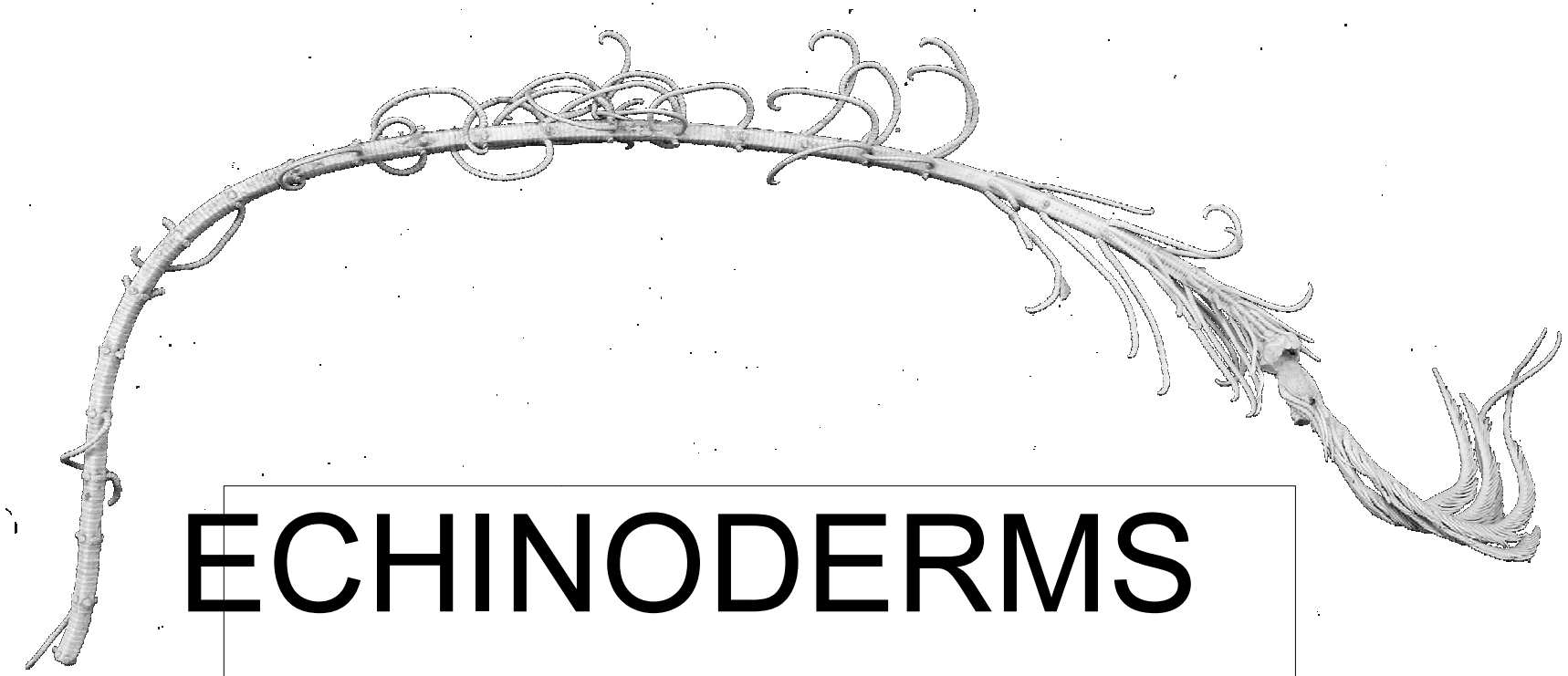
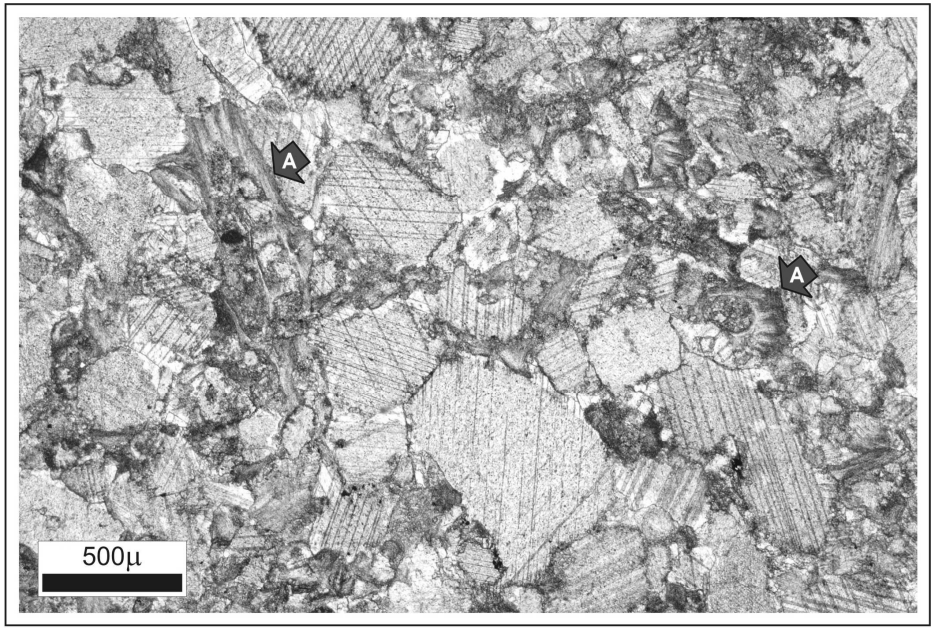
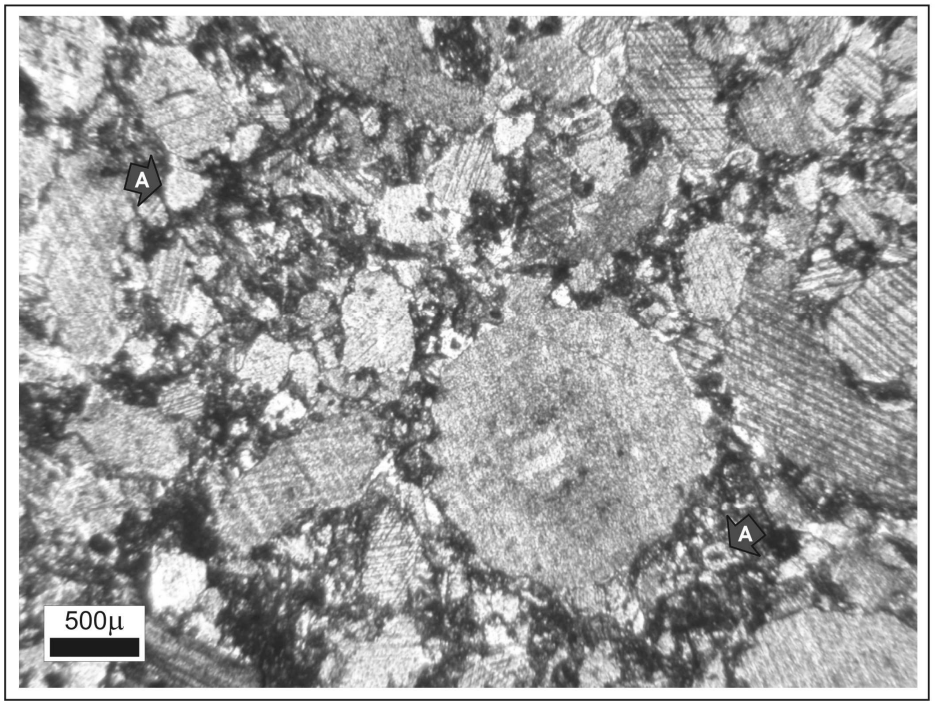


