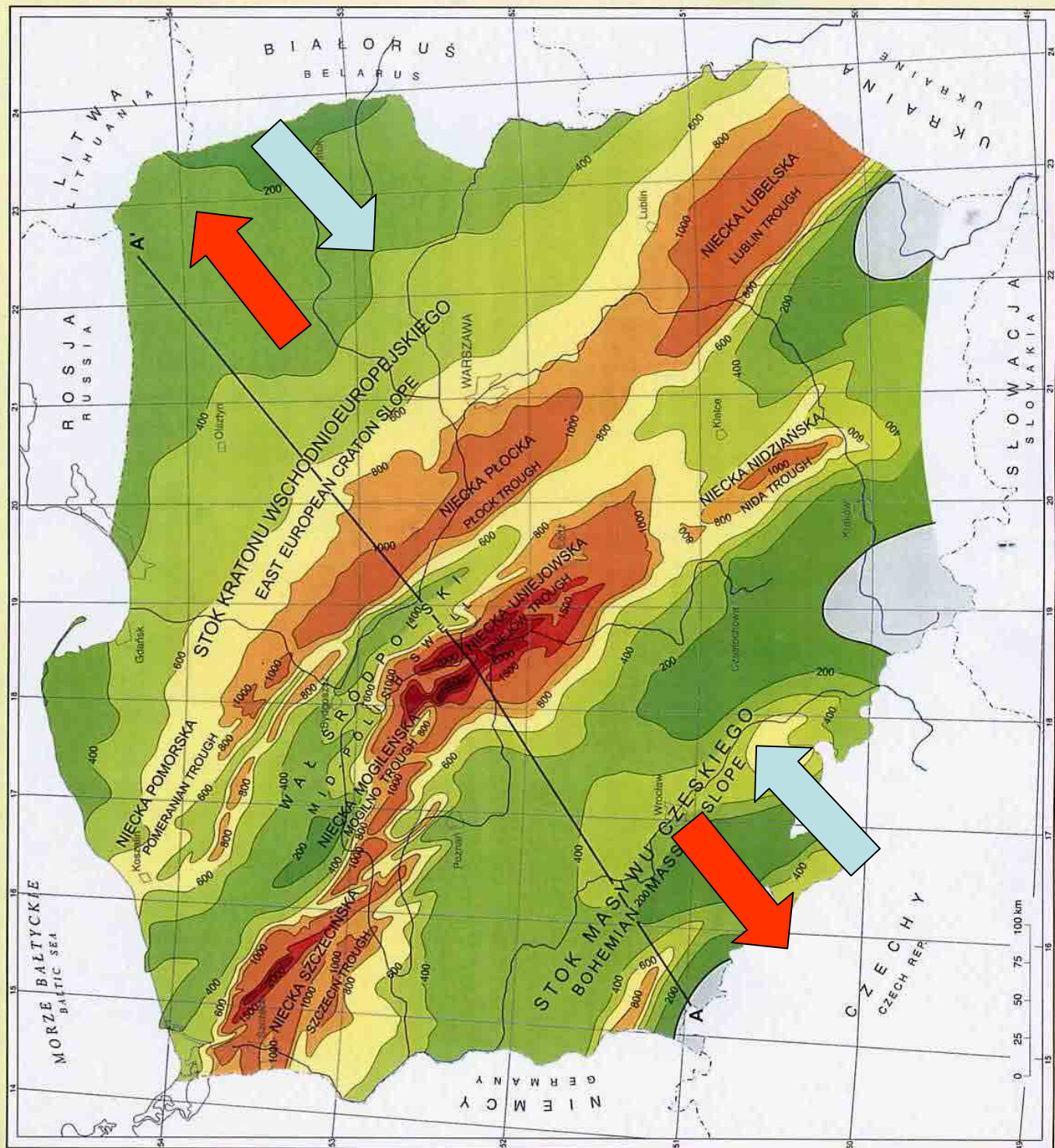
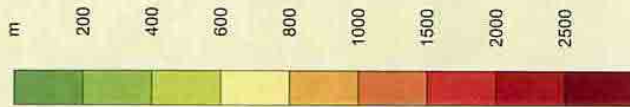
KREDA DOLNA
(BEZ DOLNEGO BERIASU
I GÓRNEGO ALBU)
MIAŻSZOŚĆ
LOWER CRETACEOUS
(EXCLUDING LOWER BERRIASIAN
AND UPPER ALBIAN)
THICKNESS



Krzysztof Leszczyński

**KREDA GÓRNA
(WRAZ Z GÓRNYM ALBEM)
MIĄSZOŚĆ**

UPPER CRETACEOUS
(INCLUDING UPPER ALBIAN)
THICKNESS



KREDA GÓRNA UPPER CRETACEOUS

STOK MASYWU CZESKIEGO BOHEMIAN MASSIF SLOPE

BRUZA ŚRÓDPOLSKA MID-POLISH TROUGH

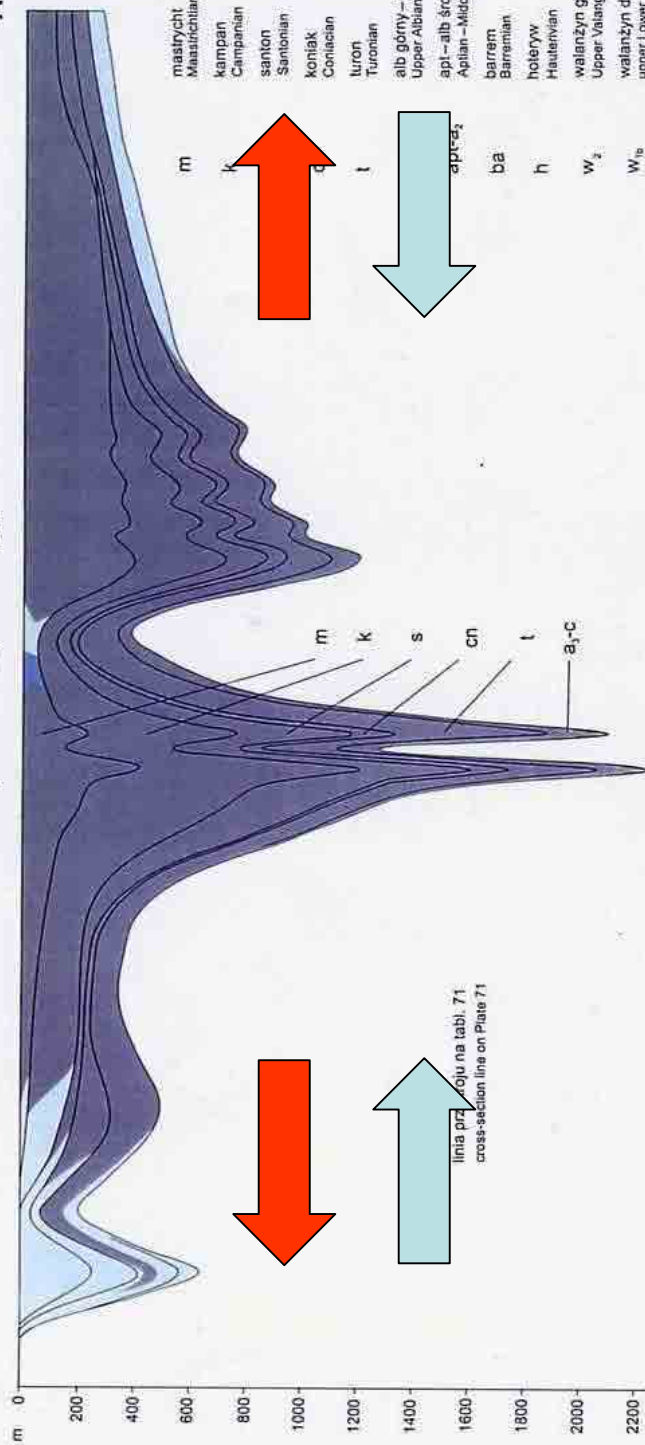
STOK KRATONU WSCHODNIOEUROPEJSKIEGO EAST EUROPEAN CRATON SLOPE

SW NE
A A'

Niecka uniejęwska
Uniejów Trough

Walek
śródpolski
Mid-Polish Swell

Niecka płocka
Plock Trough



m

k

s

cn

t

a3-c

a3-c

ba

h

w2

w10

w10-h

be23-w10

be23-w10

be23-w10

be23-w10

be23-w10

be23-w10

be23-w10

be23-w10

be23-w10

be23-w10

be23-w10

be23-w10

be23-w10

be23-w10

maastricht

kampan

santon

koniac

turon

alb górny - cenoman

Upper Albian - Cenomanian

apt - alb środkowy

Apian - Middle Albian

barrem

barremian

holeryw

holeryw

walanzyn górny

Upper Valanginian

walanzyn dolny (część górna)

upper Lower Valanginian

walanzyn dolny (część dolna) - holeryw

lower Lower Valanginian - Hauterivian

berias środkowy i górny (riazan) - walanzyn dolny (część dolna)

Middle and Upper Berriasian (Riasanian) - lower Lower Valanginian

berias środkowy i górny (riazan) - walanzyn dolny (część dolna)

Middle and Upper Berriasian (Riasanian) - lower Lower Valanginian

berias środkowy i górny (riazan) - walanzyn dolny (część dolna)

Middle and Upper Berriasian (Riasanian) - lower Lower Valanginian

berias środkowy i górny (riazan) - walanzyn dolny (część dolna)

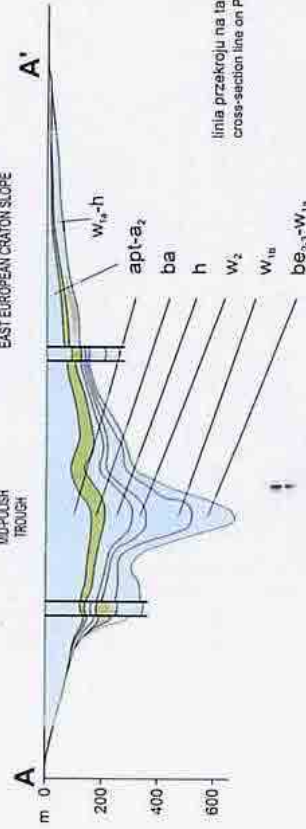
KREDA DOLNA LOWER CRETACEOUS

SW

NE

BRUZA ŚRÓDPOLSKA MID-POLISH TROUGH

STOK KRATONU WSCHODNIOEUROPEJSKIEGO EAST EUROPEAN CRATON SLOPE



A

m

200

400

600

800

1000

1200

1400

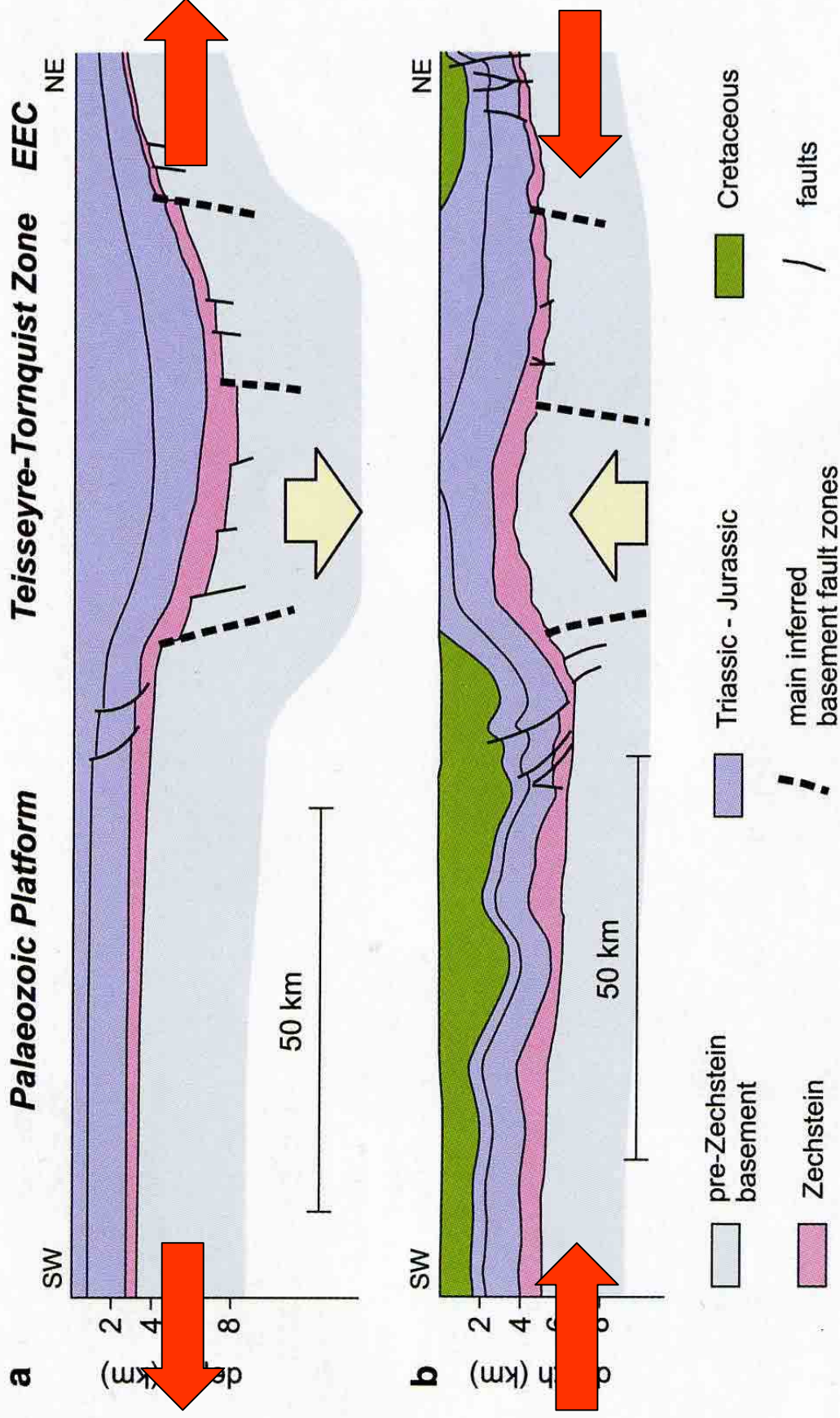
linia przekroju na tabl. 64
cross-section line on Plate 64

0 25 50 75 100 km

**Kompresyjna
interpretacja**

inwersji

bruźdy śródpolskiej



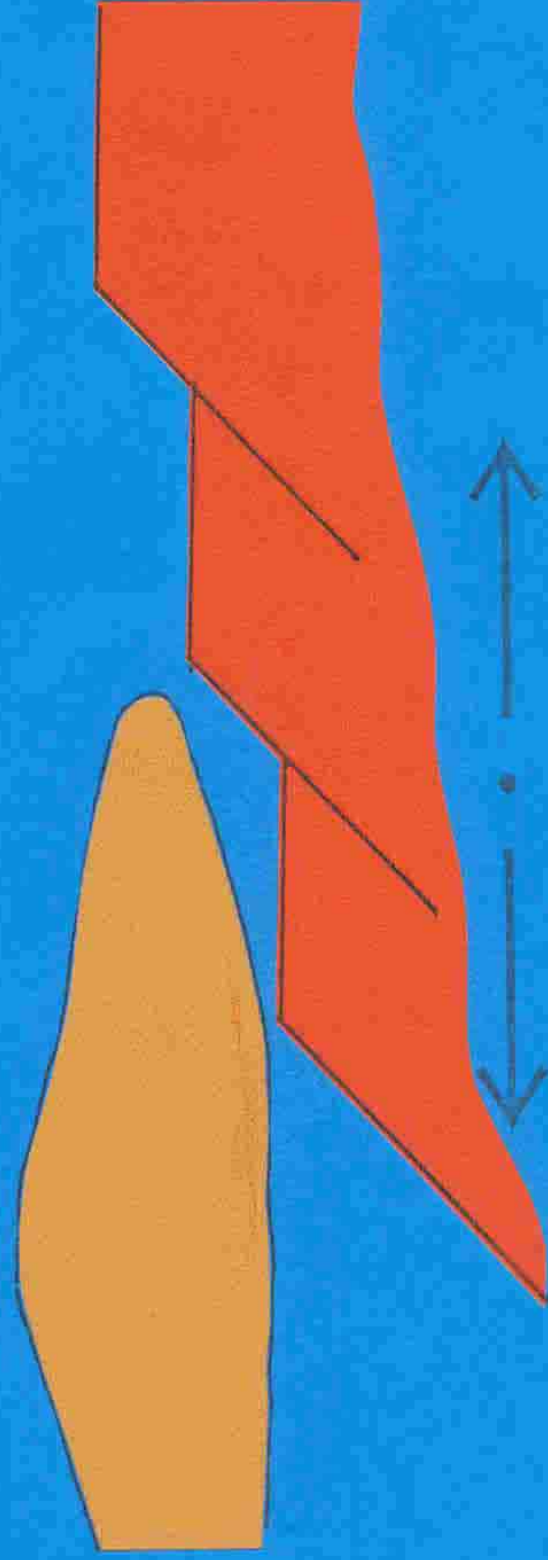
**Niemożliwość
przekazywania
nacisku od strony
orogenu alpejskiego**

