# Abbildungen zur Vorlesung „Historische Geologie“ von Reinhold Leinfelder, LMU

## Teil 3: Altpaläozoikum (Kambrium, Ordovizium)

## (incl. Wiederholung globale Karten Präkambrium)

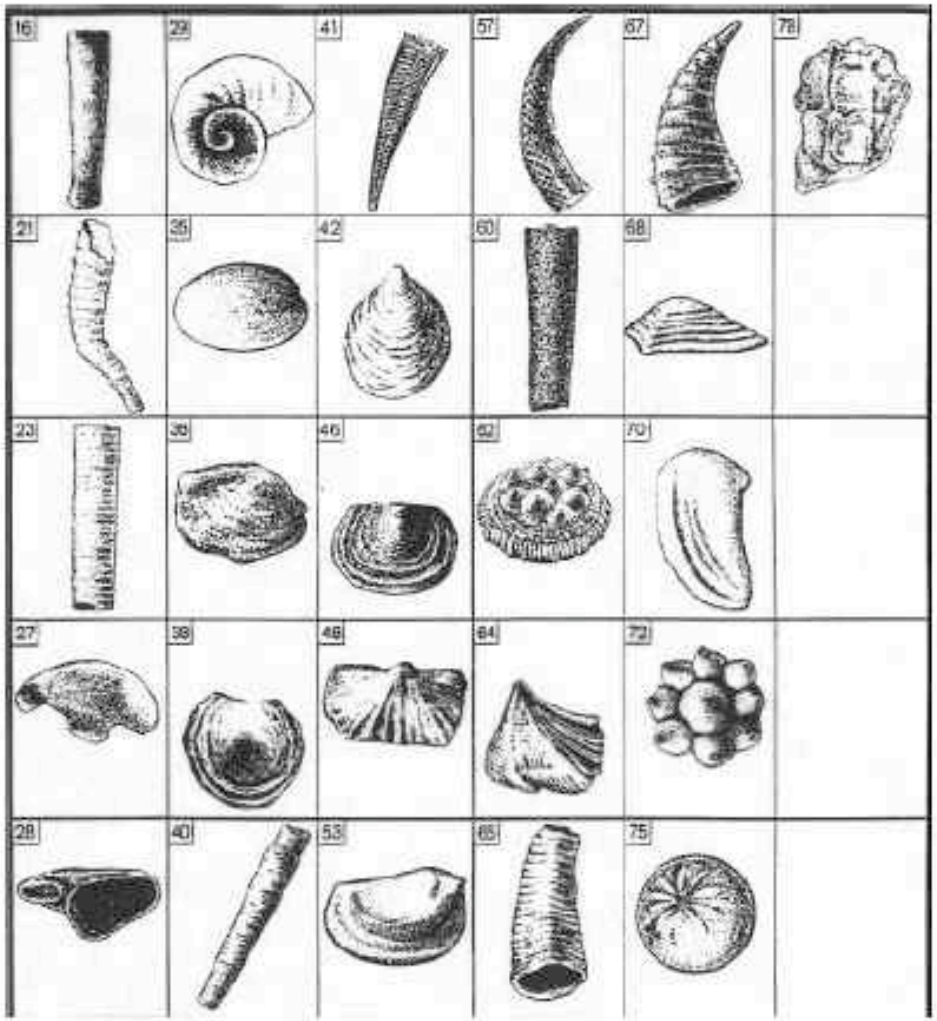
Diese Abbildungen ergänzen das Stichwortskript sowie das Schwarz-Weiß-Abbildungsskript

Zuletzt geändert: 15.5.2003

# Unterkambrische Small Shelly Faunas

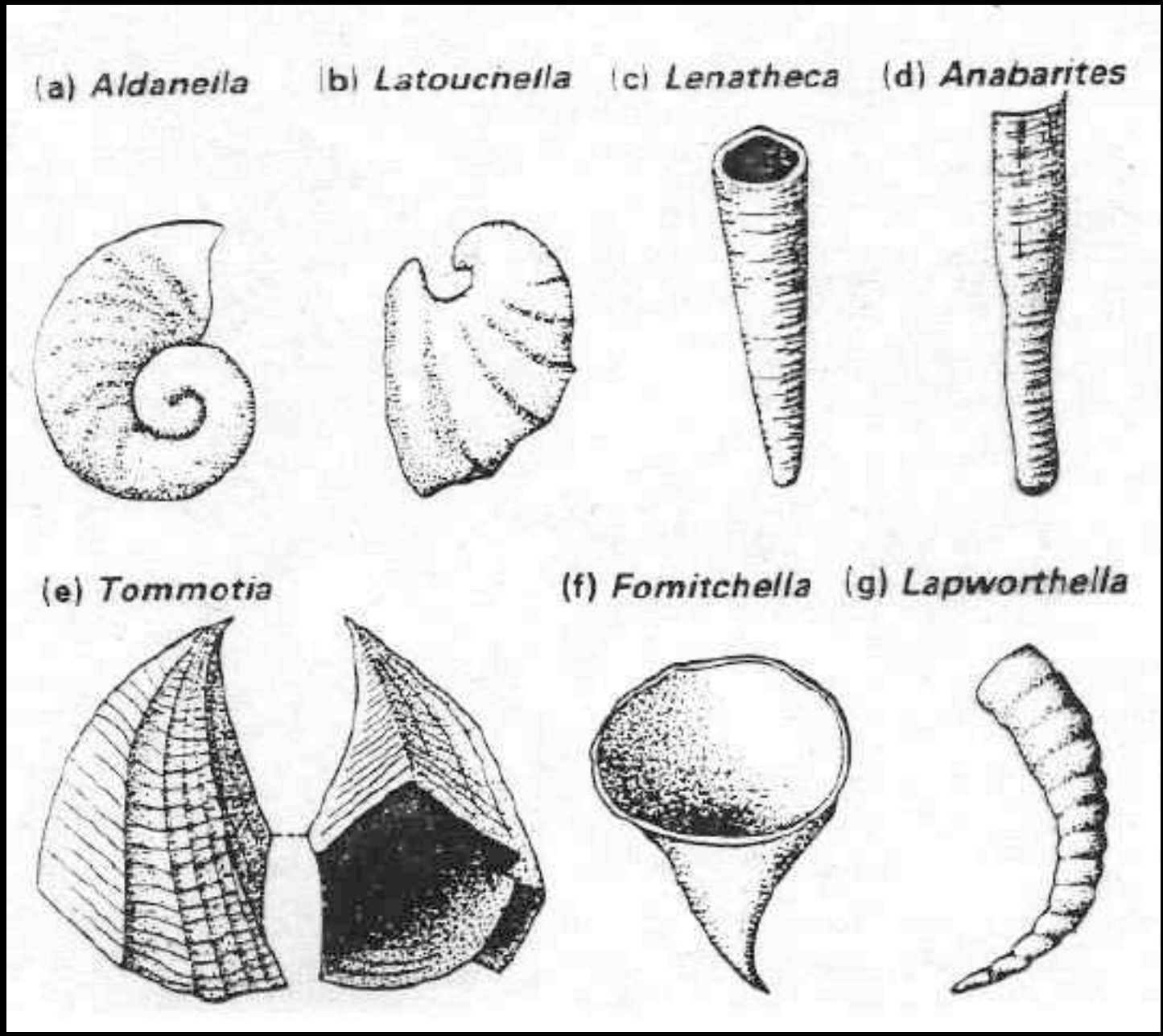
Elemente:

- Kalkalgen
- agglutinierende Forams?
- Schwämme
  - Spiculae
  - Archaeocyathiden
- Wurm-Röhren
- Mollusken:
  - Monoplacophoren
  - Hyolithen
  - Rostroconchen?
  - Bivalven?
- Brachiopoden:
  - Inarticulate
- Conodontomorpha
- Problematika



Material: Karbonat, Phosphat, Silikat

(aus Skript Mosbrugger)

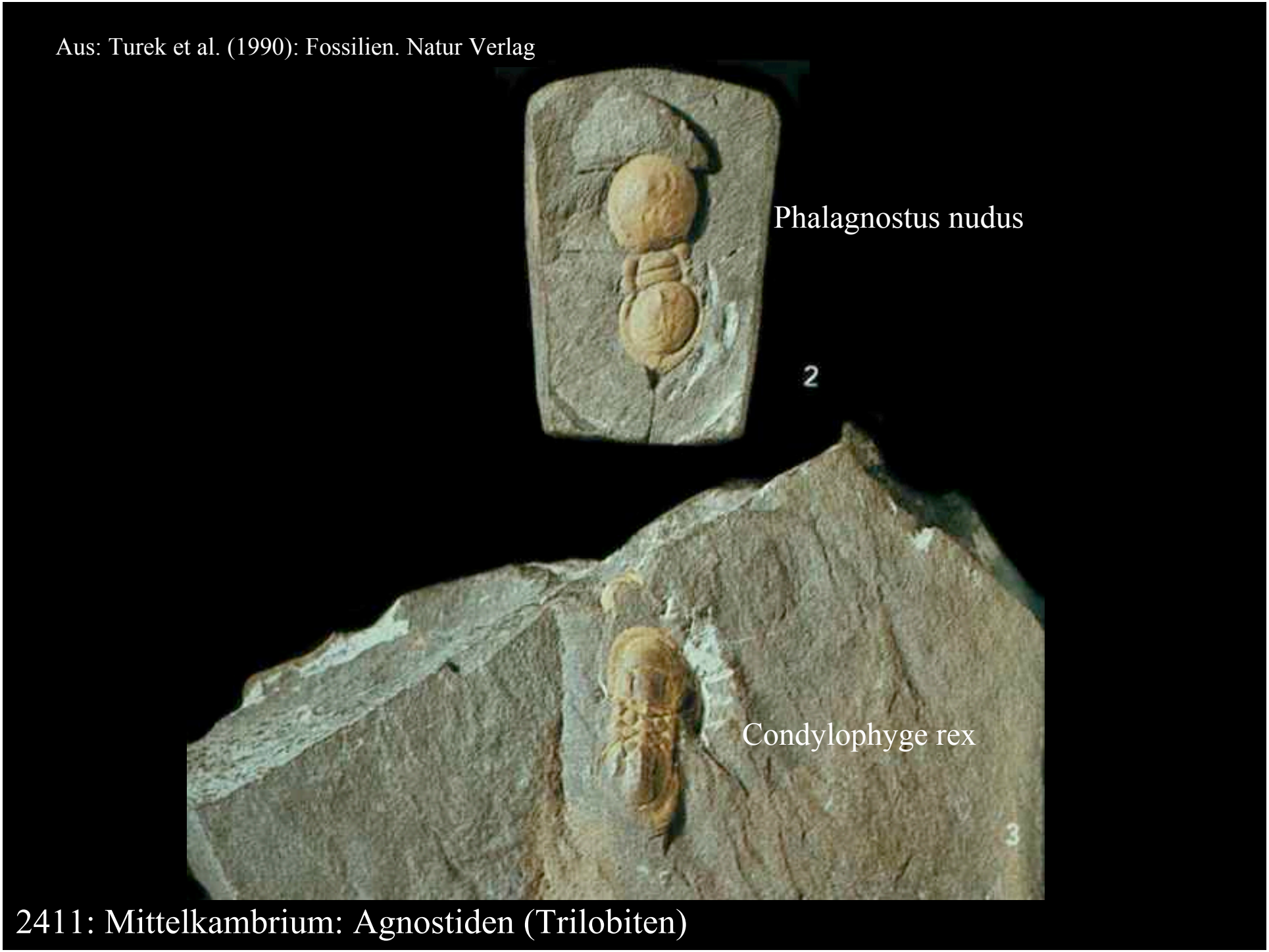

(a) Aldanella
(b) Latouchella
(c) Lenatheca
(d) Anabarites
(e) Tommotia
(f) Fomitchella
(g) Lapworthella