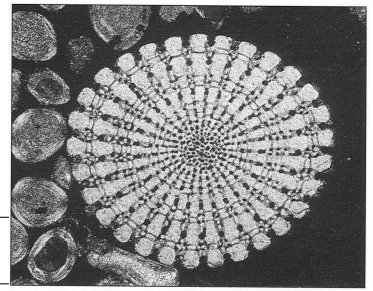
ECHINODERMS

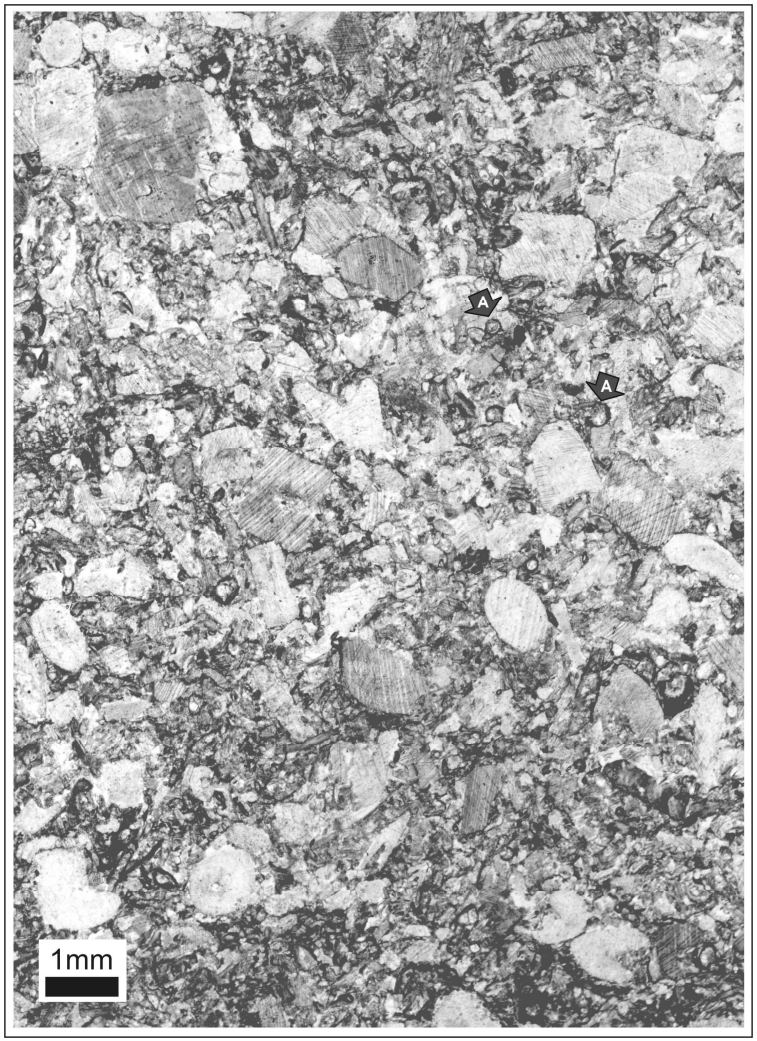
- Stalked = pelmatozoans (crinoids, cystoids, blastoids)
- echinoids