1. Niemożność przekazywania nacisku poprzez podłogę zapadliska przedgórskiego

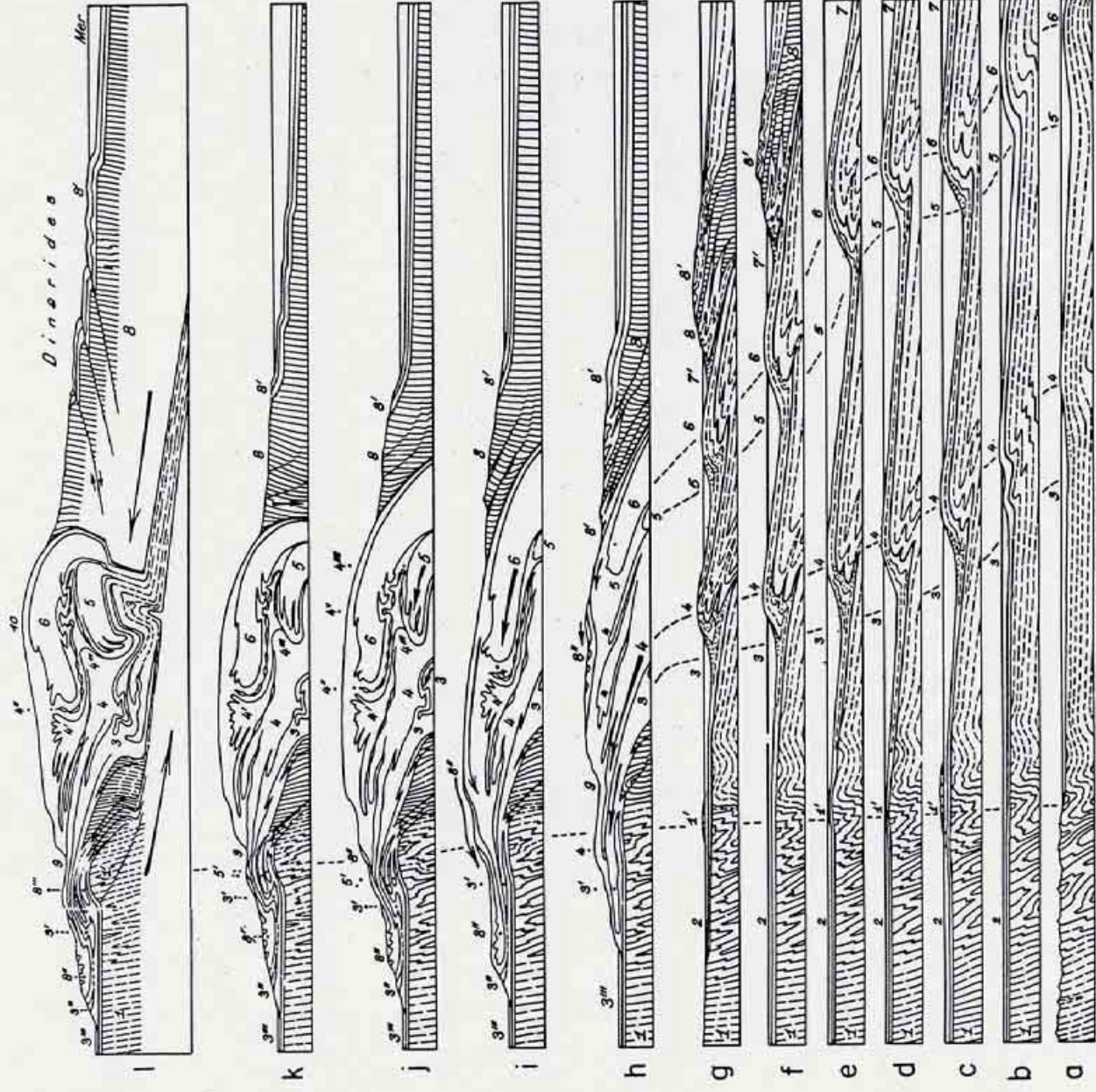
zapadlisko
przedgórskie



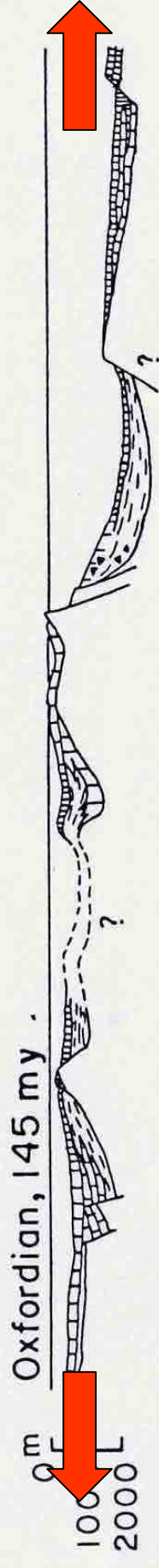
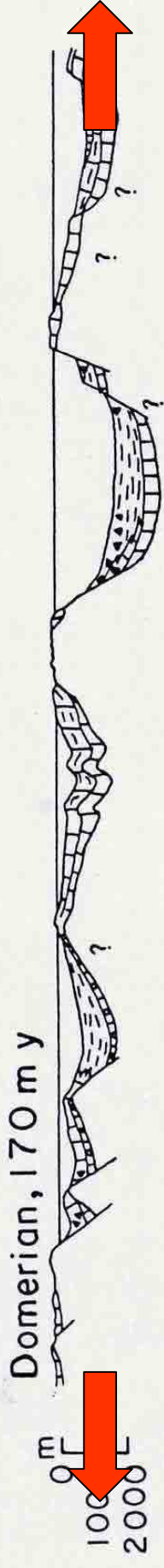
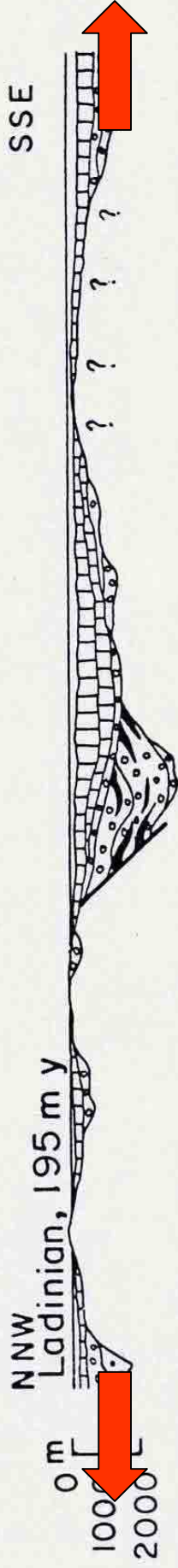
pasmo fałdowe



2. Niemożność przekazywania nacisku poprzez geosynklinę

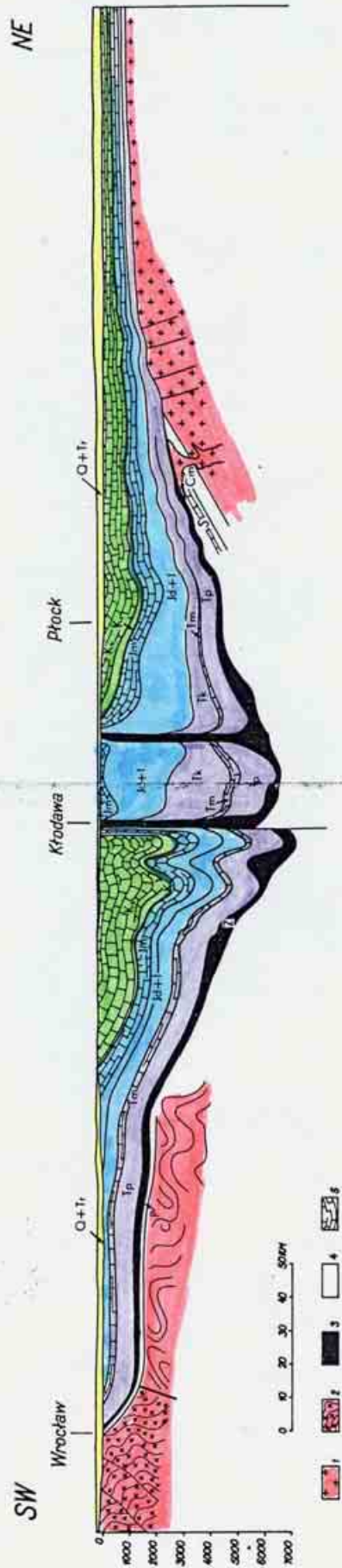


VIEWS OPPOSED TO NAPPE CONTINUITY OR "CYLINDRISM"

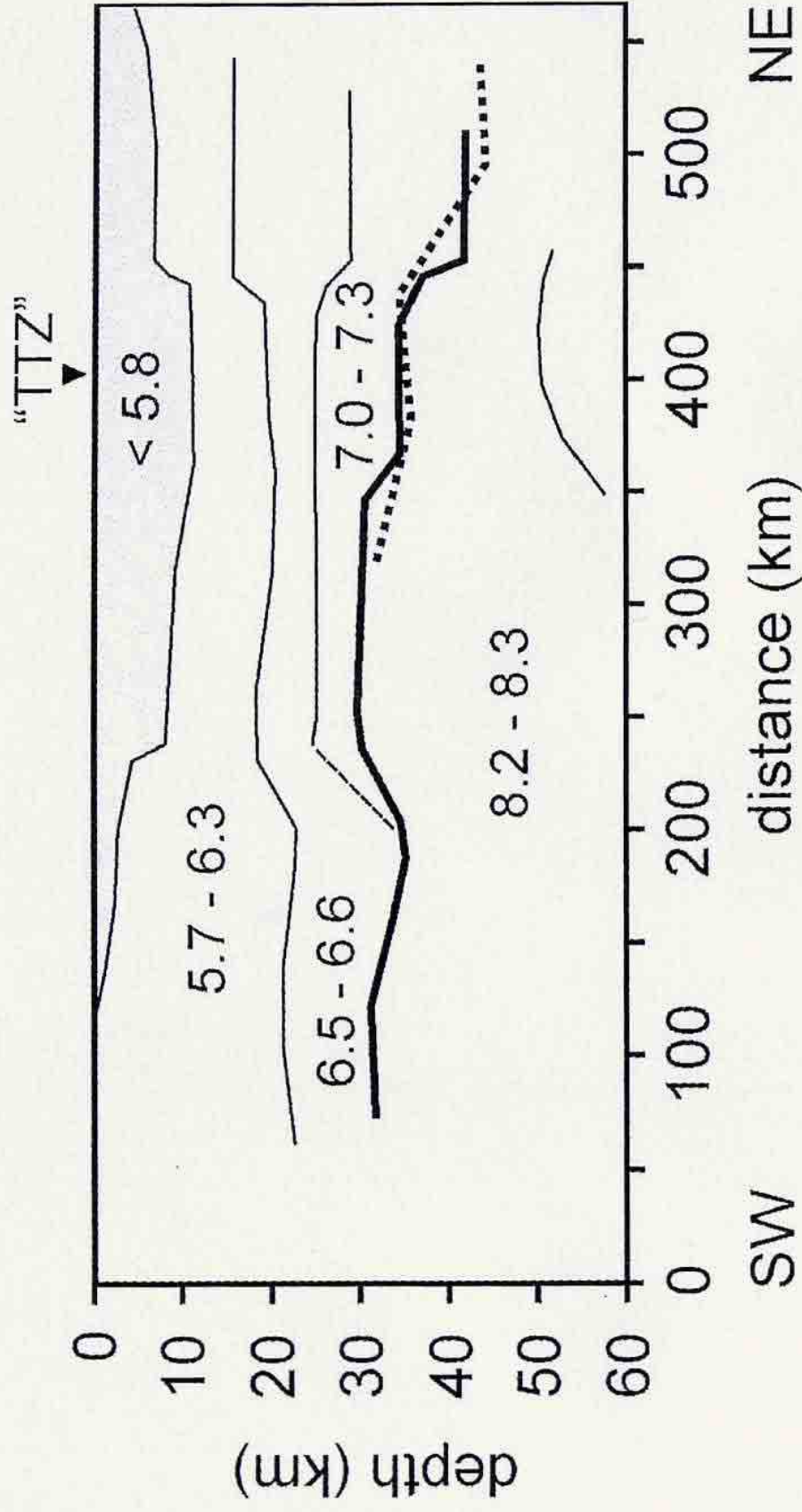


Trümpy 1965

**Niemówność
przekazywania nacisku
poprzez niecki sąsiadujące
z wałem śródpolskim
i poprzez ich podłoże**



(a) “LT-7” profile



Dośrodkowa tektonika grawitacyjna głębokich basenów depozycyjnych

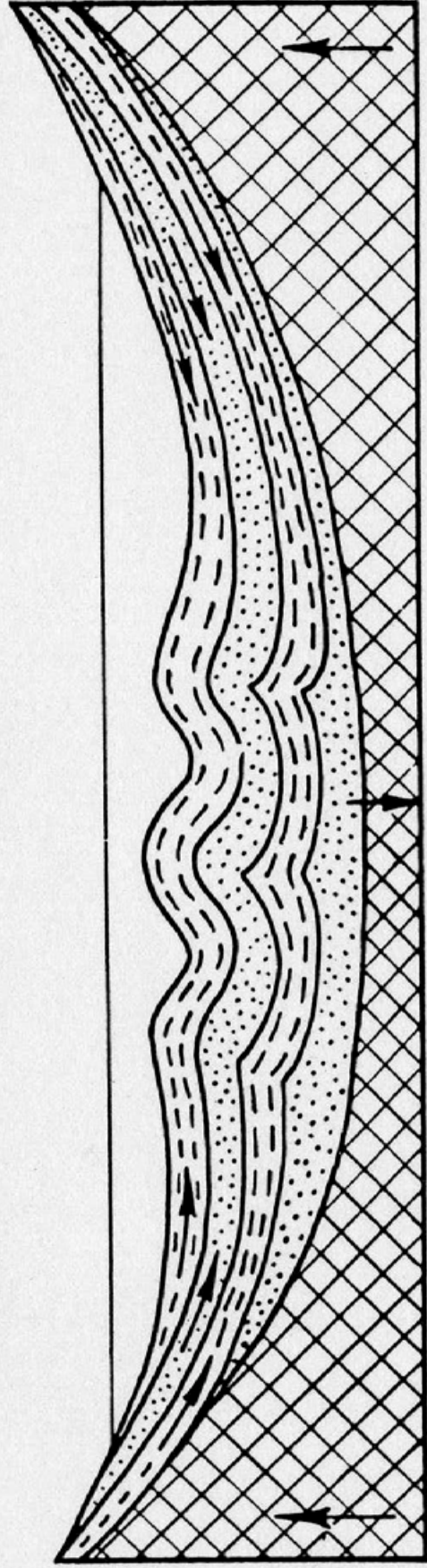
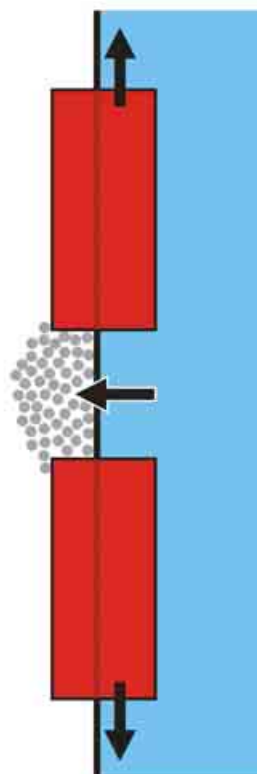
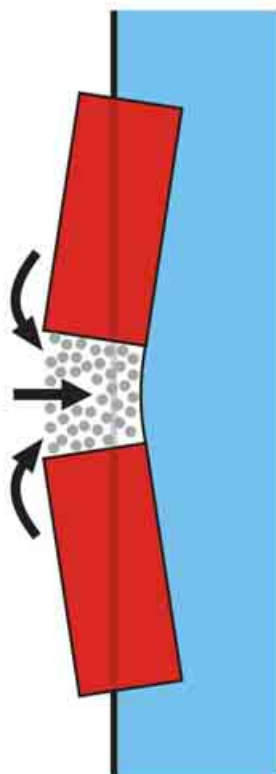
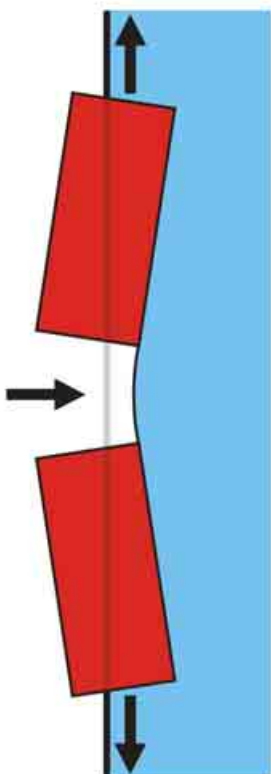
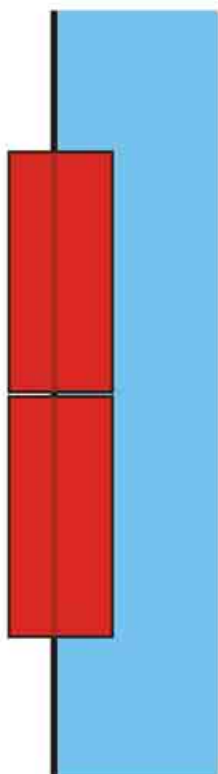


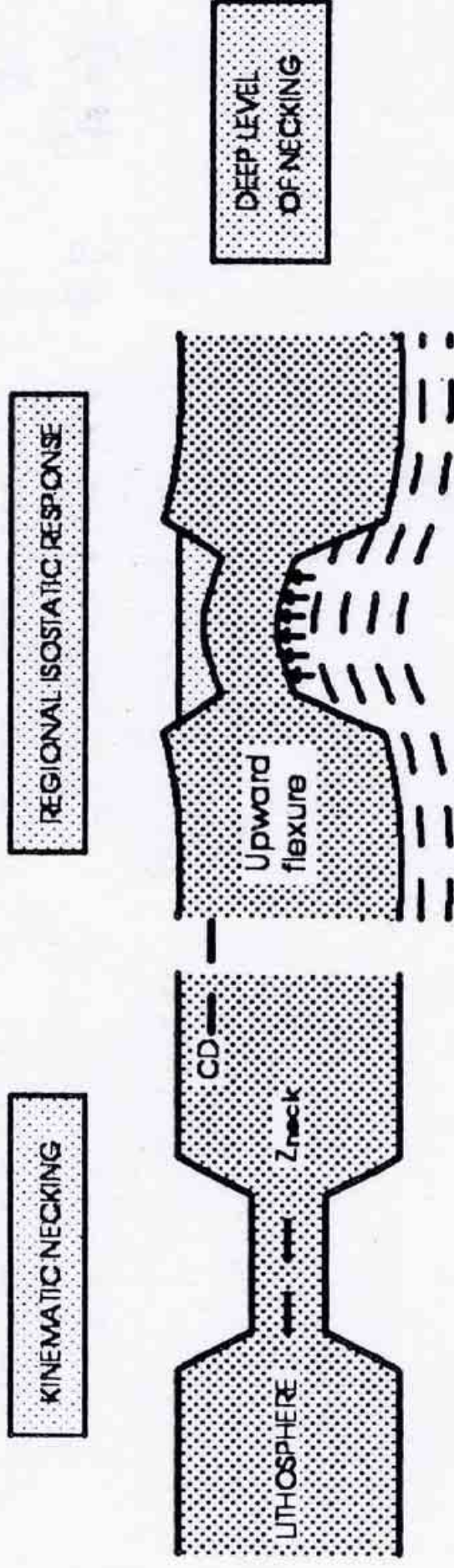
FIG. 849 To illustrate epidermal 'compressive settling' in a subsiding basin. The length of the section is of the order 100 km (*R. W. van Bemmelen*)