Aus: Turek et al. (1990): Fossilien. Natur Verlag



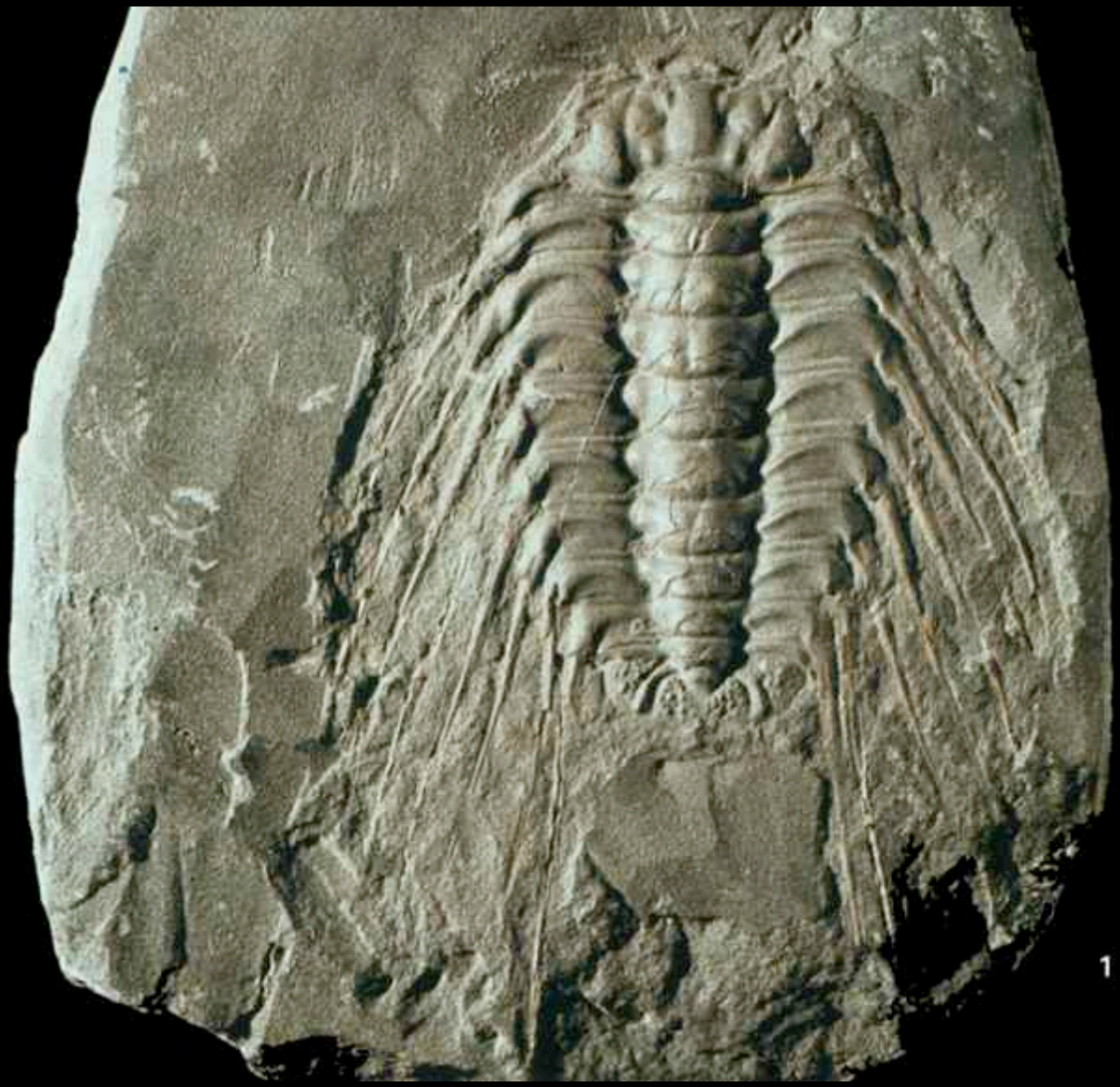

2410 Trilobiten des M.-Kambriums (Conocoryphe sulzeri)

Aus: Turek et al. (1990): Fossilien. Natur Verlag




2411: Mittelkambrium: Agnostiden (Trilobiten)

Aus: Turek et al. (1990): Fossilien. Natur Verlag




2412: Odontopleuridae: Selenopeltis buchi (Trilobit), Oberes Ordovizium

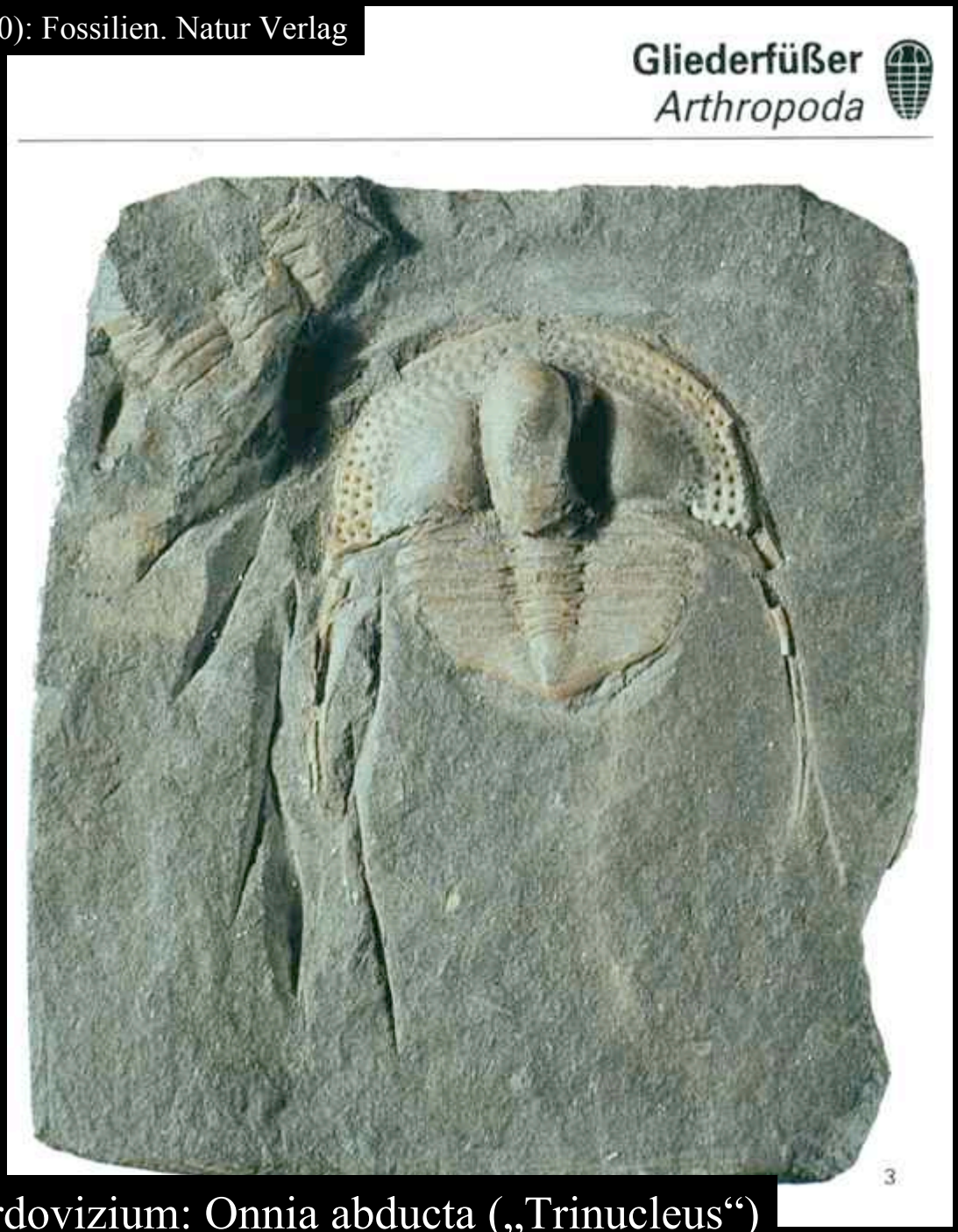
Aus: Turek et al. (1990): Fossilien. Natur Verlag

Pricyclopyge prisca


Ectillaenus parabolinus


# 2413: Ptychopariide Trilobiten des M. Ordoviziums

Aus: Turek et al. (1990): Fossilien. Natur Verlag




2414: Mittleres Ordovizium: Onnia abducta („Trinucleus“)

Aus: Turek et al. (1990): Fossilien. Natur Verlag




Clitambonites squamata

Porambonites aequirostata




Clitambonites

2395: Brachiopoden des mittleren Ordoviziums: Orthiden

Aus: Turek et al. (1990): Fossilien. Natur Verlag



Lobocyclendoceras

Dideroceras

Cameroceras

2404_ Endocerate Nautiliden des Ordoviziums

Aus: Turek et al. (1990): Fossilien. Natur Verlag



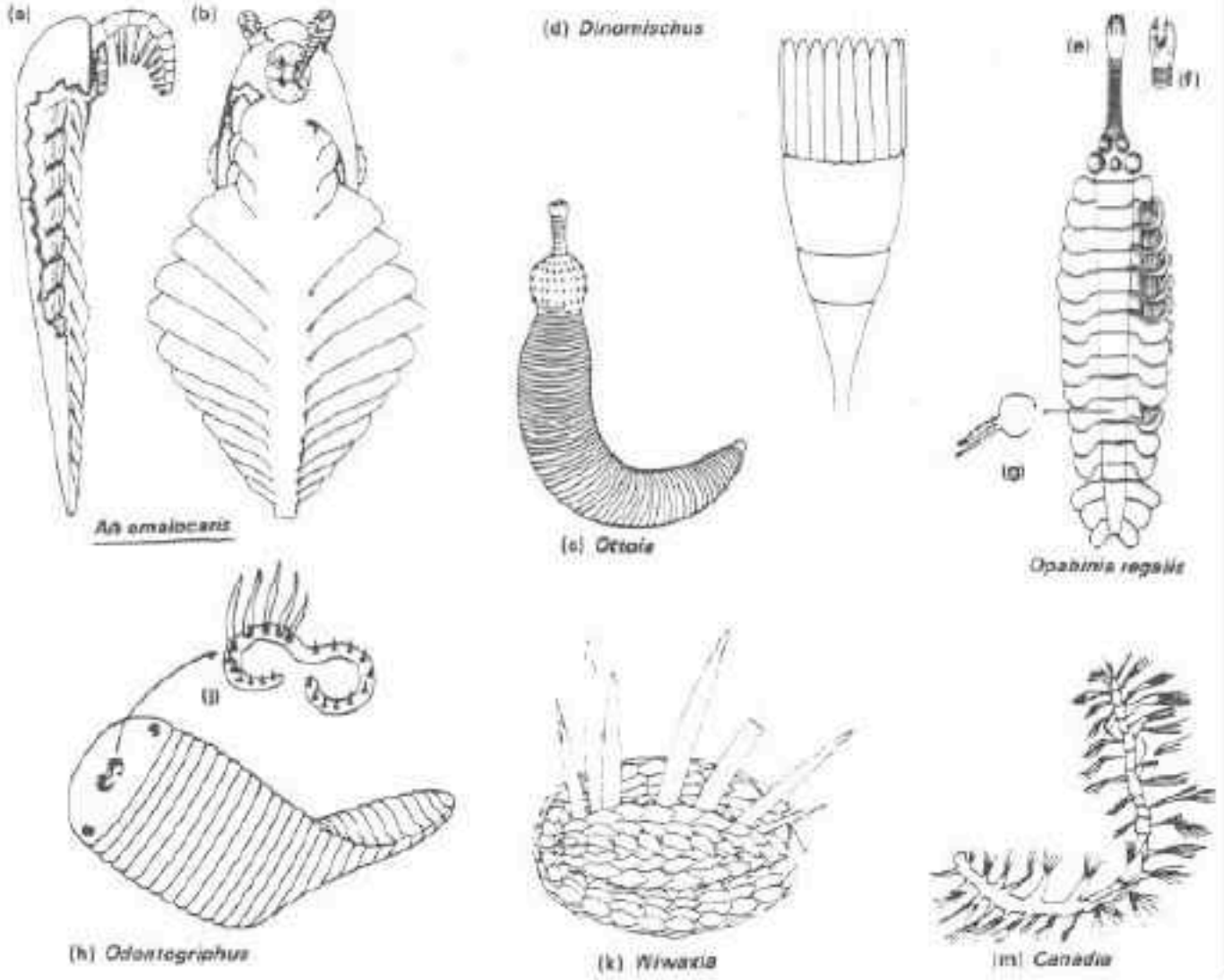
Rastrites

Didymograptus

2428: Graptolithen des Ordoviziums

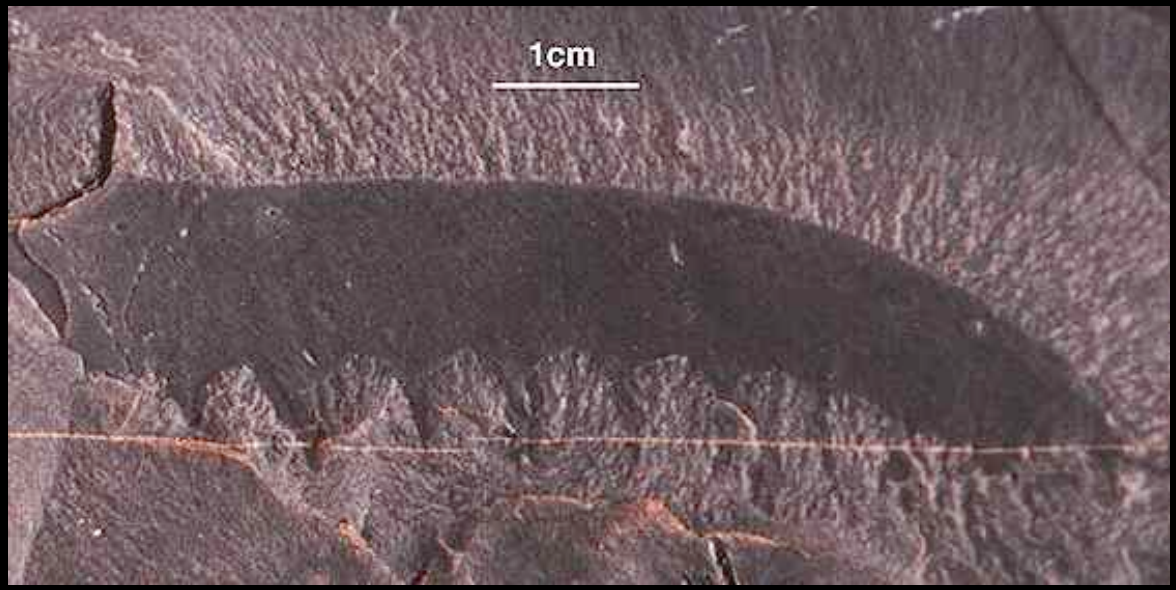
# Burgess

- Priapuliden
- Anneliden
- Arthropoden:
  - Trilobiten
  - Krebse
  - Arachniden
- Echinodermen
- Problematica