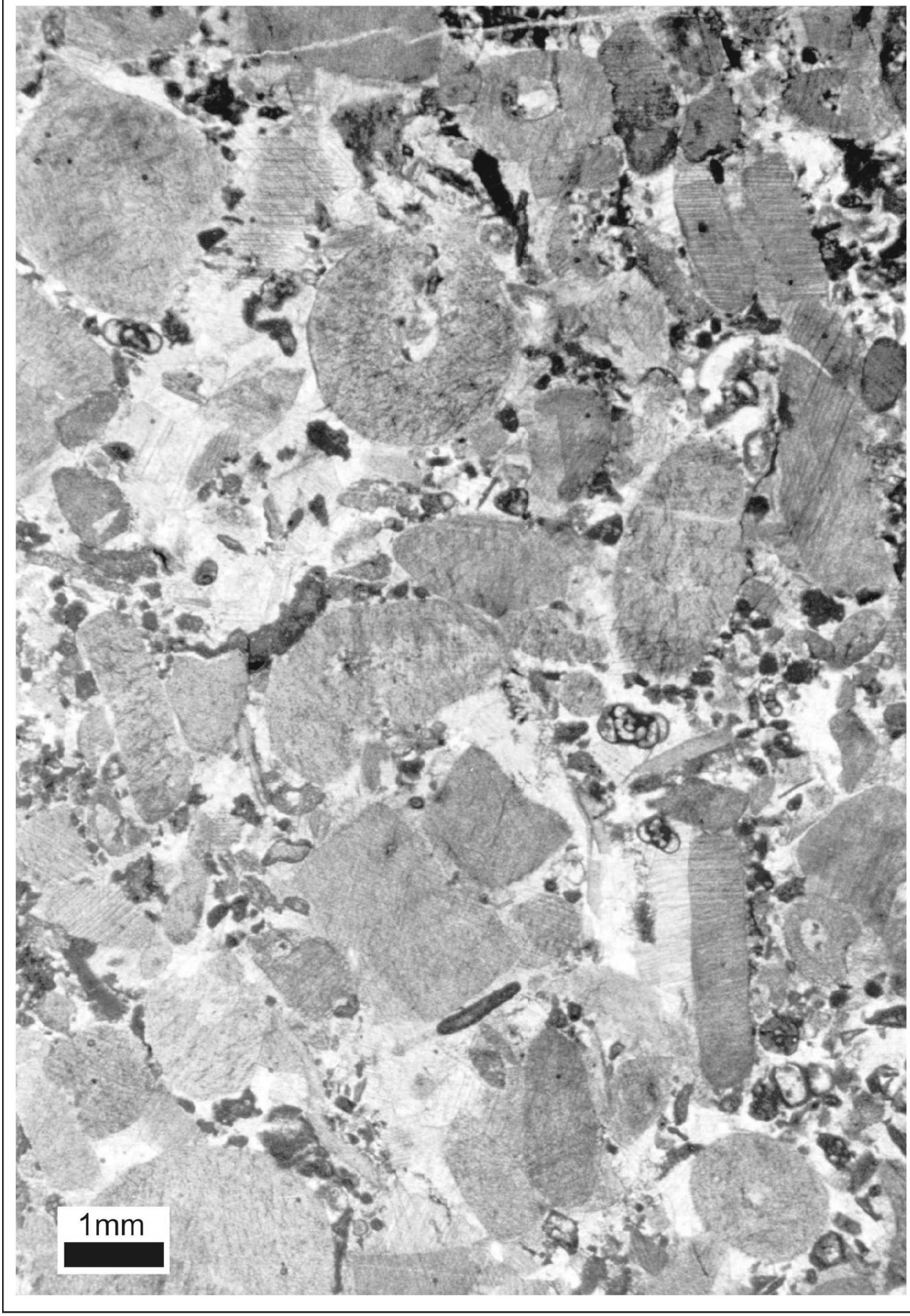




Echinoid spine



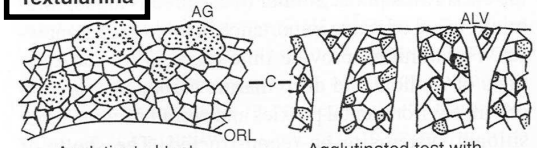



1mm

FORAMINIFERS

- small Devonian to Permian
- late Paleozoic large Fusulinids
- Cretaceous large Orbitolinids
- middle Jurassic to present planktonics
- Tertiary Nummulites, Alveolins,
  Discocylins

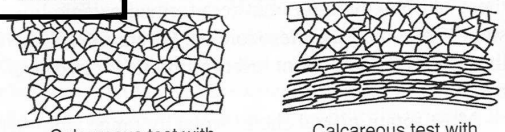
Textulariina



Agglutinated test with compact wall

Agglutinated test with alveolar (labyrinthic) wall

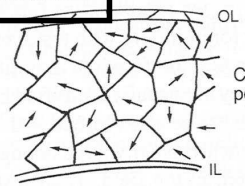
Fusulinina



Calcareous test with microgranular wall

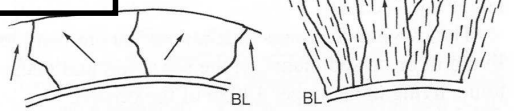
Calcareous test with microgranular differentiated wall

Miliolina



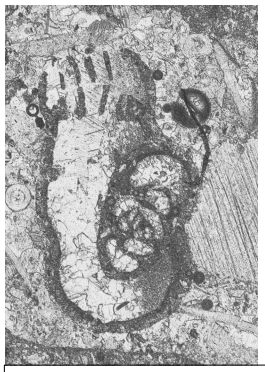
Calcareous test with porcelaneous wall

Rotaliina



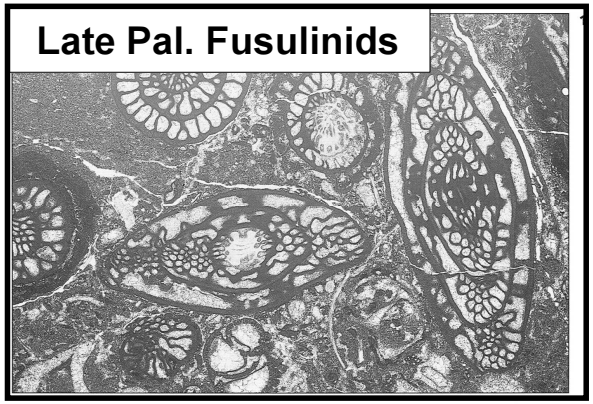
Calcareous test with granular hyaline wall