Van Bemmelen 1954

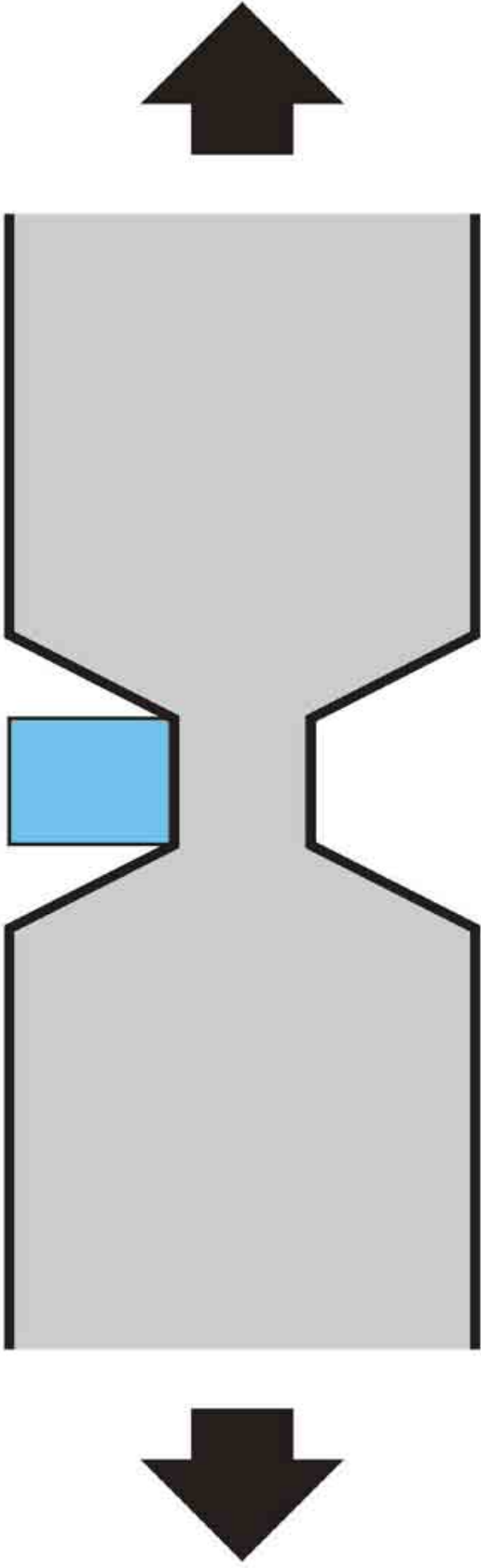
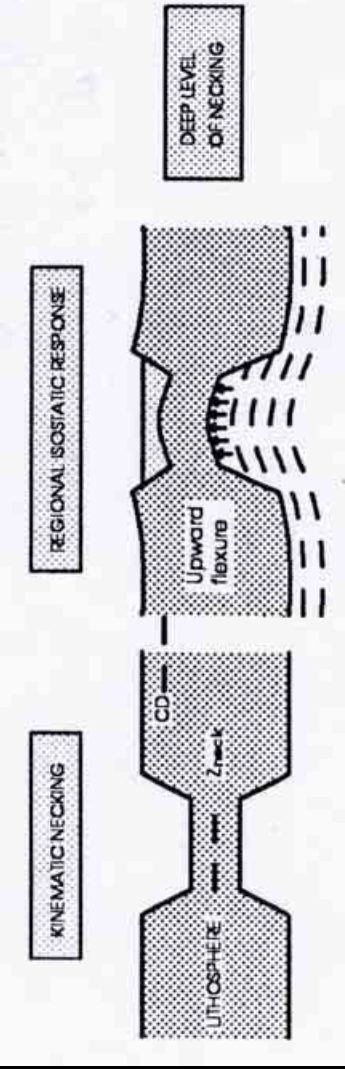
Ryftowo - diapirowy mechanizm inwersji basenowej

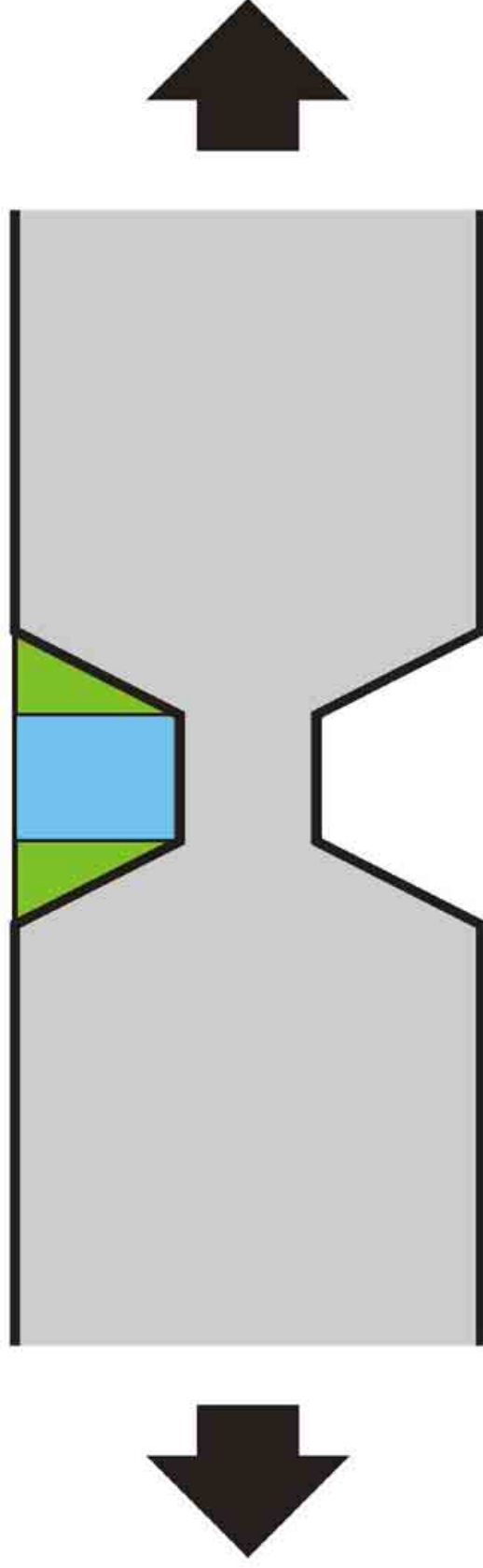
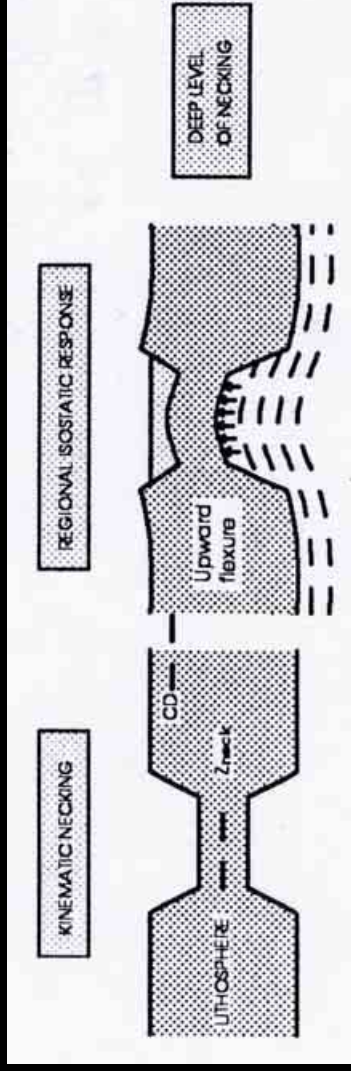


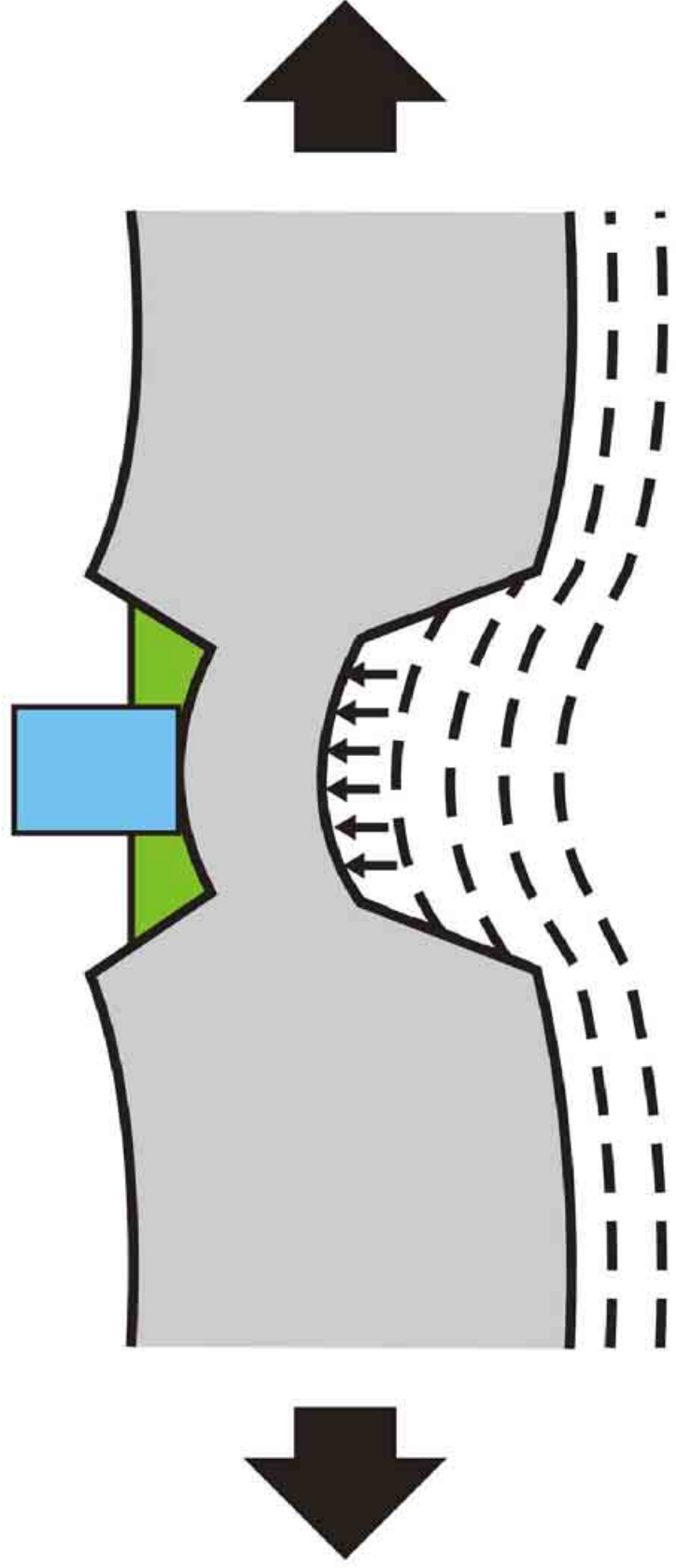
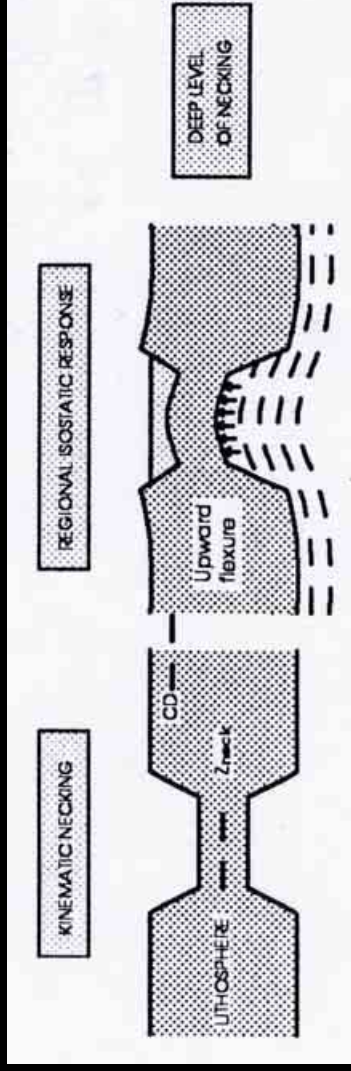
Przewężenie szyjkowe litosfery (Lithospheric necking)



Kooi, Cloetingh & Burrus 1992



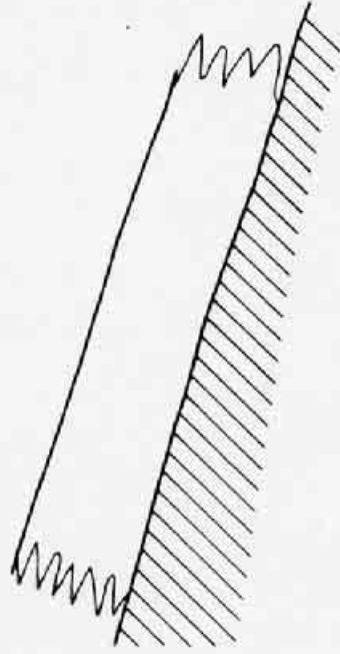




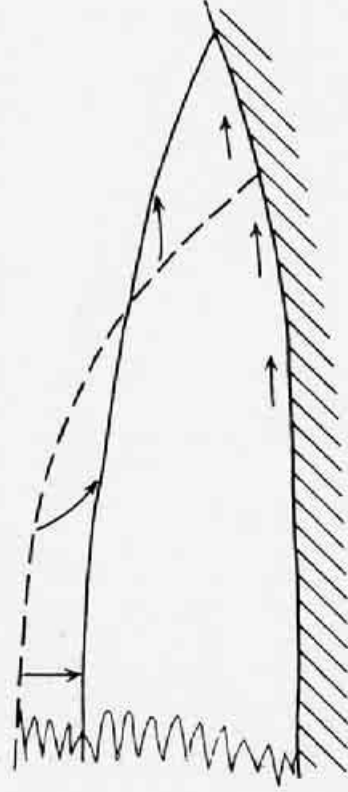
**Odśrodkowa
tektonika
grawitacyjna
inwersji basenowej**

czyli

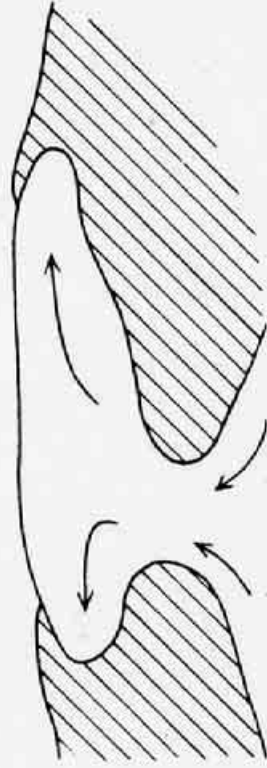
**Spreading grawitacyjny
wypiętrzanej partii
osiowej basenu
jako przyczyna
przejawów kompresji
na jej obrzeżach**