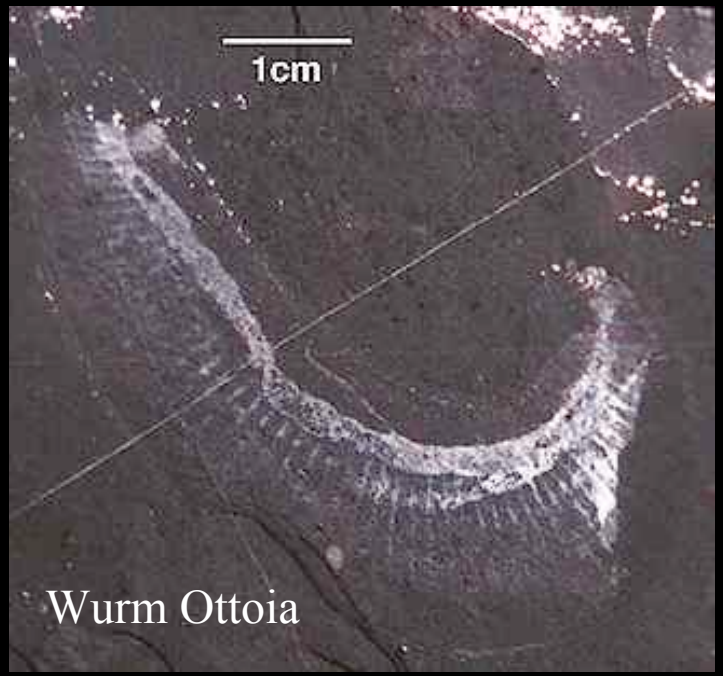



Aus Skript Mosbrugger


Marella splendens

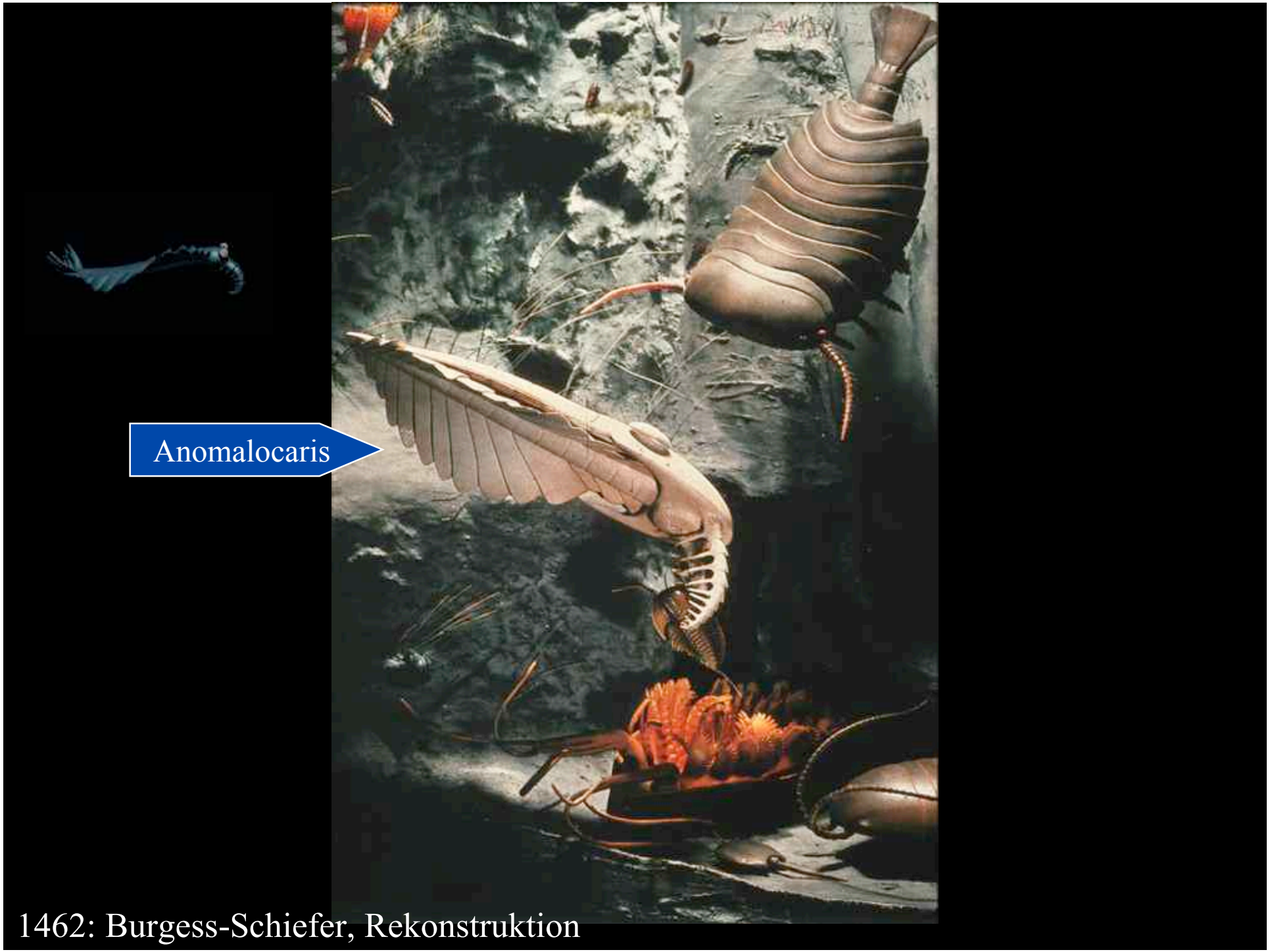



Anomalocaris-Zange

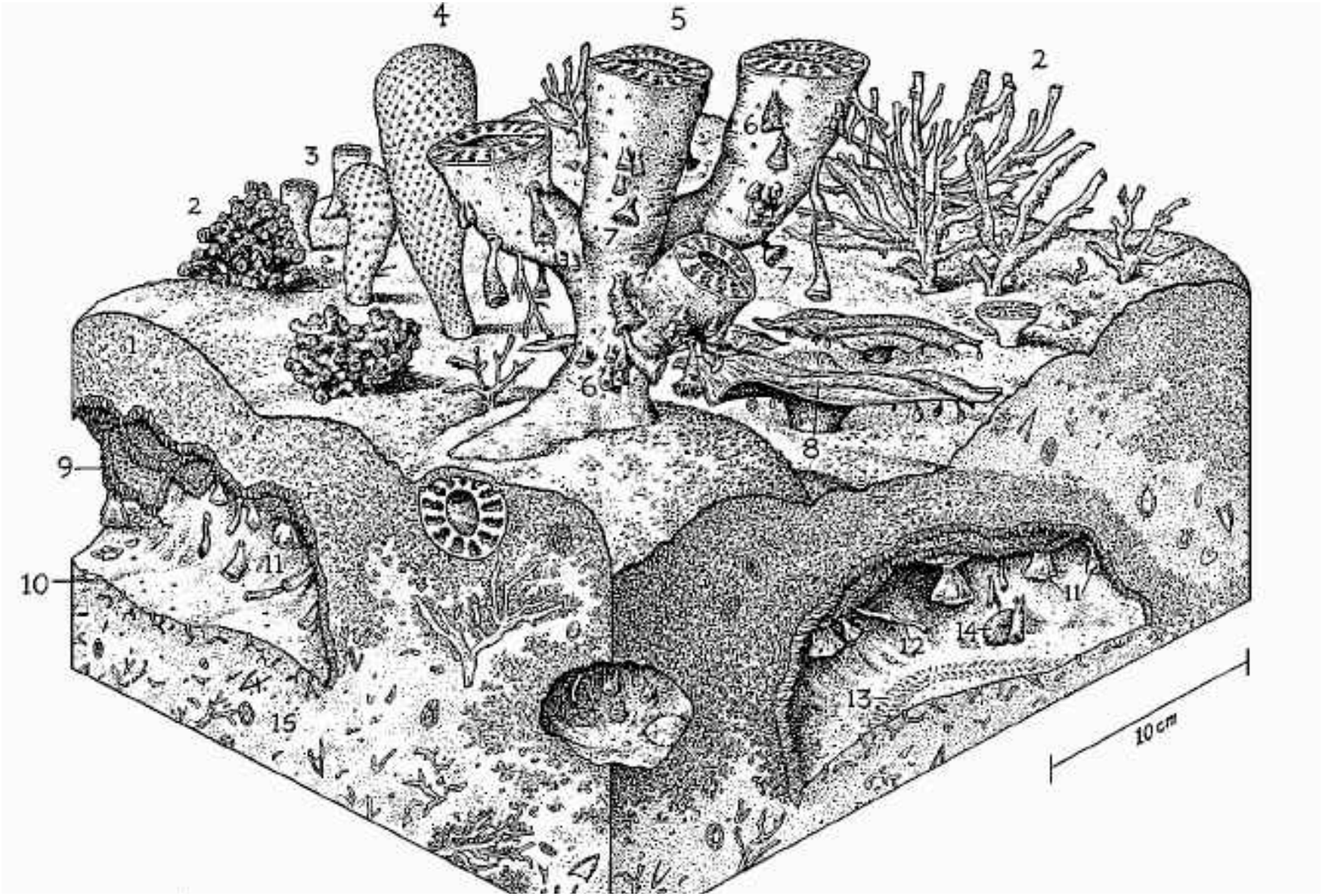



# Burgess-Shale-Fossilien

http://www.geo.ucalgary.ca/~macrae/Burgess_Shale/

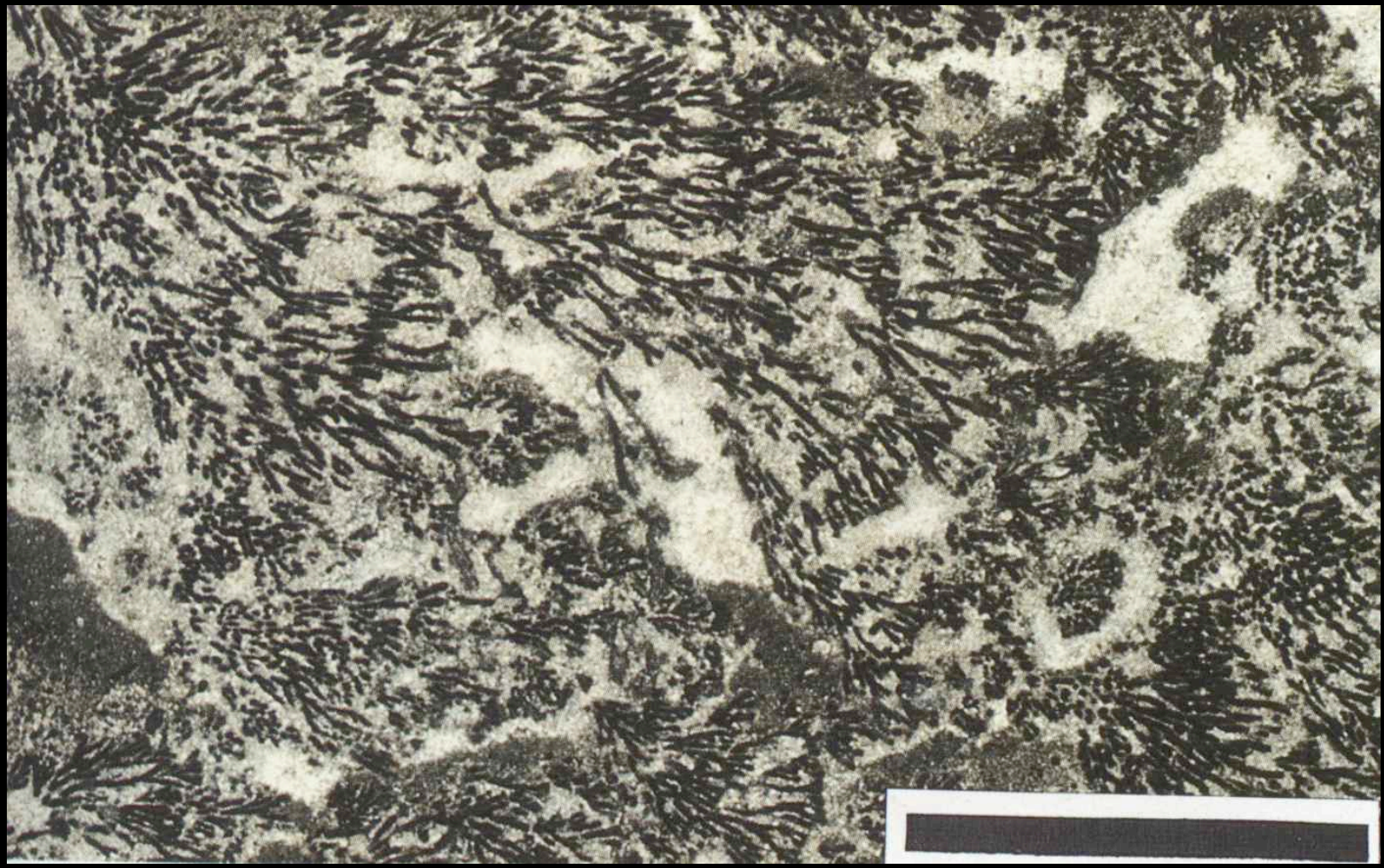



1462: Burgess-Schiefer, Rekonstruktion

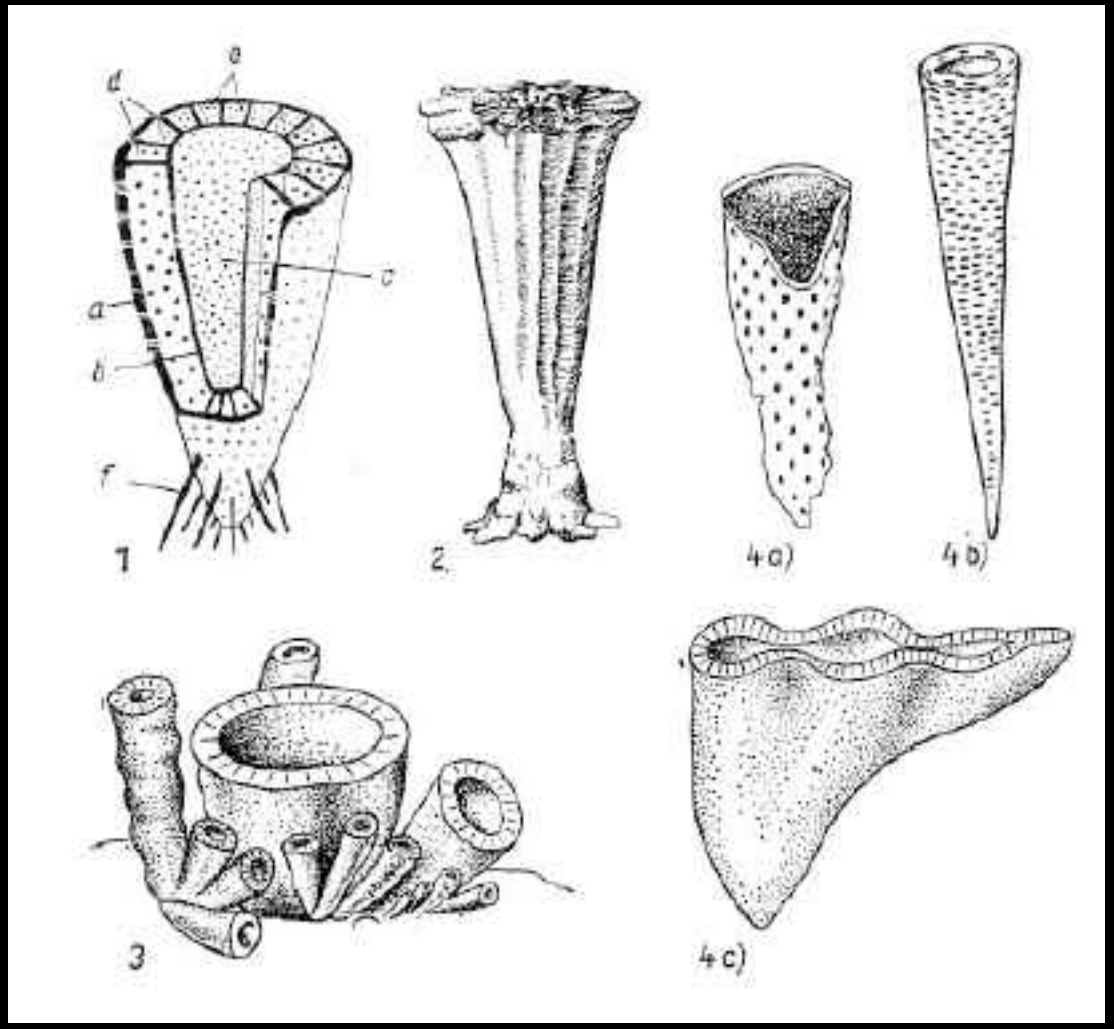



Reconstruction of an Early Cambrian reef community (from 97). 1. *Renalcis* (calcified cyanobacterium); 2: branching archaeocyath sponges; 3: solitary cup-shaped archaeocyath sponges; 4: chancellorid (?sponge); 5: radiocyath (?sponge); 6: small, solitary archaeocyath sponges; 7: cryptic "coralomorphs"; 8: *Okulitchicyathus* (archaeocyath sponge); 