

# **Volume III**

# Plates 104-200

This volume contains assemblage plates arranged in stratigraphic order from the Pridoli (latest Silurian) to the Strunian (latest Devonian).

Each plate is headed with an indication of the group(s) of taxa illustrated and the formation and the biostratigraphic and/or chronostratigraphic interval from which the specimens were recovered. It should be bourn in mind that some of the taxa illustrated in these assemblages of specified ages have been interpreted as having been reworked into that assemblage from older sediments. These reworked taxa are labelled '(R)' at the end of the figure caption of the taxon in question. The evidence for reworking of these palynomorphs is discussed in the stratigraphic palynology chapter in Volume I.

The reference for each figure on a plate is in three parts. The first part (egs. DW 310; OD 3675.75) indicates the sample number, the second part (egs. 1-1; FS-1) refers to the slide number and the third part (eg. L34\4) refers to the England Finder Reference for the specimen on the slide. Some photographs are taken under interference contrast which is indicated by the abbreviation IC.

The magnification of the acritarch and spore figures are all at X920 and the magnification of all the chitinozoan figures are at X550, unless otherwise stated in the figure caption.

**Plate 104.**

Acritarchs from the Black Shale Member, Calcareous Shale Formation, Pridoli in age.

1. *Ammonidium* sp. 2. DW 56, FS-1, H48\4.
2. *Ammonidium* sp. 2. DW 56, FS-1, K60\3.
3. *Ammonidium* sp. 2. DW 51, FS-3, R11\1.
4. *Ammonidium* sp. 2. DW 56, FS-1, S38\1, X2300.
5. *Ammonidium* sp. 2. DW 51, FS-3, X46\2.
6. *Cymbosphaeridium pilar* var. *scabratum*? Cramer 1970. DW 94, FS-4, S12\4.
7. *Cymbosphaeridium pilar* var. *scabratum*? Cramer 1970. DW 94, FS-4, P28\2.
8. *Cymbosphaeridium* sp. 1. DW 94, FS-4, S5\4.
9. *Cymbosphaeridium* sp. 1. DW 94, FS-5, S14\1.
10. *Cymbosphaeridium* sp. 1. DW 94, FS-4, W15\3.
11. *Cymbosphaeridium* sp. 1. DW 94, FS-4, M41\1.

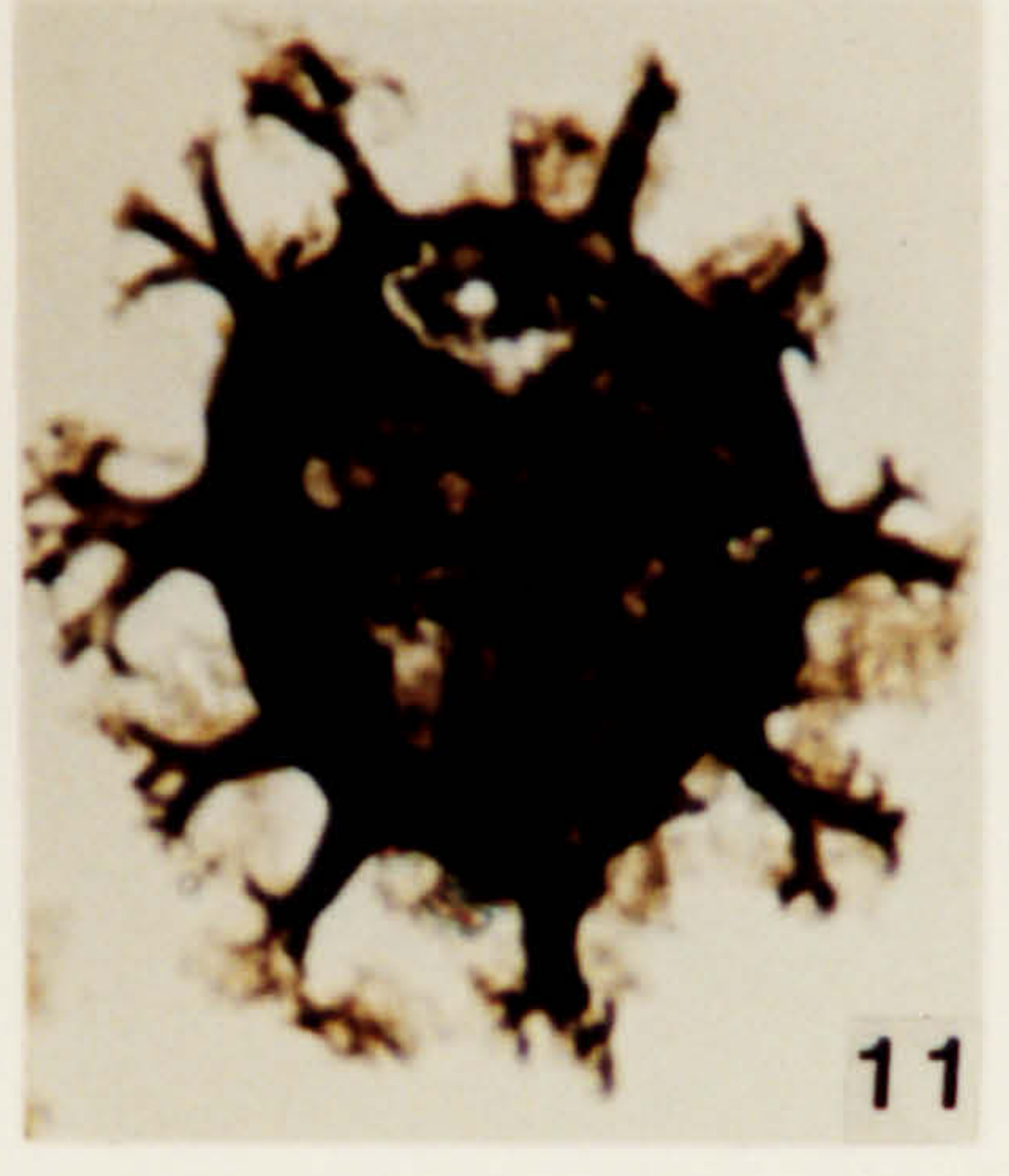
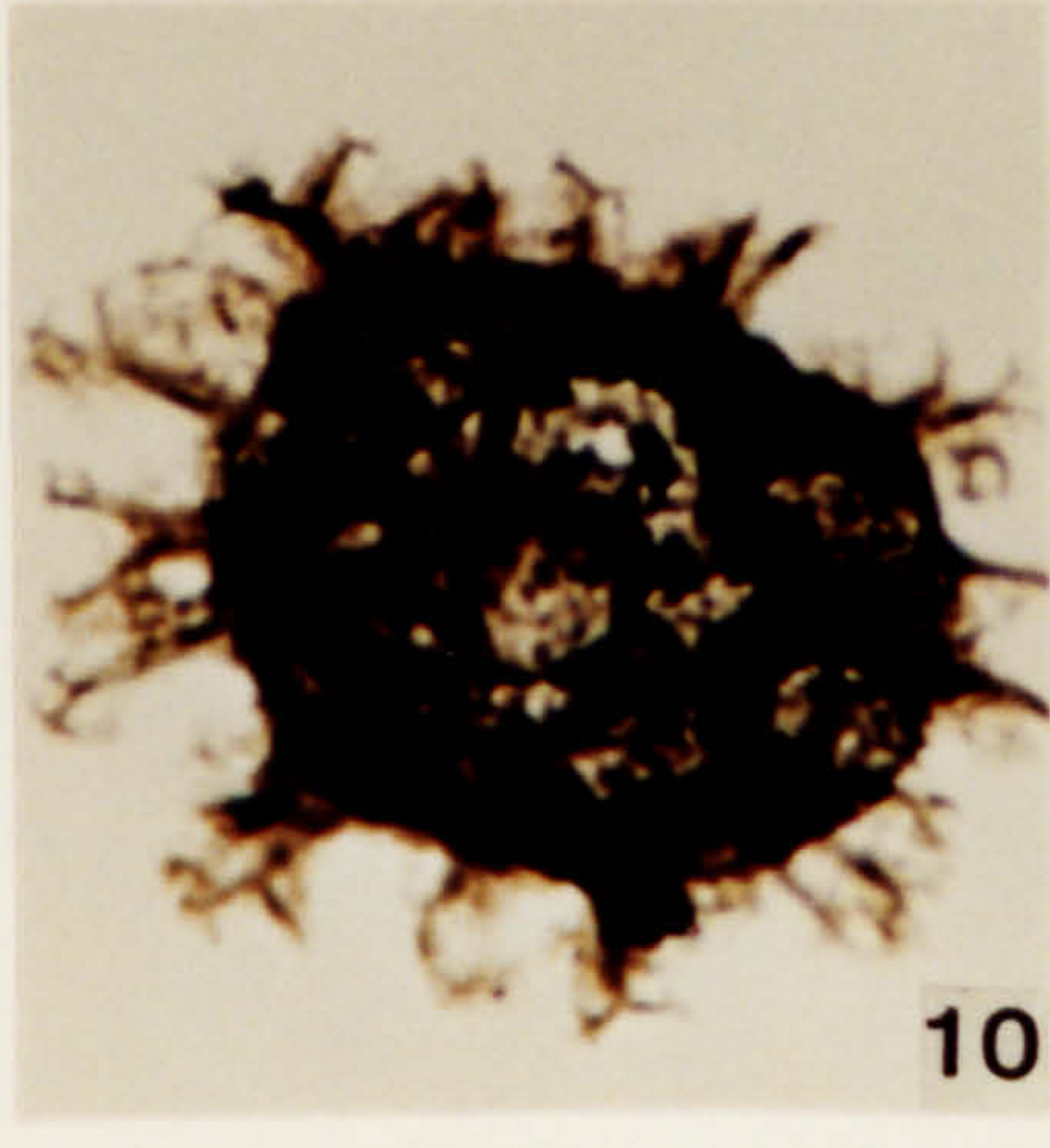
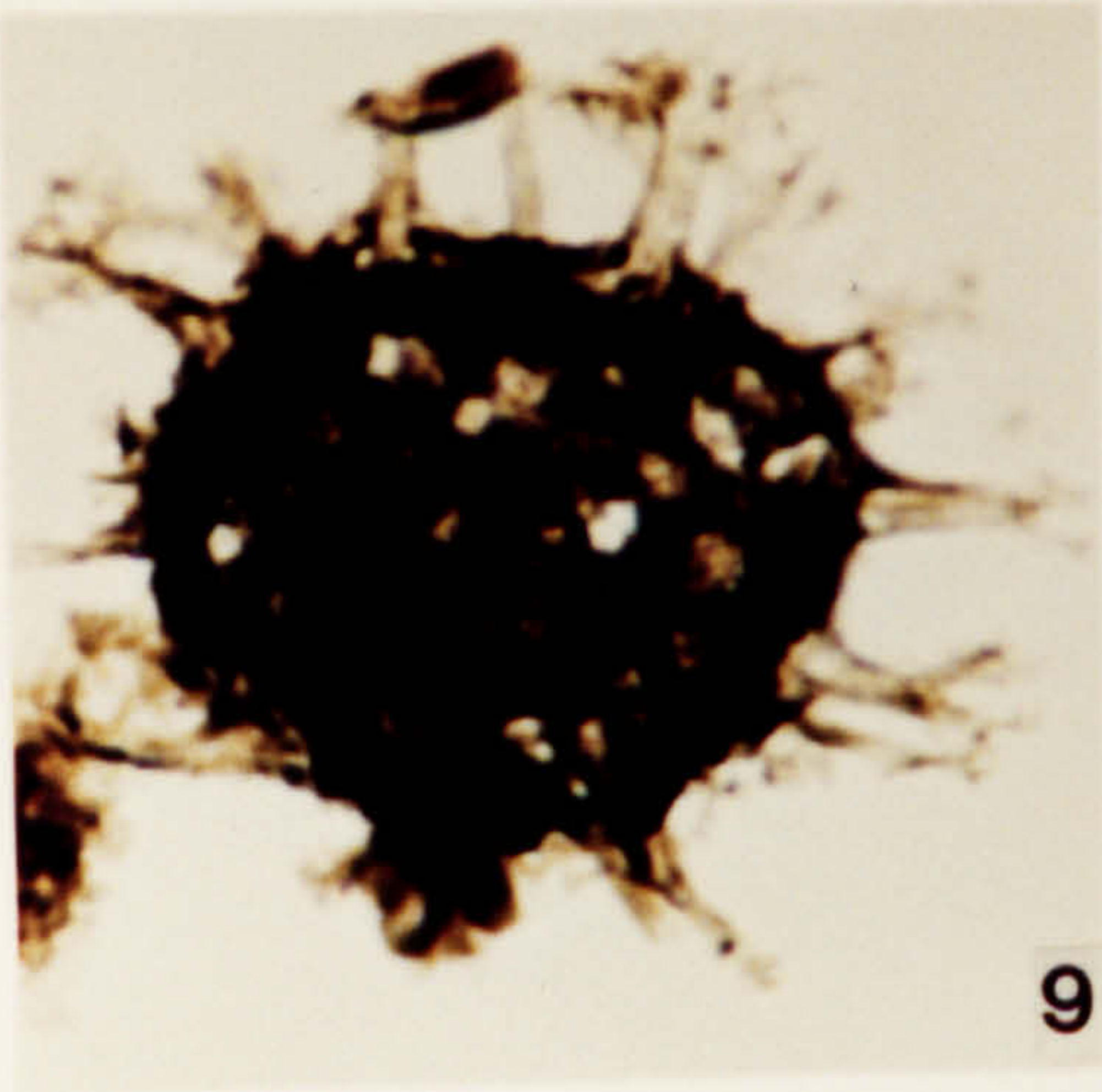
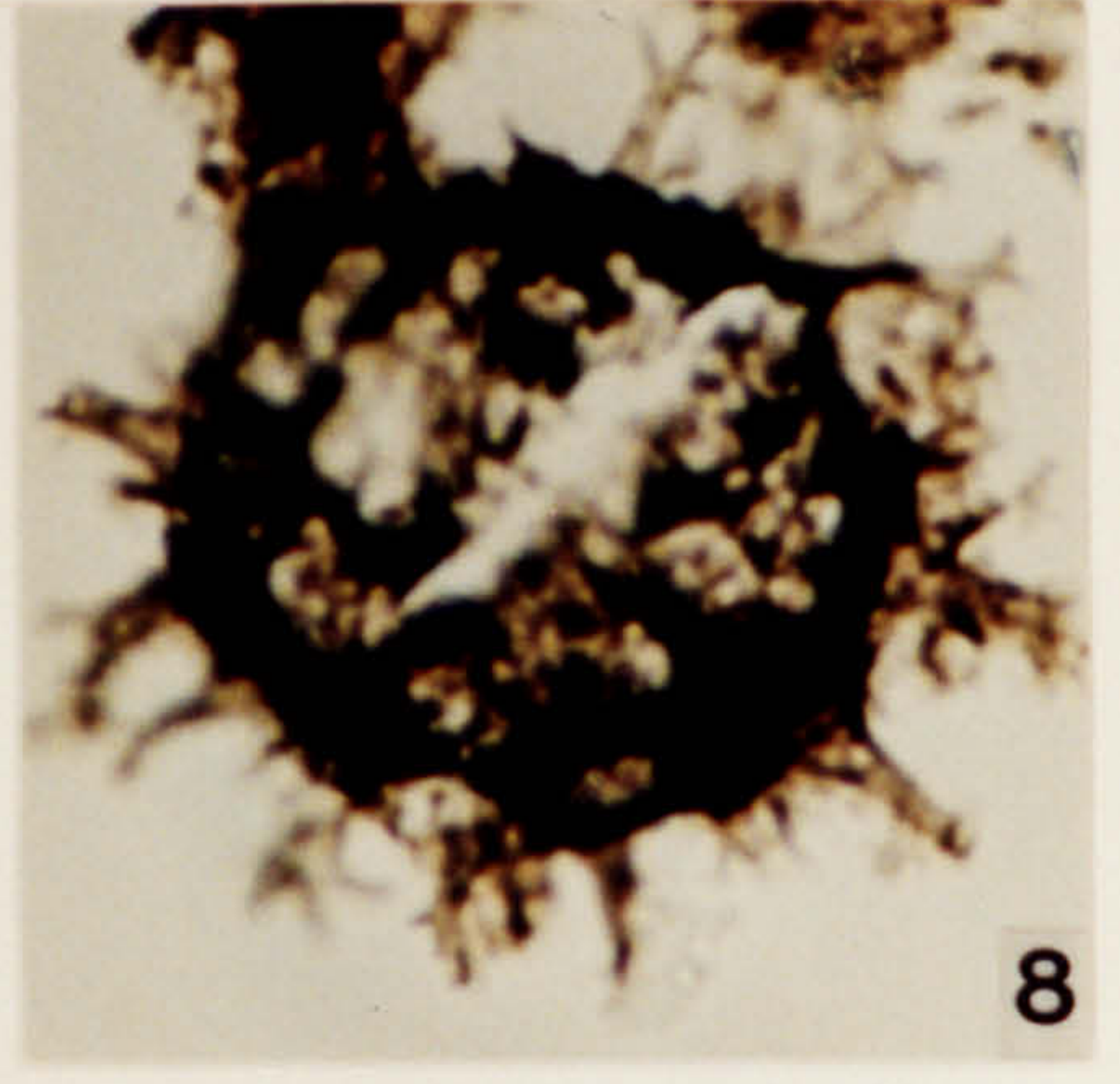
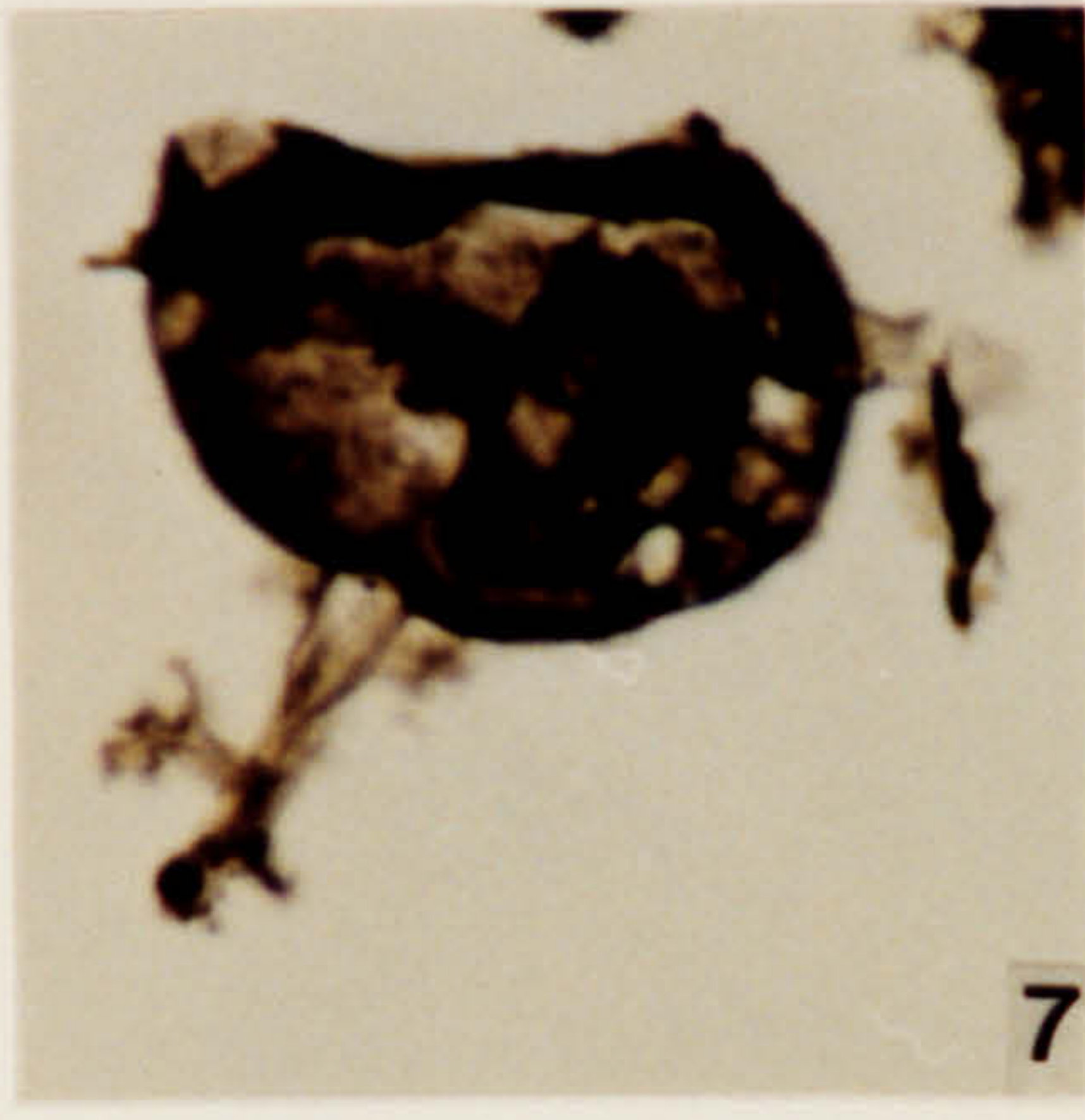
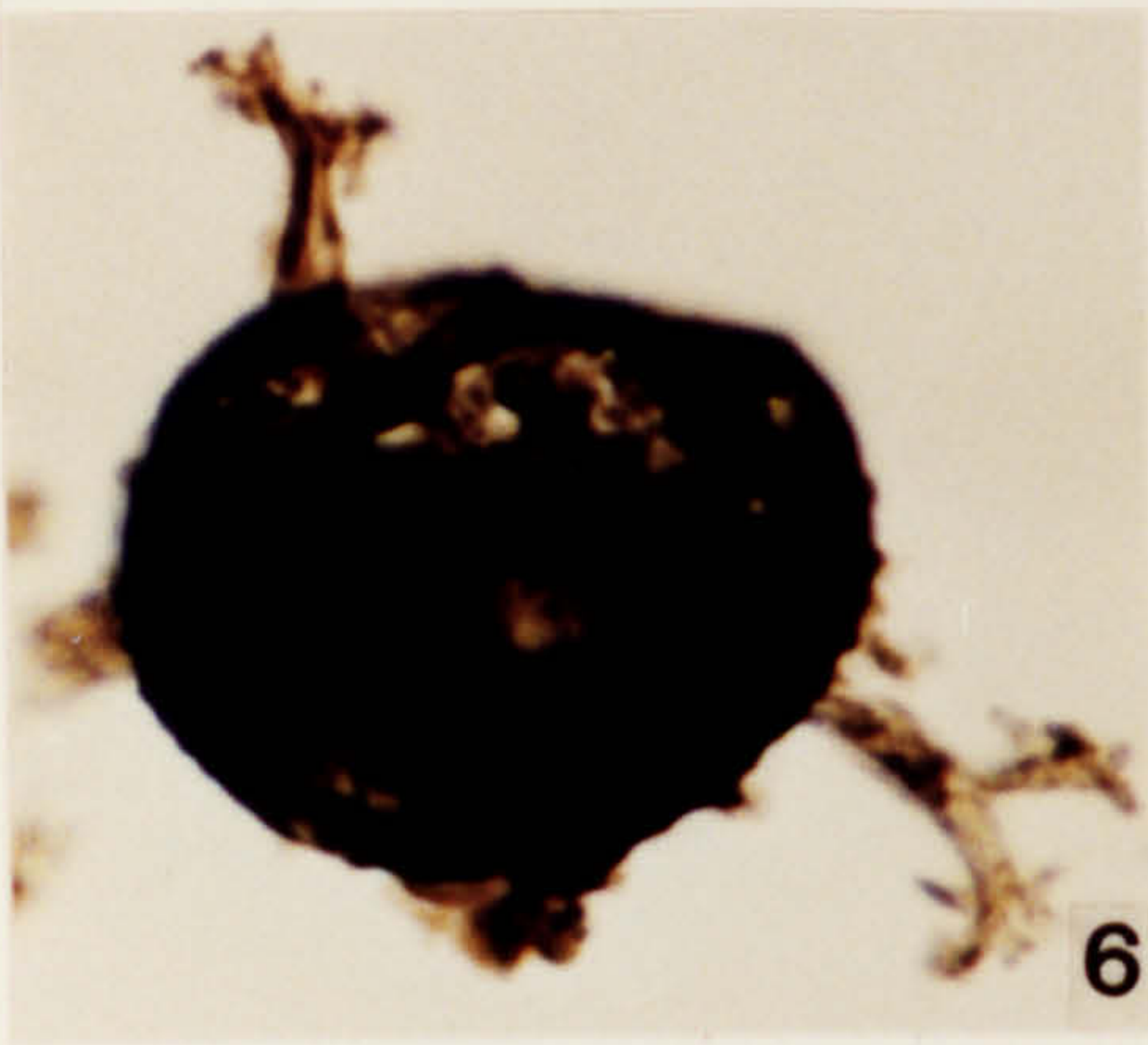
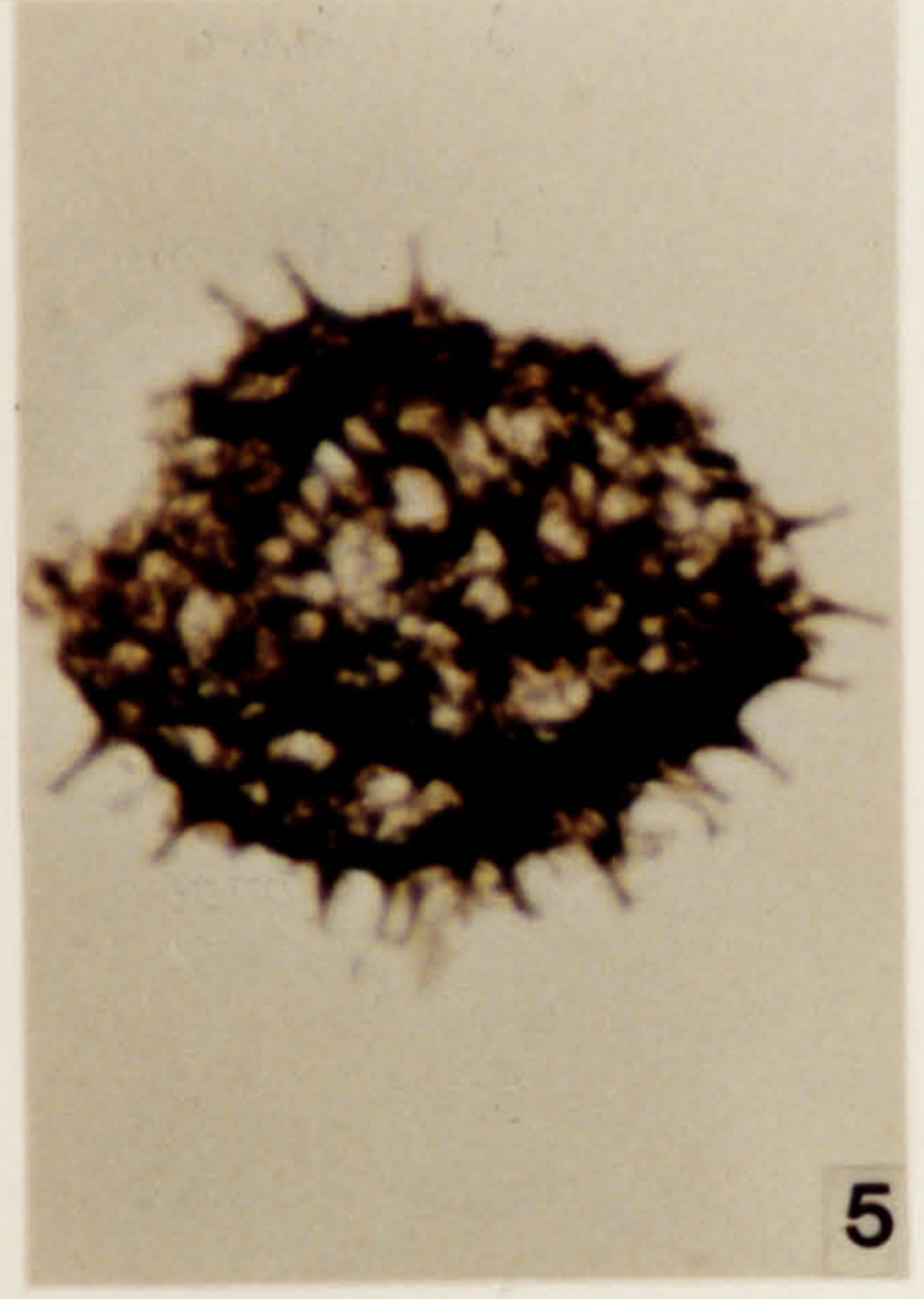
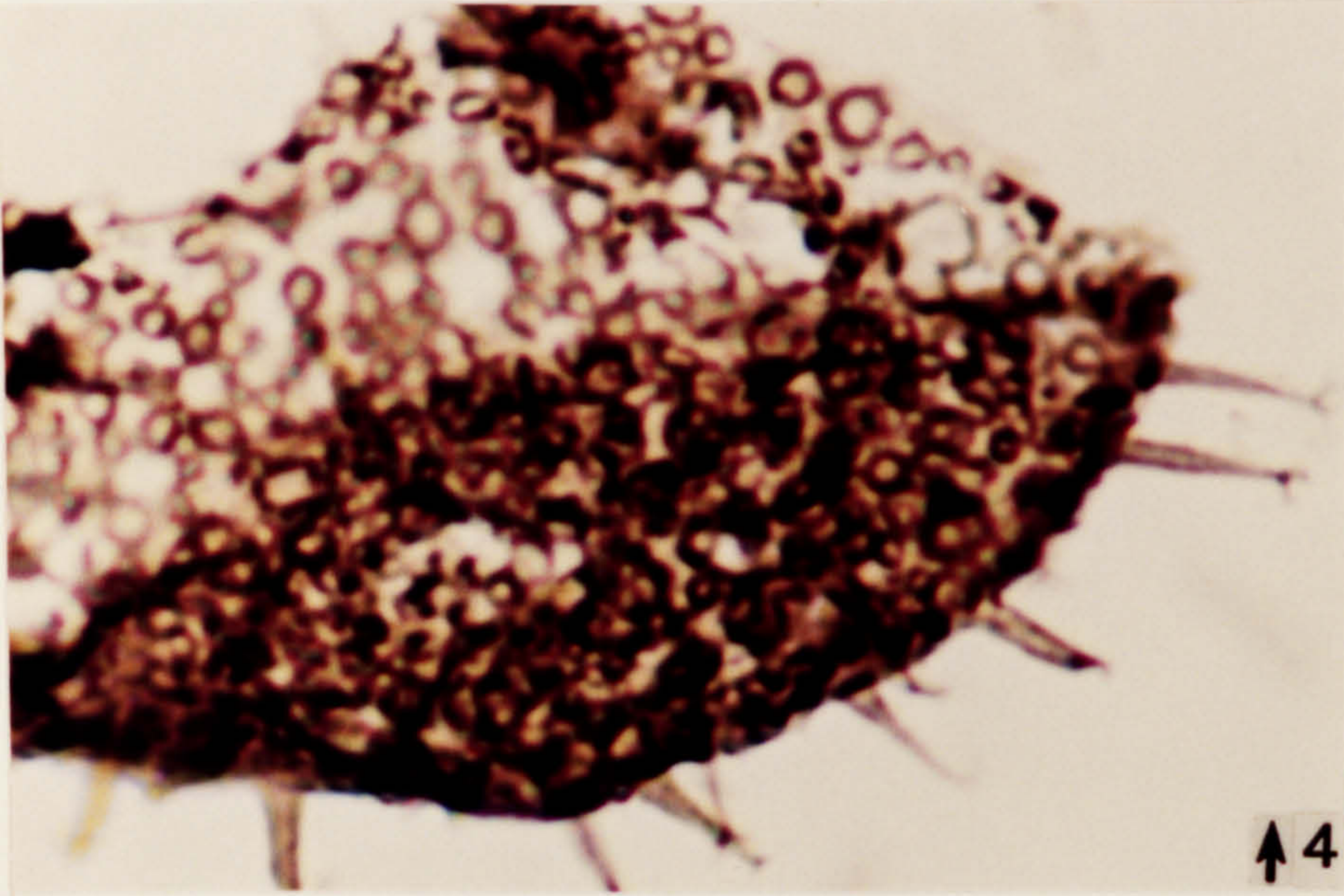
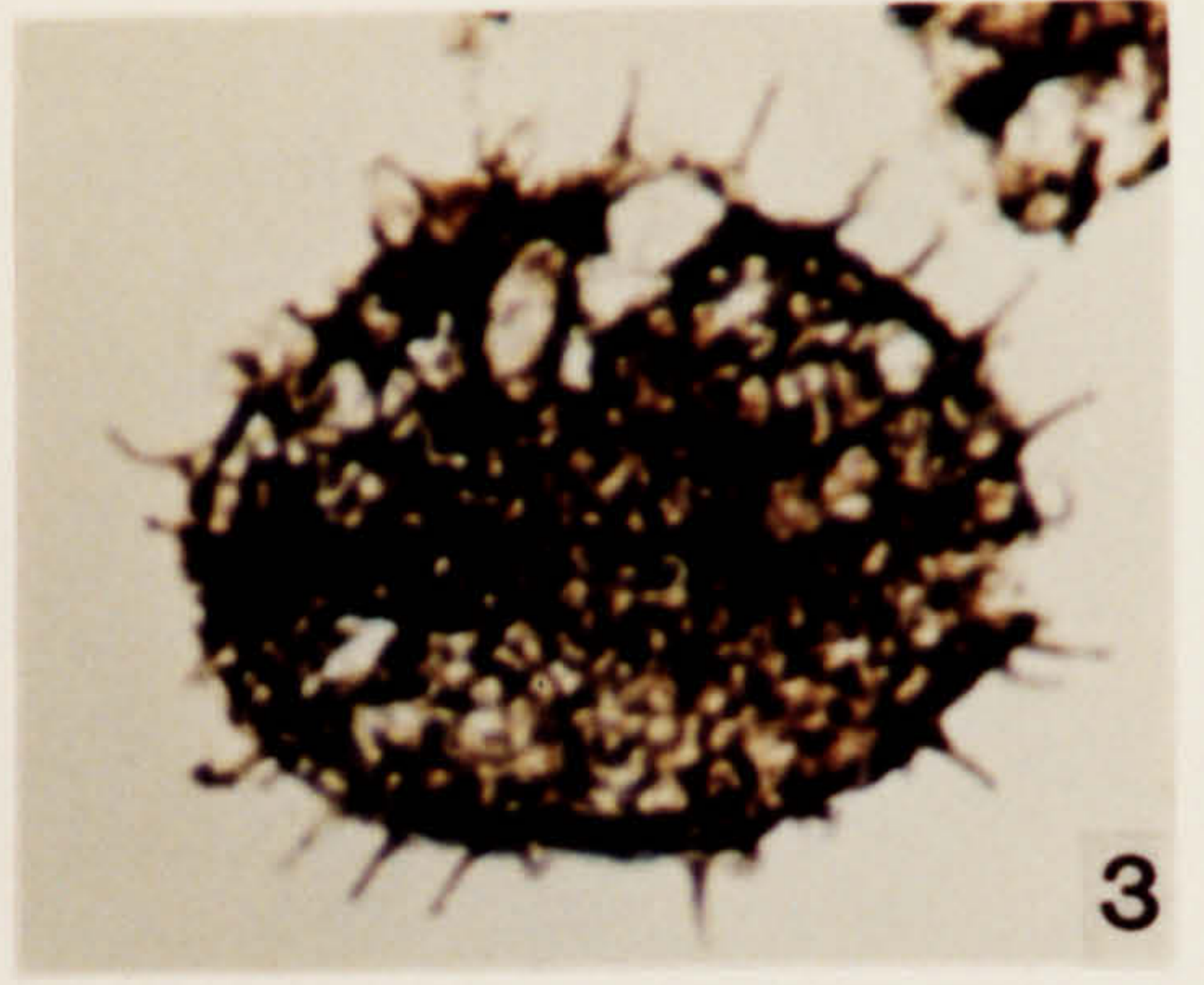
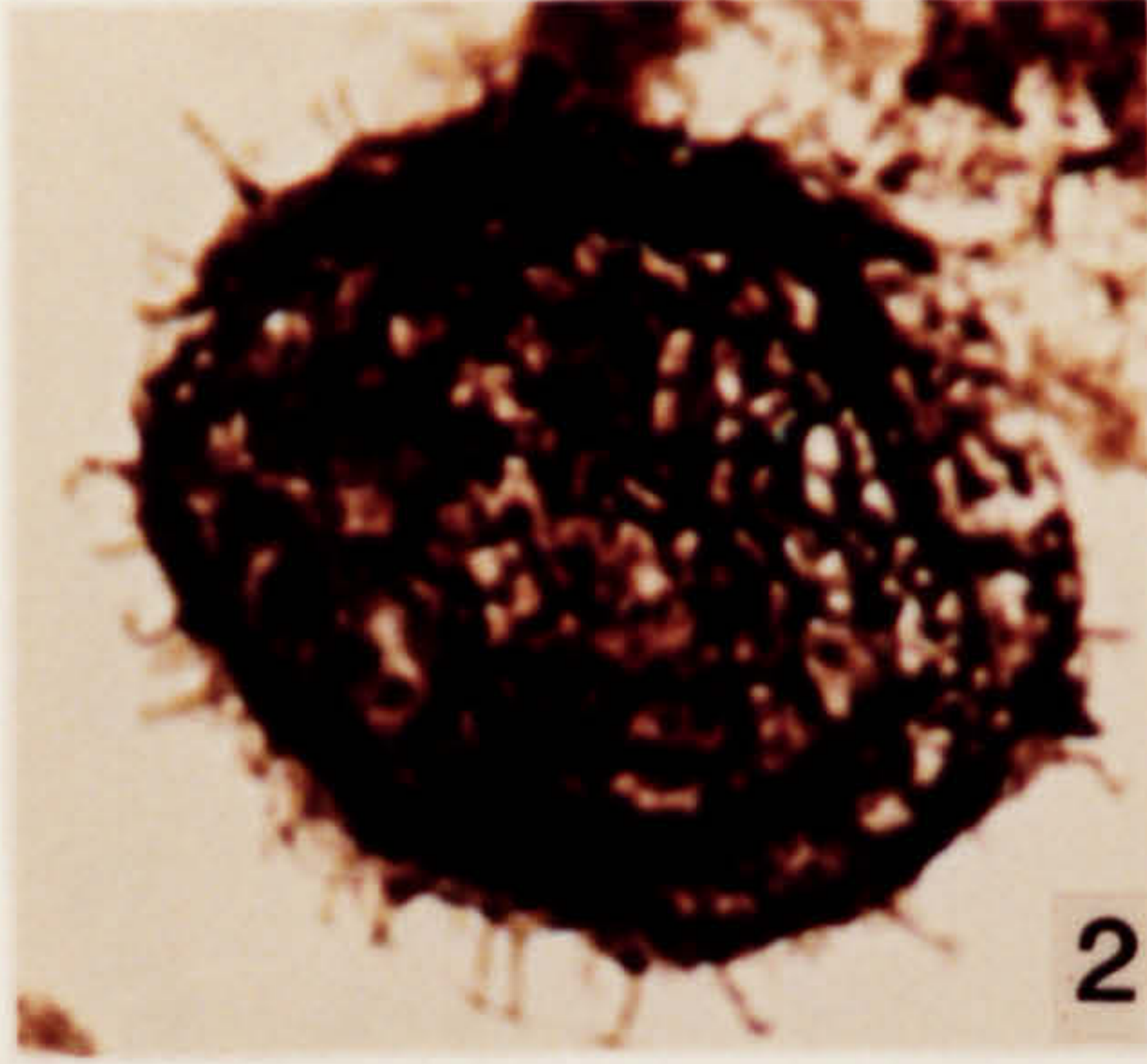
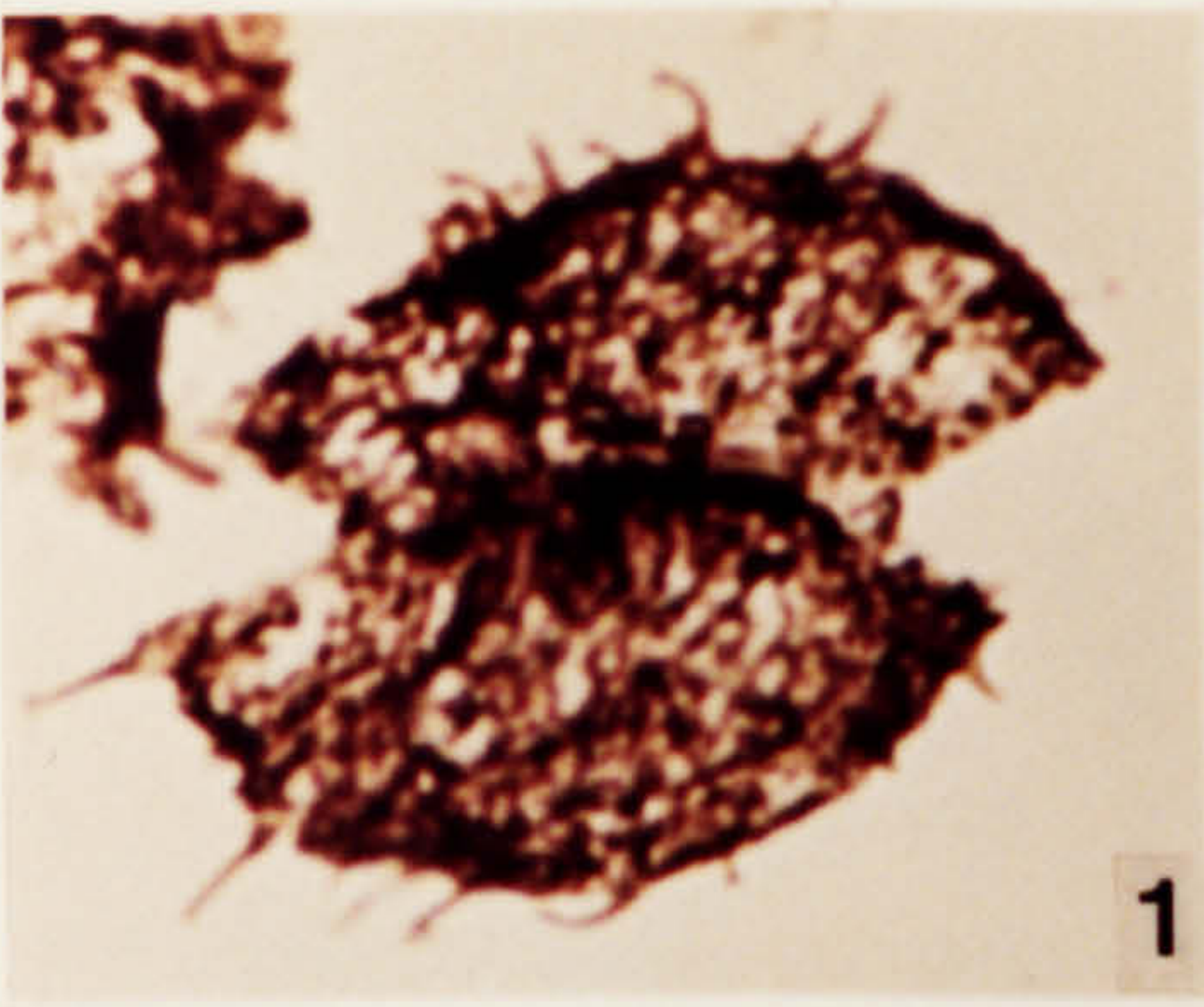
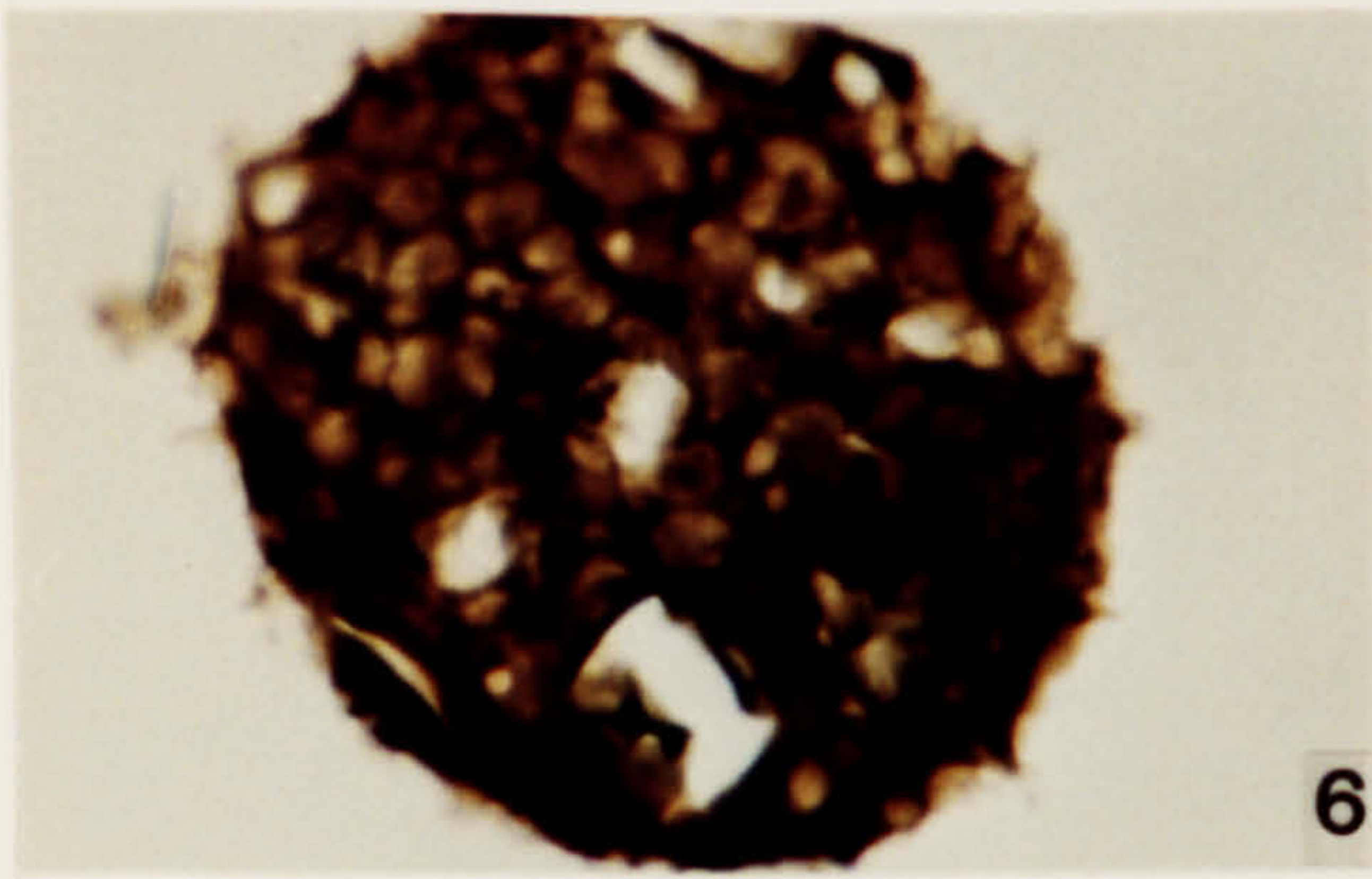
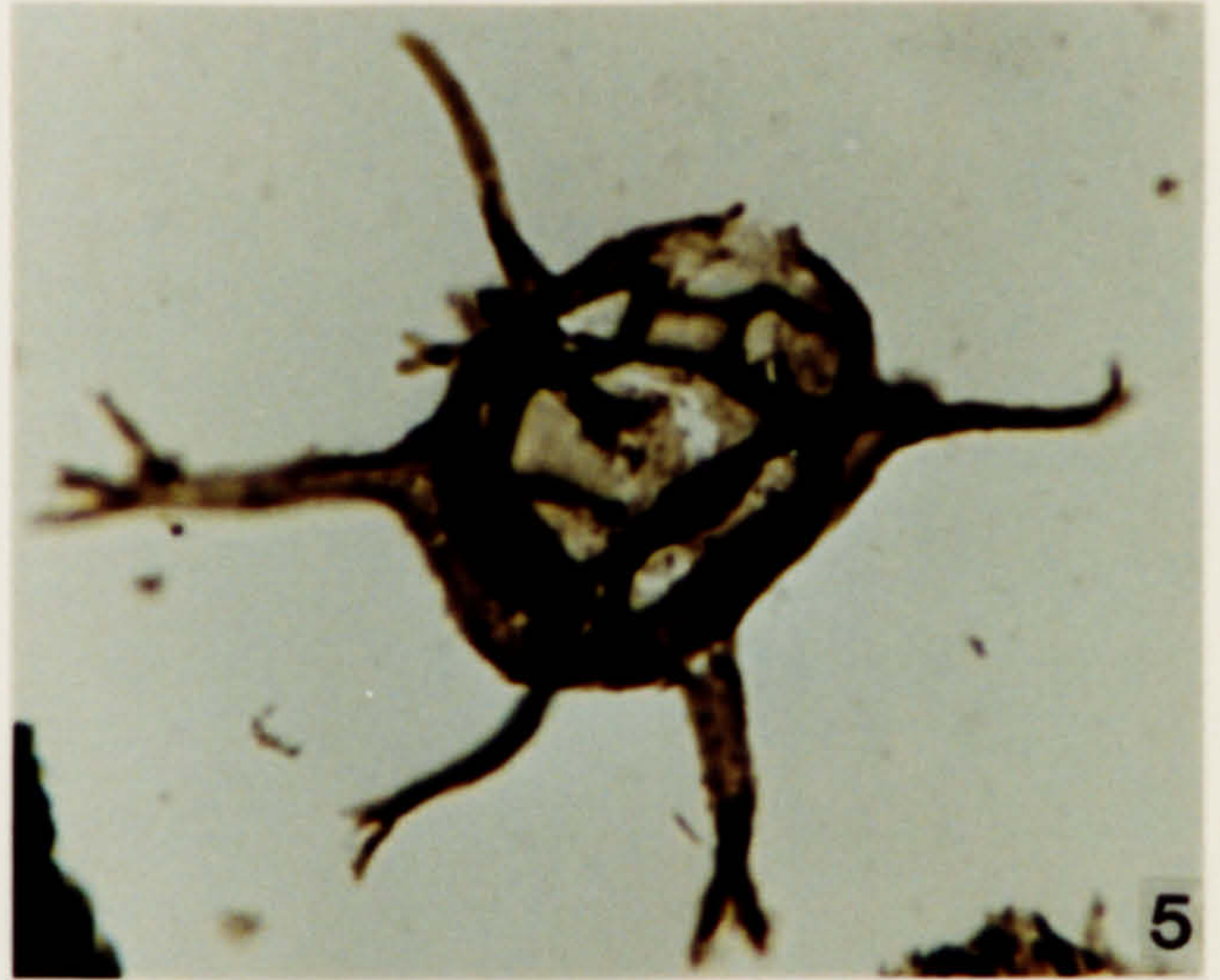
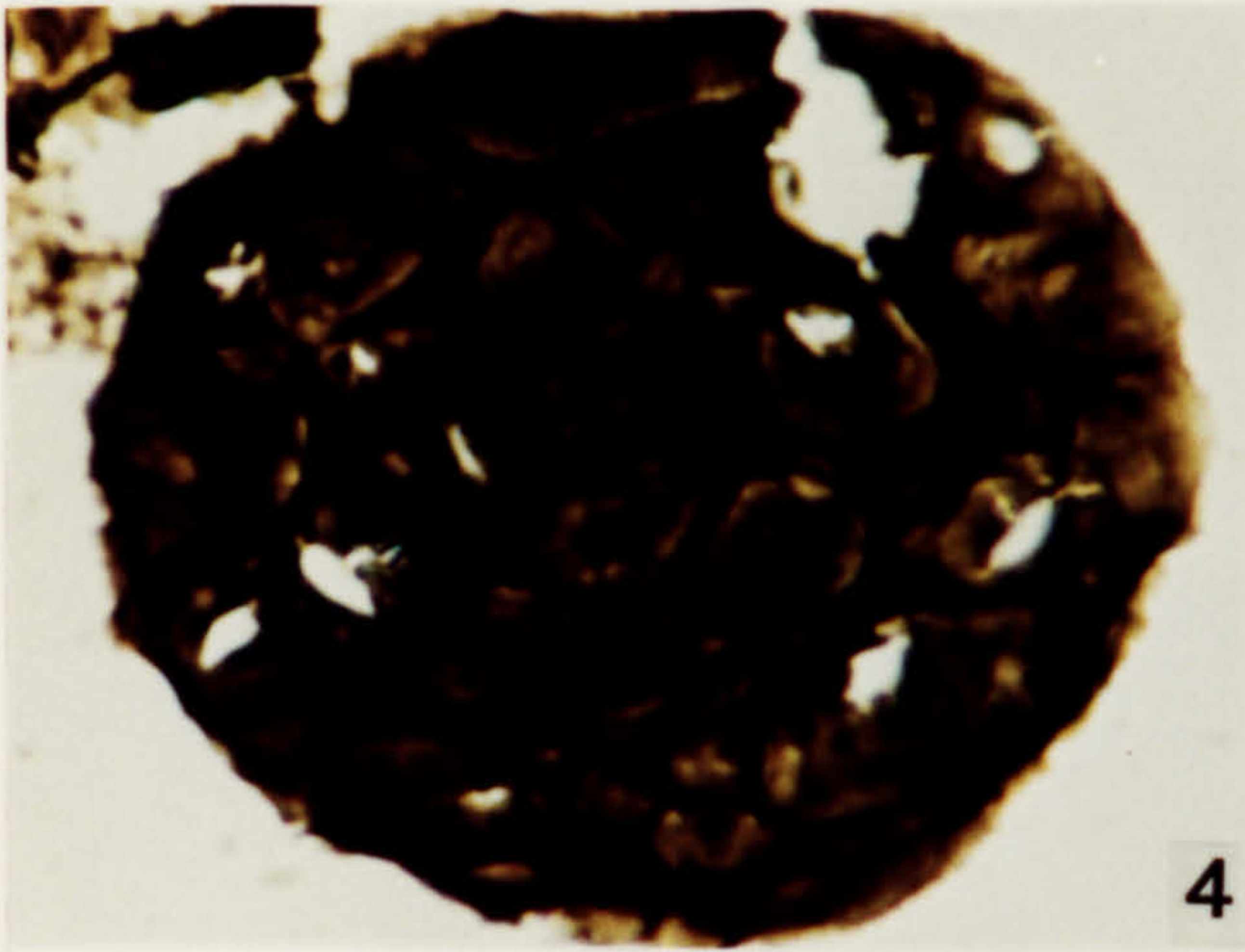
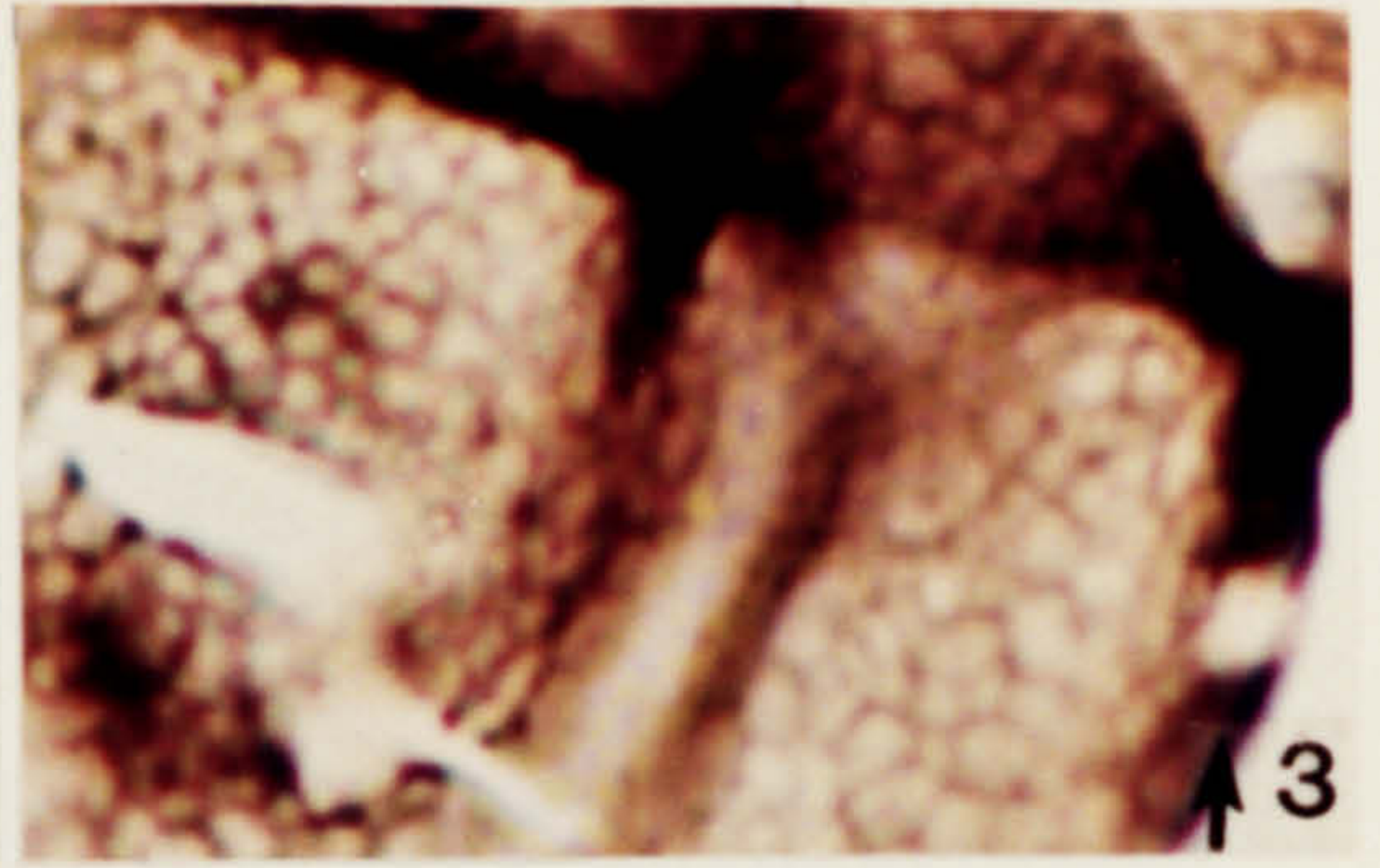


Plate 105.

Acritarchs from the Black Shale Member, Calcareous Shale Formation, Pridoli in age.

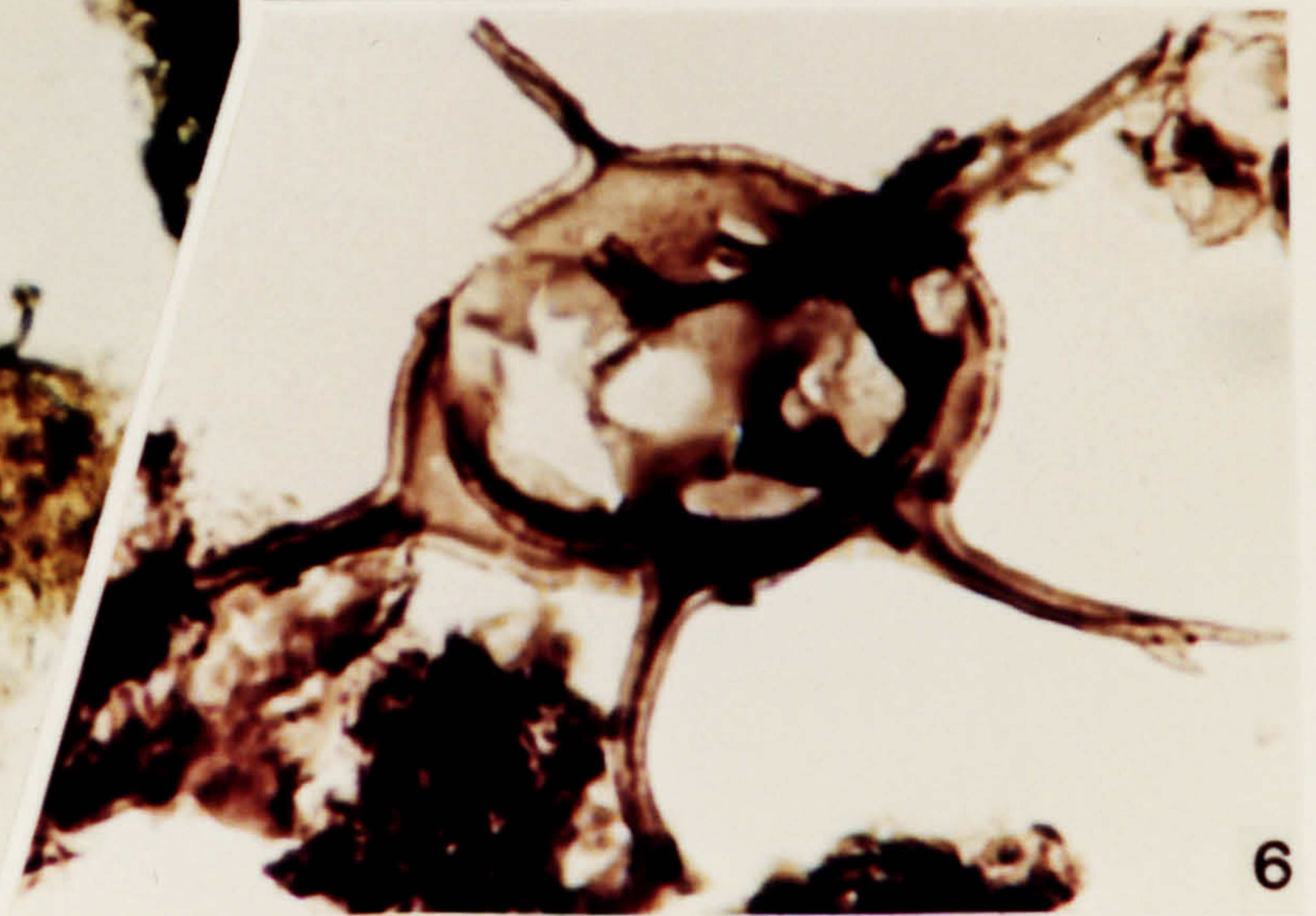
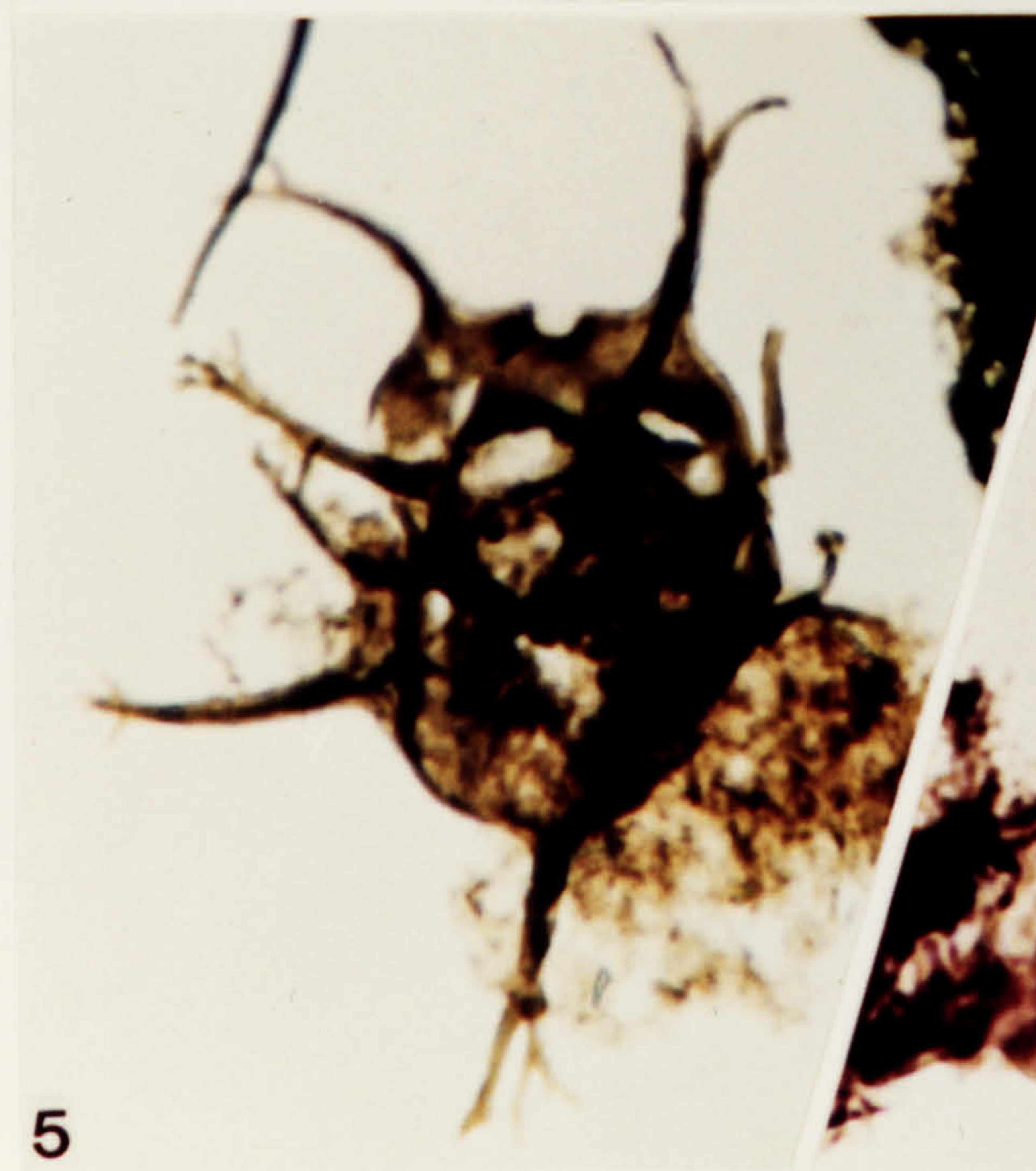
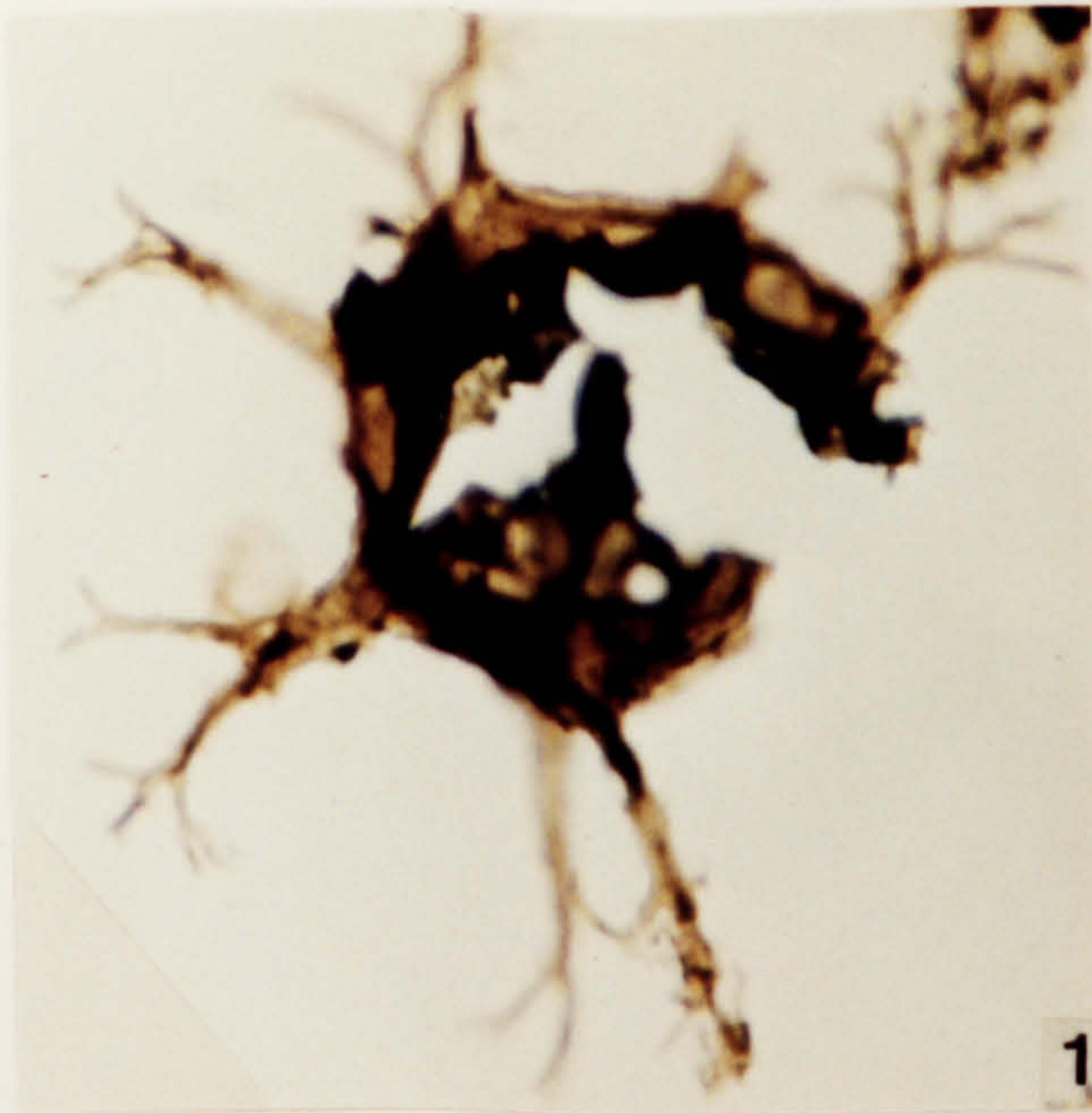
1. *Dictyotidium coarctatum* (Kiryanov) Colbath 1983. DW 52, FS-4, E36\1, IC.
2. *Dictyotidium coarctatum* (Kiryanov) Colbath 1983. DW 56, FS-1, F39\2.
3. *Dictyotidium coarctatum* (Kiryanov) Colbath 1983. DW 56, FS-1, F39\2, X2300.
4. *Dictyotidium dictyotum* (Eisenack) Eisenack 1955. DW 55, FS-4, U17\1.
5. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. DW 55, FS-4, U32\2.
6. *Dictyotidium dictyotum* (Eisenack) Eisenack 1955. DW 94, FS-4, C39\4.
7. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. DW 52, FS-4, O25\4.
8. *Dictyotidium* sp. 2. DW 52, FS-4, X36\1.
9. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. DW 94, FS-4, D19\1.



**Plate 106.**

Acritarchs from the Black Shale Member, Calcareous Shale Formation, Pridoli in age.

1. *Diexallophasis denticulata* var. A. DW 51, FS-3, T16\4.
2. *Diexallophasis denticulata* var. A. DW 51, FS-3, V38\3.
3. *Diexallophasis denticulata* var. A. DW 51, FS-3, S41\1.
4. *Diexallophasis denticulata* var. A. DW 56, FS-2,
5. *Diexallophasis denticulata* var. A. DW 51, FS-3, K11\3.
6. *Diexallophasis denticulata* var. A. DW 56, FS-1, Y46\1\1.

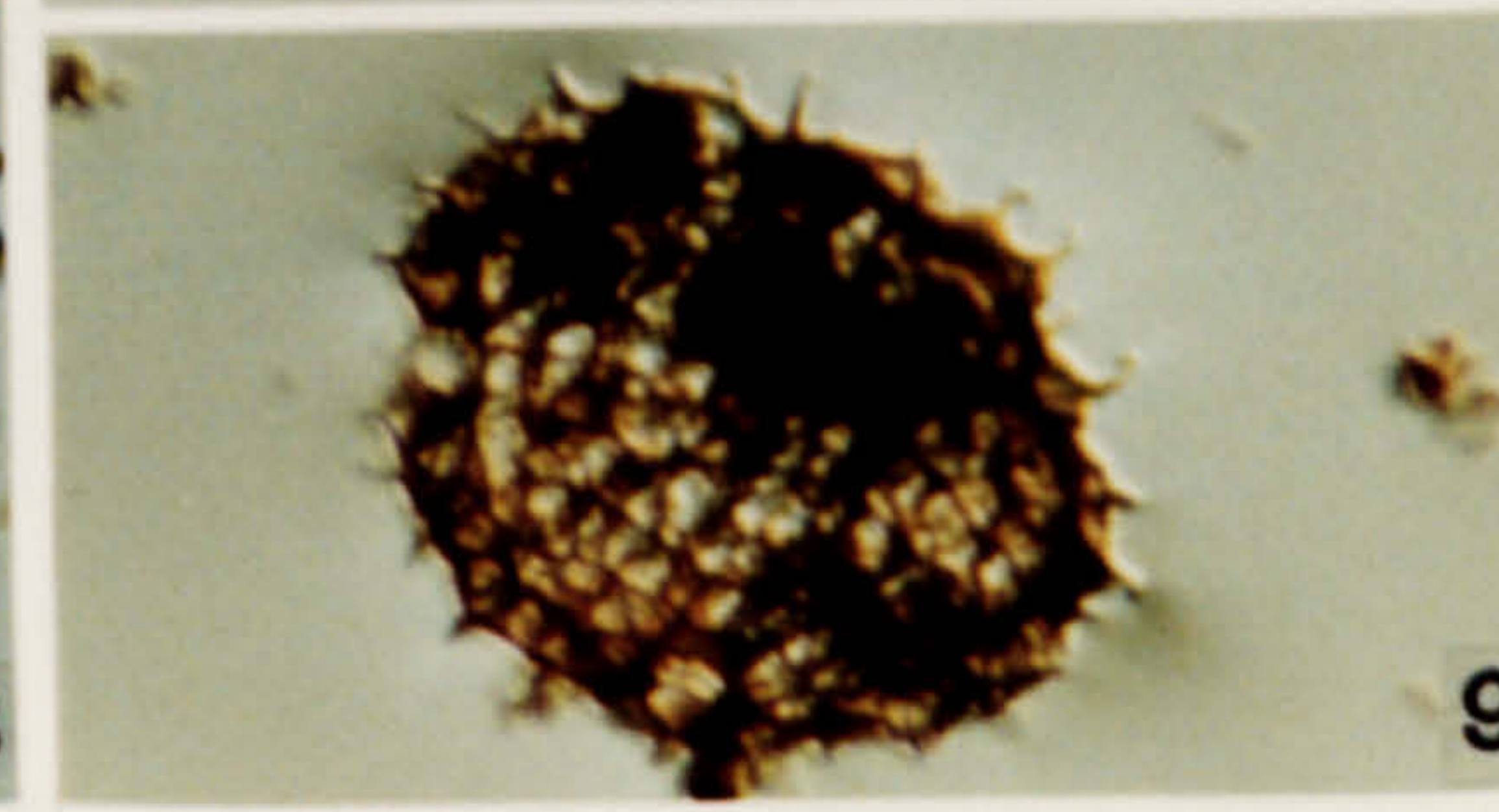
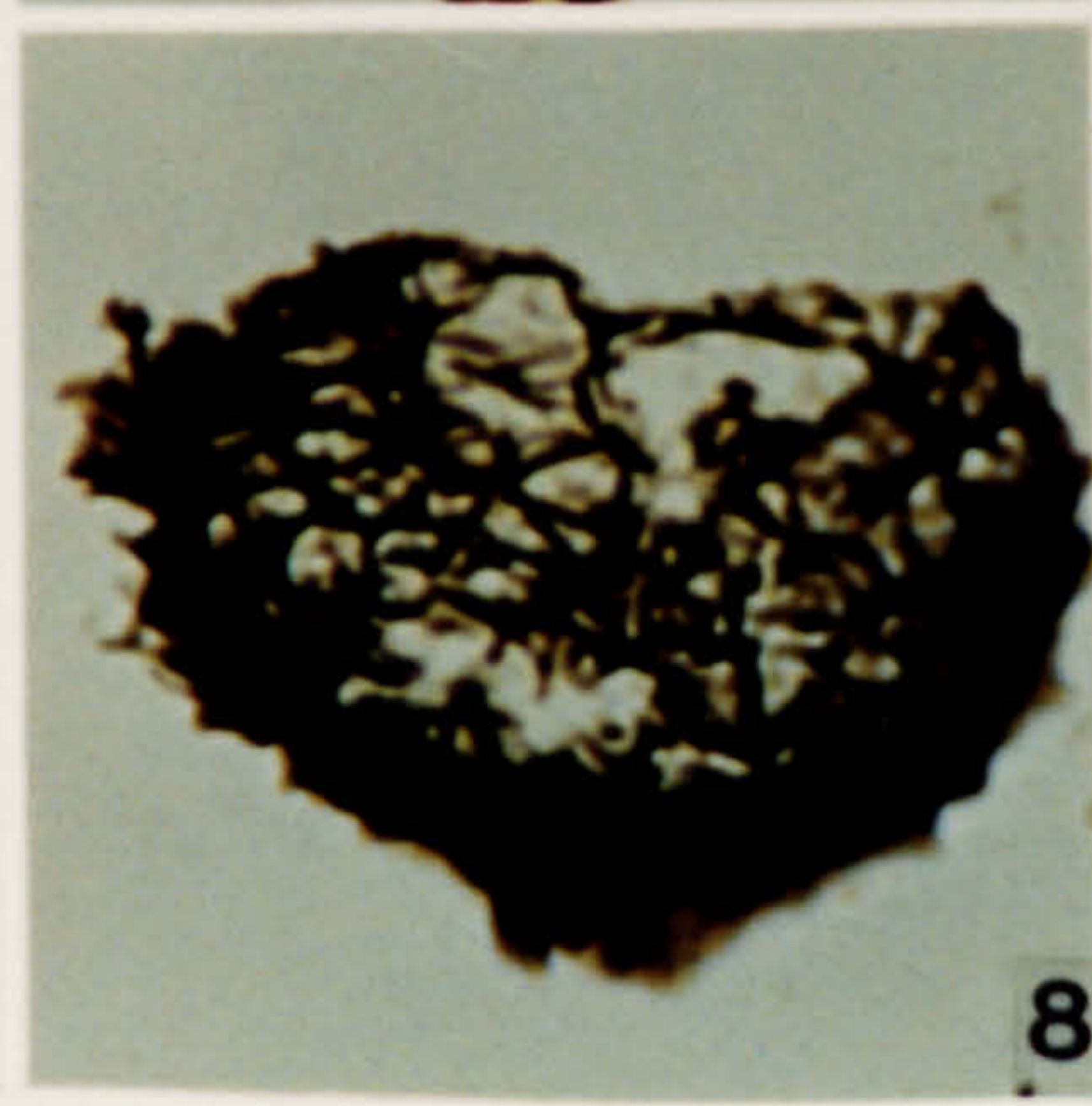
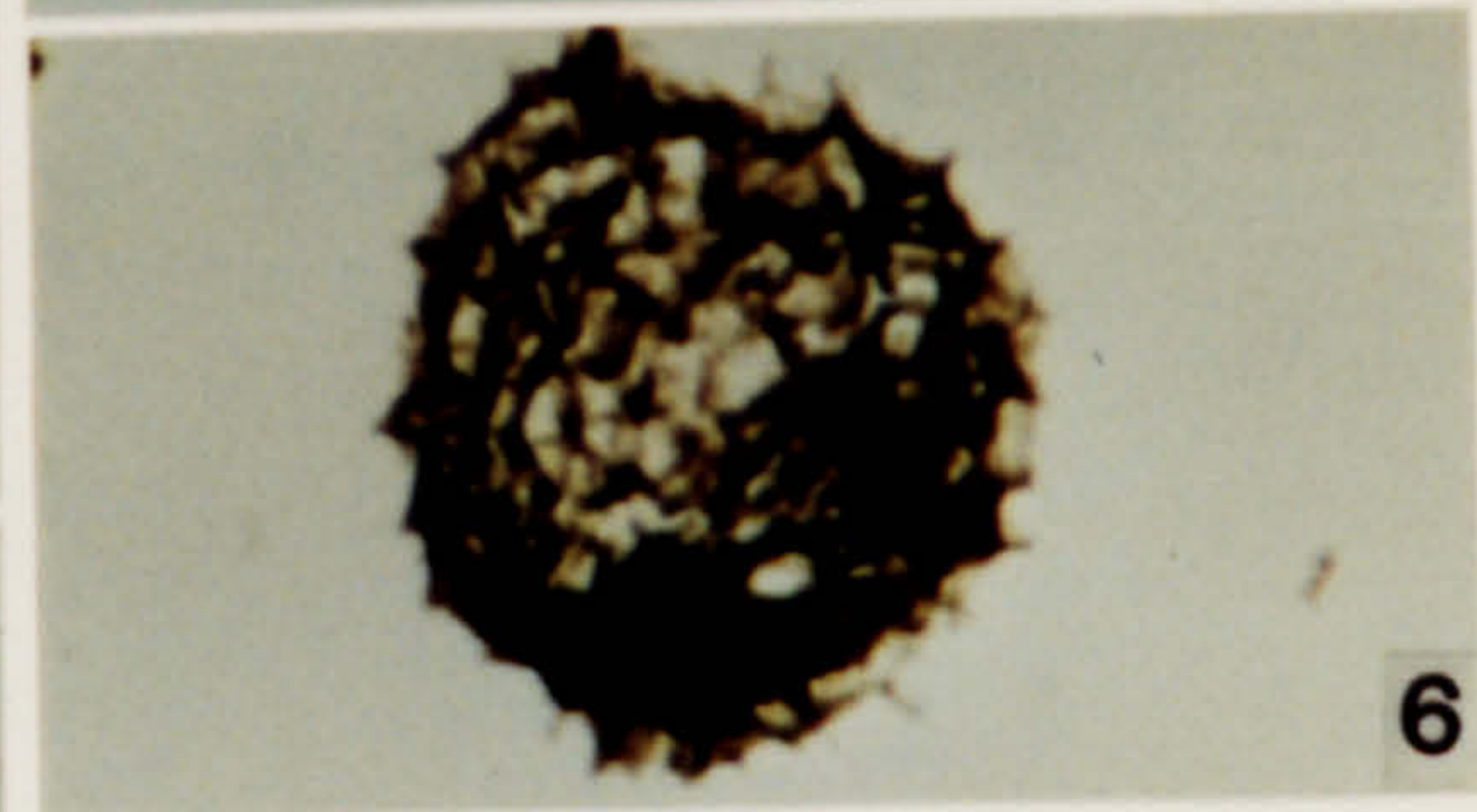
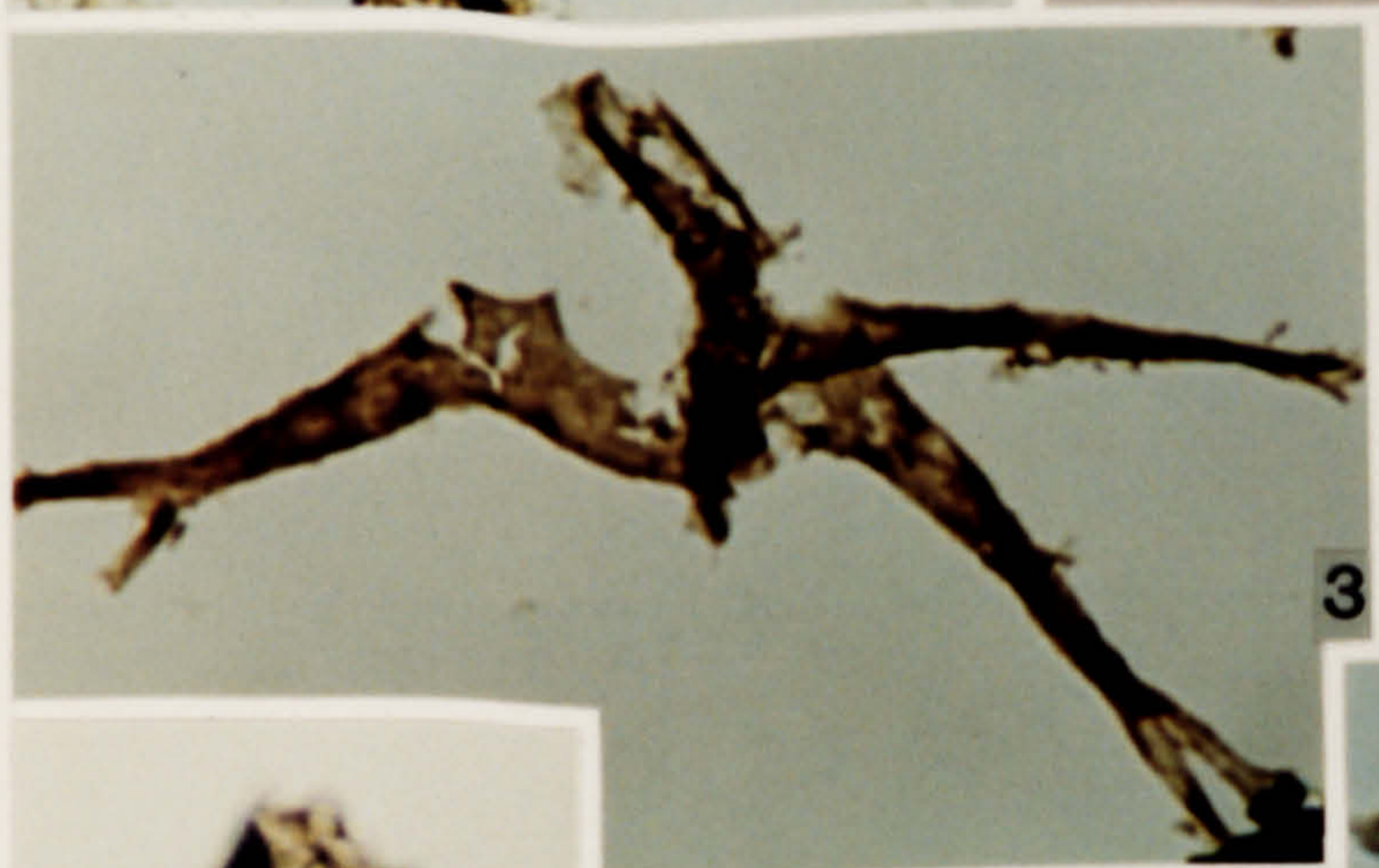
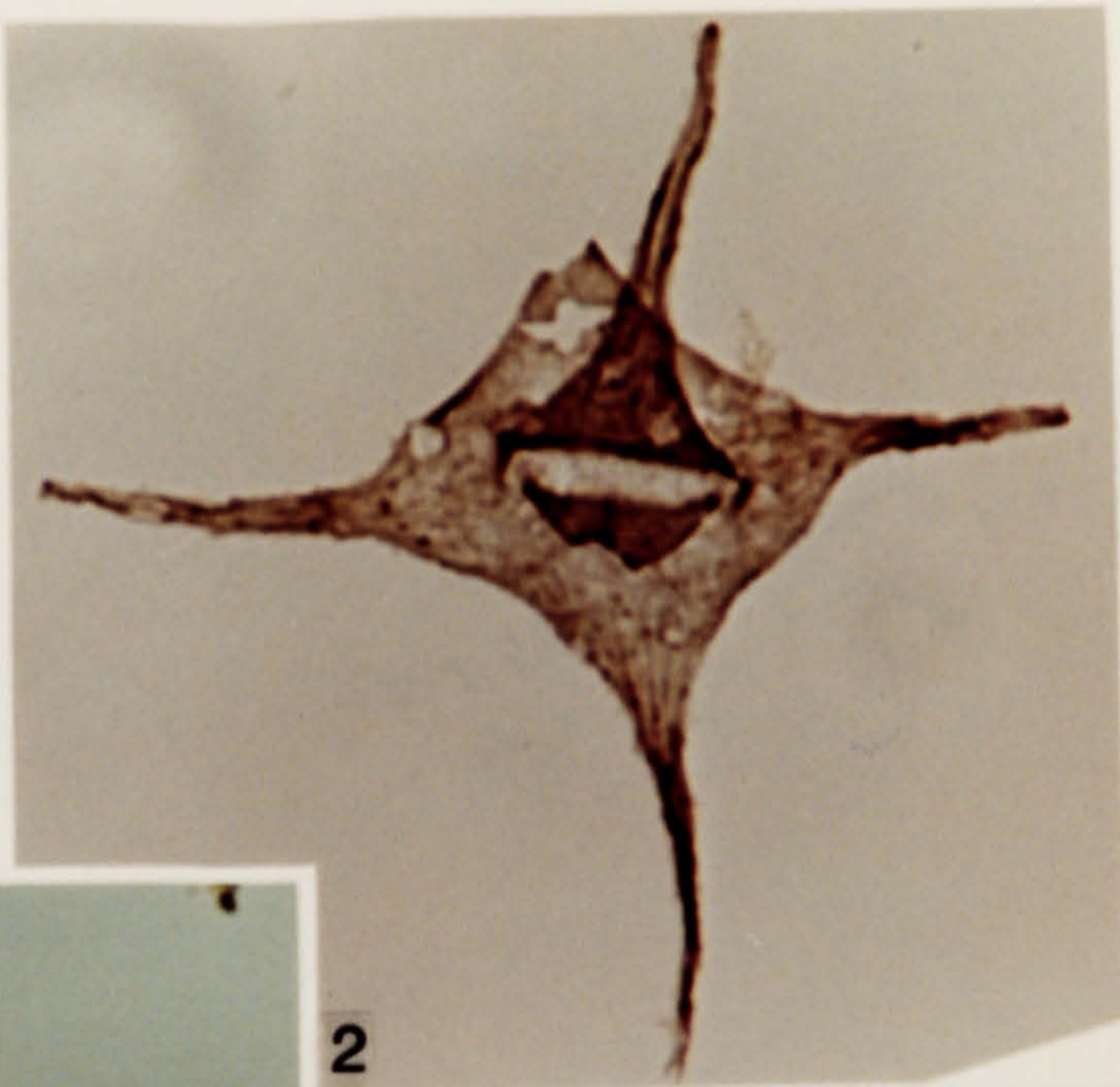
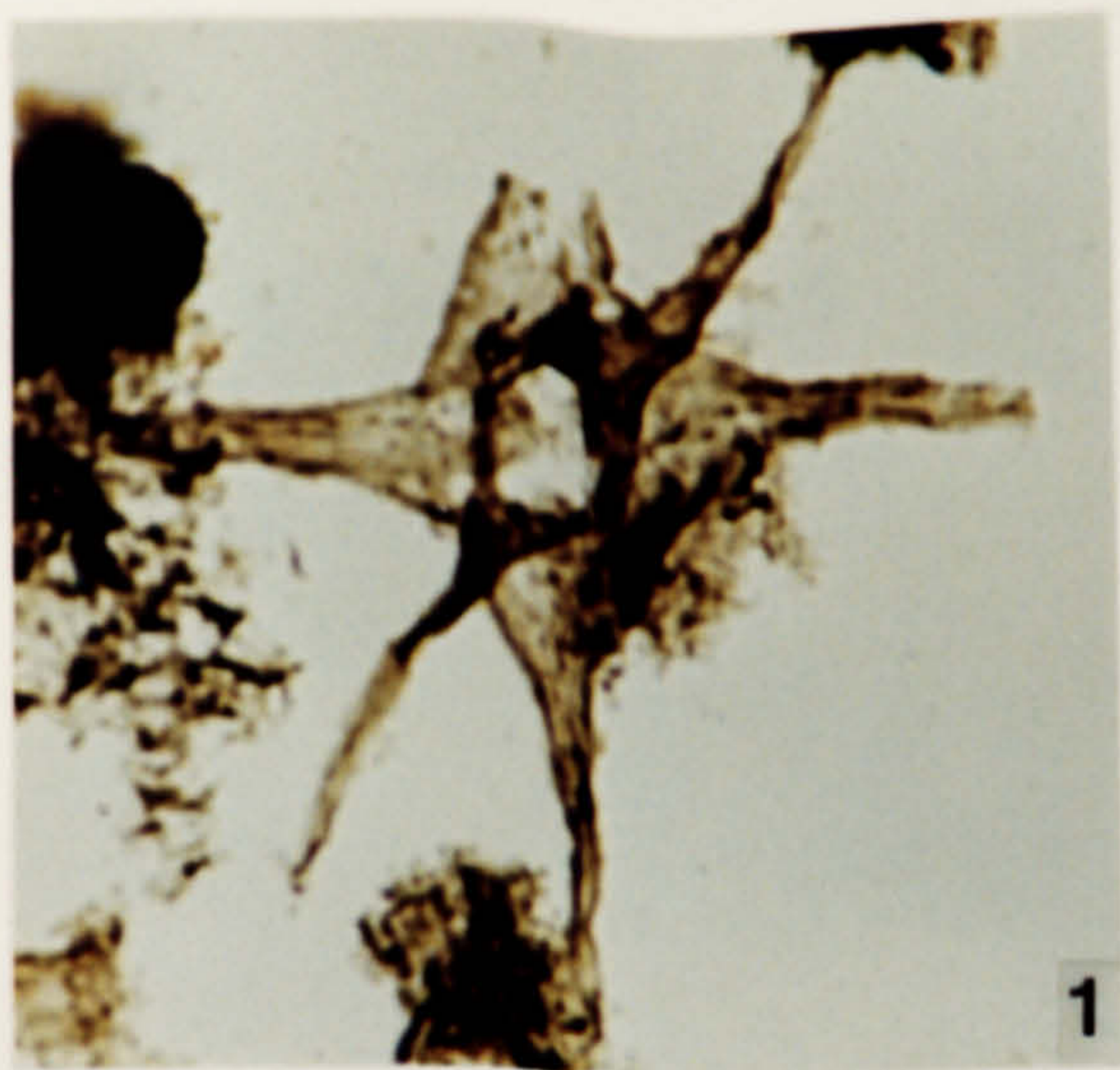




**Plate 107.**

**Acritarchs from the Black Shale Member, Calcareous Shale Formation, Pridoli in age.**

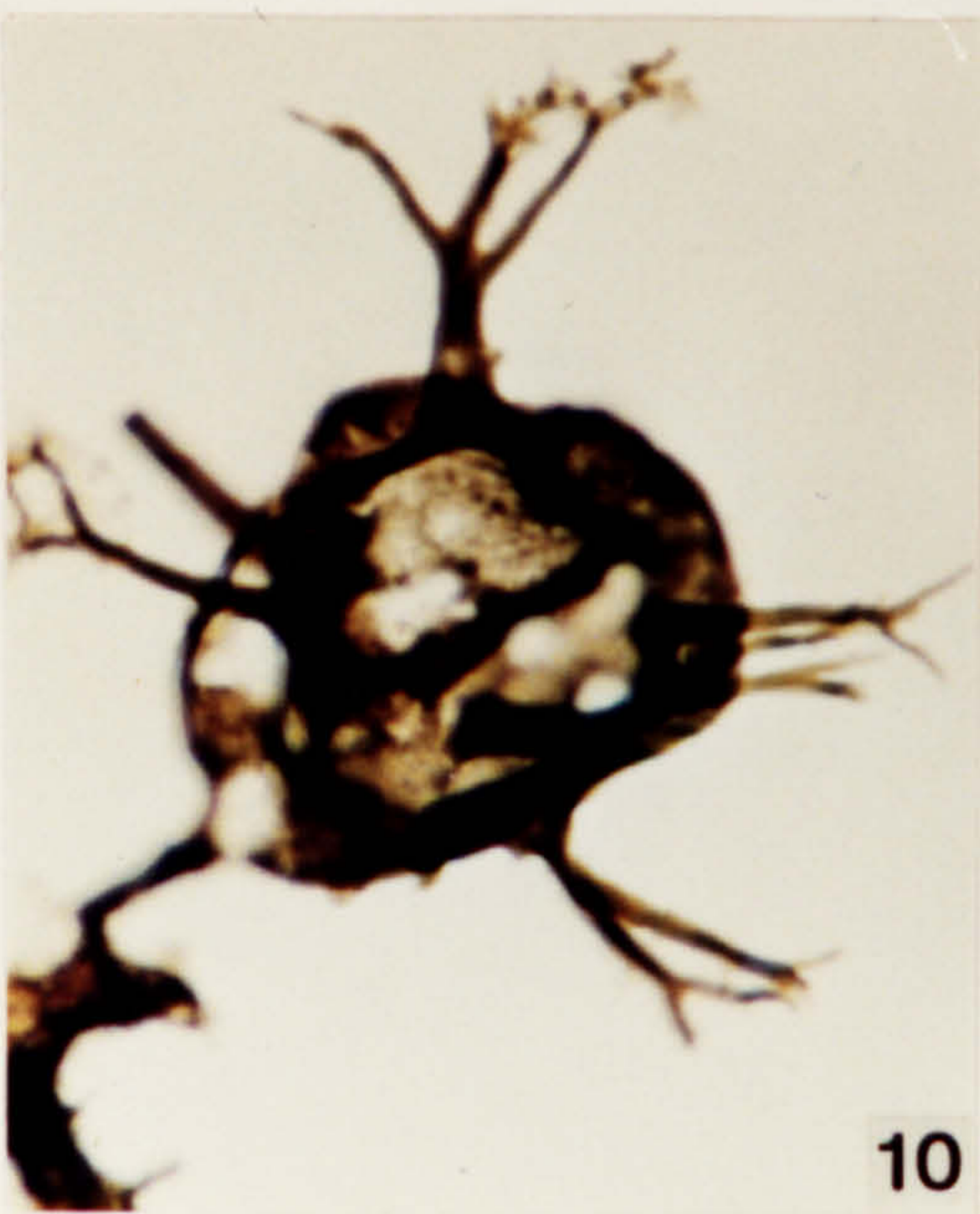
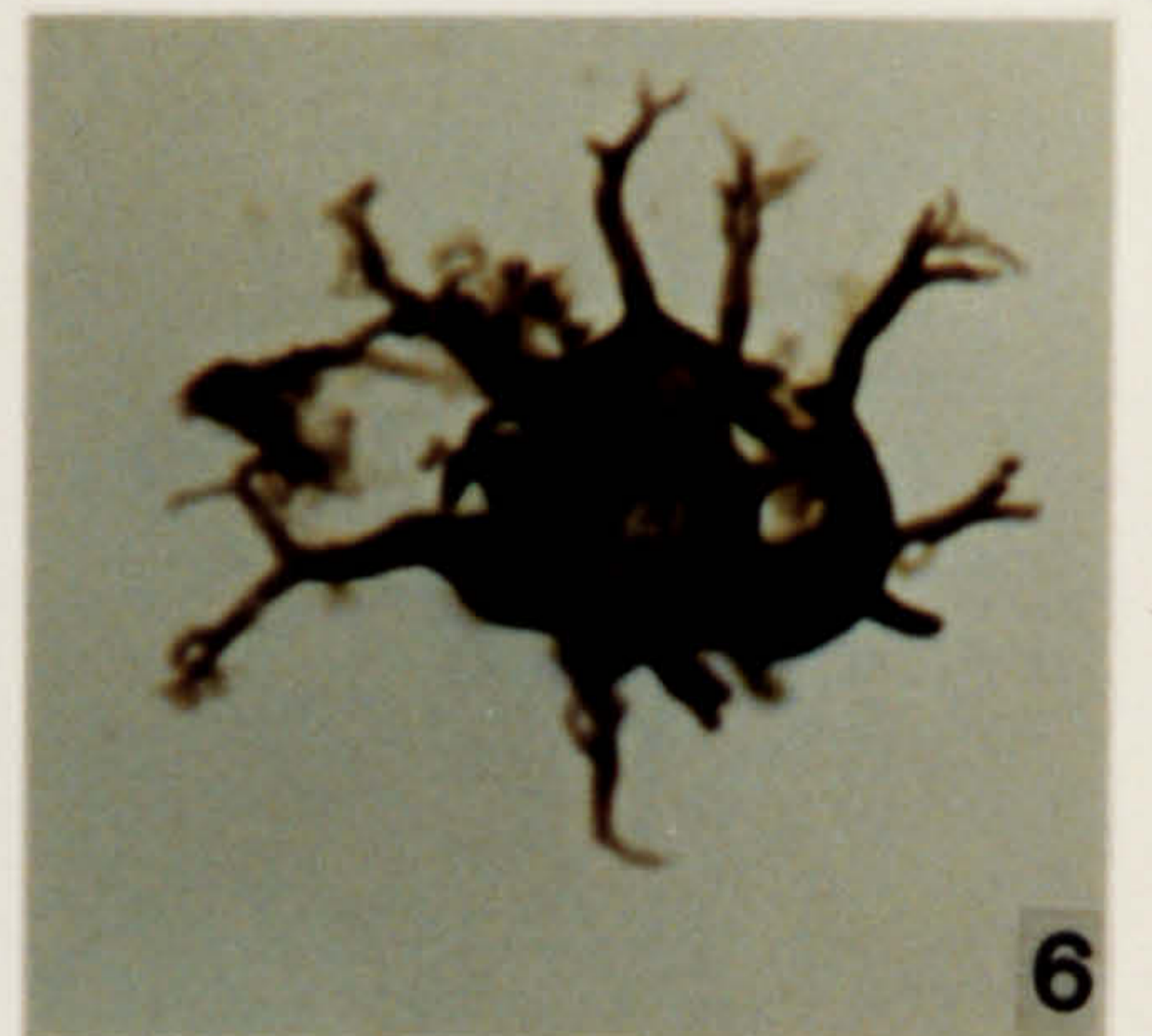
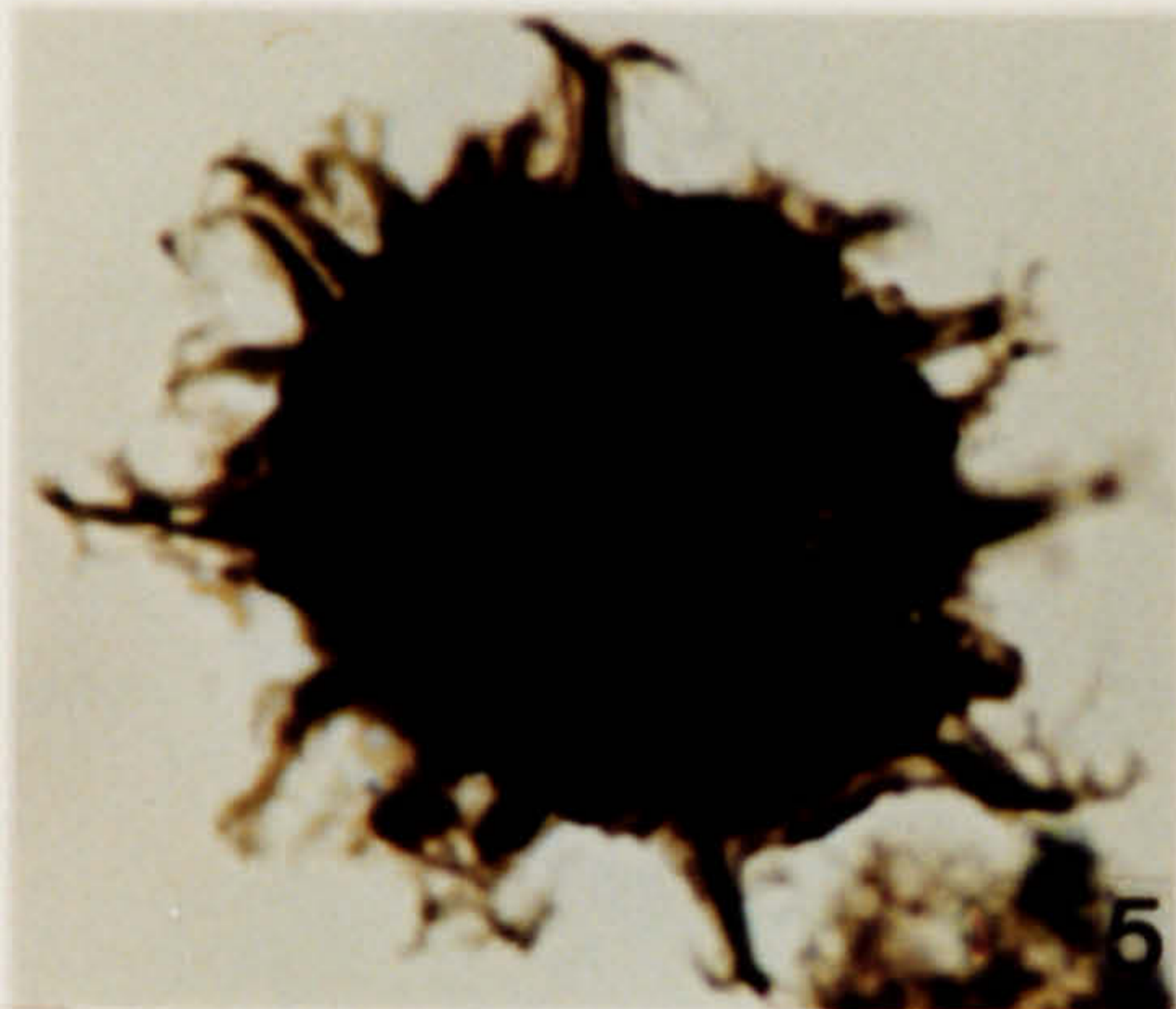
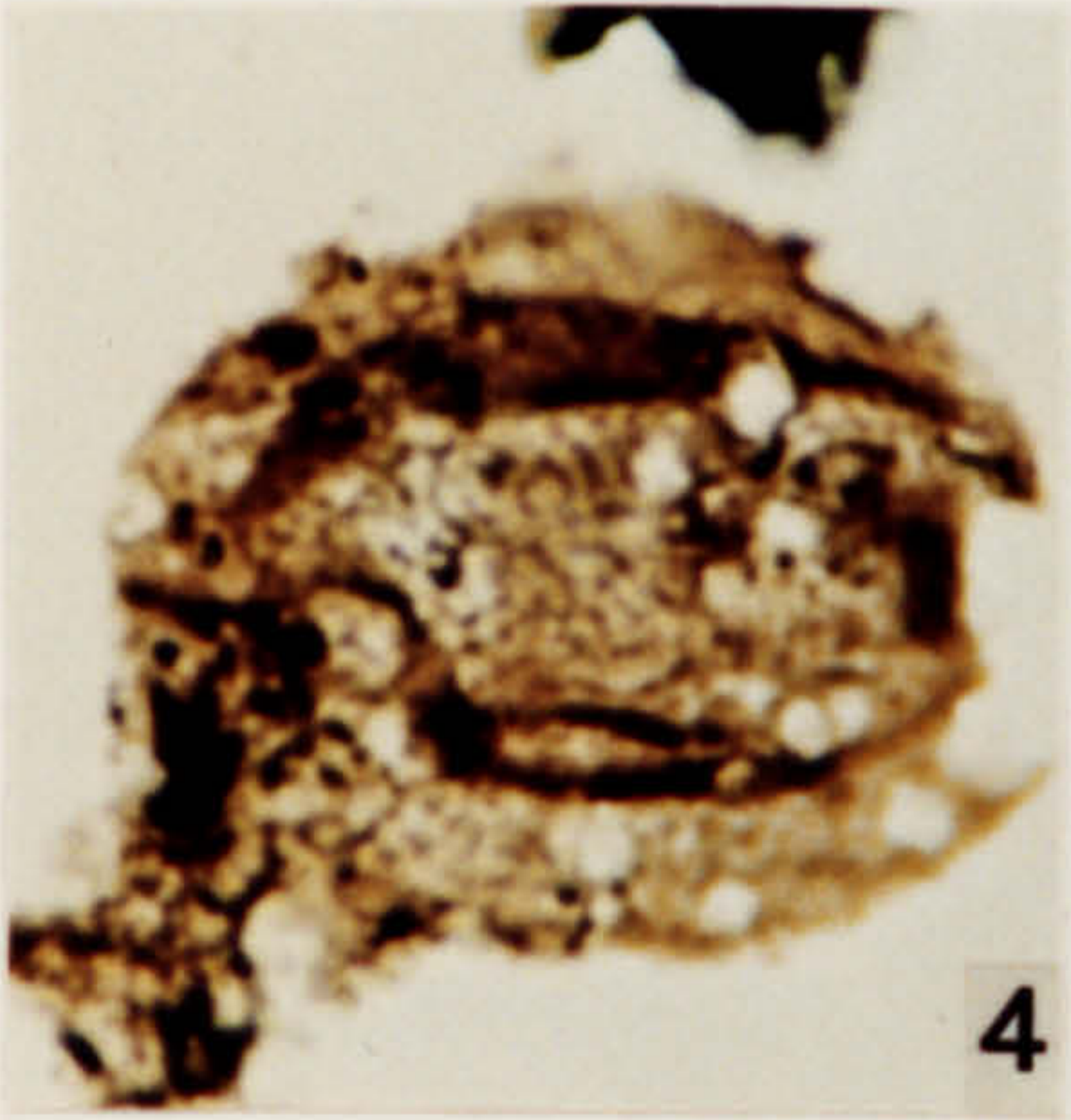
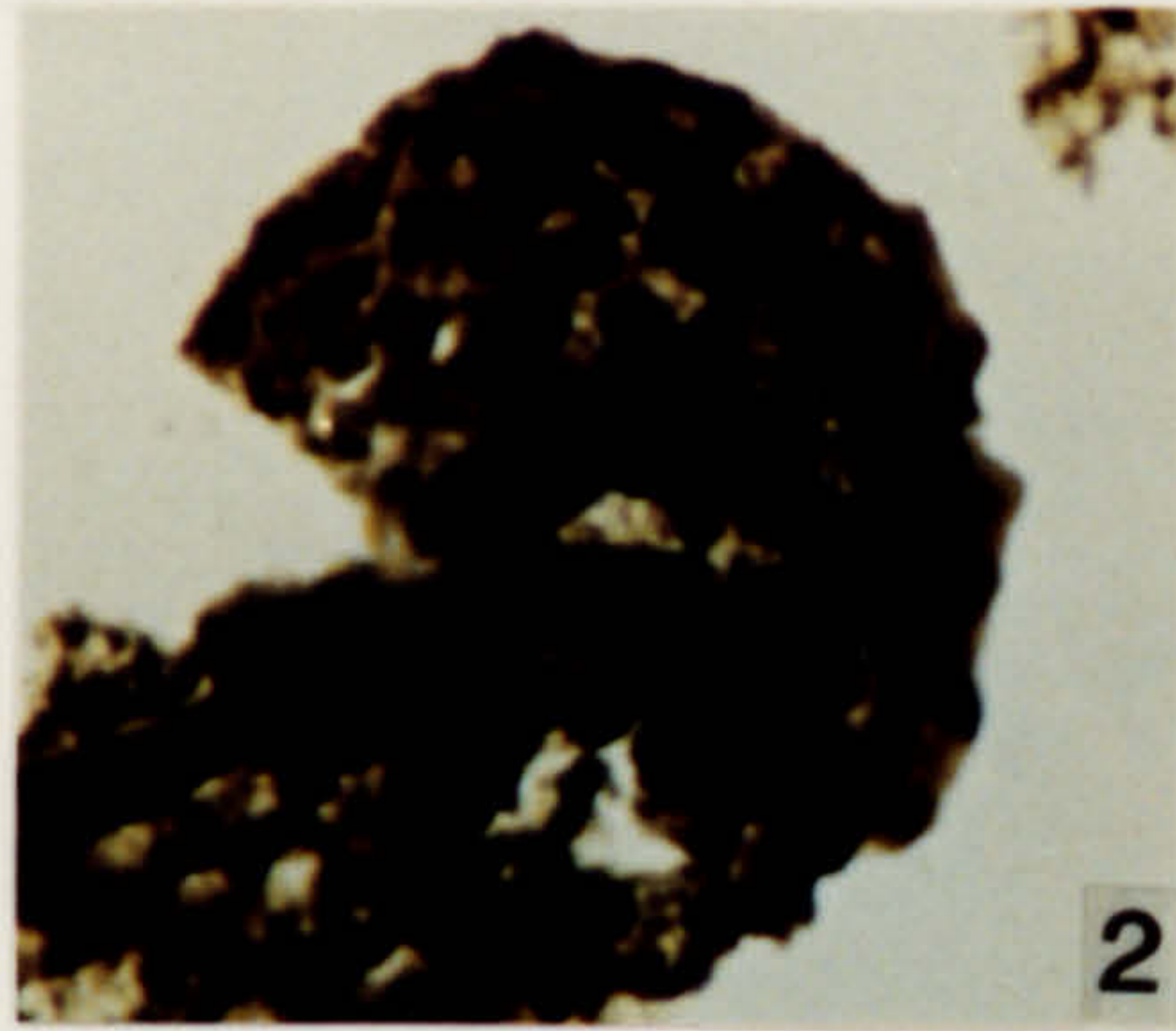
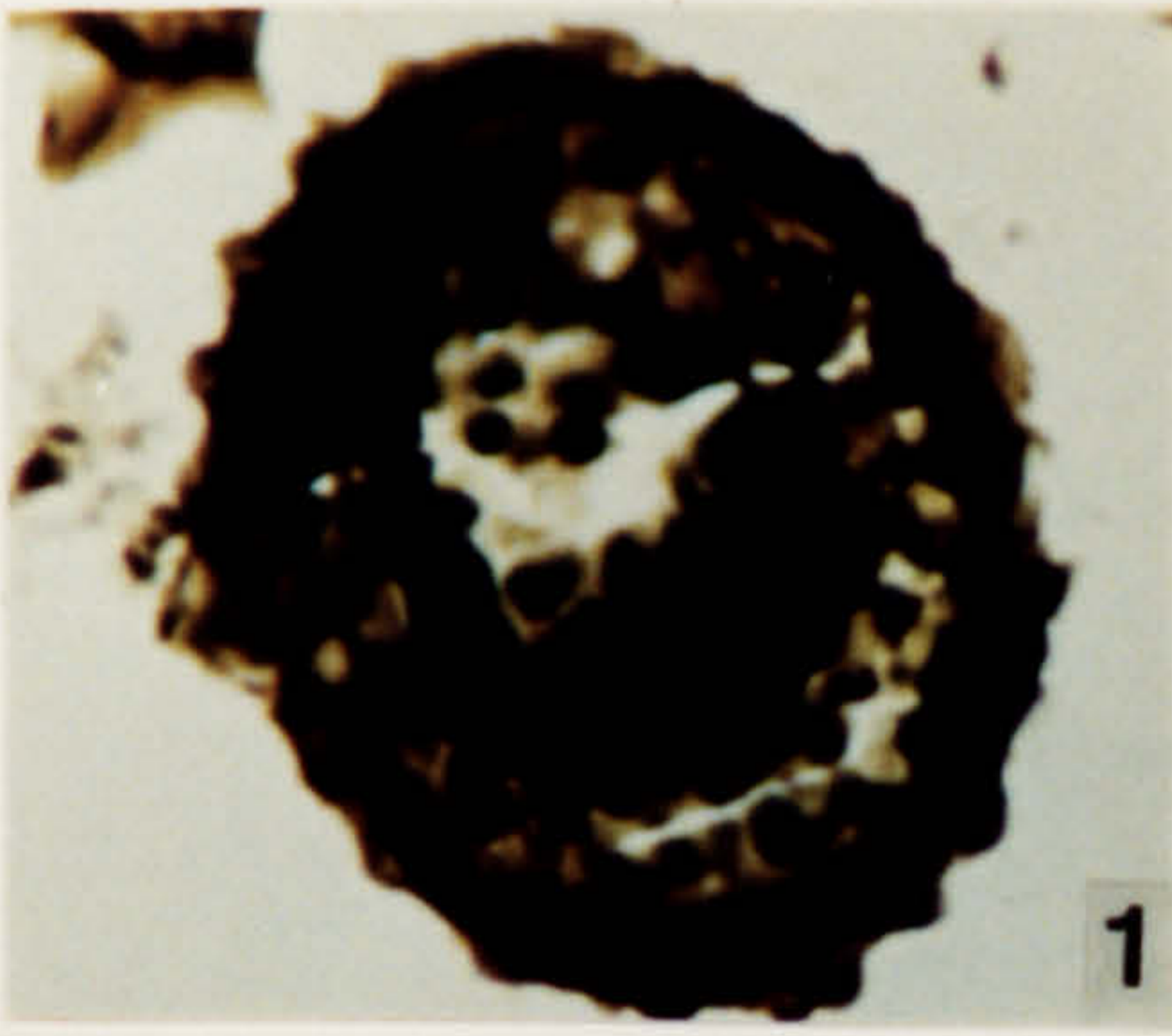
1. *Diexallophasis remota* var. *remota* (Deunff) Fensome *et al.* 1990. DW 55, FS-4, N7\3.
2. *Diexallophasis remota* var. *remota* (Deunff) Fensome *et al.* 1990. DW 56, FS-2, T36\2.
3. *Diexallophasis remota* var A. DW 52, FS-4, N31\3.
4. *Diexallophasis remota* var B. DW 56, FS-1, R22\3.
5. *Hapsidopalla* cf. *sannemannii* (Deunff) Playford 1977. DW 52, FS-4, H10\1.
6. *Hapsidopalla* cf. *sannemannii* (Deunff) Playford 1977. DW 52, FS-4, G14\3.
7. *Leiofusa estrecha?* Cramer 1964. DW 94, FS-5, H21\4.
8. *Hapsidopalla* cf. *sannemannii* (Deunff) Playford 1977. DW 52, FS-4, H10\1.
9. *Hapsidopalla* cf. *sannemannii* (Deunff) Playford 1977. DW 52, FS-4, C12\3, IC.



**Plate 108.**

**Acritarchs from the Black Shale Member, Calcareous Shale Formation, Pridoli in age.**

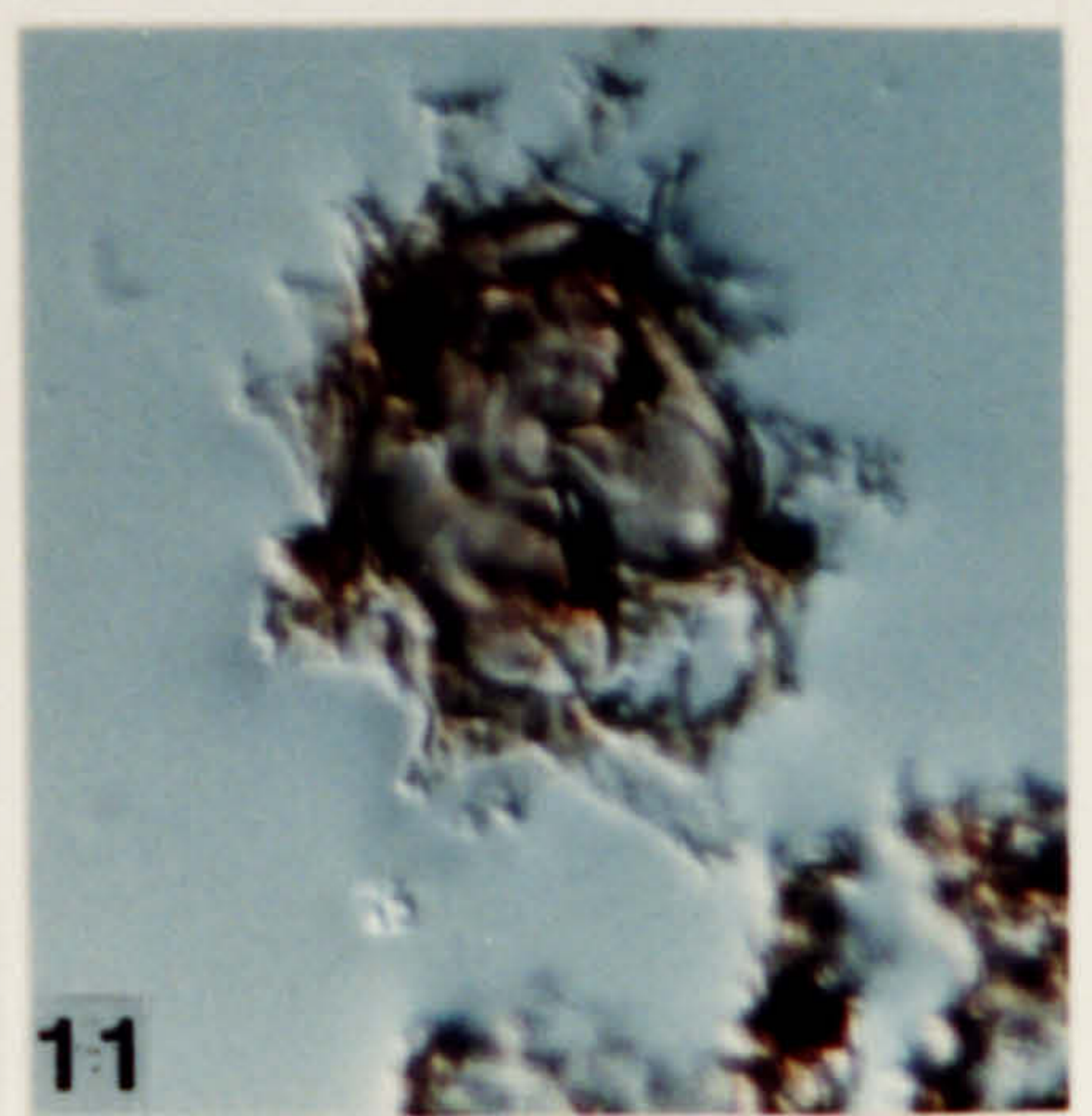
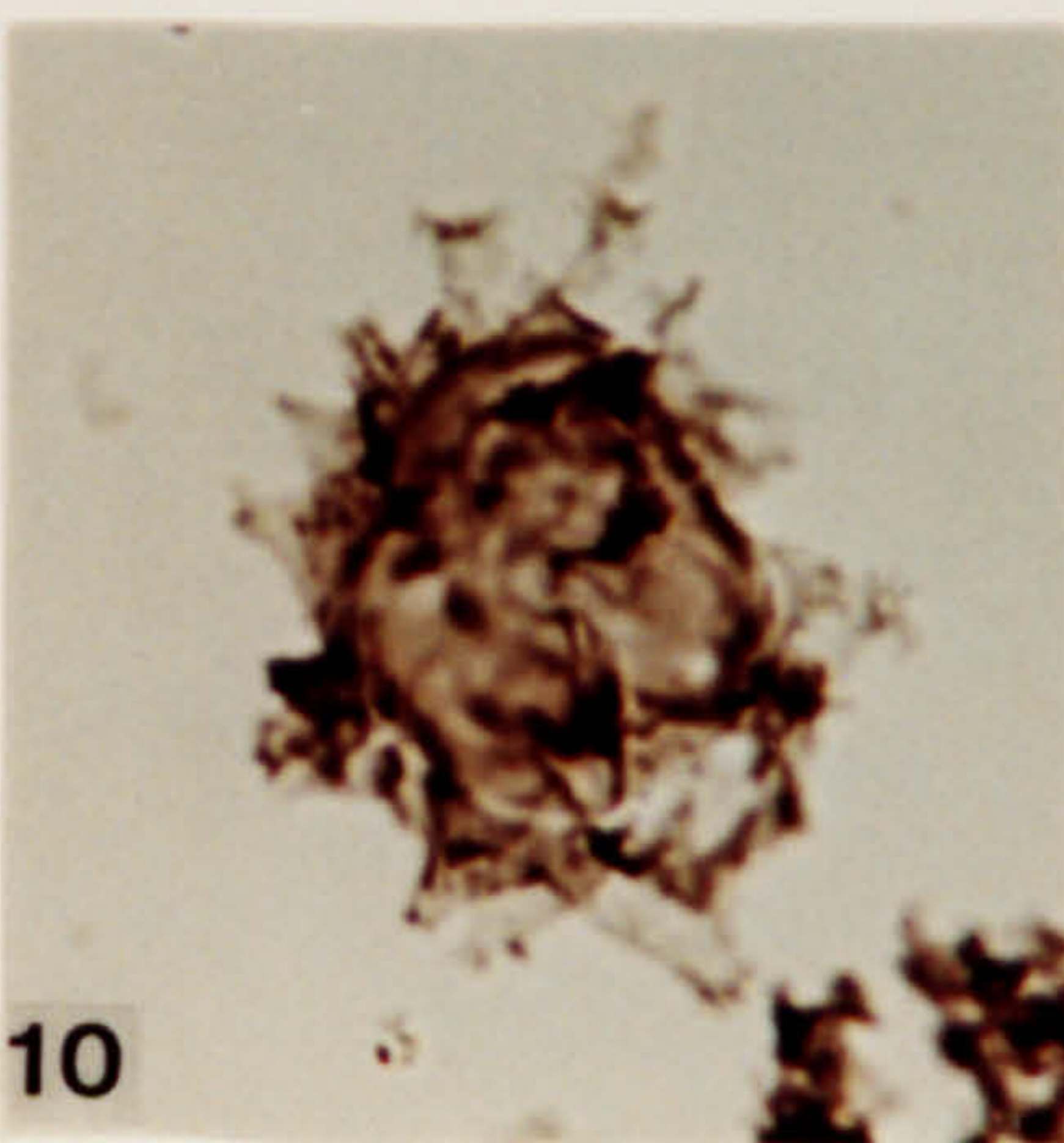
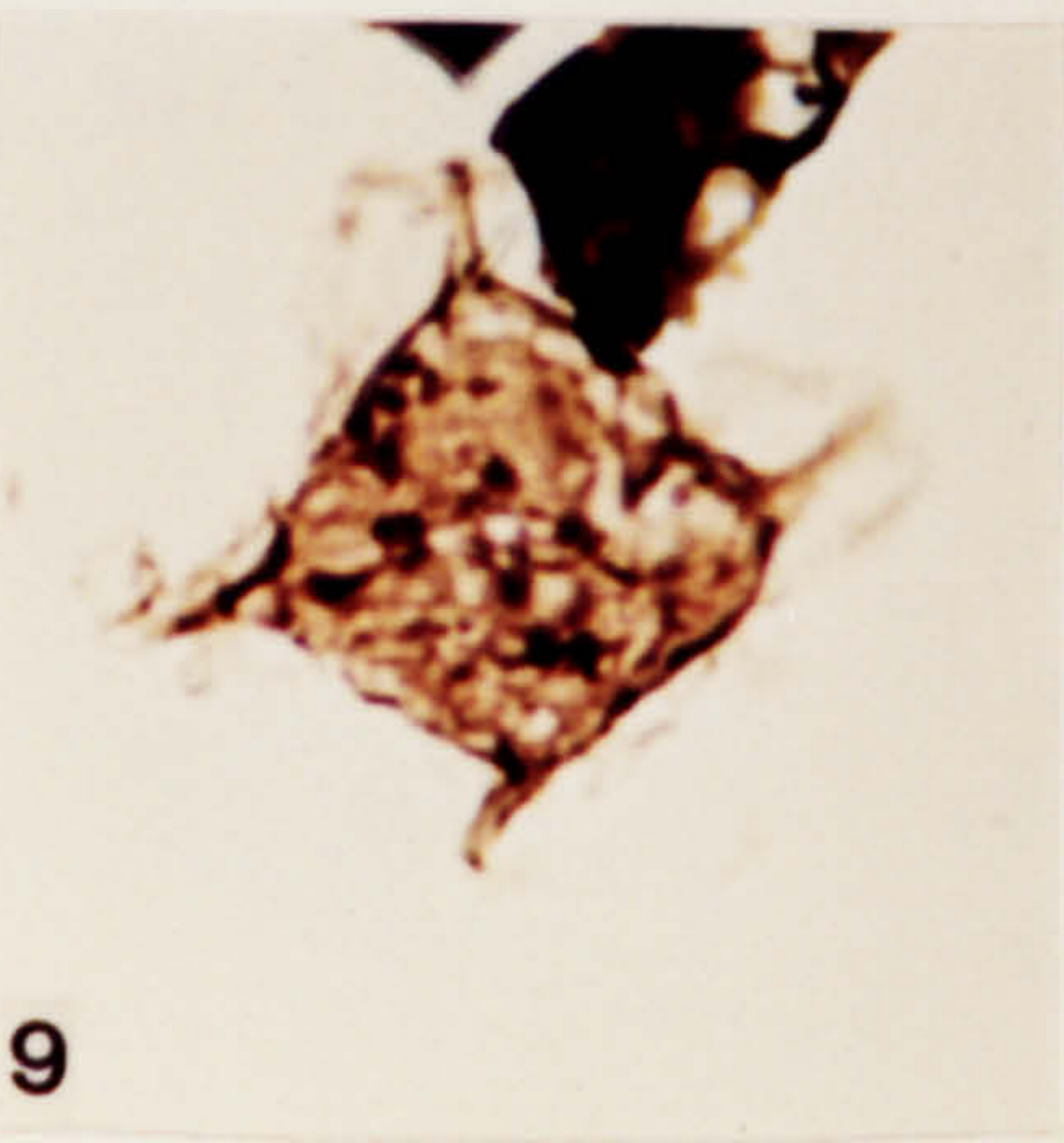
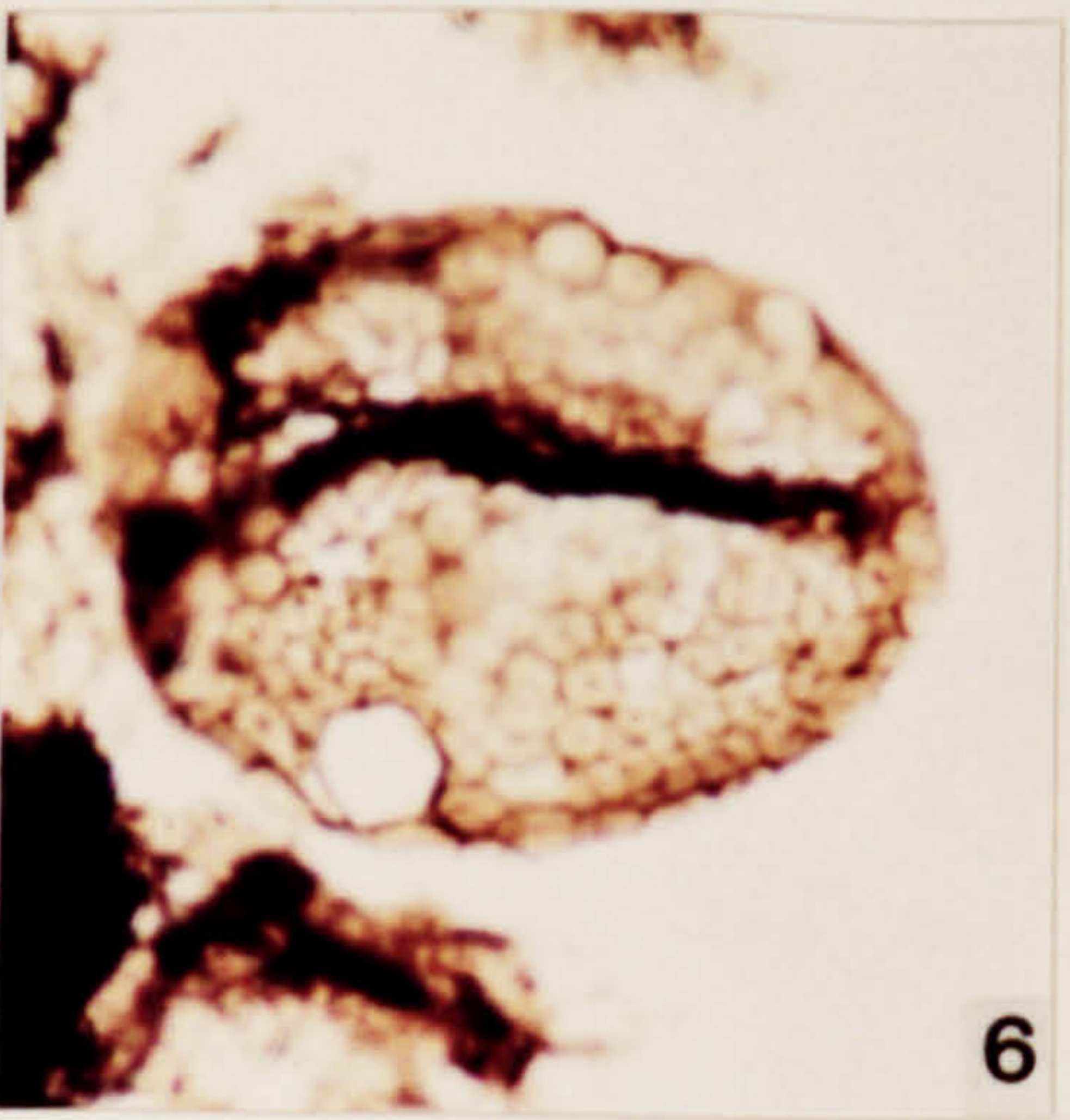
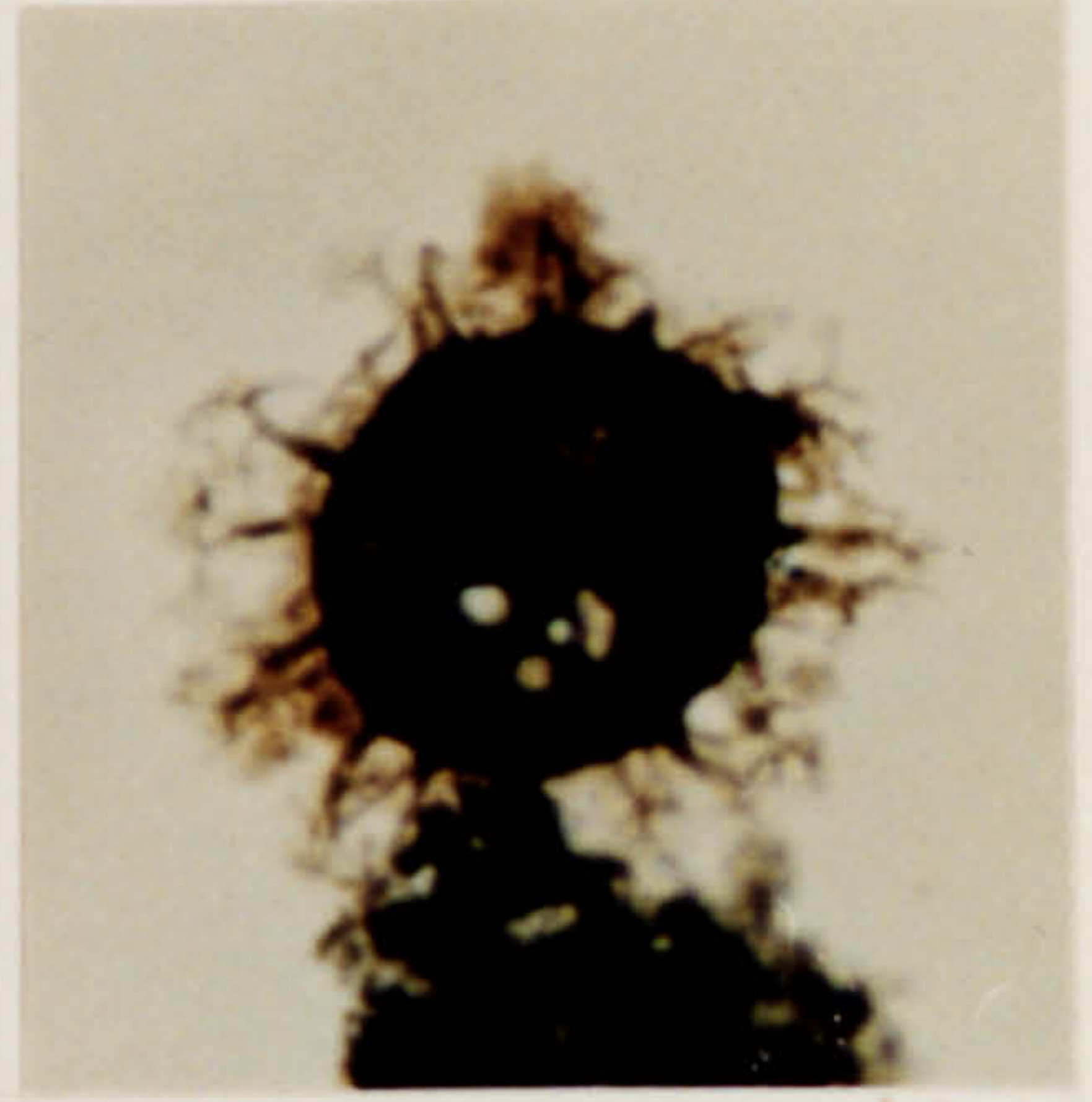
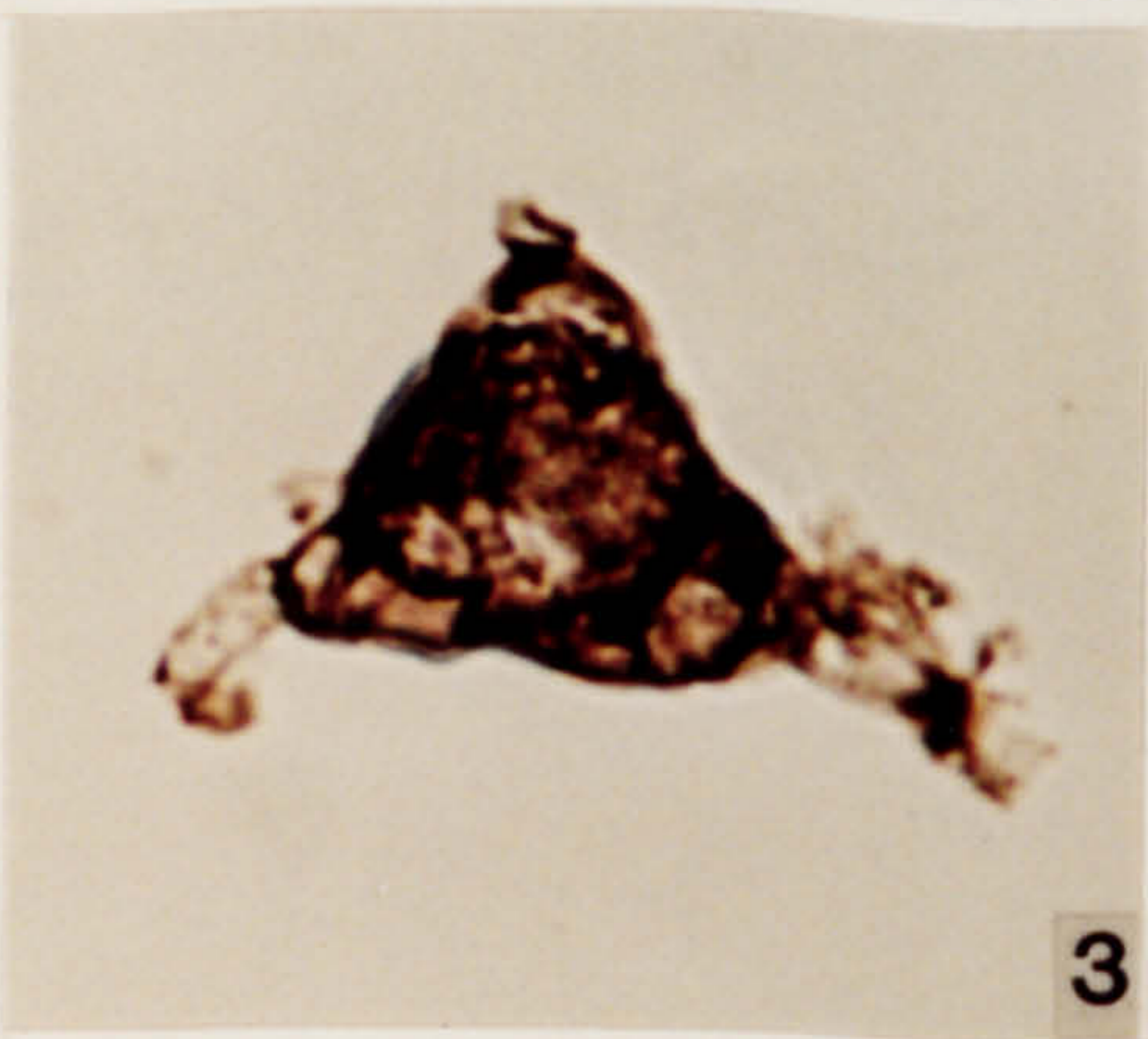
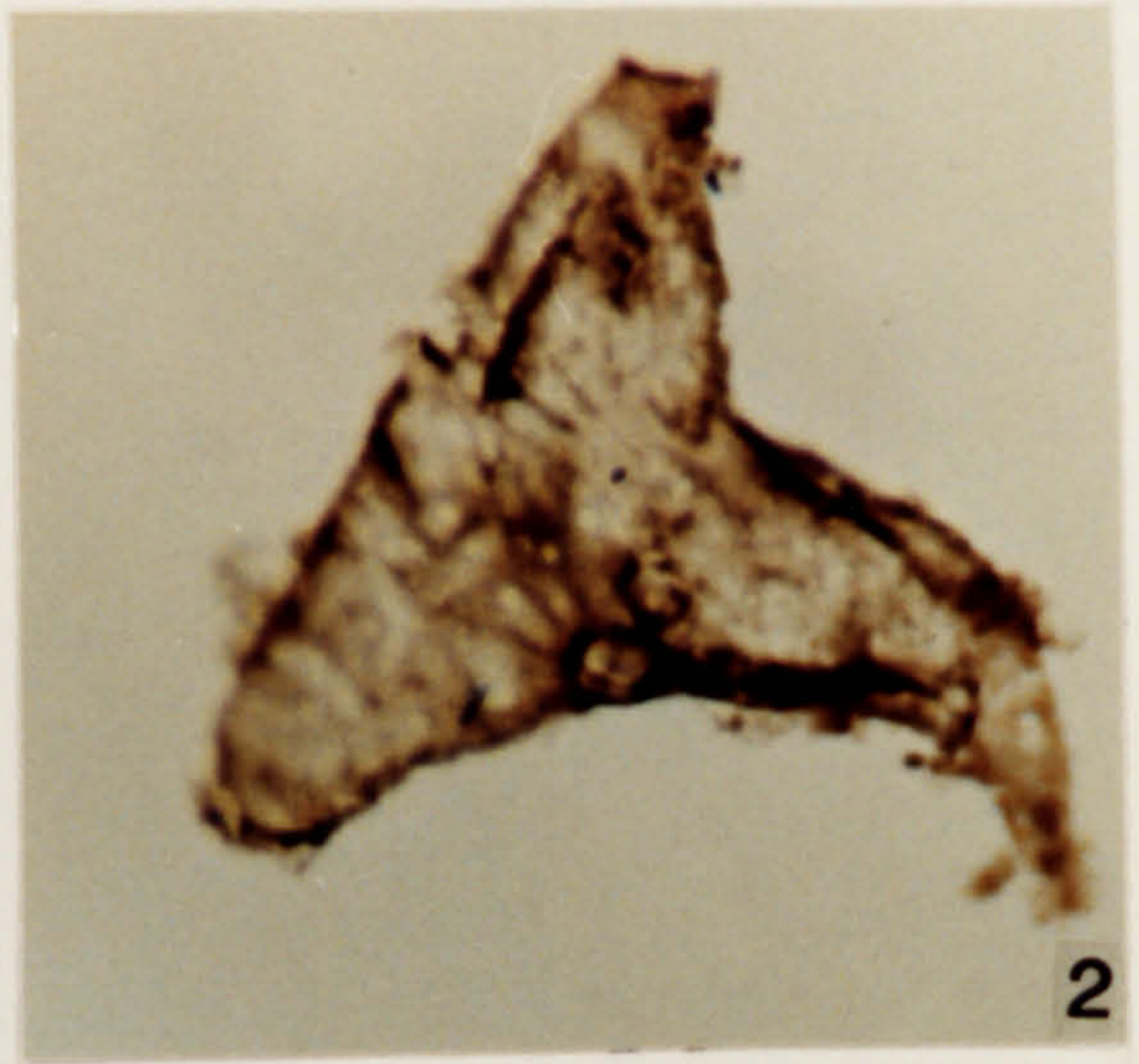
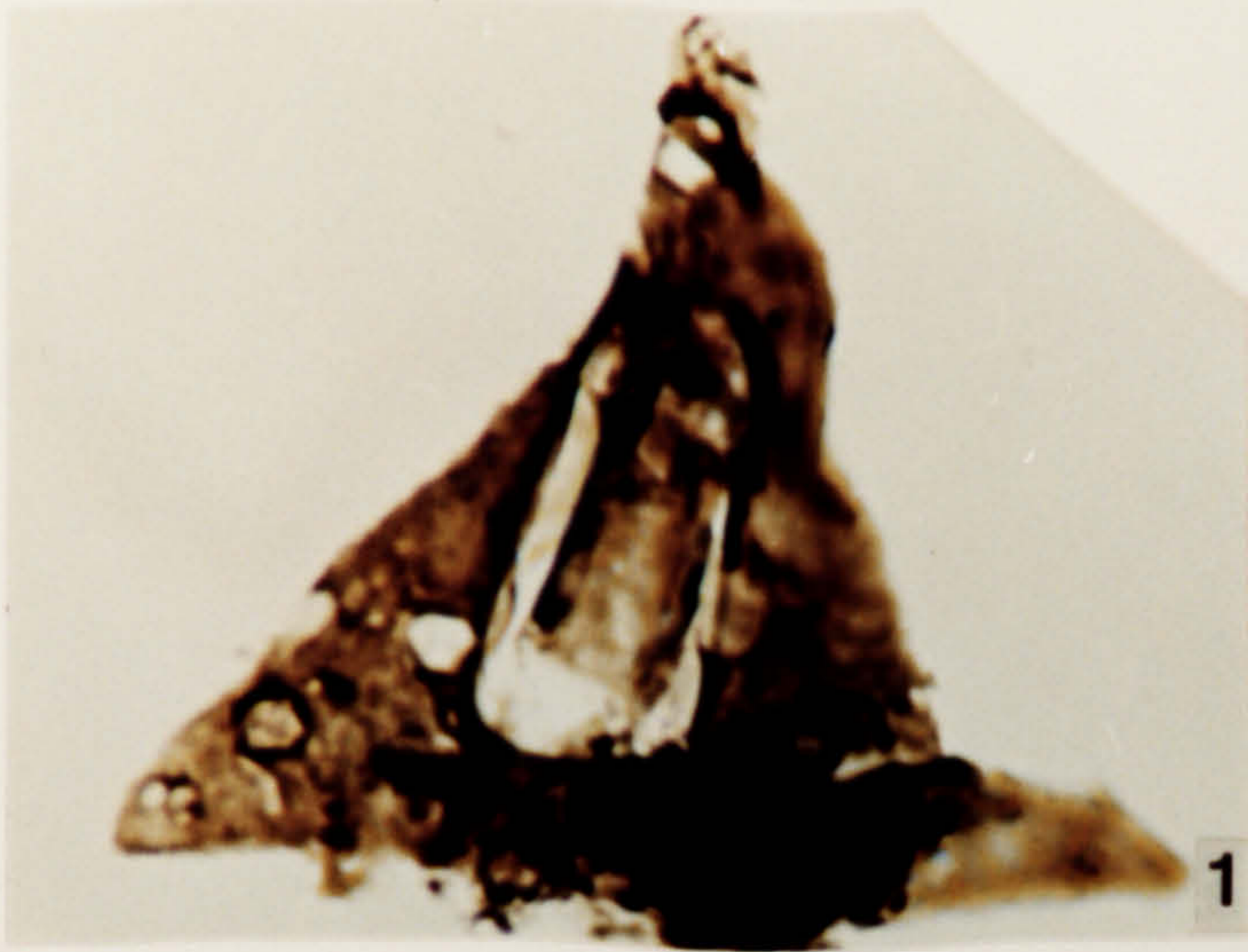
1. *Lophosphaeridium* sp. 2. DW 52, FS-4, T17\4.
2. *Lophosphaeridium* sp. 2. DW 52, FS-4, E21\1.
3. *Lophosphaeridium* sp. 2. DW 52, FS-4, U12\1.
4. *Lophosphaeridium* sp. 7. DW 94, FS-4, S20\2.
5. *Multiplicisphaeridium* cf. *saharicum* Lister 1970. DW 94, FS-4, S5\4.
6. *Multiplicisphaeridium* *variabile* (Lister) Dorning 1981. DW 52, FS-4, C28\4.
7. *Multiplicisphaeridium* *variabile* (Lister) Dorning 1981. DW 52, FS-4, P28\1.
8. *Multiplicisphaeridium* *variabile* (Lister) Dorning 1981. DW 56, FS-2, T23\2.
9. *Multiplicisphaeridium* *variabile* (Lister) Dorning 1981. DW 52, FS-4, F11\2.
10. *Multiplicisphaeridium* sp. 1. DW 51, FS-3, U13\3.
11. *Multiplicisphaeridium* sp. 1. DW 51, FS-3, F24\3.
12. *Multiplicisphaeridium* sp. 1. DW 51, FS-3, C32\1.



**Plate 109.**

Acritarchs from the Black Shale Member, Calcareous Shale Formation, Pridoli in age.

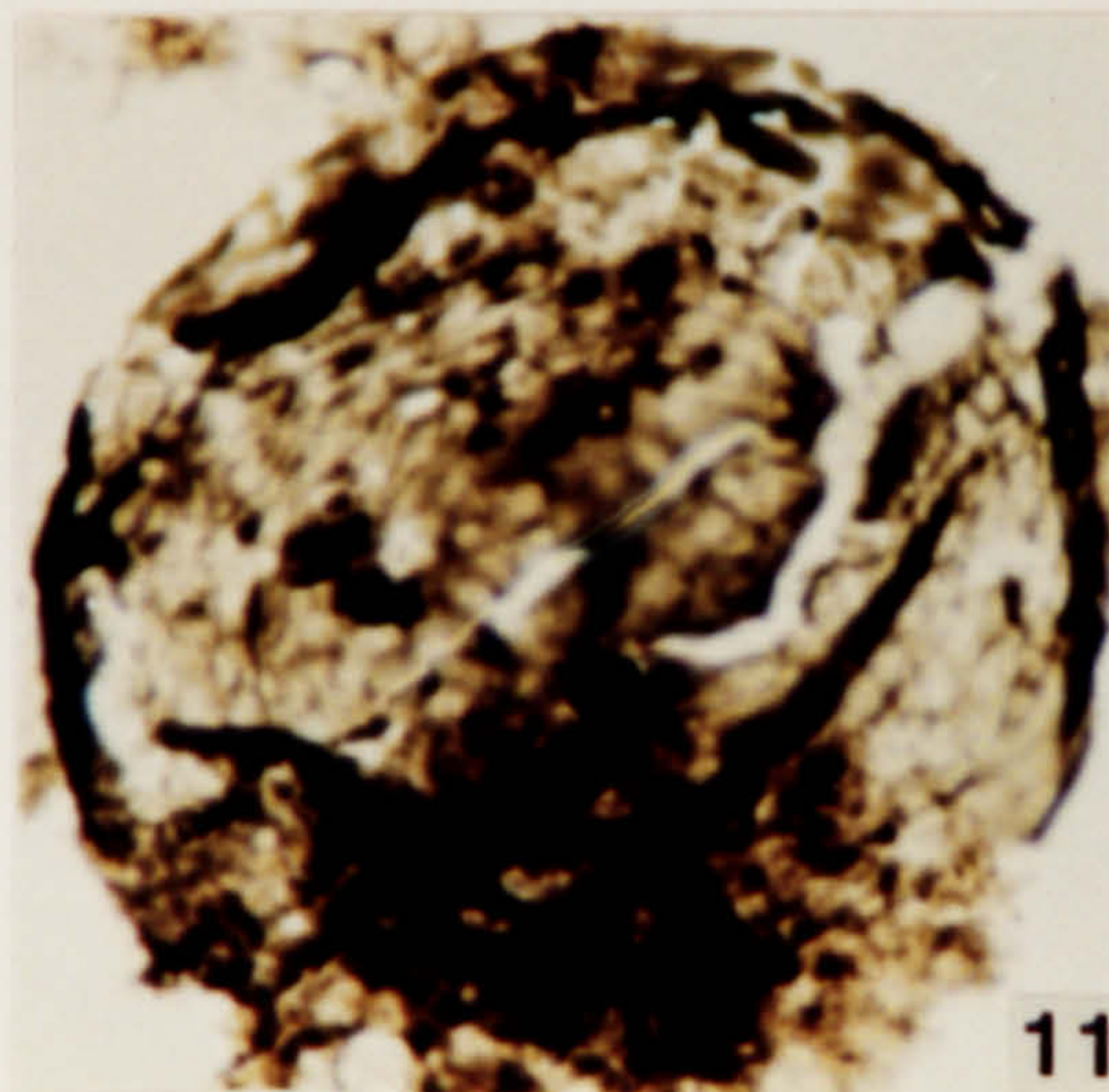
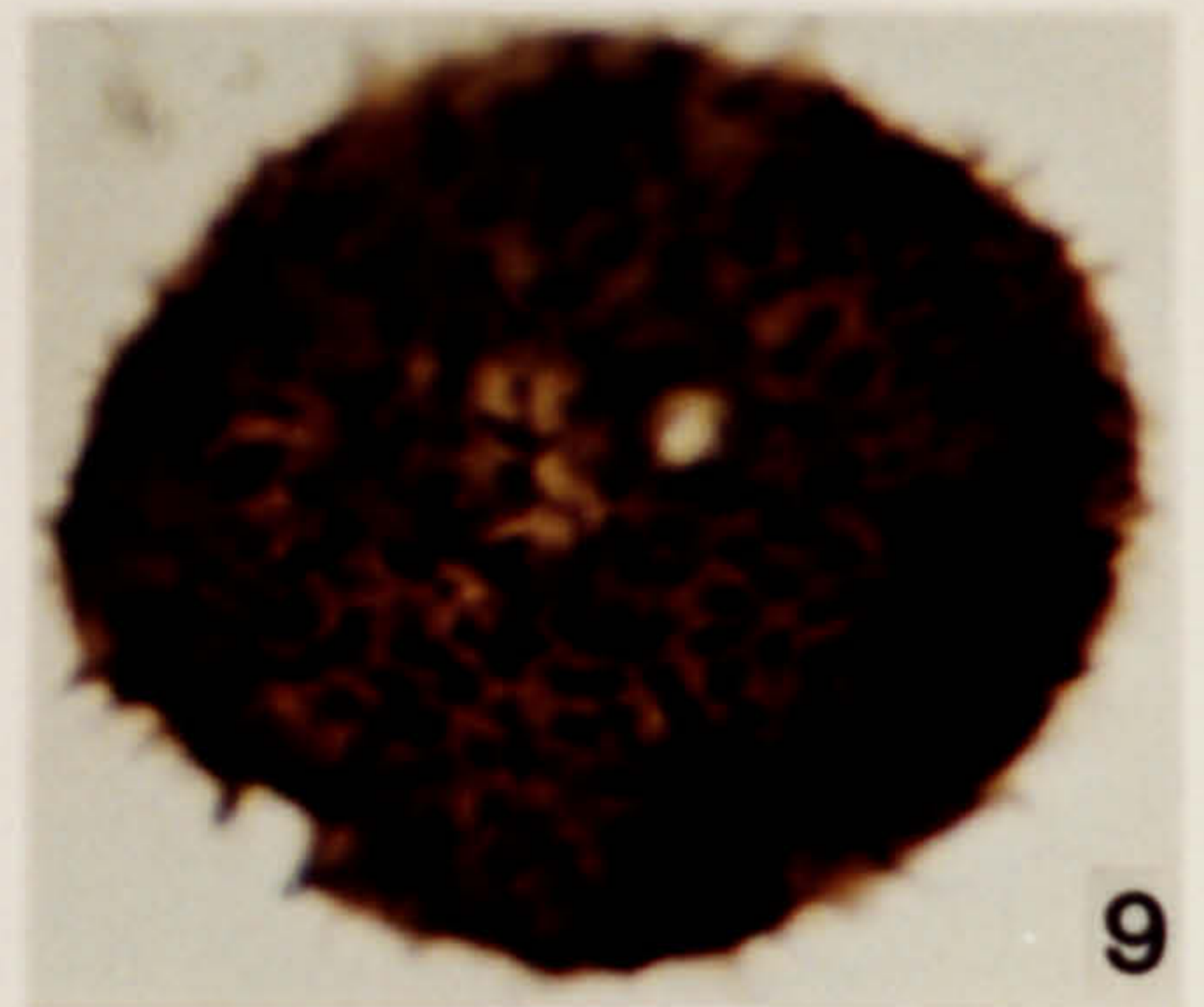
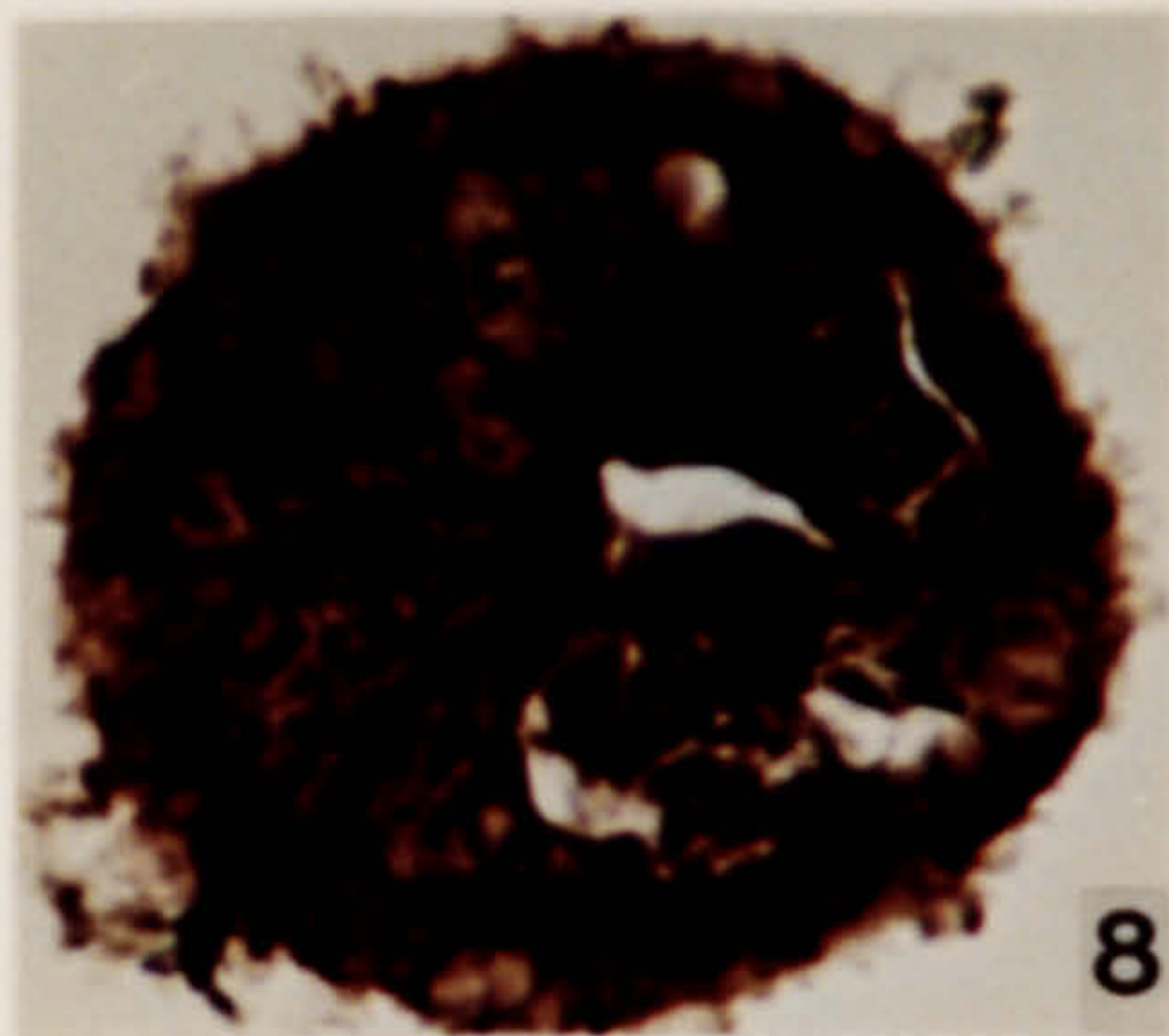
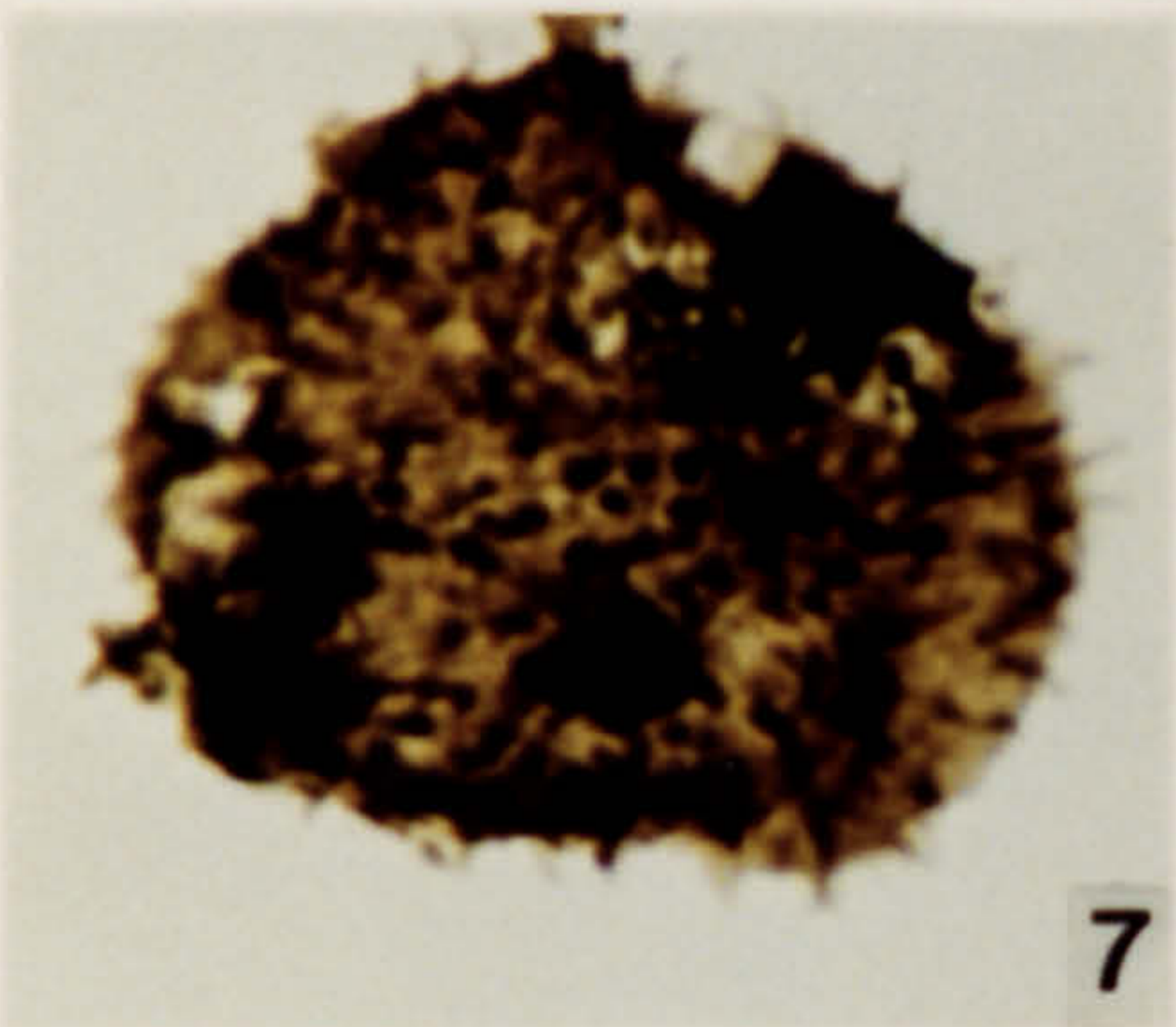
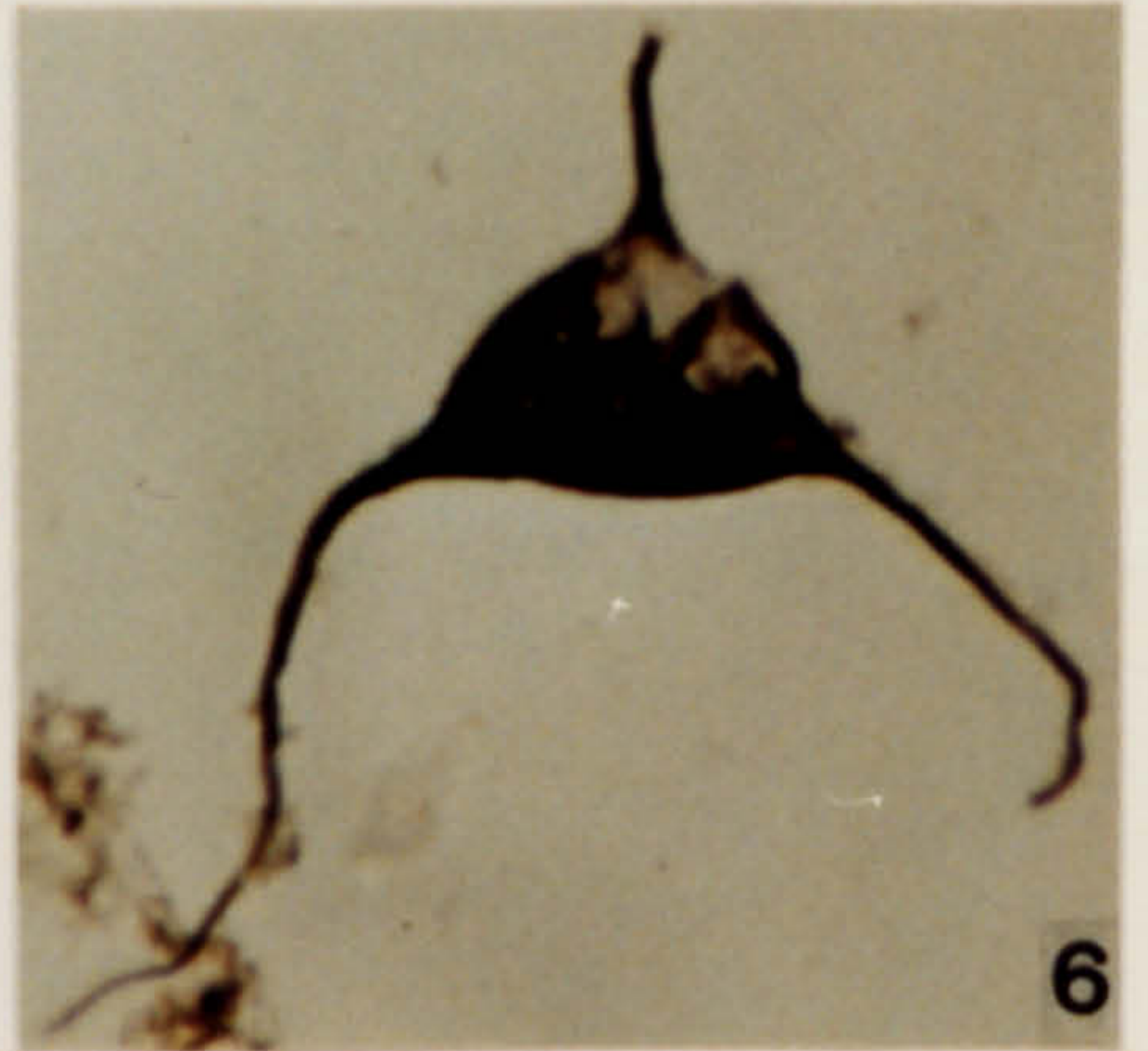
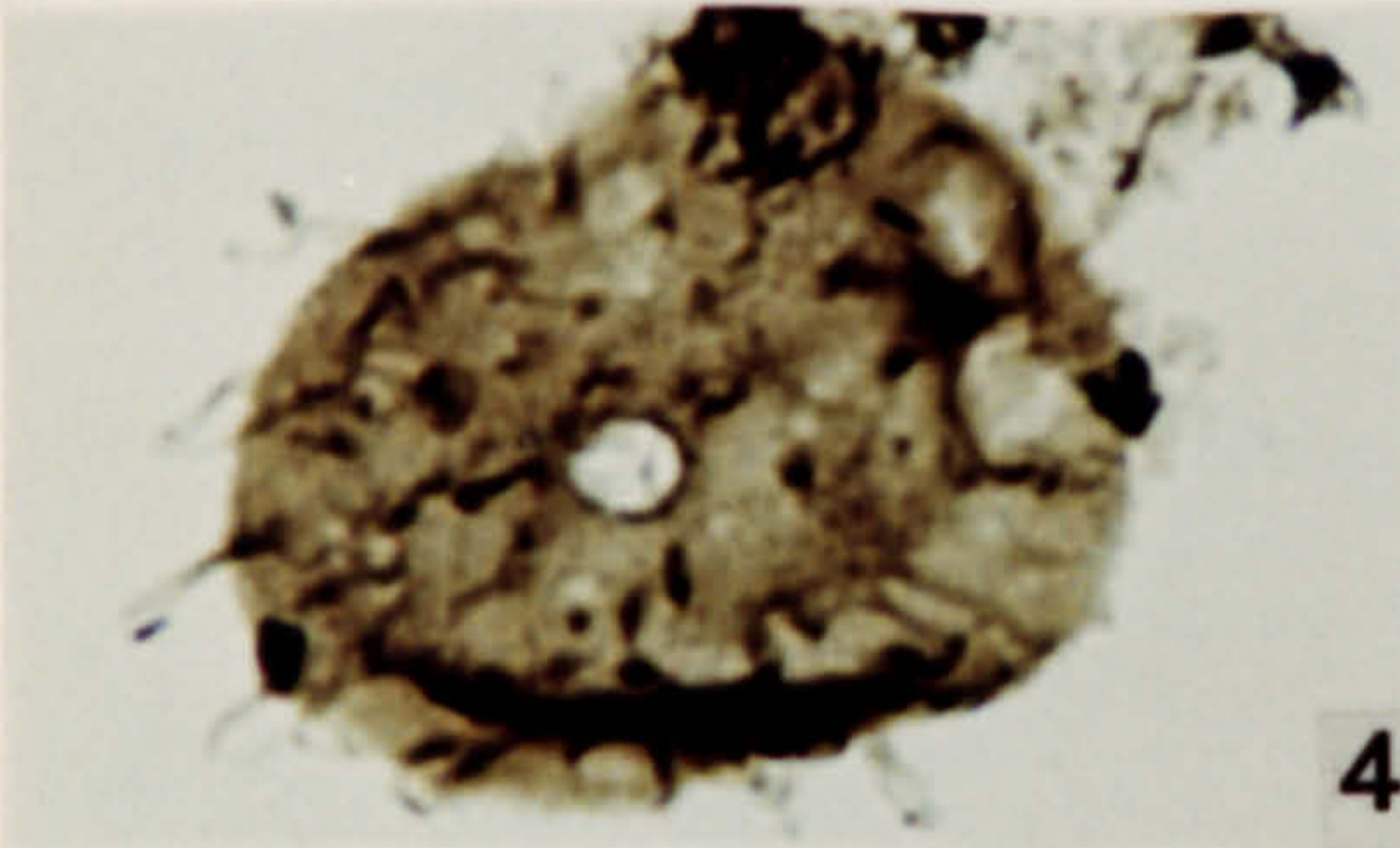
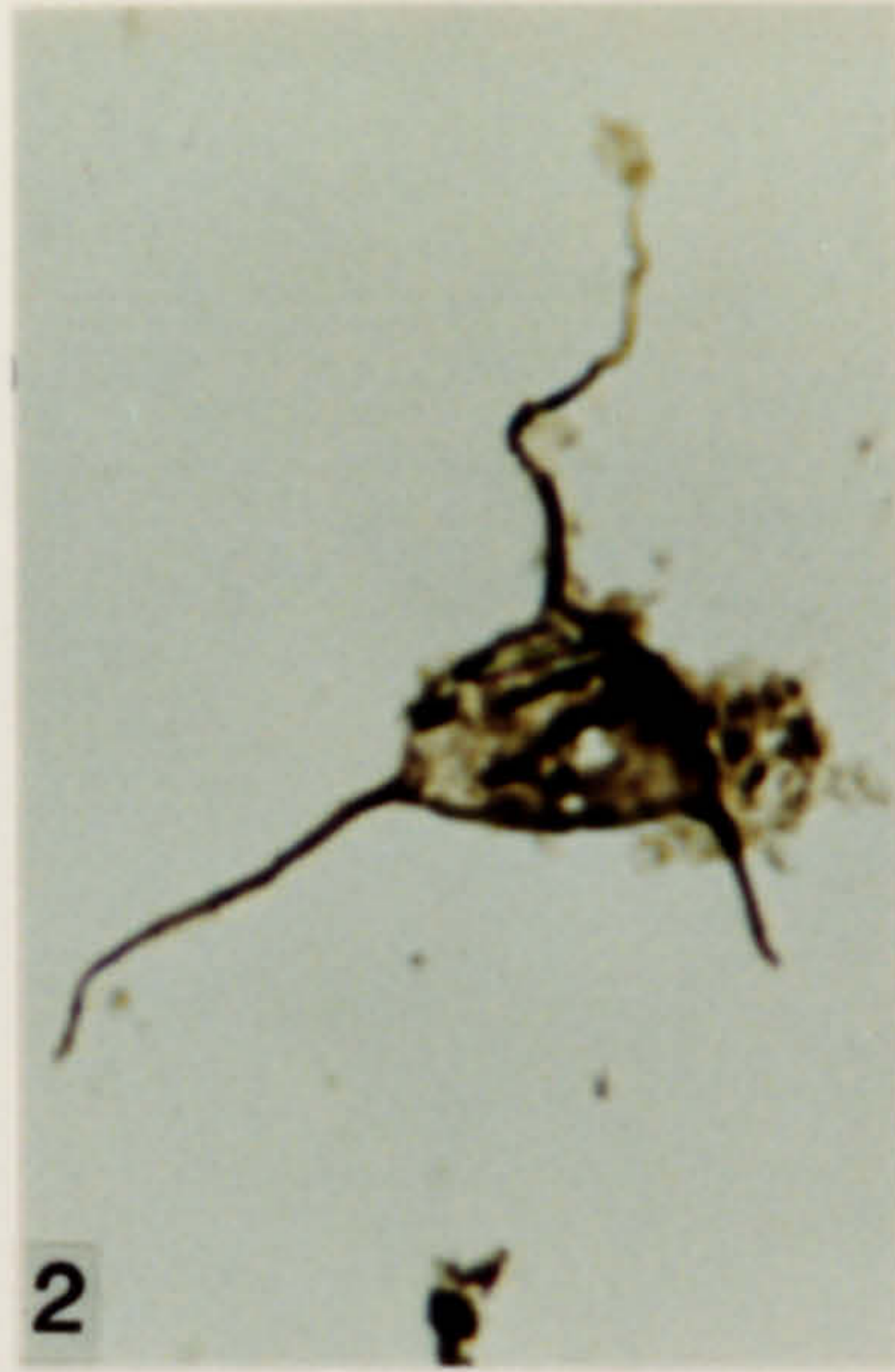
1. *Onondagella deunffii* Cramer 1966. DW 94, FS-5, M15\3.
2. *Onondagella deunffii* Cramer 1966. DW 94, FS-5, V20\1.
3. *Ozotobrachion palidodigitatus?* (Cramer) Playford 1977. DW 56, FS-2, K13\3.
4. *Oppilatala* sp. DW 51, FS-3, O10\3.
5. *Oppilatala* sp. DW 94, FS-4, W22\4.
6. *Orygmahapsis fistulosa* (Colbath) Colbath 1987. DW 56, FS-1, M21\1.
7. *Orygmahapsis fistulosa* (Colbath) Colbath 1987. DW 56, FS-2, V23\3.
8. *Orygmahapsis fistulosa* (Colbath) Colbath 1987. DW 55, FS-5, K25\1.
9. *Quadraditum scutiferum* Deunff 1966. DW 56, FS-1, Q22\2.
10. *Thysanoprobolus polykion* Loeblich & Tappan 1970. DW 56, FS\1, N33\2.
11. *Thysanoprobolus polykion* Loeblich & Tappan 1970. DW 56, FS\1, N33\2, IC.



**Plate 110.**

Acritarchs from the Black Shale Member, Calcareous Shale Formation, Pridoli in age.

1. *Triangulina sanpetrensis?* (Cramer) Fensome *et al.* 1990. DW 96, FS-5, D31\4.
2. *Veryhachium wenlockianum* (Downie *ex* Wall & Downie) Downie & Sarjeant 1965. DW 52, FS-4, N8\1.
3. *Veryhachium wenlockianum* (Downie *ex* Wall & Downie) Downie & Sarjeant 1965. DW 94, FS-4, W33\1.
4. *Visbysphaera cf. oligofurcatum* (Eisenack) Lister 1970. DW 56, FS-1, L12\3.
5. *Veryhachium wenlockianum* (Downie *ex* Wall & Downie) Downie & Sarjeant 1965. DW 51, FS-3, S46\3.
6. *Veryhachium wenlockianum* (Downie *ex* Wall & Downie) Downie & Sarjeant 1965. DW 56, FS-2, N12\1.
7. *Visbysphaera microspinosa* var C. DW 52, FS-4, O35\2.
8. *Visbysphaera microspinosa* var C. DW 56, FS-1, U9\4.
9. *Visbysphaera microspinosa* var C. DW 51, FS-3, O14\4.
10. *Visbysphaera microspinosa* var C. DW 94, FS-4, L9\3.
11. Acritarch Form G. DW 94, FS-4, V19\1.
12. Acritarch Form G. DW 94, FS-4, K3\3.