Calcareous test with fibroaxial hyaline wall

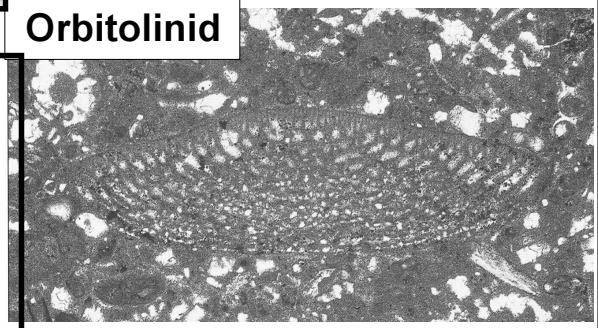


Carboniferous

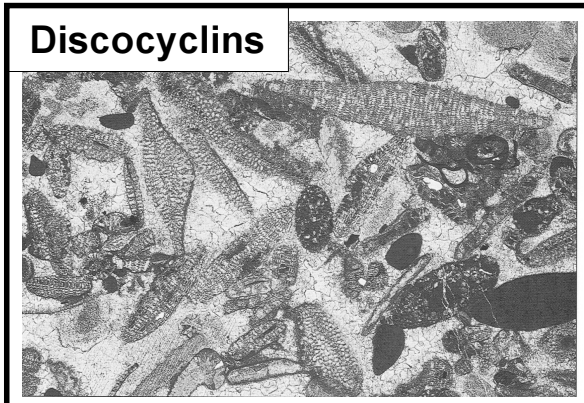
Late Pal. Fusulinids



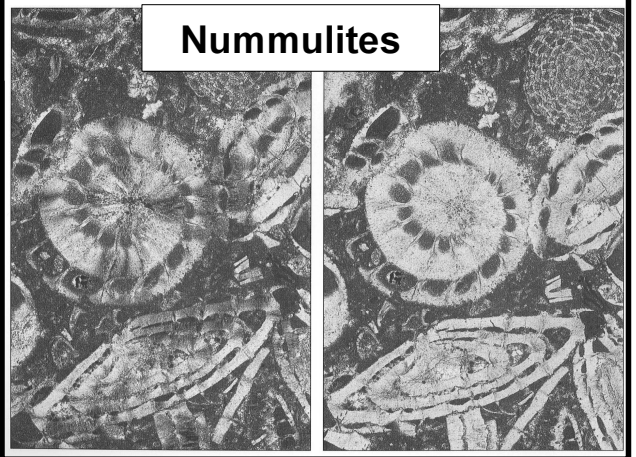
Orbitolinid



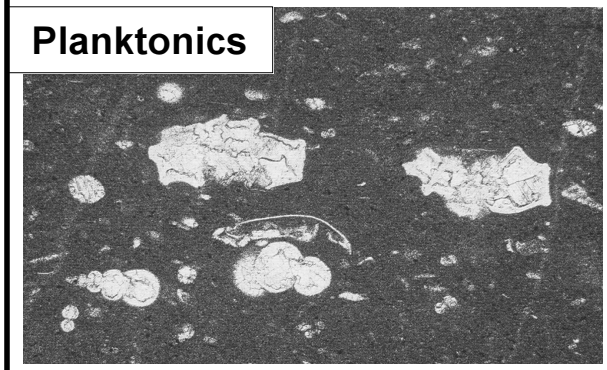
Discocyclins



Nummulites

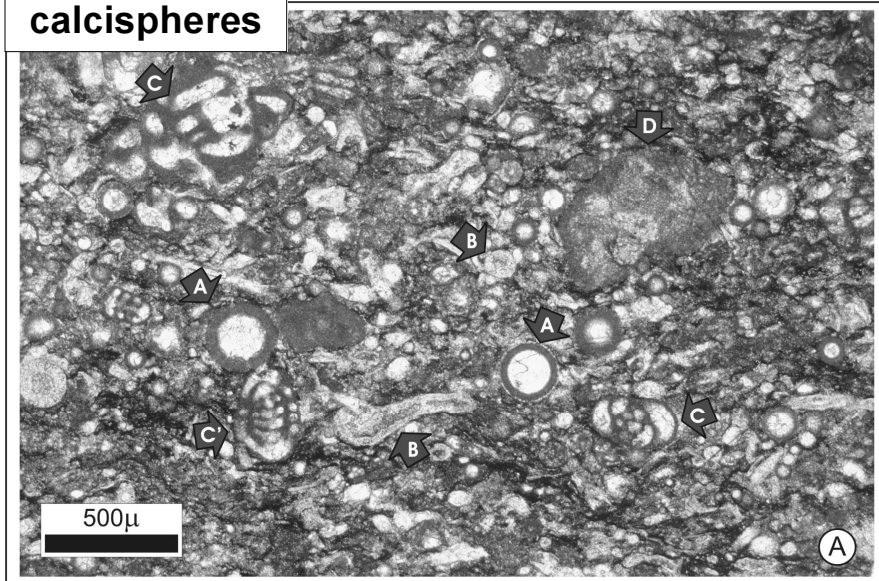


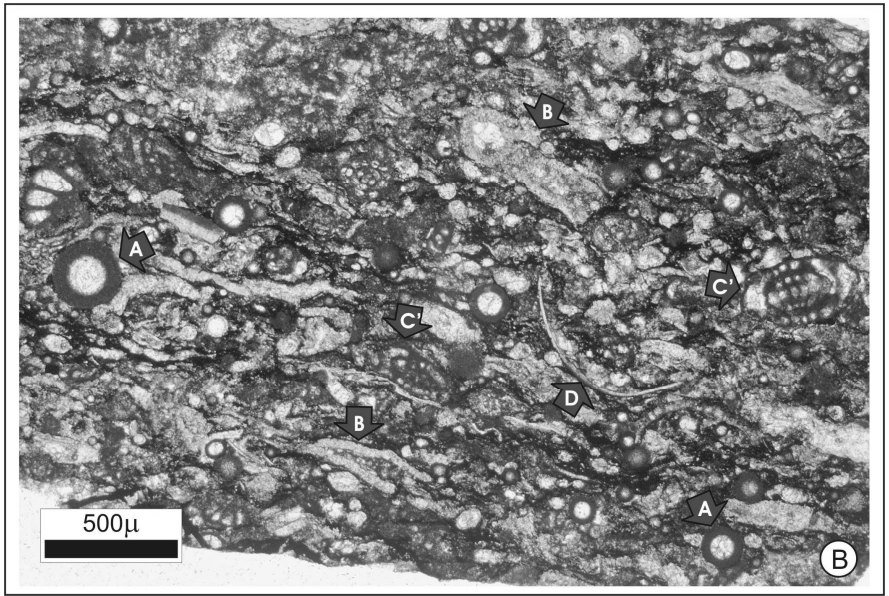
Planktonics



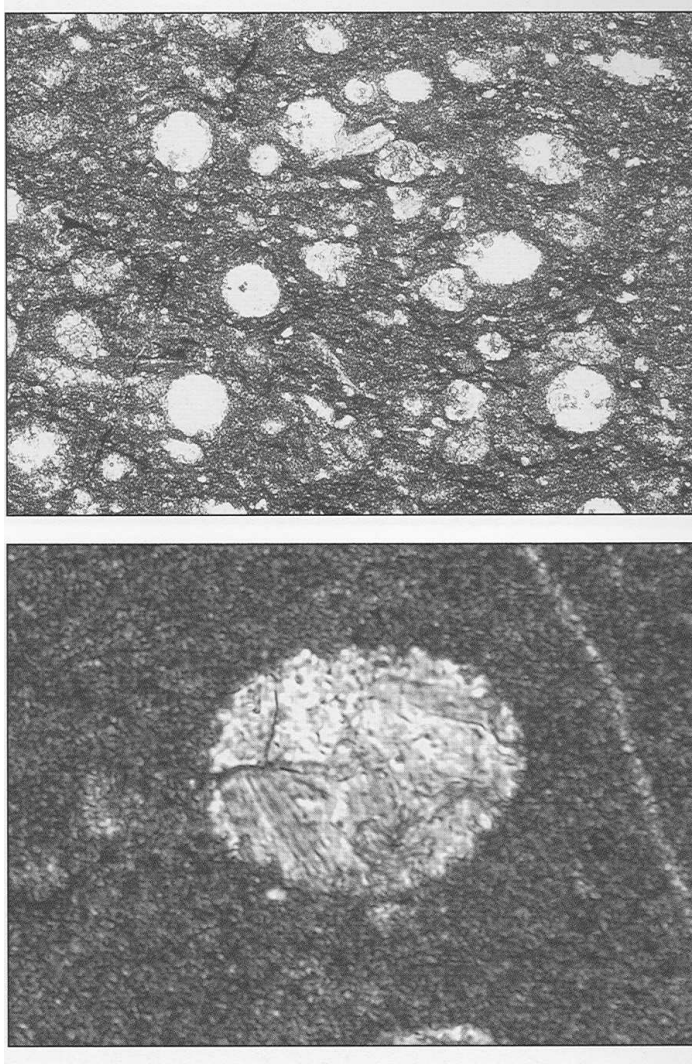