9; early fibrous cement forming within crypts; 10: microburrows (traces of a deposit-feeder) within geopetal sediment; 11: cryptic archaeocyaths and coralomorphs; 12: cryptic cribricyaths (problematic, attached skeletal tubes); 13: trilobite trackway; 14: cement botryoid; 15: sediment with skeletal debris. Rachel Wood - The Ecological Evolution of Reefs (also R. A. Wood, 1998. Reef Evolution.

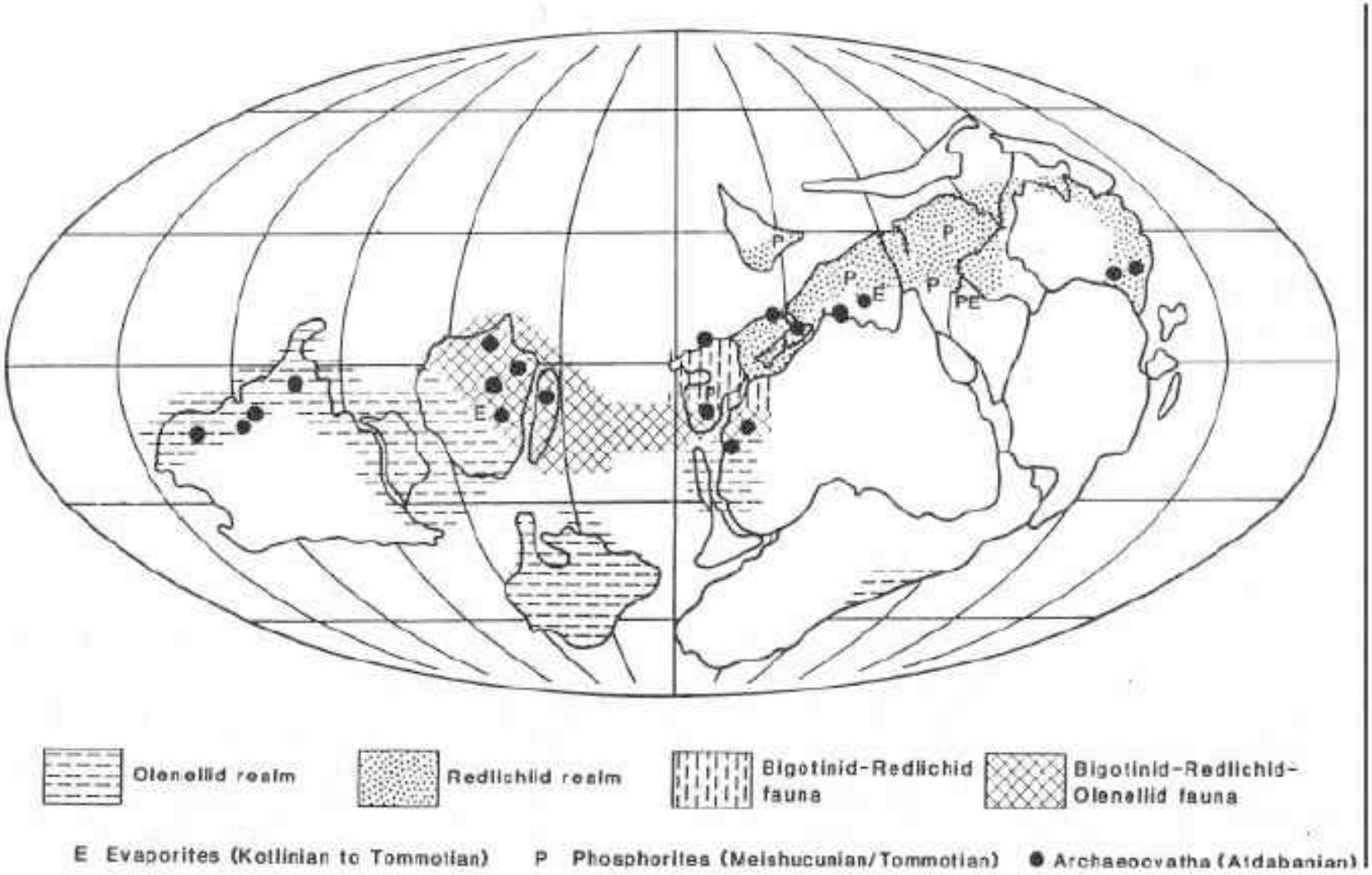
Aus Scholle et al. (ed)(1983): Carbonate Depositional Environments.- AAPG, Mem. 33



Calcimikrobe Epiphyton, Oberkambrium, W. Neufundland. Balken 1 cm




Beispiele für Archaeocyathiden

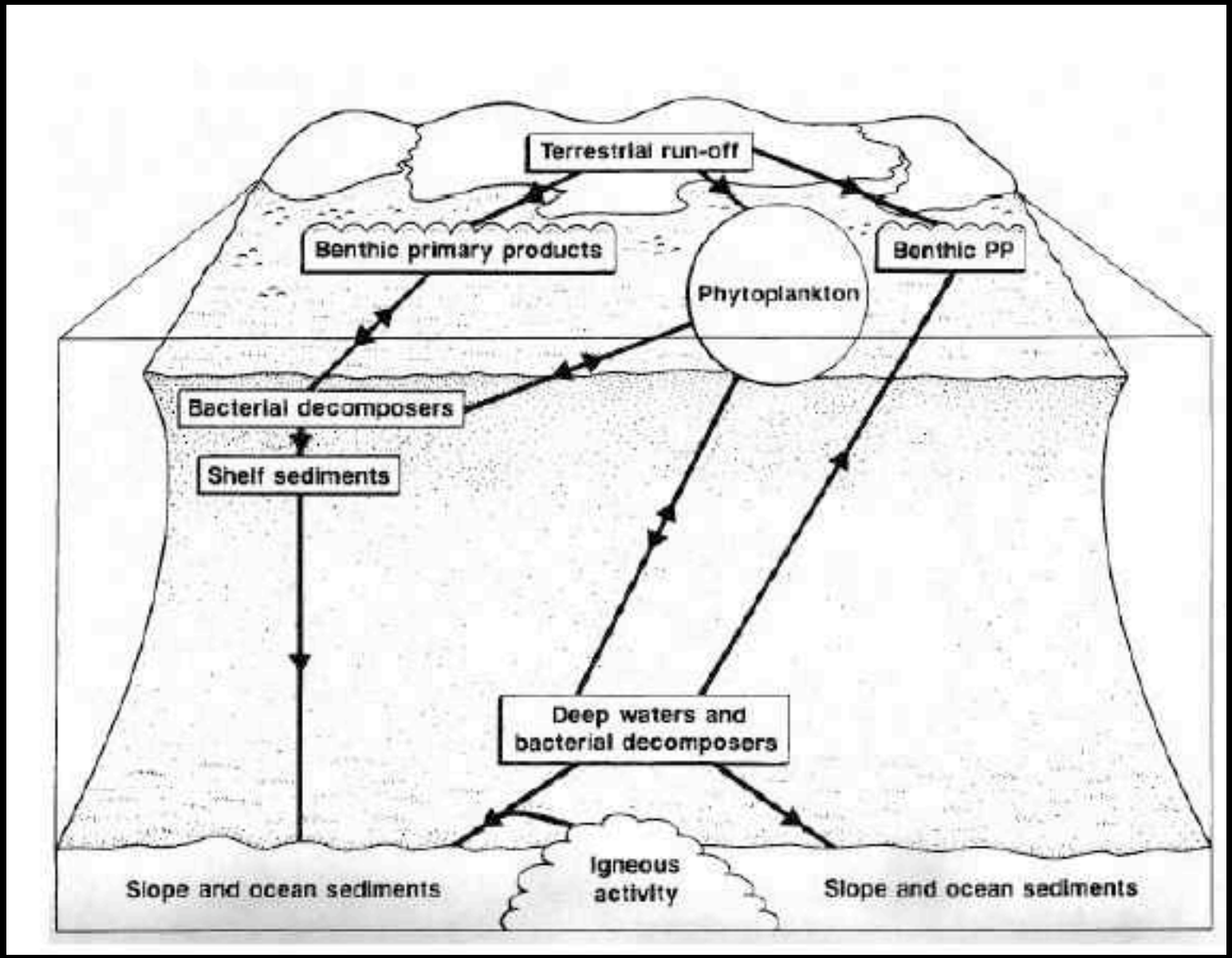



Klimazeugen und Faunenprovinzen im Unterkambrium (Aus Skript Mosbrugger)