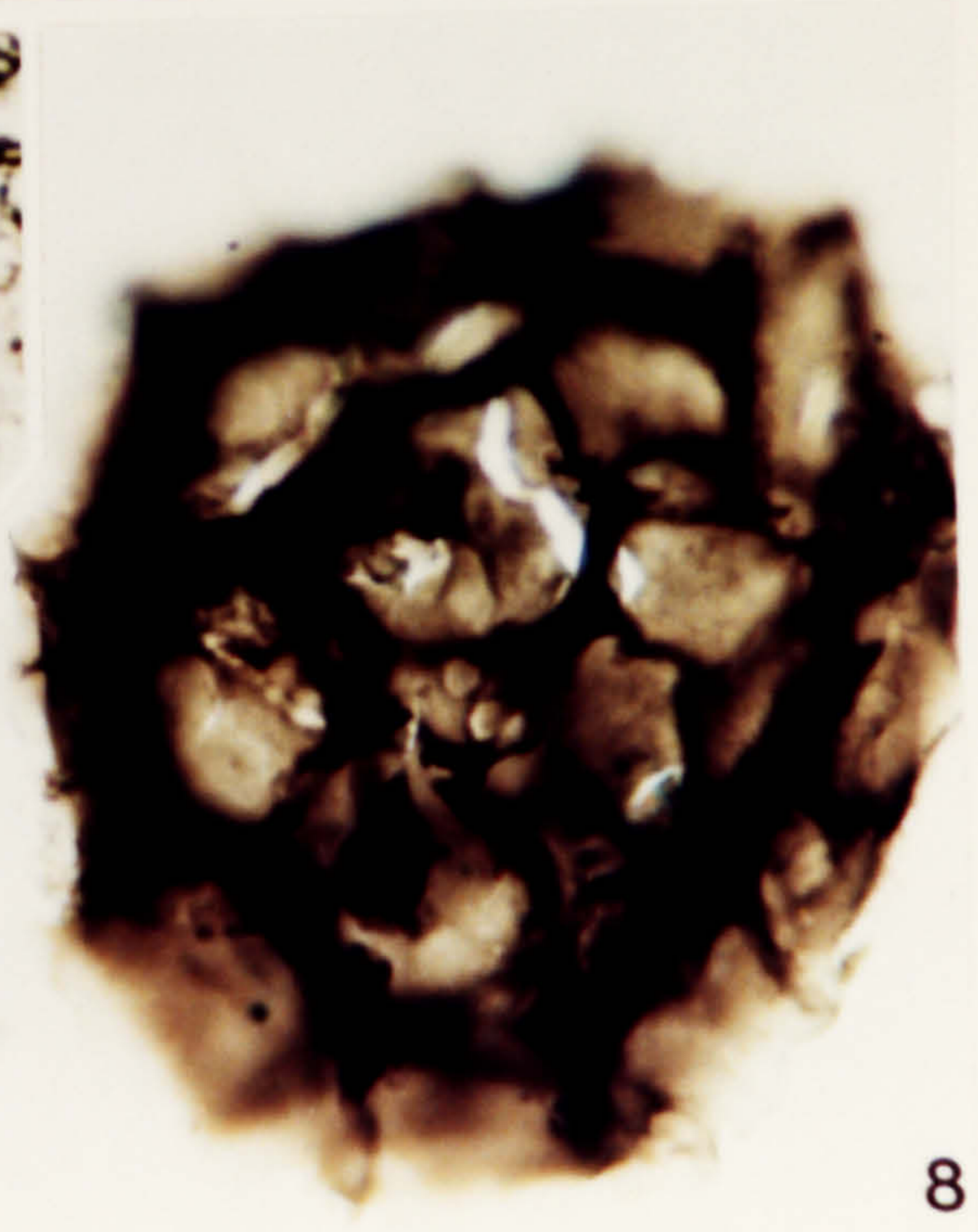
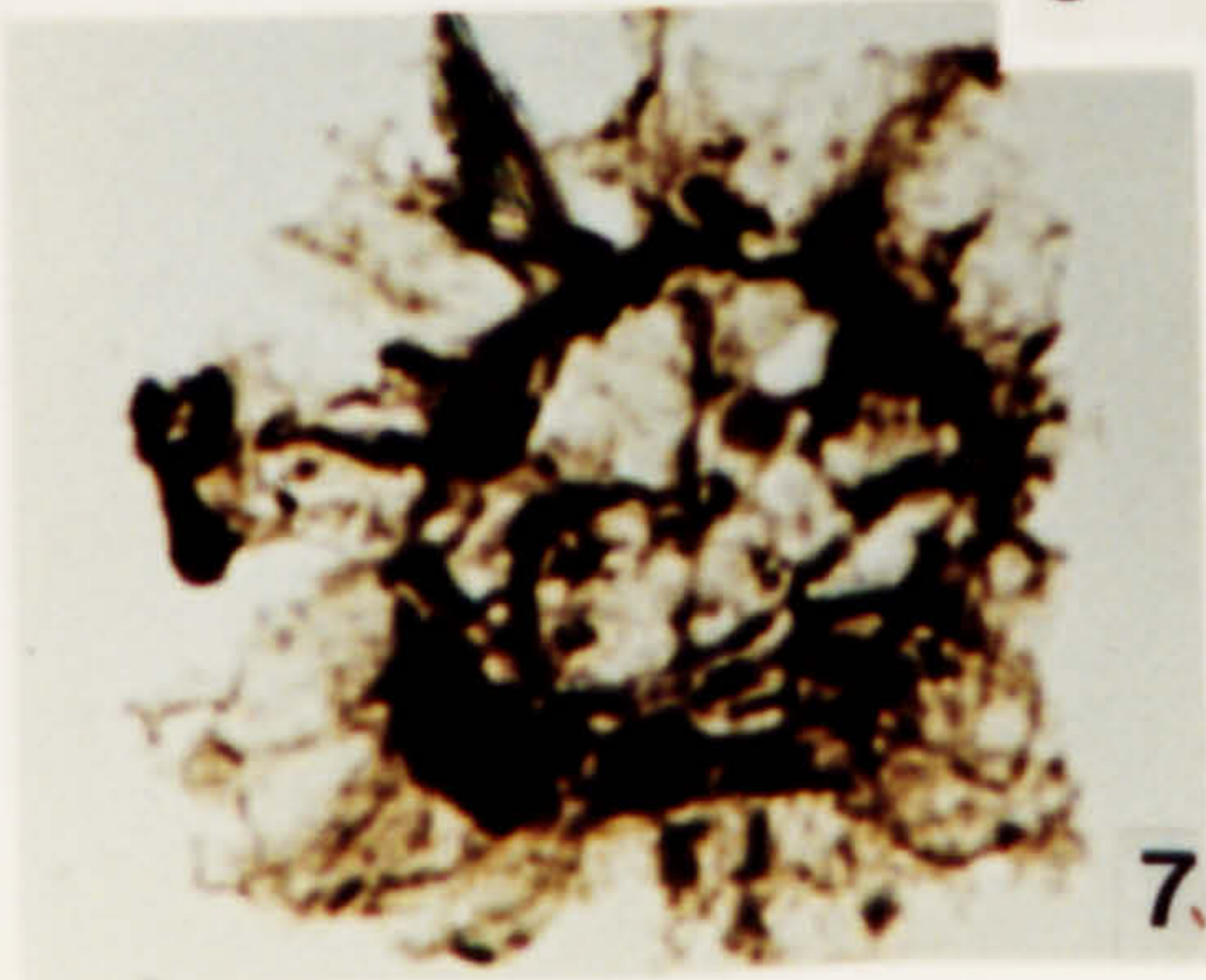
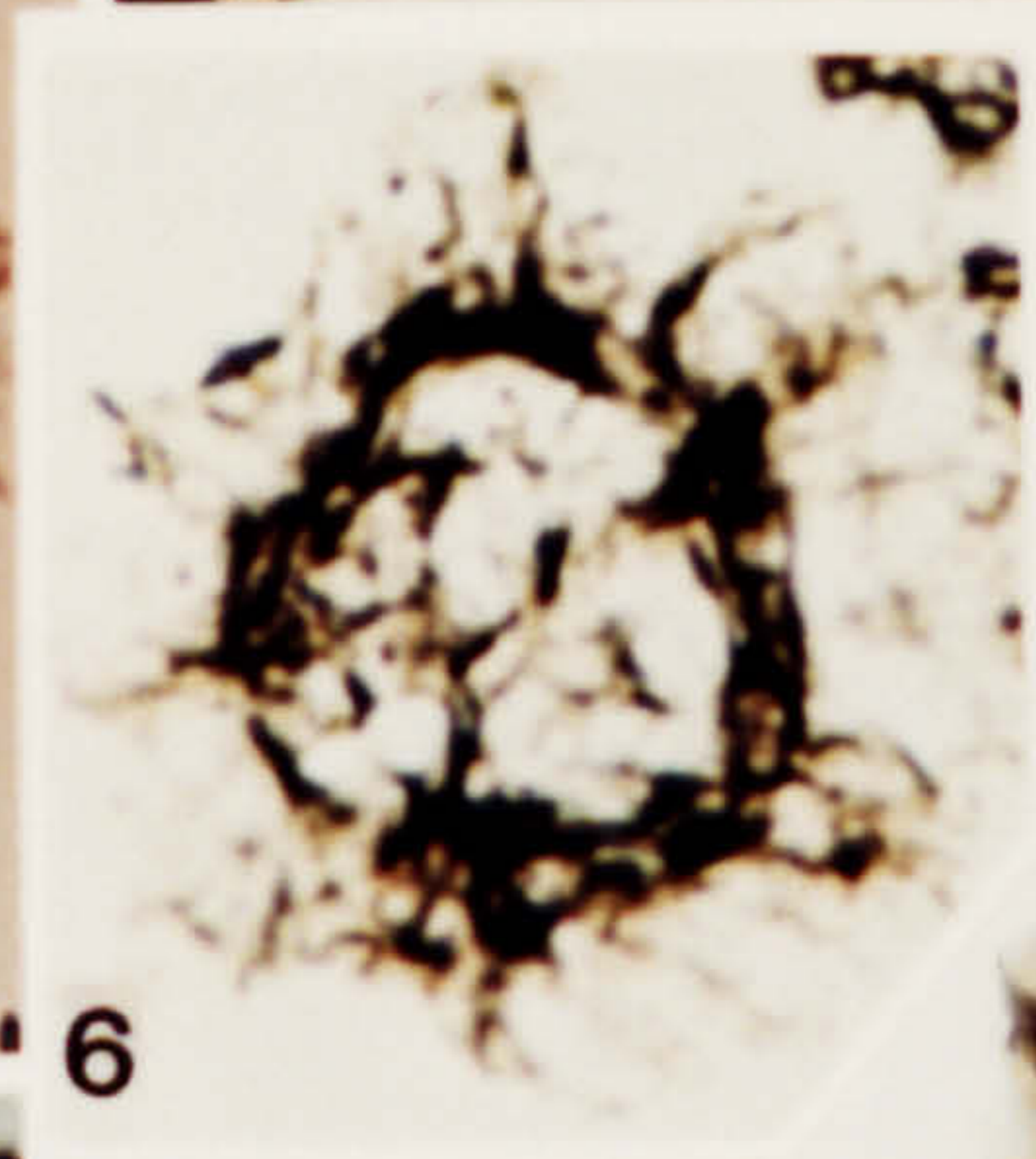
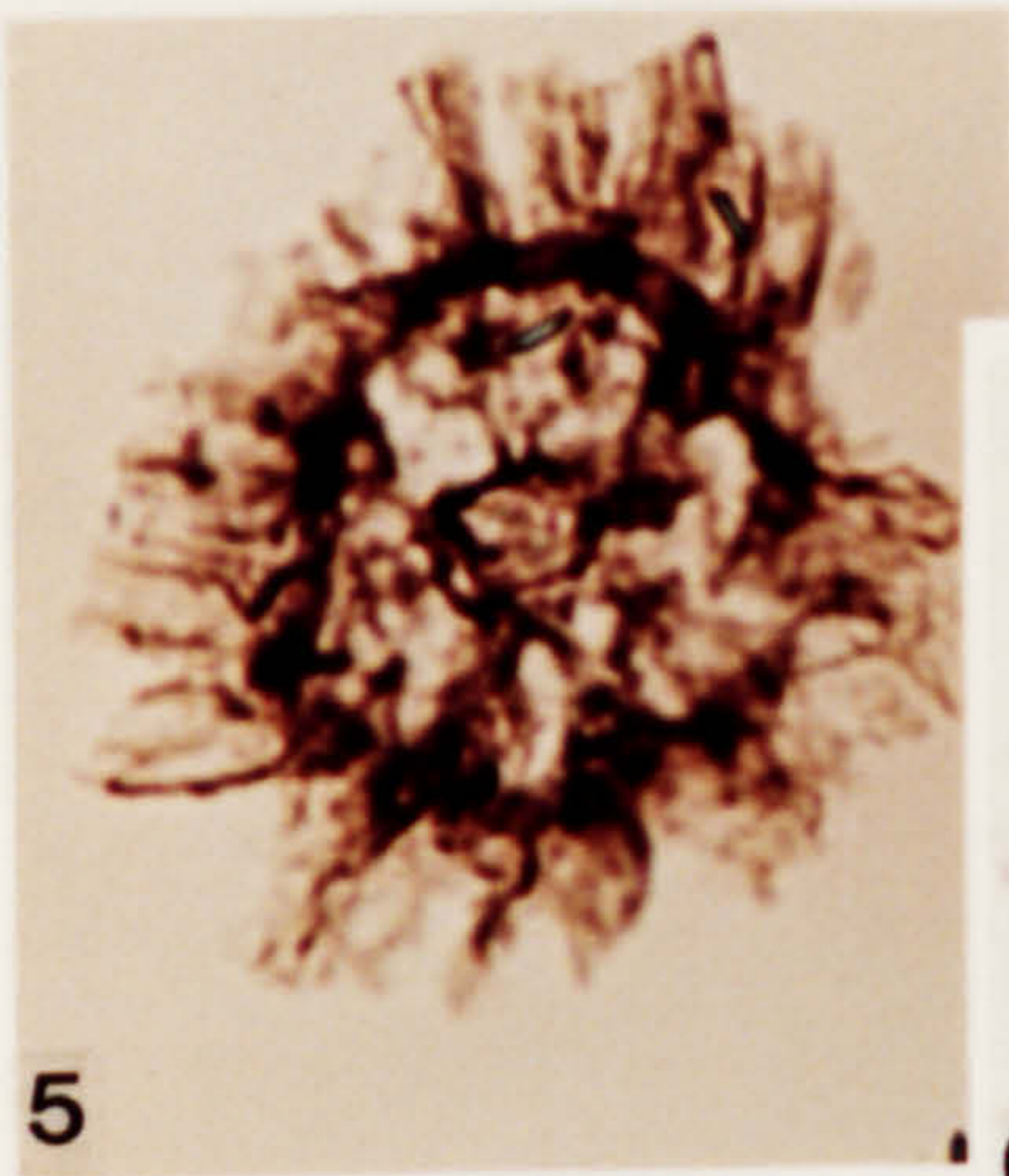
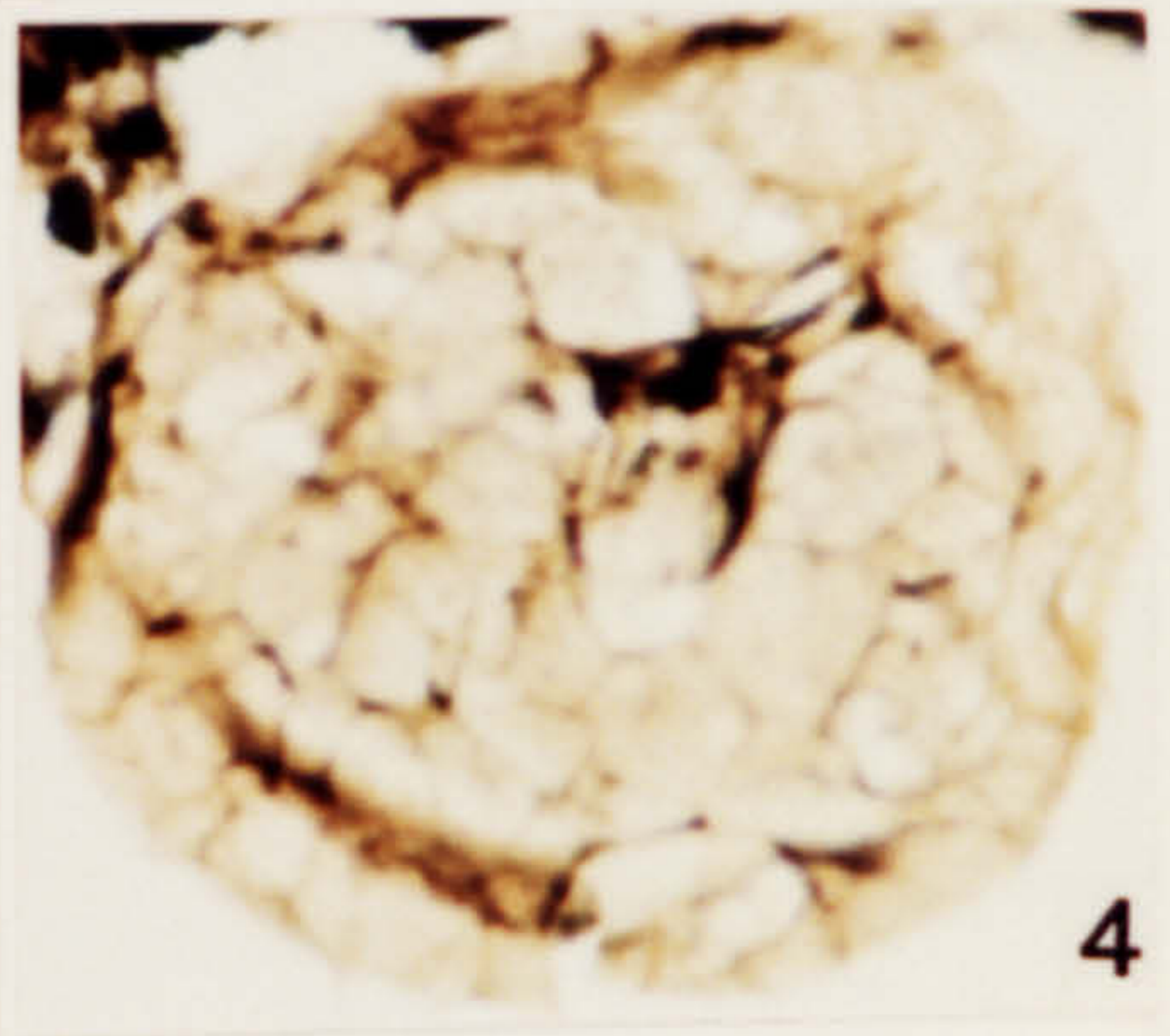
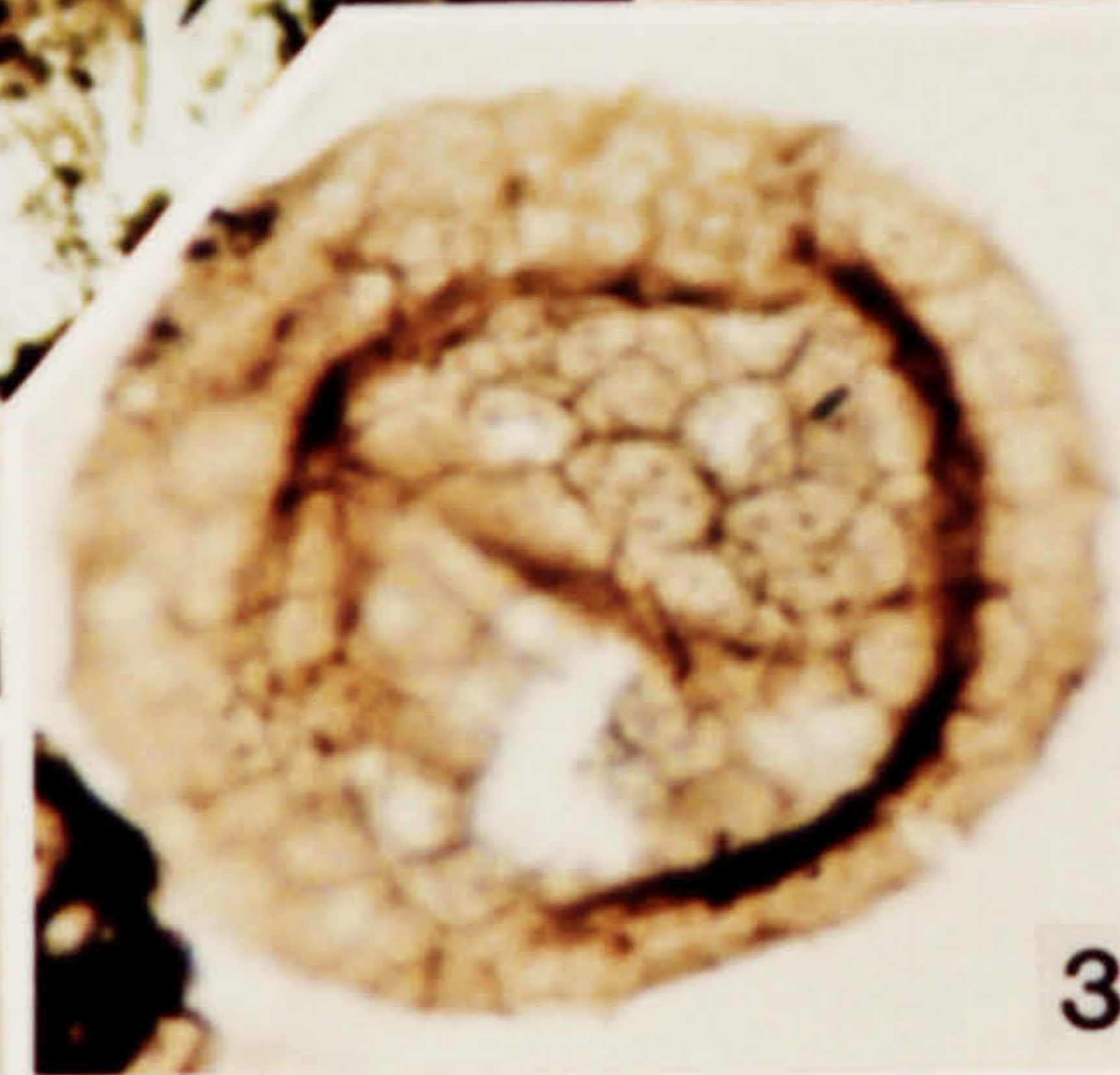
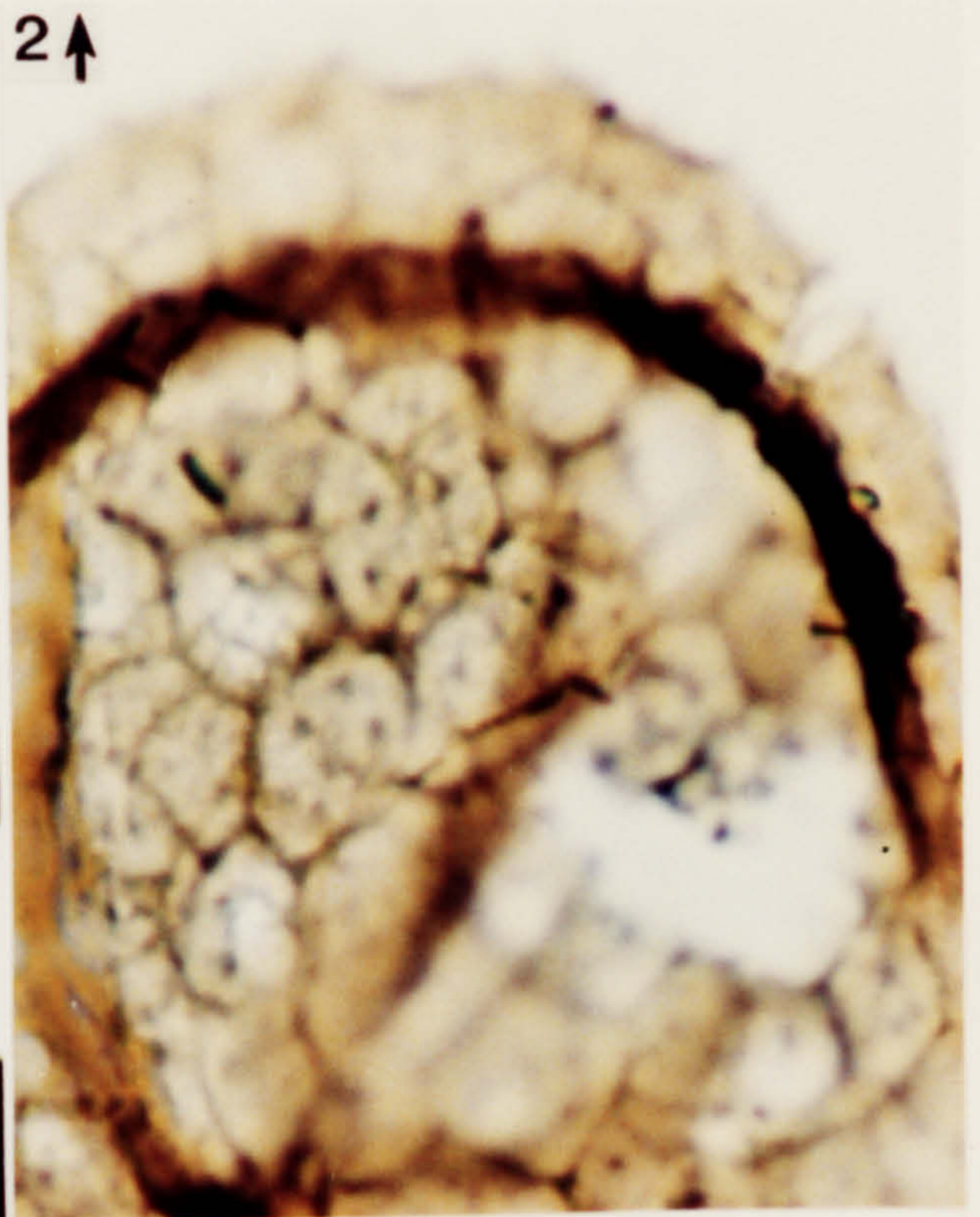
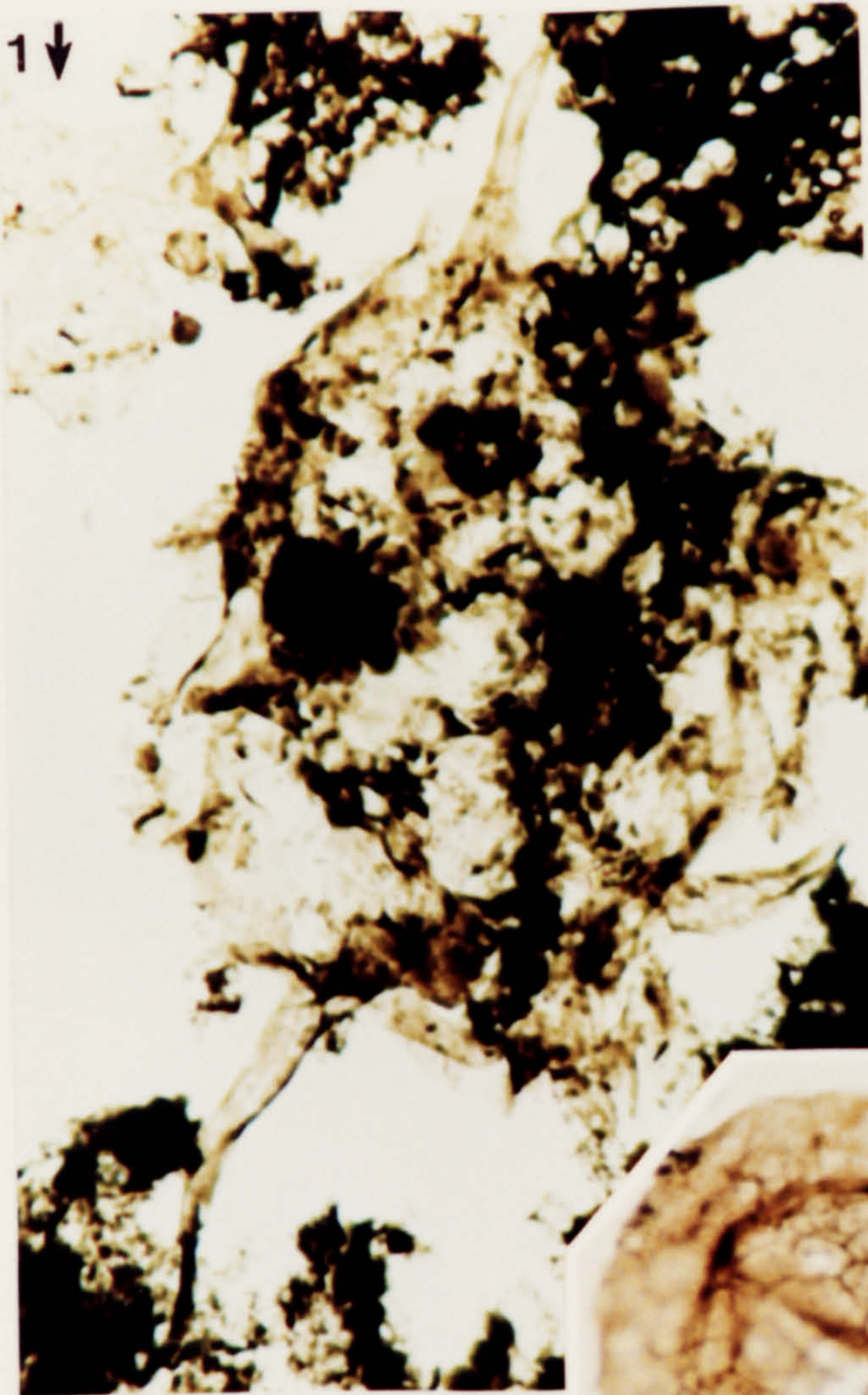




**Plate 111.**

**Acritarchs and prasinophycean algae from the Black Shale Member, Calcareous Shale Formation, Pridoli in age.**

1. **Acritarch Form L.** DW 55, FS-4, P20\1, X550.
2. **Acritarch Form T.** DW 51, FS-3, Q34\1, X2300.
3. **Acritarch Form T.** DW 51, FS-3, Q34\1.
4. **Acritarch Form T.** DW 51, FS-3, T44\3.
5. ***Cymatiosphaera* sp. 1.** DW 56, FS-1, G47\1.
6. ***Cymatiosphaera* sp. 1.** DW 51, FS-3, Q38\3.
7. ***Cymatiosphaera* sp. 1.** DW 55, FS-4, L22\4.
8. ***Cymatiosphaera* sp.** DW 56, FS-1, W15\2.



**Plate 112.**

**Chitinozoa from the Black Shale Member, Calcareous Shale Formation, Pridoli in age.**

- 1. *Ancyrochitina?* sp. DW 52, FS-4, J11\1.**
- 2. *Cingulochitina serrata* (Taugourdeau & Jekhowsky) Paris 1981. DW 94, FS-4, T39\3.**
- 3. *Cingulochitina ervensis* (Paris) Paris 1981. DW 56, FS-2, N25\3.**
- 4. *Cingulochitina ervensis?* (Paris) Paris 1981 DW 55, FS-4, K25\3.**
- 5. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. DW 94, FS-4, K7\3.**
- 6. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. DW 94, FS-4, Q28\2.**
- 7. *Eisenackitina?* sp. DW 94, FS-4, M37\4.**



**Plate 113.**

**Chitinozoa from the Black Shale Member, Calcareous Shale Formation, Pridoli in age.**

1. *Plectochitina* sp. 1. DW 94, FS-5, M18\2.
2. *Muscochitina muscosa?* Paris 1981. DW 94, FS-4, M21\4.
3. *Muscochitina muscosa?* Paris 1981. DW 94, FS-4, Q39\3.
4. *Plectochitina* sp. 1. DW 94, FS-5, D36\1.
5. *Plectochitina* sp. 1. DW 94, FS-4, D34\1.
6. *Plectochitina* sp. 1. DW 94, FS-4, E26\3.
7. *Hoegisphaere* cf. *glabra* Staplin 1961. DW 56, FS-1, K37\2, X920.



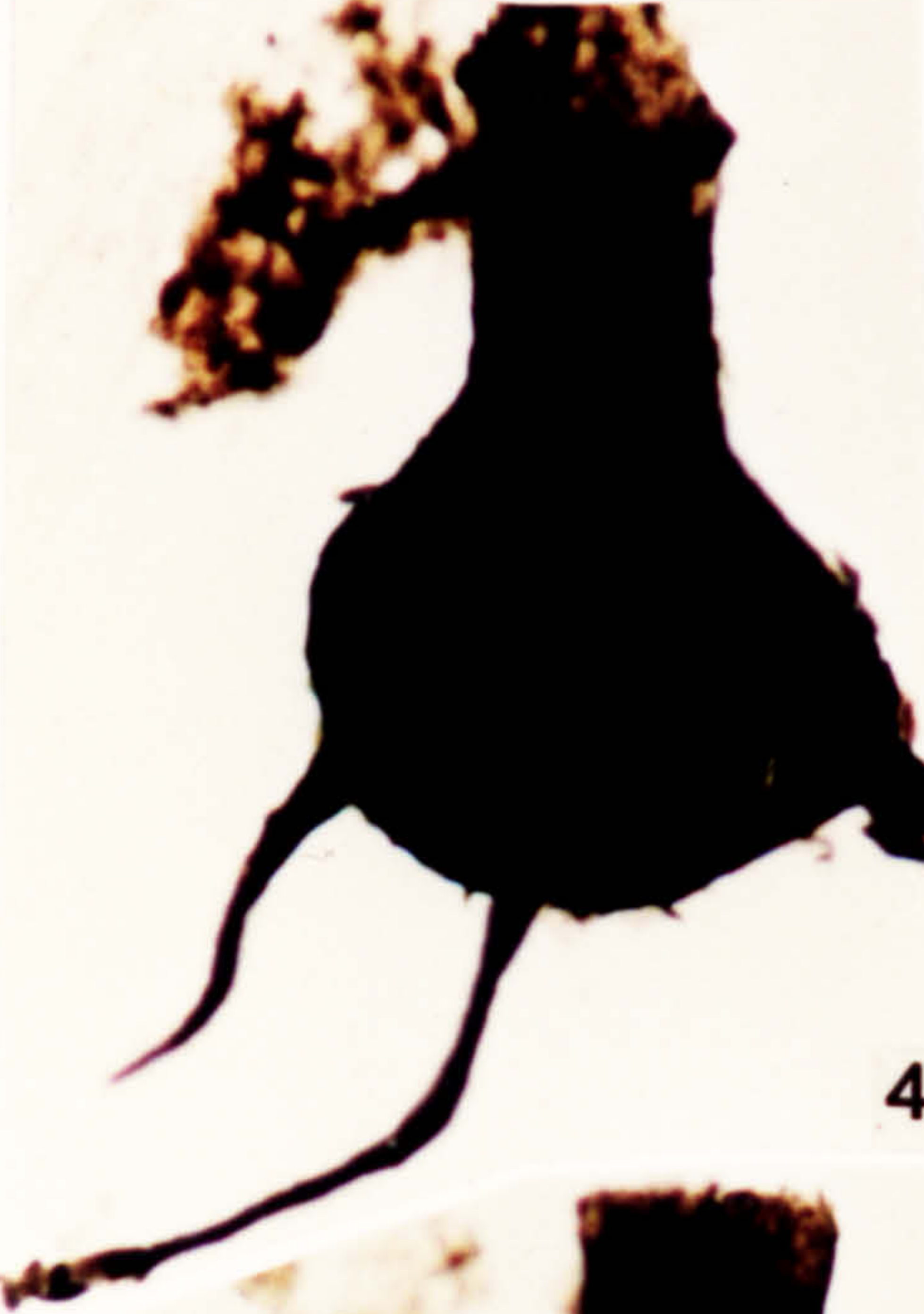
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2



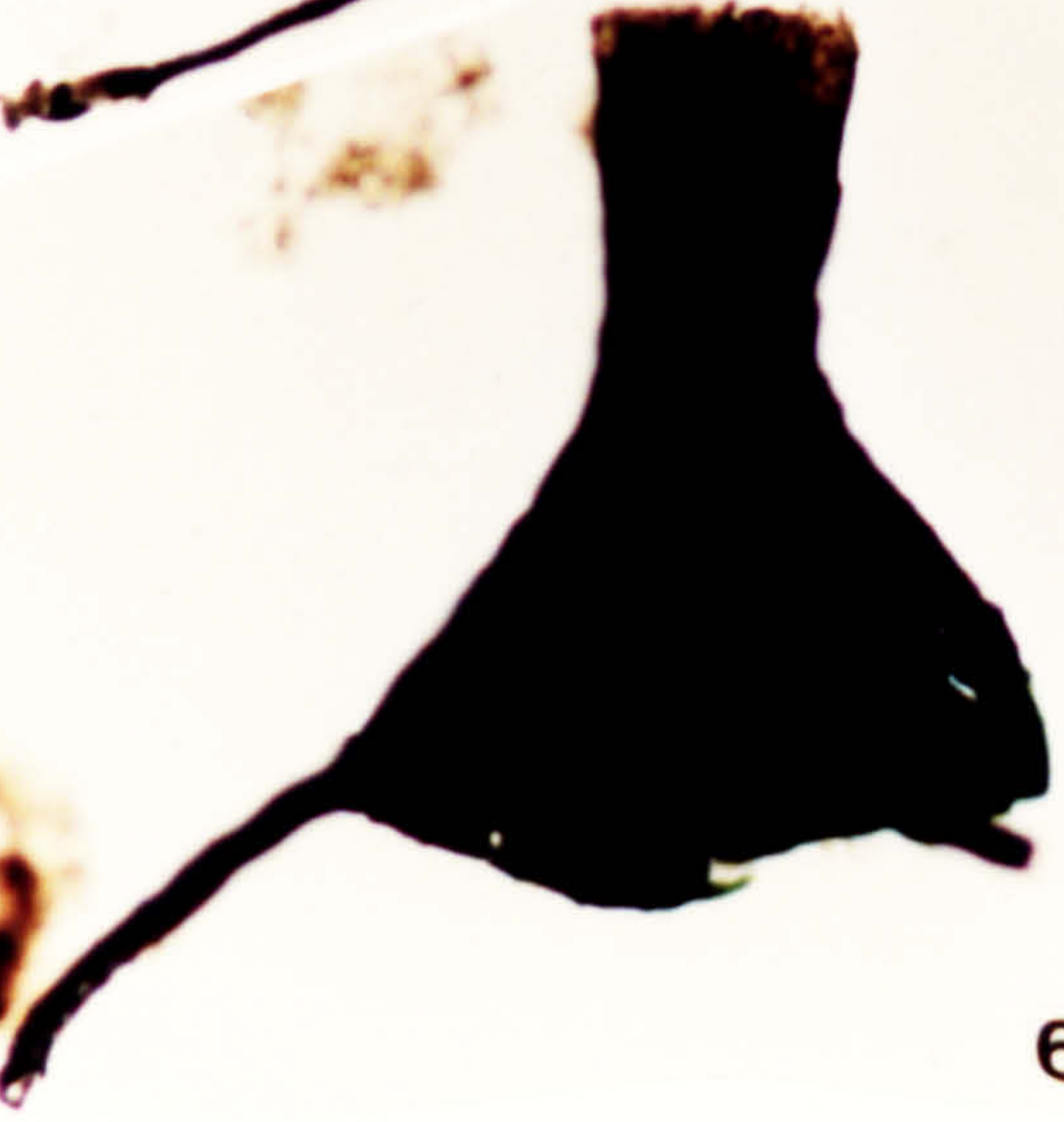
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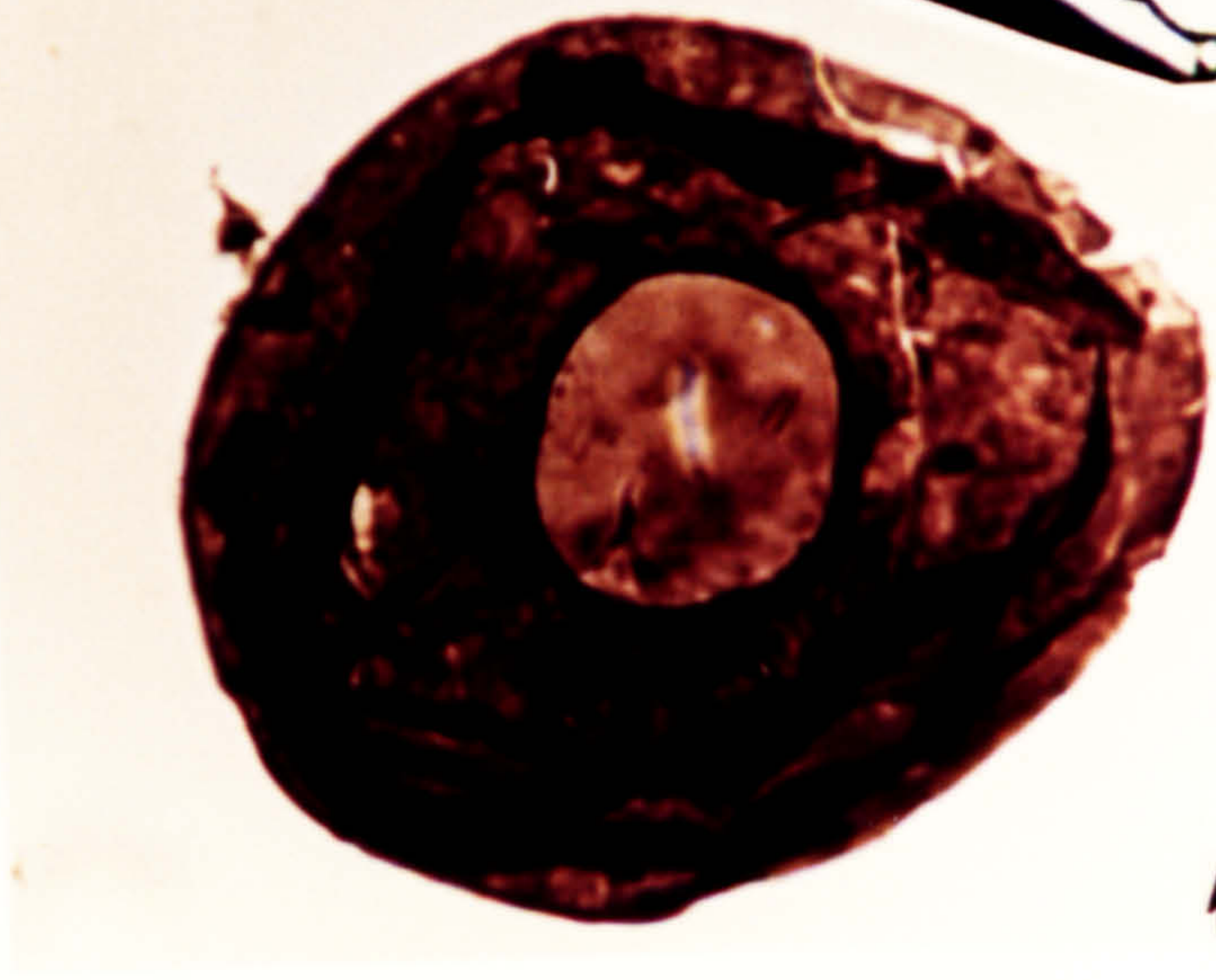
4



5



6

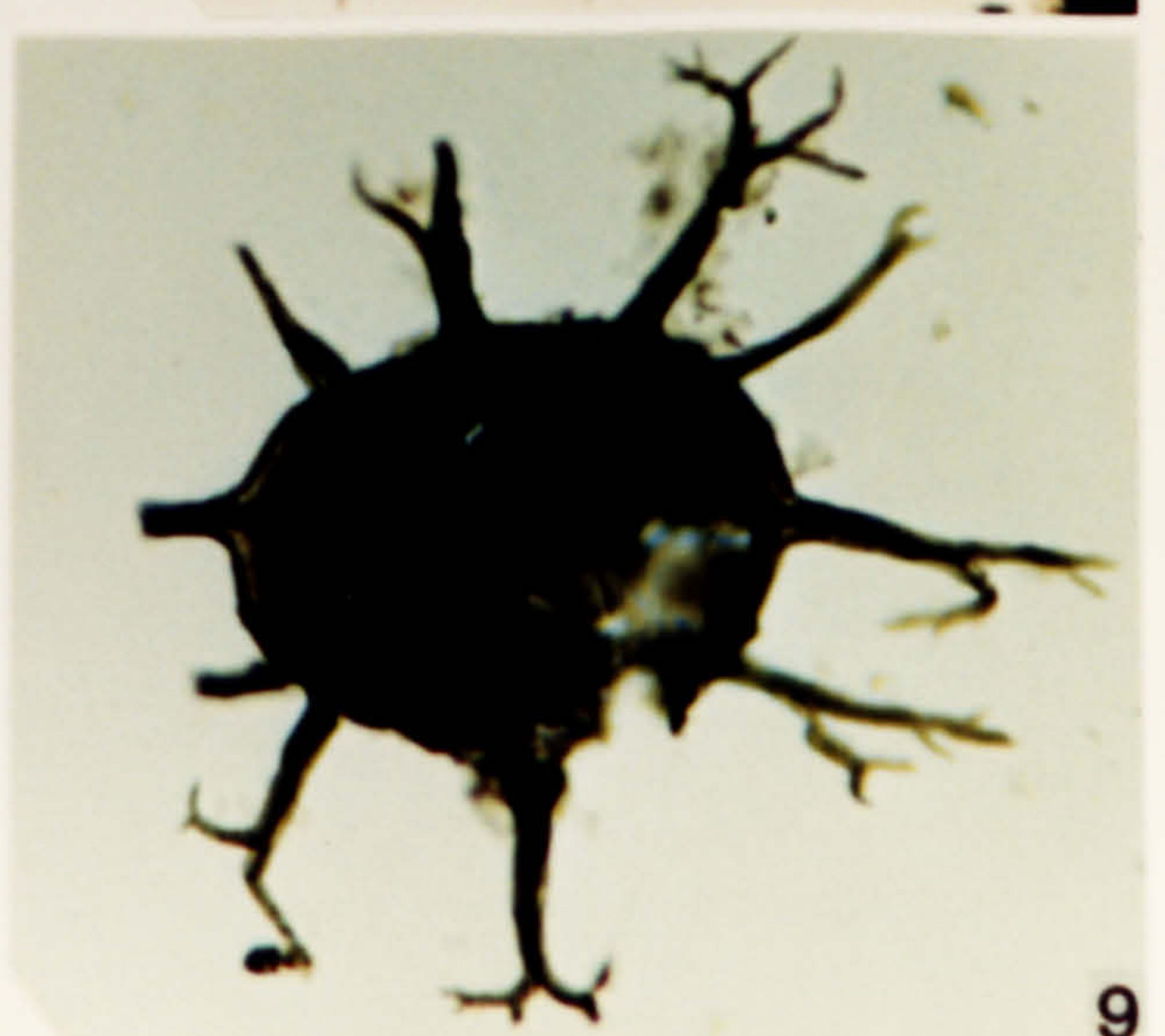
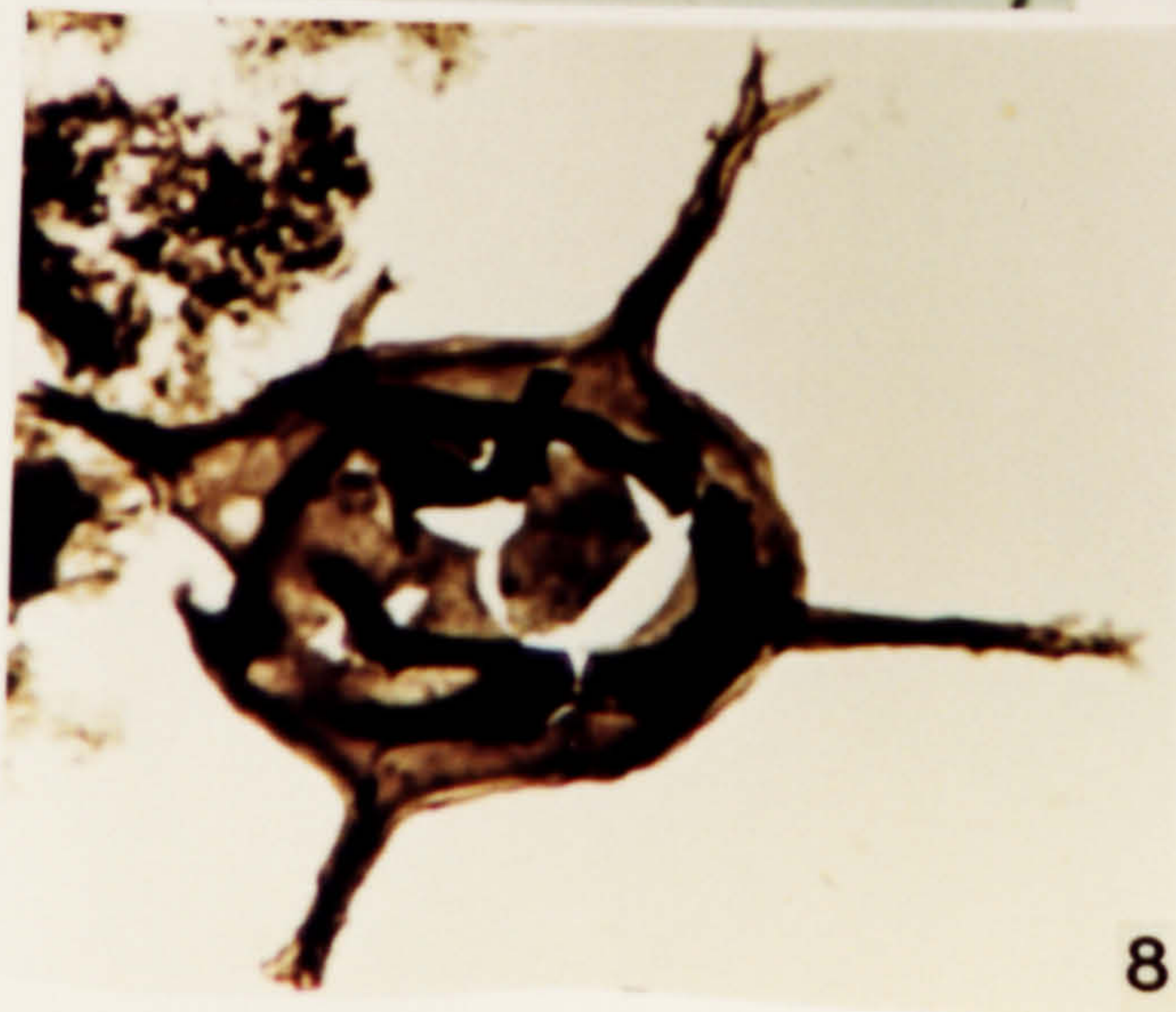
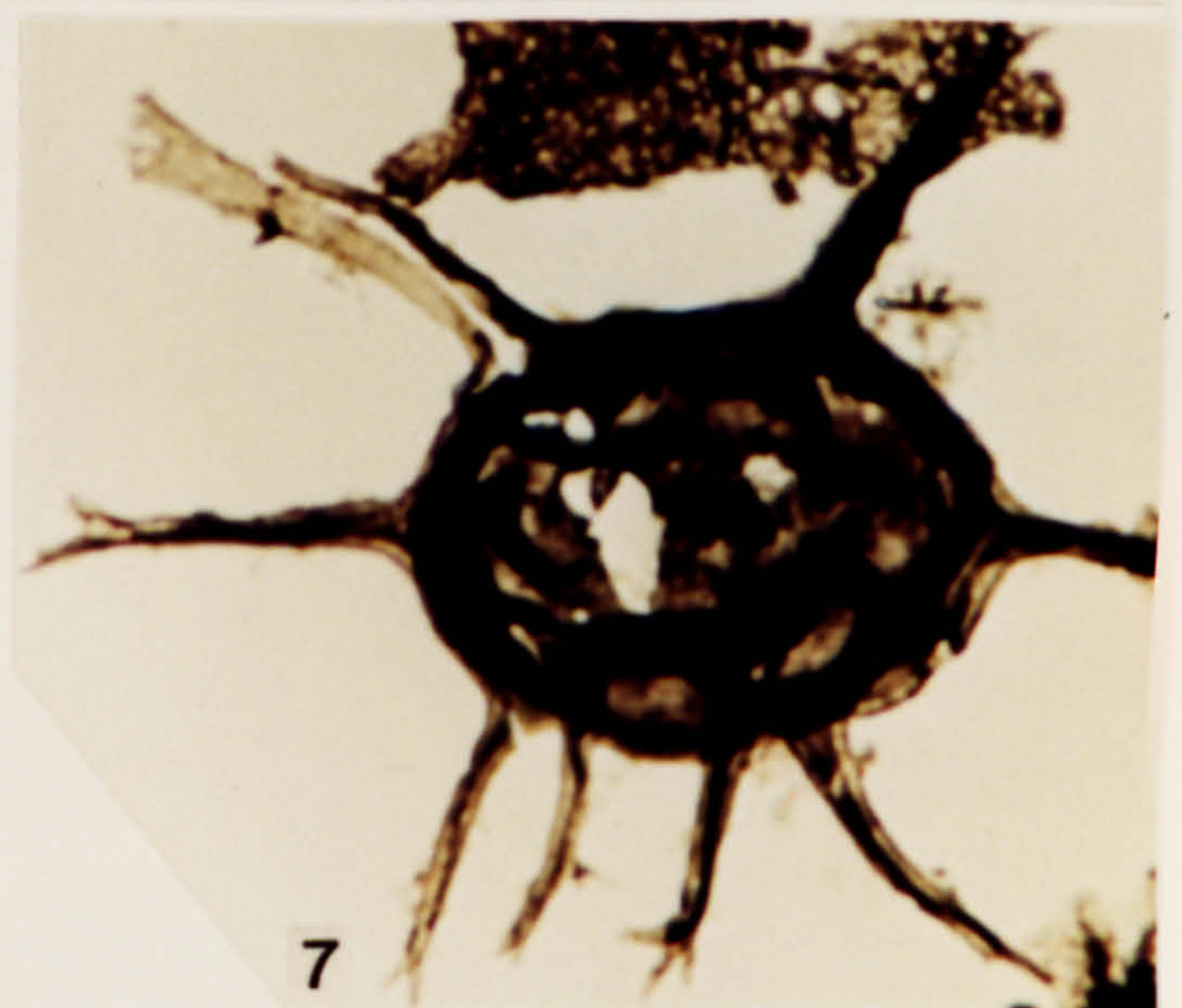
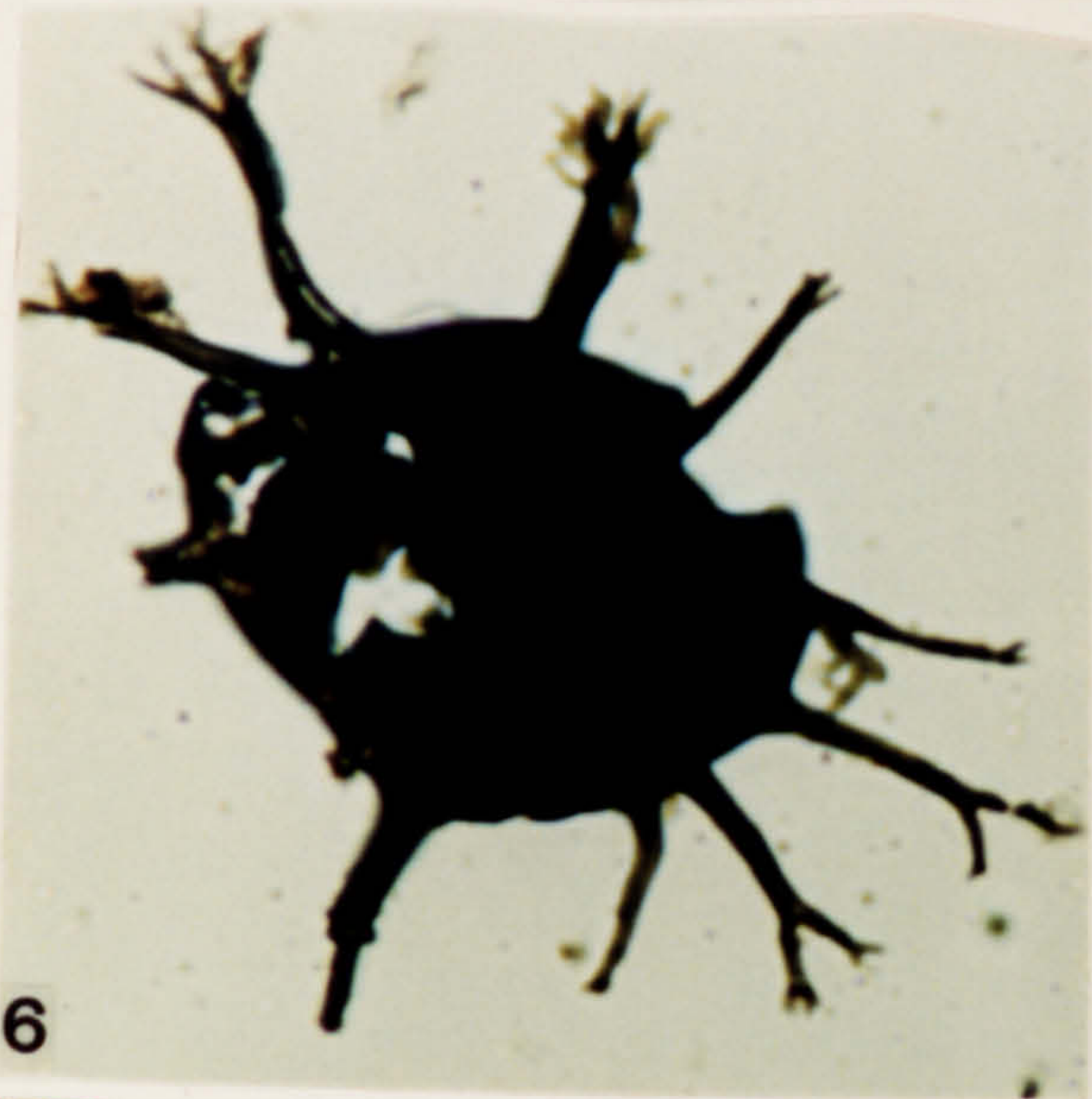
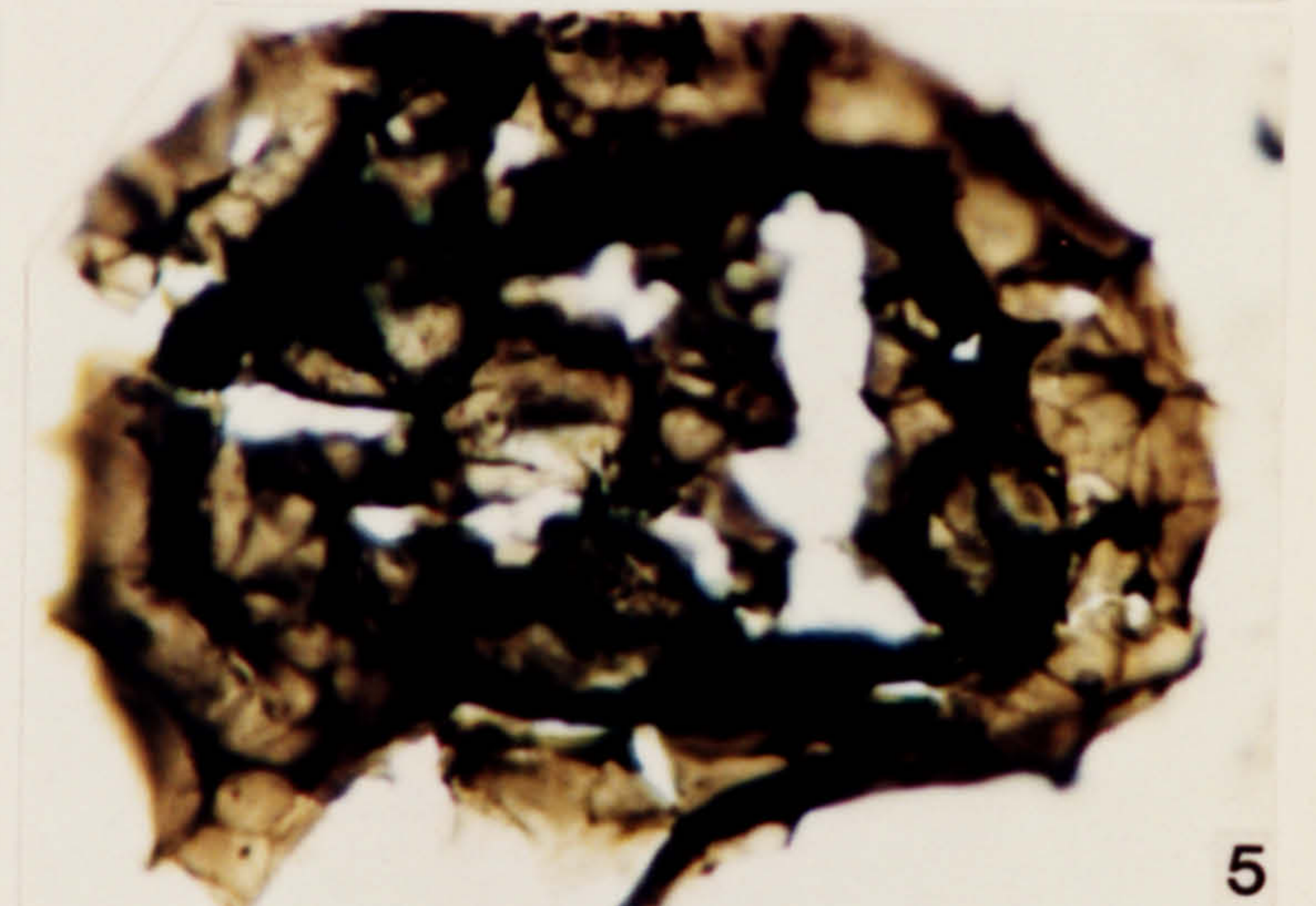
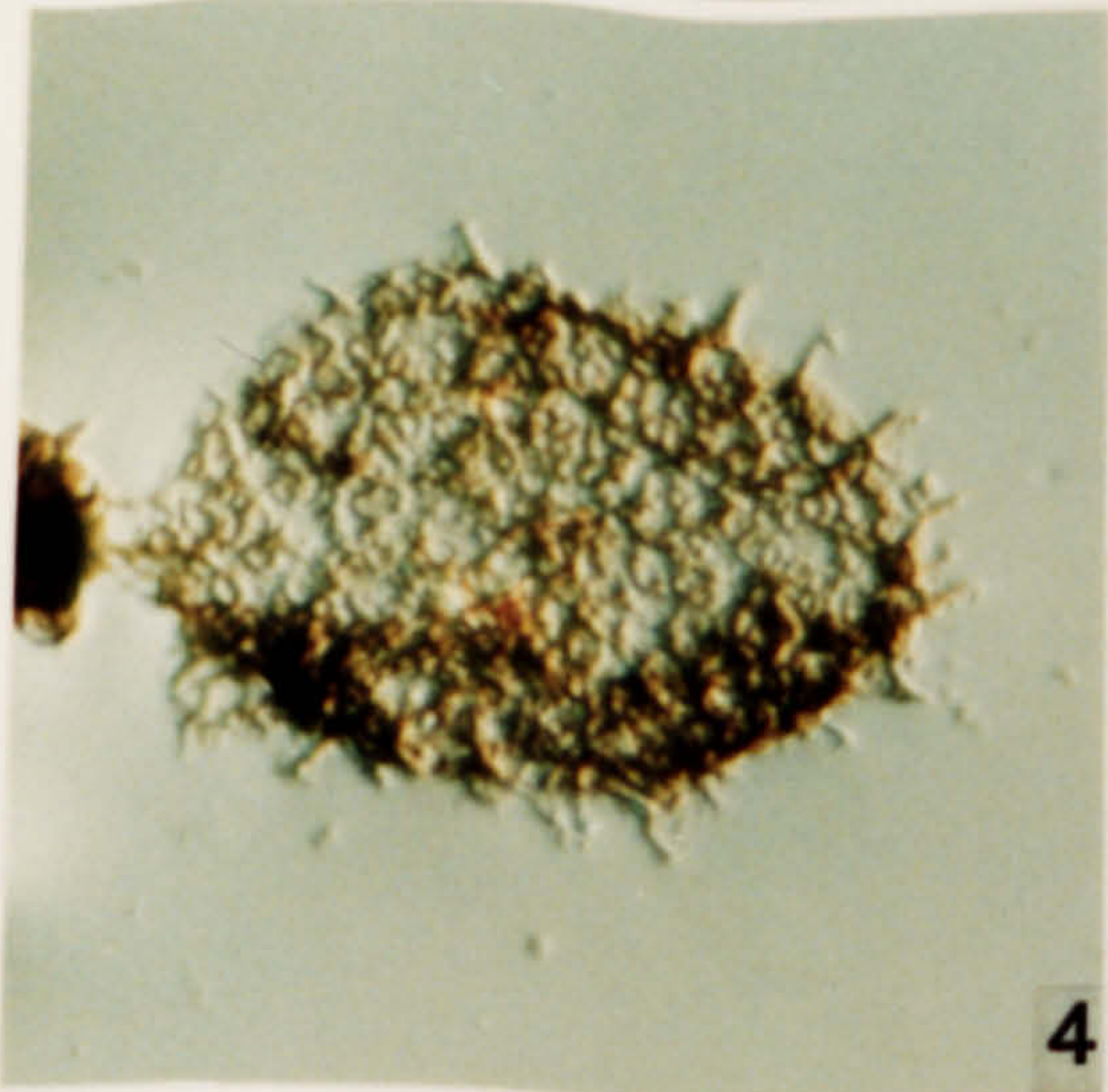
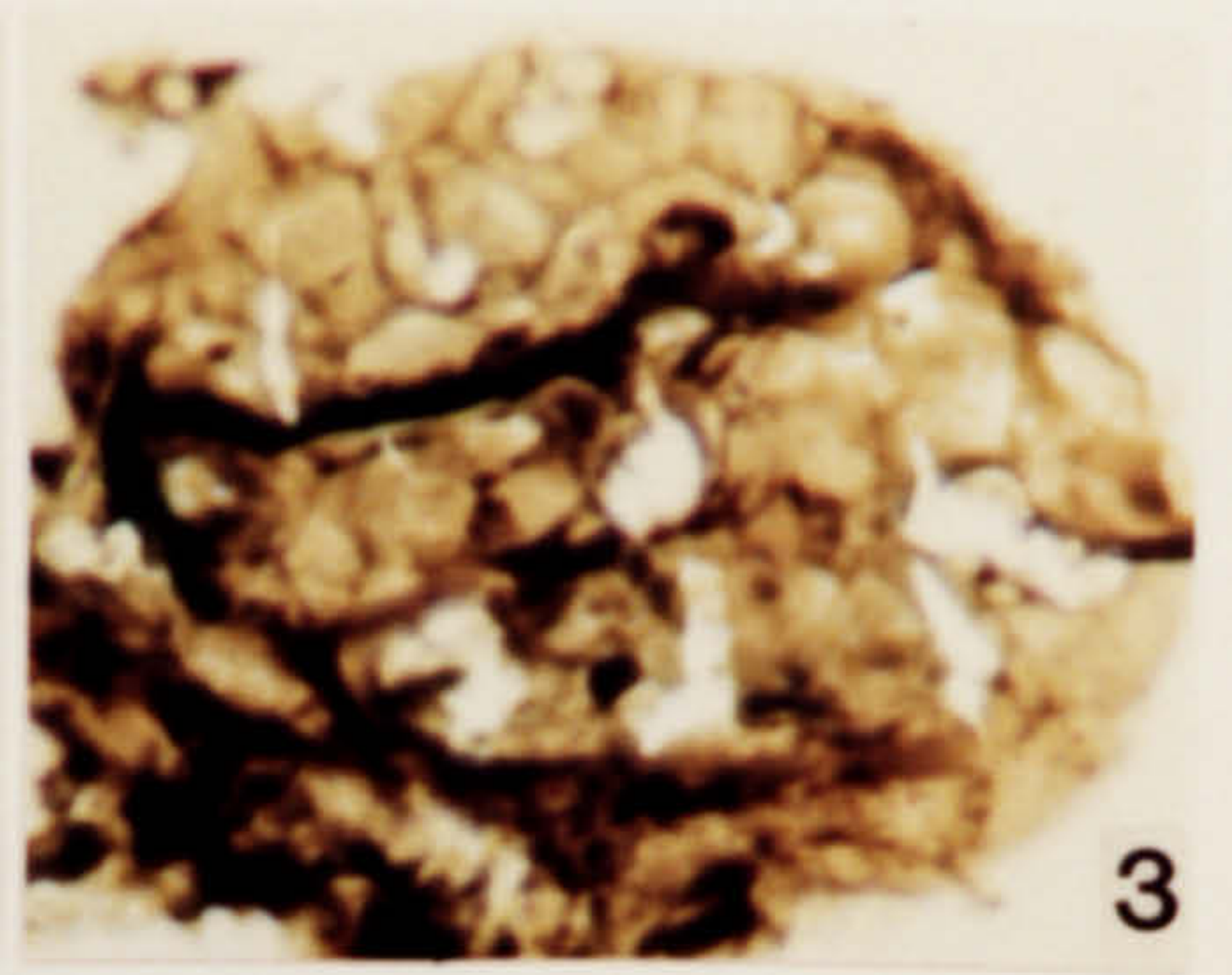
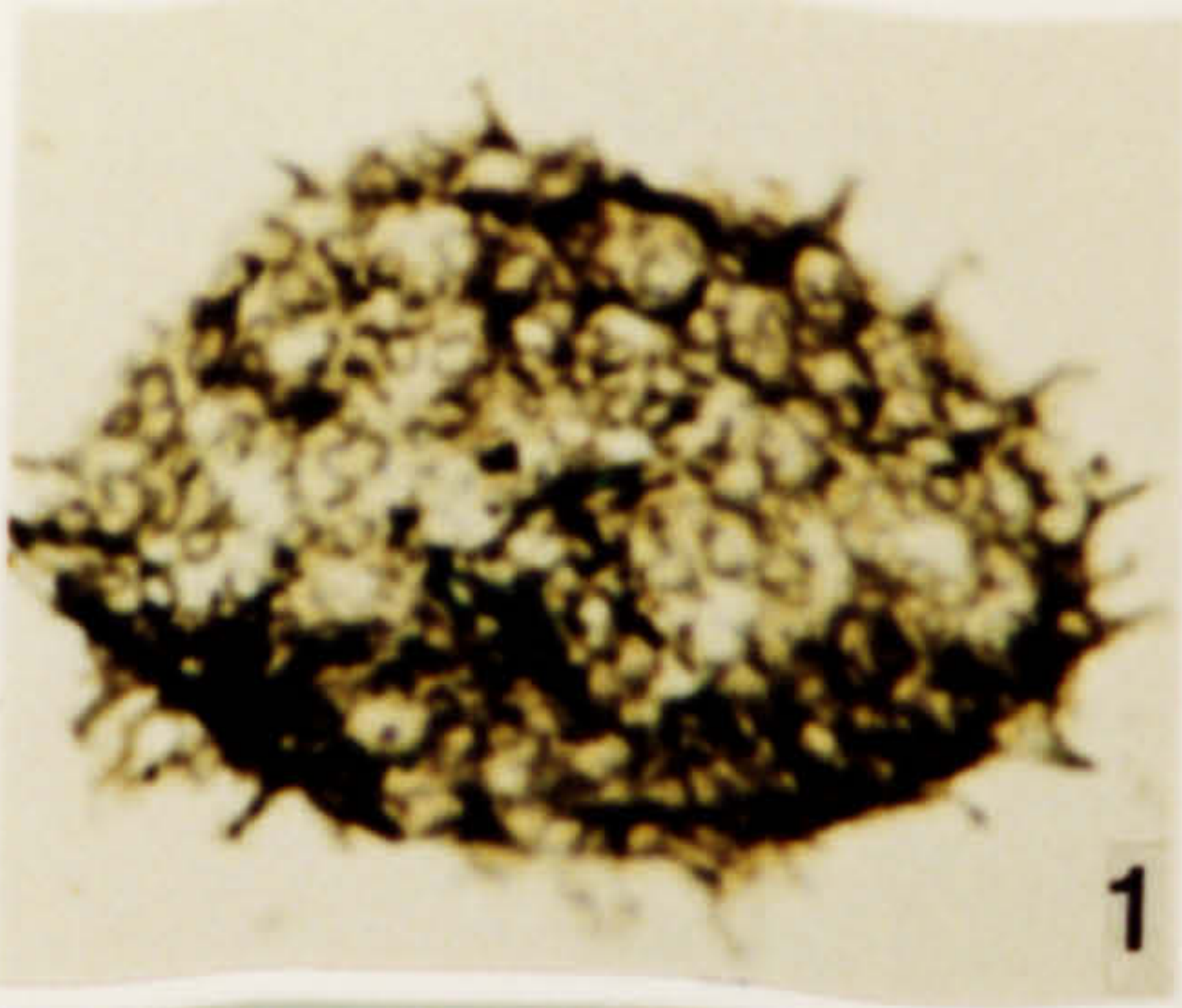


↑ 7

**Plate 114.**

**Acritarchs from the Black Shale Member, Calcareous Shale Formation, Gedinnian (*uniformis* Zone) in age.**

1. *Ammonidium* sp. 2. DW 58, FS-4, H28\2.
2. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. DW 58, FS-4, E17\1.
3. *Dictyotidium dictyotum* (Eisenack) Eisenack 1955. DW 58, FS-4, T9\4.
4. *Ammonidium* sp. 2. DW 58, FS-4, H28\2, IC.
5. *Dictyotidium* sp. 2. DW 58, FS-5, T20\2.
6. *Diexallophasis denticulata* var. A. DW 58, FS-4, M4\2.
7. *Diexallophasis denticulata* var. A. DW 57, FS-4, E16\2.
8. *Diexallophasis denticulata* var. A. DW 58, FS-4, F20\4.
9. *Diexallophasis denticulata* var. A. DW 58, FS-5, Y26\3.

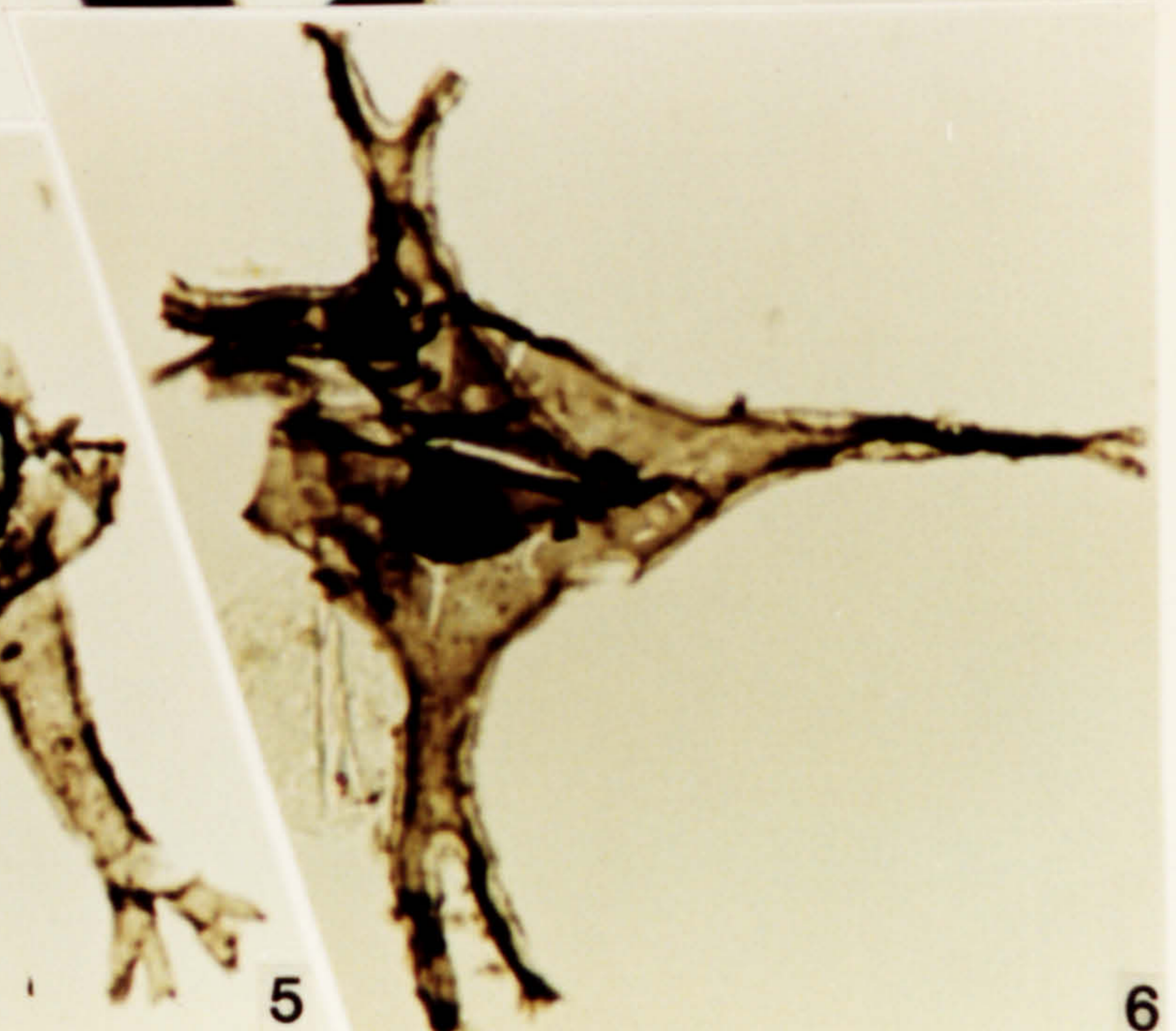
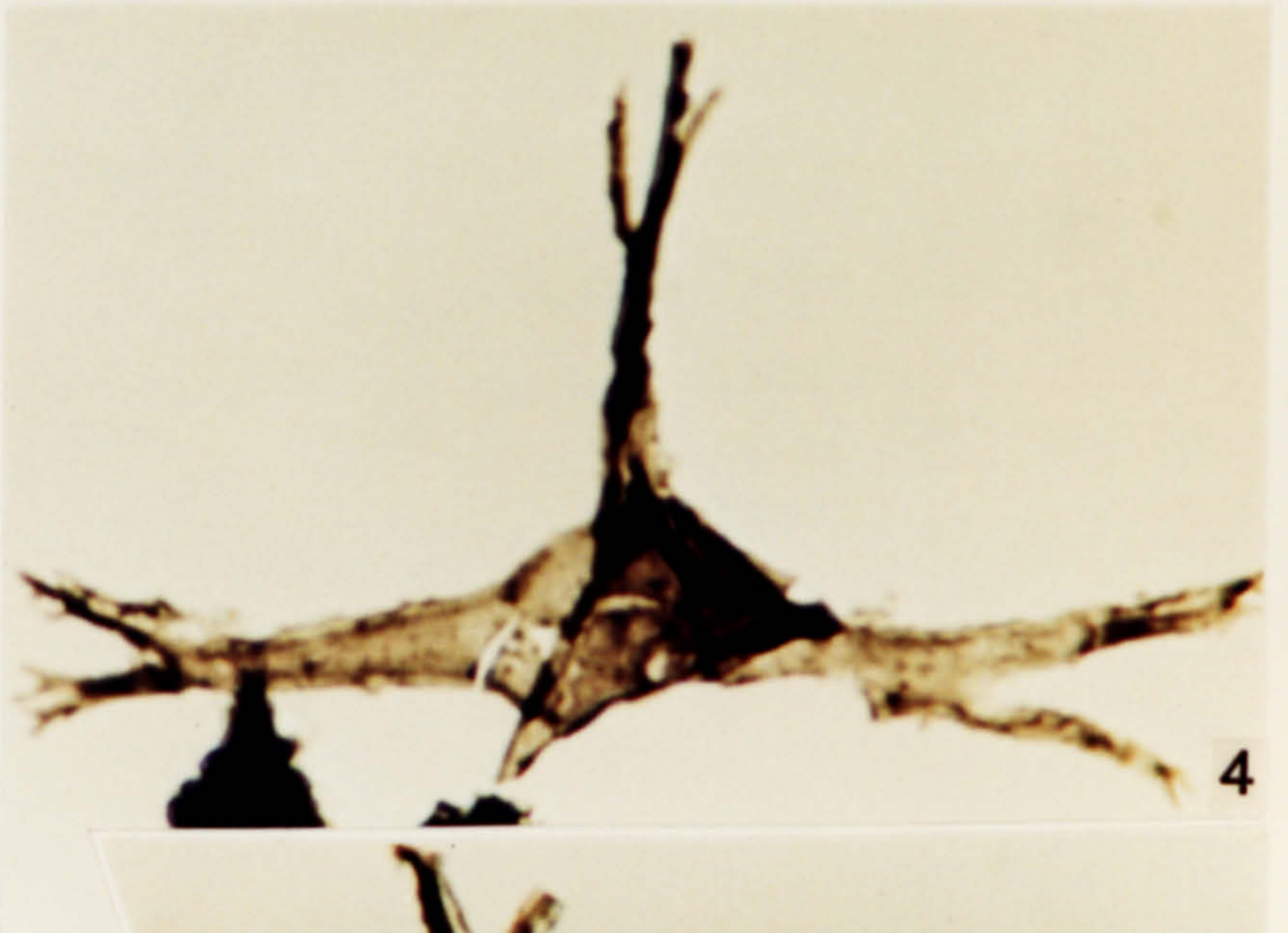
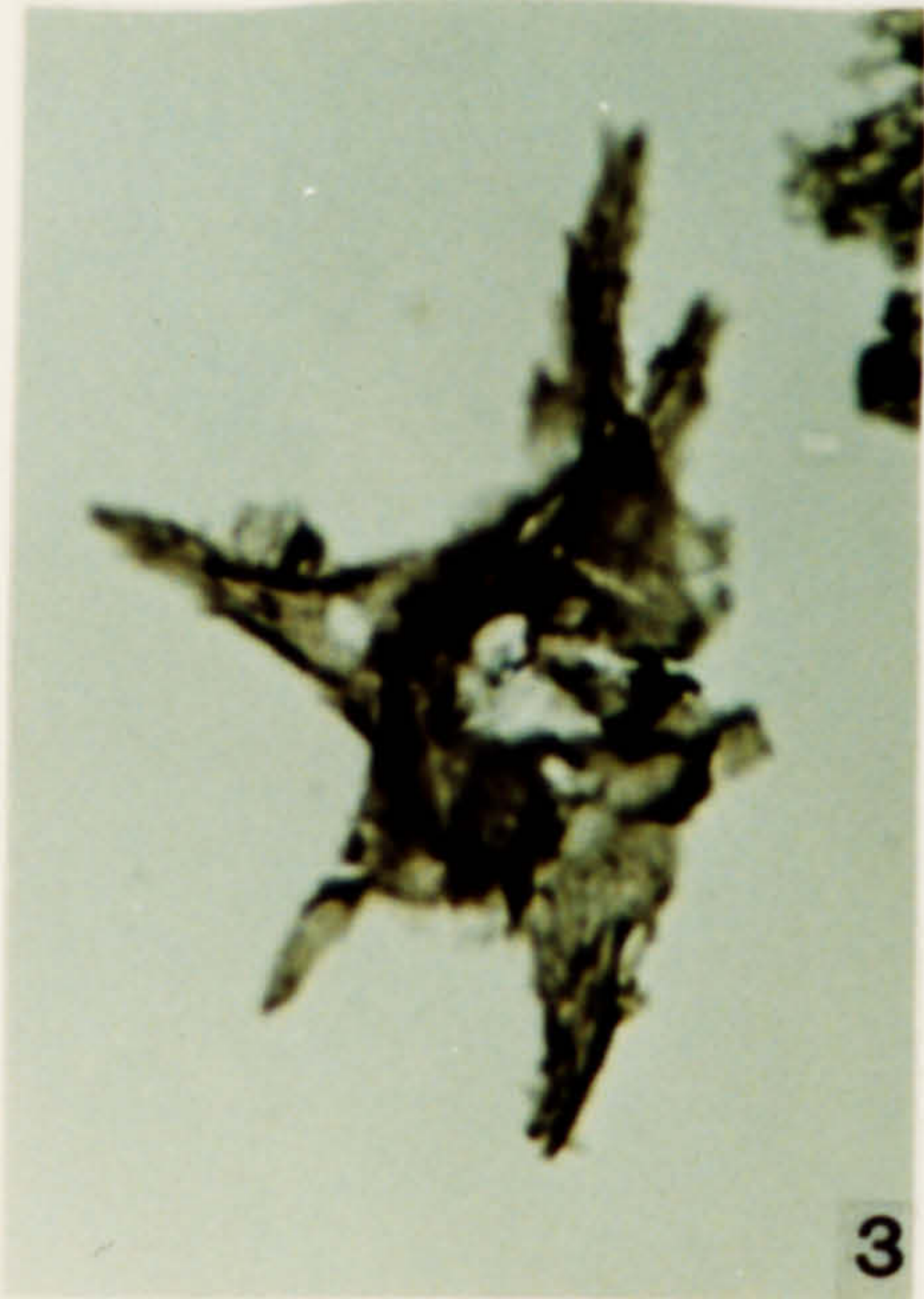
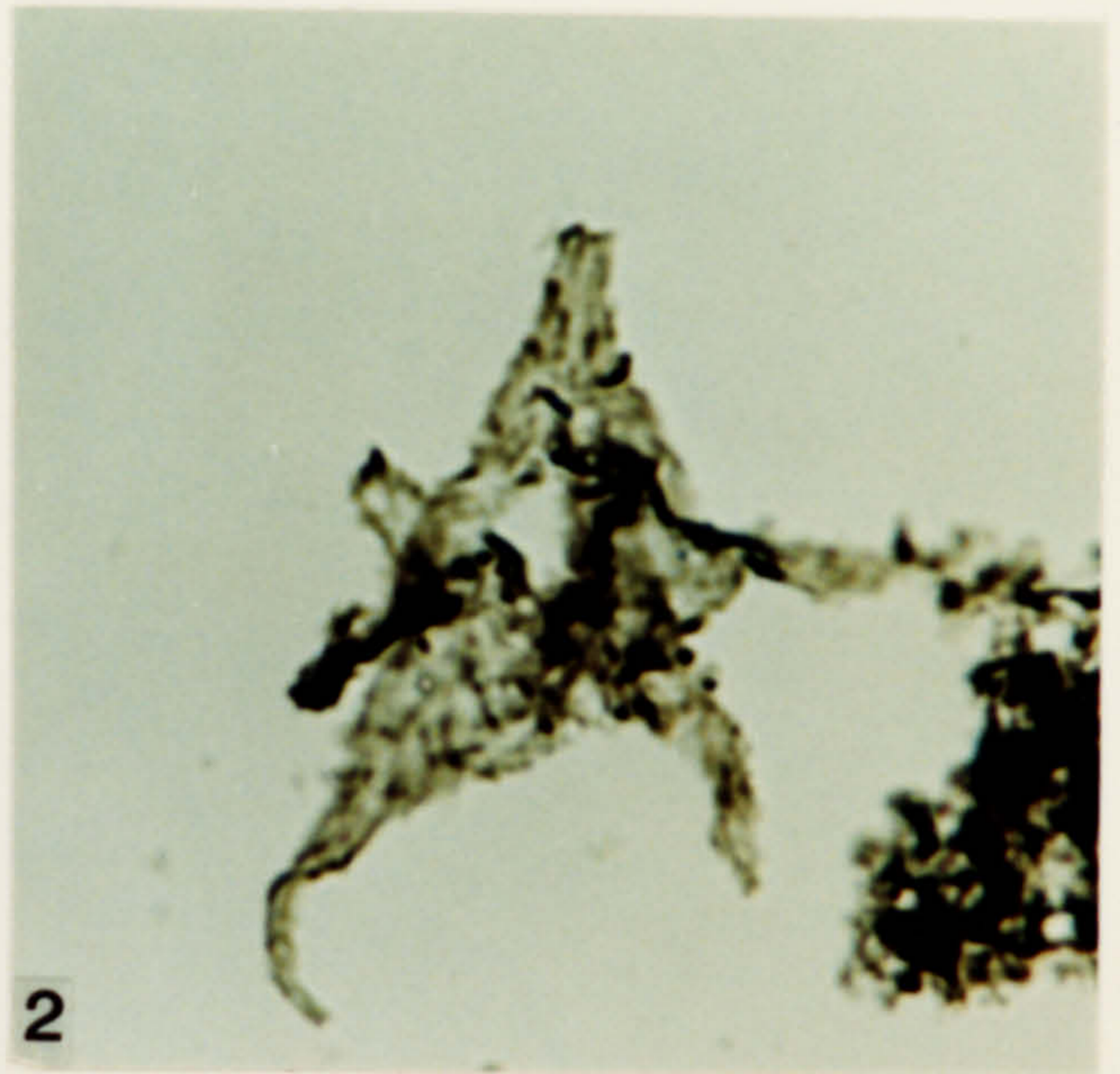
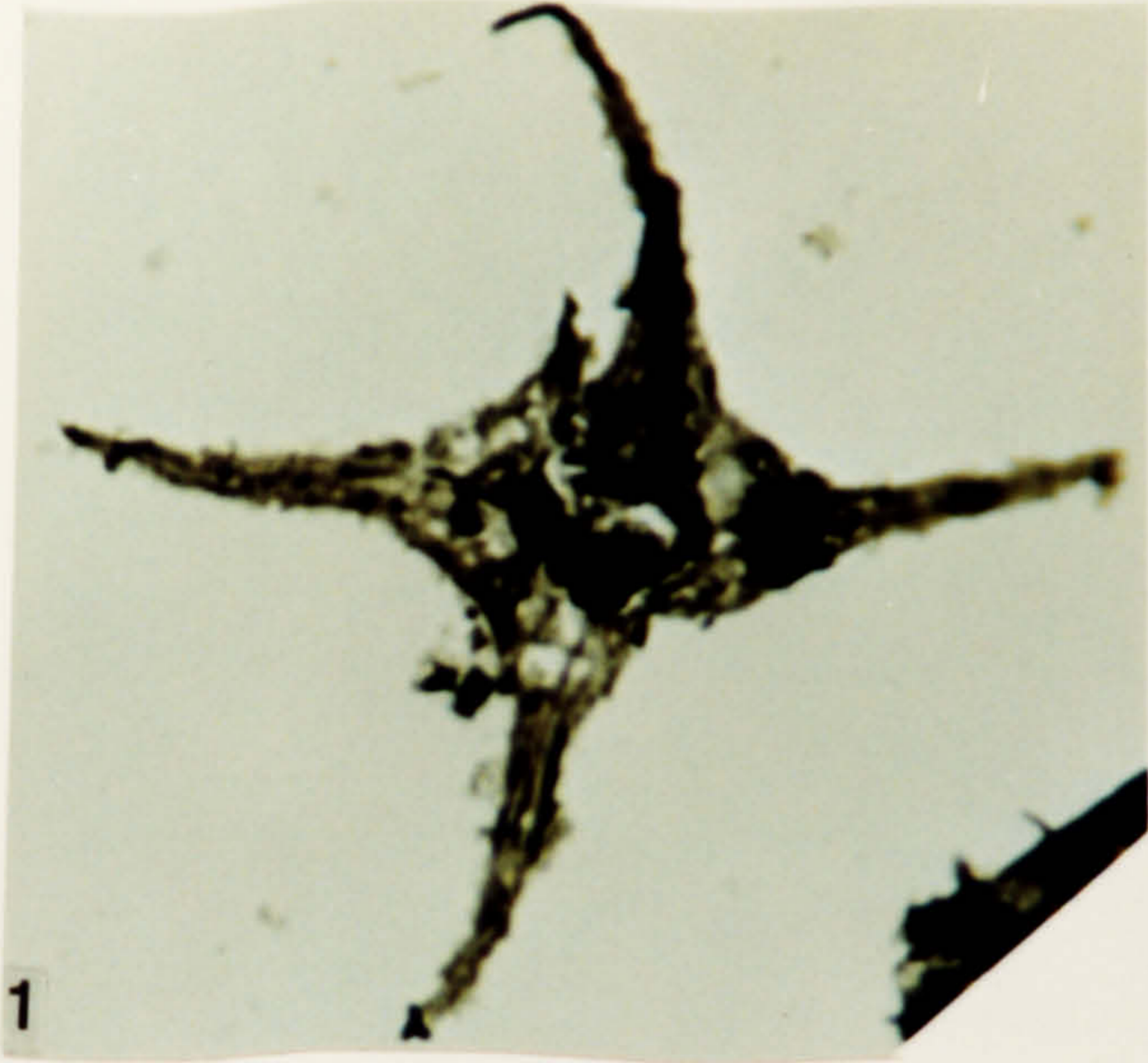




**Plate 115.**

**Acritarchs from the Black Shale Member, Calcareous Shale Formation, Gedinnian  
(*uniformis* Zone) in age.**

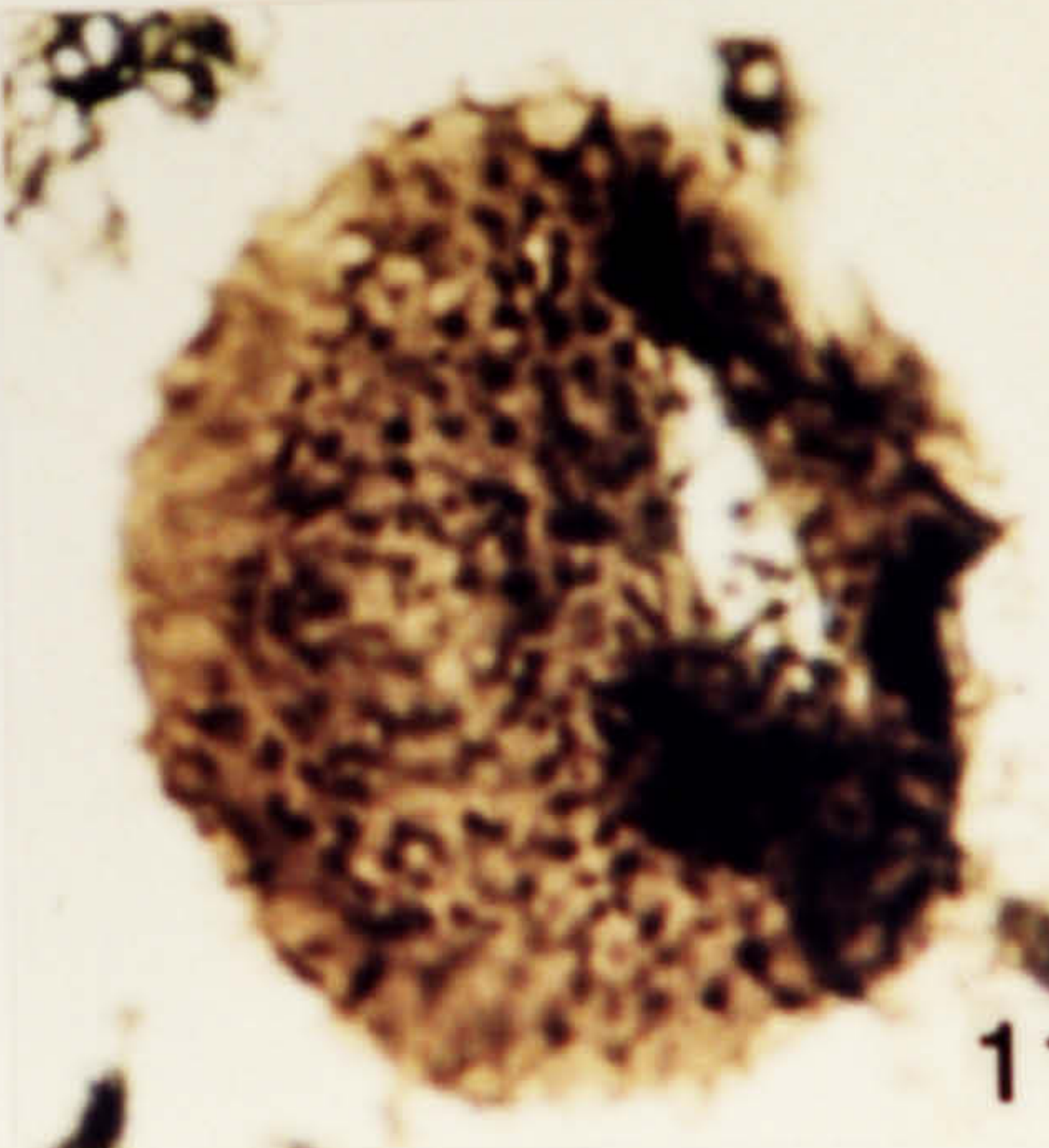
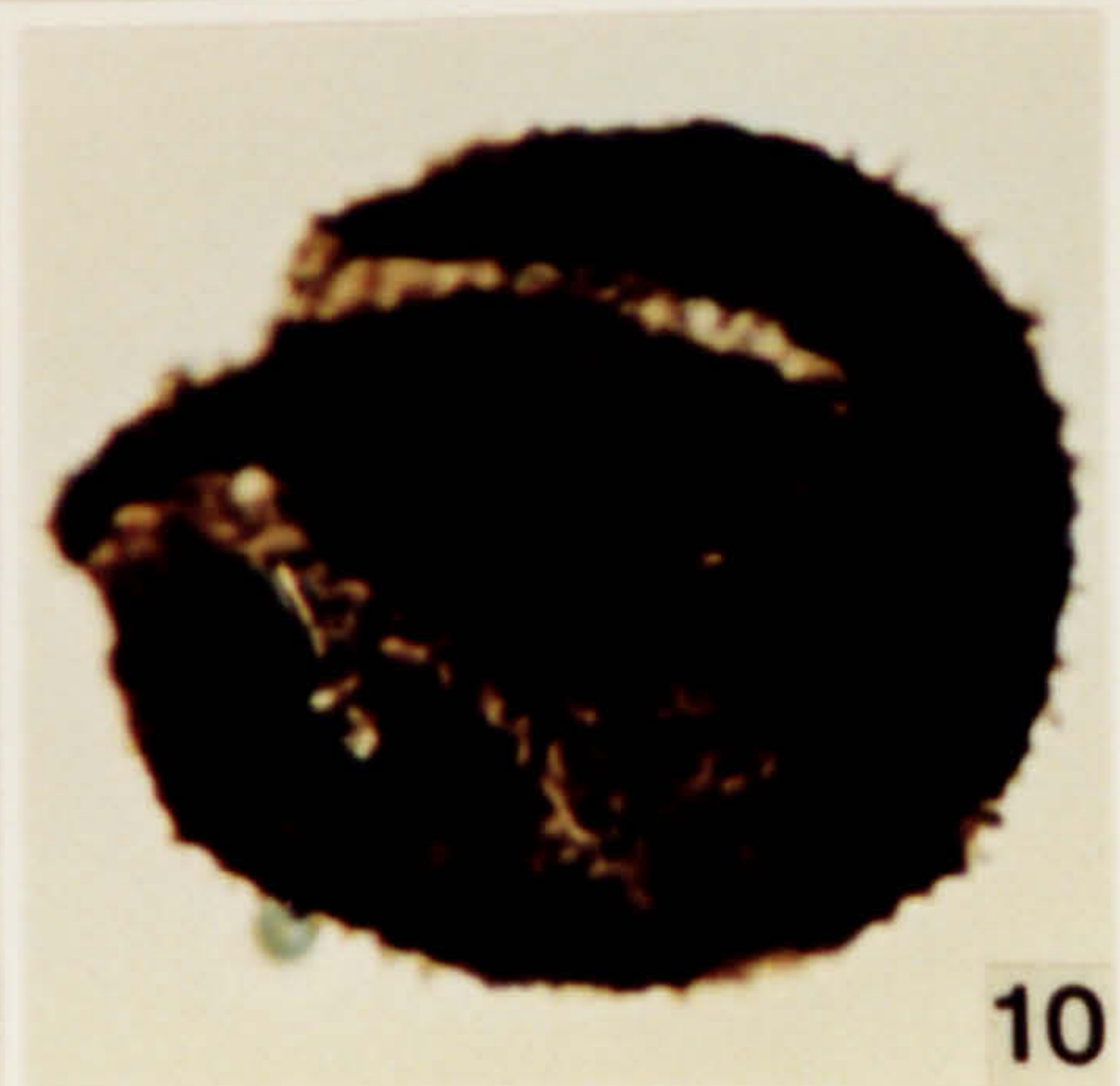
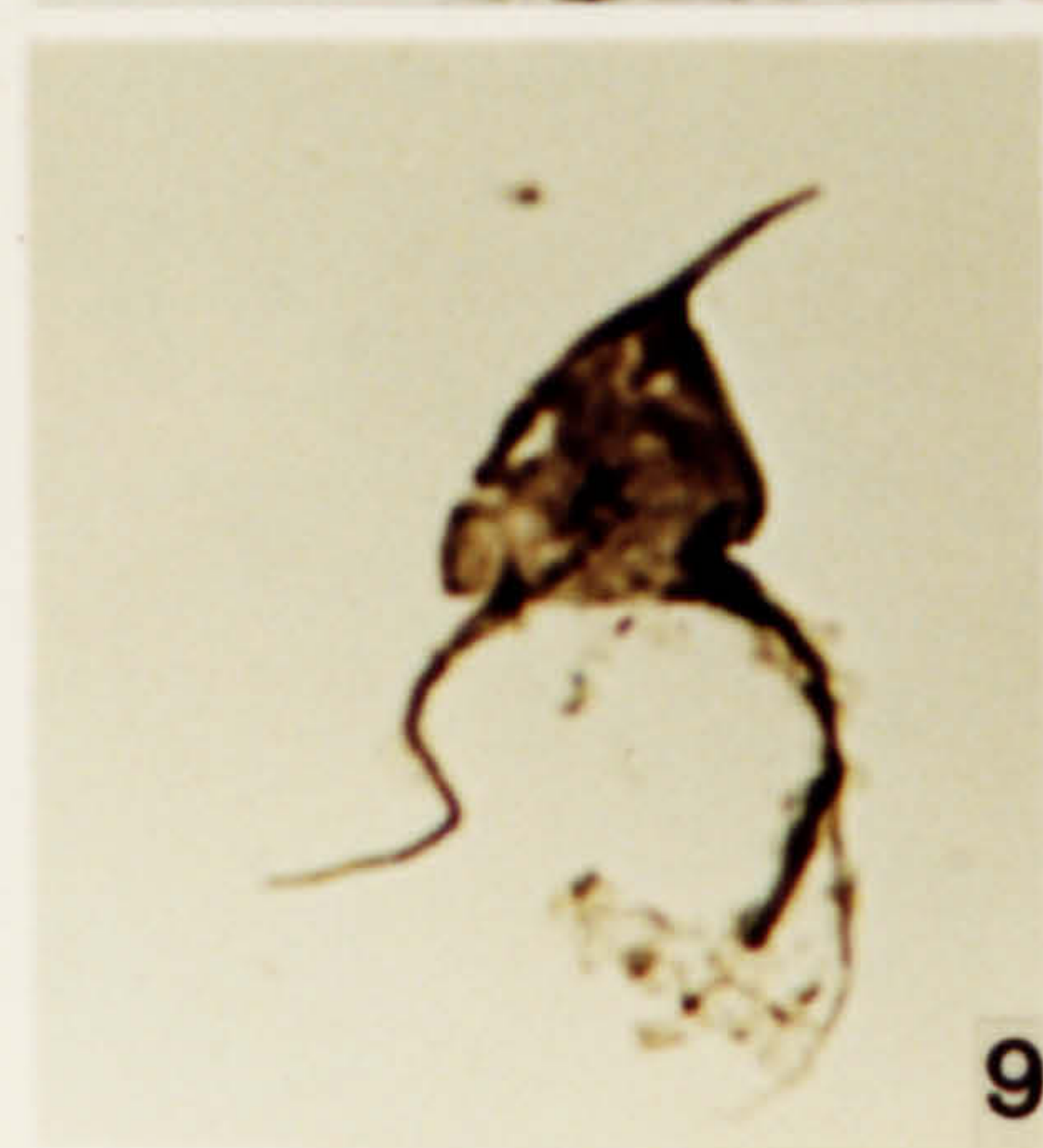
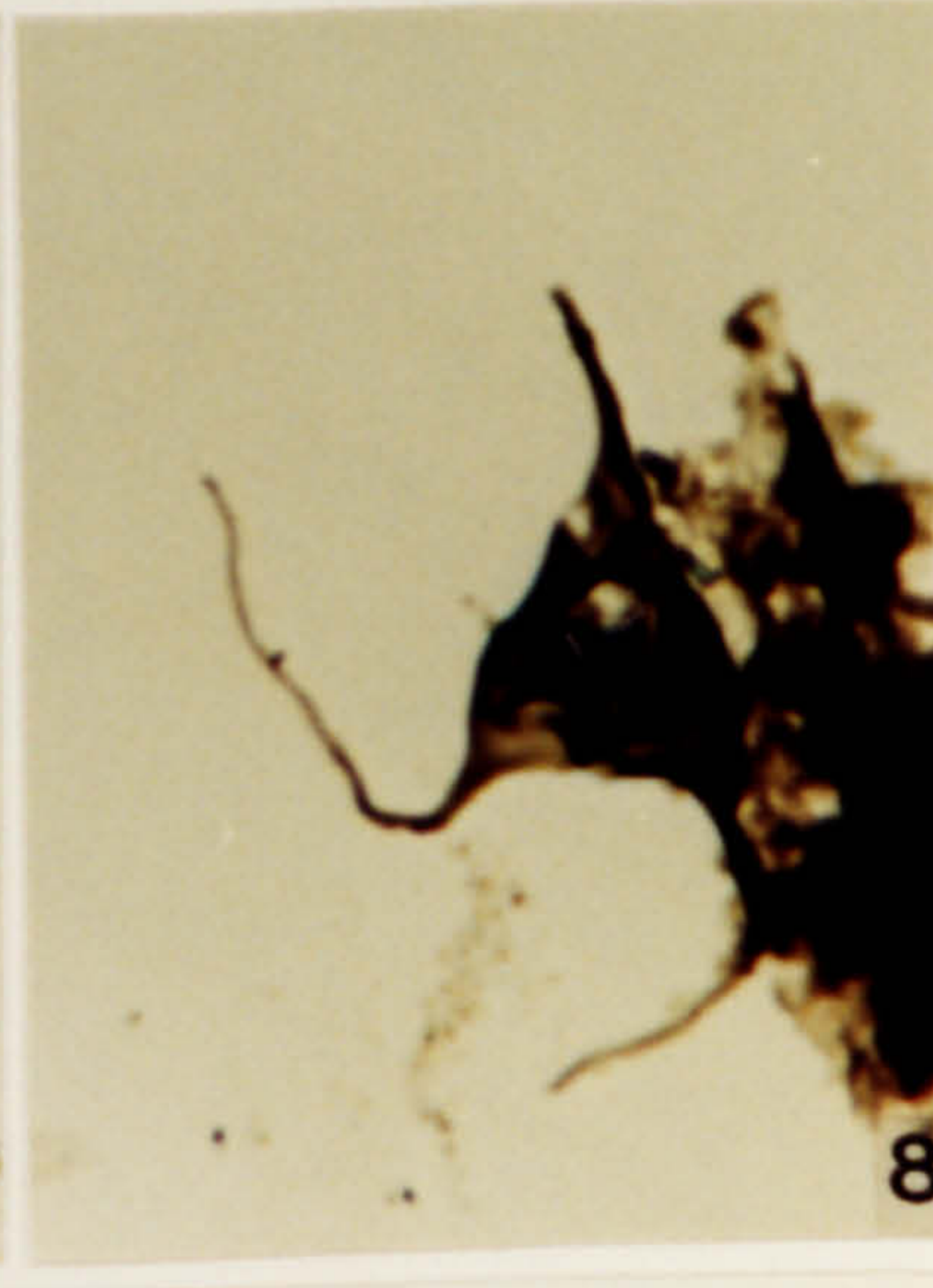
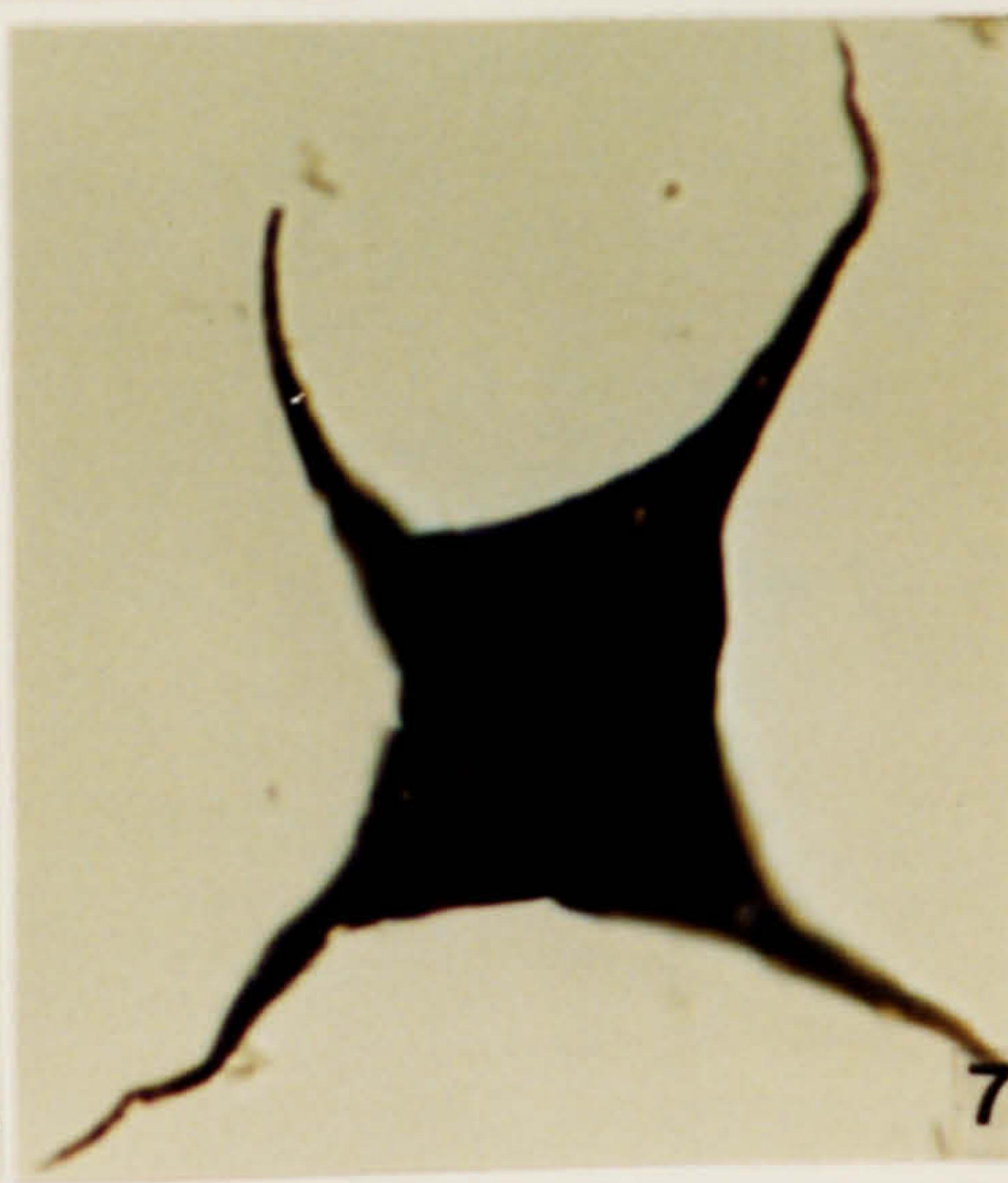
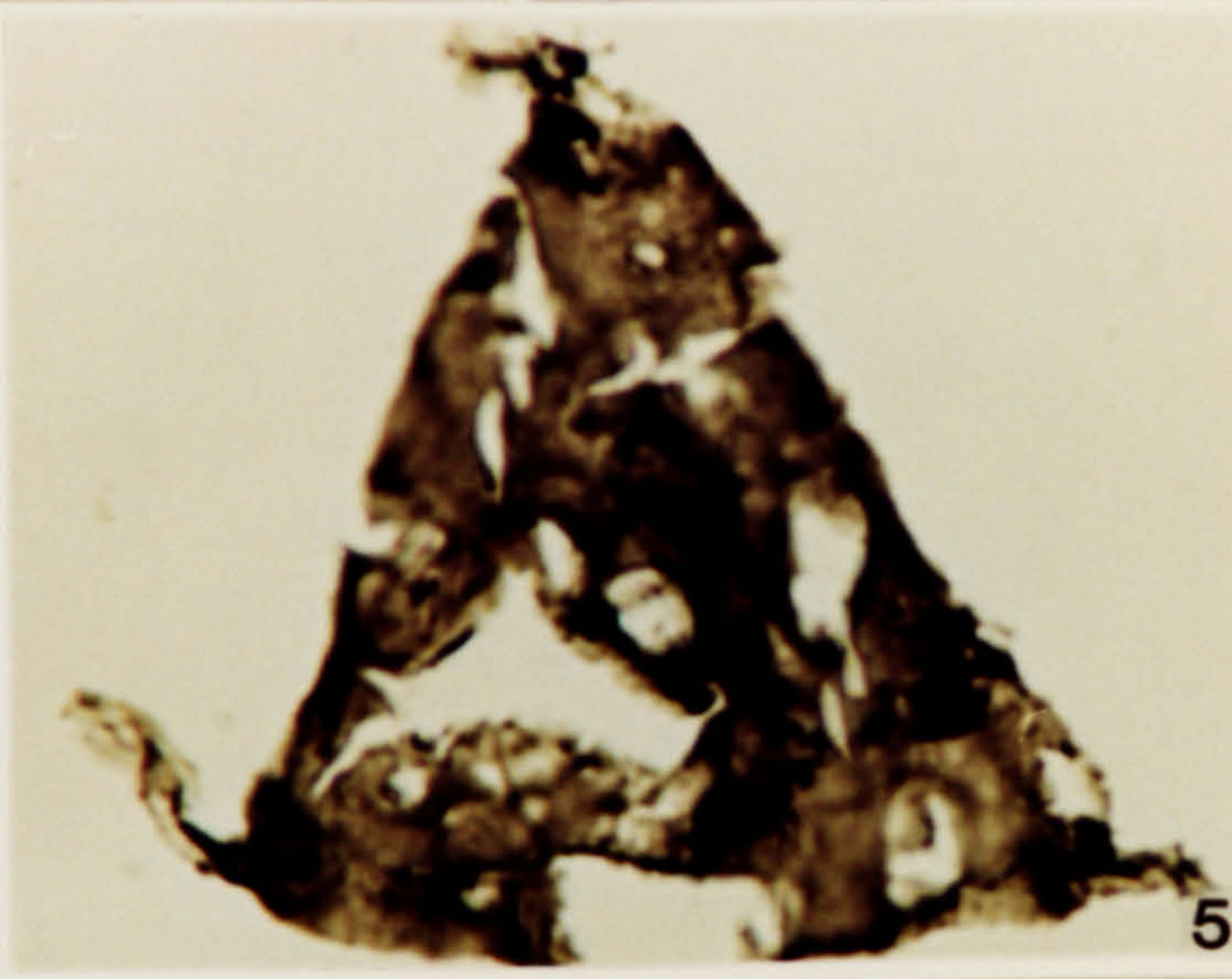
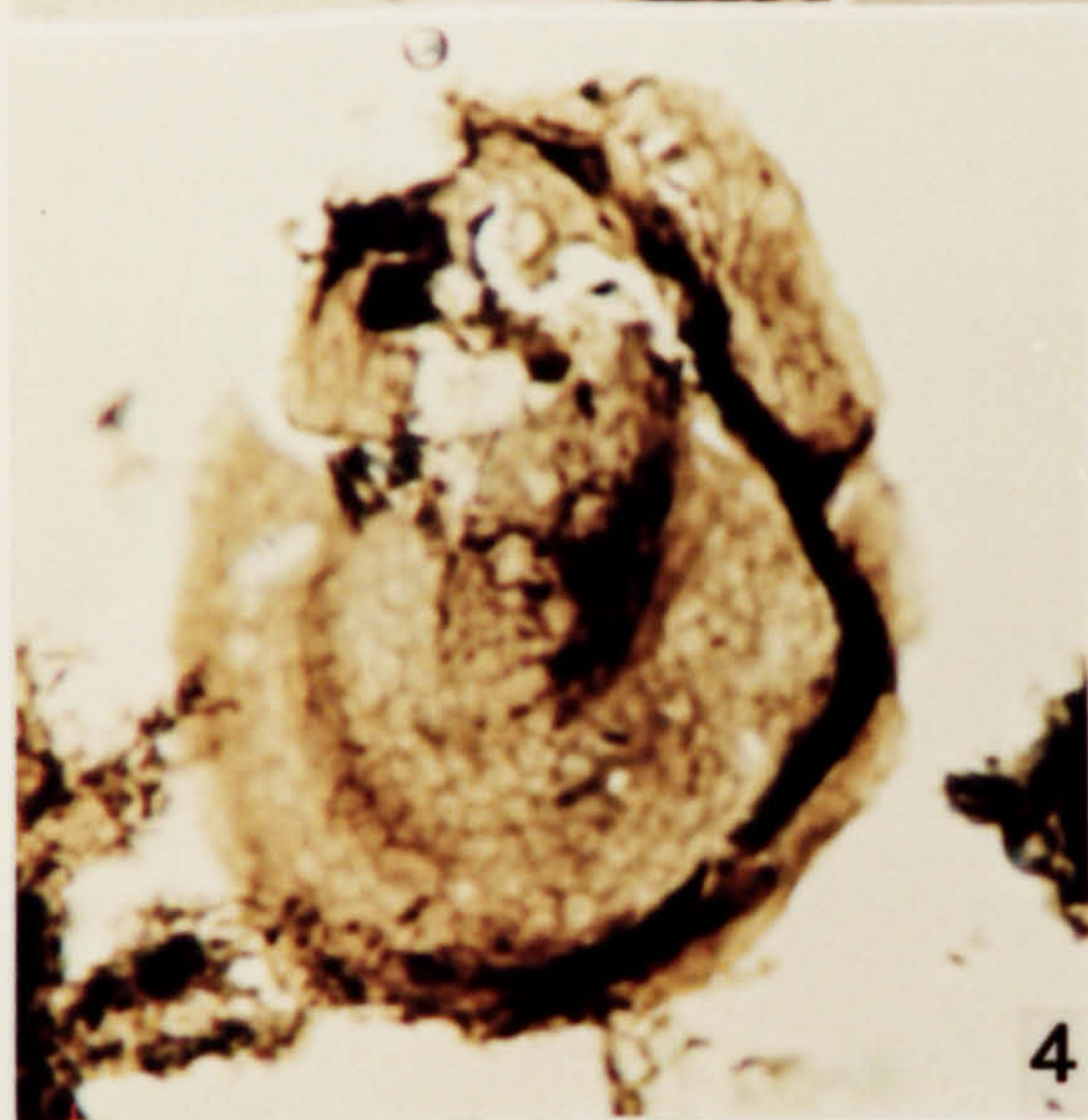
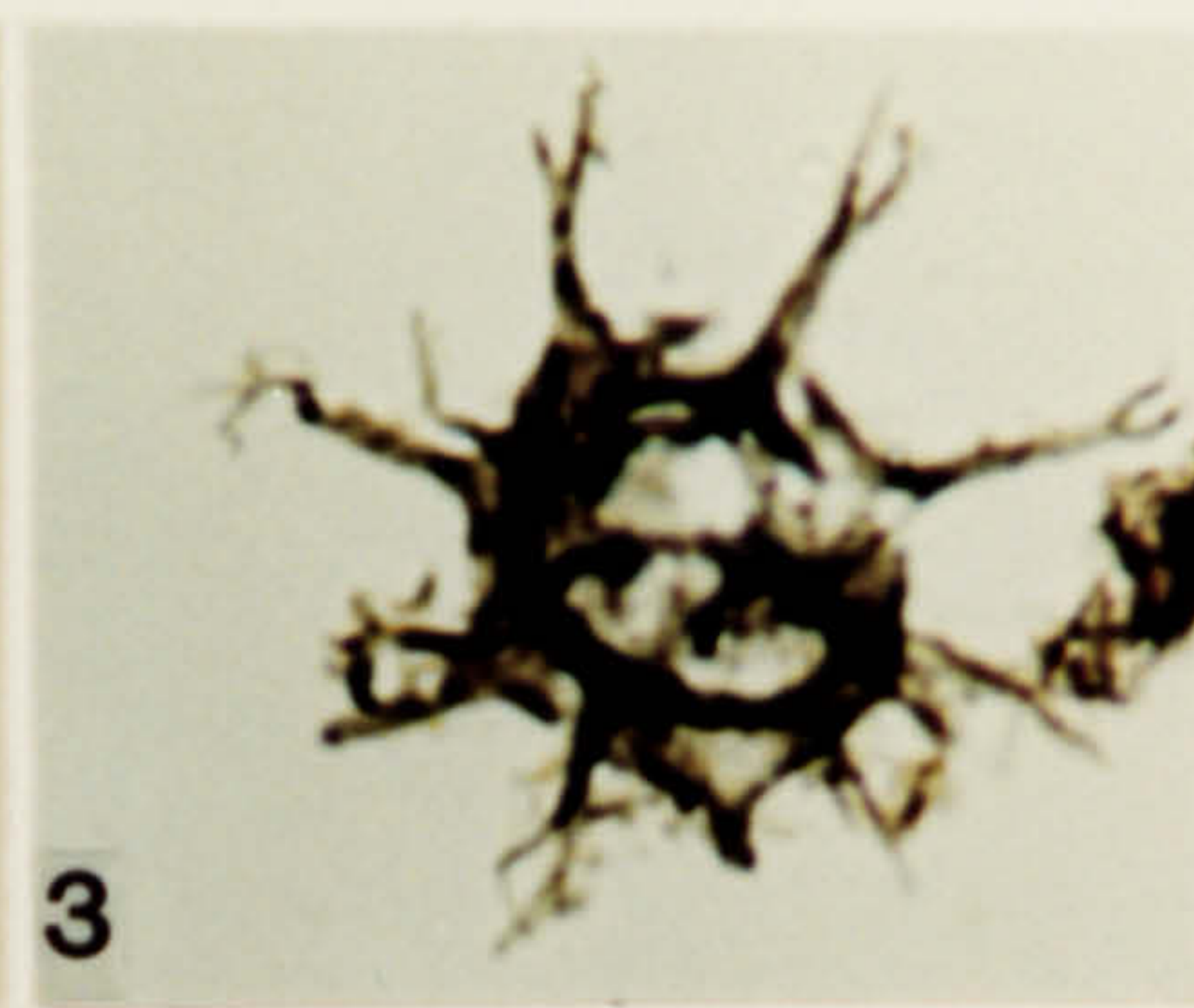
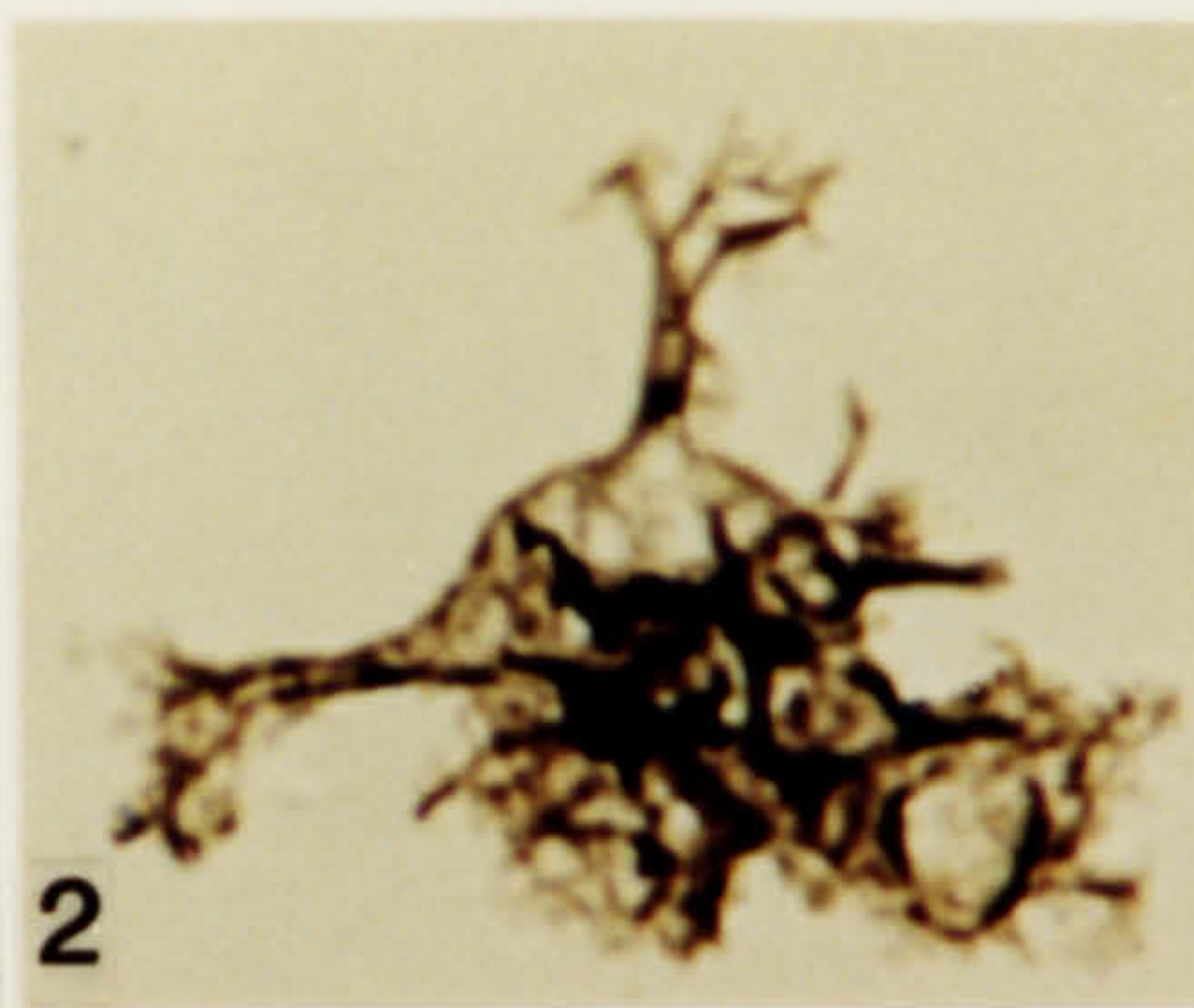
1. *Diexallophasis remota* var. *remota* (Deunff) Fensome *et al.* 1990. DW 57, FS-5, T7\4.
2. *Diexallophasis remota* var. *remota* (Deunff) Fensome *et al.* 1990. DW 57, FS-4, F39\1.
3. *Diexallophasis remota* var. *remota* (Deunff) Fensome *et al.* 1990. DW 57, FS-4, D11\2.
4. *Diexallophasis remota* var. A. DW 57, FS-4, H12\2.
5. *Diexallophasis remota* var. A. DW 57, FS-4, X28\2.
6. *Diexallophasis remota* var. A. DW 57, FS-4, K17\2.



**Plate 116.**

**Acritarchs from the Black Shale Member, Calcareous Shale Formation, Gedinnian (*uniformis* Zone) in age.**

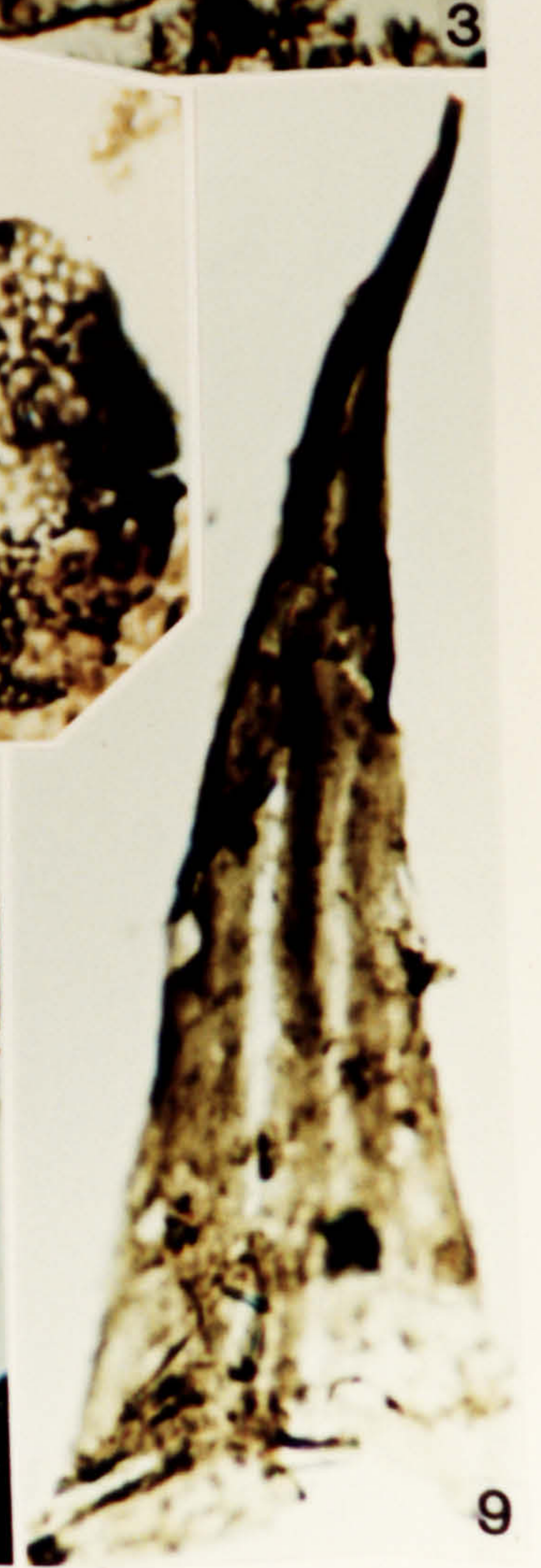
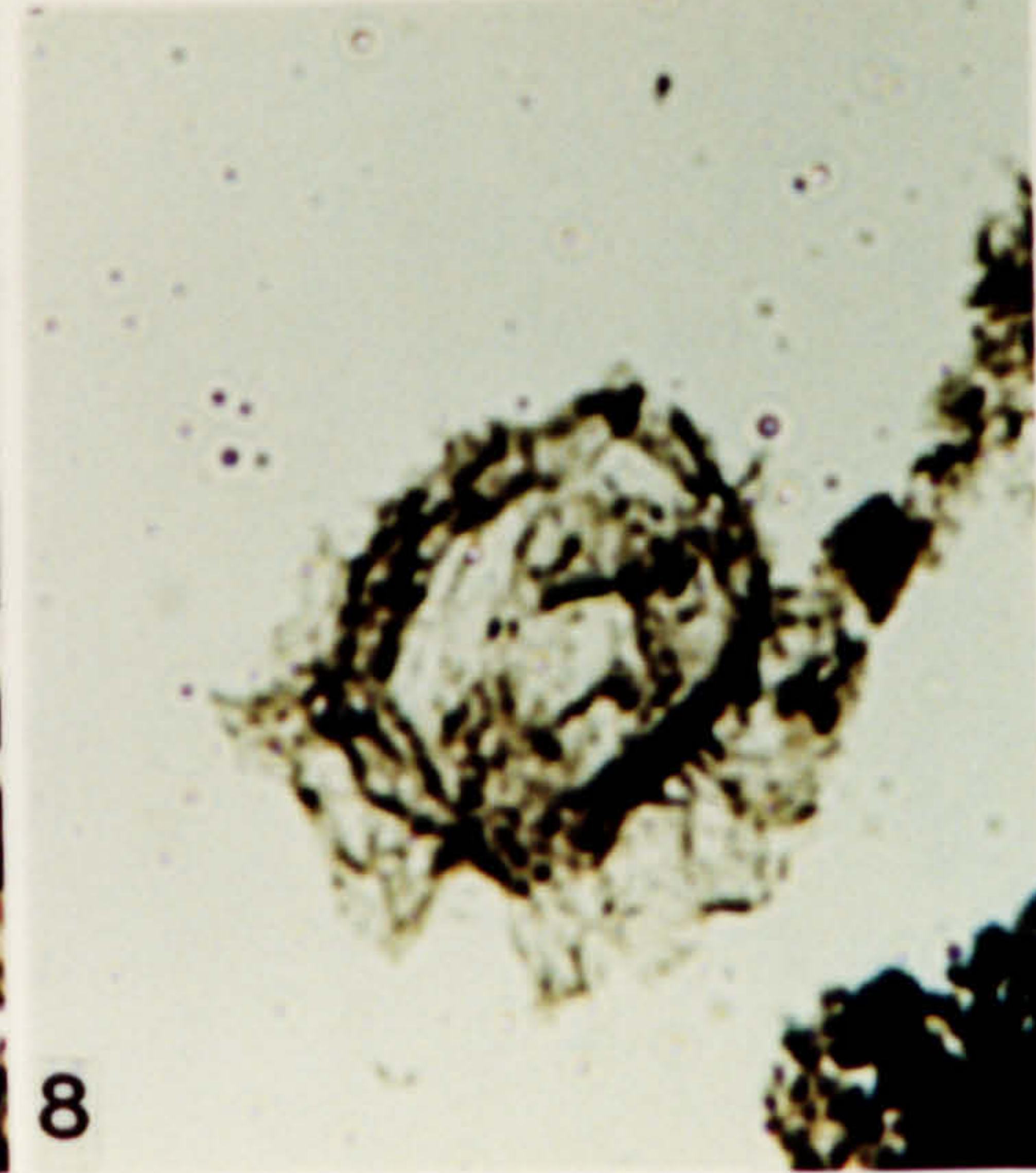
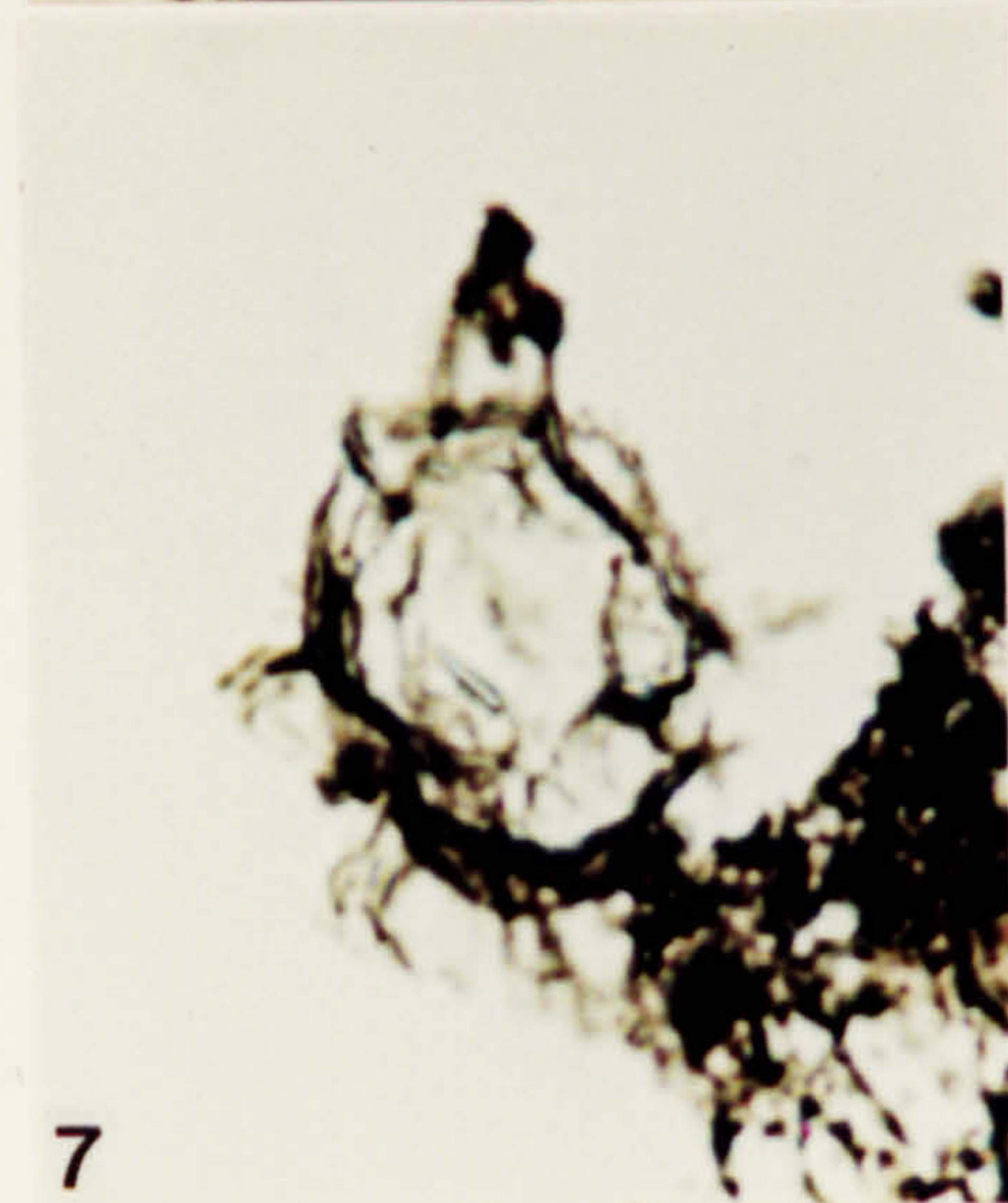
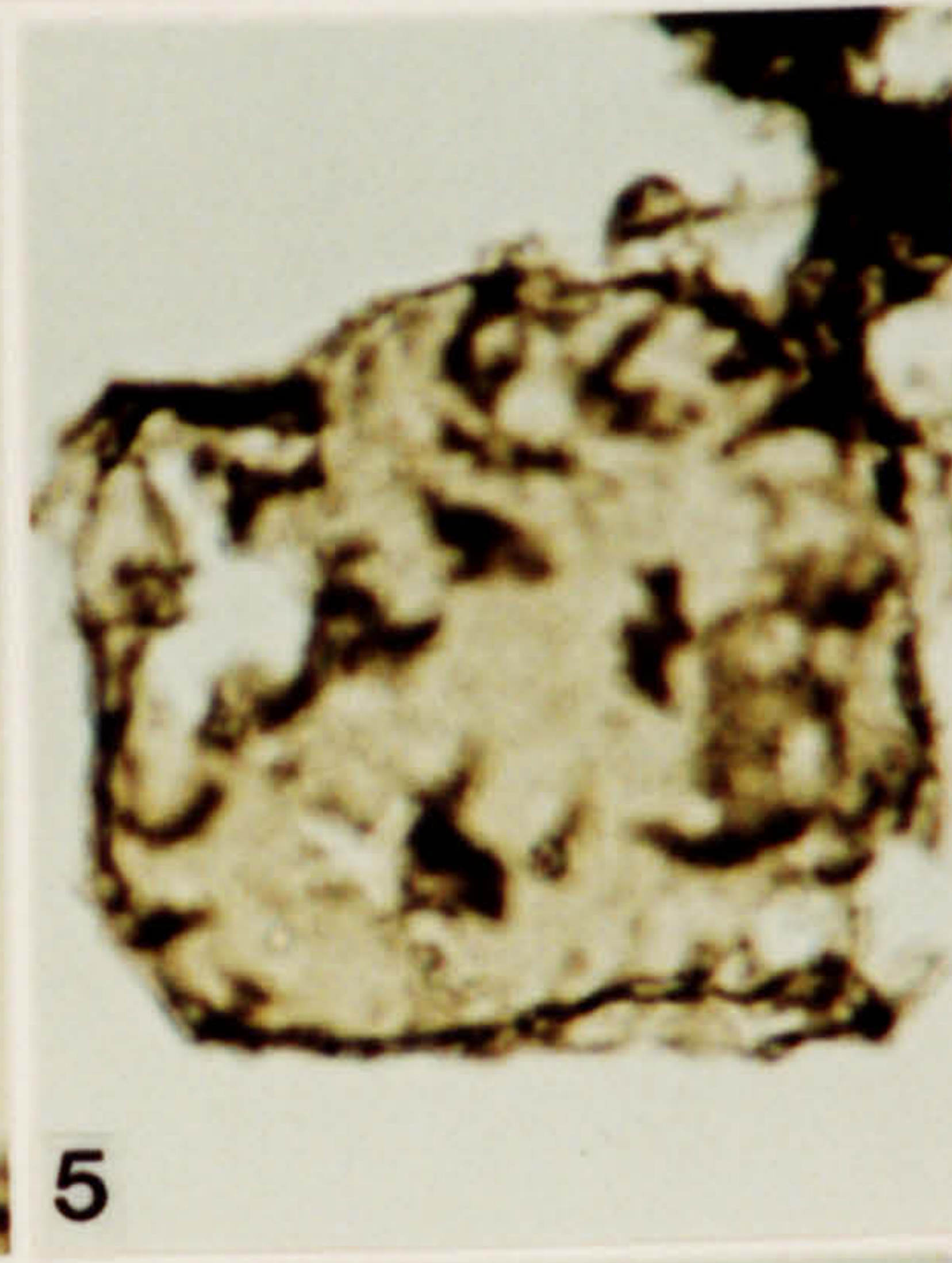
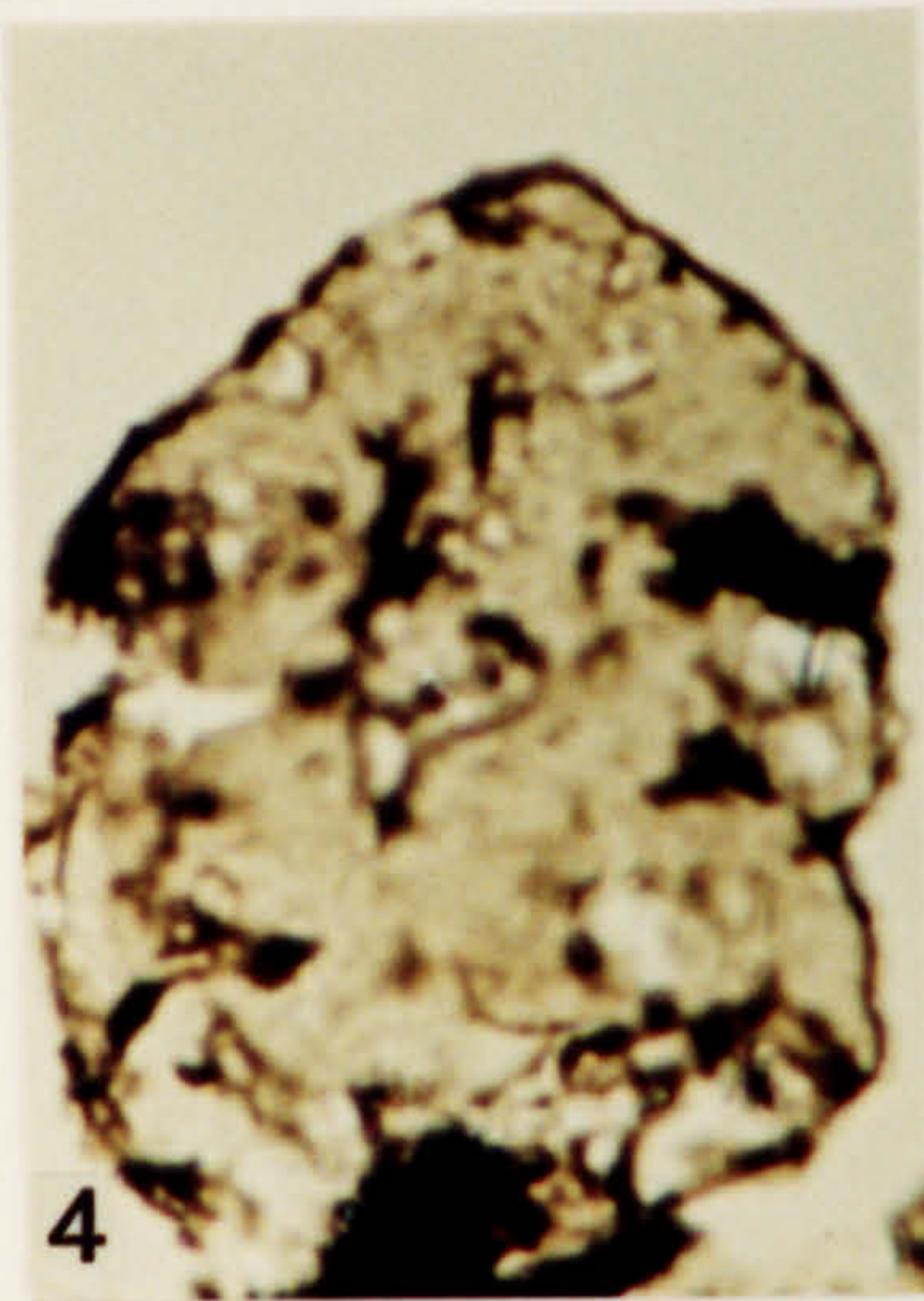
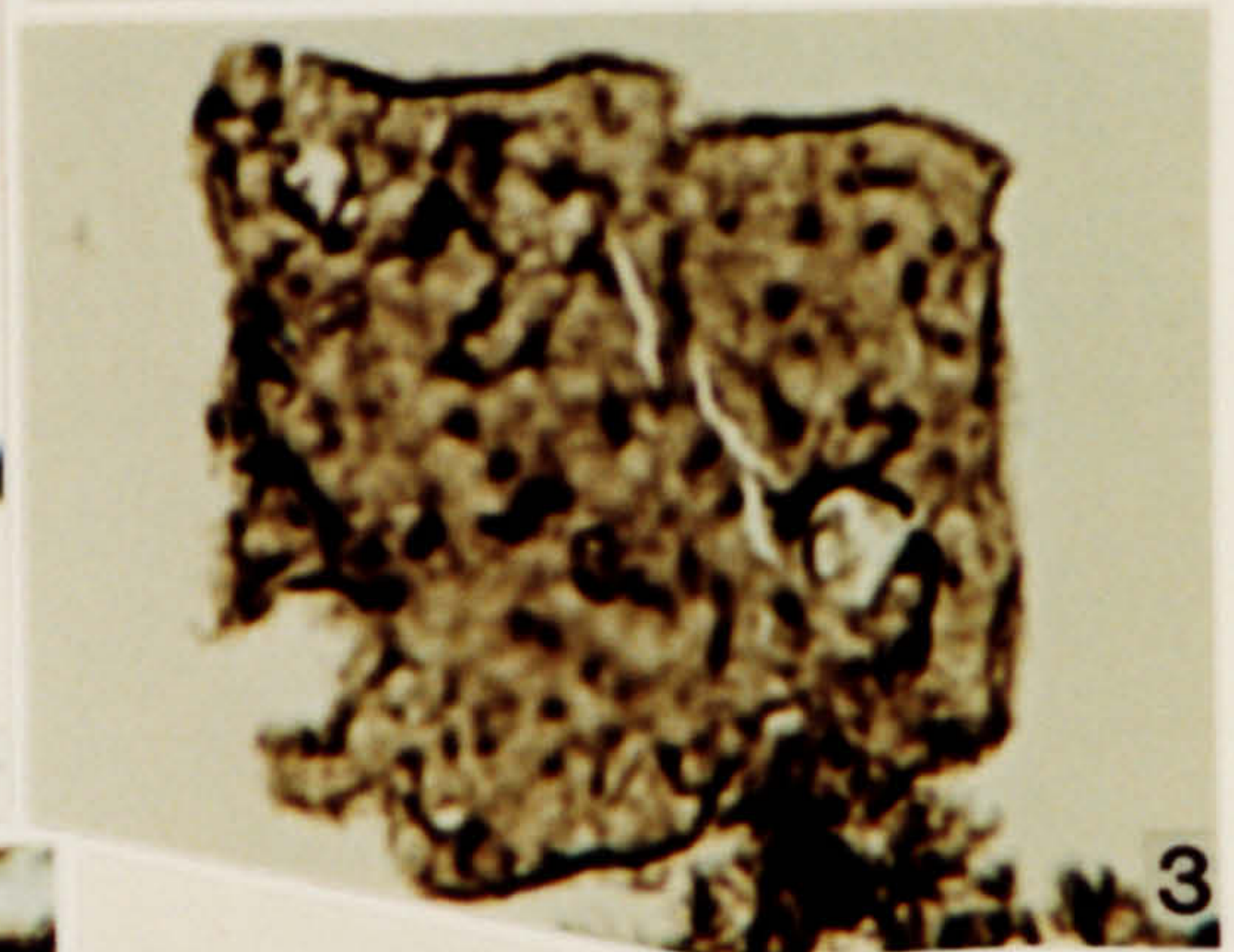
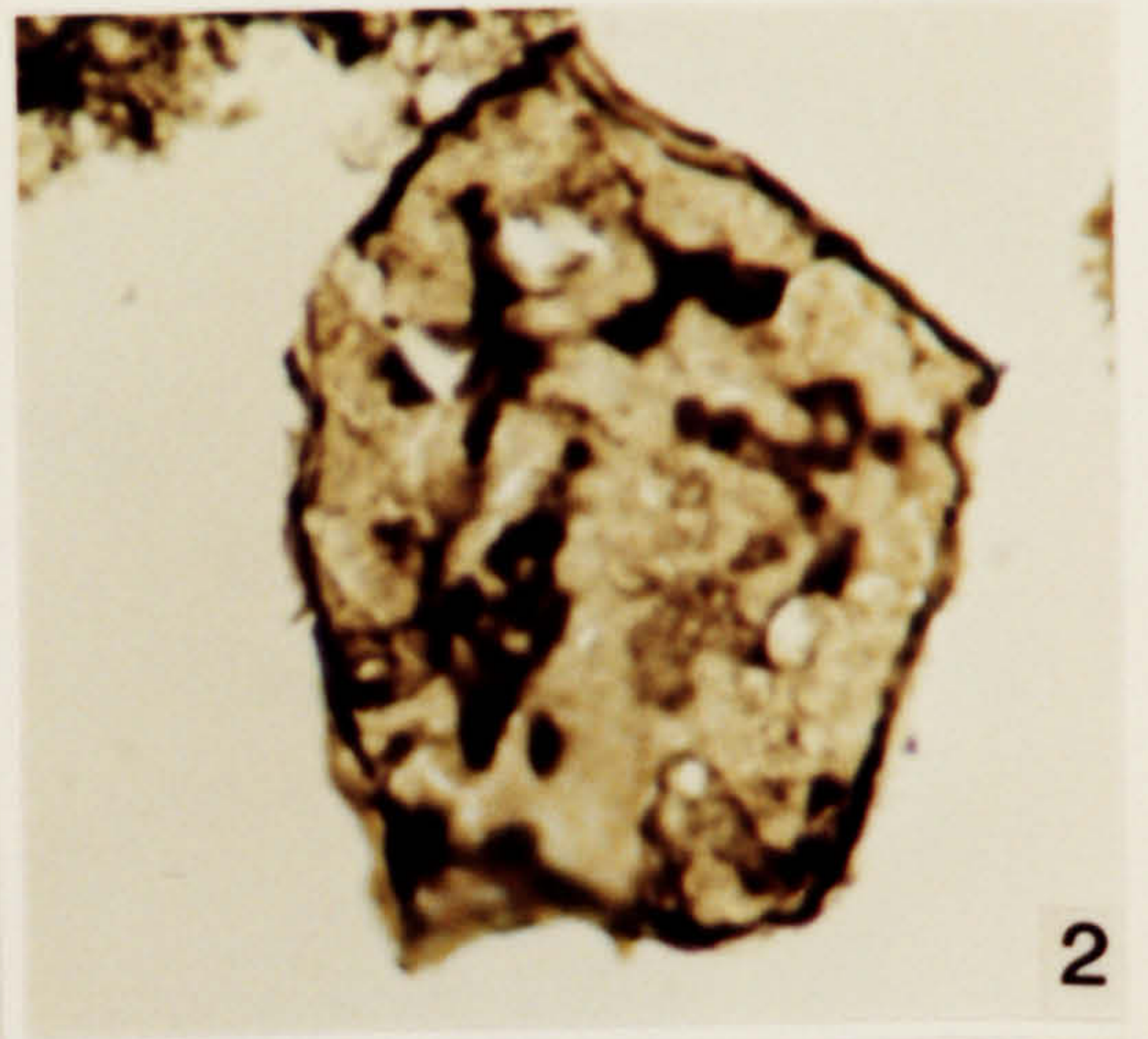
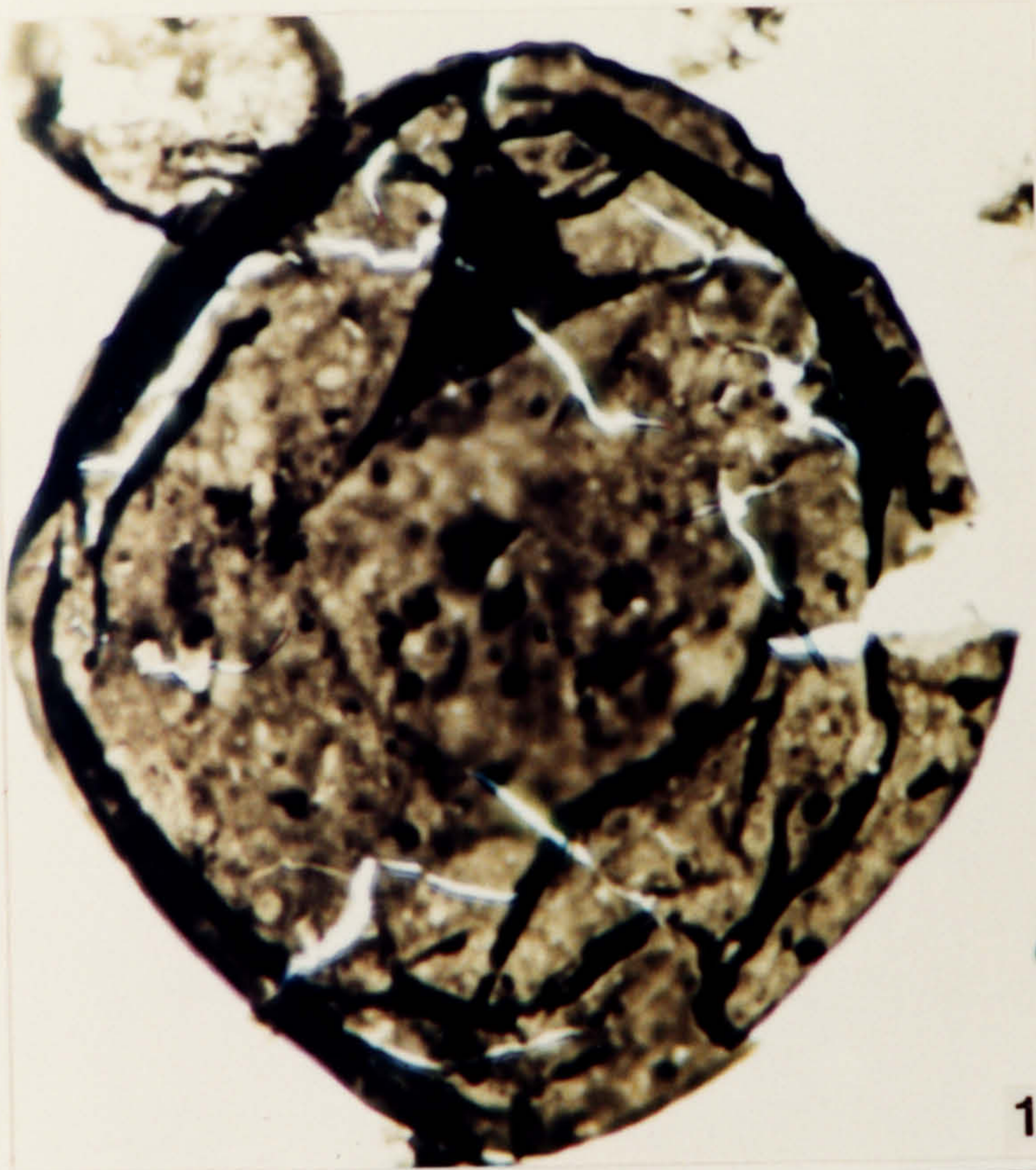
1. ***Multiplicisphaeridium variabile* (Lister) Doming 1981. DW 57, FS-4, S21\1.**
2. ***Multiplicisphaeridium variabile* (Lister) Doming 1981. DW 57, FS-4, F13\1.**
3. ***Multiplicisphaeridium variabile* (Lister) Doming 1981. DW 58, FS-4, C16\1.**
4. ***Orygmahapsis fistulosa* (Colbath) Colbath 1987. DW 58, FS-4, E28\4.**
5. ***Triangulina sanpetrensis?* (Cramer) Fensome *et al.* 1990. DW 57, FS-5, G22\3.**
6. ***Tunisphaeridium tentaculaferum* (Martin) Cramer 1970. DW 58, FS-4, O20\1.**
7. ***Verhachium lairdii* Deflandre 1946 *ex* Loeblich 1970. DW 57, FS-6, V13\3.**
8. ***Verhachium wenlockianum* (Downie *ex* Wall & Downie) Downie & Sarjeant 1965. DW 57, FS-4, H41\2.**
9. ***Verhachium wenlockianum* (Downie *ex* Wall & Downie) Downie & Sarjeant 1965. DW 58, FS-4, C19\2.**
10. ***Visbysphaera microspinosa* var. C. DW 58, FS-4, D33\4.**
11. ***Visbysphaera microspinosa* var. C. DW 58, FS-4, N25\2.**



**Plate 117.**

**Acritarchs from the Black Shale Member, Calcareous Shale Formation, Gedinnian  
(*uniformis* Zone) in age.**

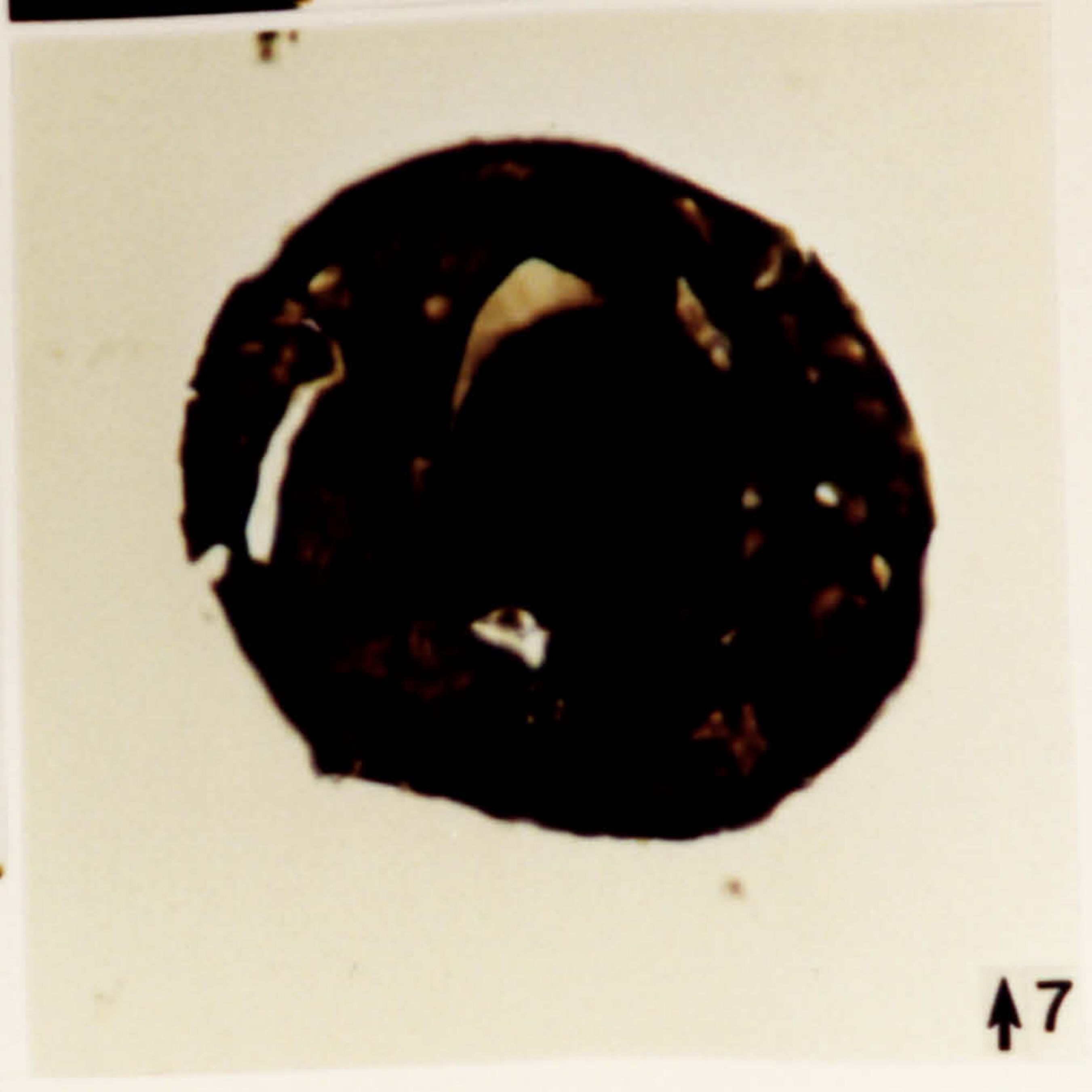
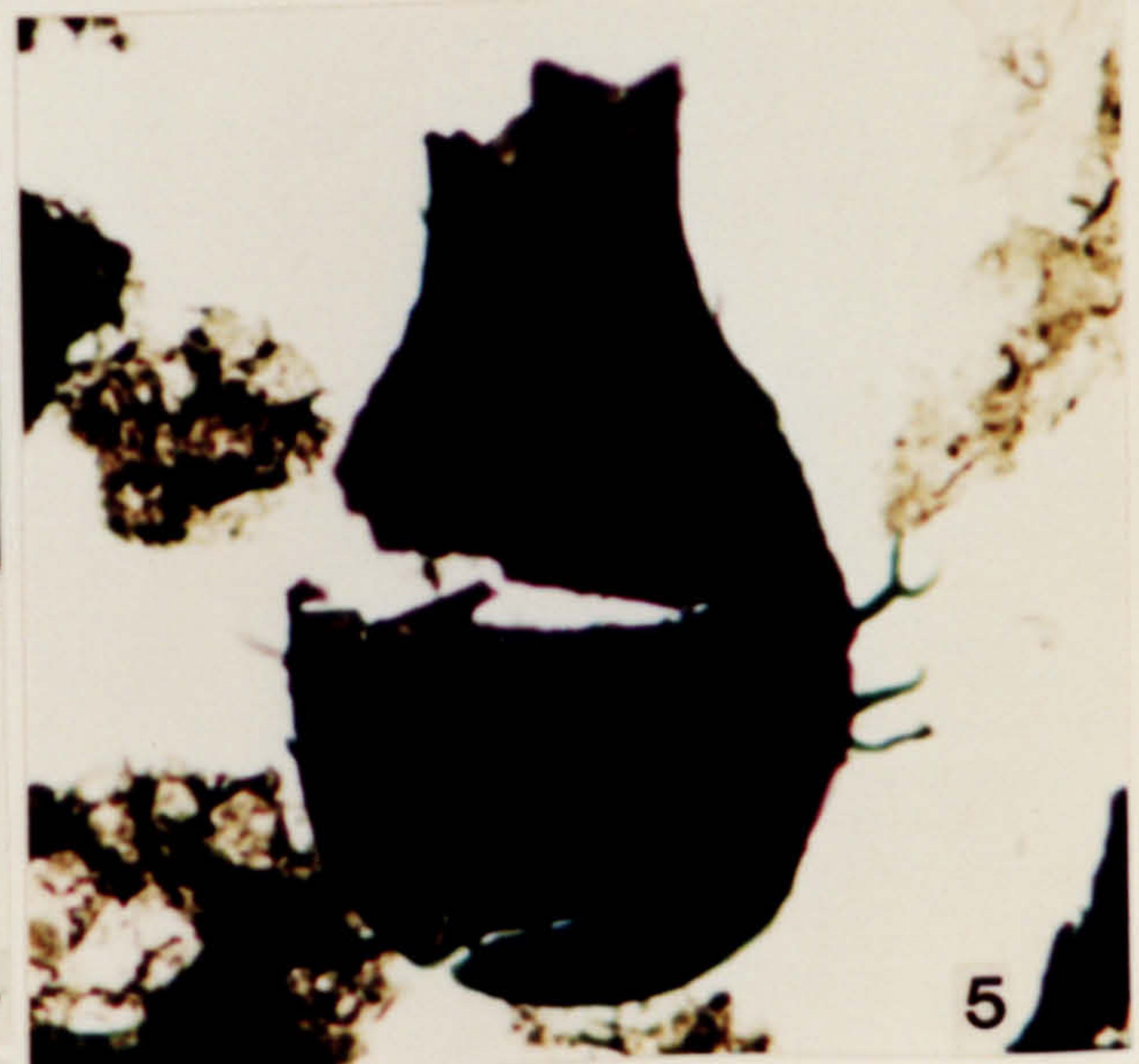
- 1. Acritarch Form G. DW 57, FS-5, H29\2.**
- 2. Acritarch Form J. DW 57, FS-4, H15\1.**
- 3. Acritarch Form J. DW 57, FS-4, G28\2.**
- 4. Acritarch Form J. DW 57, FS-4, V23\3.**
- 5. Acritarch Form J. DW 57, FS-4, L30\1.**
- 6. Acritarch Form I. DW 58, FS-4, T33\2.**
- 7. *Cymatiosphaera* sp. 1. DW 58, FS-4, F19\1.**
- 8. *Cymatiosphaera* sp. 1. DW 58, FS-4, W6\3.**
- 9. Single spine of Acritarch Form L. DW 58, FS-5, T20\2.**



**Plate 118.**

Chitinozoa from the Black Shale Member, Calcareous Shale Formation, Gedinnian (*uniformis* Zone) in age.

1. *Angochitina crassispina* Eisenack 1964. DW 57, FS-6, S14\4.
2. *Angochitina crassispina* Eisenack 1964. DW 57, FS-6, A33\4.
3. *Angochitina crassispina* Eisenack 1964. DW 57, FS-5, S22\4.
4. *Angochitina crassispina?* Eisenack 1964. DW 57, FS-4, T22\4.
5. *Angochitina* sp. DW 57, FS-4, U38\3.
6. *Cingulochitina ervensis* (Paris) Paris 1981. DW 57, FS-4, H15\4.
7. *Hoegisphaere* cf. *glabra* Staplin 1961. DW 58, FS-4, Q32\1, X920.

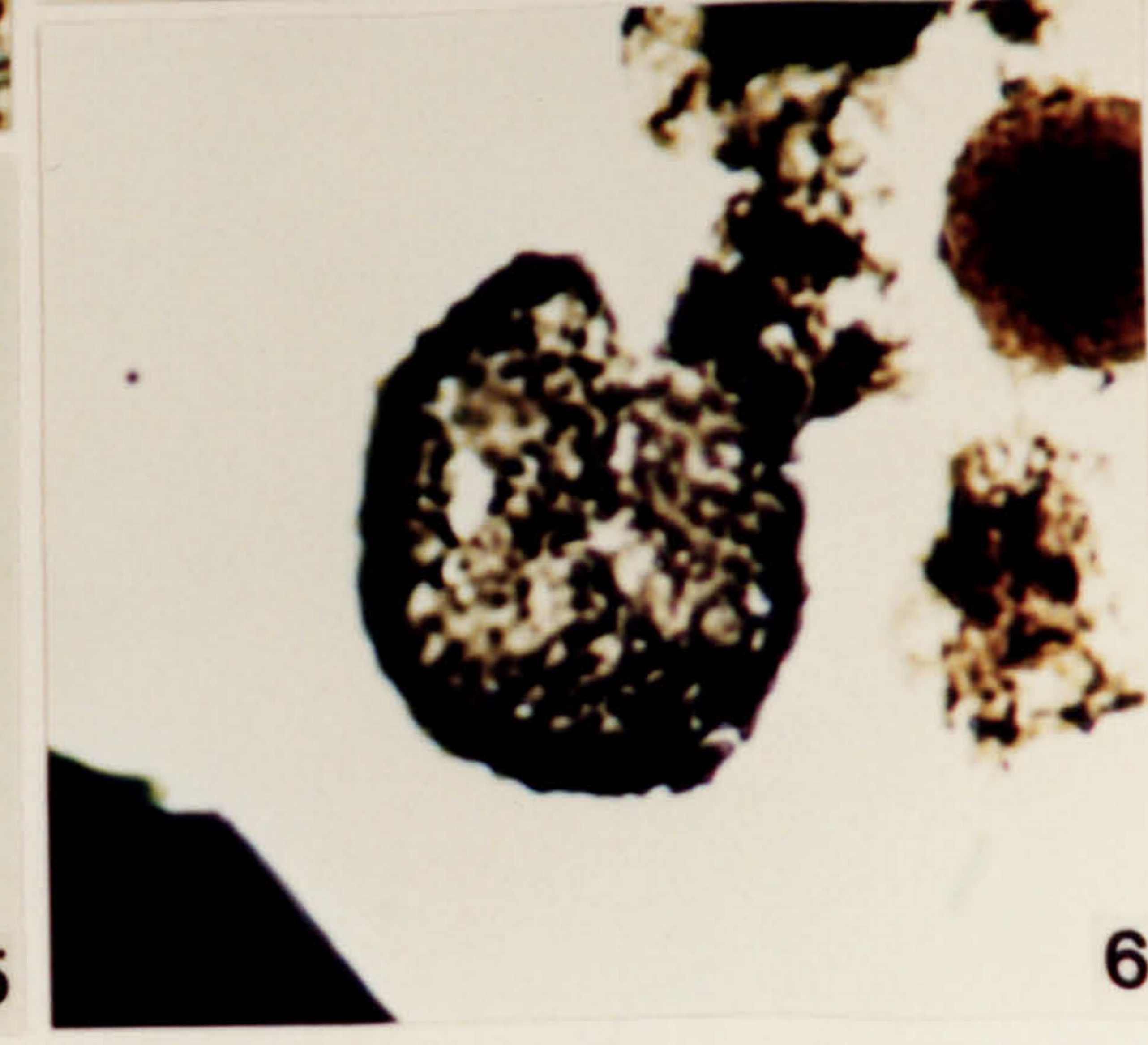
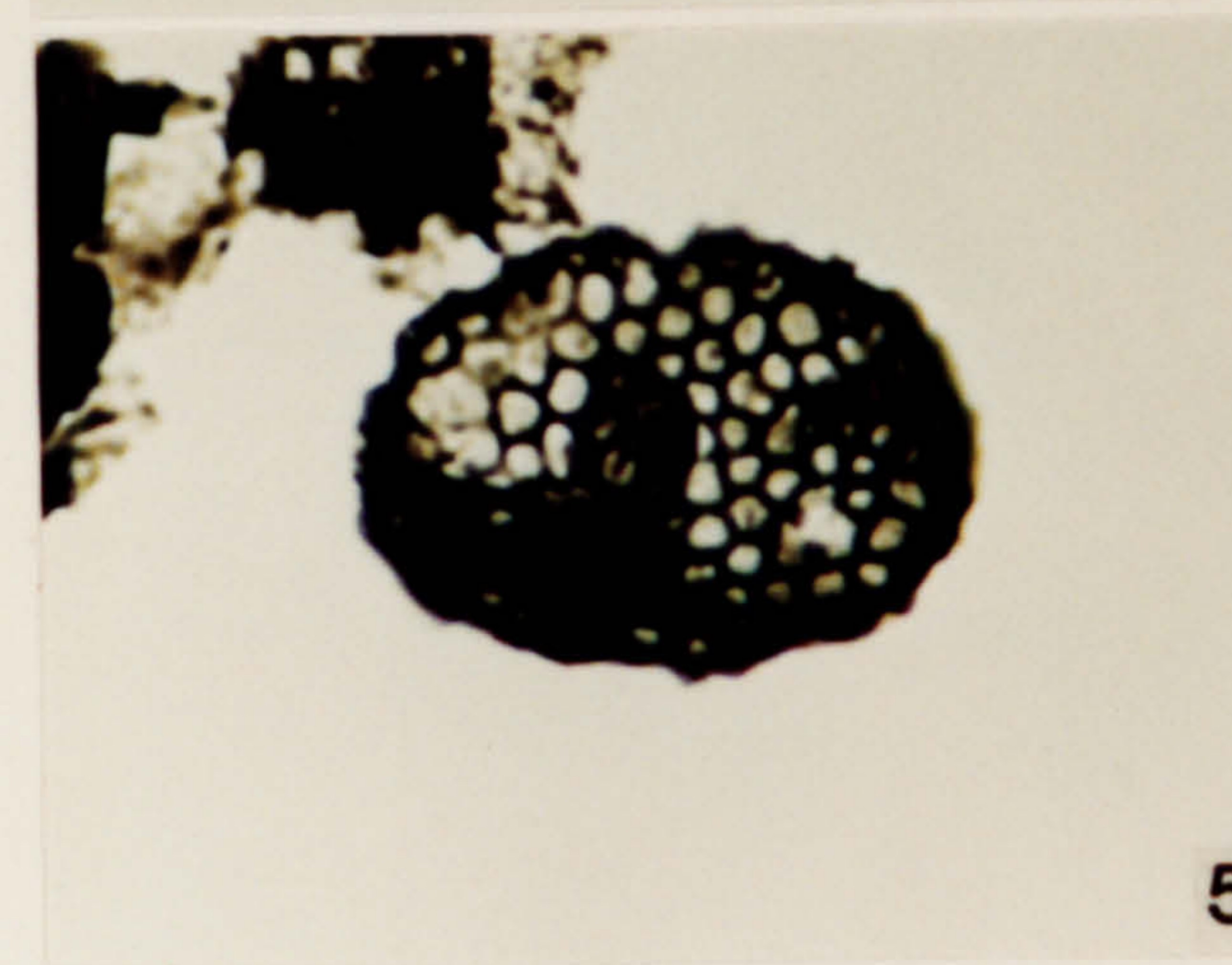
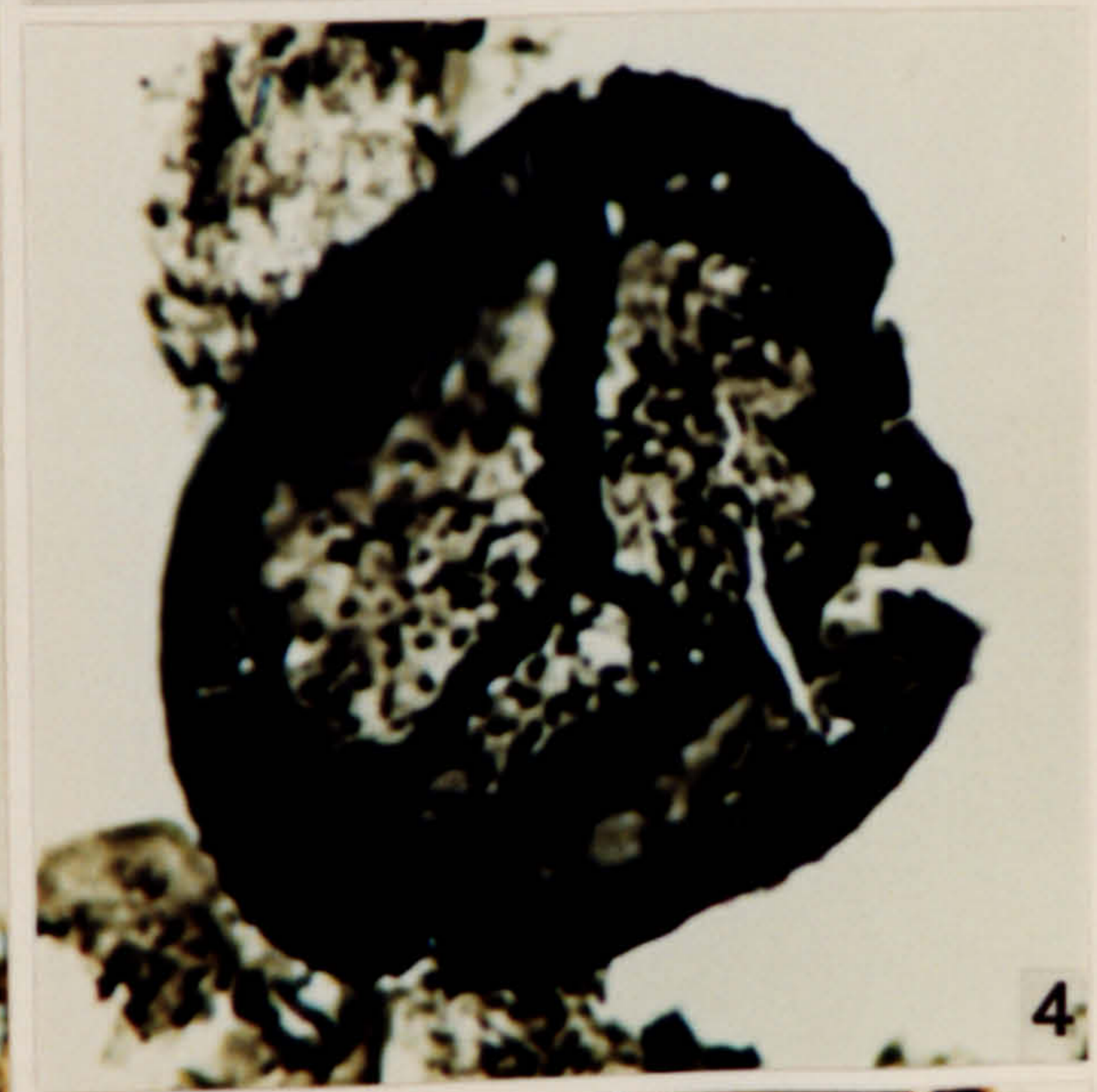
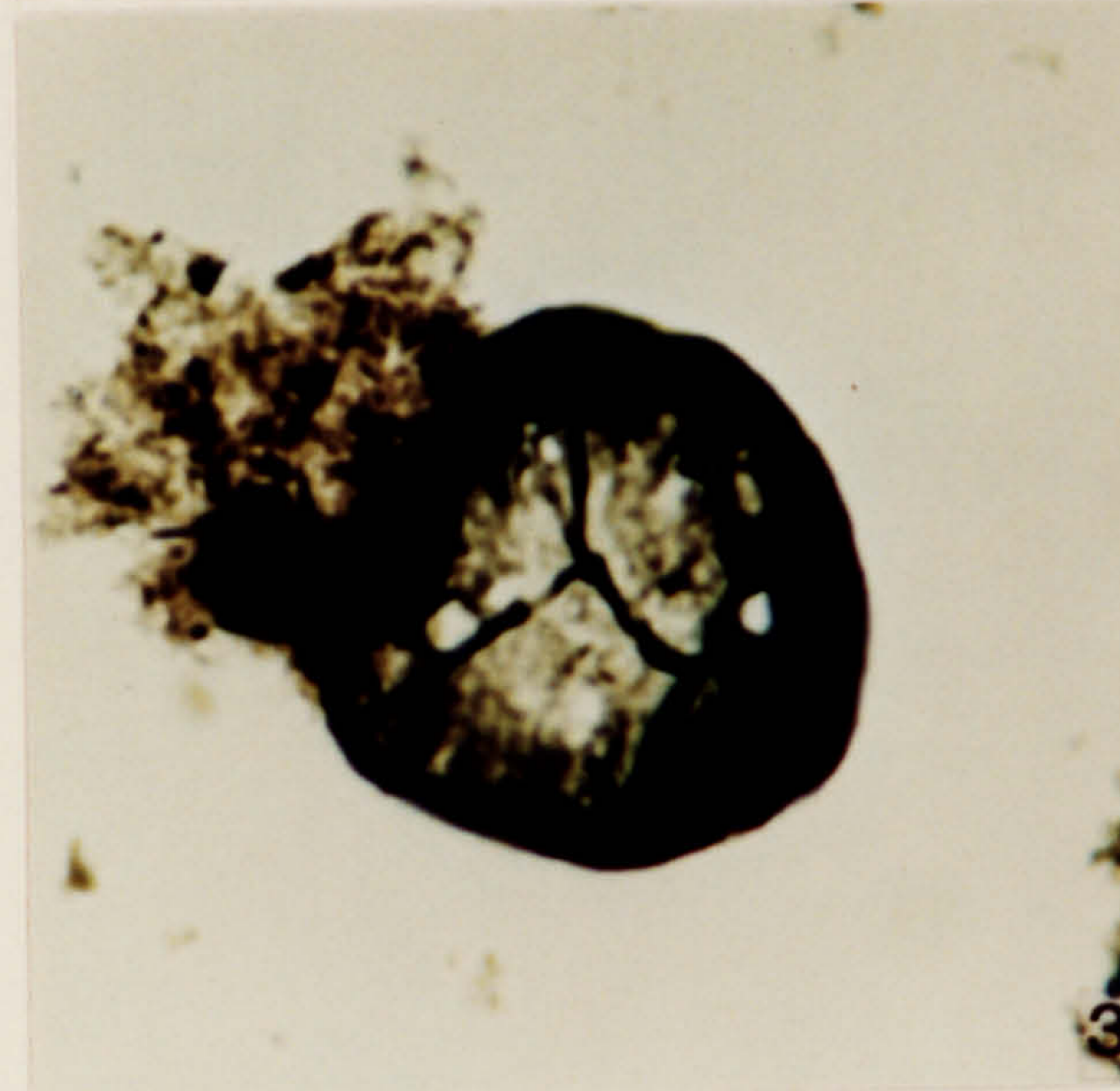
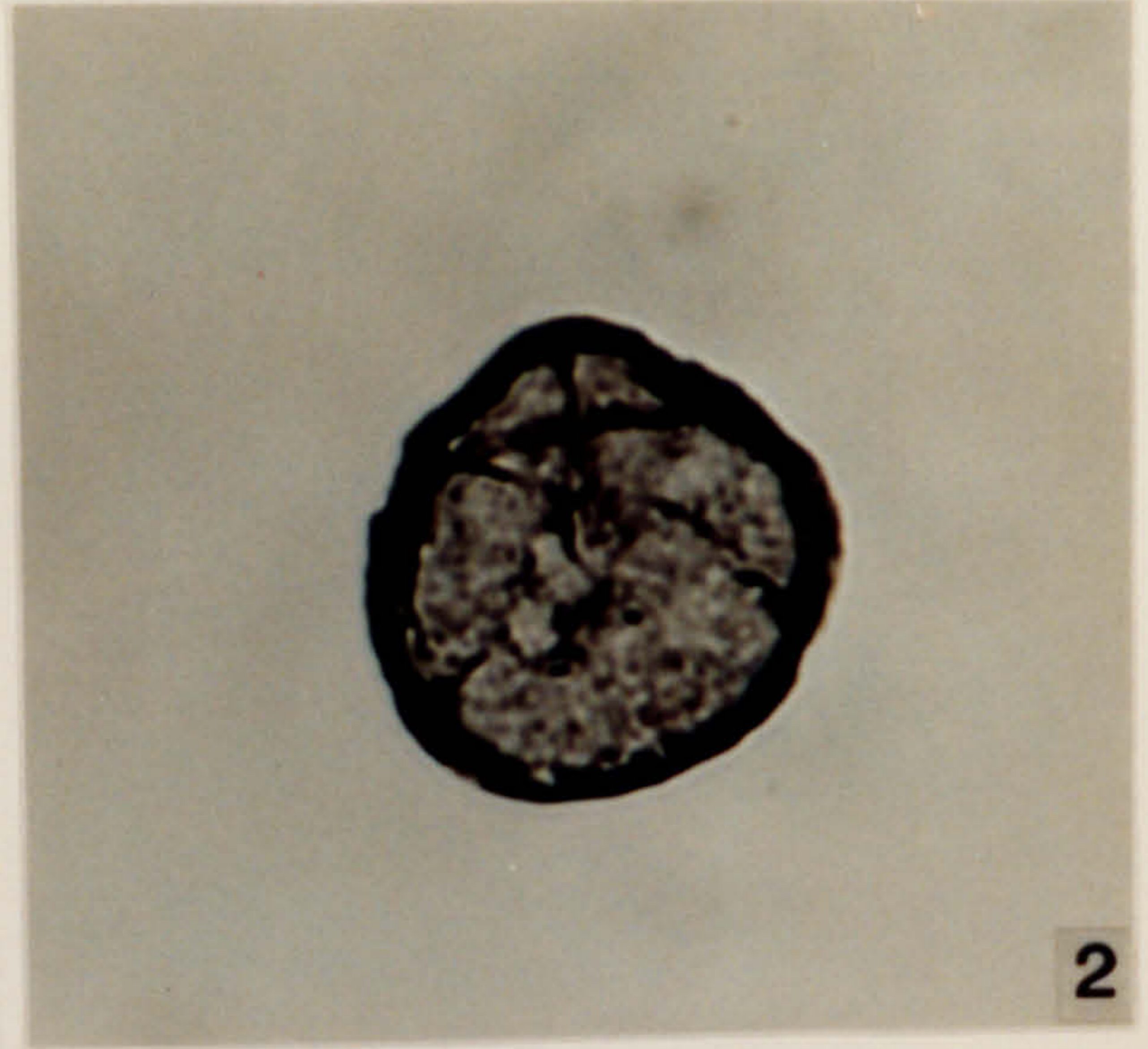
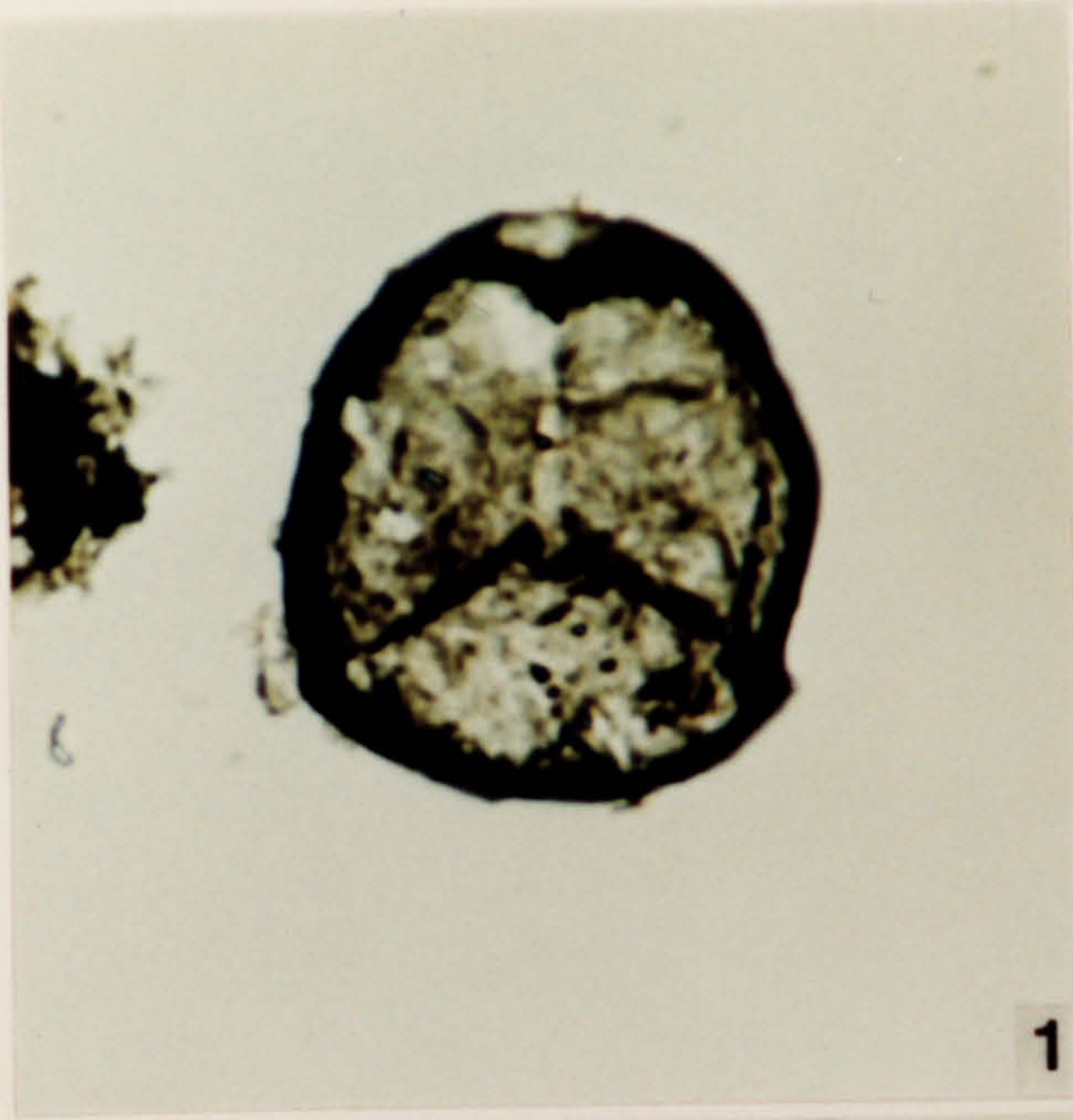




**Plate 119.**

Miospores from the Black Shale Member, Calcareous Shale Formation, Gedinnian (*uniformis* Zone) in age.