Alveolin

calcispheres





RADIOLORIANS



ARTHROPODS

- trilobites
- ostracods

58

trilobites

57

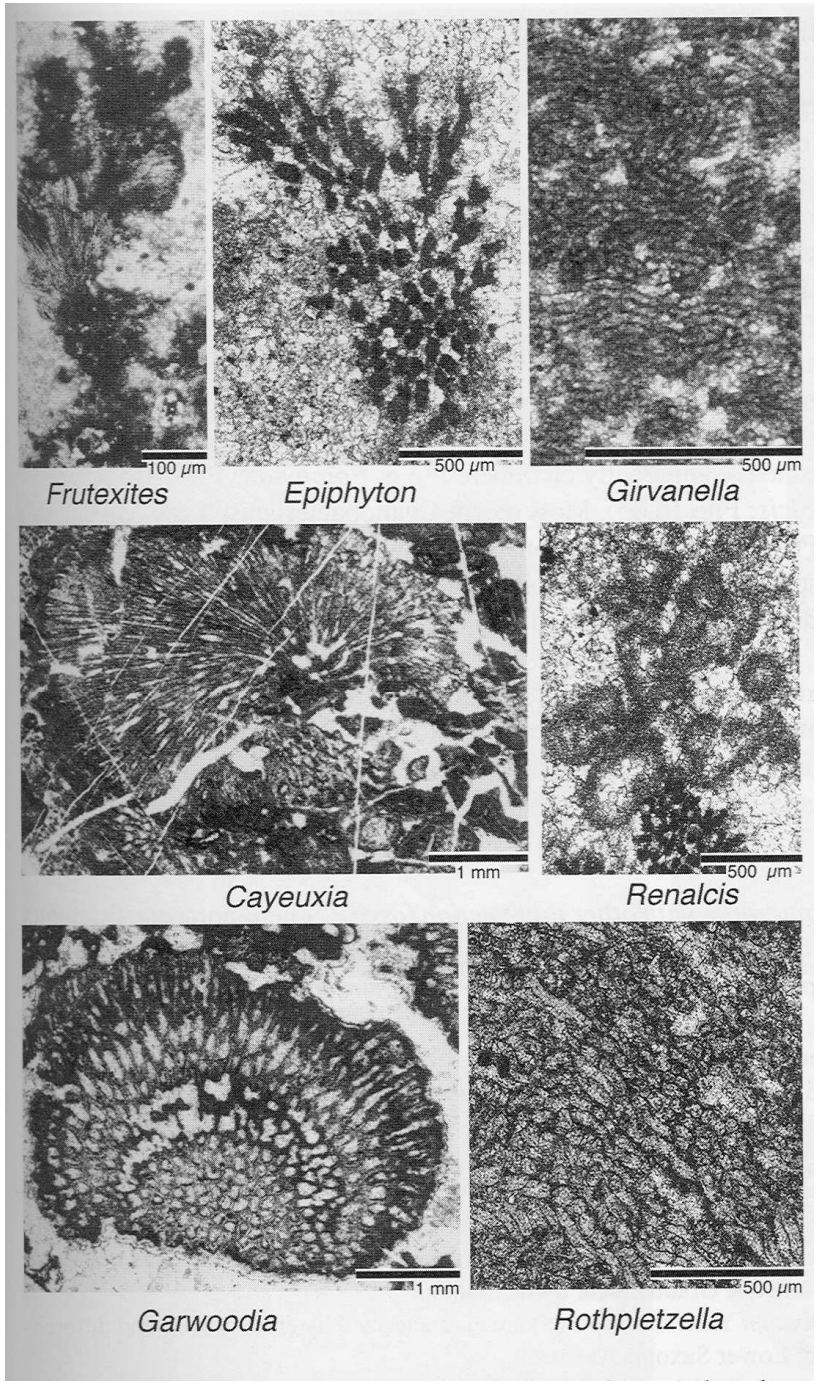
ostracods

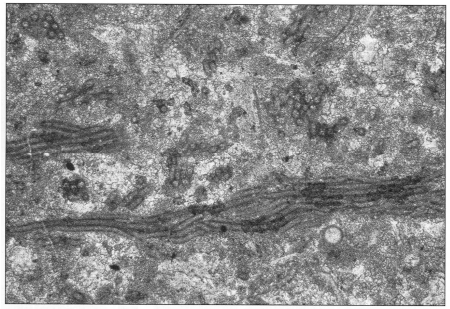
1

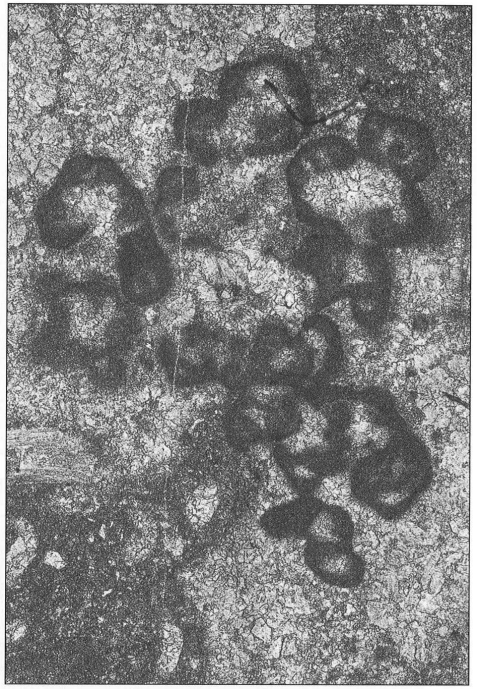
Calcareous ALGAE and CYANOBACTERIA

- Cyanobacteria (‘blue-green’)
- red algae: Corallinaceans, Solenoporaceans
- green algae: Udoteaceans, Dasycladaceans