# Kambrische Explosion

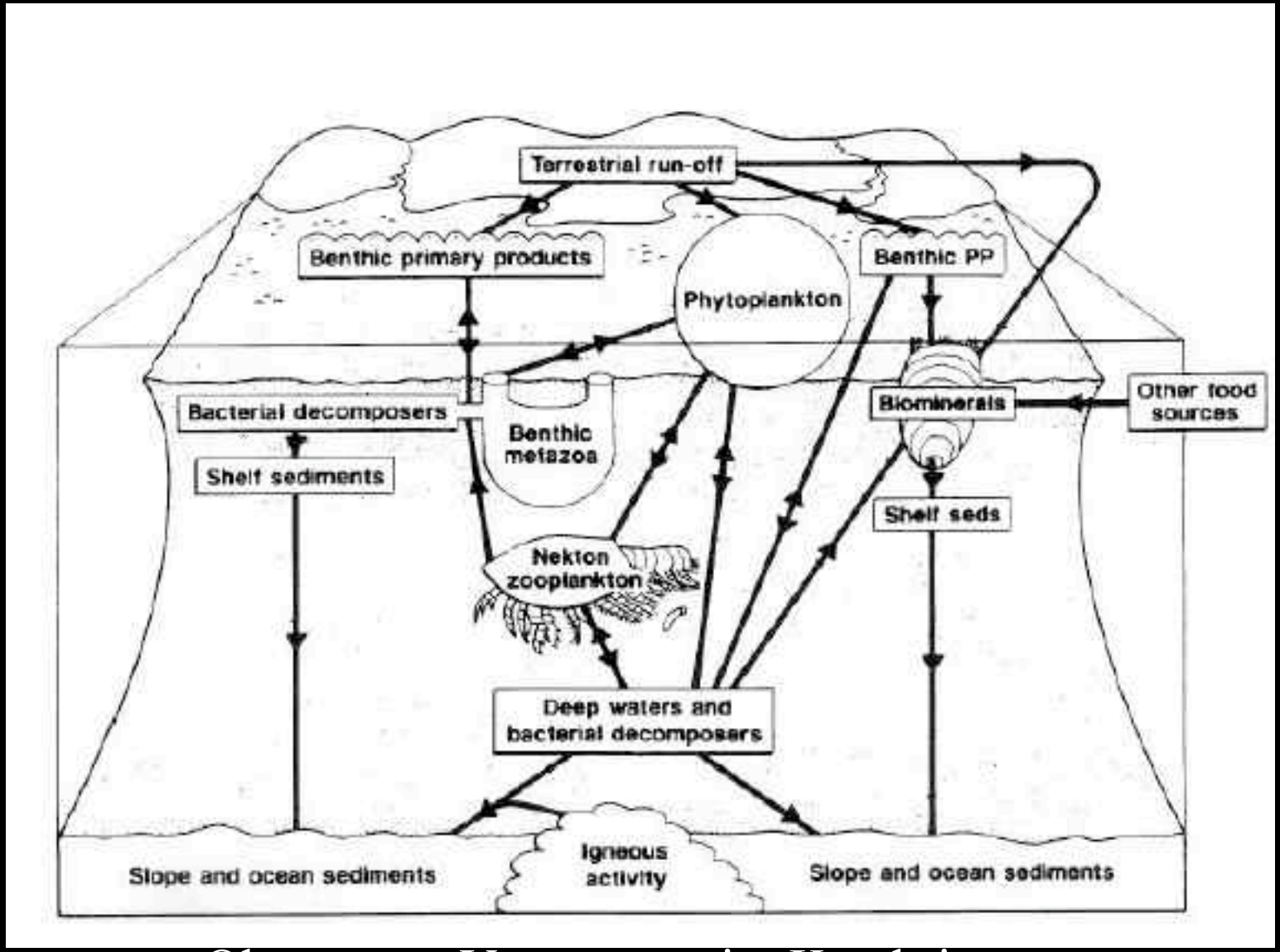
- Schwämme
- Coelenteraten
- Priapuliden
- Anneliden
- Pentastomiden
- Onychophora
- Arthropoden
  - Trilobiten
  - „Krebse"
  - Arachnomorpha
- Brachiopoden
  - Articulate
  - Inarticulate
- Mollusken
  - Monoplacophoren
  - Rostroconchen
  - Bivalven
  - Hyolithida
  - Cephalopoden
- Graptolithen
- Echinodermen
  - Helicoplacoidea
  - Homalozoa
  - Eocrinoidea/Crinoidea
  - Edrioasteroidea
- Chordaten
  - Conodonten
  - „Agnathe Fische"

Aus Skript Mosbrugger




Ökosystem-Vernetzung im Präkambrium

Aus Skript Mosbrugger



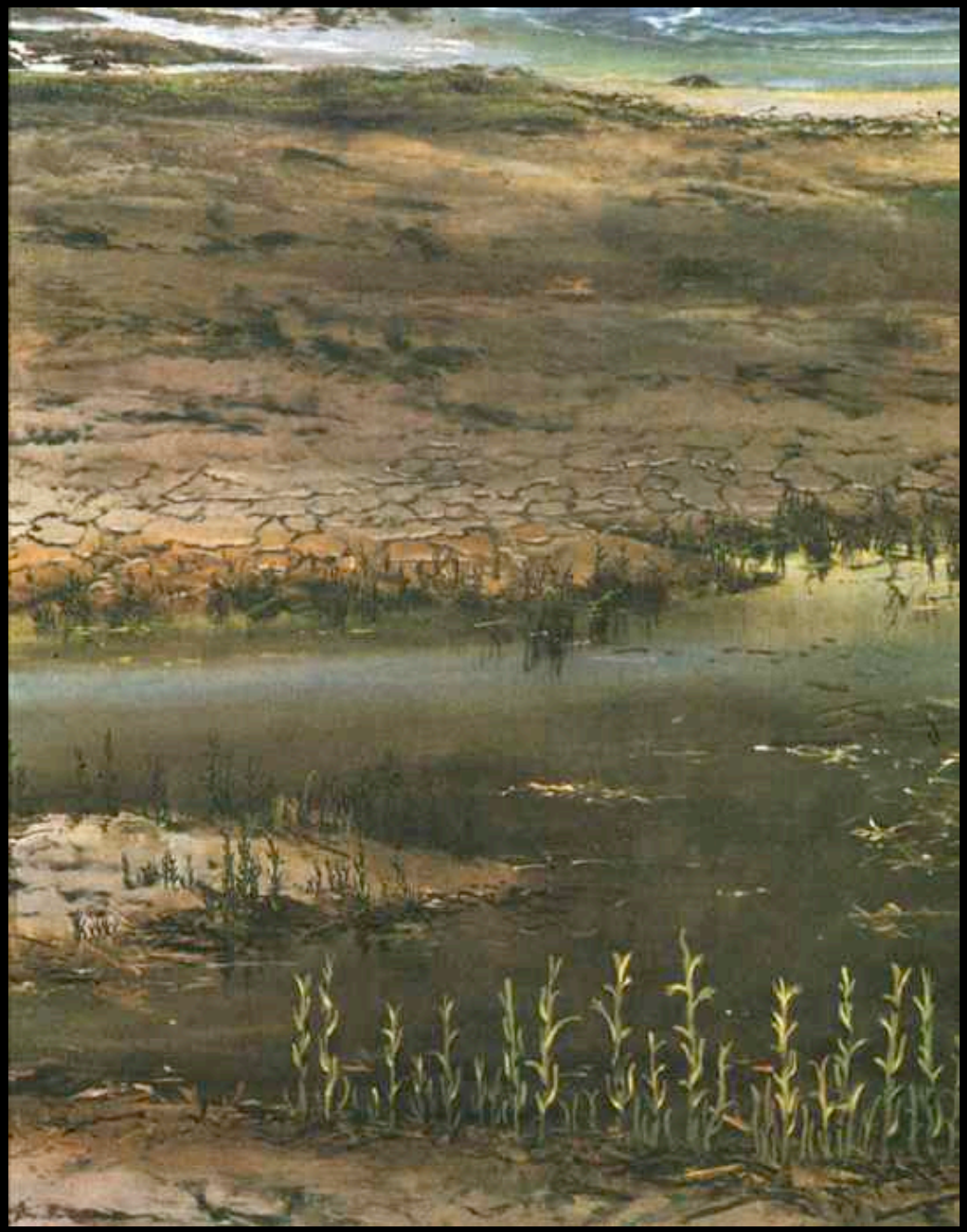

Okosystem-Vernetzung im Kambrium

Aus Skript Mosbrugger

1463: Kambrium-Lebensbild: marine Bereiche

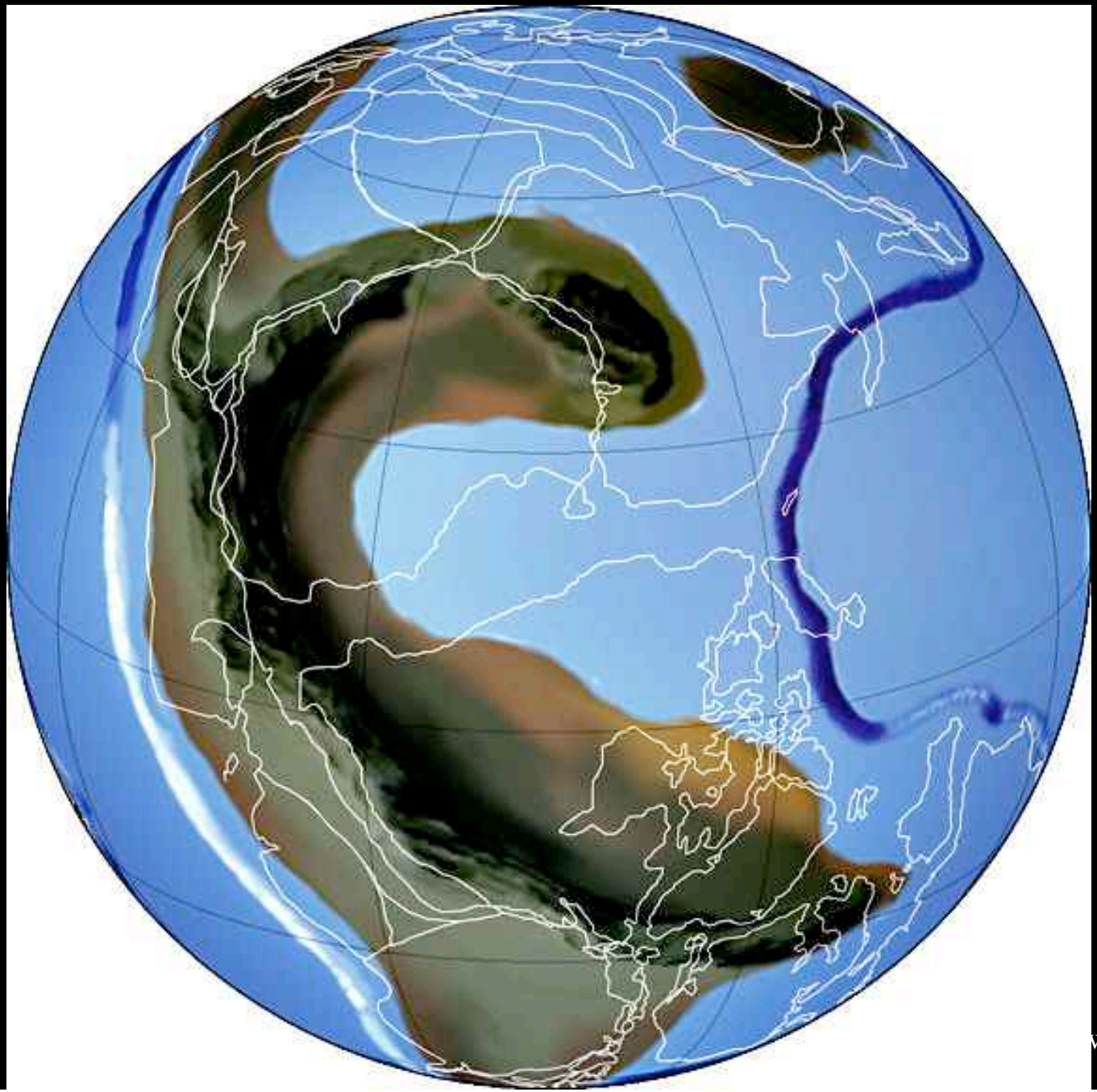
http://www.ucmp.berkeley.edu/ordovician/ordovician.html