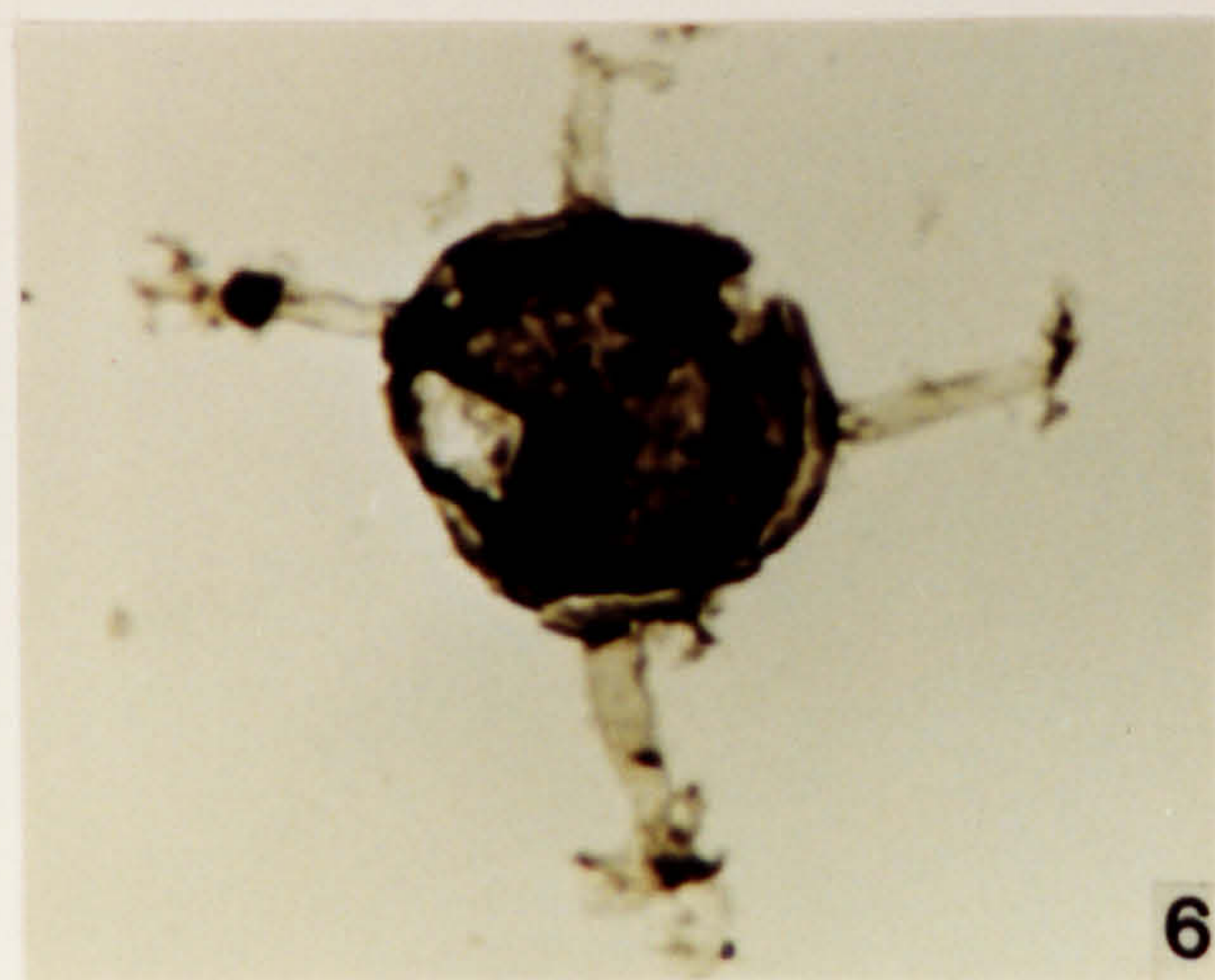
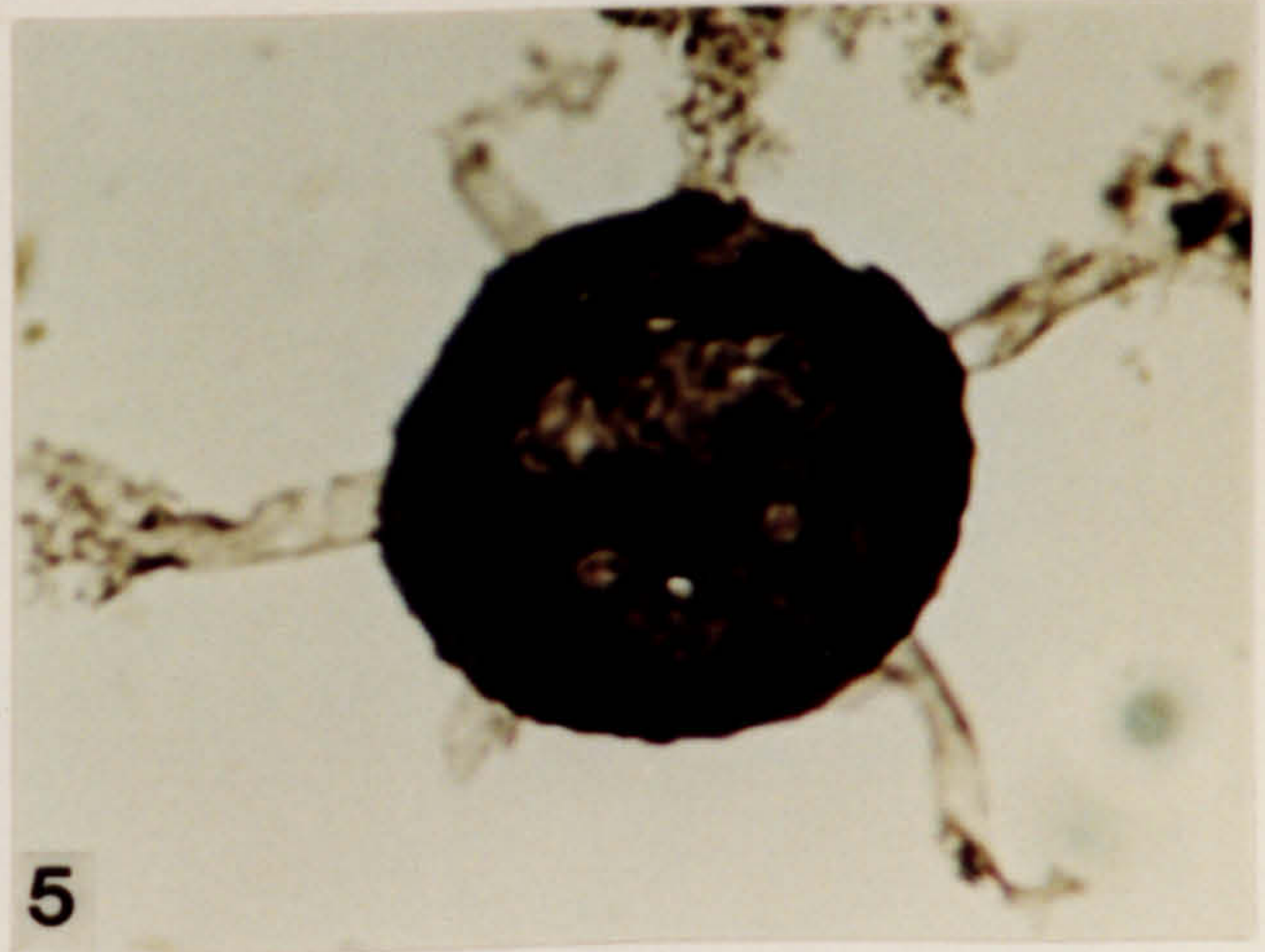
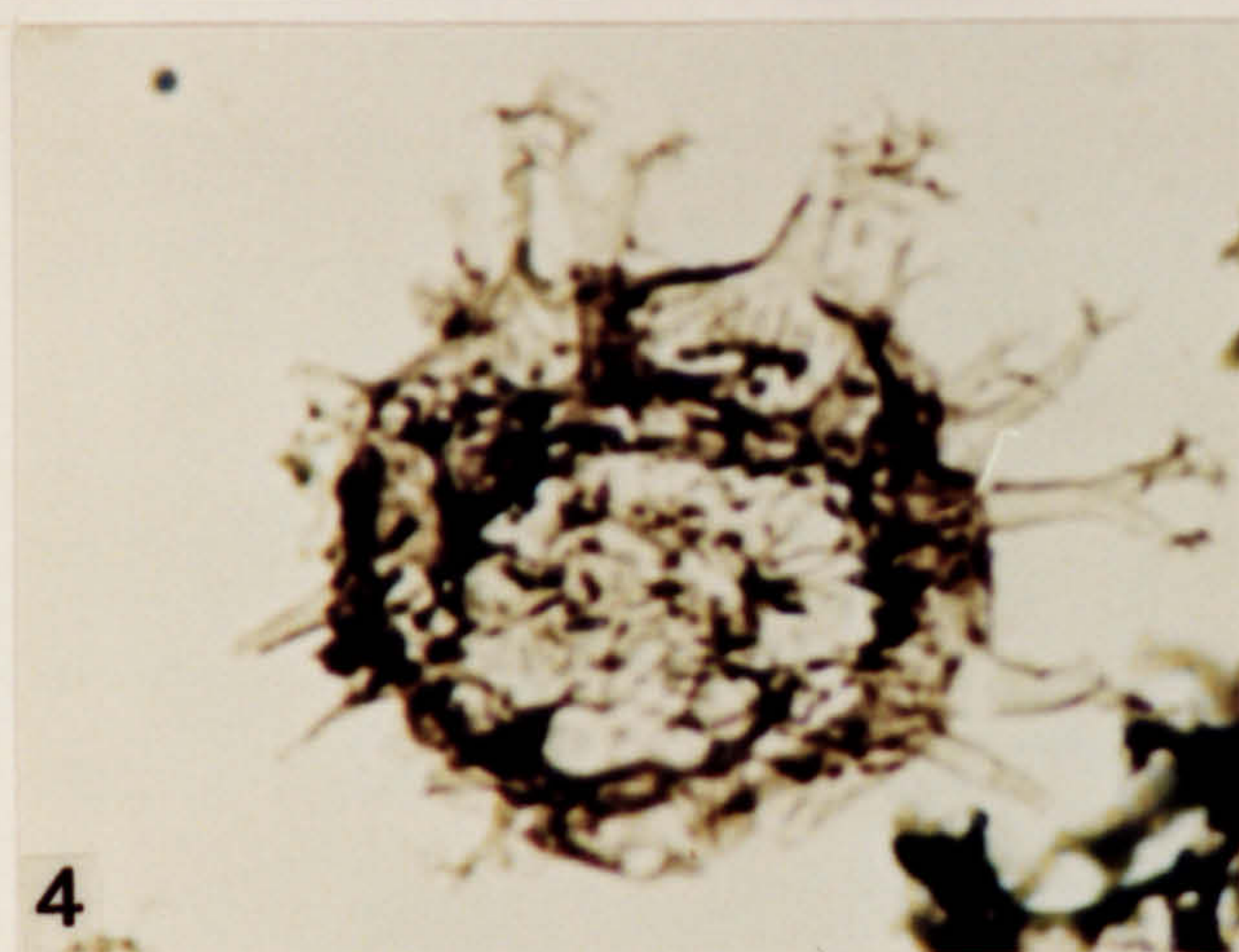
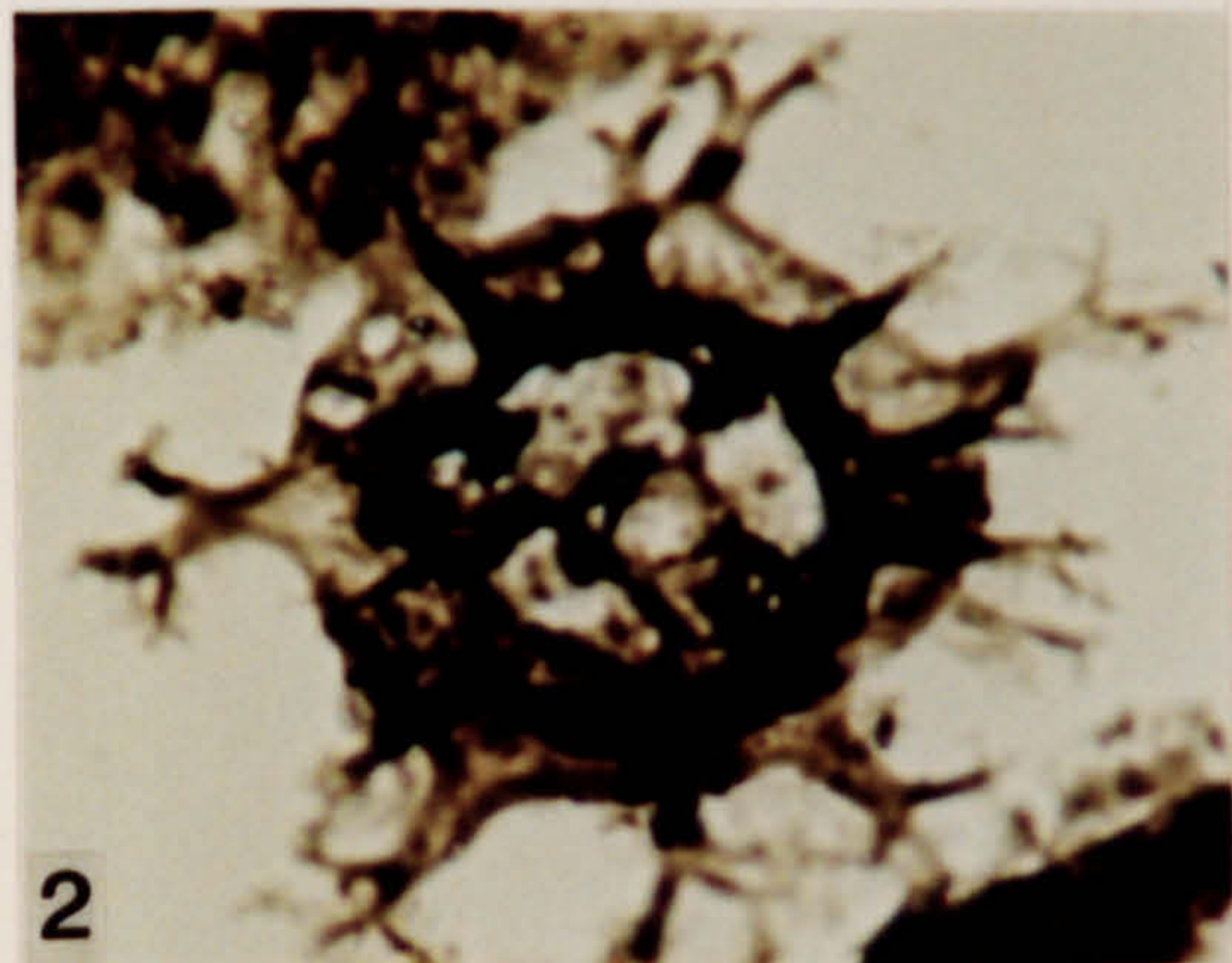
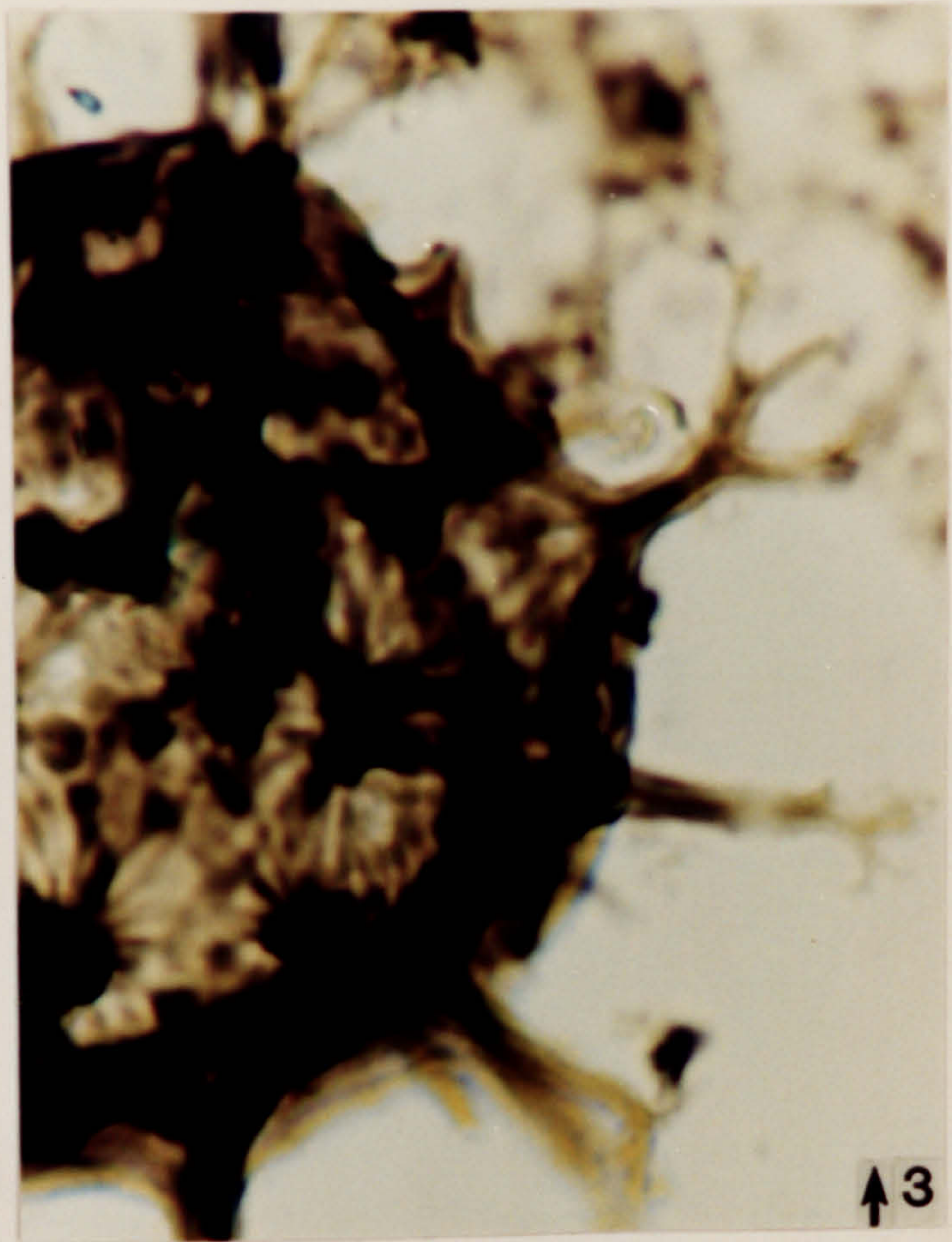
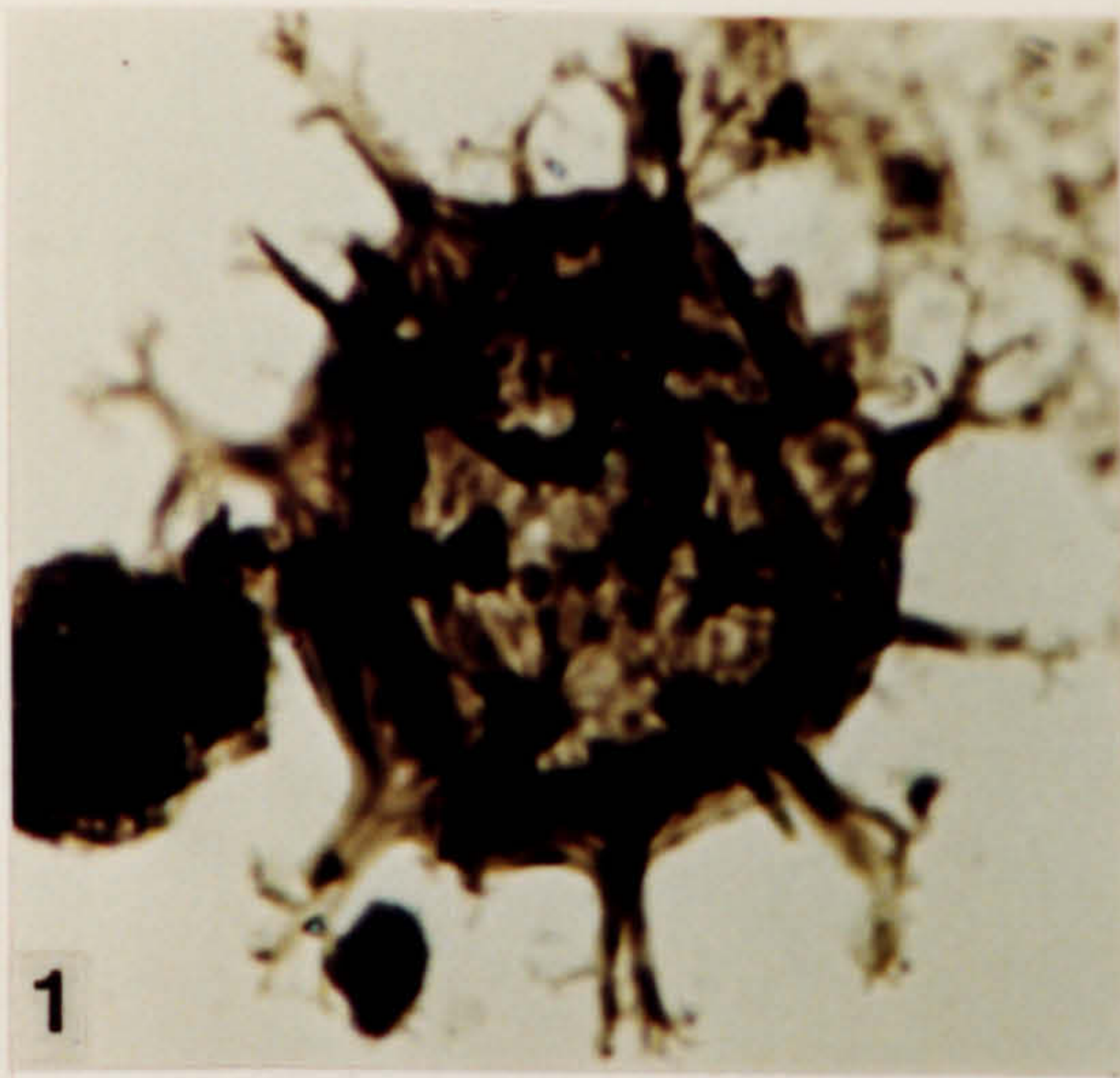
1. *Retusotriletes* sp. DW 57, FS-6, C21\1.
2. *Retusotriletes* sp. DW 57, FS-4, J40\1.
3. *Retusotriletes* sp. DW 58, FS-4, P22\3.
4. *Apiculietusotriletes* sp. DW 57, FS-5, K10\1.
5. *Brochotriletes* sp. DW 57, FS-4, H41\2.
6. *Apiculietusotriletes* sp. DW 58, FS-4, H16\2.



**Plate 120.**

Acritarchs from the Lmhaifid Formation or the Assa Formation. The lithostratigraphic position of the samples from which this assemblage has been recovered is in question. The macrofauna present indicates a Siegenian (*yukonensis* Zone) age.

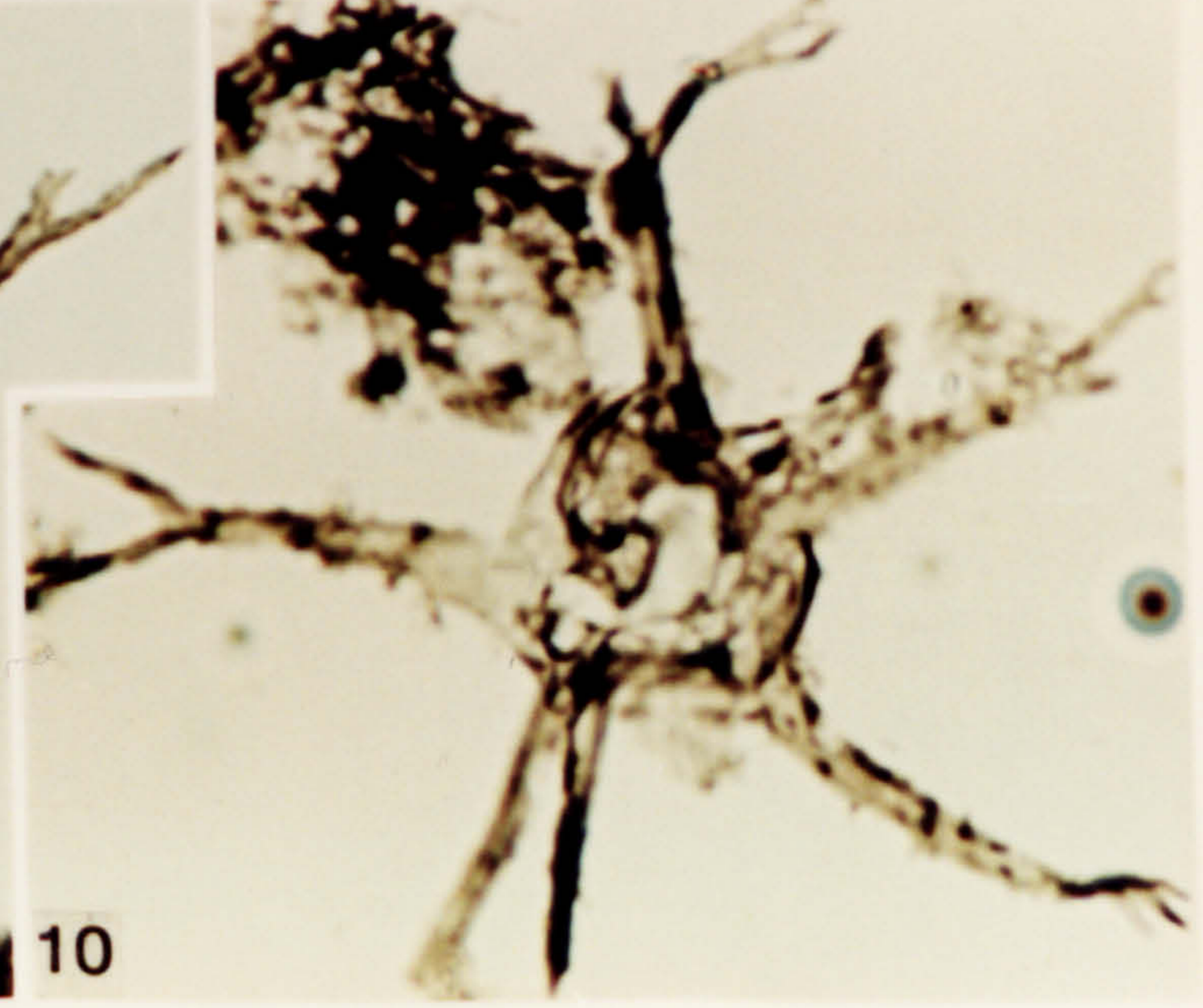
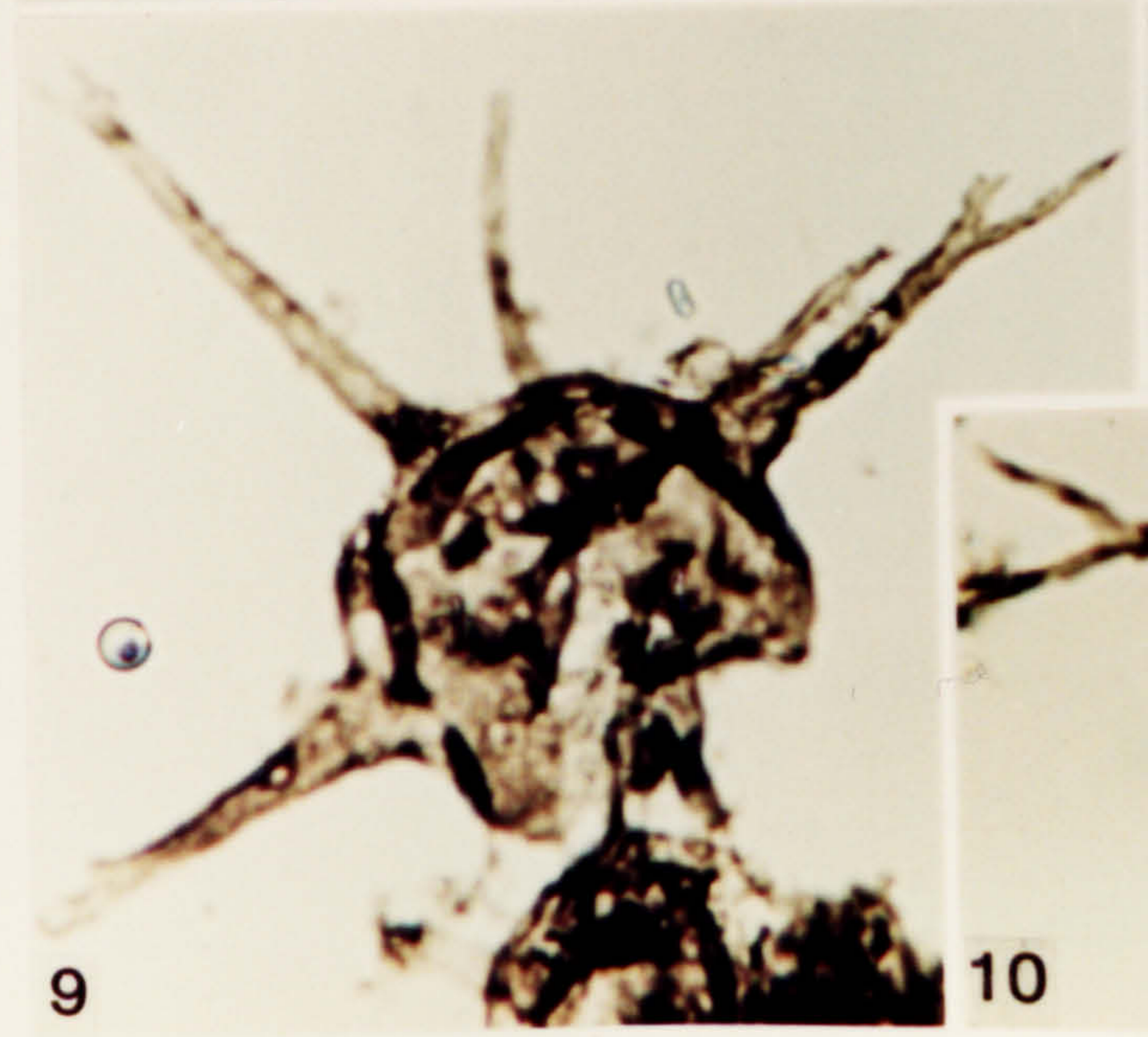
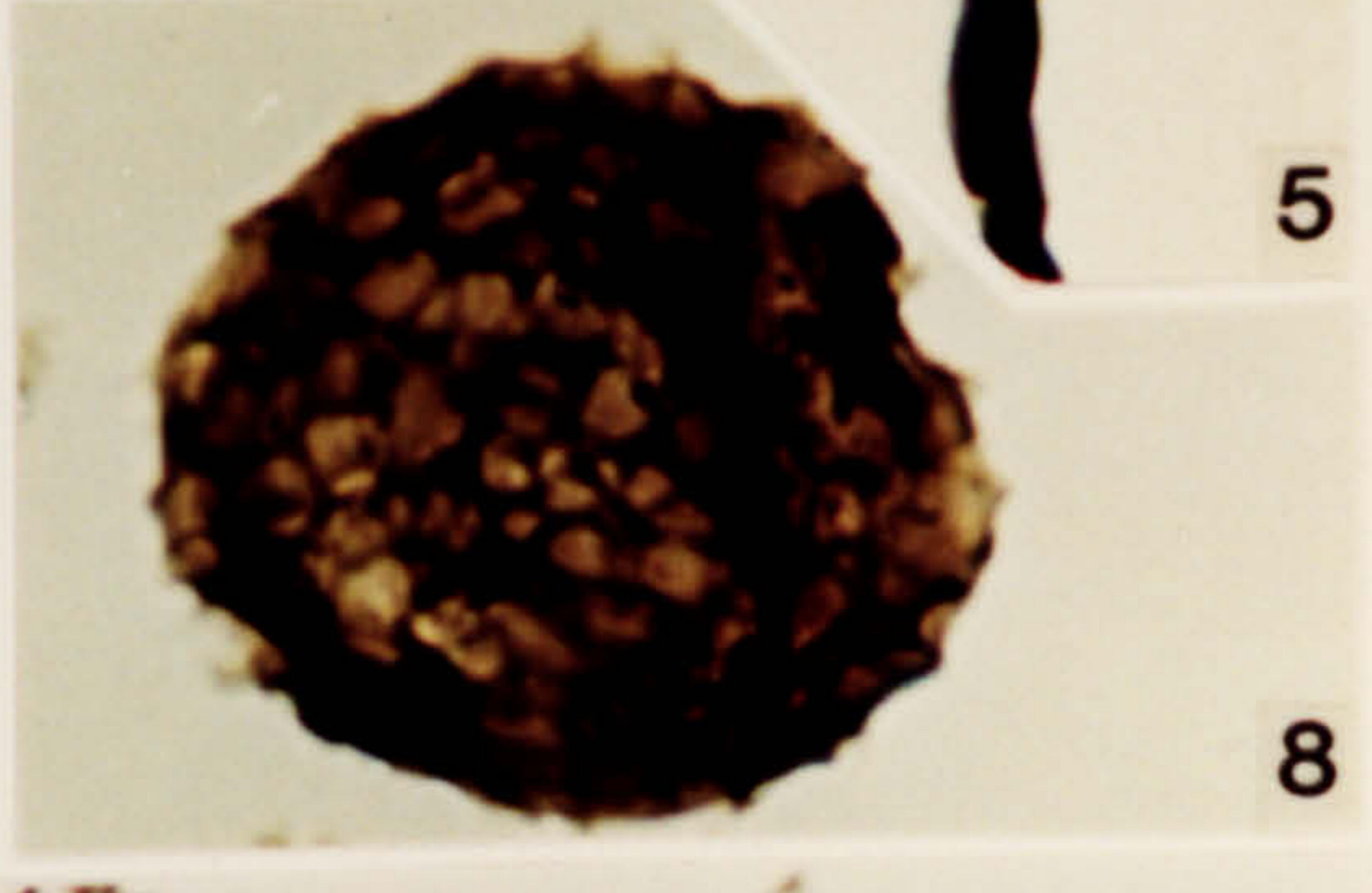
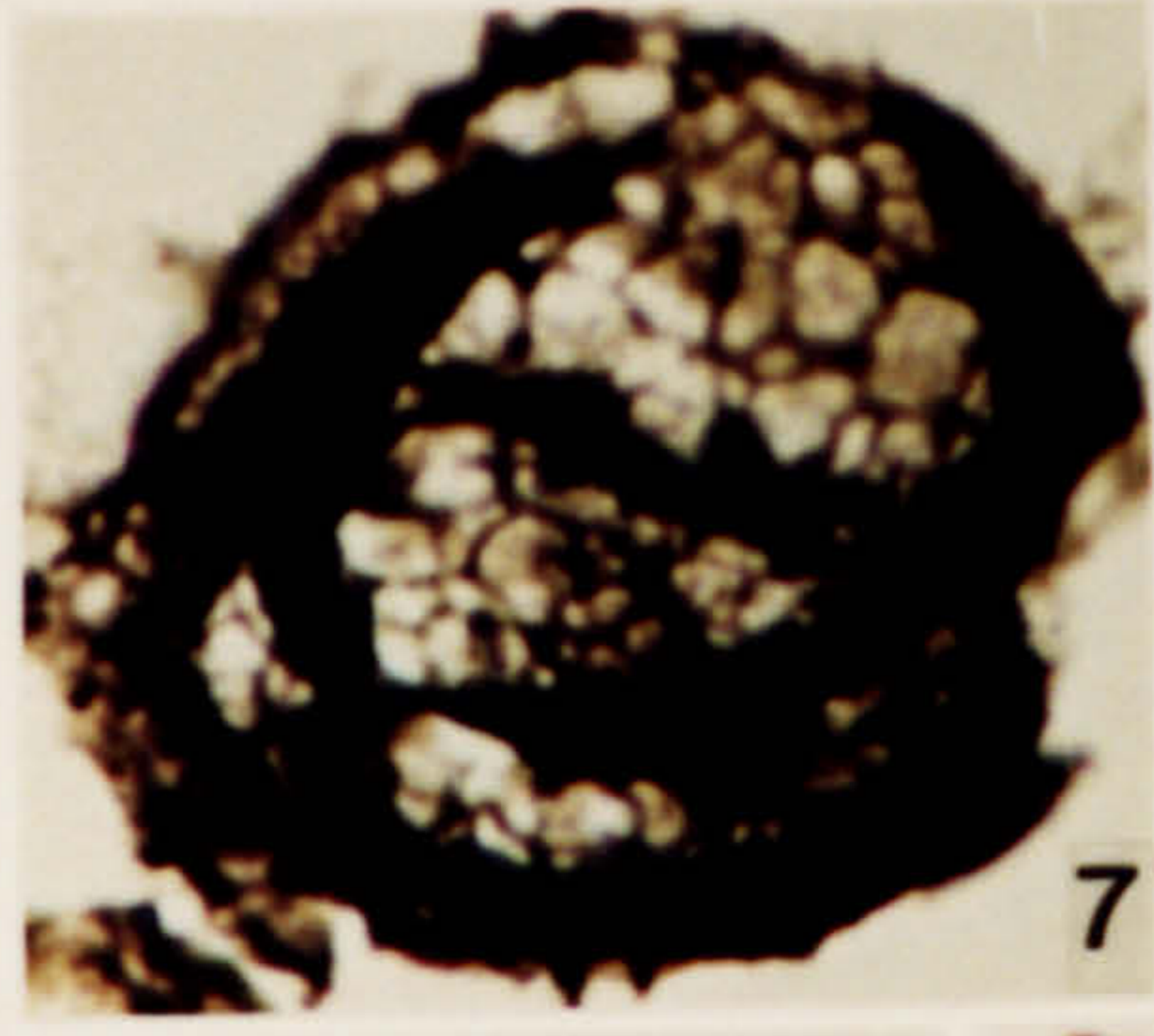
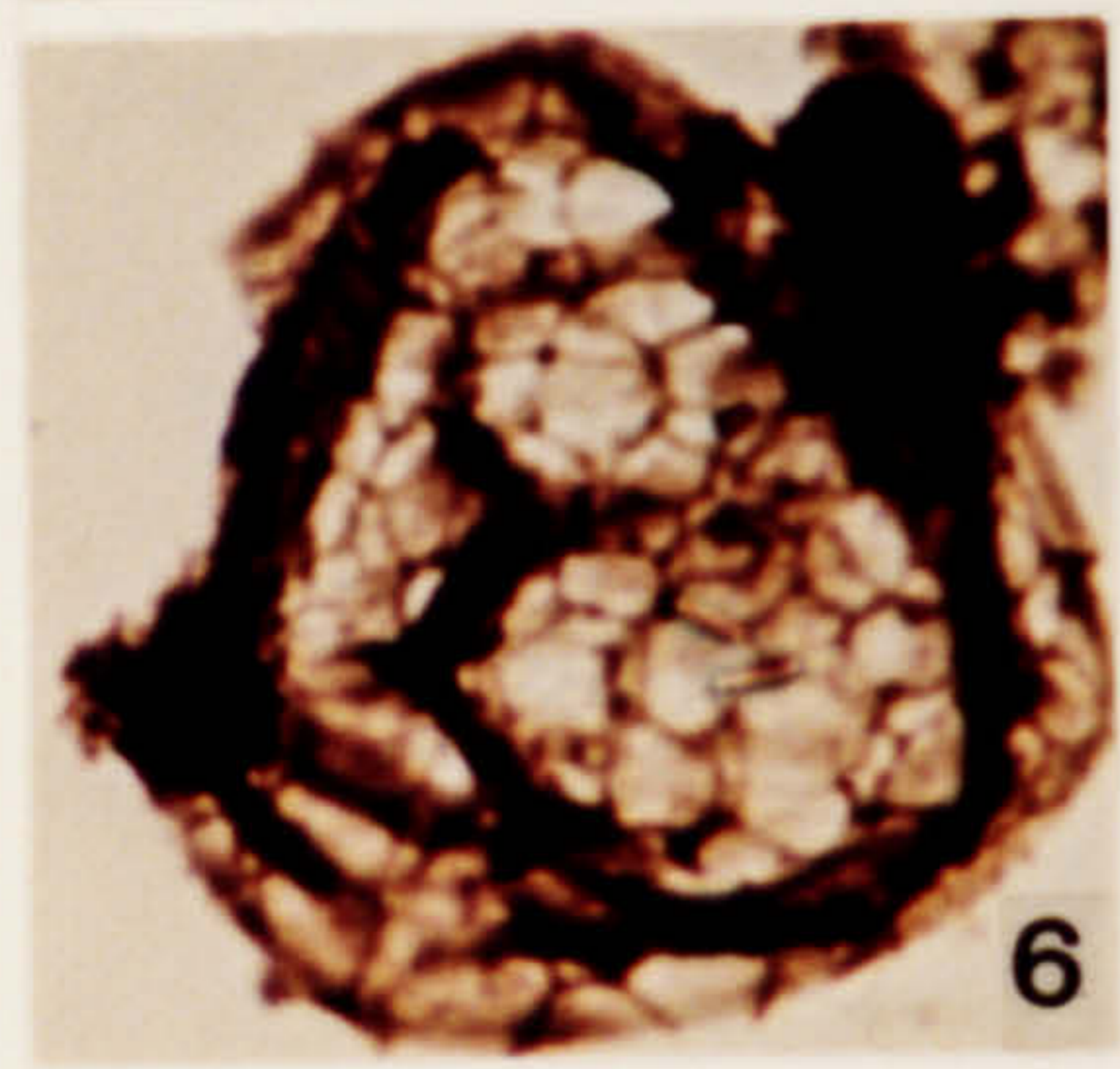
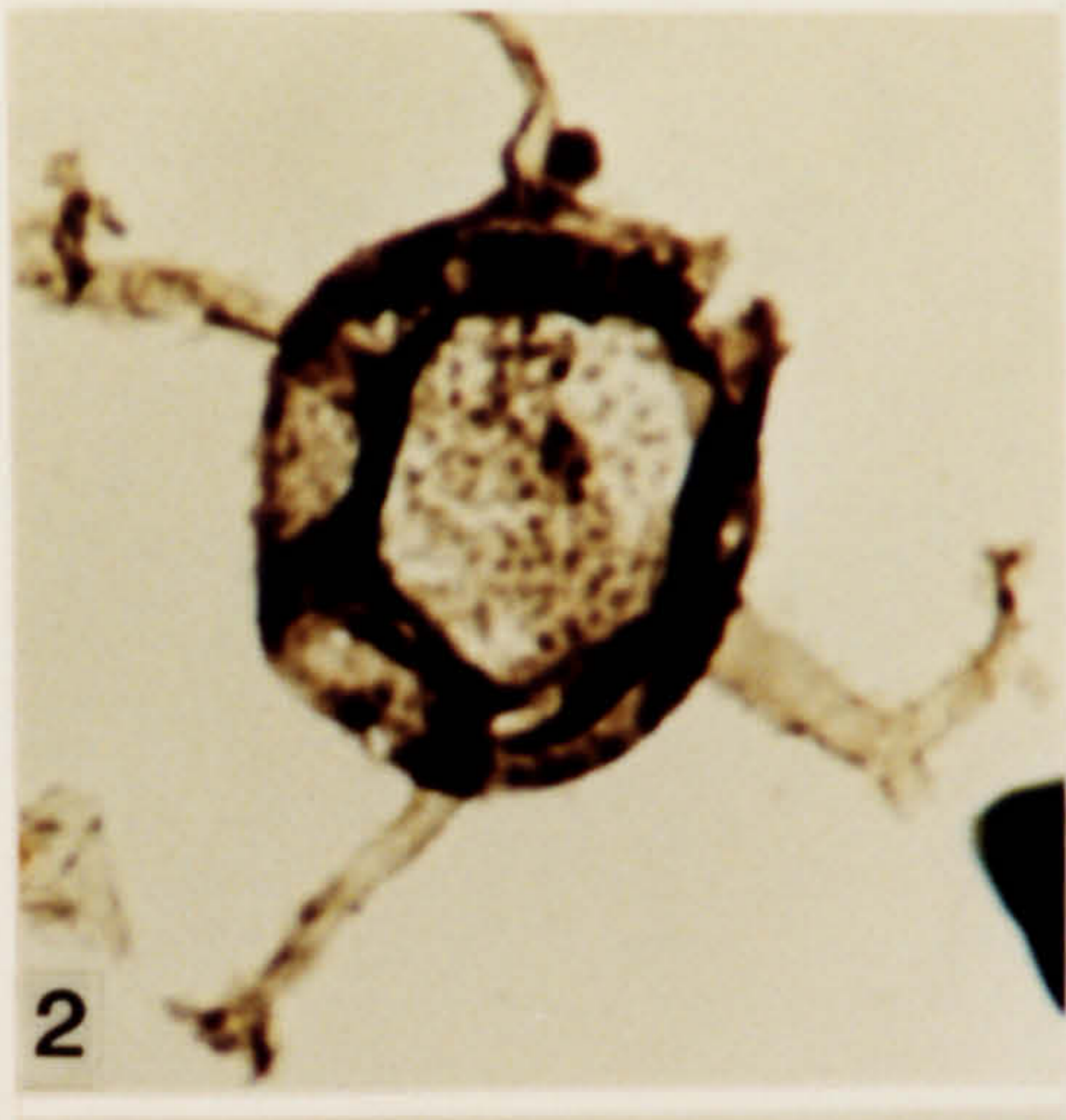
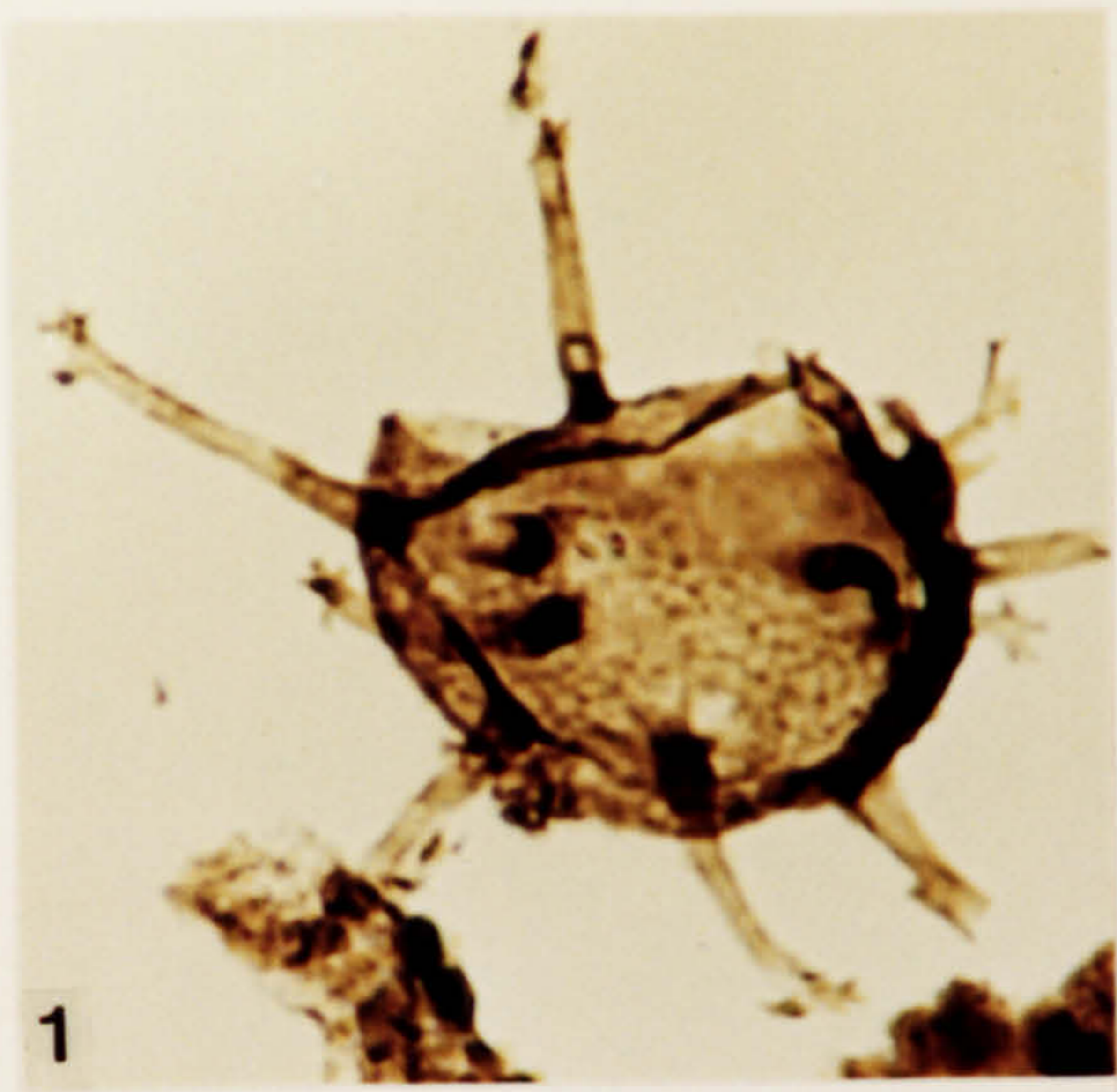
1. *Actinophasis cf. complurilata* Loeblich & Wicander 1976. DW 97, FS-5, K24\1.
2. *Actinophasis cf. complurilata* Loeblich & Wicander 1976. DW 97, FS-5, T16\1.
3. *Actinophasis cf. complurilata* Loeblich & Wicander 1976. DW 97, FS-5, K24\1, X2300.
4. *Actinophasis cf. complurilata* Loeblich & Wicander 1976. DW 97, FS-4, R27\1.
5. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. DW 97, FS-4, N22\2.
6. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. DW 96, FS-2, W24\3.
7. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. DW 97, FS-4, E19\1.



**Plate 121.**

Acritarchs from the Lmhaifid Formation or the Assa Formation. The lithostratigraphic position of the samples from which this assemblage has been recovered is in question. The macrofauna present indicates a Siegenian (*yukonensis* Zone) age.

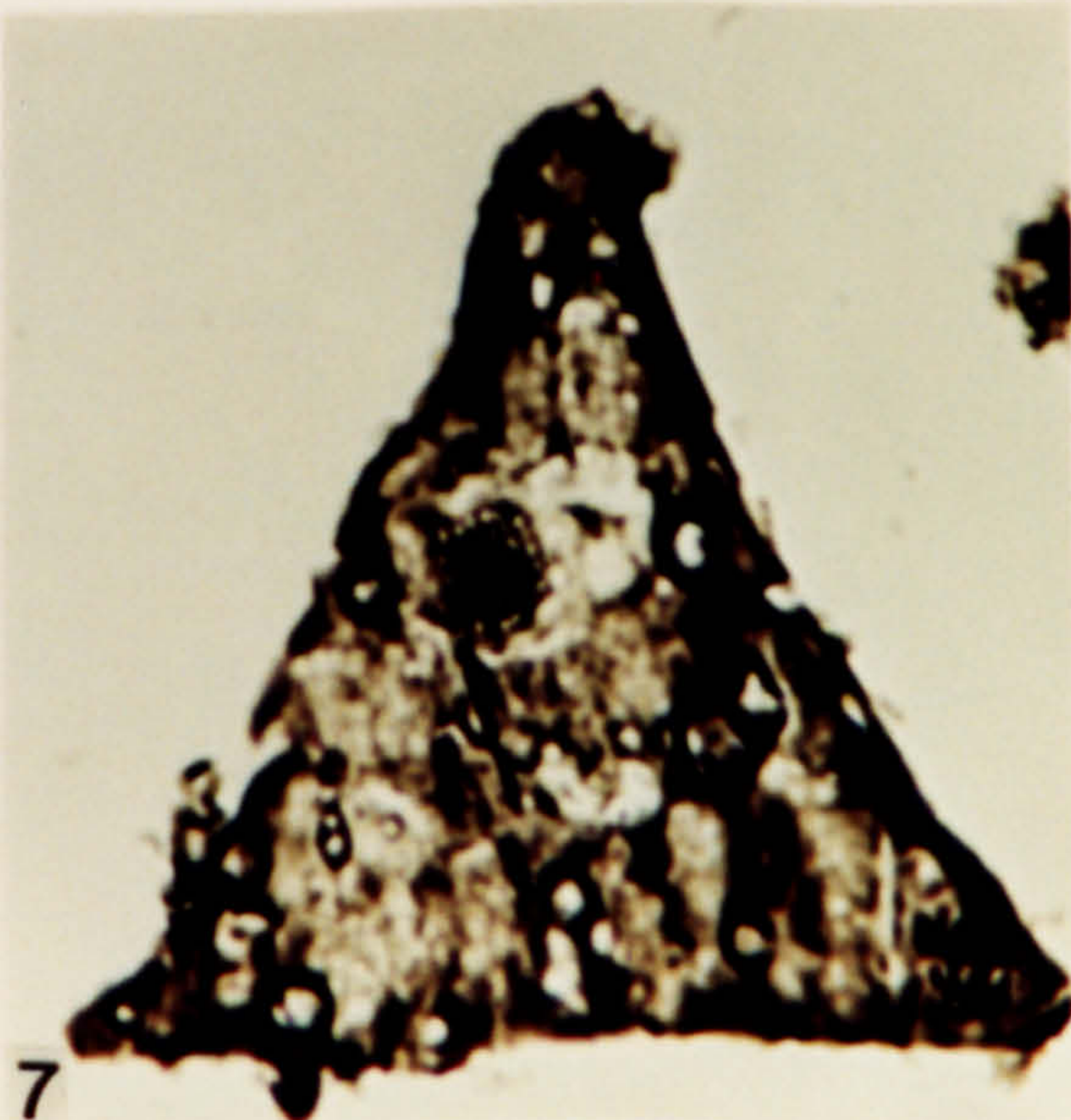
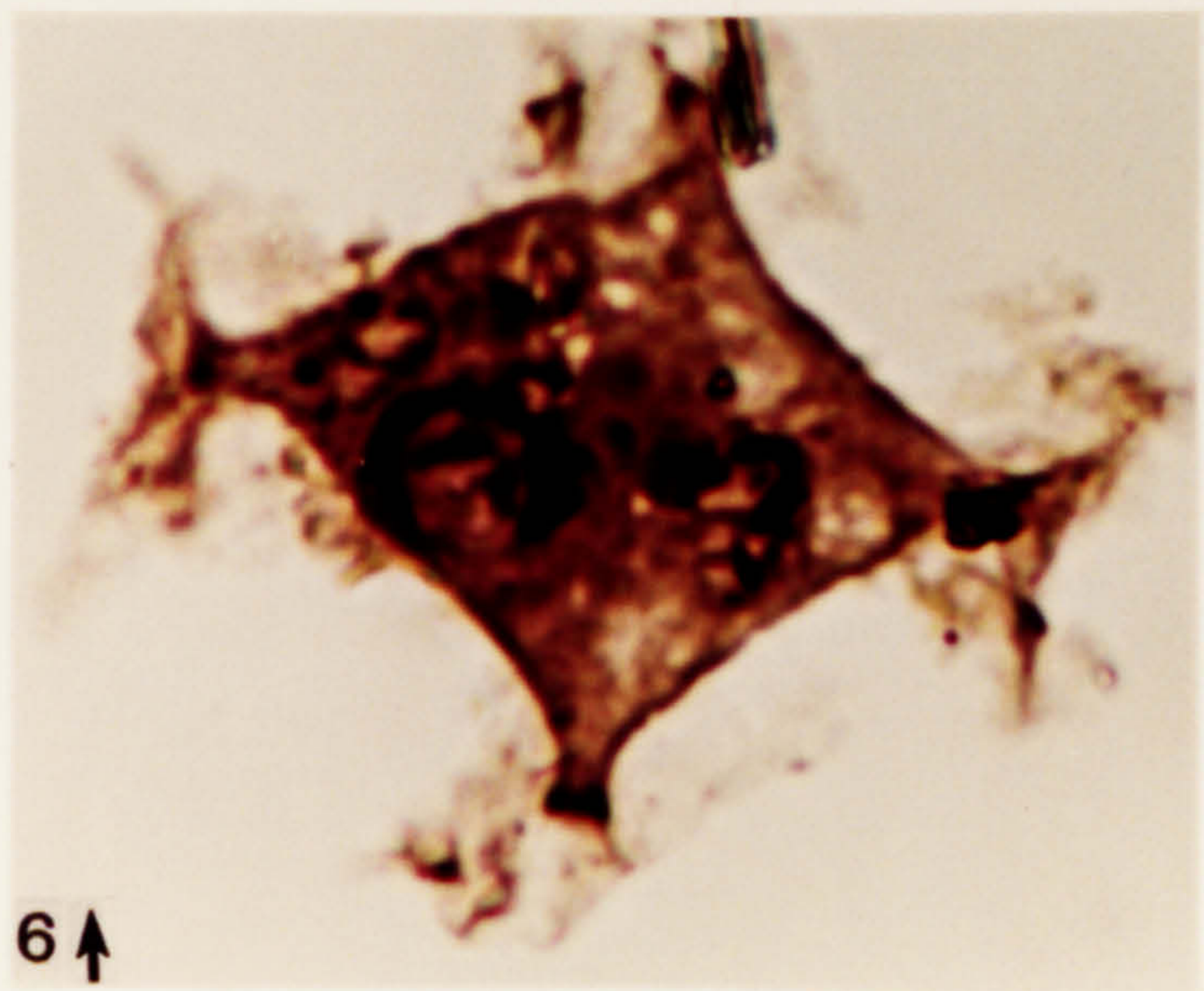
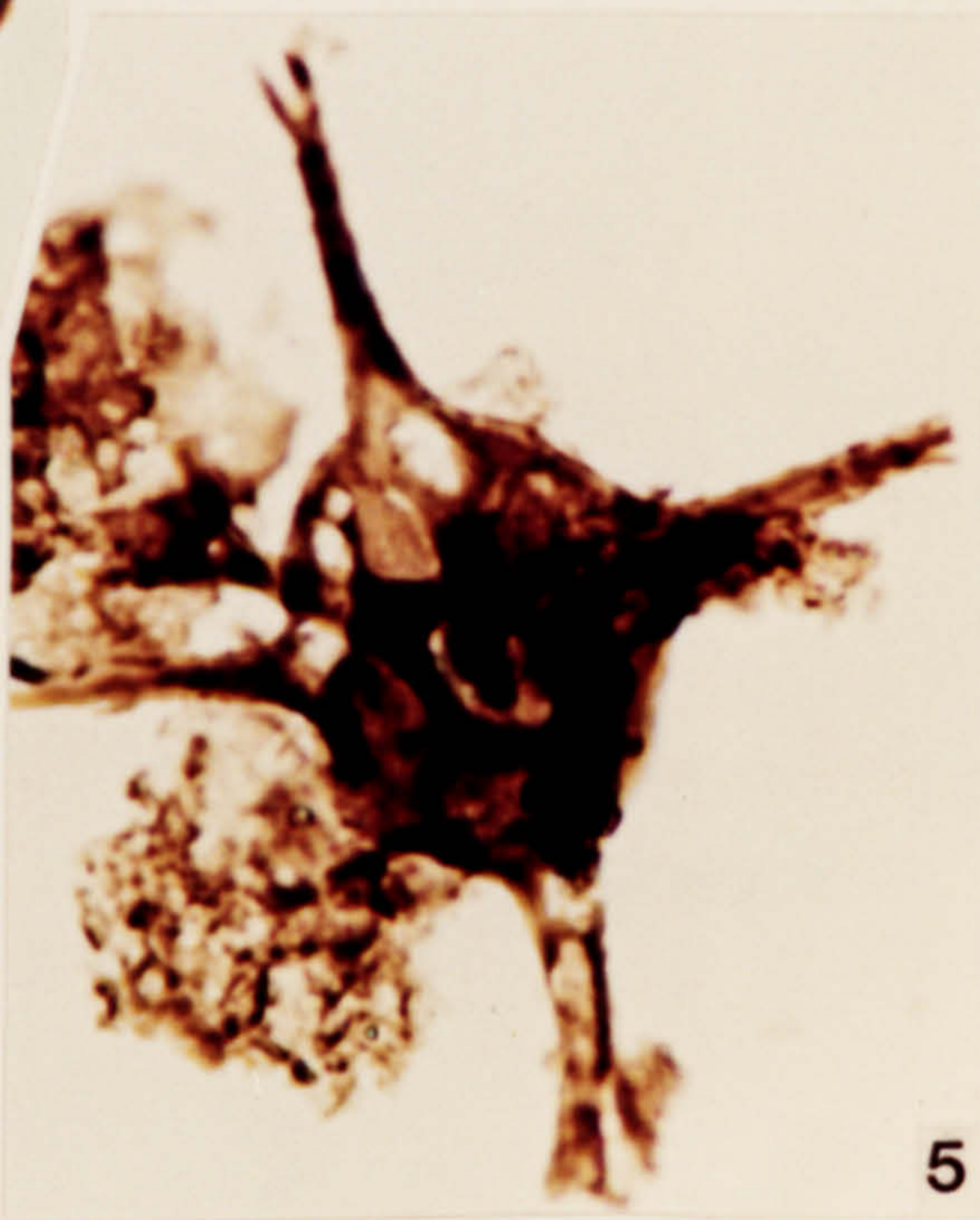
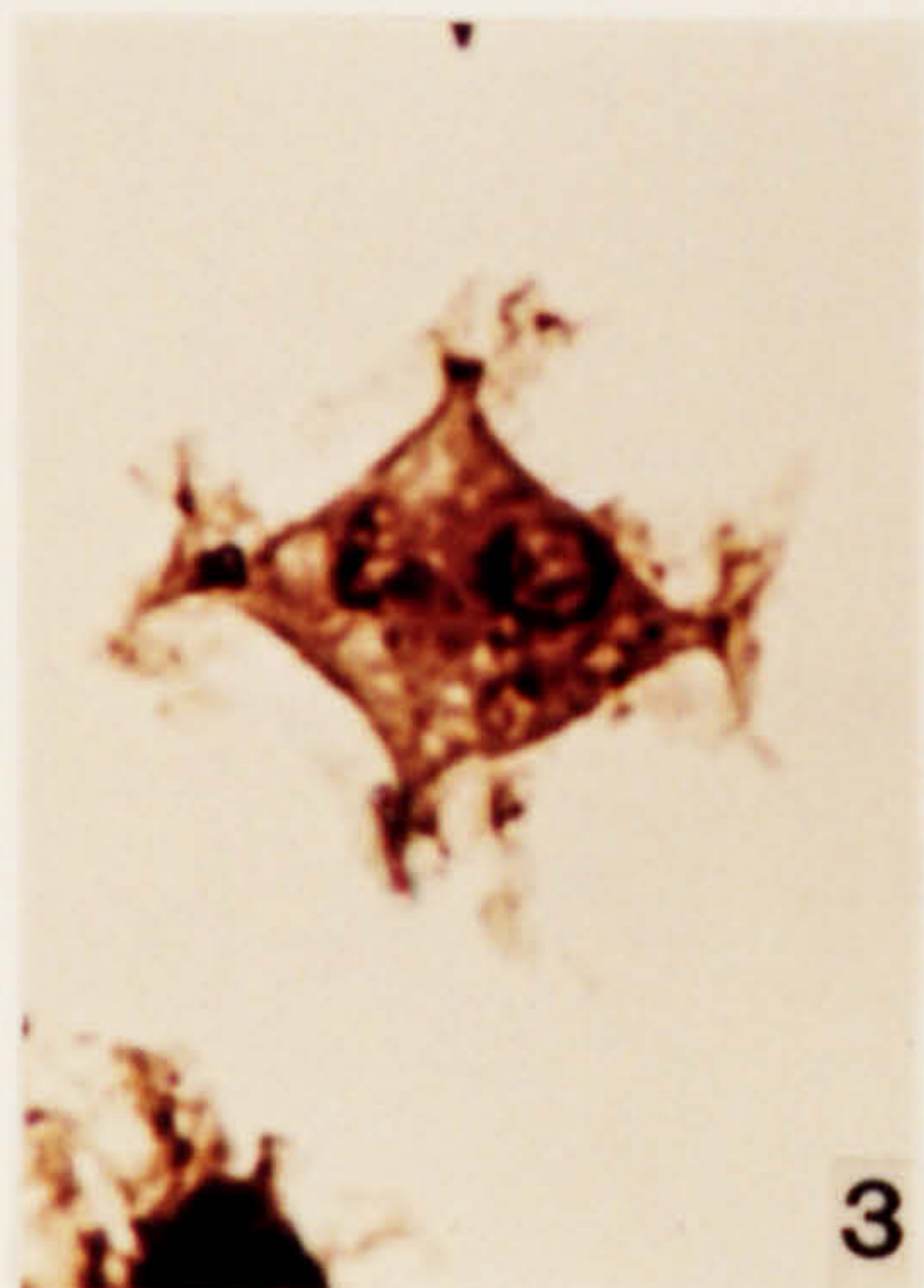
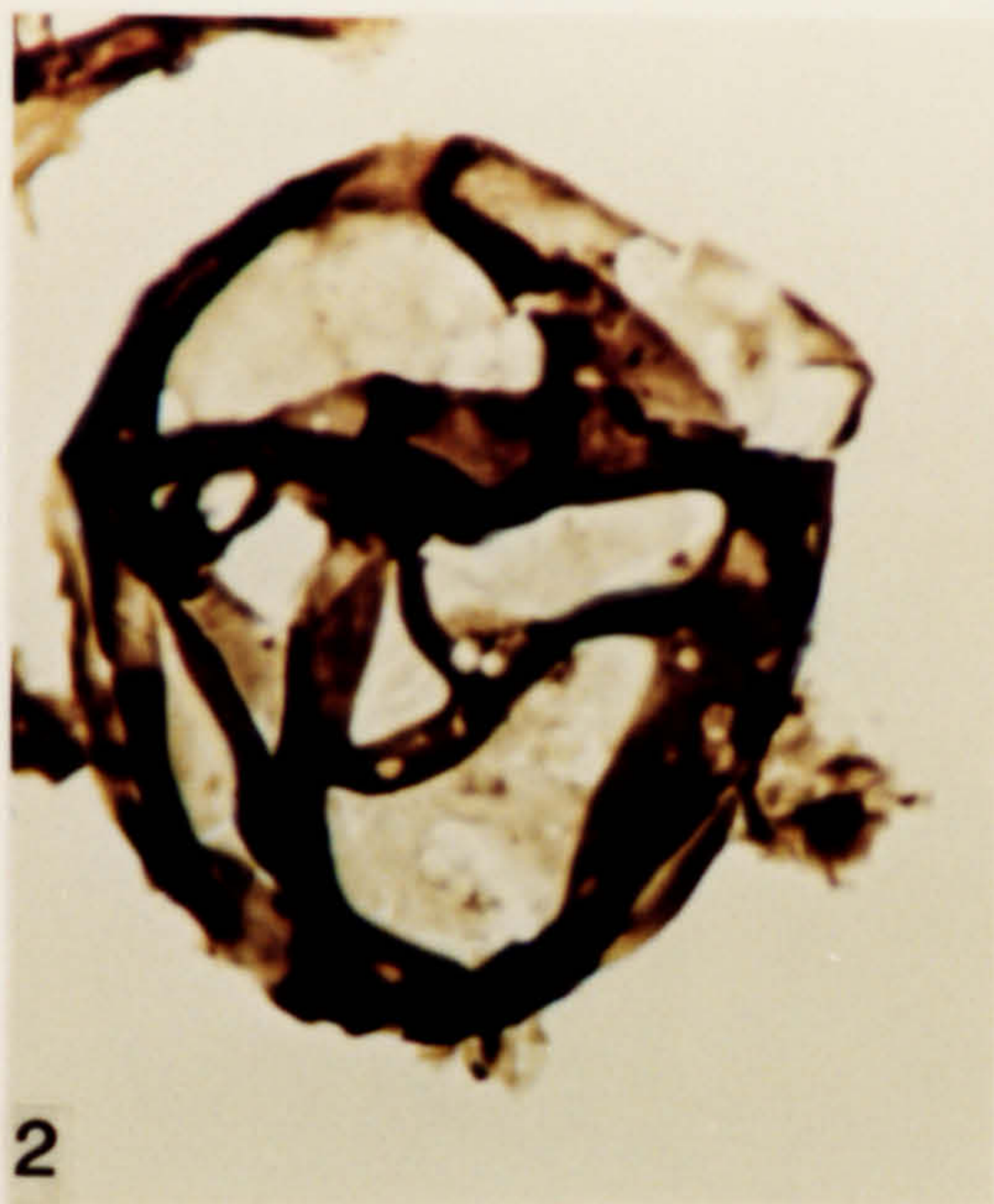
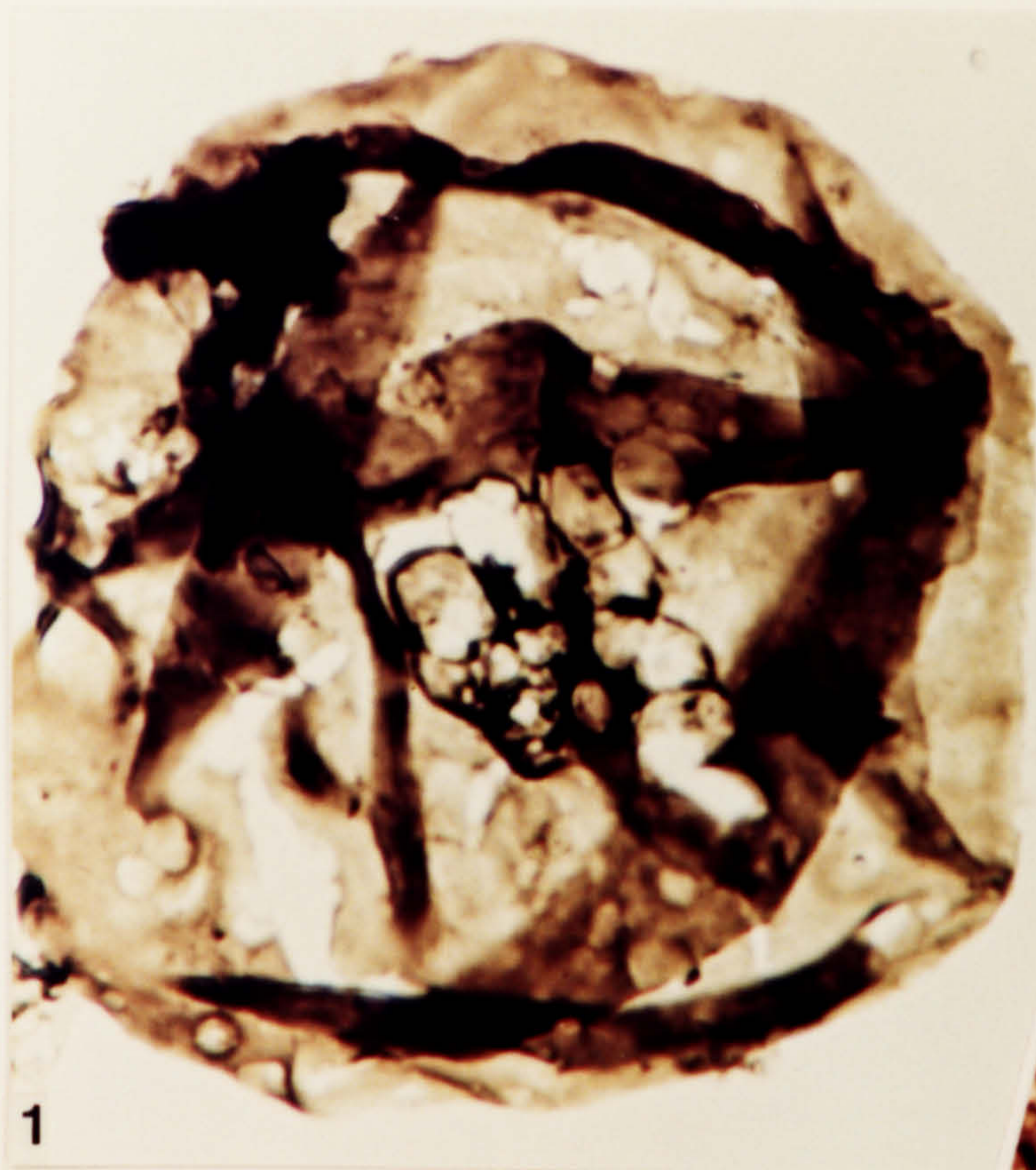
1. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. DW 96, FS-2, S14\3.
2. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. DW 97, FS-5, X16\4.
3. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. DW 96, FS-1, E56\4.
4. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. DW 97, FS-5, P6\4.
5. *Dactylofusa striatifera?* (Cramer) Fensome *et al.* 1990. DW 97, 1-1, Q22\4.
6. *Dictyotidium* cf. *dictyotum* (Eisenack) Eisenack 1955. DW 96, FS-2, D44\4.
7. *Dictyotidium* cf. *dictyotum* (Eisenack) Eisenack 1955. DW 97, FS-4, S36\3.
8. *Dictyotidium stenodictyum* Eisenack 1965. DW 97, FS-2, D51\3.
9. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. DW 97, FS-4, S31\1.
10. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. DW 97, FS-4, V28\1.



**Plate 122.**

Acritarchs from the Lmhaifid Formation or the Assa Formation. The lithostratigraphic position of the samples from which this assemblage has been recovered is in question. The macrofauna present indicates a Siegenian (*yukonensis* Zone) age.

1. *Leiosphaeridia* sp 1. DW 96, FS-2, X26\4.
2. *Leiosphaeridia* sp. DW 96, FS-2, K24\1.
3. *Quadraditum scutiferum* Deunff 1966. DW 96, FS-1, L47\4.
4. *Leiosphaeridia* sp. DW 96, FS-2, V50\1.
5. *Diexallophasis remota* (Deunff) Playford 1977. DW 96, FS-2, K51\4.
6. *Quadraditum scutiferum* Deunff 1966. DW 96, FS-1, L47\4, X2300.
7. *Onondagella deunffii* Cramer 1966. DW 97, FS-5, Q10\2.

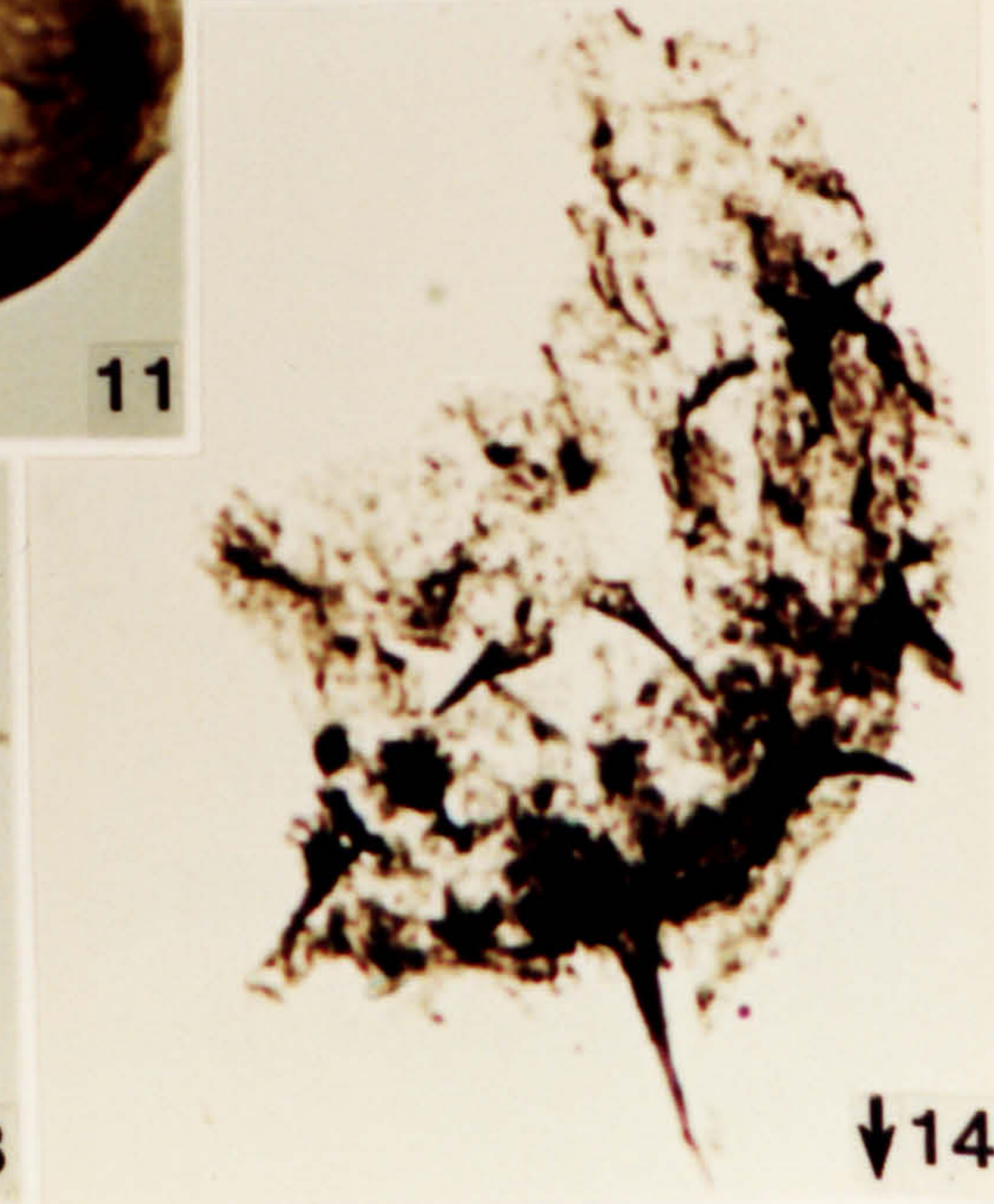
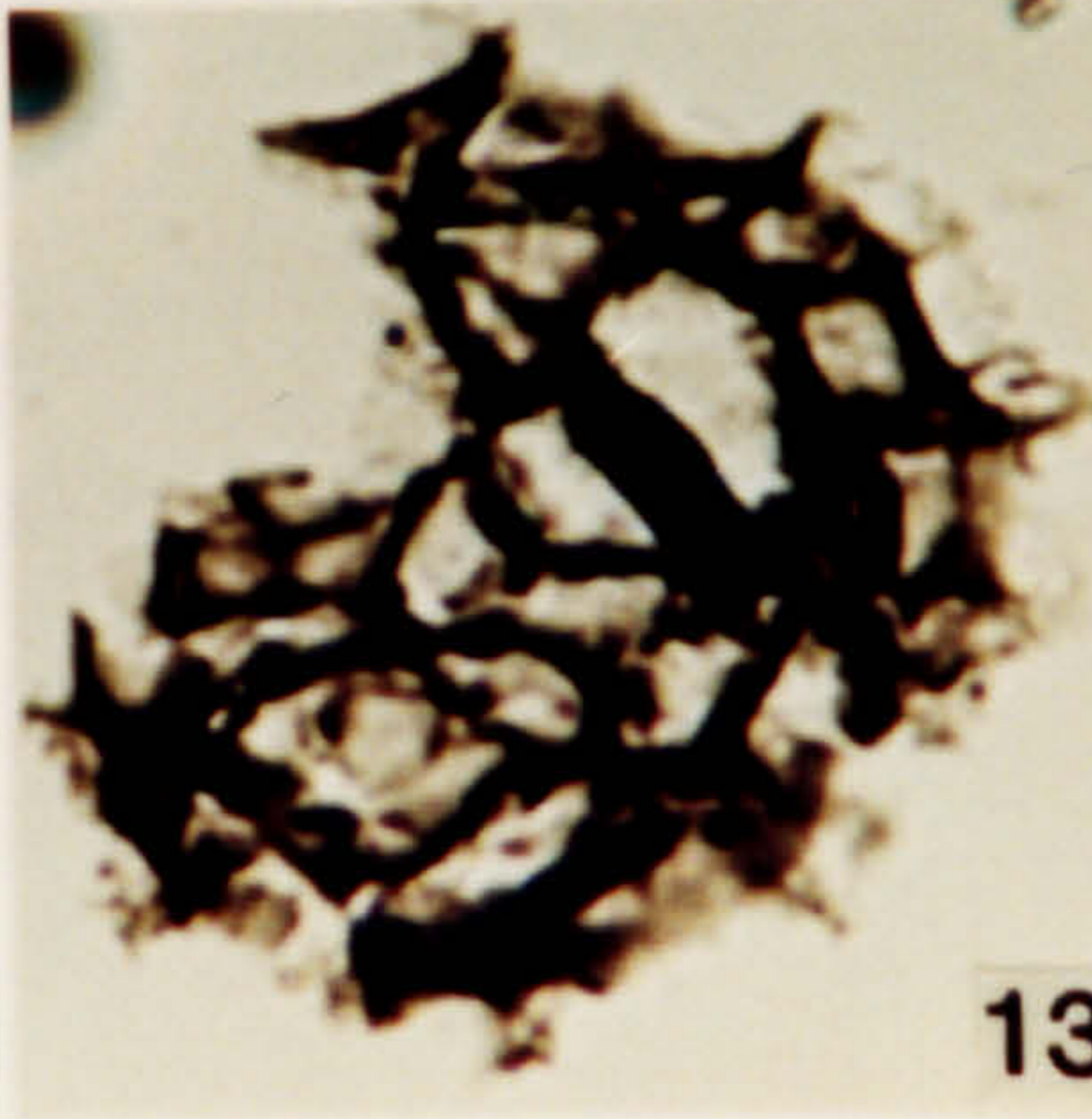
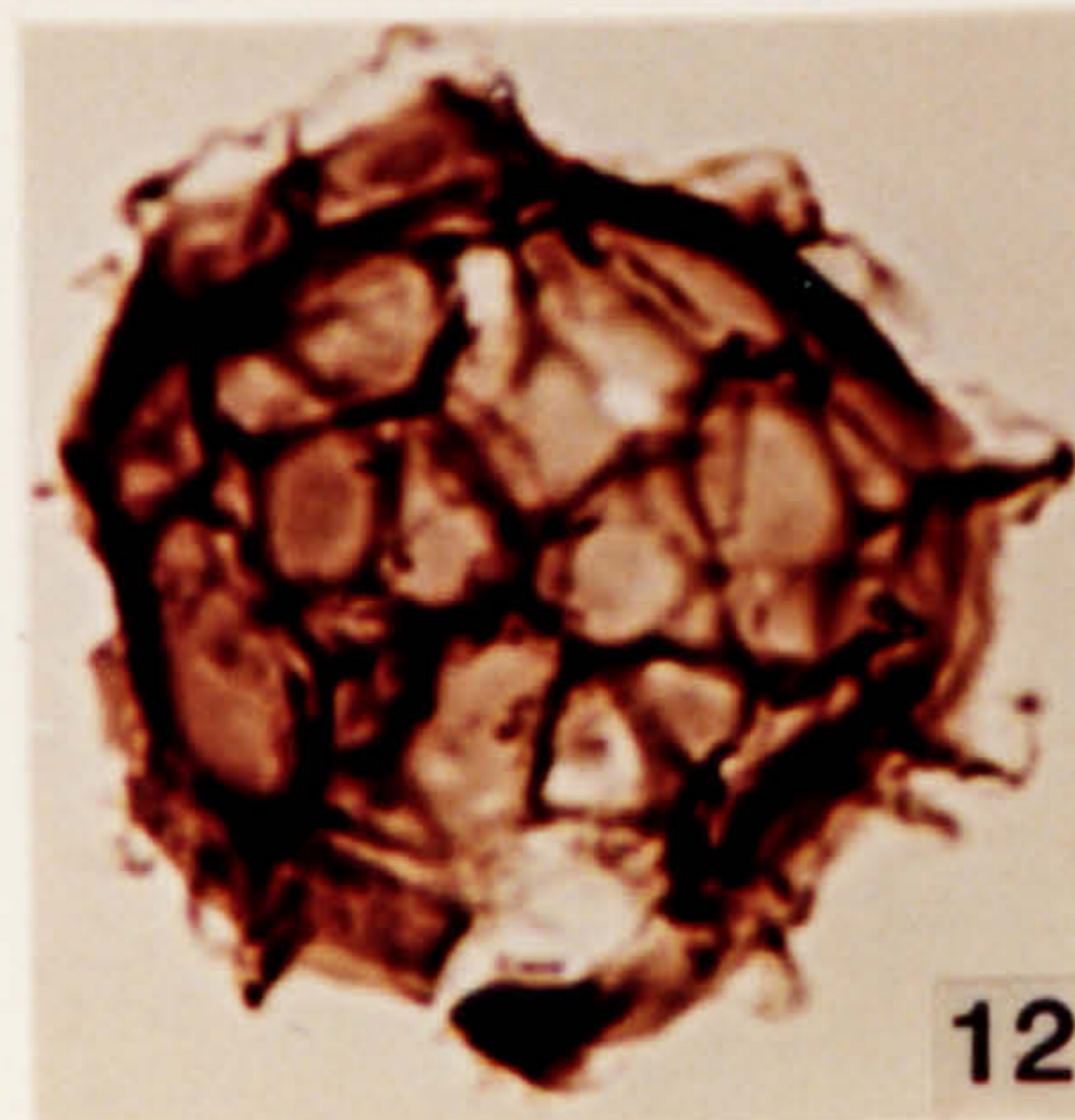
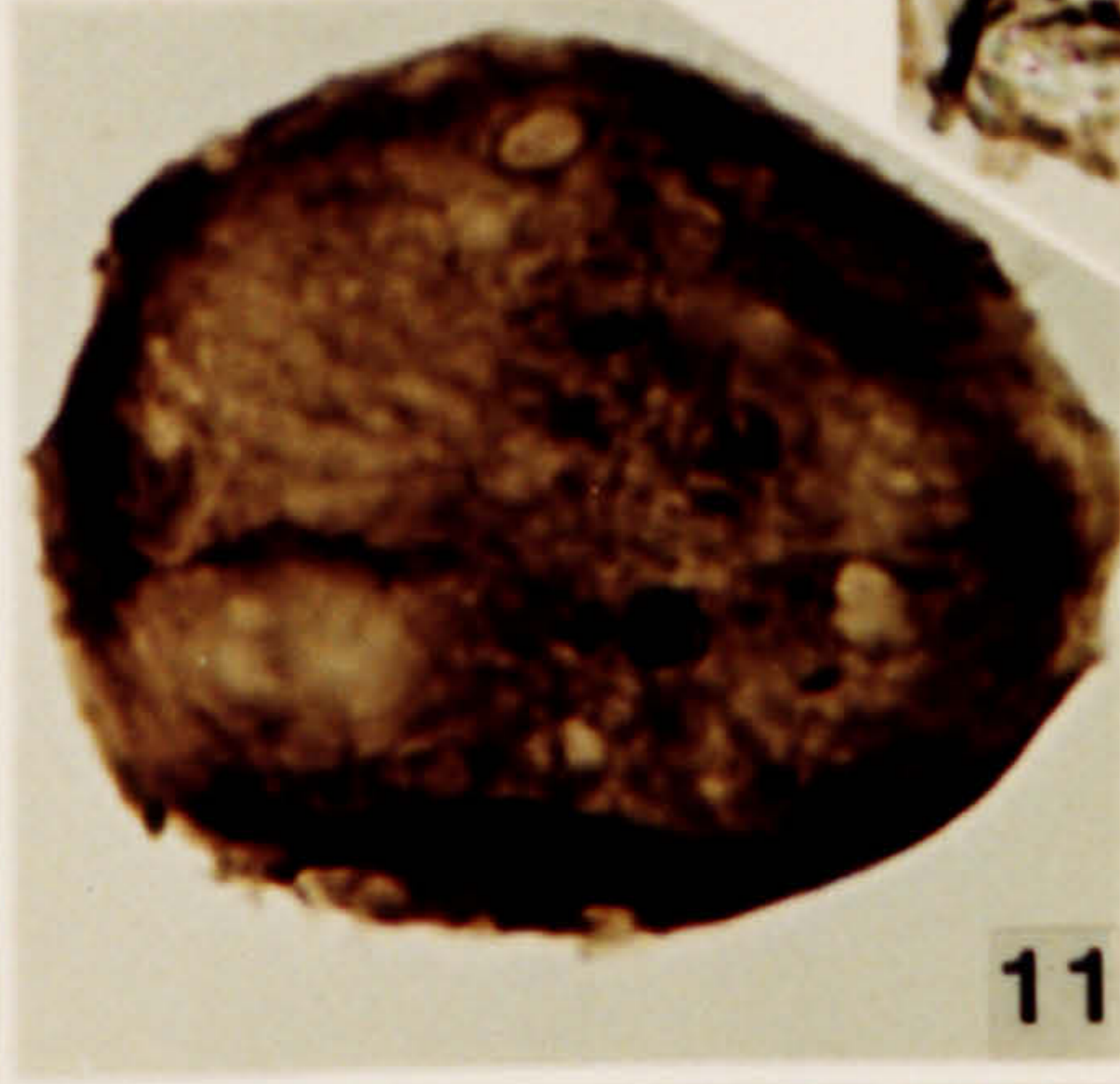
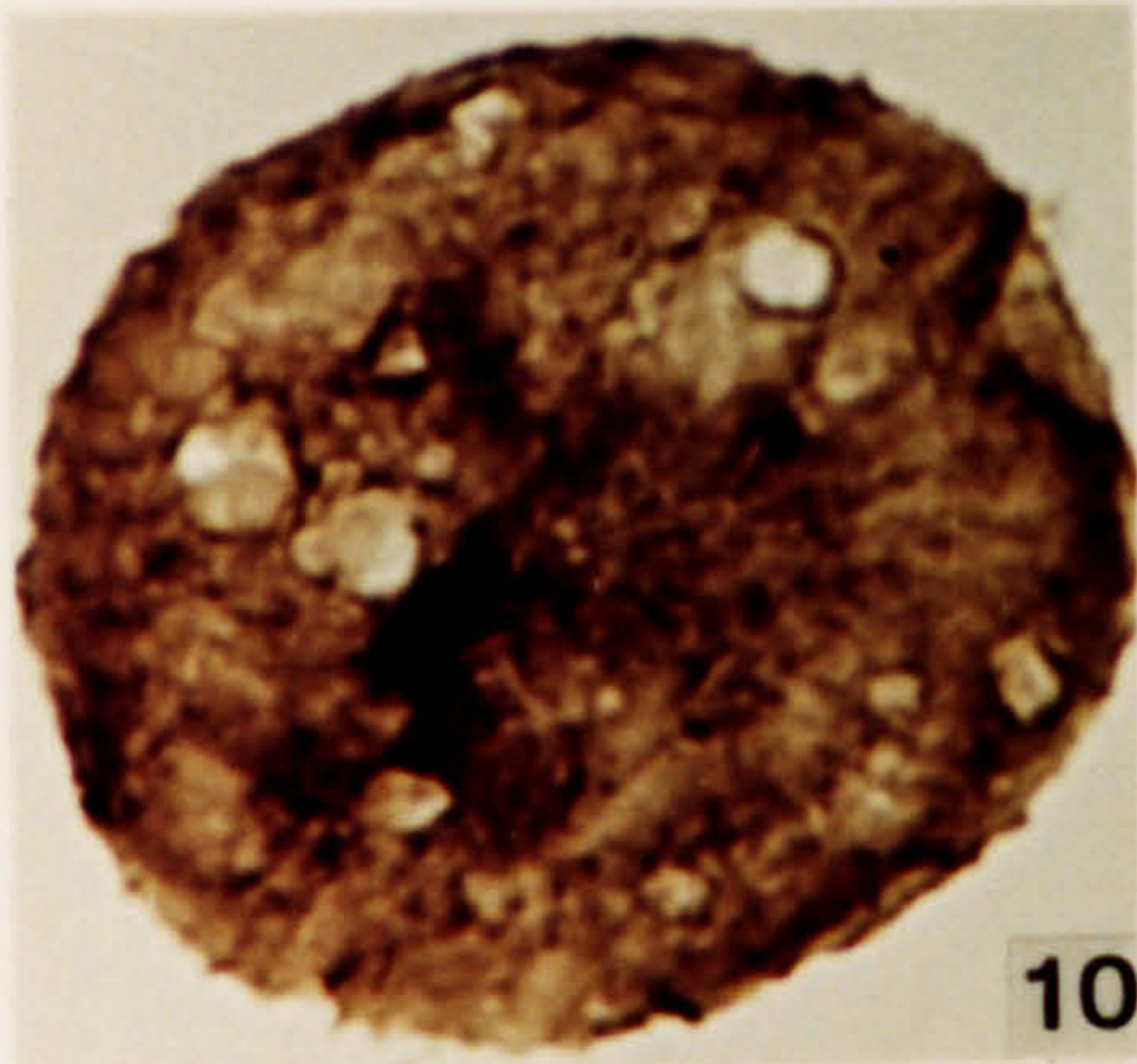
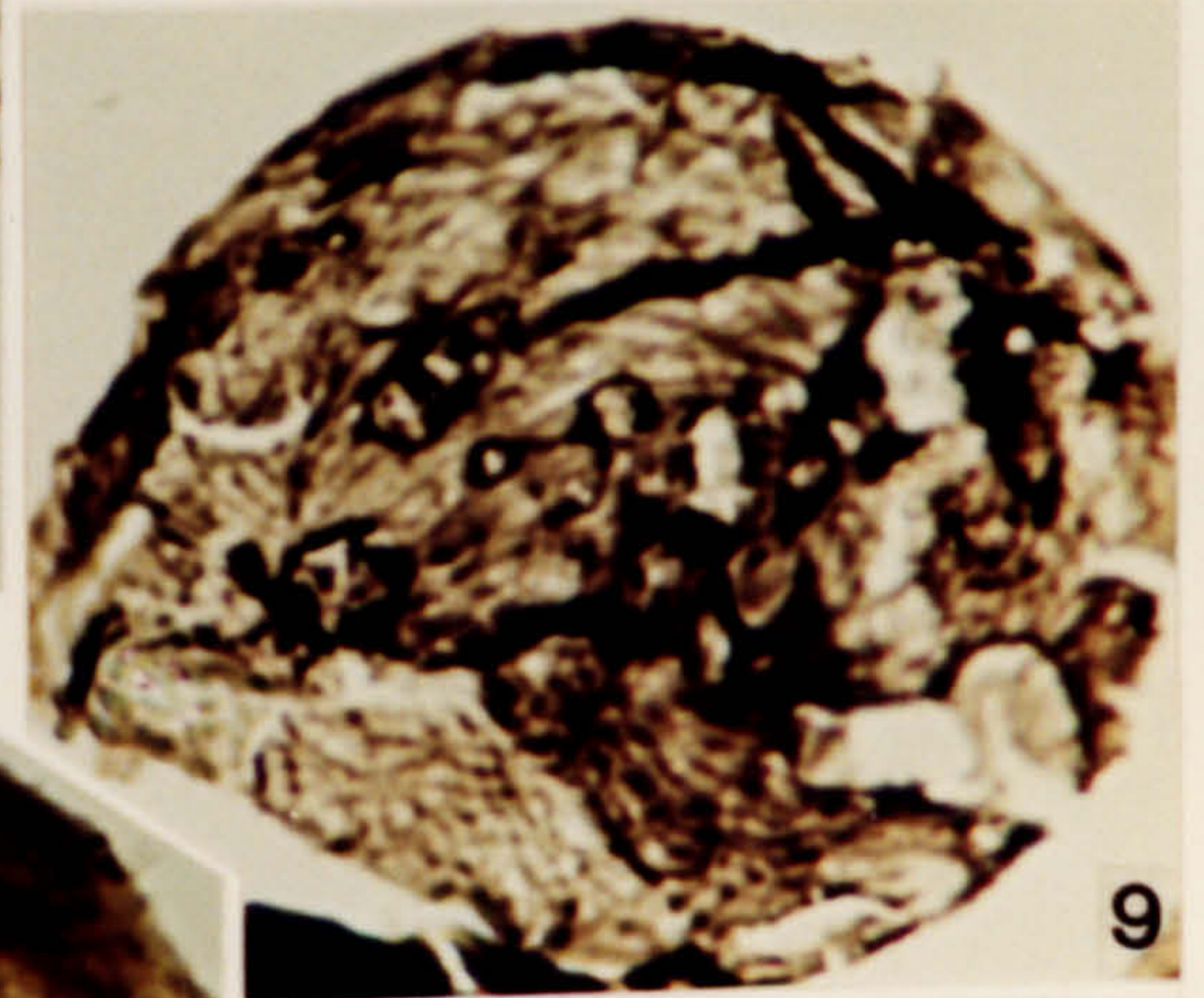
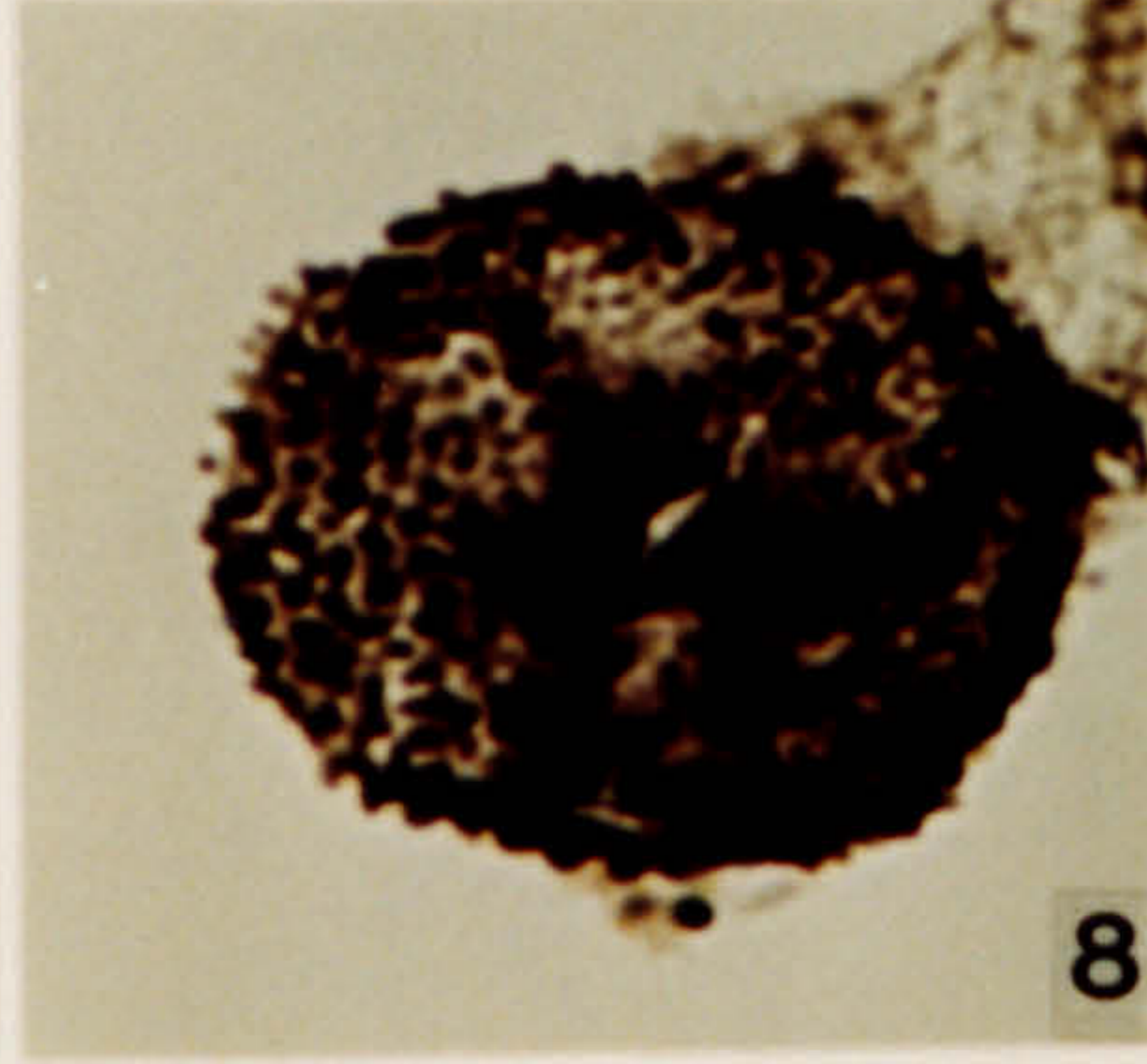
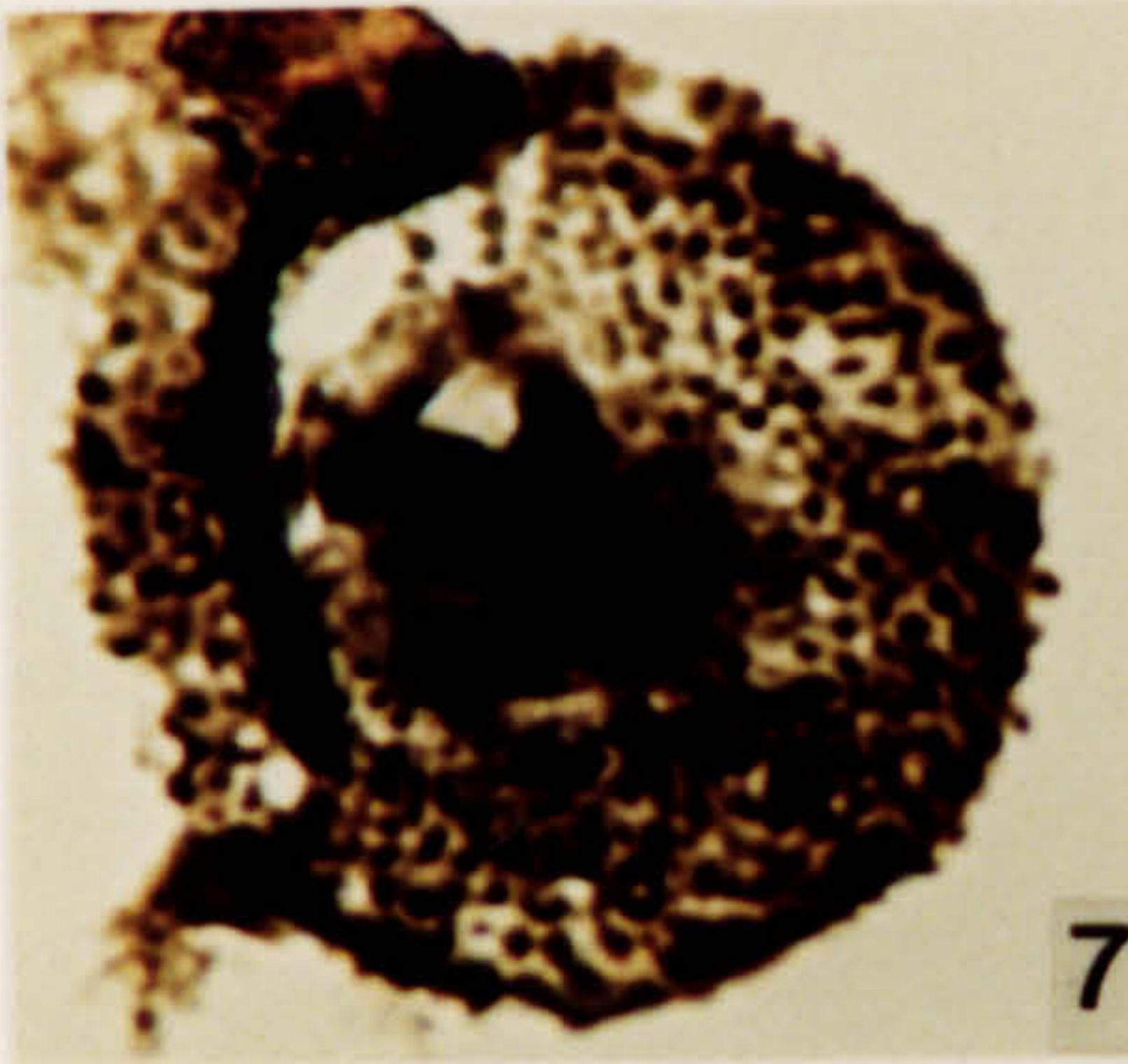
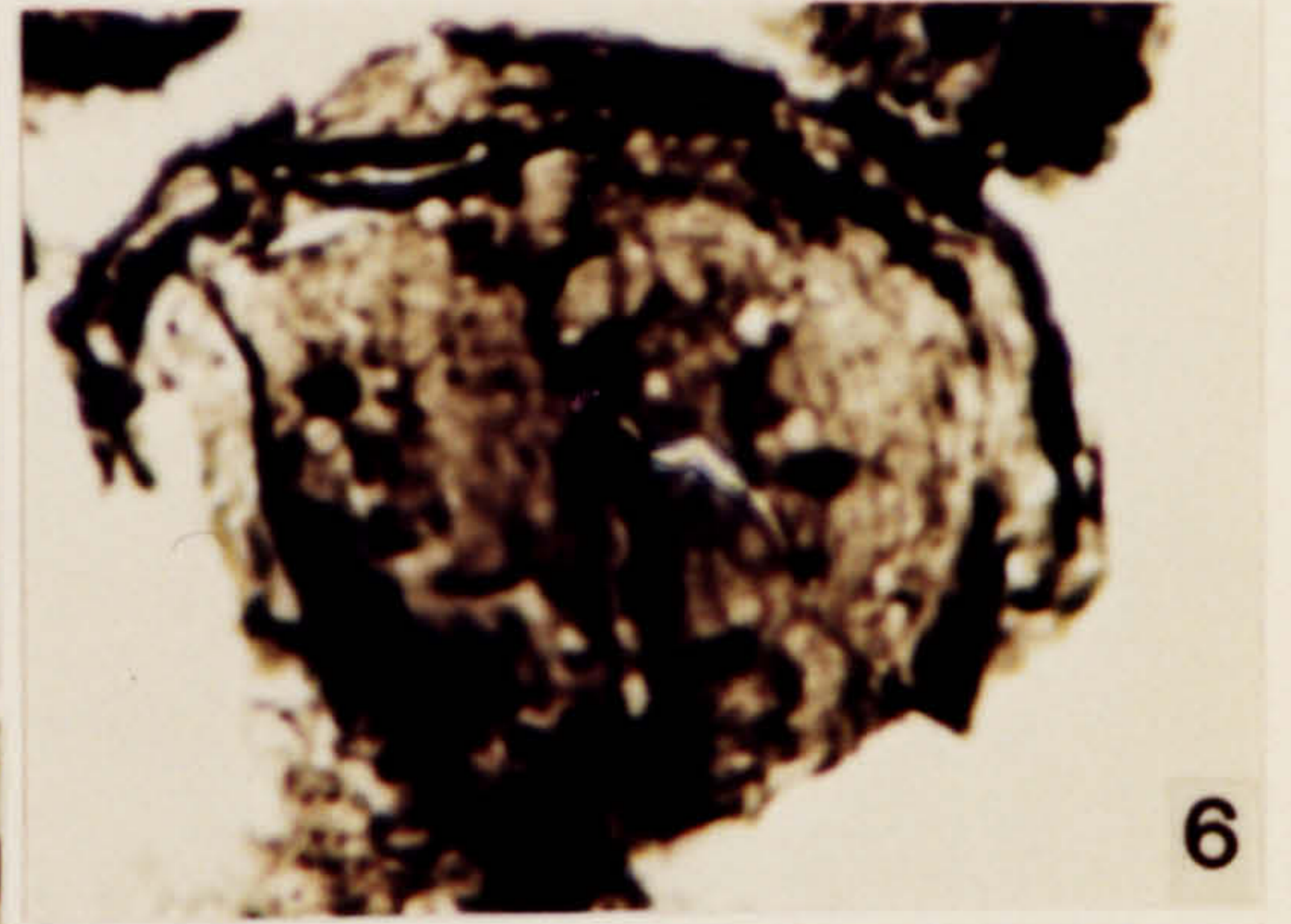
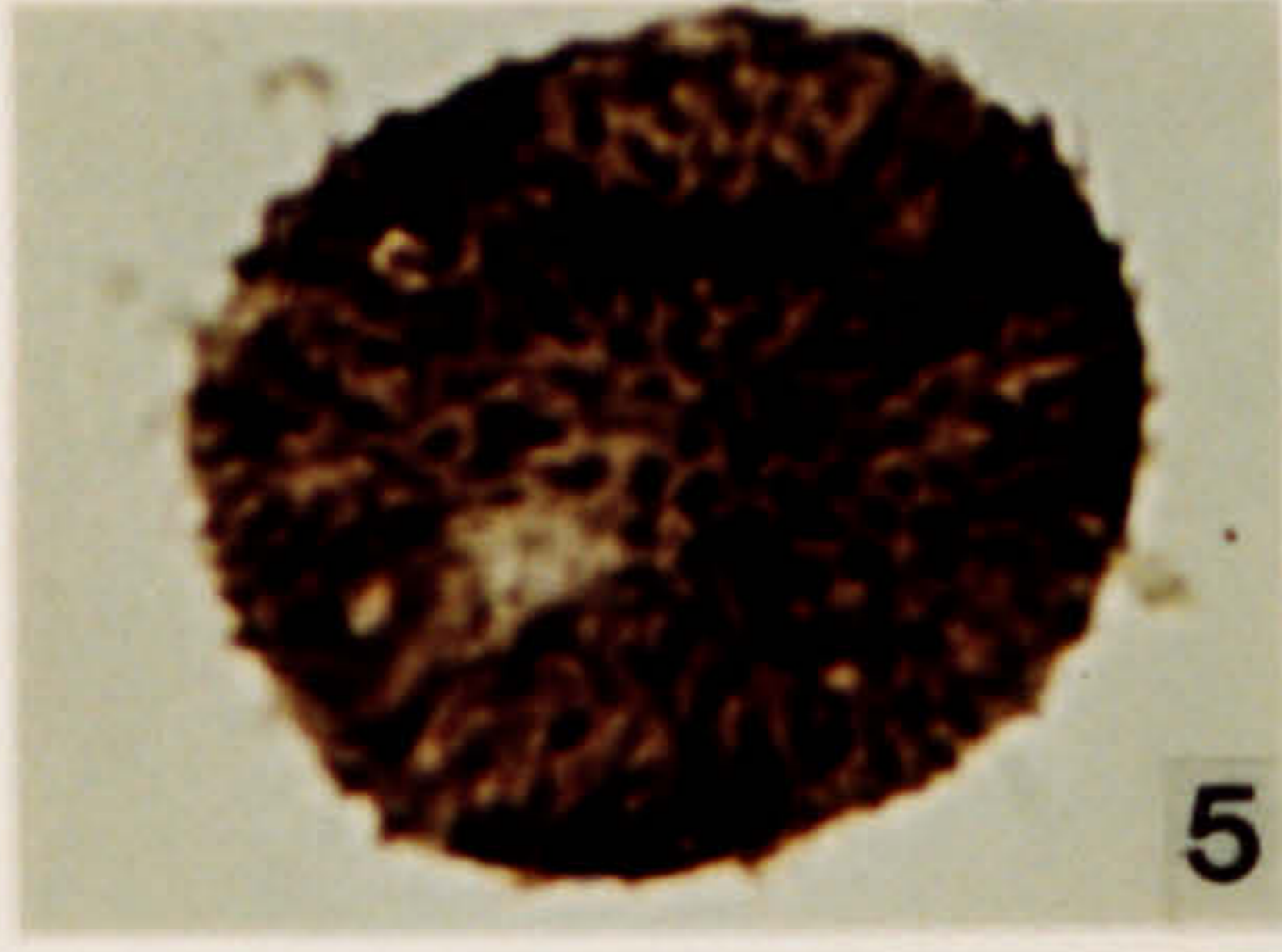
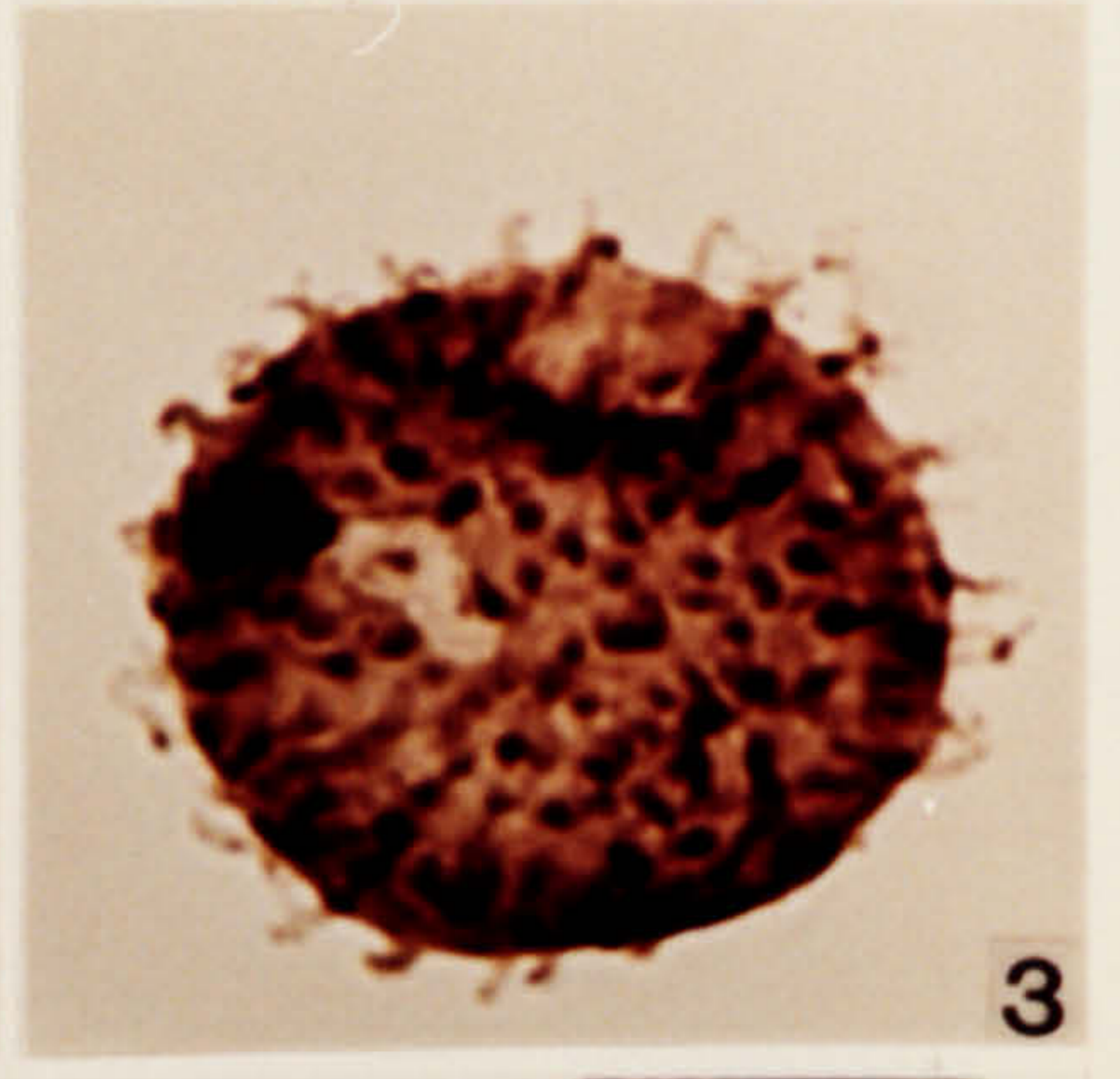
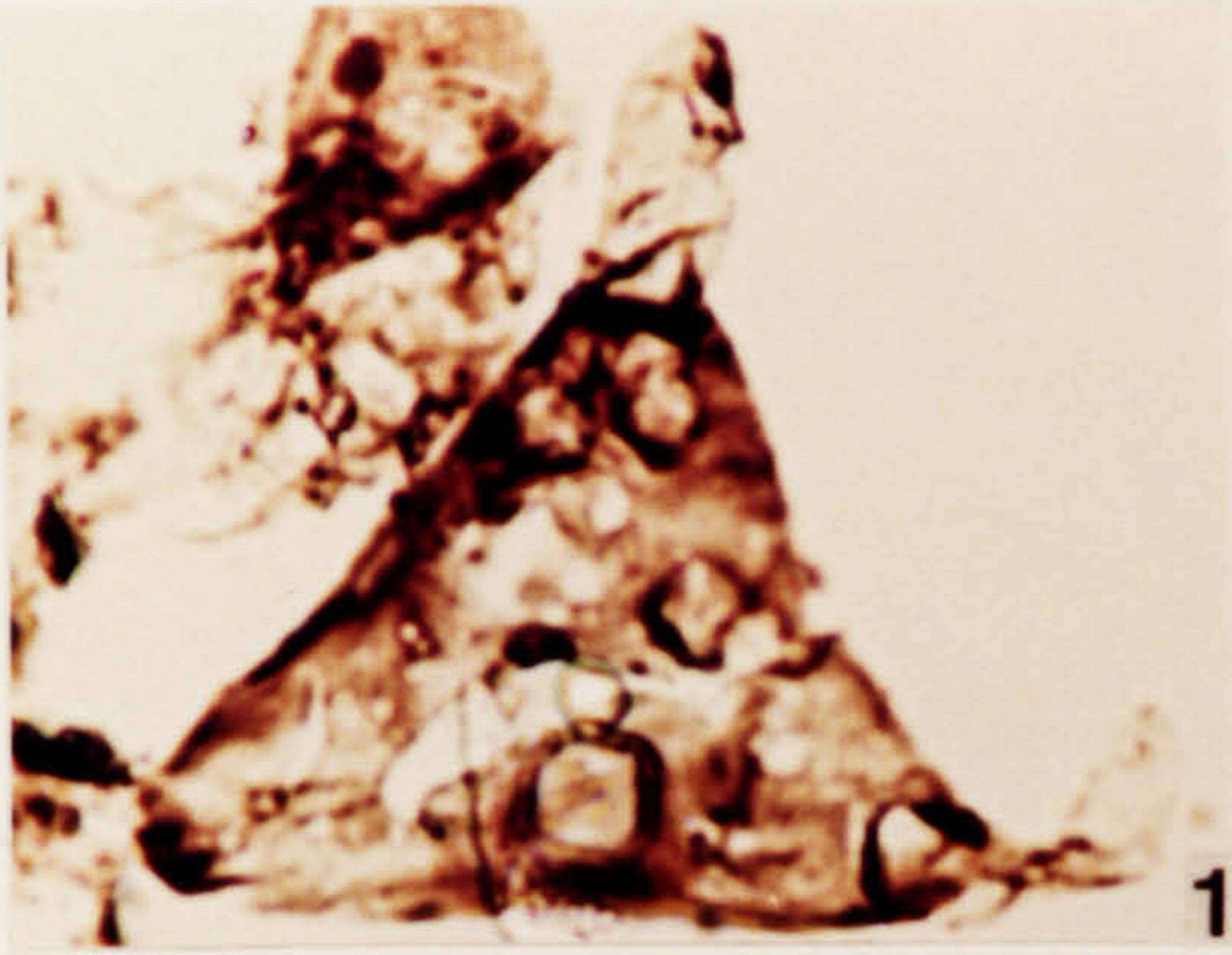




**Plate 123.**

**Acritarchs from the Lmhaifid Formation or the Assa Formation. The lithostratigraphic position of the samples from which this assemblage has been recovered is in question. The macrofauna present indicates a Siegenian (*Yukonensis* Zone) age.**

- 1. *Triangulina sanpetrensis* (Cramer) Fensome *et al.* 1990. DW 96, FS-1, M47\2.**
- 2. *Veryhachium* cf. *europaeum* Stockmans & Williere 1960. DW 96, FS-1, R64\4.**
- 3. *Visbysphaera* cf. *oligofurcatum* (Eisenack) Lister 1970. DW 96, FS-1, B49\1.**
- 4. *Visbysphaera microspinoso* var. C. DW 96, FS-1, V44\3.**
- 5. *Visbysphaera microspinoso* var. C. DW 96, FS-1, E32\2.**
- 6. Acritarch Form G sp. 1. DW 97, FS-4, P29\4.**
- 7. *Visbysphaera microspinoso*? var. B. DW 96, FS-2, V21\4.**
- 8. *Visbysphaera microspinoso*? var. B. DW 96, FS-2, W24\3.**
- 9. Acritarch Form G. DW 96, FS-2, K24\2.**
- 10. Acritarch Form U. DW 96, FS-2, U25\1.**
- 11. Acritarch Form U. DW 96, FS-2, X26\2.**
- 12. *Cymatiosphaera* sp. DW 96, FS-1, R59\4.**
- 13. *Cymatiosphaera* sp. DW 97, FS-4, V24\4.**
- 14. Acritarch Form L. DW 97, FS-4, P33\2, X550.**



**Plate 124.**

**Chitinozoa from the Lmhaifid Formation or the Assa Formation. The lithostratigraphic position of the samples from which this assemblage has been recovered is in question. The macrofauna present indicates a Siegenian (*yukonensis* Zone) age.**

- 1. *Ancyrochitina ancyrea* (Eisenack) Eisenack 1955. DW 97, FS-4, Y20\3.**
- 2. *Ancyrochitina ancyrea?* (Eisenack) Eisenack 1955. DW 97, FS-5, Y7\3.**
- 3. *Ancyrochitina* sp. DW 97, FS-4, P15\4.**
- 4. *Ancyrochitina fragilis* var. A. DW 96, FS-2, R16\2.**
- 5. *Ancyrochitina fragilis* var. A. DW 96, FS-1, G9\2.**
- 6. *Ancyrochitina tormentosa* Taugourdeau & Jekhowsky 1960. DW 97, FS-5, H14\1.**
- 7. *Ancyrochitina tormentosa?* Taugourdeau & Jekhowsky 1960. DW 97, FS-5, V15\2.**
- 8. *Ancyrochitina tumida* Taugourdeau & Jekhowsky 1960. DW 96, FS-1, B62\4.**



1



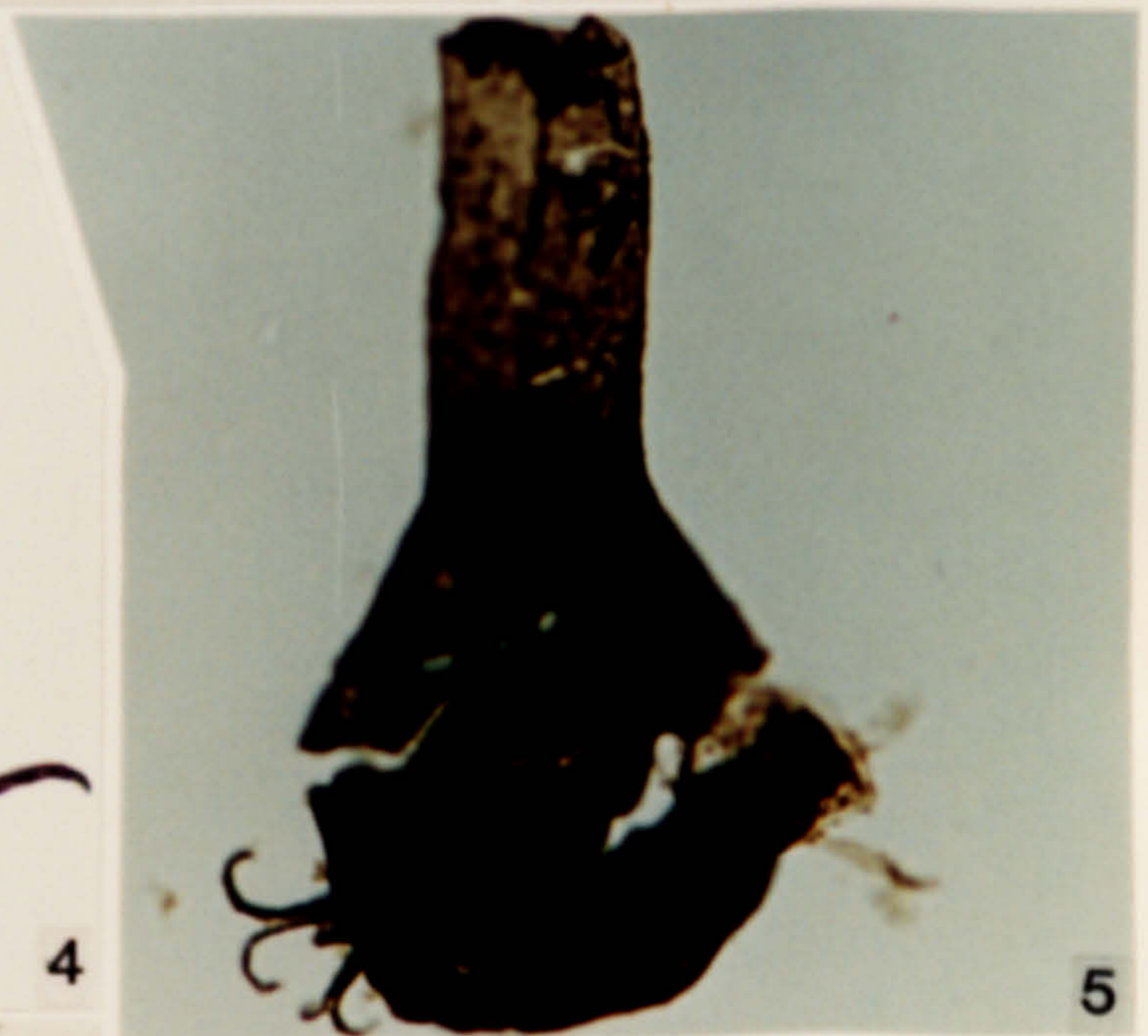
2



3



4



5



6



7

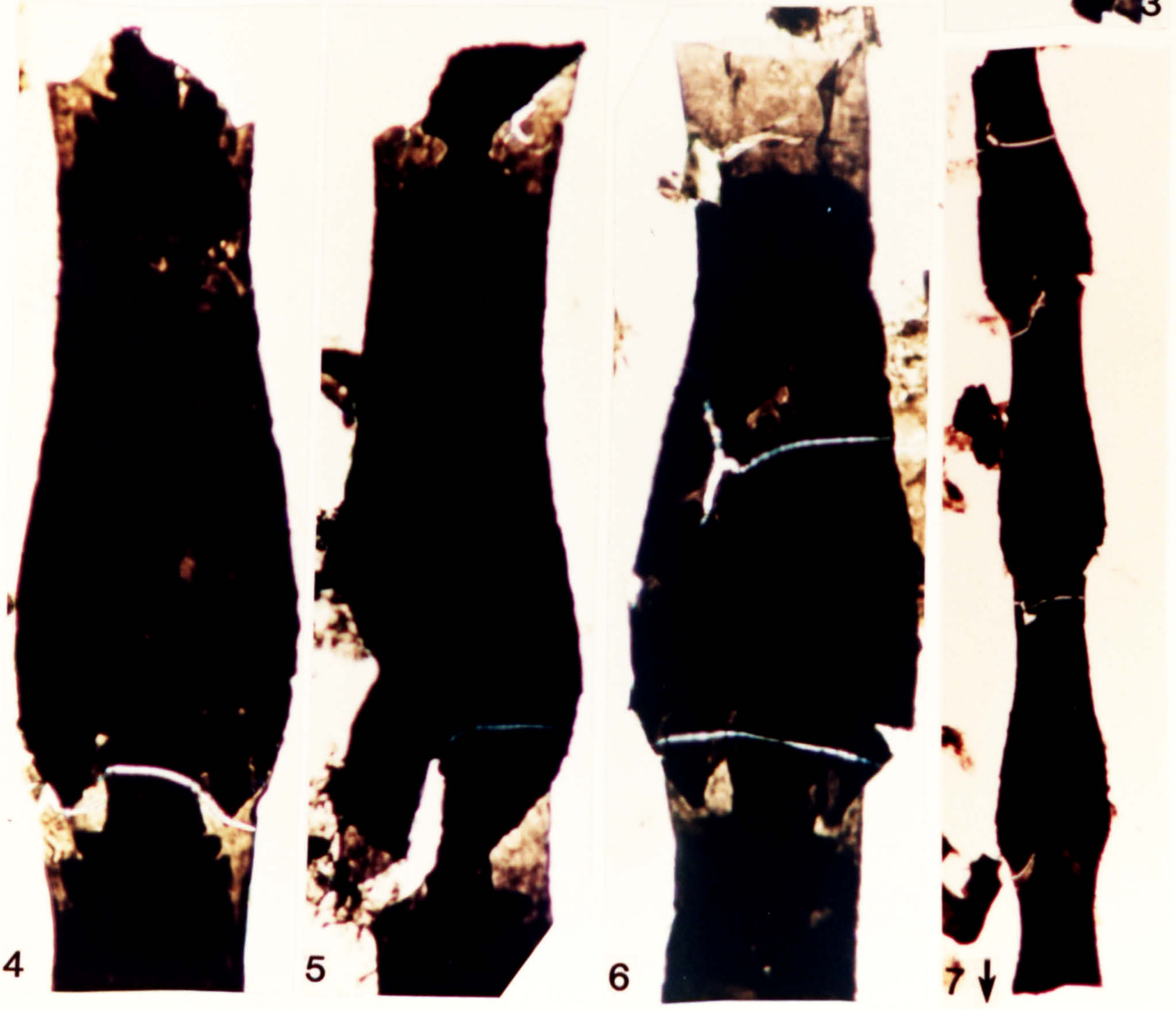
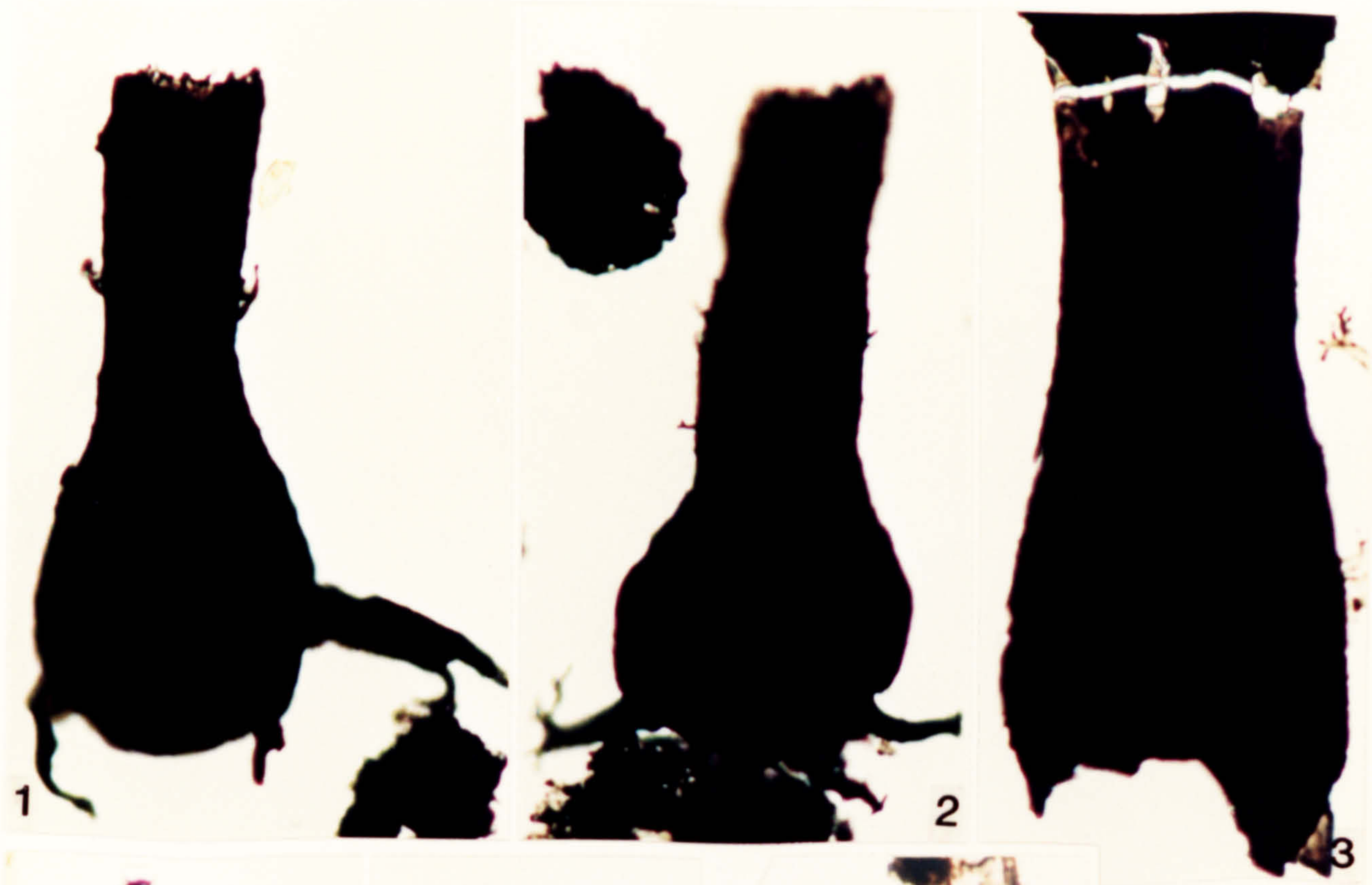


8

**Plate 125.**

**Chitinozoa from the Lmhaifid Formation or the Assa Formation. The lithostratigraphic position of the samples from which this assemblage has been recovered is in question. The macrofauna present indicates a Siegenian (*Wilonensis* Zone) age.**

- 1. *Angochitina ceratophora?* Eisenack 1964. DW 97, 1-2, L21\4.**
- 2. *Angochitina ceratophora?* Eisenack 1964. DW 97, 1-1, D18\3.**
- 3. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. DW 97, FS-4, N34\3.**
- 4. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. DW 96, FS-2, T17\3.**
- 5. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. DW 97, FS-4, L24\1.**
- 6. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. DW 96, FS-1, Q62\4.**
- 7. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. DW 96, FS-1, B62\3, X230.**



**Plate 126.**

Chitinozoa from the Lmhaifid Formation or the Assa Formation. The lithostratigraphic position of the samples from which this assemblage has been recovered is in question. The macrofauna present indicates a Siegenian (*yukonensis* Zone) age.

1. *Cingulochitina serrata* (Taugourdeau & Jekhowsky) Paris 1981. DW 97, FS-5, D9\2.
2. *Cingulochitina cf. serrata* (Taugourdeau & Jekhowsky) Paris 1981. DW 97, FS-5, W32\4.
3. *Cingulochitina cf. serrata* (Taugourdeau & Jekhowsky) Paris 1981. DW 97, FS-4, L24\2, X230.
4. *Cingulochitina cf. serrata* (Taugourdeau & Jekhowsky) Paris 1981. DW 97, FS-4, L20\4, X230.
5. *Cingulochitina* sp. 1. DW 97, FS-4, K12\2.
6. *Cingulochitina cf. serrata* (Taugourdeau & Jekhowsky) Paris 1981. DW 97, FS-4, L20\4.
7. *Cingulochitina* sp. 1. DW 97, FS-4, K12\2, X230.

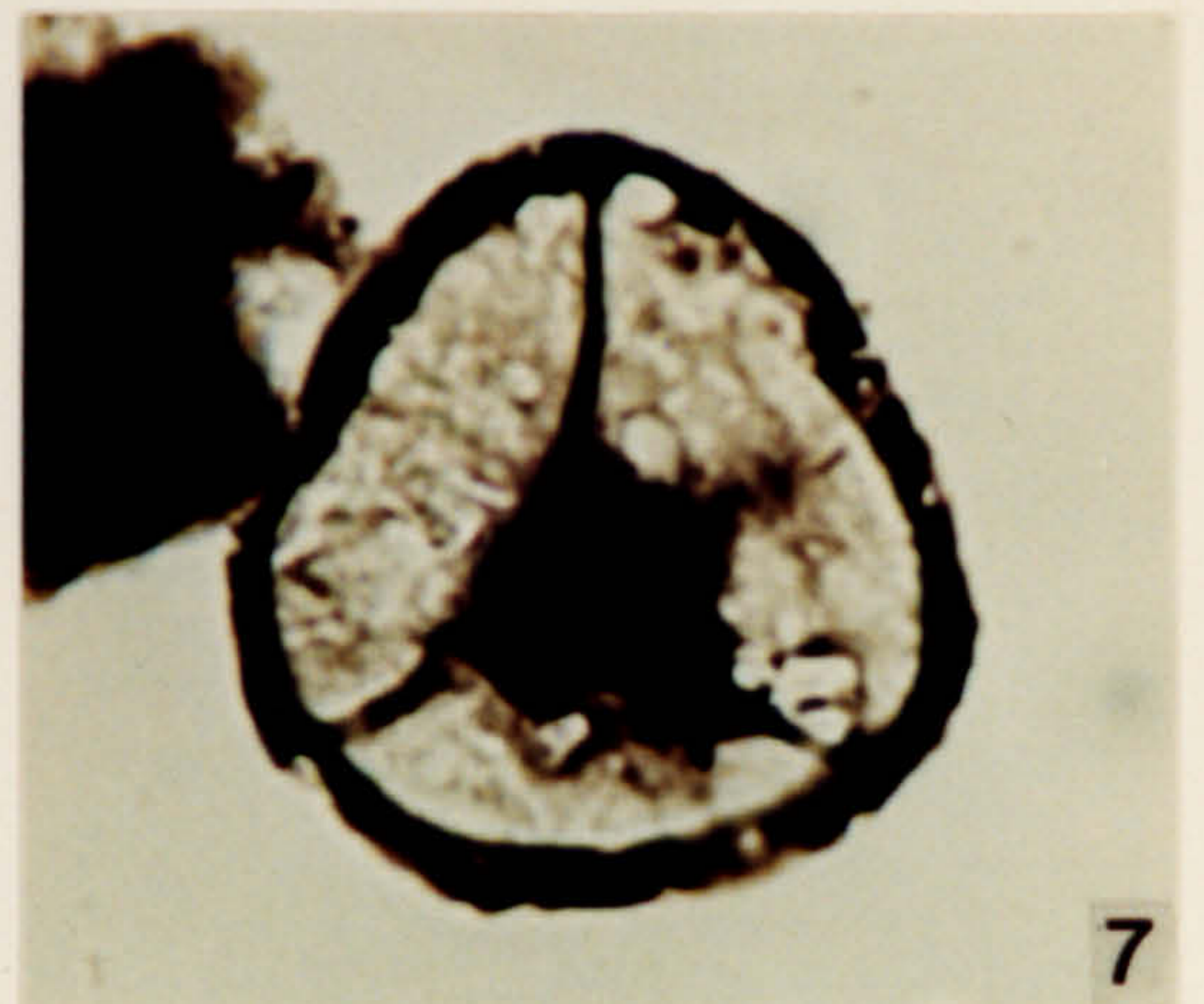




Plate 127.

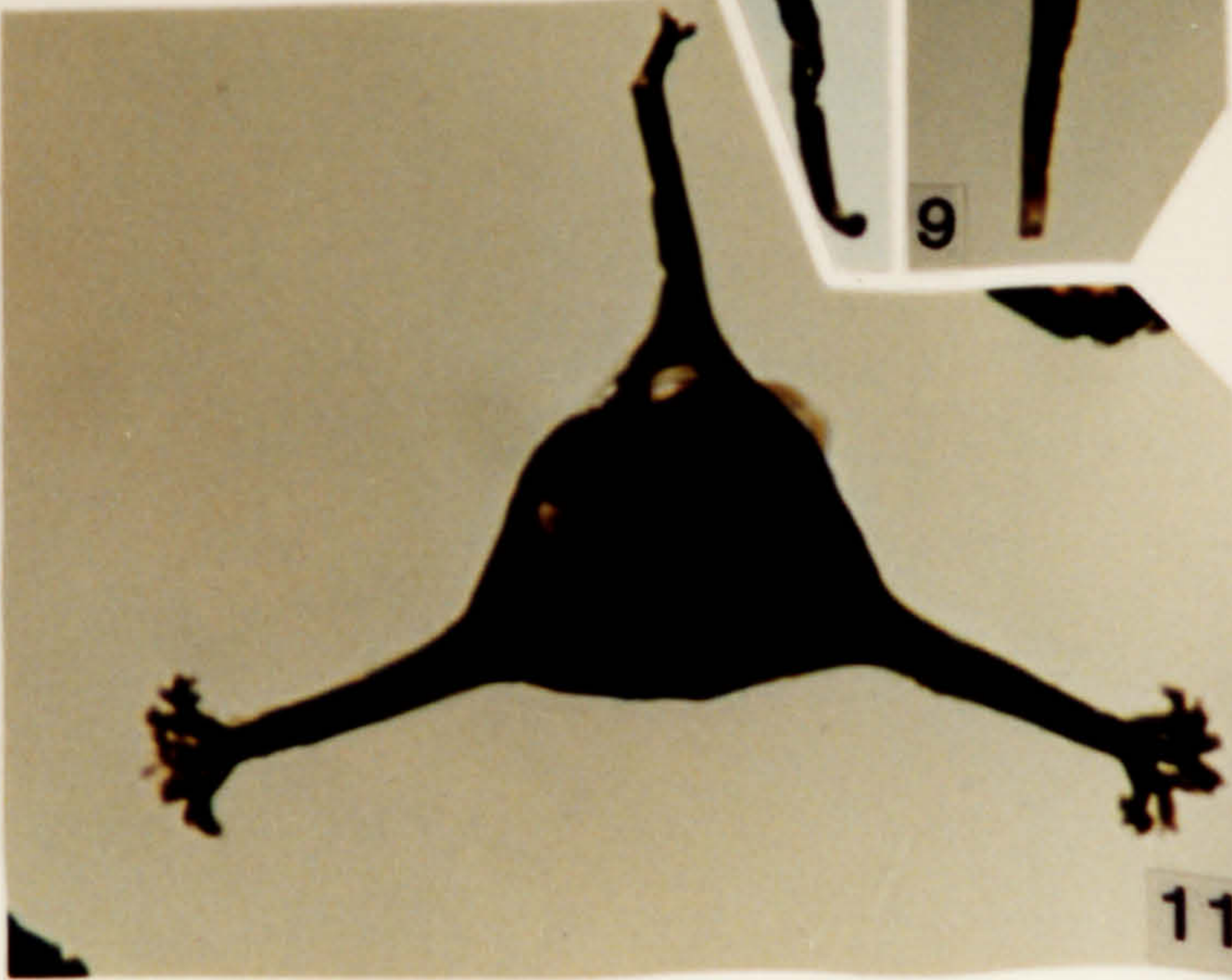
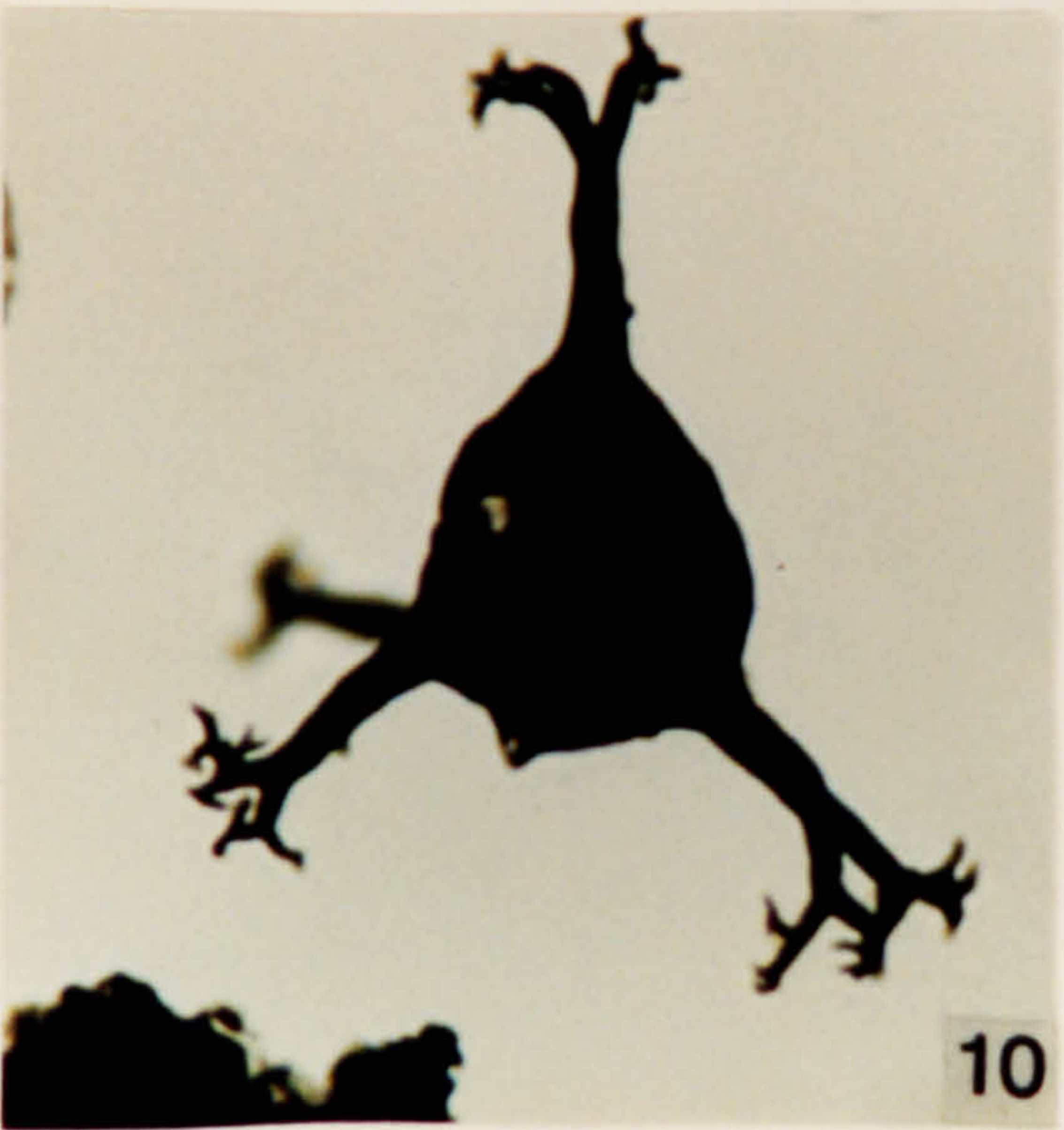
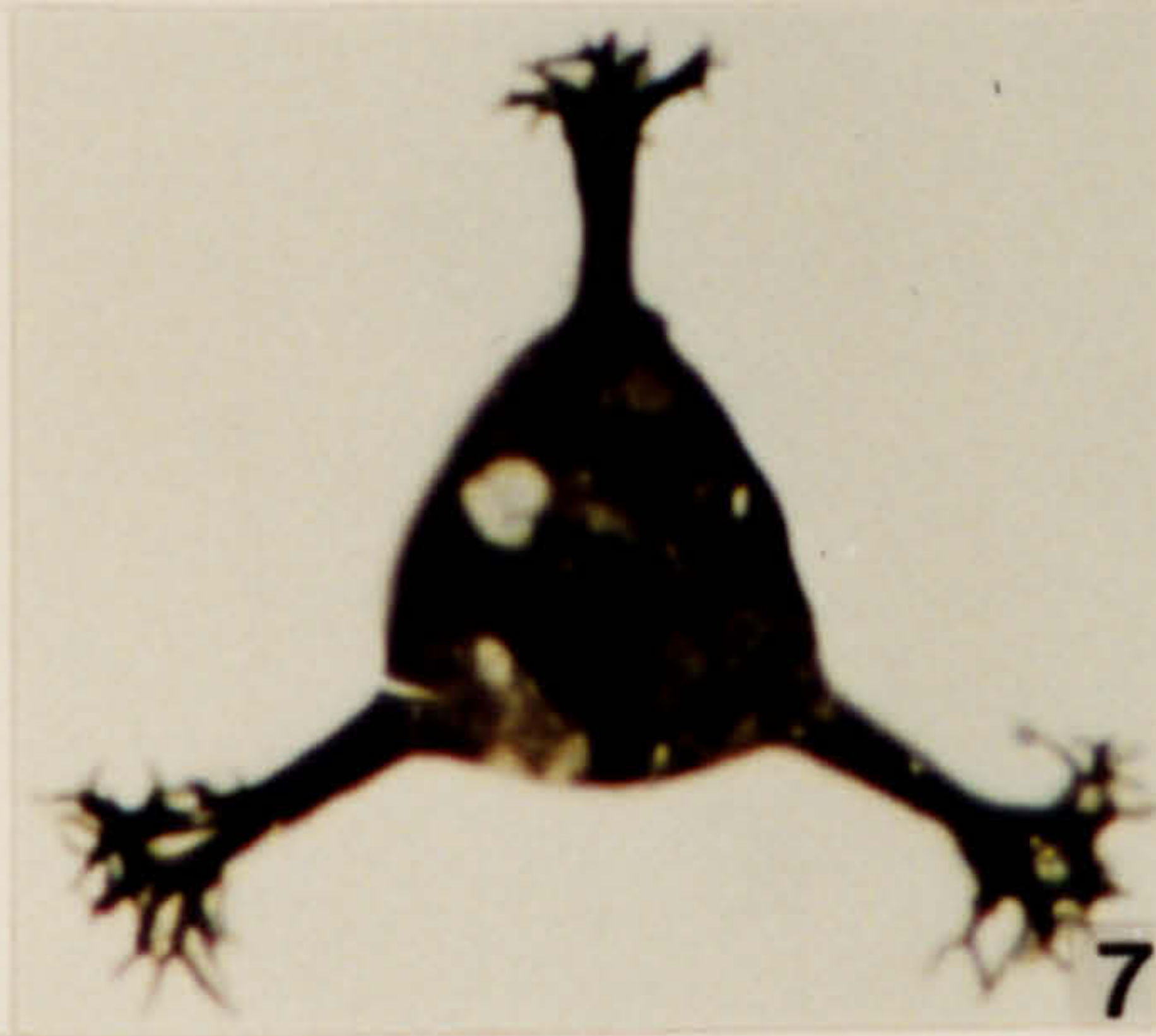
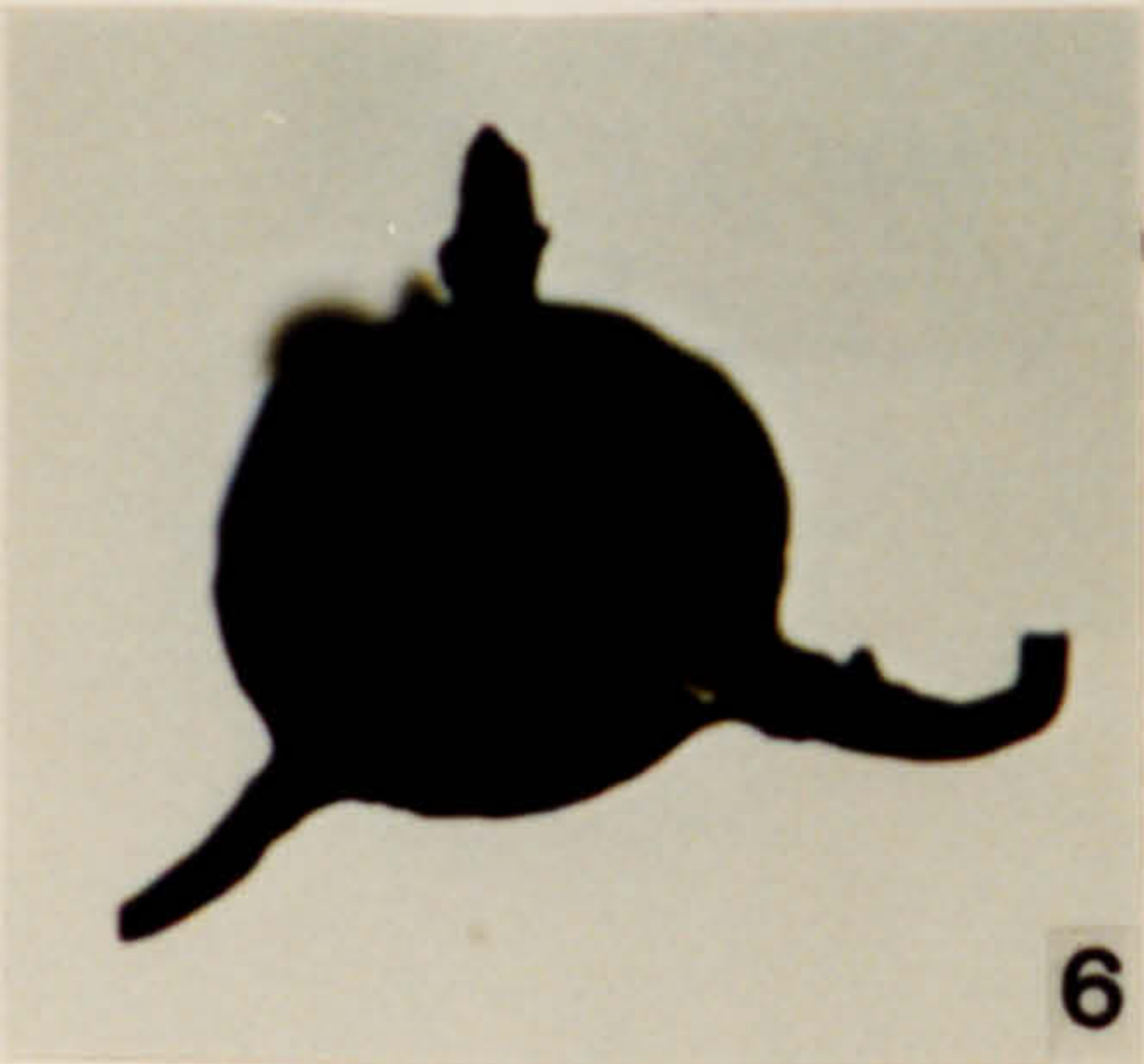
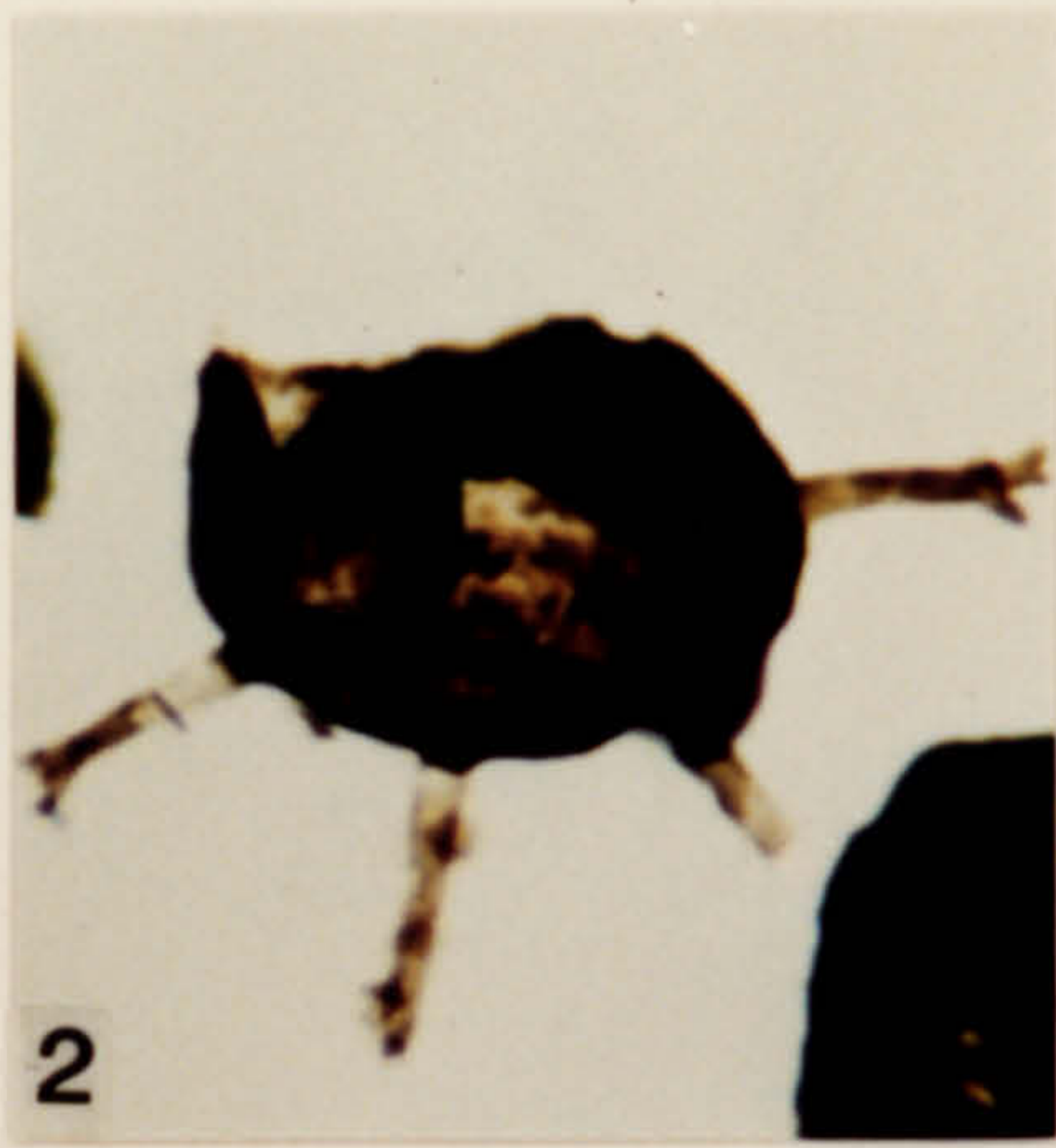
Chitinozoa and miospores from the Lmhaifid Formation or the Assa Formation. The lithostratigraphic position of the samples from which this assemblage has been recovered is in question. The macrofauna present indicates a Siegenian (*yukonensis* Zone) age.

1. *Fungochitina pistilliformis* var. A. DW 96, FS-1, L42\3.
2. *Fungochitina pistilliformis* var. A. DW 96, FS-2, K25\3.
3. *Sphaerochitina?* sp. DW 96, FS-1, L58\4.
4. *Fungochitina pistilliformis* var. *lata* (Taugourdeau & Jekhowsky) Taugourdeau 1966. DW 97, FS-5, S26\1.
5. *Plectochitina* sp. DW 97, 1-1, H17\1.
6. *Pterochitina perivelata?*. DW 97, FS-5, V14\2.
7. *Retusotriletes* sp. DW 97, FS-5, M24\1.



Acritarchs from the Lmhaifid Formation, Gedinnian in age.

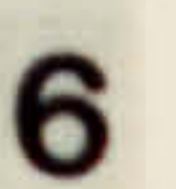
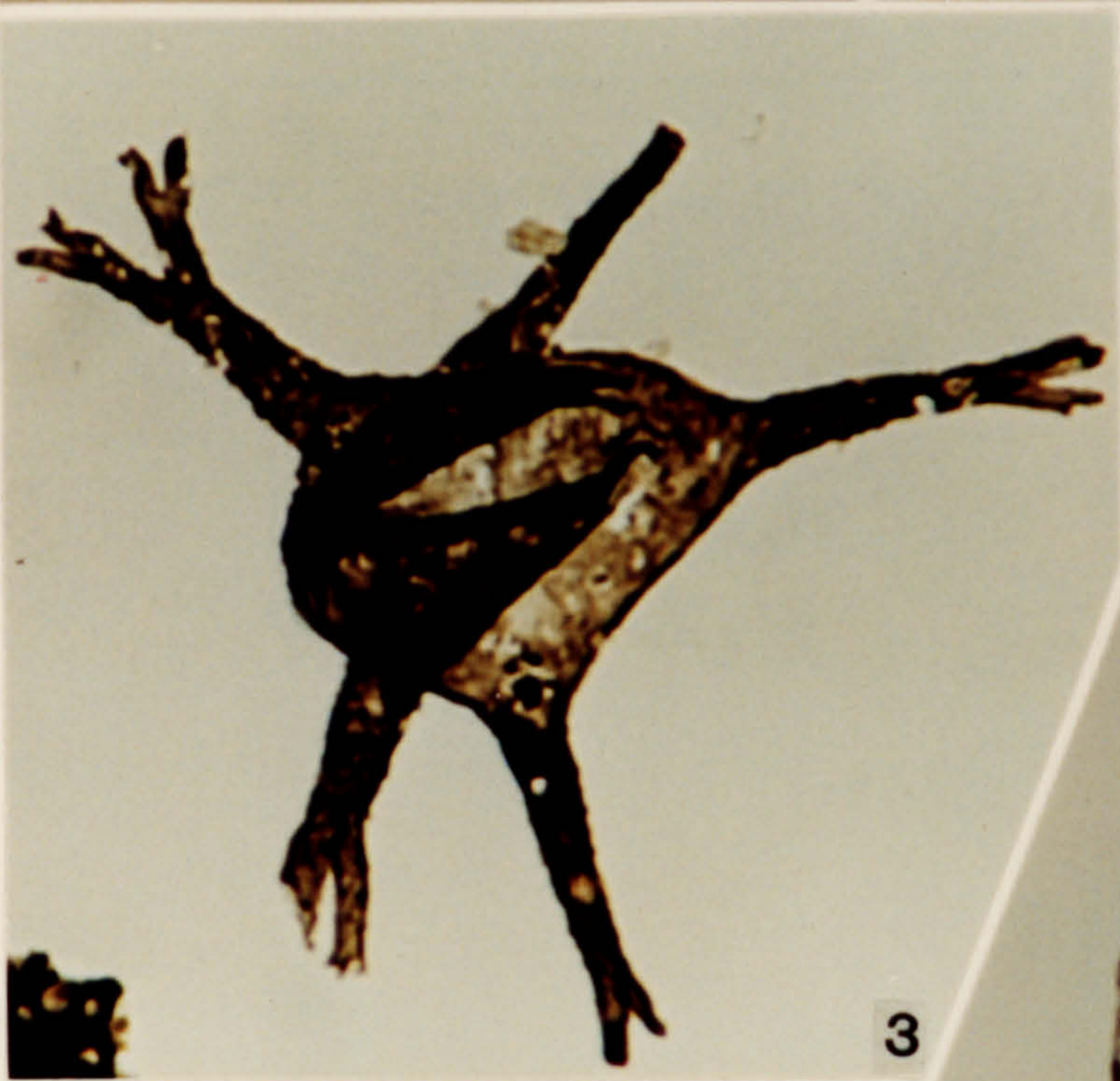
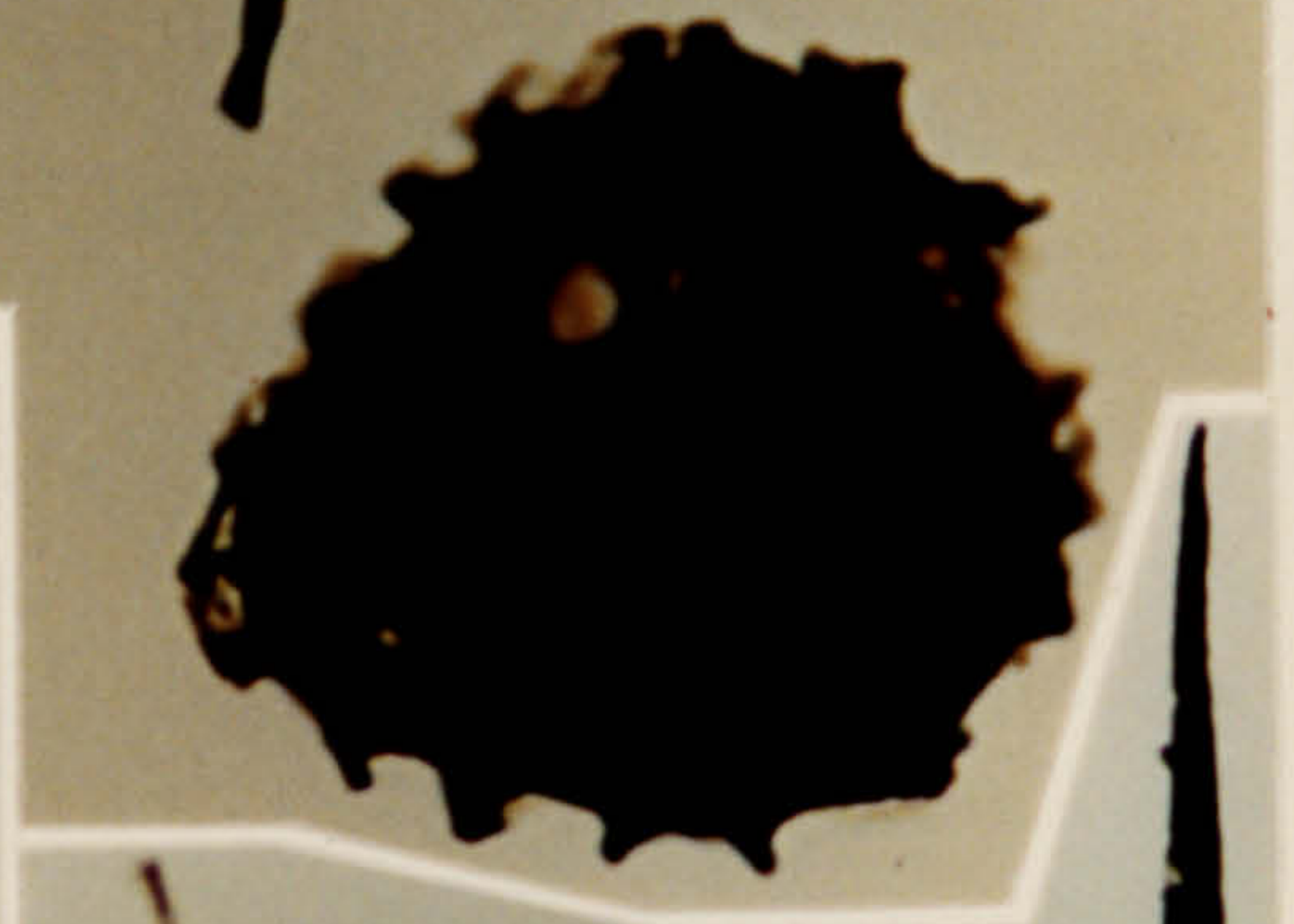
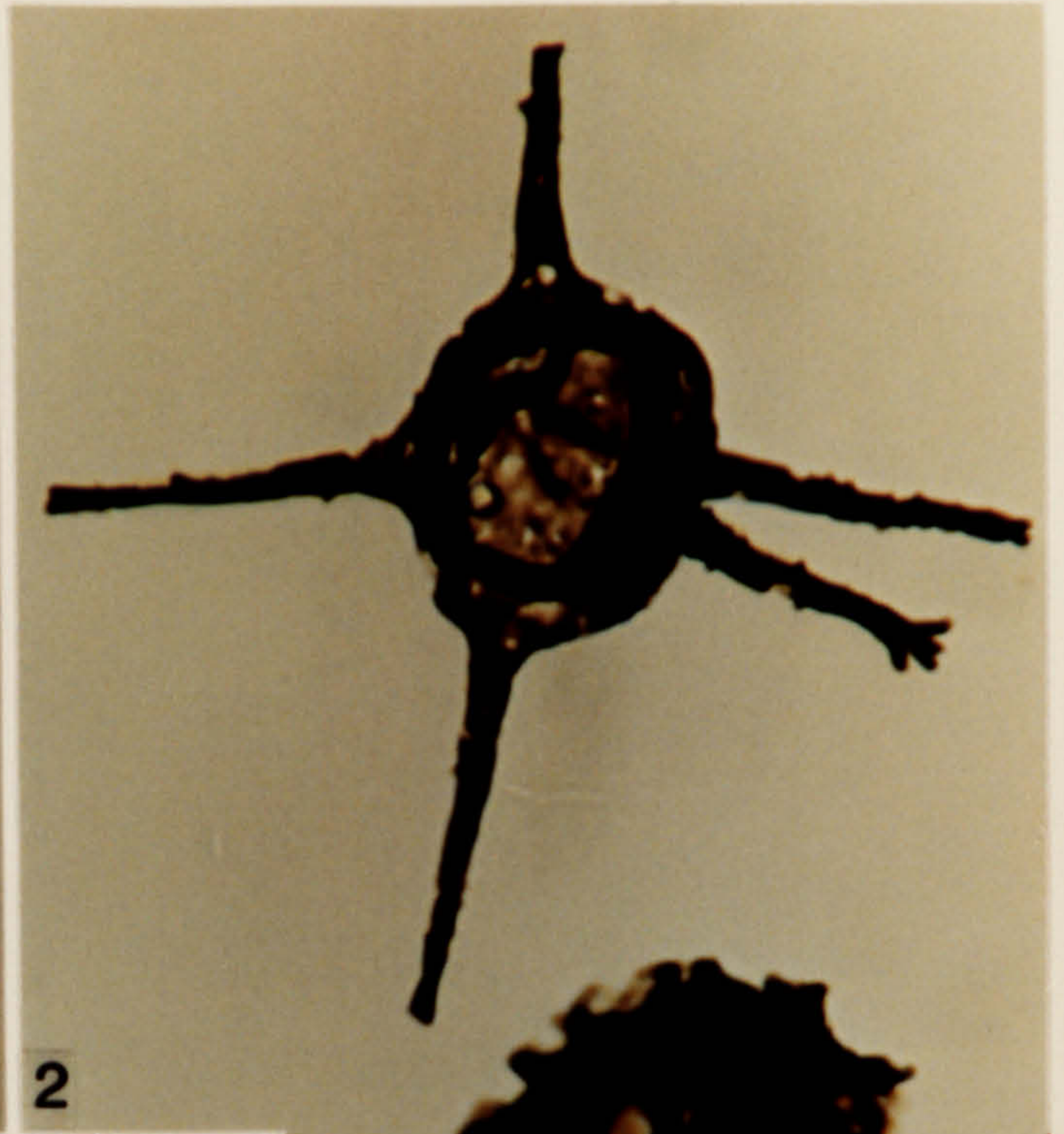
1. *Ammonidium* sp. OD 4215, 1-2, R15\1.
2. *Cymbosphaeridium pilar* var. *scabratum*? Cramer 1970. OD 4125, S-4, K33\3.
3. *Cymbosphaeridium pilar* var. *pilar*? Cramer 1964. OD 4215, S-4, Y19\1.
4. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. OD 4214.5-4271, S-3, O25\3.
5. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. OD 4215.4, FS-1, X30\4.
6. *Candelasphaeridium* cf. *insolitum*? Deunff 1978. OD 4215, S-1, L16\1.
7. *Dateriocradus lindus* (Cramer & Diez) comb. nov. OD 4215, 1-1, Q7-4.
8. *Dactylofusa striatifera* var. *striatifera* (Cramer) Fensome *et al.* 1990. OD 4214.5-4271, S-3, M35\3.
9. *Dactylofusa striatifera* var. *striatifera* (Cramer) Fensome *et al.* 1990. OD 4215, 2-2, Q11\2.
10. *Dateriocradus lindus* (Cramer & Diez) comb. nov. OD 4215, 1-2, N38\2.
11. *Dateriocradus lindus* (Cramer & Diez) comb. nov. OD 4214.5-4217, FS-1, T9\3.