CYANOBACTERIA

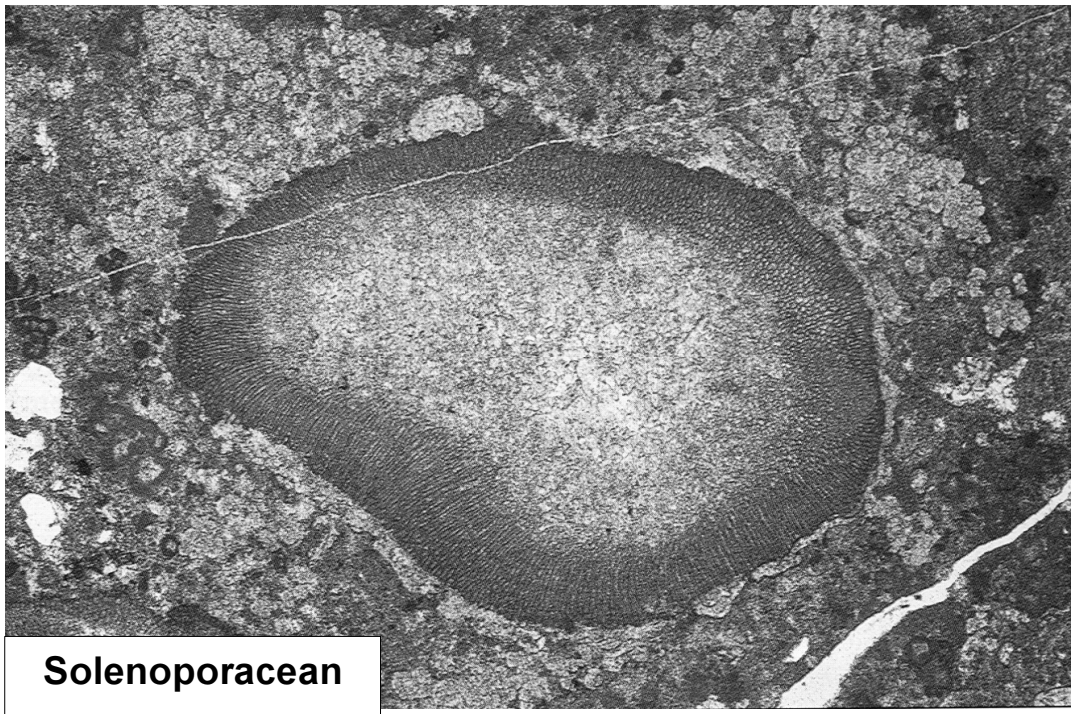




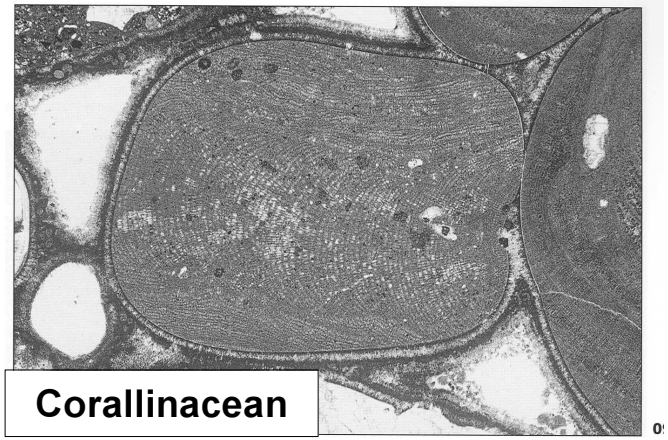


RED ALGAE

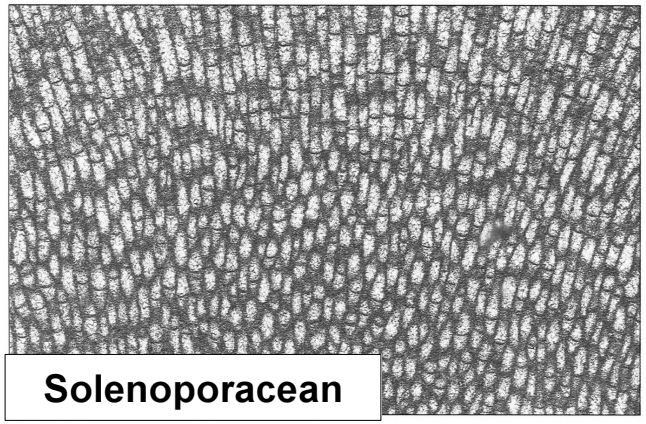
Thin-section criteria	Stratigraphic range
Corallinaceans Fine net-work structure; cell size < 5 to 15 μm; differentiation according to cell size and arrangement; case-shaped cavities in lines or isolated within the tissue; crusts, nodules, branches; in transmitted light dark. . . . . Pl. 54	Early Cretaceous to recent, possibly already Early Paleozoic
Peyssoneliaceans Net-work structure; cell size 20 - 30 μm; basal calcification with botryoids; distinctly set sheets; blades, nodules; in transmitted light golden, yellowish, gray . . . . . .Pl. 64/10	Early Cretaceous to recent possibly also Late Paleozoic
Solenoporaceans Closely packed vertical filaments, sometimes with horizontal partitions; cell size 10 - 100 μm; no cell differentiation, no case-shaped cavities; nodular and branched . .Pl. 55	Cambrian to Tertiary (Miocene)
Ancestral red algae (Archaeolithophyllaceans) Net-work structure; cell size approx. 10 - 30 μm; cell differentiation; blades and nodules; in transmitted light yellowish, gray . . . . . Pl. 56/2, 8	Carboniferous and Permian (Viséan to Late Permian)
Problematic algae **Ungdarellaceans** Net-work structure; cell size about 20 μm; cell differentiation;very small encrusting or isolated structures; in transmitted light often golden, yellowish . . Pl. 56/5-7, Pl. 108/7-8	Carboniferous and Permian Common: Viséan–Moscovian
Stacheinaceans Indistinct network; very small encrusting structures; in transmitted light often golden, yellowish . . . . . Pl. 108/10	Carboniferous (Viséan to Moscovian)