(1) Gravity Gliding



(2) Gravitational Collapse
and spreading



(3) Diapirism

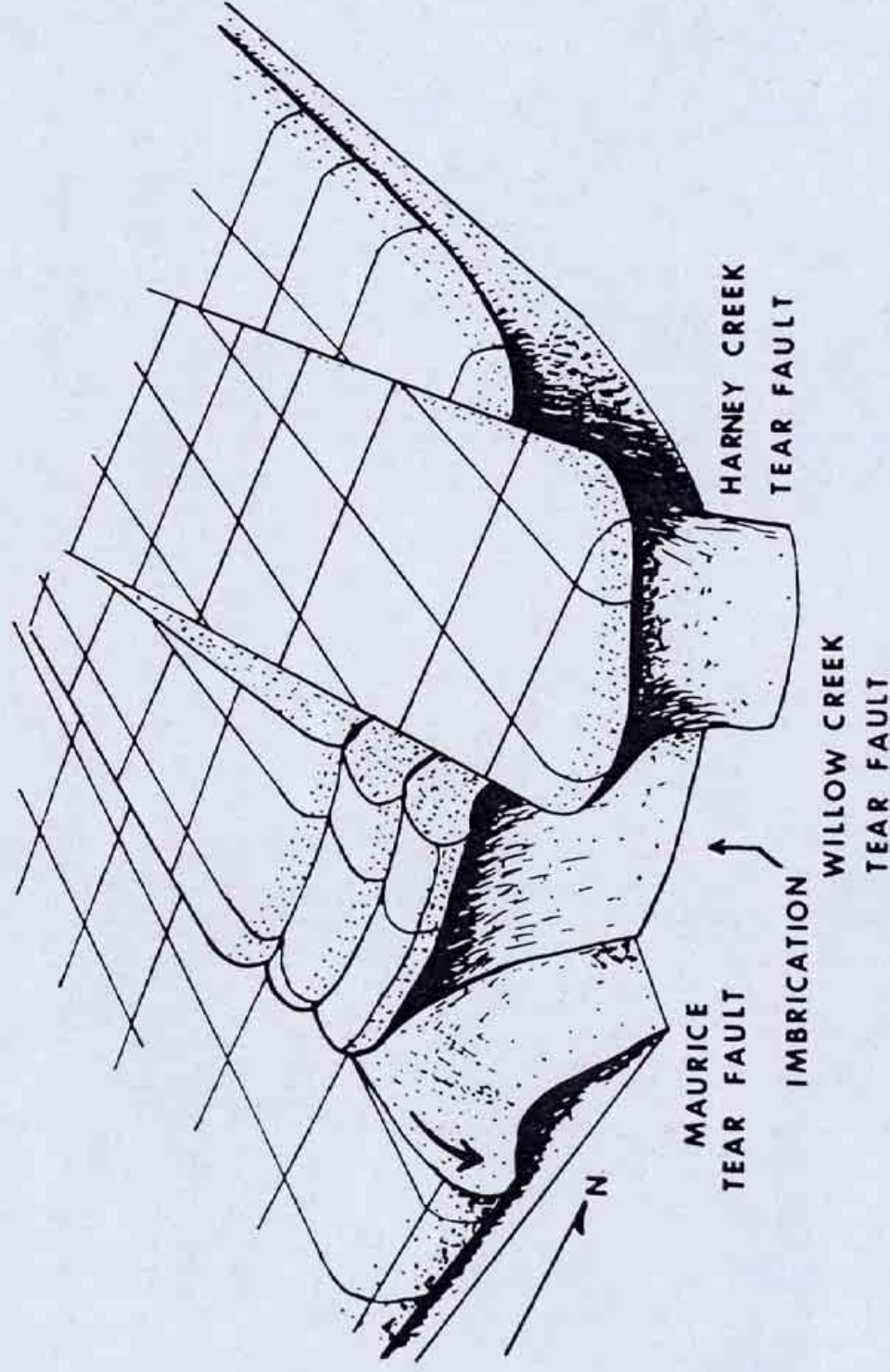
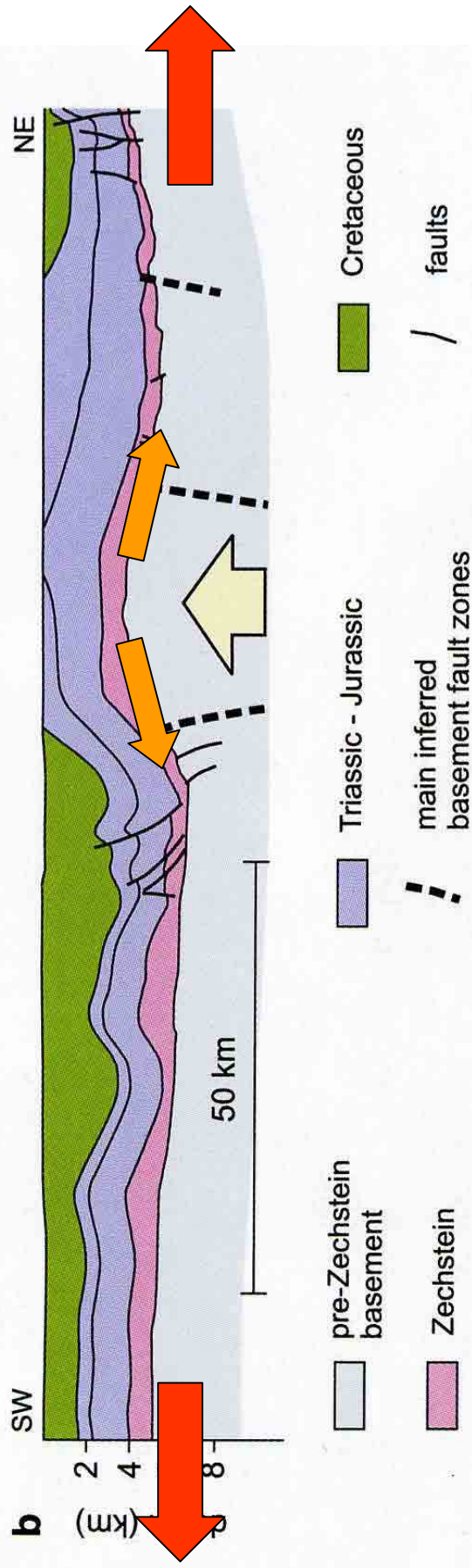
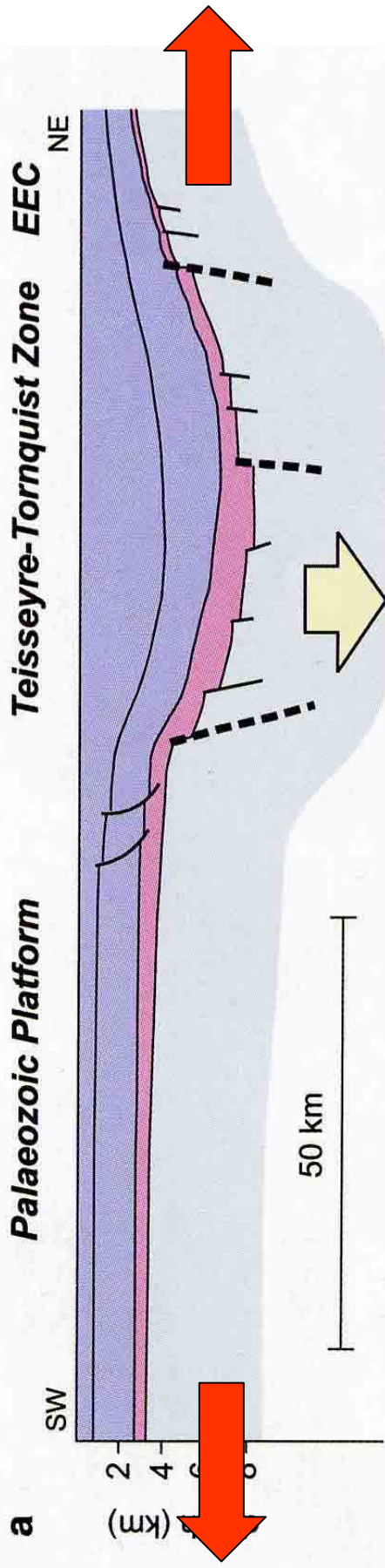
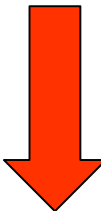


FIG. 7 Block diagram showing relationship of tear faults and imbrication at the northeast corner of the Beartooth crustal block.

Reinterpretacja schematu Mazura i współautorów kompresyjnej inwersji bruzdy śródpolskiej



 - tensja regionalna
  - spreading grawitacyjny

**Deformacja
masywu czeskiego
zgodna z rozciąganiem
basenu polskiego**

Plutonizm granitoidowy jako wskaźnik tensji

JOURNAL OF GEOPHYSICAL RESEARCH, VOL. 97, NO. B7, PAGES 11,011-11,024, JULY 10, 1992

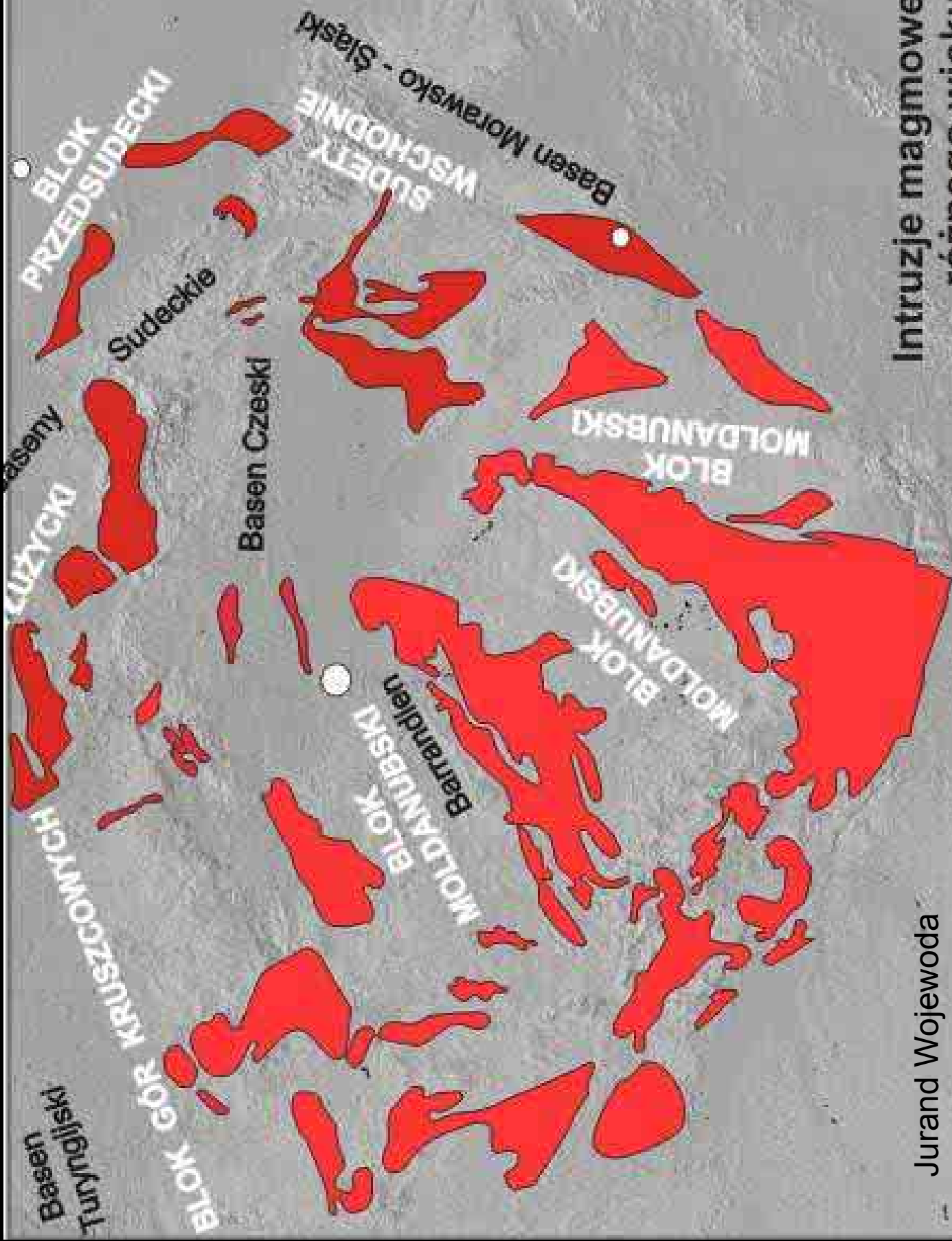
**Evidence for the Generation of Juvenile Granitic Crust During Continental Extension,
Mineral Mountains Batholith, Utah**

DREW S. COLEMAN¹ AND J. DOUGLAS WALKER

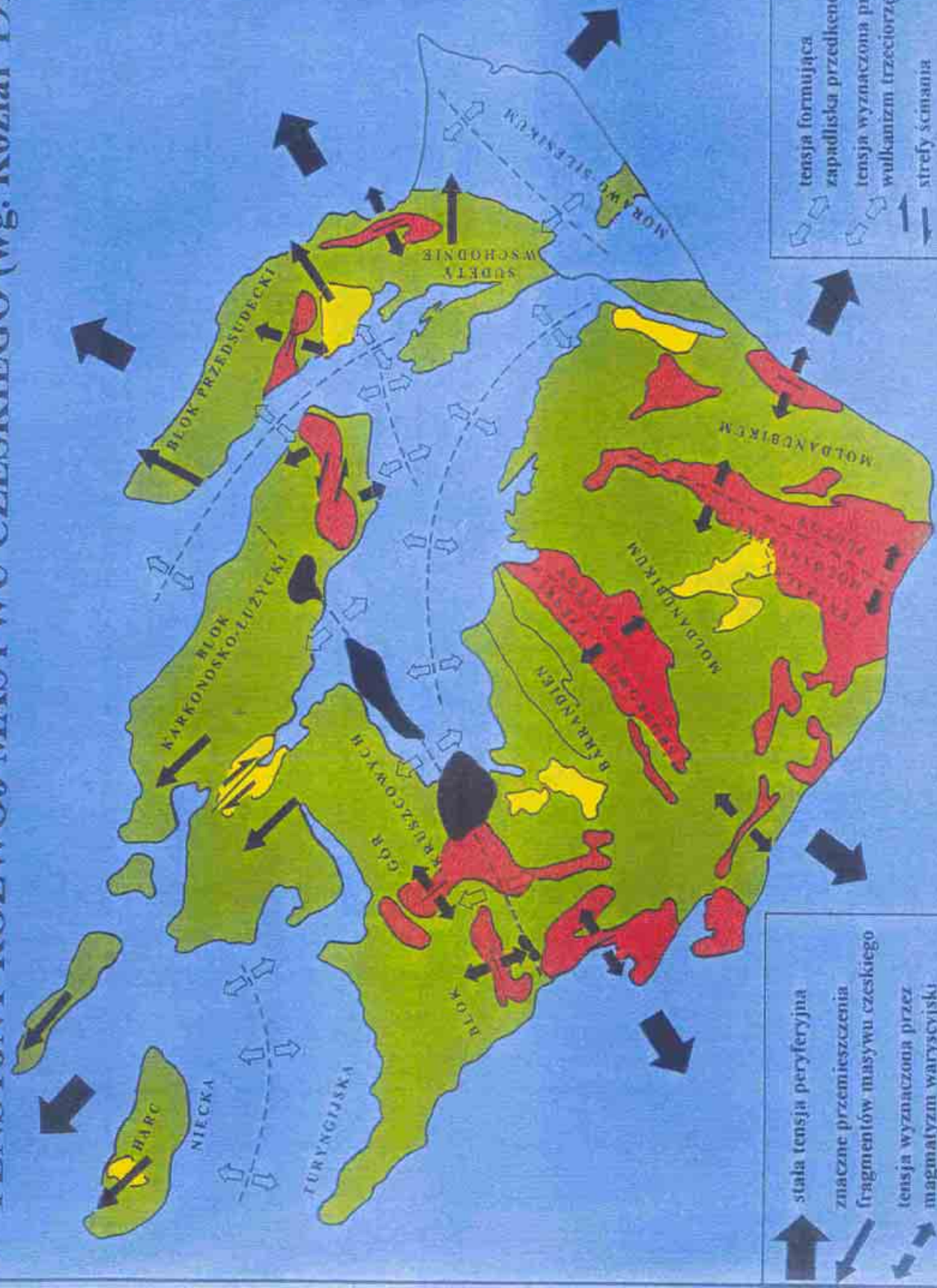
Department of Geology, University of Kansas, Lawrence