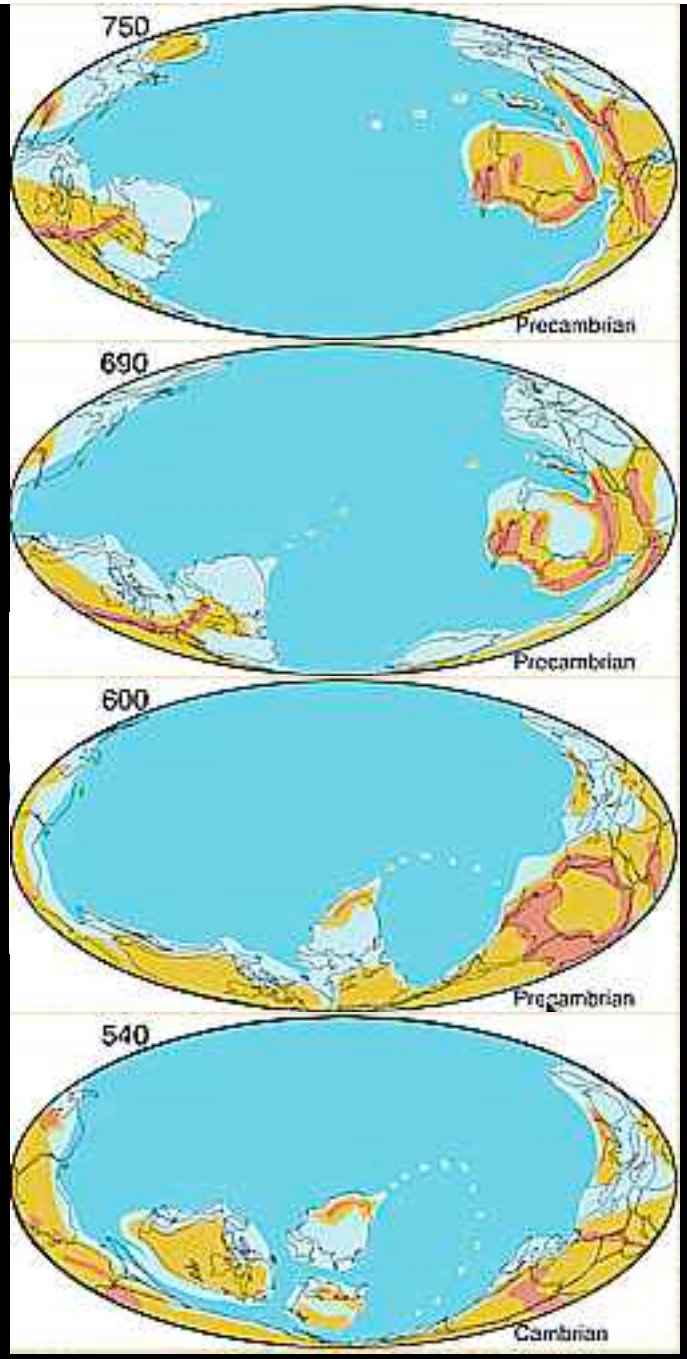
Ordovizium-Lebensbild: marine Bereiche

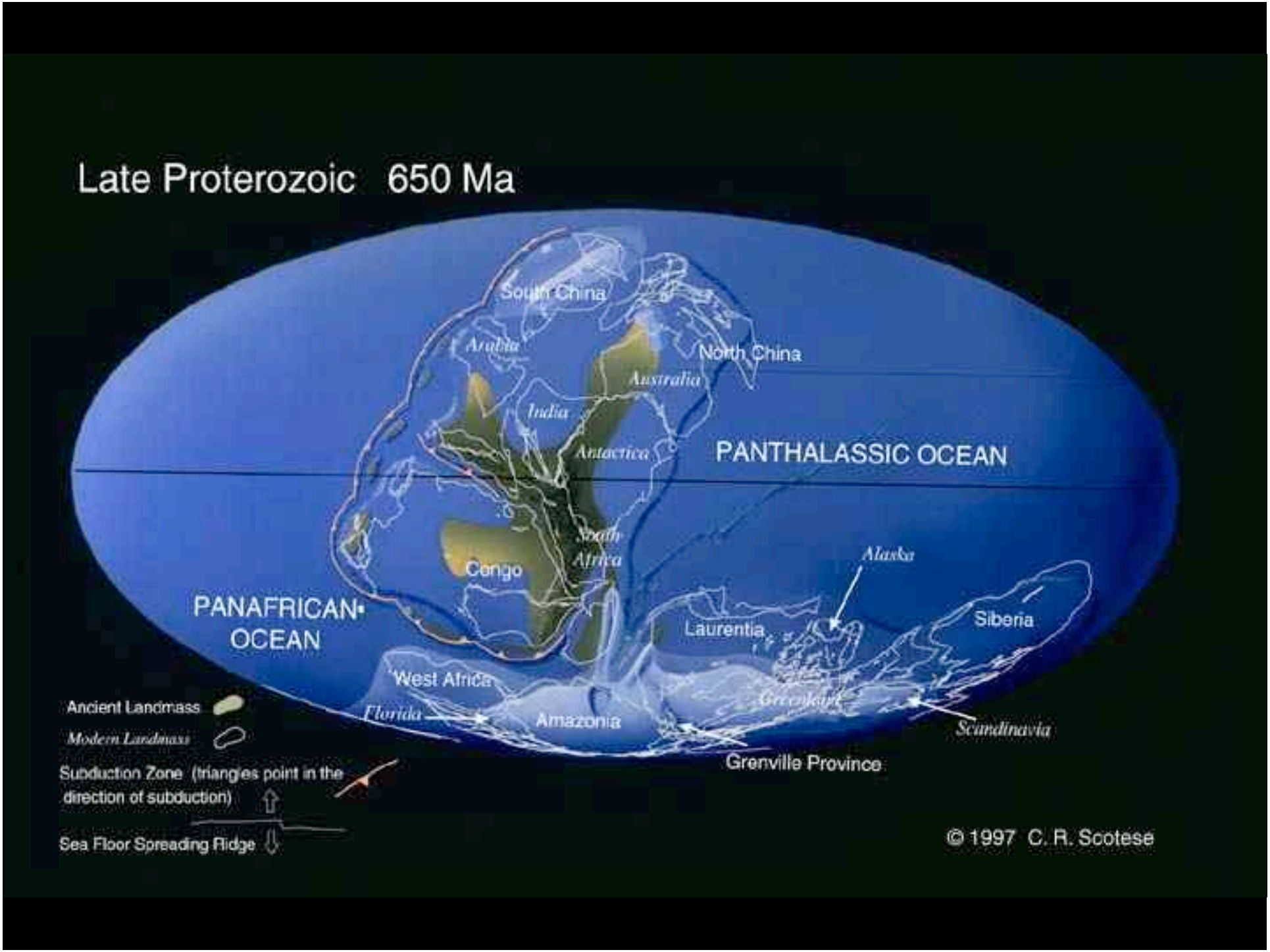


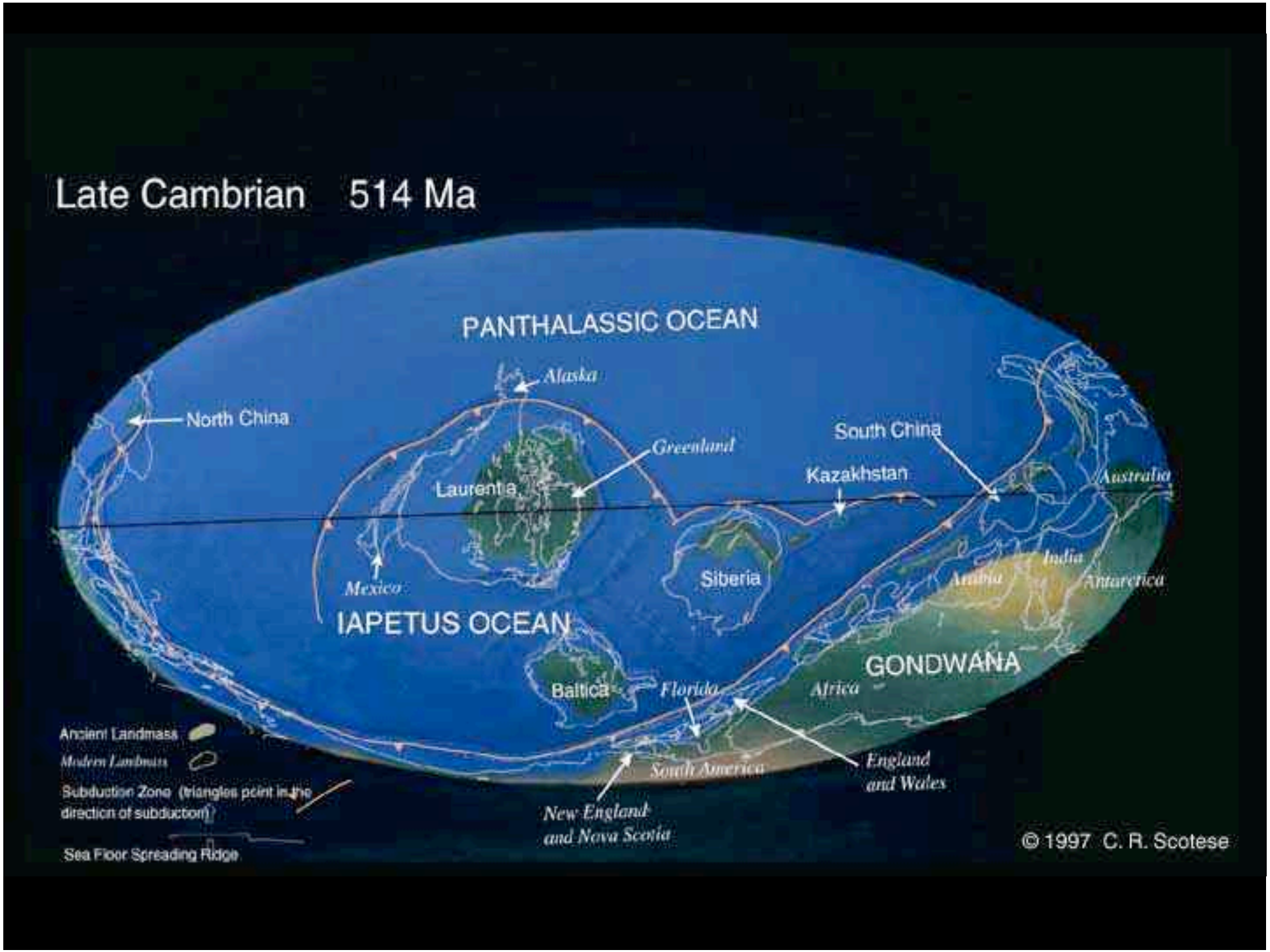
1464: Ordovizium-Lebensbild: festländisch

# Rodinia (1.1 Ga)




750
Precambrian
690
Precambrian
600
Precambrian
540
Cambrian


Late Proterozoic 650 Ma
South China
Arabia
North China
Australia
India
Antarctica
PANTHALASSIC OCEAN
South Africa
Congo
Alaska
PANAFRICAN OCEAN
Laurentia
Siberia
West Africa
Florida
Amazonia
Greenland
Scandinavia
Grenville Province
Ancient Landmass
Modern Landmass
Subduction Zone (triangles point in the direction of subduction)
Sea Floor Spreading Ridge
© 1997 C. R. Scotese