Solenoporacean



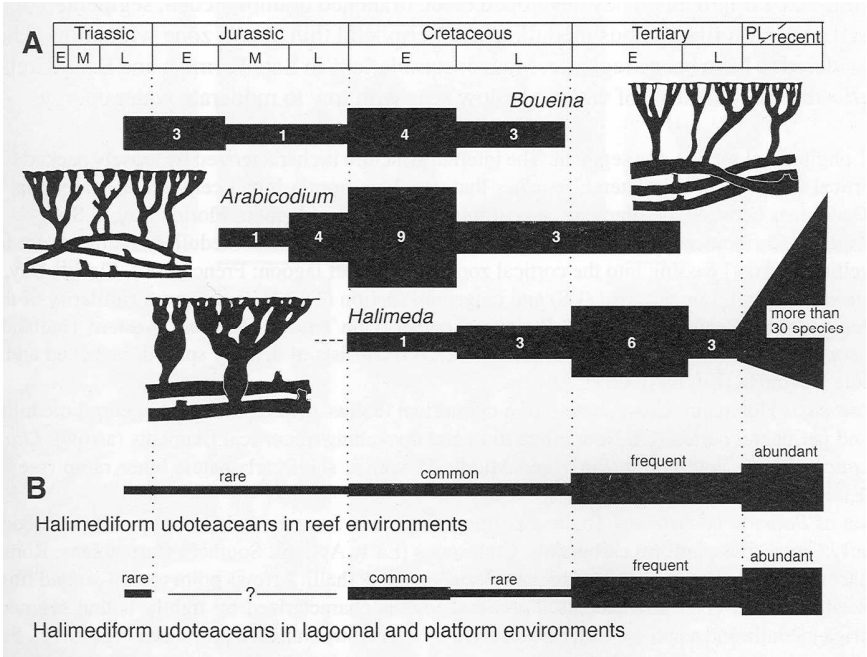
Corallinacean

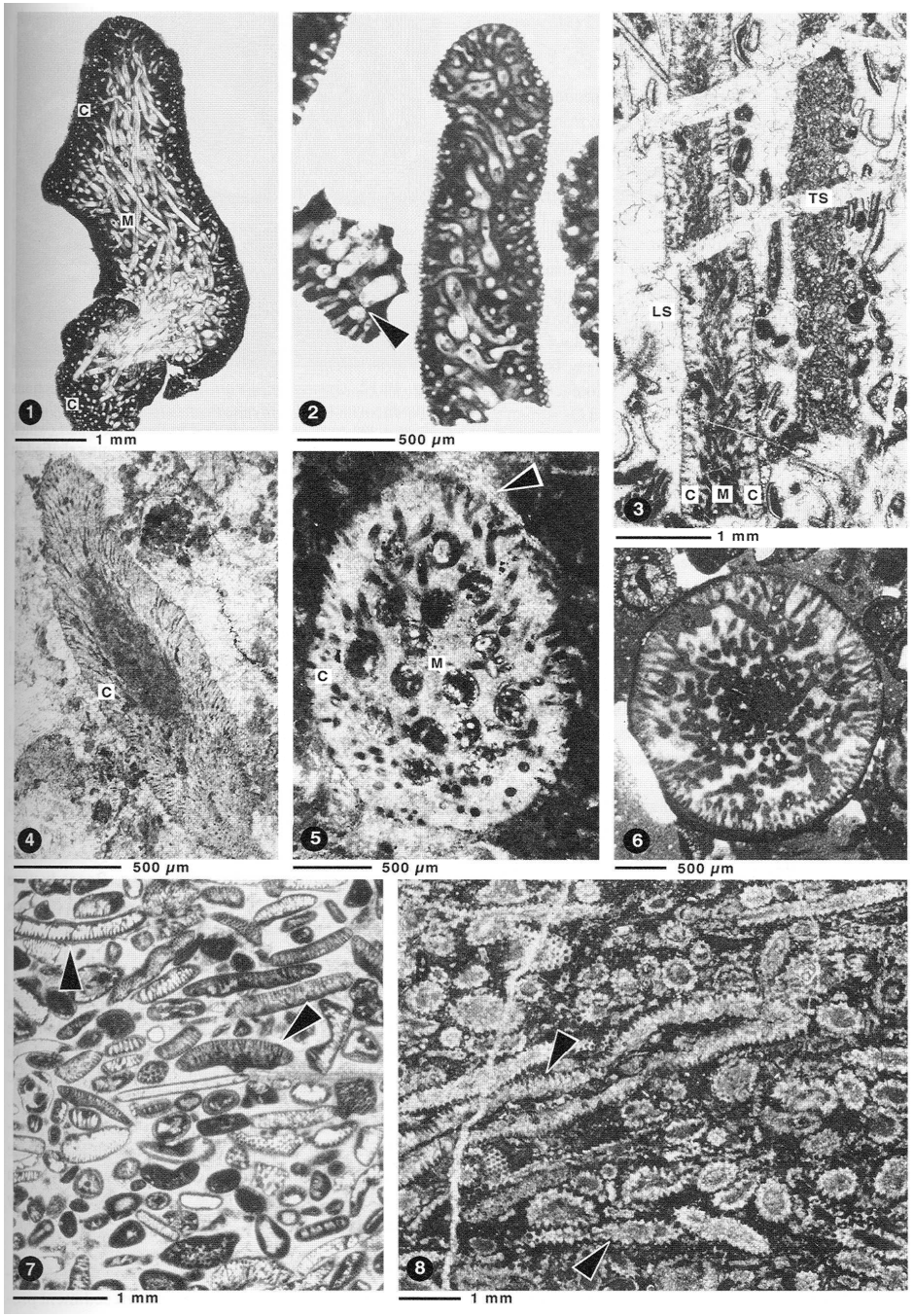


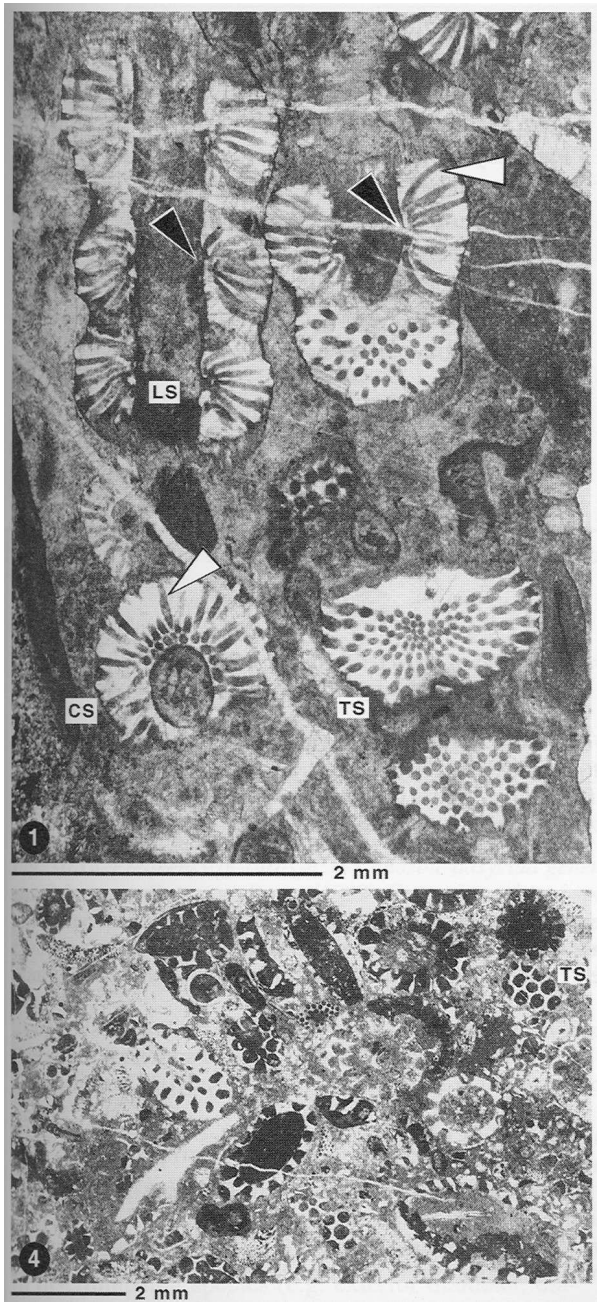