**Plate 129.**

**Acritarchs from the Lmhaifid Formation, Gedinnian in age.**

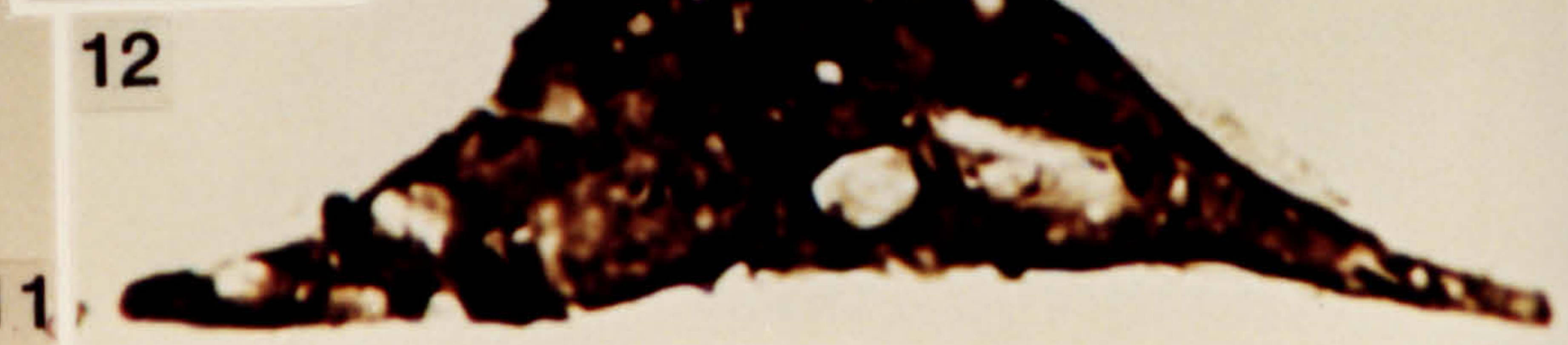
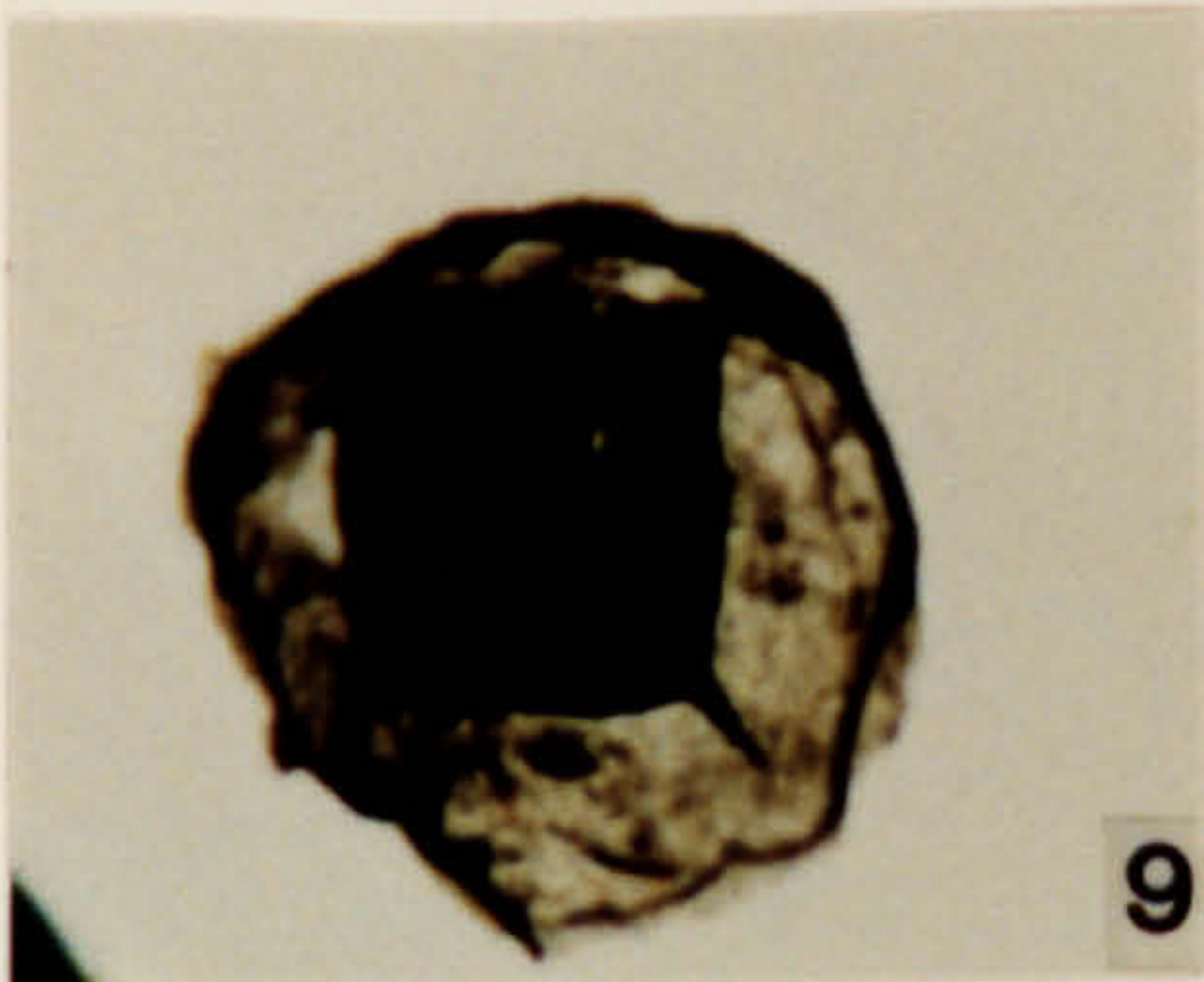
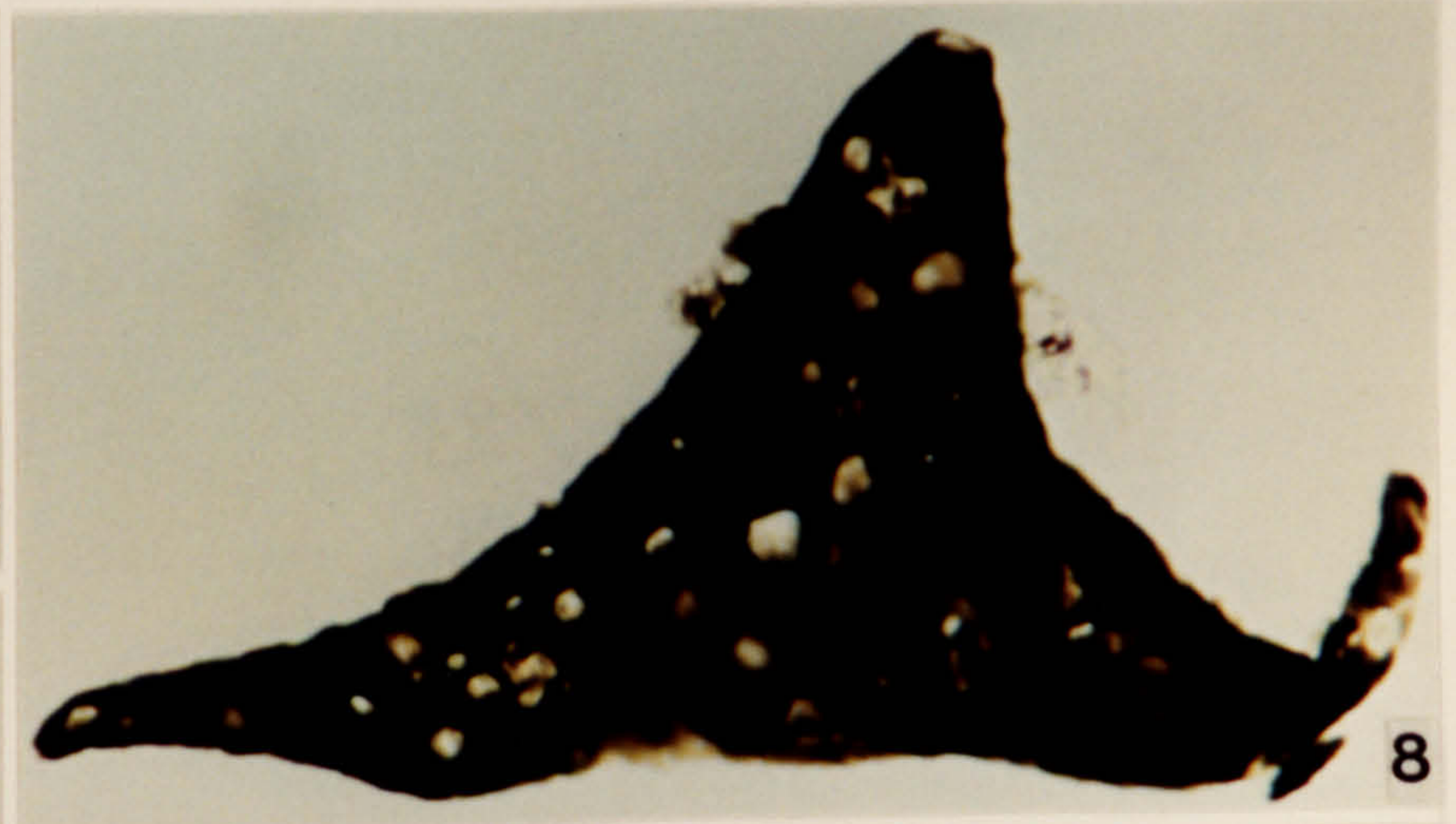
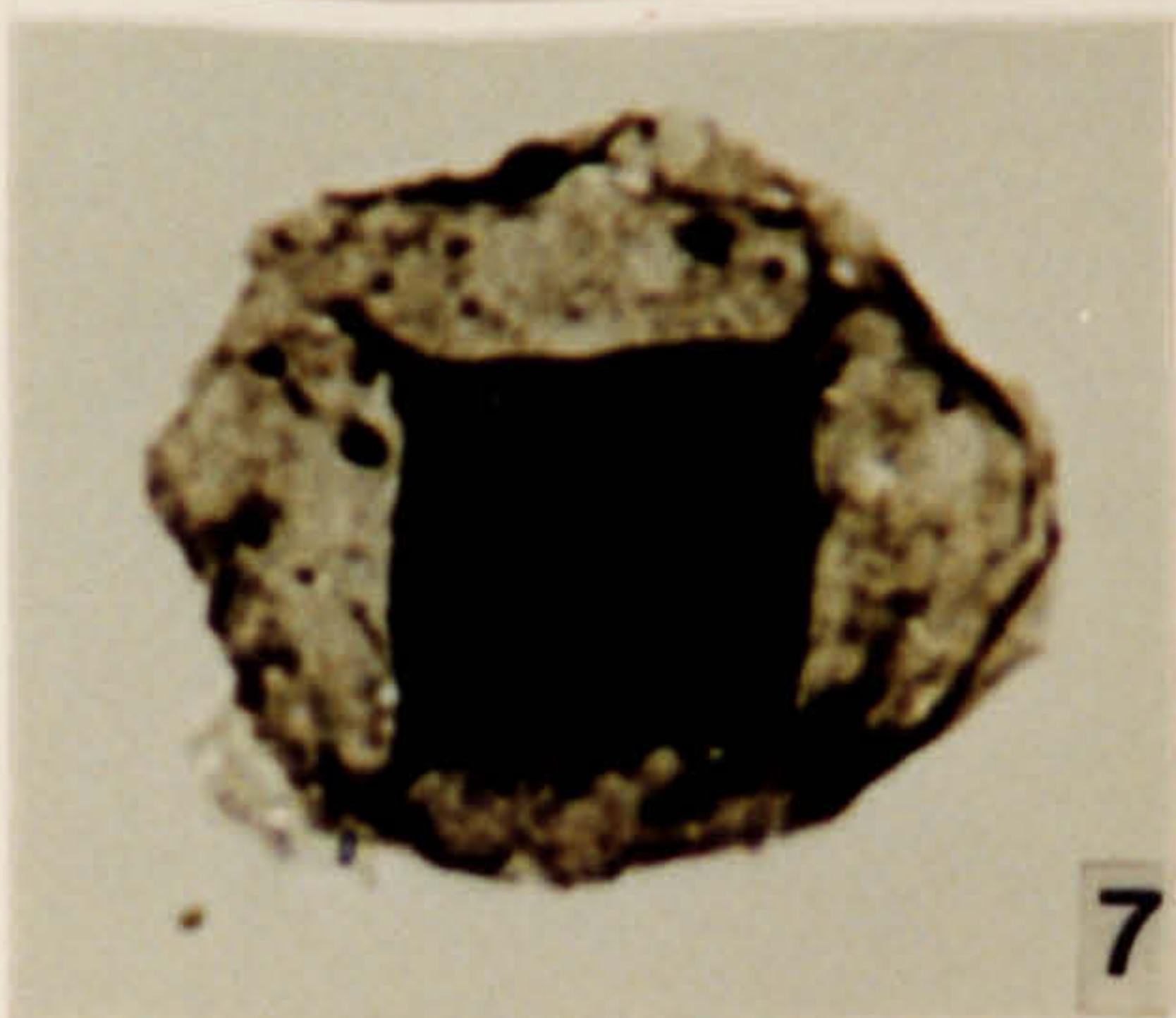
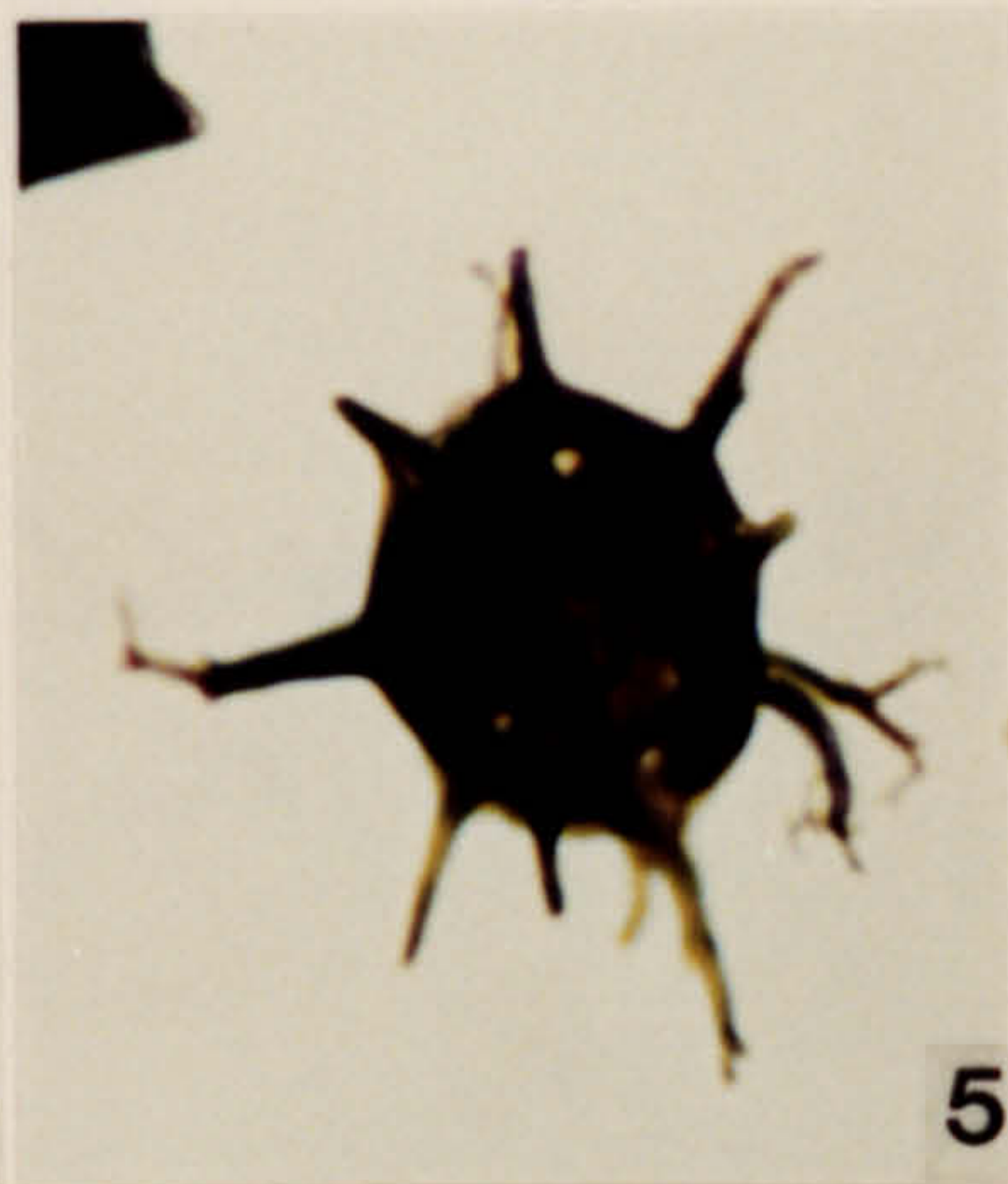
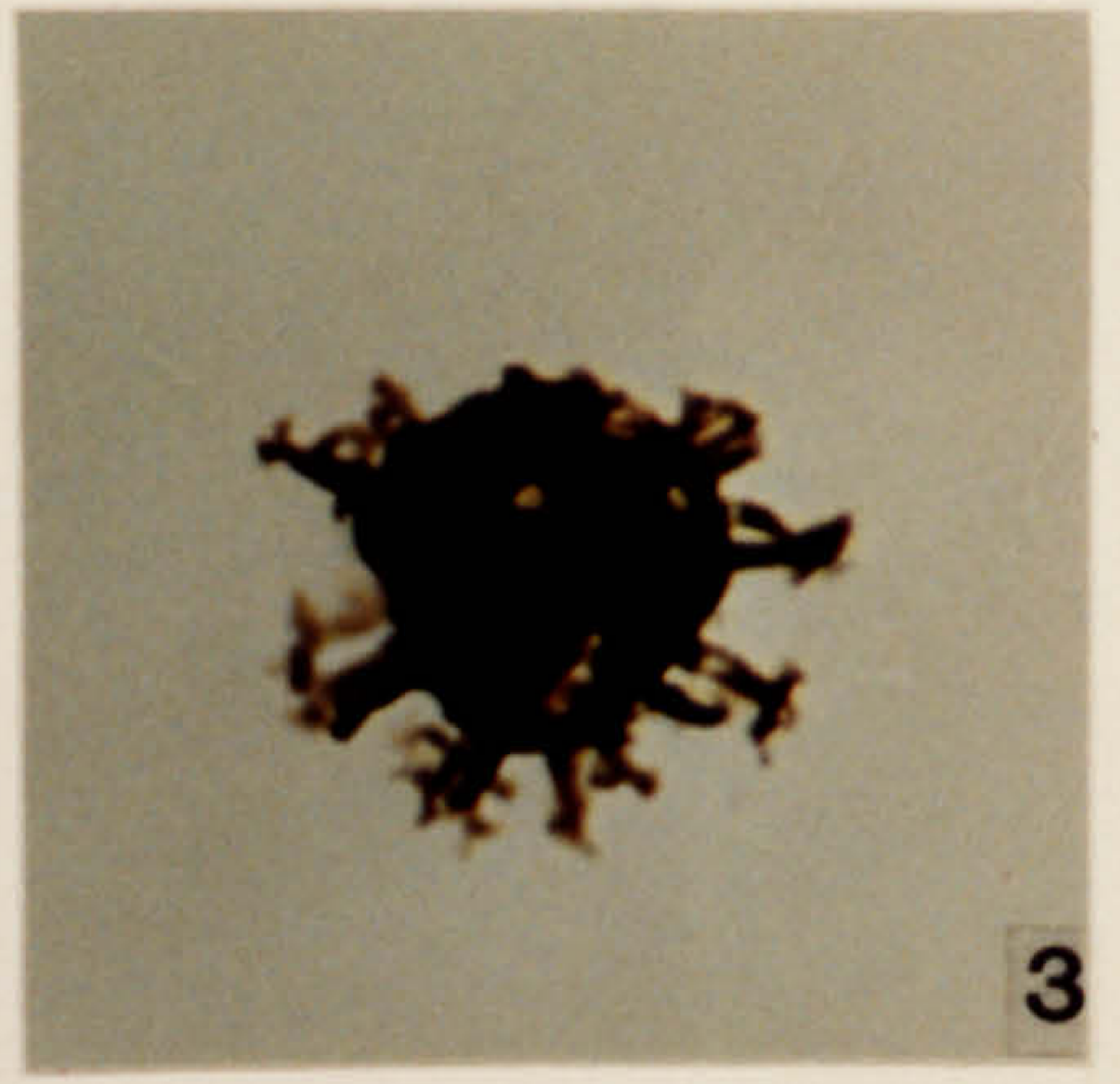
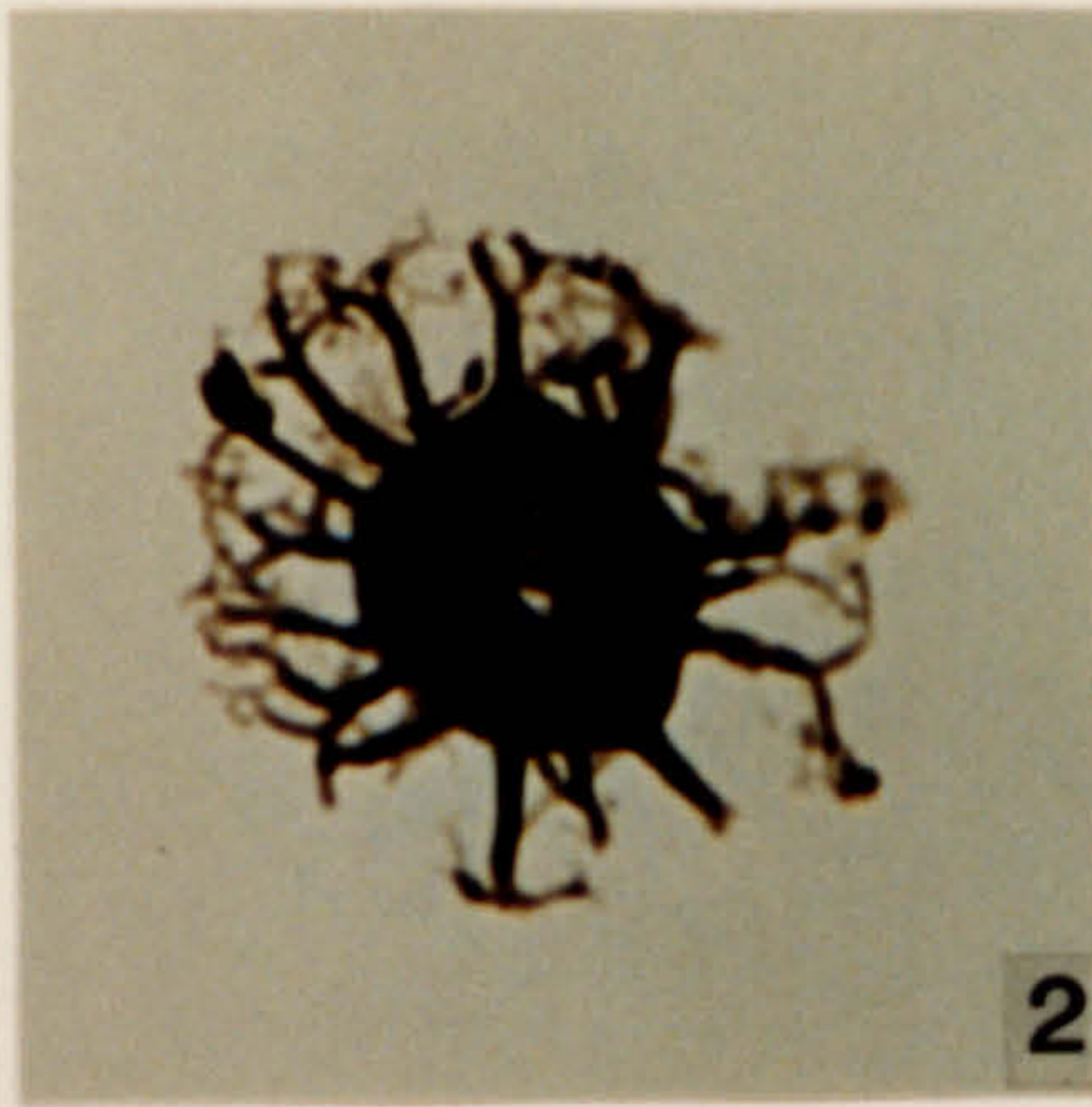
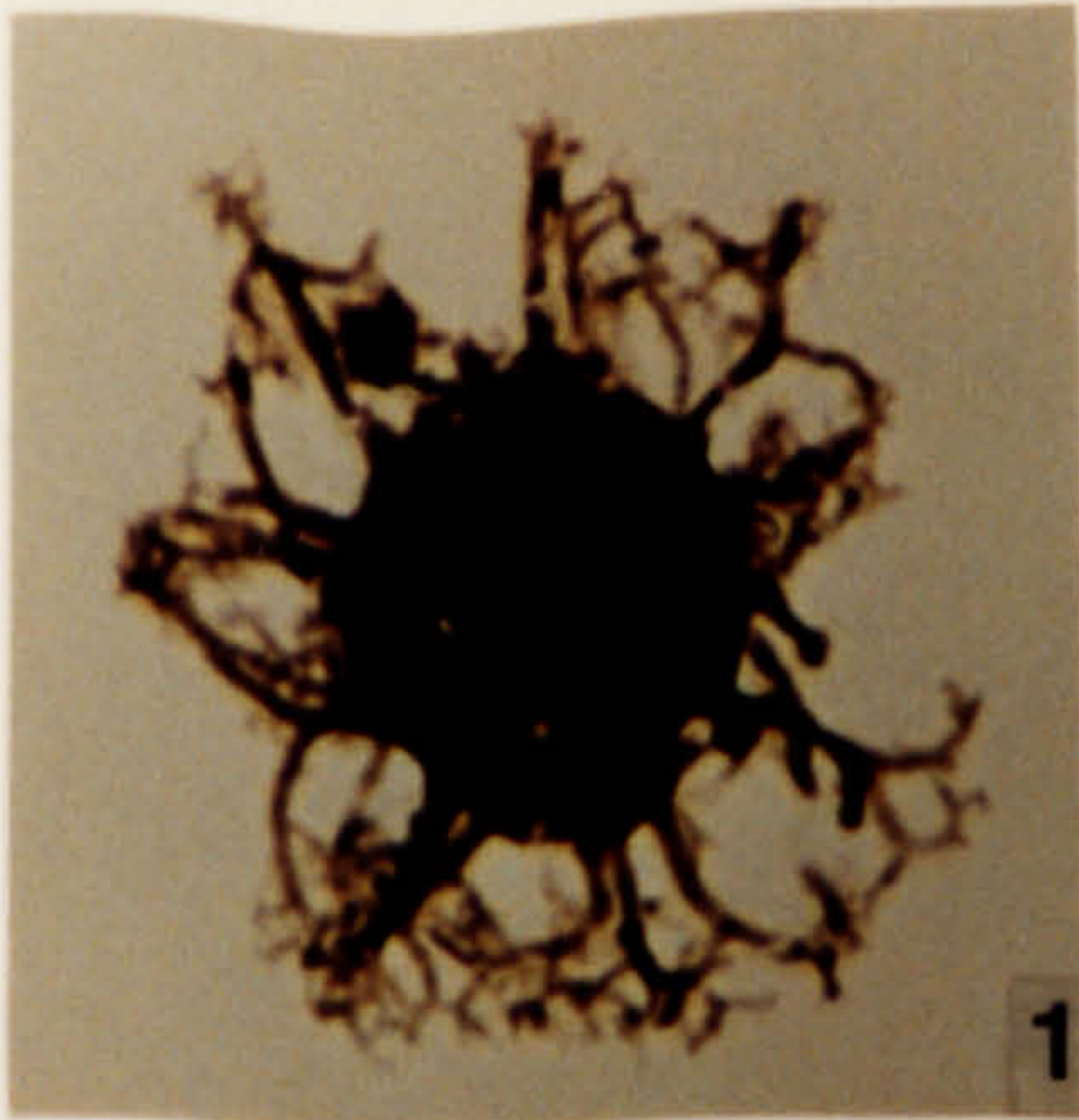
1. *Diexallophasis denticulata* (Stockmans & Williere)Loeblich 1970. OD 4215.4, S-1, S23\4.
2. To the north *Diexallophasis denticulata* (Stockmans &Williere) Loeblich 1970.  
To the south *Brochotrilete?* sp. OD 4214.5-4217, S-3,S34\1.
3. *Diexallophasis remota* var. *rabiosum* (Cramer) comb. nov.OD 4215, 2-2, G31\4.
4. *Florisphaeridium* sp. OD 4215, S-4, Q28\3.
5. *Leiofusa* sp. OD 4215, 1-2, U37\2.
6. *Leiofusa estrecha* Cramer 1964. OD 4215, 2-2, C10\4.



**Plate 130.**

**Acritarchs from the Lmhaifid Formation, Gedinnian in age.**

1. *Multiplicisphaeridium lobeznum* (Cramer) Eisenack, Cramer & Diez 1973. OD 4214.5-4217, FS-1, H2\1.
2. *Multiplicisphaeridium lobeznum* (Cramer) Eisenack, Cramer & Diez 1973. OD 4215, S-1, D16\1.
3. *Multiplicisphaeridium raspum* (Cramer) Eisenack, Cramer & Diez 1973. DW 4215.4, S-4, E6\4.
4. *Multiplicisphaeridium ramispinosum* Staplin 1961. DW 4215.4, S-4, F12\1.
5. *Multiplicisphaeridium ramispinosum* Staplin 1961. DW 4215.4, S-4, H25\4.
6. *Ozotobrachion palidodigitatus* (Cramer) Playford 1977. DW 4215, 1-2, N19\3.
7. *Quadraditum fantasticum* Cramer 1964. DW 4215, 1-2, G27\3.
8. *Onondagella deunffii* Cramer 1966. OD 4215.4, S-4, E6\4.
9. *Quadraditum fantasticum* Cramer 1964. DW 4215, 1-1, R36\1.
10. *Quadraditum fantasticum* Cramer 1964. DW 4215, 1-2, E8\3.
11. *Quadraditum fantasticum* Cramer 1964. DW 4215, FS-1, Q41\4.
12. *Onondagella deunffii* Cramer 1966. OD 4215, FS-1, J48\3.

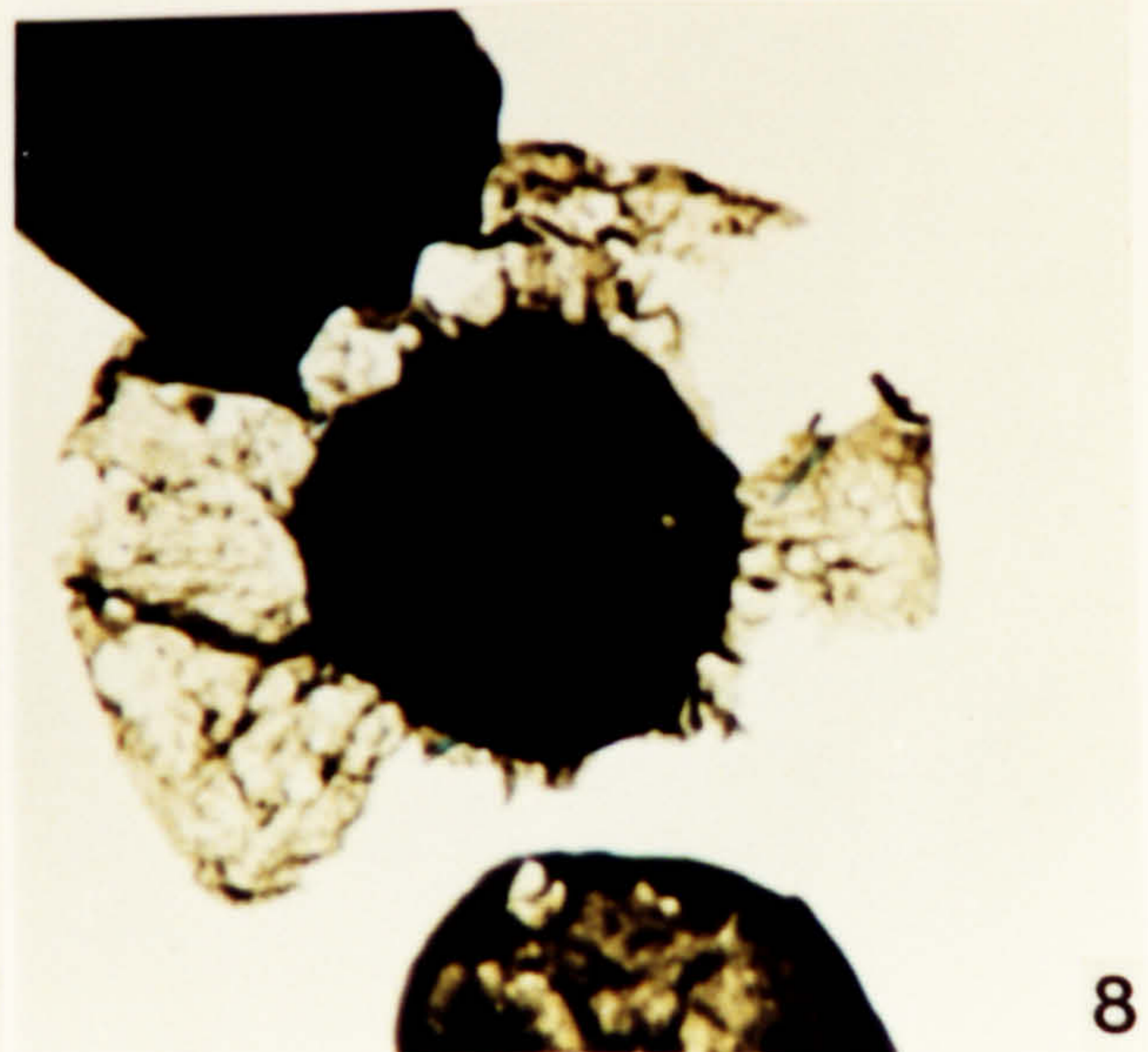
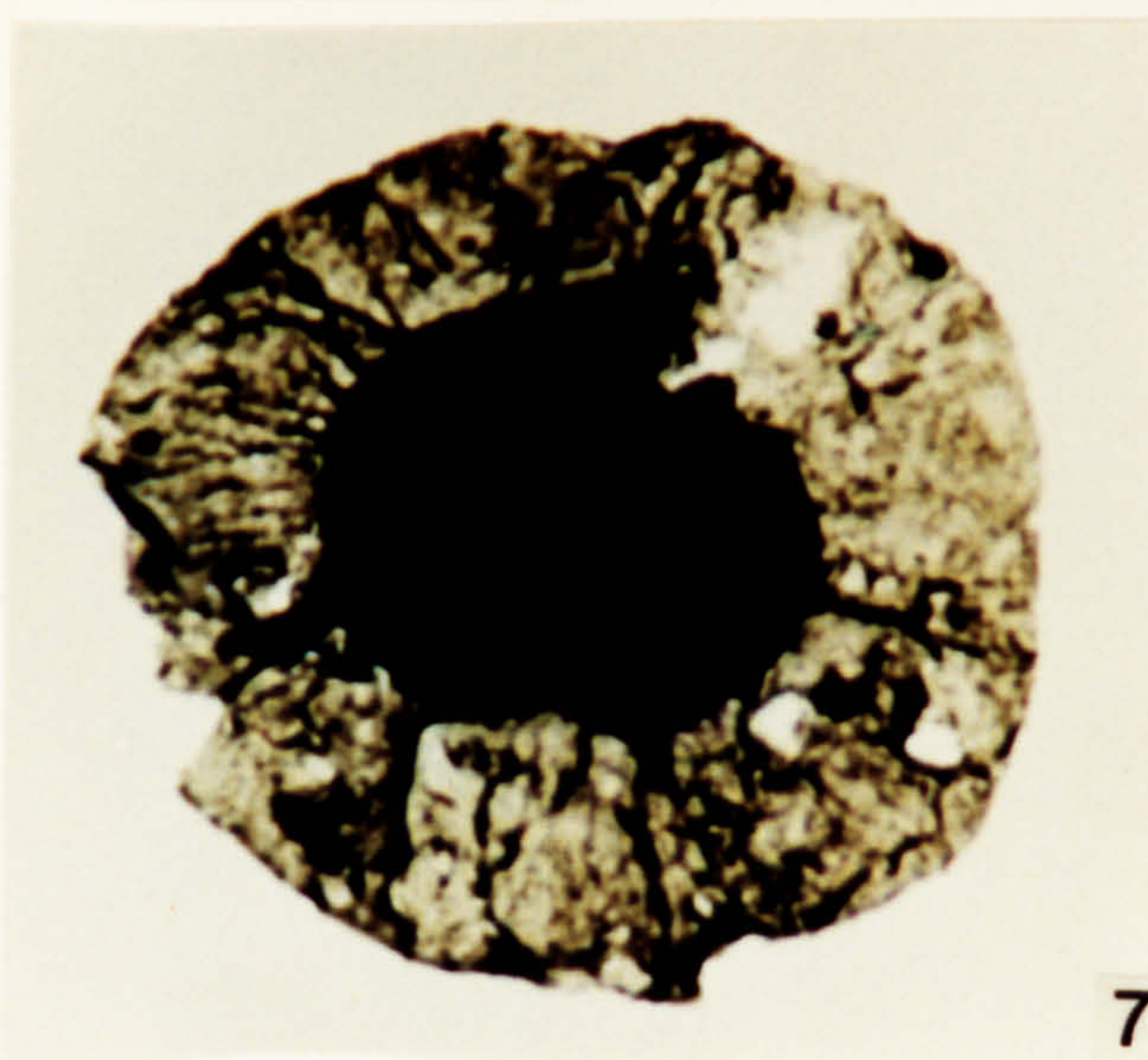
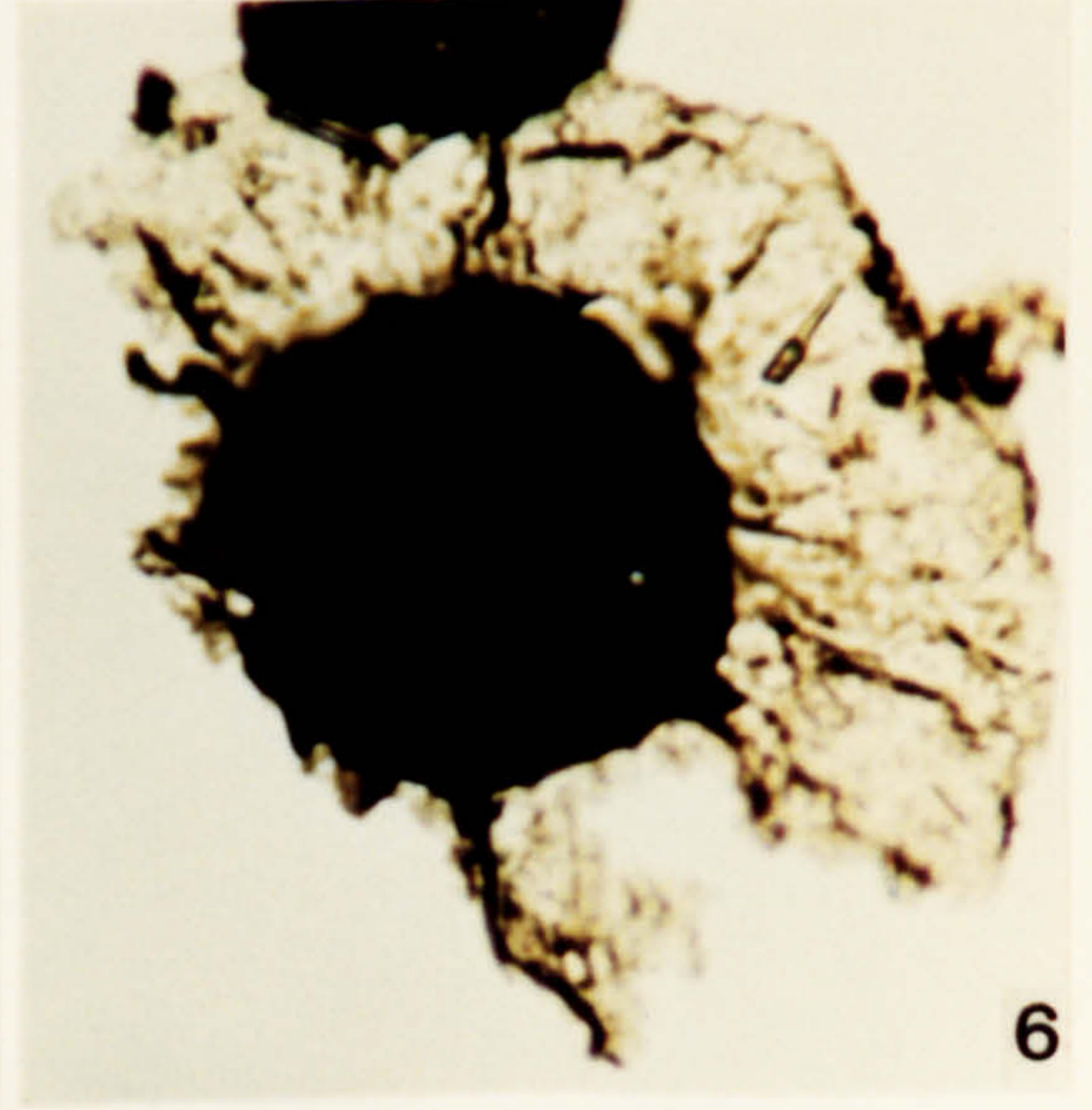
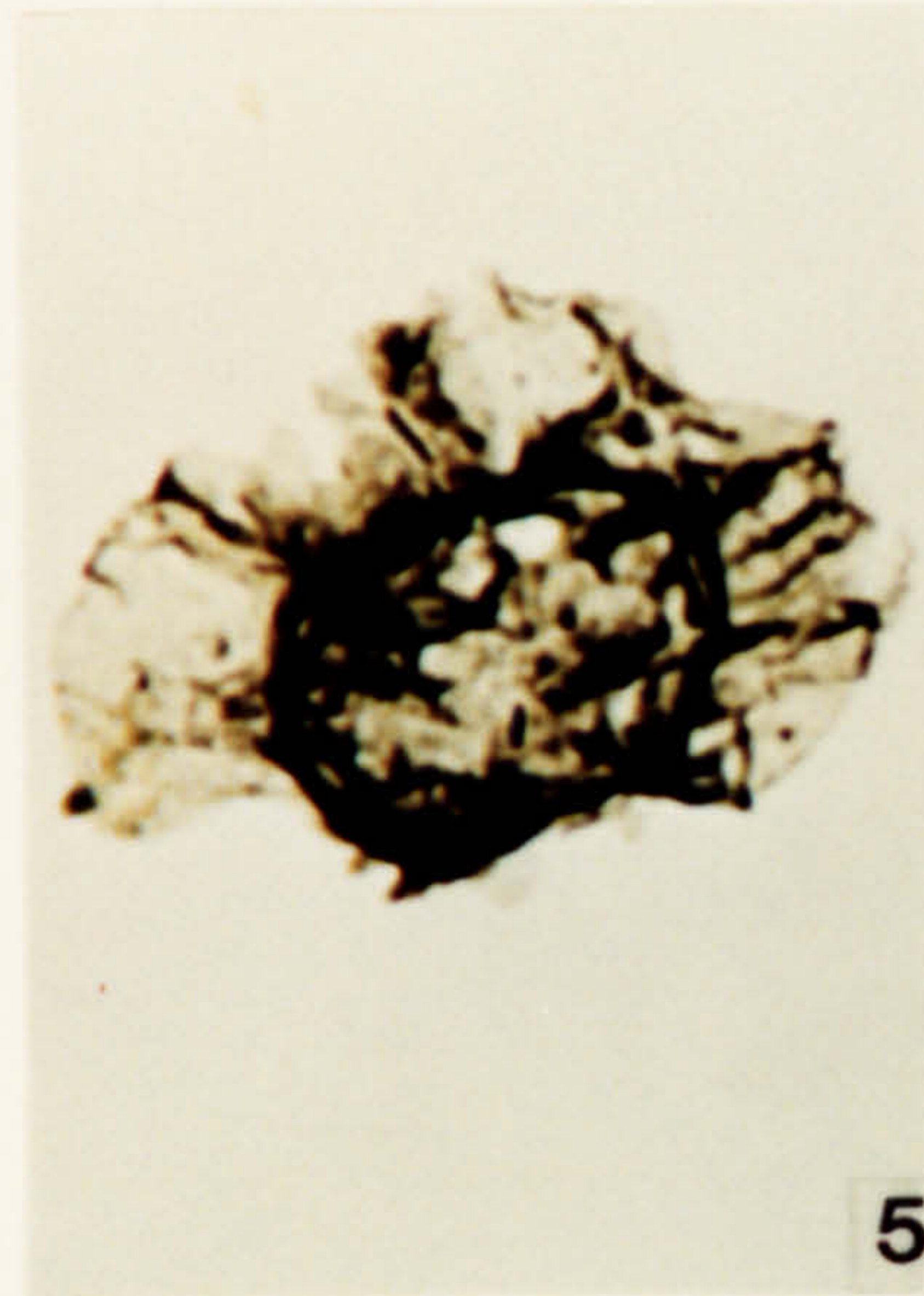
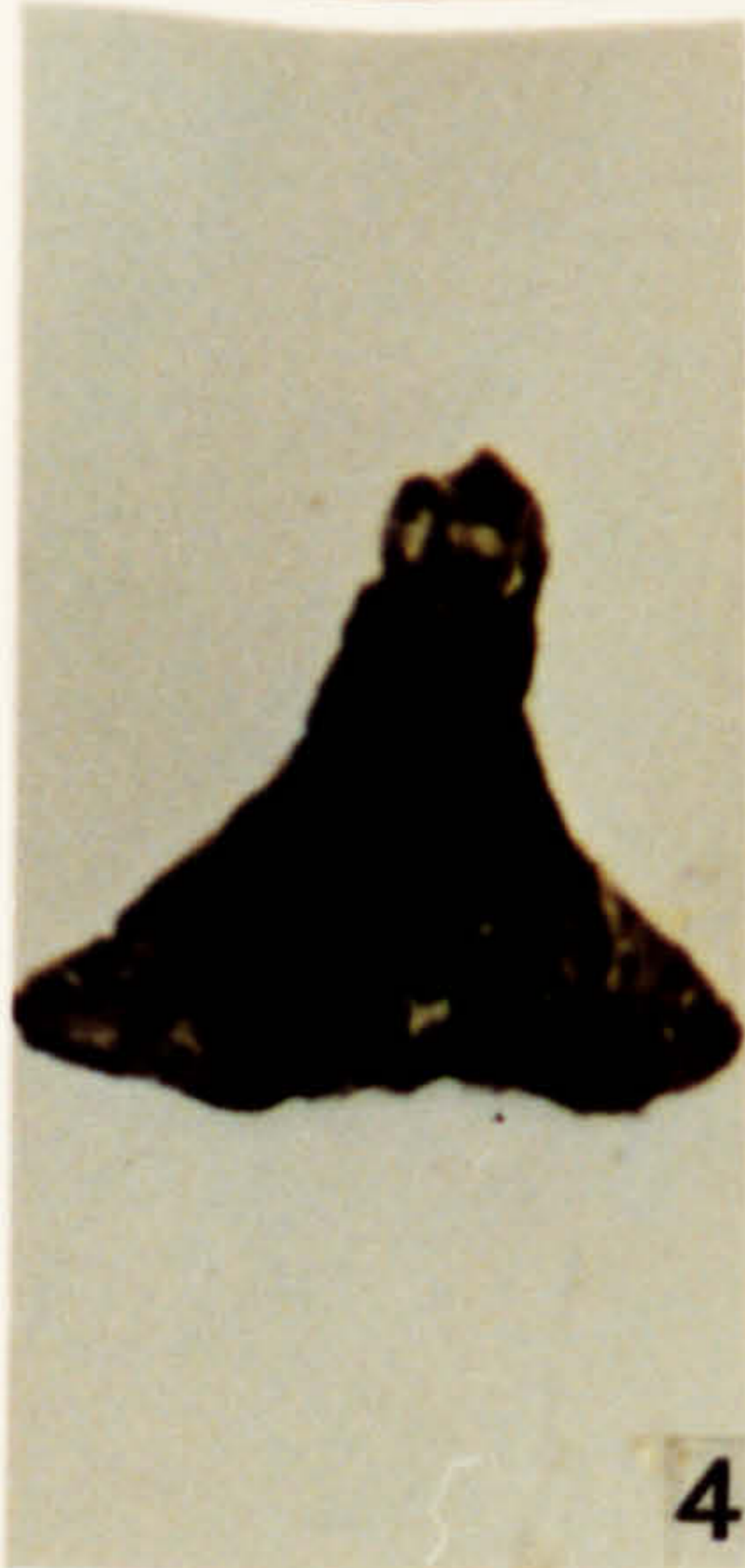
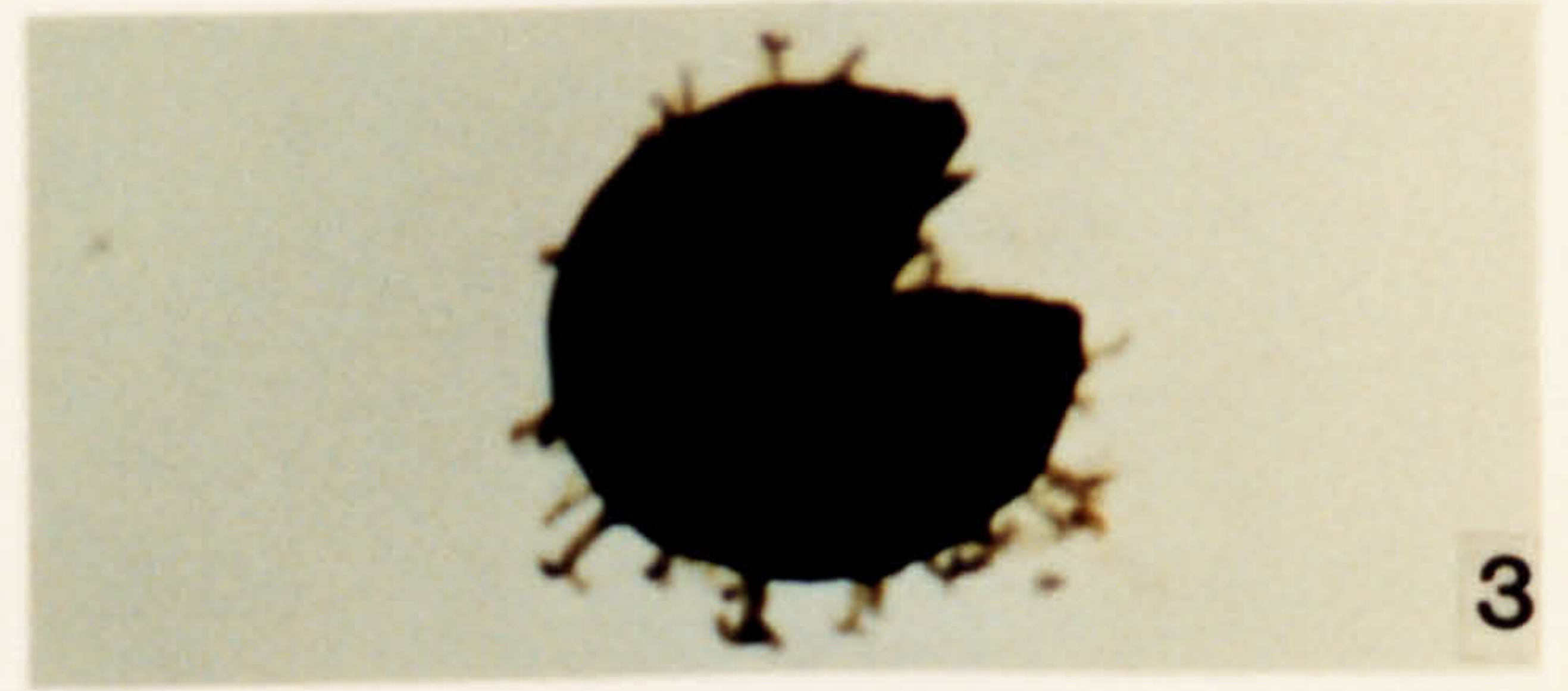
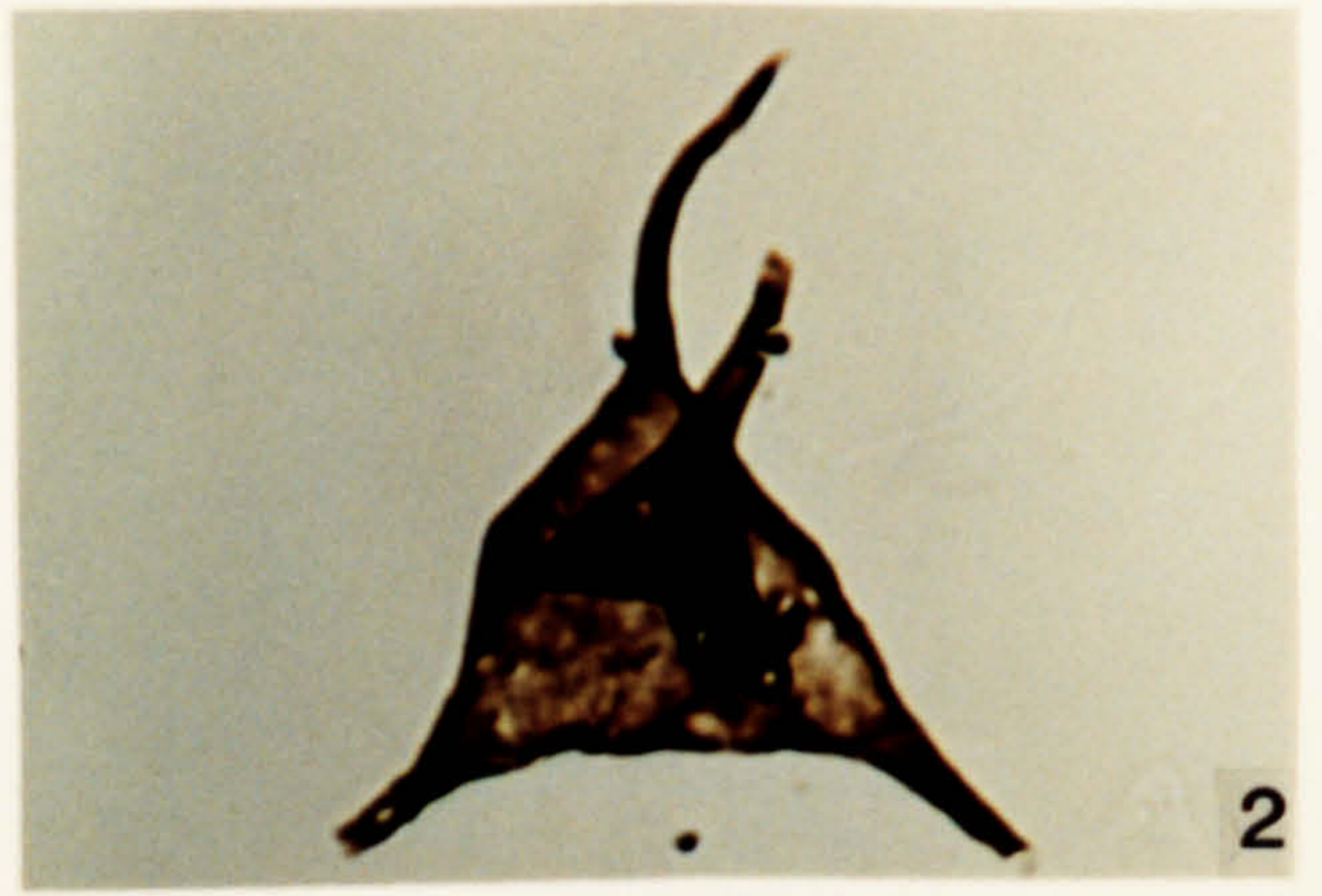
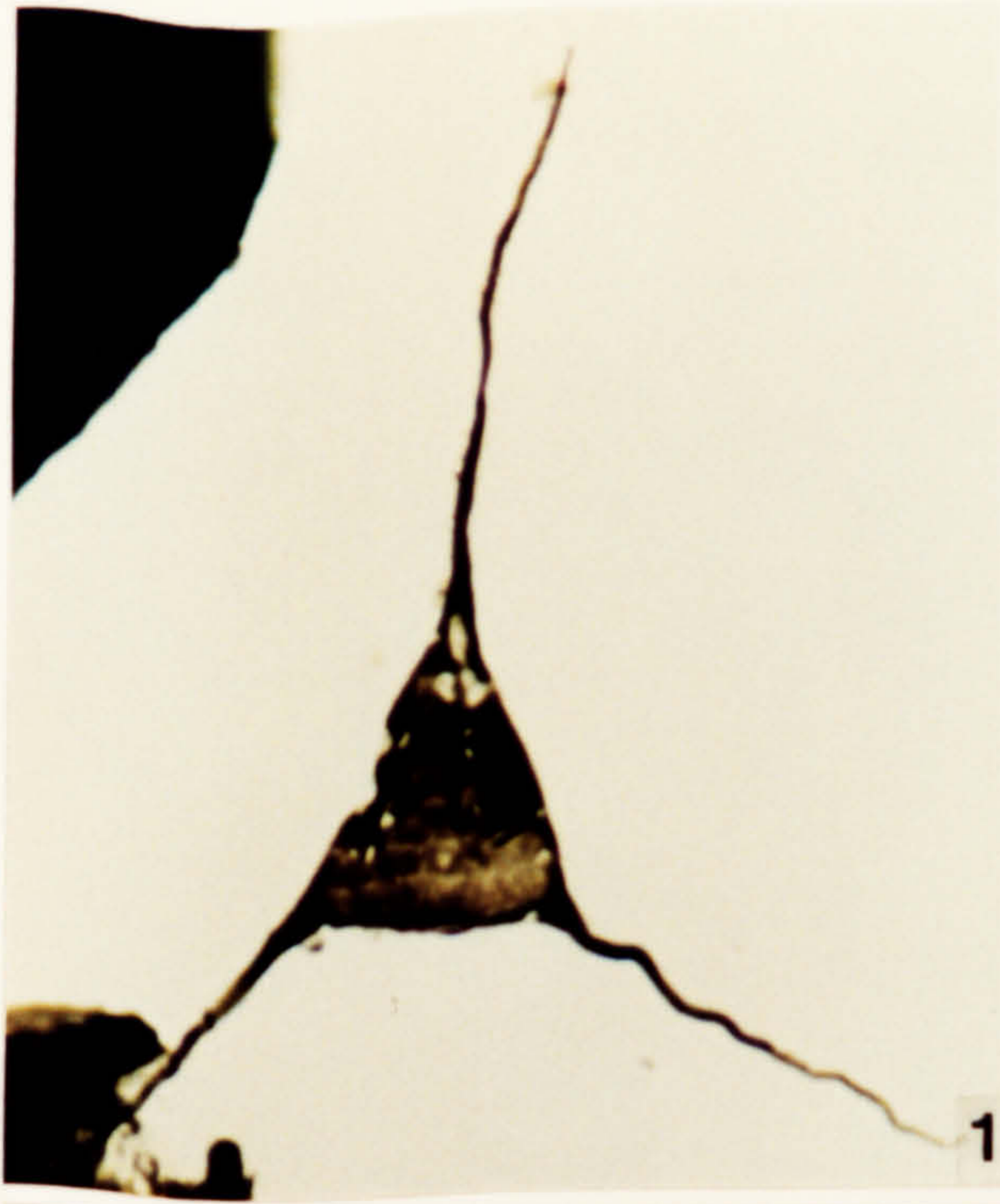




**Plate 131.**

**Acritarchs and prasinophycean algae from the Lmhaifid Formation, Gedinnian in age.**

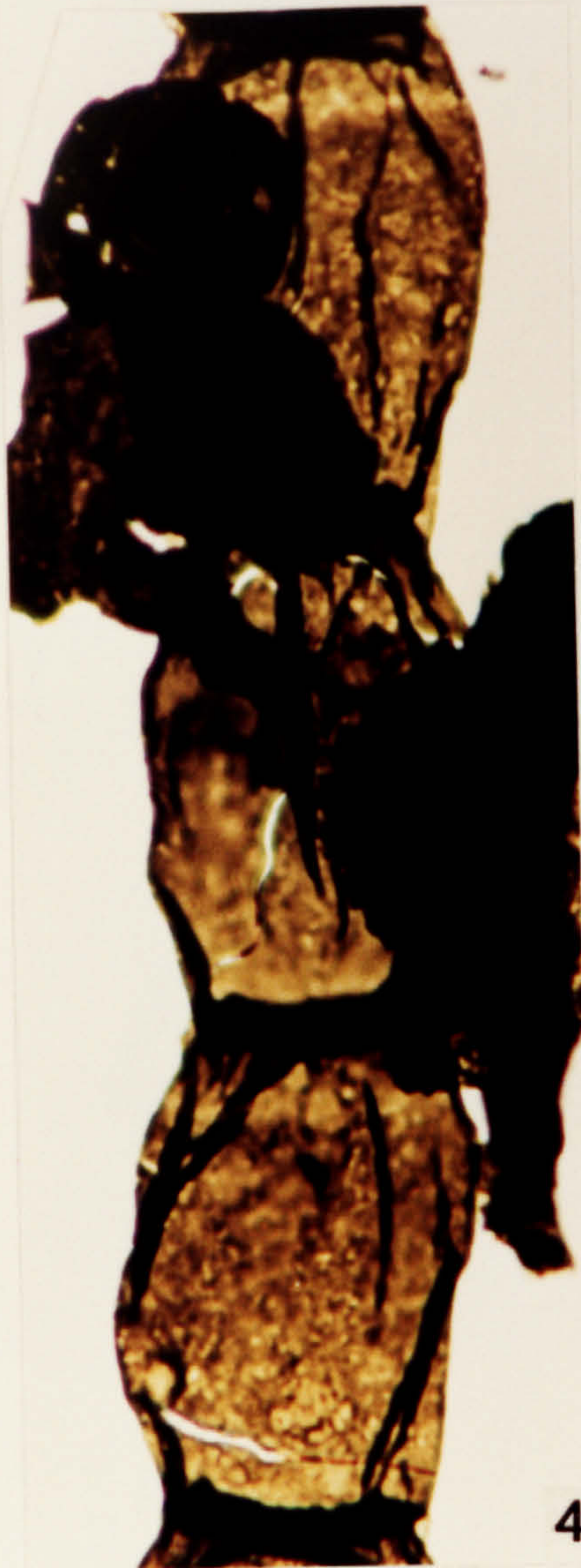
- 1. *Veryhachium wenlockianum* (Downie ex Wall & Downie) Downie & Sarjeant 1965. OD 4215, 1-2, M18\4.**
- 2. *Veryhachium europeanum* Stockmans & Williere 1960. OD 4215.4, S-4, N21\2.**
- 3. *Visbysphaera* sp. OD 4215, S-1, R10\1.**
- 4. *Triangulina* sp. OD 4215, 1-2, S14\3.**
- 5. *Cymatiosphaera* sp. 1. OD 4215, S-1, L16\1.**
- 6. *Pterospermella onondagaensis* (Deunff) Eisenack, Cramer & Diez 1973. DW 4215, S-1, K35\4.**
- 7. *Pterospermella onondagaensis* (Deunff) Eisenack, Cramer & Diez 1973. DW 4215, 1-1, F13\4.**
- 8. *Pterospermella onondagaensis* (Deunff) Eisenack, Cramer & Diez 1973. DW 4215, S-1, P23\3.**



**Plate 132.**

**Chitinozoa from the Lmhaifid Formation, Gedinnian in age.**

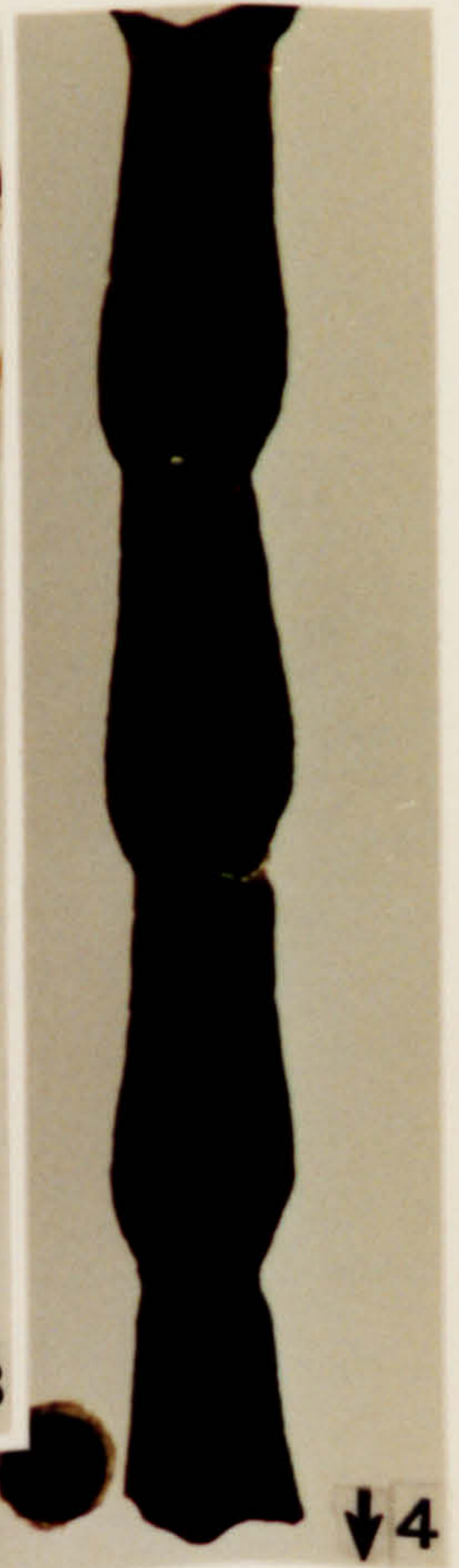
- 1. *Ancyrochitina* sp. OD 4124.5-4217, FS-1, Q31\1.**
- 2. *Angochitina chlupaci* Paris & Laufeld 1980. OD 4215.4, KQ28\4.**
- 3. *Angochitina chlupaci* Paris & Laufeld 1980. OD 4215.4, K, K21\4.**
- 4. *Calpichitina sphaerica* (Taugourdeau & Jekhowsky) Paris 1981. OD 4214.5-4217, FS-1, V18\1.**
- 5. *Calpichitina sphaerica* (Taugourdeau & Jekhowsky) Paris 1981. OD 4214.5-4217, S-3, Q23\4.**
- 6. *Angochitina chlupaci* Paris & Laufeld 1980. OD 4215, 1-1, H14\4.**



**Plate 133.**

Chitinozoa from the Lmhaifid Formation, Gedinnian in age.

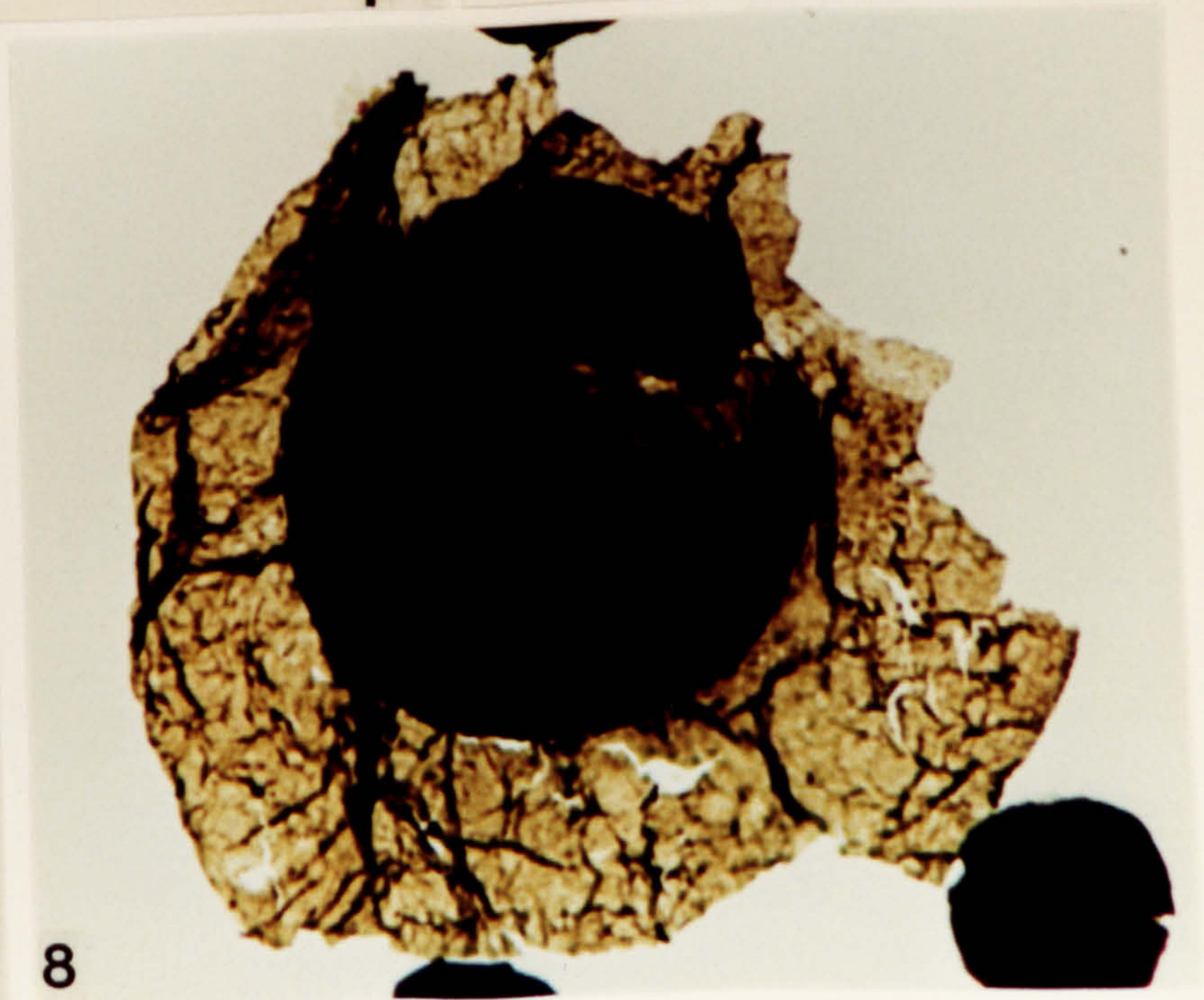
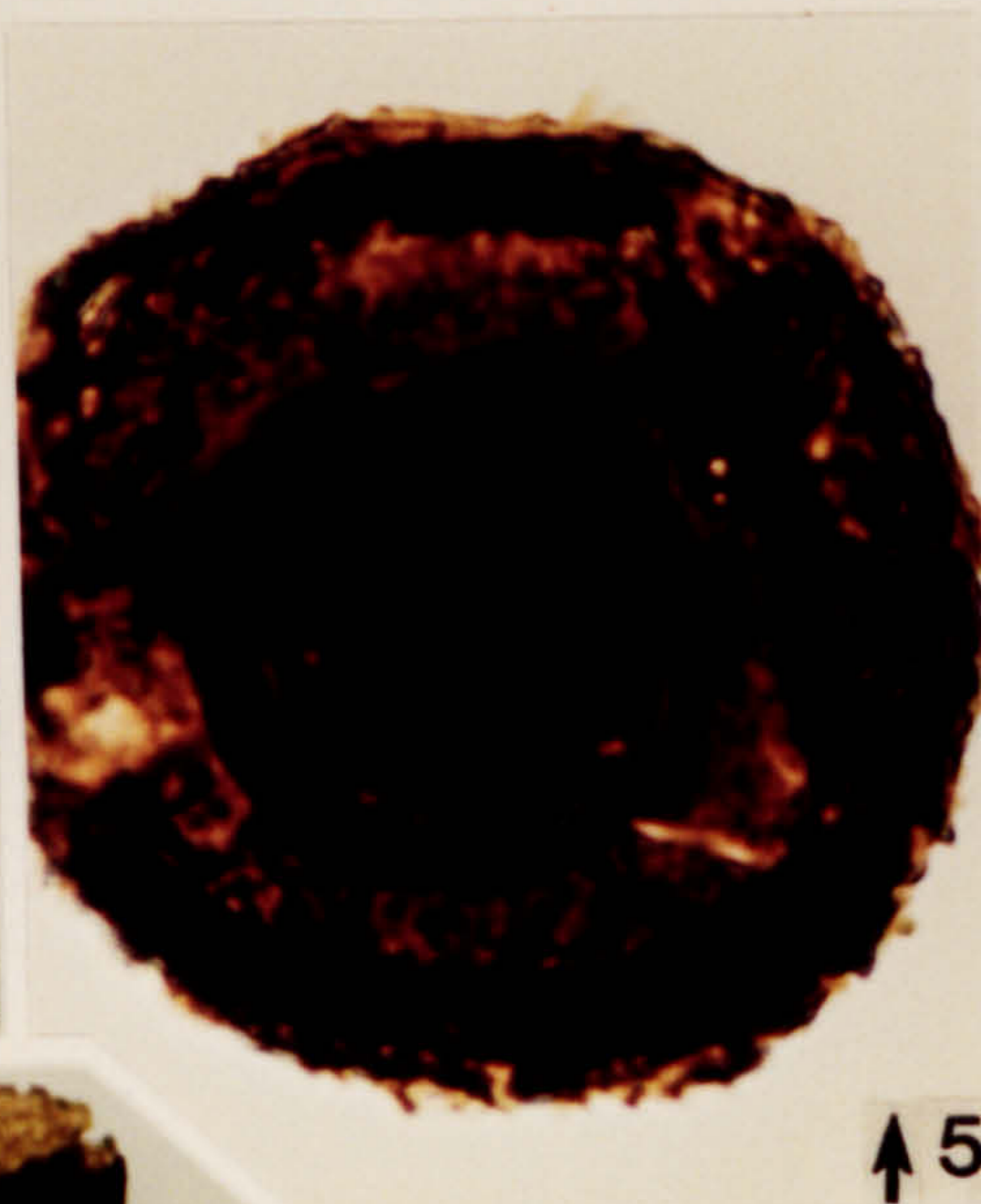
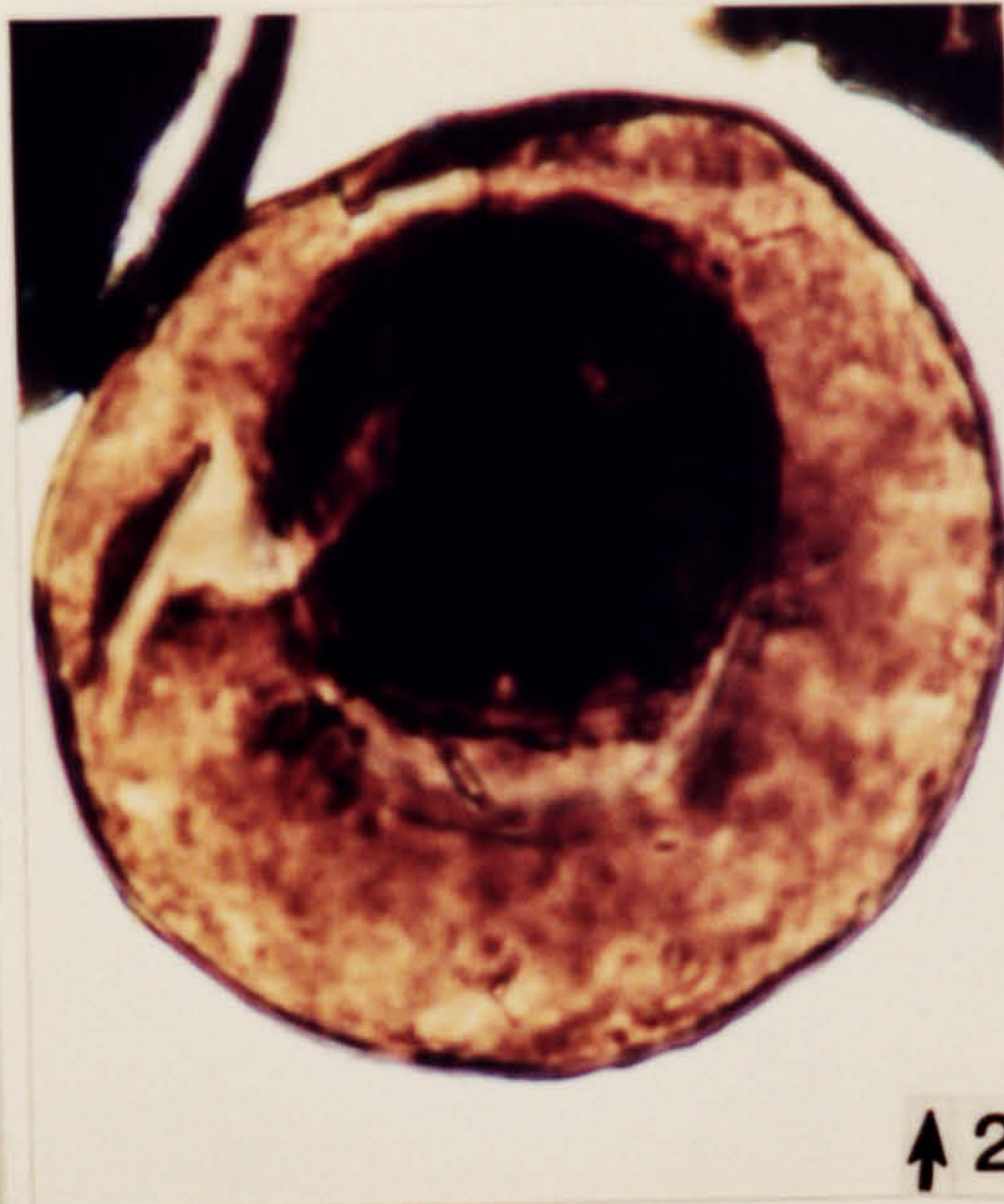
1. *Cingulochitina convexa* (Laufeld) Paris 1981. OD 4215, S-4, J34\4.
2. *Cingulochitina convexa* (Laufeld) Paris 1981. OD 4214.5-4217, S-3, V31\2.
3. *Cingulochitina convexa* (Laufeld) Paris 1981. OD 4214.5-4217, FS-1, N24\2, X230.
4. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. OD 4214.5-4217, S-3, W8\3, X230.
5. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. OD 4214.5-4217, S-3, P24\2.
6. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. OD 4214.5-4217, S-3, T15\3.
7. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. OD 4214.5-4217, S-3, K31\1, X230.
8. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. OD 4214.5-4217, S-3, K31\1.



**Plate 134.**

**Chitinozoa from the Lmhaifid Formation, Gedinnian in age.**

1. ***Cingulochitina serrata* (Taugourdeau & Jekhowsky) Paris 1981. OD 4215, S-1, P24\2.**
2. ***Hoegisphaere cf. glabra* Staplin 1961. OD 4215, FS-1, K44\4, X40.**
3. ***Calpichitina* sp. 2. OD 4215, FS-1, K42\3, X40.**
4. ***Cingulochitina cf. serrata* (Taugourdeau & Jekhowsky) Paris 1981. OD 4214.5-4217, s-3, P18\4.**
5. ***Calpichitina* sp. 2. OD 4215, FS-1, R49\4, X40.**
6. ***Calpichitina* sp. 2. OD 4215, FS-1, P39\2, X40.**
7. ***Cingulochitina cf. serrata* (Taugourdeau & Jekhowsky) Paris 1981. OD 4214.5-4217, S-3, O24\4.**
8. ***Pterochitina perivelata* (Eisenack) Eisenack 1955. OD 4215.4, S-4, K11\1 (R?).**

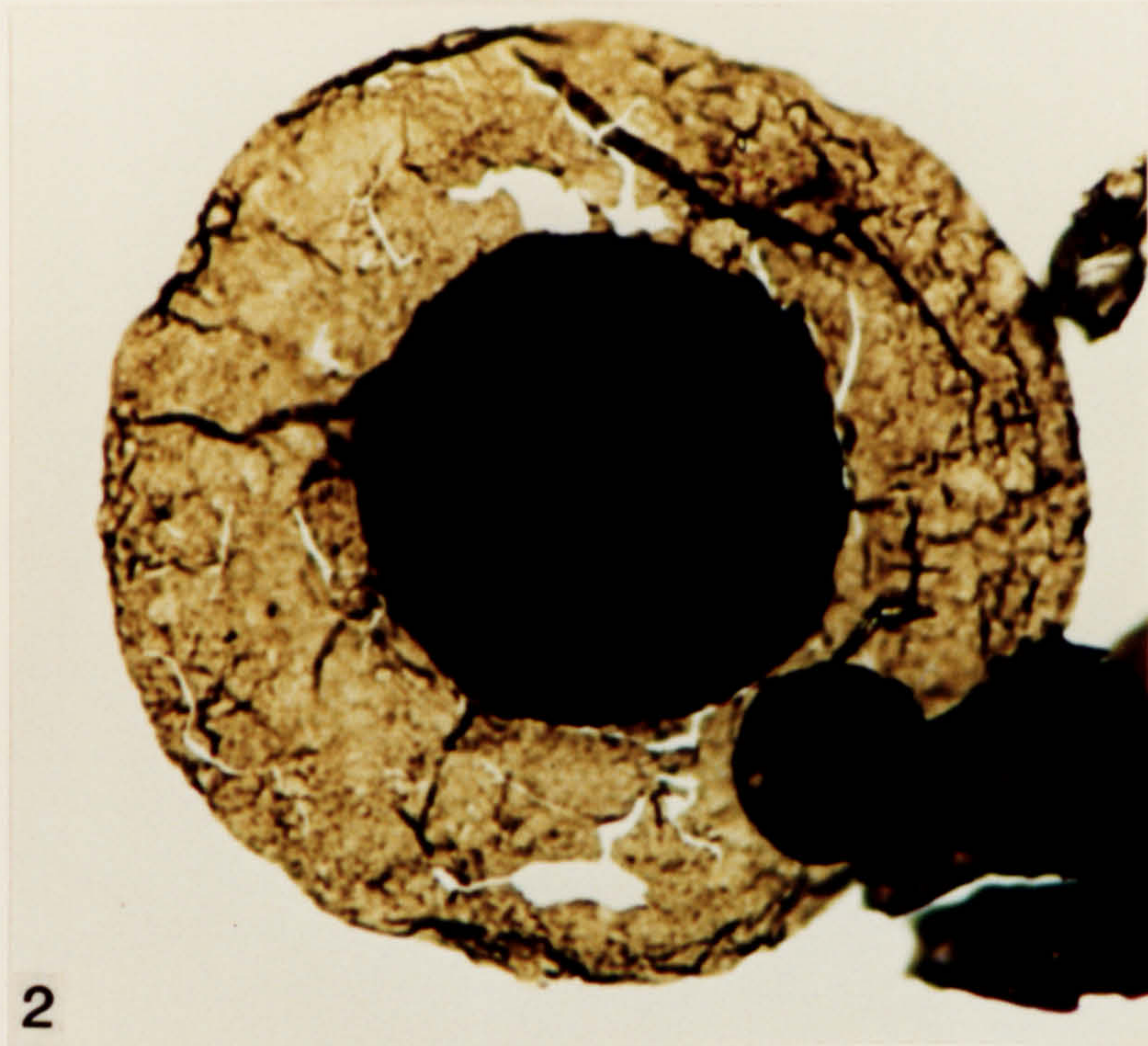




**Plate 135.**

Chitinozoa from the Lmhaifid Formation, Gedinnian in age.

1. *Lagenochitina cf. navicula* Taugourdeau & Jekhowsky 1960.
2. *Pterochitina perivelata* (Eisenack) Eisenack 1955. OD 4215, FS-1, G22\4 (R?).
3. *Sphaerochitina sphaerocephala* (Eisenack) Eisenack 1955. OD 4214.5-4217, S-3, F37\3.
4. *Sphaerochitina sphaerocephala* (Eisenack) Eisenack 1955. OD 4215.4, FS-1, W36\1.
5. *Sphaerochitina sphaerocephala* (Eisenack) Eisenack 1955. OD 4215.4, FS-1, Y20\1.



**Plate 136.**

Chitinozoa and spores from the Lmhaifid Formation, Gedinnian in age.

1. *Urnocitina urna* (Eisenack) Paris 1981. OD 4215, 1-1, H7\2 (R?).
2. *Urnocitina urna* (Eisenack) Paris 1981. OD 4215, 1-2, U30\2 (R?).
3. *Brochotriletes* sp. OD 4215.4, FS-1, H22\3.
4. *Apiculiretusotriletes* sp. OD 4215.4, S-4, M8\4.
5. Spore indet. OD 4214.5-4217, FS-1, E27\4.
6. Zonate spore indet. OD 4215.4, FS-4, U20\3.
7. *Retusotrilete* sp. OD 4214.5, FS-1, F48\4.
8. *Retusotriletes* sp. OD 4214.5-4217, FS-1, E42\4.
9. *Brochotriletes?* sp. OD 4214.5-4217, FS-3, G17\4.

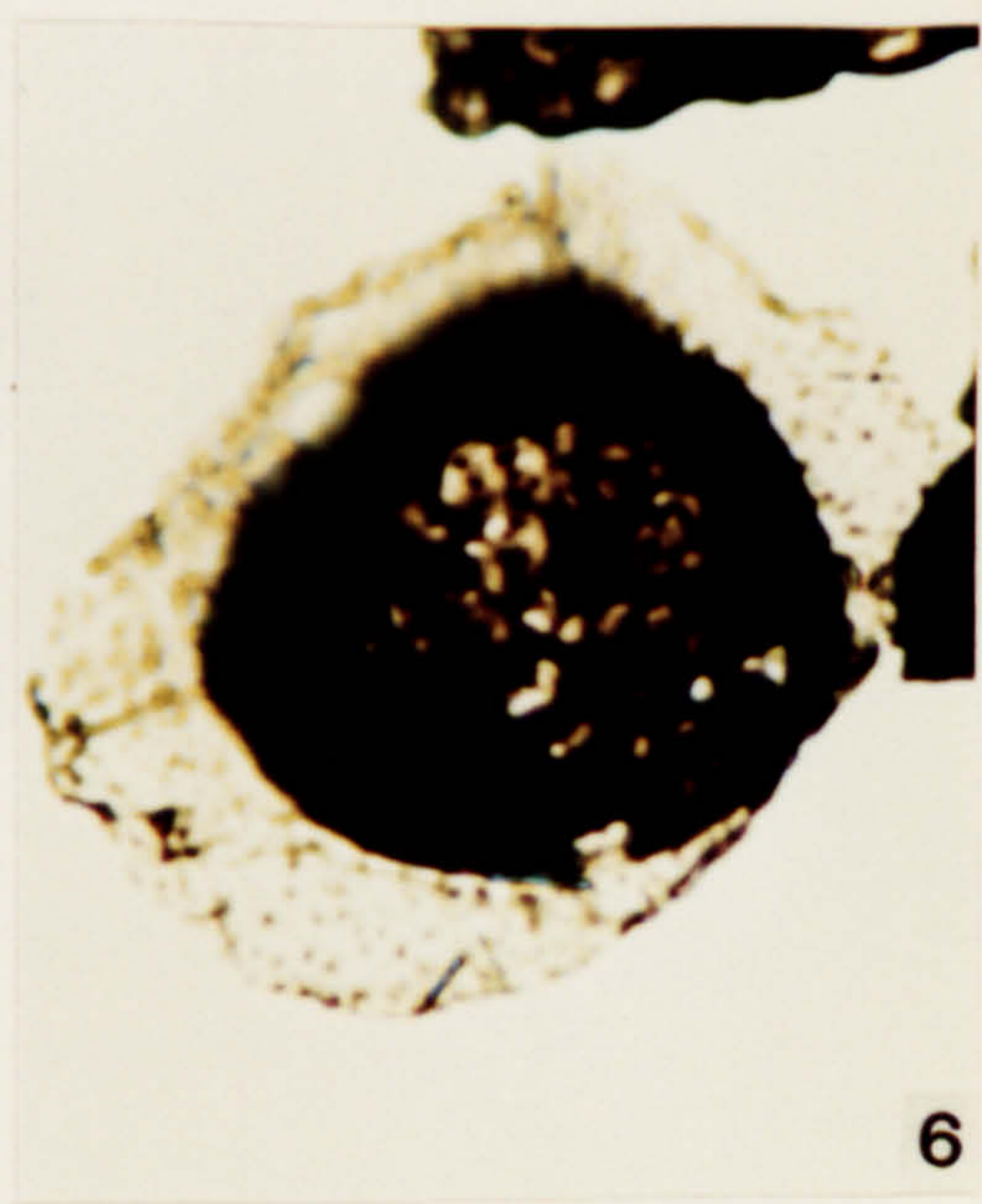
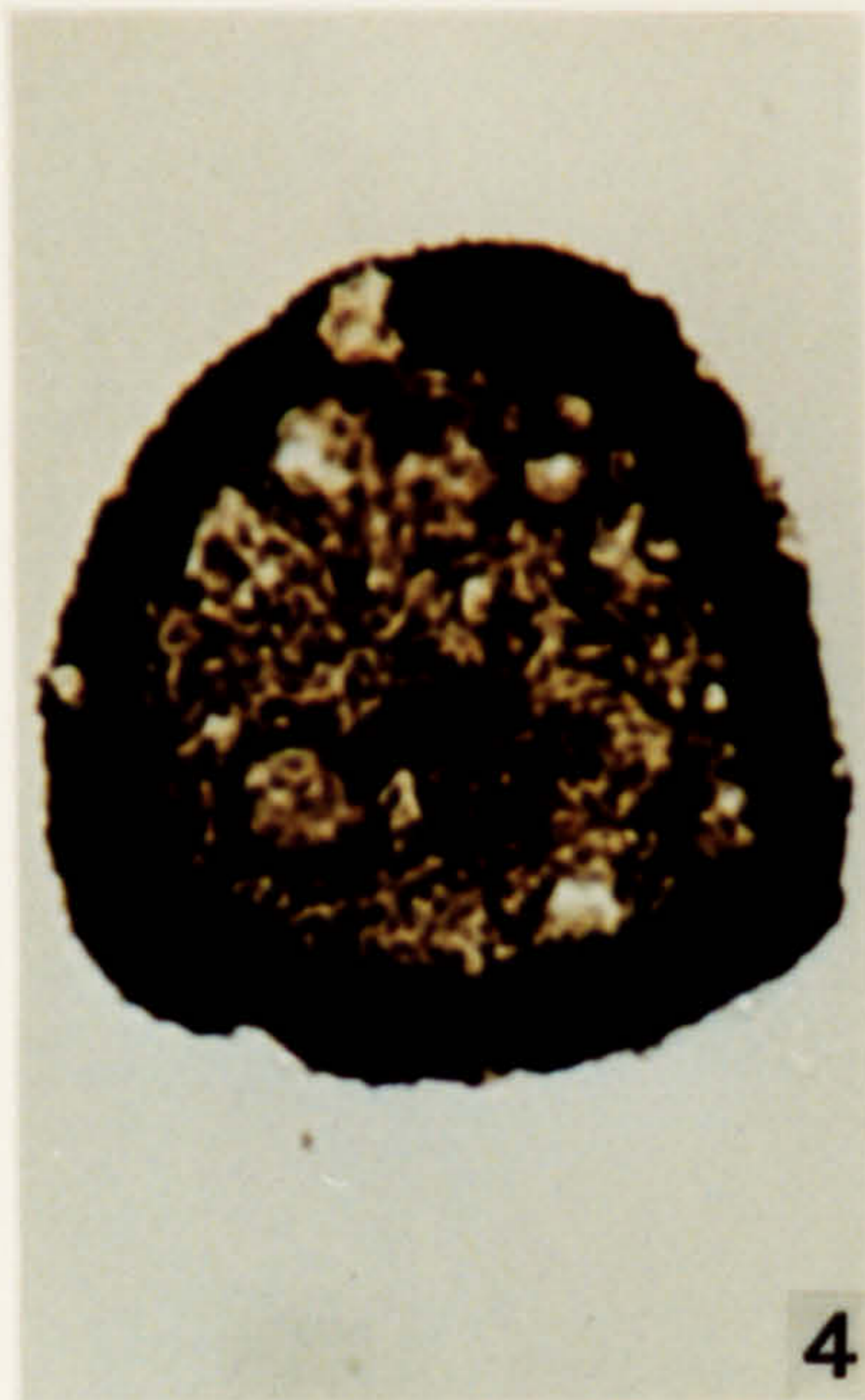
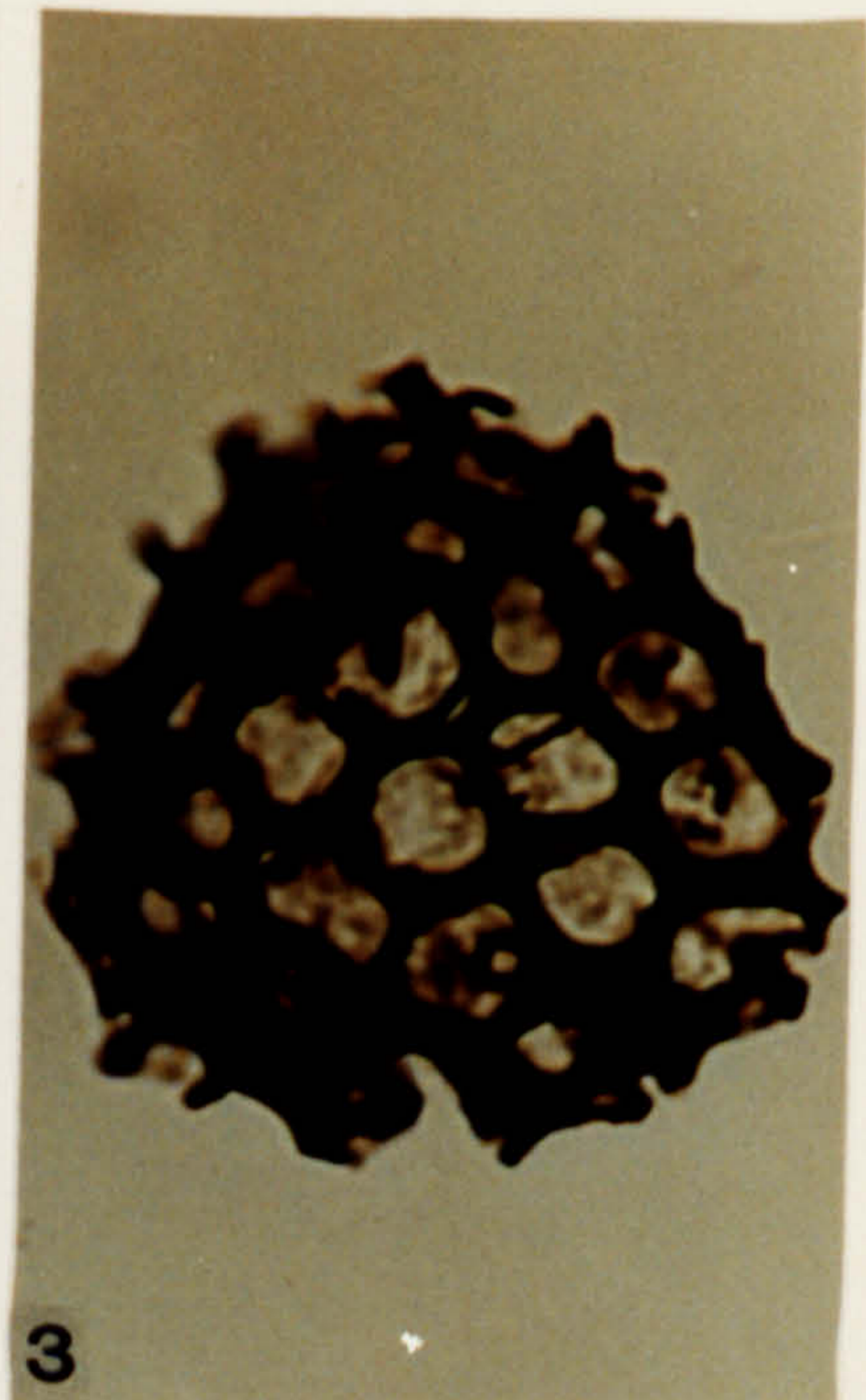
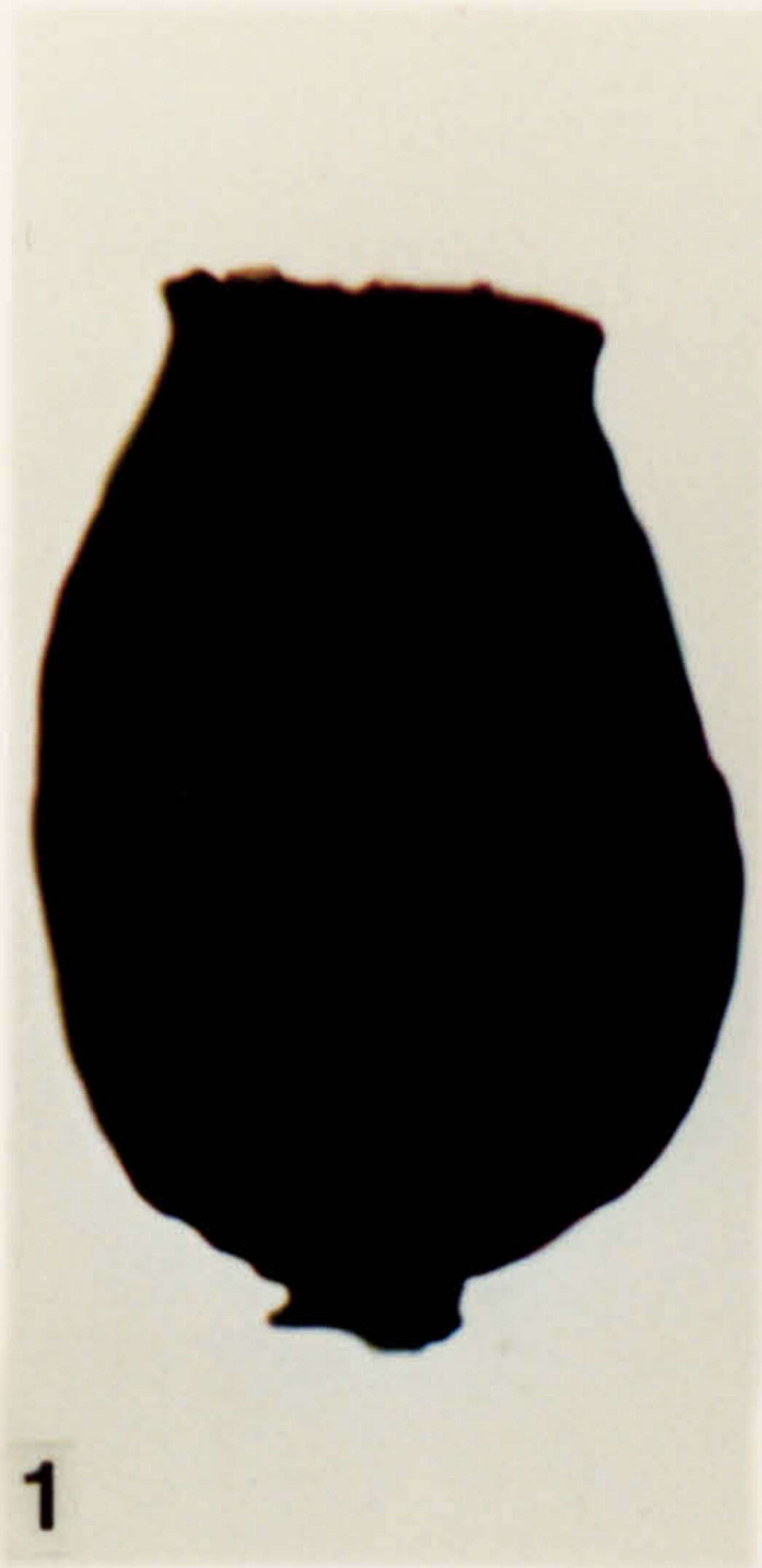
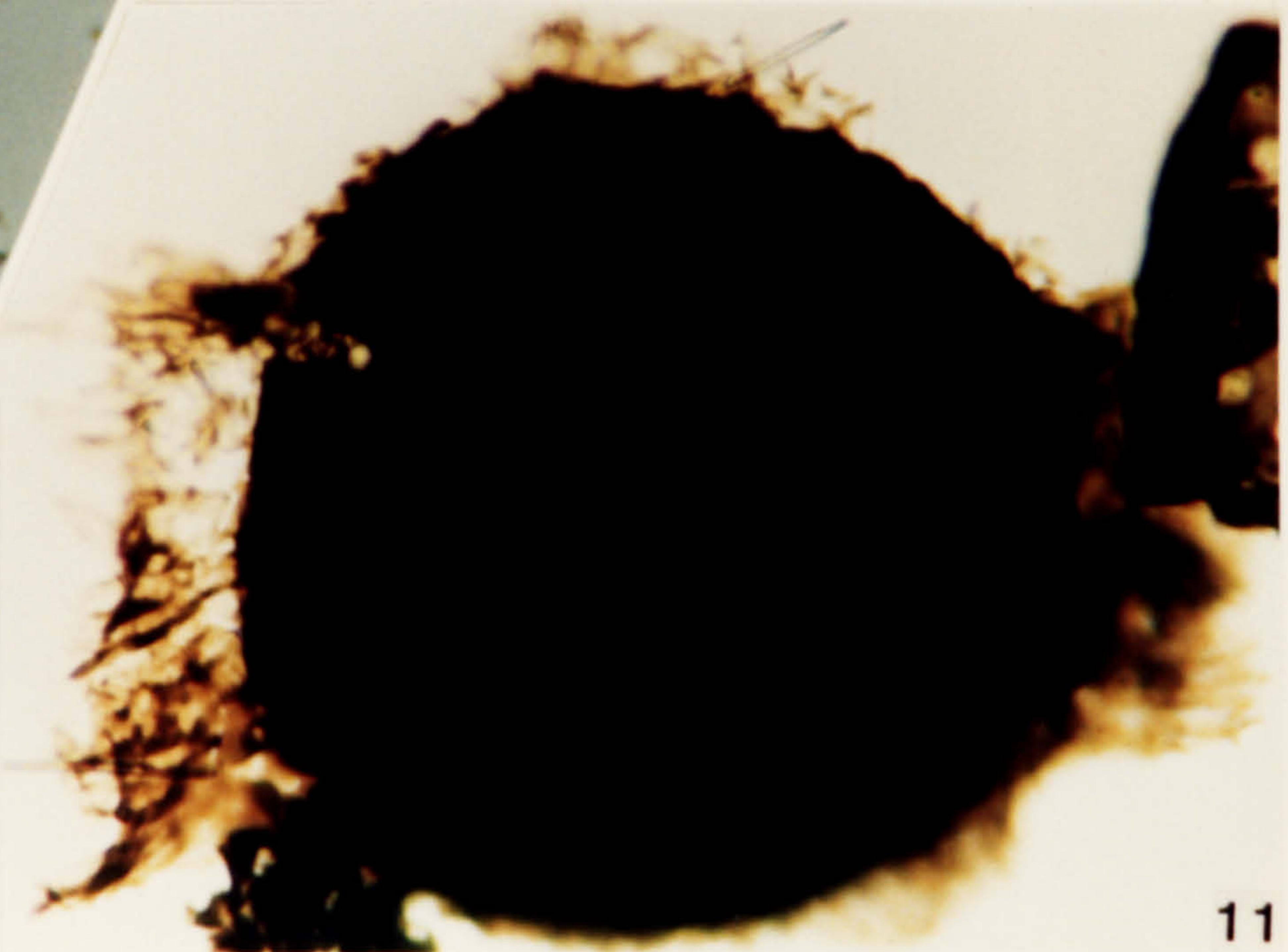
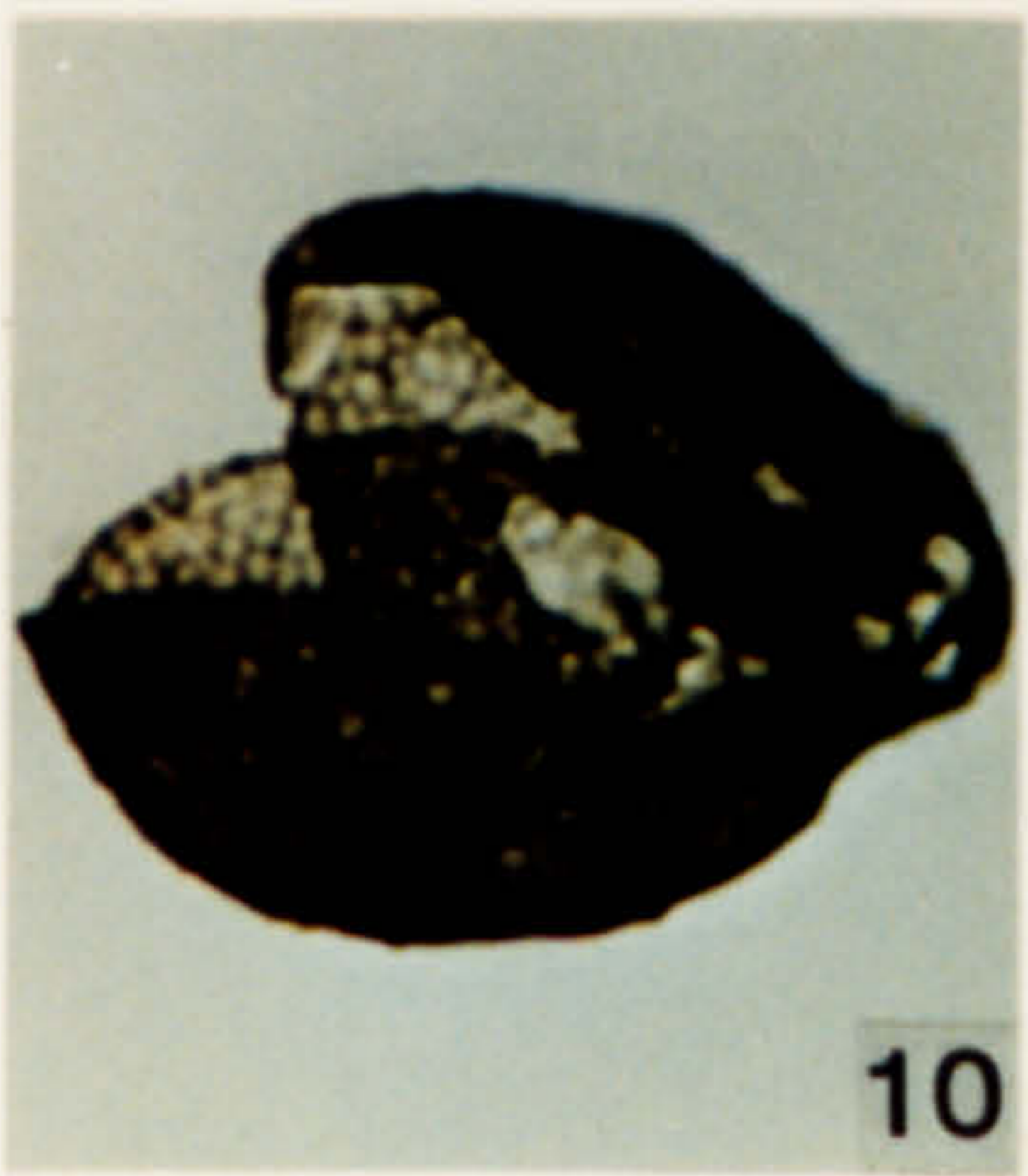
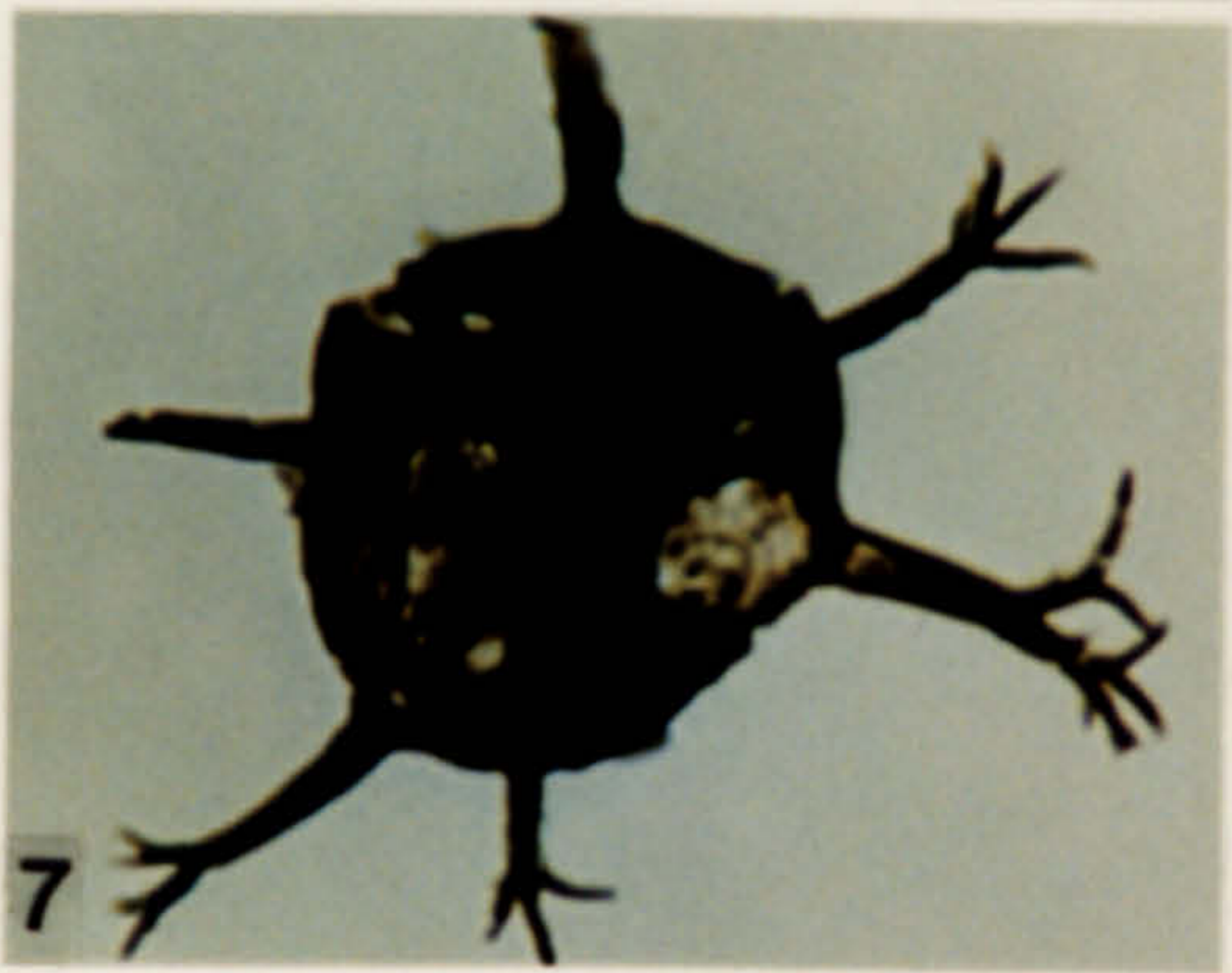
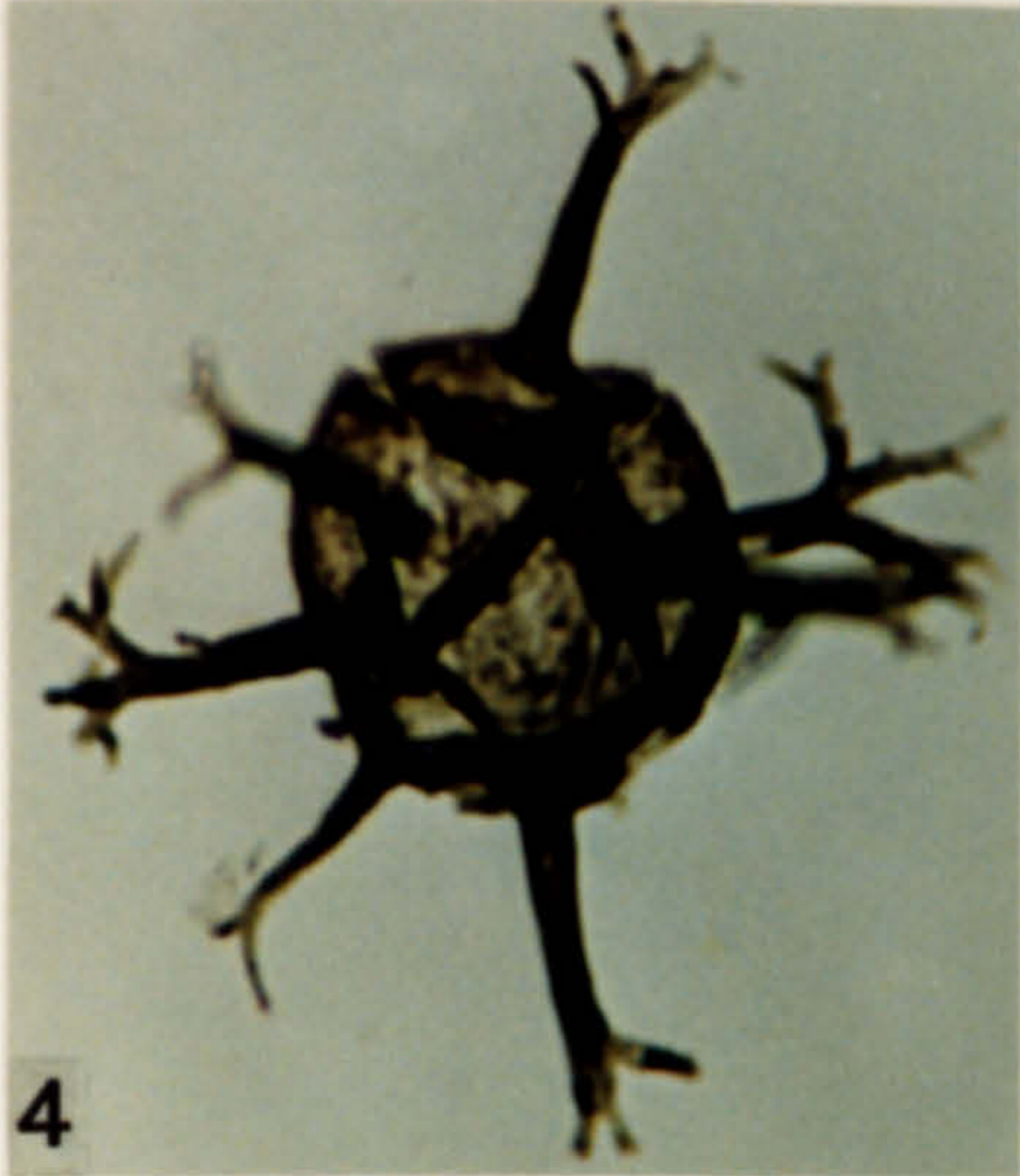
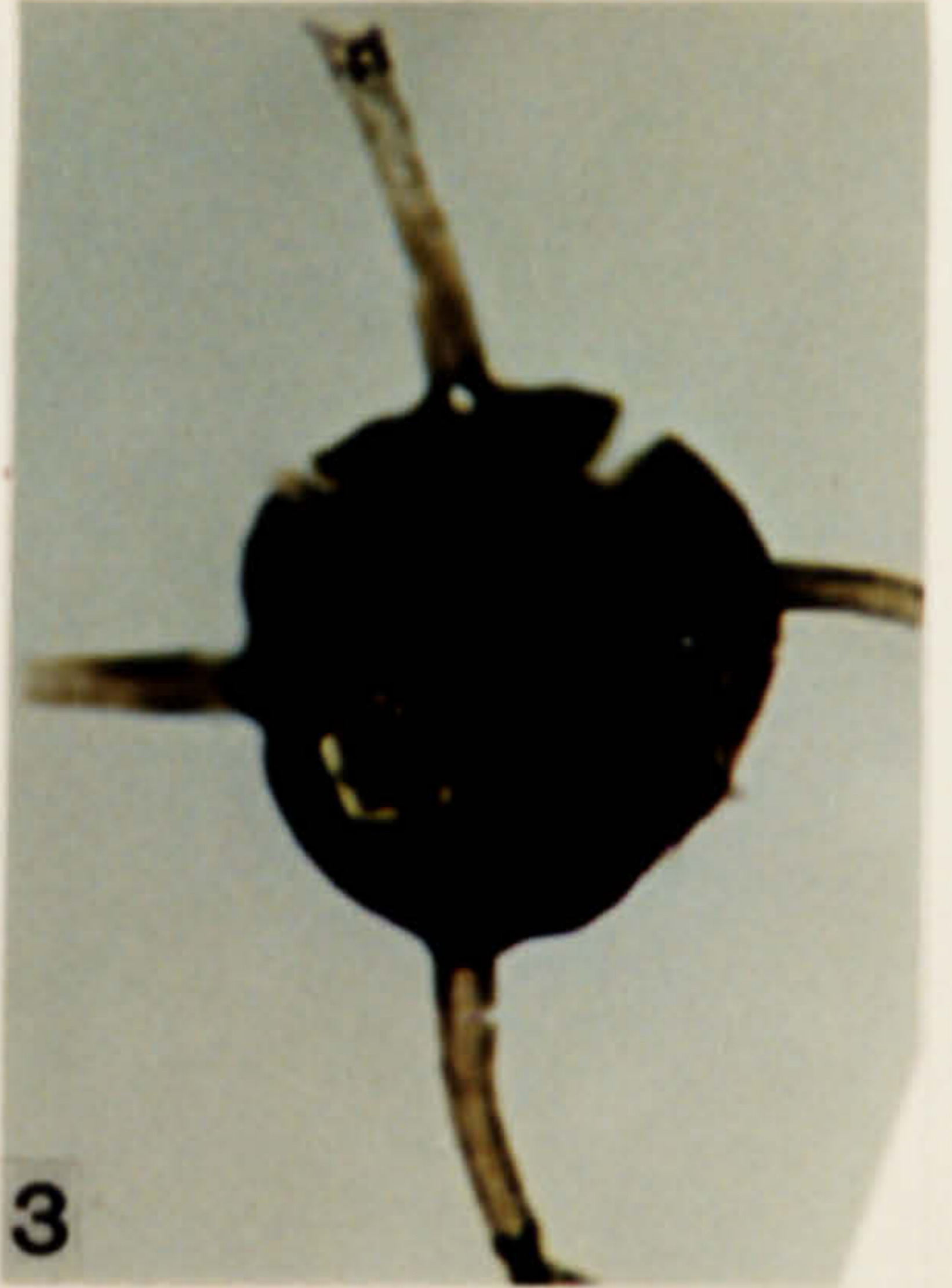
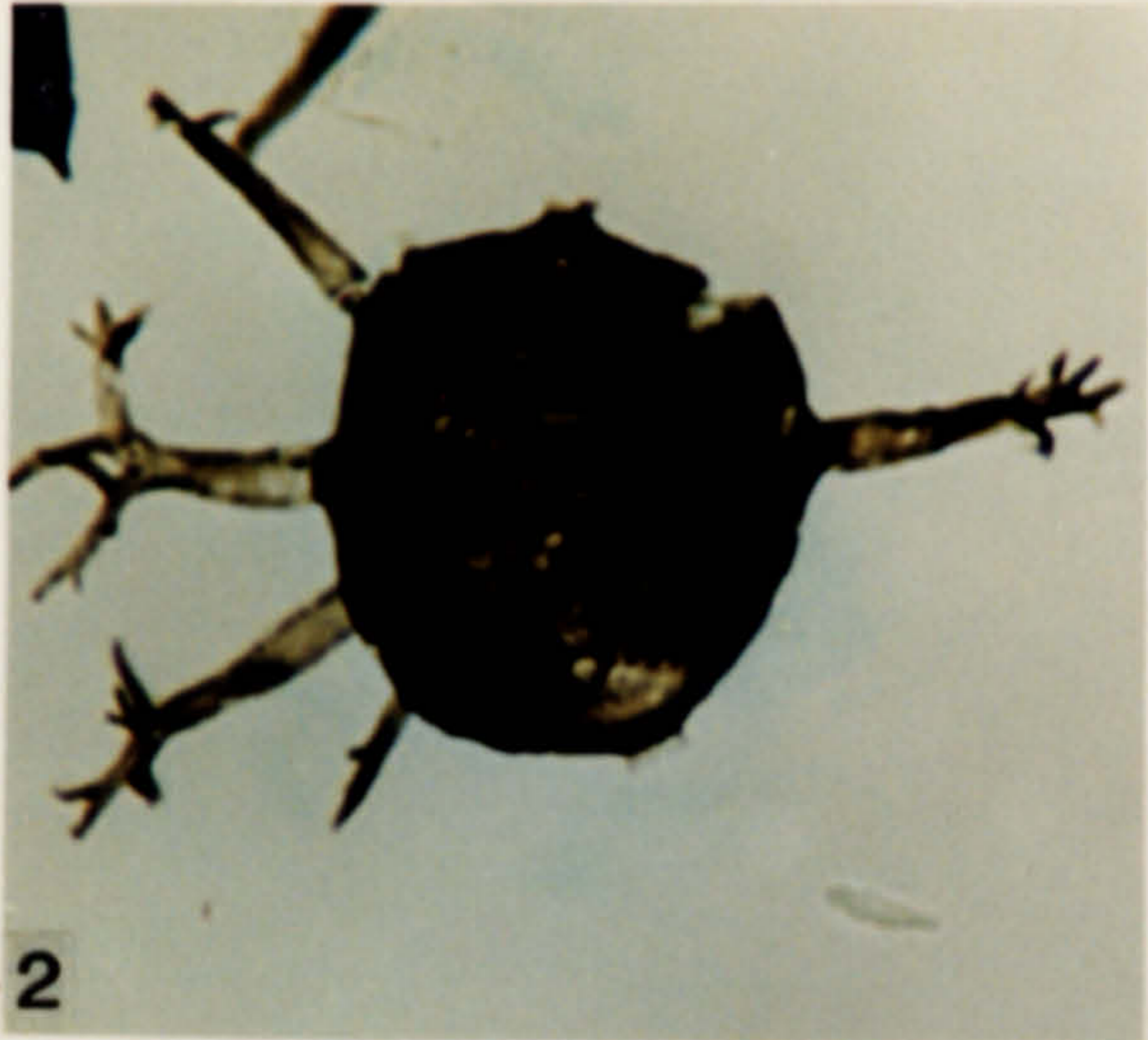
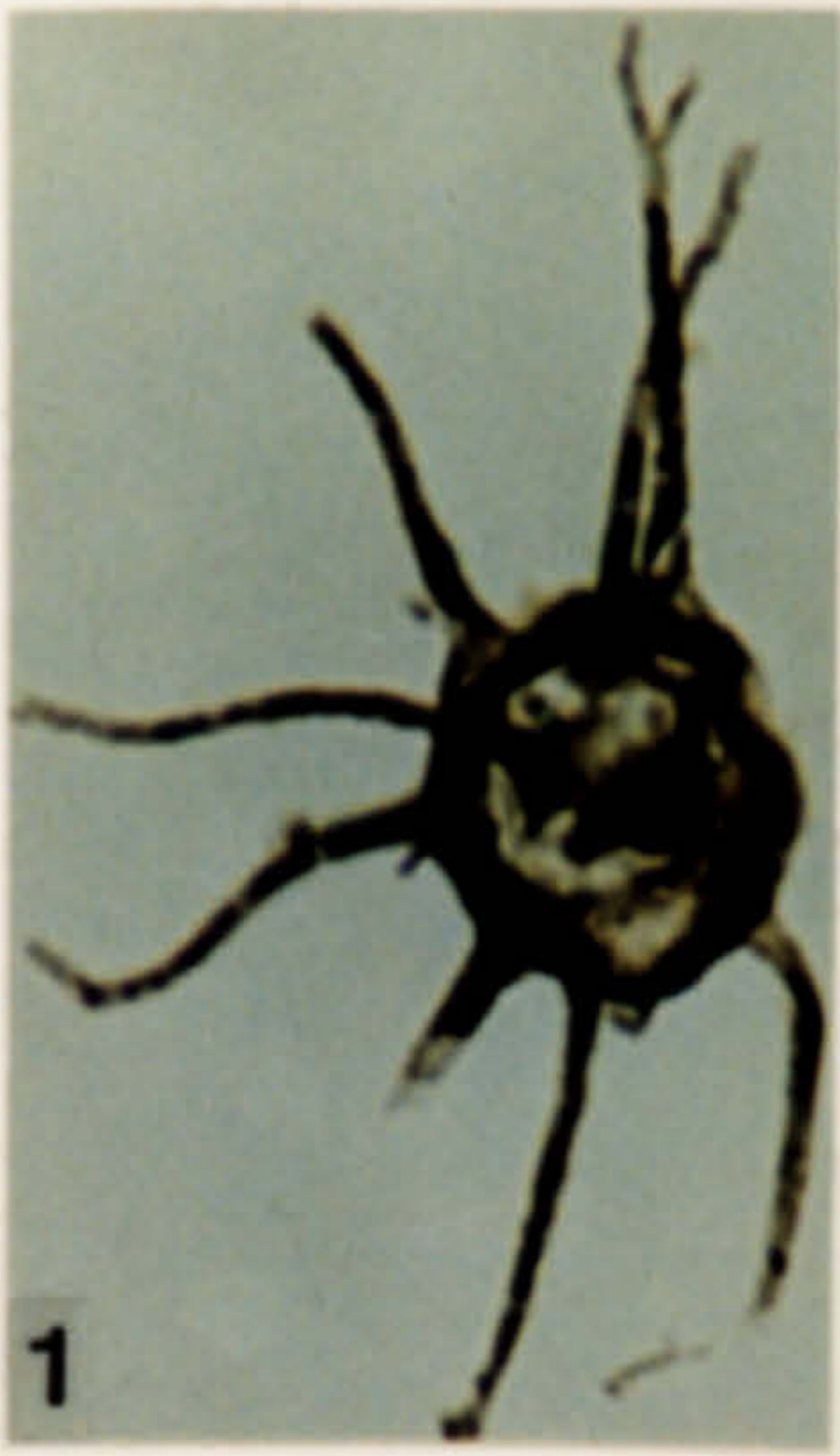


Plate 137.

Acritarchs from the Lmhaifid Formation, late Gedinnian in age.

1. *Baltisphaeridium anfractum* Playford 1977. OD 4069.8-4071.5, S-3, U24\1.
2. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. OD 4070.1, S-4, J28\1.
3. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. OD 4069.8-4071.5, S-3, G33\2.
4. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. OD 4069.8-4071.5, S-3, Y14\3.
5. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. OD 4070.1, S-1, T11\2.
6. *Demorhethium* cf. *lappaceum* Loeblich & Wicander 1974. OD 4069.8-4071.5, 1-1, N27\3.
7. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. OD 4070.1, S-1, S16\4.
8. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. OD 4070.1, S-1, E30\1.
9. *Demorhethium* cf. *lappaceum* Loeblich & Wicander 1974. OD 4069.8-4071.5, S-3, J34\3.
10. *Dictyotidium coarctatum* (Kiryanov) Colbath 1983. OD 4070.1, S-1, F32\1.
11. *Daisypilula compacta* Loeblich & Wicander 1976. OD 4069.8-4071.5, S-3, T27\4.



**Plate 138.**

**Acritarchs from the Lmhaifid Formation, late Gedinnian in age.**

- 1. *Dictyotidium* sp. 2. OD 4069.8-4071.5, S-3, K26\4.**
- 2. *Dictyotidium dictyotum?* (Eisenack) Eisenack 1955. OD 4071.1, S-4, J18\2.**
- 3. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970 var B. OD 4070.1, S-4, P20\4.**
- 4. *Dictyotidium* sp. OD 4069.8-4071.5, 1-1, B8\2.**
- 5. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. OD 4069.8-4071.5, S-3, O23\3.**
- 6. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. OD 4069.8-4071.5, 1-1, Q20\-.**
- 7. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. OD 4070.1, S-1, N27\1.**
- 8. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. OD 4070.1, S-1, E10\4.**
- 9. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. OD 4069.8-4071.5, 1-1, C14\4.**

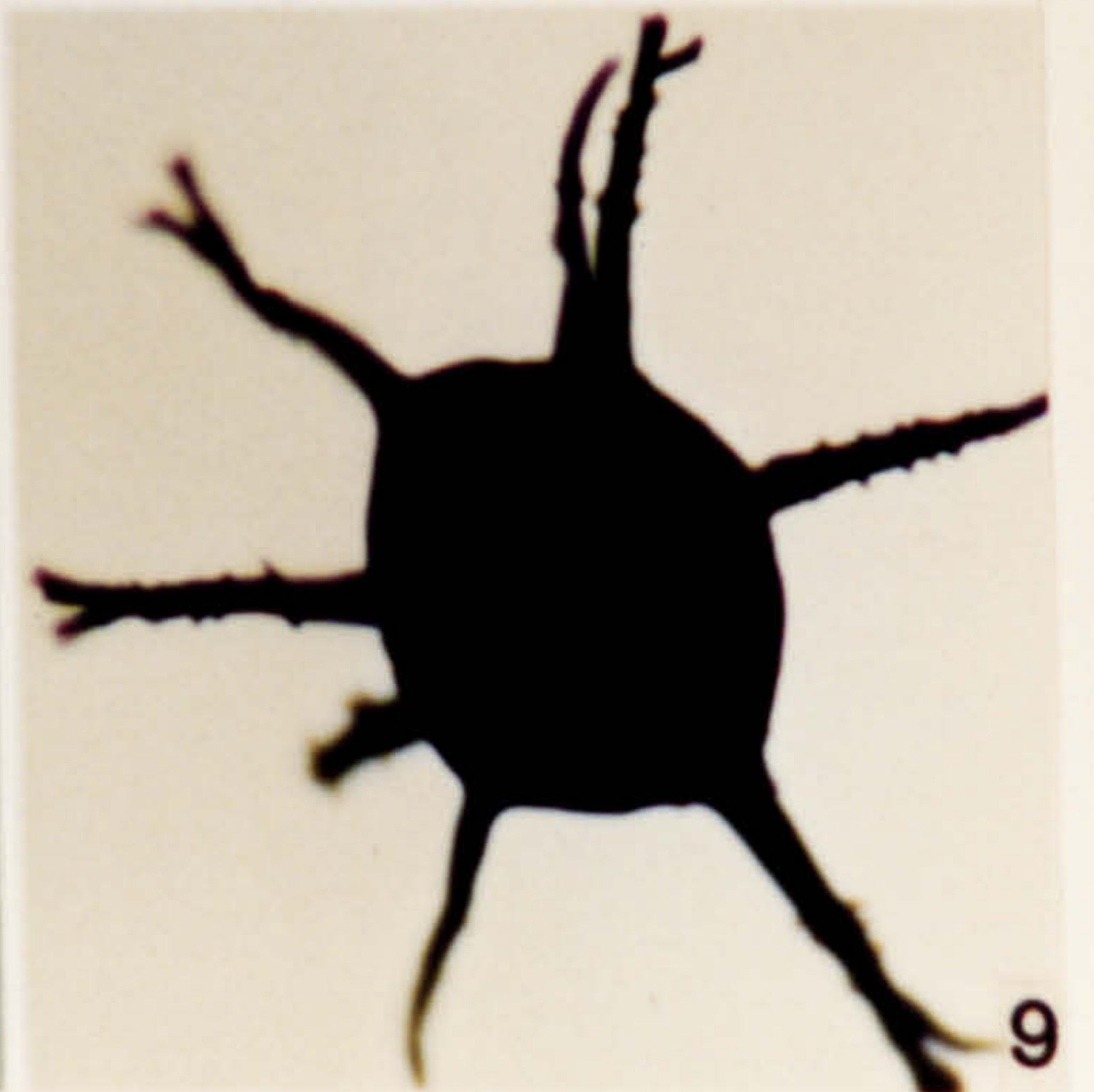
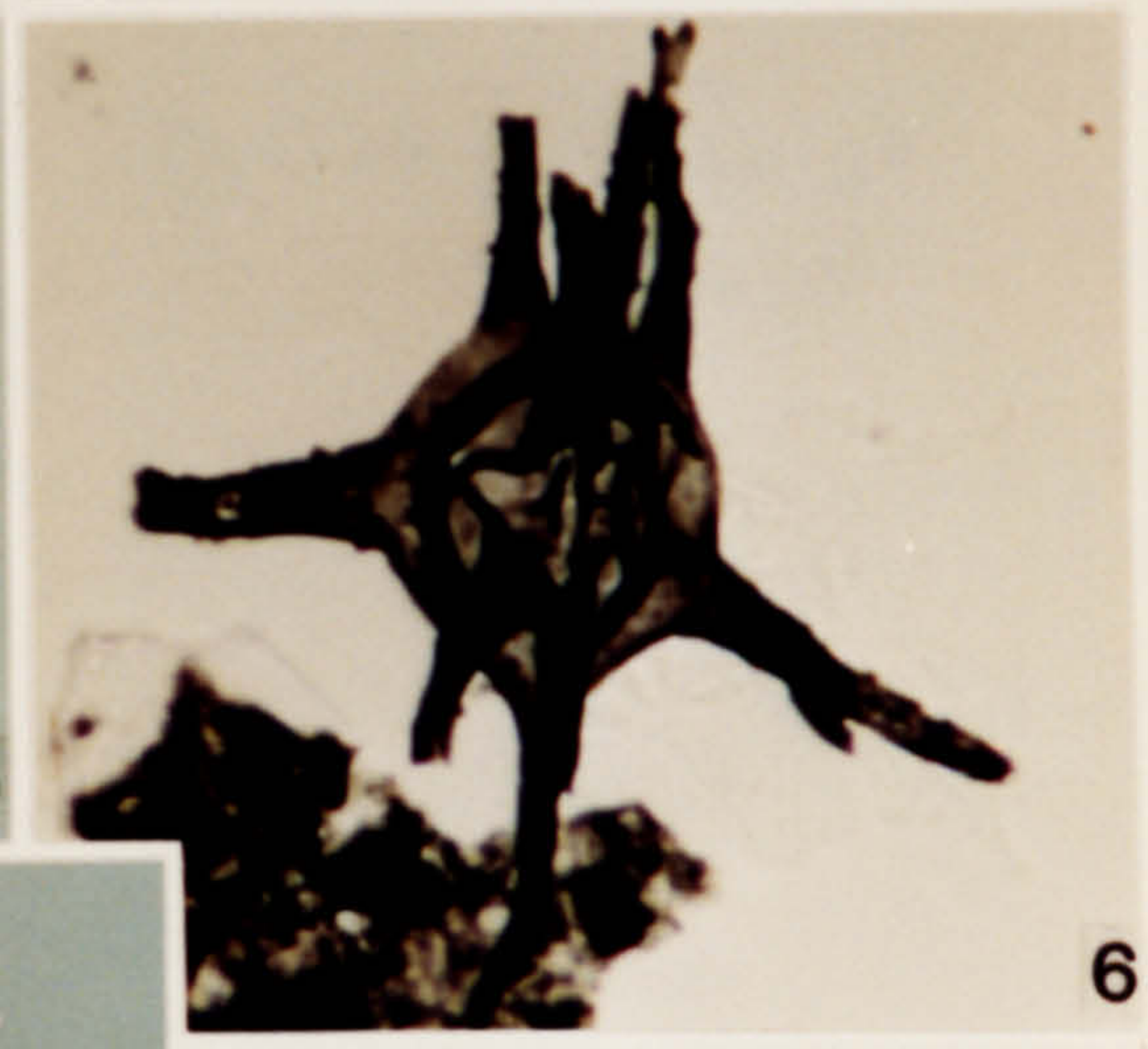
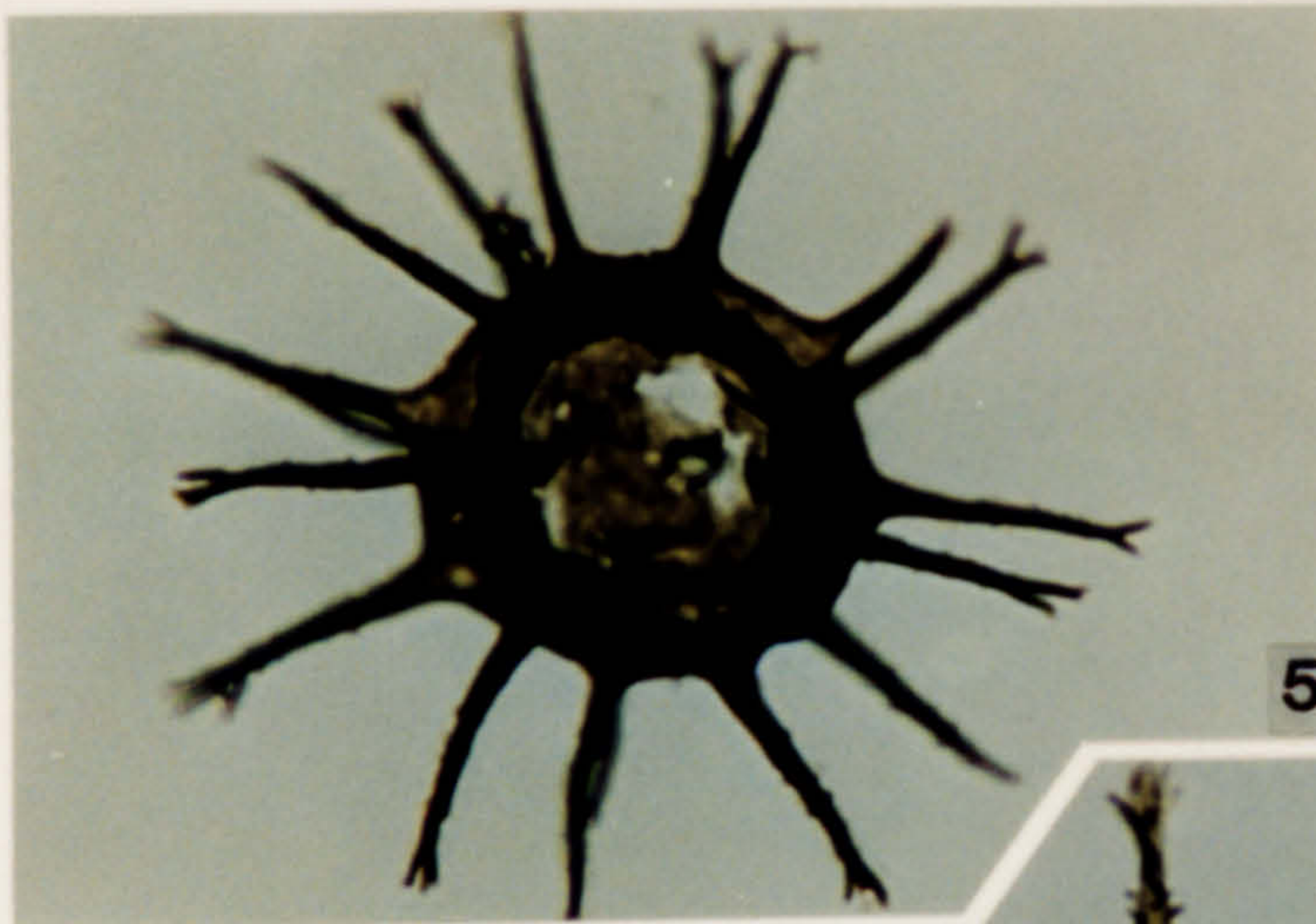
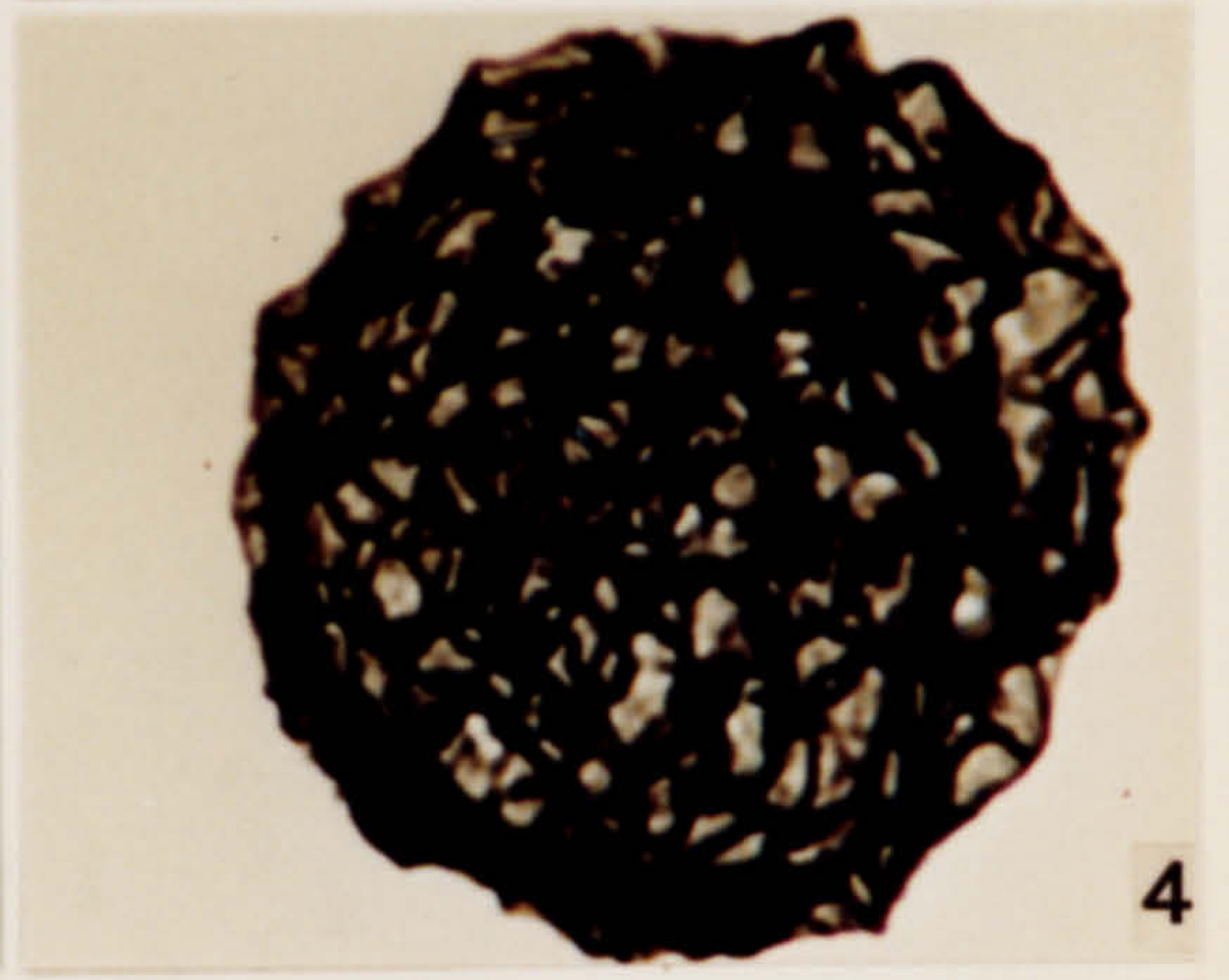
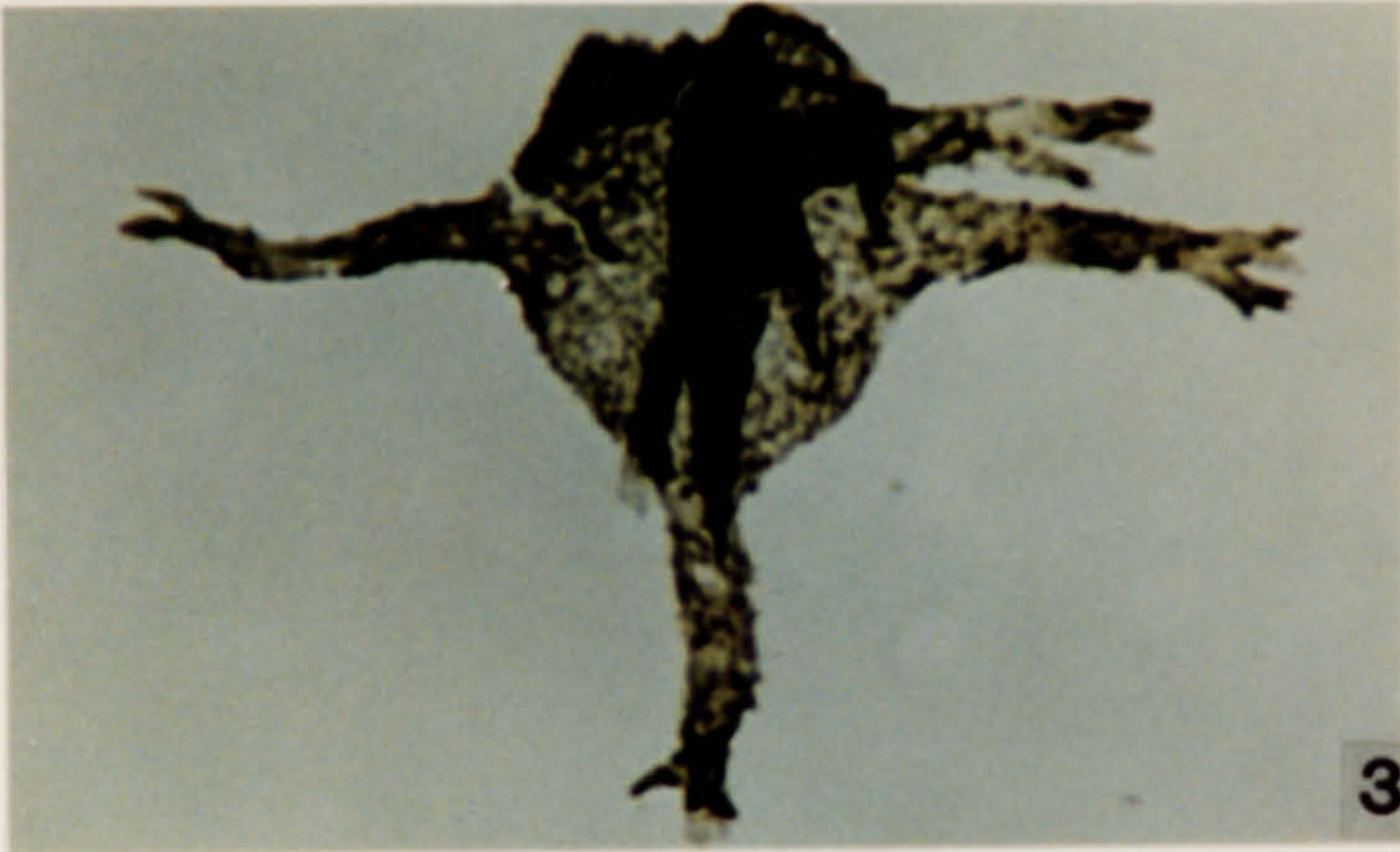
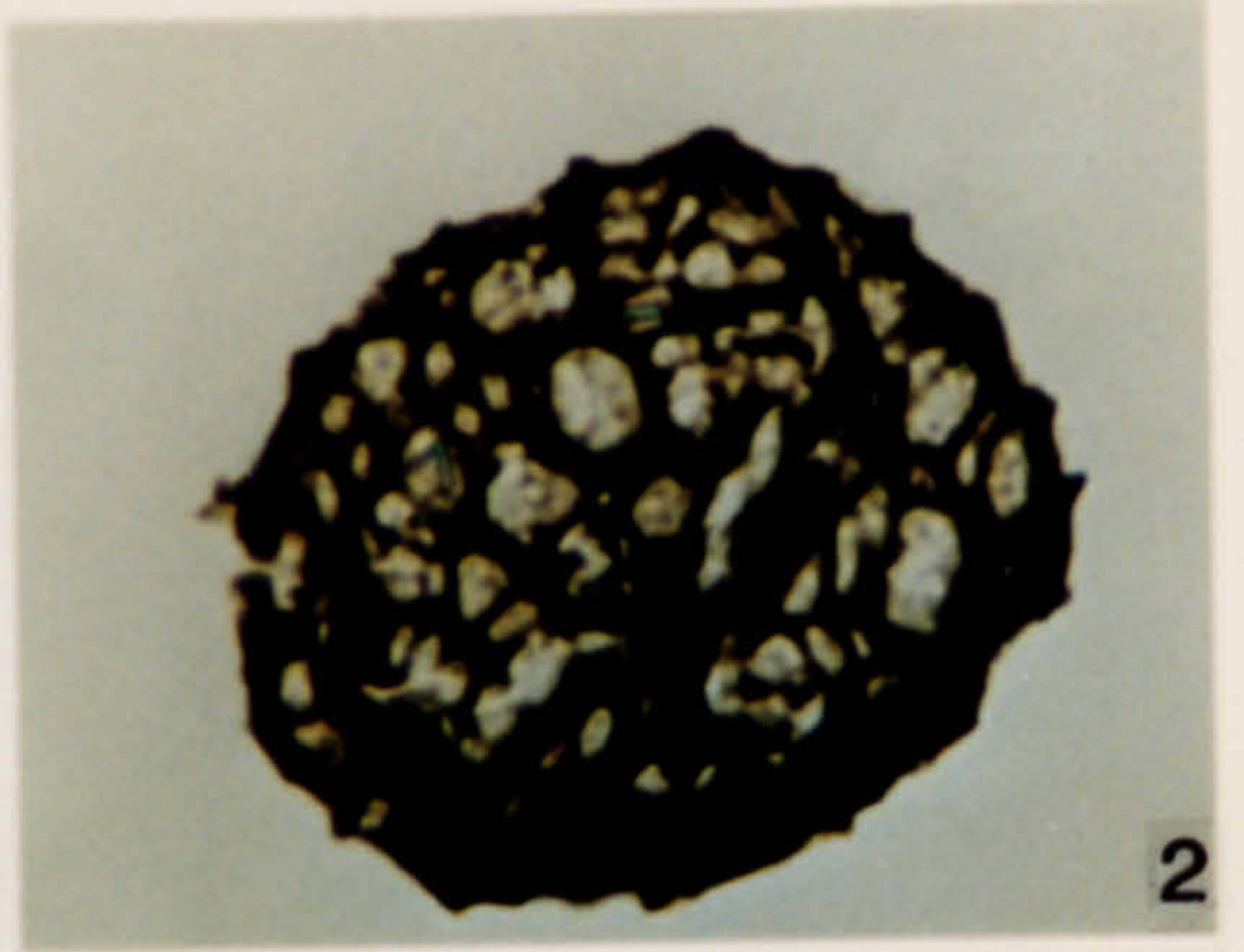
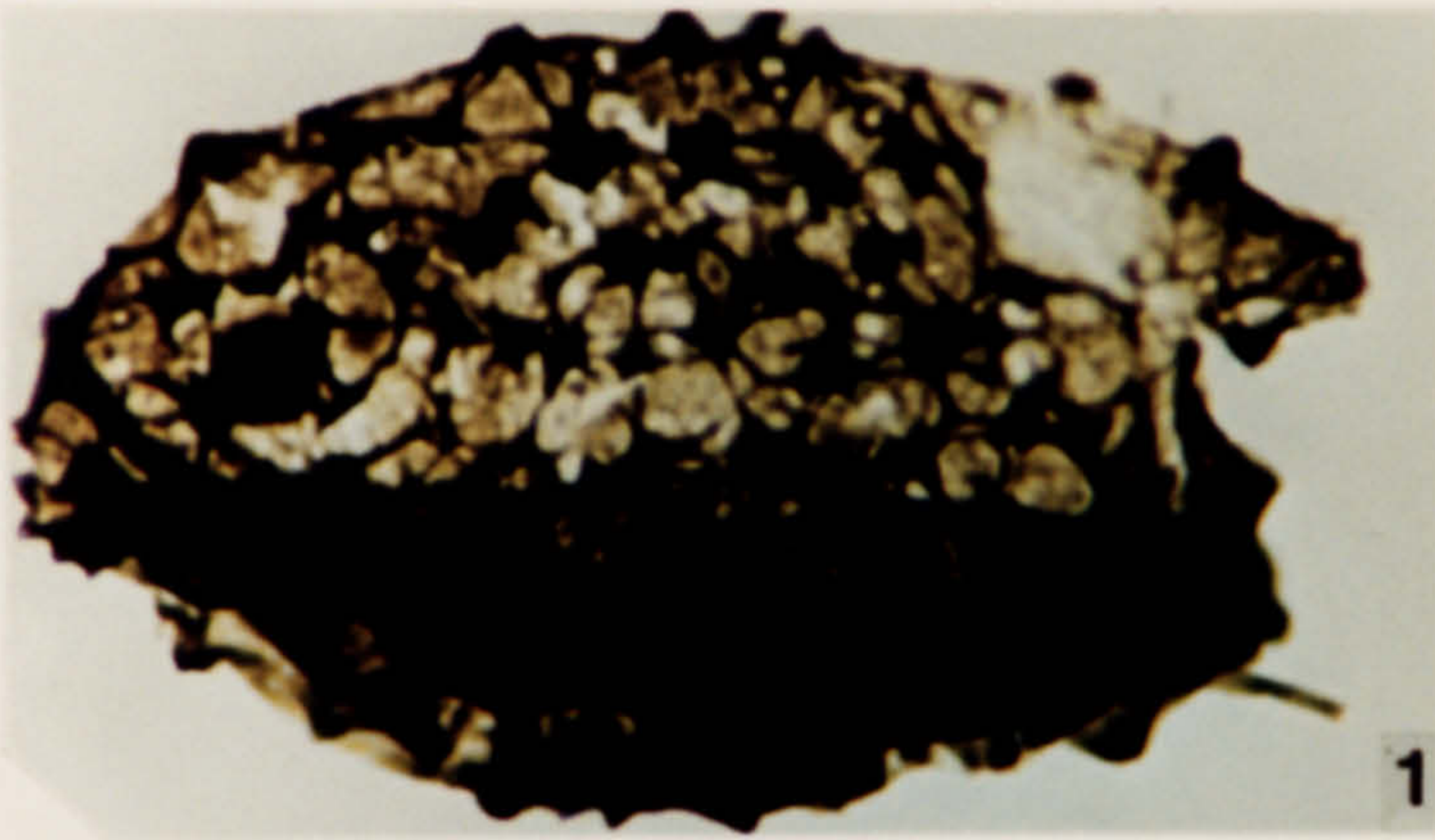
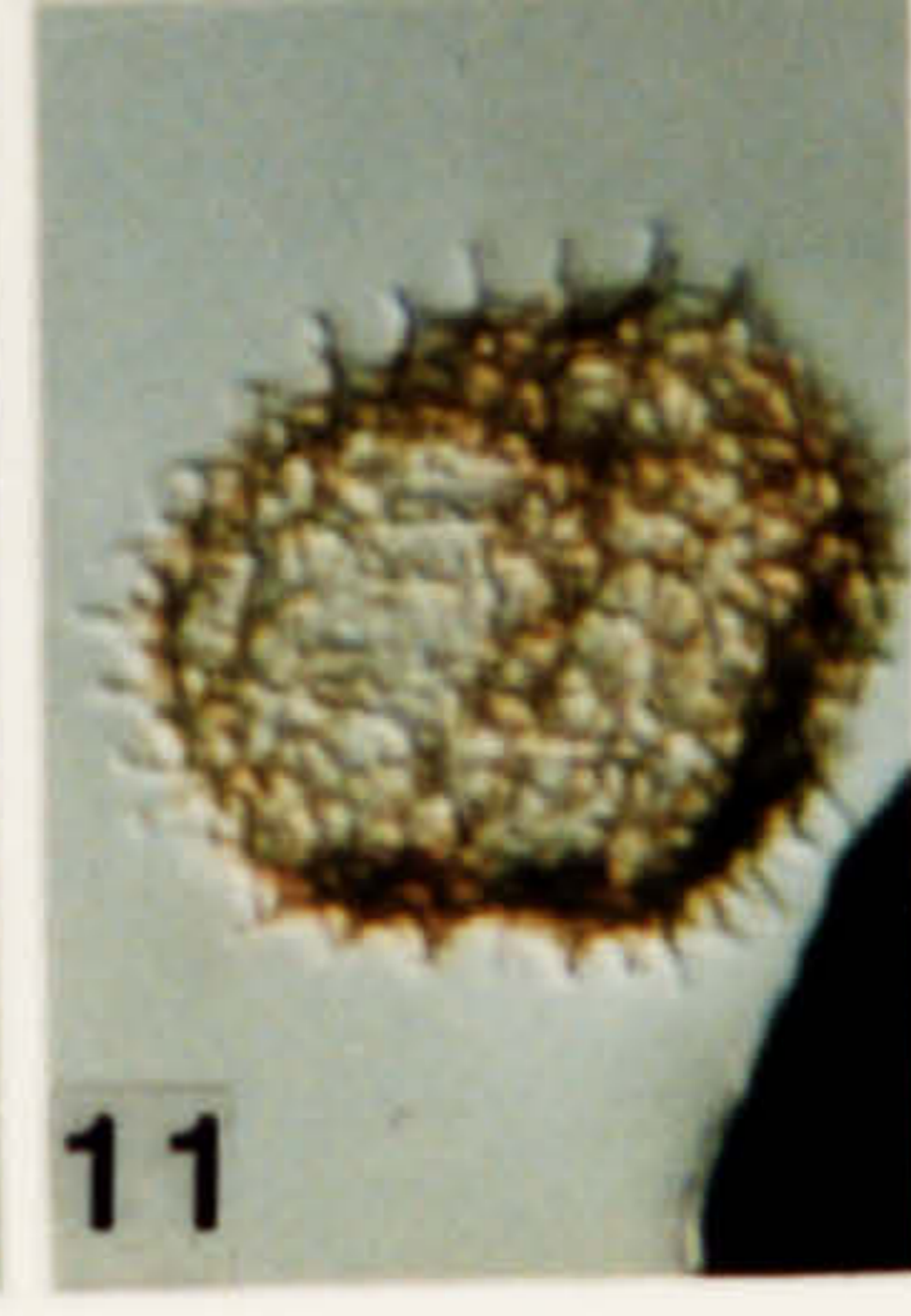
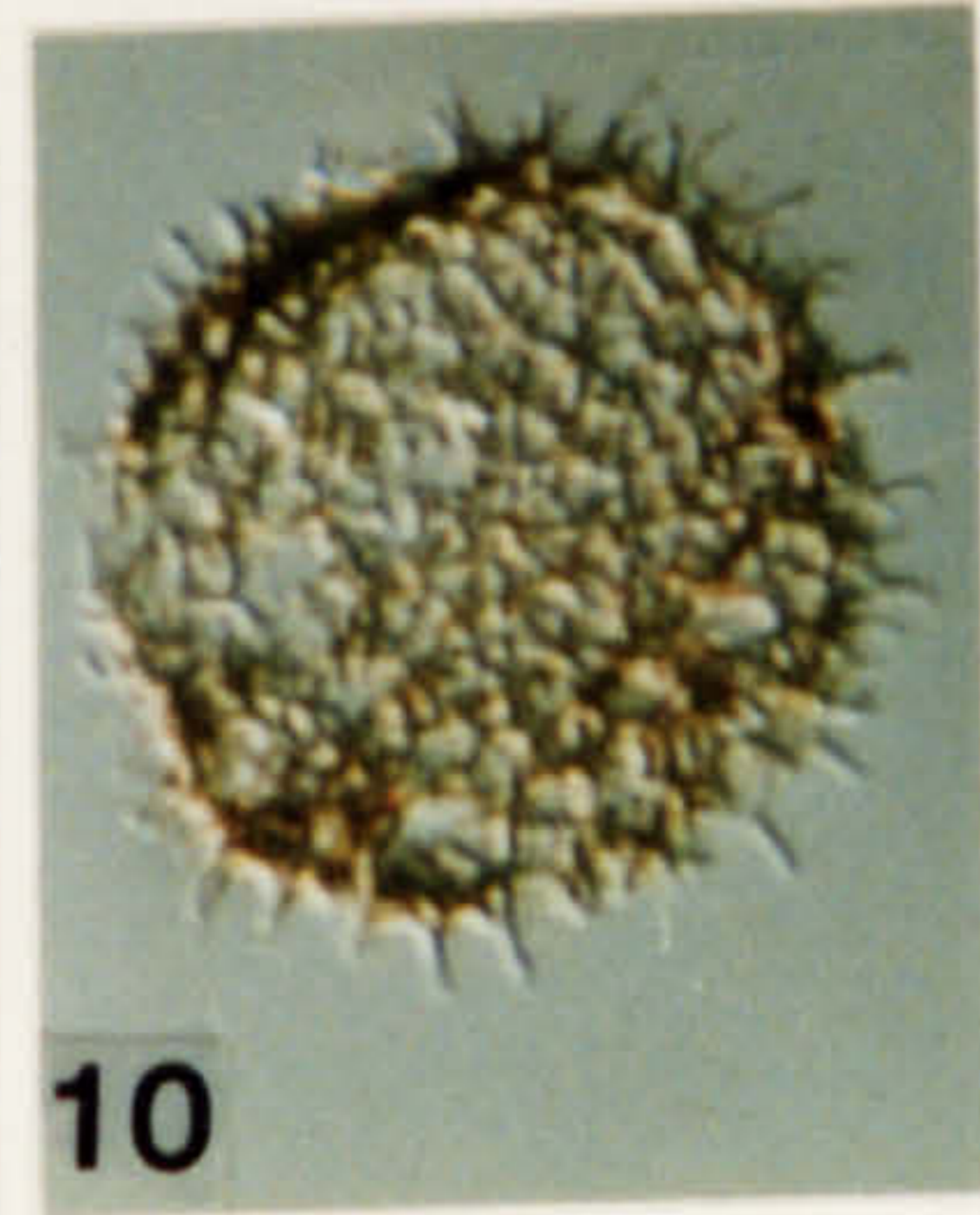
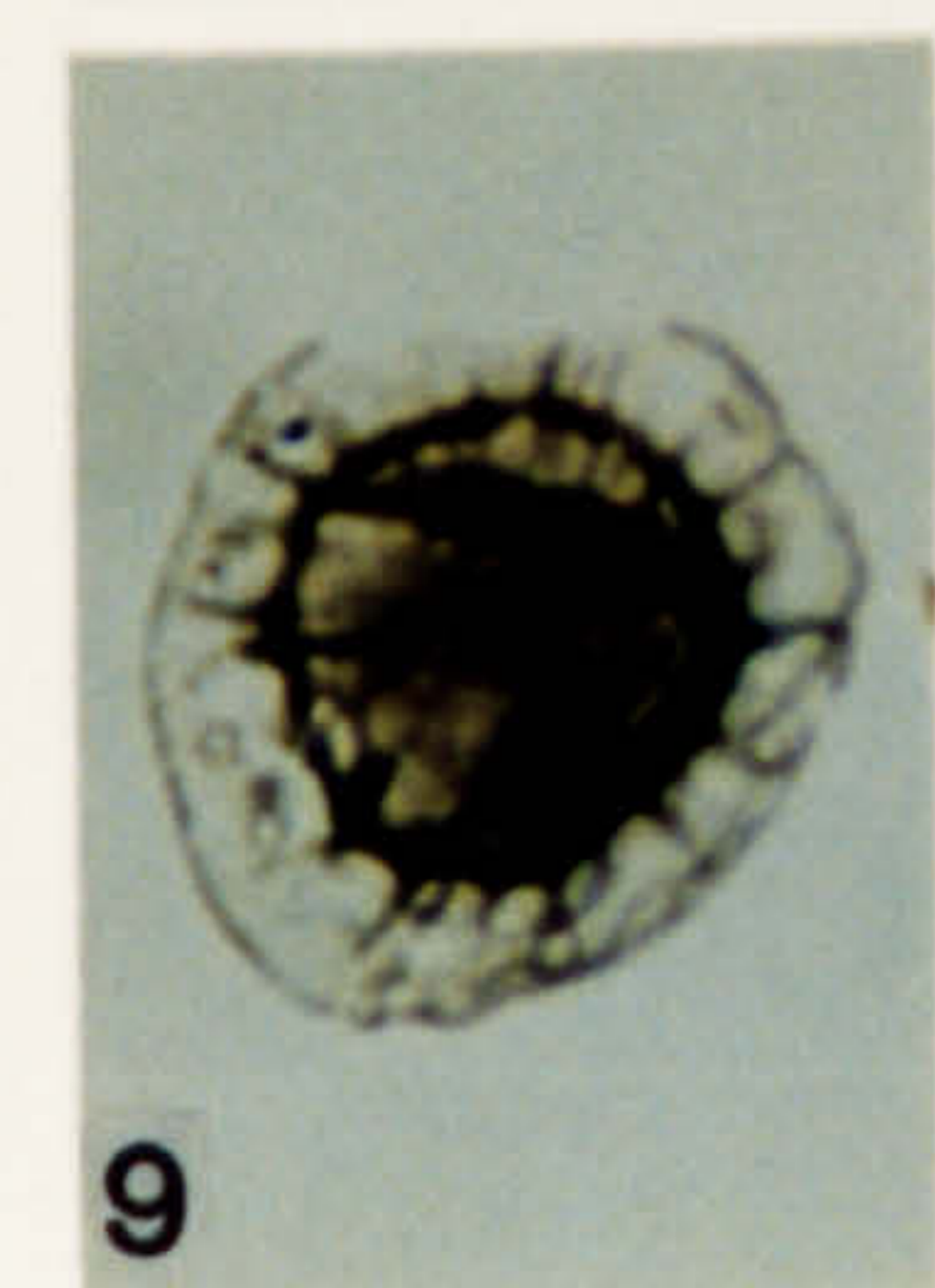
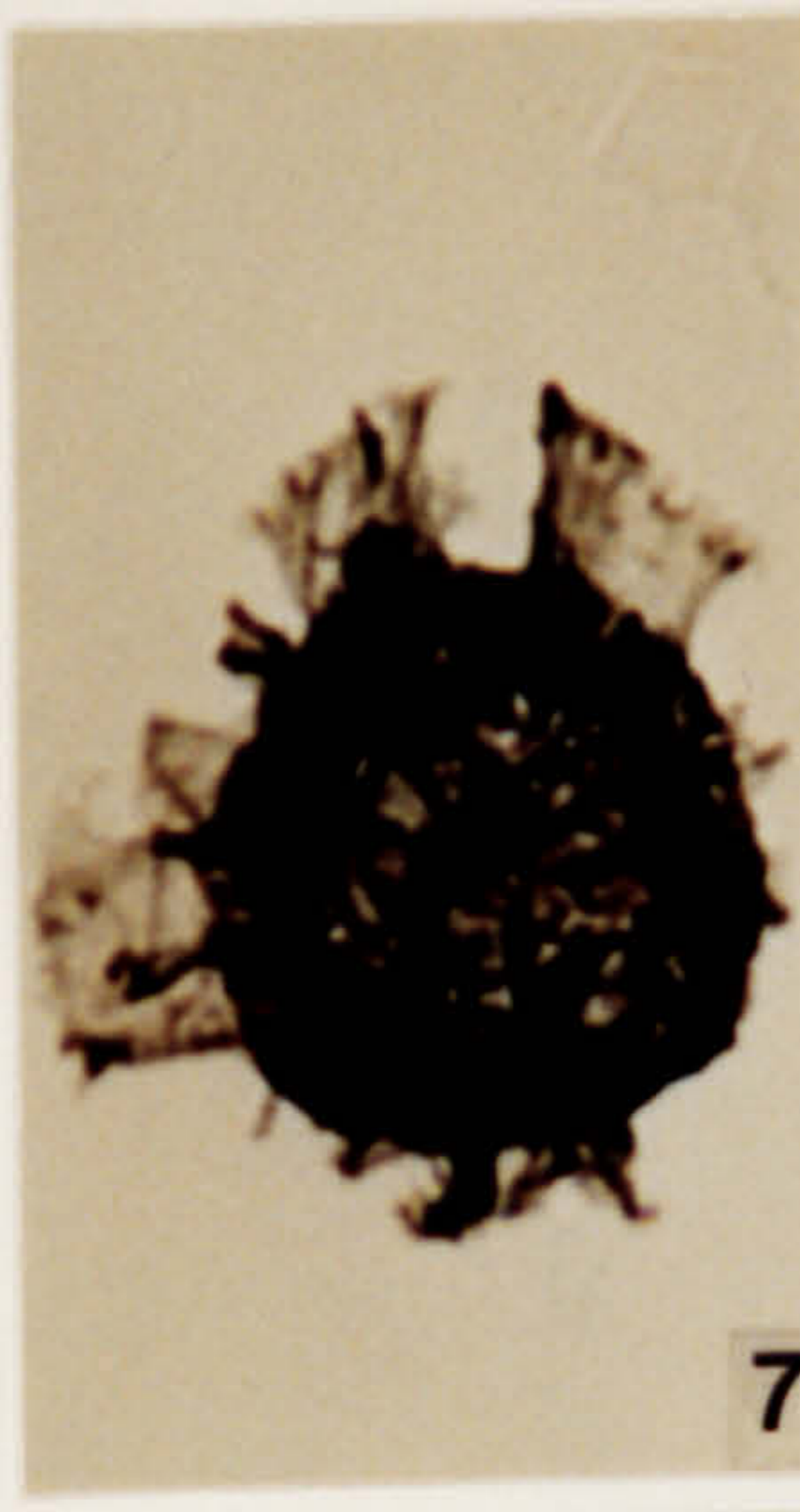
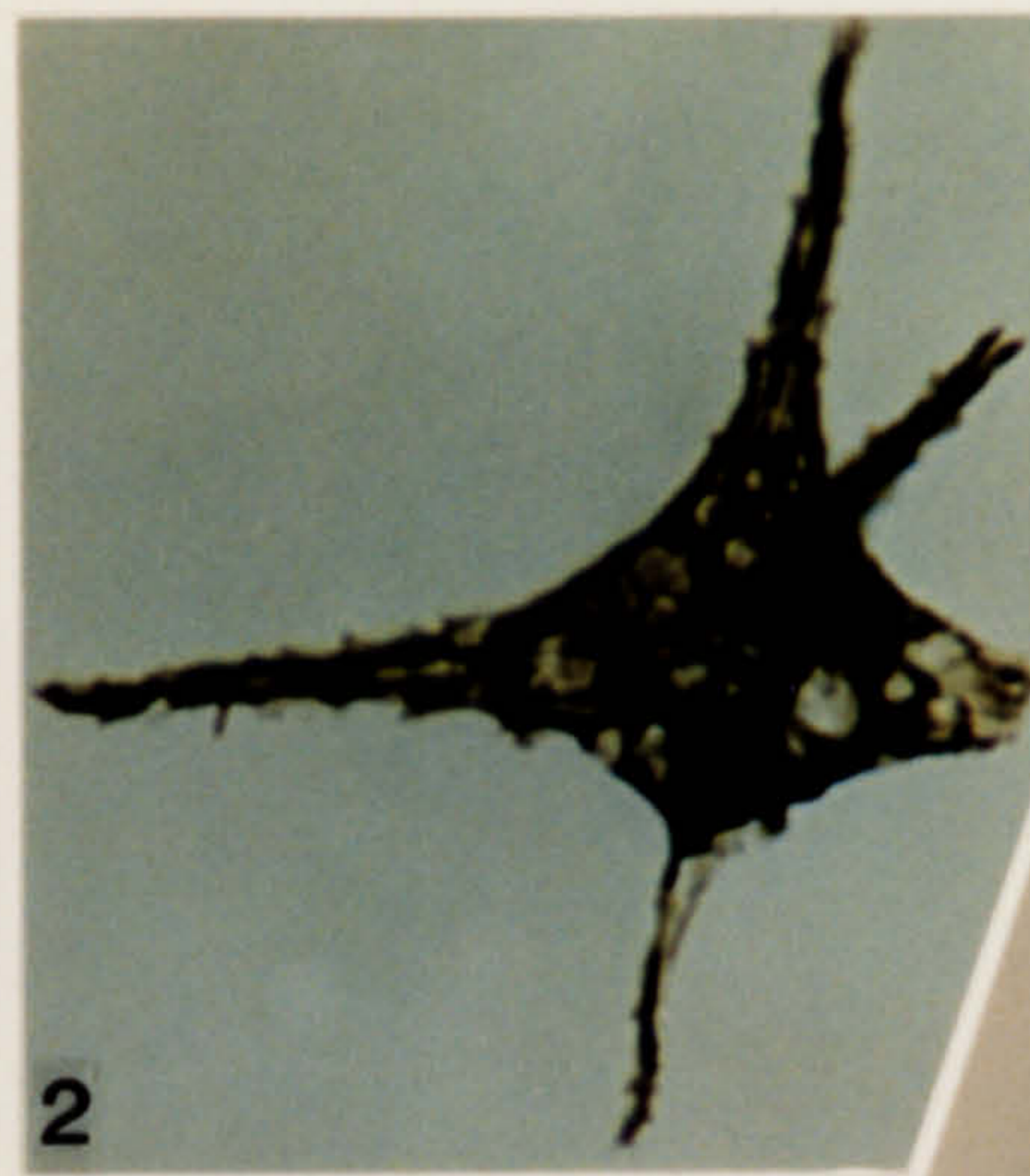
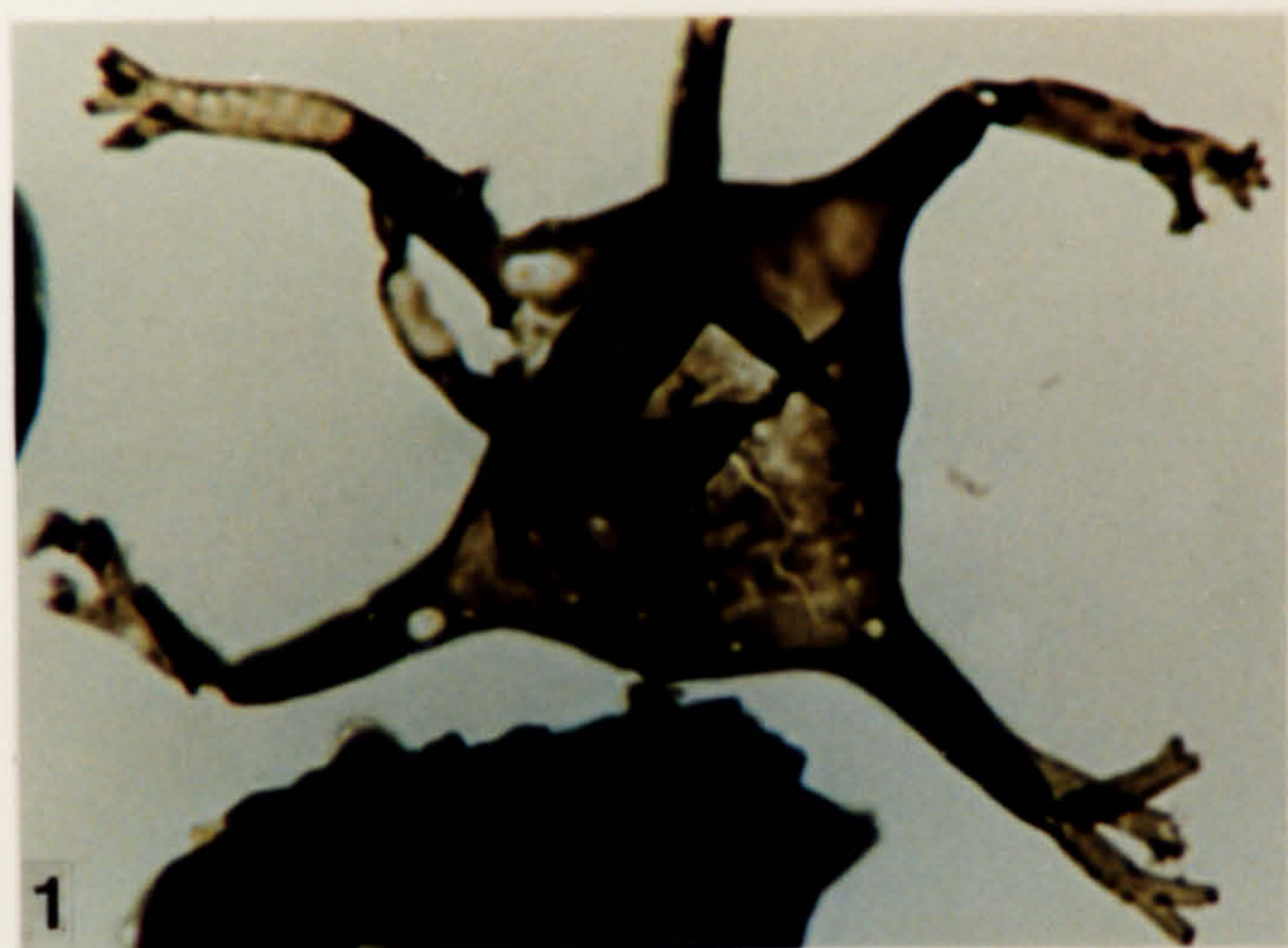




Plate 139.

Acritarchs from the Lmhaifid Formation, late Gedinnian in age.

1. *Diexallophasis remota* var. *rabiosum* (Cramer) comb. nov. OD 4070.1, S-1, J13\4.
2. *Diexallophasis remota* var. *remota* (Deunff) Fensome *et al.* 1990. OD 4069.8-4071.5, S-3, U32\1.
3. *Diexallophasis remota* var. *rabiosum* (Cramer) comb. nov. OD 4069.8-4071.5, S-3, E9\2.
4. *Diexallophasis remota* var. *remota* (Deunff) Fensome *et al.* 1990. OD 4069.8-4071.5, 1-1, M16\3.
5. *Leiofusa estrecha* Cramer 1964. OD 4069.8-4071.5, 1-1, F13\3.
6. *Diexallophasis remota* var. *rabiosum* (Cramer) comb. nov. OD 4070.1, S-1, F17\2.
7. cf. *Fimbriaglomorella* sp. OD 4069.8-4071.5, 1-1, Q32\4.
8. cf. *Fimbriaglomorella* sp. OD 4069.8-4071.5, 1-1, S12\2.
9. *Duvernaysphaera* sp. OD 4069.8-4071.5, S-3, U17\3.
10. *Hapsidopalla* cf. *sannemannii* (Deunff) Playford 1977. OD 4070.1, S-4, H31\4.
11. *Hapsidopalla* cf. *sannemannii* (Deunff) Playford 1977. OD 4070.1, S-4, M10\2.
12. *Hapsidopalla* cf. *sannemannii* (Deunff) Playford 1977. OD 4069.8-4071.5, 1-1, M16\4.
13. *Leiofusa estrecha* Cramer 1964. OD 4069.8-4071.5, 1-1, S4\1.