Intruzje magmowe różnego wieku

Jurand Wojewoda

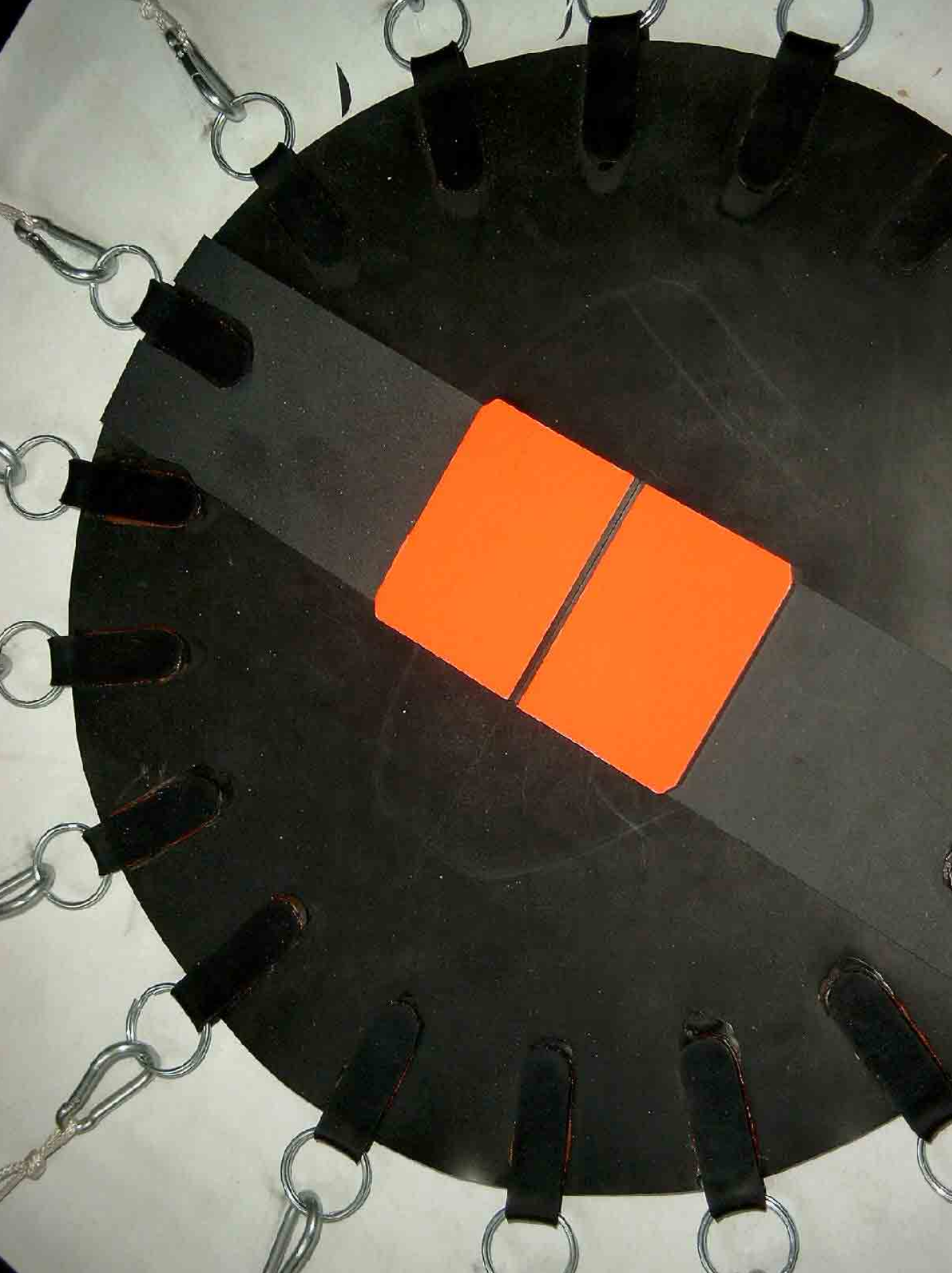


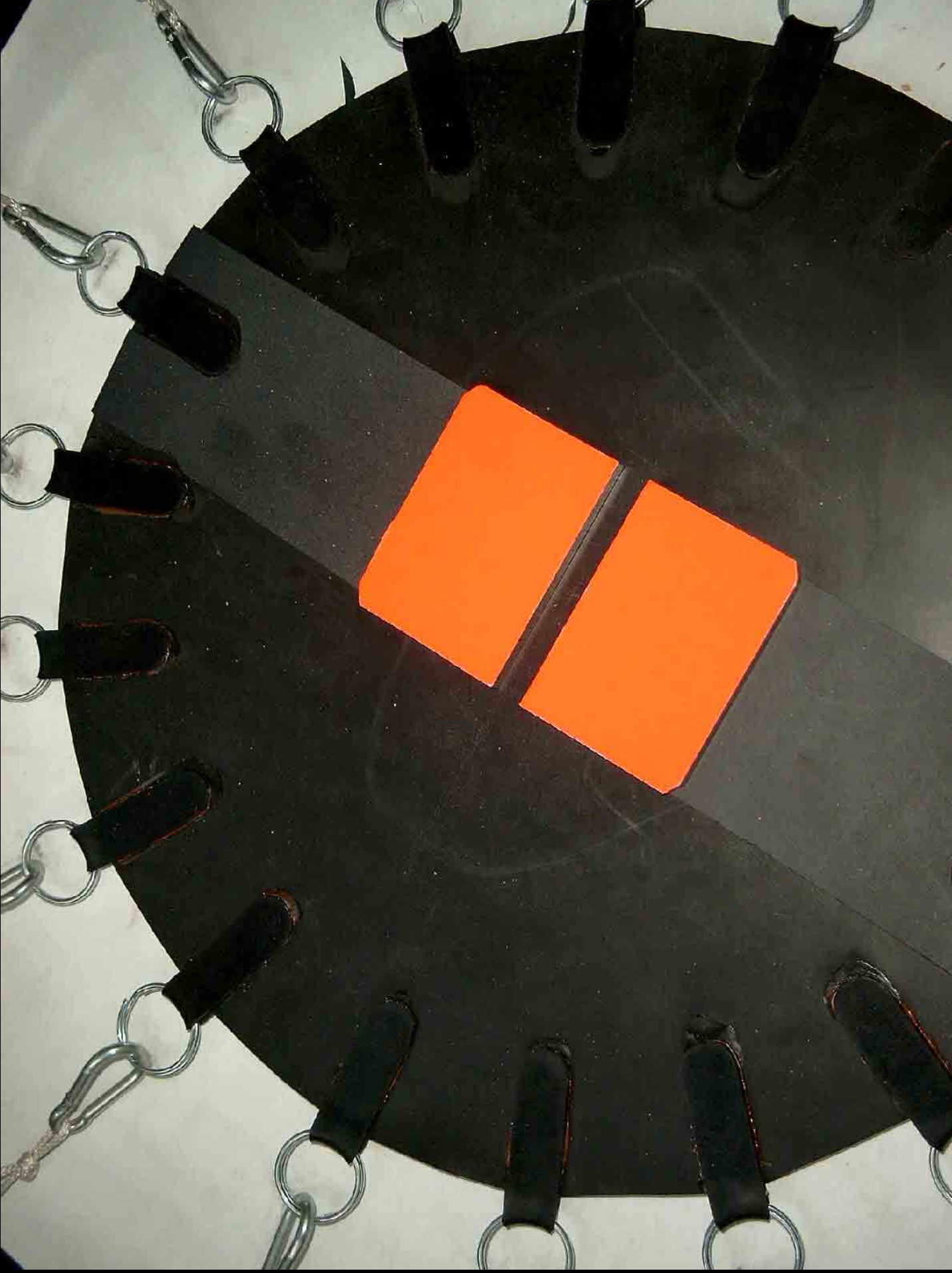
TENSYJNY ROZWÓJ MASYWU CZESKIEGO (wg. Koziar 1993)