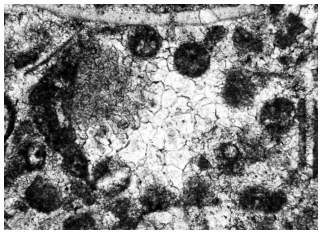
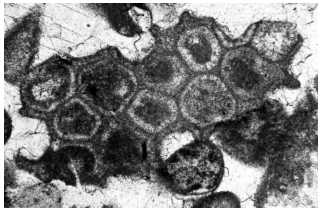
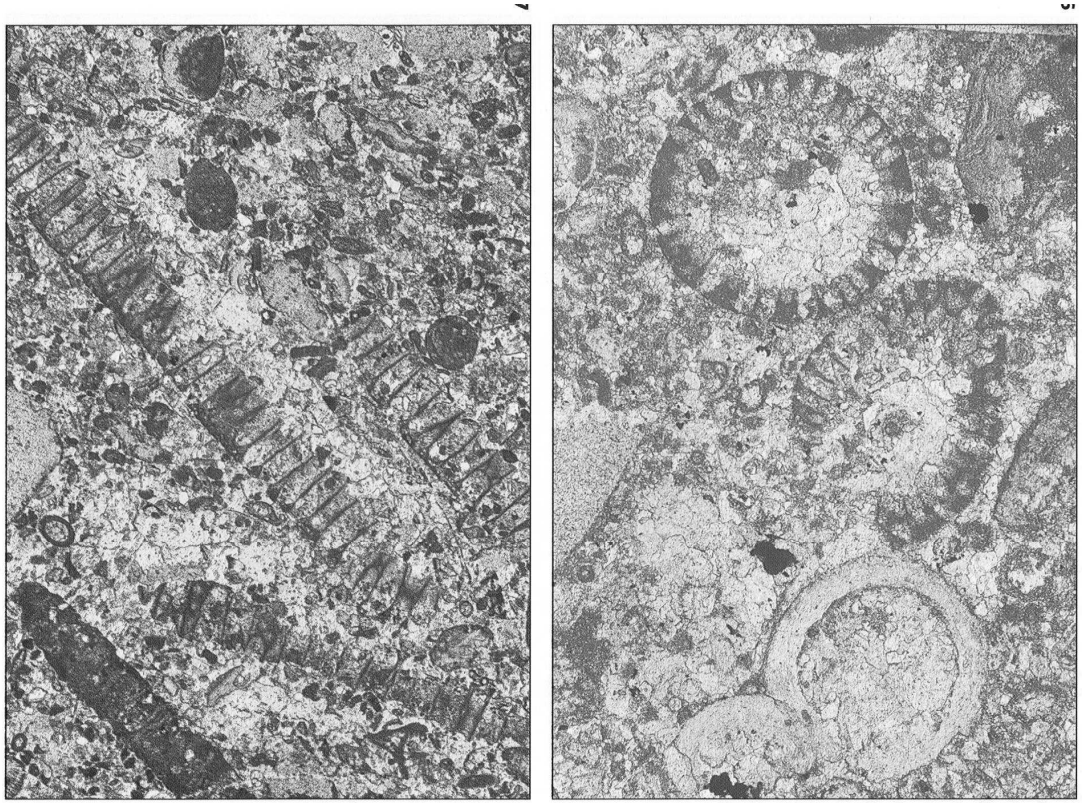
Solenoporacean

GREEN ALGAE

Udoteaceans





GREEN ALGAE

Dasycladaceans