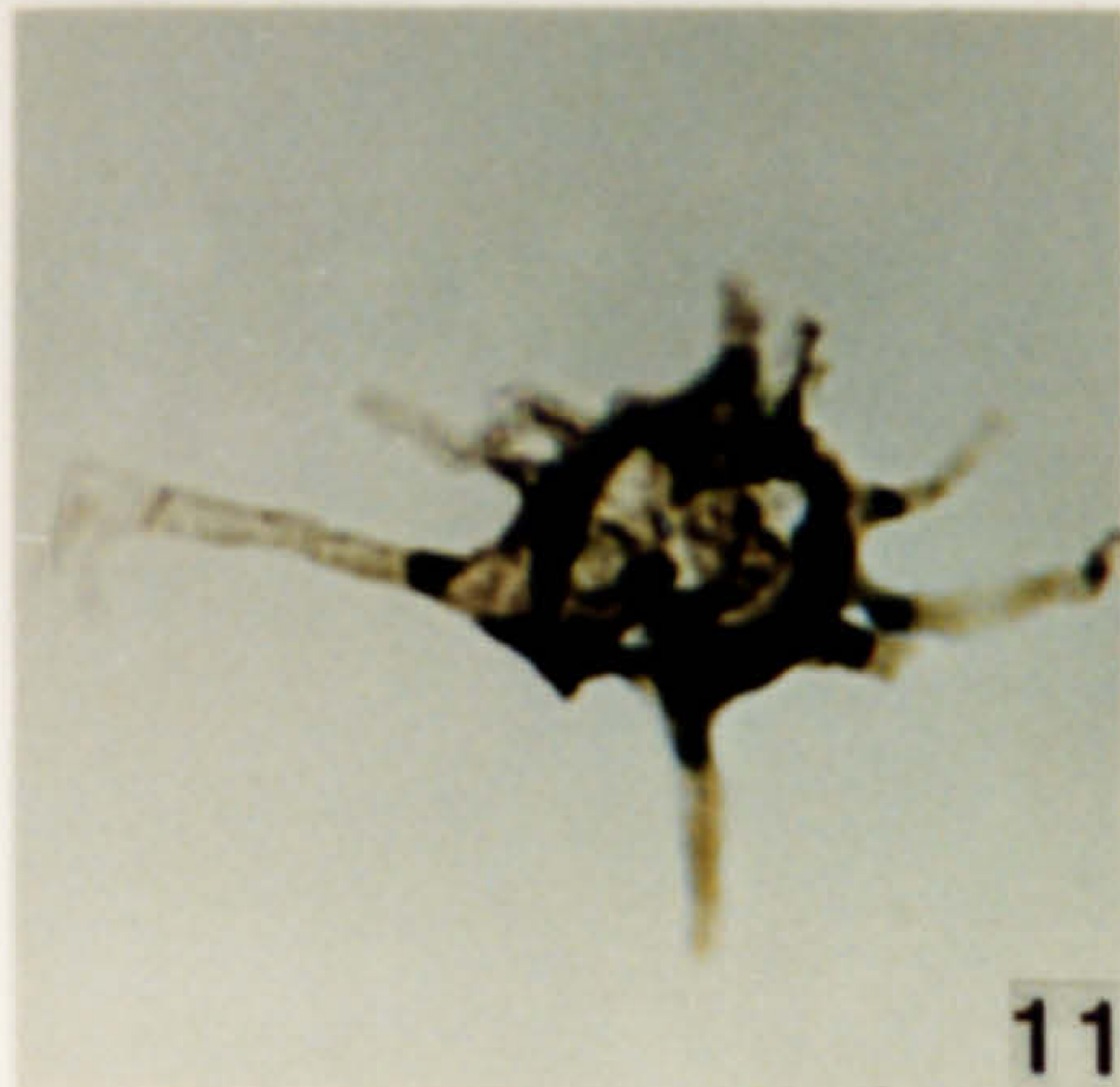
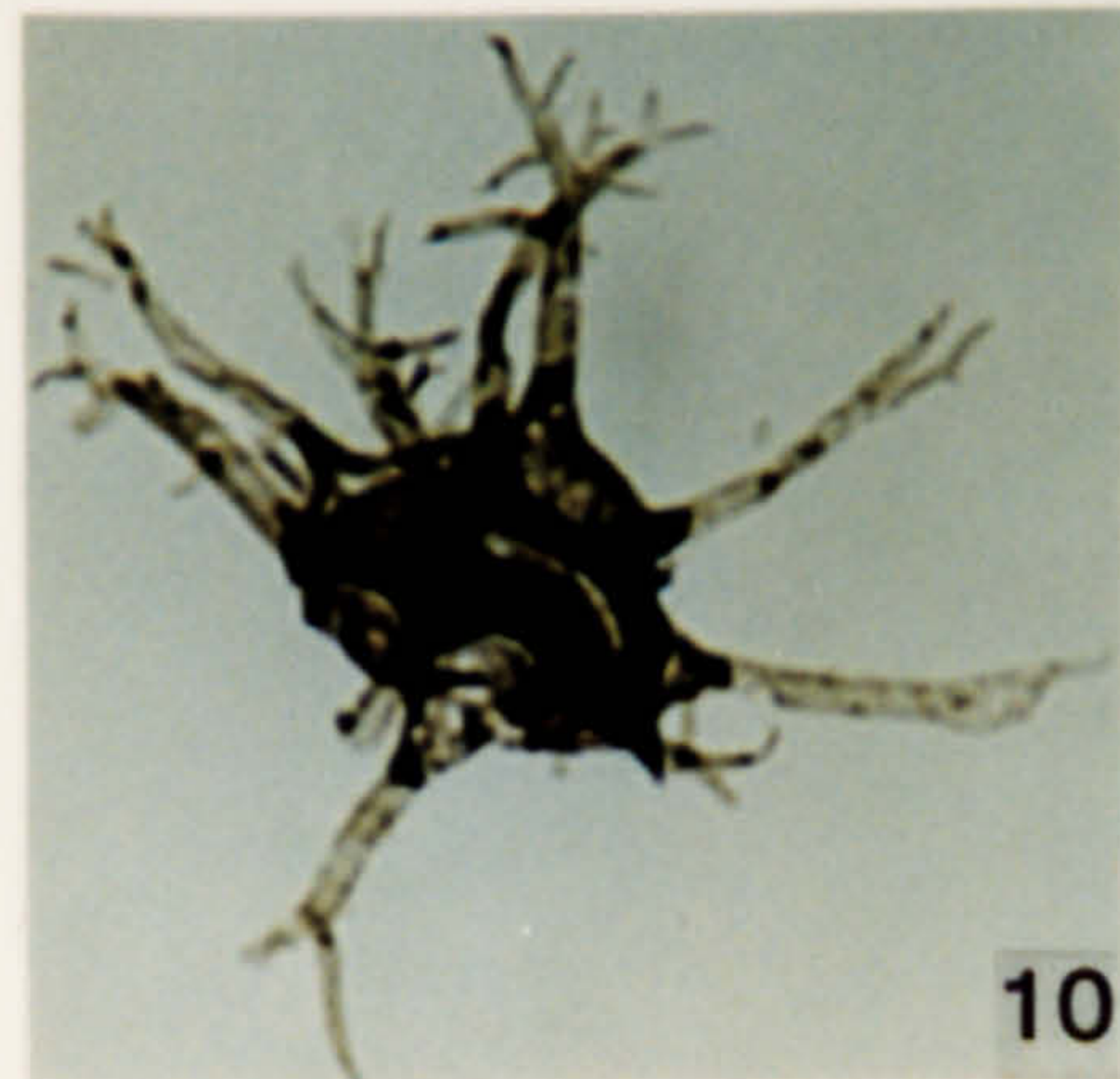
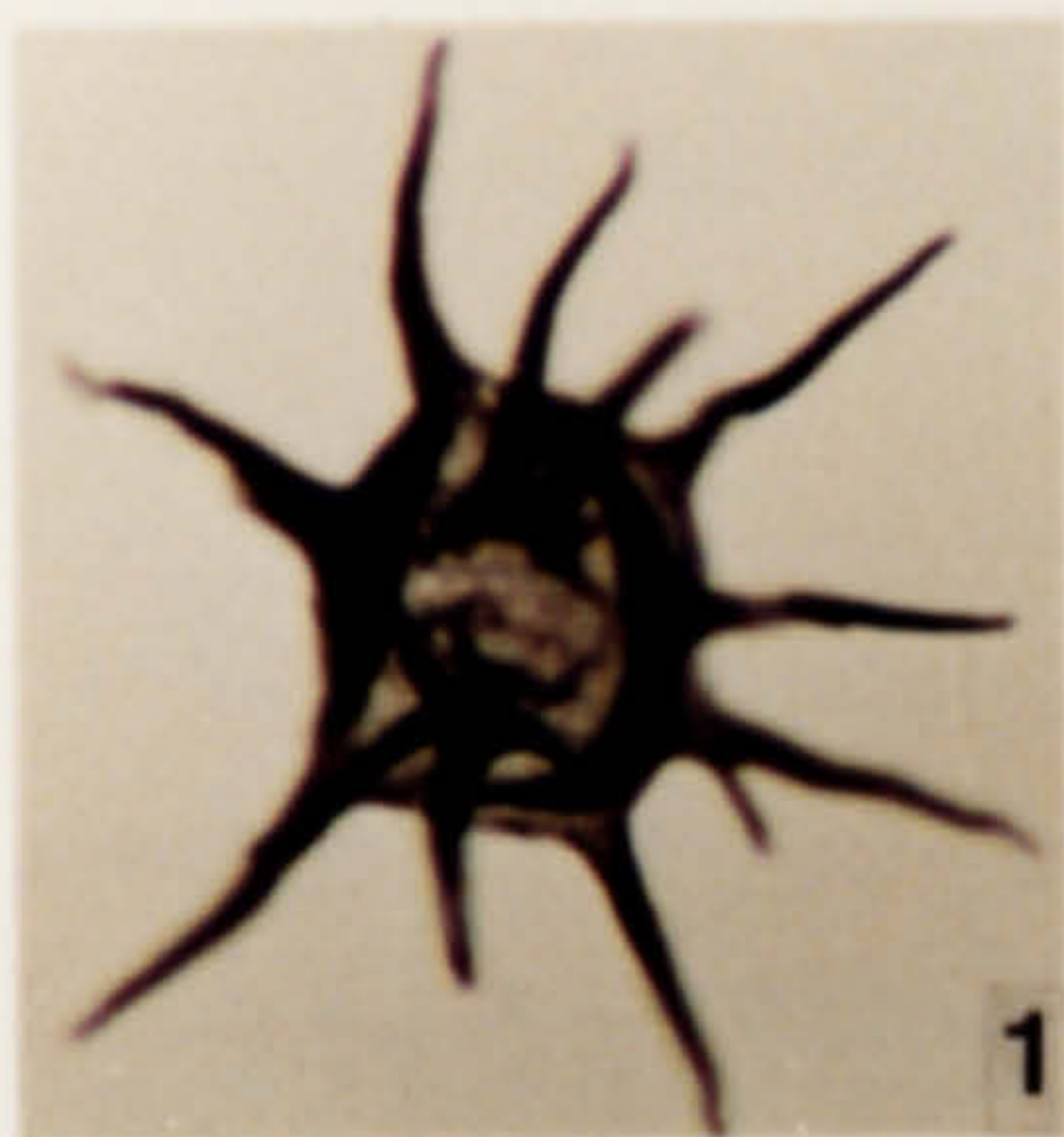


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**Plate 140.**

Acritarchs from the Lmhaifid Formation, late Gedinnian in age.

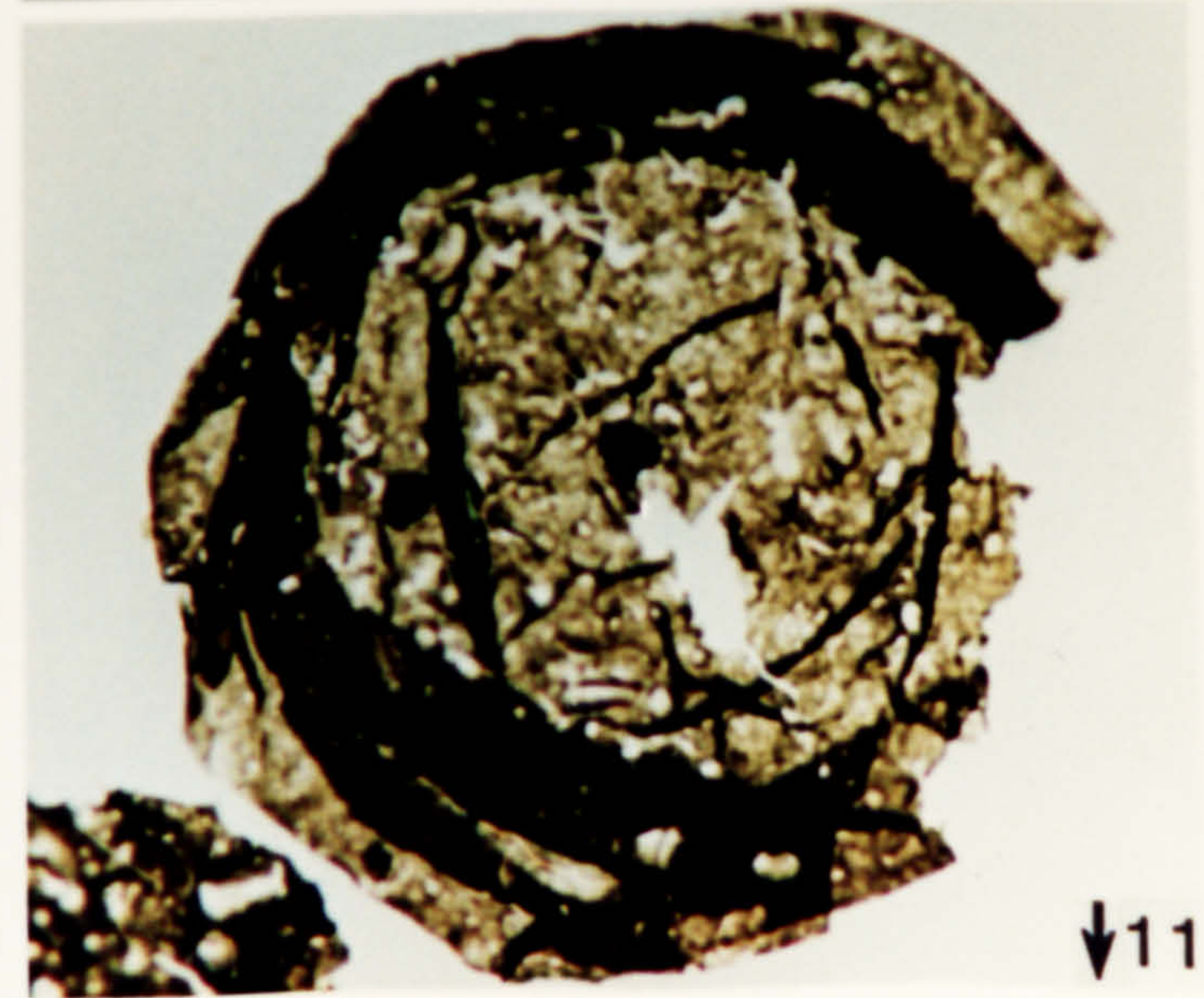
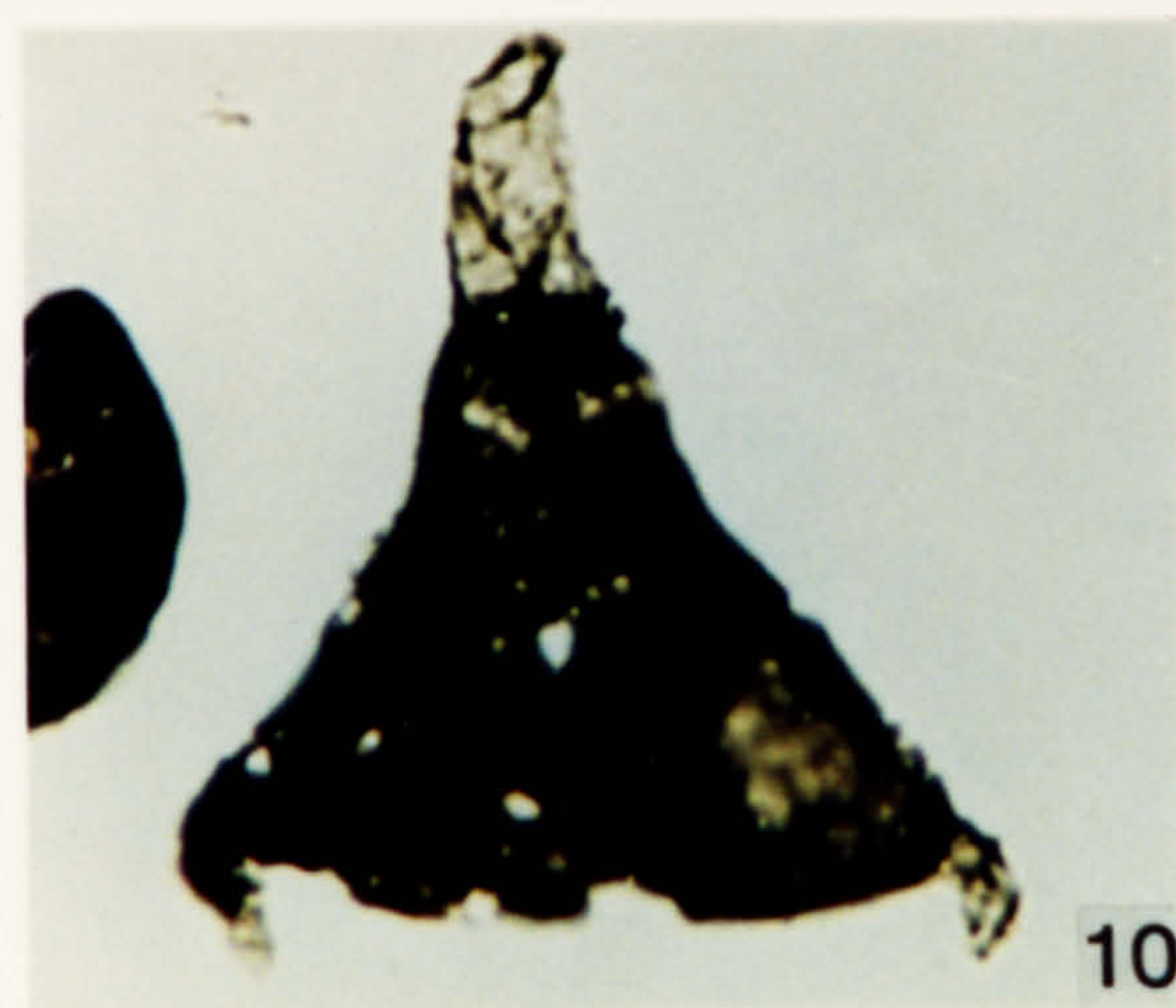
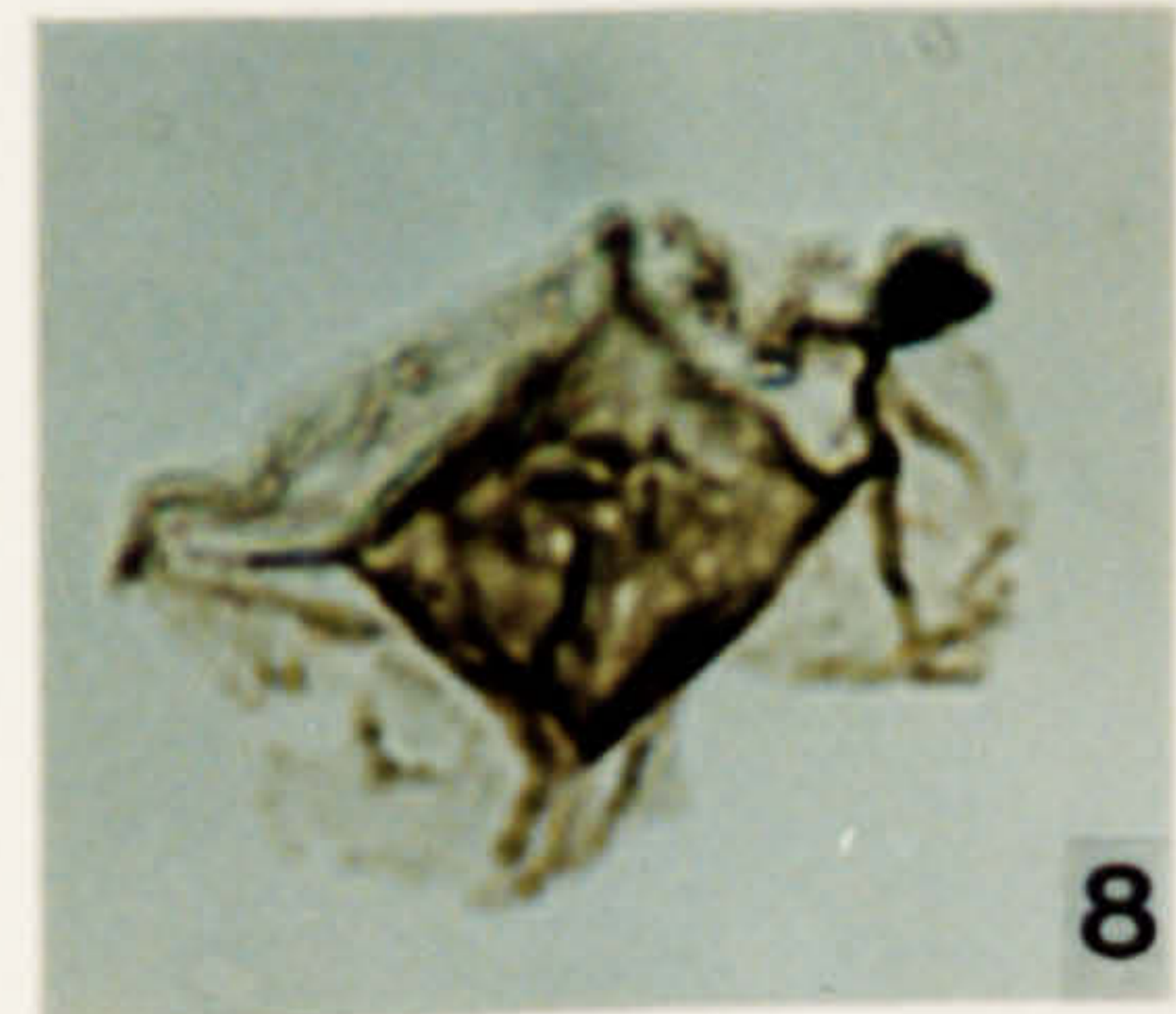
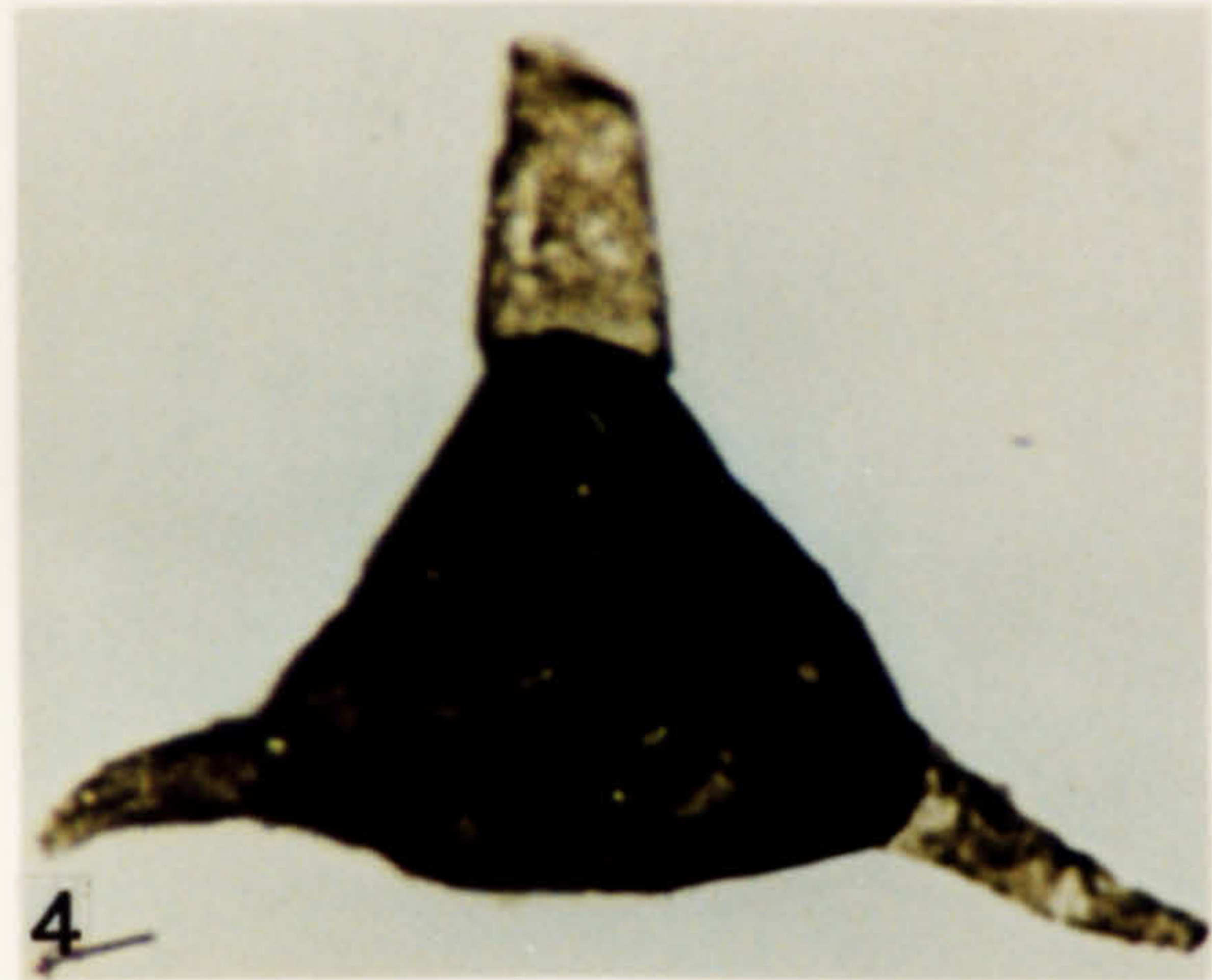
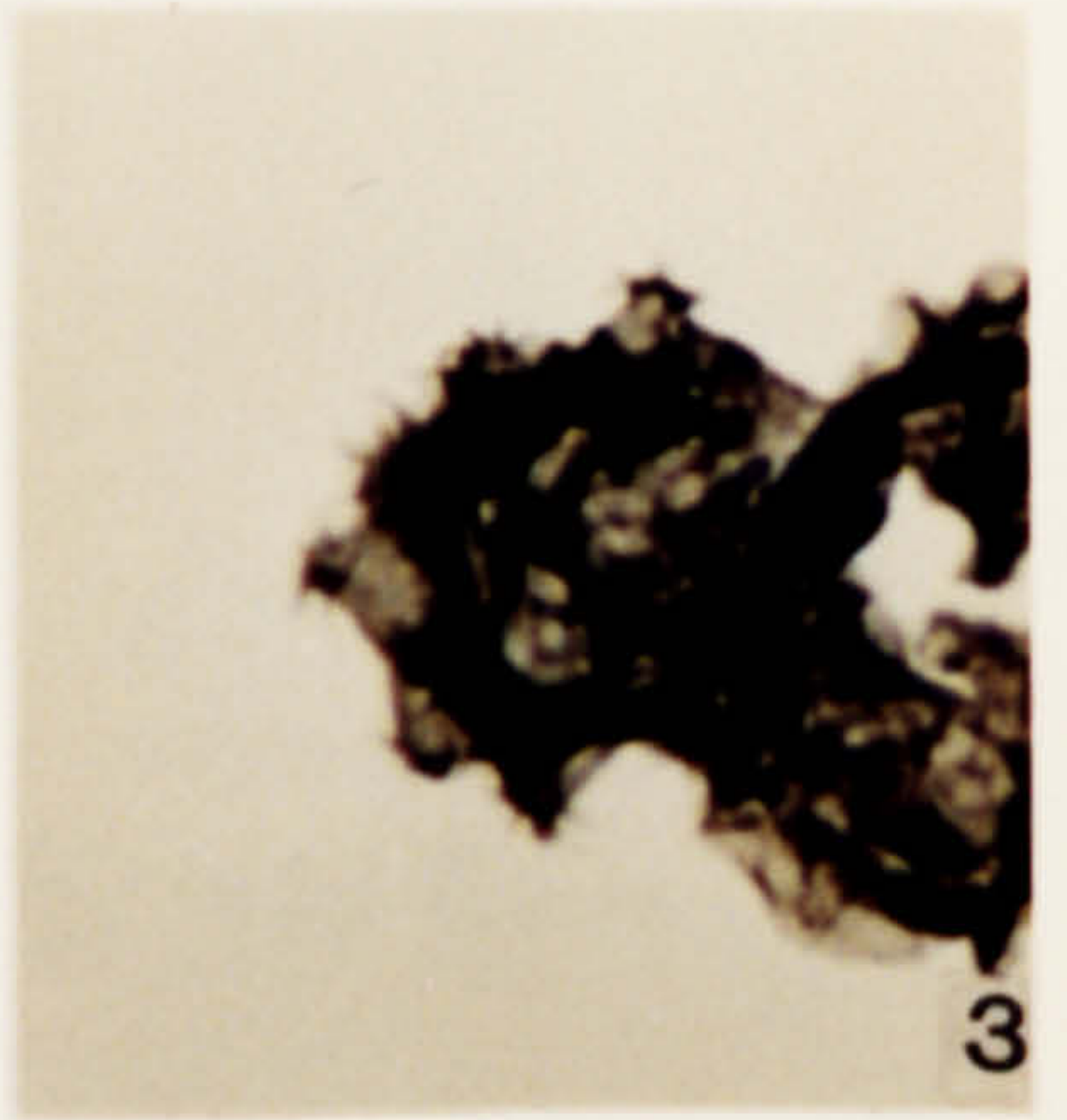
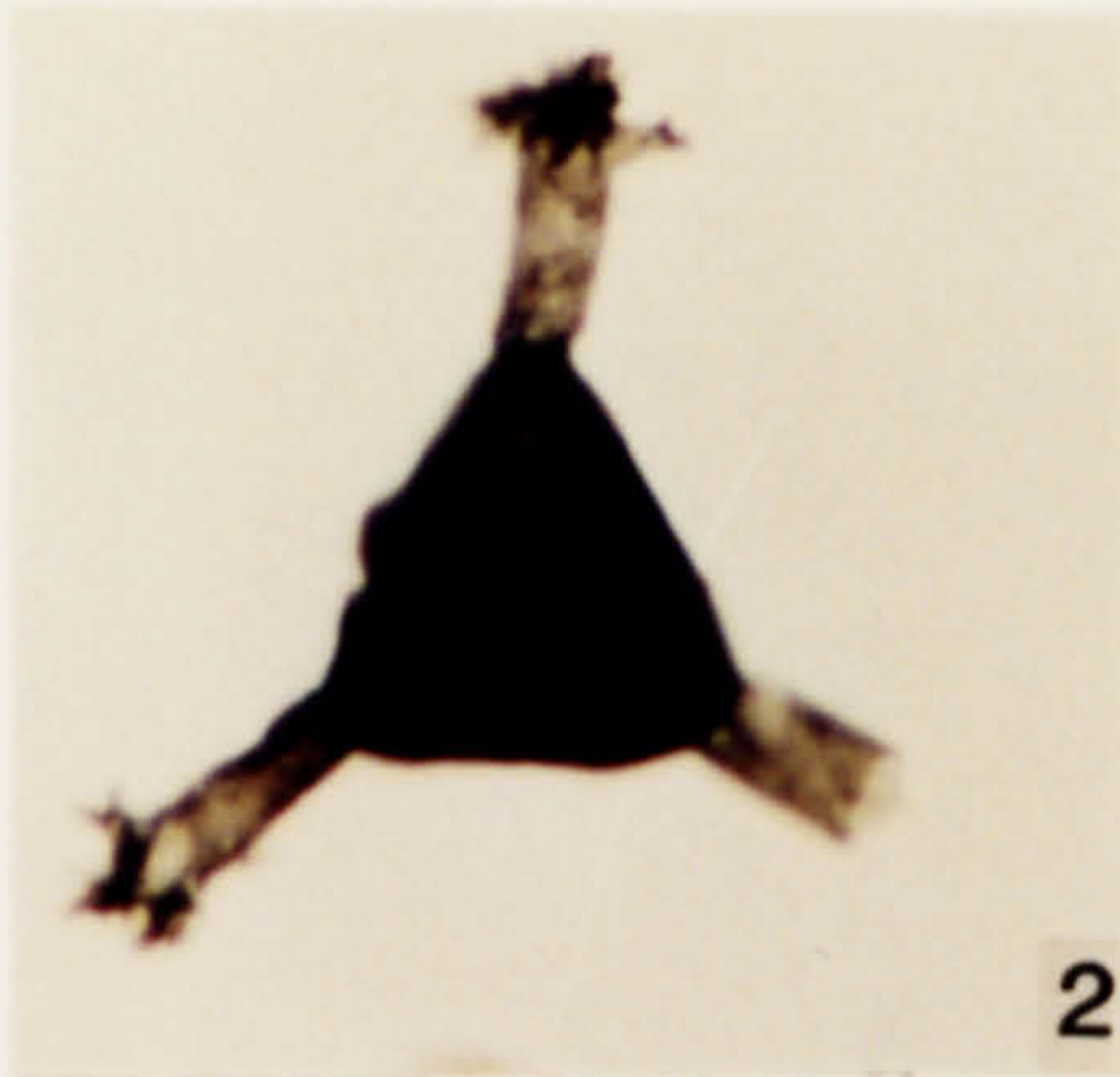
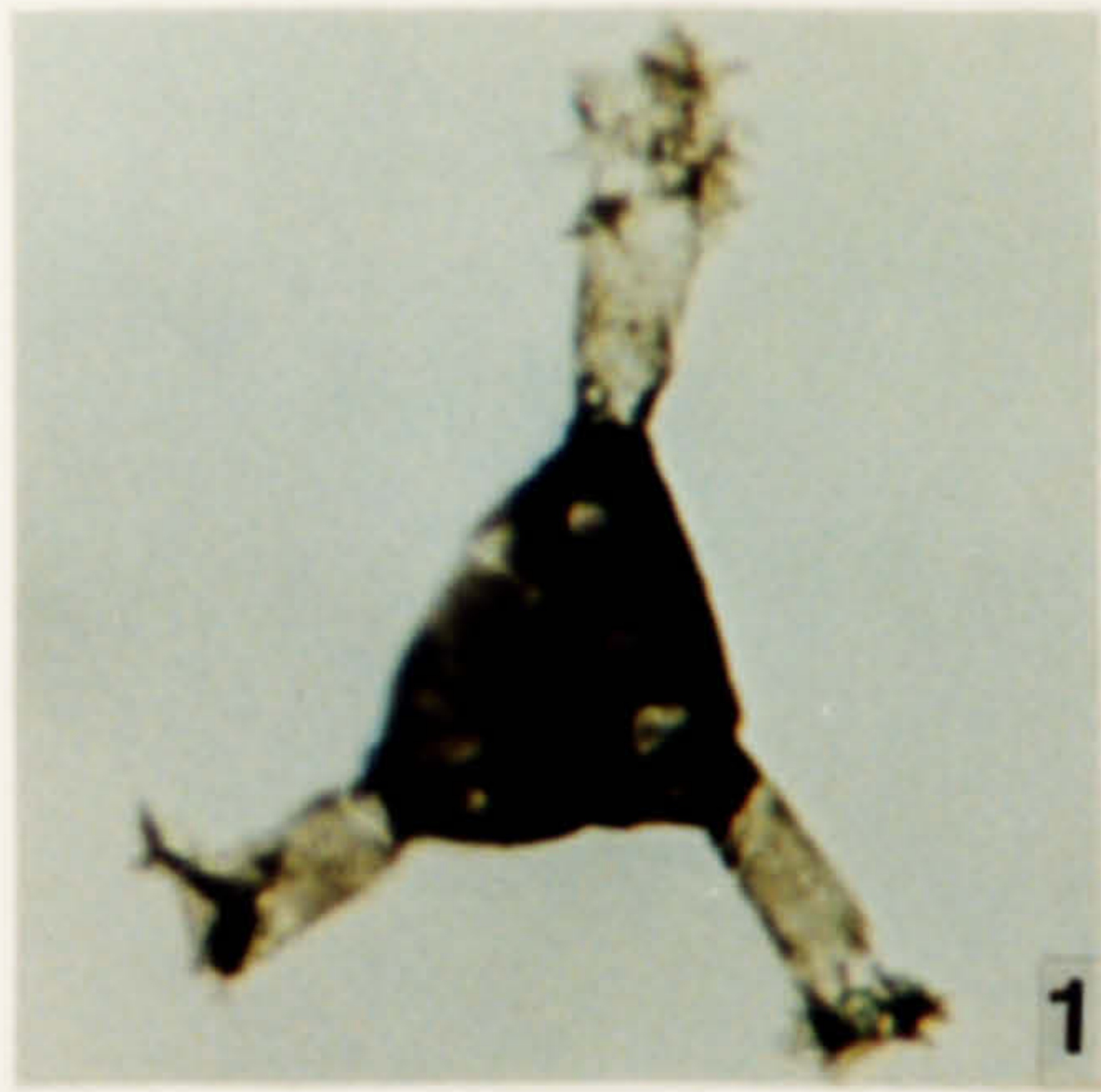
1. *Micrhystridium stellatum* Deflandre 1945. OD 4069.8-4071.5, 1-1, P40\4.
2. *Multiplicisphaeridium lobeznum* (Cramer) Eisenack, Cramer & Diez 1973. OD 4069.8-4071.5, 1-1, S40\1.
3. *Multiplicisphaeridium raspum* (Cramer) Eisenack, Cramer & Diez 1973. OD 4069.8-4071.5, 1-1, E7\3.
4. *Multiplicisphaeridium raspum* (Cramer) Eisenack, Cramer & Diez 1973. OD 4070.1, S-4, Q20\2.
5. *Onondagella deunffii* Cramer 1966. OD 4069.8-4071.5, S-3, P8\2.
6. *Onondagella* sp. 1. OD 4070.1, S-1, F17\3.
7. *Onondagella* sp. 1. OD 4070.1, S-1, P27\4.
8. *Onondagella* sp. 1. OD 4069.8-4071.5, S-3, J12\3.
9. *Onondagella* sp. 1. OD 4069.8-4071.5, S-3, J24\4.
10. *Ozotobrachion furcillatus* (Deunff) Playford 1977. OD 4070.1, S-4, J8\4.
11. *Ozotobrachion furcillatus* (Deunff) Playford 1977. OD 4069.8-4071.5, S-3, Y29\3.
12. *Ozotobrachion furcillatus* (Deunff) Playford 1977. OD 4069.8-4071.5, 1-1, N28\3.



**Plate 141.**

**Acritarchs from the Lmhaifid Formation, late Gedinnian in age.**

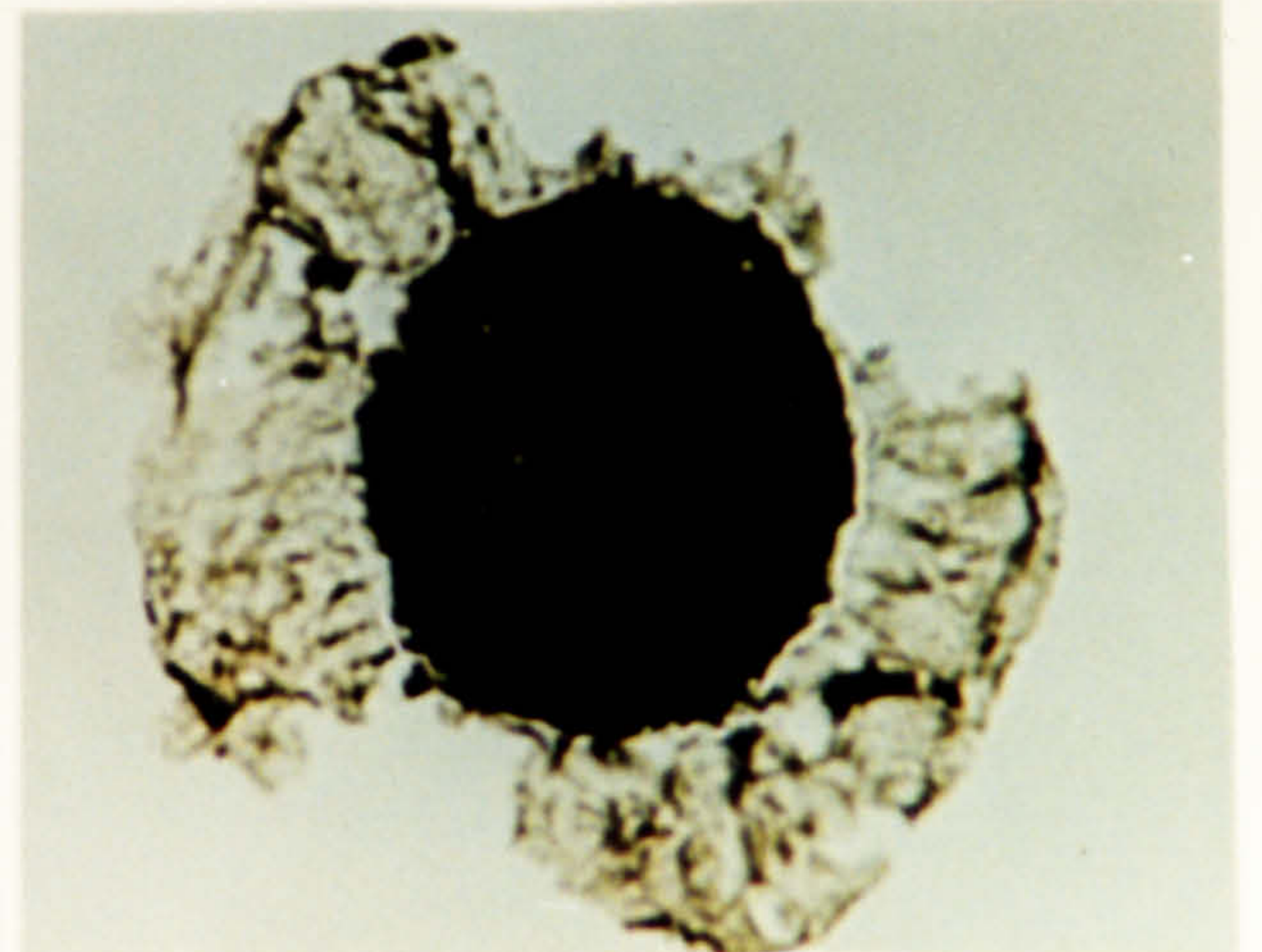
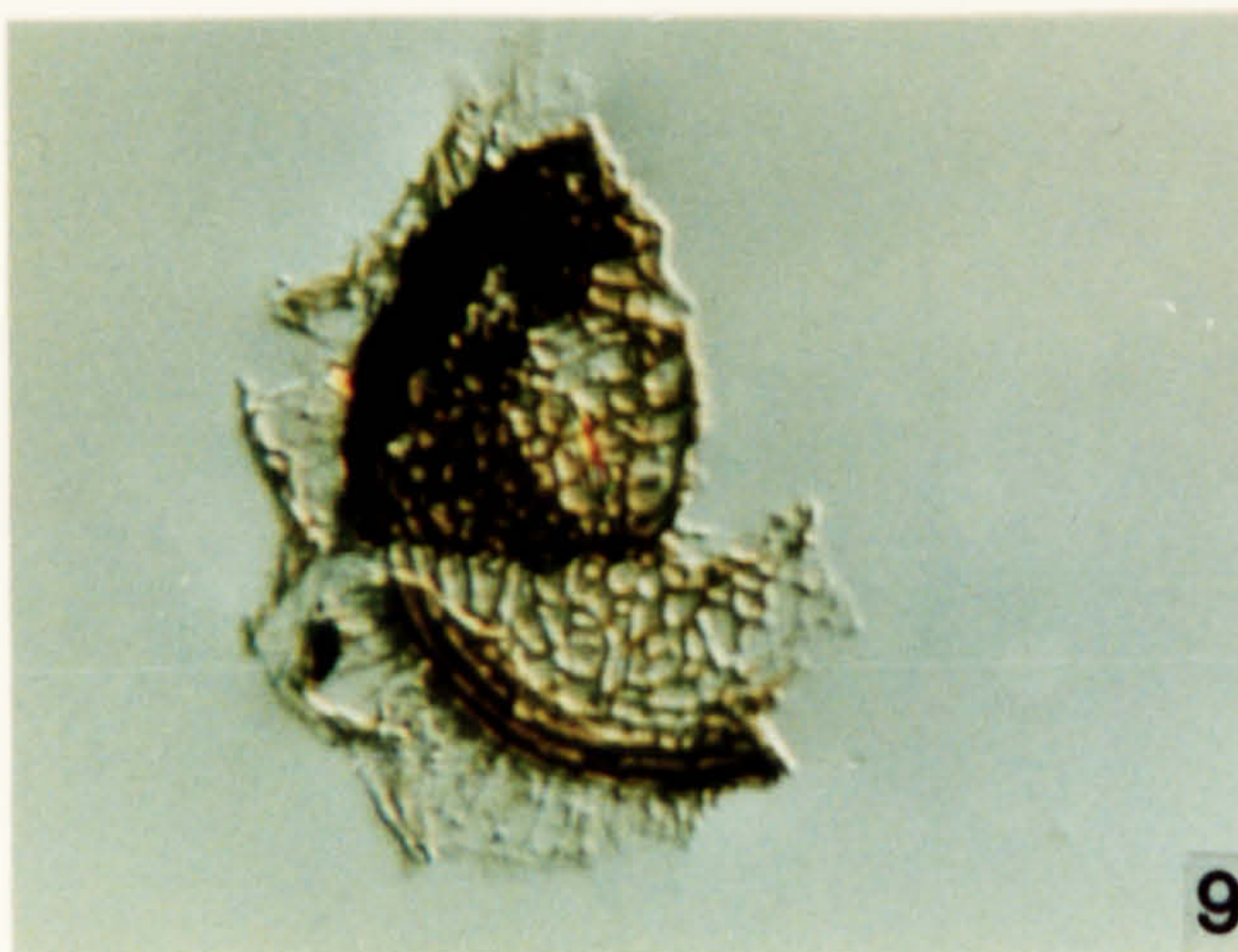
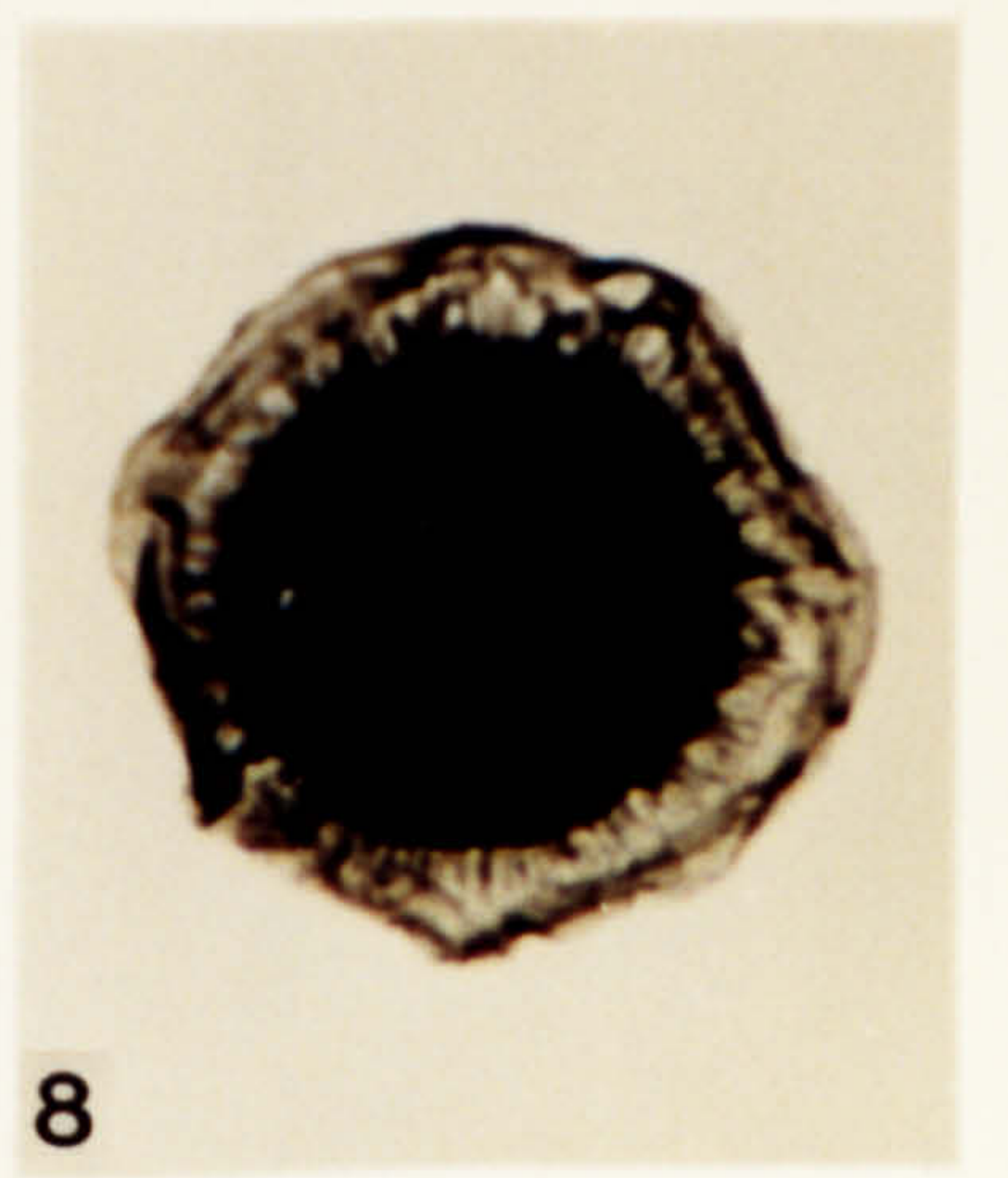
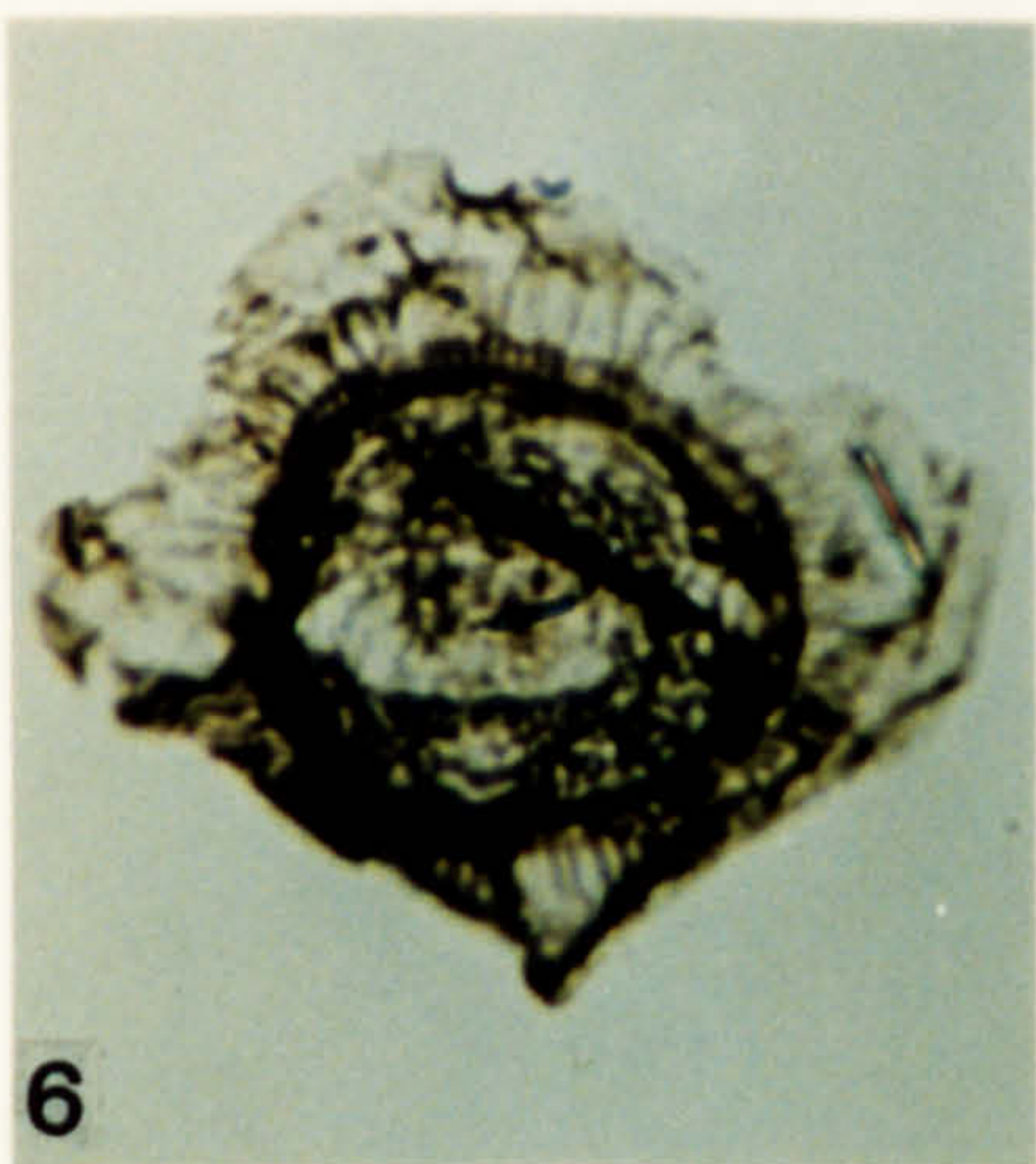
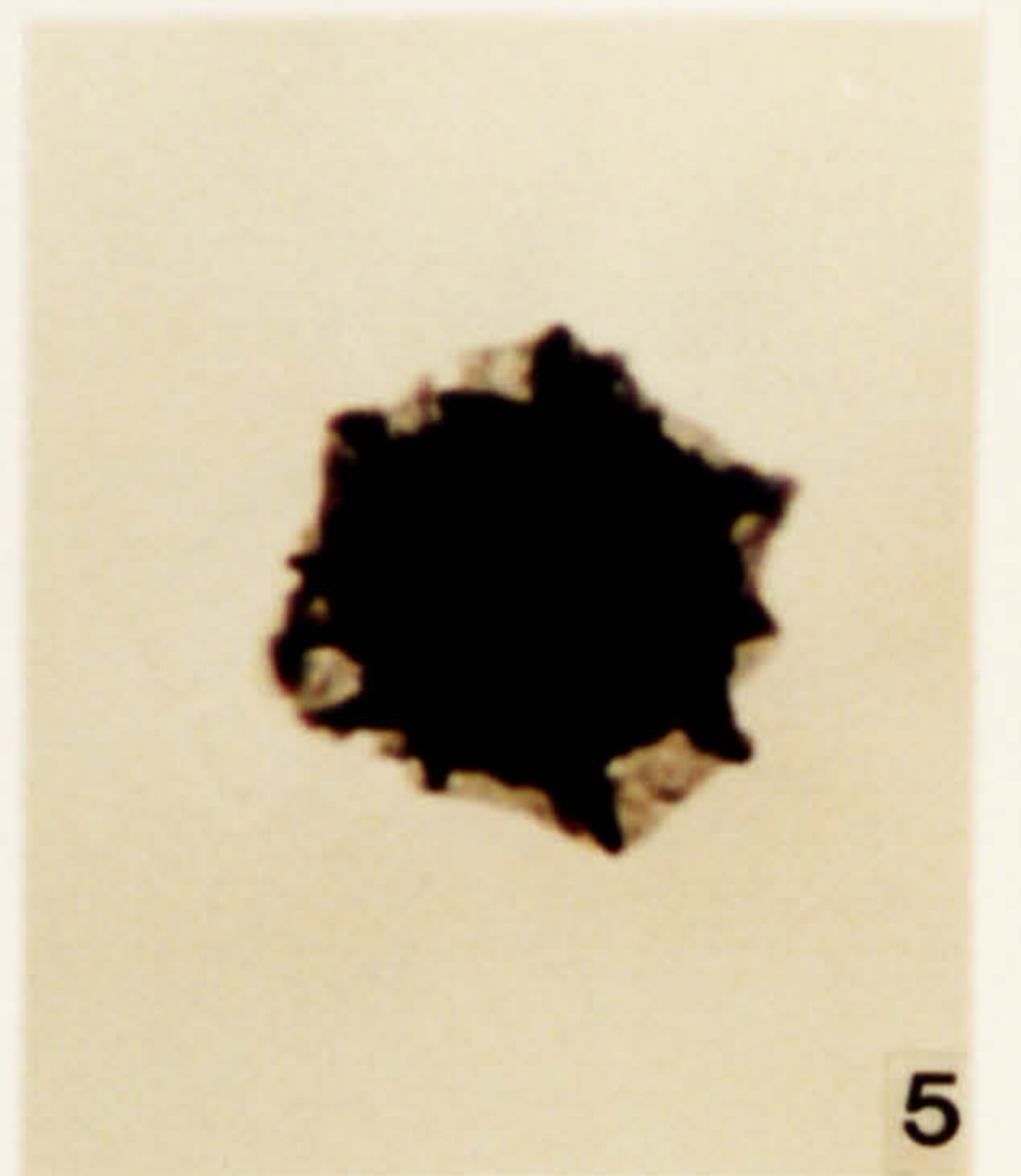
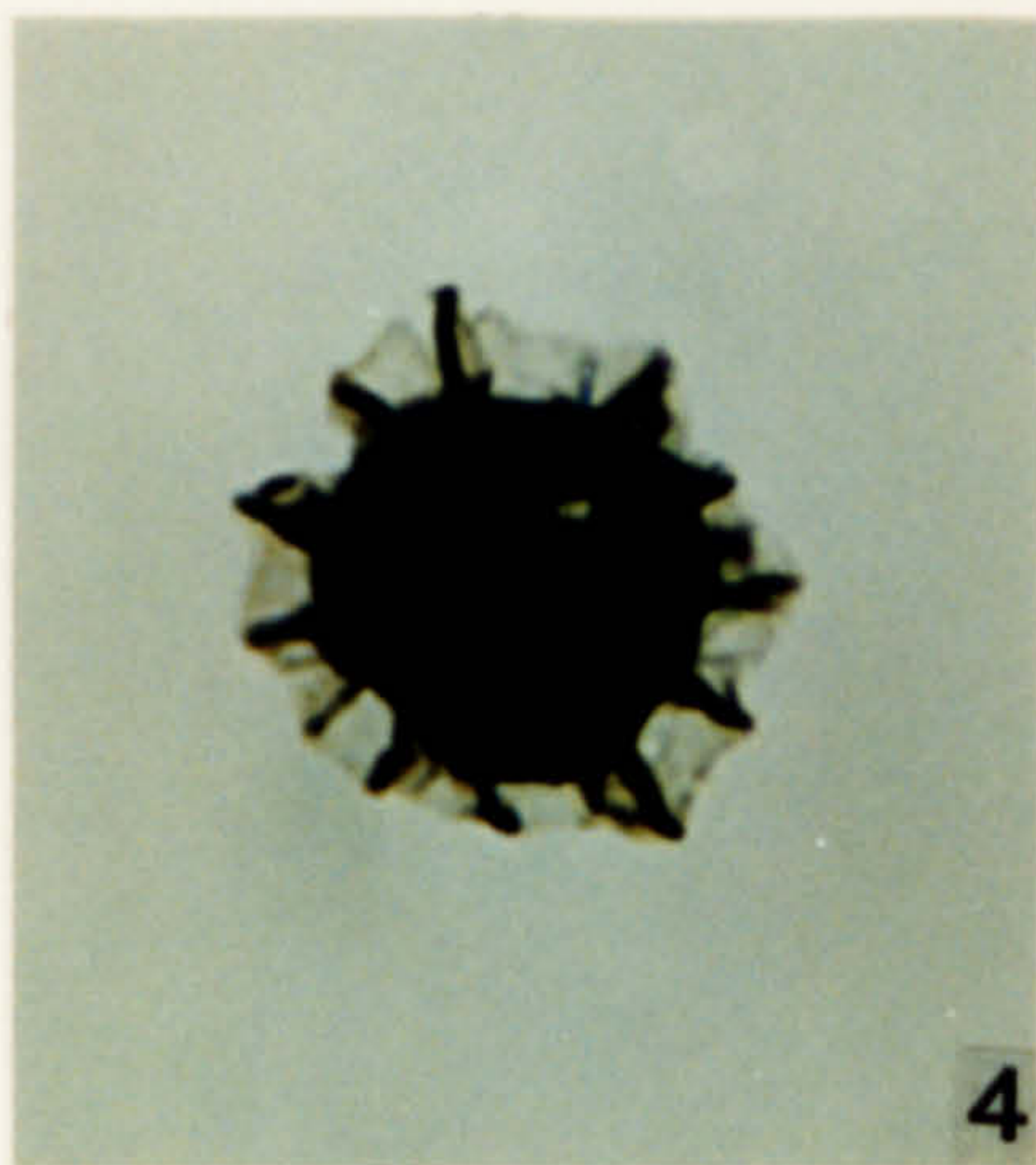
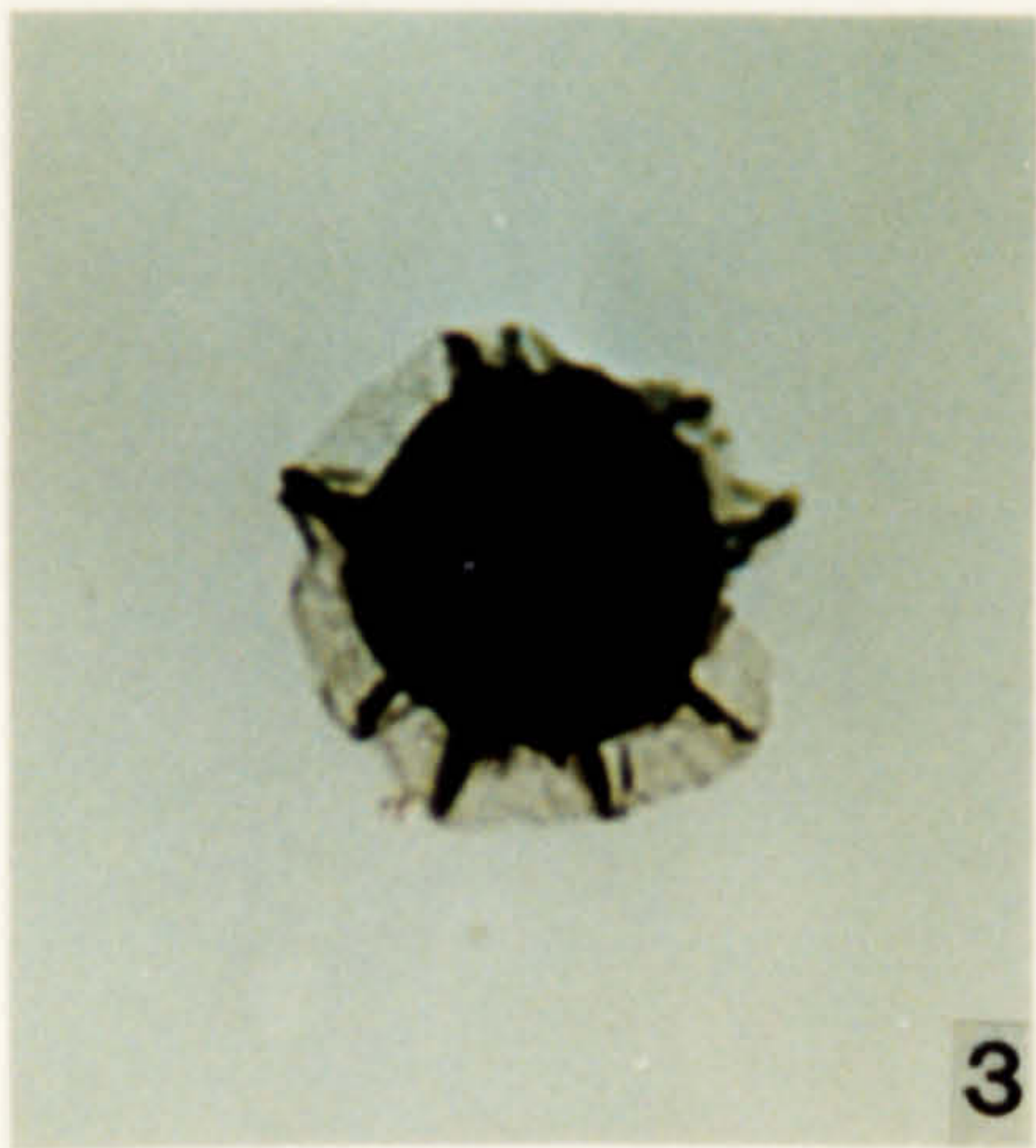
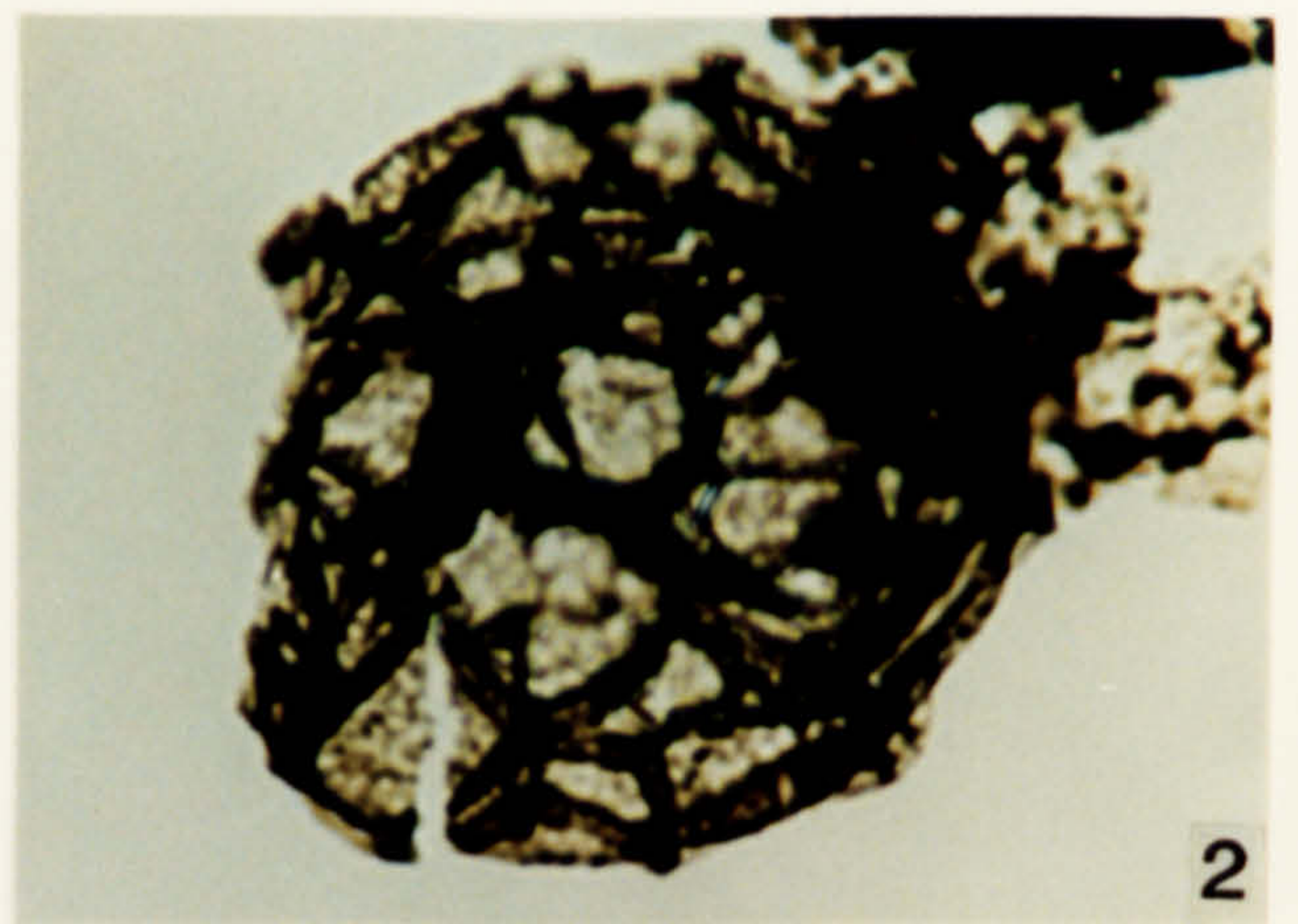
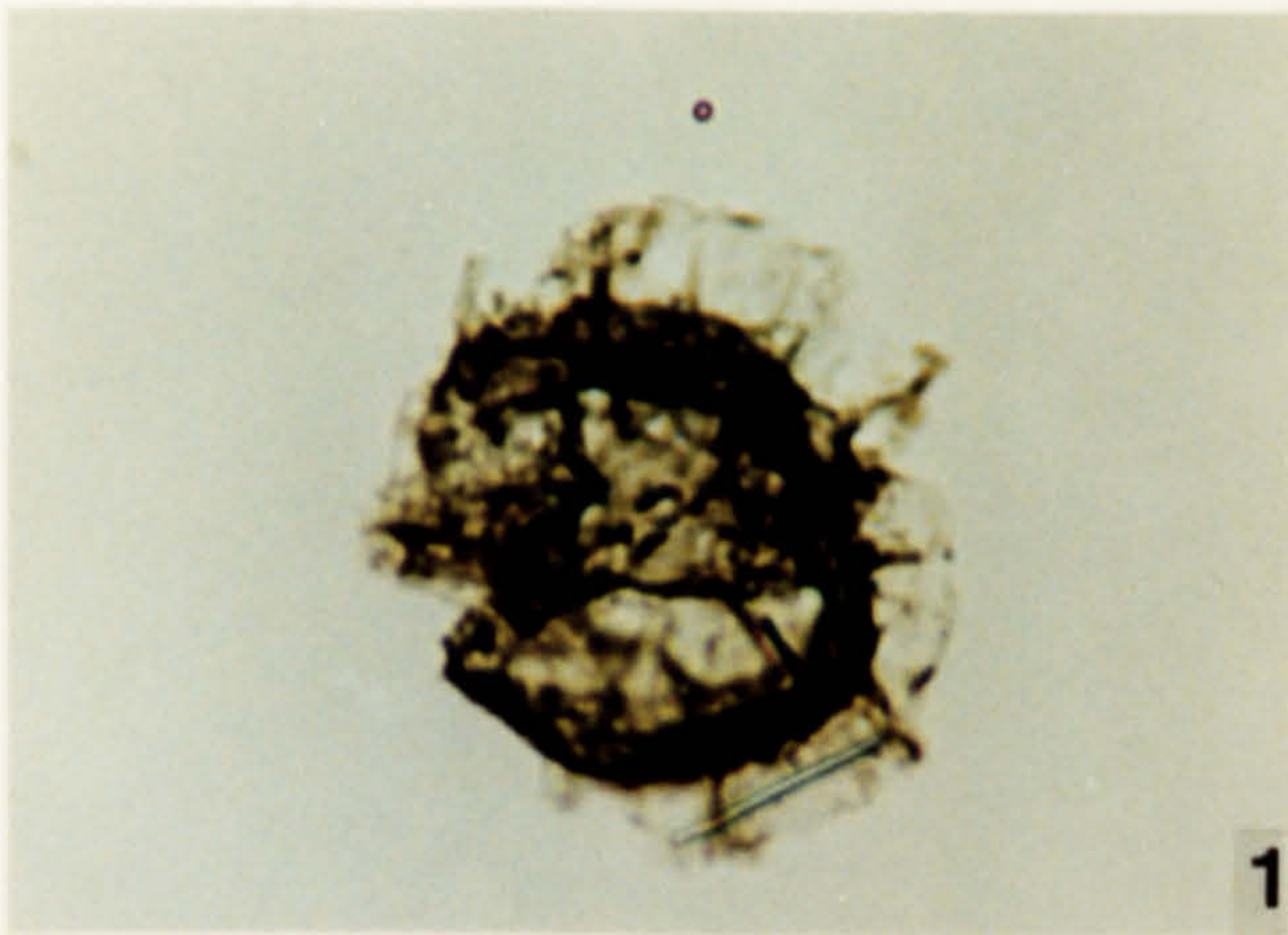
1. *Ozotobrachion palidodigitatus* (Cramer) Playford 1977. OD 4069.8-4071.5, S-3, G33\2.
2. *Ozotobrachion palidodigitatus* (Cramer) Playford 1977. OD 4069.8-4071.5, 1-1, G30\4.
3. *Thysanoprobolus polykion* Loeblich & Tappan 1970. OD 4069.8-4071.5, 1-1, Q9\3.
4. *Triangulina alargada* Cramer 1964. OD 4069.8-4071.5, S-3, R6\3.
5. *Veryhachium wenlockianum* (Downie ex Wall & Downie) Downie & Sarjeant 1965. OD 4070.1, S-1, X16\1.
6. *Veryhachium minutum* Downie 1958 emend. OD 4070.1, S-1, X16\1.
7. *Triangulina alargada* Cramer 1964. OD 4070.1, S-4, V10\3.
8. *Quadraditum fantasticum* Cramer 1964. OD 4069.8-4071.5, S-3, S6\2.
9. *Visbysphaera microspinosa* (Eisenack) Lister 1970. OD 4070.1, S-4, F21\4.
10. *Triangulina alargada* Cramer 1964. OD 4070.1, S-4, M13\1.
11. Acritarch Form G. OD 4069.8-4071.5, S-3, S6\3, X25.



**Plate 142.**

Prasinophycean algae from the Lmhaifid Formation, late Gedinnian in age.

1. *Cymatiosphaera* sp. 1. OD 4070.1, S-1, D30\4.
2. *Cymatiosphaera* sp. OD 4070.1, S-4, L9\1.
3. *Cymatiosphaera nebulosa* (Deunff) Deflandre 1954. OD 4070.1, S-4, P26\3.
4. *Cymatiosphaera nebulosa* (Deunff) Deflandre 1954. OD 4069.8-4071.5, S-3, T12\1.
5. *Cymatiosphaera nebulosa* (Deunff) Deflandre 1954. OD 4069.8-4071.5, 1-1, V13\4.
6. *Pterospermella circumstriata* (Jardine *et al.*) Eisenack, Cramer & Diez 1973. OD 4070.1, S-4, J18\2.
7. *Pterospermella circumstriata* (Jardine *et al.*) Eisenack, Cramer & Diez 1973. OD 4069.8-4071.5, 2-1, L35\1.
8. *Pterospermella* sp. OD 4069.8-4071.5, 1-1, Q8\2
9. *Pterospermella circumstriata?* (Jardine *et al.*) Eisenack, Cramer & Diez 1973. OD 4070.1, S-4, B28\2, IC.
10. *Pterospermella onondagaensis* (Deunff) Eisenack, Cramer & Diez 1973. OD 4070.1, S-1, P31\1.

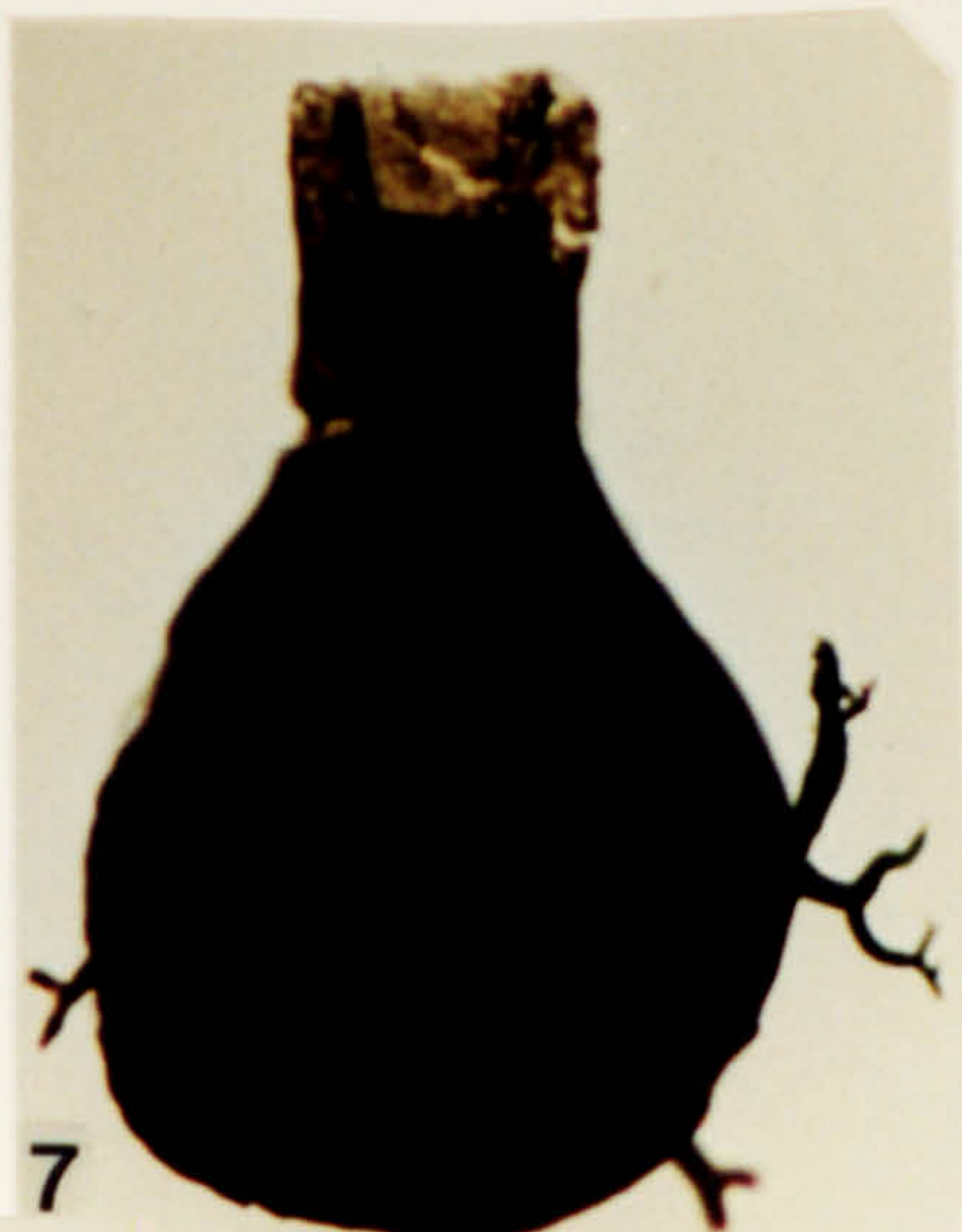




**Plate 143.**

Chitinozoa from the Lmhaifid Formation, late Gedinnian in age.

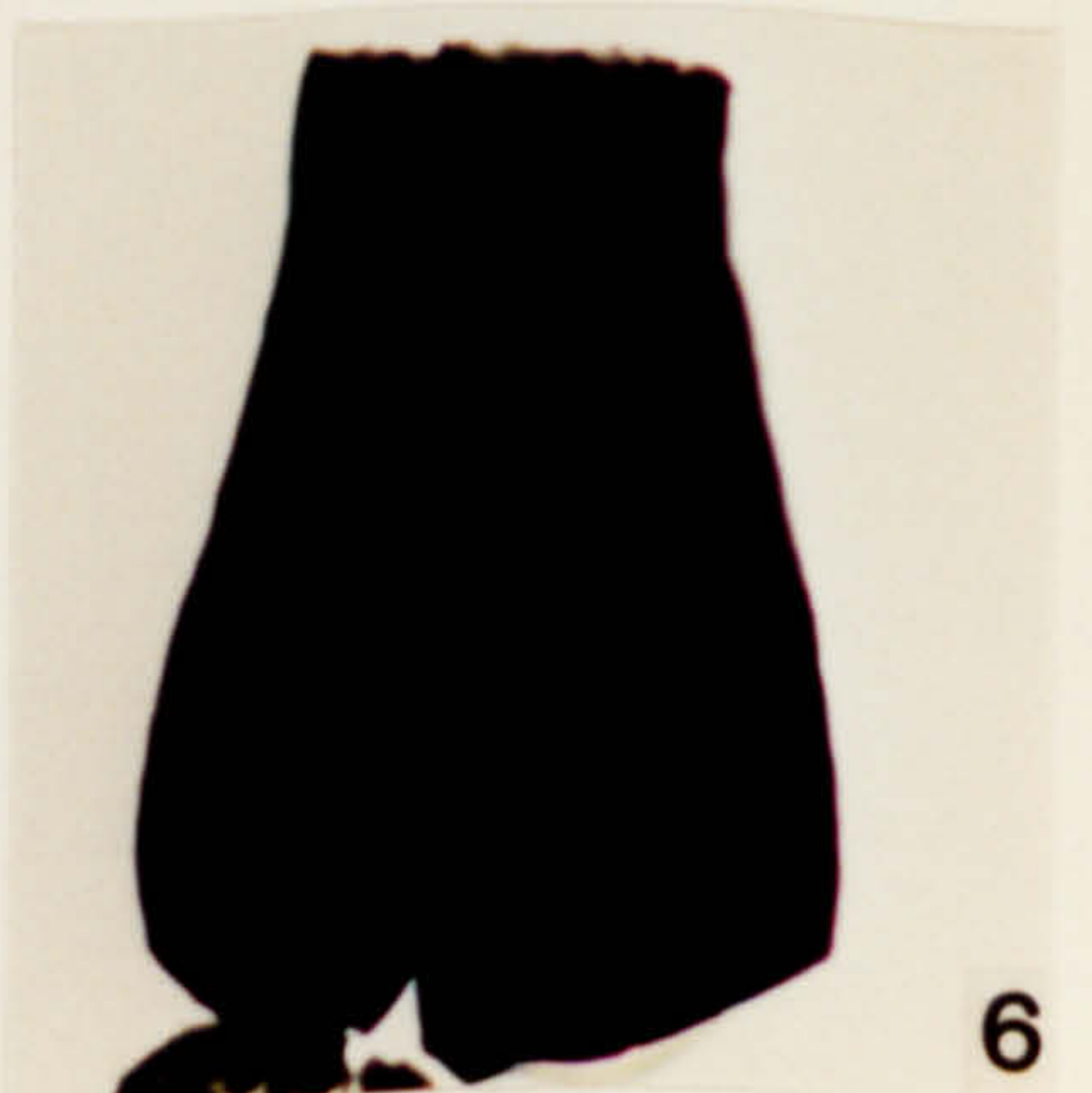
1. *Ancyrochitina tormentosa?* Taugourdeau & Jekhowsky 1960. OD 4070.1, 2-1, J7\4.
2. *Ancyrochitina tumida* Taugourdeau & Jekhowsky 1960. OD 4070.1, FS-5, N23\3.
3. *Ancyrochitina?* sp. OD 4069.8-4071.5, 1-2, J41\4.
4. *Ancyrochitina?* sp. OD 4069.8-4071.5, S-3, T32\2.
5. *Ancyrochitina?* sp. OD 4070.1, S-5, G34\2.
6. *Angochitina?* sp. OD 4069.8-4071.5, S-3, V34\1.
7. *Angochitina?* sp. OD 4070.1, S-5, O12\4.
8. *Angochitina?* sp. OD 4069.8-4071.5, 1-2, H41\1.



**Plate 144.**

**Chitinozoa from the Lmhaifid Formation, late Gedinnian in age.**

1. *Calpichitina sphaerica* (Taugourdeau & Jekhowsky) Paris 1981. OD 4214.5-4217, FS-1, V18\1.
2. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. OD 4070.1, S-4, V21\1.
3. *Cingulochitina cf. convexa* (Laufeld) Paris 1981. OD 4069.8-4071.5, 1-1, L19\2.
4. *Cingulochitina convexa* (Laufeld) Paris 1981. OD 4070.1, S-4, V19\2.
5. *Cingulochitina serrata* (Taugourdeau & Jekhowsky) Paris 1981. OD 4069.8-4071.5, 1-1, L19\2.
6. *Cingulochitina plusquelleci* Paris 1981. OD 4069.8-4071.5, 1-1, C28\3.
7. *Cingulochitina ervensis* (Paris) Paris 1981. OD 4070.1, S-5, W14\1.
8. *Cingulochitina ervensis* (Paris) Paris 1981. OD 4069.8-4071.5, S-5, P31\2.
9. *Cingulochitina ervensis* (Paris) Paris 1981. OD 4069.8-4071.5, 1-1, U38\3.



**Plate 145.**

Chitinozoa from the Lmhaifid Formation, late Gedinnian in age.

1. *Eisenackitina taugourdaeui* (Rauscher & Doubigner) Paris 1981. OD 4070.1, S-5, Q8\1.
2. *Eisenackitina taugourdaeui* (Rauscher & Doubigner) Paris 1981. OD 4069.8-4071.5, 1-1, D21\3.
3. *Fungochitina pistilliformis* var. *lata* (Taugourdeau & Jekhowsky) Deunff, Lefort & Paris 1971. OD 4069.8-4071.5, 1-1, M26\4.
4. *Eisenackitina taugourdaeui* (Rauscher & Doubigner) Paris 1981. OD 4070.1, S-4, X29\4.
5. *Eisenackitina taugourdaeui* (Rauscher & Doubigner) Paris 1981. OD 4070.1, 2-1, N18\4.
6. *Fungochitina pistilliformis* var. *lata* (Taugourdeau & Jekhowsky) Deunff, Lefort & Paris 1971. OD 4070.1, S-5, U26\2.
7. *Fungochitina pistilliformis* var. *lata* (Taugourdeau & Jekhowsky) Deunff, Lefort & Paris 1971. OD 4070.1, S-5, P12\3.
8. *Eisenackitina rauscheri* Paris 1976. OD 4070.1, S-5, L37\1.



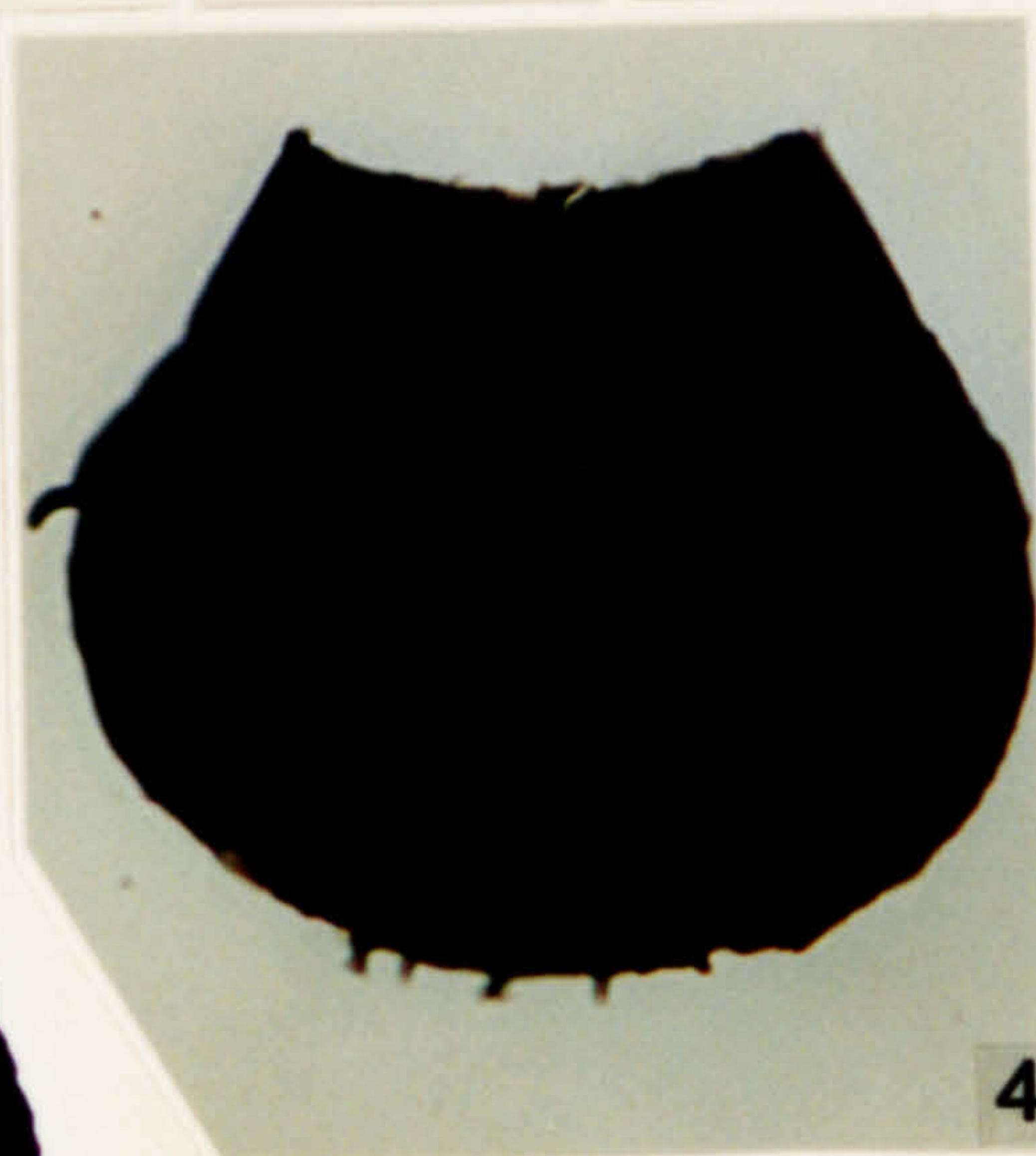
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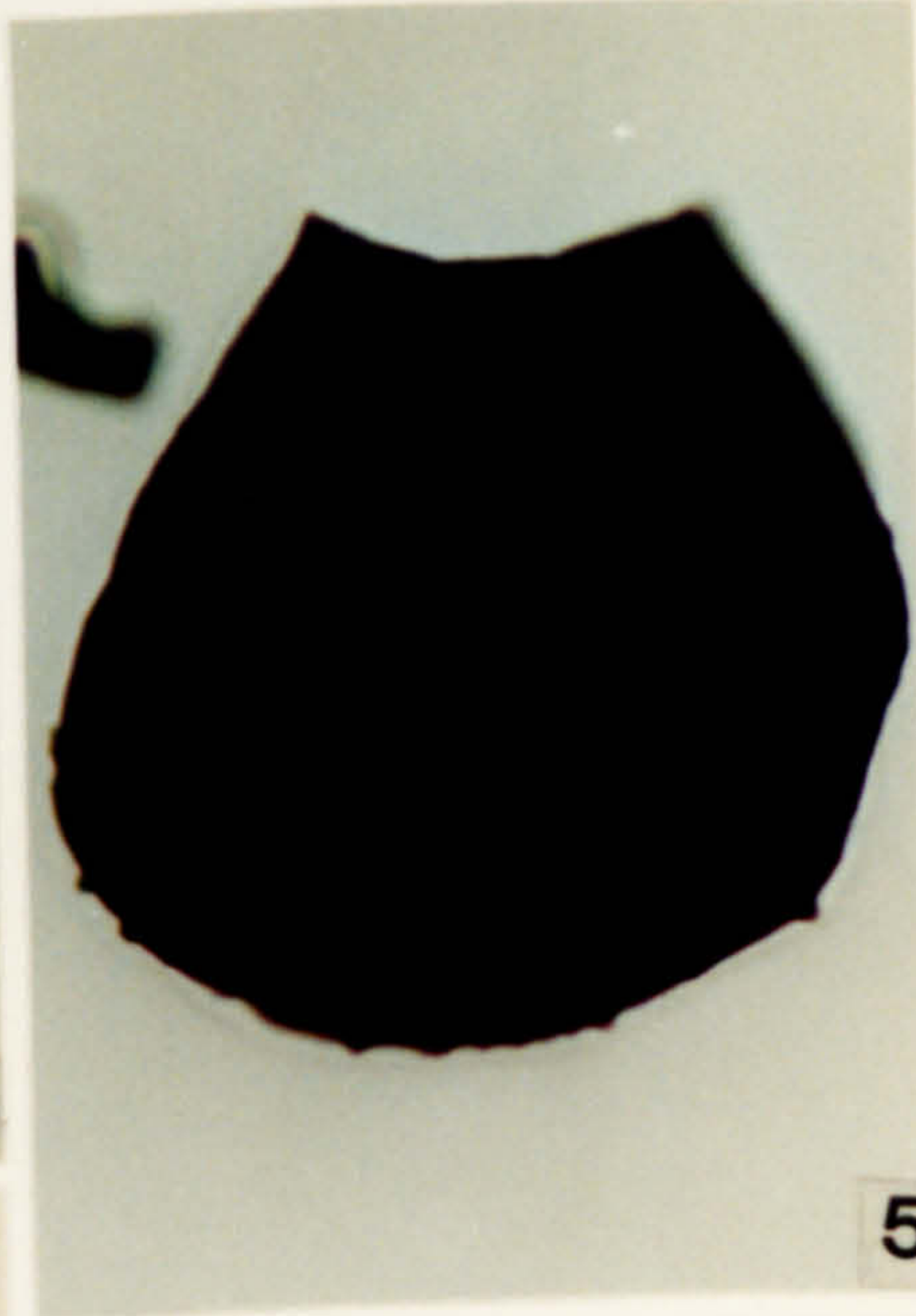
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3



4



5



6



7

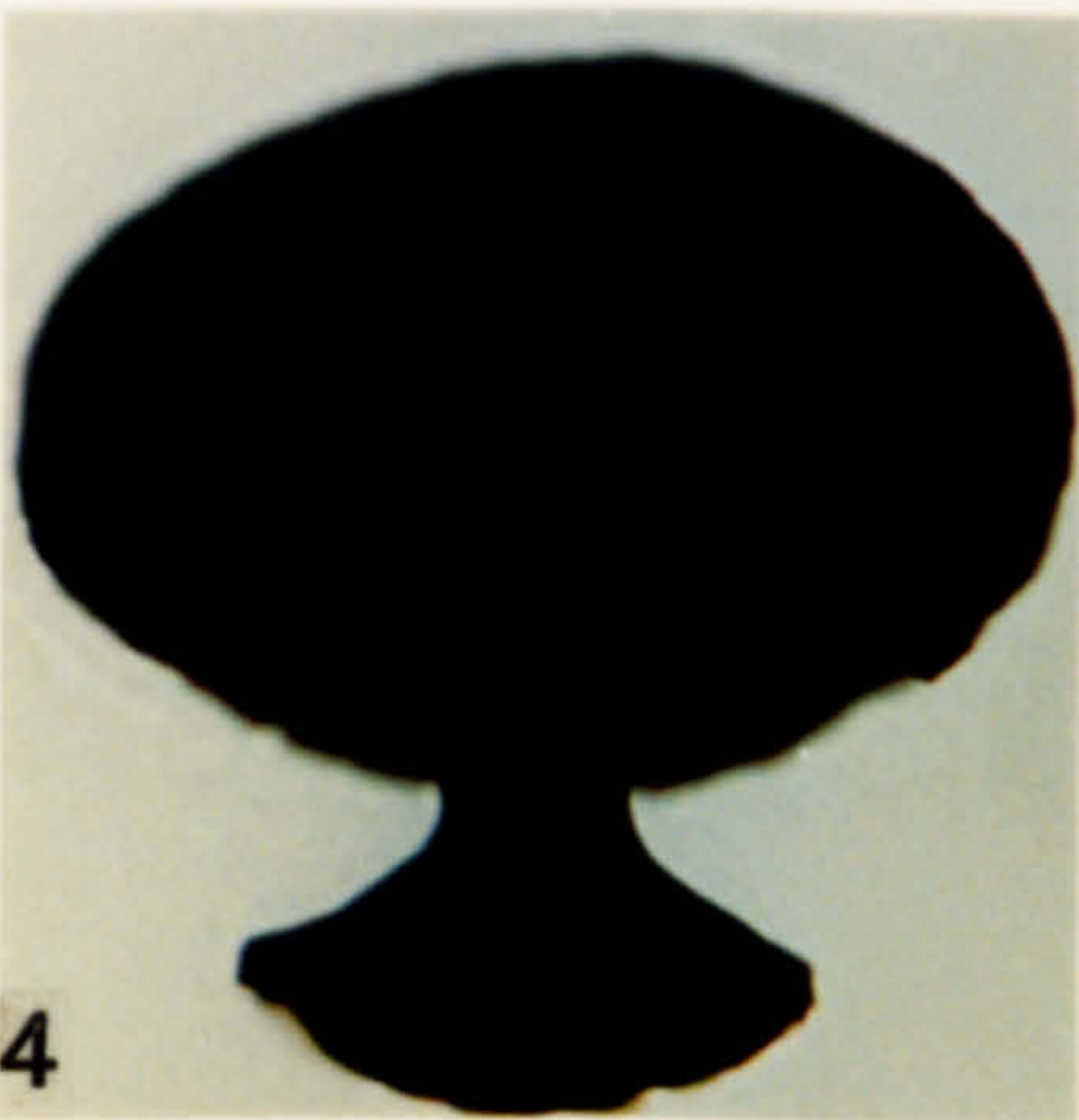


8

**Plate 146.**

Chitinozoa from the Lmhaifid Formation, late Gedinnian in age.

1. *Margachitina catenaria* Obut 1973. OD 4069.8-4071.5, 2-2, C40\-, X40.
2. *Margachitina catenaria* subsp. *crassipes*? Paris 1981. OD 4069.8-4071.5, S-5, E19\-.
3. *Margachitina catenaria* subsp. *crassipes*? Paris 1981. OD 4070.1, S-4, F21\3.
4. *Margachitina catenaria* Obut 1973. OD 4070.1, S-4, V5\4.
5. *Margachitina catenaria* subsp. *tenuipes* Paris 1981. OD 4070.1, S-4, F21\3.
6. *Muscochitina muscosa* Paris 1981. OD 4069.8-4071.5, S-6, X7\4.
7. *Muscochitina muscosa* Paris 1981. OD 4069.8-4071.5, S-3, U7\4.
8. *Muscochitina muscosa* Paris 1981. OD 4069.8-4071.5, S-3, X8\4.

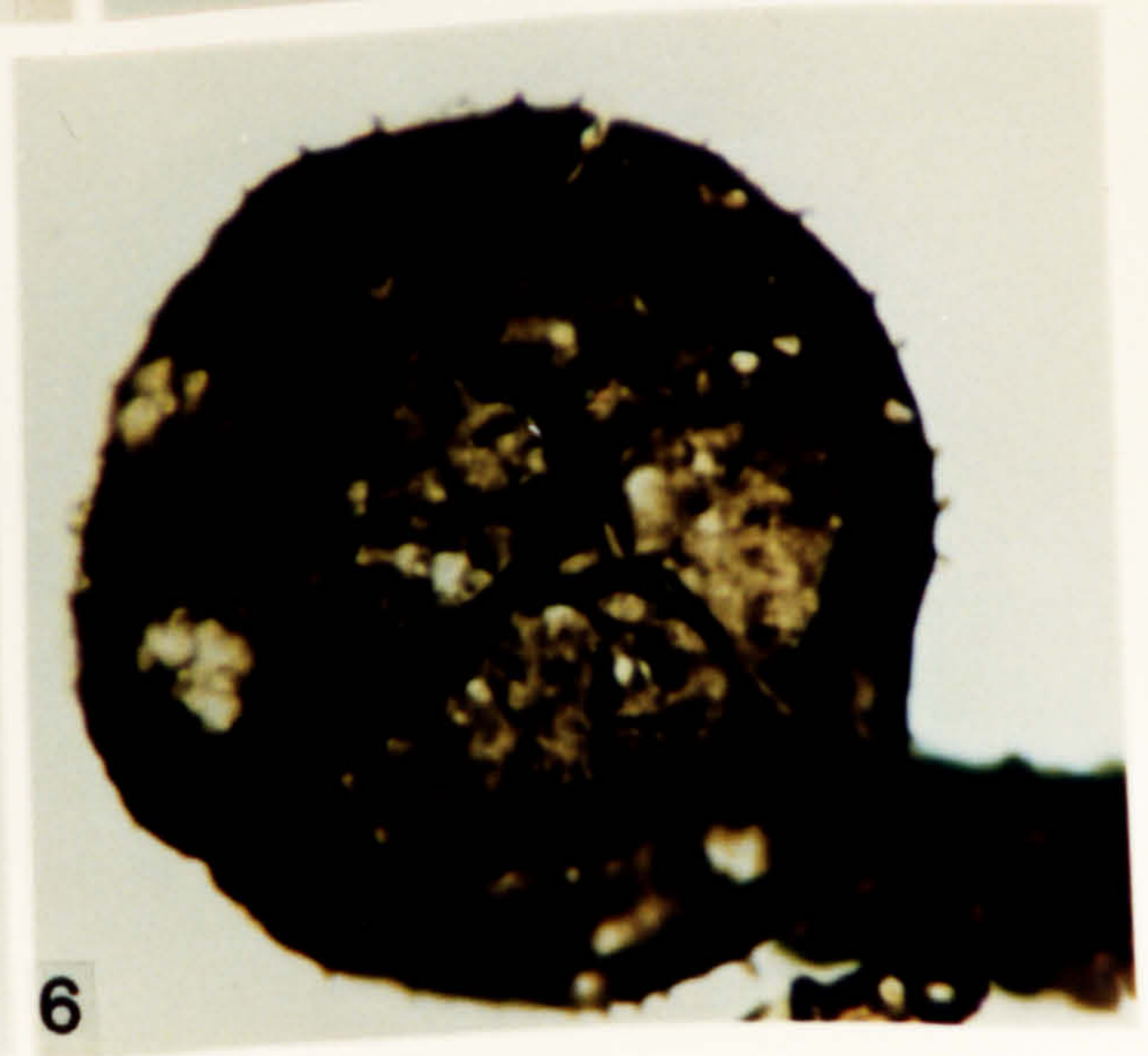
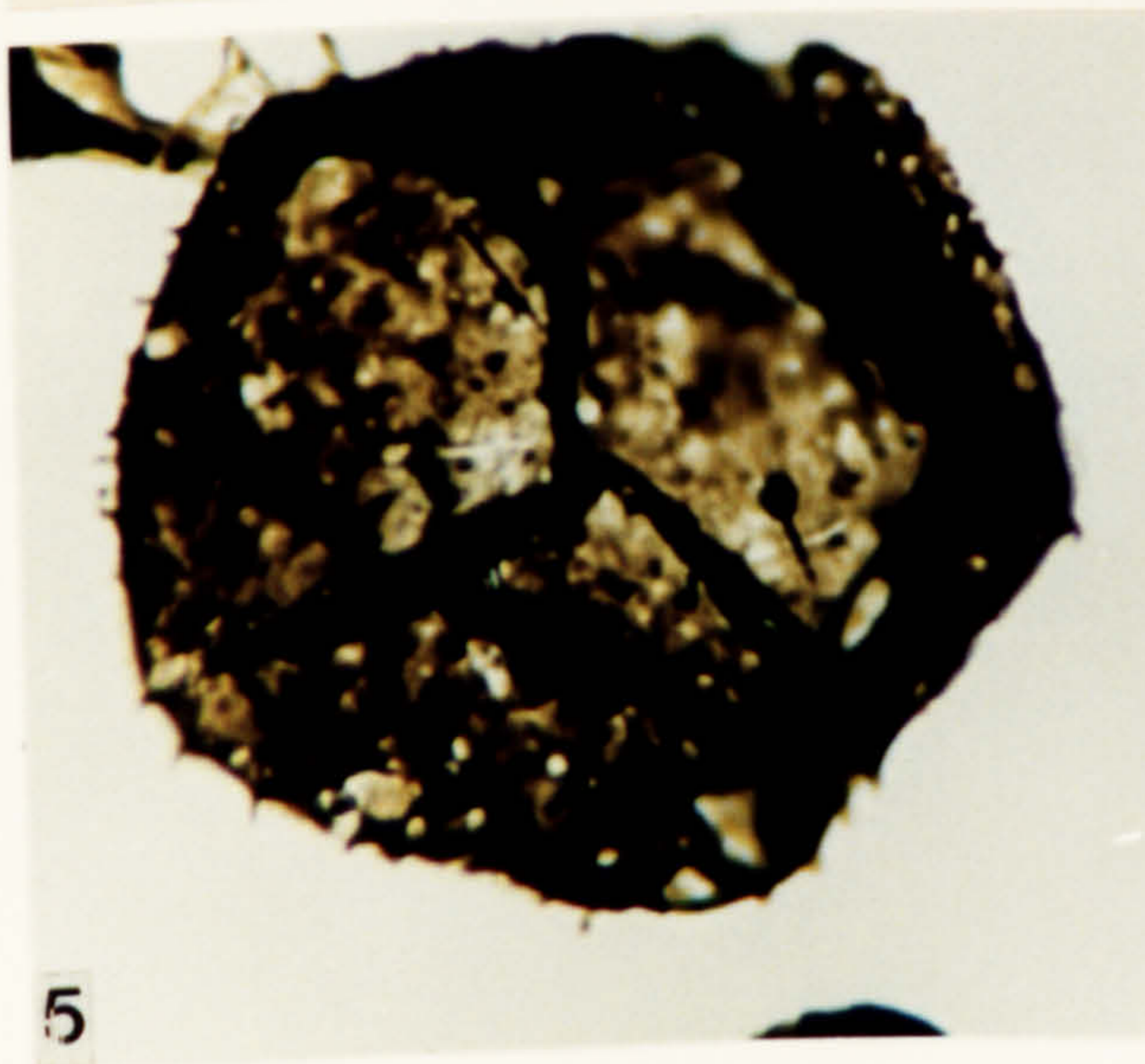
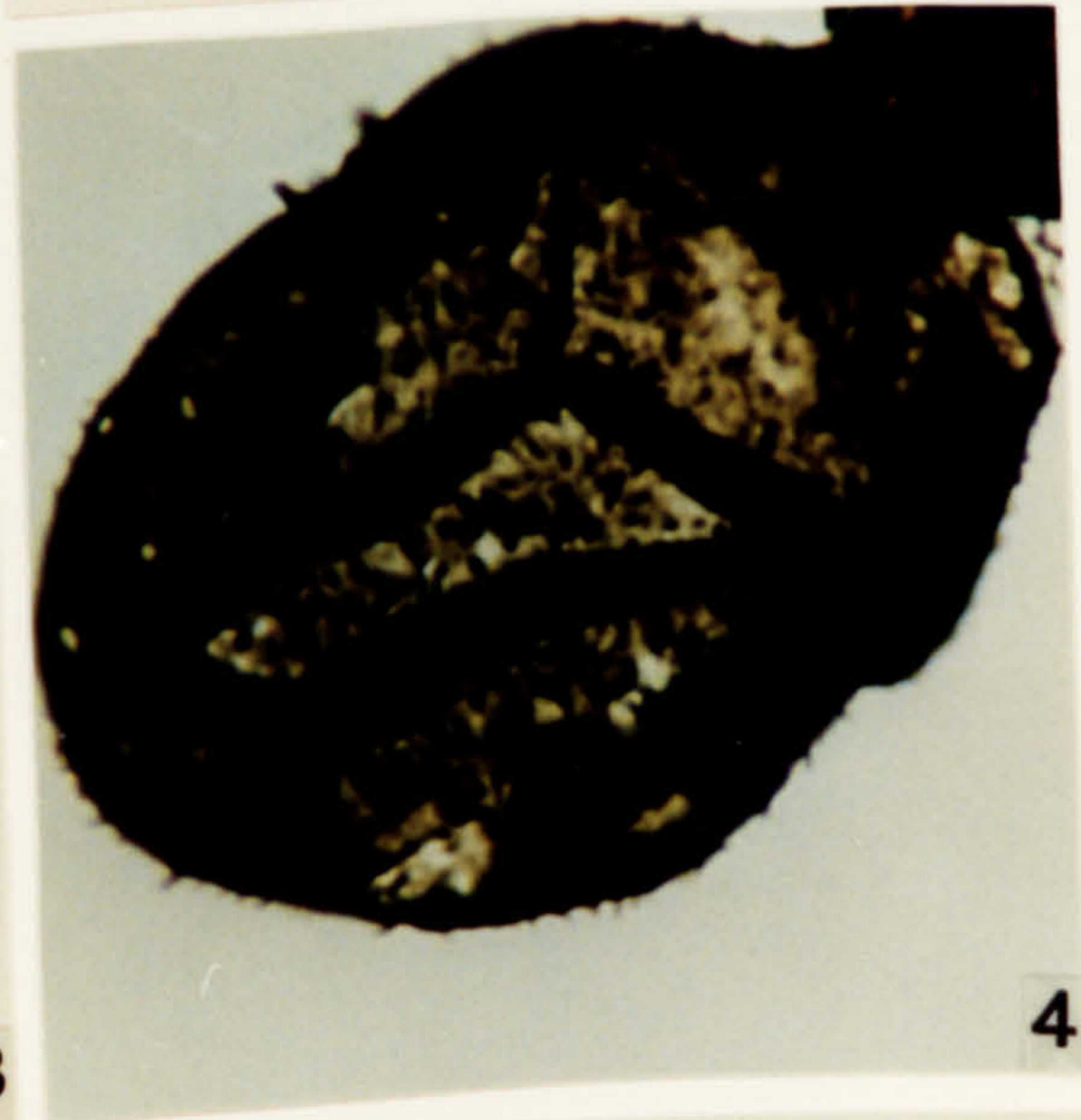
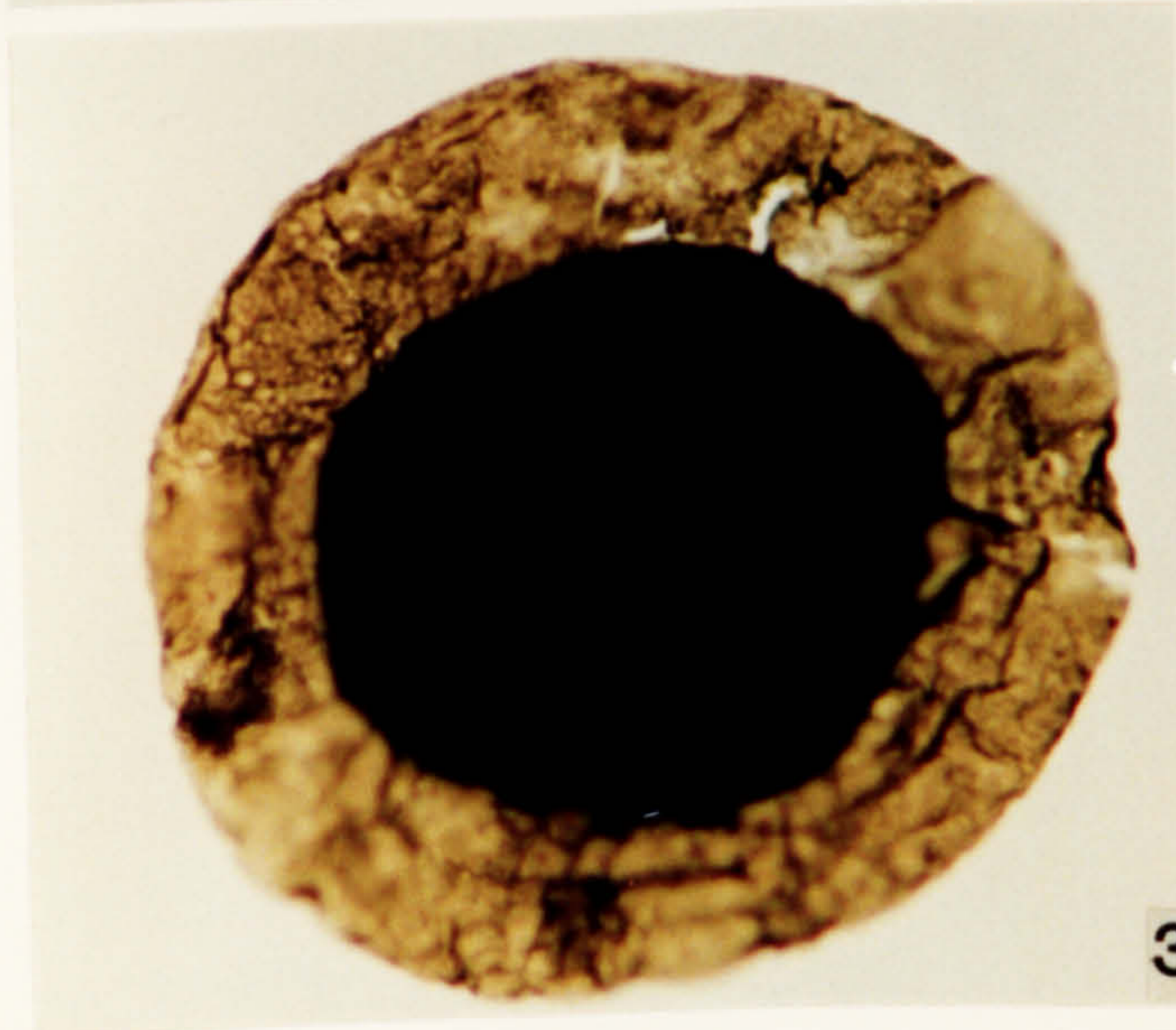
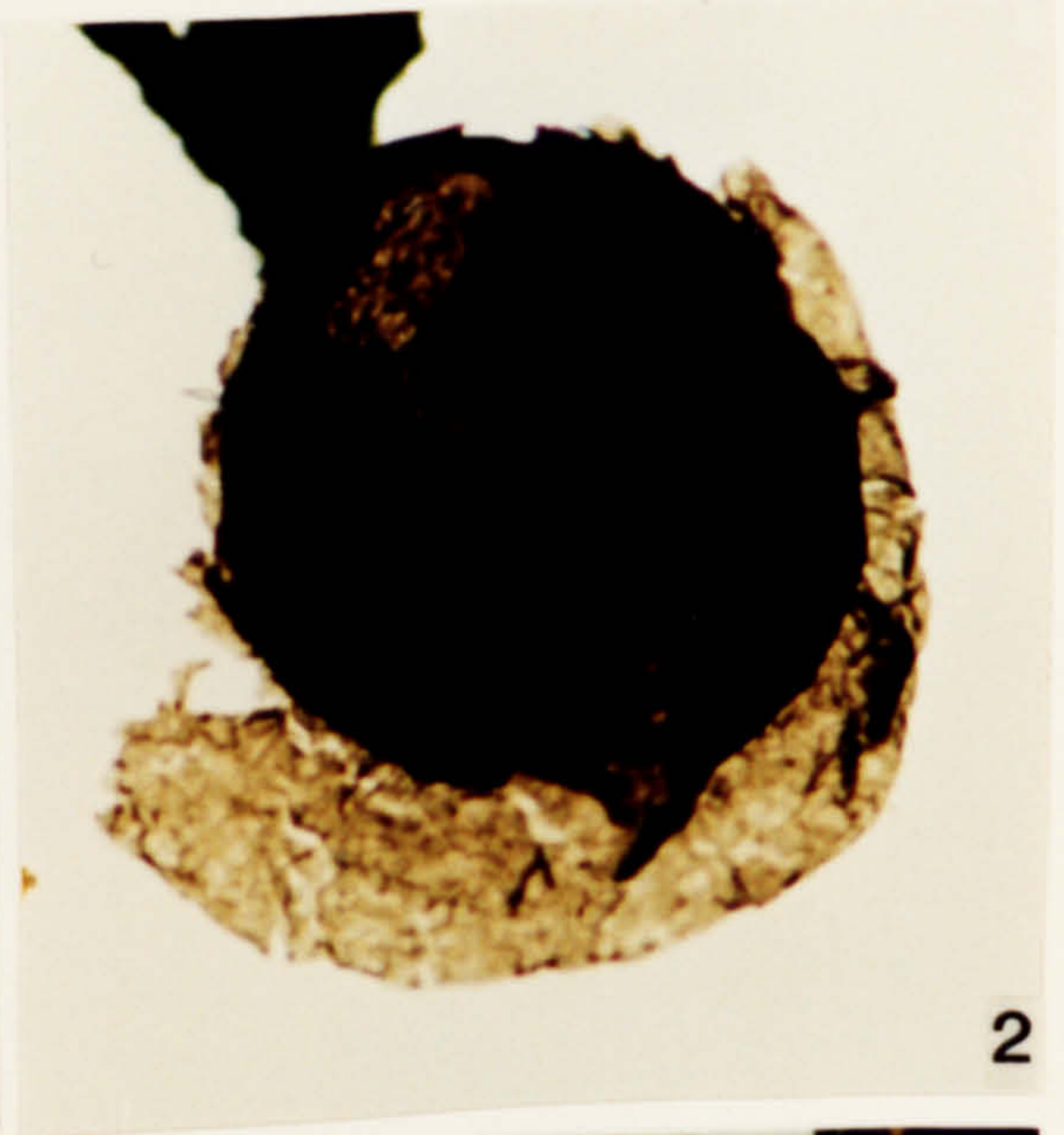




**Plate 147.**

**Chitinozoa and spores from the Lmhaifid Formation, late Gedinnian in age.**

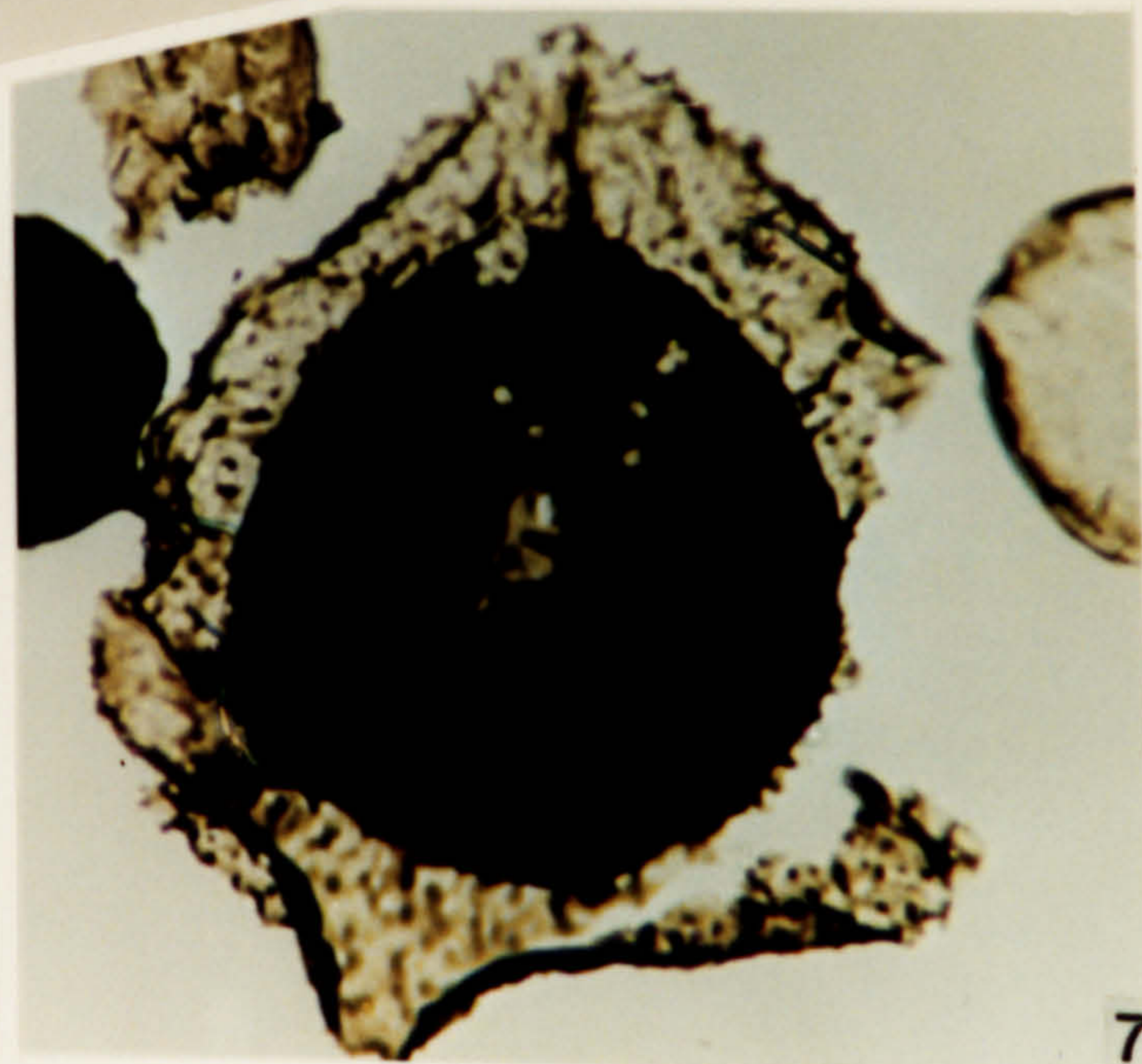
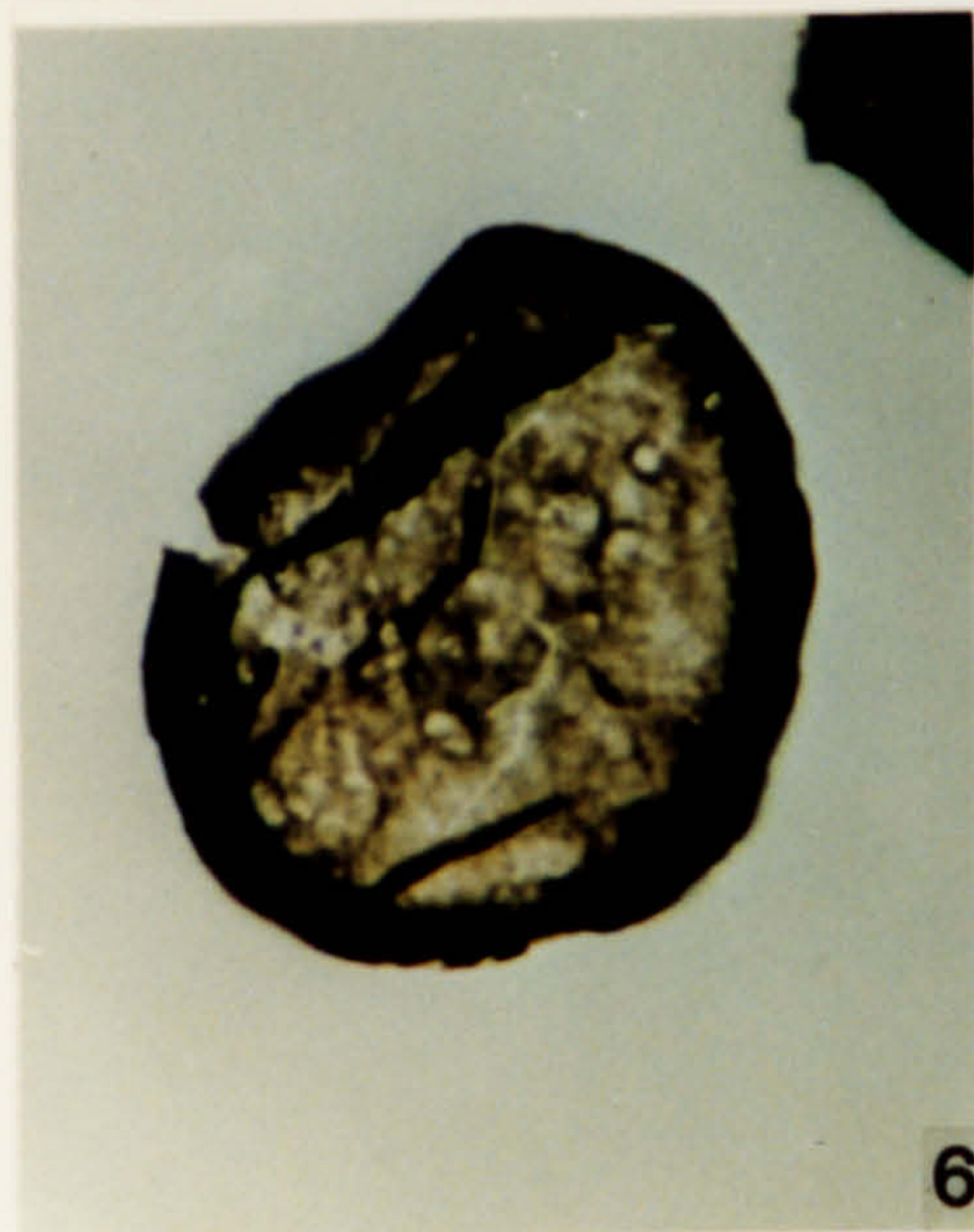
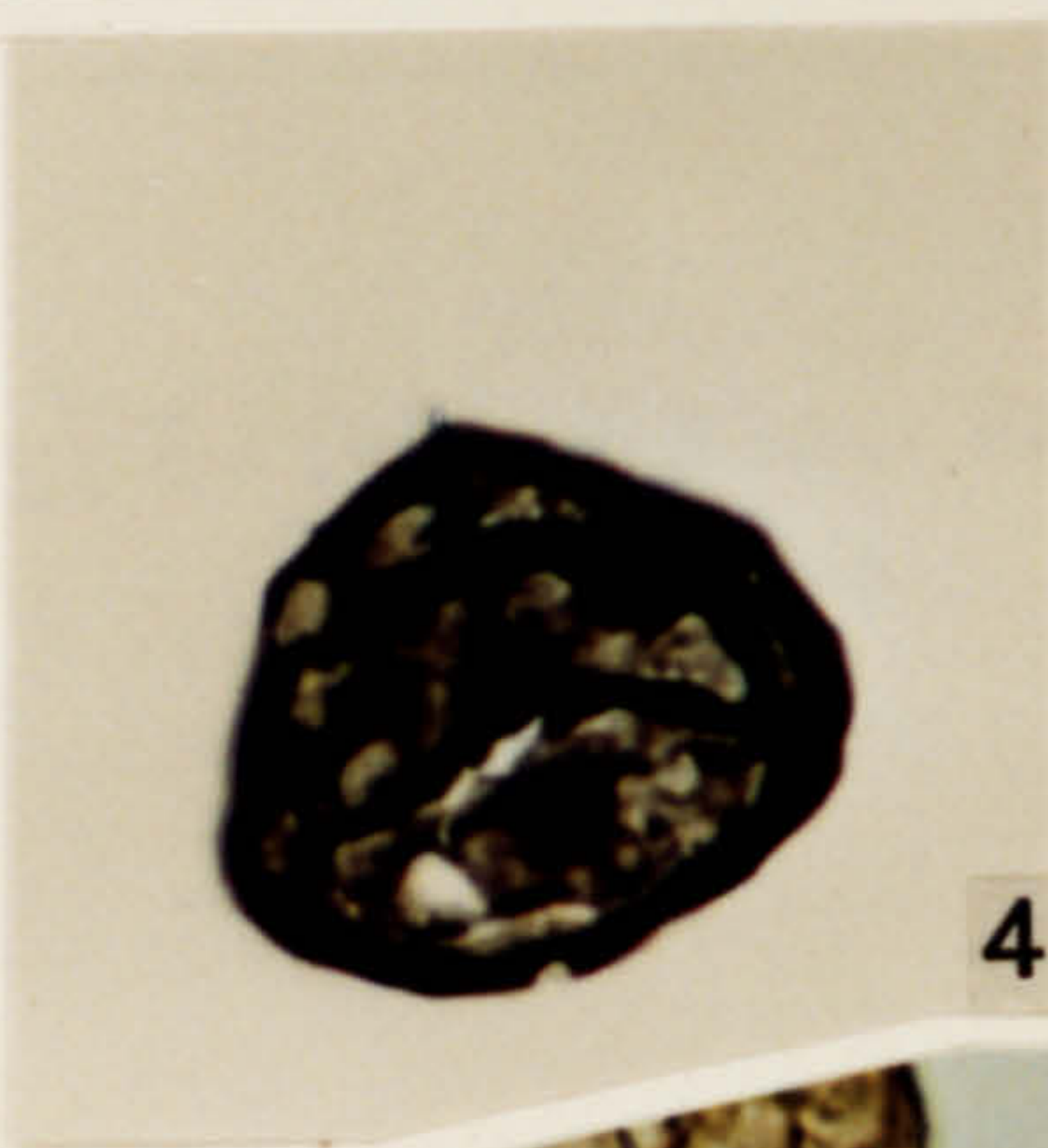
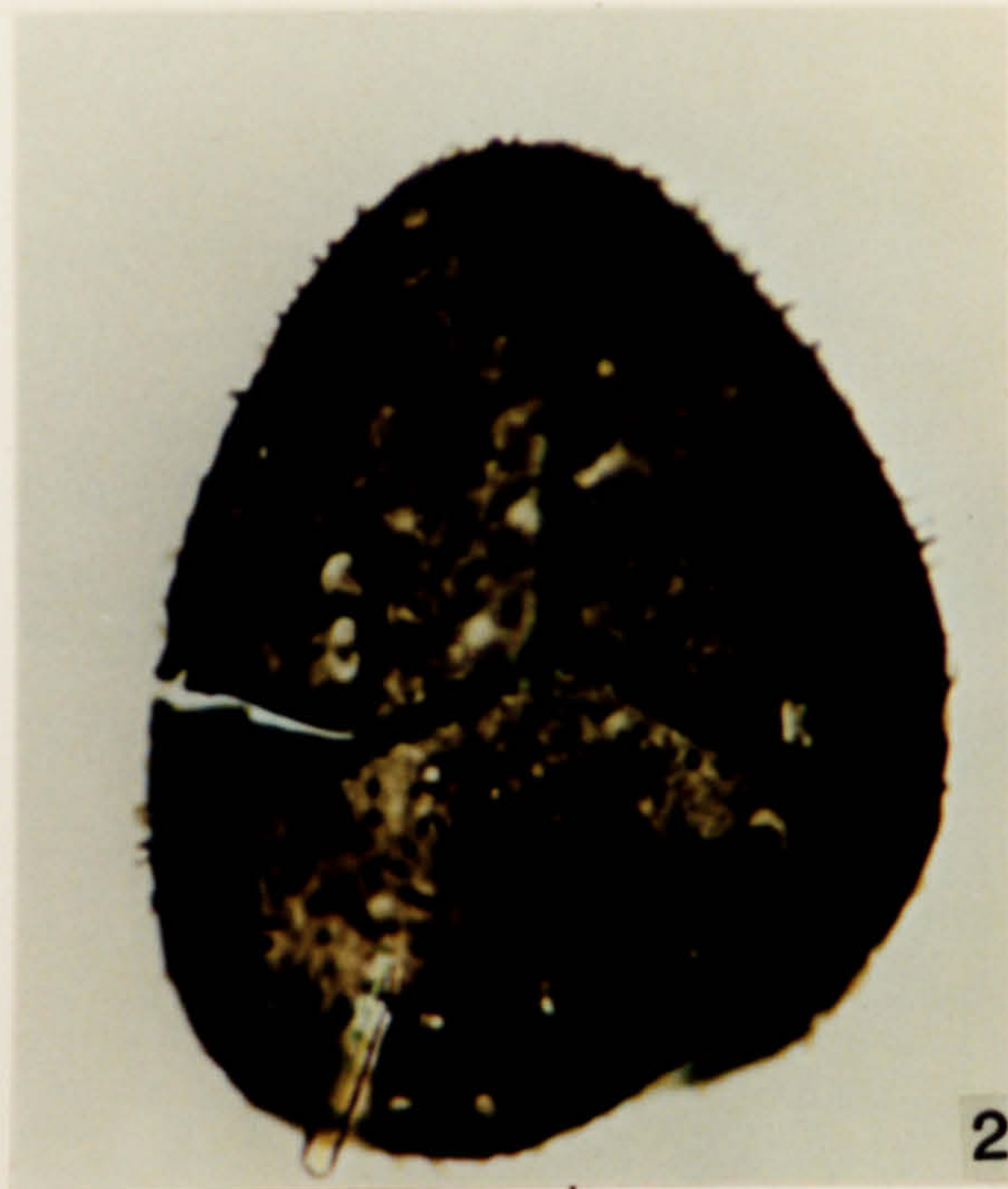
- 1. *Pterochitina perivelata* (Eisenack) Eisenack 1955. OD 4070.1, S-4, P6\1 (R?).**
- 2. *Pterochitina perivelata* (Eisenack) Eisenack 1955. OD 4070.1, S-5, S29\4 (R?).**
- 3. *Pterochitina perivelata* (Eisenack) Eisenack 1955. OD 4069.8-4071.5, S-6, R12\1 (R?).**
- 4. Spore indet. OD 4070.1, S-1, N9\2.**
- 5. Spore indet. OD 4070.1, S-1, F15\4.**
- 6. Spore indet. OD 4070.1, S-1, N9\2.**



**Plate 148.**

**Spores from the Lmhaifid Formation, late Gedinnian in age.**

- 1. Spore indet. OD 4070.1, S-4, N26\2.**
- 2. Spore indet. OD 4069.8-4071.5, S-3, X14\4.**
- 3. *Retusotriletes* sp. OD 4069.8-4071.5, 1-1, U13\4.**
- 4. *Retusotriletes* cf. *maculatus* Richardson & McGregor 1986 OD 4069.8-4071.5, 1-2, N12\-.**
- 5. *Apiculiretusotriletes?* sp. OD 4069.8-4071.5, S-3, S24\1.**
- 6. *Retusotriletes* sp. OD 4070.1, S-1, J14\3.**
- 7. *Grandispora* ? sp. OD 4069.8-4071.5, S-3, K7\2.**



**Plate 149.**

Acritarchs from the Assa Formation, late Siegenian-early Emsian in age.

1. *Ammonidium? alloiteauii* (Deunff) Deunff 1976. OD 3675-3677.5, S-5, R17\3.
2. *Cymbosphaeridium pilar* var. *pilar* Cramer 1964. OD 3675-3677.75, S-5, S38\4.
3. *Candelasphaeridium* cf. *insolitum* Deunff 1978. OD 3675.75, 1-1, P21\3.
4. *Candelasphaeridium* cf. *insolitum* Deunff 1978. OD 3675-3677.75,, S-5, R17\3.
5. *Candelasphaeridium* cf. *insolitum* Deunff 1978. OD 3675-3677.75,, S-5, P36\1.
6. *Candelasphaeridium* cf. *insolitum* Deunff 1978. OD 3675.75, 1-1, K8\2.
7. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. OD 3675-3677.5,, S-5, O39\3.
8. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. OD 3675.75, 1-2, L39\1.
9. *Diexallophasis remota* var. *remota* (Deunff) Fensome *et al.* 1990. OD 3675.75, 1-1, V20\3.
10. *Diexallophasis remota* var. *remota* (Deunff) Fensome *et al.* 1990. OD 3675-3677.5, S-5, U35\3.
11. *Diexallophasis remota* var. *rabiosum* (Cramer) comb. nov. OD 3675-3677.5, S-5, P23\3.
12. *Diexallophasis remota* var. *rabiosum* (Cramer) comb. nov. OD 3675.75, 1-2, F27\-..

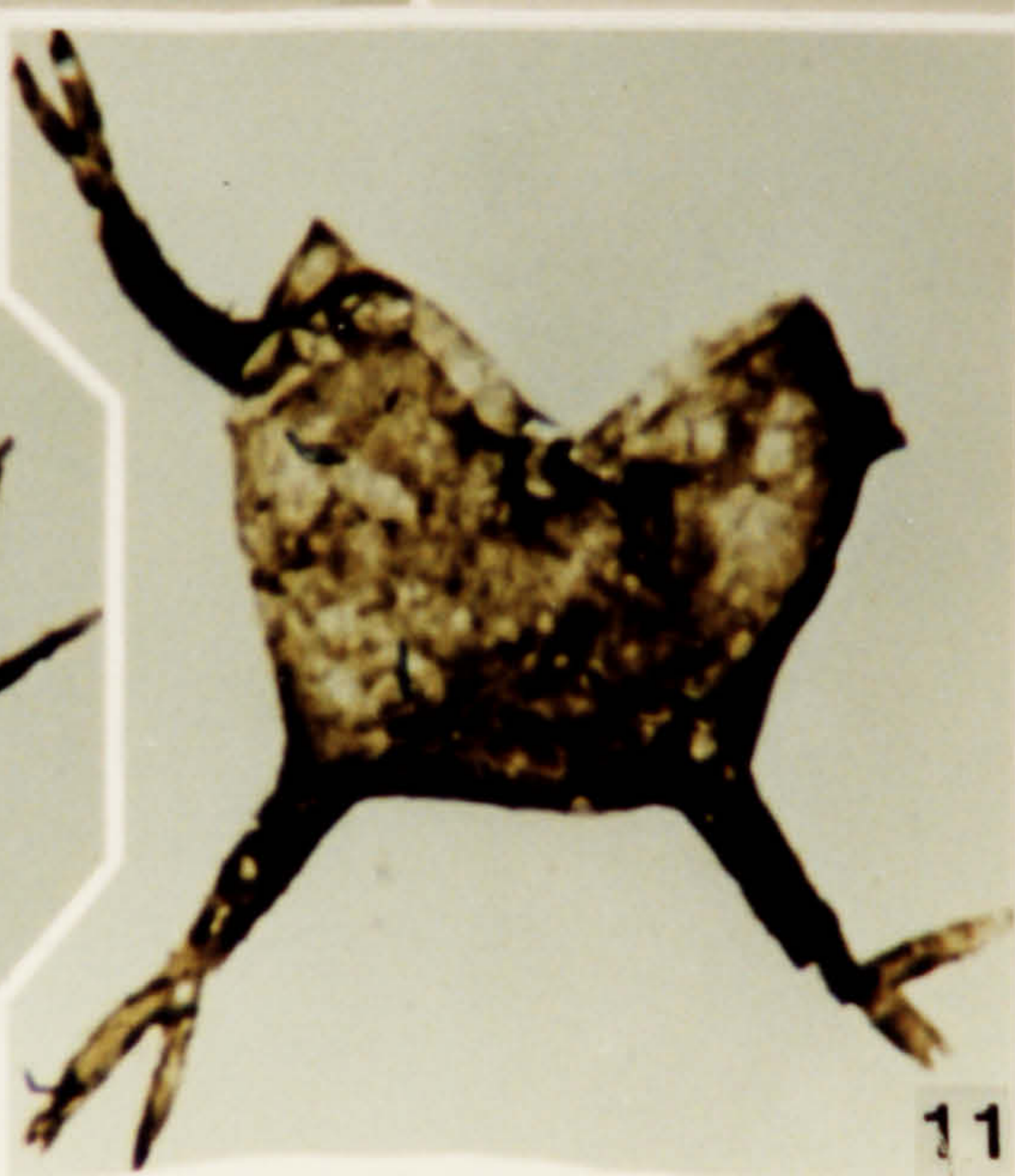
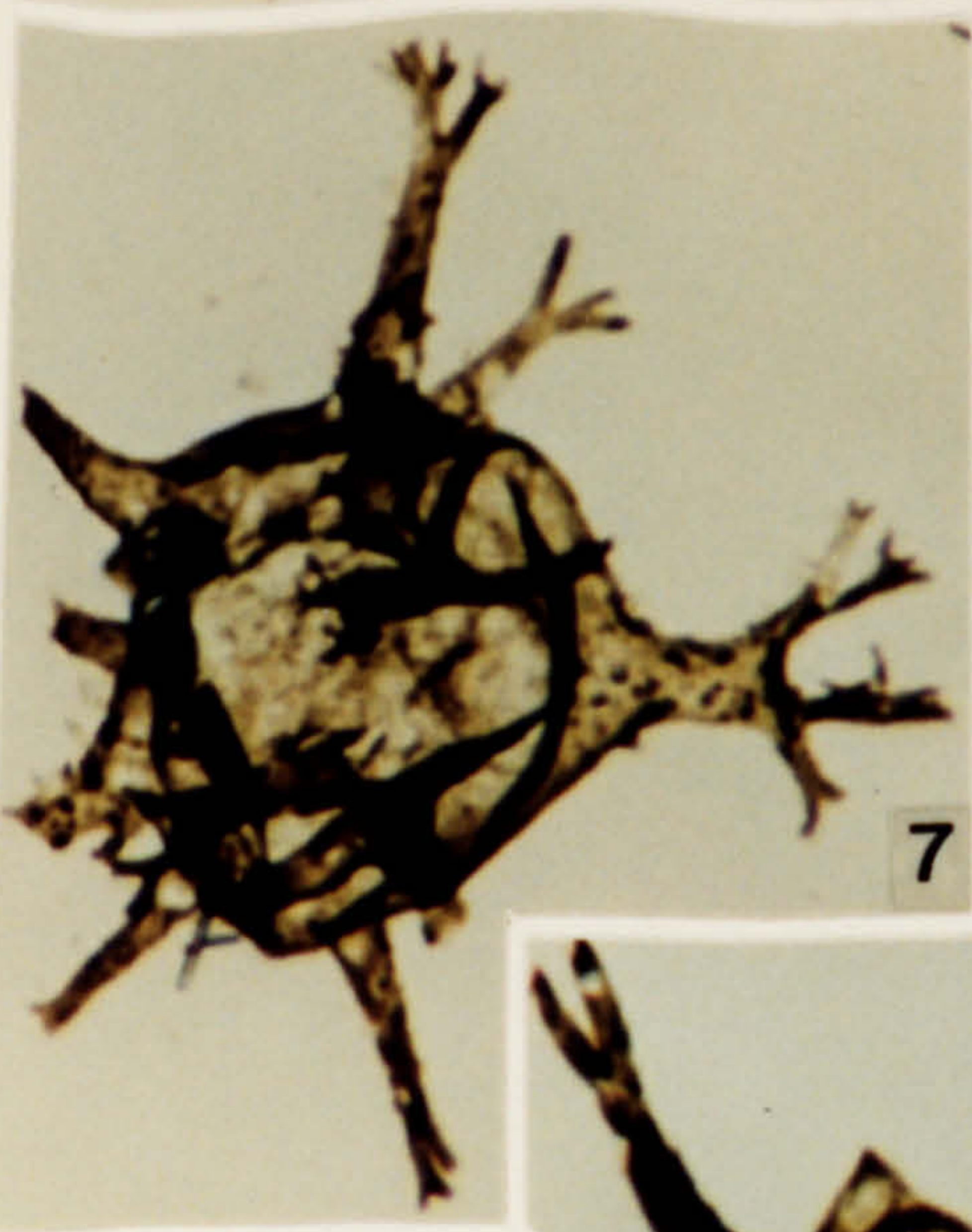
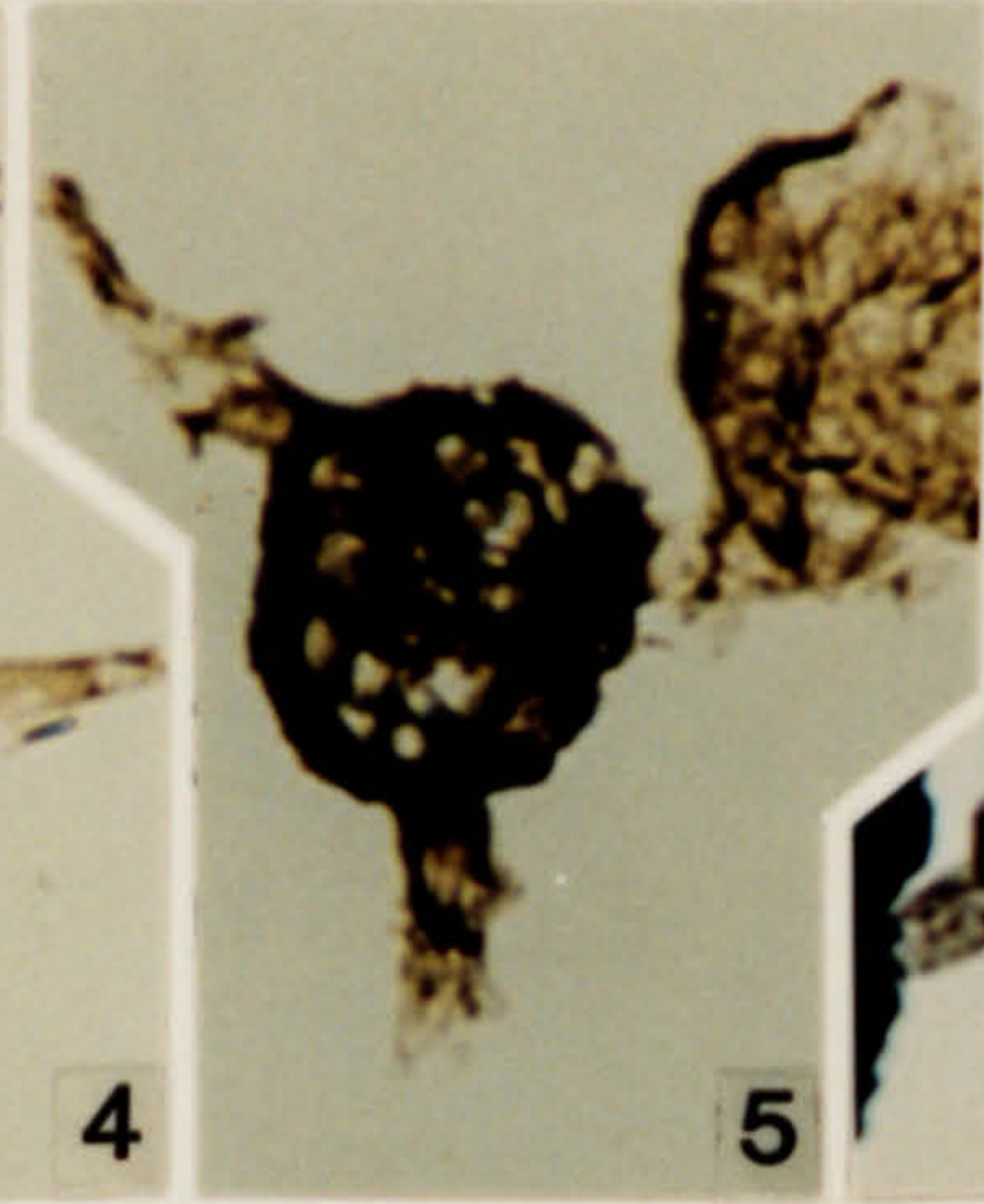
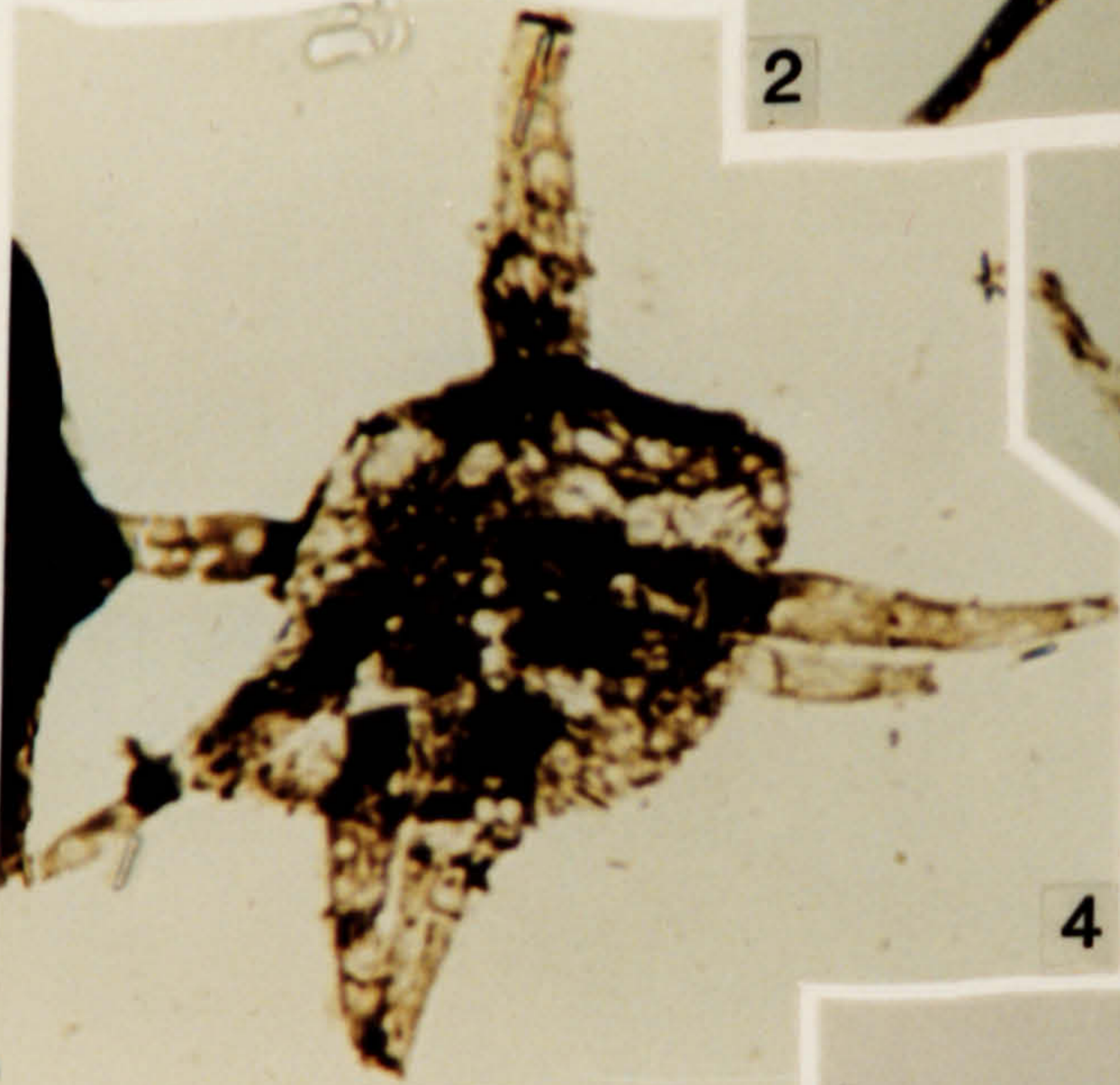
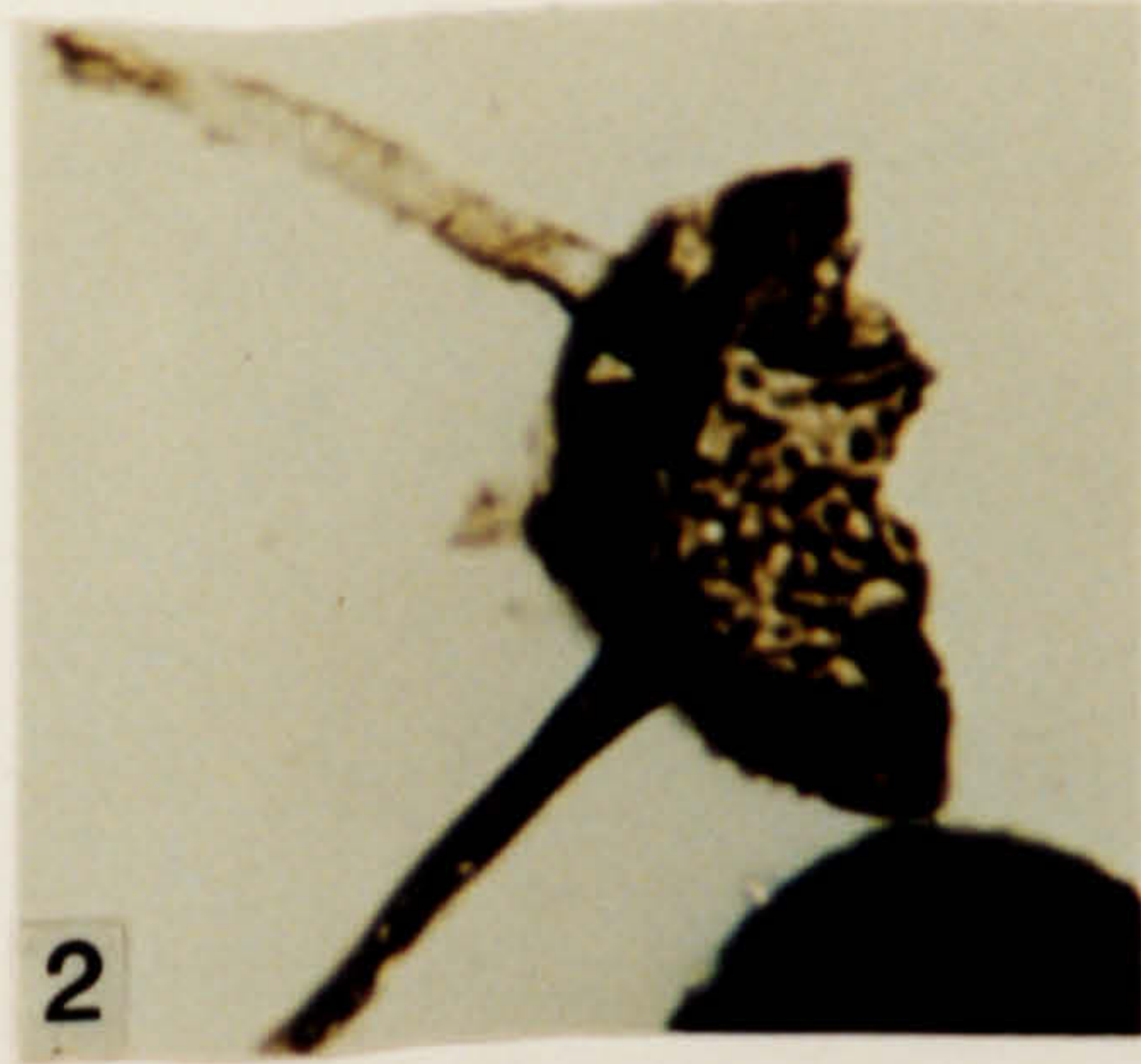
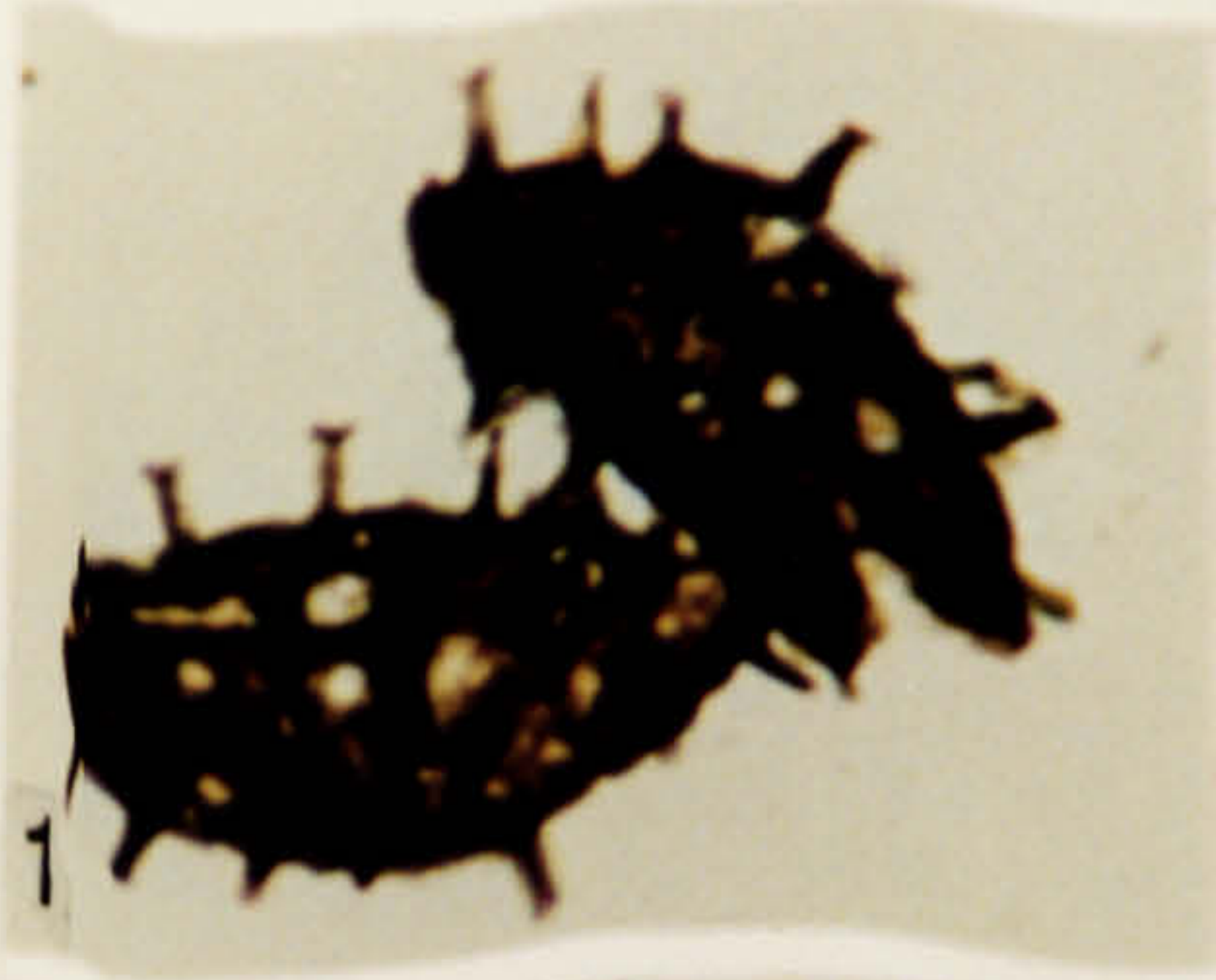
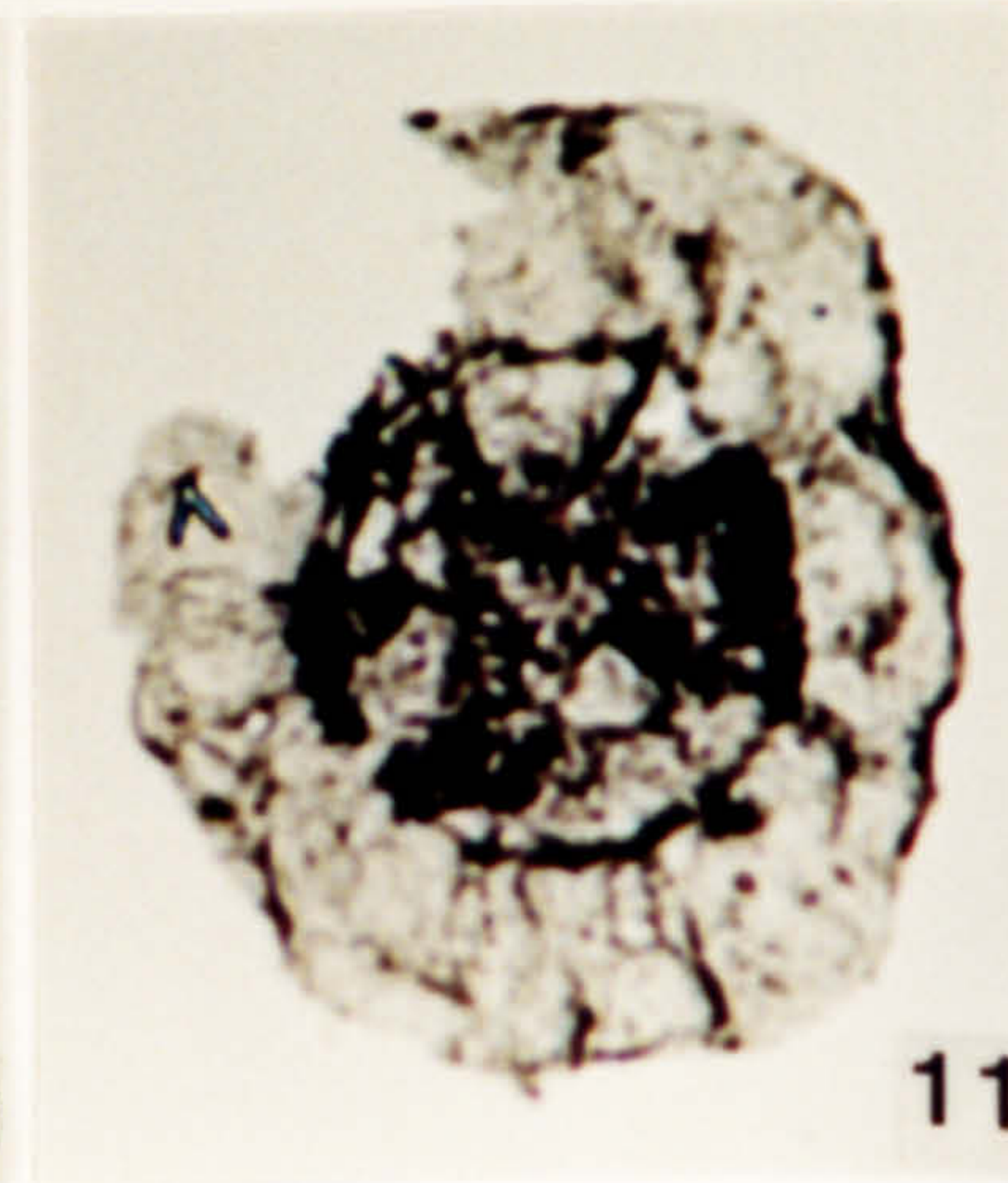
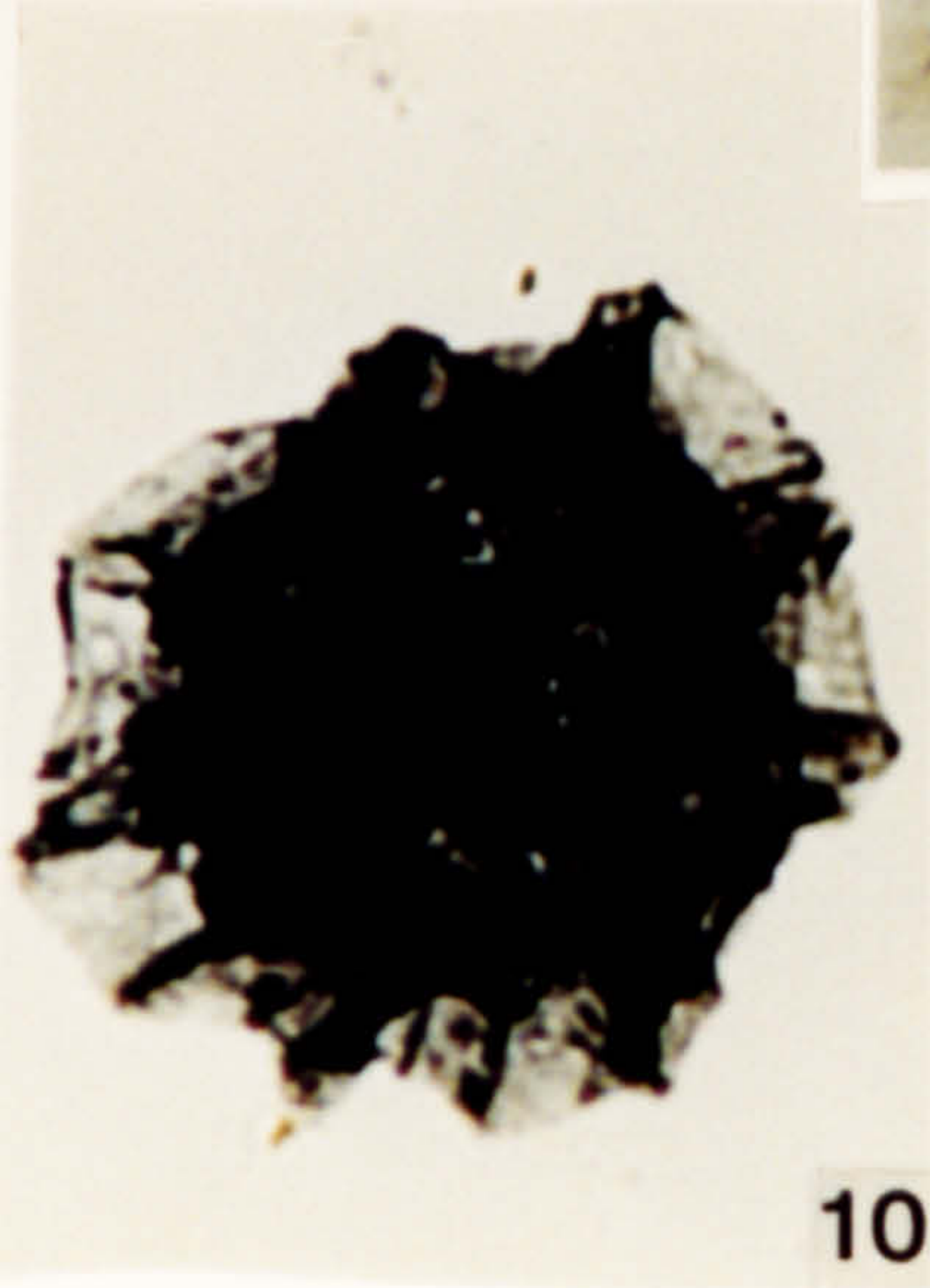
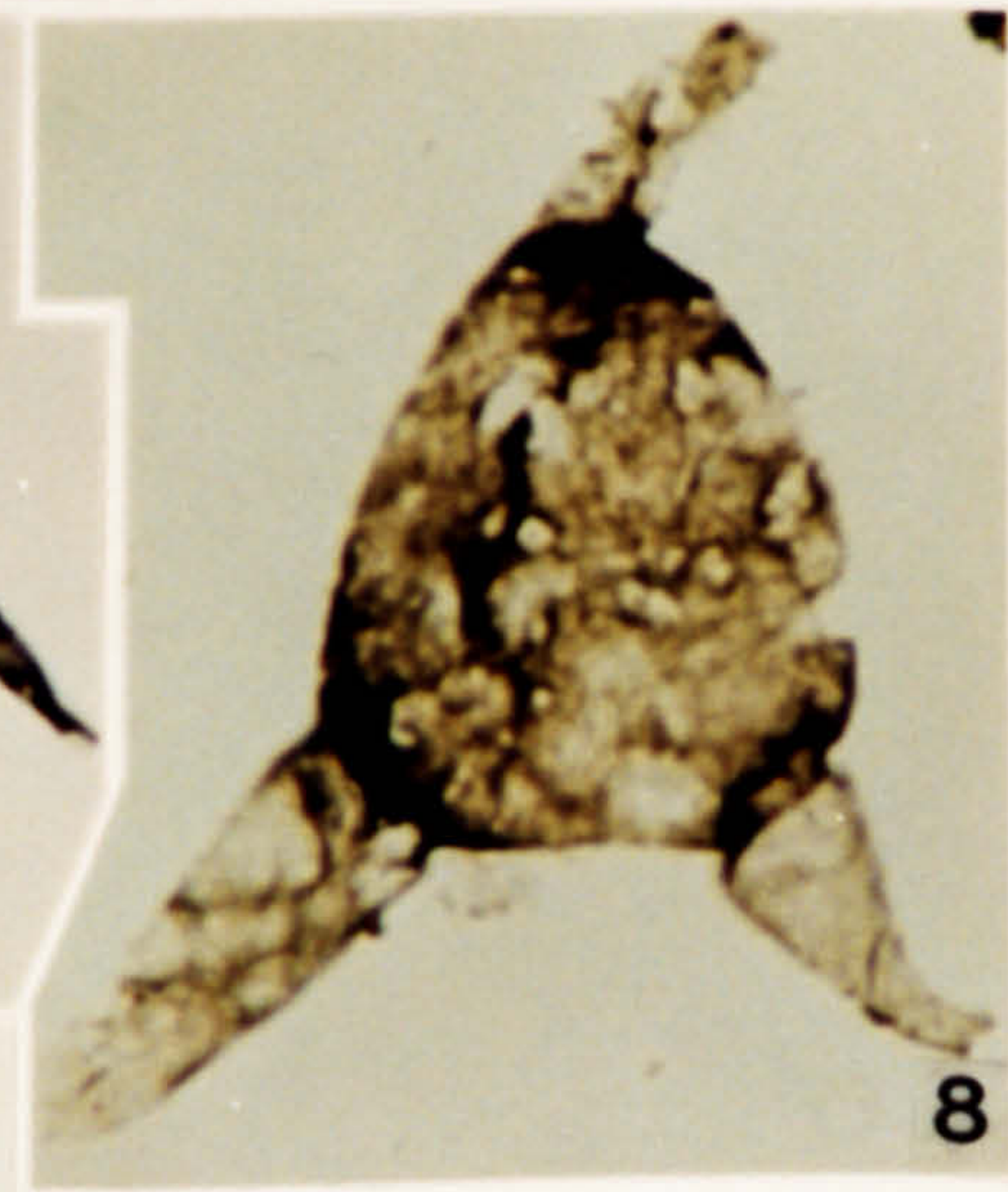
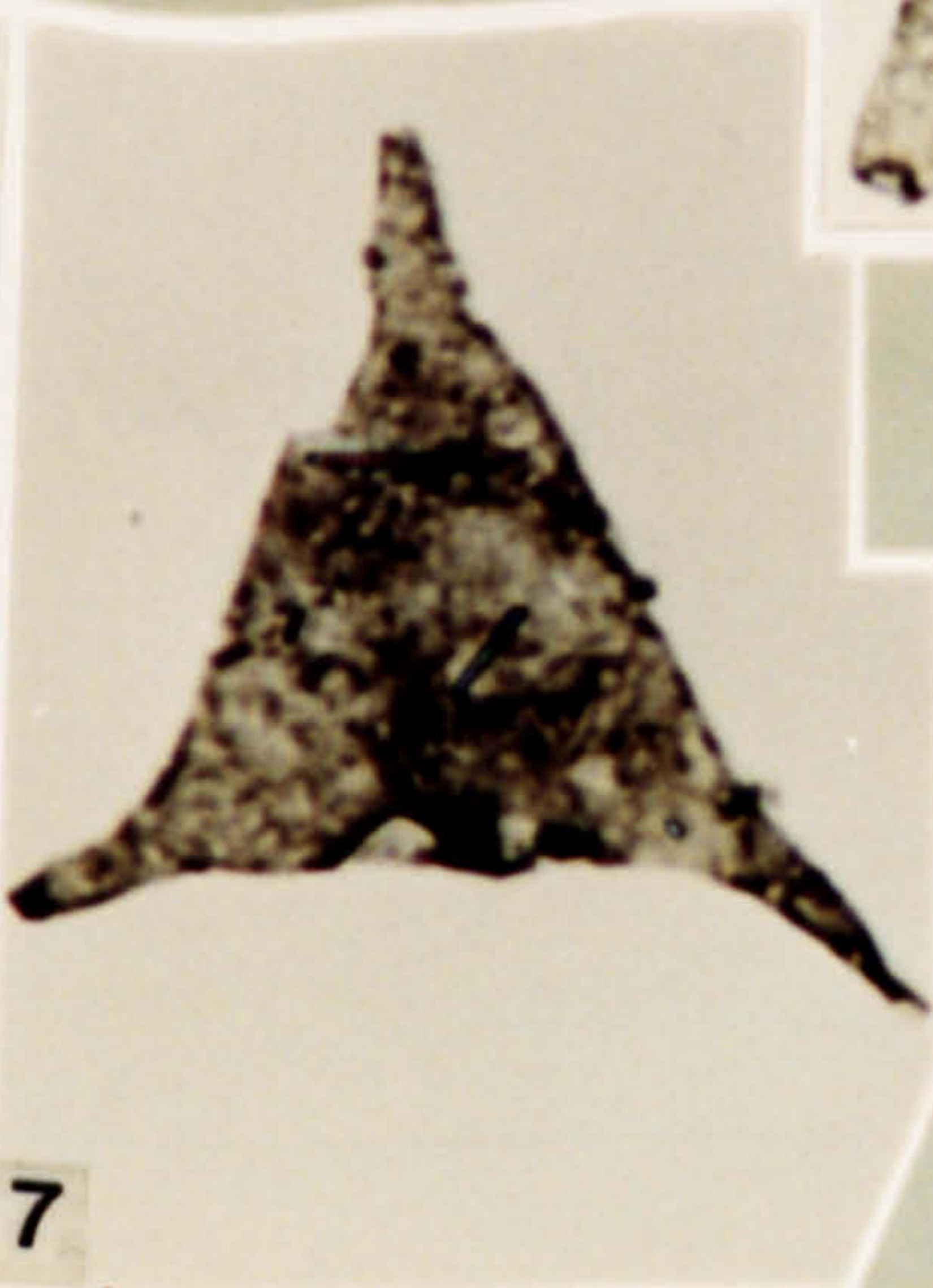
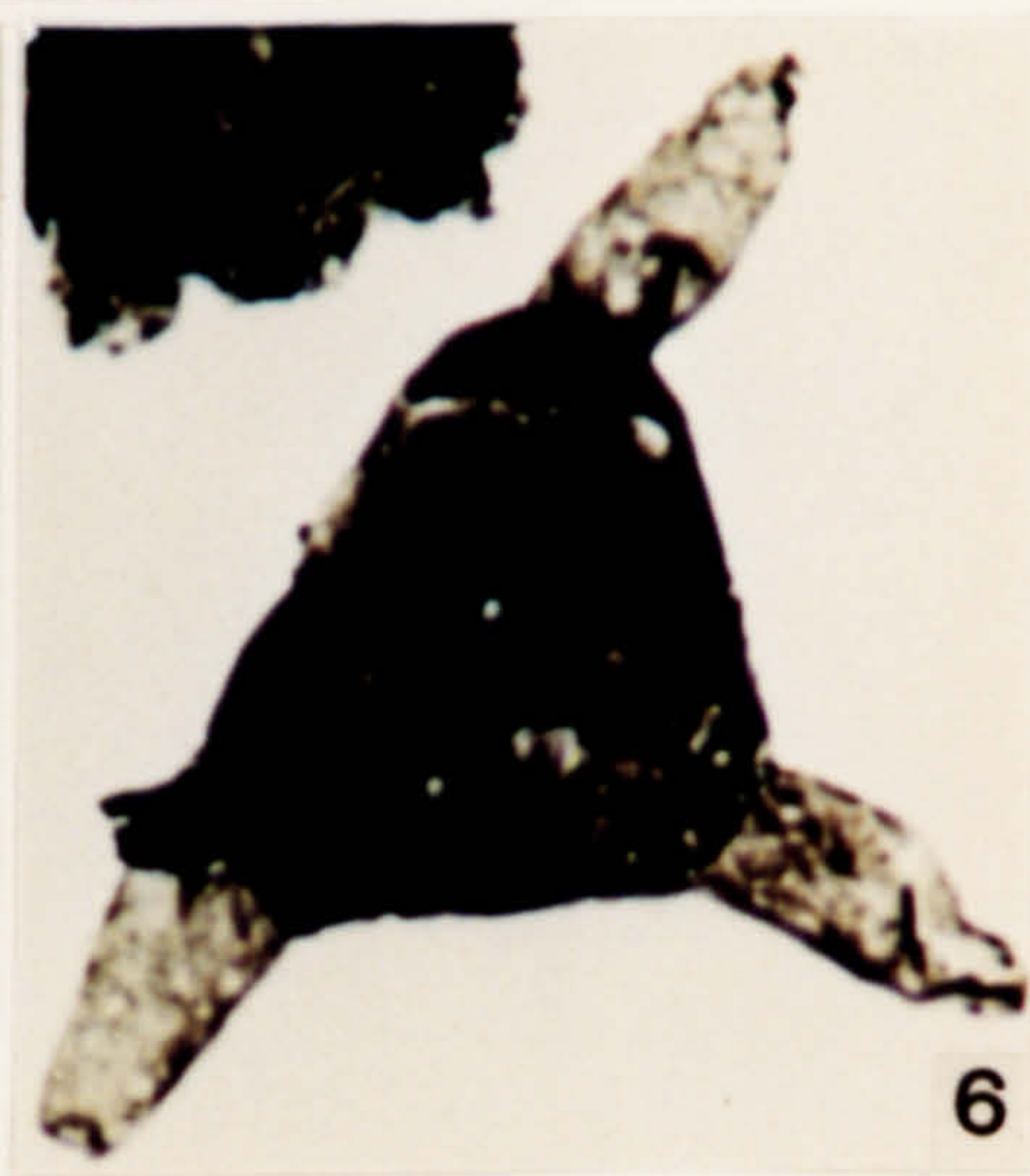
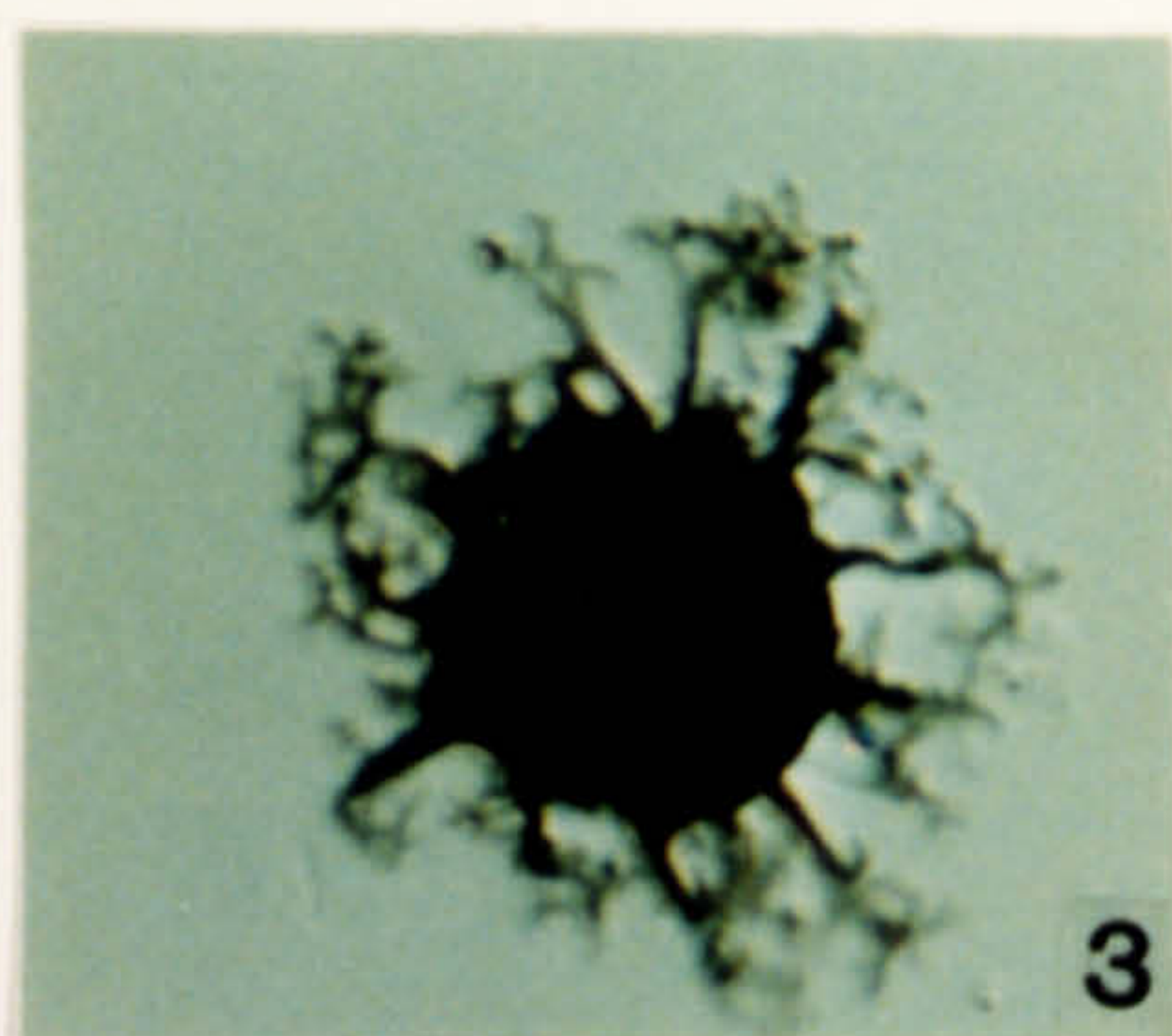


Plate 150.