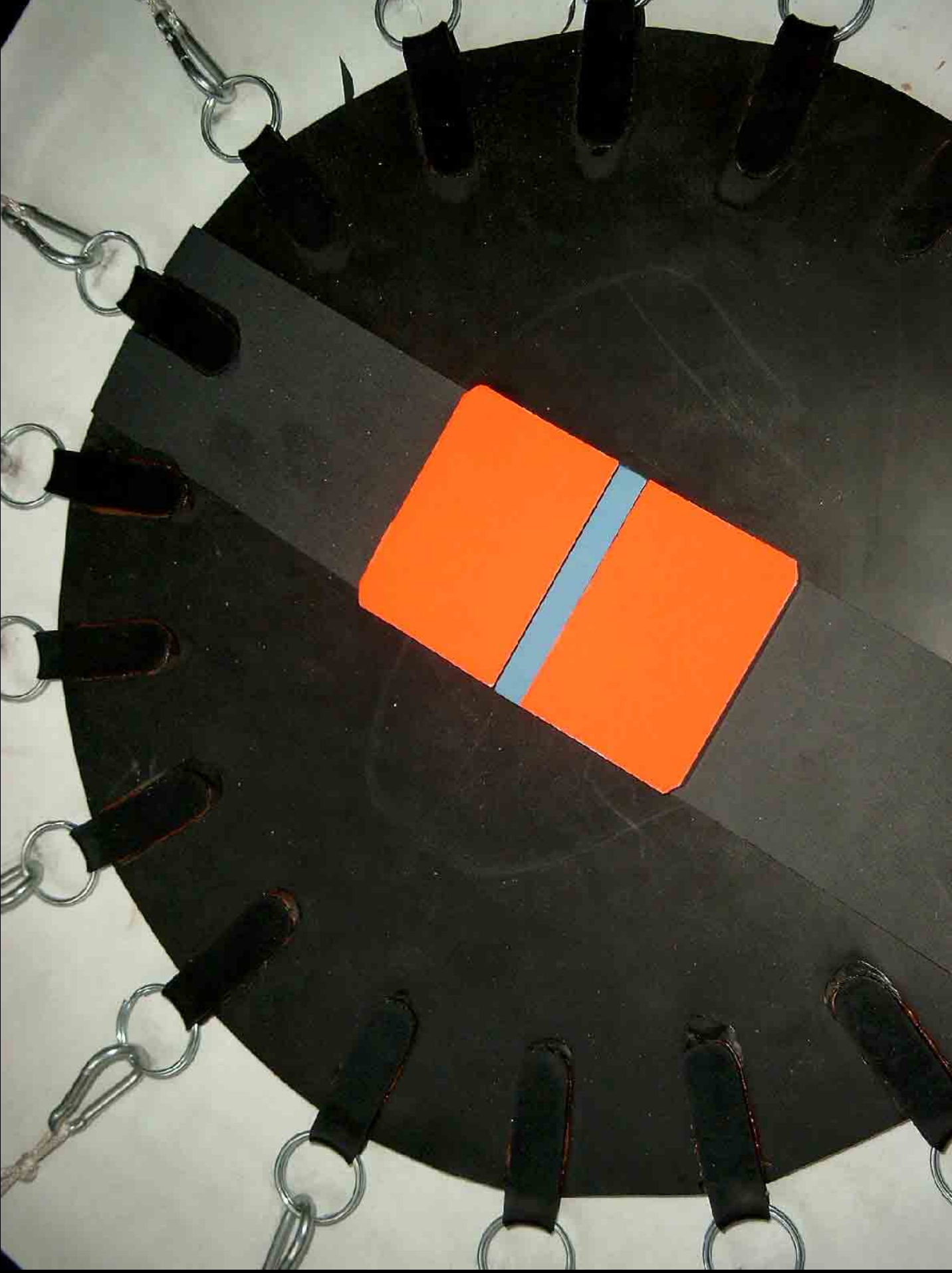


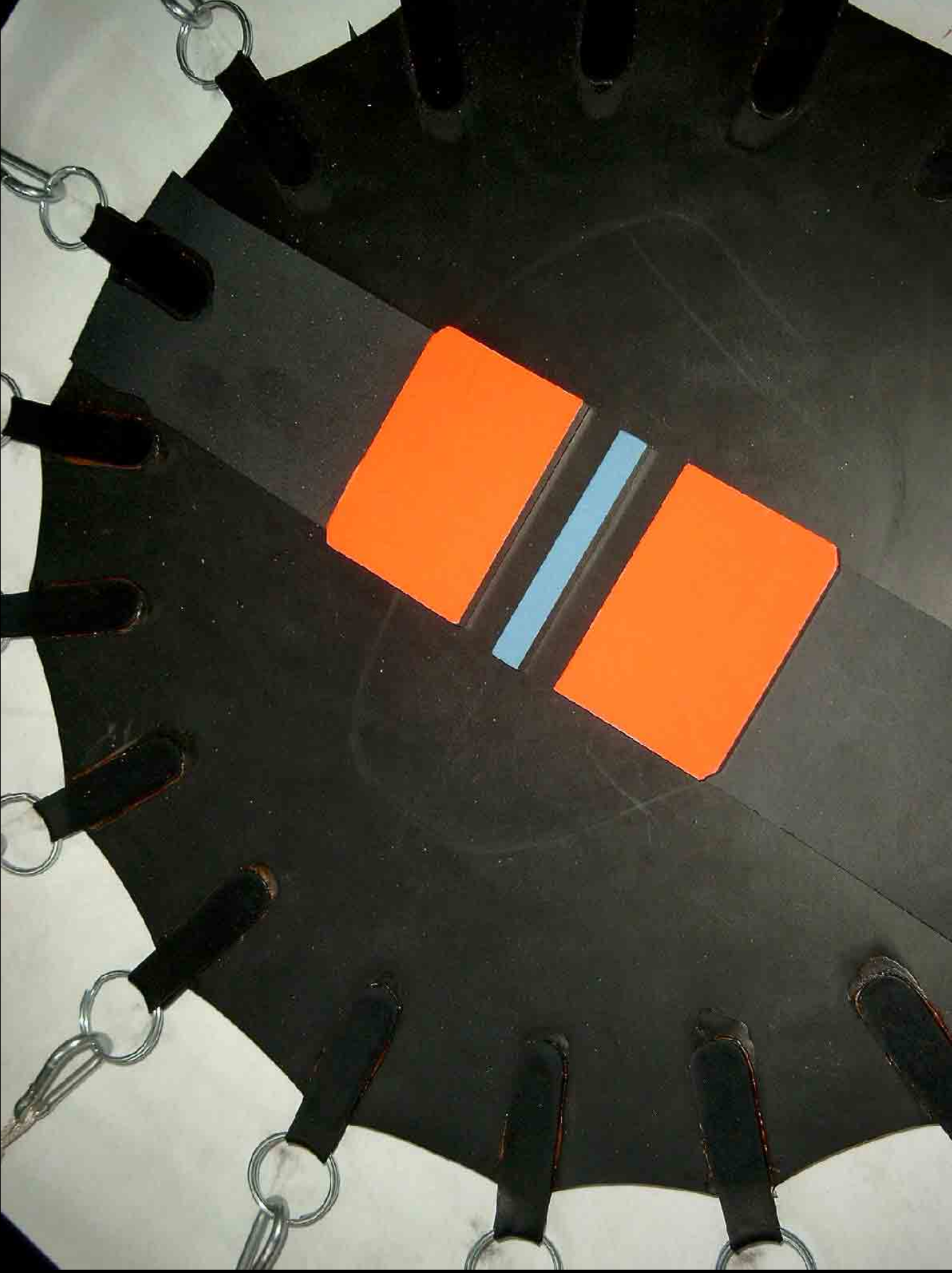


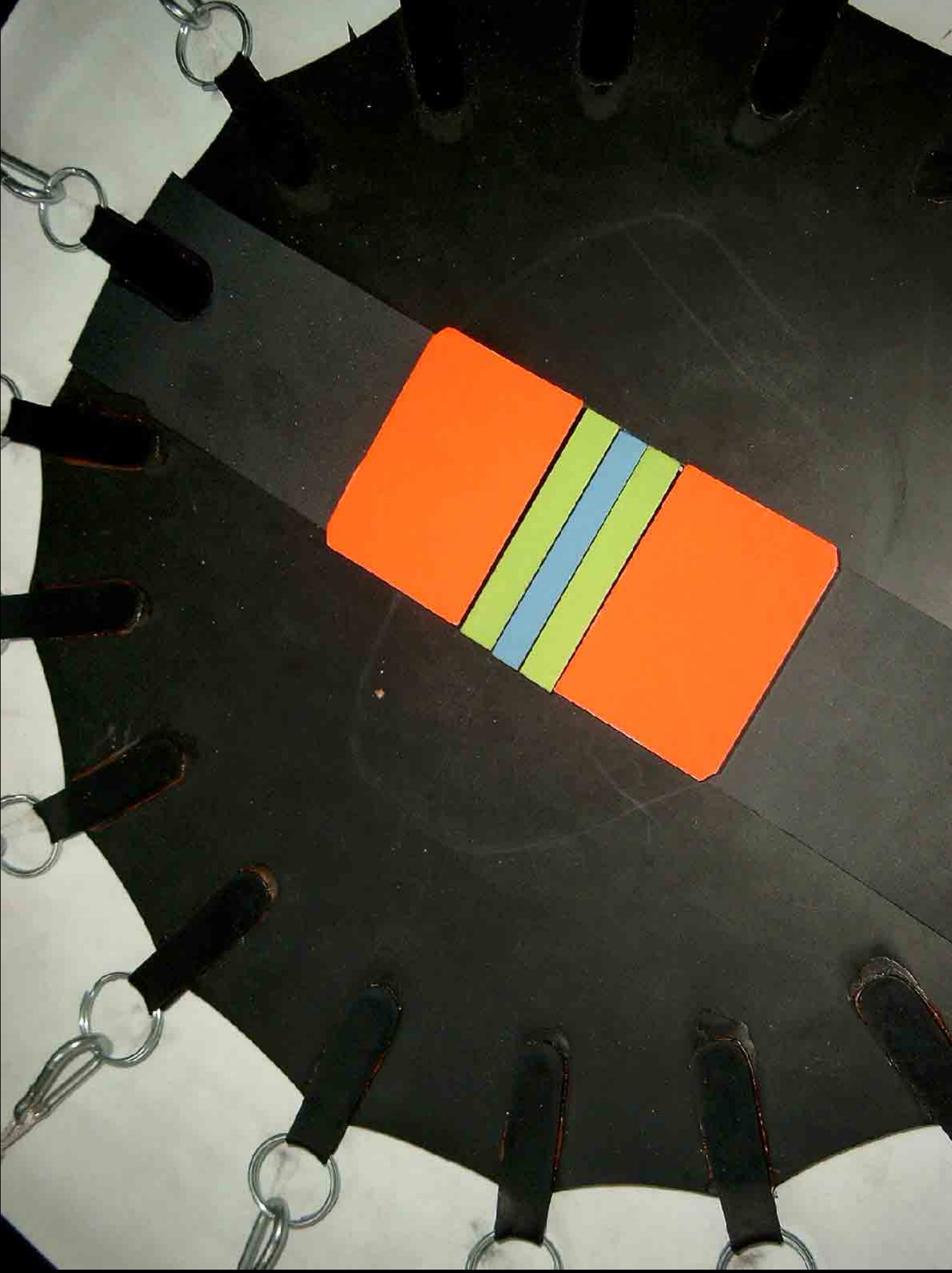


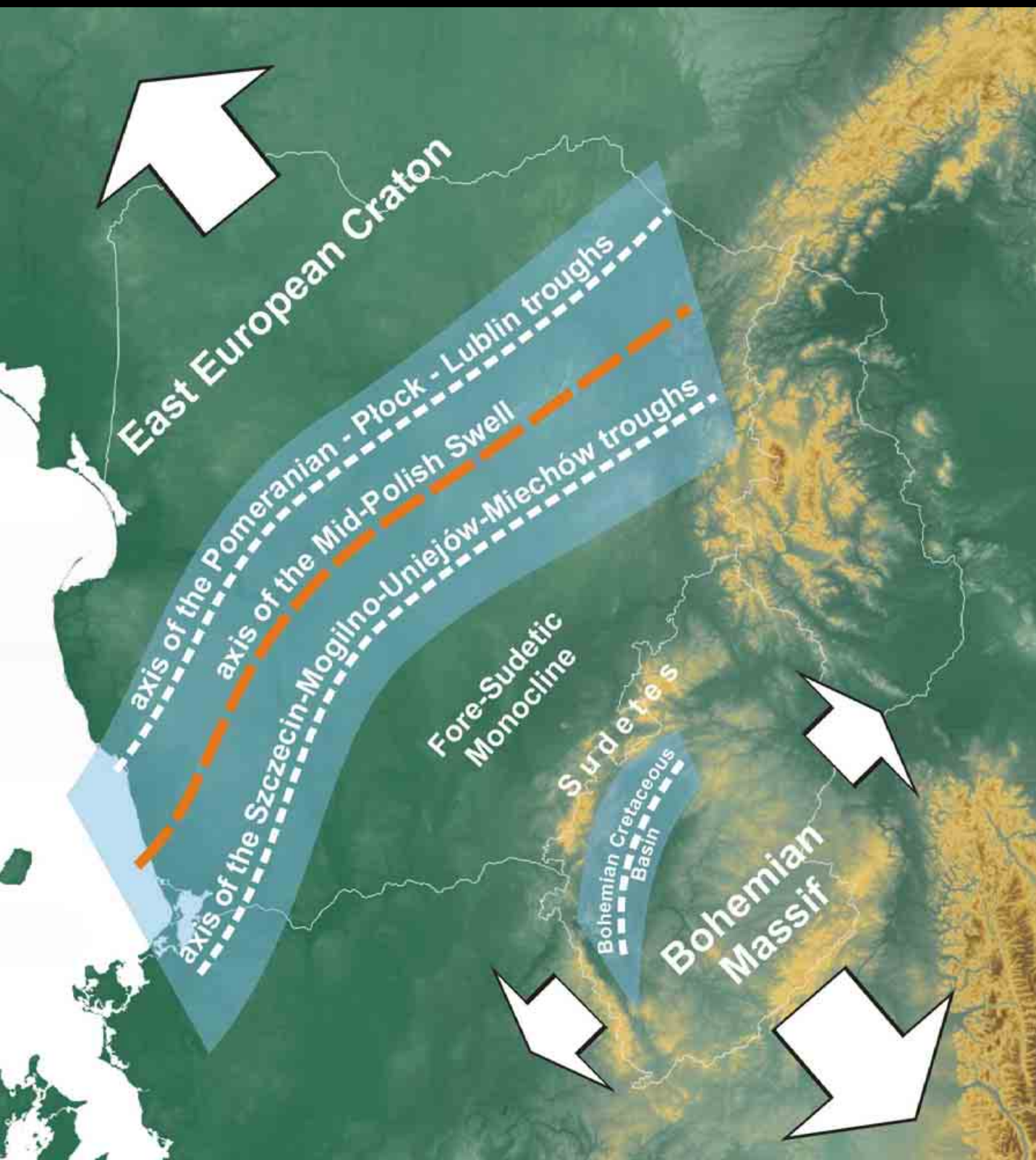






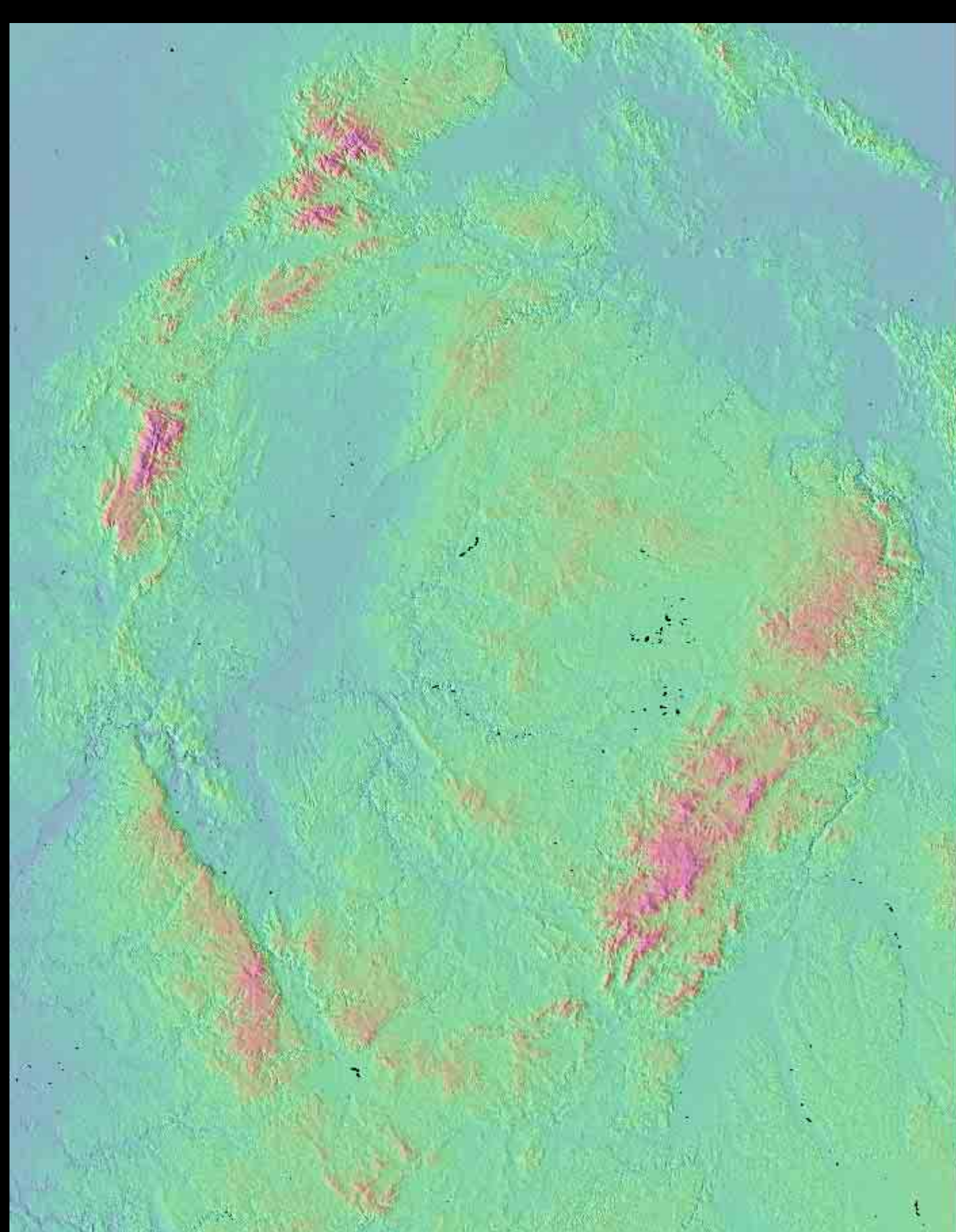






**Thank you
for your attention**

Ryftowa tektonika obrzeżenia masywu czeskiego



Weissel & Karner 1989

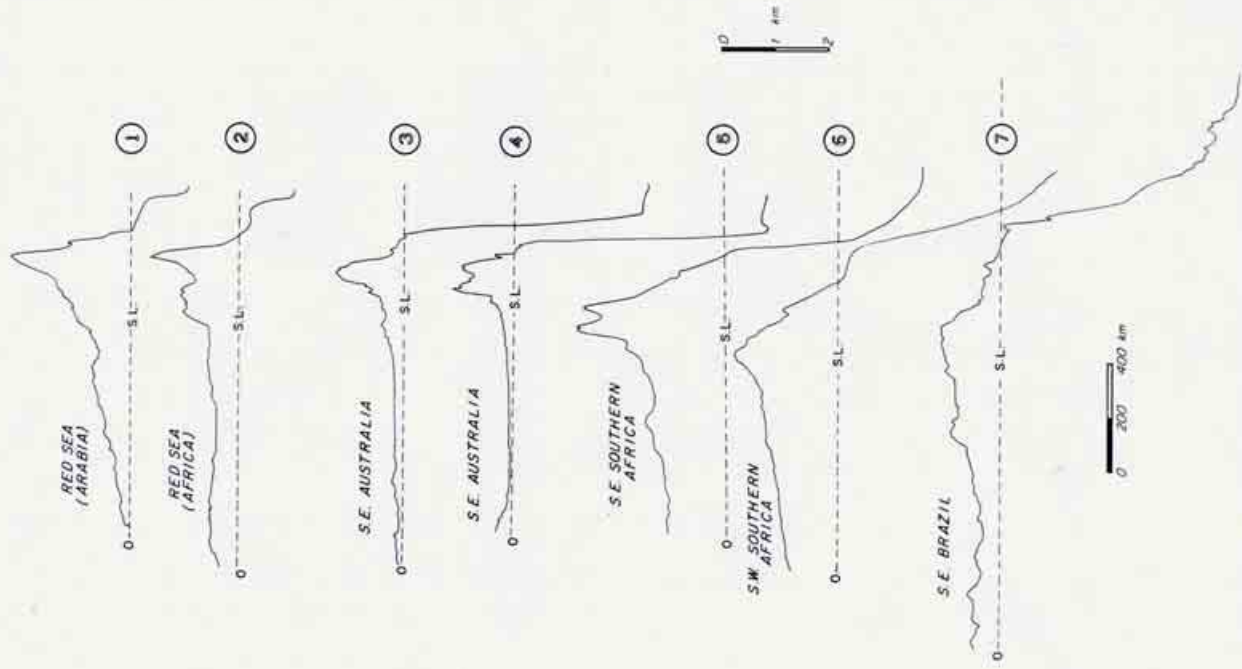
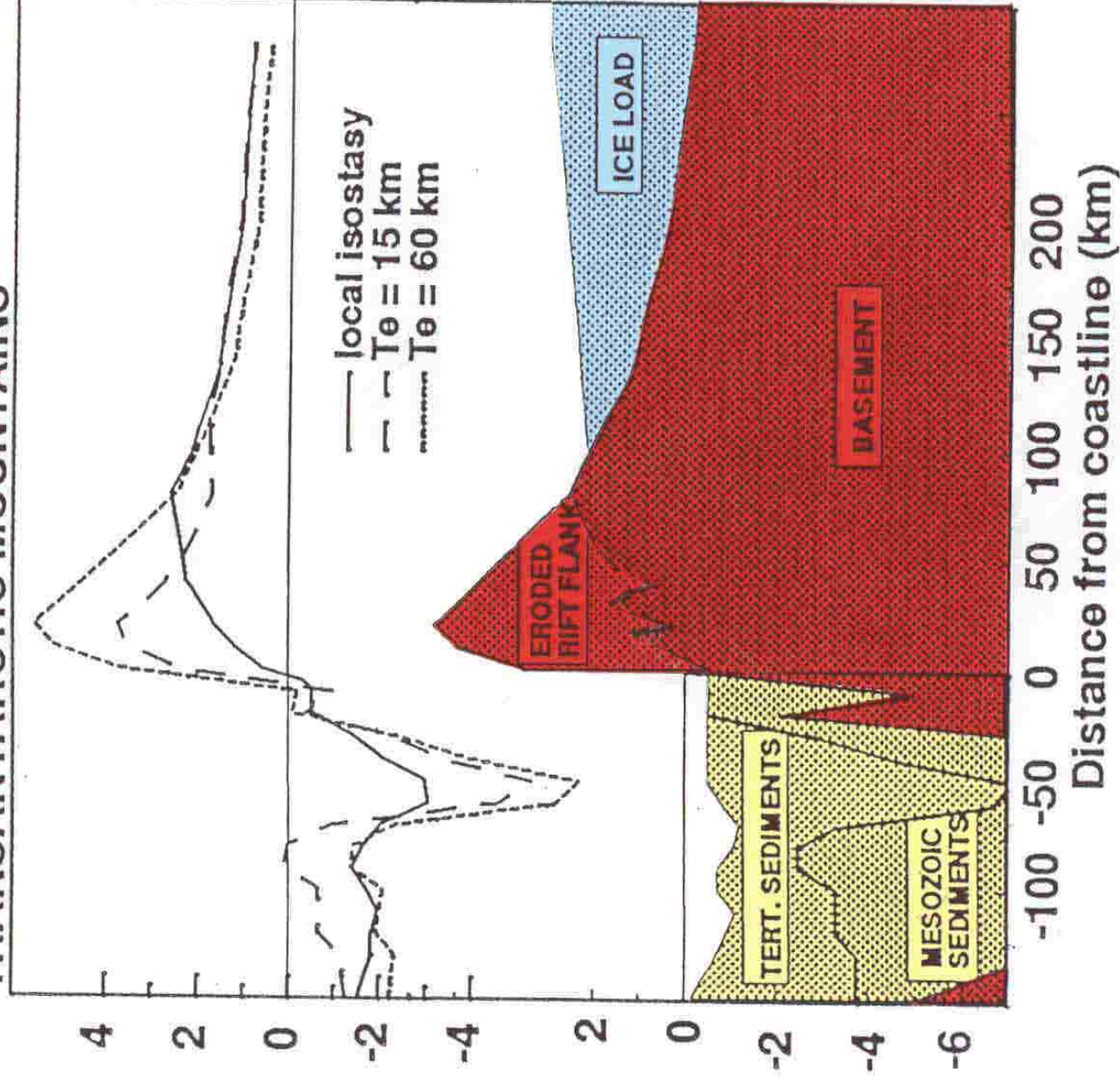
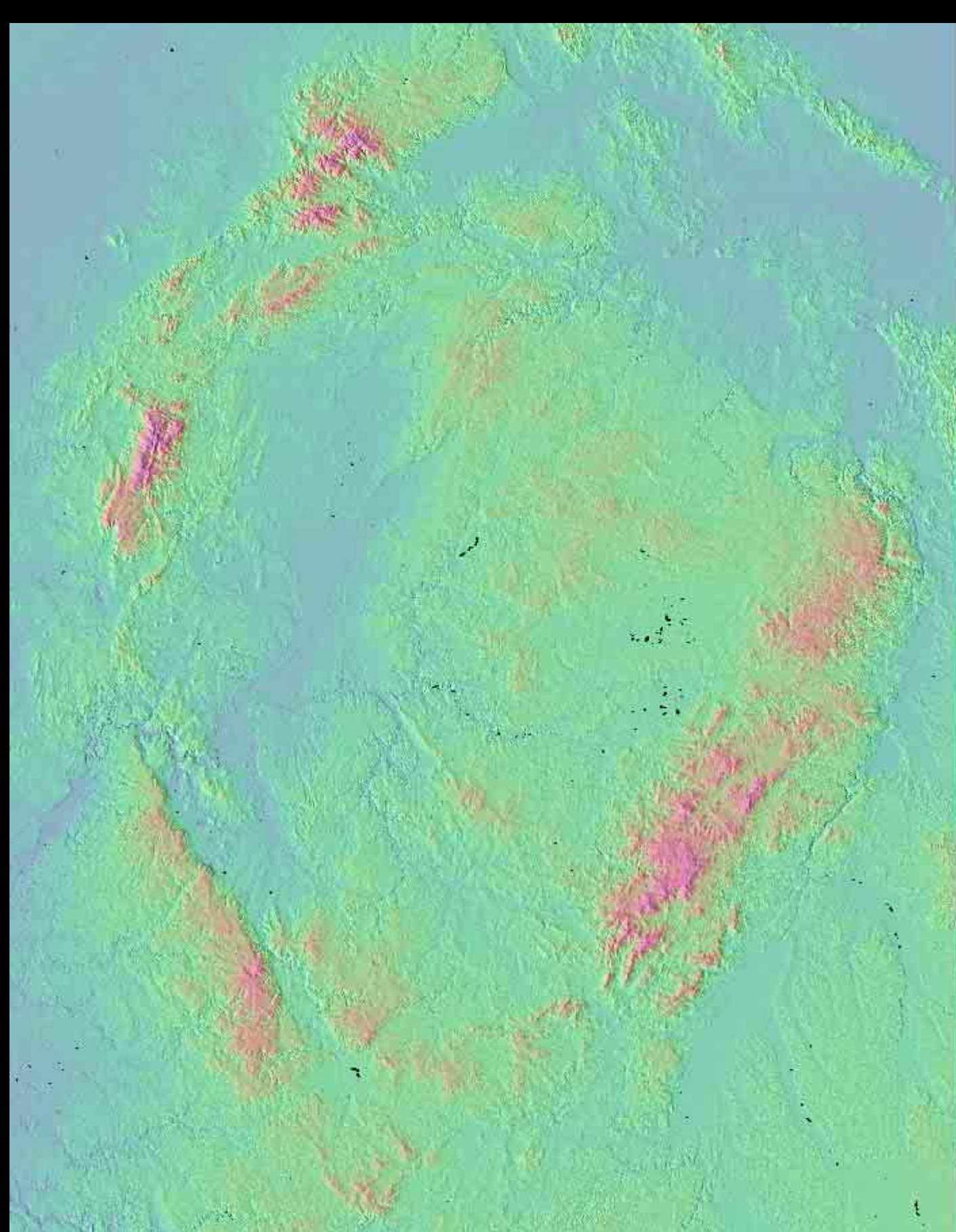


Fig. 1. Elevation profiles across selected passive margins of the Gondwana continents. These profiles were constructed from global 5 arc min $\times$ 5 arc min average elevations [National Geophysical Data Center, 1985]. Note that uplifted flanks lie adjacent to ocean basins of widely differing ages (youngest is at the top). S.L., sea level.