Late Cambrian 514 Ma
PANTHALASSIC OCEAN
Alaska
North China
Greenland
South China
Kazakhstan
Laurentia
Australia
Mexico
Siberia
India
Arabia
Antarctica
IAPETUS OCEAN
GONDWANA
Baltica
Florida
Africa
South America
England and Wales
New England and Nova Scotia
Ancient Landmass
Modern Landmass
Subduction Zone (triangles point in the direction of subduction)
Sea Floor Spreading Ridge
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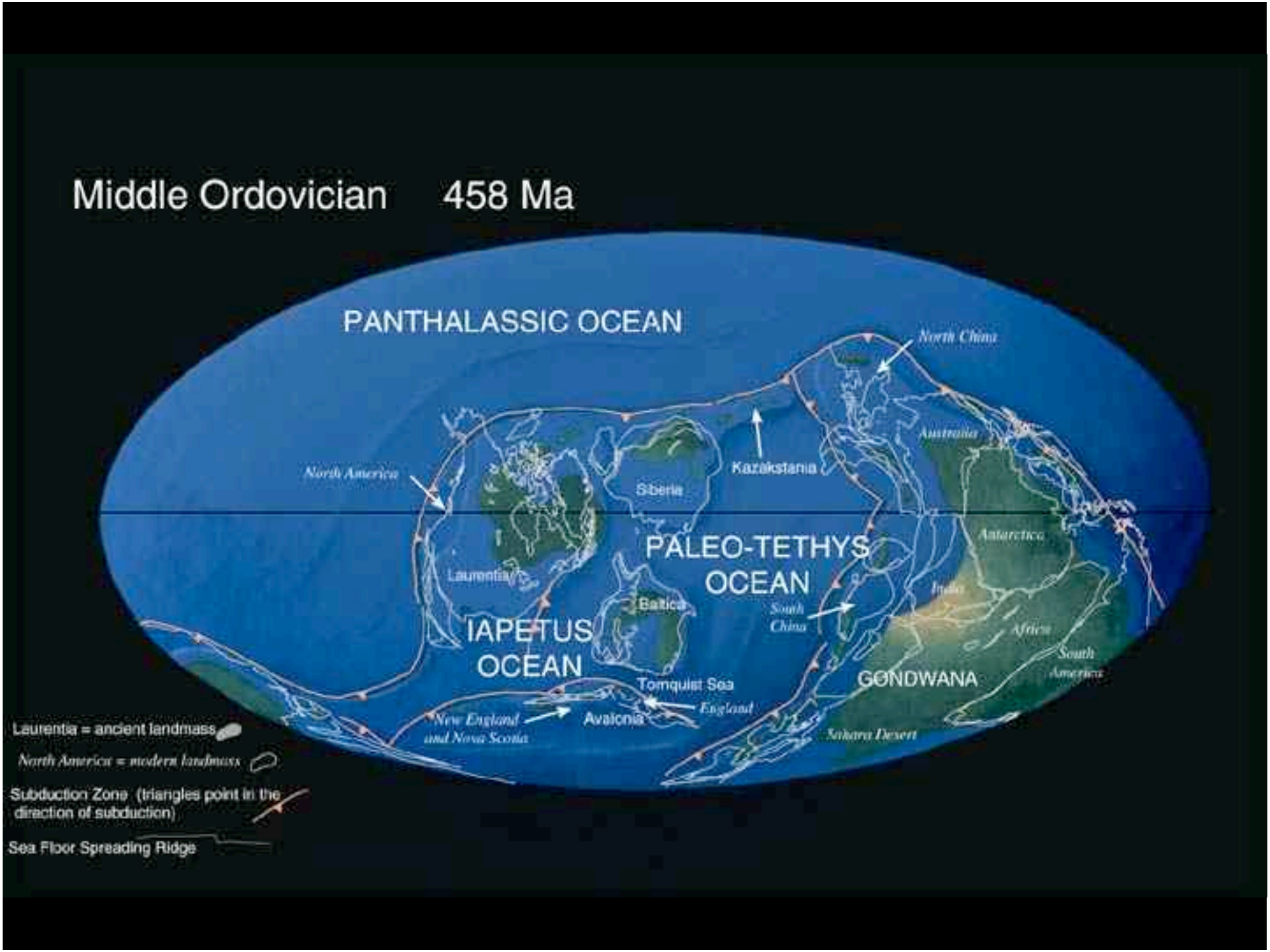
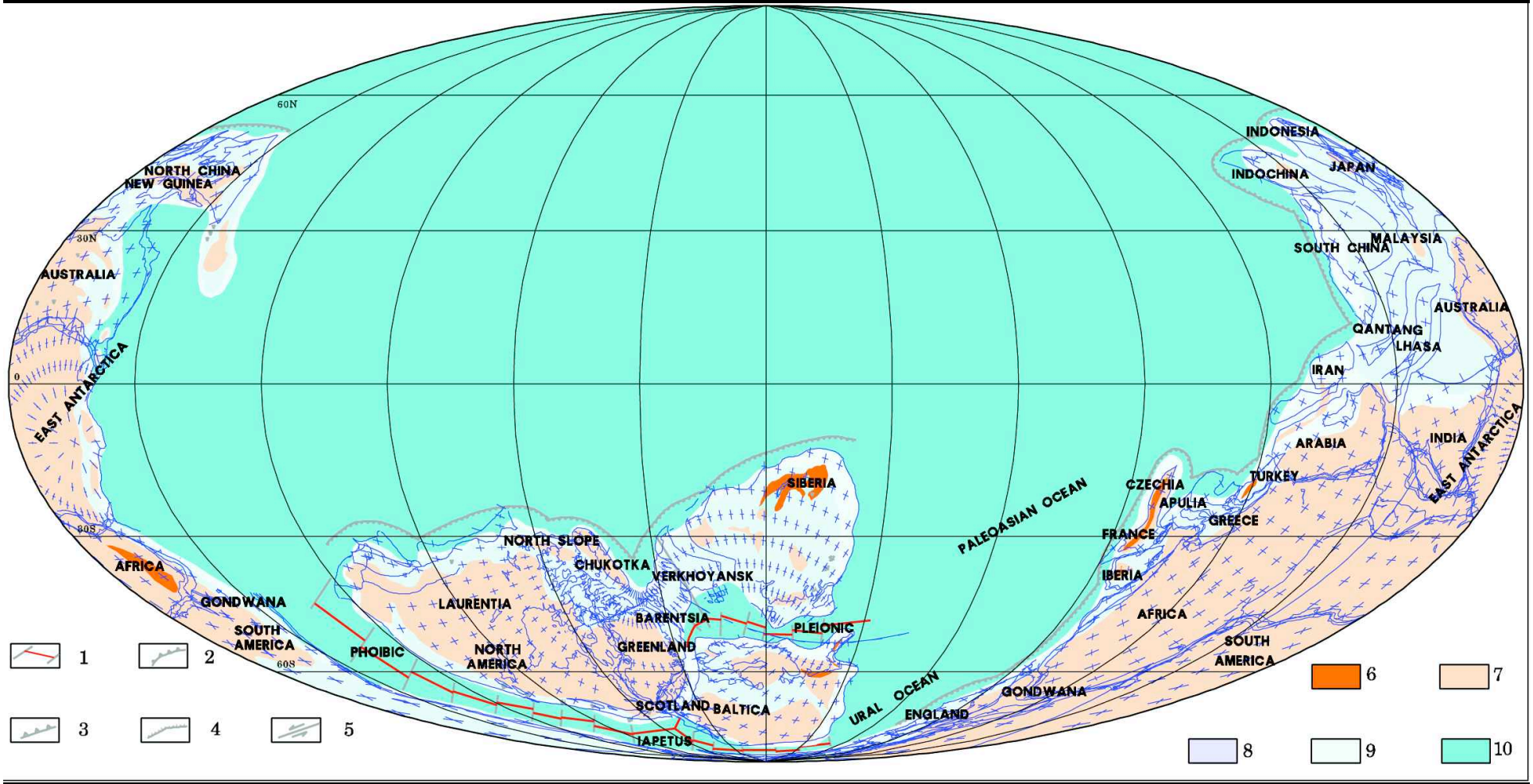
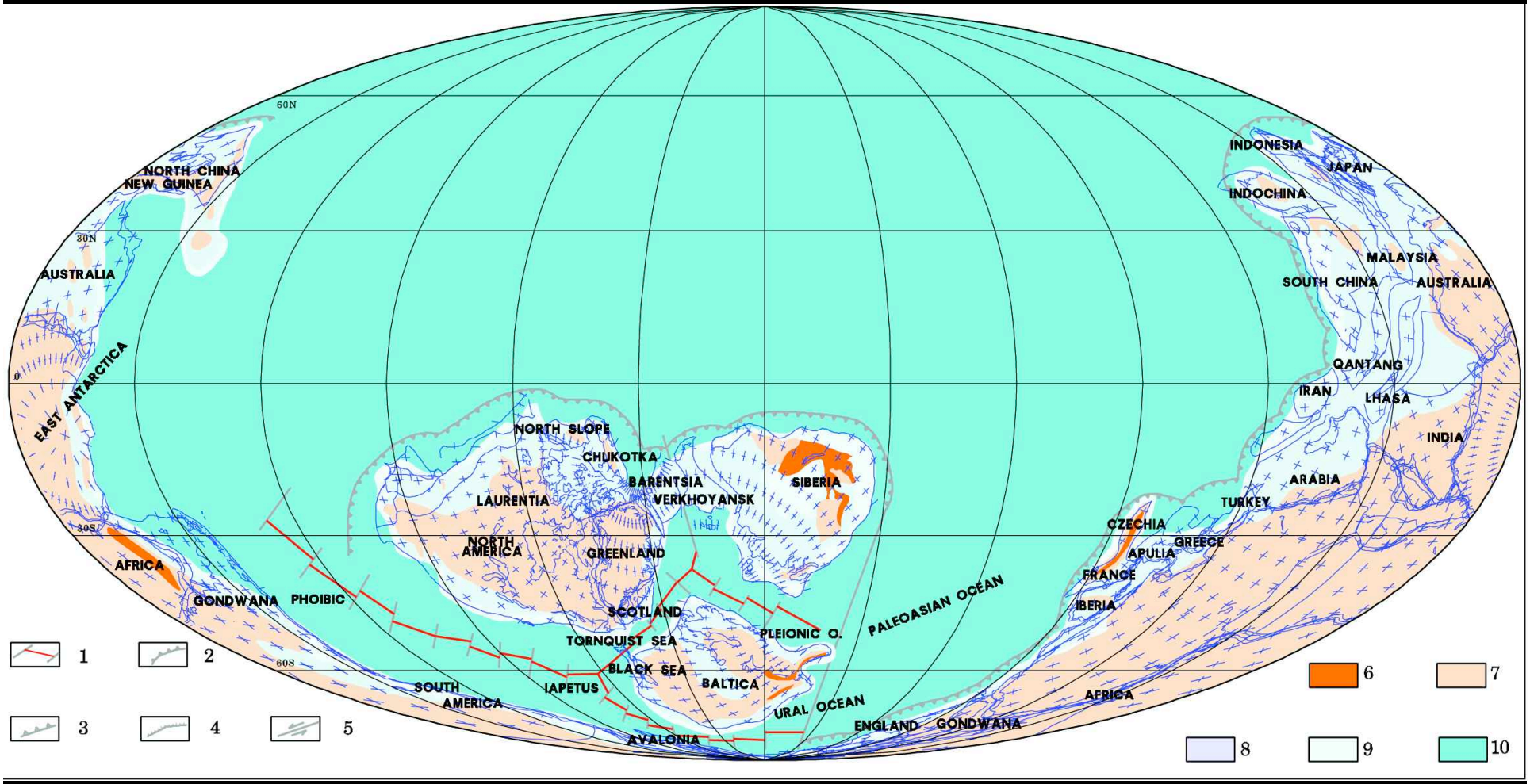
# Middle Ordovician 458 Ma