Acritarchs and prasinophycean algae from the Assa Formation, late Siegenian-early Emsian in age.

1. *Florisphaeridium toyetae* (Cramer) Cramer & Diez 1976. OD 3675.75, 1-1, T21\1.
2. *Multiplicisphaeridium raspum* (Cramer) Eisenack, Cramer & Diez 1973. OD 3675.75, 1-1, O3\3.
3. *Multiplicisphaeridium lobeznum* (Cramer) Eisenack, Cramer & Diez 1973. OD 3675.75, 1-1, U20\4, IC.
4. *Ozotobrachion palidodigitatus* (Cramer) Playford 1977. OD 3675.75, 1-1, L34\4.
5. *Winwaloeusia distracta* (Deunff) Deunff 1977. OD 3675-3677.5, S-5, O40\2.
6. *Triangulina alargada* Cramer 1964. OD 3675.75, 1-1, O18\4.
7. *Veryhachium downiei* Stockmans & Williere 1962. OD 3675.75, 1-1, O19\1.
8. *Triangulina alargada* Cramer 1964. OD 3675-3677.5, S-5, N13\1.
9. *Navifusa* sp. OD 3675-3677.5, S-5, P16\3.
10. *Cymatiosphaera* sp. OD 3675.75, 1-1, O12\2.
11. *Pterospermella onondagaensis?* (Deunff) Eisenack, Cramer & Diez 1973. OD 3675.75, 1-1, R24\3.

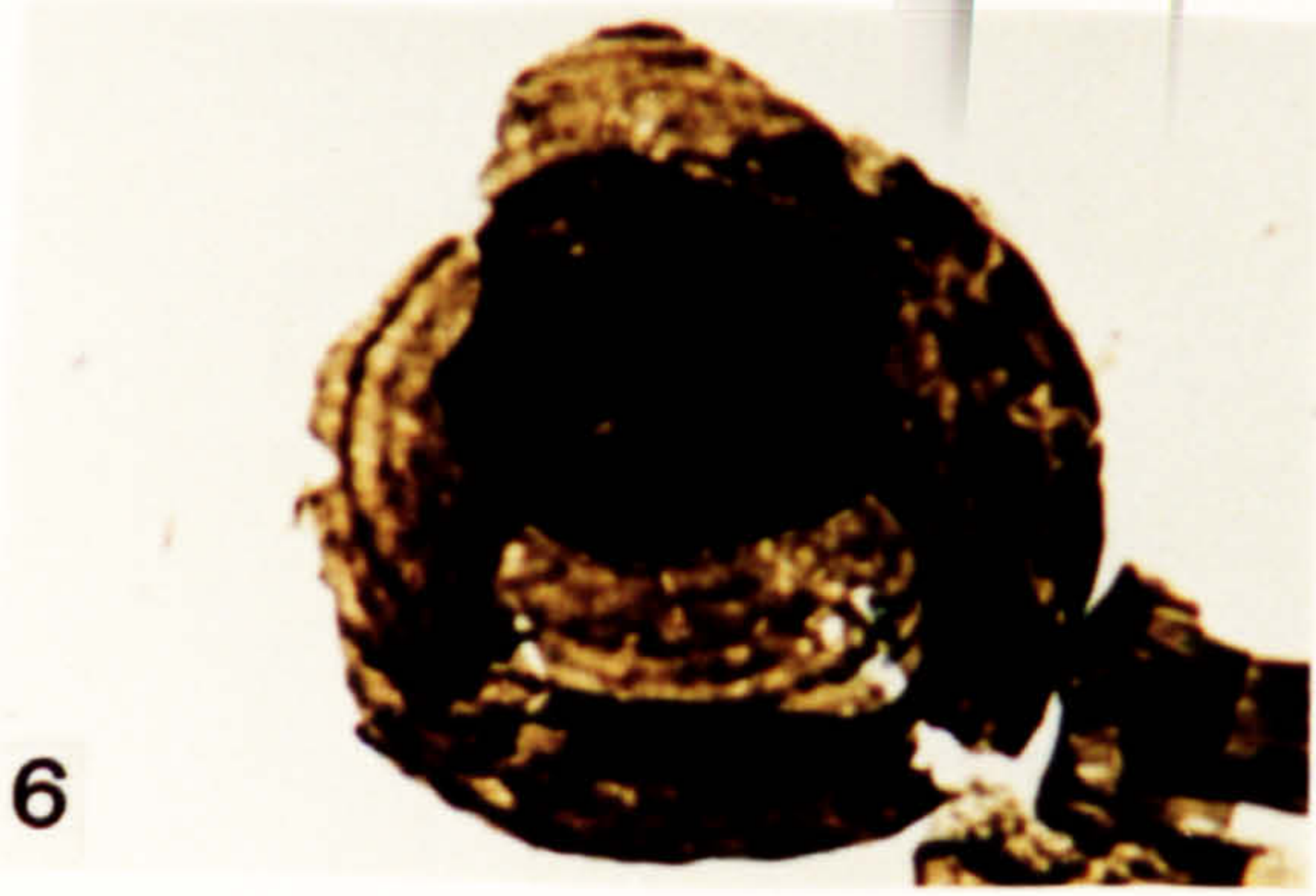




**Plate 151.**

Chitinozoa from the Assa Formation, late Siegenian-early Emsian in age.

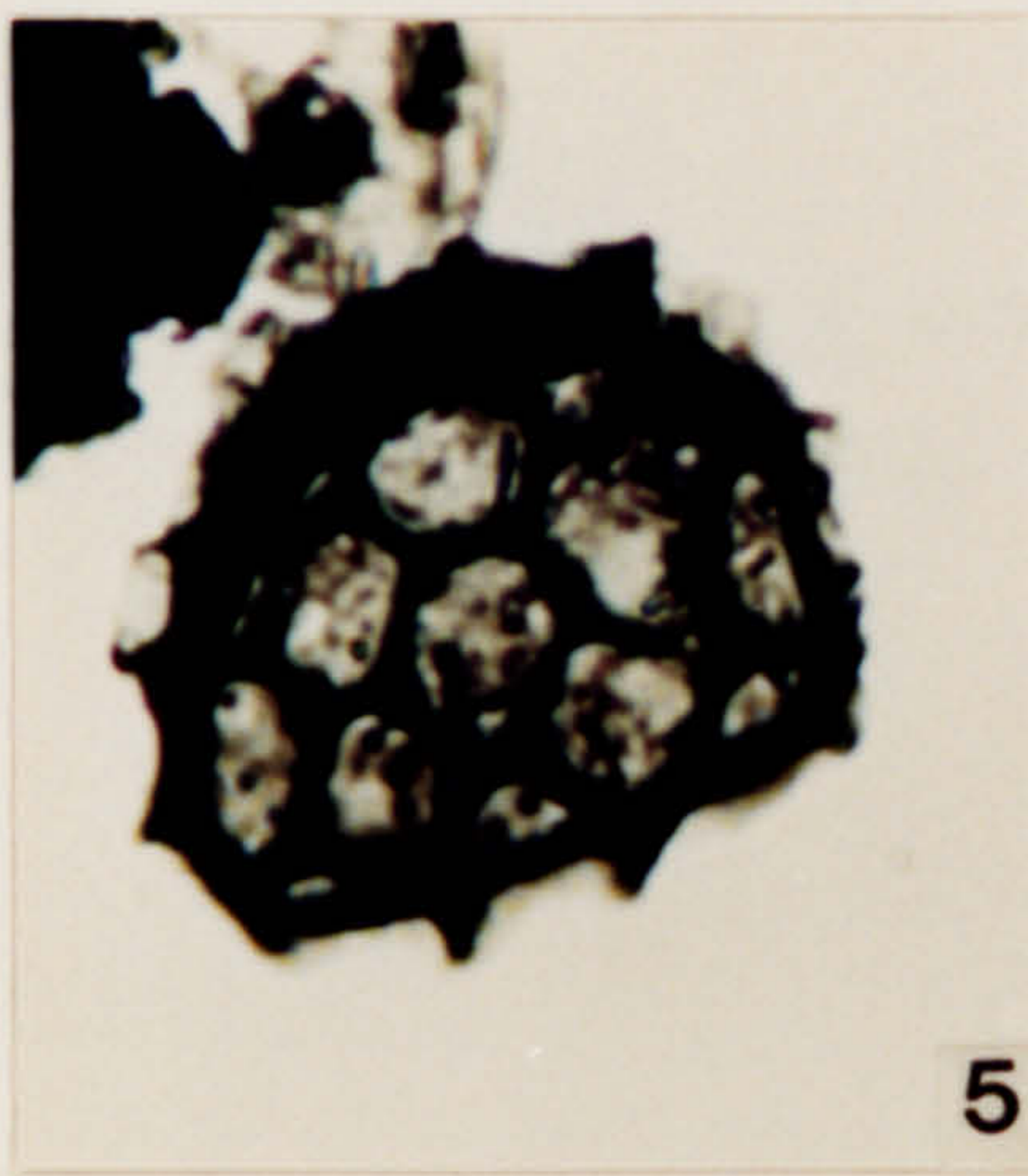
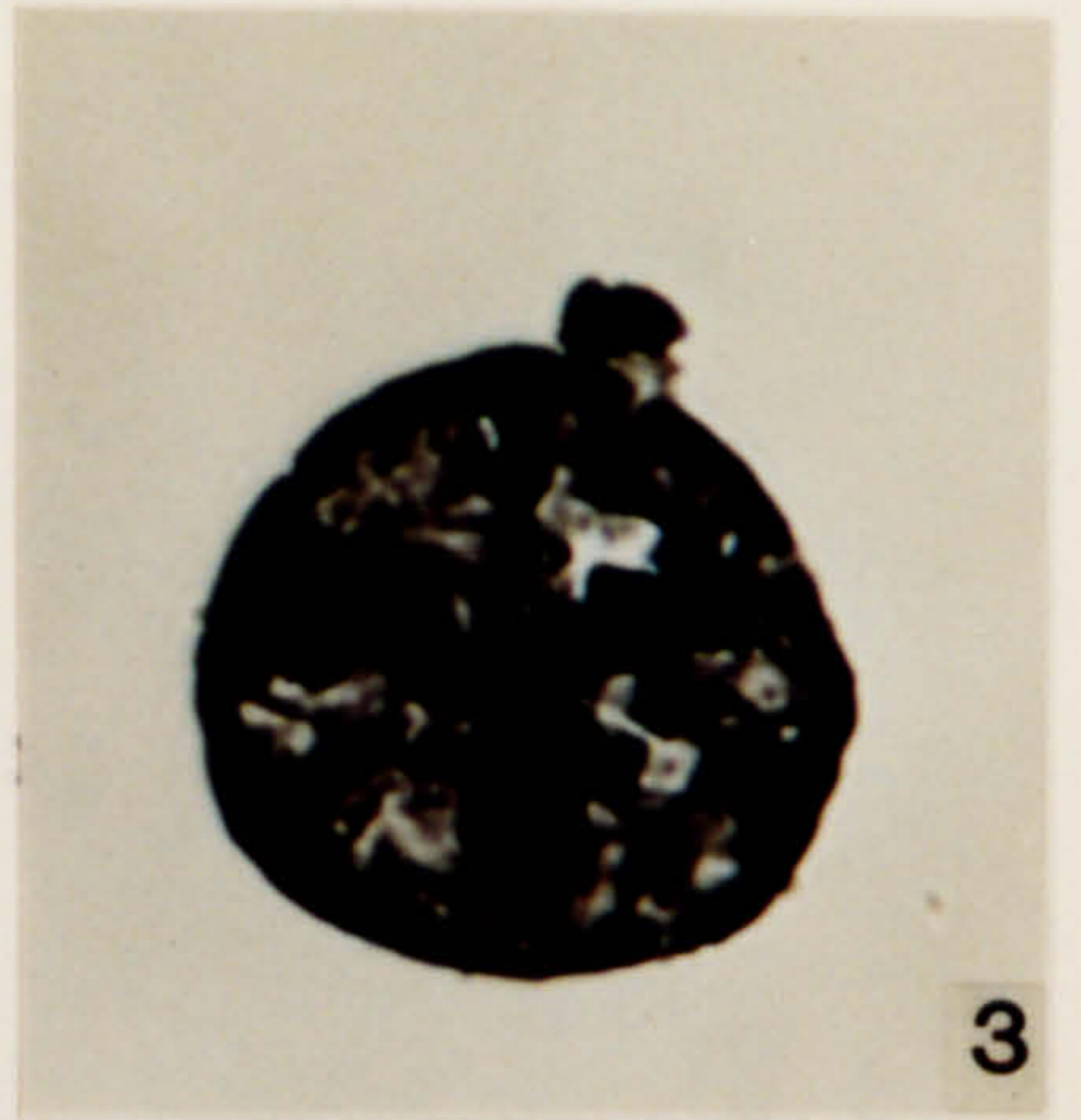
1. *Ancyrochitina* sp. OD 3675.75, 1-1, N37\4.
2. *Ancyrochitina* sp. OD 3675.75, 1-2, X39\3.
3. *Angochitina/Gothlandochitina?* sp. OD 3675.75, 1-1, P29\1.
4. *Cingulochitina serrata* (Taugourdeau & Jekhowsky) Paris 1981. OD 3675.75, 1-2, S27\4, X230.
5. *Cingulochitina serrata* (Taugourdeau & Jekhowsky) Paris 1981. OD 3675.75, 1-1, H39\4.
6. *Margachitina* sp. OD 3675-3677.5, S-5, N19\1.
7. *Margachitina catenaria catenaria?* Obut 1973. OD 3675.75, 1-2, Q47\2.
8. *Sphaerochitina sphaerocephala?* (Eisenack) Eisenack 1955. OD 3675.75, 1-1, P28\1.



**Plate 152.**

Spores from the Assa Formation, late Siegenian-early Emsian in age.

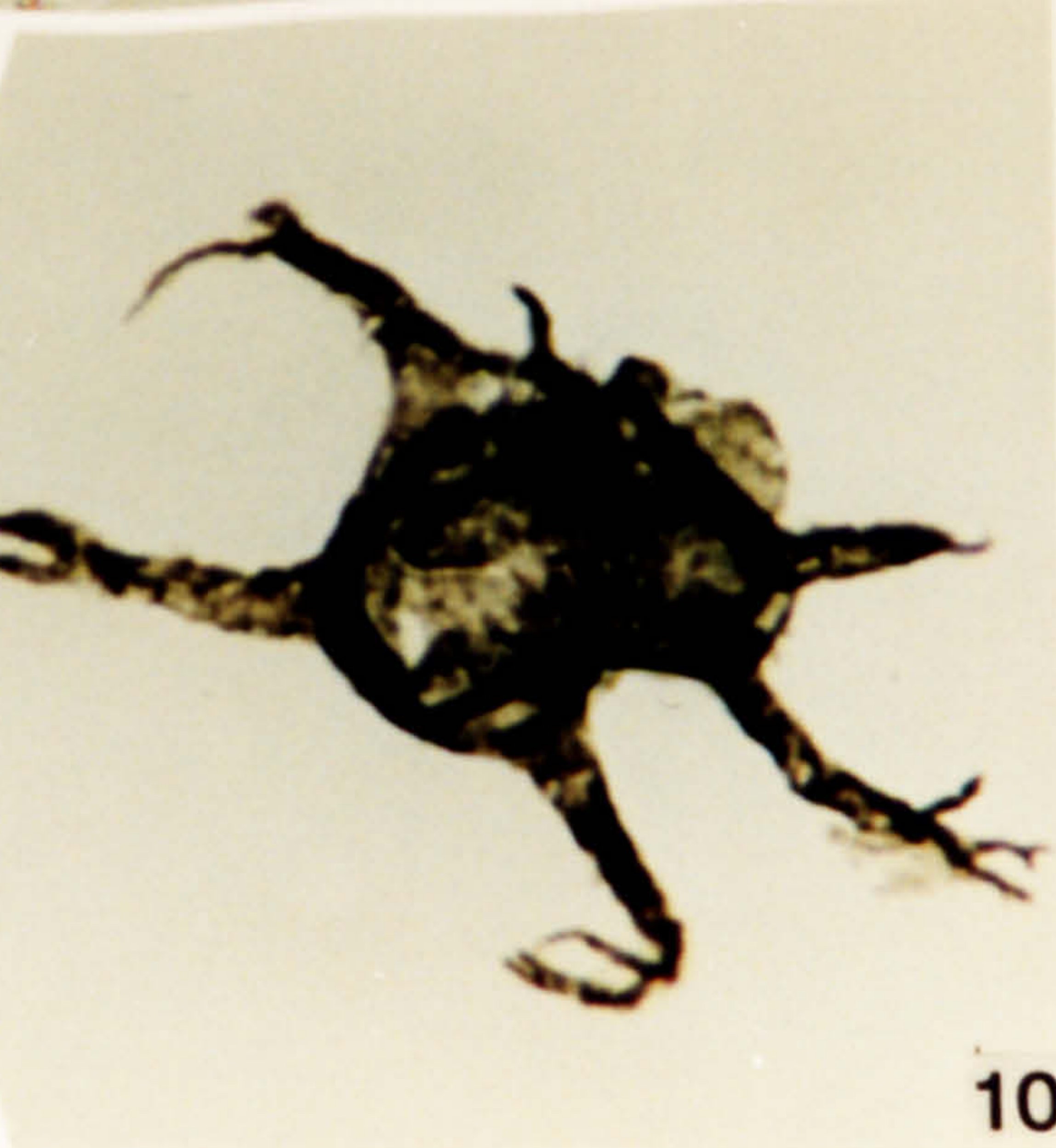
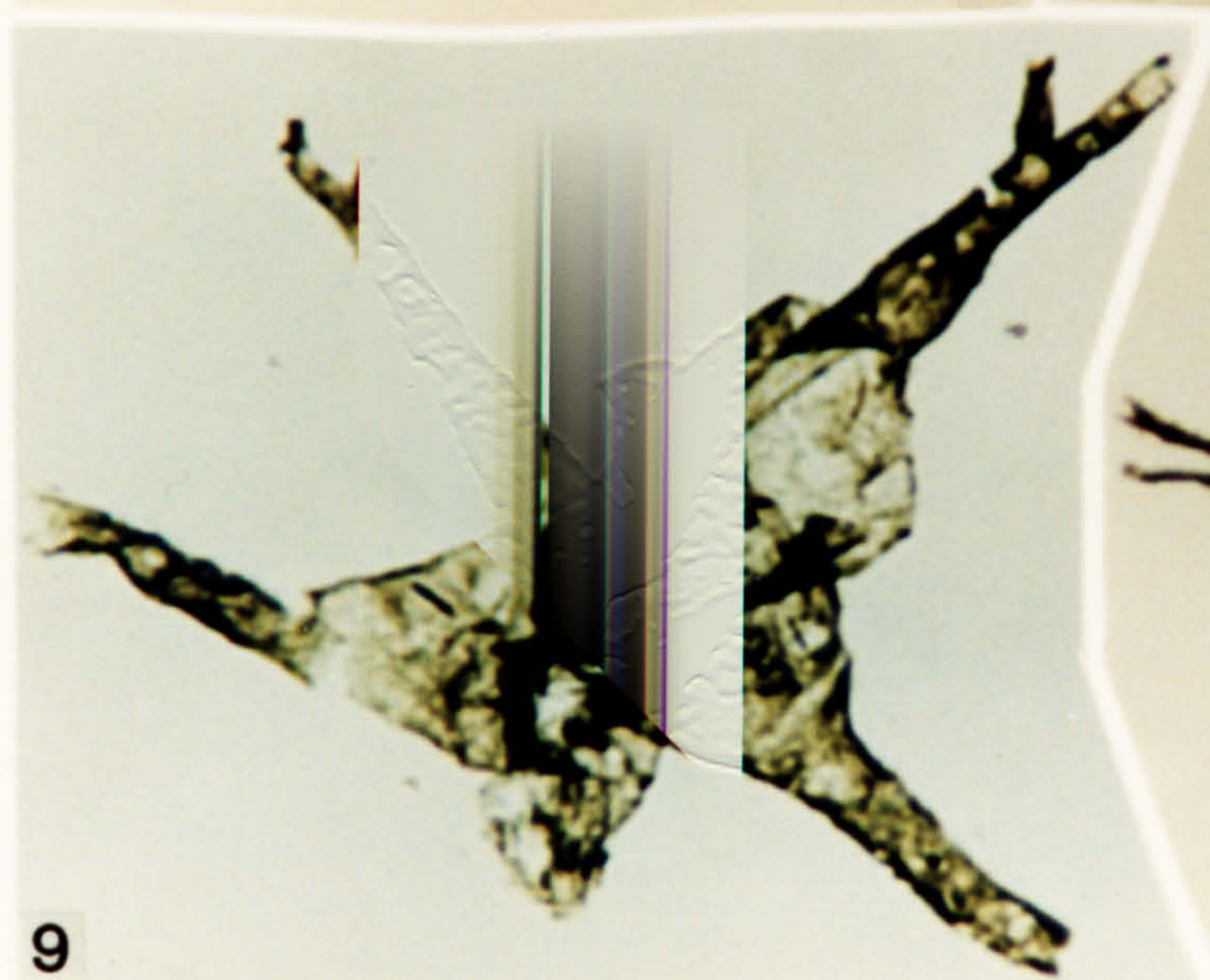
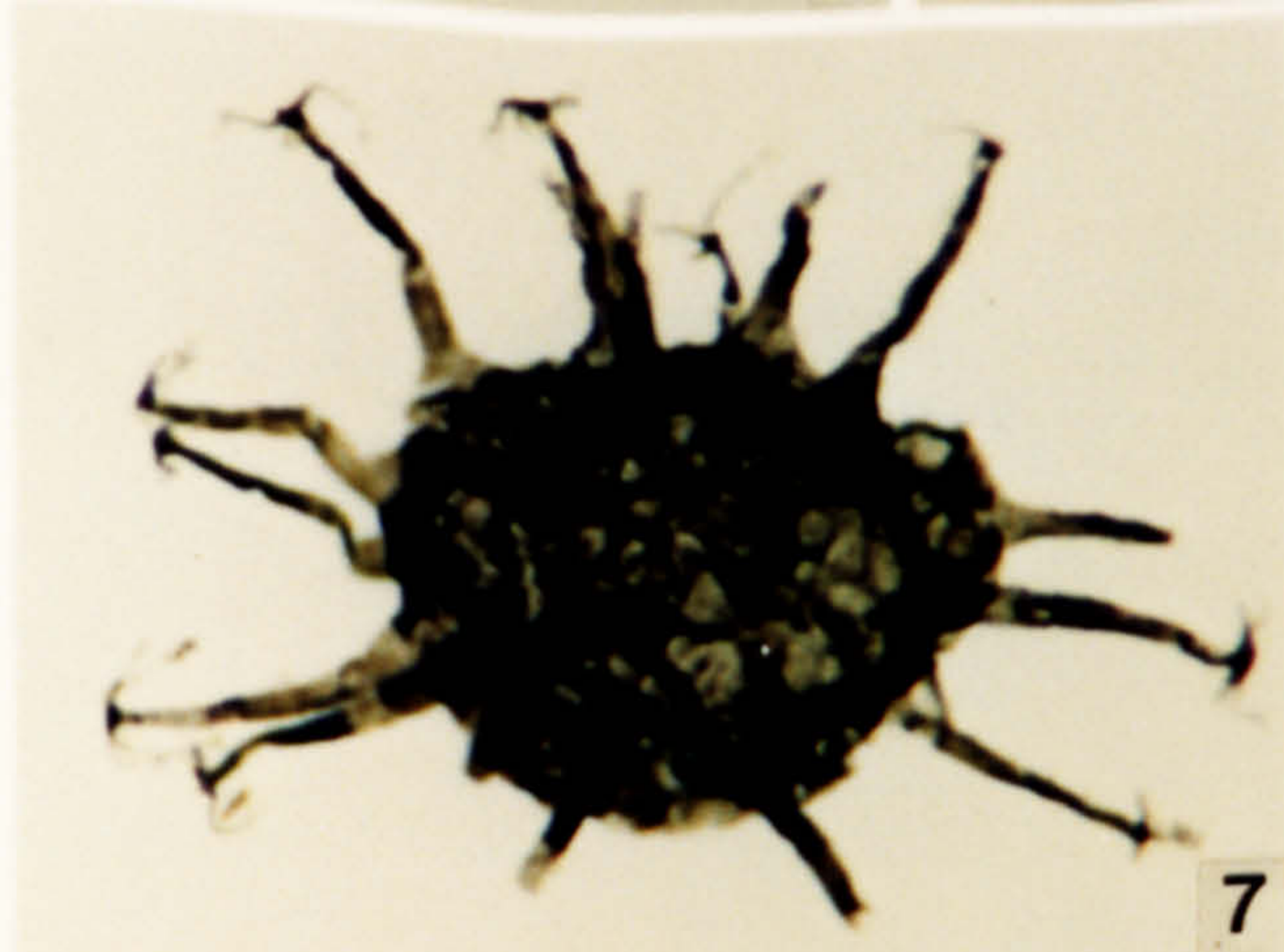
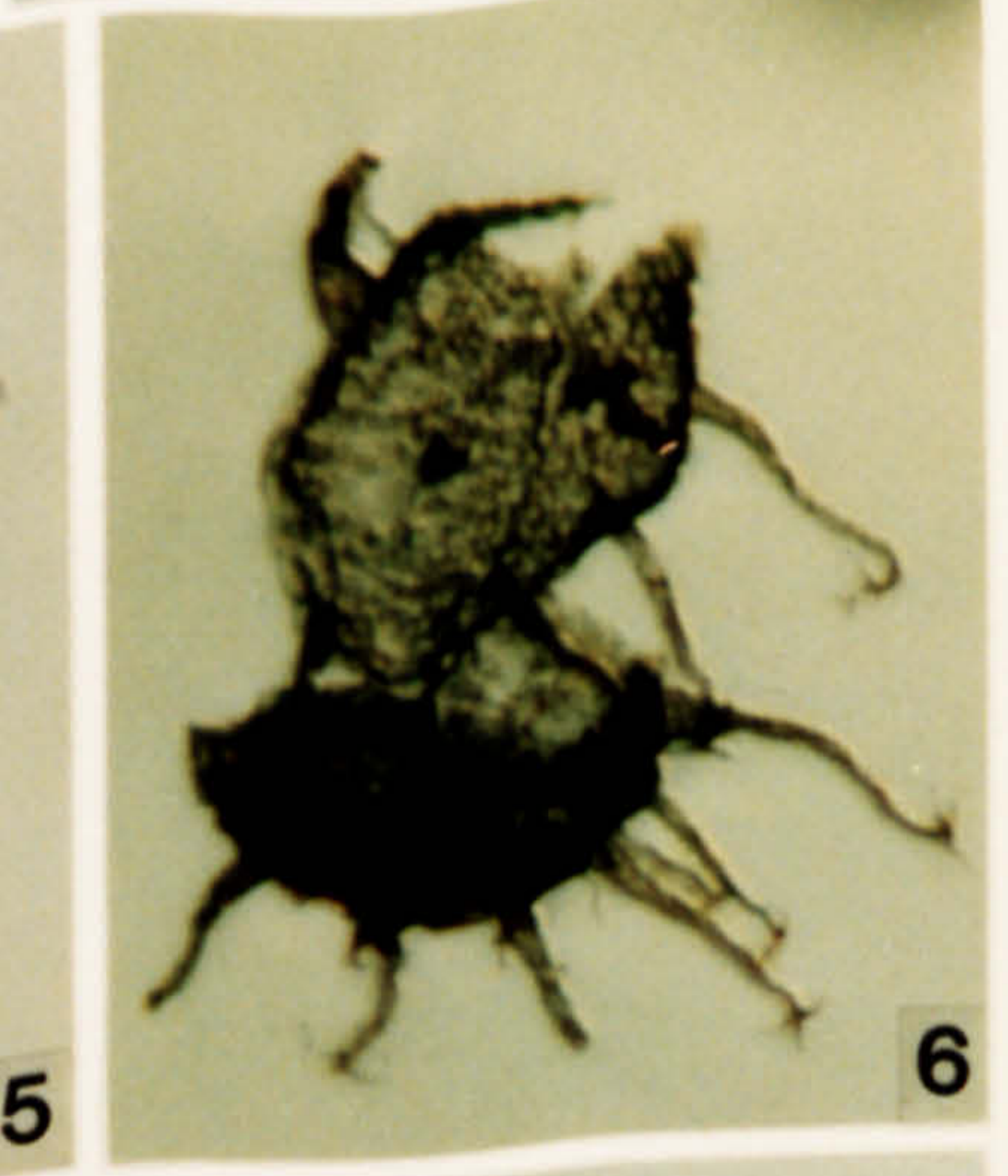
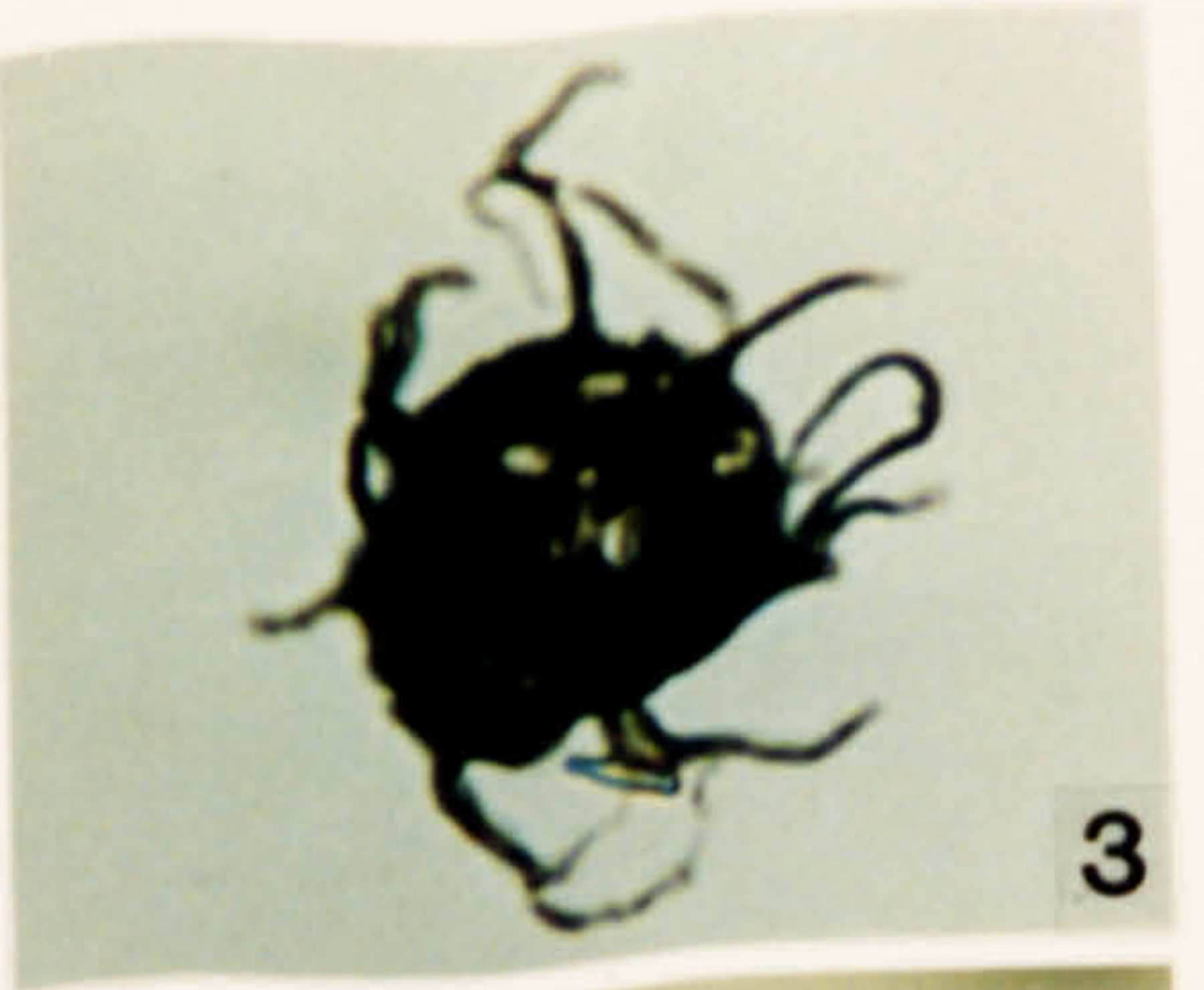
1. *Retusotriletes* sp. OD 3675.75, 1-1, R9\3.
2. *Apiculiretusotriletes* sp. OD 3675.75, 1-2, P18\1.
3. Spore indet. OD 3675.75, 1-2, J21\4.
4. *Brochotriletes? foveolatus* Naumova 1953. OD 3675.75, 1-1, F30\1.
5. *Dictyotriletes emsiensis* (Allen) McGregor 1973. OD 3675.75, 1-1, G11\3.
6. *Dictyotriletes emsiensis* (Allen) McGregor 1973. OD 3675.75, 1-1, G18\2.
7. *Dictyotriletes richardsoni* Steemans 1989. OD 3675.75, 1-1, P7\1.
8. *Dibolisporites variverrucatus* Massa & Moreau Benoit 1976. OD 3675.75, 1-2, L11\3.
9. *Dibolisporites variverrucatus* Massa & Moreau Benoit 1976. OD 3675-3677.5, S-5, H29\3.
10. Spore indet. OD 3675.75, 1-1, S10\1.
11. Spore indet. OD 3675-3677.5, S-5, P10\2.
12. Spore indet. OD 3675-3677.5, S-5, P27\3.



**Plate 153.**

Acritarchs from the Mdaour el Kbir-El Ansar-N'Kheila Formations, early Eifelian in age.

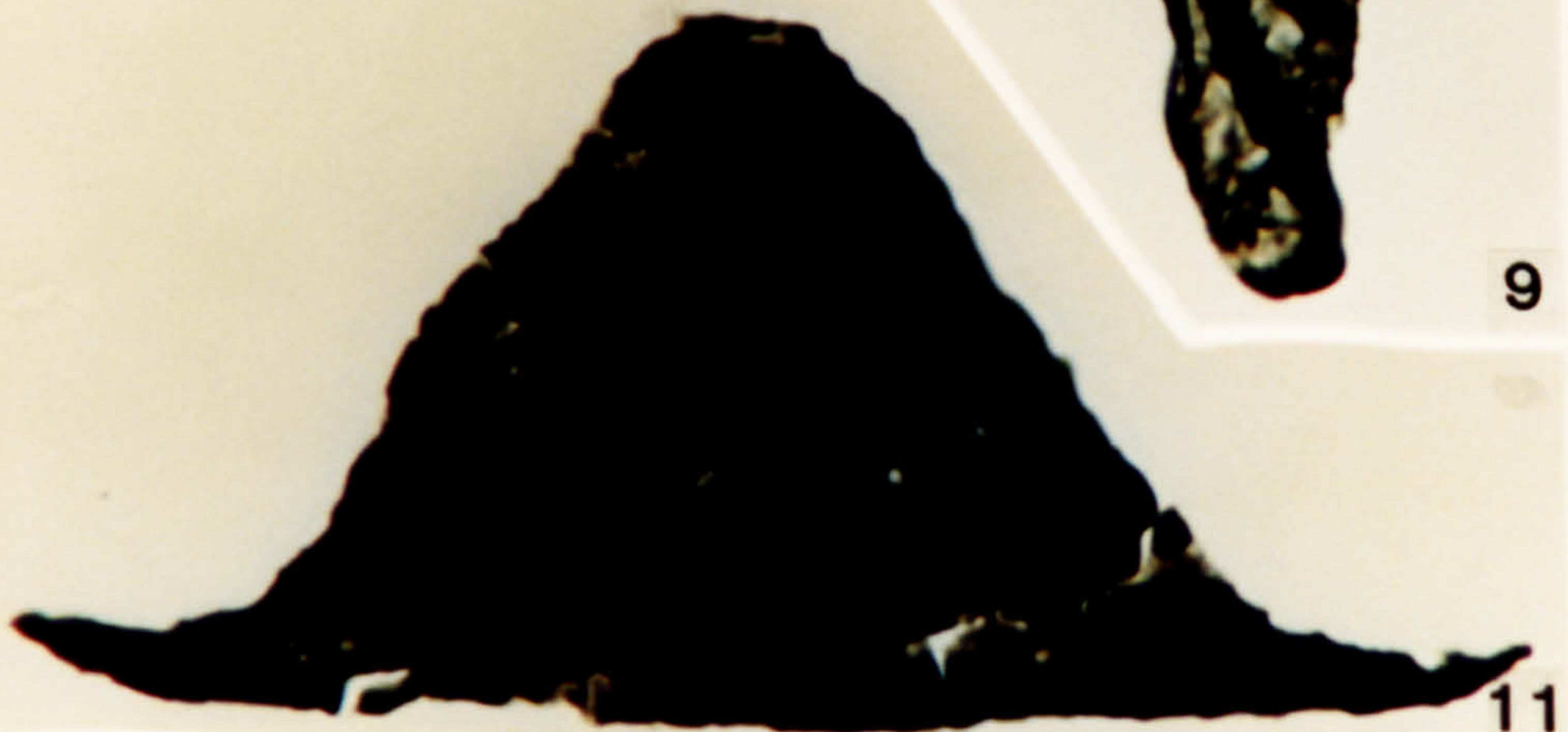
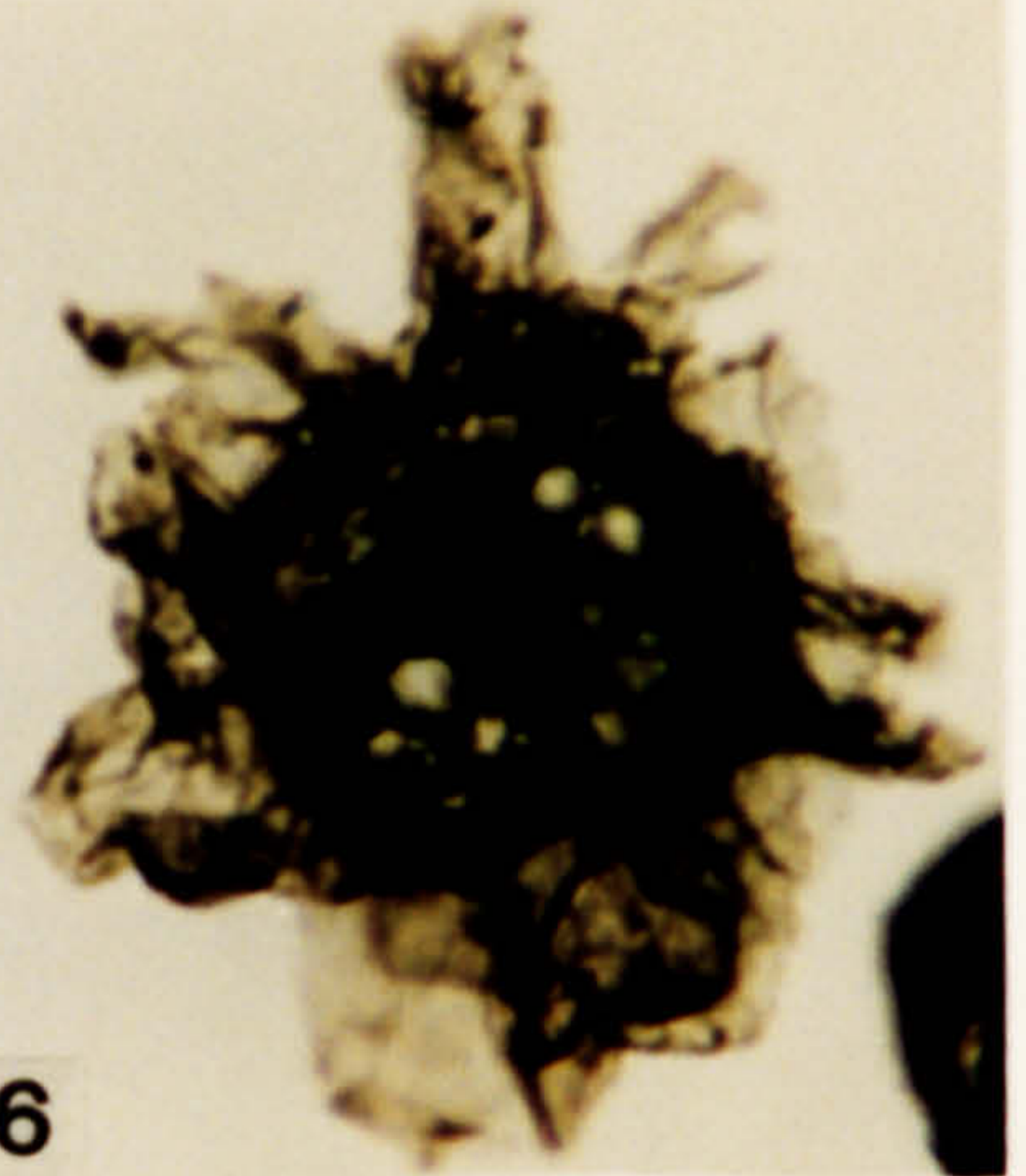
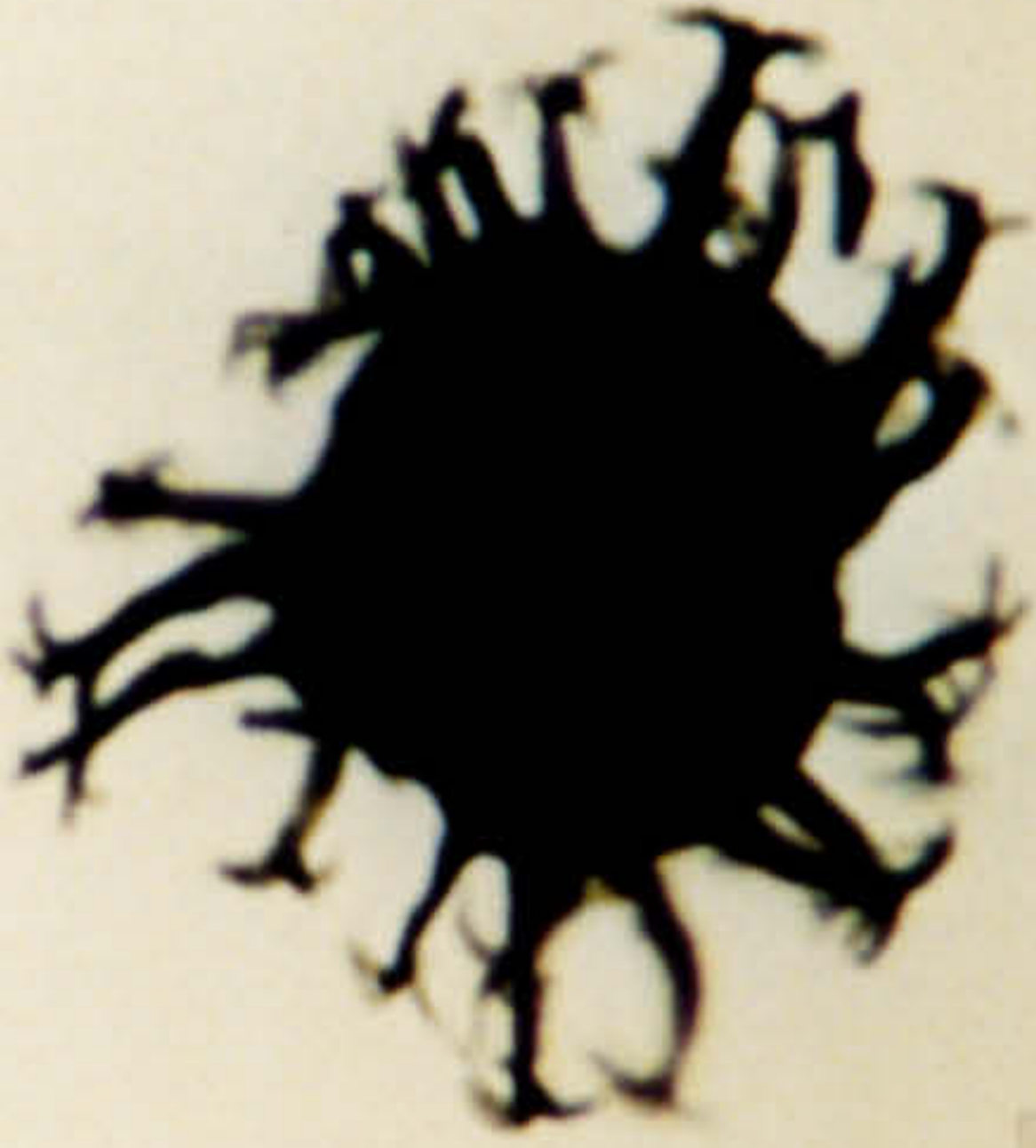
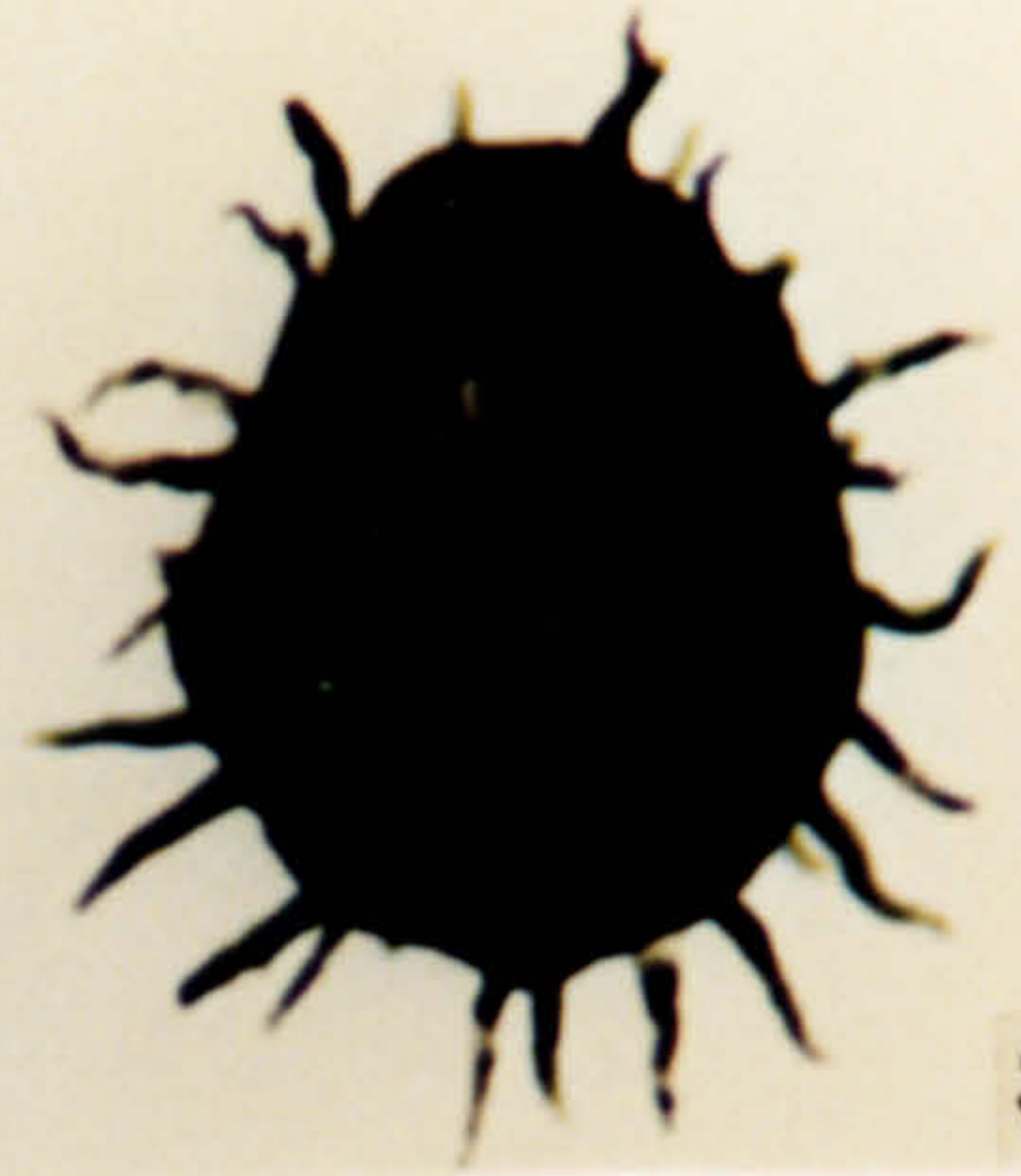
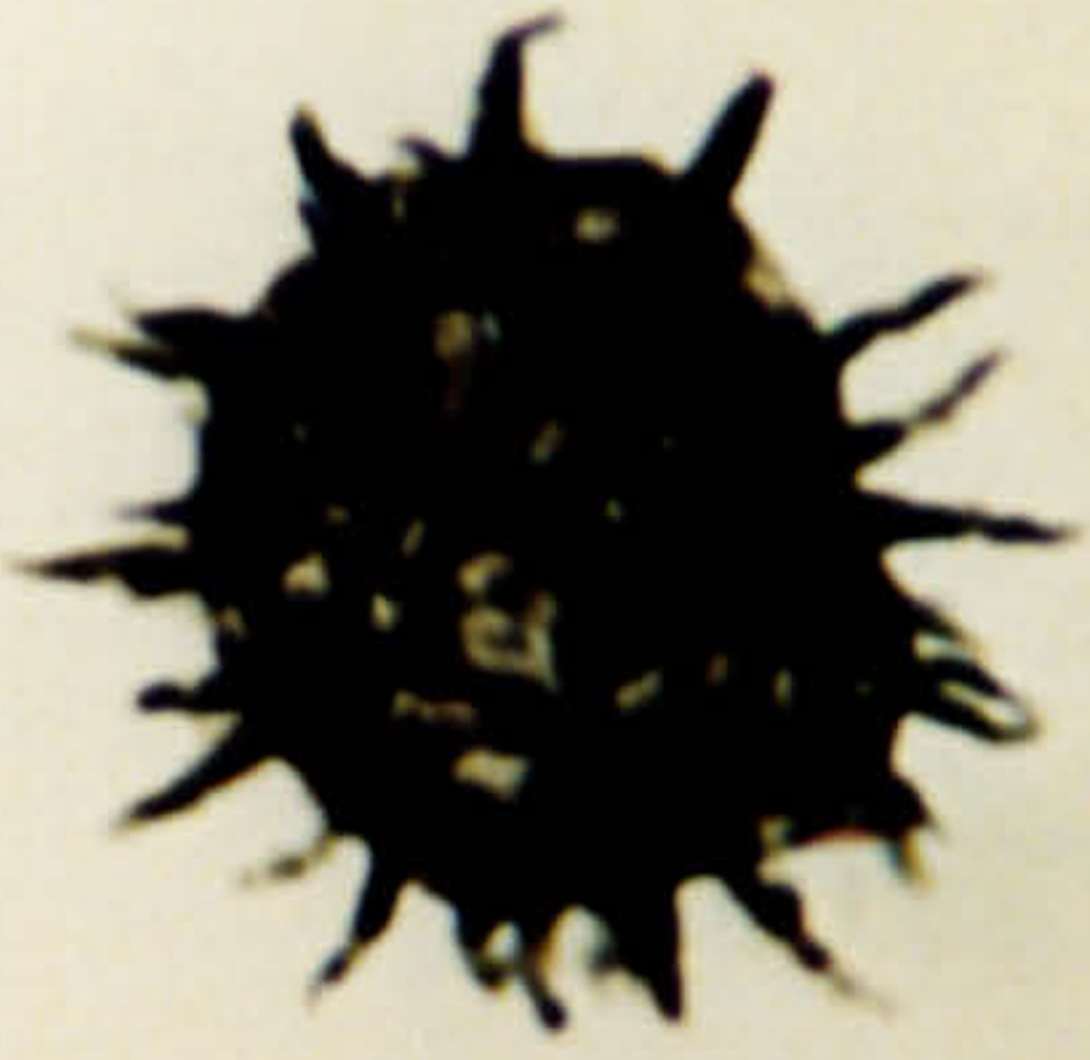
1. *Ammonidium? alloiteauii* (Deunff) Deunff 1976. OD 3333.2, S-1, H19\3.
2. *Ammonidium? alloiteauii* (Deunff) Deunff 1976. OD 3333.2, S-1, P40\1.
3. *Baltisphaeridium anfractum* Playford 1977. OD 3504, S-3, Q30\4.
4. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 3504, 2-2, G8\1.
5. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 3239, 2-1, O35\2.
6. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 3239.5, 2-1, U24\2.
7. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 3239.5, 2-1, W19\-..
8. *Diexallophasis denticulata* (Stockmans & Williere) Loeblich 1970. OD 3274, S-1, V13\3.
9. *Diexallophasis remota* var. *rabiosum?* (Cramer) comb. nov. OD 3504, S-3, H23\3.
10. *Diexallophasis denticulata?* (Stockmans & Williere) Loeblich 1970. OD 3504, 2-1, Q29\4.



**Plate 154.**

Acritarchs from the Mdaour el Kbir-El Ansar-N'Kheila Formations, early Eifelian in age.

1. *Gorgonisphaeridium telum* Wicander & Playford 1985. OD 3239.5, S-1, G30\2.
2. *Gorgonisphaeridium telum* Wicander & Playford 1985. OD 3333.2, S-1, G12\4.
3. *Gorgonisphaeridium telum*. Wicander & Playford 1985. OD 3239.5, S-1, S26\2.
4. *Multiplicisphaeridium raspum* (Cramer) Eisenack, Cramer & Diez 1973. OD 3239.5, S-1, M33\1.
5. *Navifusa minuta* (Deunff) Eisenack, Cramer & Diez 1979. OD 3239.5, S-1, D23\-.
6. cf. *Fimbriaglomorella* sp. OD 3504, 2-2, K17\1.
7. *Navifusa minuta* (Deunff) Eisenack, Cramer & Diez 1979. OD 3504, 2-2, H39\3.
8. *Navifusa* sp. OD 3274, 2-1, G23\3.
9. *Navifusa bacilla* (Deunff) Playford 1977. OD 3239.5, S-1, H27\3.
10. *Leiofusa estrecha?* Cramer 1964. OD 3239.5, 2-1, J20\1.
11. *Onondagella asymmetrica* (Deunff ex Deunff) Cramer 1966. OD 3239.5, S-1, V42\1.

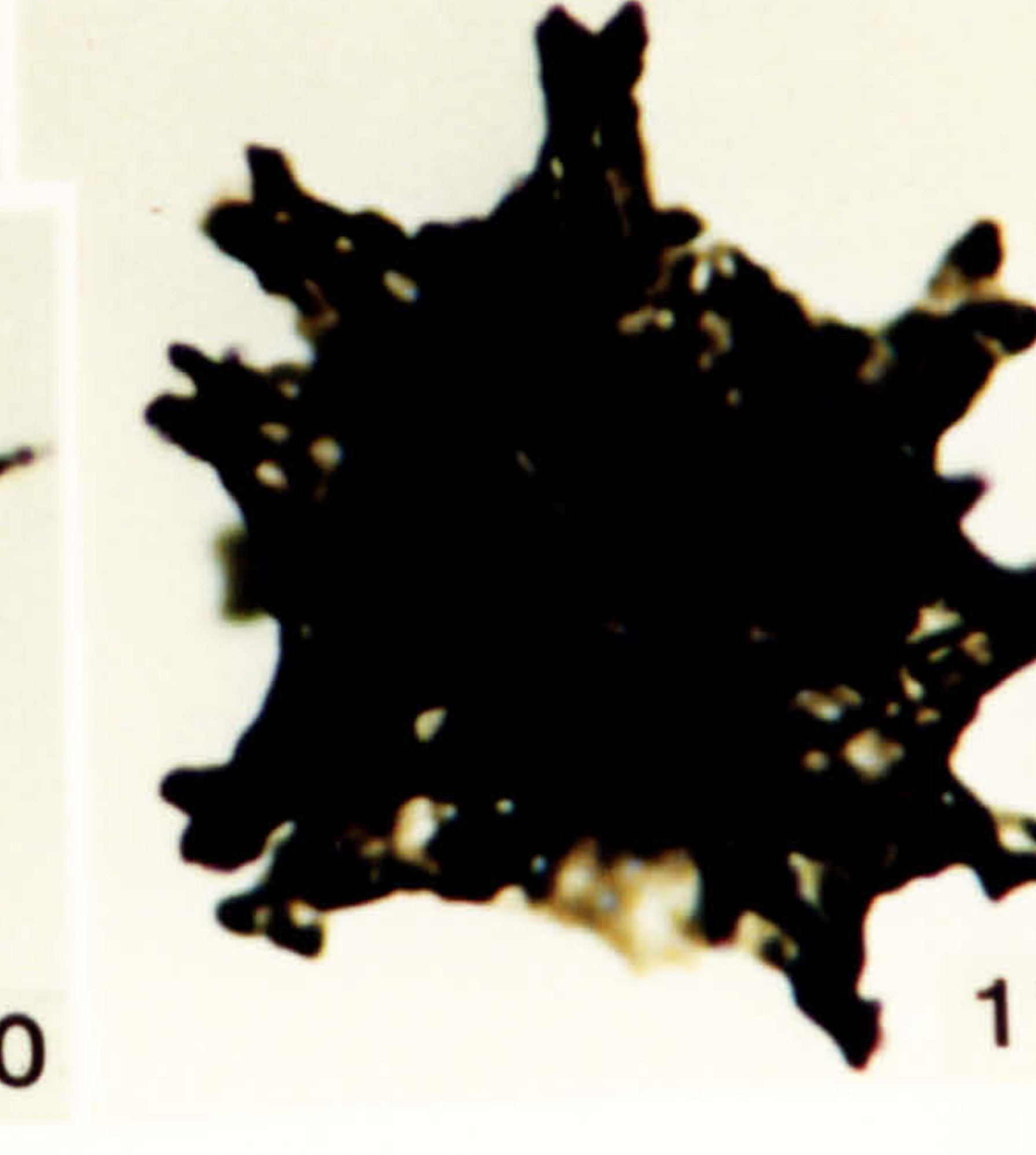
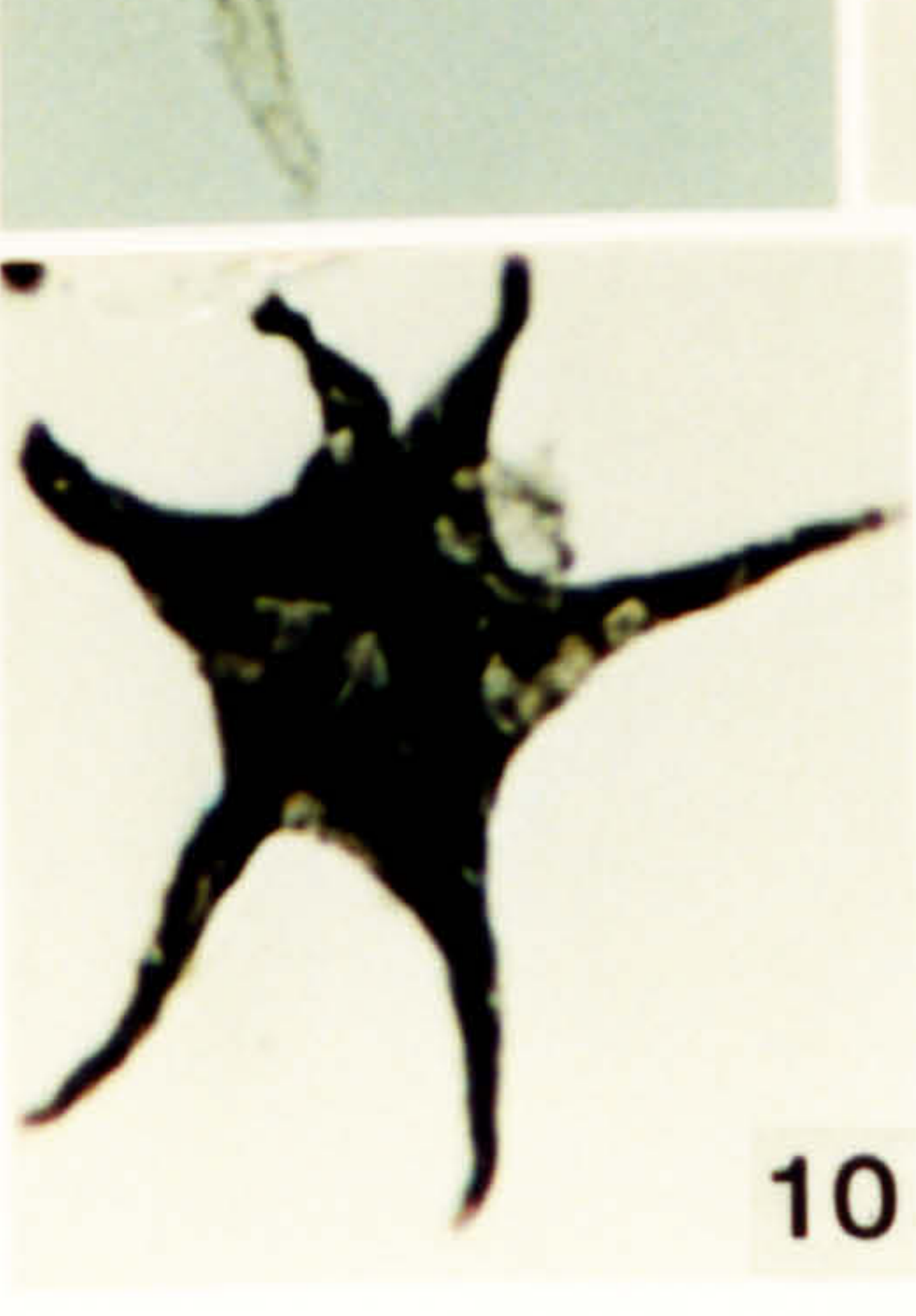
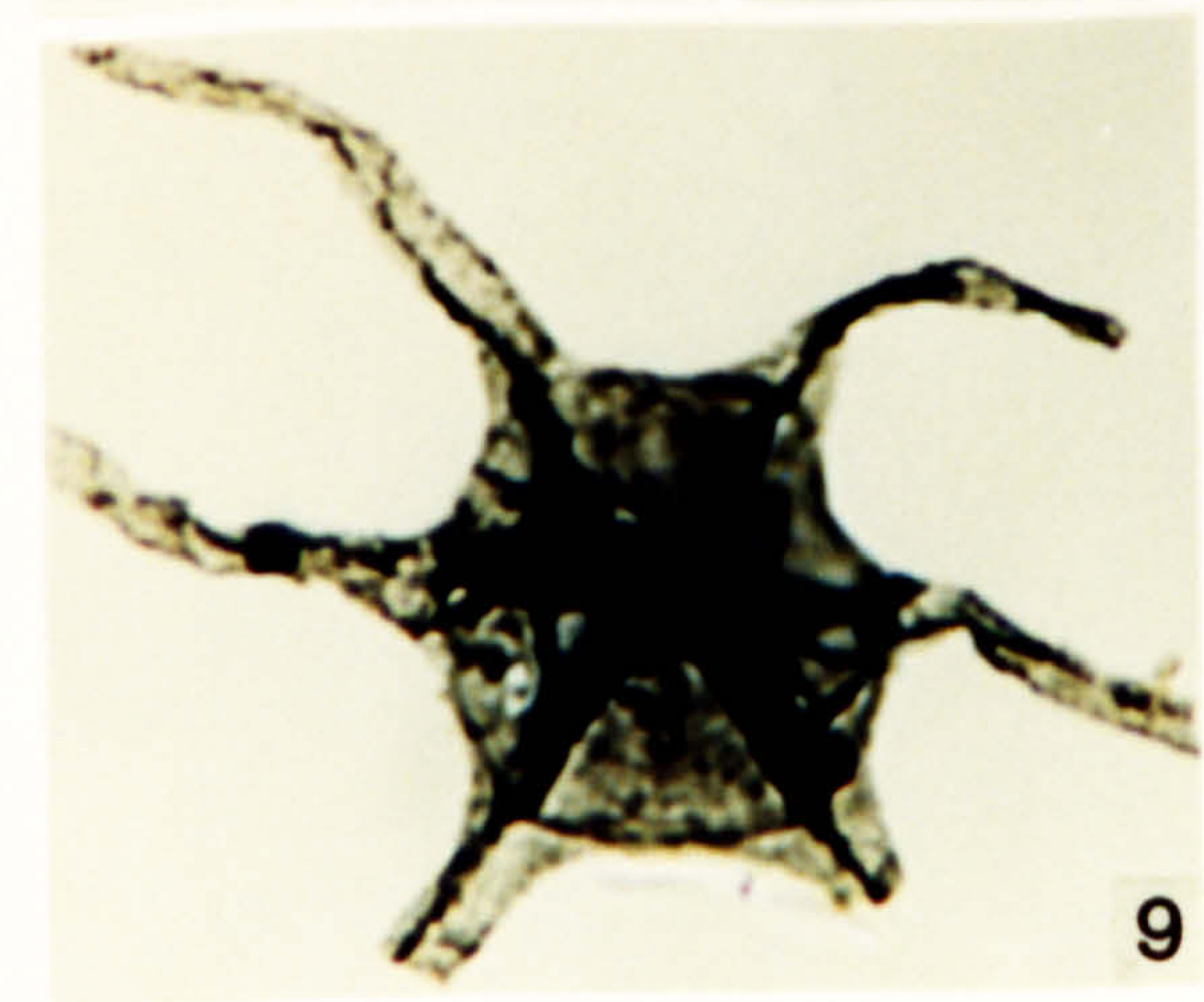
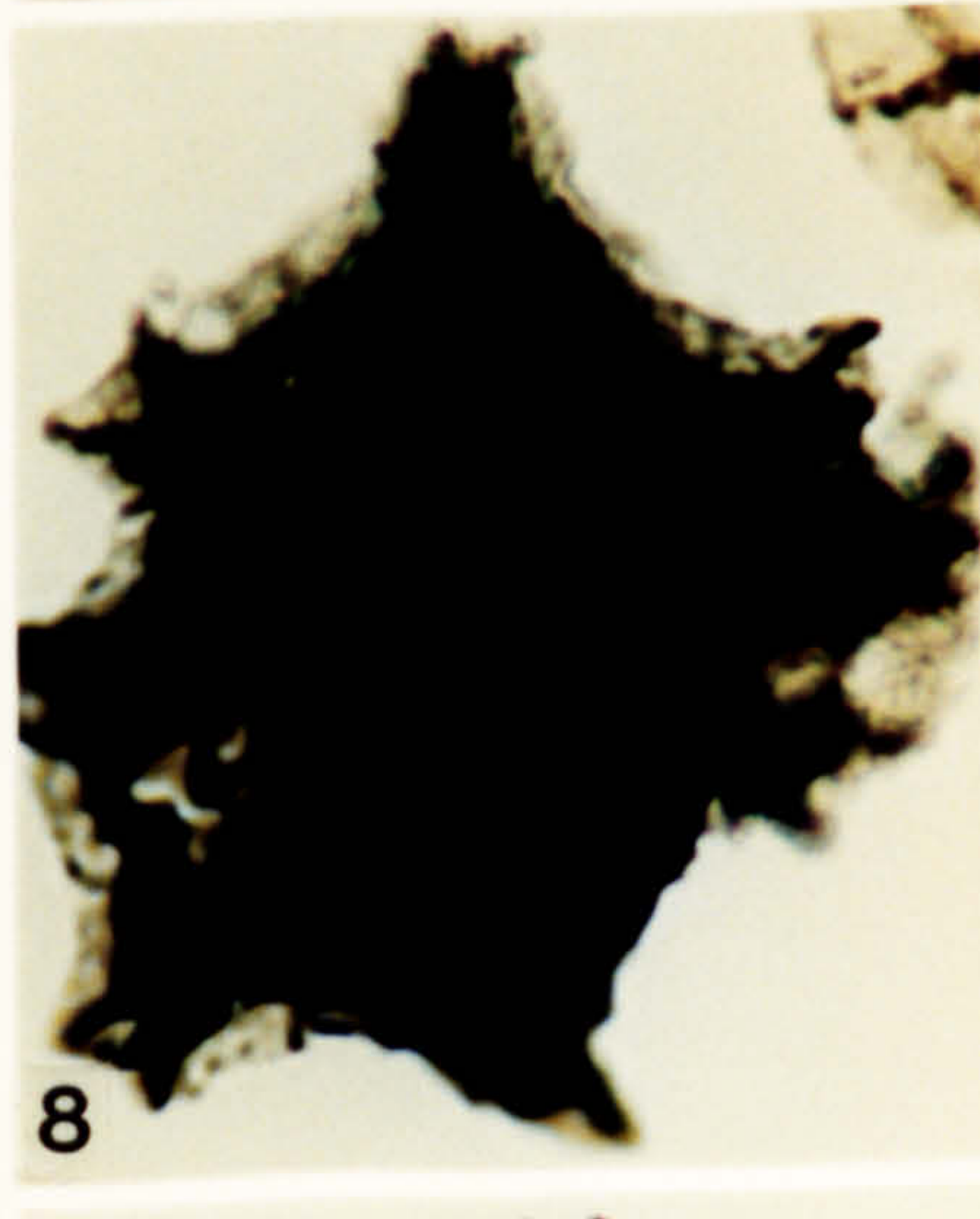
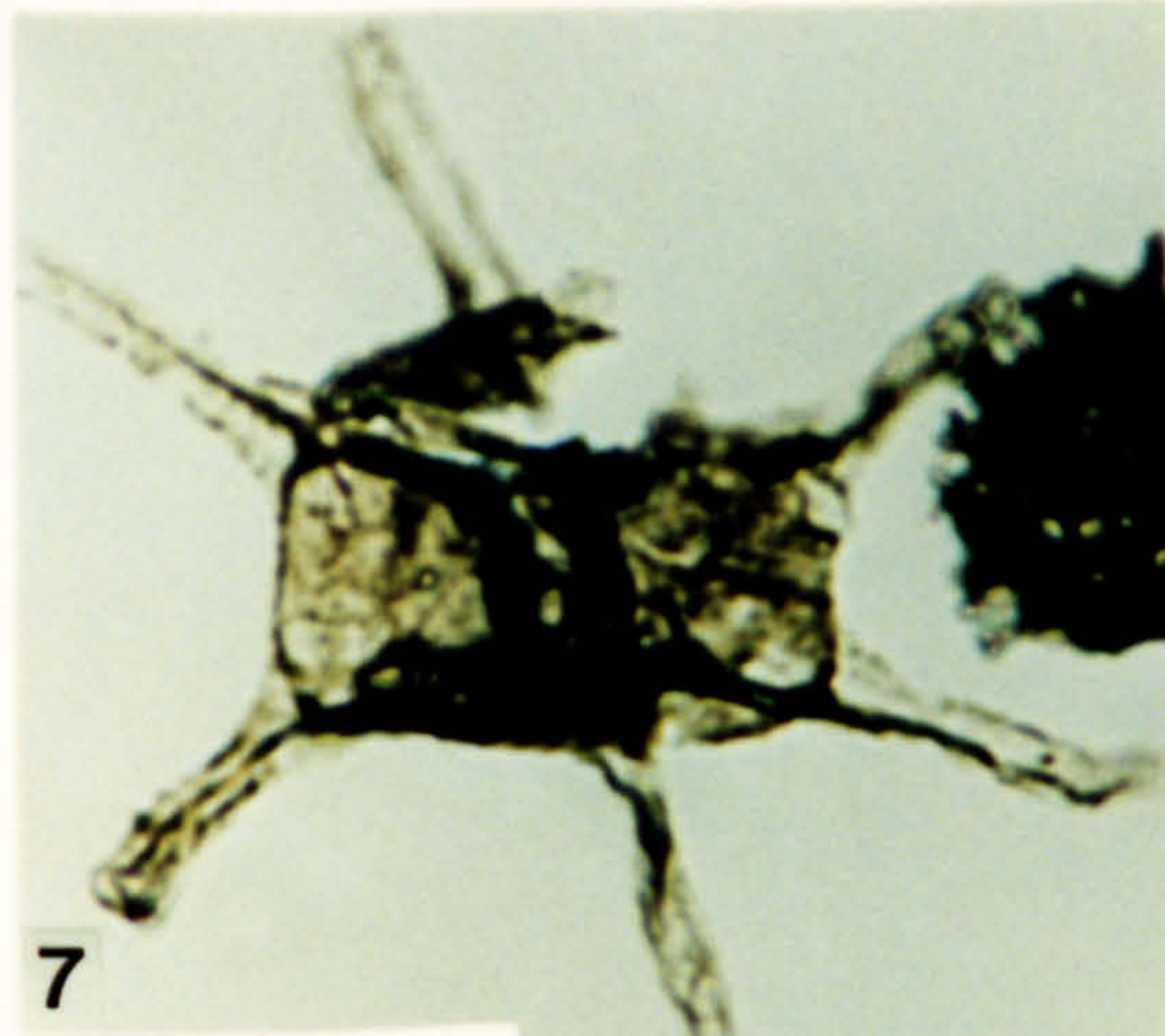
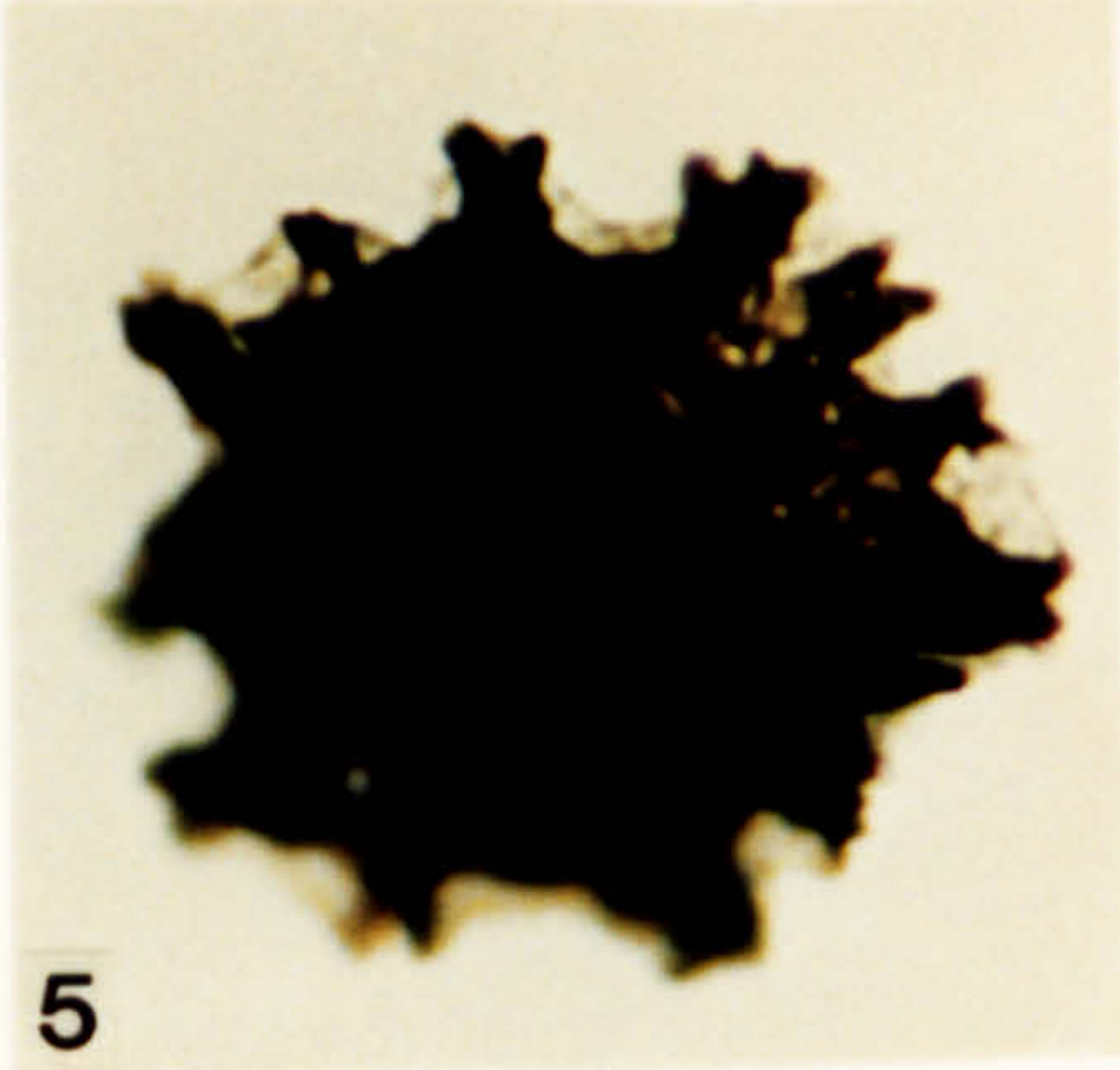
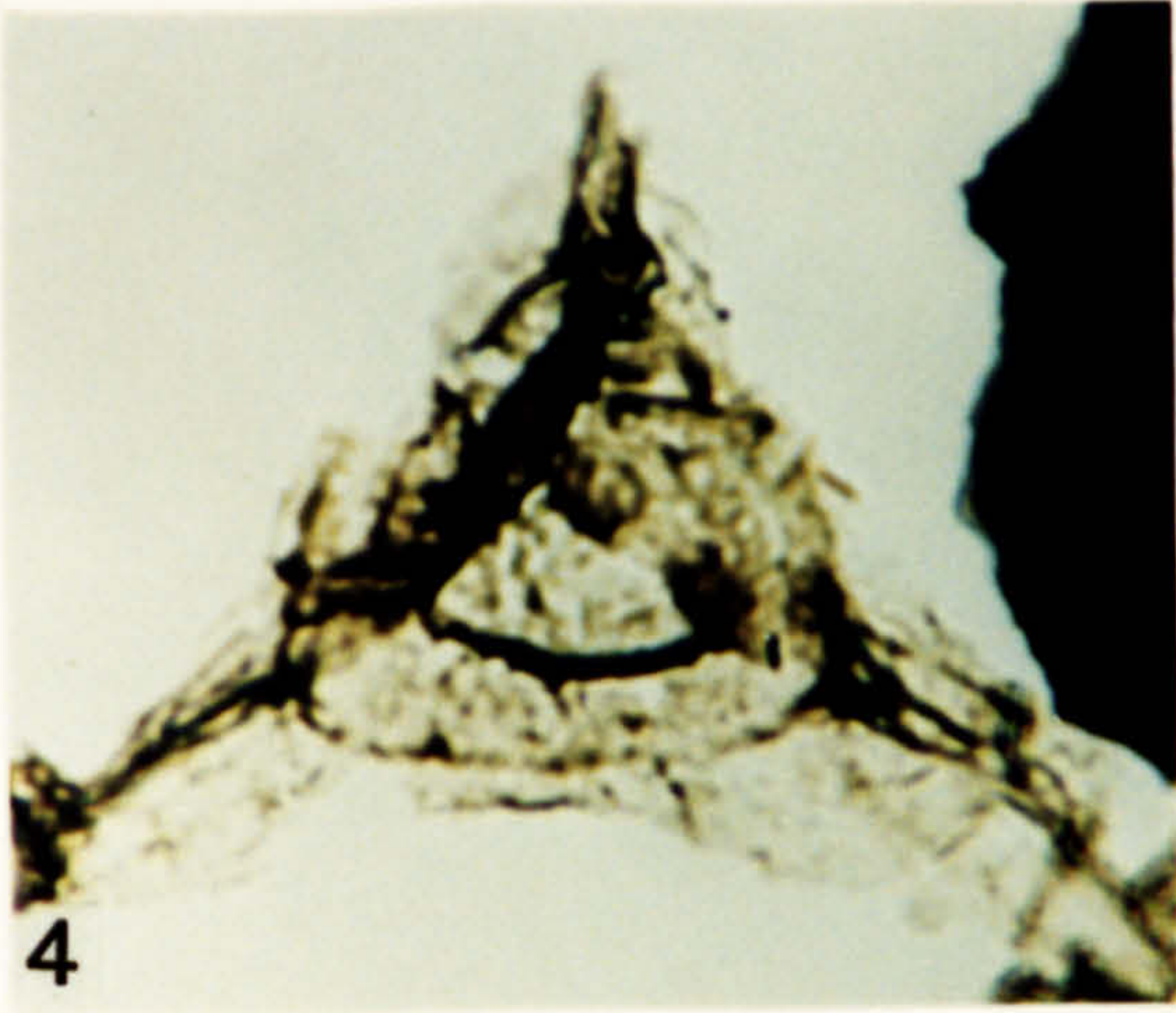
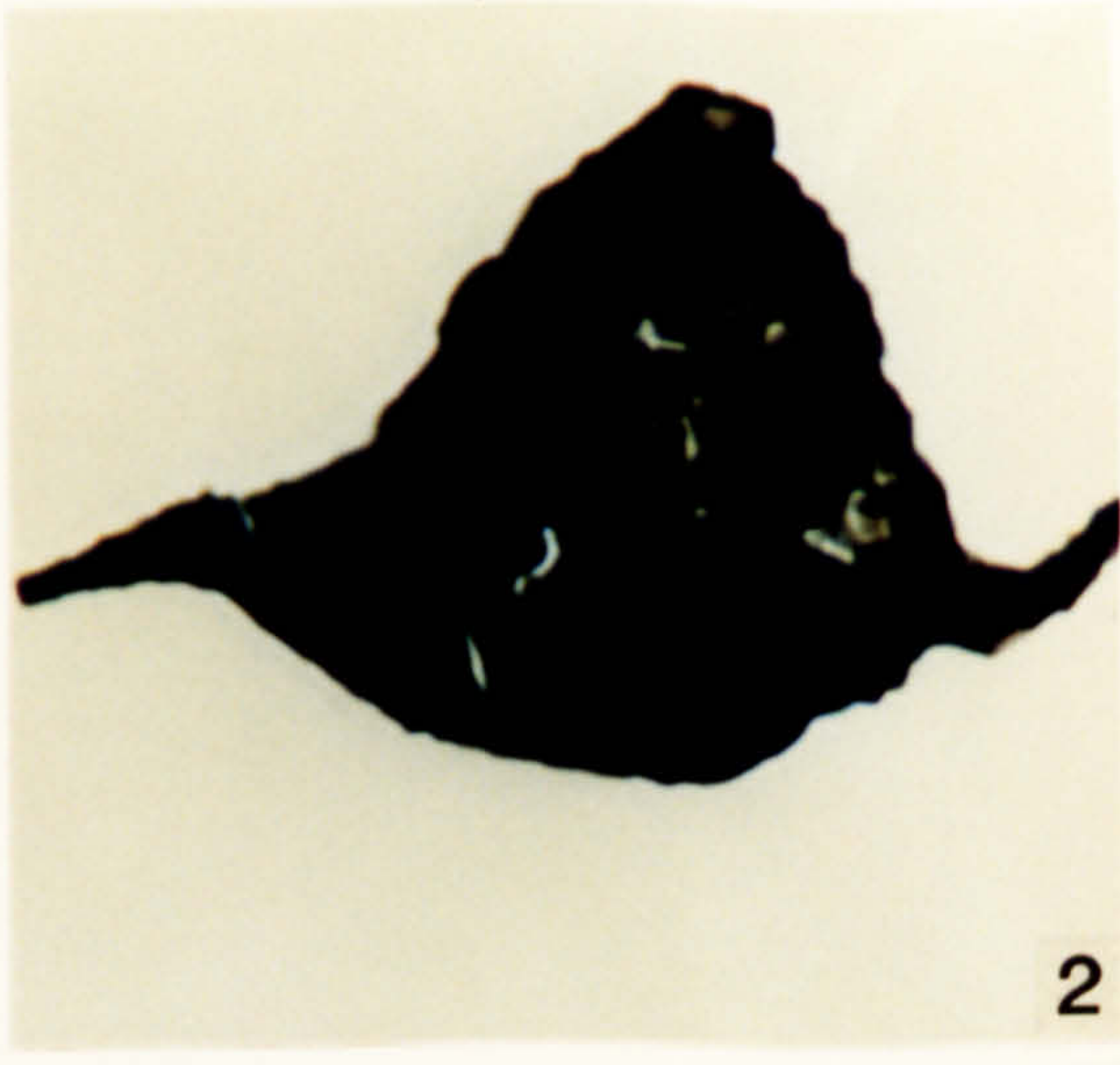
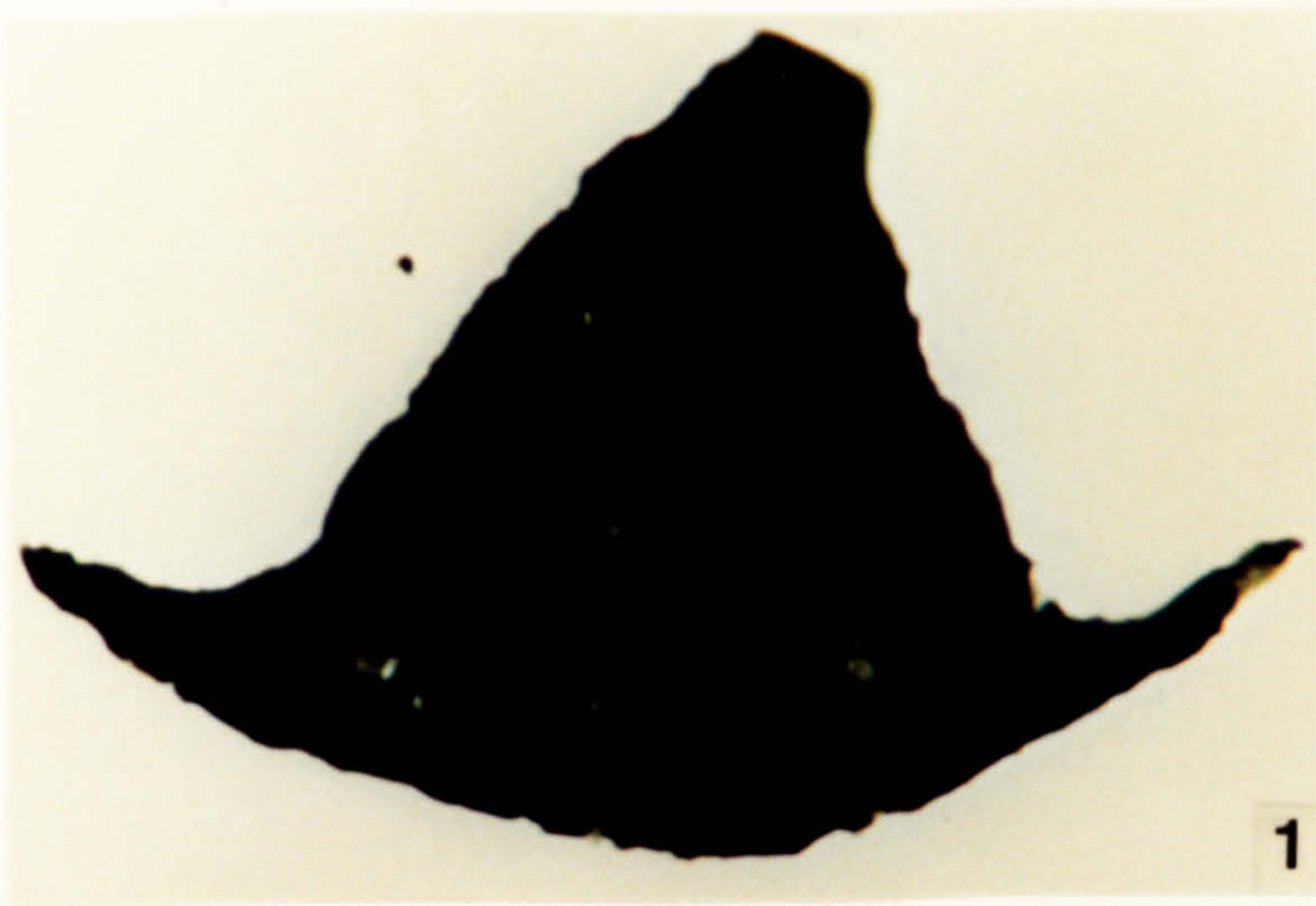




**Plate 155.**

Acritarchs from the Mdaour el Kbir-El Ansar-N'Kheila Formations, early Eifelian in age.

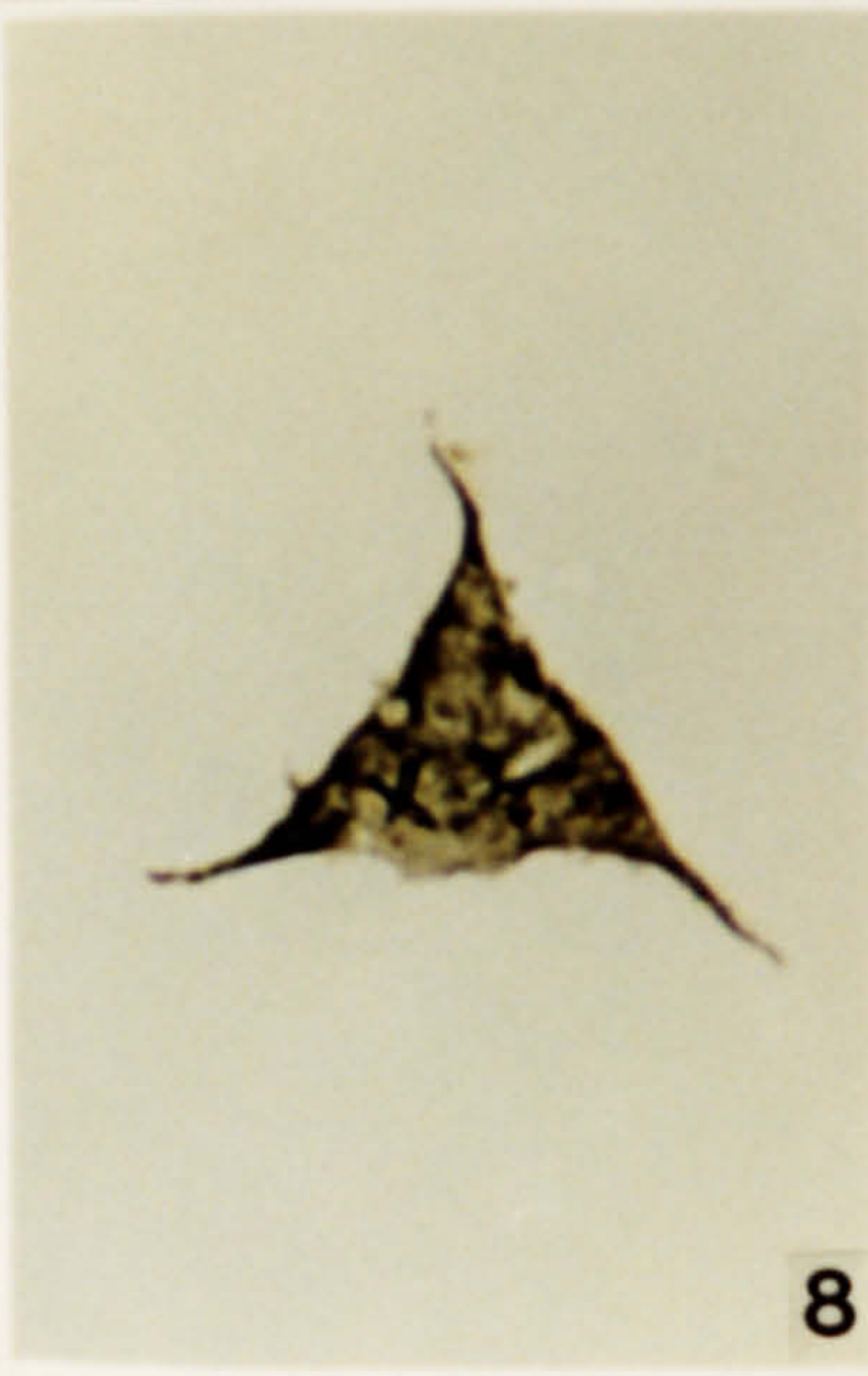
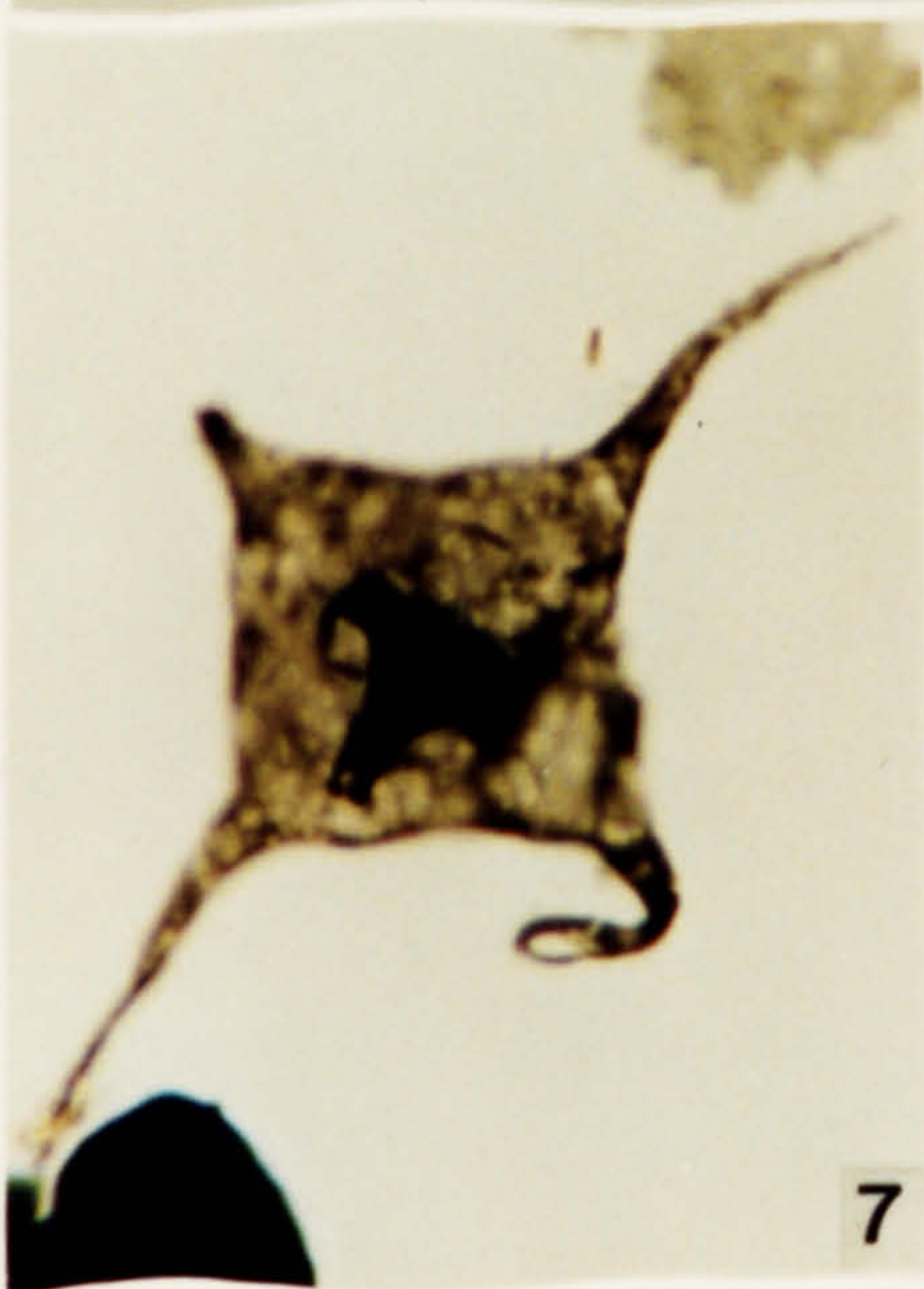
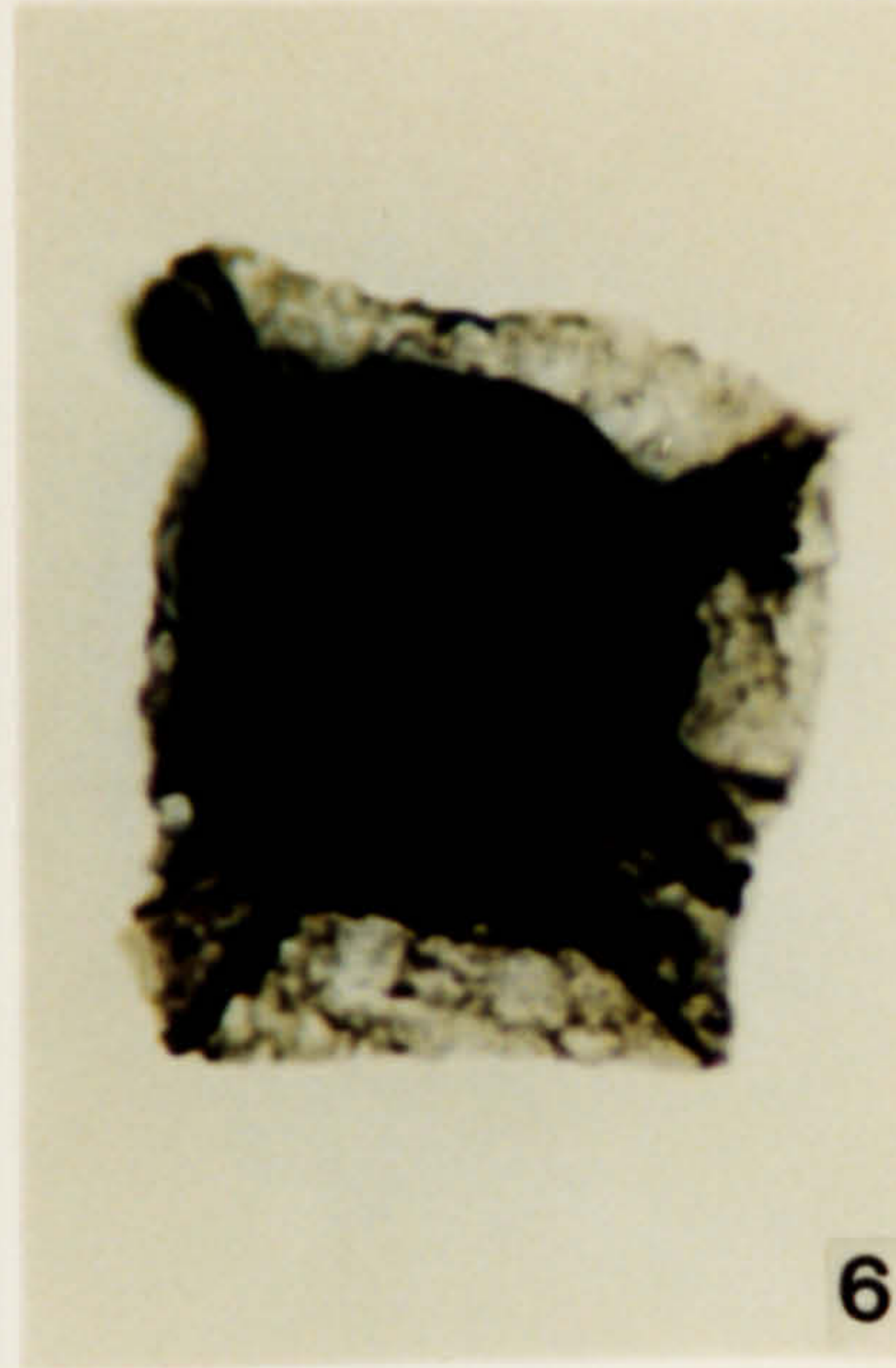
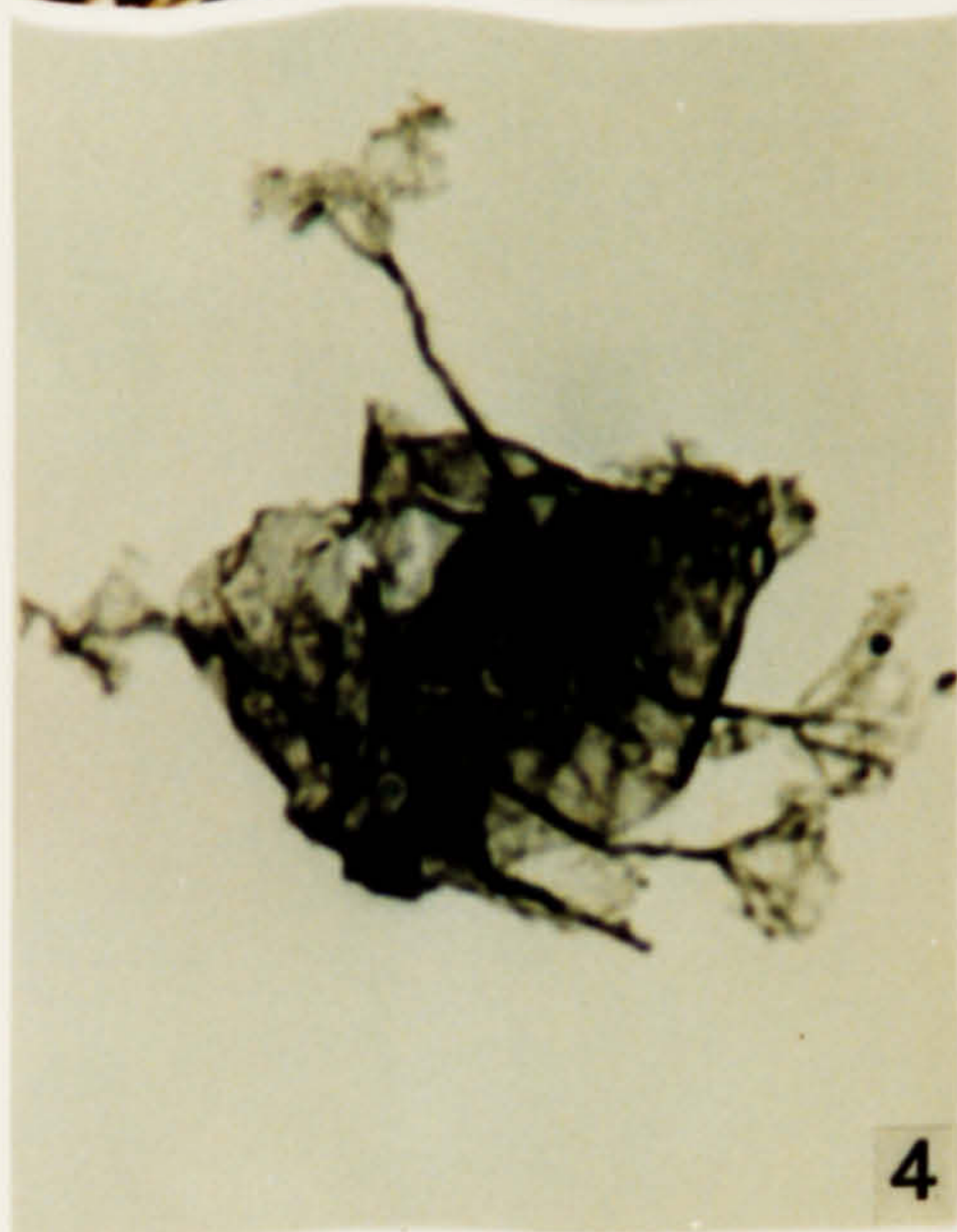
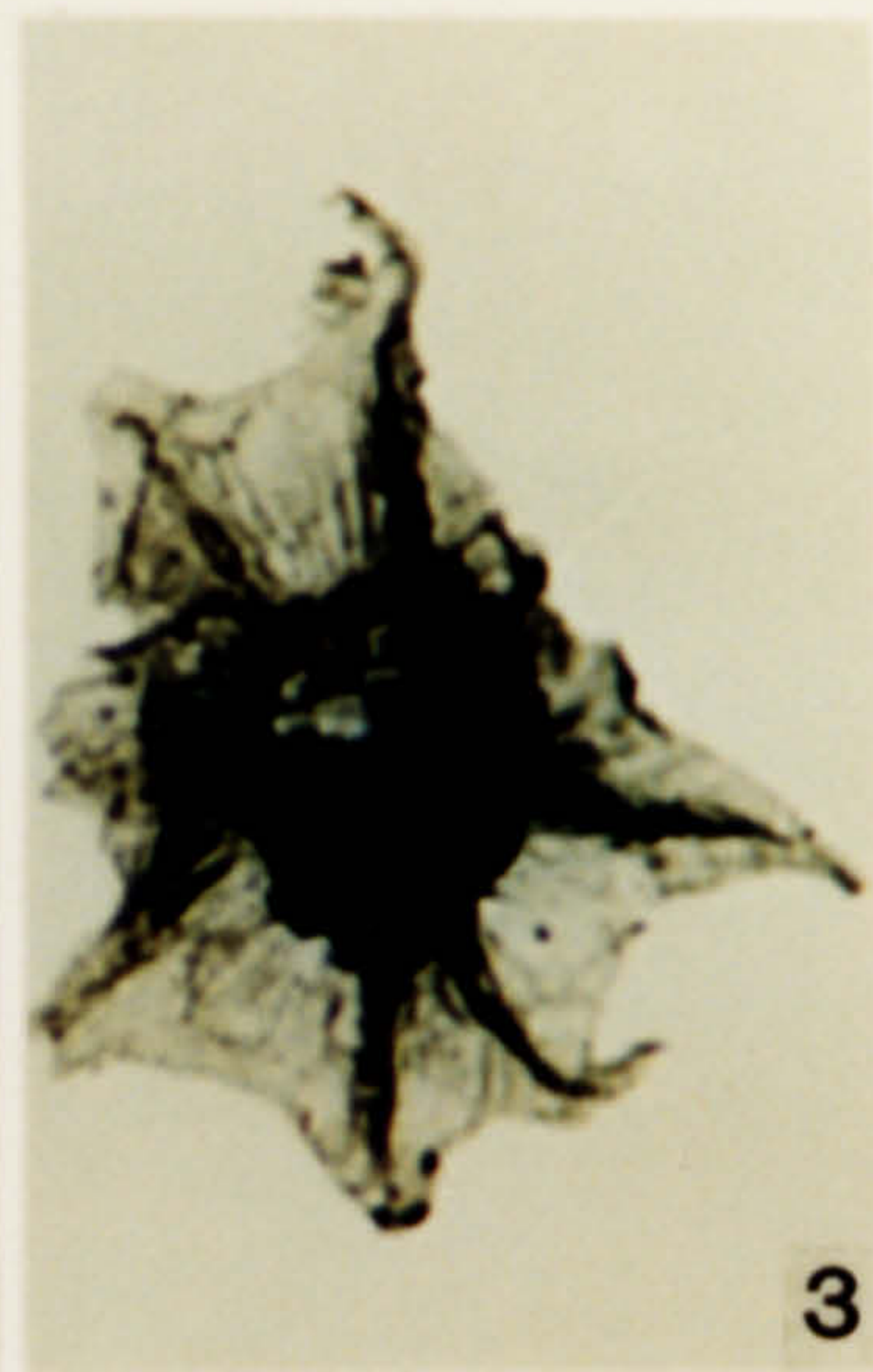
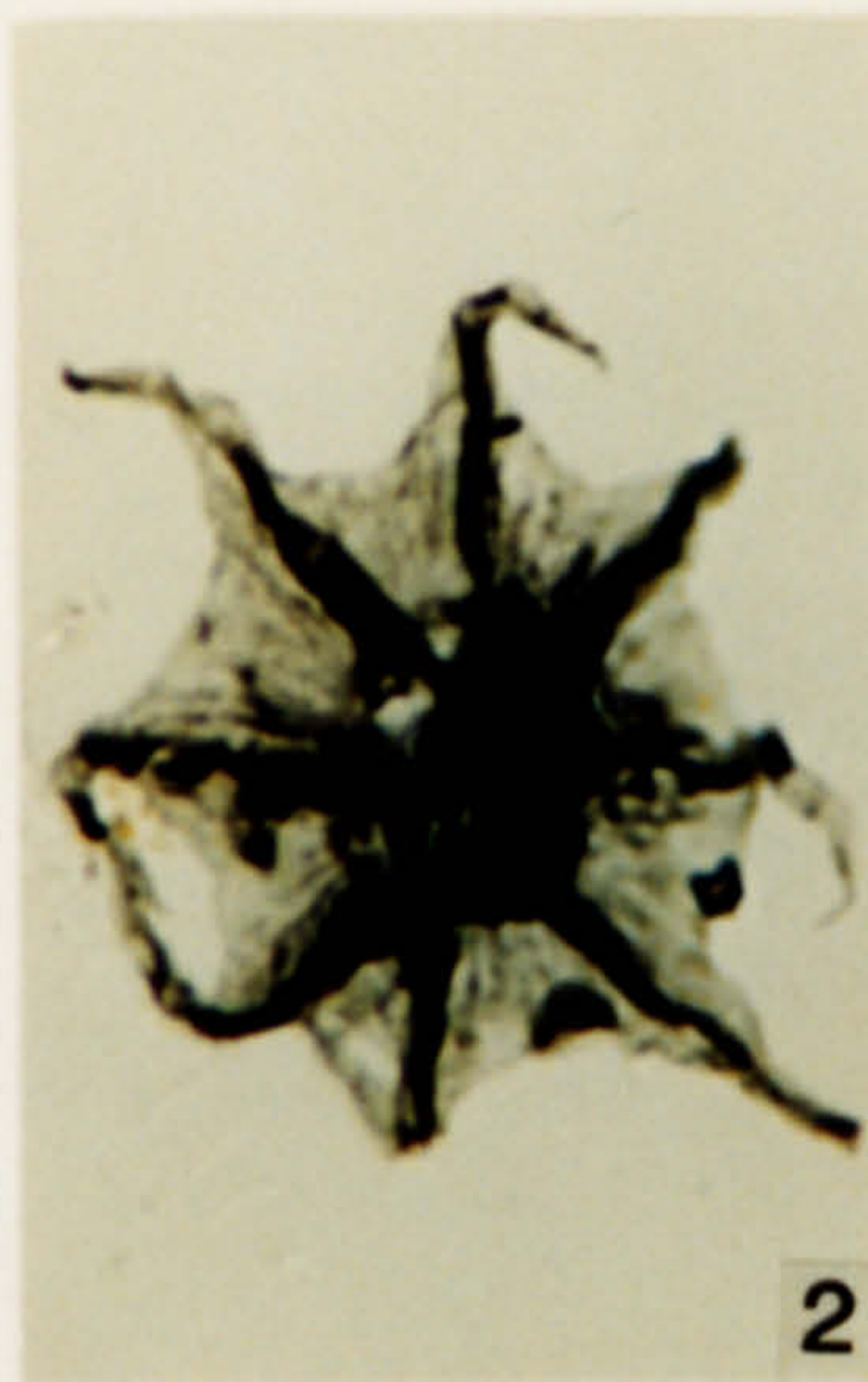
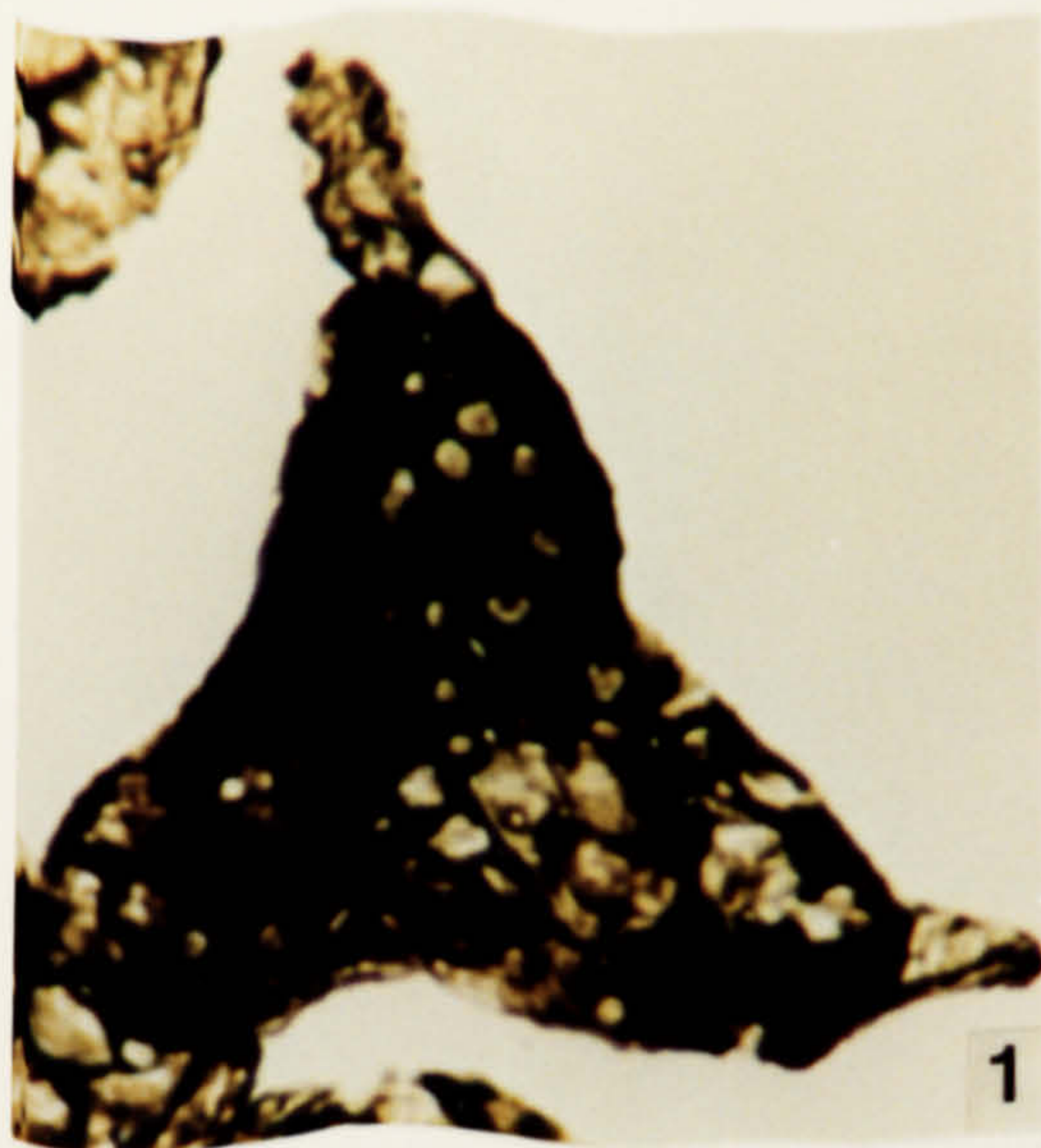
1. *Onondagella asymmetrica* (Deunff ex Deunff) Cramer 1966. OD 3274, 2-1, V36\1.
2. *Onondagella asymmetrica* (Deunff ex Deunff) Cramer 1966. OD 3274, 2-1, J8\1.
3. *Ozotobrachion furcillatus* (Deunff) Playford 1977. OD 3239.5, 2-1, G22\1.
4. *Polyedrixium fragulosum* Playford 1977. OD 3504 S-3, N10\1.
5. *Polyedrixium evolutum* Deunff 1955. OD 3504, S-4, W7\4.
6. *Stellinium octoaster* (Staplin) Jardine et al. 1972. OD 3274, 2-1, J23\2.
7. *Polyedrixium pharoane* Deunff 1954 ex Deunff 1961. OD 3504, S-3, M31\4.
8. *Polyedrixium evolutum* Deunff 1955. OD 3274, S-2, M7\4.
9. *Polyedrixium pharoane* Deunff 1954 ex Deunff 1961. OD 3239.5, 2-2, D14\4.
10. *Stellinium octoaster* (Staplin) Jardine et al. 1972. OD 3274, 2-1, N11\1.
11. *Polyedrixium evolutum* Deunff 1955. OD 3239.5, S-1, S28\2.



**Plate 156.**

**Acritarchs and prasinophycean algae from the Mdaour el Kbir-El Ansar-N'Kheila Formations, early Eifelian in age.**

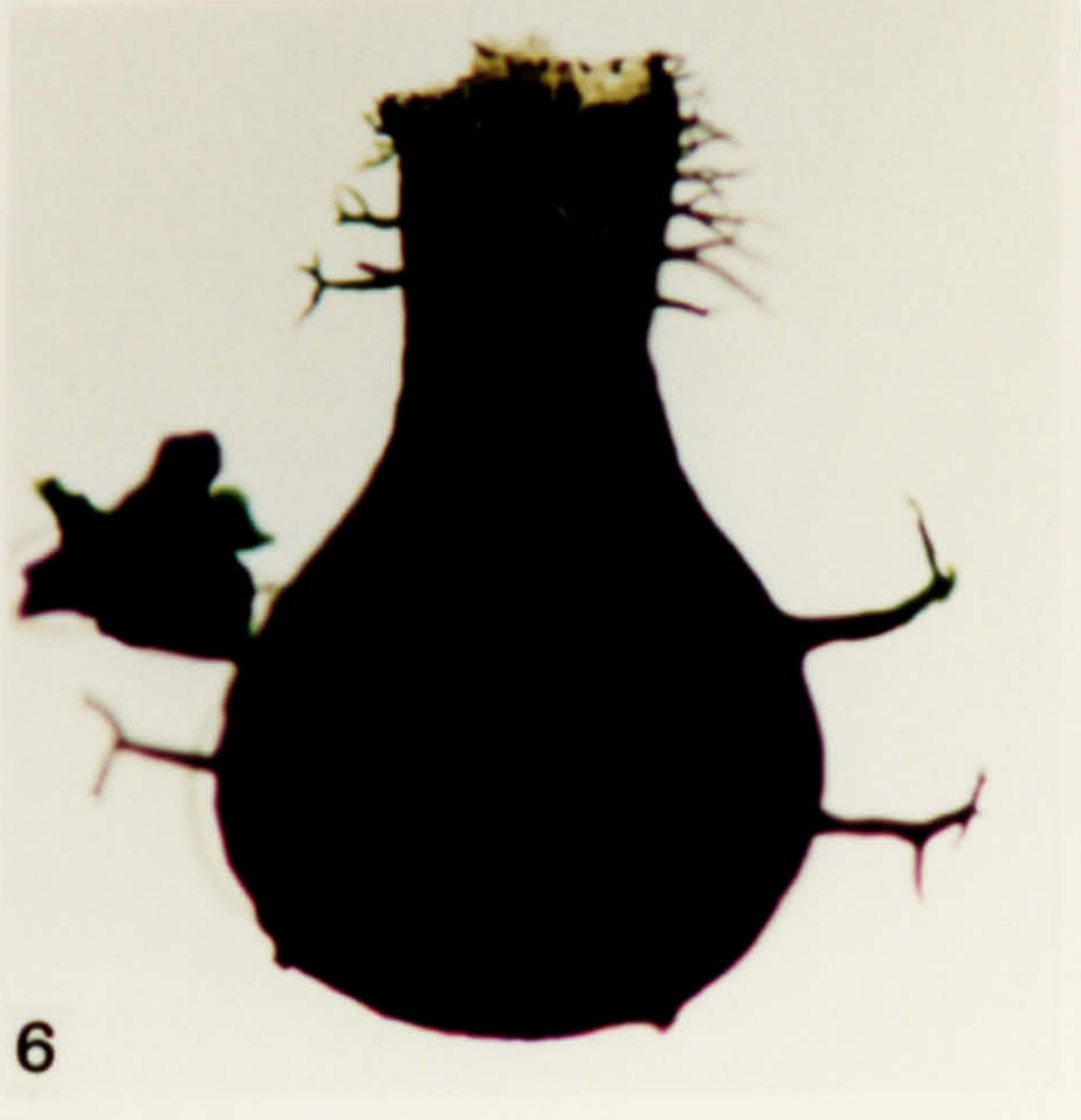
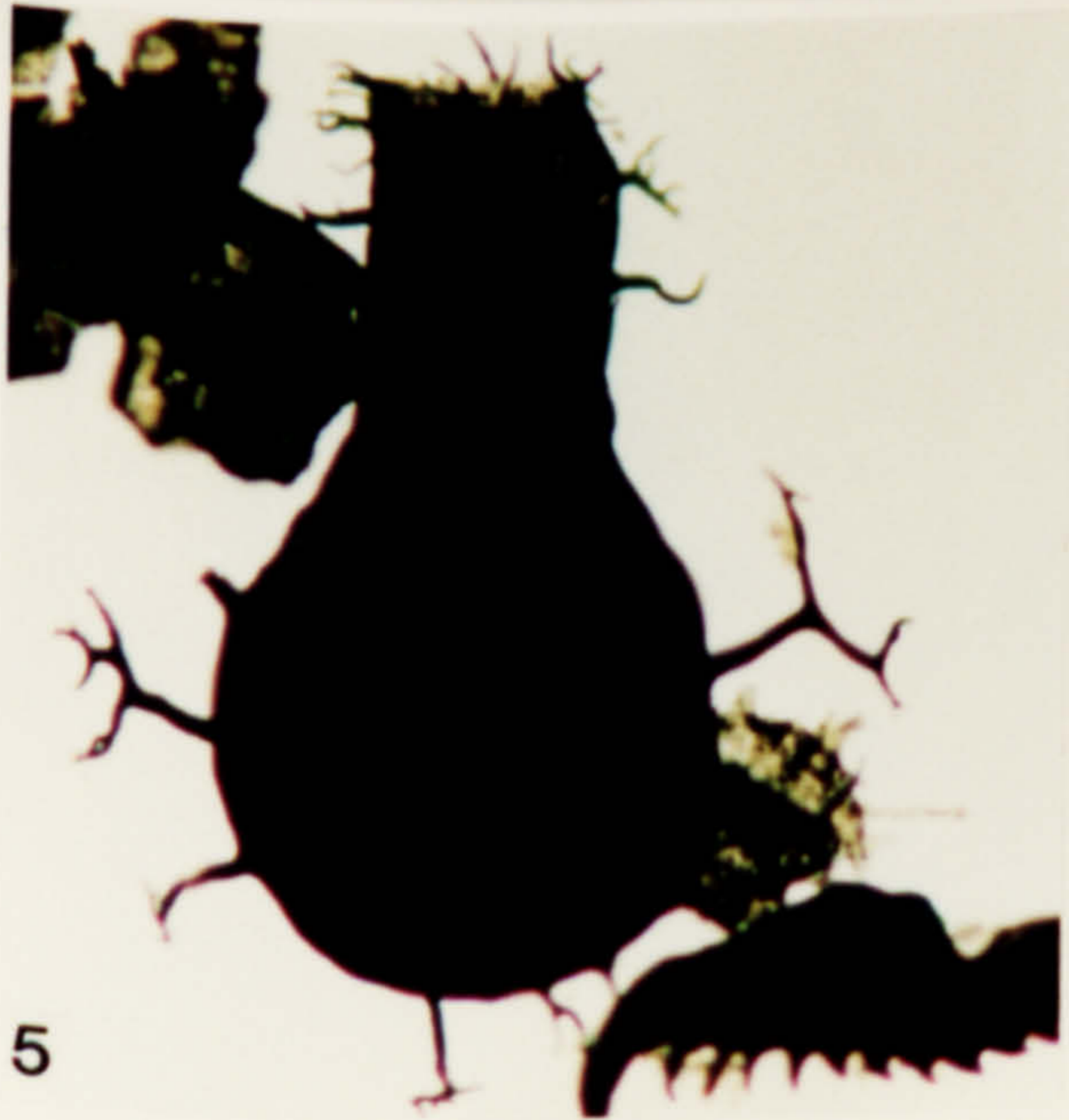
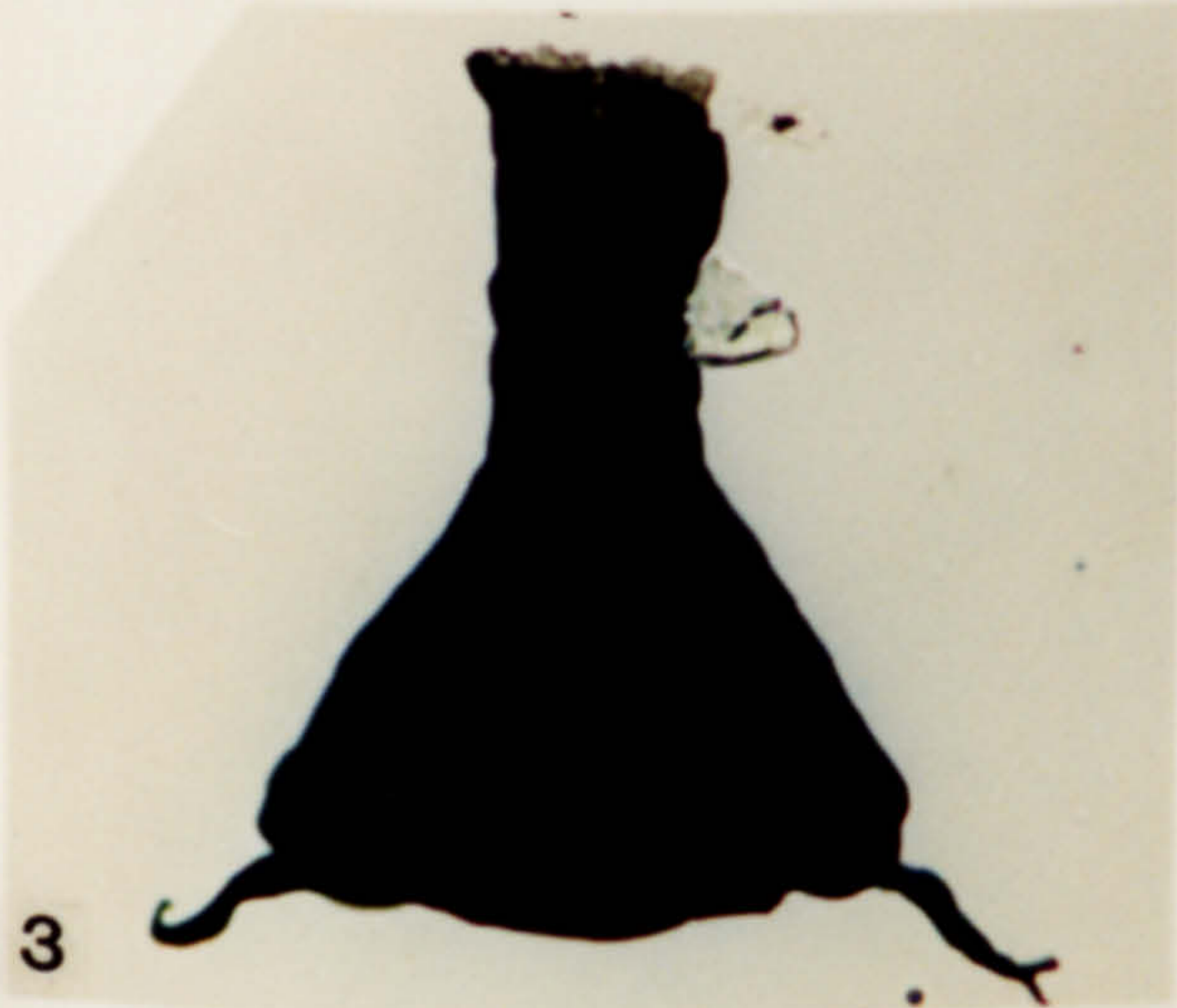
1. *Triangulina sanpetrensis?* (Cramer) Fensome *et al.* 1990. OD 3504, S-4, Q33\2.
2. *Cymatiosphaera carminae* Cramer 1964. OD 3239, 2-1, N32\3.
3. *Cymatiosphaera carminae* Cramer 1964. OD 3239.5, 2-2, G23\2.
4. *cf. Tunisphaeridium* sp. OD 3239.5, 2-1, J7\2.
5. *Cymatiosphaera carminae* Cramer 1964. OD 3504, 2-1, E13\2.
6. *Poledrixium embudum* Cramer 1964. OD 3239.5, S-1, Q27\4.
7. *Veryhachium cf. arcarium* Wicander & Loeblich 1977. OD 3504, 2-2, L18\2.
8. *Veryhachium* sp. OD 3504, 2-2, Q8\3.
9. *Poledrixium embudum* Cramer 1964. OD 3239.5, 2-1, C17\4.



**Plate 157.**

Chitinozoa from the Mdaour el Kbir-El Ansar-N'Kheila Formations, early Eifelian in age.

1. *Ancyrochitina ancyrea* var. A. OD 3239, 53-2, L12\3.
2. *Ancyrochitina ancyrea* var. A. OD 3239, 53-1, K12\1.
3. *Ancyrochitina ancyrea* var. A. OD 3239, 53-1, R19\3.
4. *Ancyrochitina ancyrea* var. A. OD 3239, 53-1, P24\3.
5. *Angochitina philippoti* Complex. OD 3333.2, S-3, L19\3.
6. *Angochitina philippoti* Complex. OD 3333.2, 2-1, D24\2.



**Plate 158.**

**Chitinozoa from the Mdaour el Kbir-El Ansar-N'Kheila Formations, early Eifelian in age.**

1. *Angochitina philippoti* Complex. OD 3333.2, S-2, F7\4.
2. *Angochitina philippoti* Complex. OD 3333.2, 2-1, T39\4.
3. *Angochitina philippoti* Complex. OD 3239.5, S-1, H13\-.
4. *Angochitina philippoti* Complex. OD 3504, 2-1, V14\3.
5. *Angochitina philippoti* Complex. OD 3239.5, S-1, Q17\1.
6. *Angochitina* sp. OD 3274, S-2, F30\-.

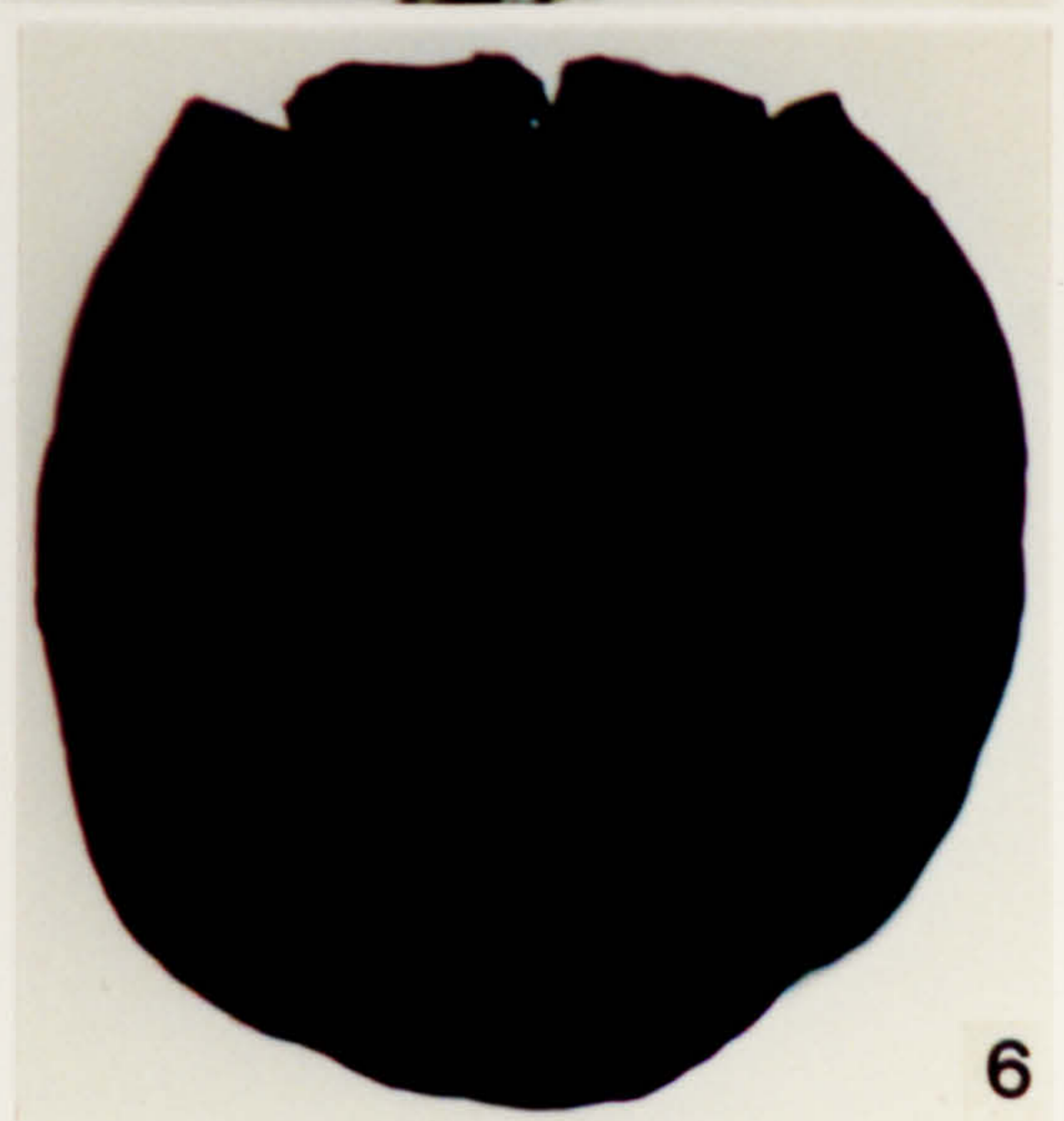
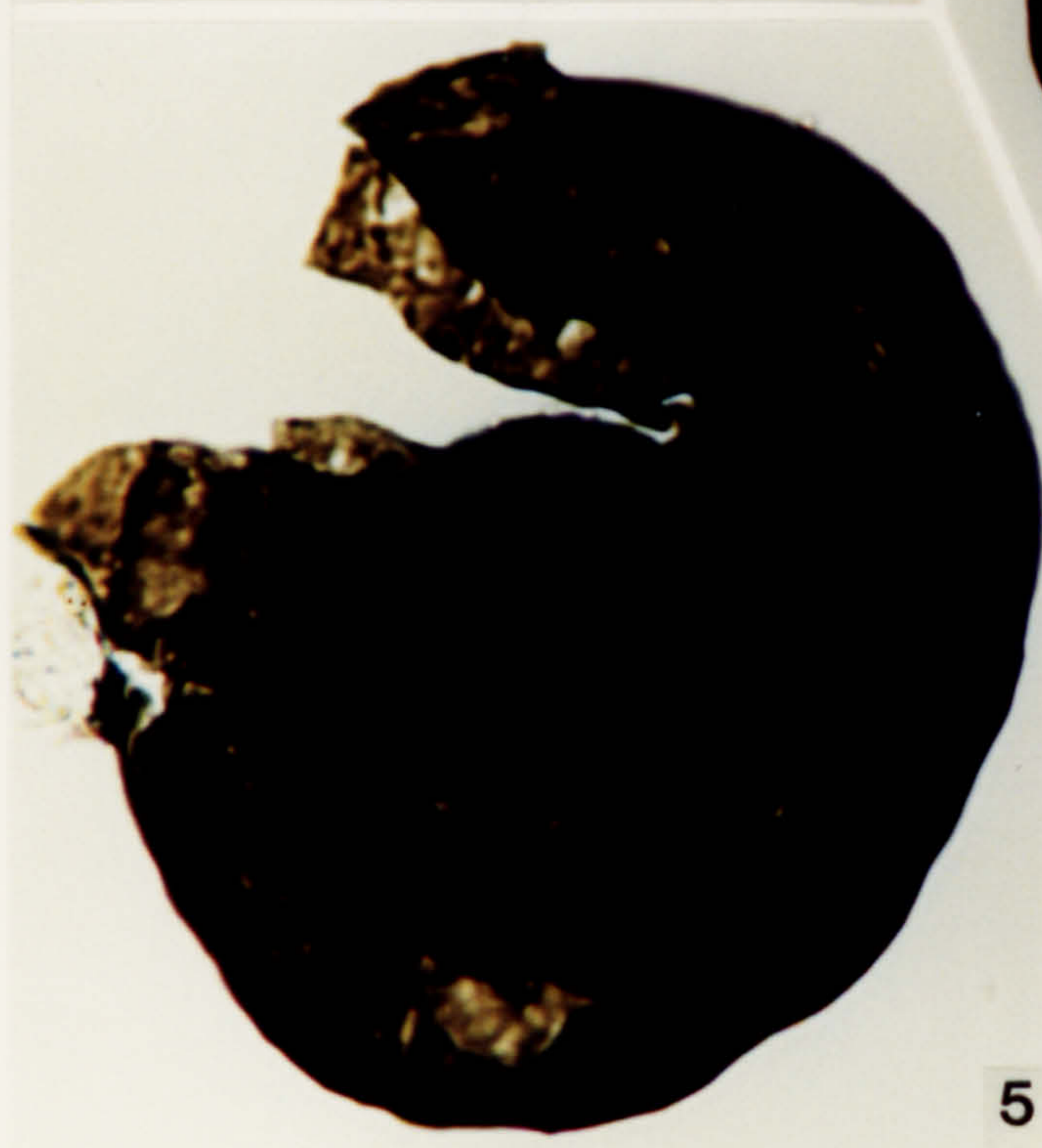
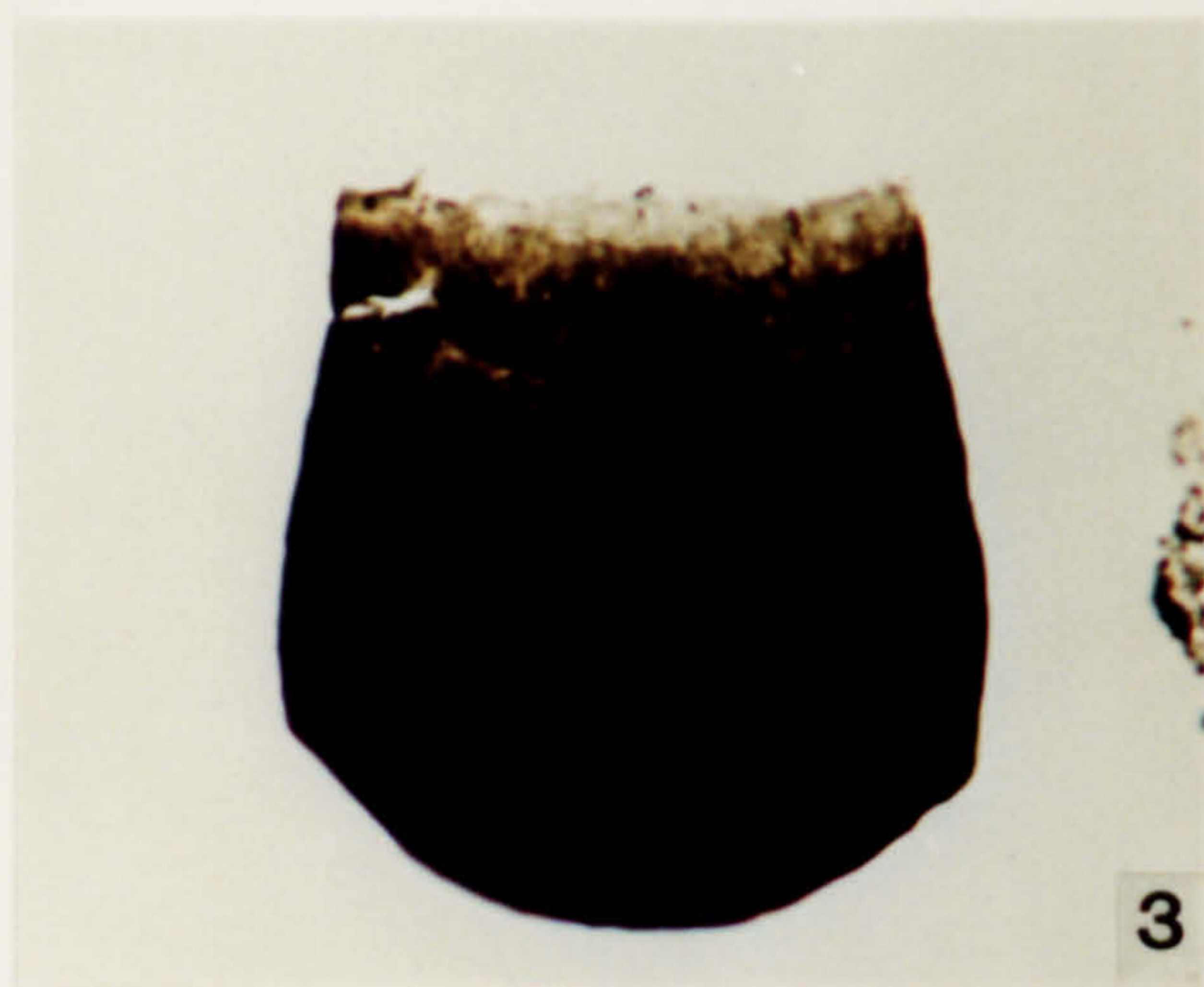




**Plate 159.**

**Chitinozoa from the Mdaour el Kbir-El Ansar-N'Kheila Formations, early Eifelian in age.**

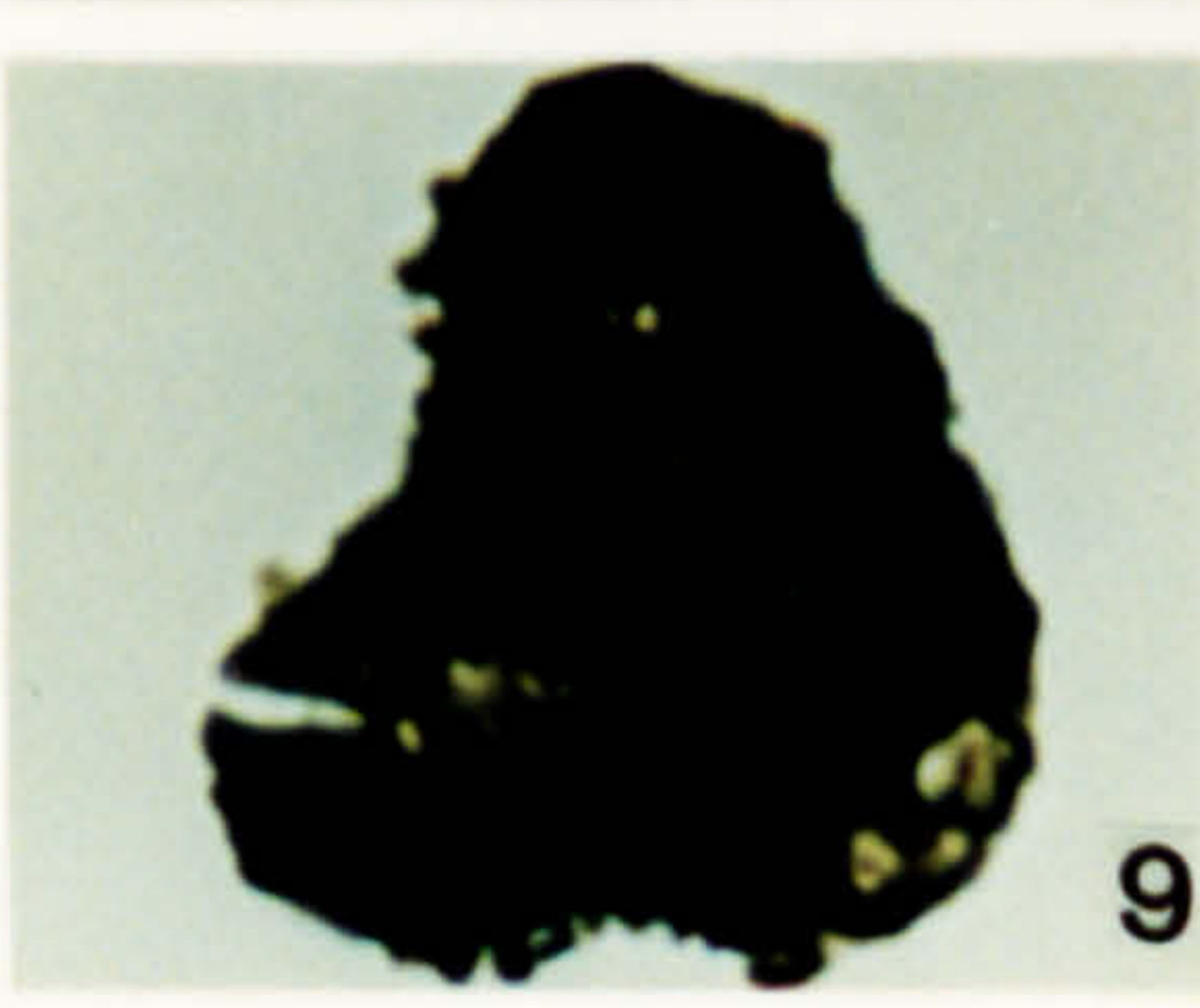
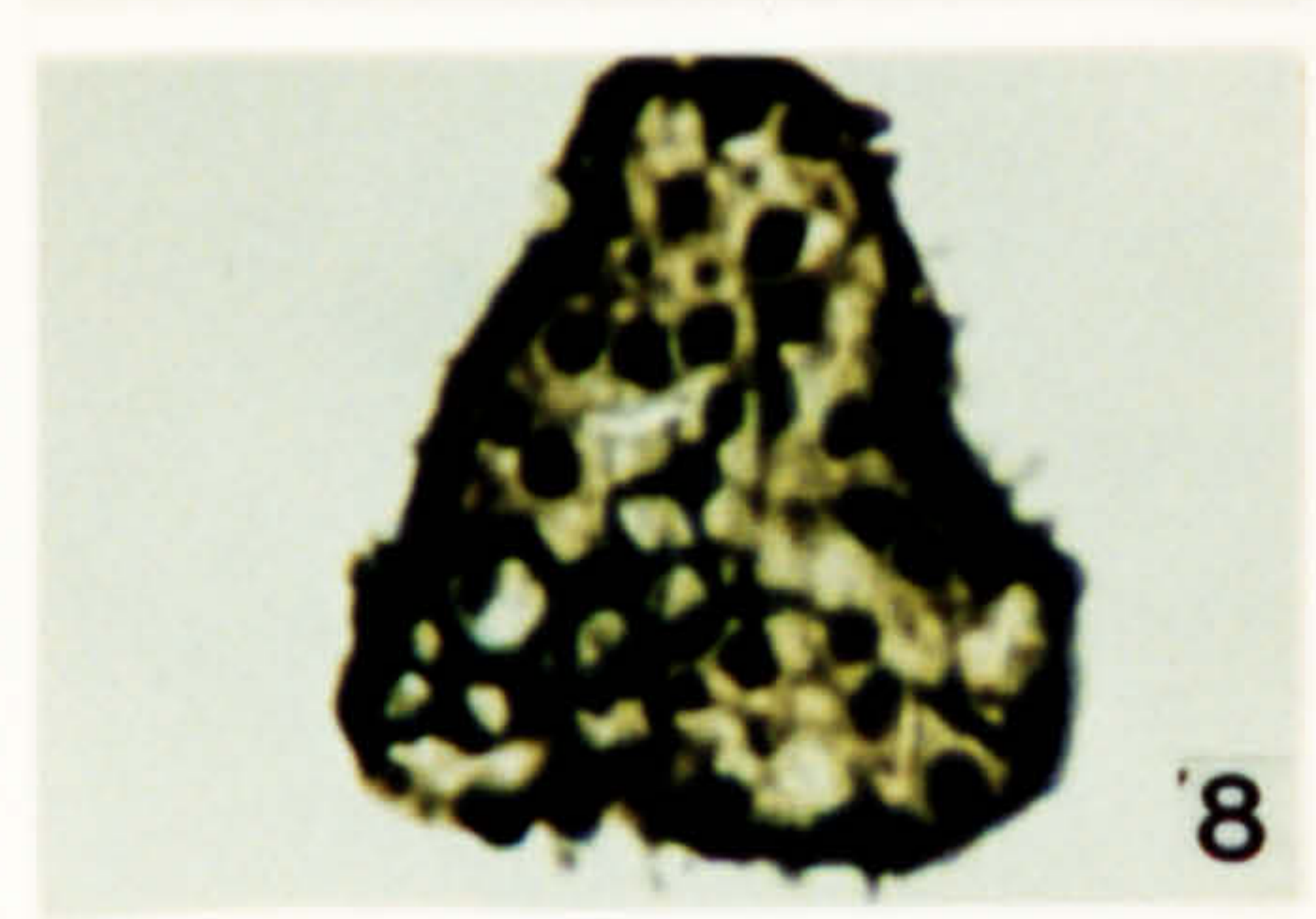
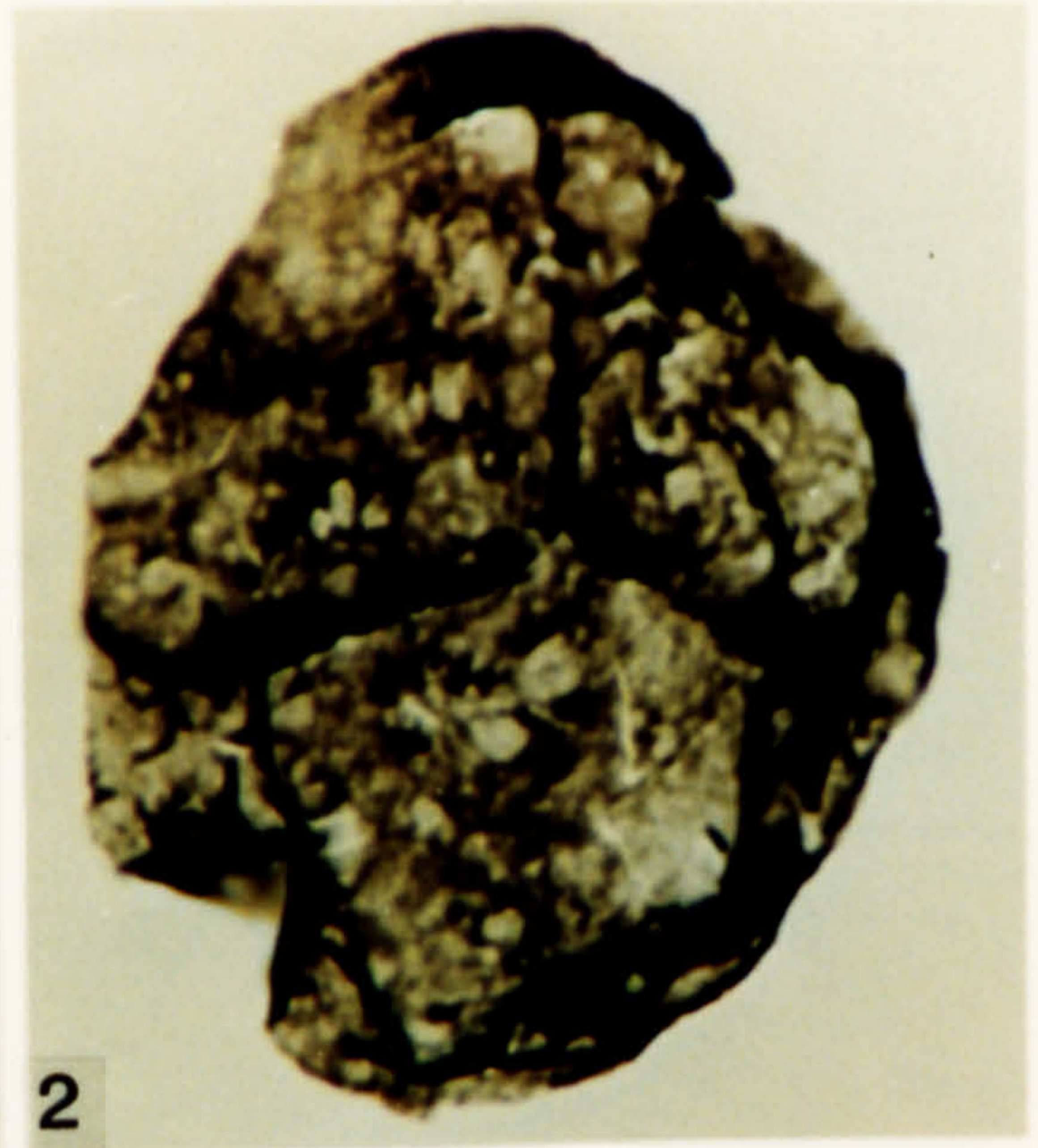
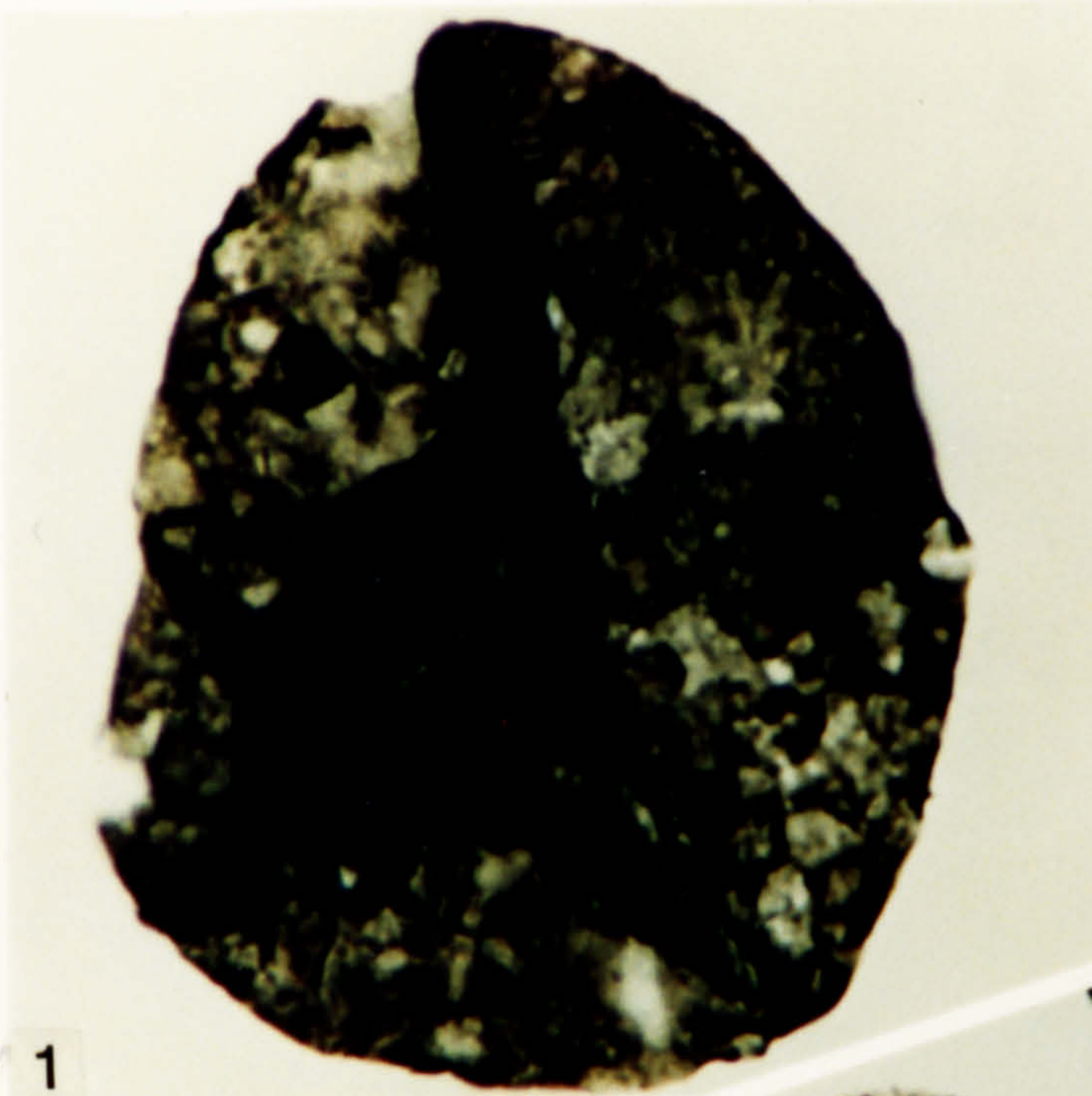
1. *Angochitina* sp. OD 3504, S-3, T33\1.
2. *Angochitina* sp. OD 3504, S-3, R13\4.
3. *Bursachitina bursa* (Taugourdeau & Jekhowsky) Taugourdeau 1966. OD 3274, S-2, T8\2.
4. *Bursachitina bursa* (Taugourdeau & Jekhowsky) Taugourdeau 1966. OD 3274, S-2, M24\2.
5. *Hoegisphaere glabra* Staplin 1961. OD 3274, S-2, M24\2, X40.
6. *Eisenackitina castor?* Jansonius 1964. OD 3239.5, 2-1, V8\4.



**Plate 160.**

Spores from the Mdaour el Kbir-El Ansar-N'Kheila Formations, early Eifelian in age.

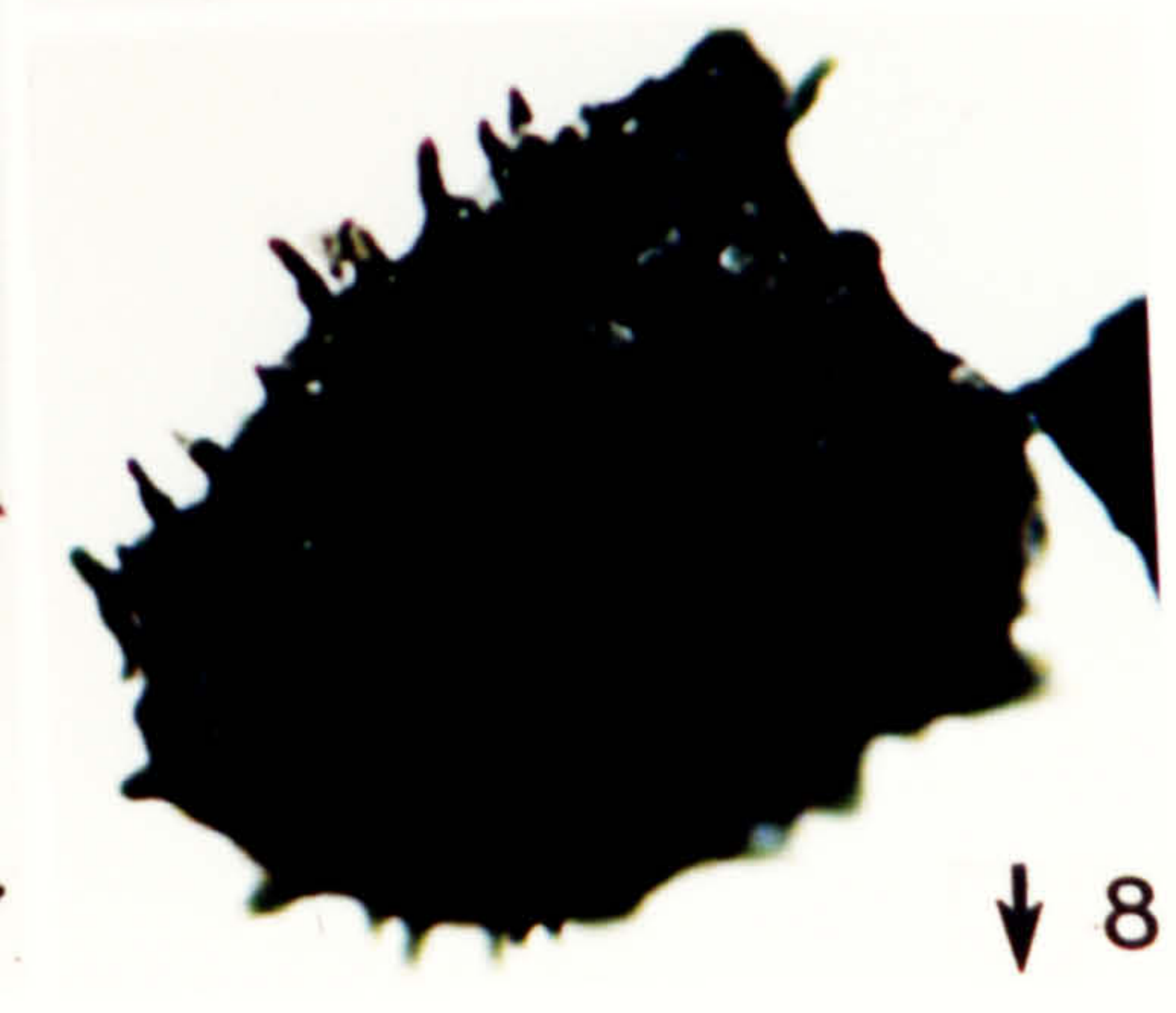
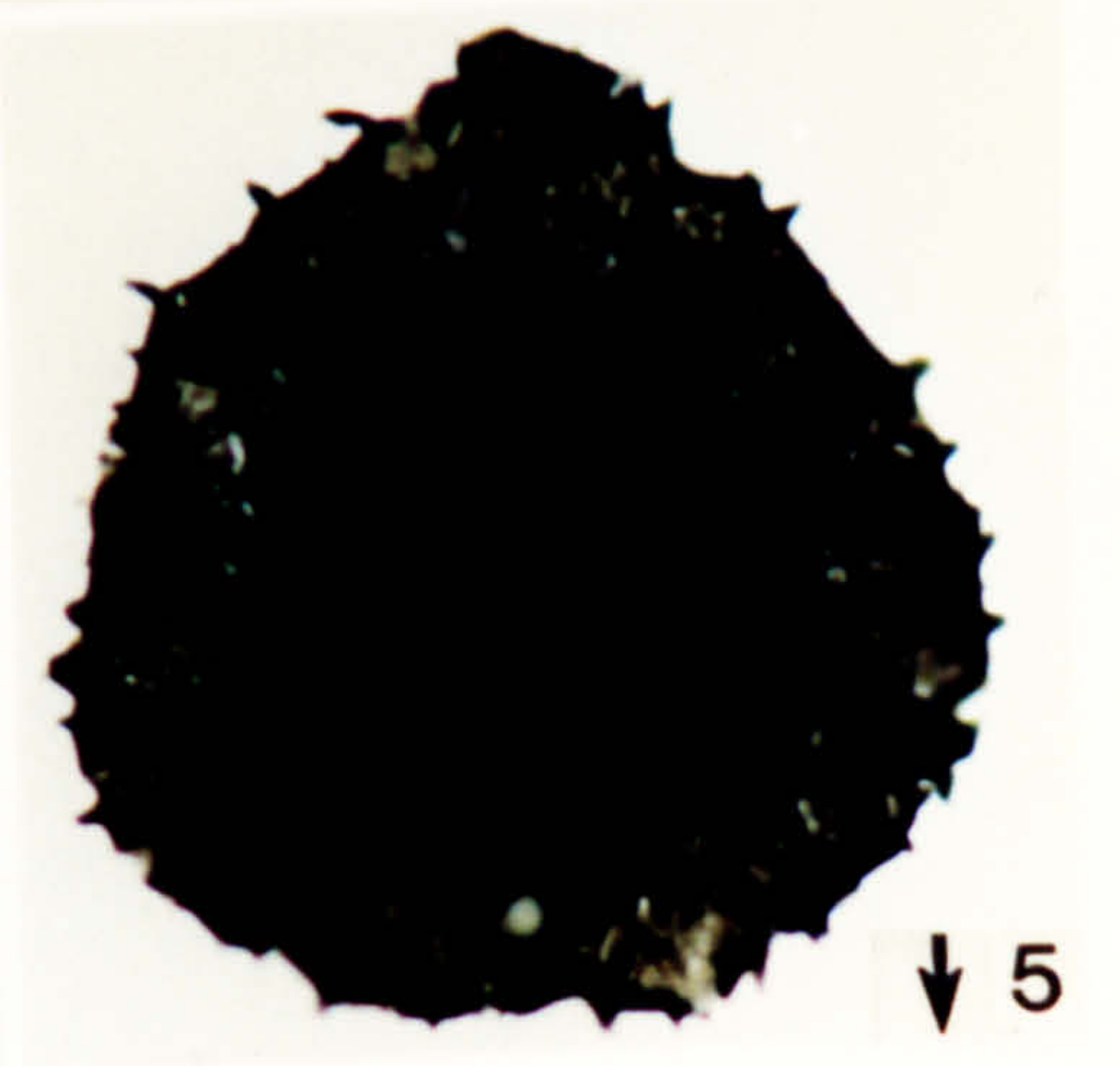
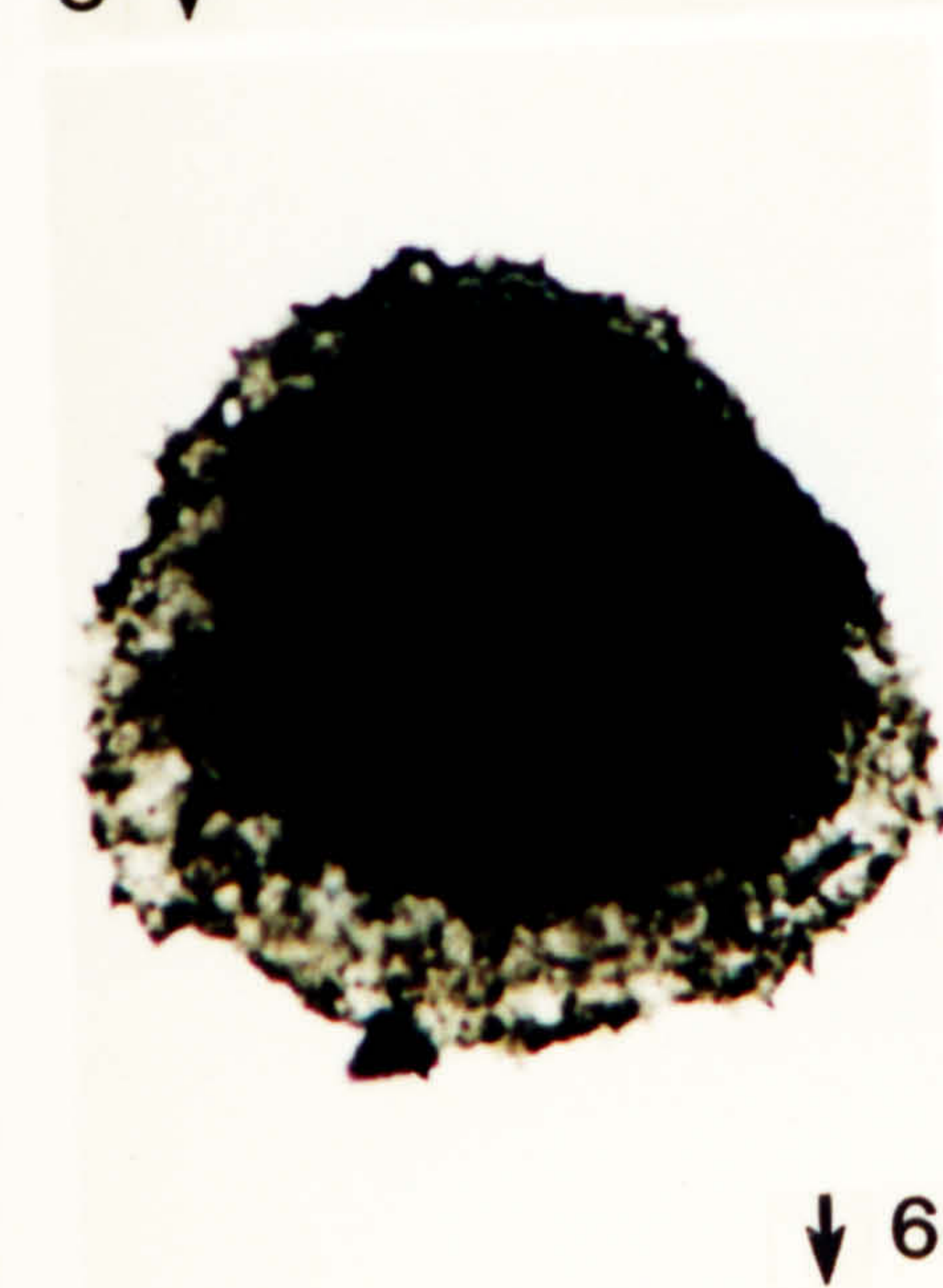
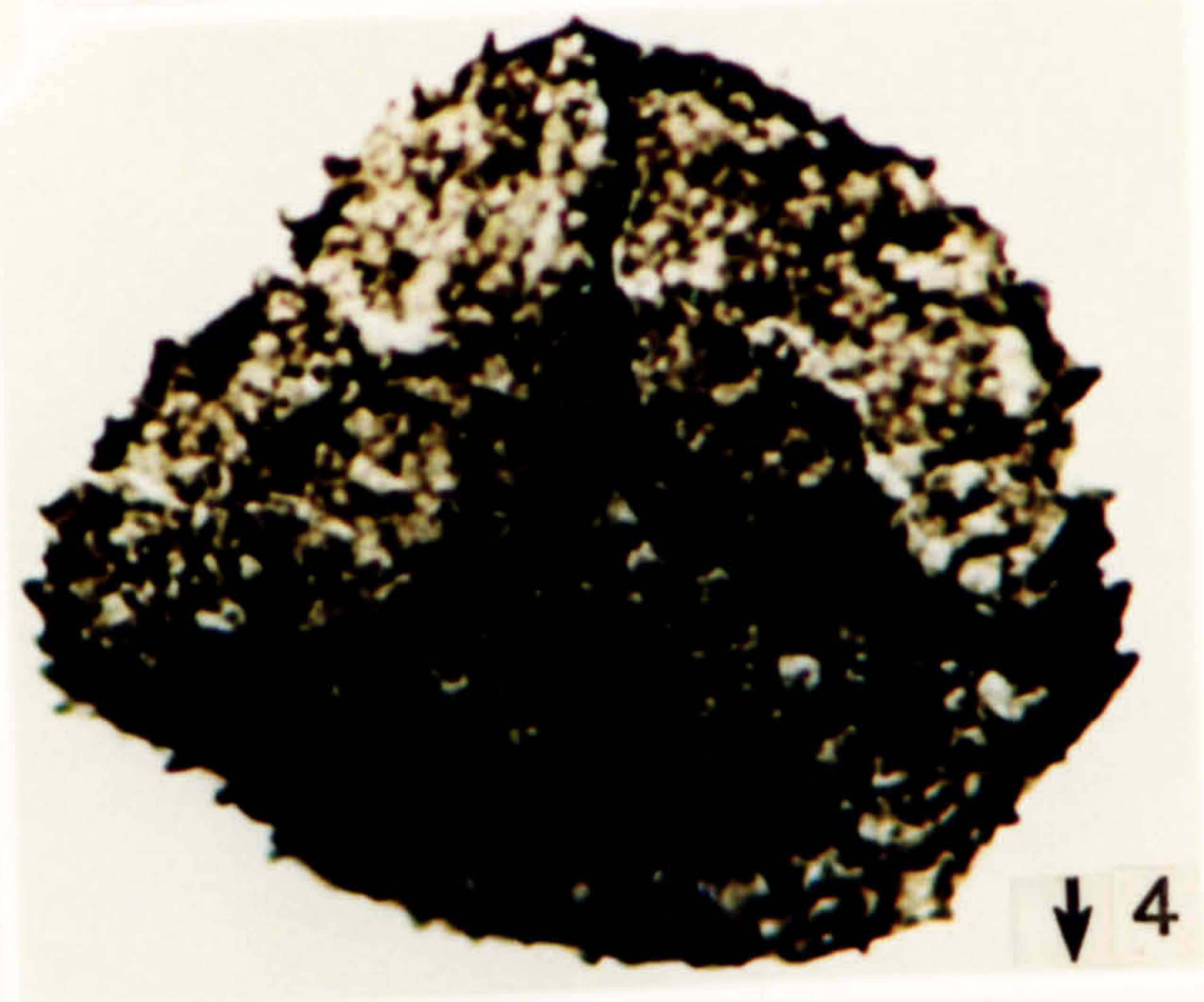
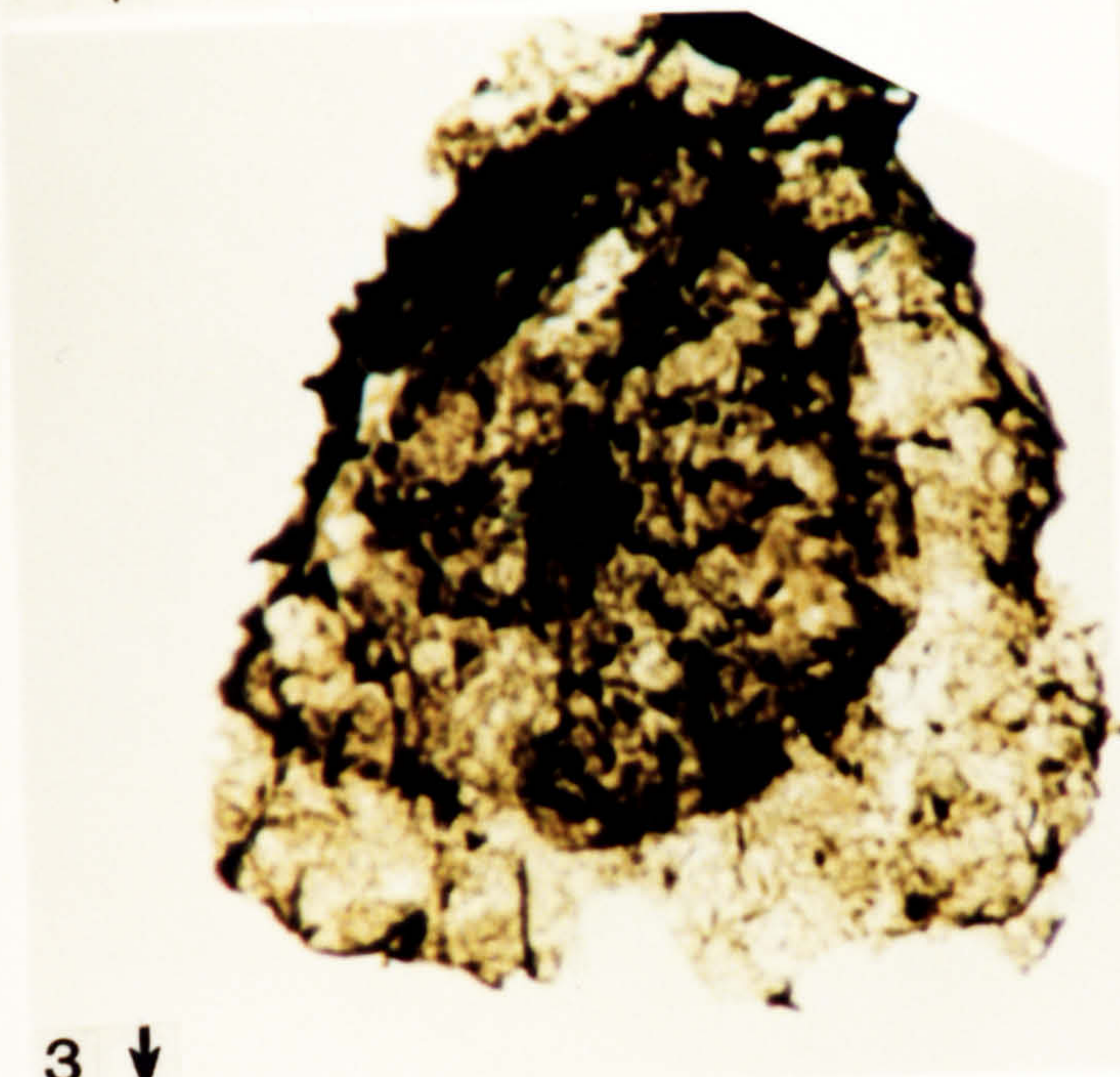
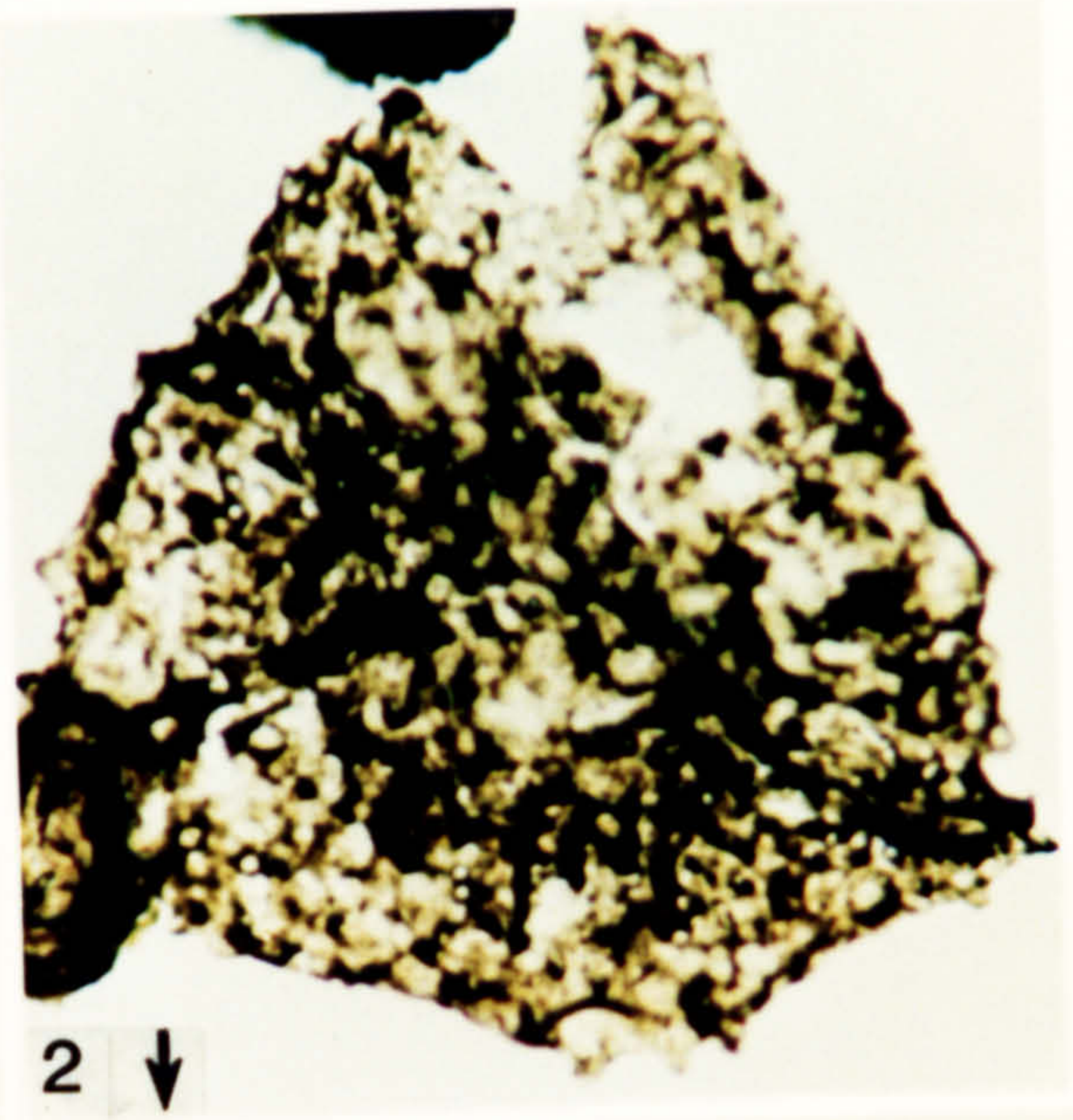
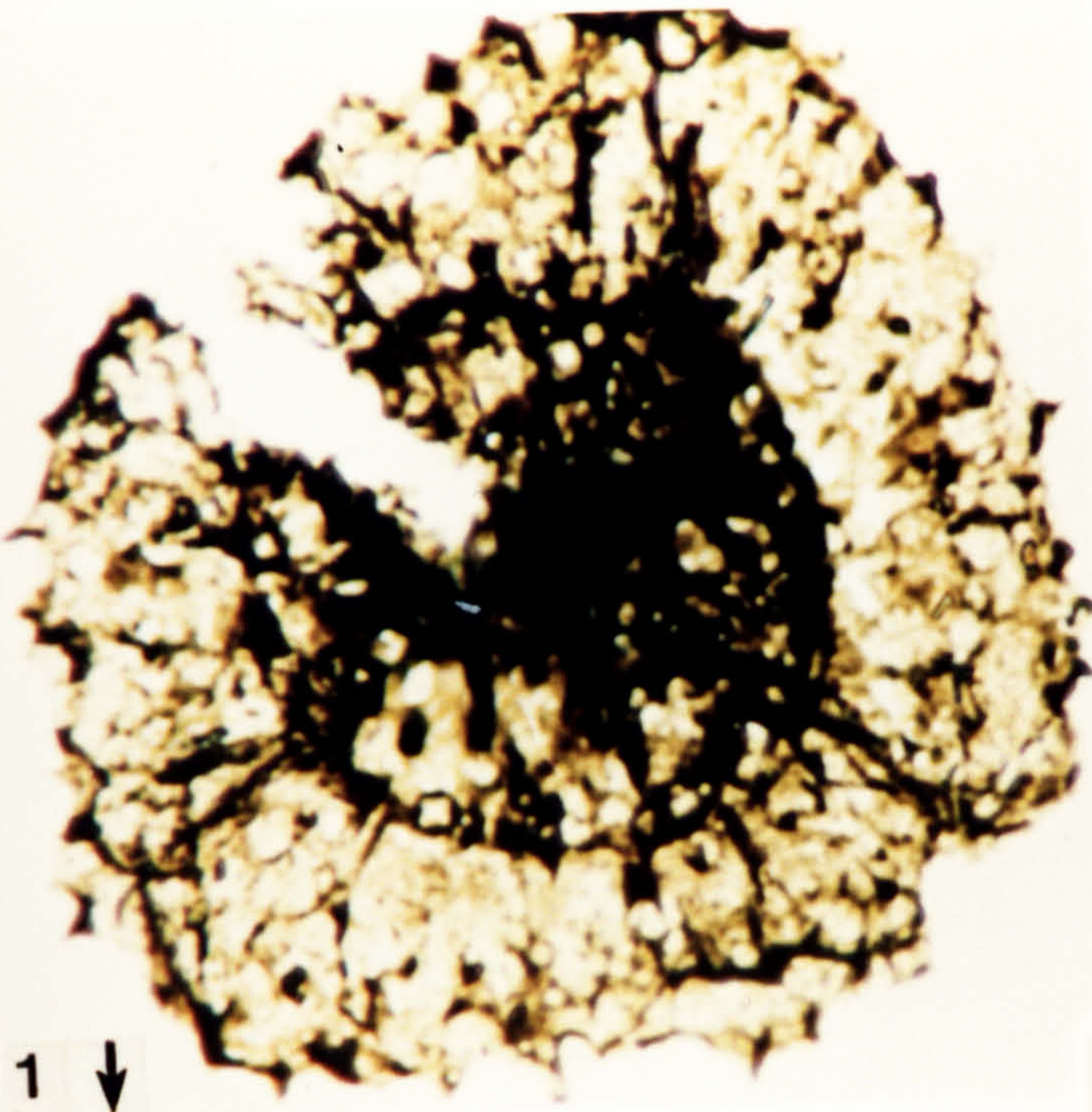
1. *Calamaspora* sp. OD 3239.5, 2-1, M16\1.
2. *Retusotriletes* sp. OD 3239.5, S-1, F36\3.
3. *Emphanisporites annulatus* McGregor 1961. OD 3239.5, S-1, S36\2.
4. Spore indet. OD 3239.5, S-1, T21\3.
5. *Retusotriletes* sp. OD 3239.5, 2-1, N18\4.
6. *Emphanisporites annulatus* McGregor 1961. OD 3504, S-3, W21\2.
7. *Emphanisporites annulatus* McGregor 1961. OD 3274, S-1, K13\3.
8. *Diatomozonotriletes* sp. OD 3504, S-3, P26\2.
9. *Diatomozonotriletes* sp. OD 3504, S-3, W23\2.
10. Spore indet. OD 3239.5, S-1, S40\4.