TRANSANTARCTIC MOUNTAINS



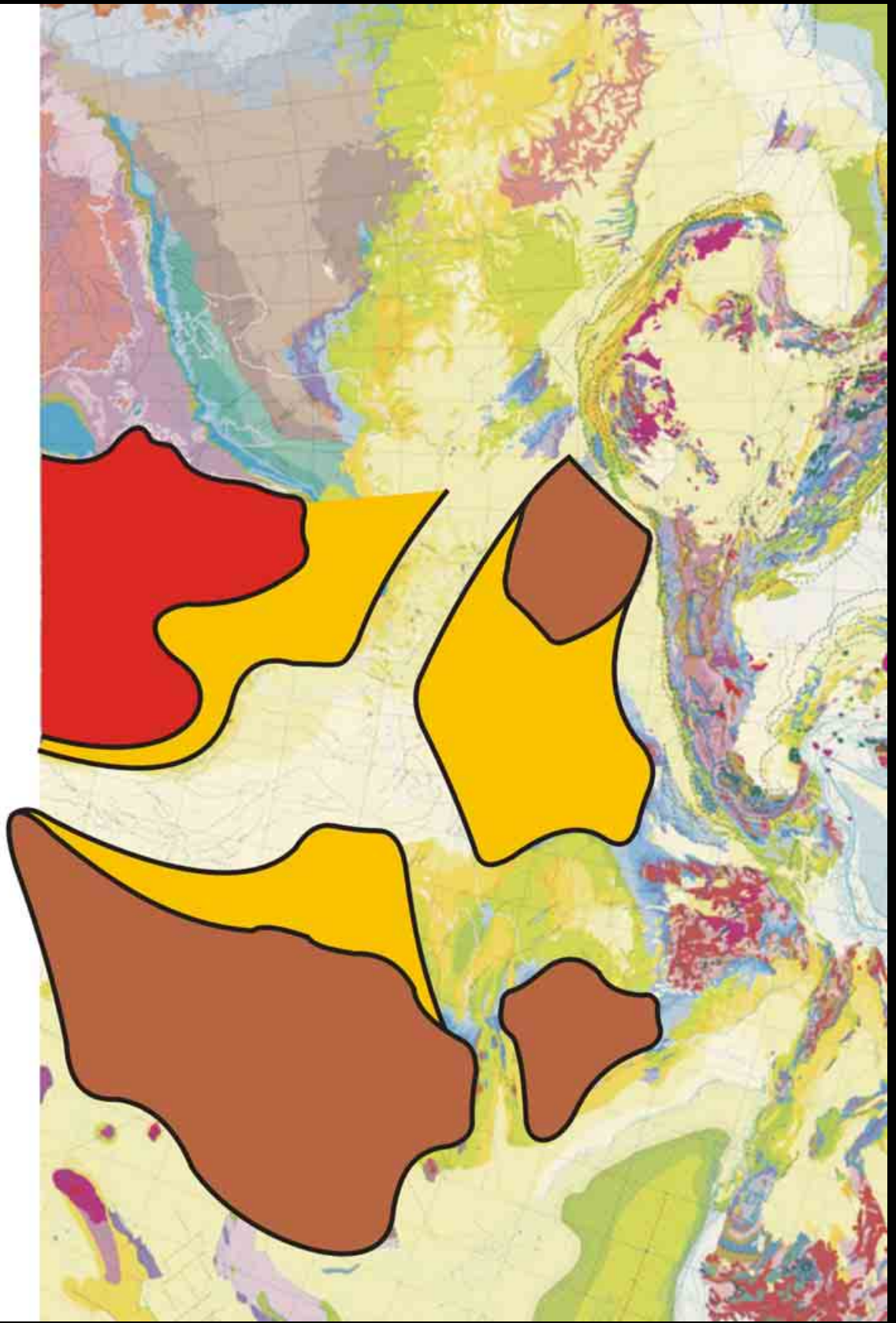


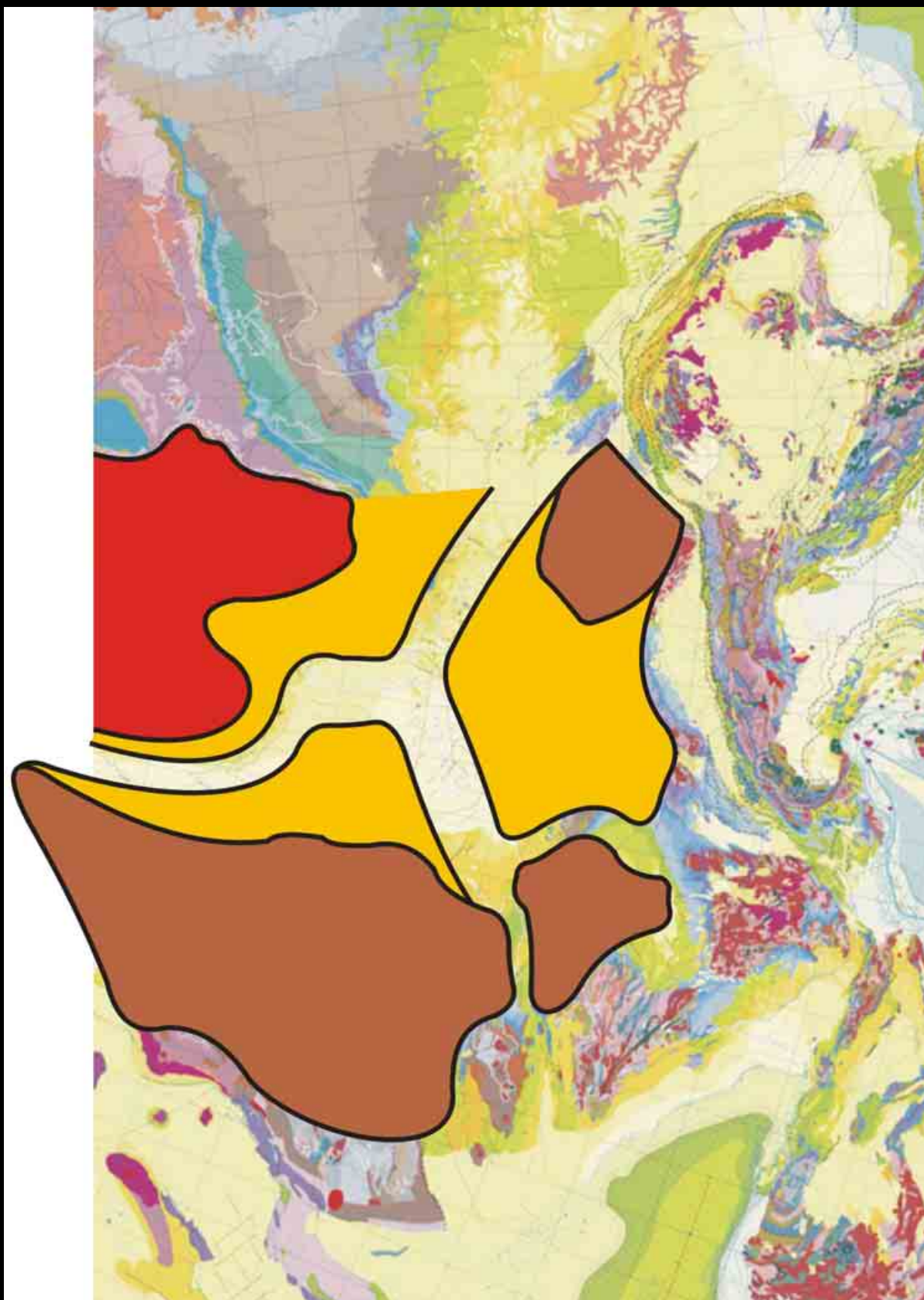


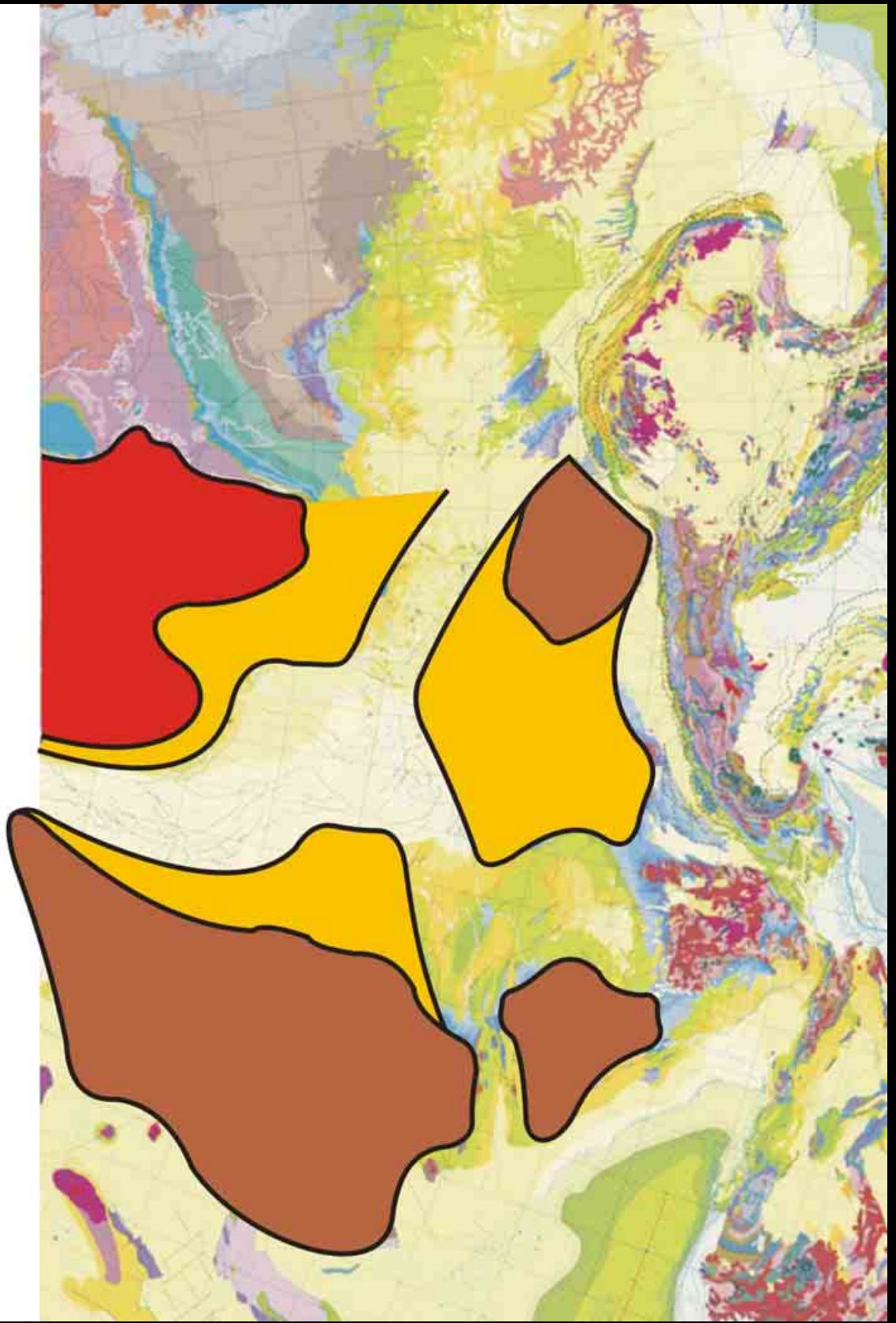
Wstępna rekonstrukcja zachodnio-europejskich basenów perykratonicznych

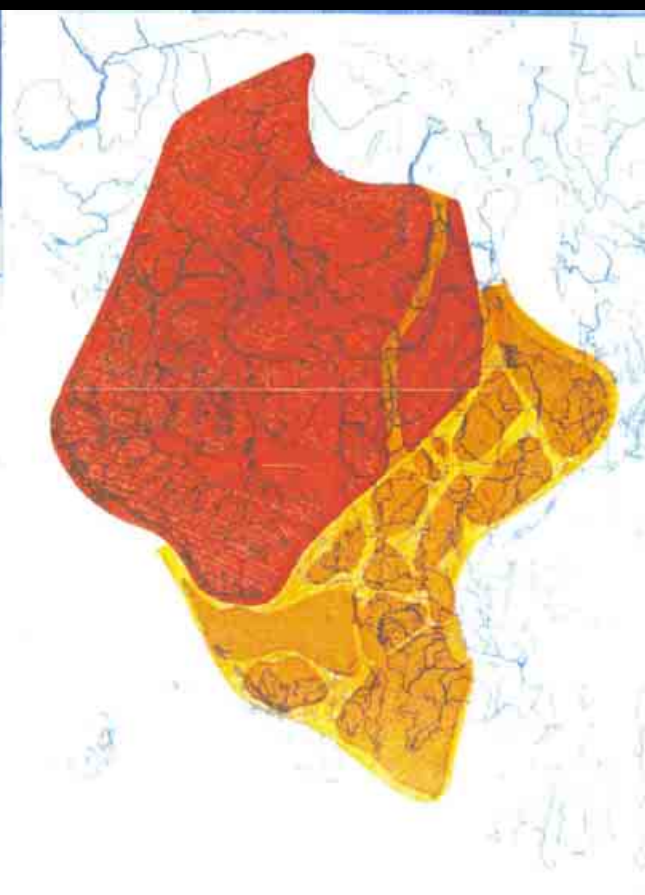
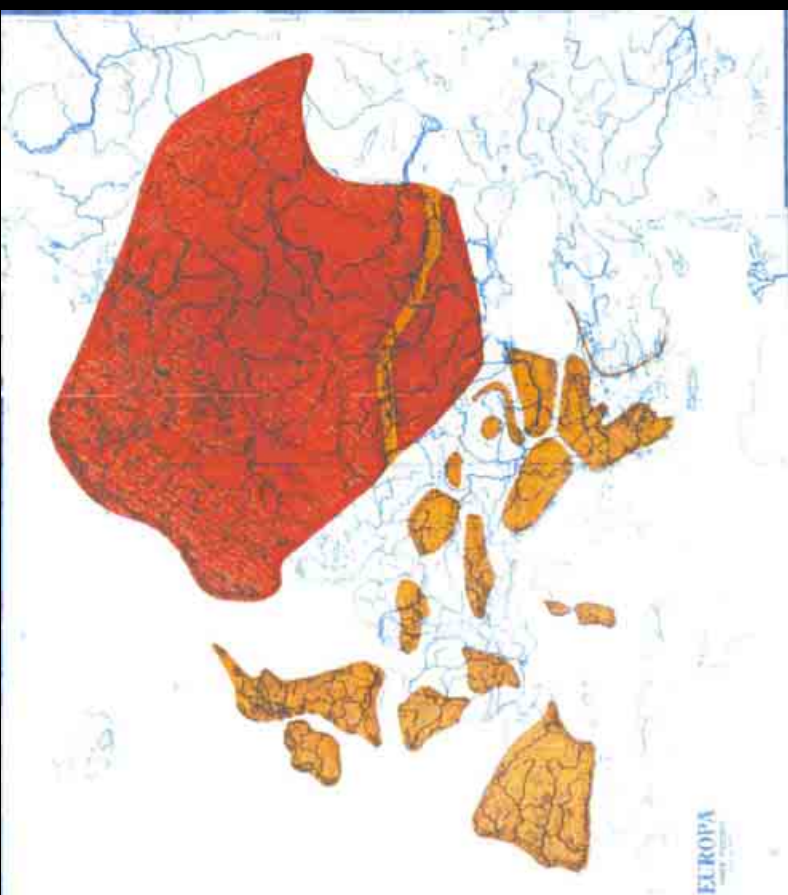


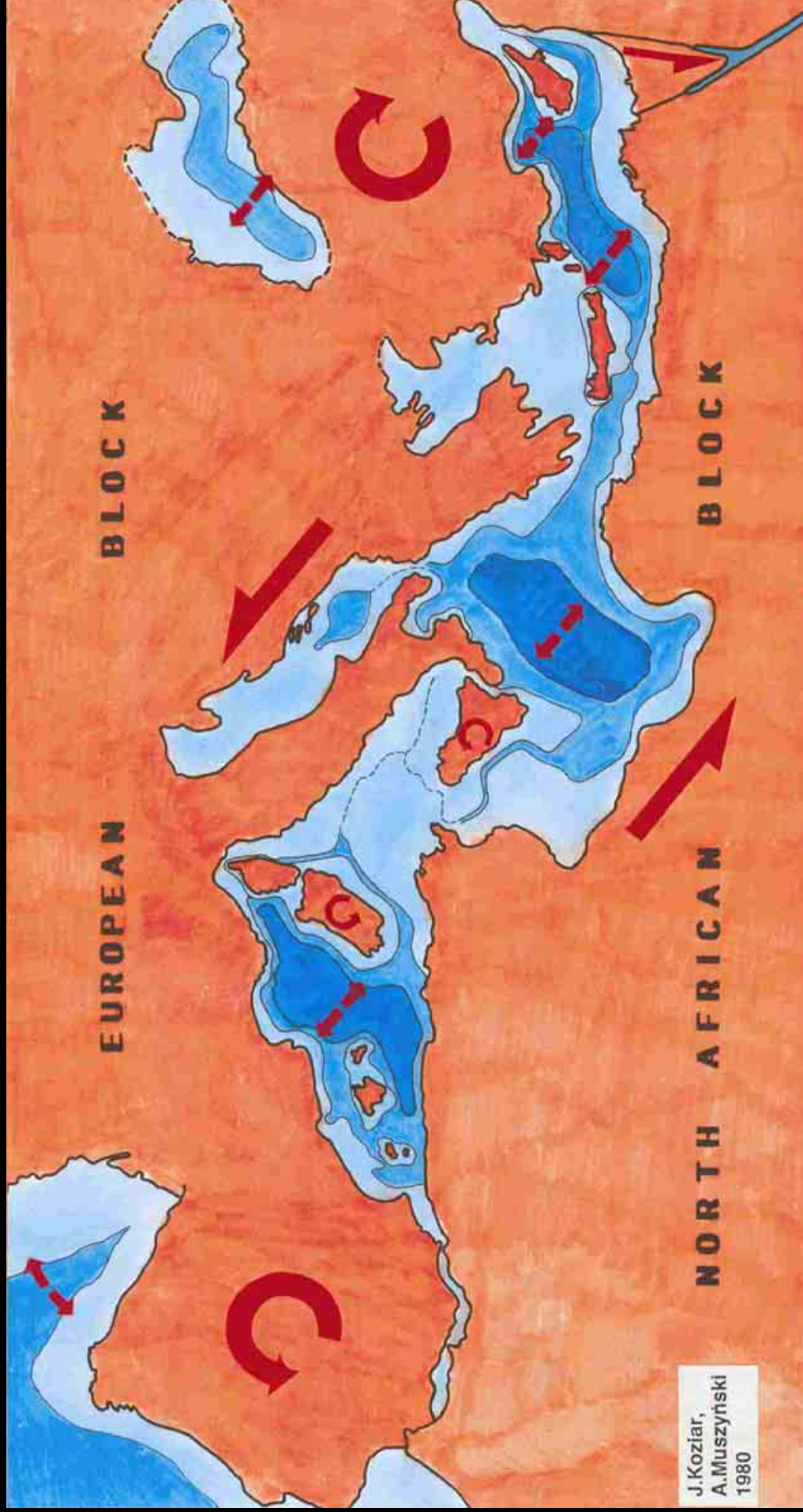








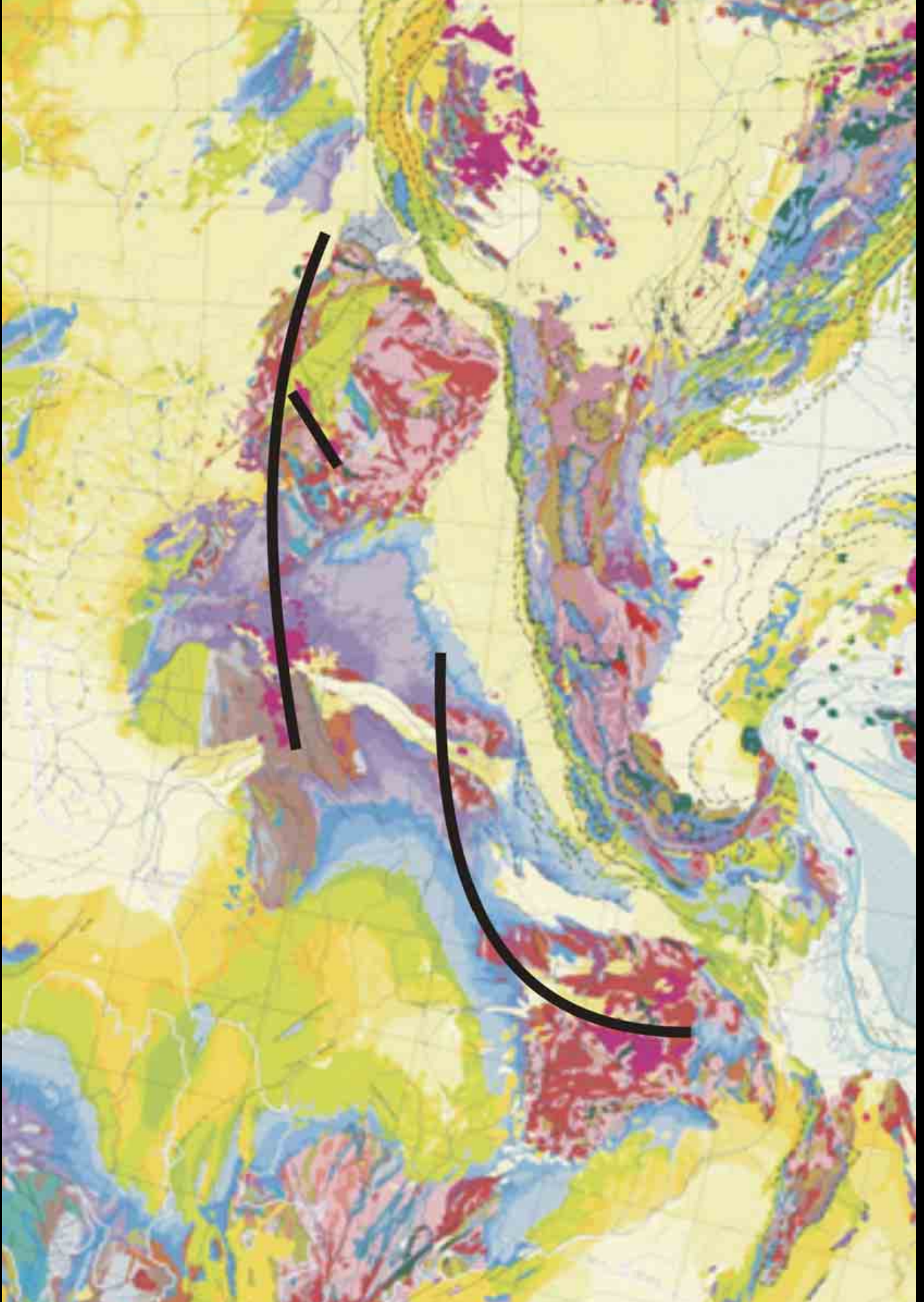




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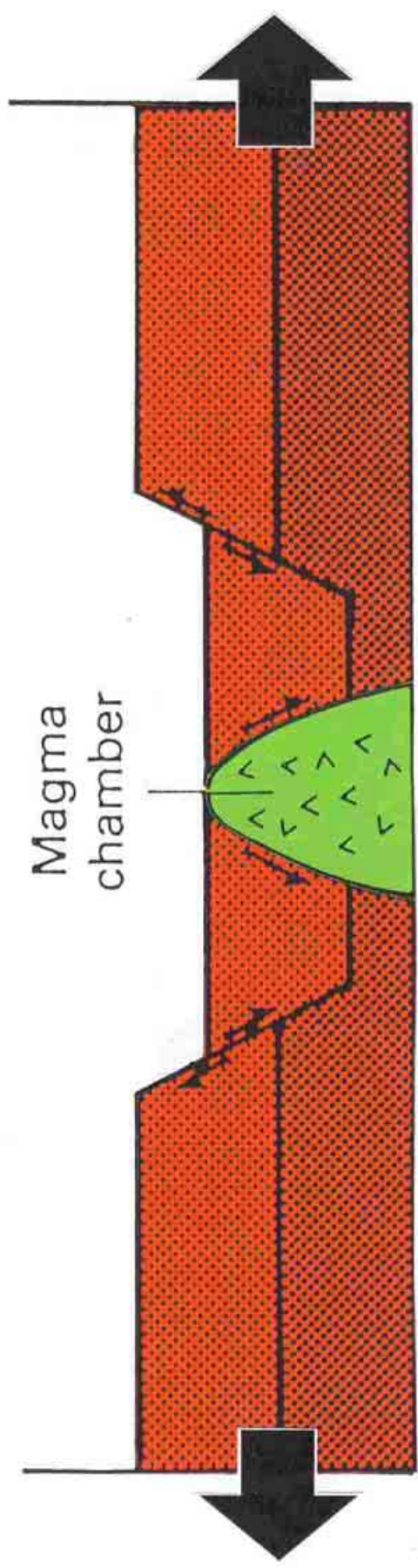
**Syn- i postoregeniczny
wulkanizm przedpola orogenu
jako wskaźnik tensji**