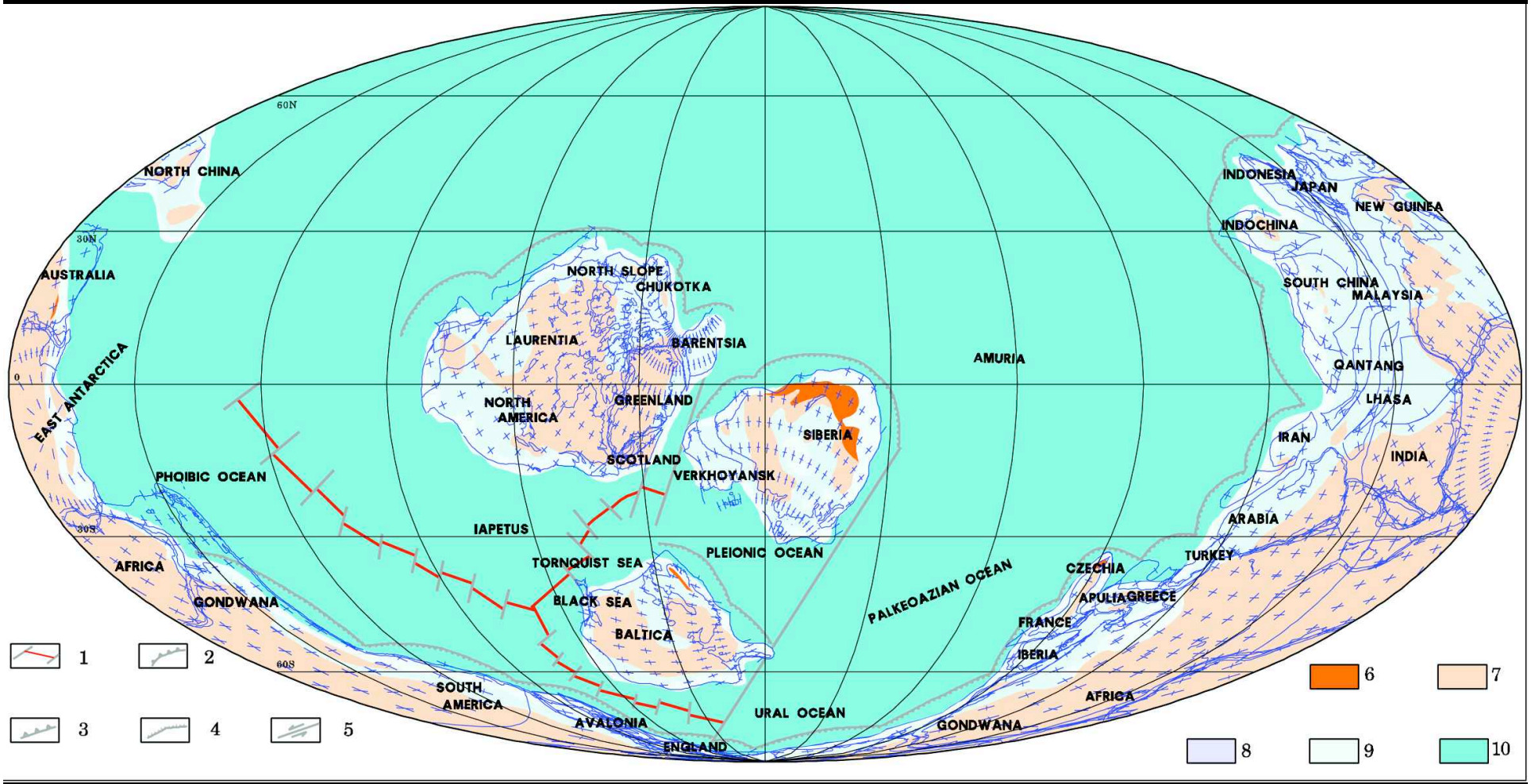




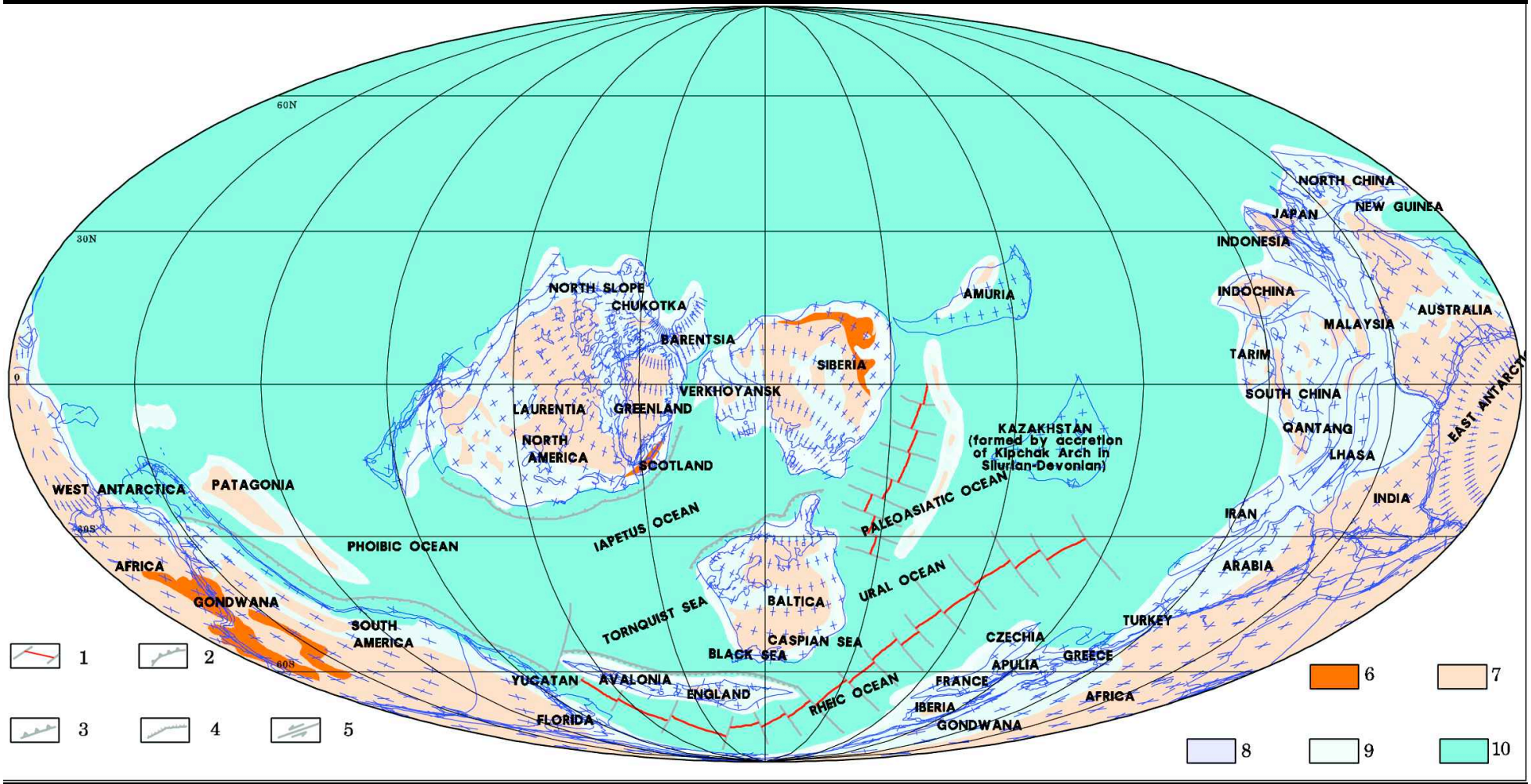

544-511 Ma (Unterkambrium) (Golonka 2002)




511-597 Ma (Mittelkambrium) (Golonka 2002)

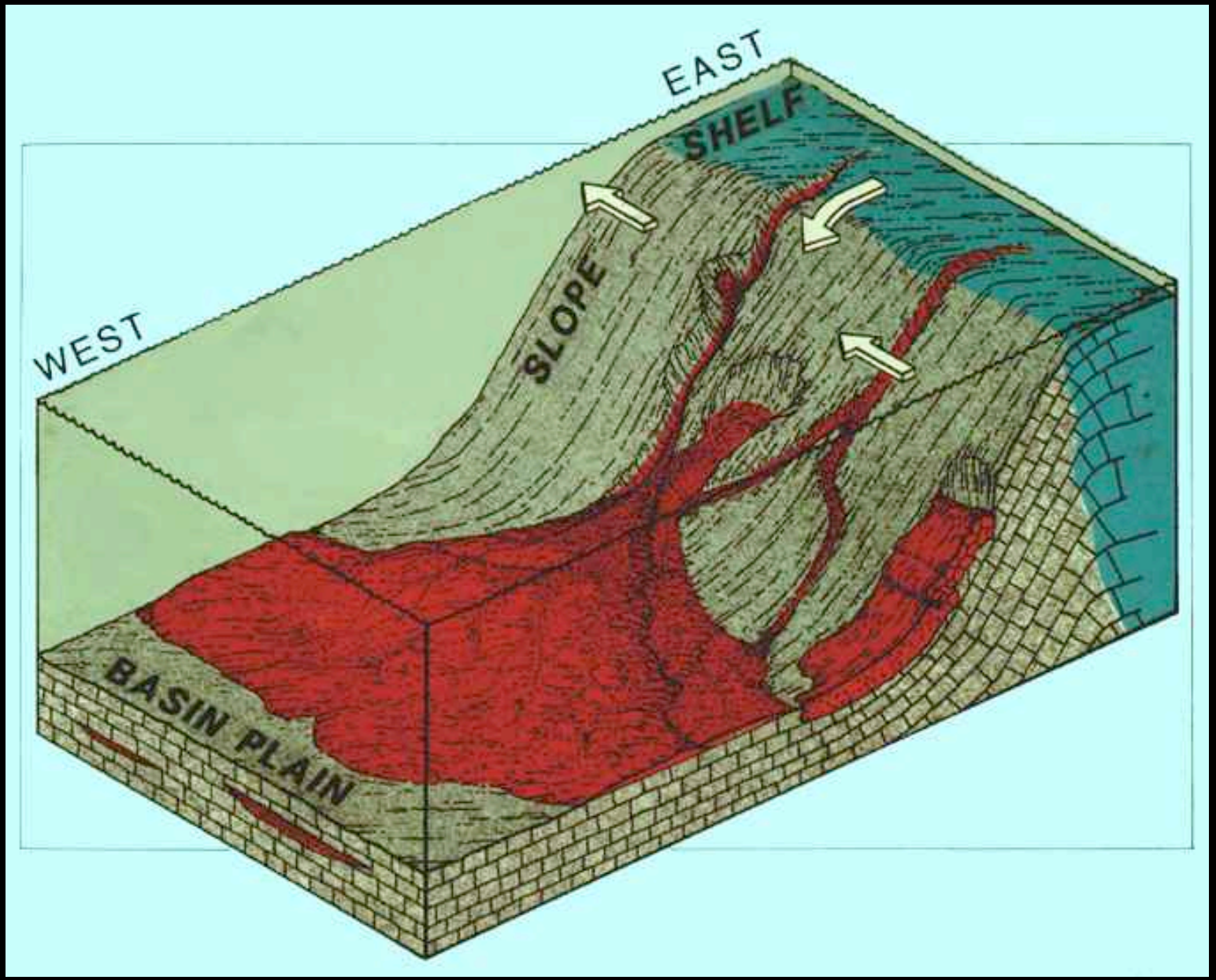



482-465 Ma (spätes Unter- bis frühes Mittelordovizium) (Golonka 2002)




465-433 Ma (spätes Mittel- bis Oberes Mittelordovizium) (Golonka 2002)

Aus Scholle et al. (ed)(1983): Carbonate Depositional Environments.- AAPG, Mem. 33




1179: Modell passiver Kontinentalrand für O.-Kambrium und U. Ordovizium in Nevada

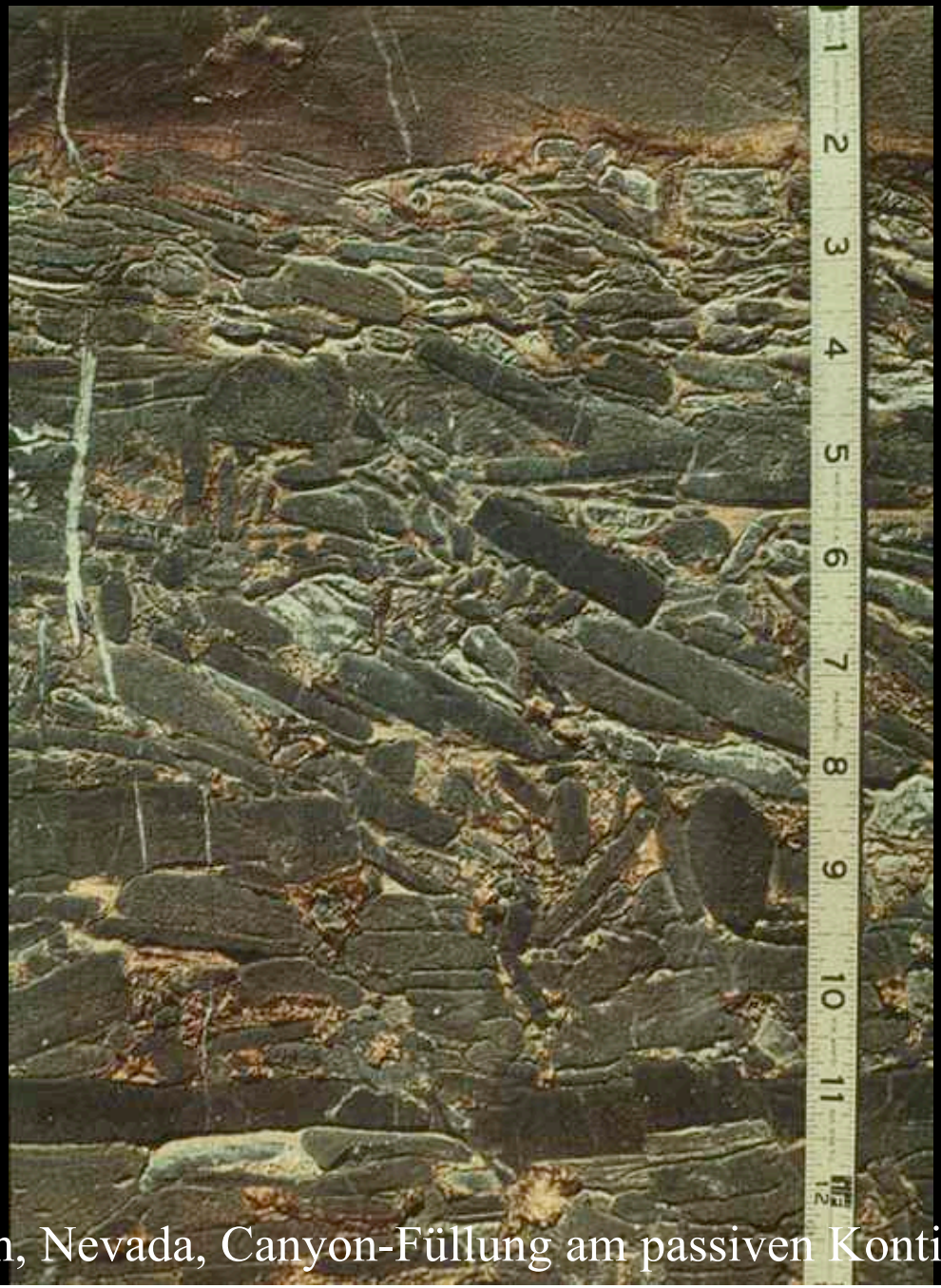
Aus Scholle et al. (ed)(1983): Carbonate Depositional Environments.- AAPG, Mem. 33

1175: Debrite und Grainflows, M. Ordoviz, W. Neufundland; vgl. vorherige Abbildung

Aus Scholle et al. (ed)(1983): Carbonate Depositional Environments.- AAPG, Mem. 33

1174: zu abb. 1179: allochthone Blocksedimentation des Paläozoikums von Kanada (Alberta) (Devon)

Aus Scholle et al. (ed)(1983): Carbonate Depositional Environments.- AAPG, Mem. 33



1176: Oberkambrium, Nevada, Canyon-Füllung am passiven Kontinentalrand: USA