**Plate 161.**

Spores from the Mdaour el Kbir-El Ansar-N'Kheila Formations, early Eifelian in age.

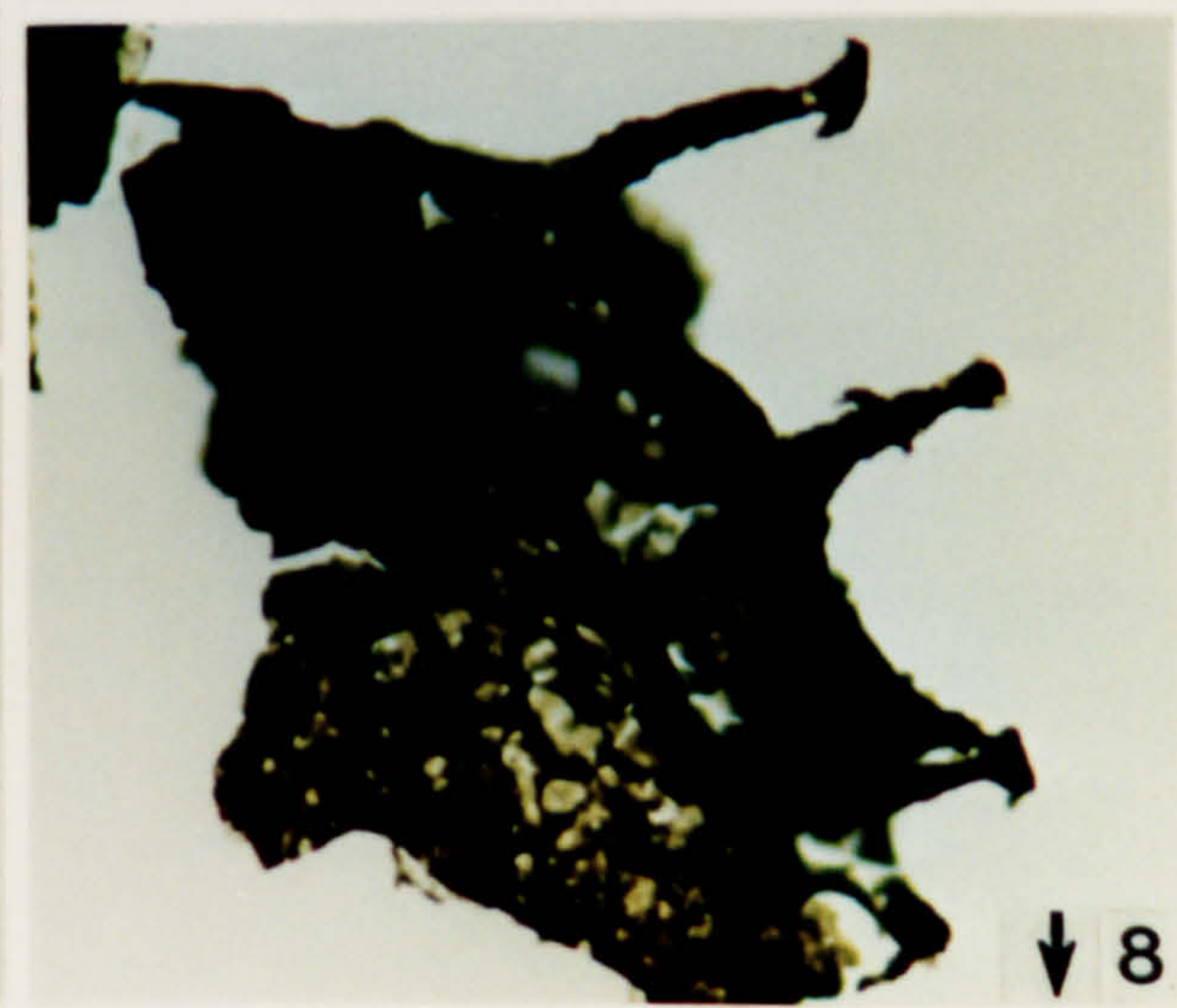
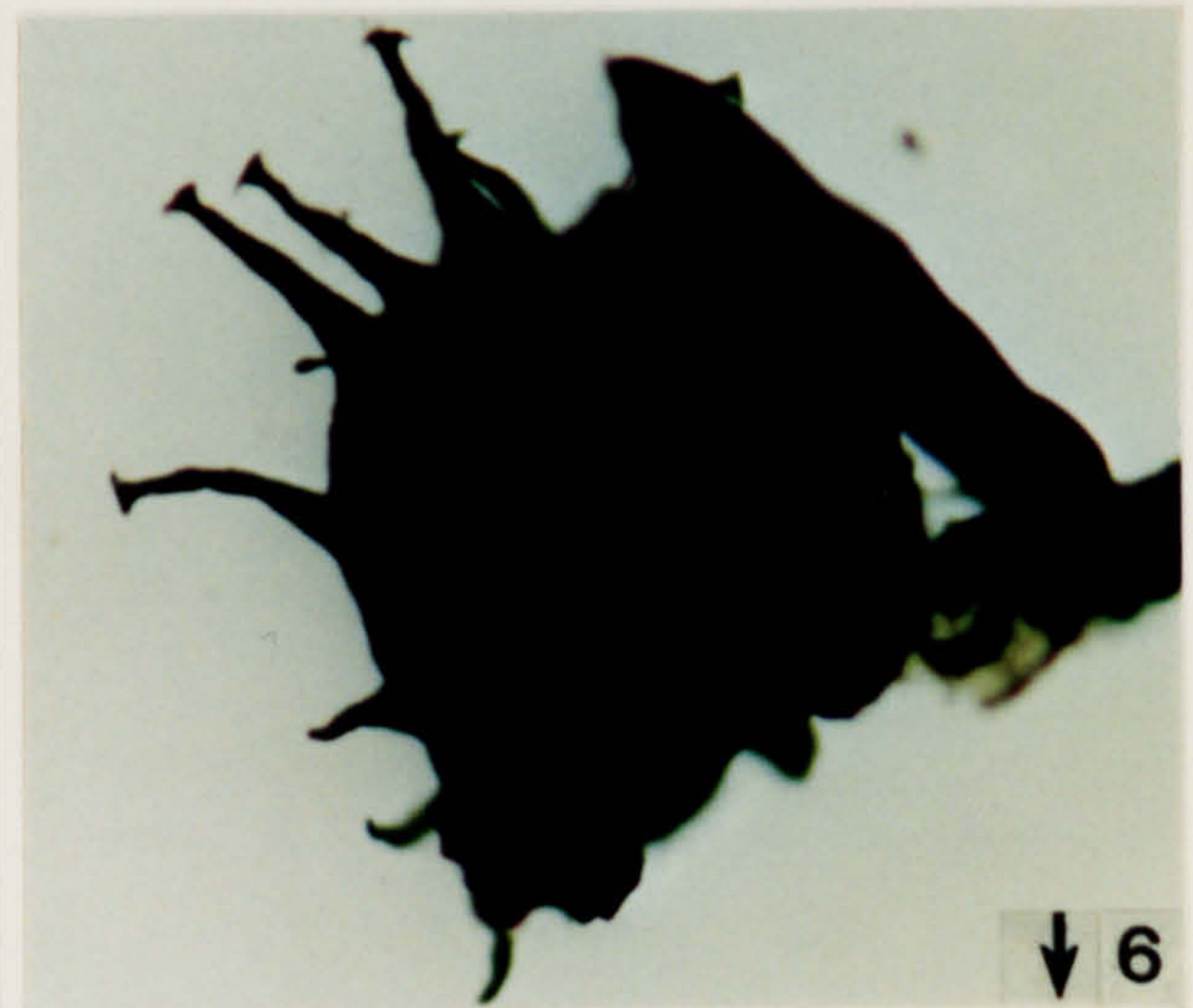
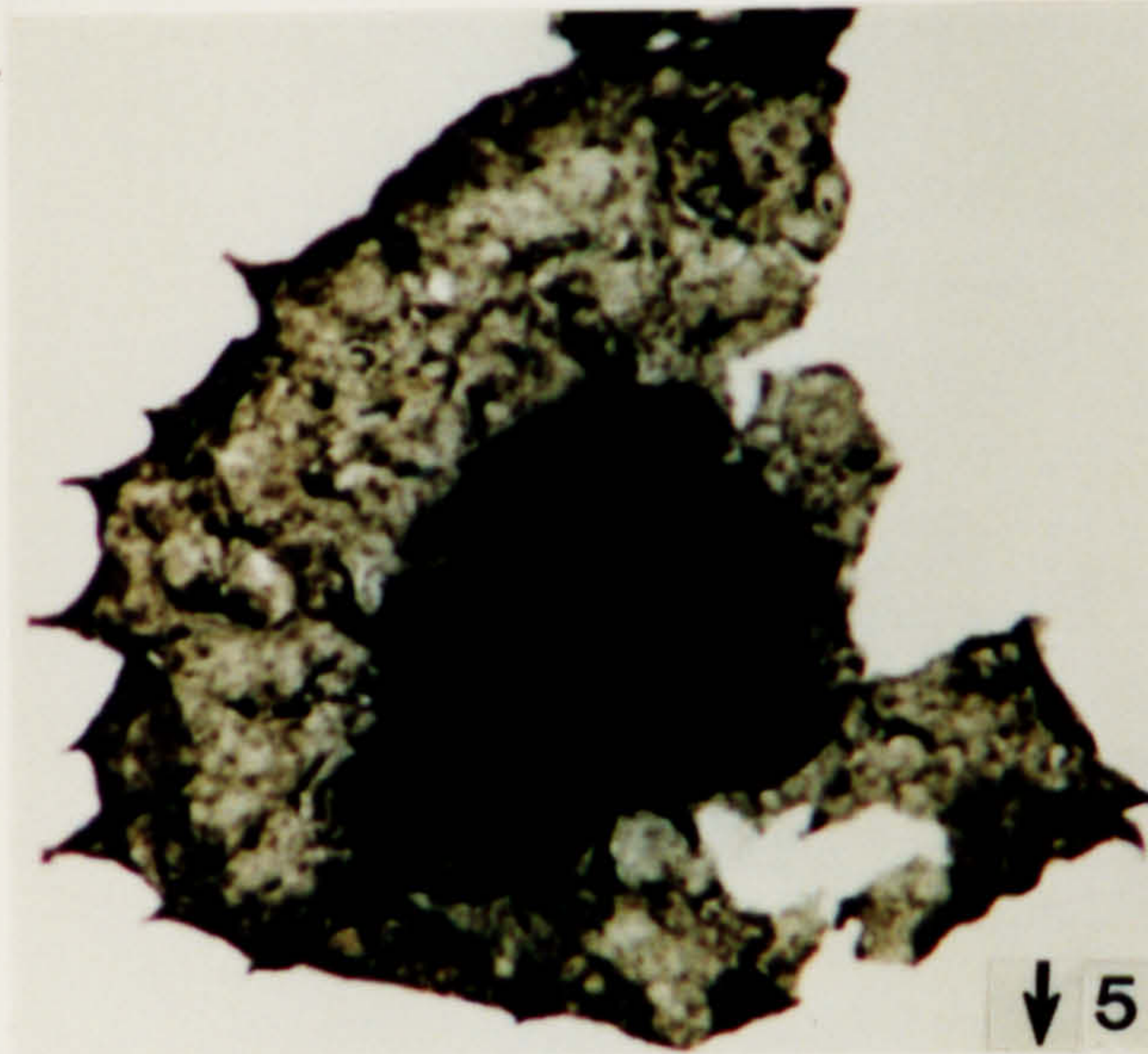
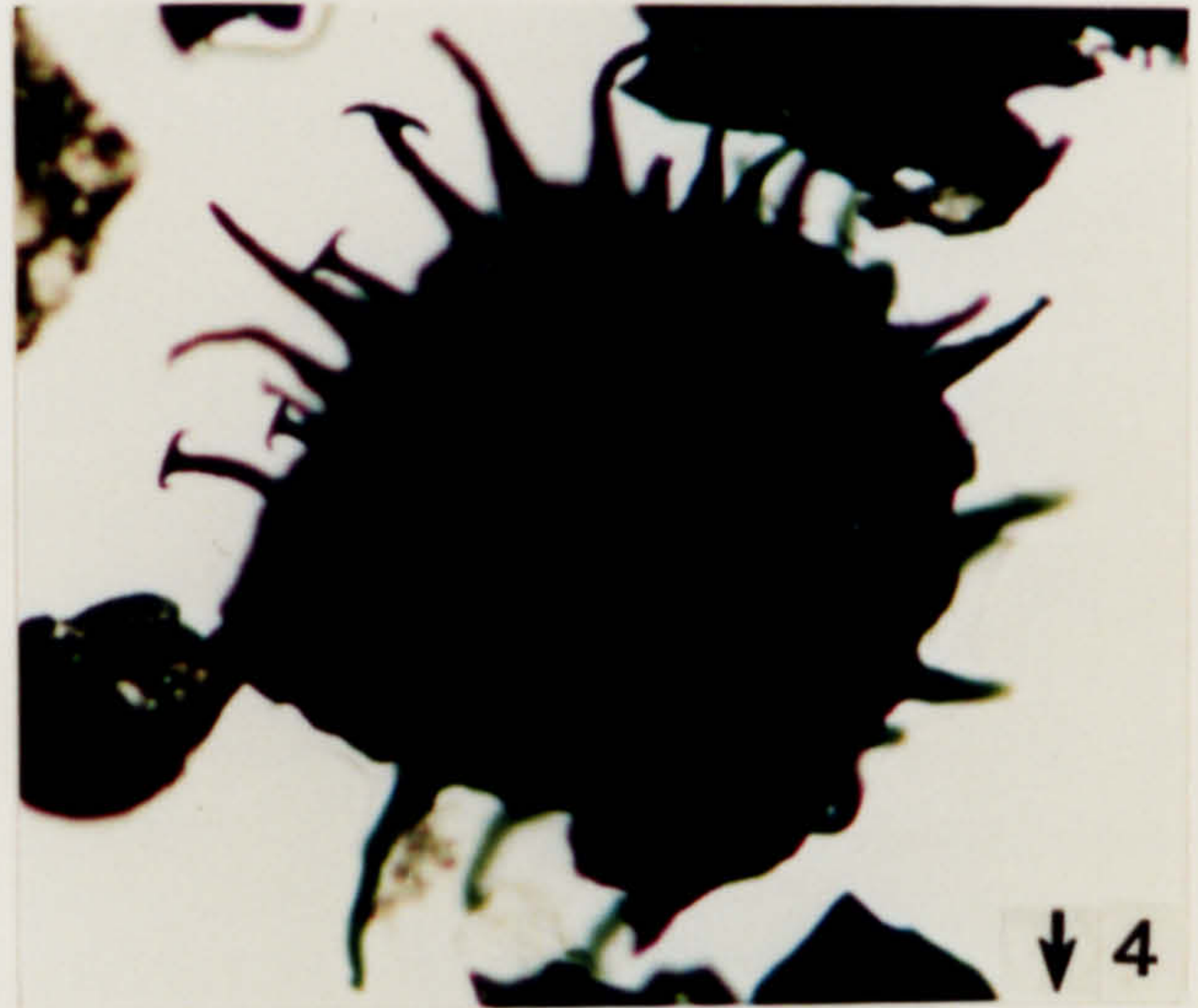
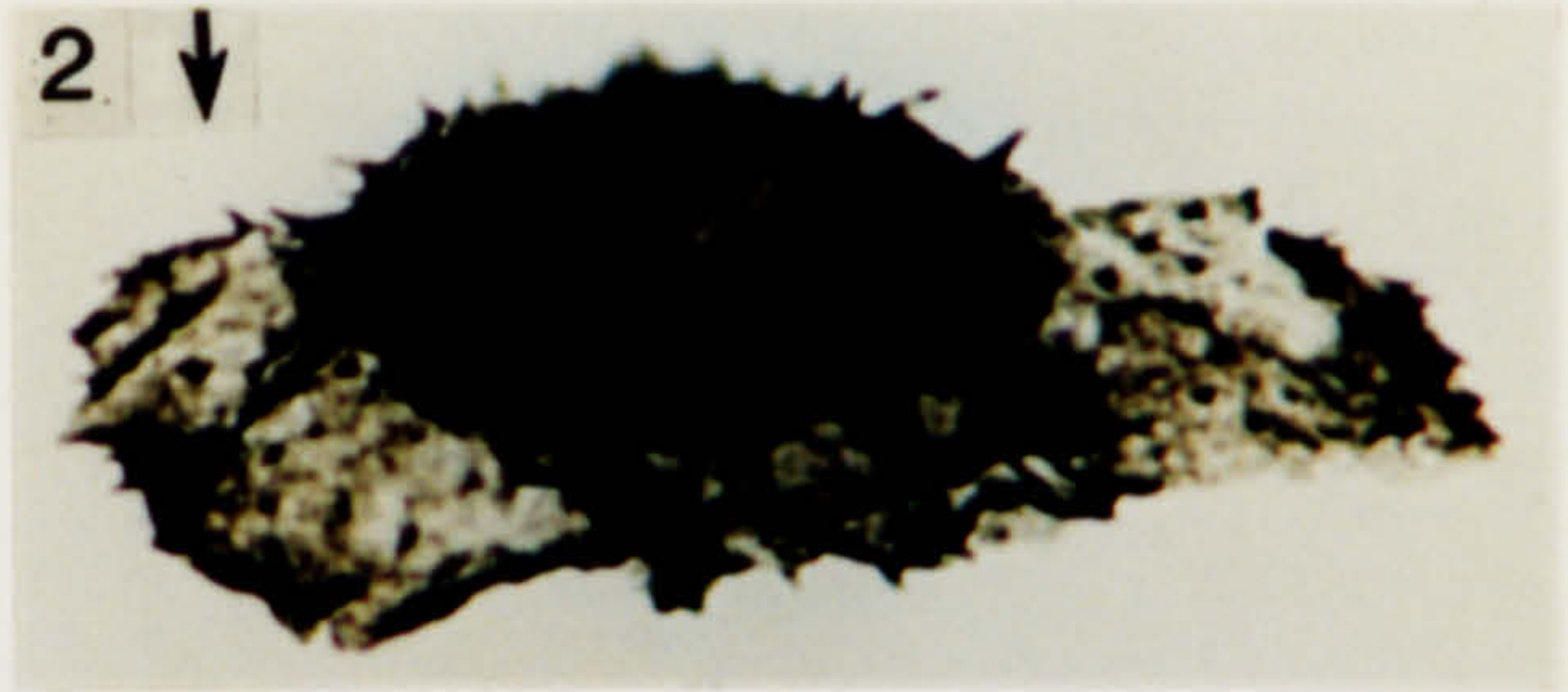
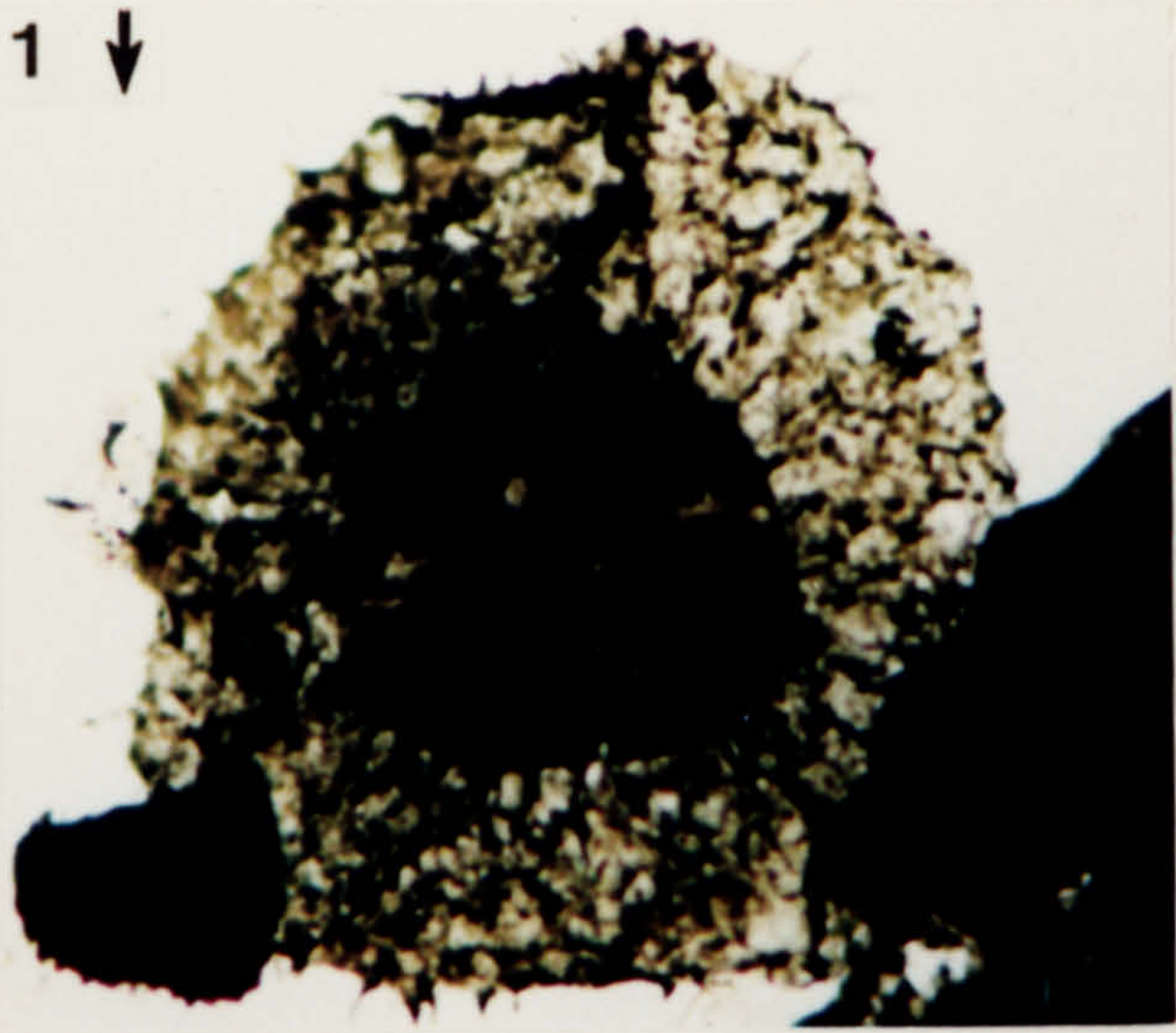
1. *Grandispora protea* (Naumova) Moreau-Benoit 1980. OD 3504, S-3, T21\3, X25.
2. *Grandispora protea* (Naumova) Moreau-Benoit 1980. OD 3504, S-3, U27\2, X25.
3. *Grandispora protea* (Naumova) Moreau-Benoit 1980. OD 3504, S-3, G10\4, X25.
4. *Grandispora protea* (Naumova) Moreau-Benoit 1980. OD 3274, S-2, L32\4, X25.
5. *Grandispora douglastownense* McGregor 1973. OD 3239, 53-2, J36\3, X25.
6. *Grandispora gabesensis* Loboziac & Streel 1989. OD 3239, 53-1, F34\2, X25.
7. *Grandispora gabesensis* Loboziac & Streel 1989. OD 3239.5, 2-1, G22\1, X25.
8. *Grandispora douglastownense* McGregor 1973. OD 3274, 2-1, G32\1, X25.



**Plate 162.**

Spores from the Mdaour el Kbir-El Ansar-N'Kheila Formations, early Eifelian in age.

1. *Grandispora* sp. OD 3239, 53-1, L24\2, X25.
2. *Grandispora* sp. OD 3239.5, S-1, T23\1, X25.
3. *Grandispora* sp. OD 3239, 53-2, W28\4, X25.
4. *Hystrichosporites* sp. OD 3274, 2-3, Q10\3, X25.
5. *Ancyrospora nettersheimensis* Riegel 1973. OD 3239, 2-2, G16\3, X25.
6. *Hystrichosporites* sp. OD 3333.2, 2-1, M35\3, X25.
7. *Hystrichosporites* sp. OD 3504, S-1, H13\2, X25.
8. *Hystrichosporites* sp. OD 3333.2, S-3, K40\4, X25.

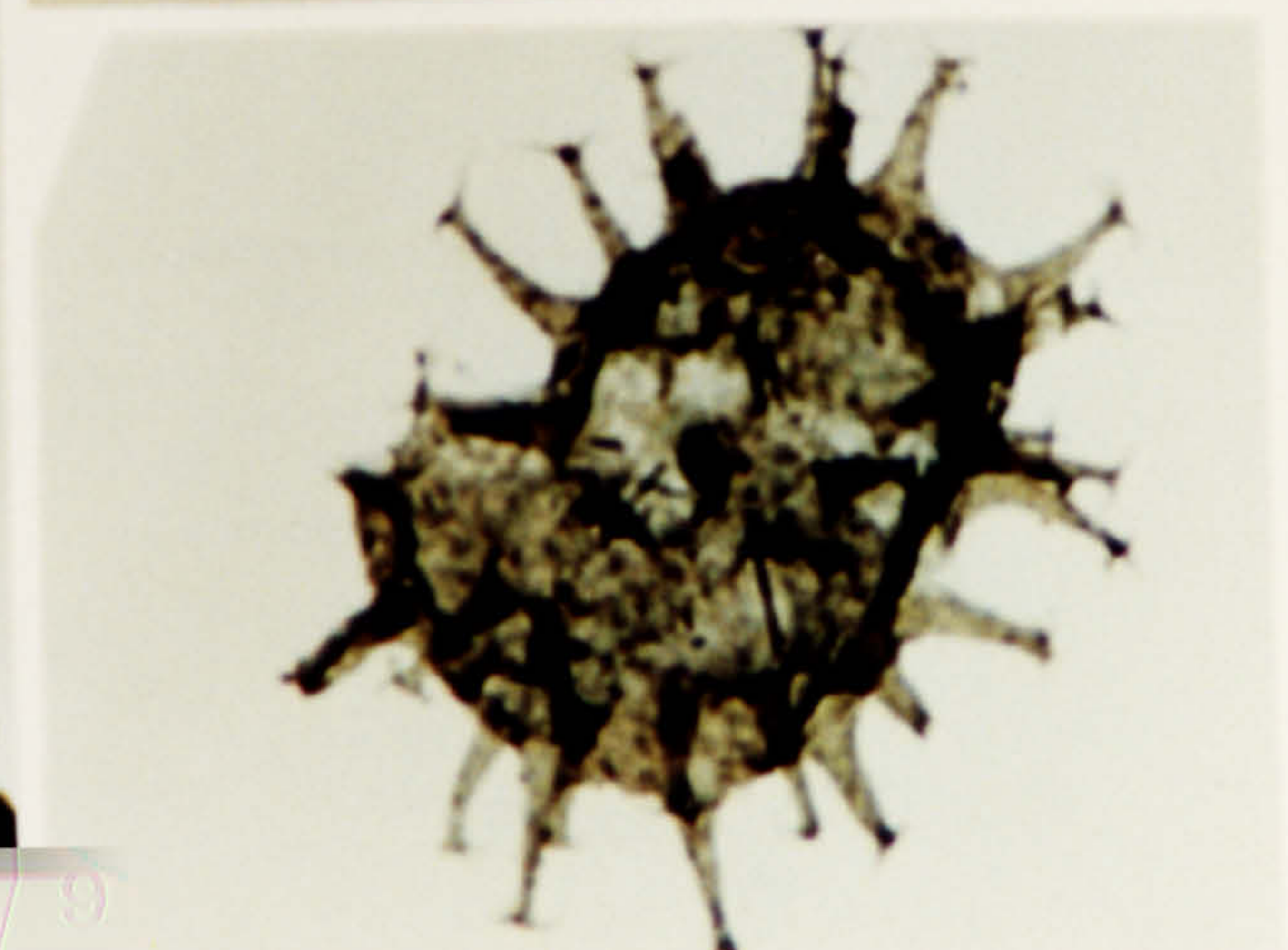
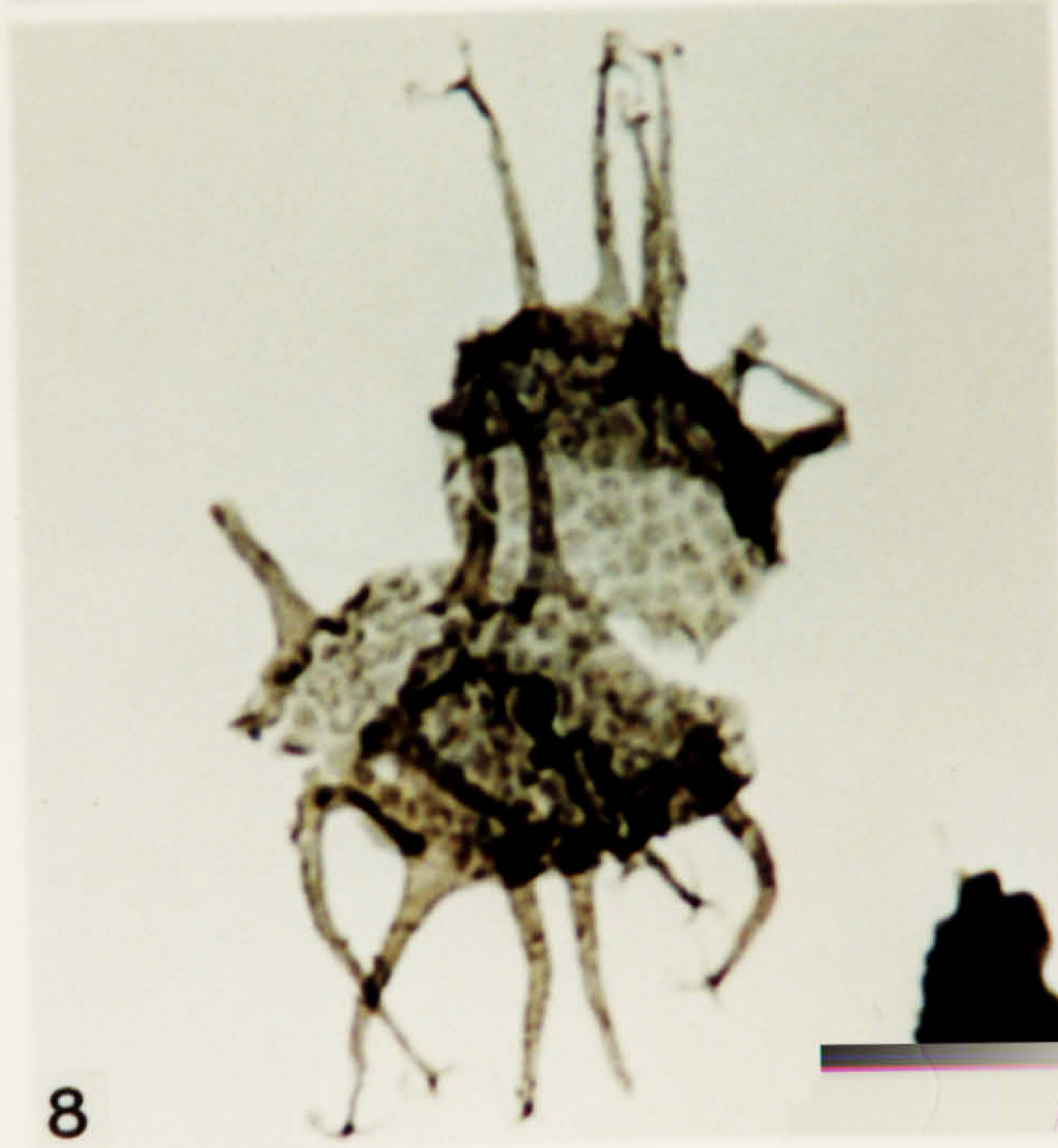
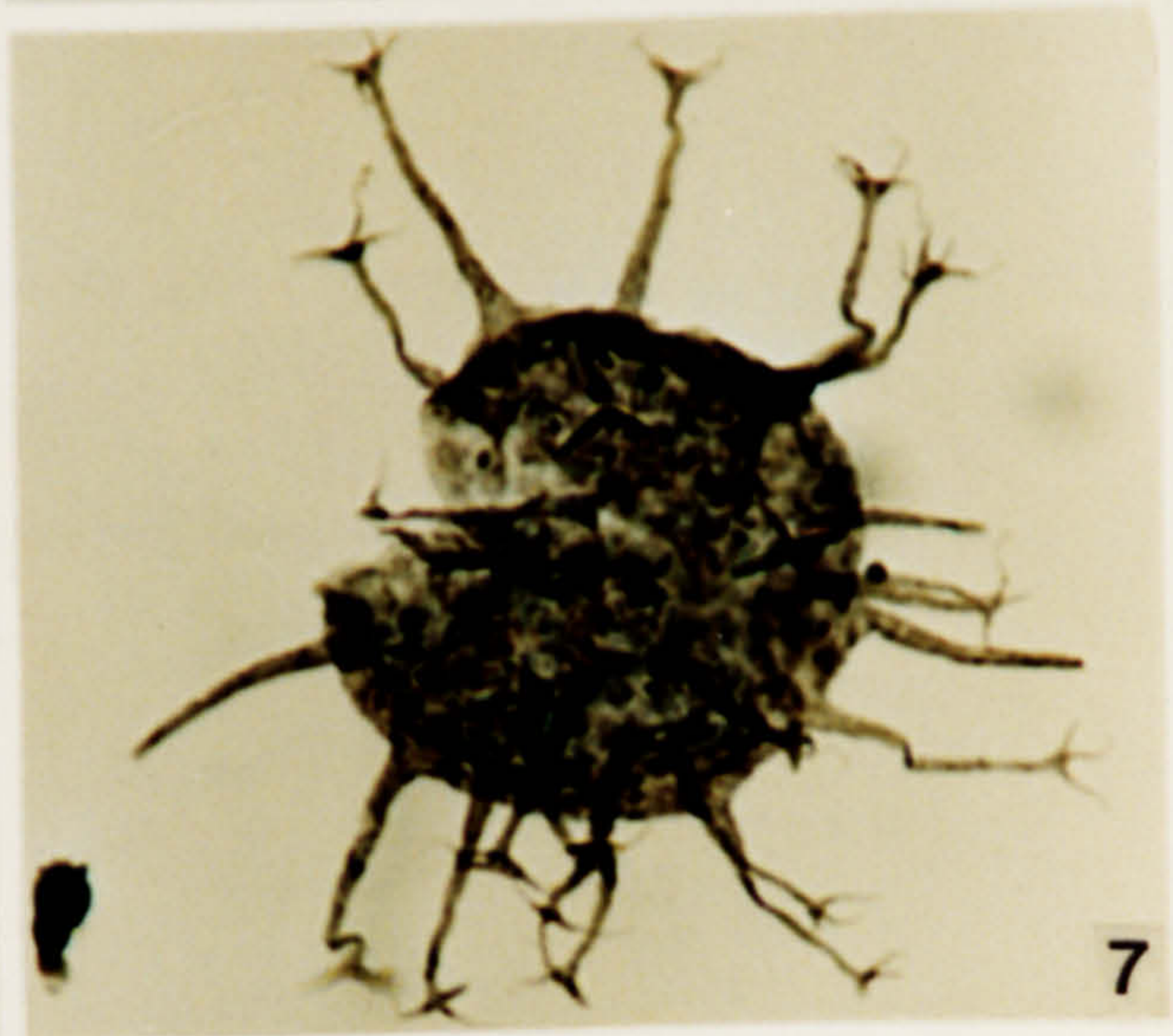
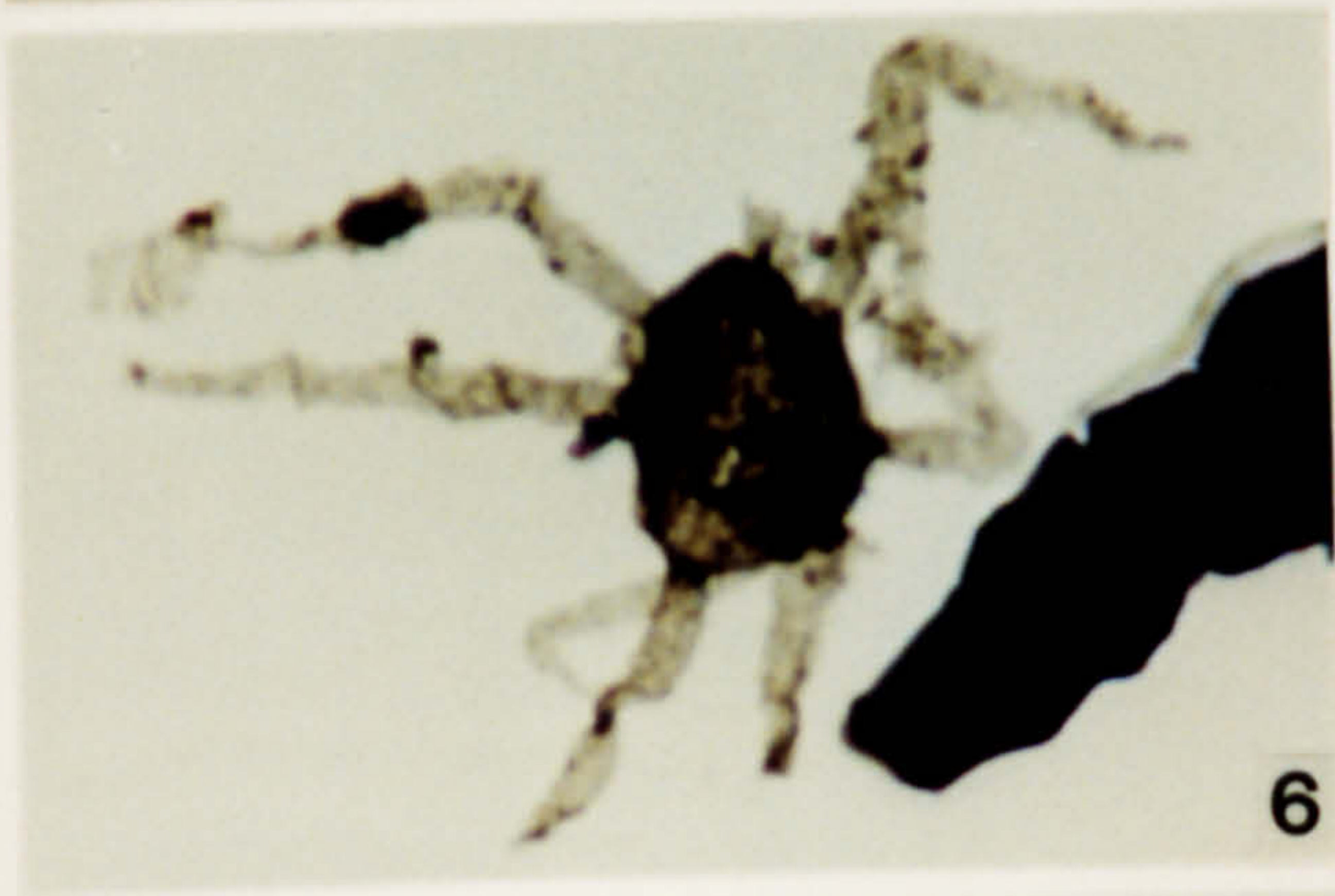
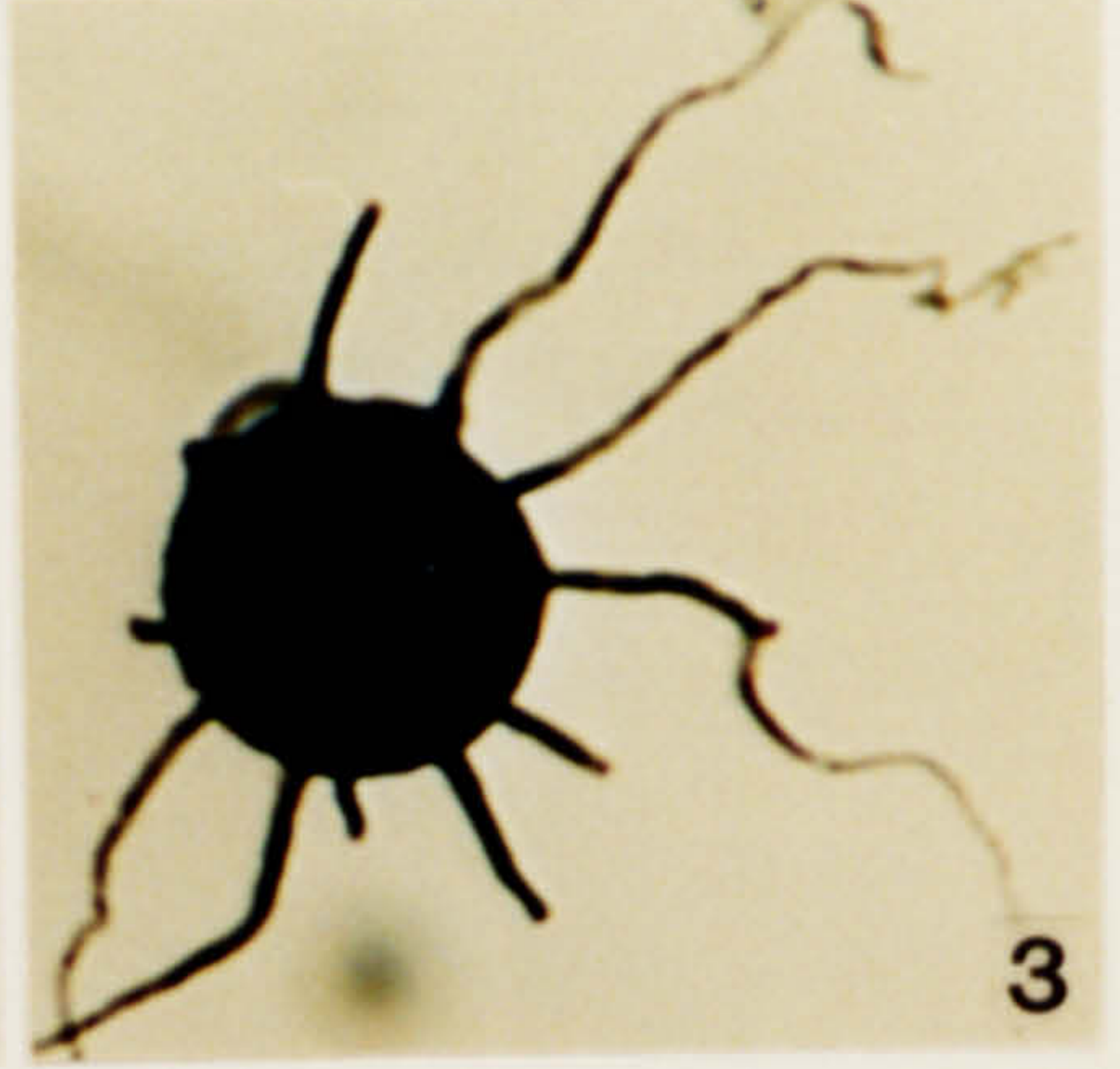




**Plate 163.**

Acritarchs from the N'Kheila Formation, late Eifelian in age.

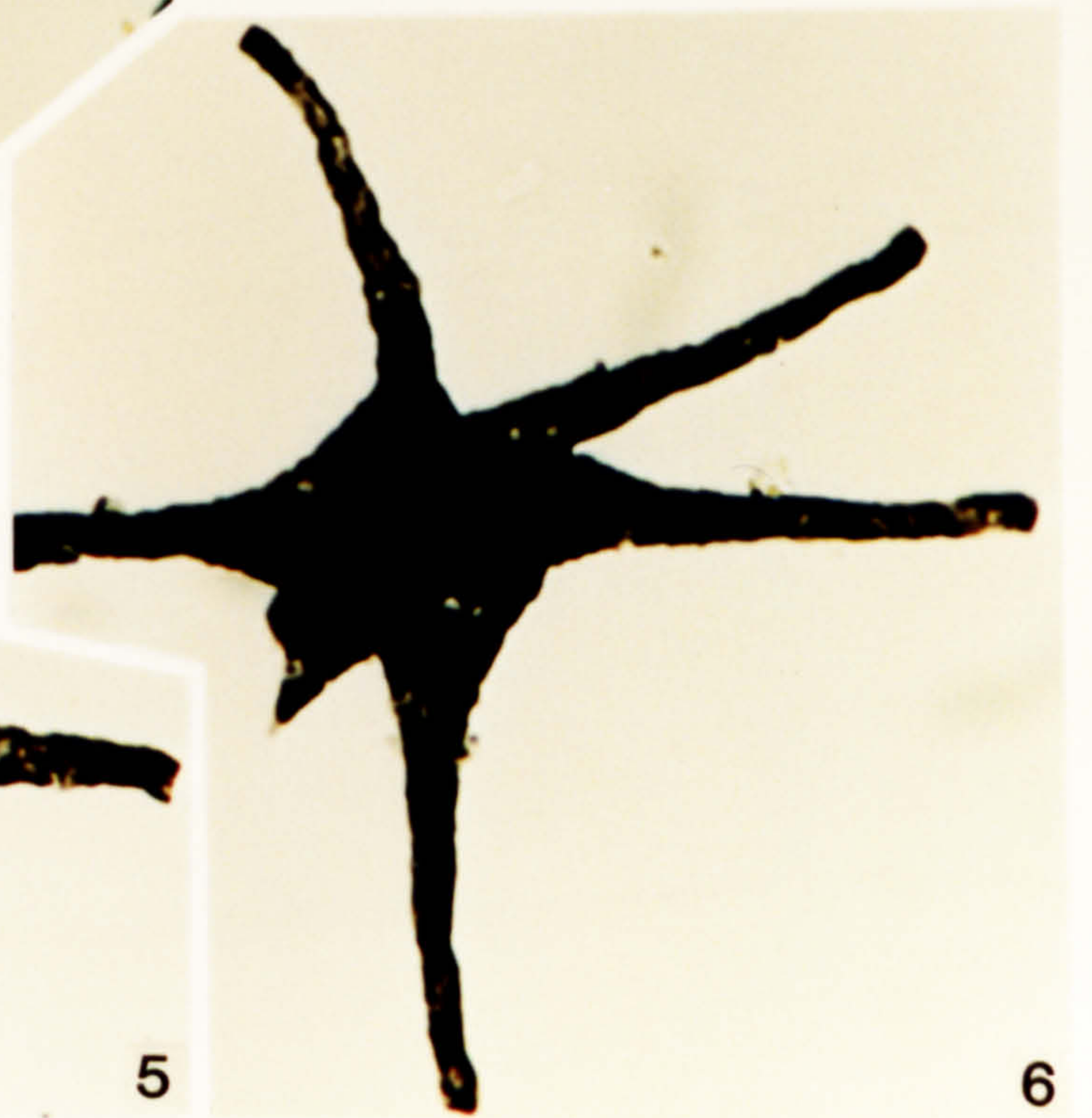
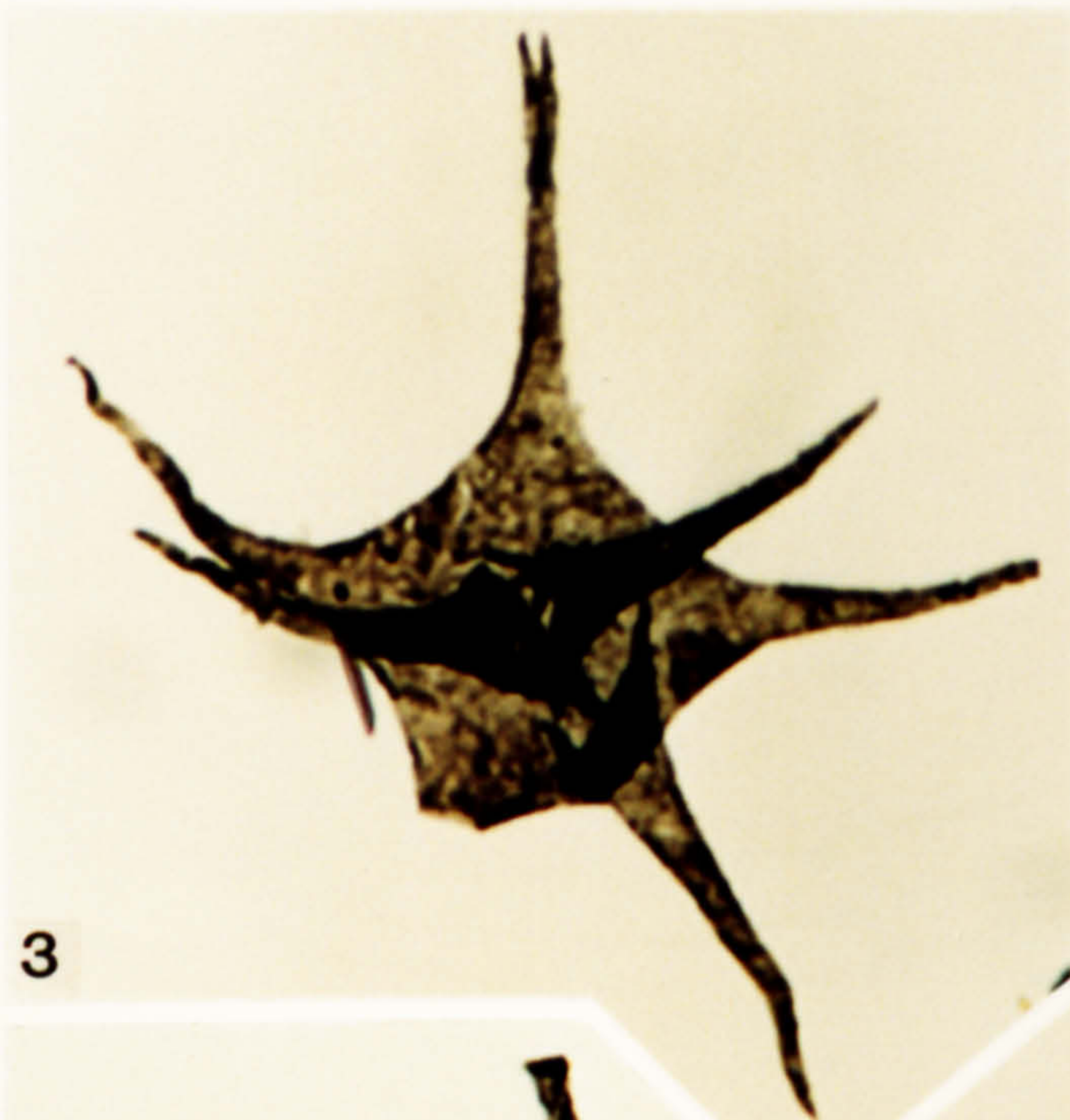
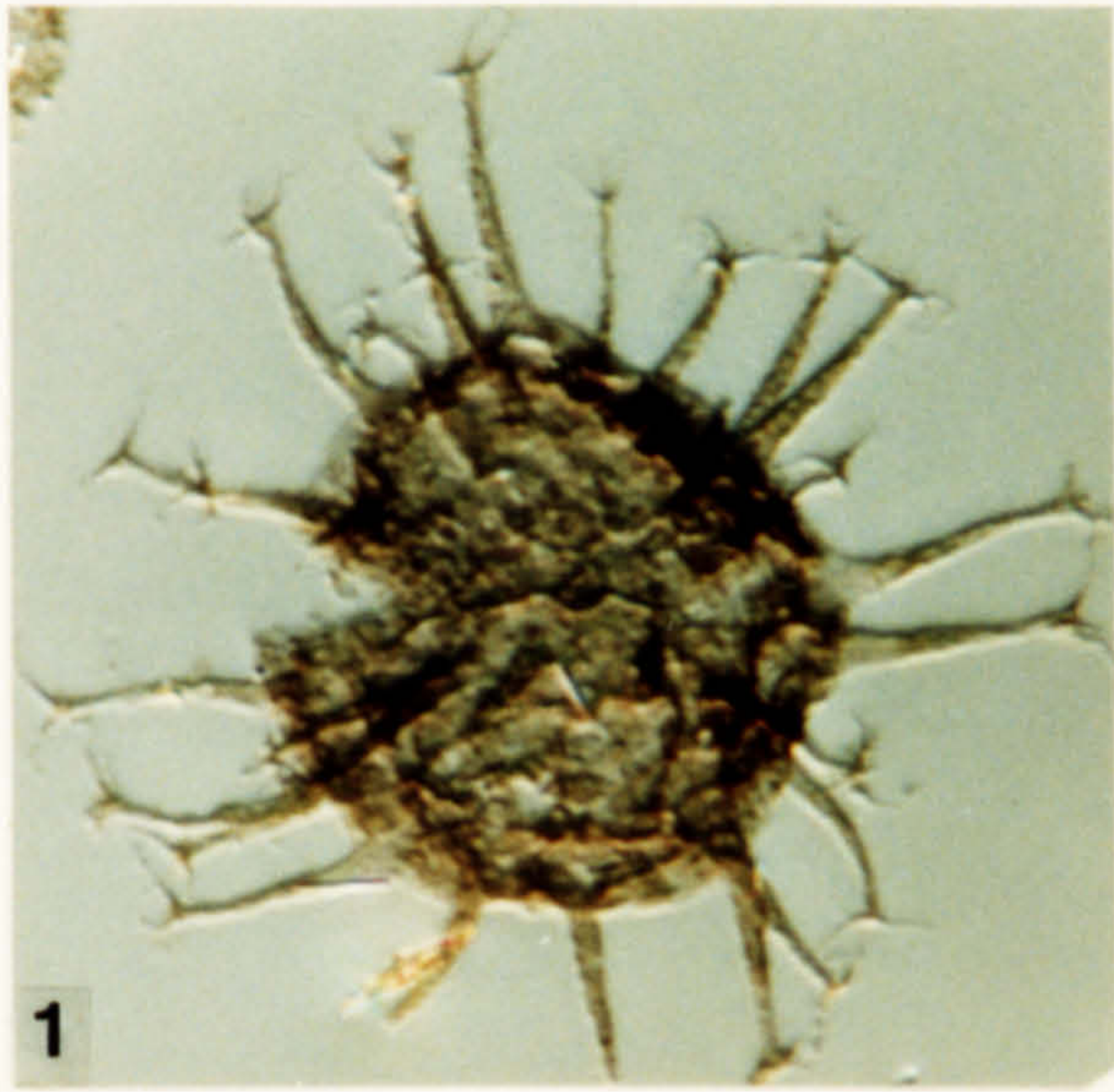
1. *Ammonidium? alloiteauii* (Deunff) Deunff 1976. OD 3130.65, 1-1, X40\1.
2. *Baltisphaeridium anfractum* Playford 1977. OD 3130.65, 1-1, L42\2.
3. *Baltisphaeridium anfractum* Playford 1977. OD 3130.65, 1-1, E31\1.
4. *Baltisphaeridium distentum* Playford 1977. OD 3130.65, 1-1, M23\4.
5. *Baltisphaeridium anfractum* Playford 1977. OD 3131, 2-2, N6\1.
6. *Baltisphaeridium distentum* Playford 1977. OD 3130.65, 1-1, M23\4.
7. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 3131, 1-2, K26\4.
8. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 3131, 2-1, V14\3.
9. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 3131, S-1, Y26\1.



**Plate 164.**

Acritarchs from the N'Kheila Formation, late Eifelian in age.

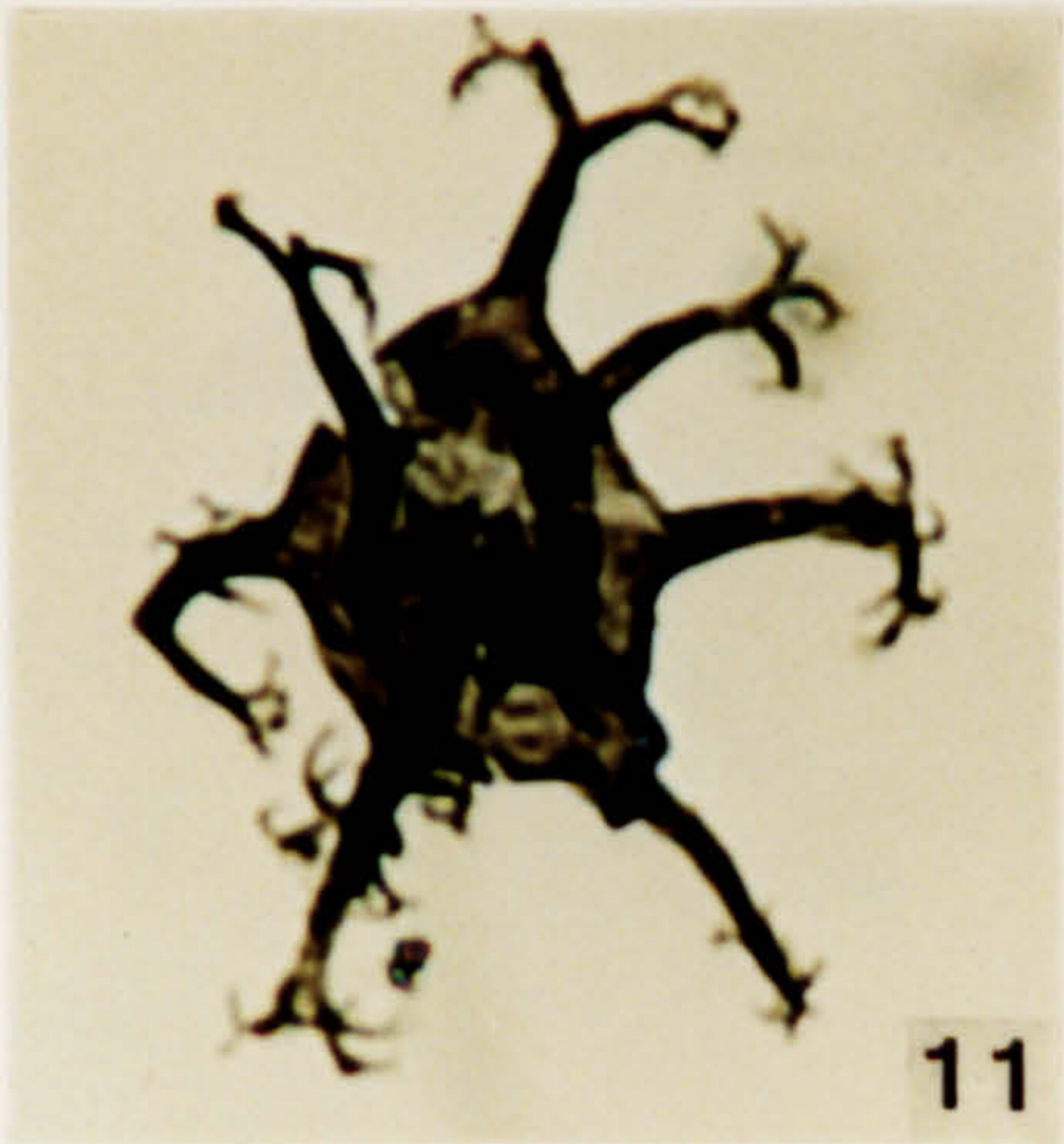
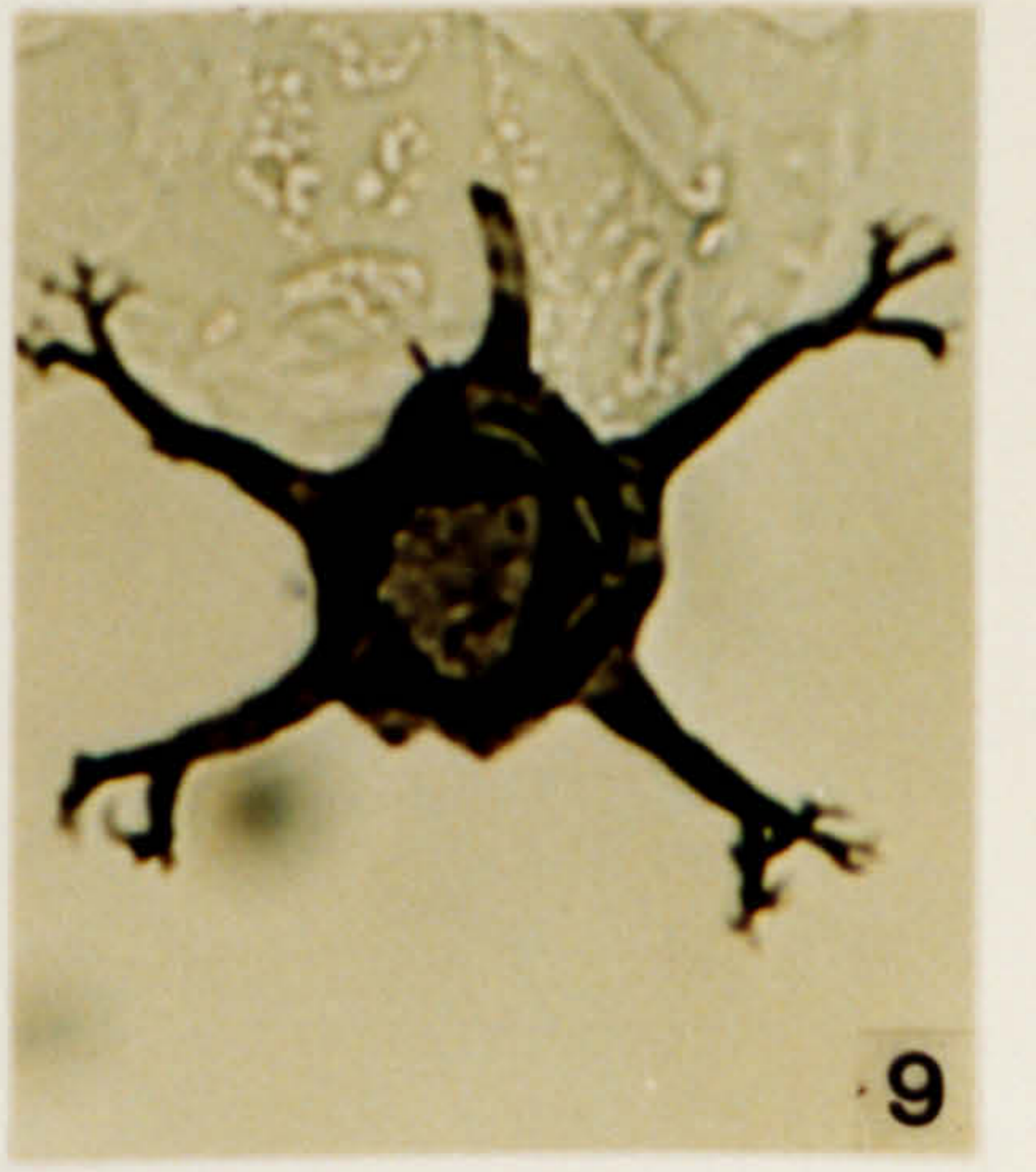
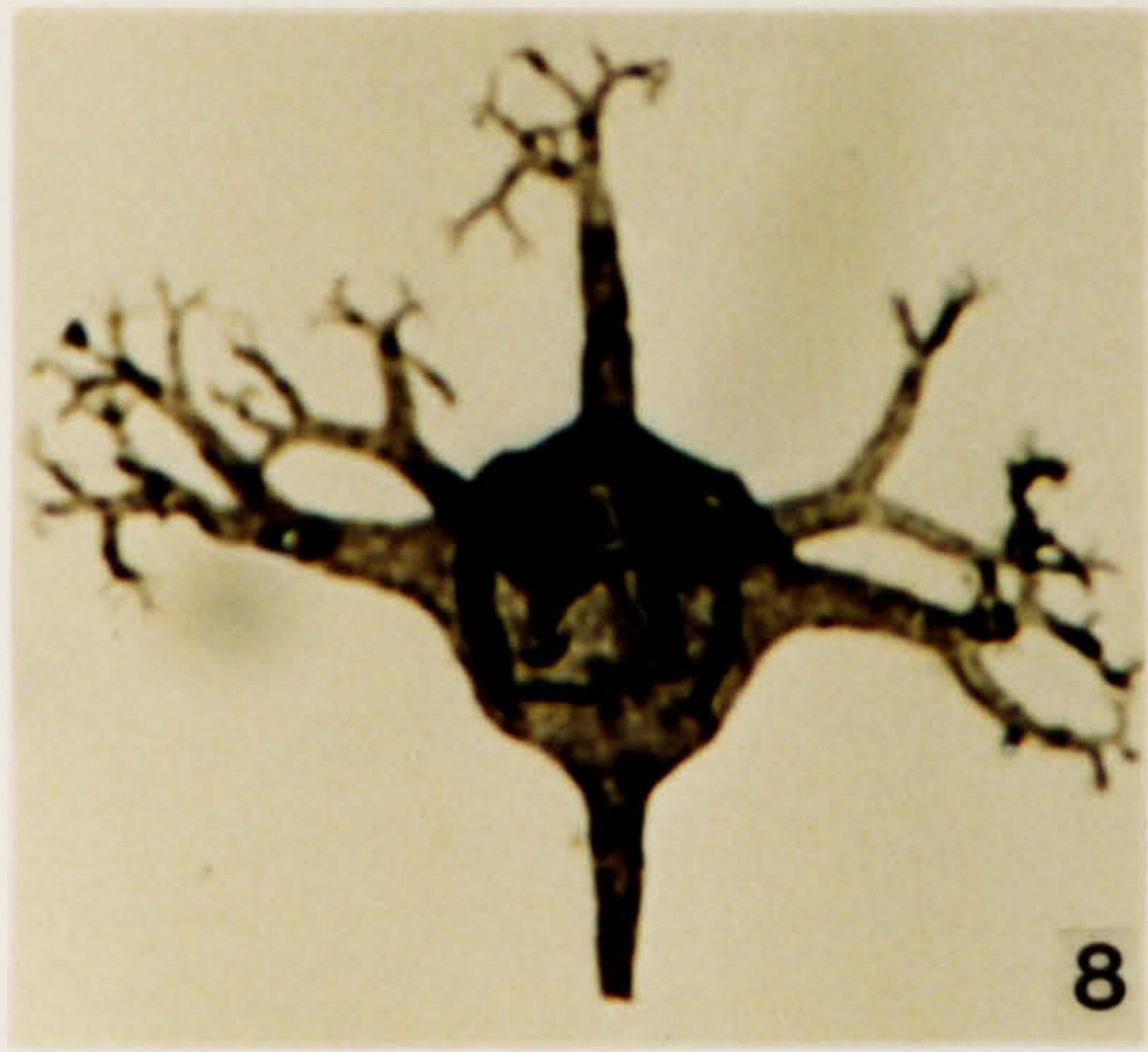
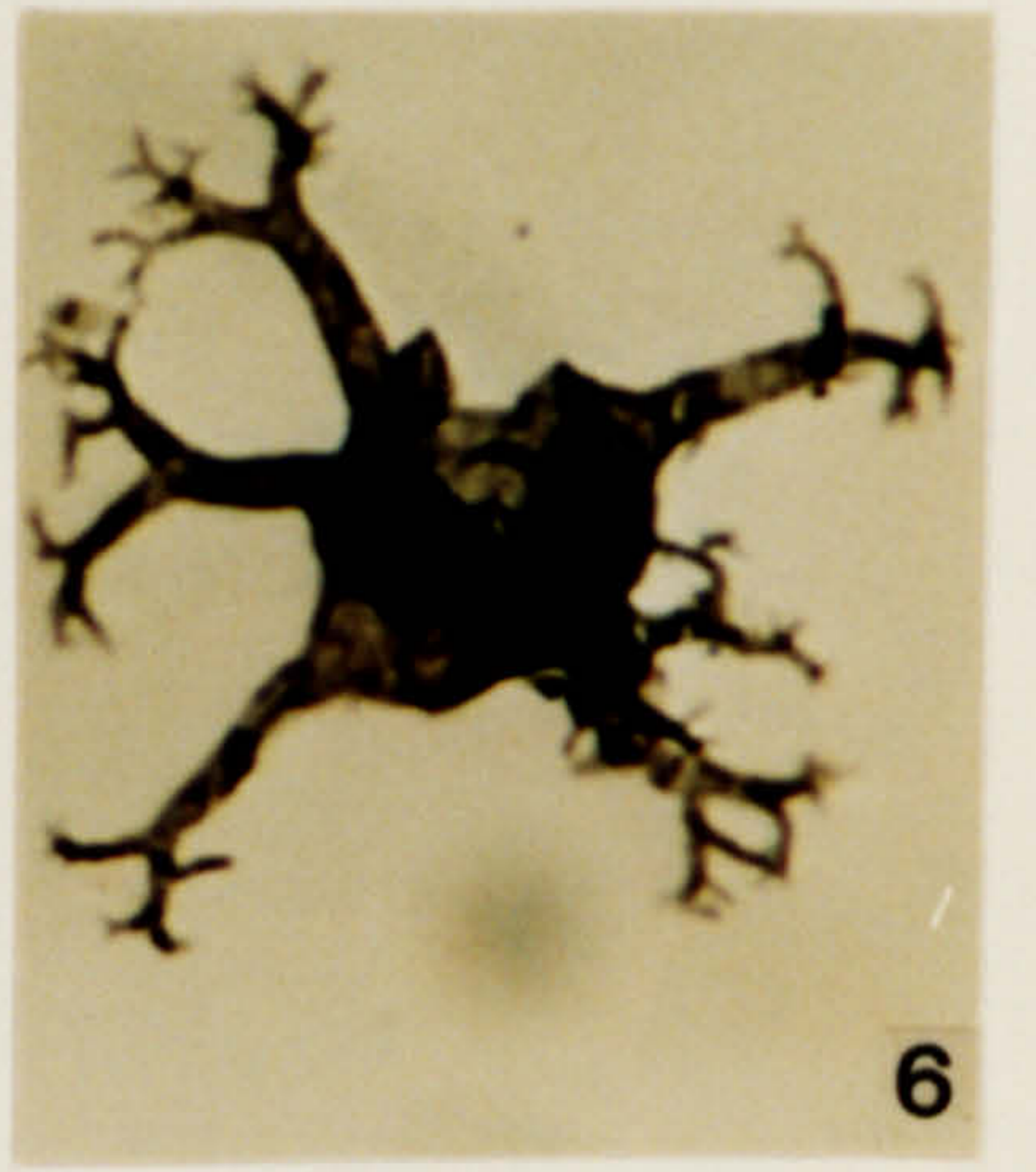
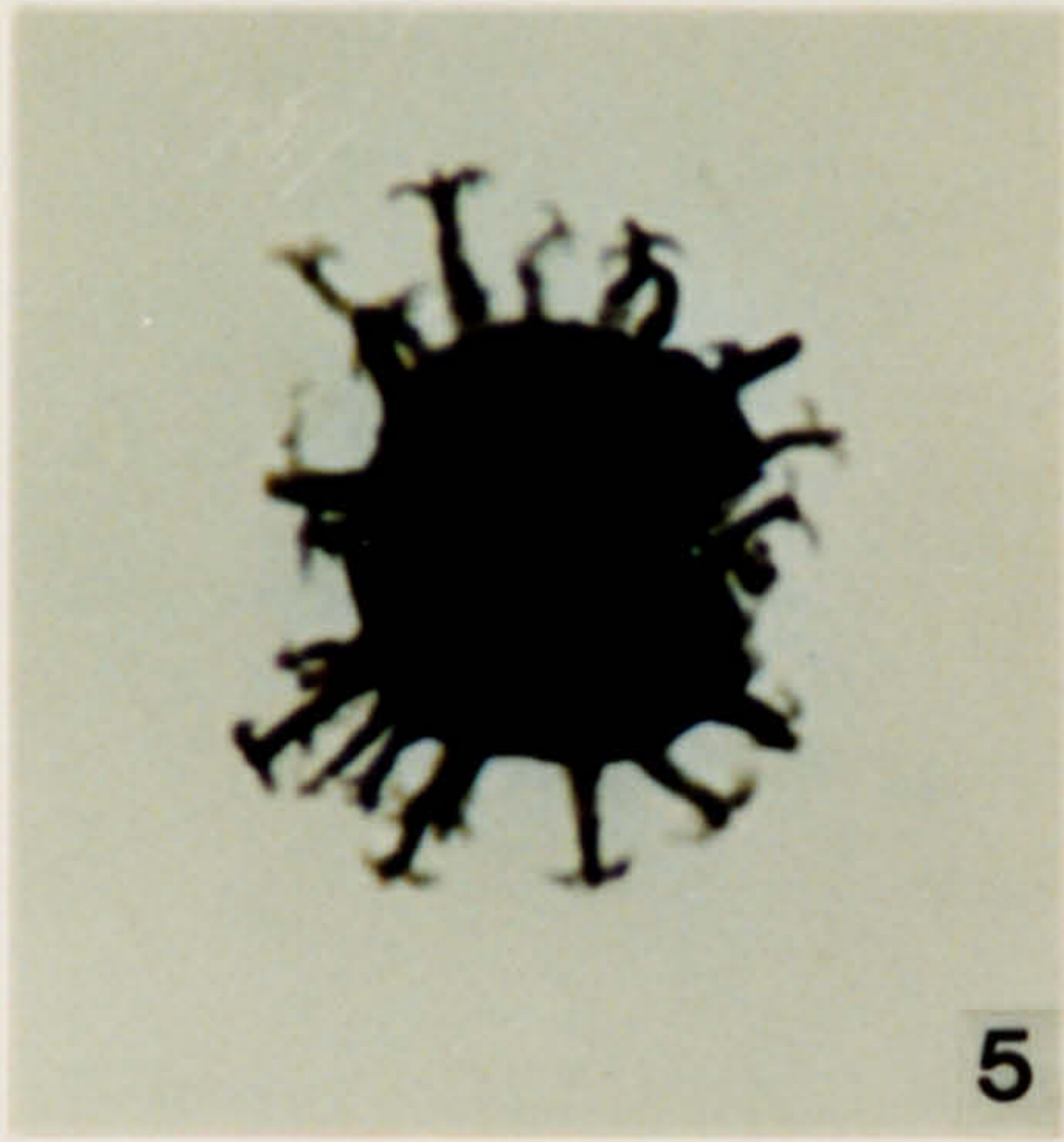
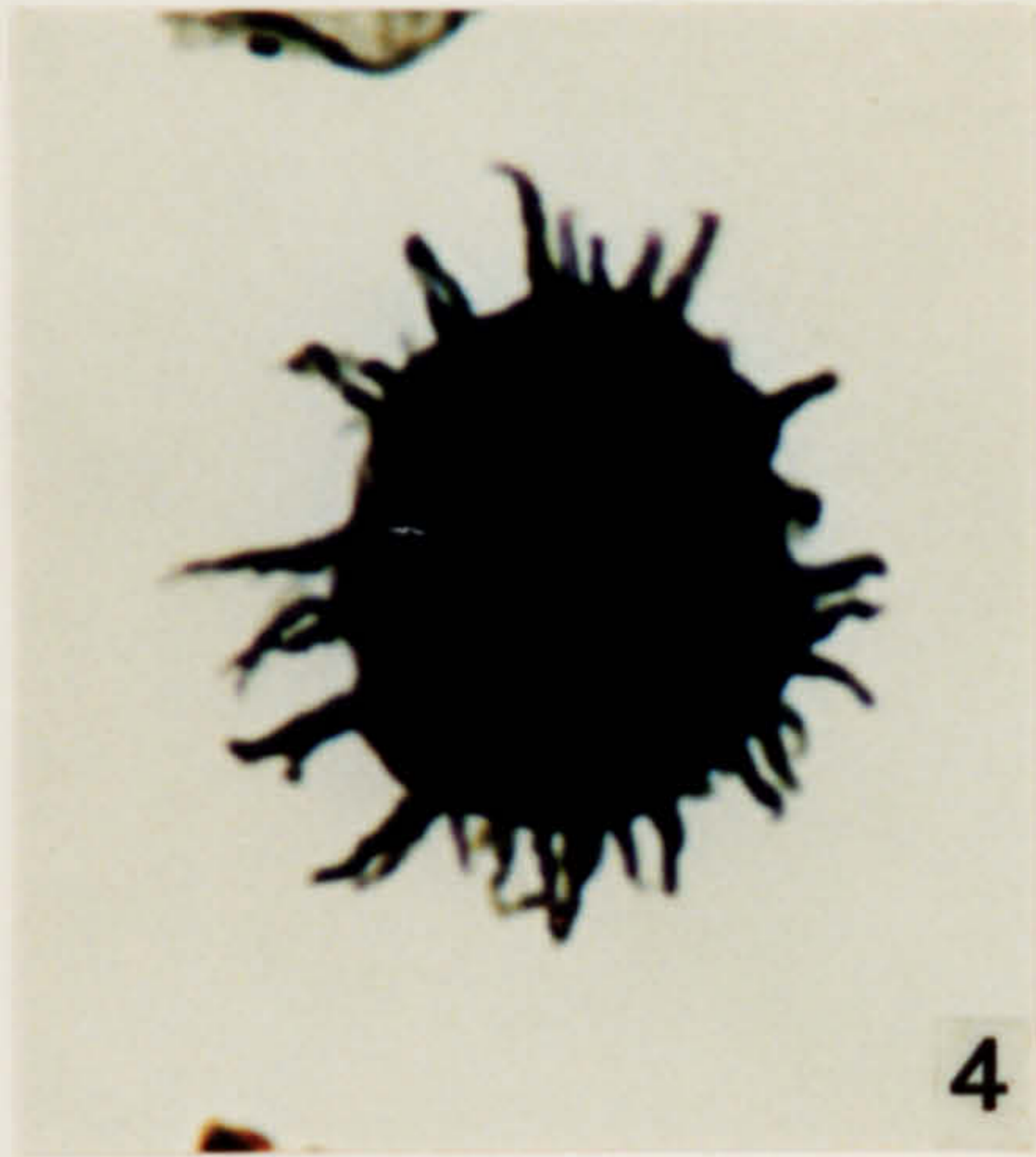
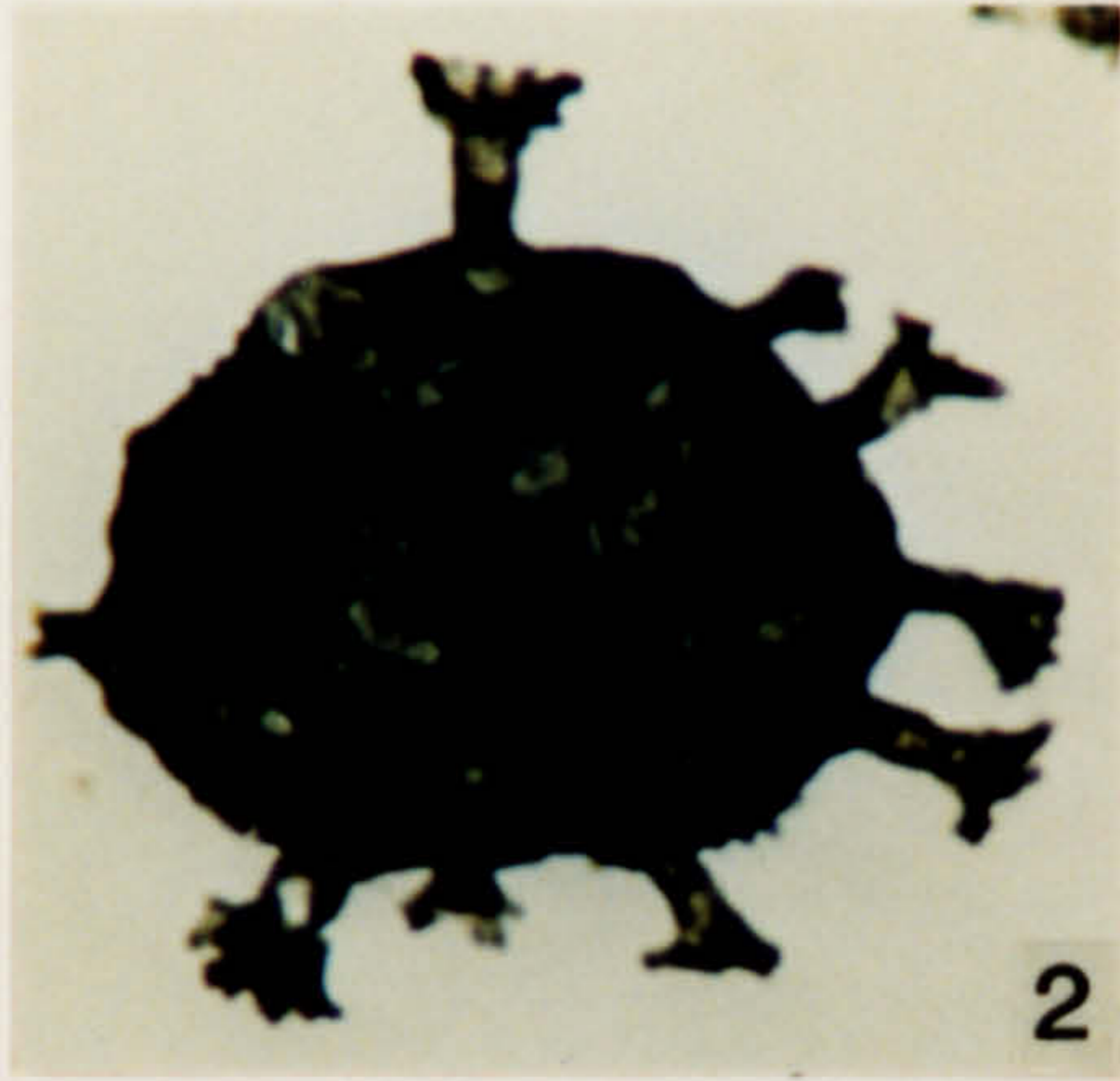
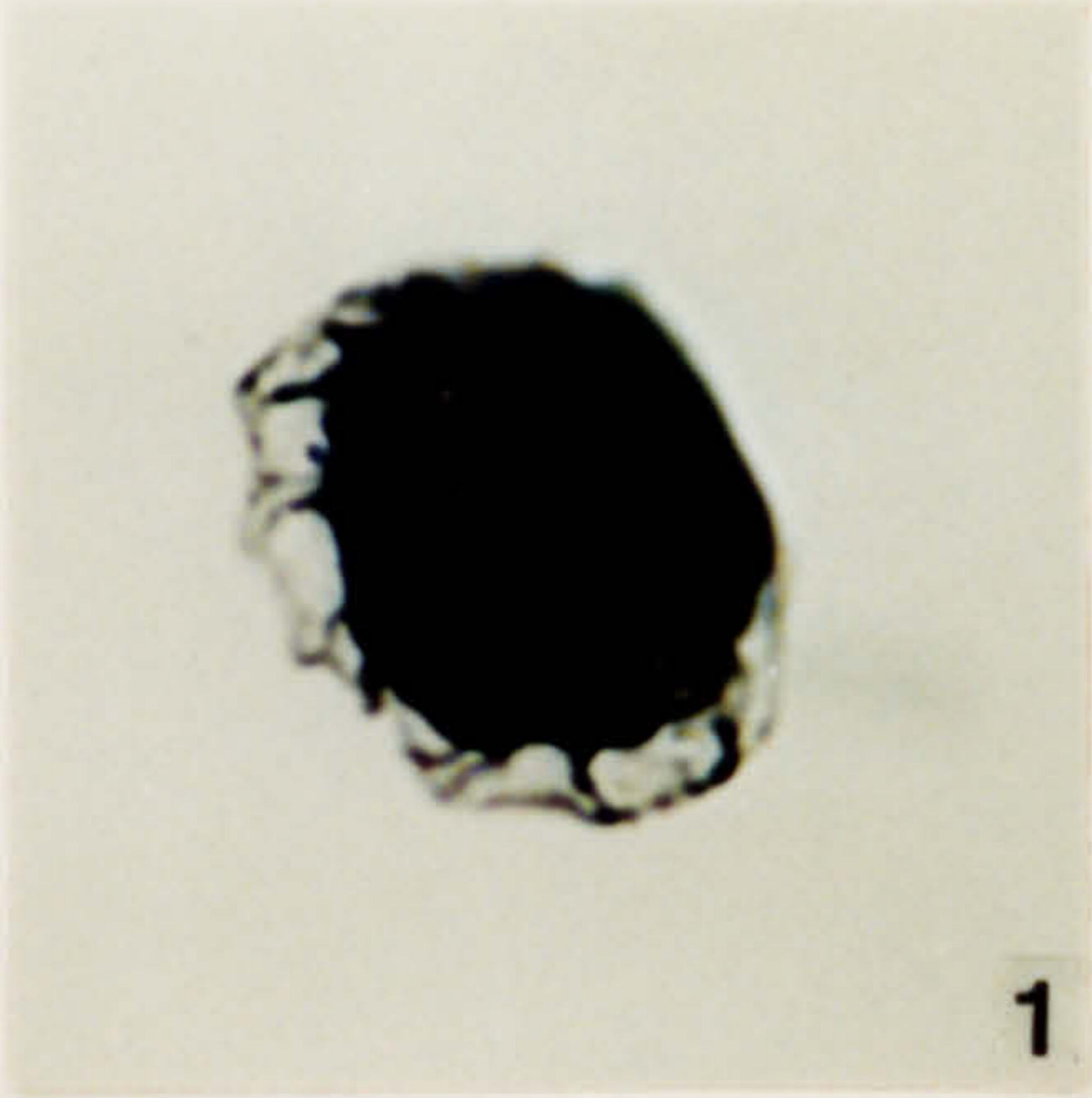
1. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 3131, S-1, L11\4.
2. *Diexallophasis remota* (Deunff) Playford 1977. OD 3130.65, 1-1, E13\1.
3. *Diexallophasis remota* var. *remota* (Deunff) Fensome *et al.* 1990. OD 3130.65, 1-2, N50\3.
4. *Diexallophasis remota* var. *remota* (Deunff) Fensome *et al.* 1990. OD 3130.65, 1-1, F32\3.
5. *Diexallophasis remota* (Deunff) Playford 1977. OD 3131, 1-1, U28\4.
6. *Diexallophasis remota* (Deunff) Playford 1977. OD 3130.65, 1-1, B15\3.



**Plate 165.**

Acritarchs from the N'Kheila Formation, late Eifelian in age.

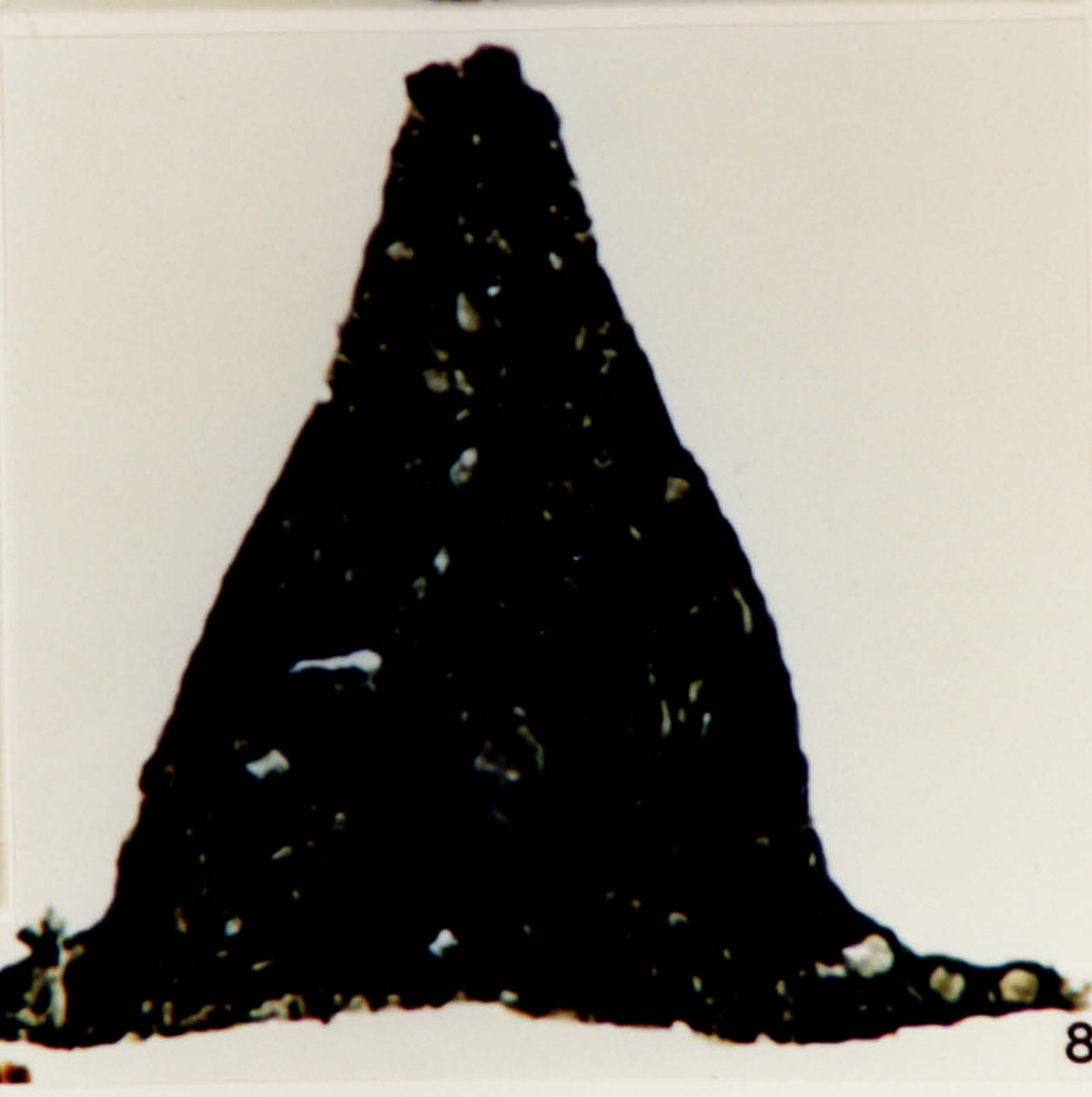
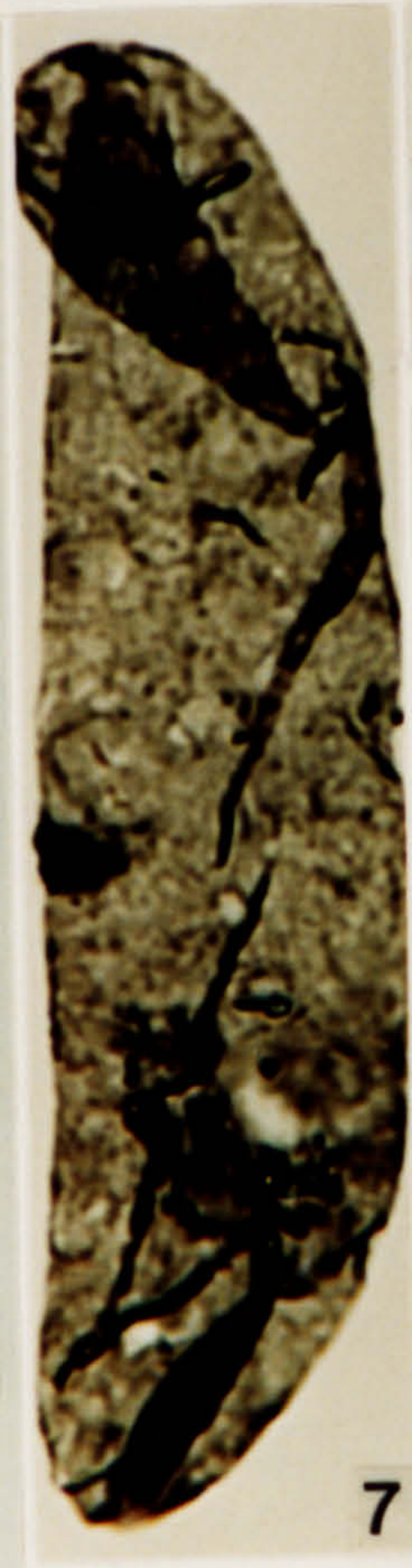
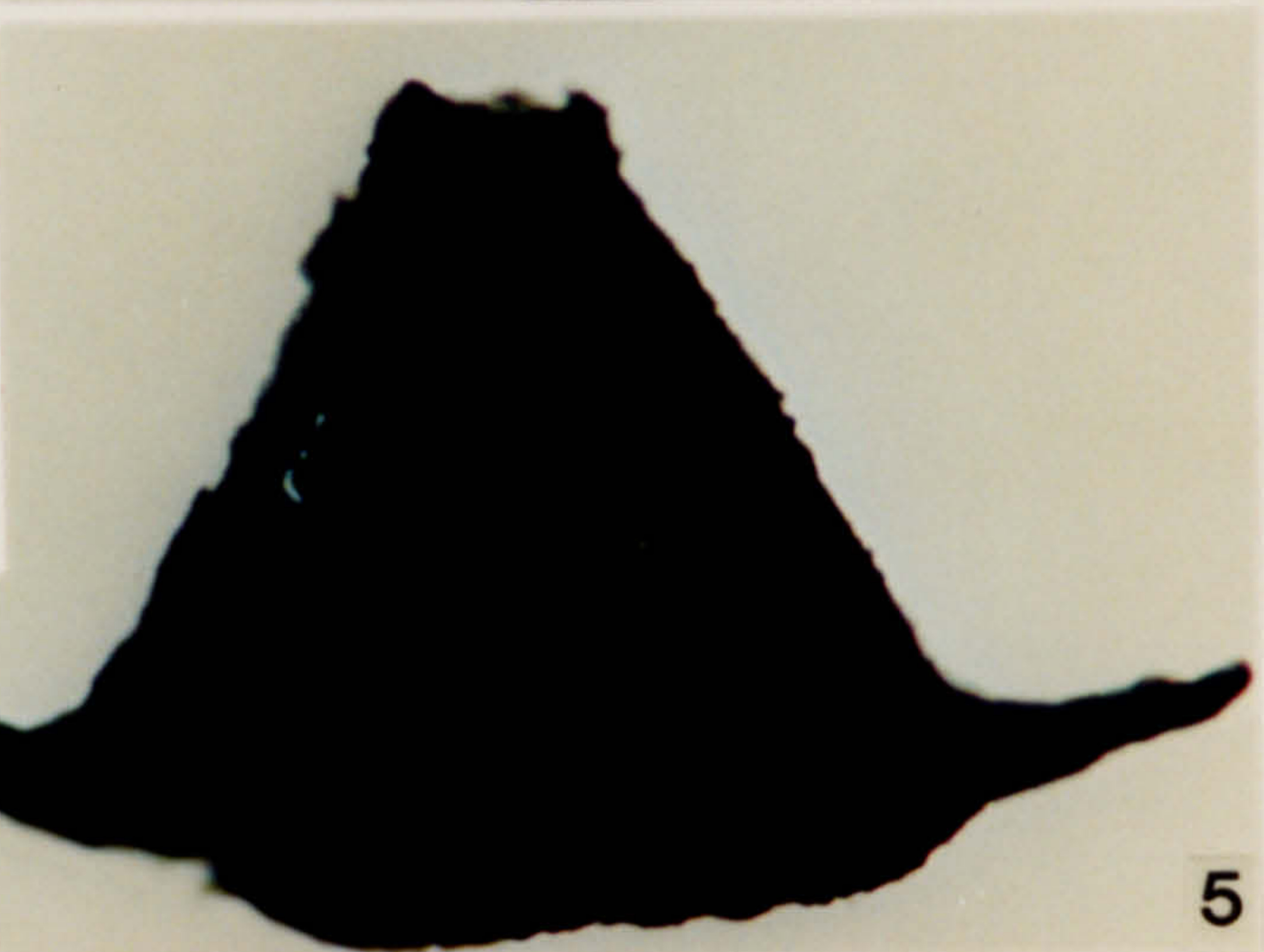
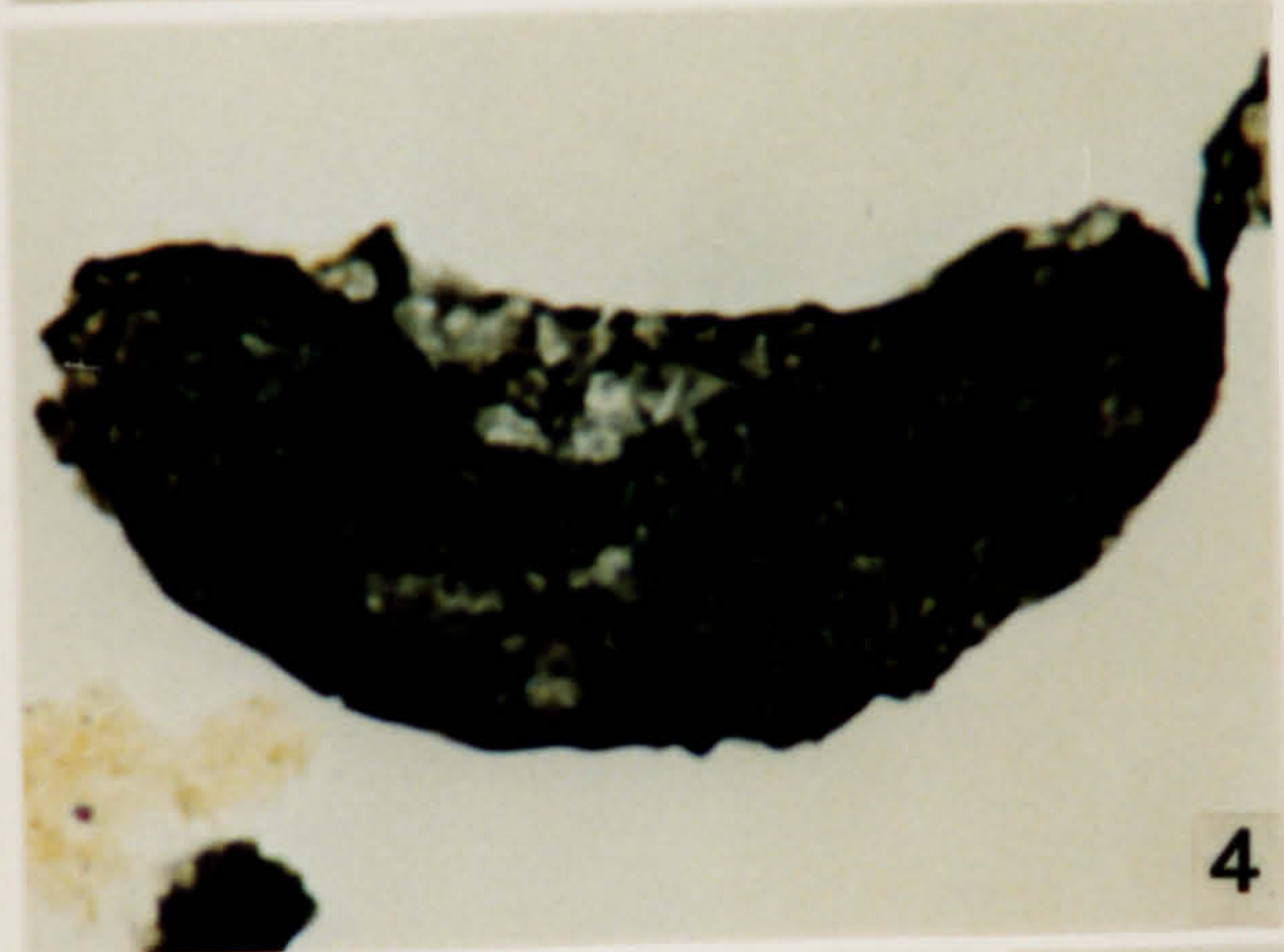
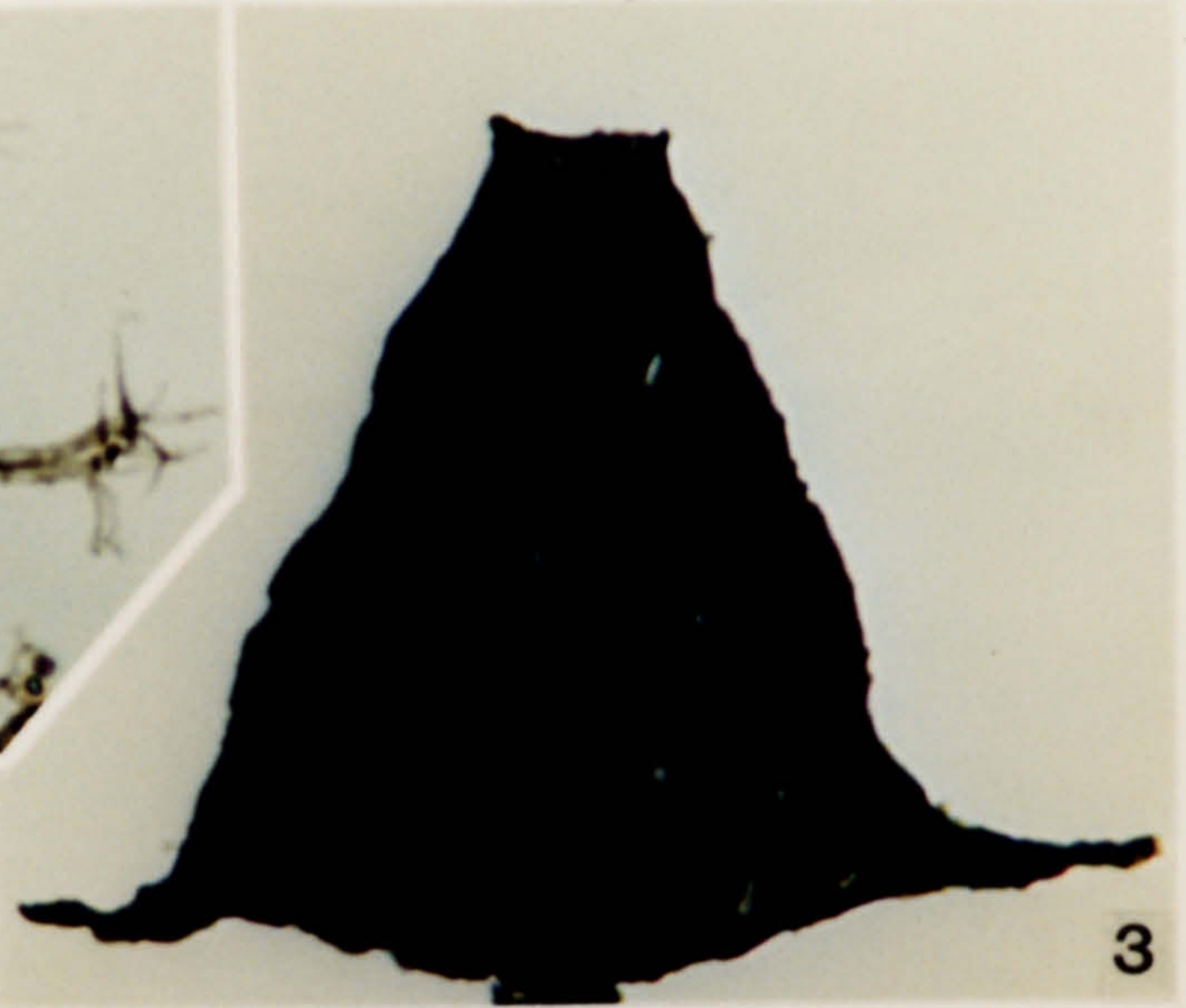
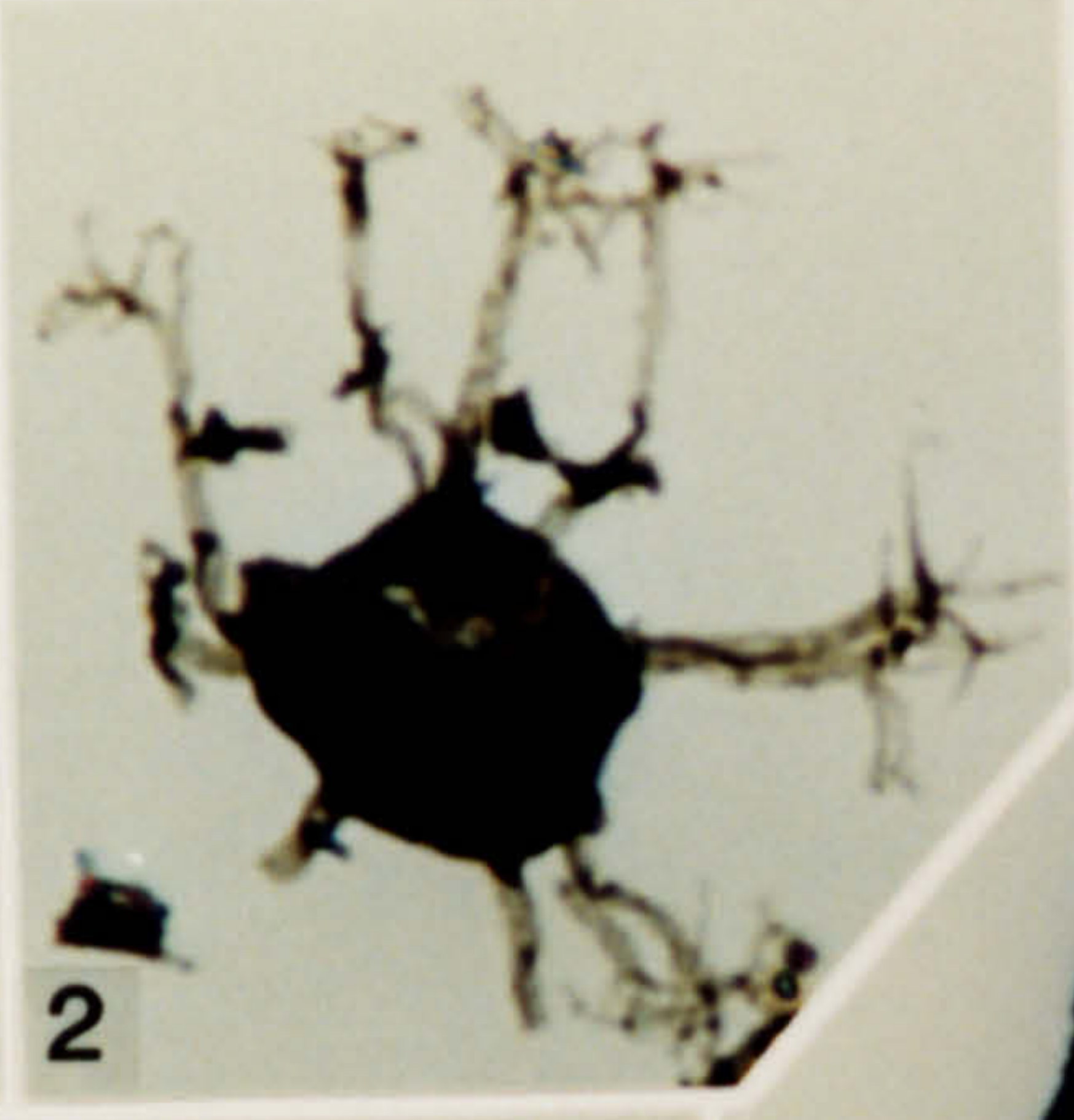
1. *Duvernaysphaera* sp. OD 3186.5, 2-1, D34\1.
2. *Florisphaeridium* sp. OD 3186.5, 2-1, E10\3.
3. *Gorgonisphaeridium telum*. Wicander & Playford 1985. OD 3185.5, 2-1, F25\3.
4. *Gorgonisphaeridium telum*. Wicander & Playford 1985. OD 3131, 1-1, J17\3.
5. *Multiplicisphaeridium raspum* (Cramer) Eisenack, Cramer & Diez 1973. OD 3130.65, 1-1, M23\4.
6. *Multiplicisphaeridium ramispinosum* Staplin 1961. OD 3130.65, 1-2, L27\3.
7. *Multiplicisphaeridium?* sp. 2. OD 3131, 2-1, H20\1.
8. *Multiplicisphaeridium ramispinosum* Staplin 1961. OD 3130.65, 1-1, E13\2.
9. *Multiplicisphaeridium ramispinosum* Staplin 1961. OD 3130.65, 1-1, E44\2.
10. *Multiplicisphaeridium?* sp. 2. OD 3131, 2-1, R36\2.
11. *Multiplicisphaeridium?* sp. 2. OD 3130.65, 1-1, E13\4.
12. *Multiplicisphaeridium?* sp. 2. OD 3130.65, 1-1, C21\1.



**Plate 166.**

**Acritarchs from the N'Kheila Formation, late Eifelian in age.**

1. *Ozotobrachion furcillatus* (Deunff) Playford 1977. OD 3130.65, 1-2, N50\3.
2. *Ozotobrachion furcillatus* (Deunff) Playford 1977. OD 3131, 2-1, J38\4.
3. *Onondagella asymmtrica* (Deunff ex Deunff) Cramer 1966. OD 3186.2, 1-1, V21\4.
4. *Navifusa* sp. OD 3186.2, 2-1, N35\2.
5. *Onondagella asymmtrica* (Deunff ex Deunff) Cramer 1966. OD 3186.2, 1-2, X13\2.
6. *Navifusa bacilla* (Deunff) Playford 1977. OD 3186.2, 1-2, N18\2.
7. *Navifusa bacilla* (Deunff) Playford 1977. OD 3130.65, 1-2, K48\4.
8. *Onondagella asymmtrica* (Deunff ex Deunff) Cramer 1966. OD 3186.5, 2-1, R26\1.

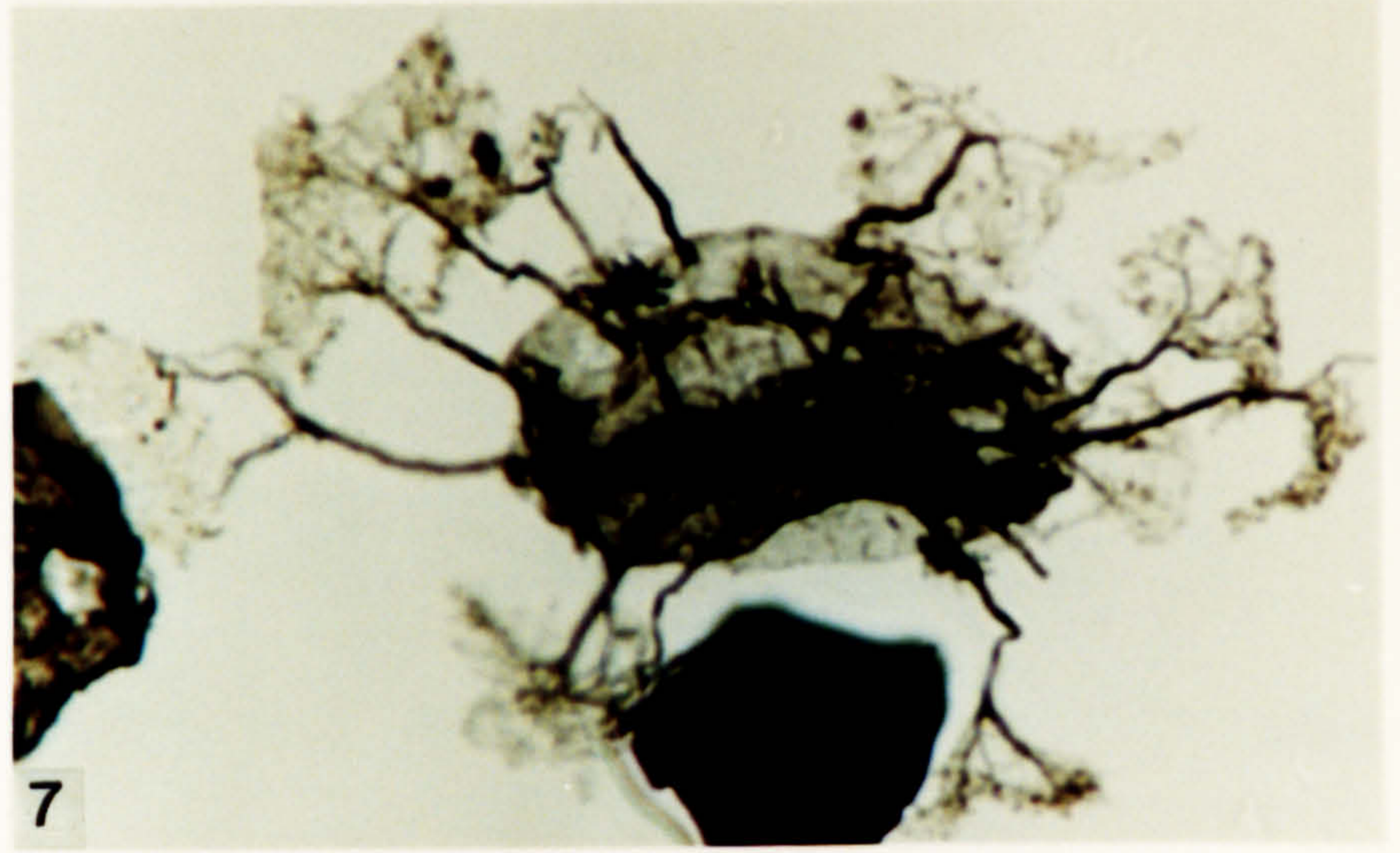
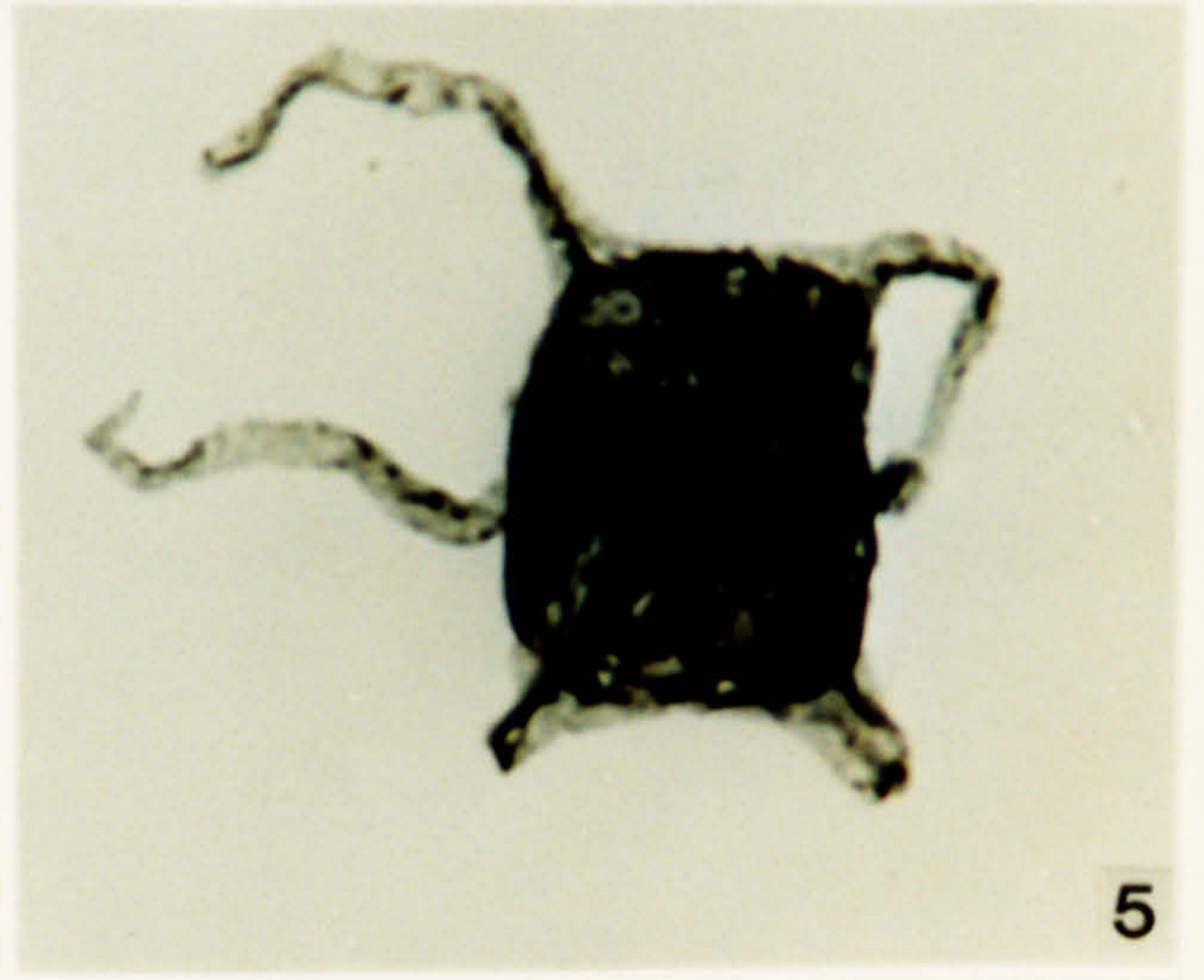
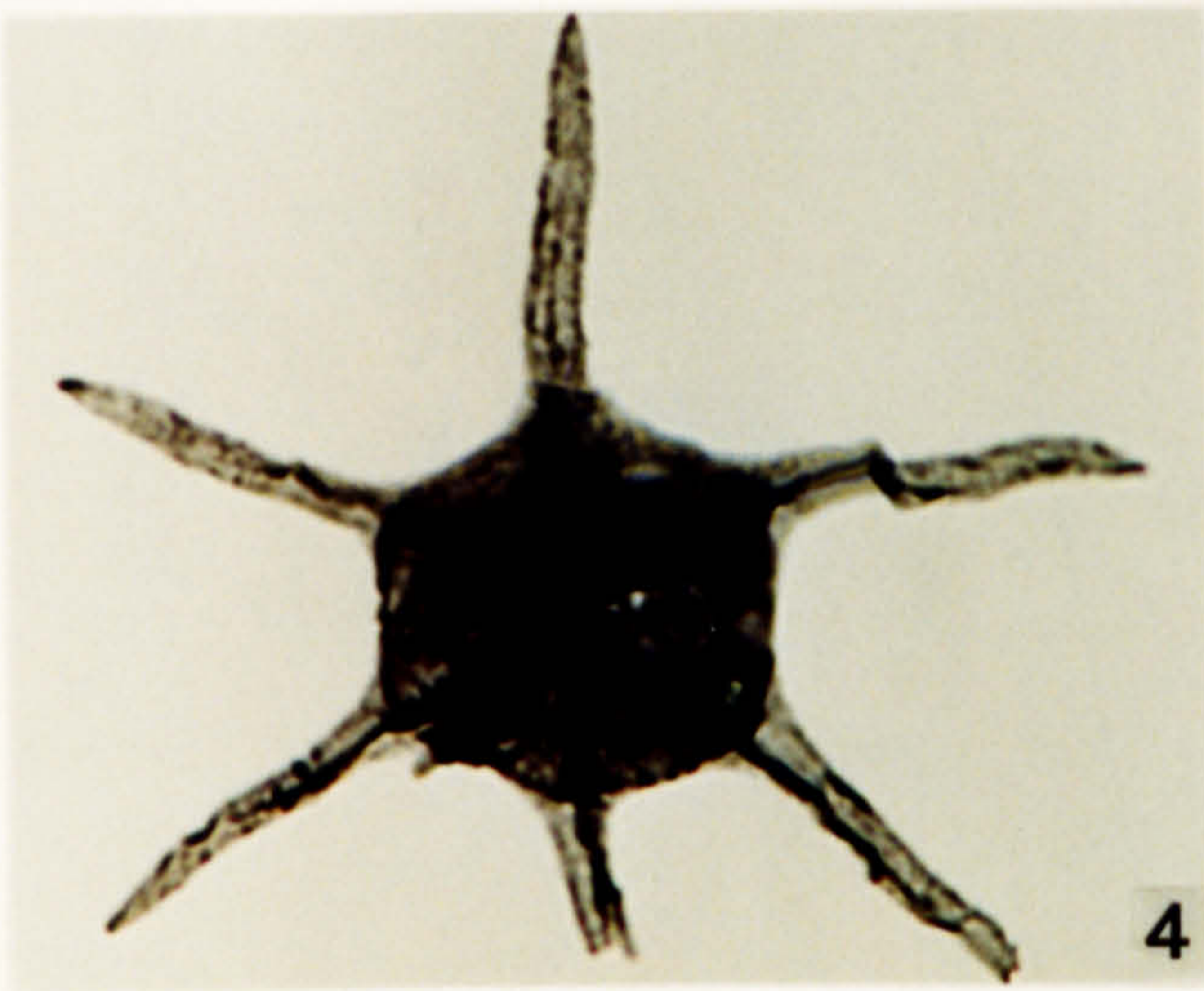
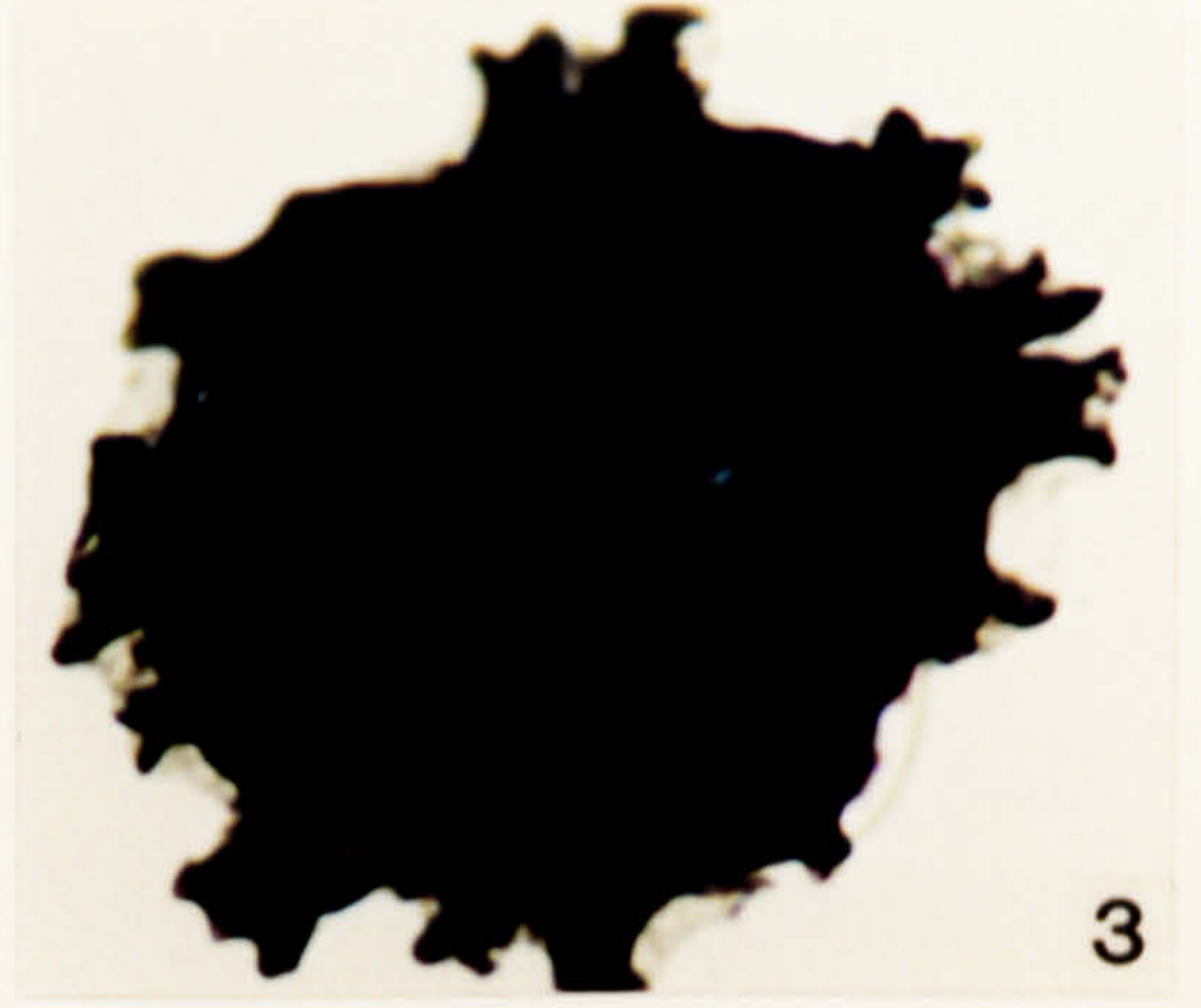
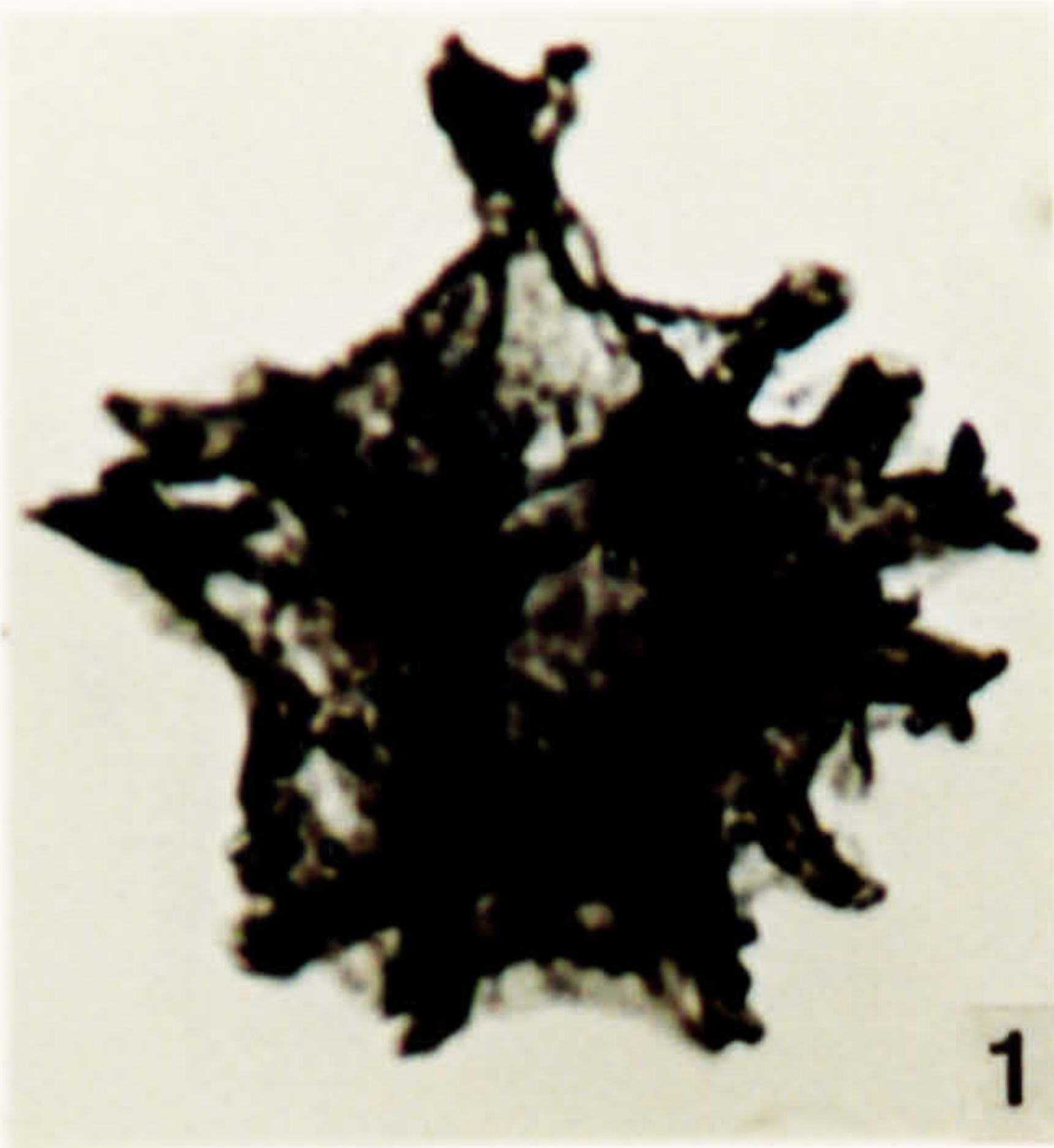




**Plate 167.**

Acritarchs from the N'Kheila Formation, late Eifelian in age.

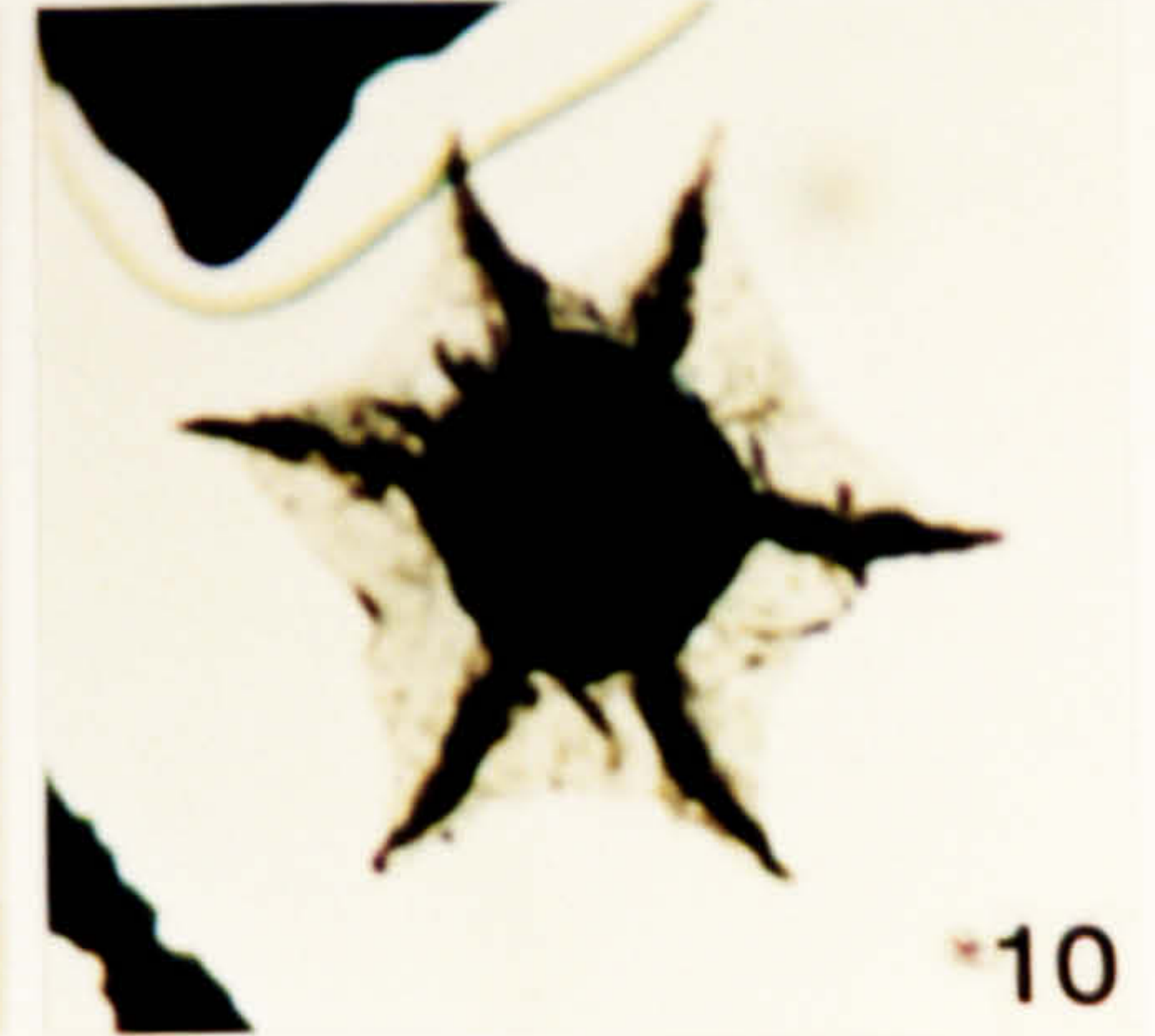
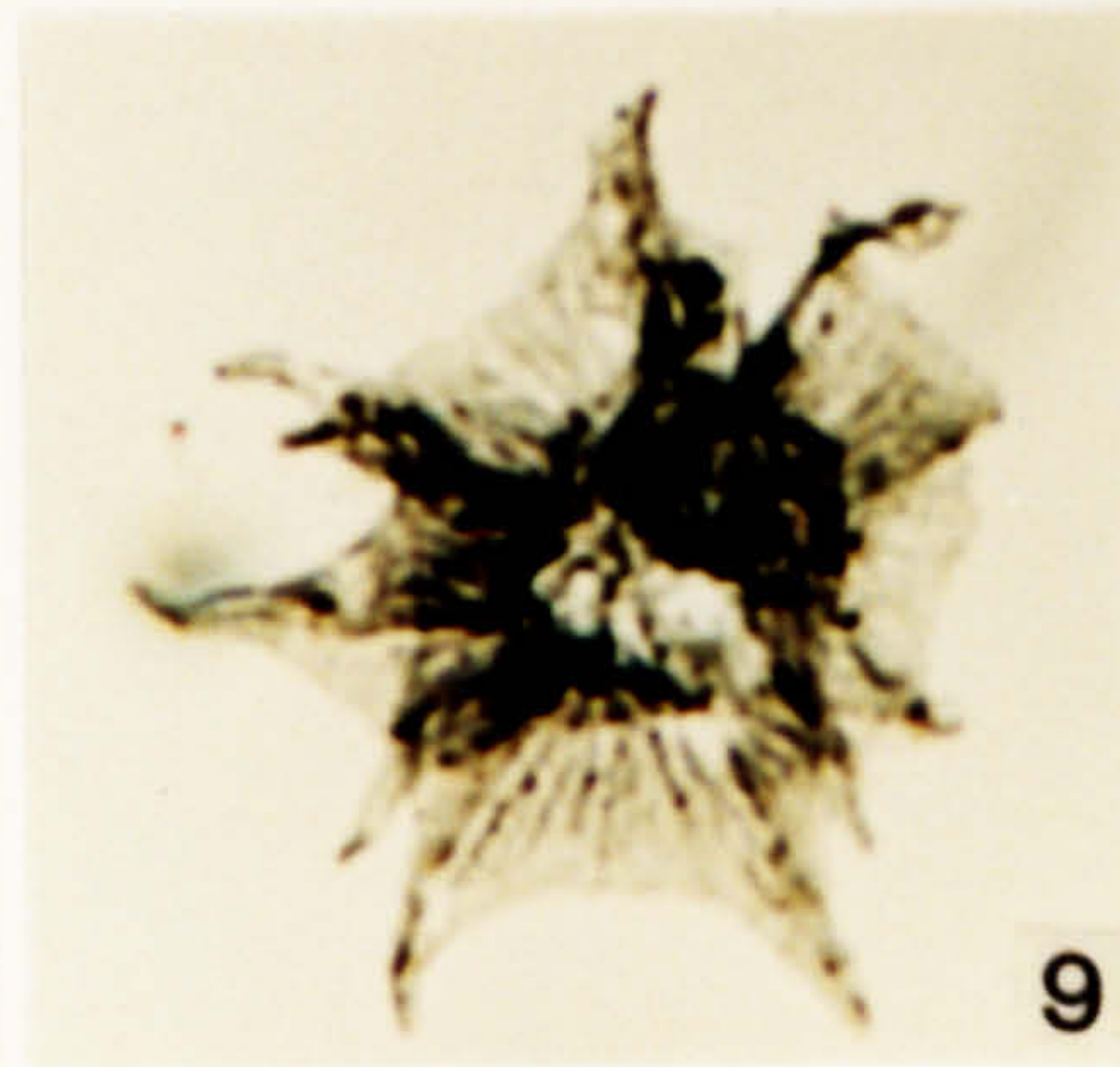
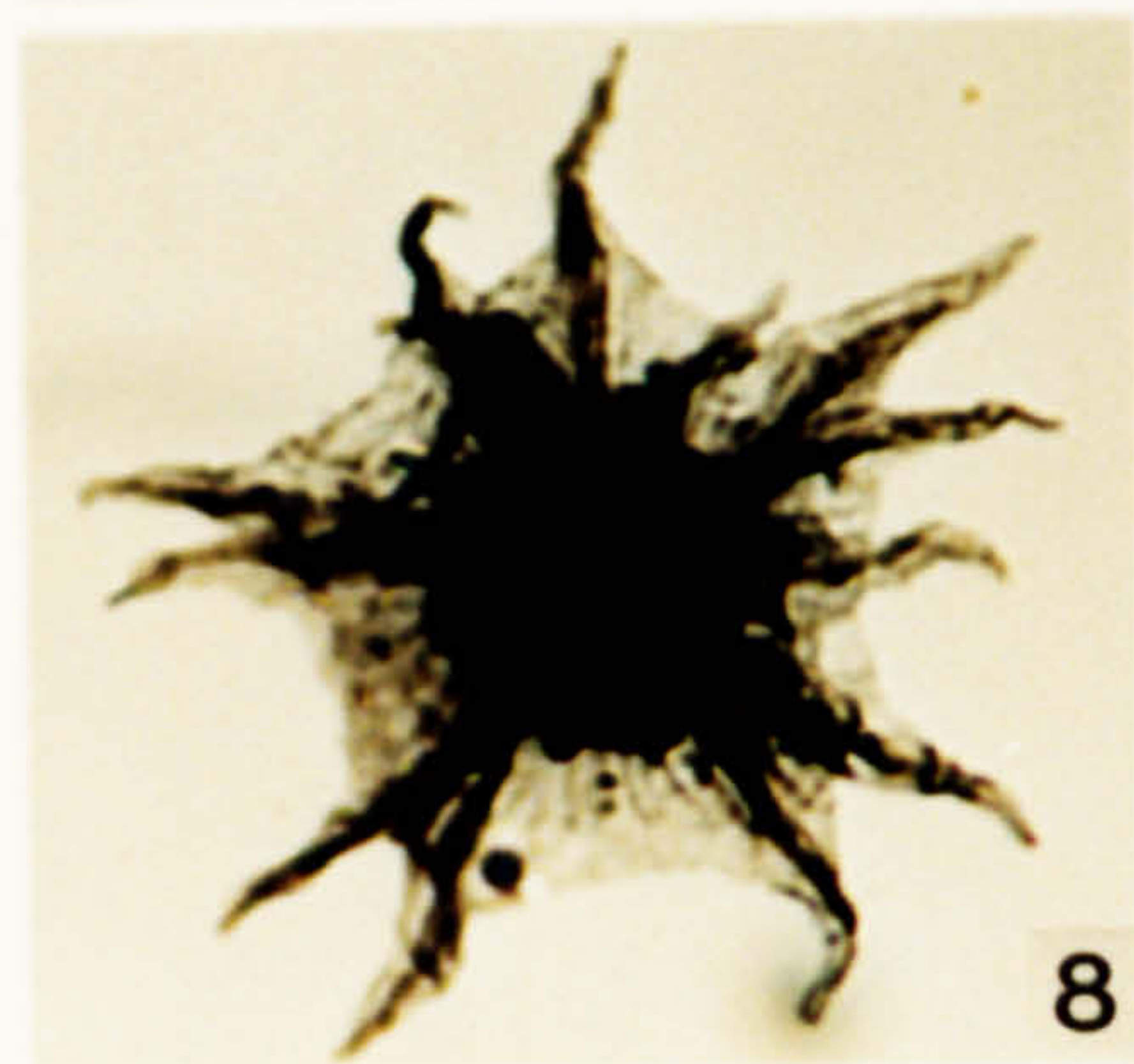
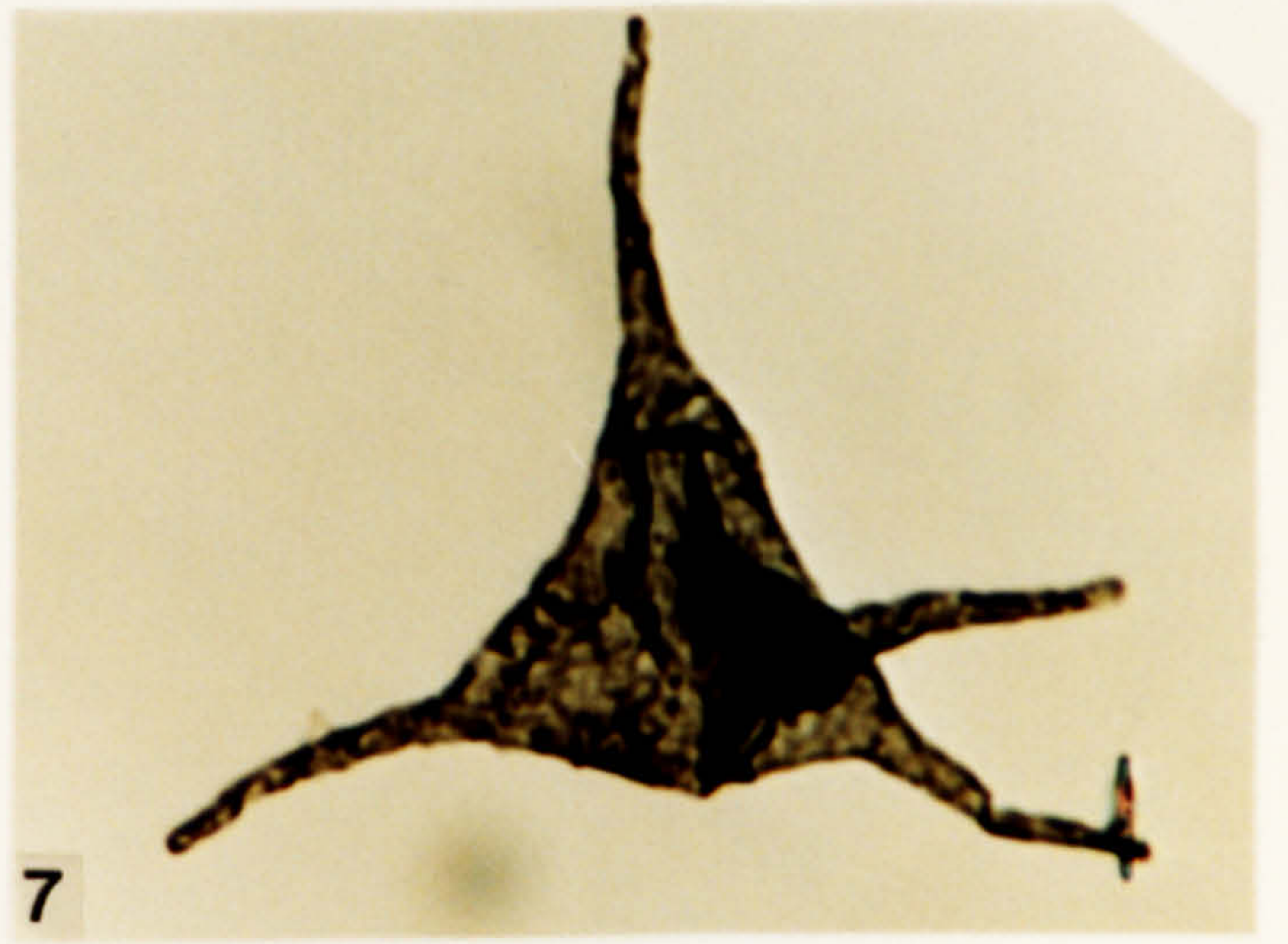
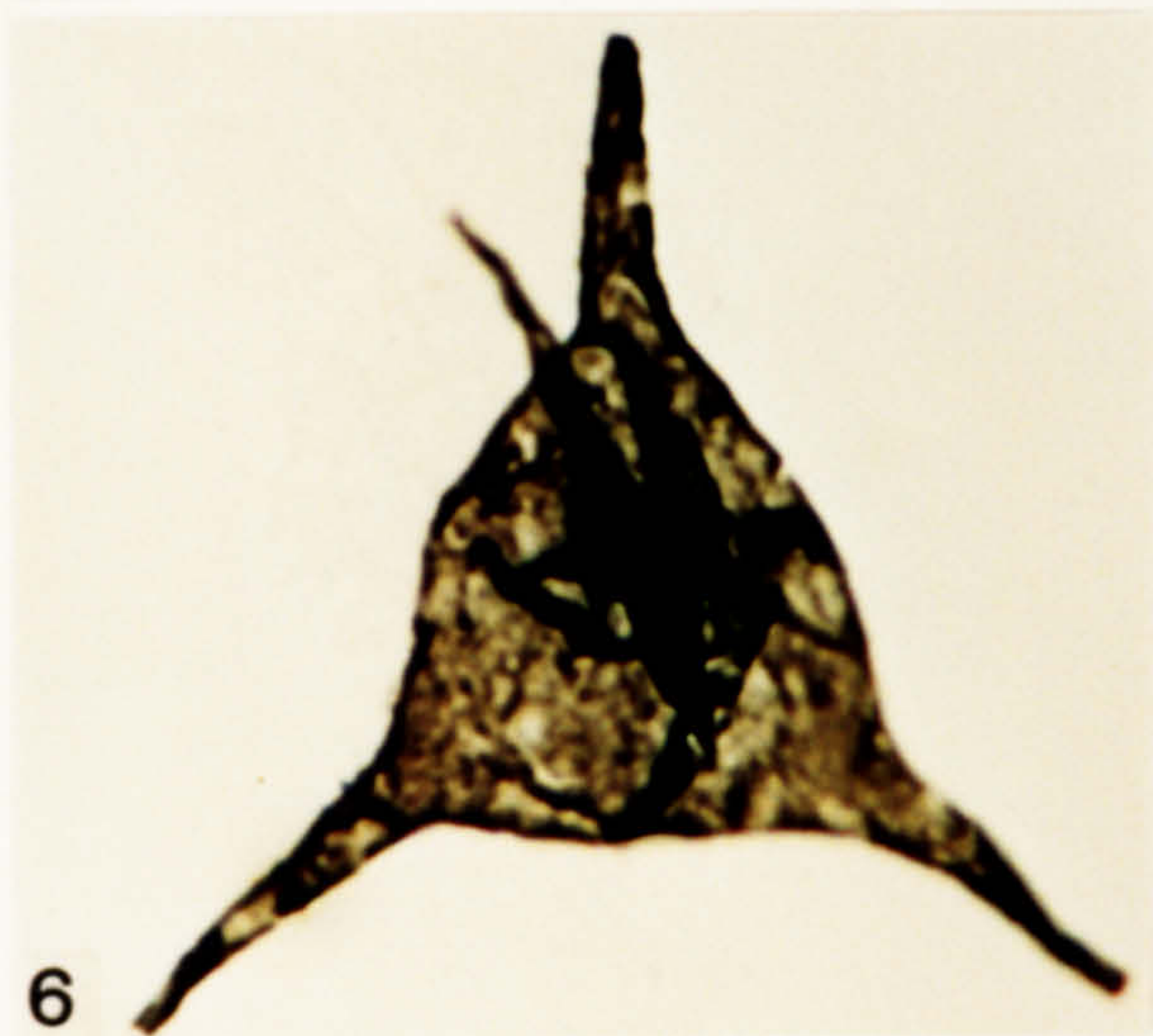
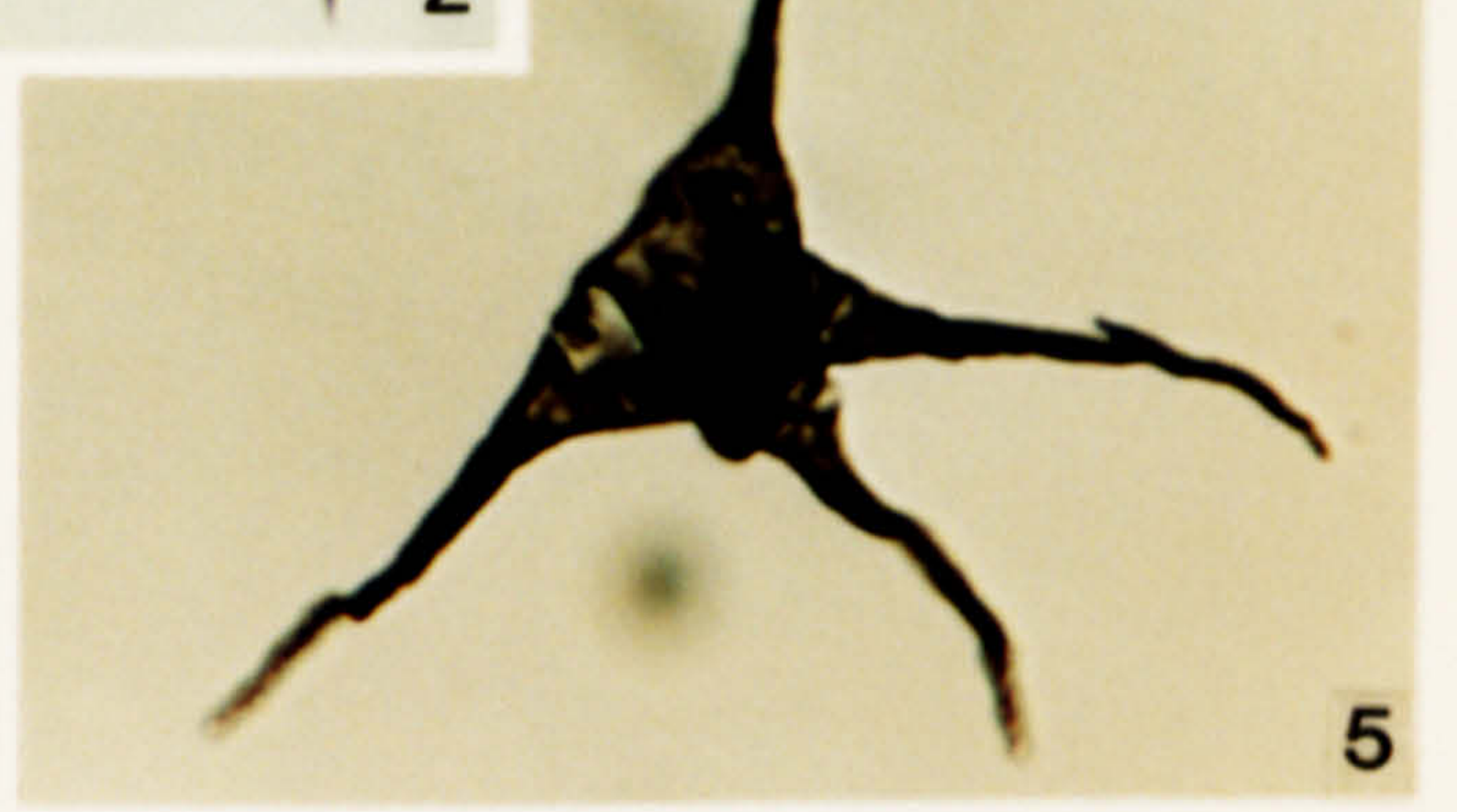
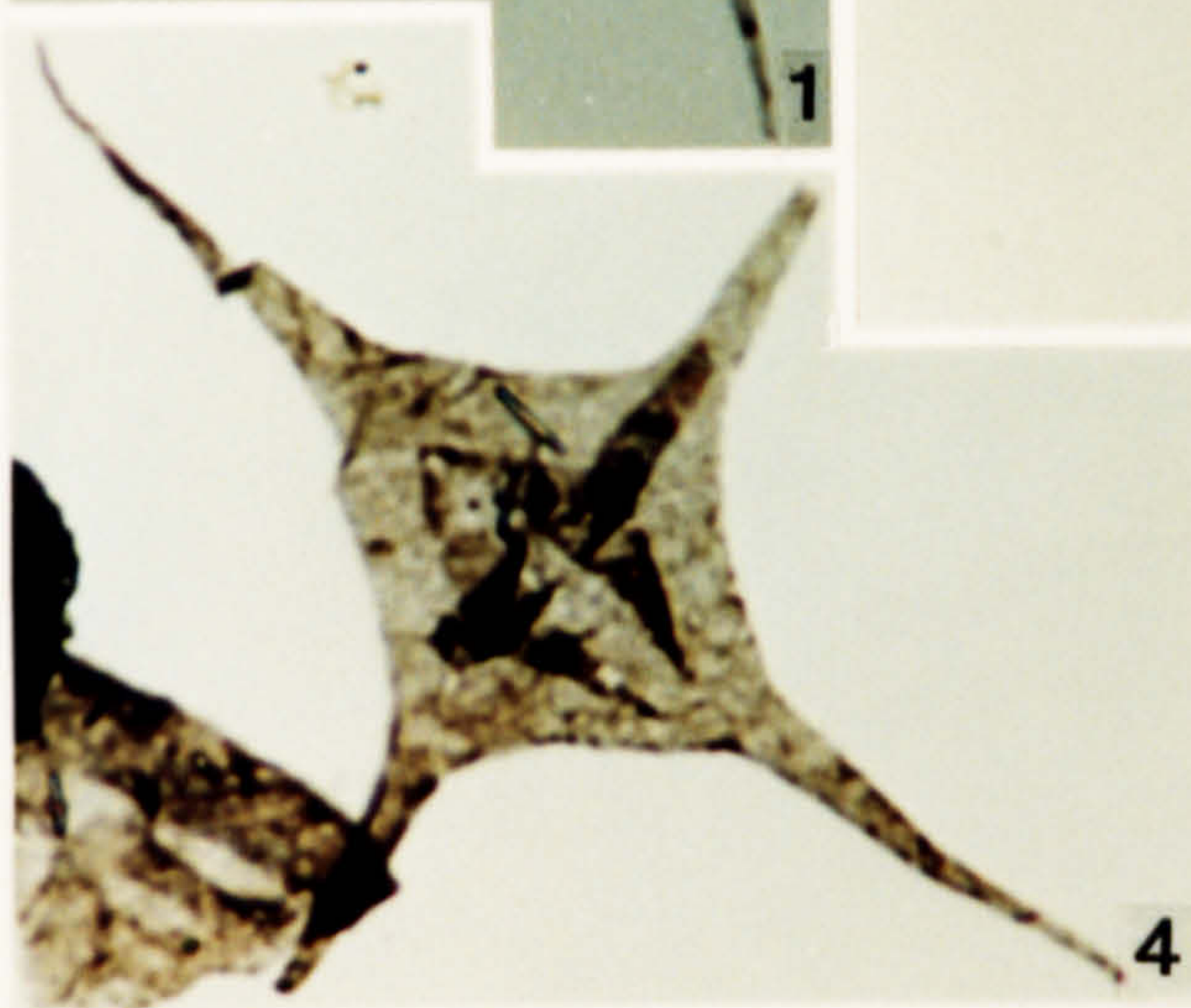
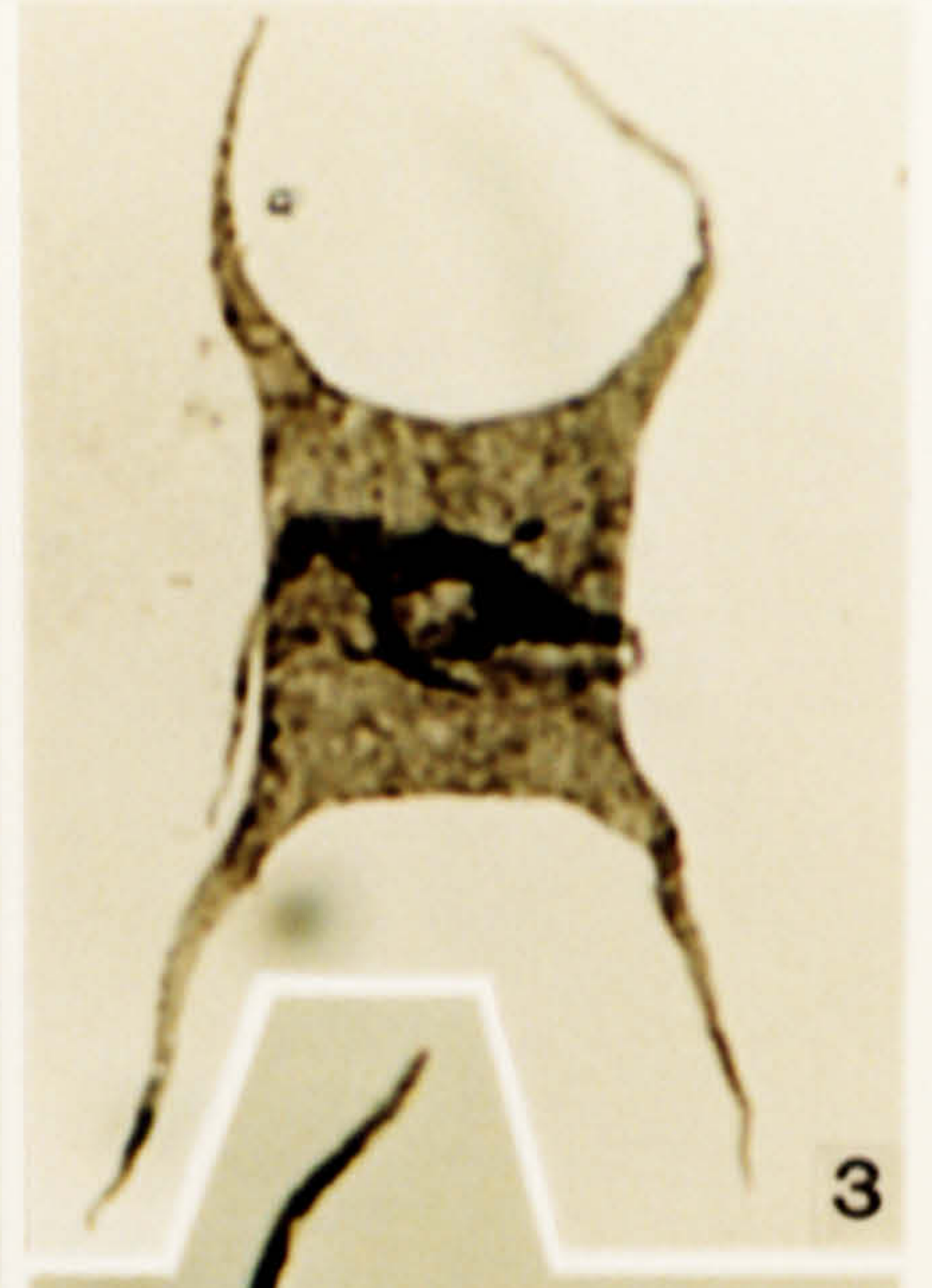
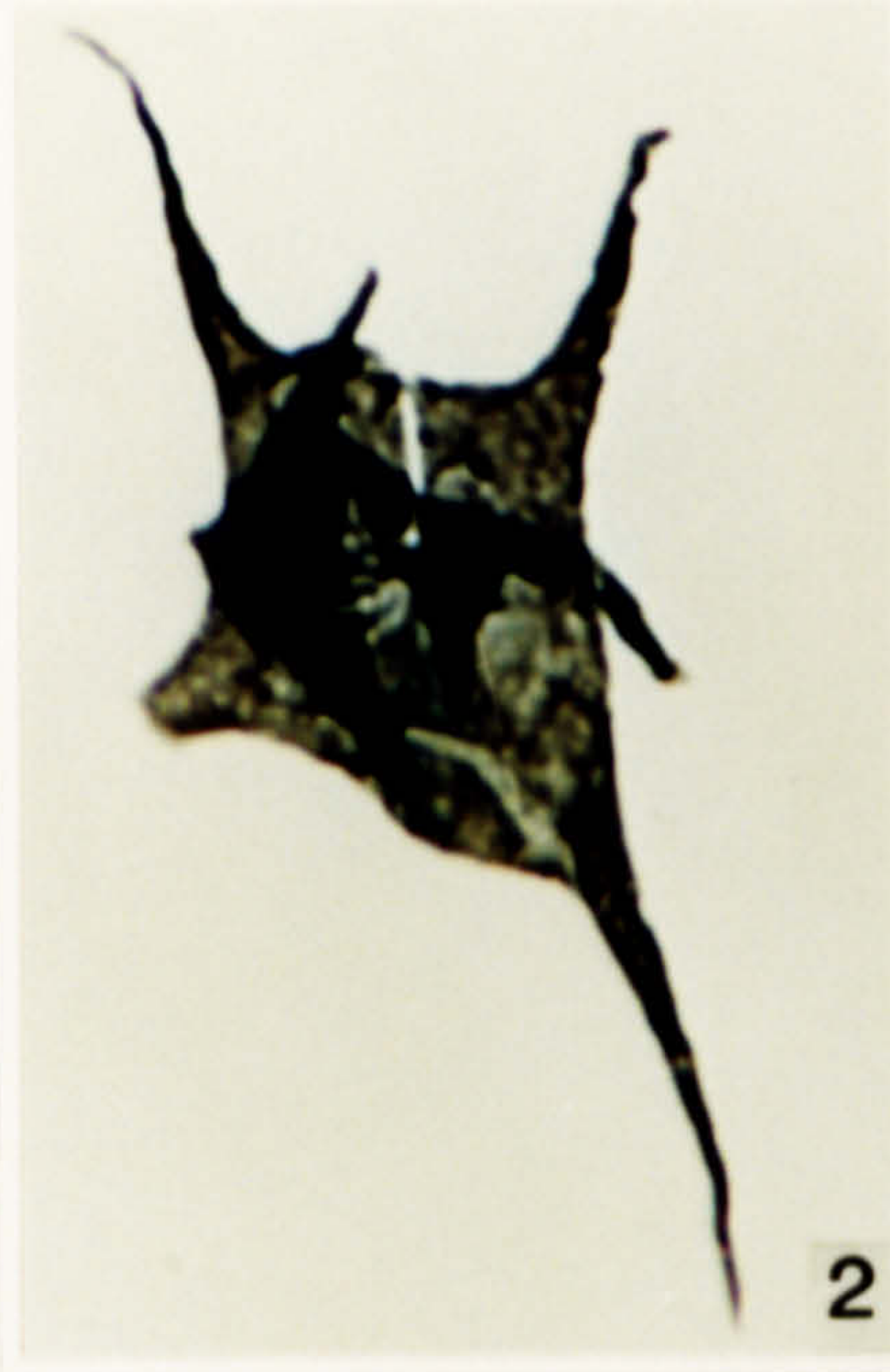
1. *Polyedrixium evolutum* Deunff 1955. OD 3131, 1-1, V12\4.
2. *Polyedrixium evolutum* Deunff 1955. OD 3130.65, 1-1, L41\2.
3. *Polyedrixium evolutum* Deunff 1955. OD 3130.65, 1-1, C20\3.
4. *Polyedrixium pharoane* Deunff 1954 ex Deunff 1961. OD 3131, 1-2, M25\4.
5. *Polyedrixium pharoane* Deunff 1954 ex Deunff 1961. OD 3186.5, 2-1, Y15\4.
6. *Stellinium octoaster* (Staplin) Jardine *et al.* 1972. OD 3131, 2-1, P20\4.
7. cf. *Tunisphaeridium* sp. OD 3131, 2-2, S10\3.
8. *Stellinium octoaster* (Staplin) Jardine *et al.* 1972. OD 3186.5, 2-1, N18\1.
9. cf. *Tunisphaeridium* sp. OD 3131, 1-1, J9\4.



**Plate 168.**

**Acritarchs and prasinophcean algae from the N'Kheila Formation, late Eifelian in age.**

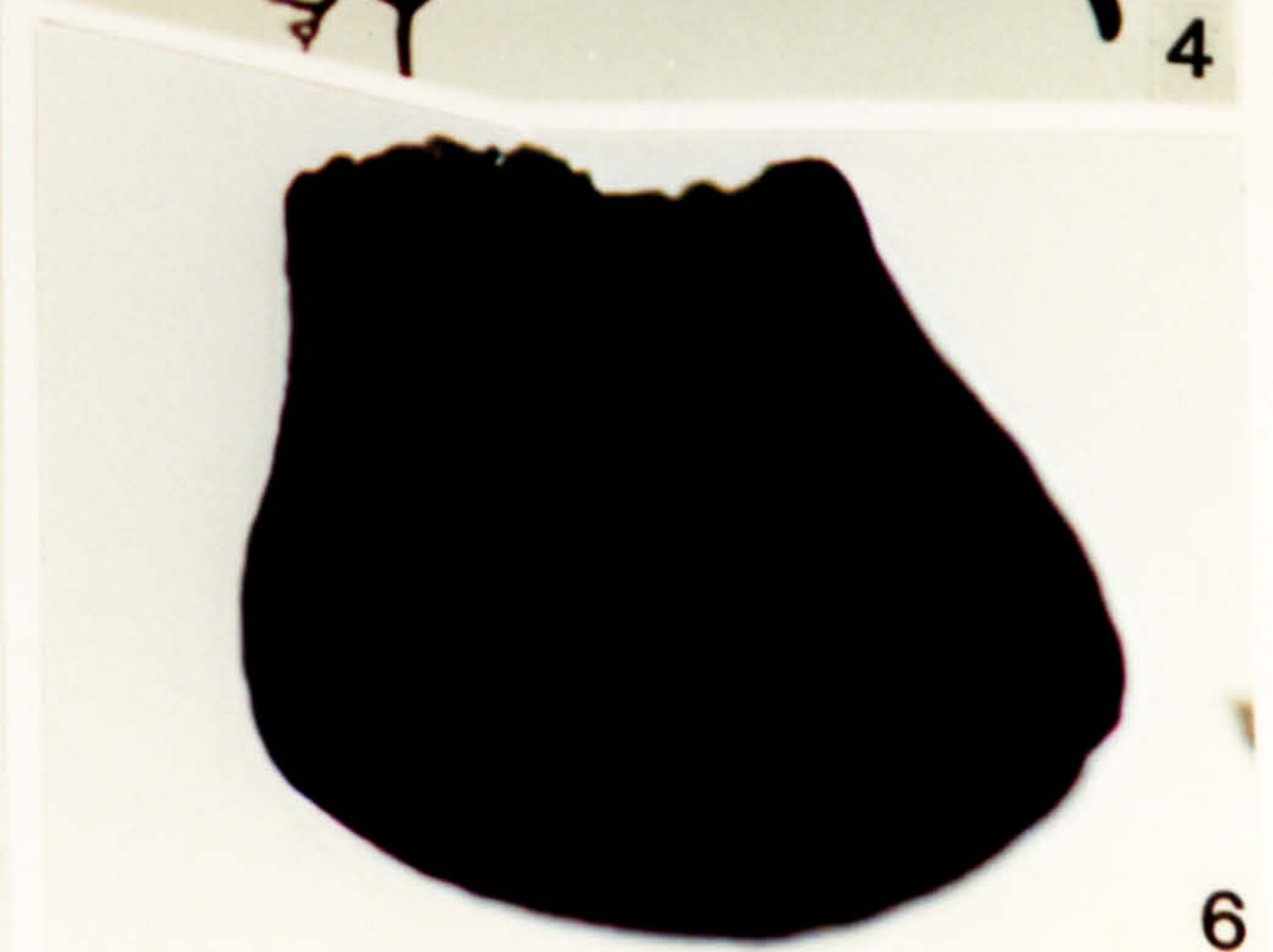
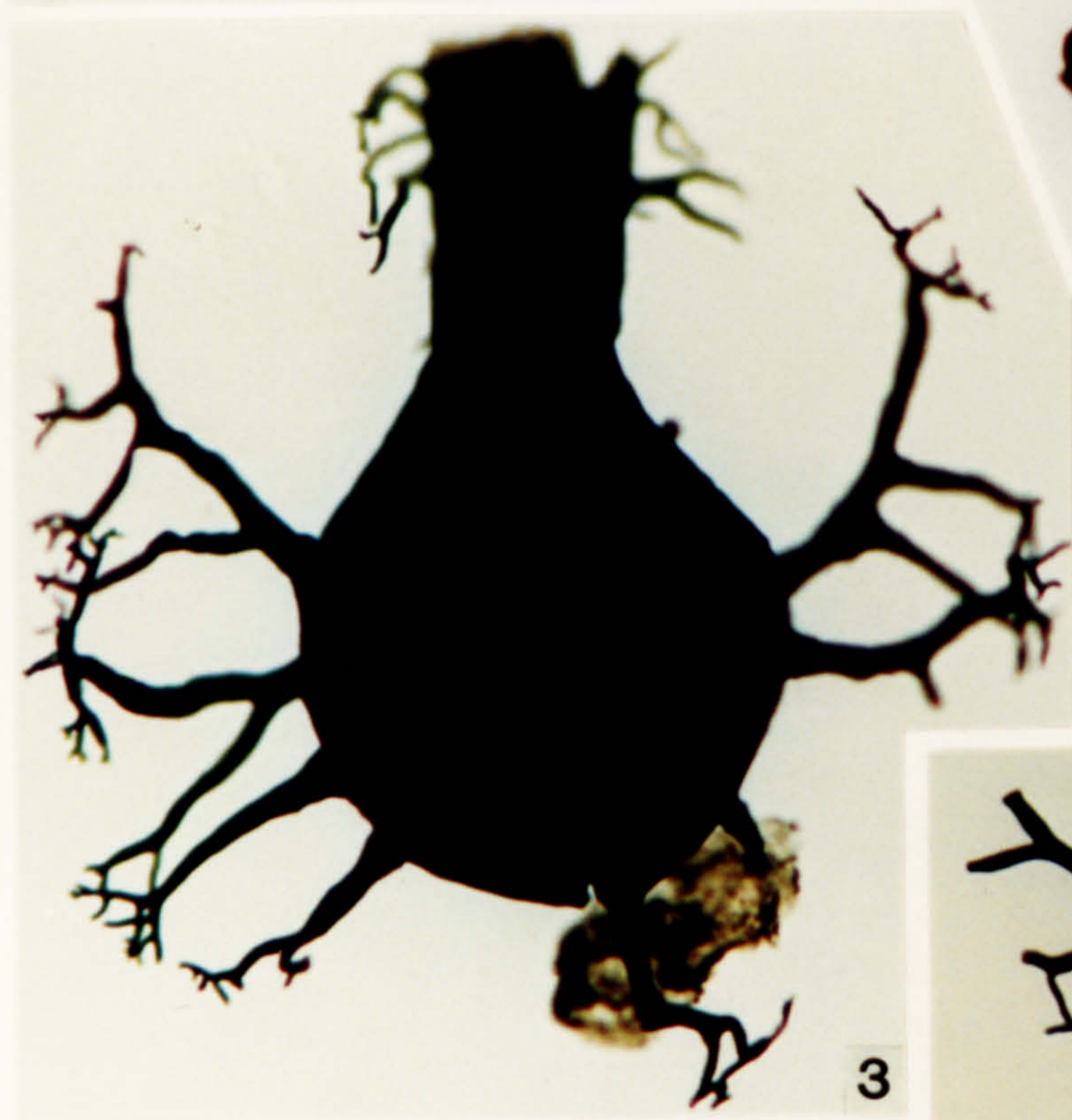
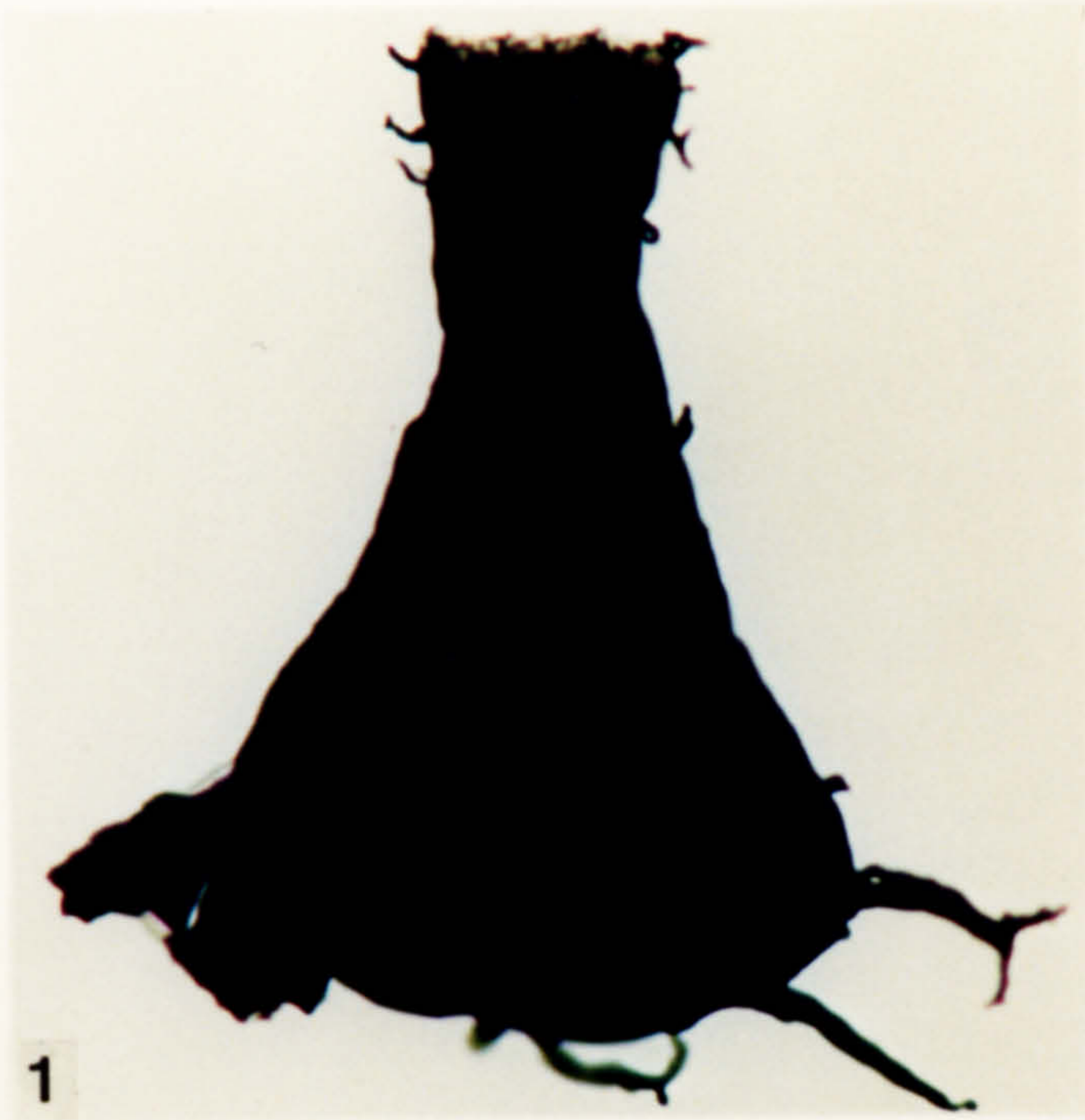
1. *Veryhachium cf. arcarium*. Wicander & Loeblich 1977. OD 3130.65, 1-2, N50\3.
2. *Veryhachium cf. arcarium*. Wicander & Loeblich 1977. OD 3186.5, 2-1, F21\3.
3. *Veryhachium cf. arcarium*. Wicander & Loeblich 1977. OD 3186.5, 1-1, N23\4.
4. *Veryhachium cf. arcarium*. Wicander & Loeblich 1977. OD 3131, 2-1, U14\4.
5. *Veryhachium europaeum* Stockmans & Williere 1960. OD 3130.65, 1-1, C20\2.
6. *Veryhachium cf. cymosum* Wicander & Loeblich 1977. OD 3130.65, 1-1, J39\4.
7. *Veryhachium cf. cymosum* Wicander & Loeblich 1977. OD 3130.65, 1-1, E13\2.
8. *Cymatiosphaera carminae* Cramer 1964. OD 3130.65, 1-1, E16\4.
9. *Cymatiosphaera carminae* Cramer 1964. OD 3131, 1-2, 8\1.
10. *Cymatiosphaera peligrosa* Cramer 1964. OD 3130.65, 1-1, G42\1.