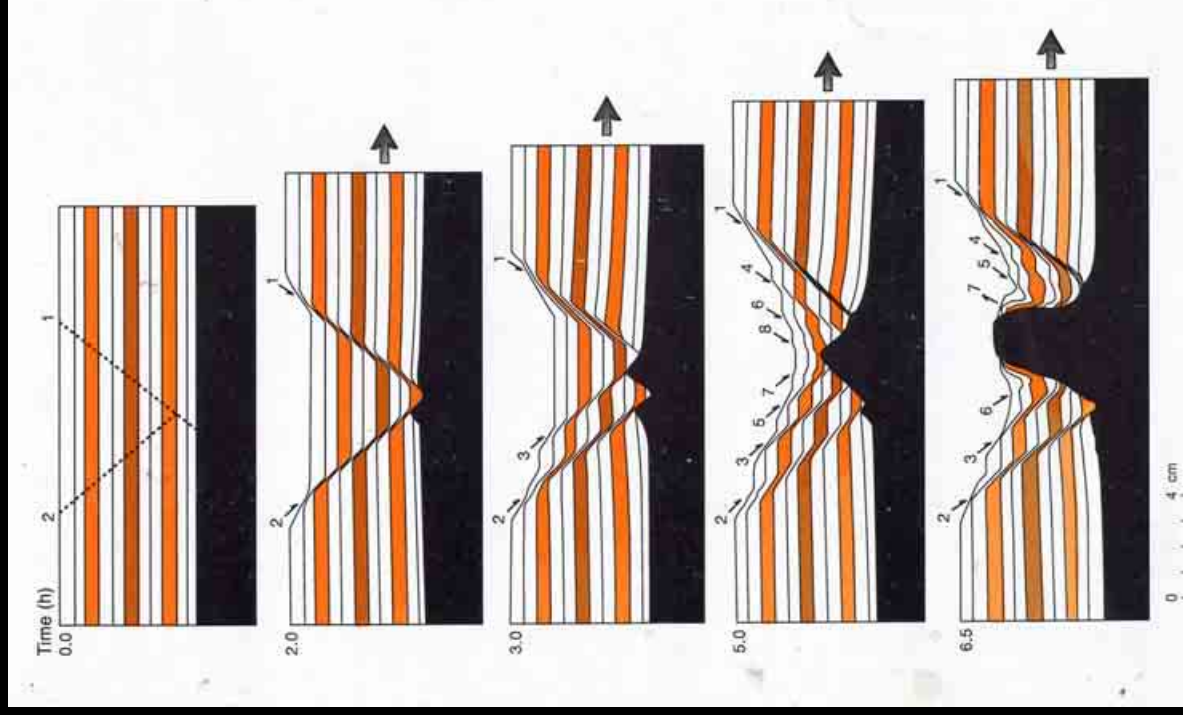




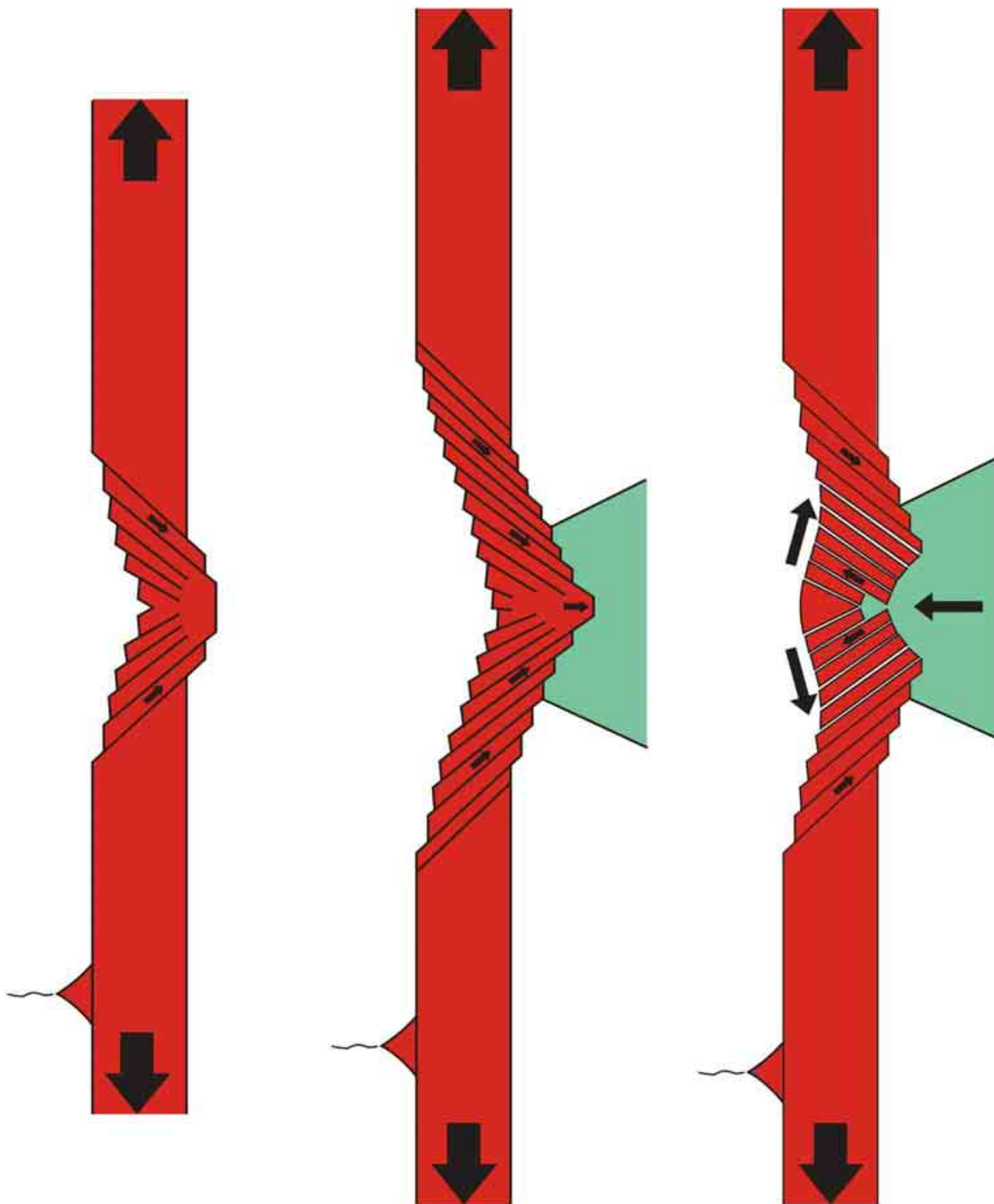


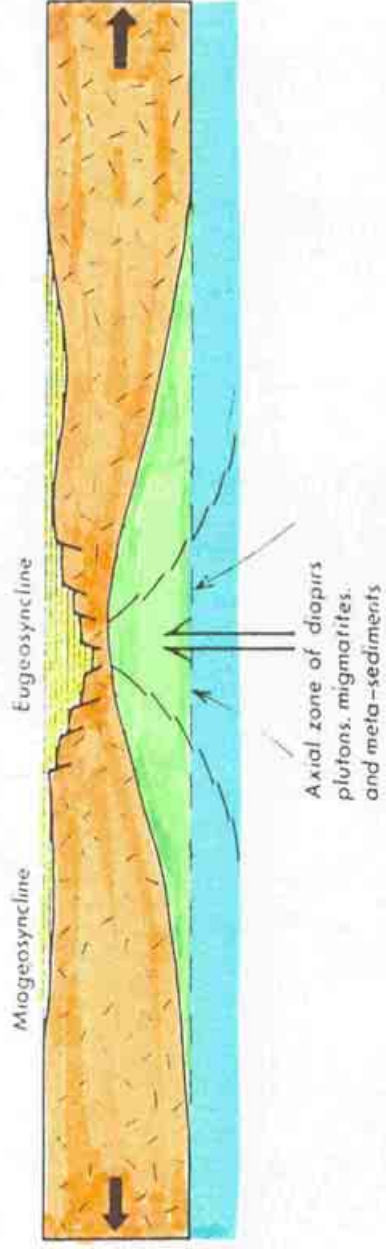
Magma
chamber

Regional extension as a geologic trigger for diapirism

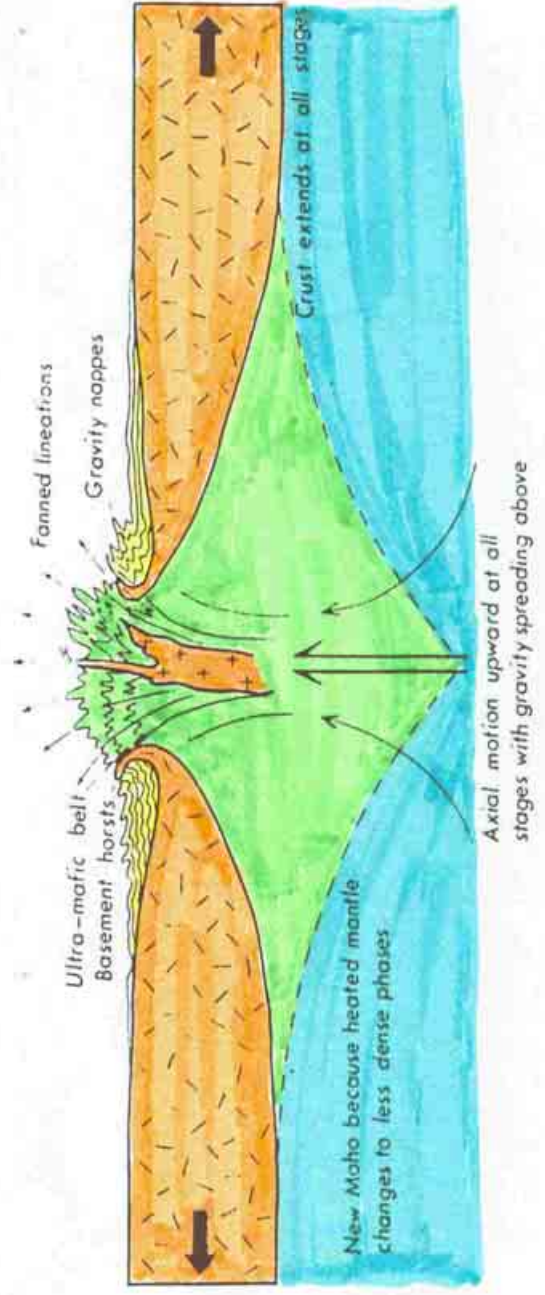


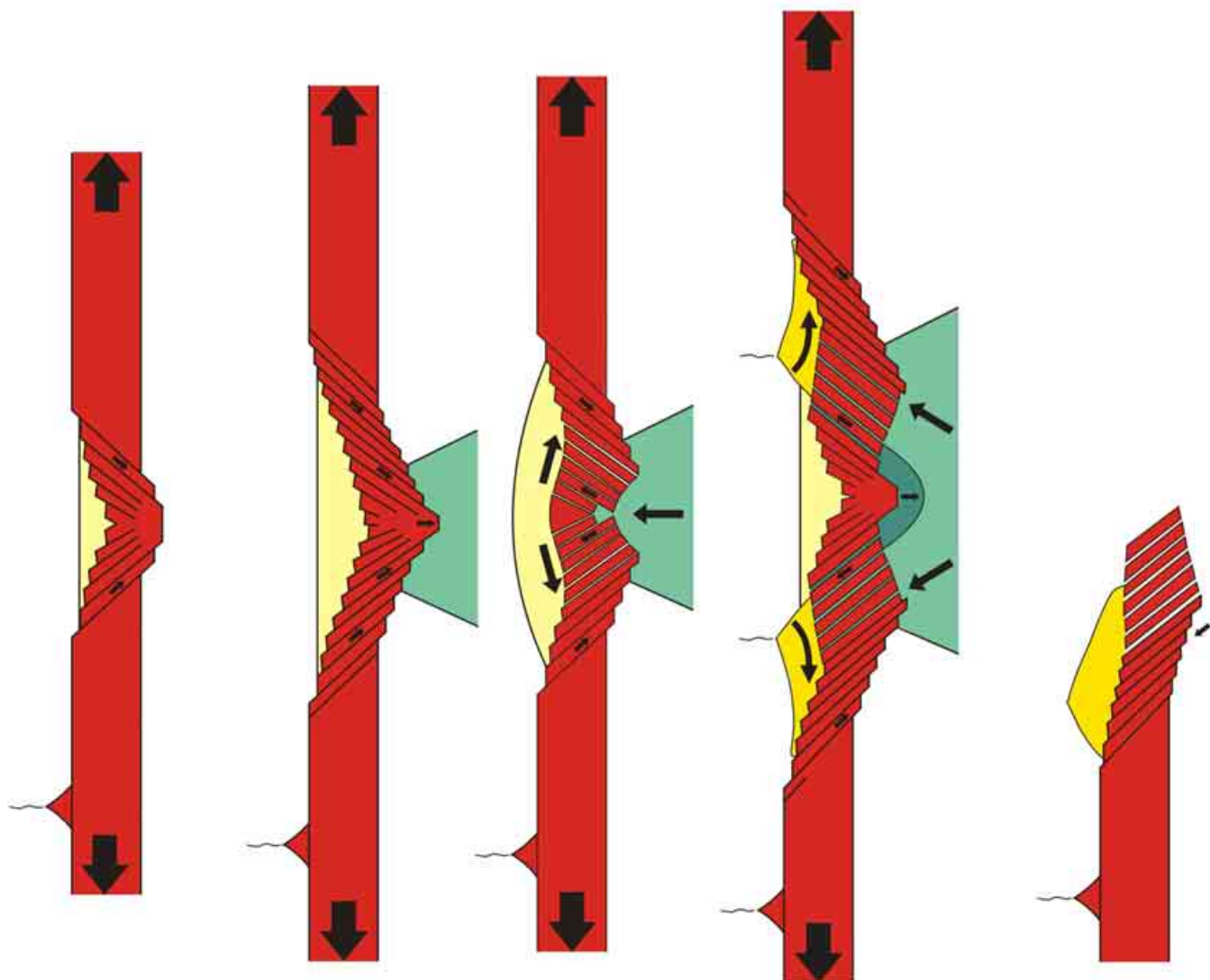
Jackson
&
Vendeville
1994





Carey 1976

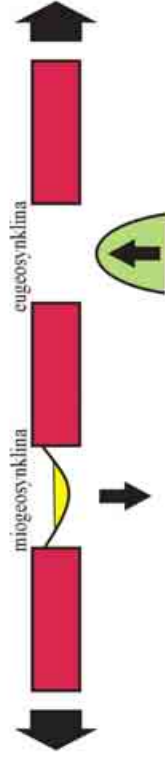




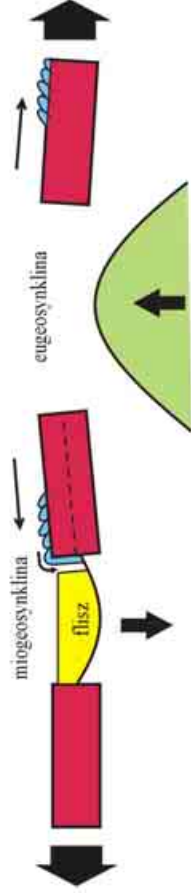
a.



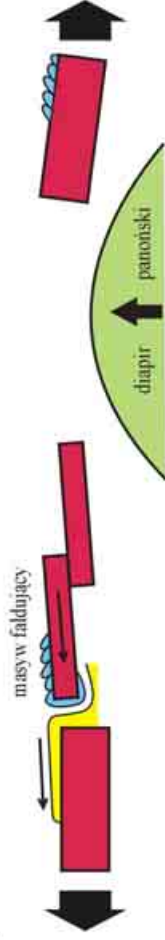
b.



c.



d.



e.