**Plate 169.**

Chitinozoa from the N'Kheila Formation, late Eifelian in age.

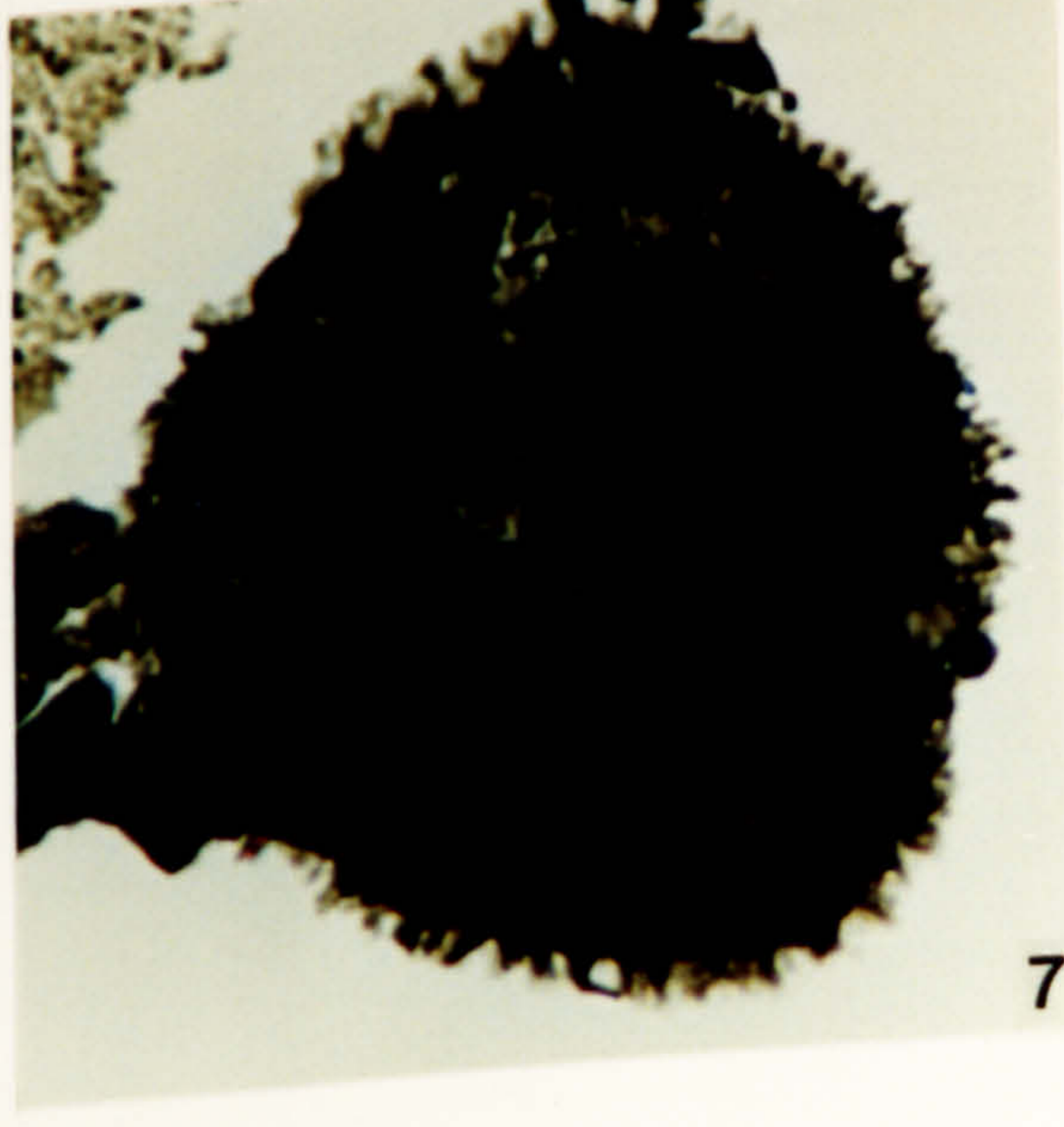
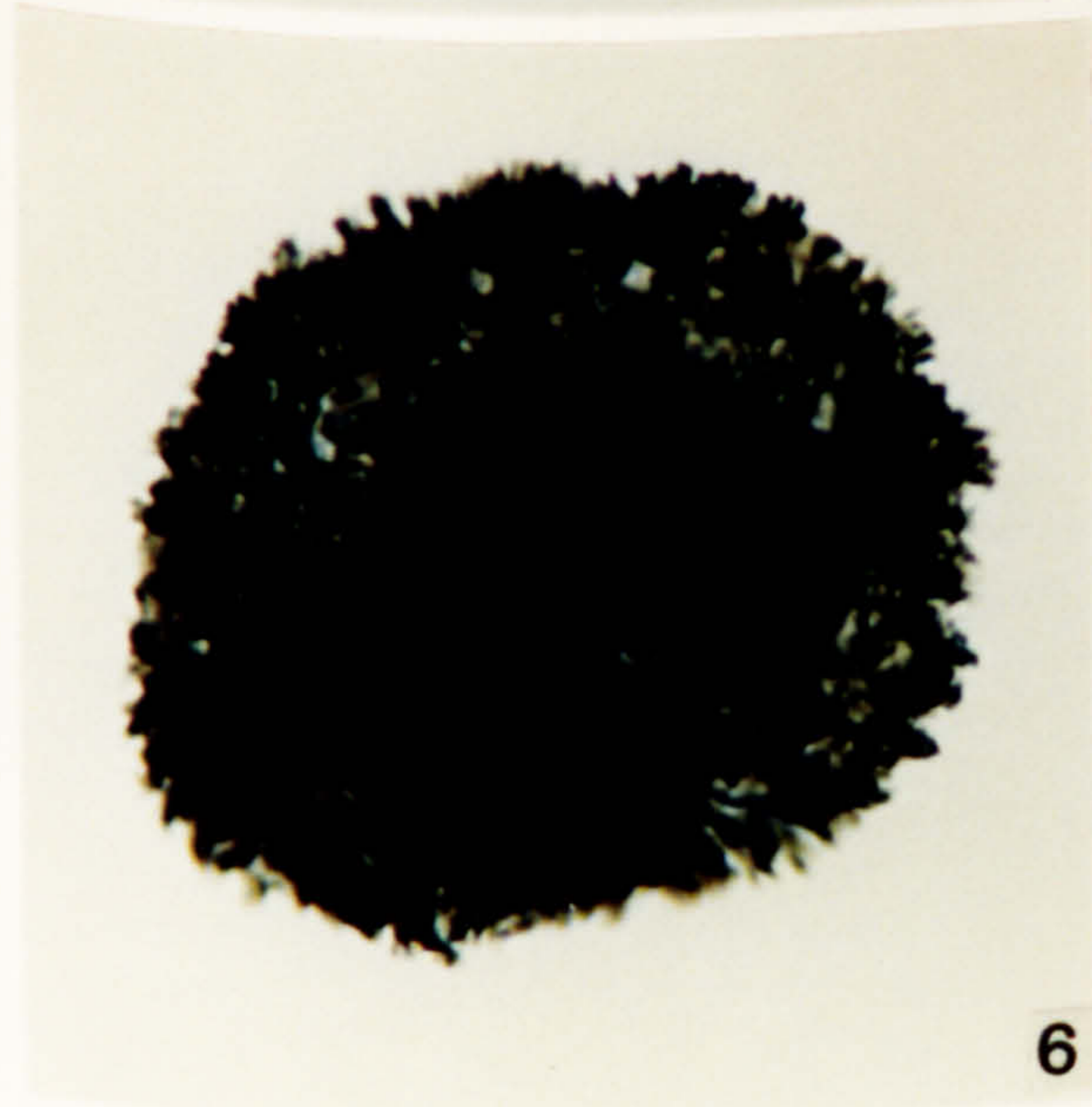
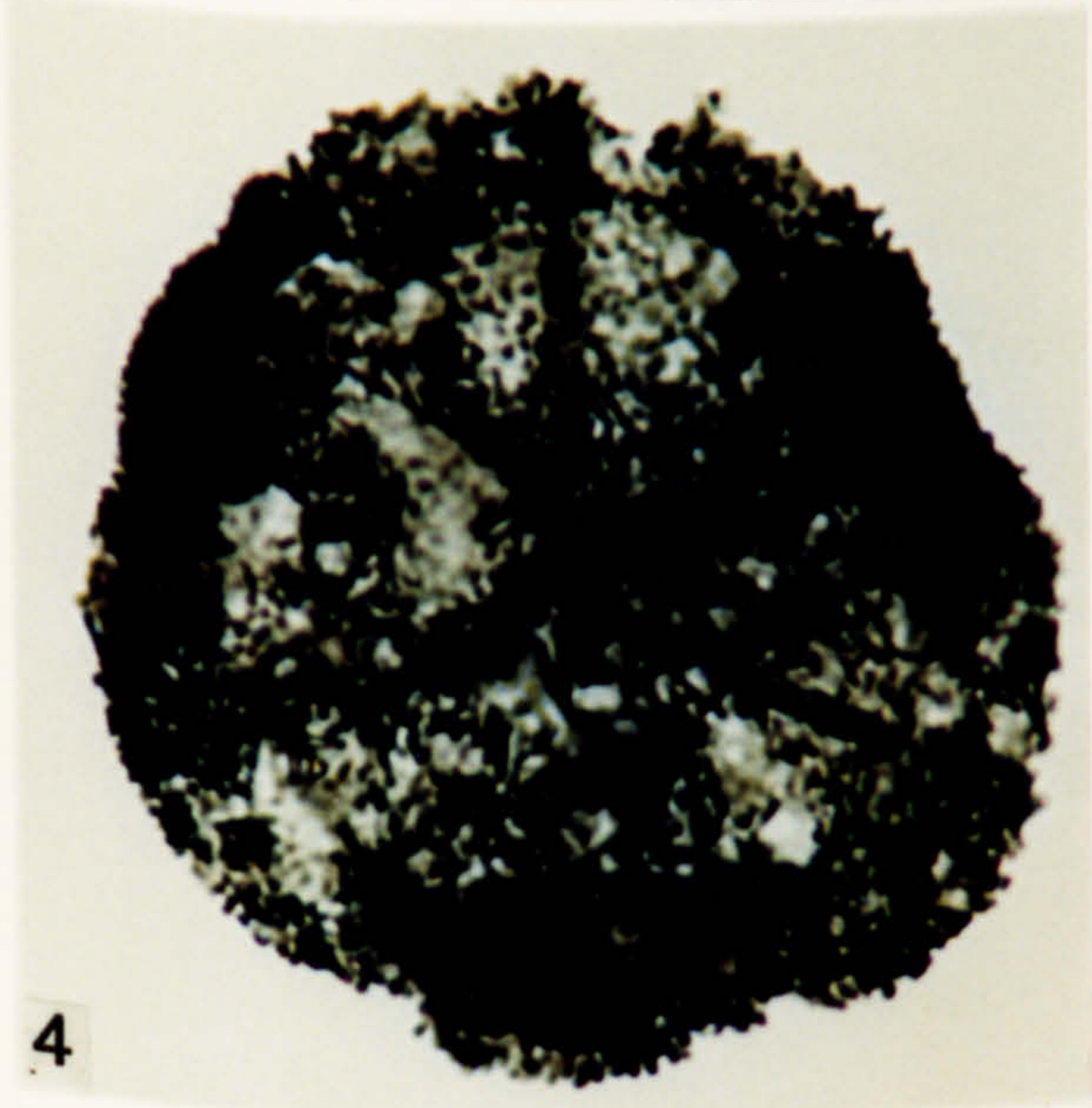
1. *Ancyrochitina ancyrea* var. A. OD 3186.2, 1-1, N20\1.
2. *Fungochitina pistilliformis?* (Eisenack) Taugourdeau 1966. OD 3186.5, S-1, K14\2.
3. *Angochitina philippoti* Complex. OD 3131, S-3, K12\3.
4. *Angochitina philippoti* Complex. OD 3131, S-1, W8\2.
5. *Angochitina milanensis* Collinson & Scott 1958. OD 3186.2, 1-1, L22\1.
6. *Bursachitina bursa*. (Taugourdeau & Jekhowsky) Taugourdeau 1966. OD 3186.5, 2-1, M20\2.



**Plate 170.**

Spores from the N'Kheila Formation, late Eifelian in age.

1. *Retusotriletes* sp. OD 3130.65, 1-1, G51\3.
2. *Diatomozonotriletes oligodontus/franklimi*. OD 3186.5, 2-1, L21\2.
3. Spore indet. OD 3131, 2-2, C18\4.
4. Spore indet. OD 3186.2, 1-1, R21\3.
5. Spore indet. OD 3186.5, 2-1, H17\3.
6. Spore indet. OD 3186.2, 1-1, Q22\3.
7. Spore indet. OD 3131, 2-2, K32\2

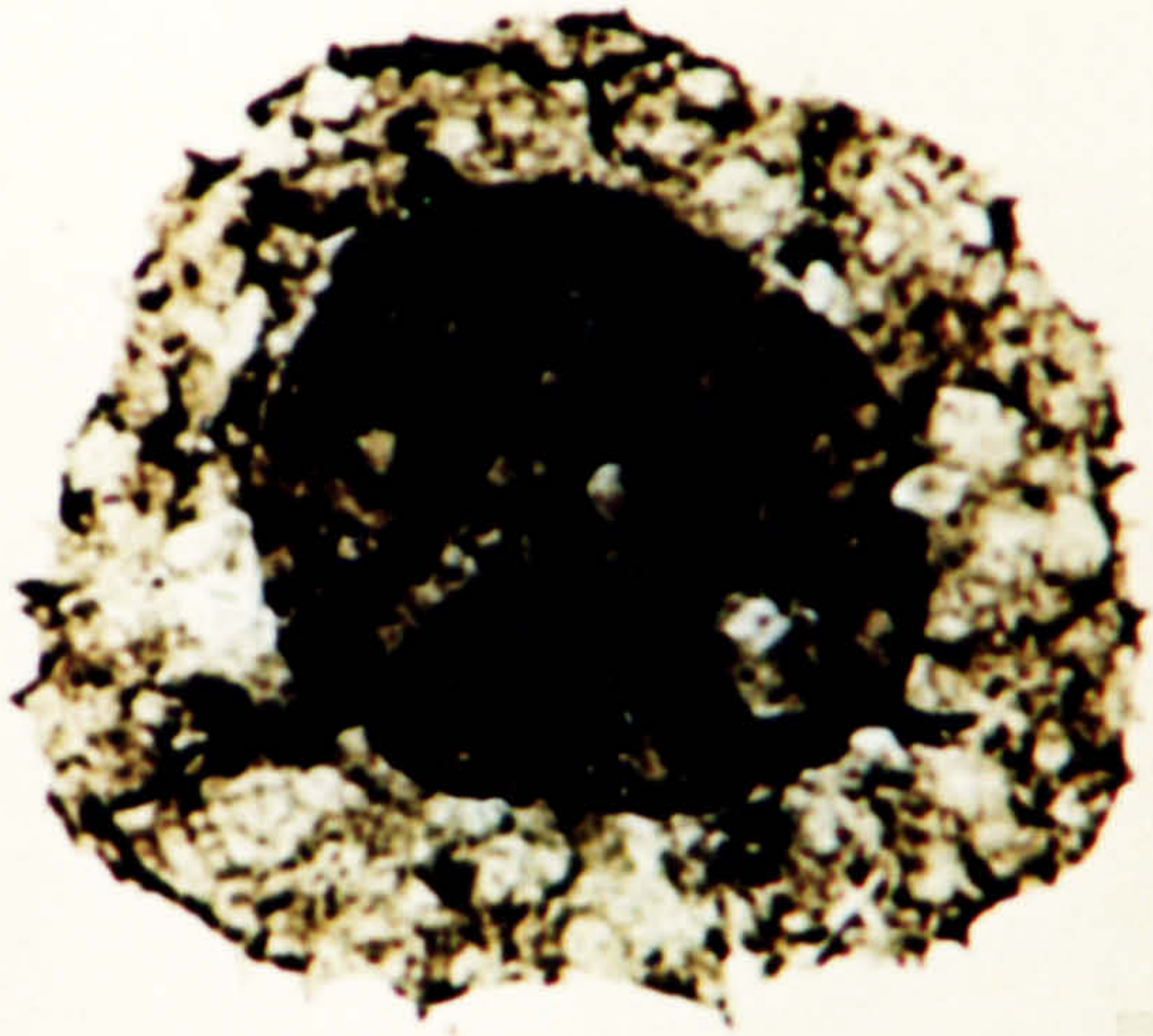




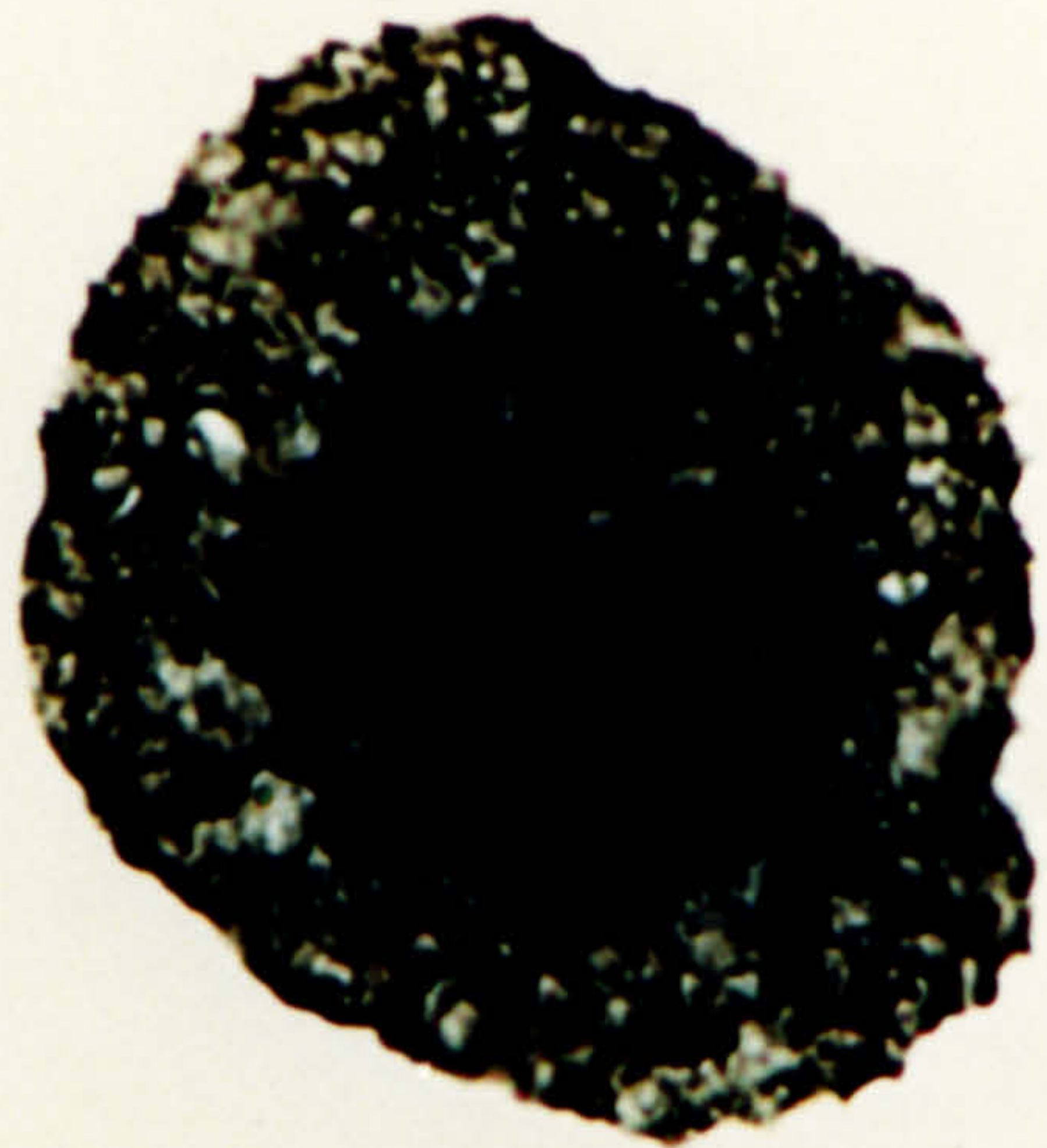
**Plate 171.**

Spores from the N'Kheila Formation, late Eifelian in age.

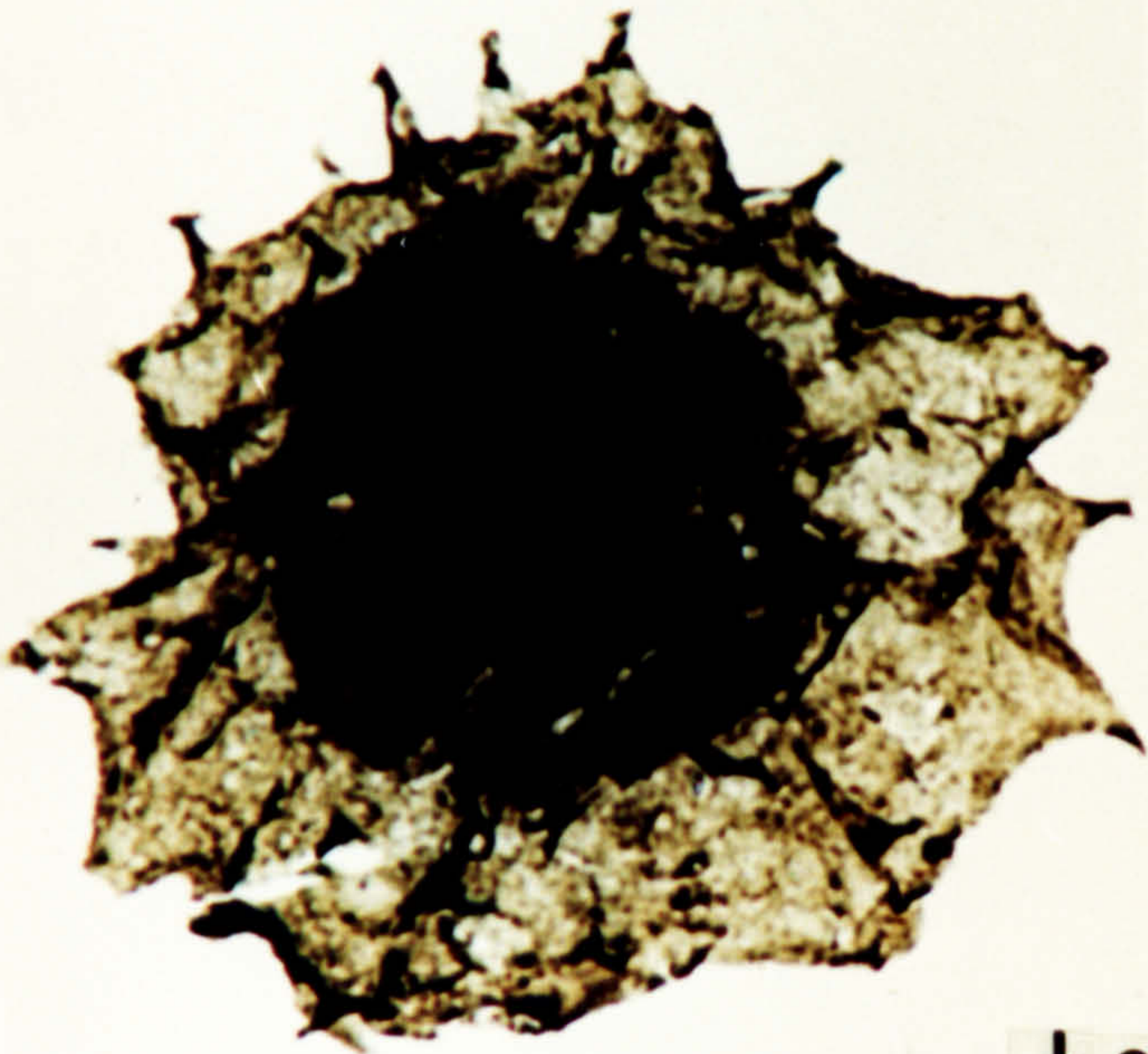
1. *Grandispora* sp. OD 3186.5, S-1, U29\1, X25.
2. *Grandispora* sp. OD 3186.5, 2-1, C22\1, X25.
3. *Ancyrospora nettersheimensis* Riegel 1973. OD 3131, S-1, Q20\1, X25.
4. *Ancyrospora nettersheimensis* Riegel 1973. OD 3186.5, S-1, V14\2, X25.
5. *Ancyrospora nettersheimensis* Riegel 1973. OD 3186.5, S-2, P39\1, X25.
6. *Ancyrospora nettersheimensis* Riegel 1973. OD 3131, 1-2, R11\2, X25.
7. *Ancyrospora nettersheimensis* Riegel 1973. OD 3186.5, S-1, L22\4, X25.



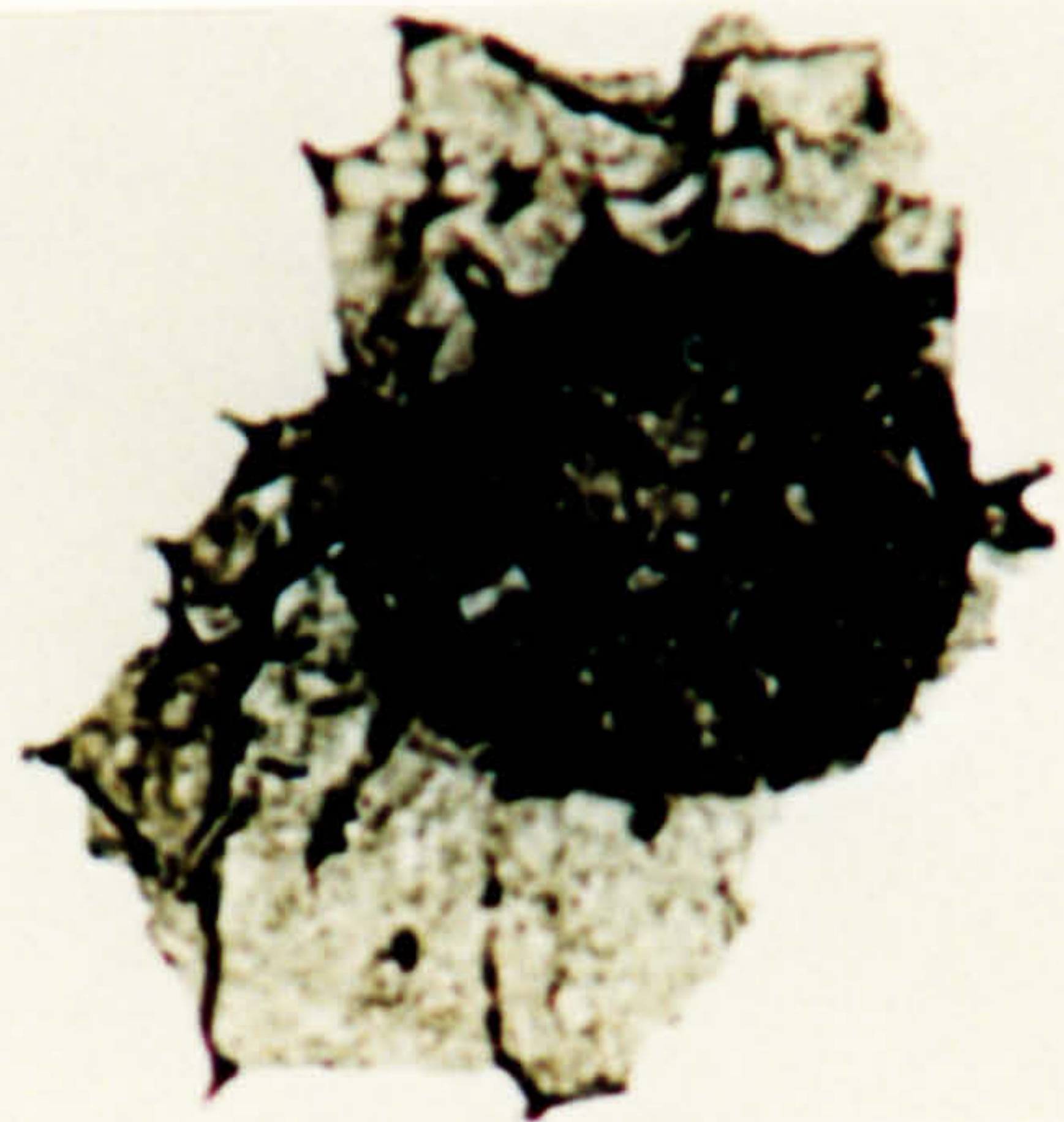
↓ 1



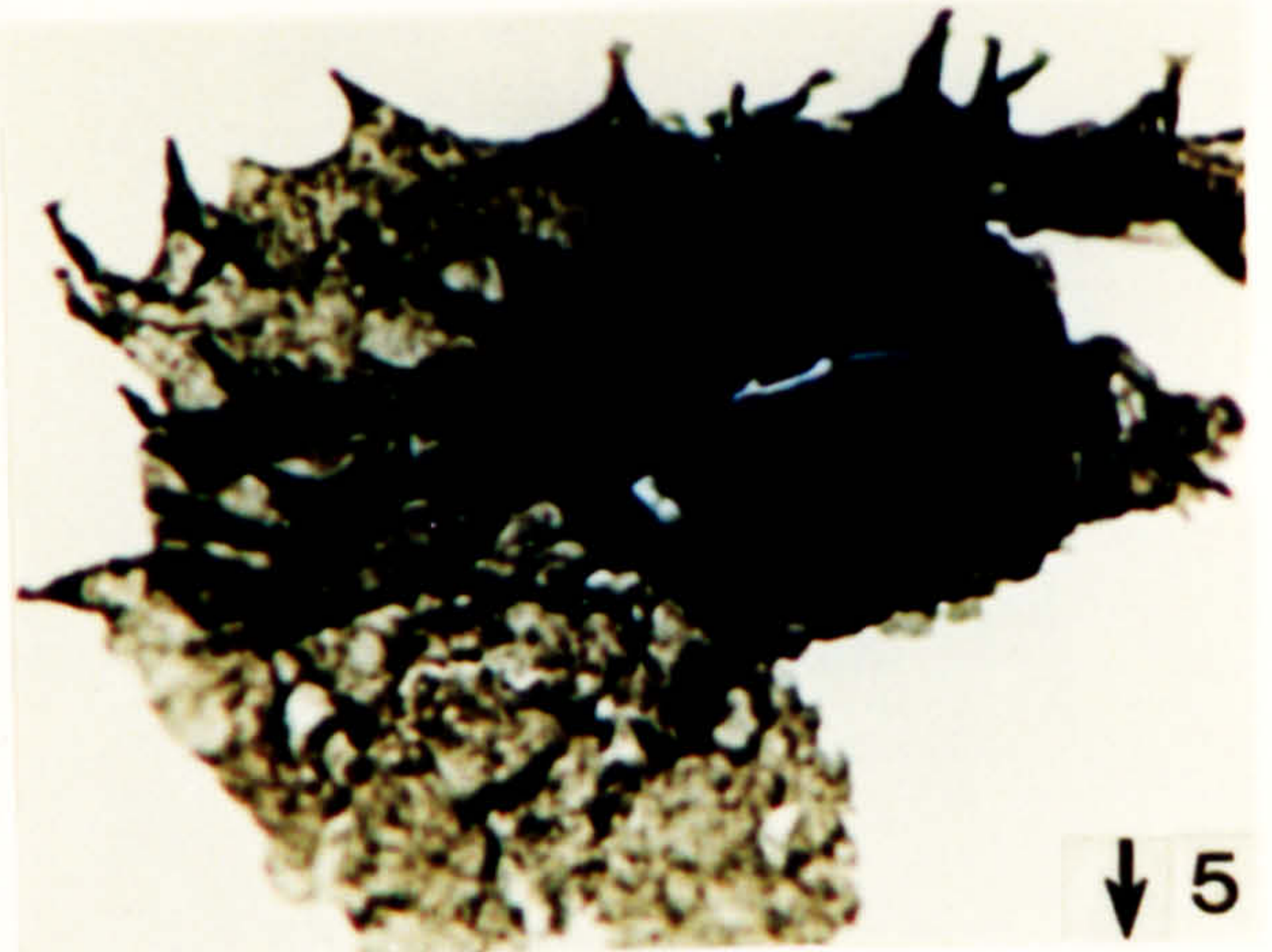
↓ 2



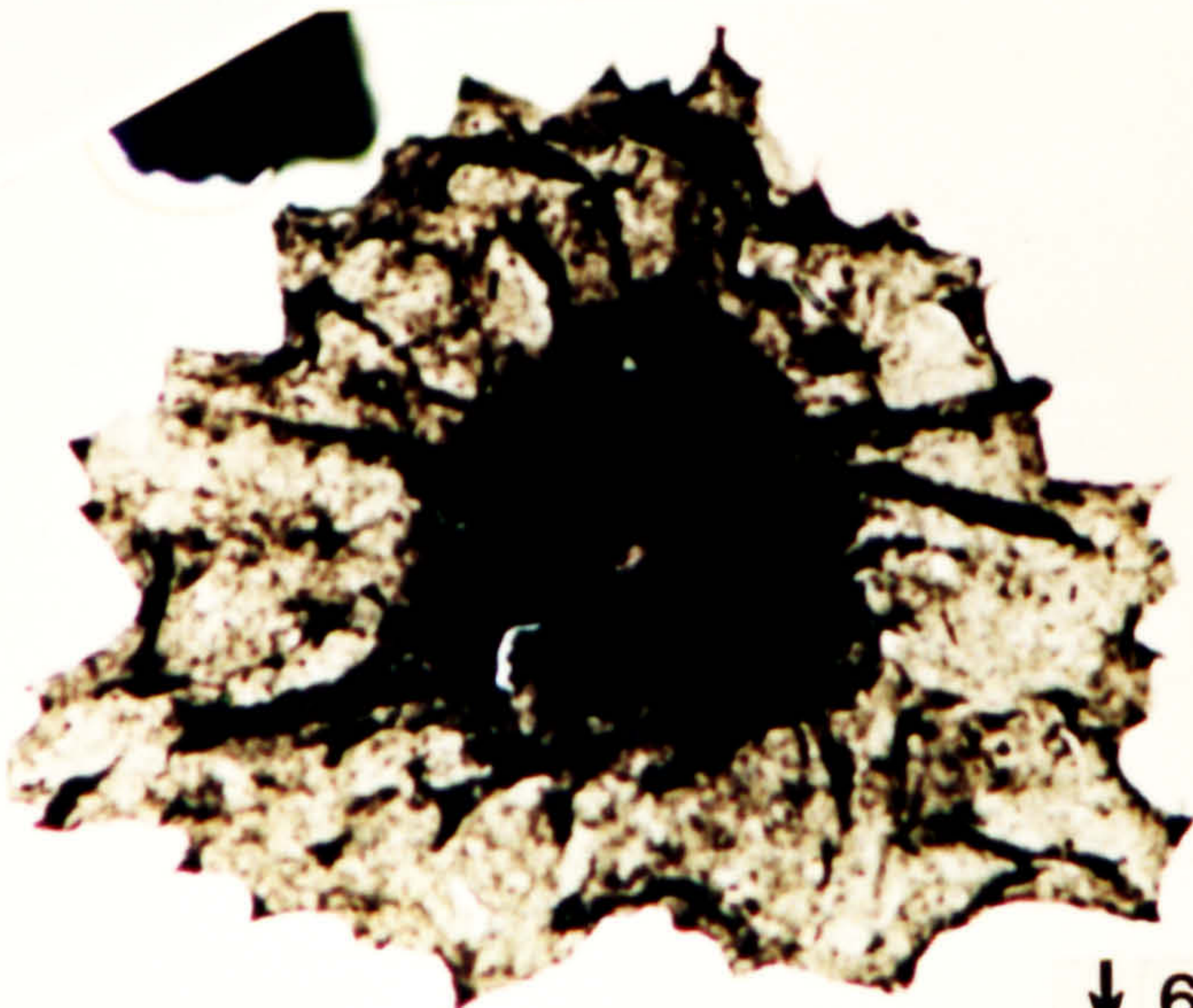
↓ 3



↓ 4



↓ 5



↓ 6

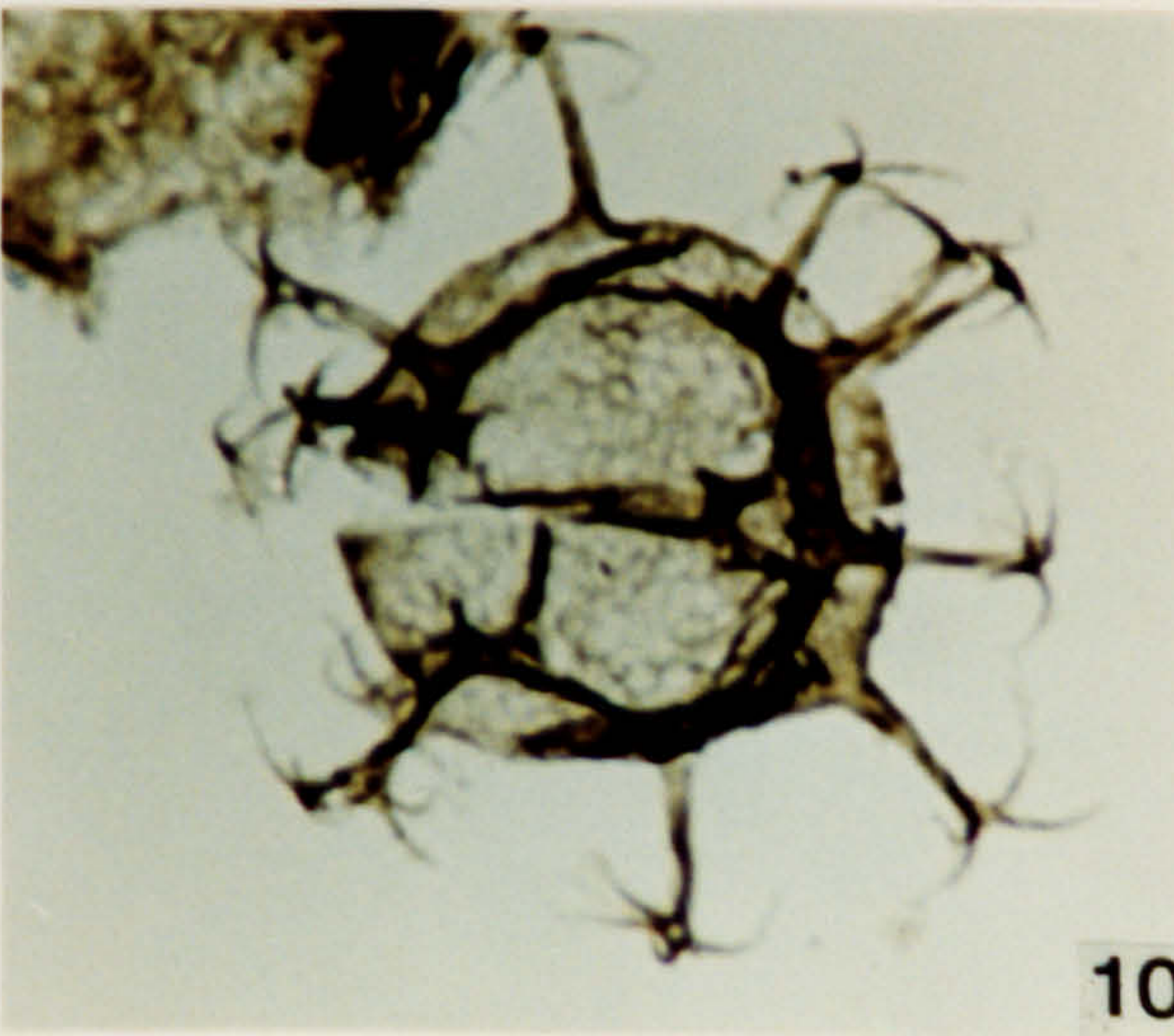
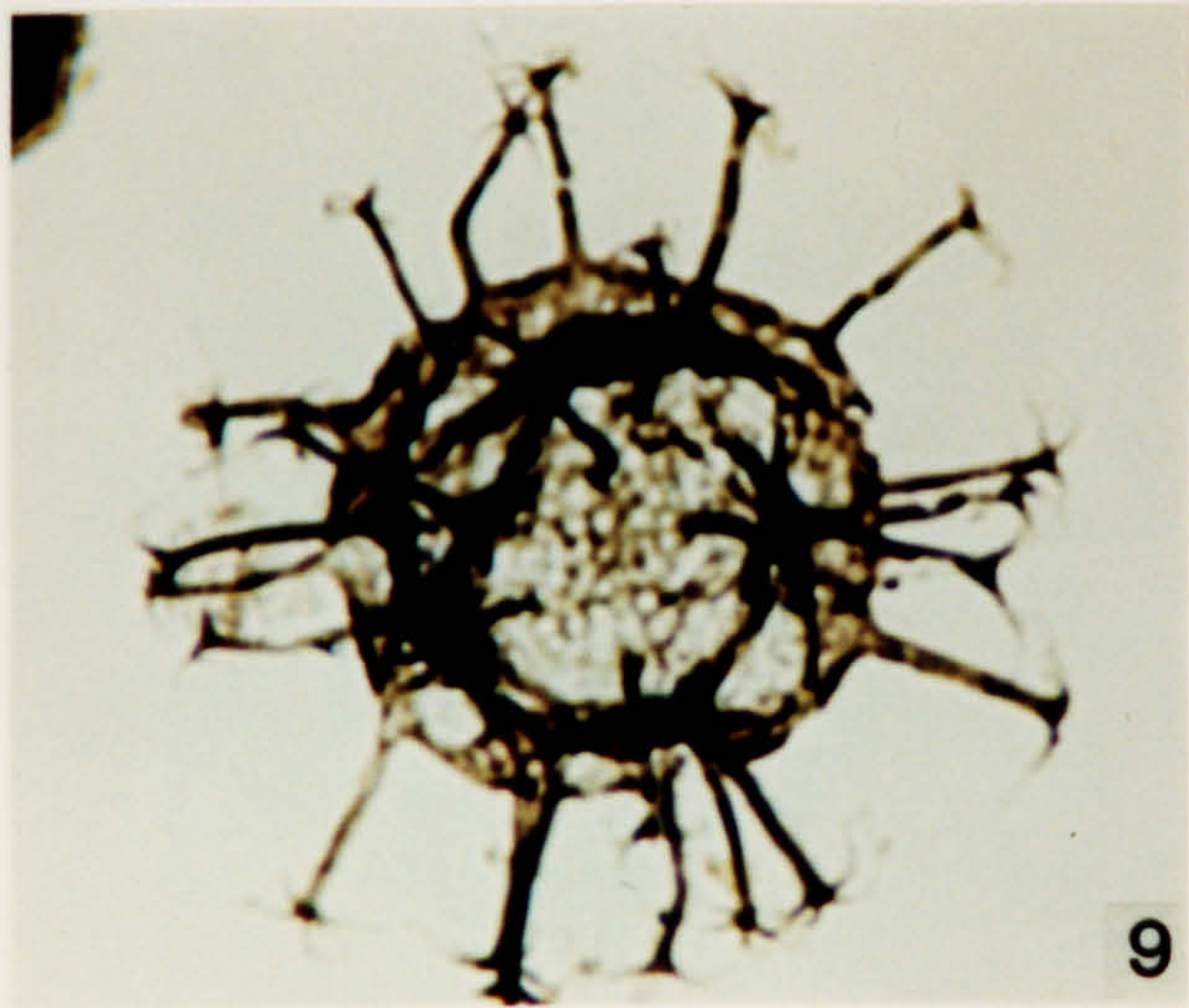
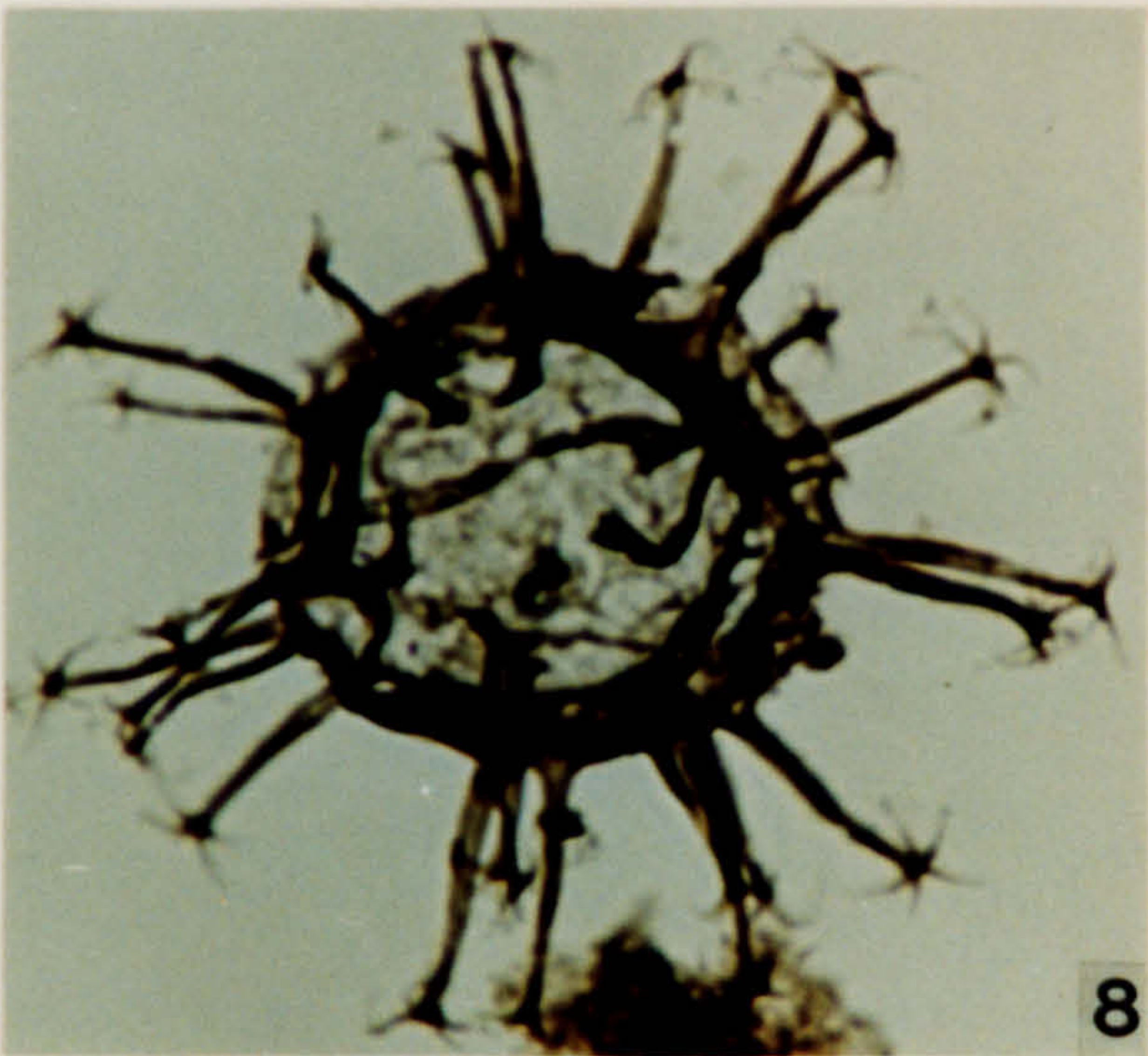
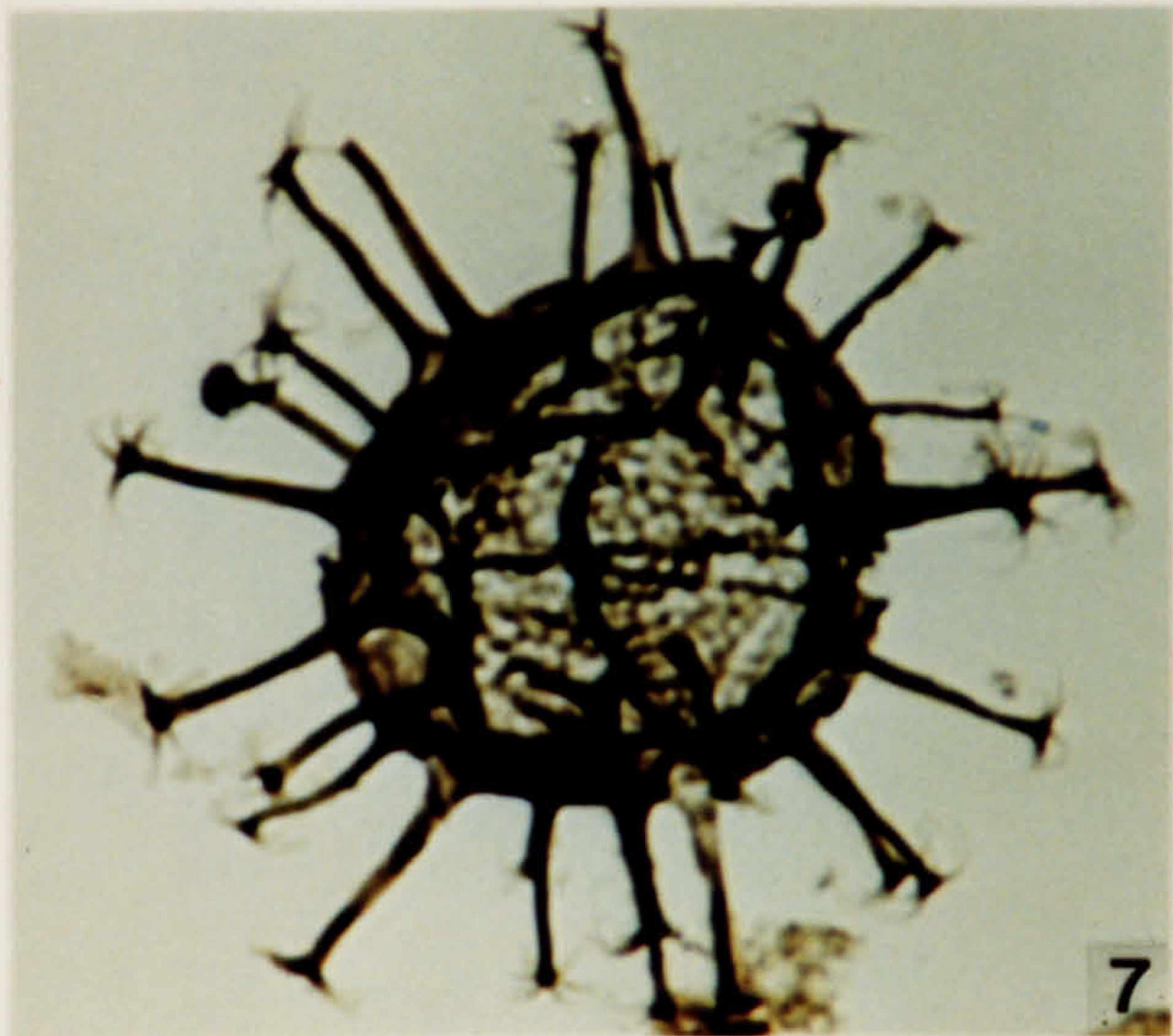
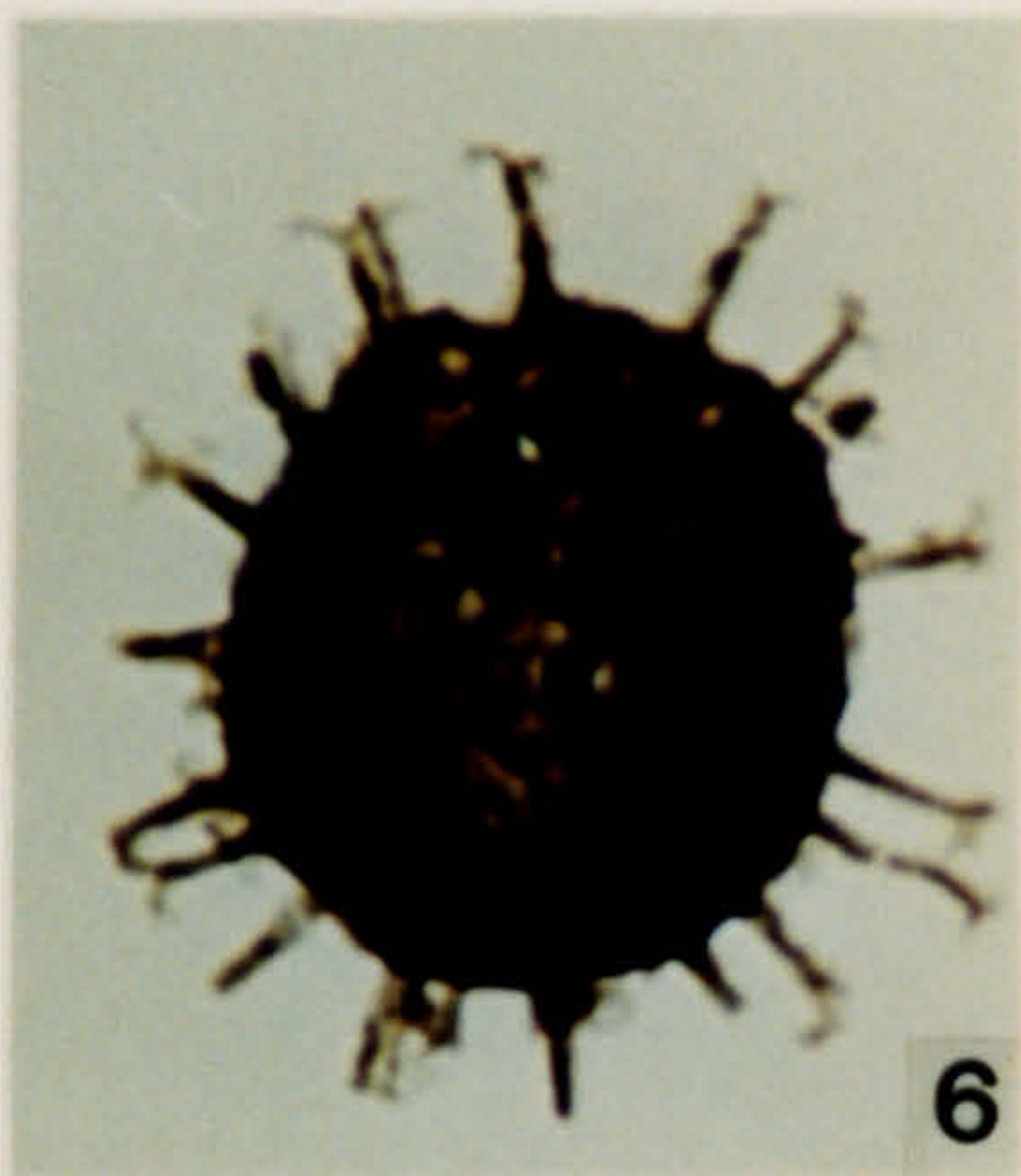
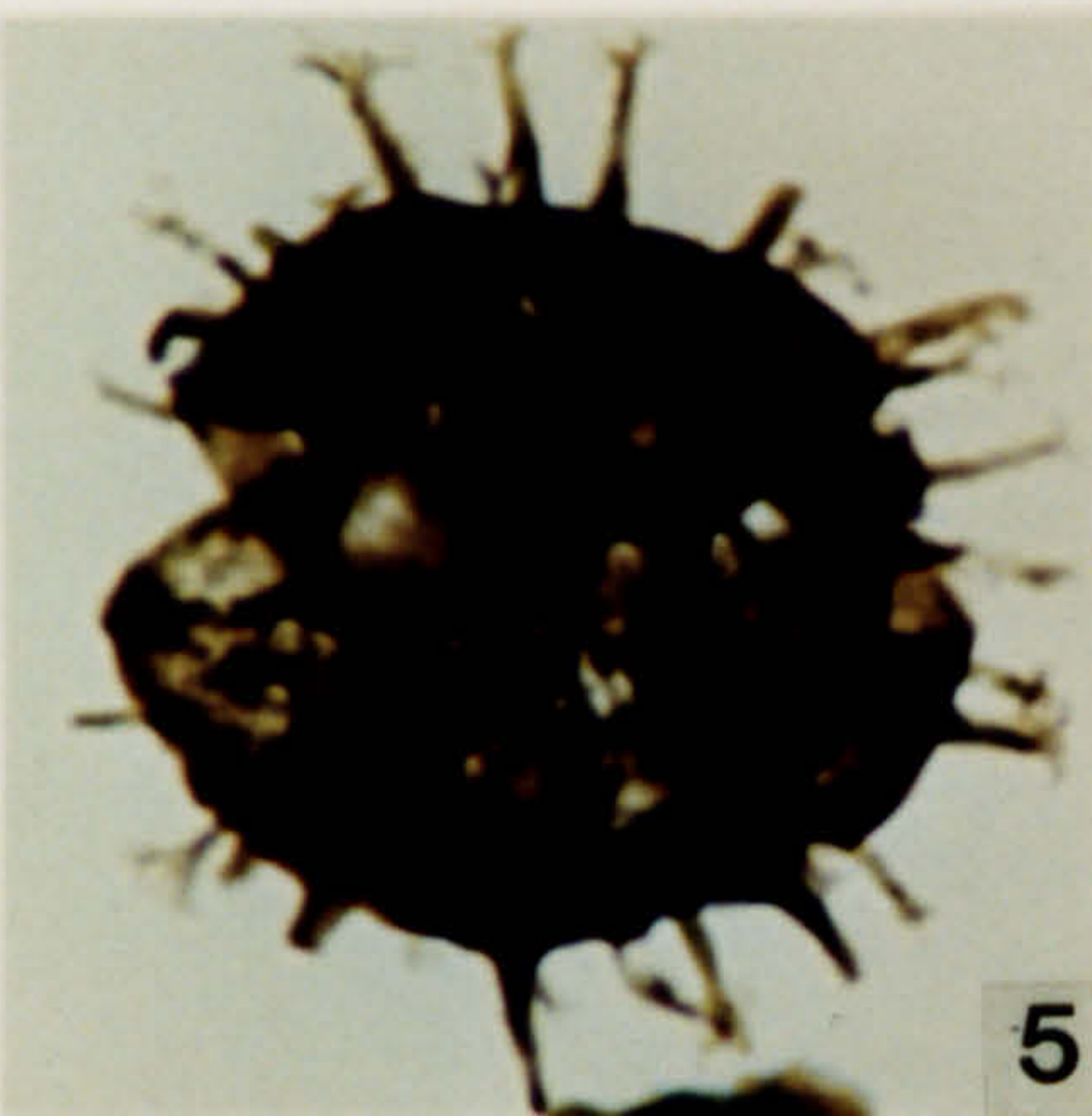
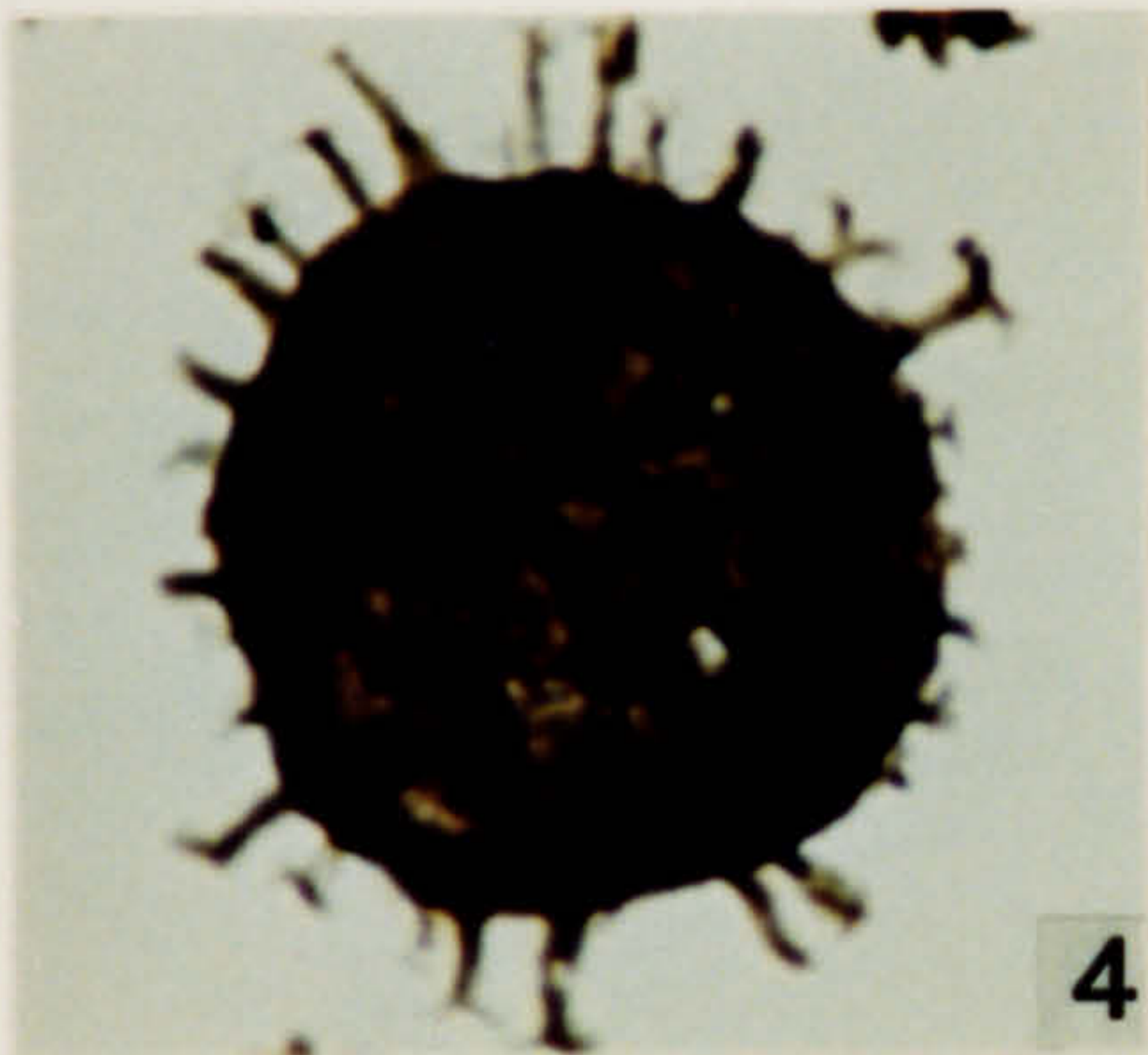
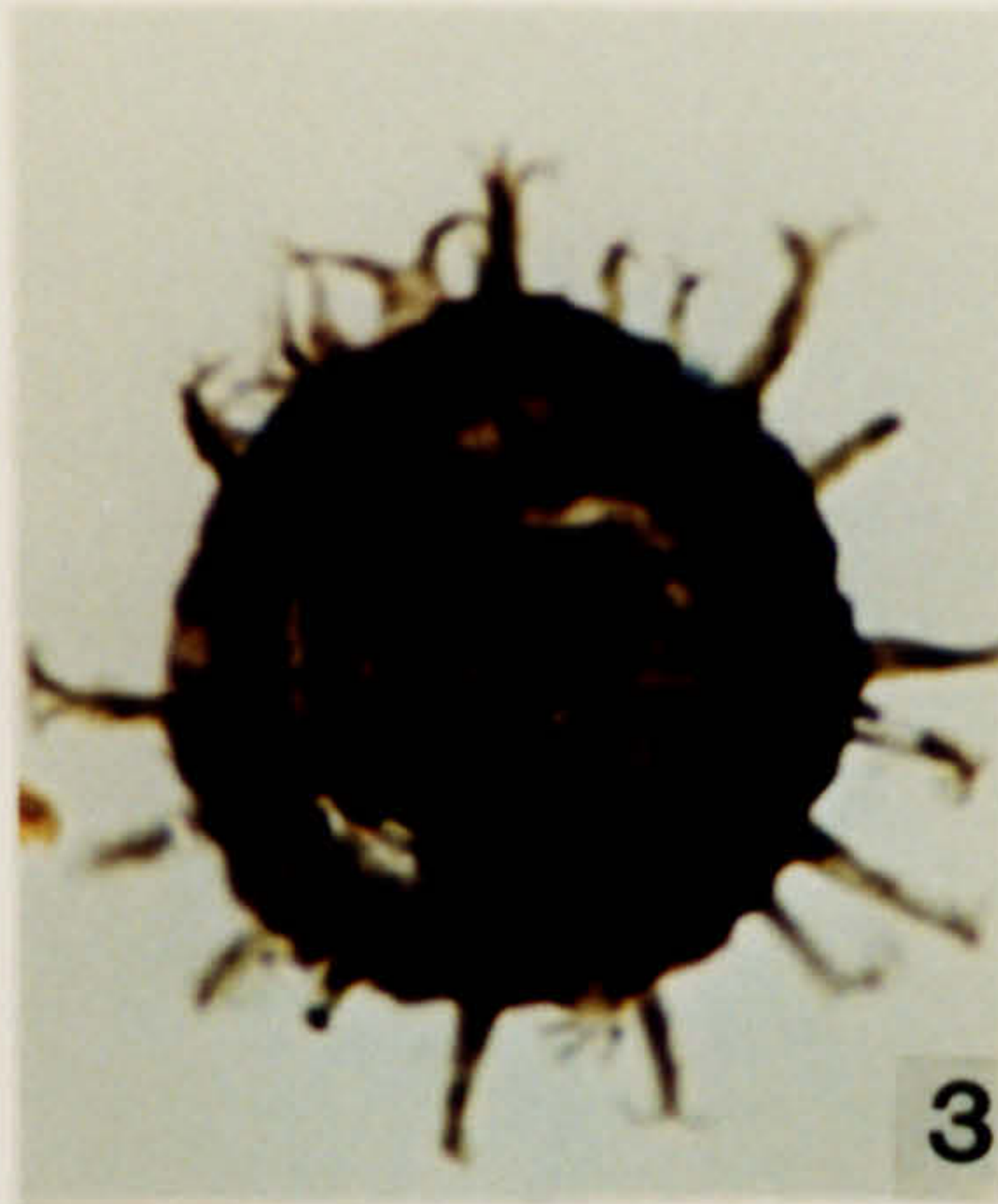
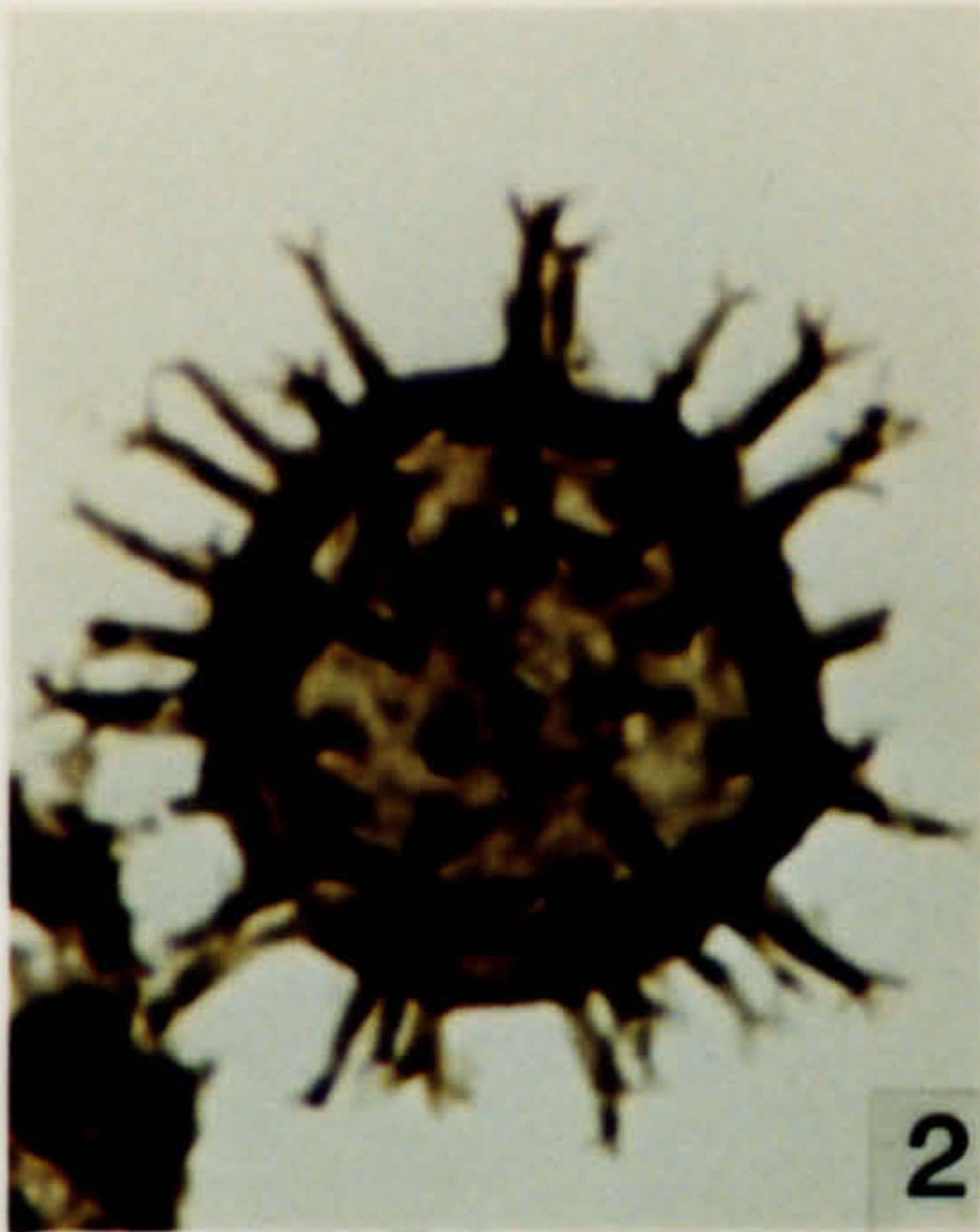


↓ 7

**Plate 172.**

**Acritarchs from the Anou Smaira Formation, Frasnian in age.**

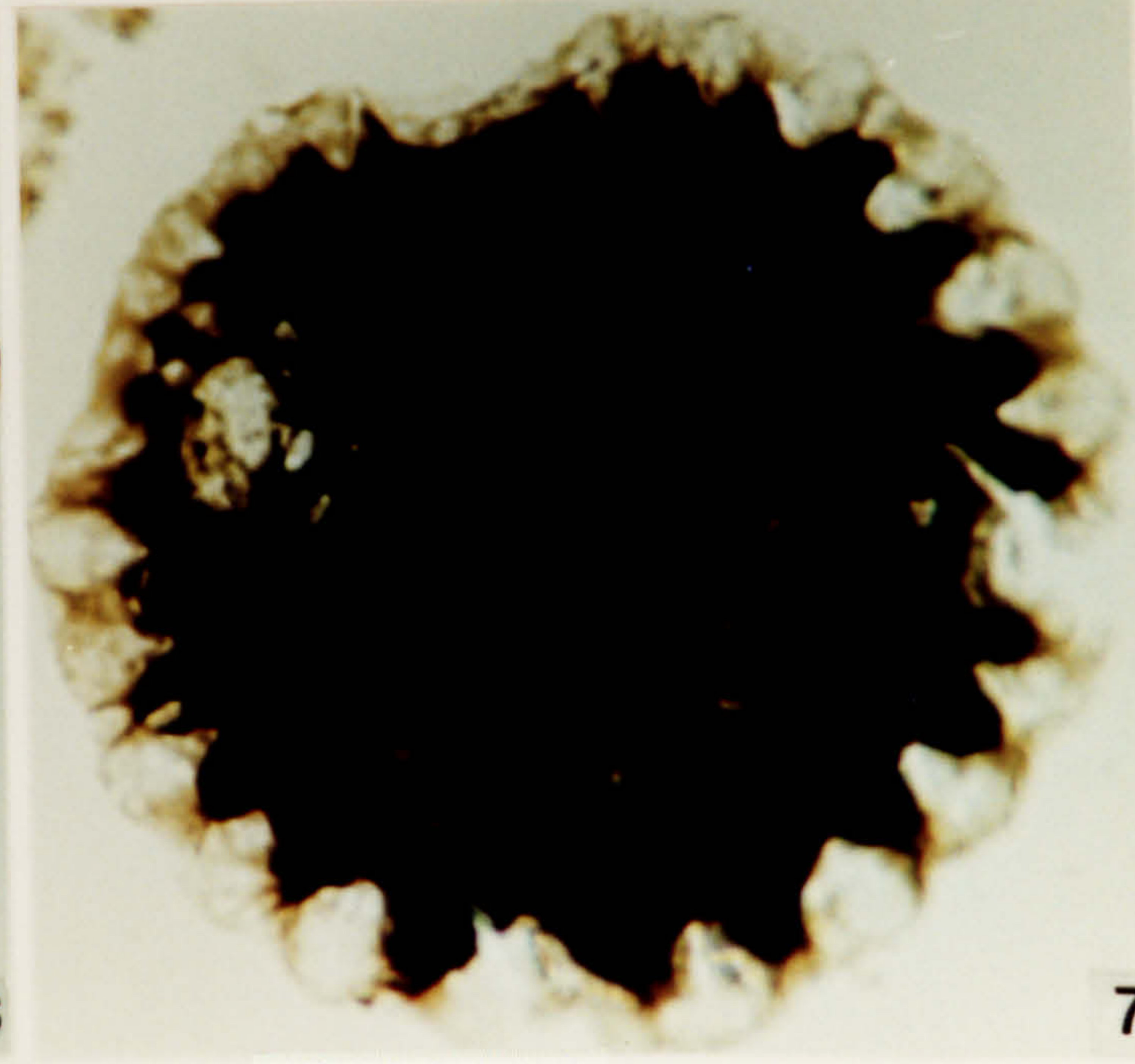
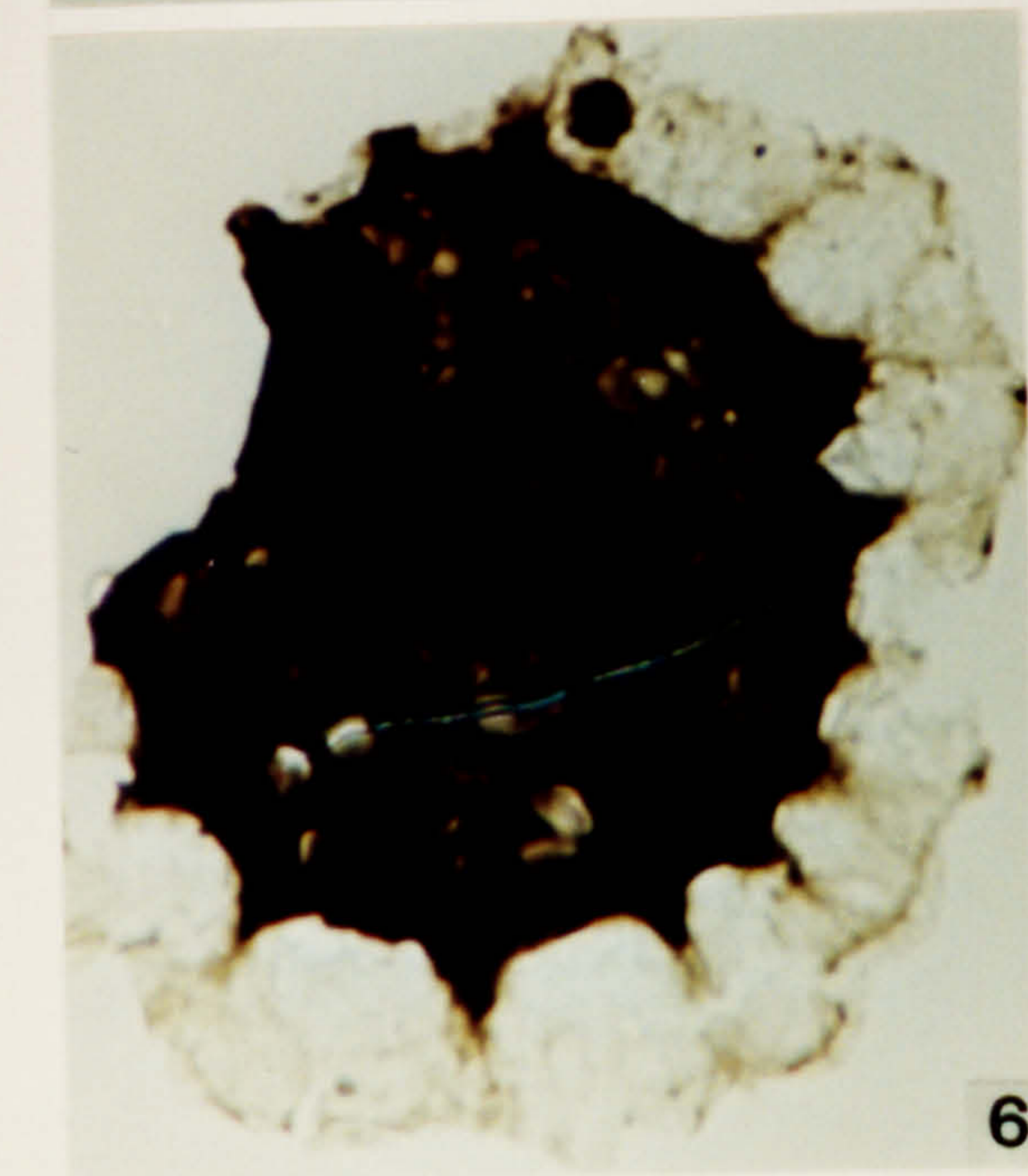
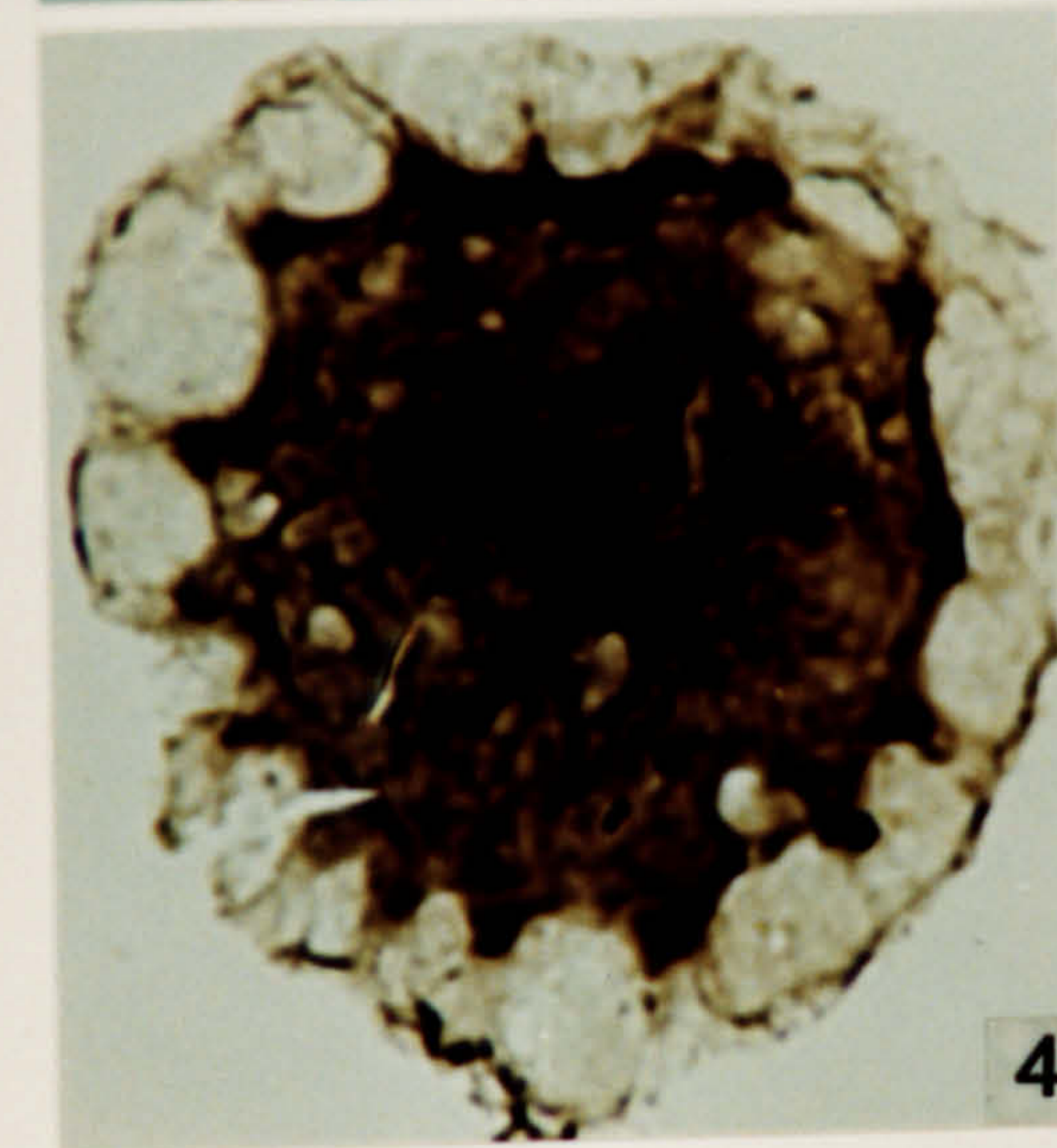
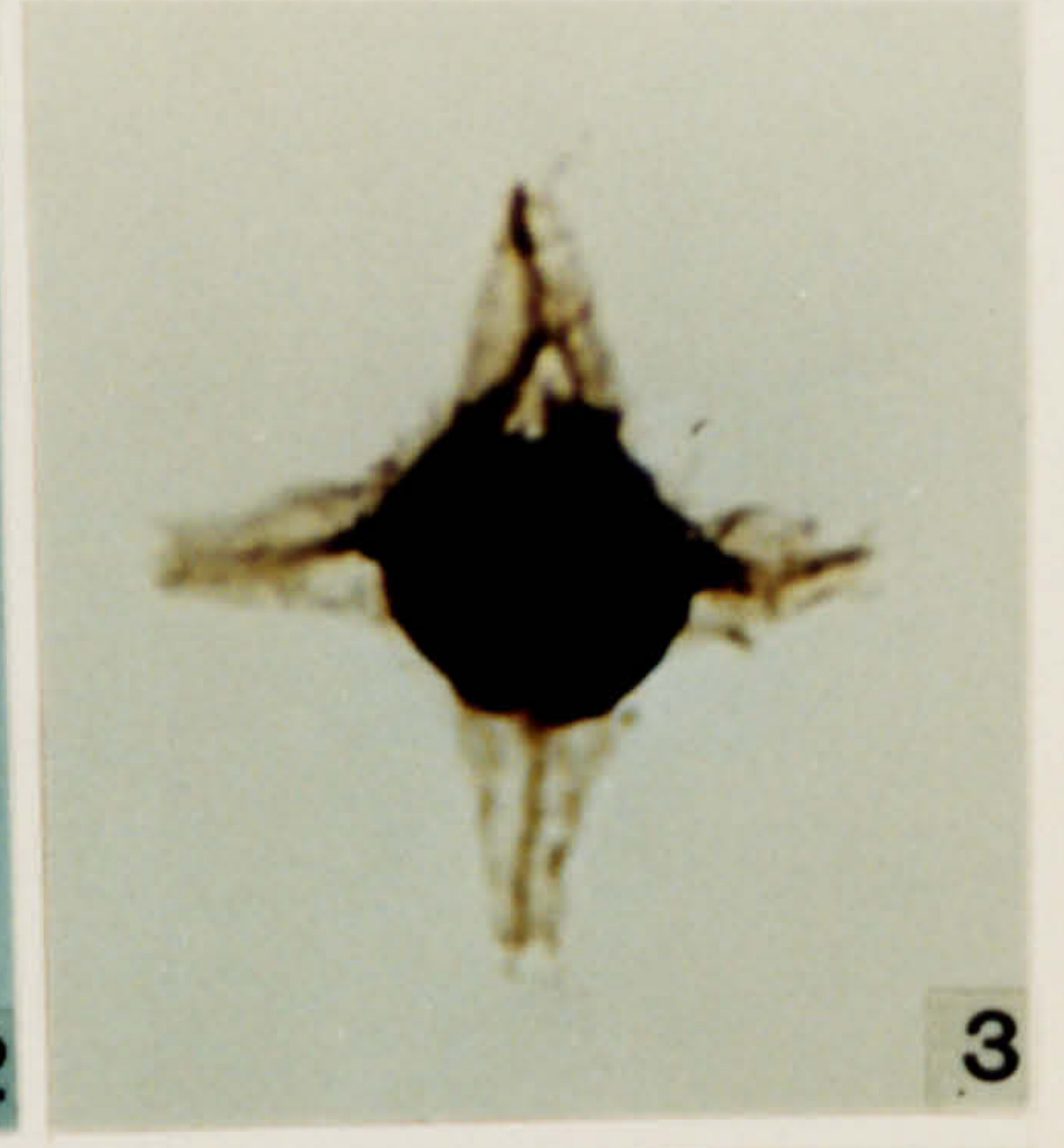
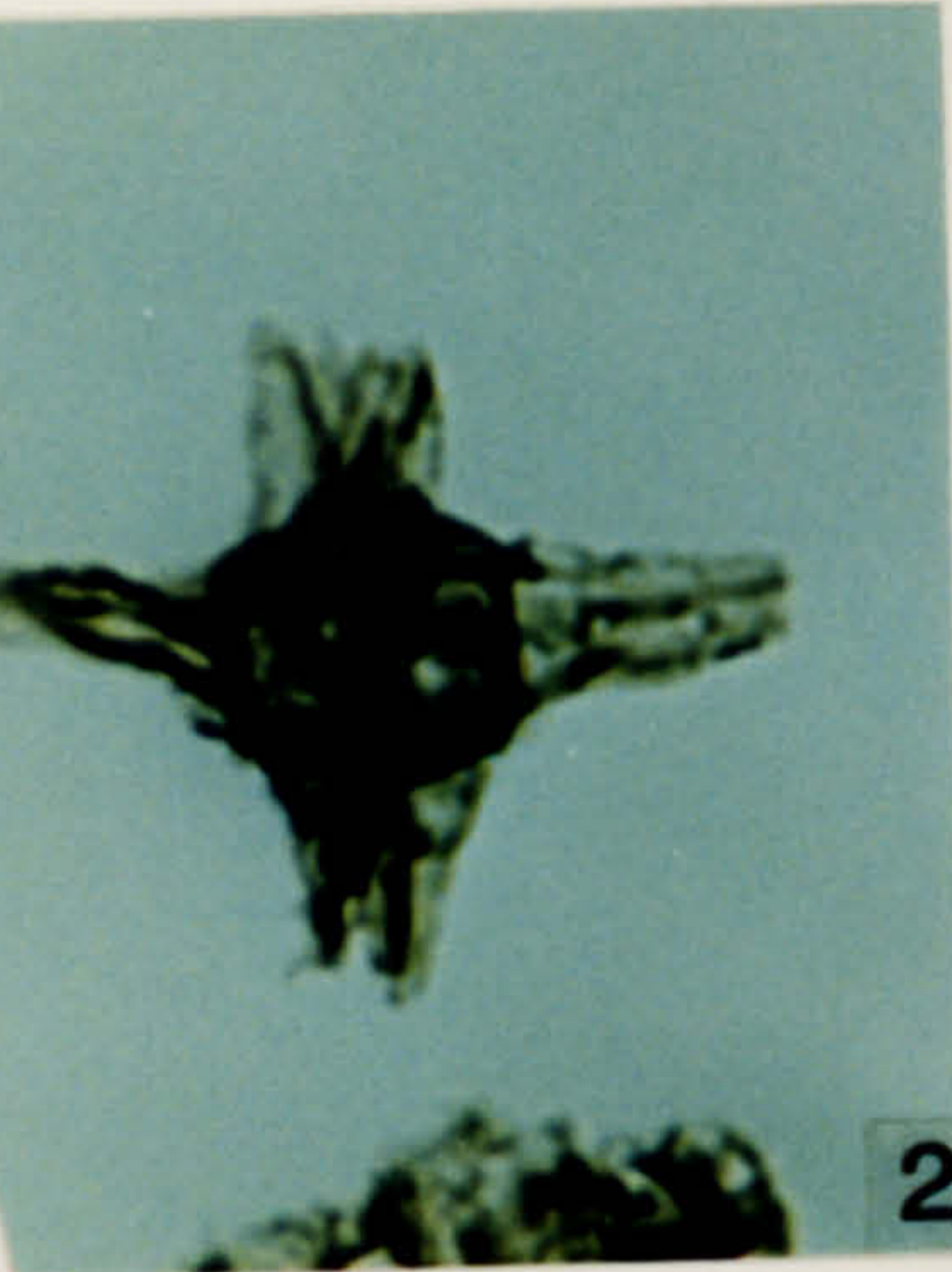
1. *Ammonidium? alloiteauii* (Deunff) Deunff 1976. OD 2409.65, S-1, E19\3.
2. *Ammonidium grosjeanii* (Stockmans & Williere) Martin 1981. OD 2409.65, S-1, Q36\4.
3. *Ammonidium grosjeanii* (Stockmans & Williere) Martin 1981. OD 2409.65, S-1, G23\3.
4. *Ammonidium grosjeanii* (Stockmans & Williere) Martin 1981. OD 2409.65, S-2, F20\4.
5. *Ammonidium grosjeanii* (Stockmans & Williere) Martin 1981. OD 2409.65, S-1, M26\3.
6. *Ammonidium grosjeanii* (Stockmans & Williere) Martin 1981. OD 2409.65, S-1, H38\2.
7. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 2409.65, S-2, J28\1.
8. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 2409.65, S-1, K21\2.
9. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 2409.65, S-1, L26\1.
10. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 2409.65, S-1, T18\4.



**Plate 173.**

Acritarchs from the Anou Smaira Formation, Frasnian in age.

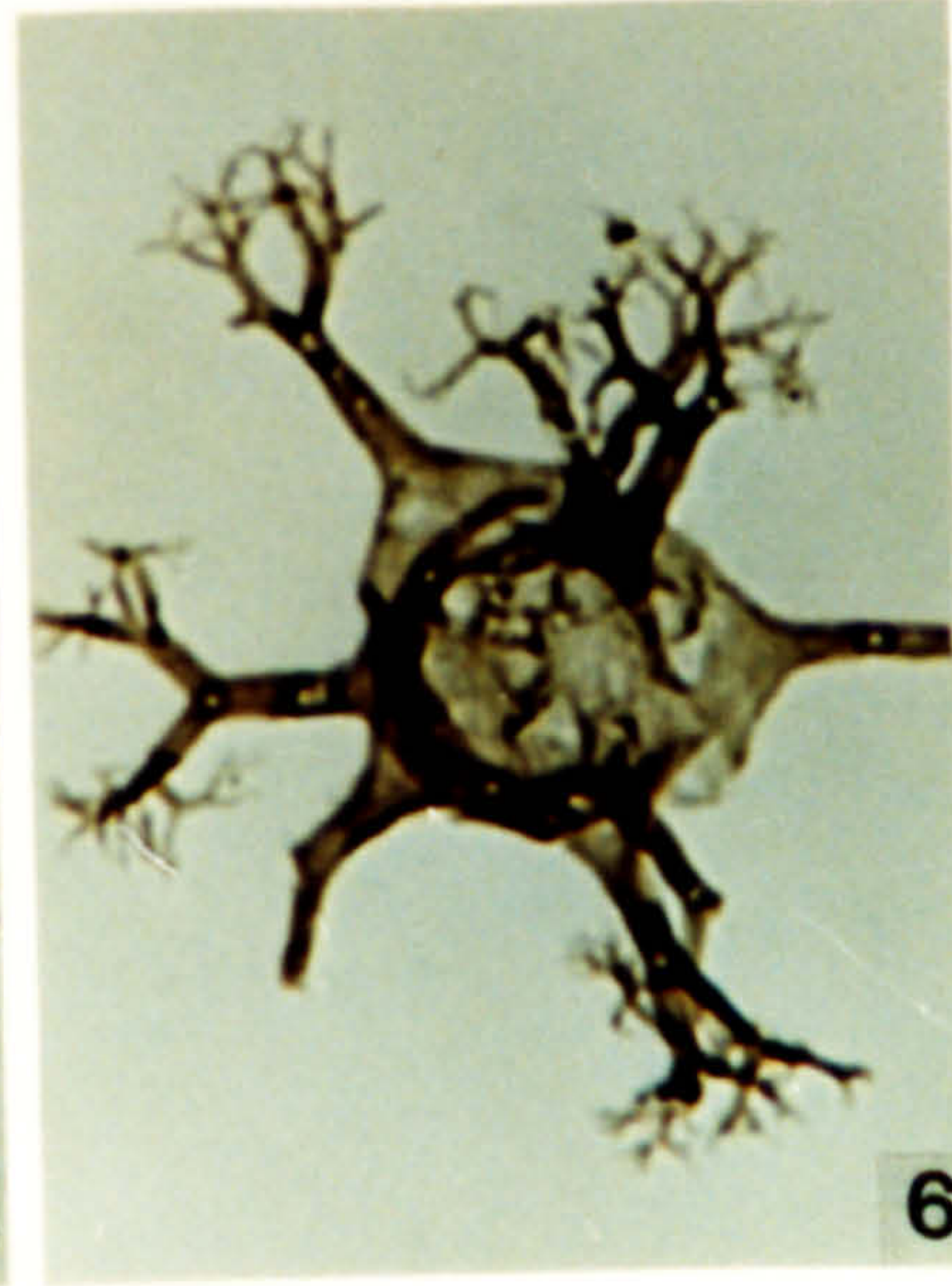
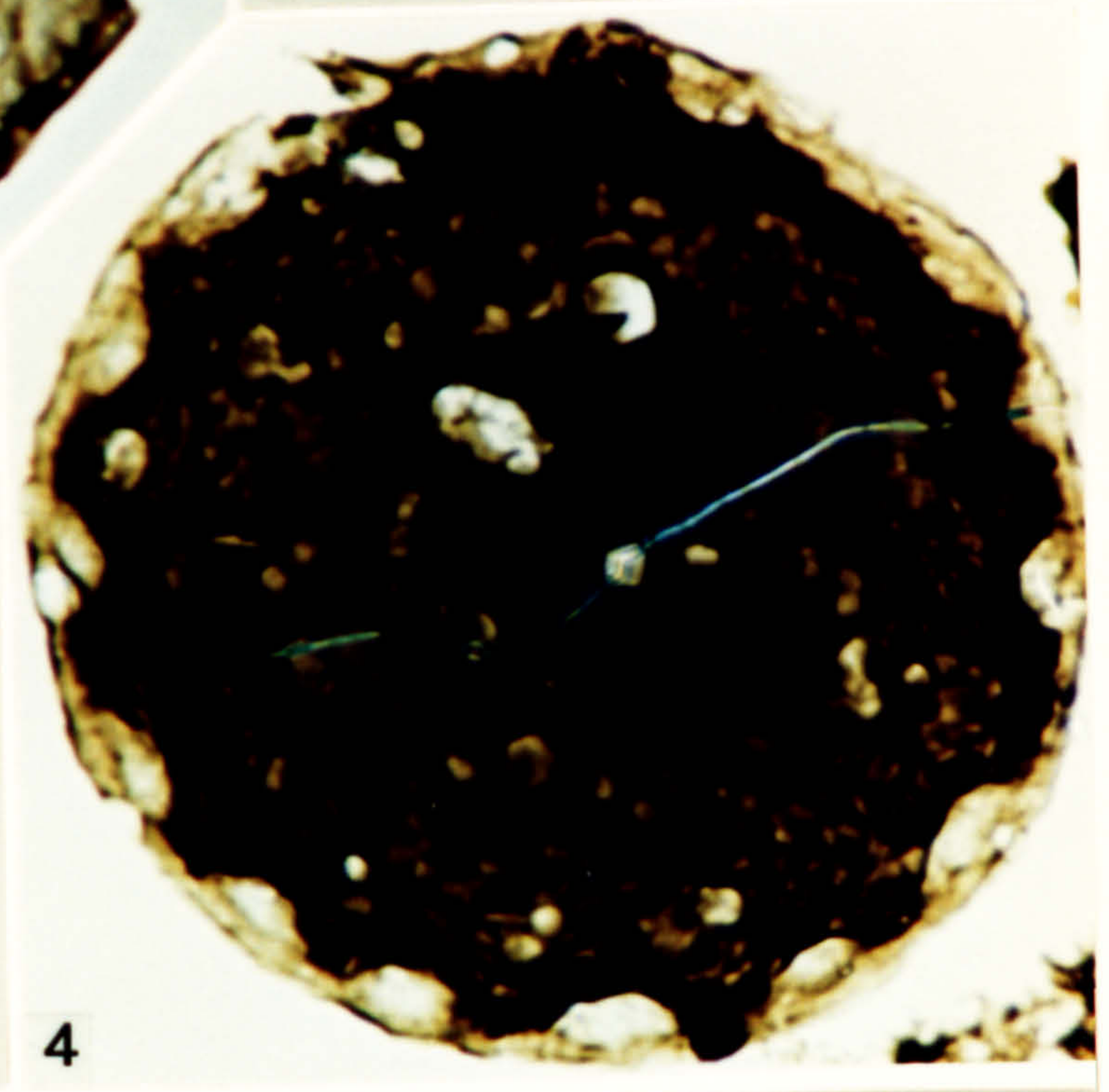
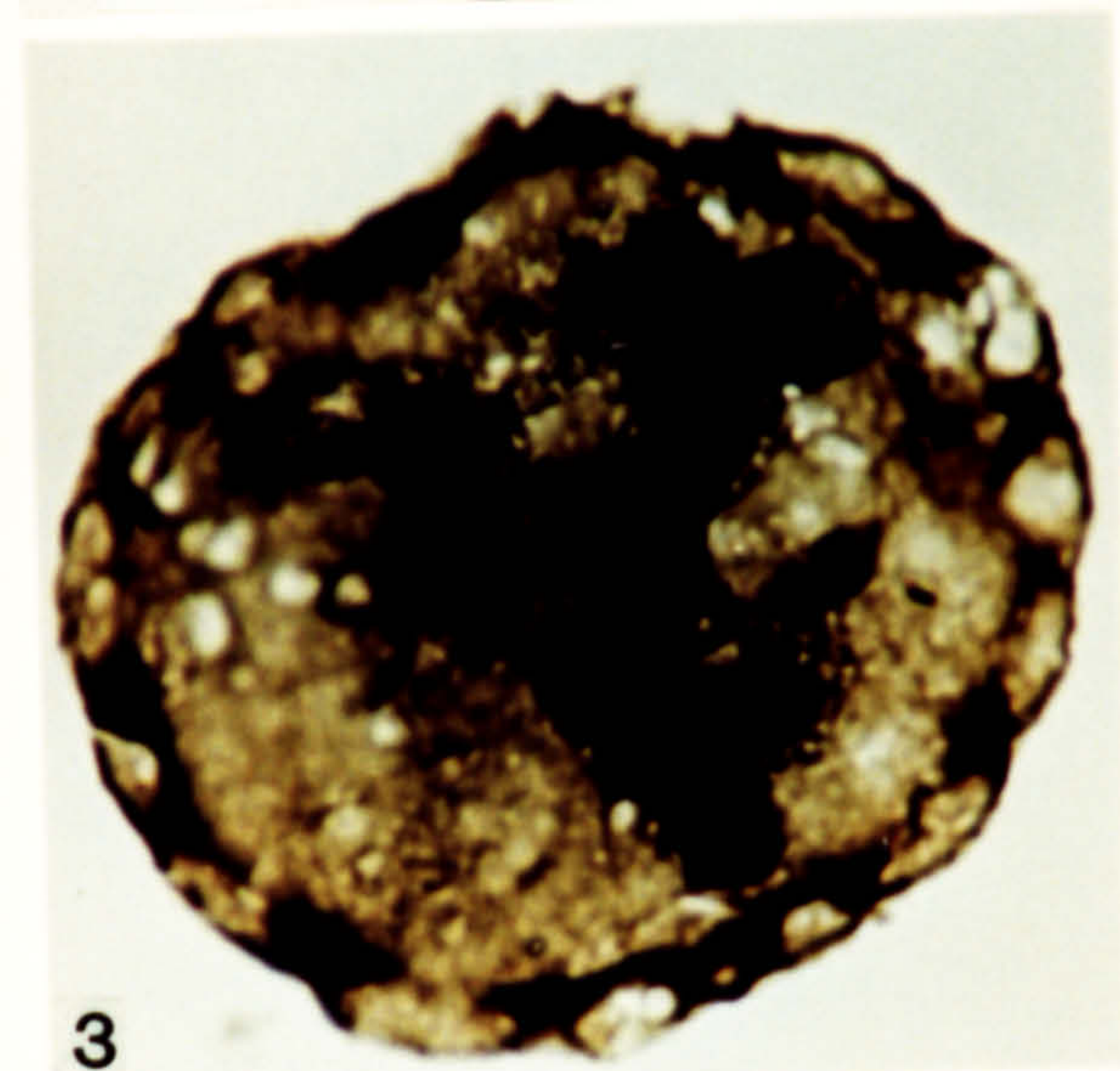
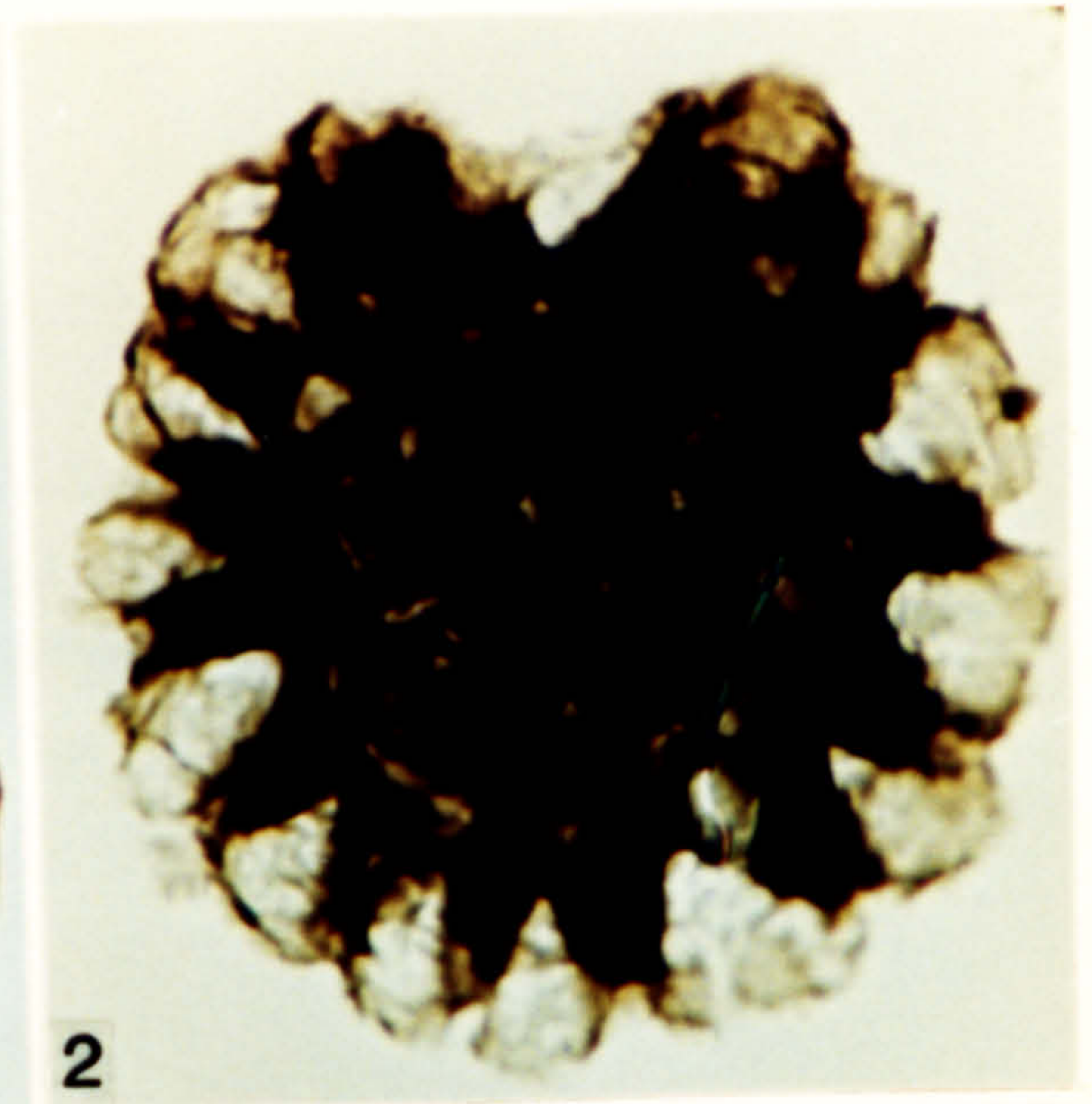
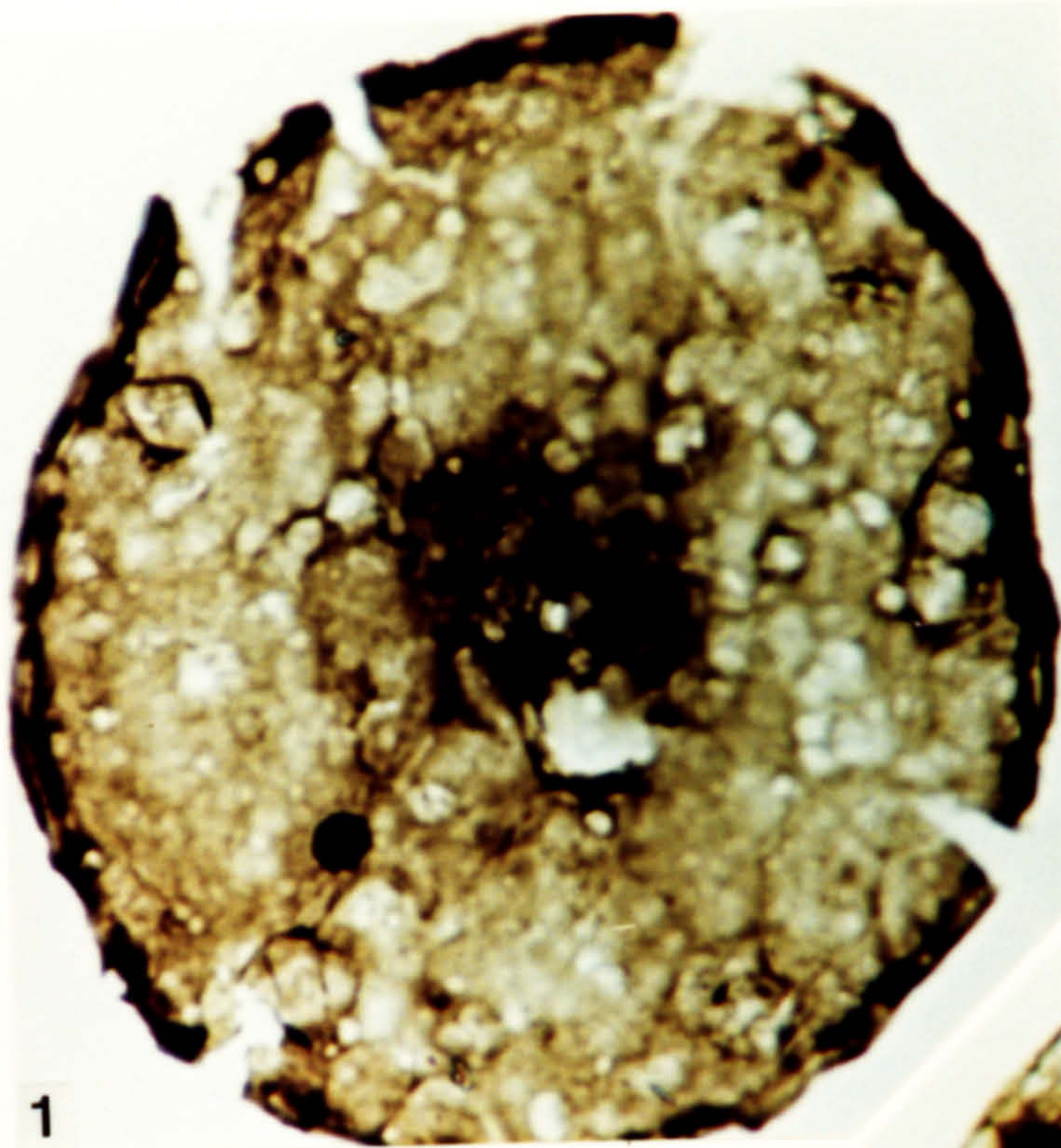
1. *Diexallophasis remota* var. *thyrae* (Cramer) comb. nov. OD 2409.65, S-1, E17\1.
2. *Daillydium pentaster* (Staplin) Playford in Playford & Dring 1981. OD 2409.65, S-1, D31\1.
3. *Daillydium pentaster* (Staplin) Playford in Playford & Dring 1981. OD 2409.65, S-1, K43\3.
4. *Maranhites britoi* Stockmans & Williere 1969. OD 2409.65, S-2, X11\2.
5. *Diexallophasis remota* (Deunff) Playford 1977. OD 2409.65, S-1, P28\1.
6. *Maranhites britoi* Stockmans & Williere 1969. OD 2409.65, S-2, F34\4.
7. *Maranhites* cf. *britoi* Stockmans & Williere 1969. OD 2409.65, S-1, J18\3.



**Plate 174.**

**Acritarchs from the Anou Smaira Formation, Frasnian in age.**

1. *Maranhites stockmansii* Martin 1981 emend. Martin 1984. OD 2409.65, S-1, W22\1.
2. *Maranhites* cf. *britoi* Stockmans & Williere 1969. OD 2409.65, S-1, K16\4.
3. *Maranhites* cf. *stockmansii* Martin 1981 emend. Martin 1984. OD 2409.65, S-2, F21\4.
4. *Maranhites* cf. *stockmansii* Martin 1981 emend. Martin 1984. OD 2409.65, S-1, H28\4.
5. *Multiplicisphaeridium ramispinosum* Staplin 1961. OD 2409.65, S-2, Q9\1.
6. *Multiplicisphaeridium ramispinosum* Staplin 1961. OD 2409.65, S-1, K43\3.
7. *Micrhystridium stellatum* Deflandre 1945. OD 2409.65, S-1, G12\2.

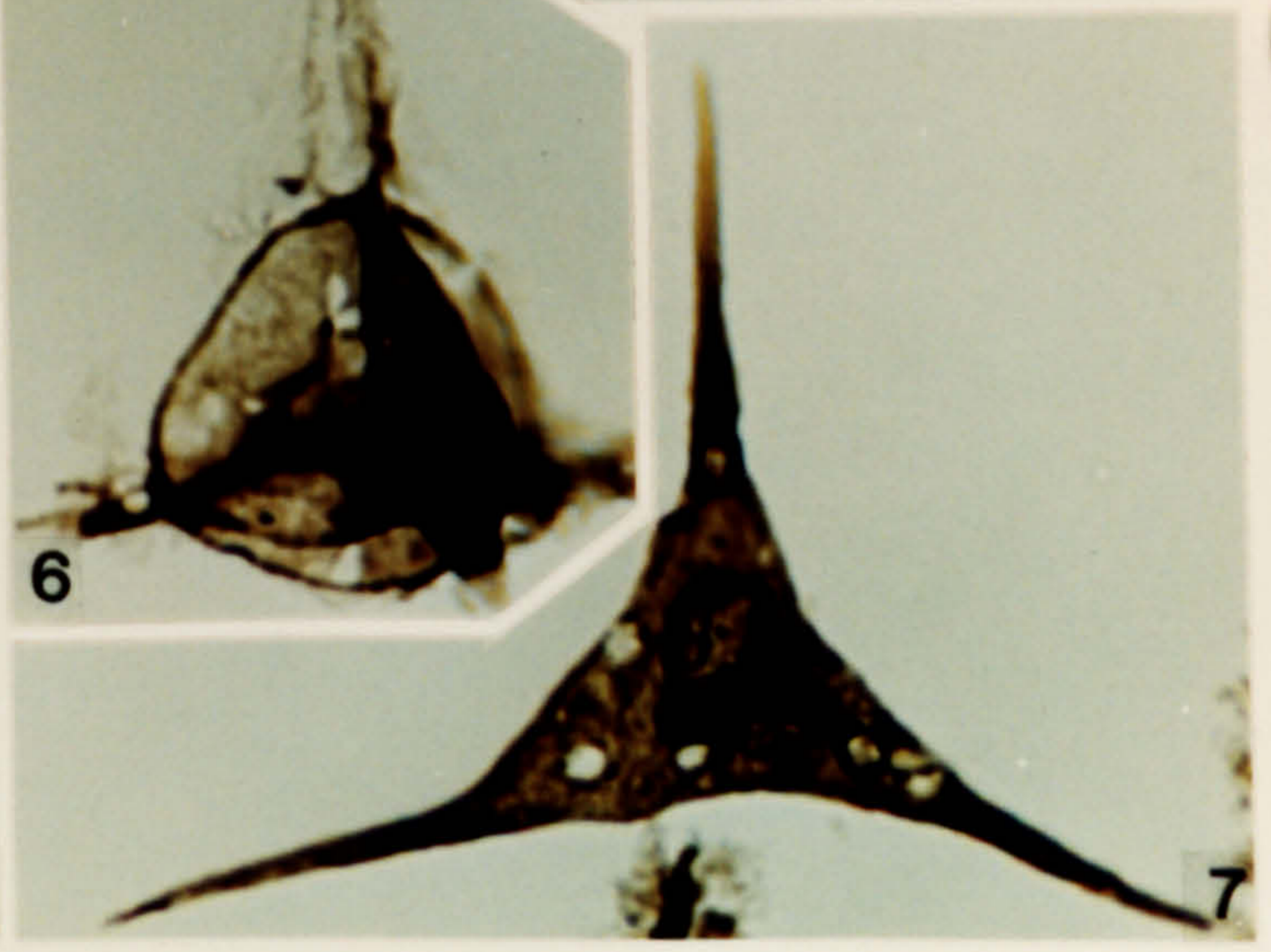
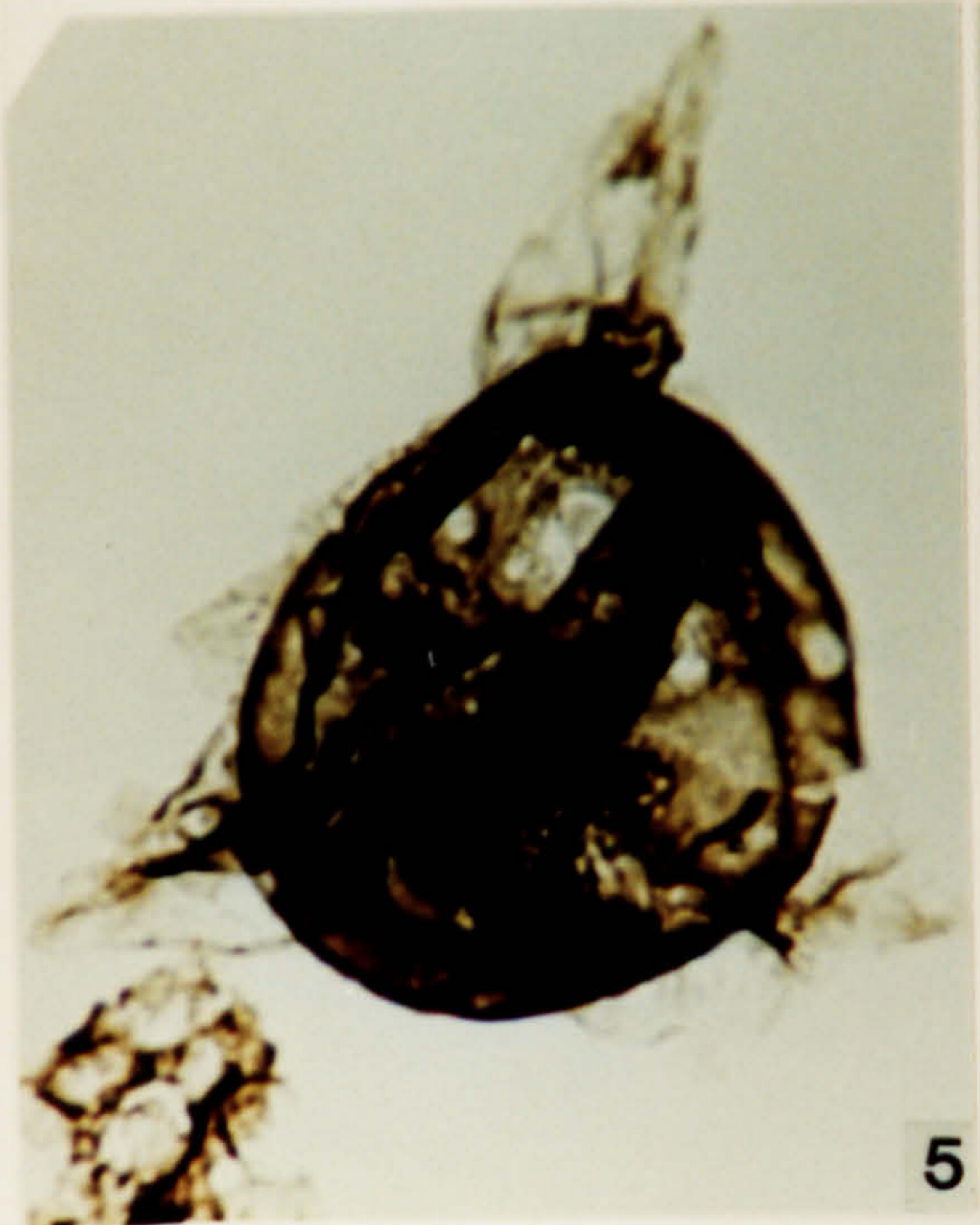
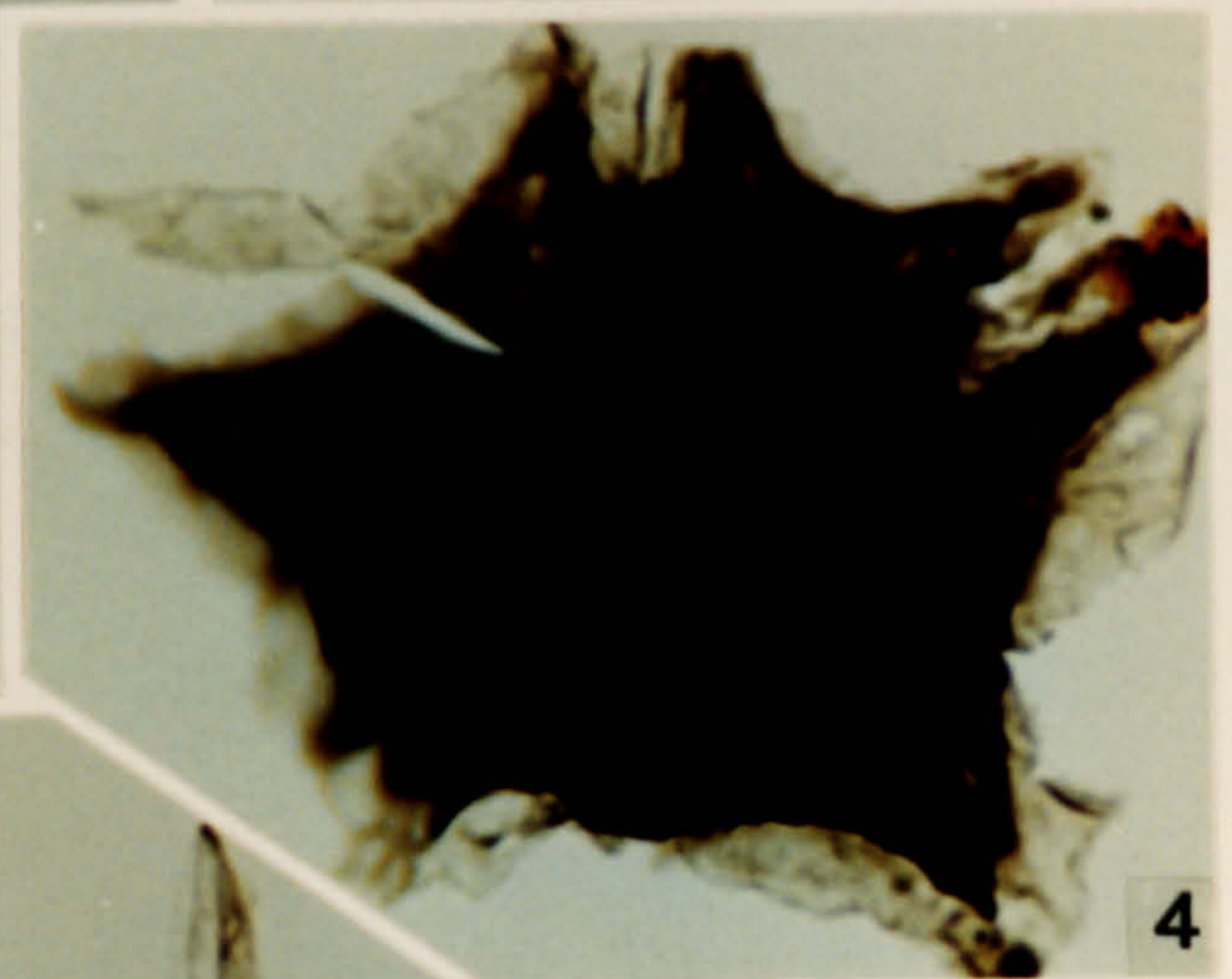
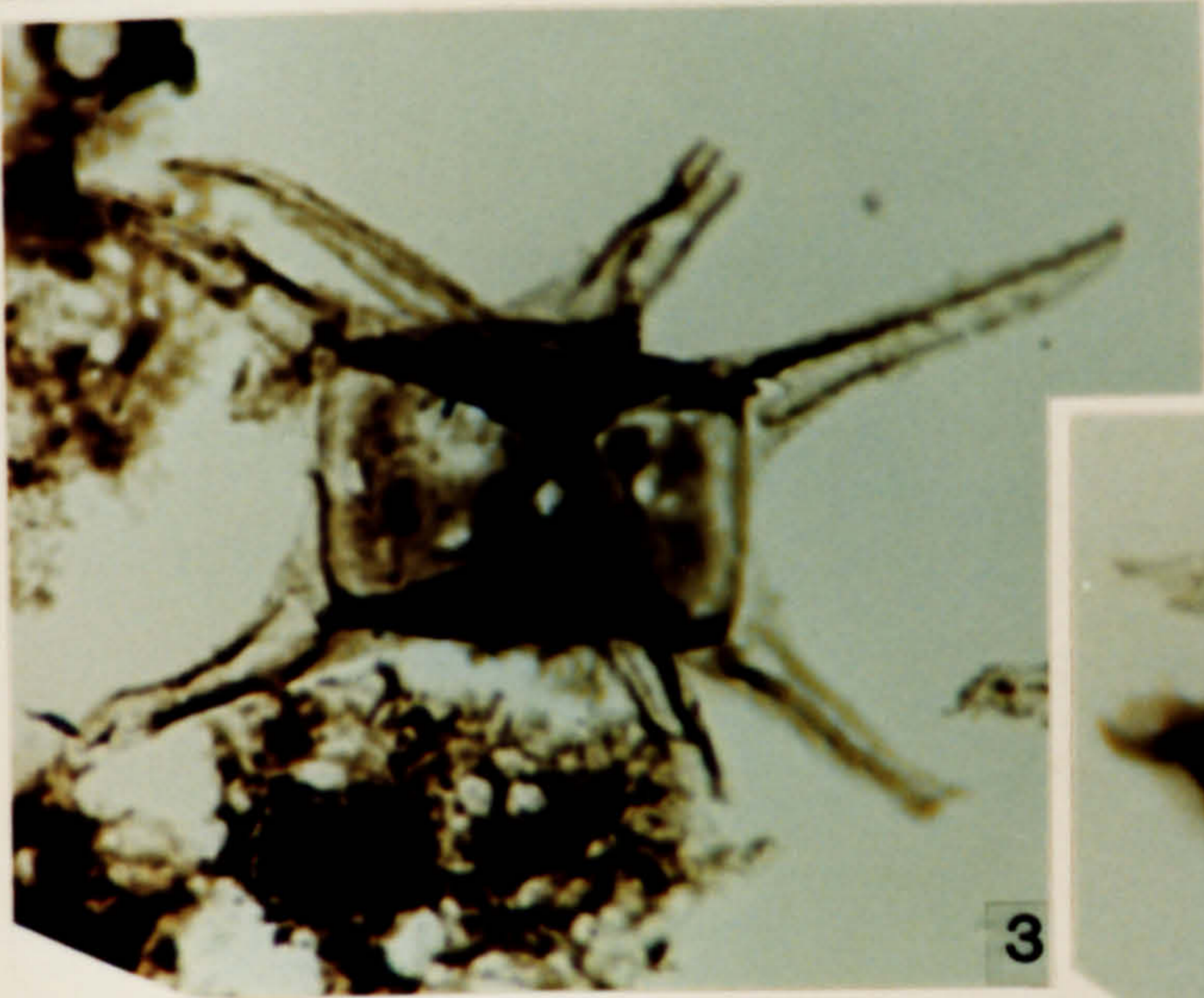




**Plate 175.**

Acritarchs from the Anou Smaira Formation, Frasnian in age.

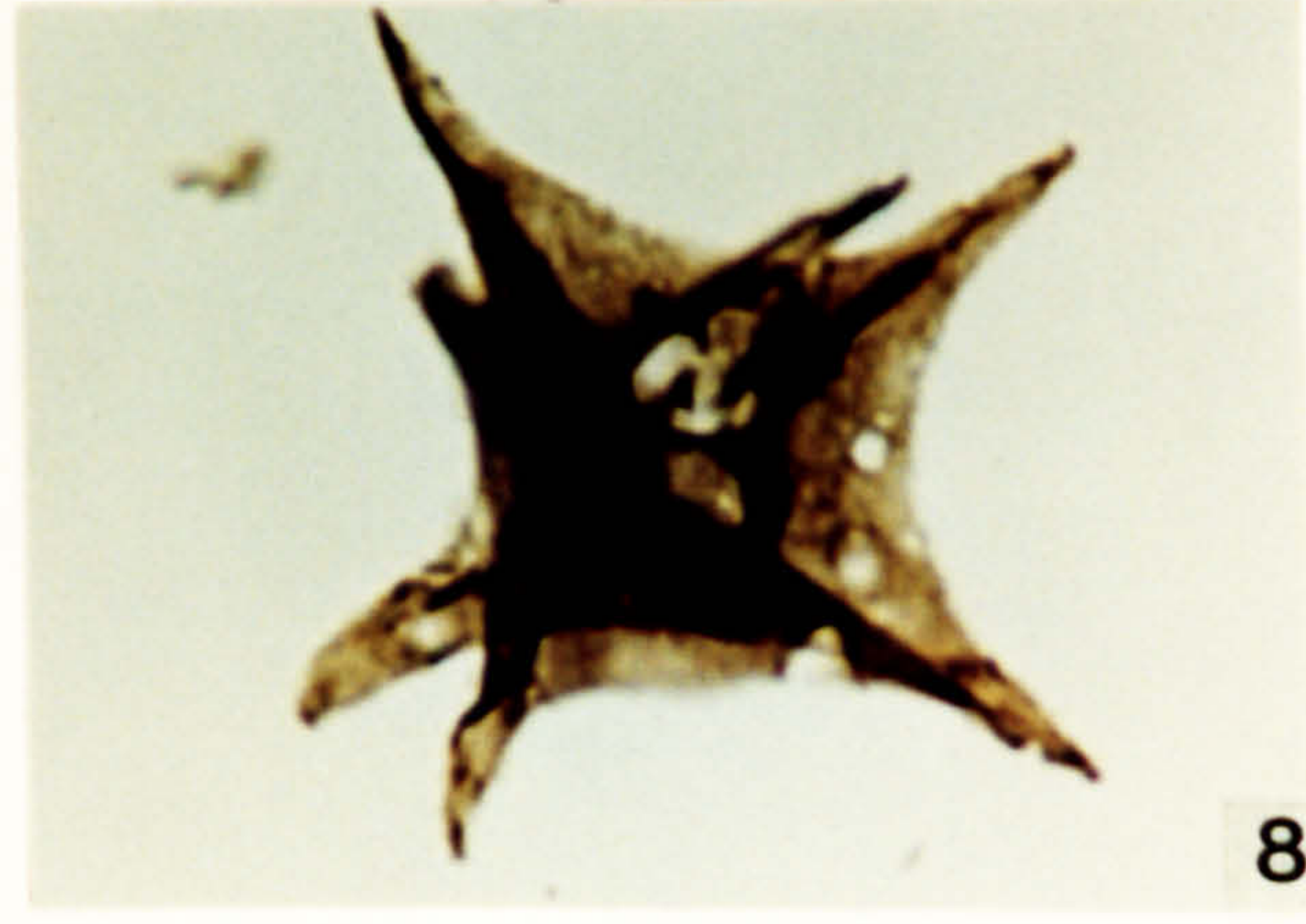
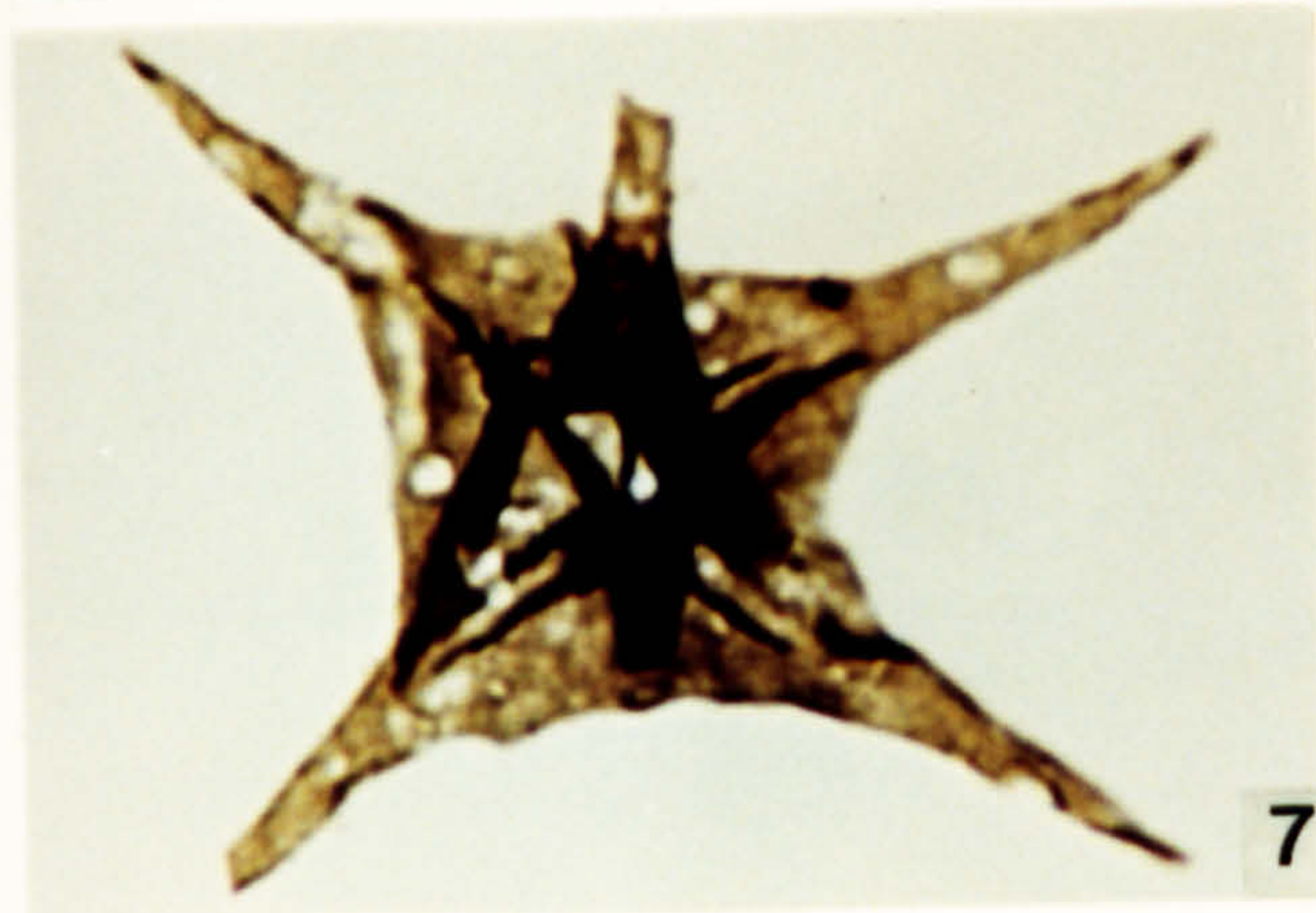
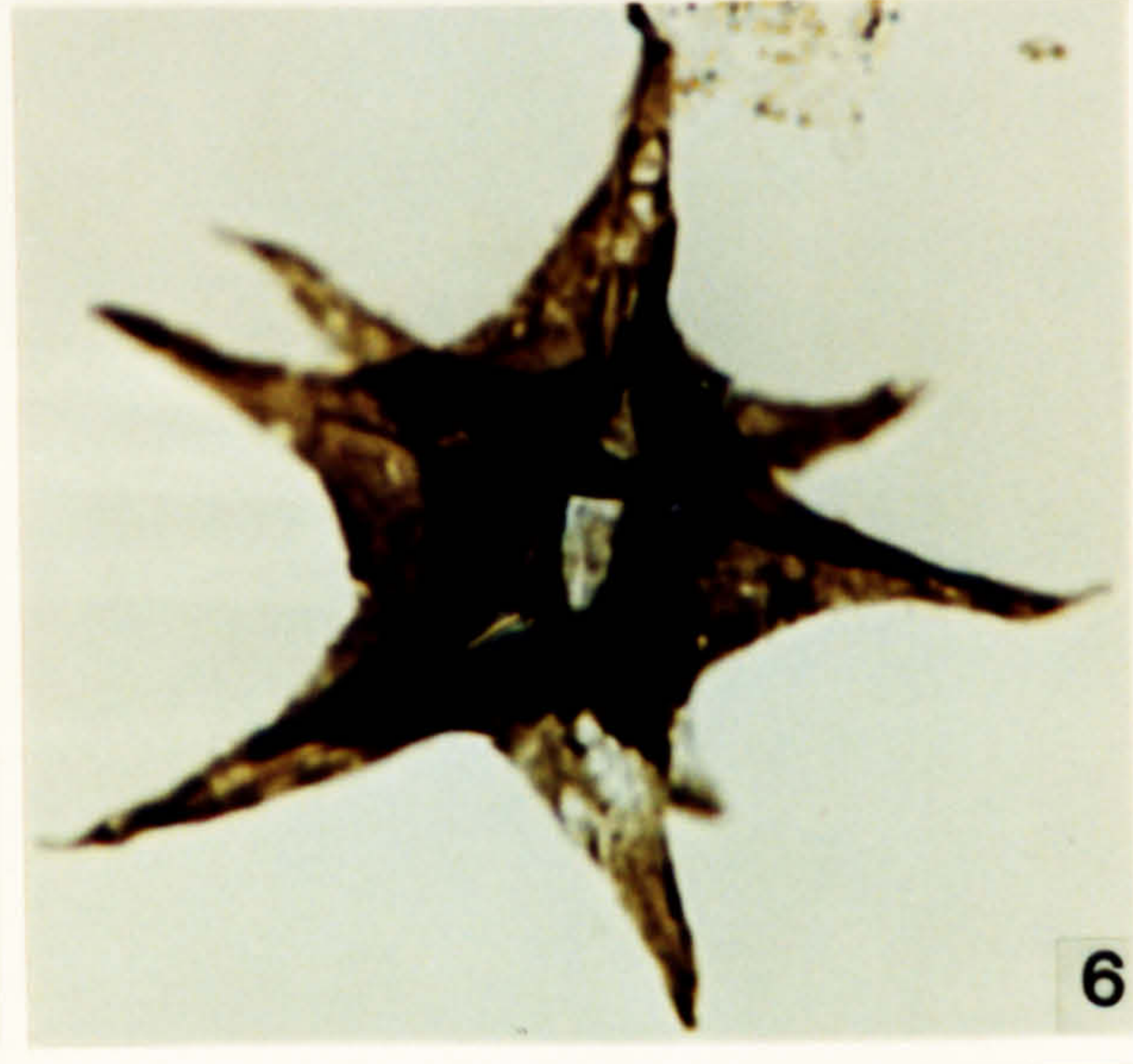
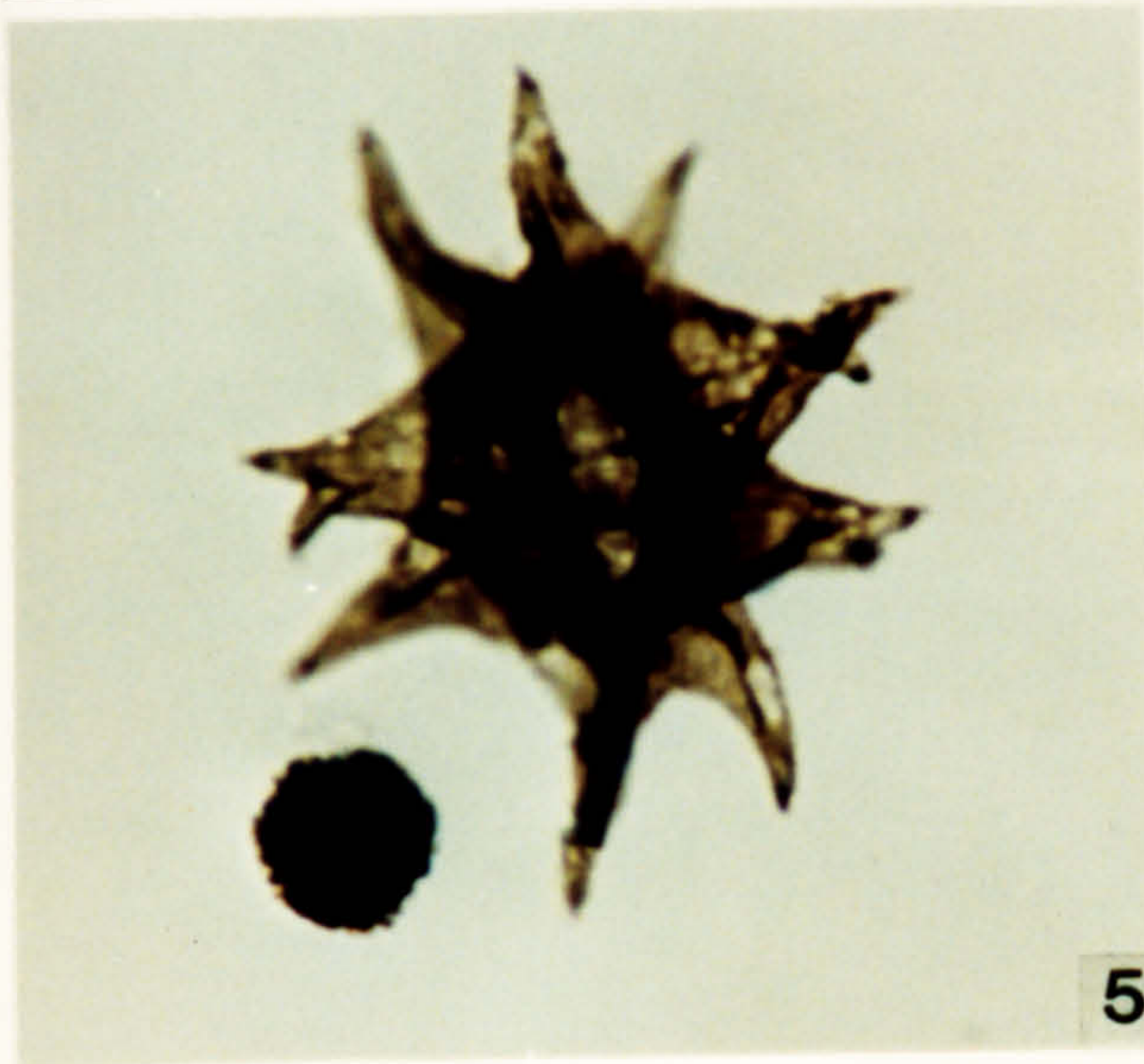
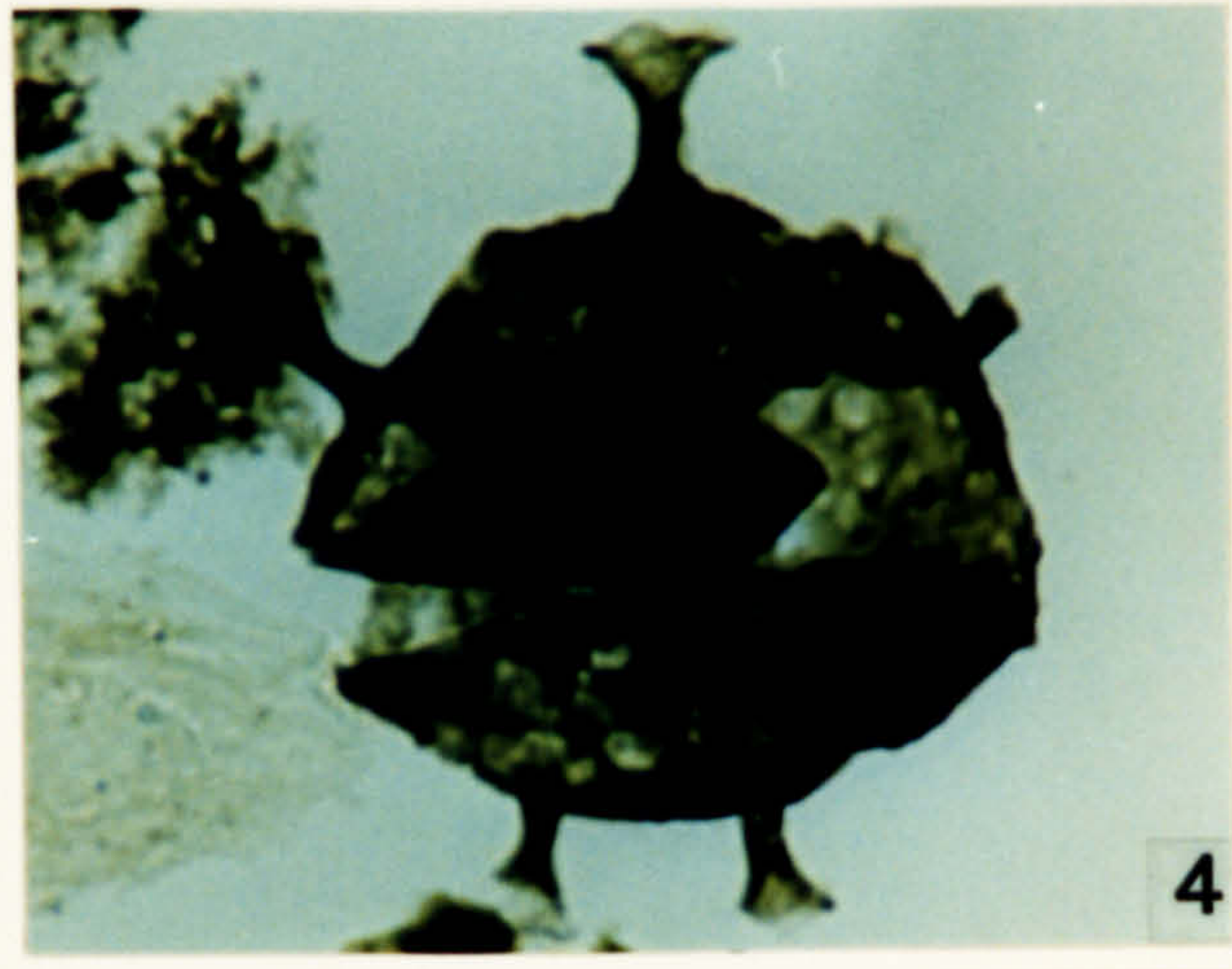
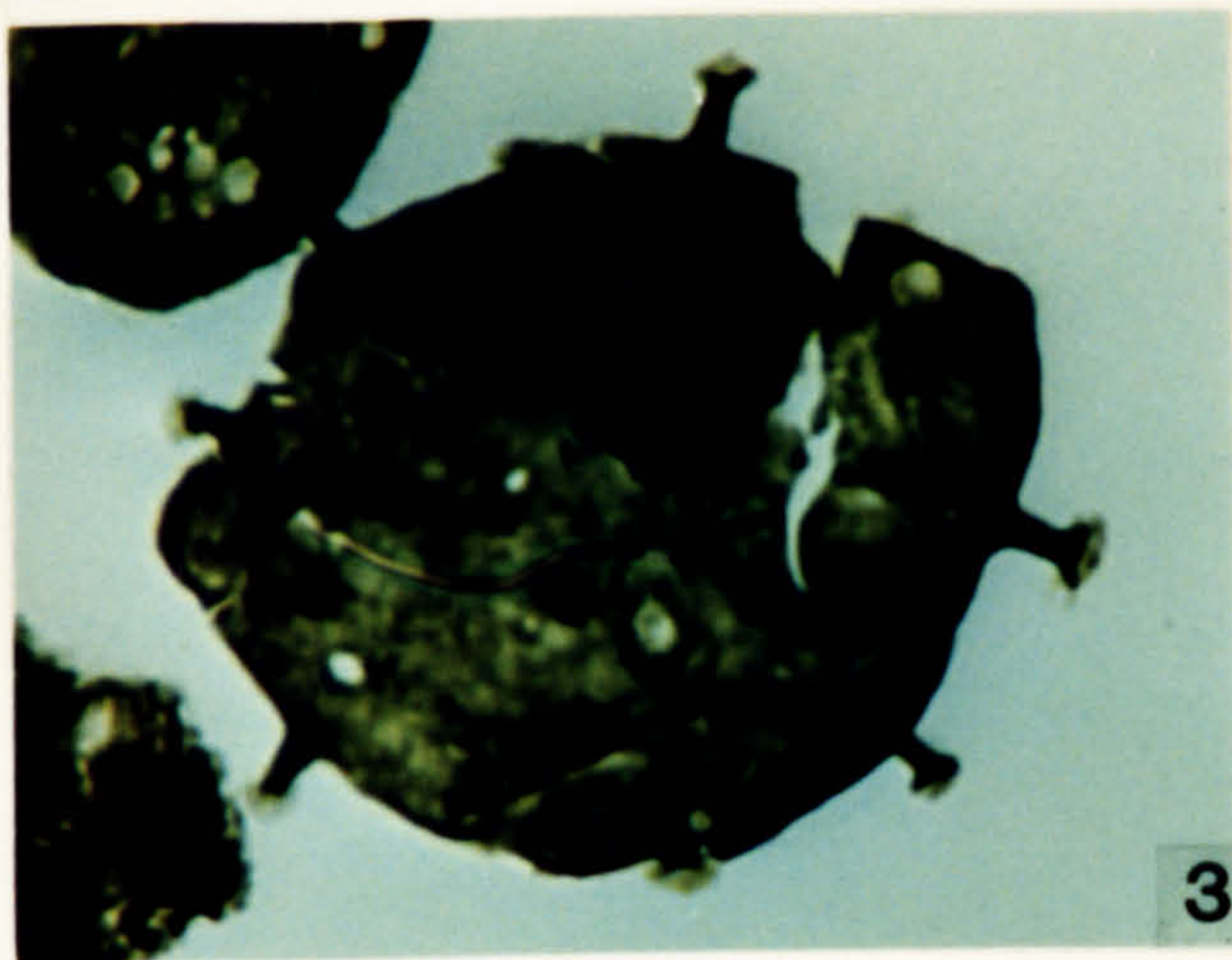
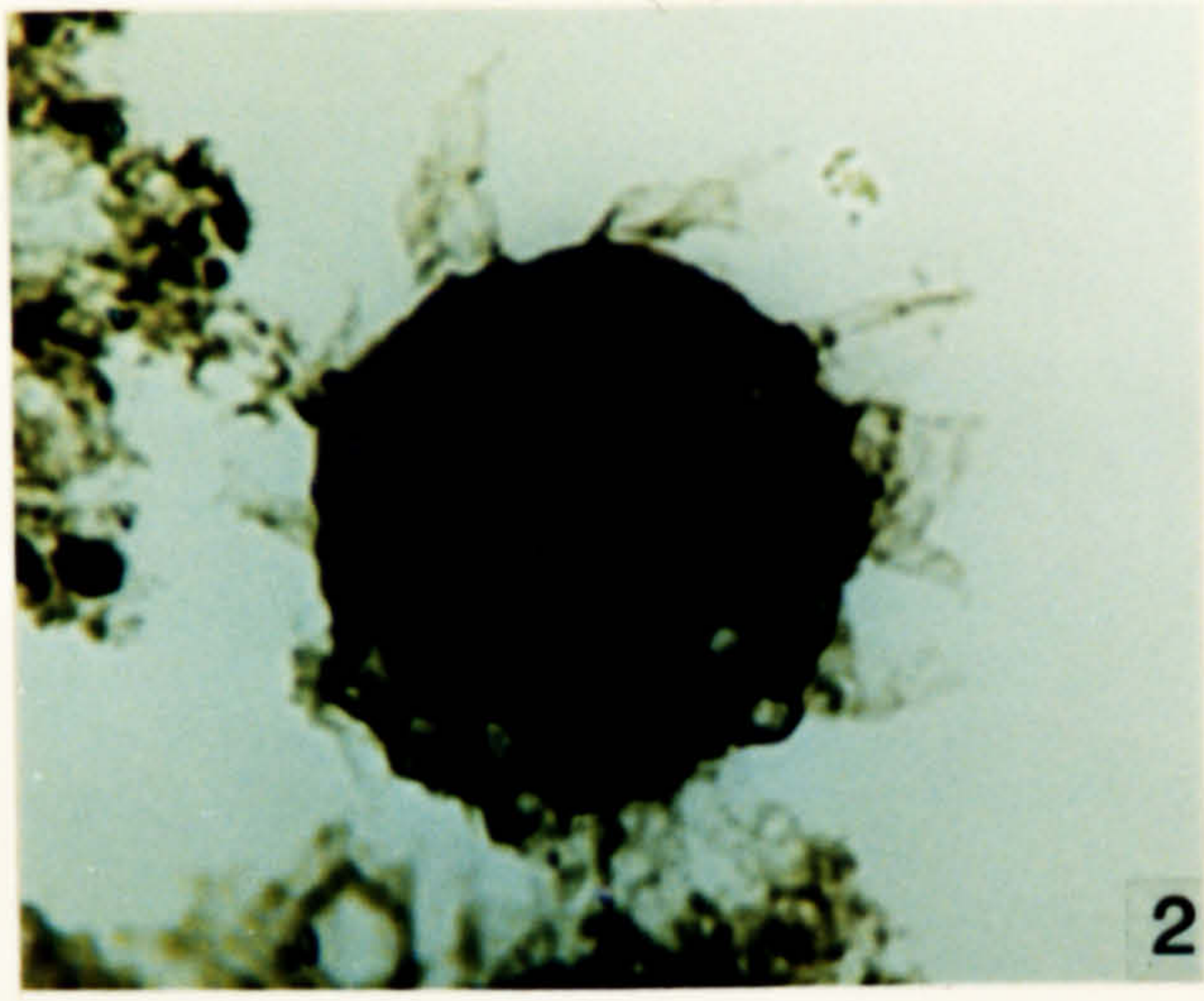
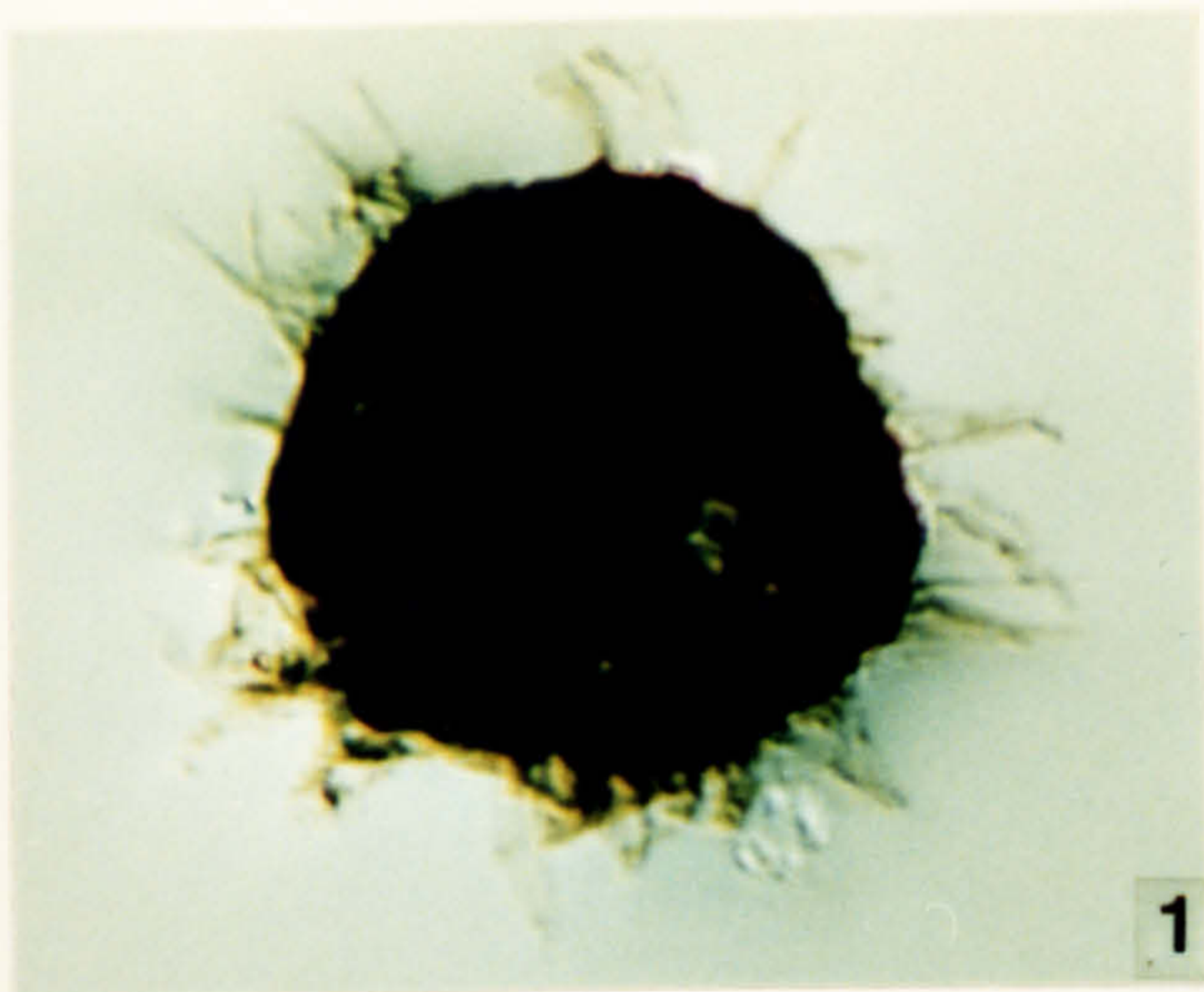
1. *Quisquilites buckhornensis* Wilson & Urban 1963. OD 2409.65, S-2, G23\4.
2. *Navifusa* sp. OD 2409.65, S-2, G23\4.
3. *Polyedrixium pharoane* Deunff 1954 ex Deunff 1961. OD 2409.65, S-1, J16\4.
4. *Polyedrixium* sp. OD 2409.65, S-1, M18\1.
5. *Polyedrixium fragulosum* Playford 1977. OD 2409.65, S-1, G33\3.
6. *Polyedrixium fragulosum* Playford 1977. OD 2409.65, S-1, K43\3.
7. *Palacanthus tripus* Martin 1984. OD 2409.65, S-1, H17\4.



**Plate 176.**

Acritarchs from the Anou Smaira Formation, Frasnian in age.

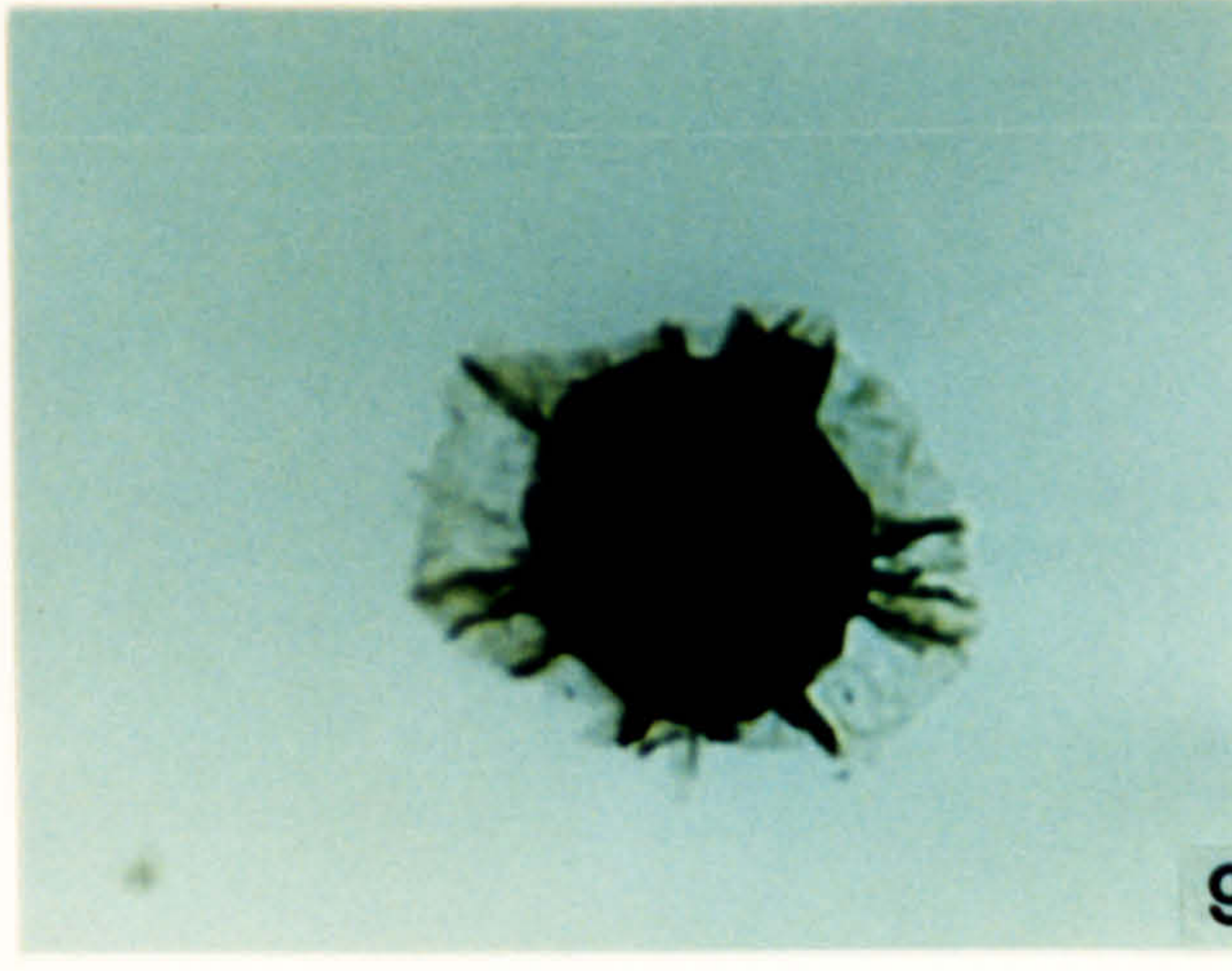
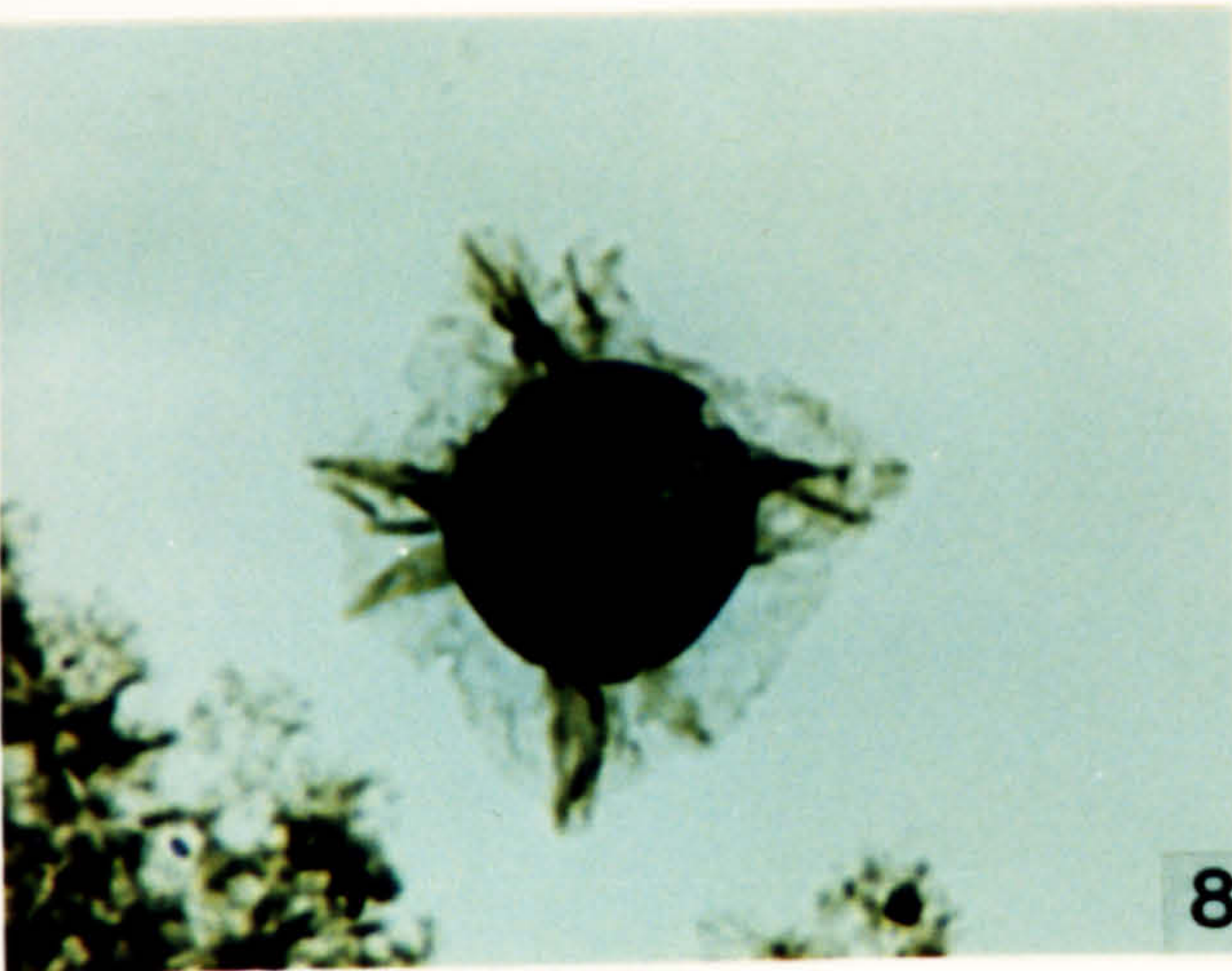
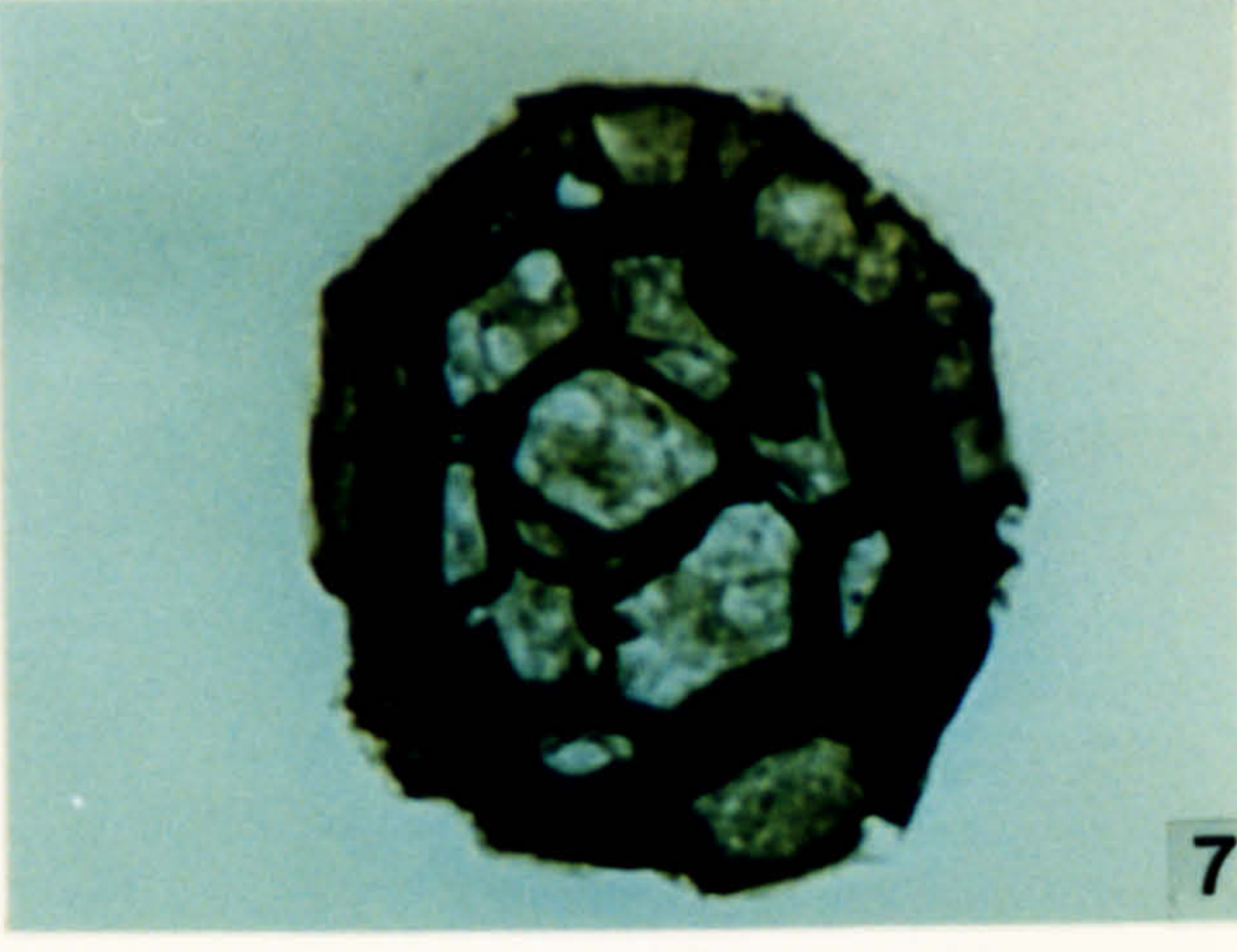
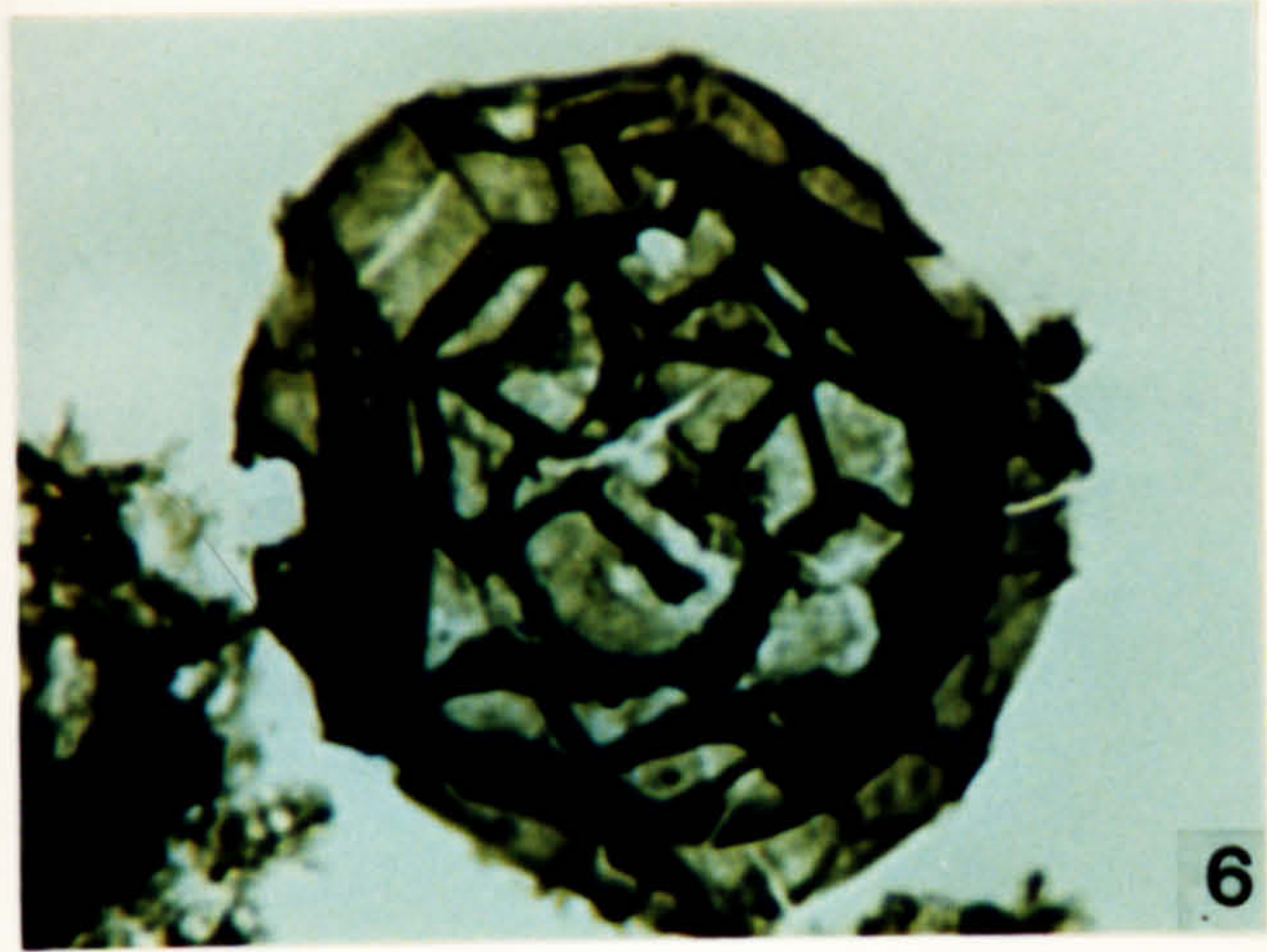
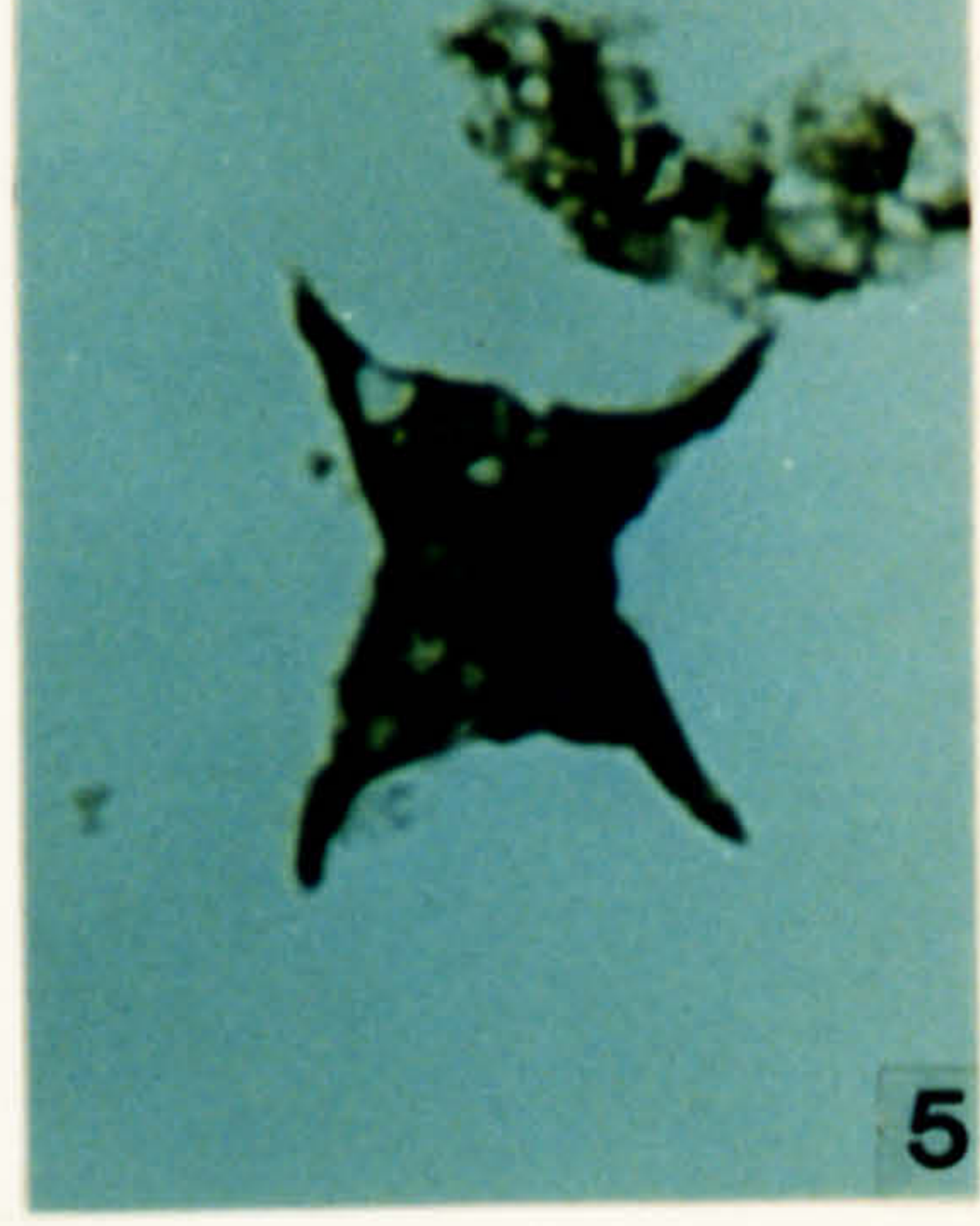
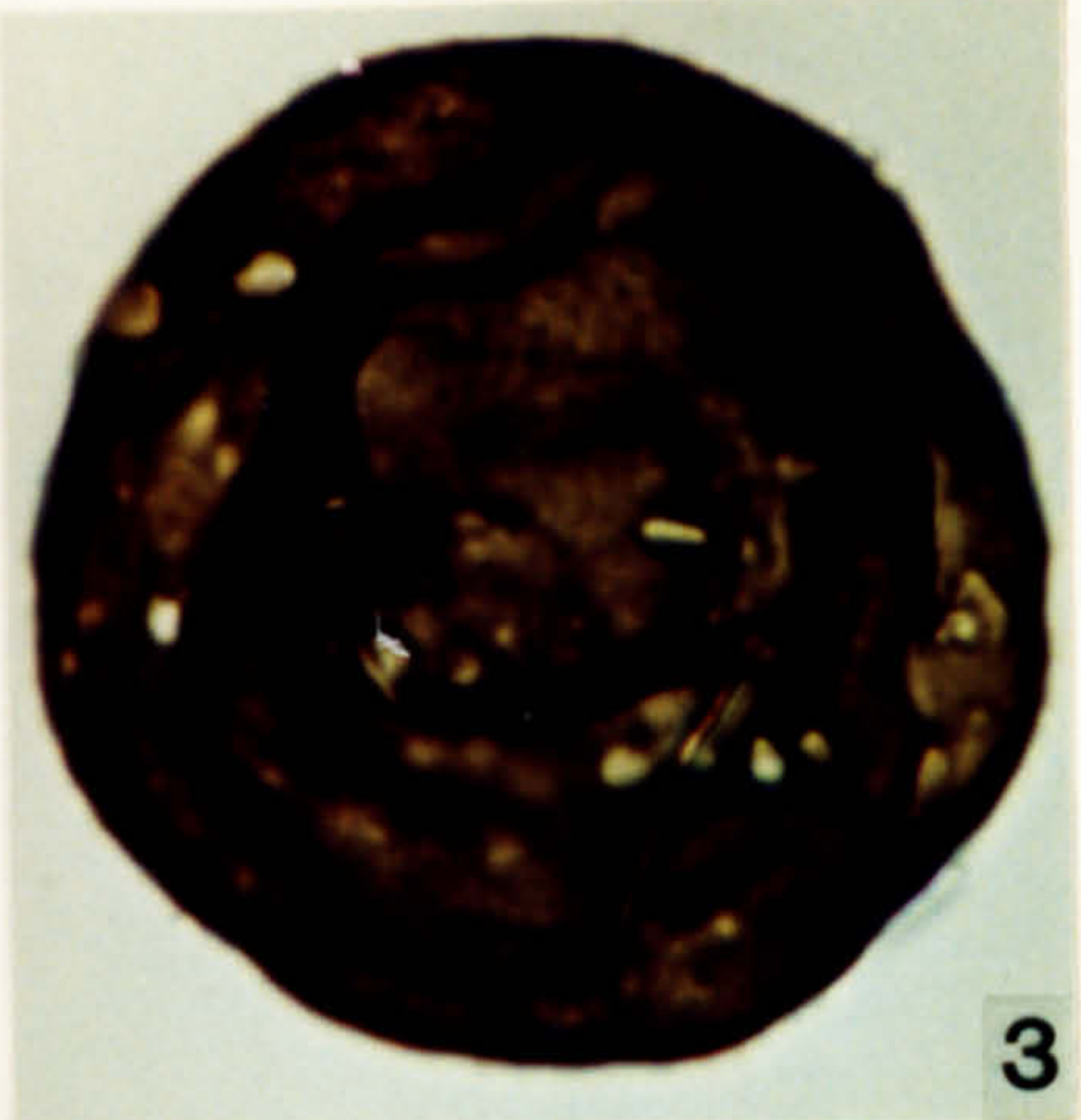
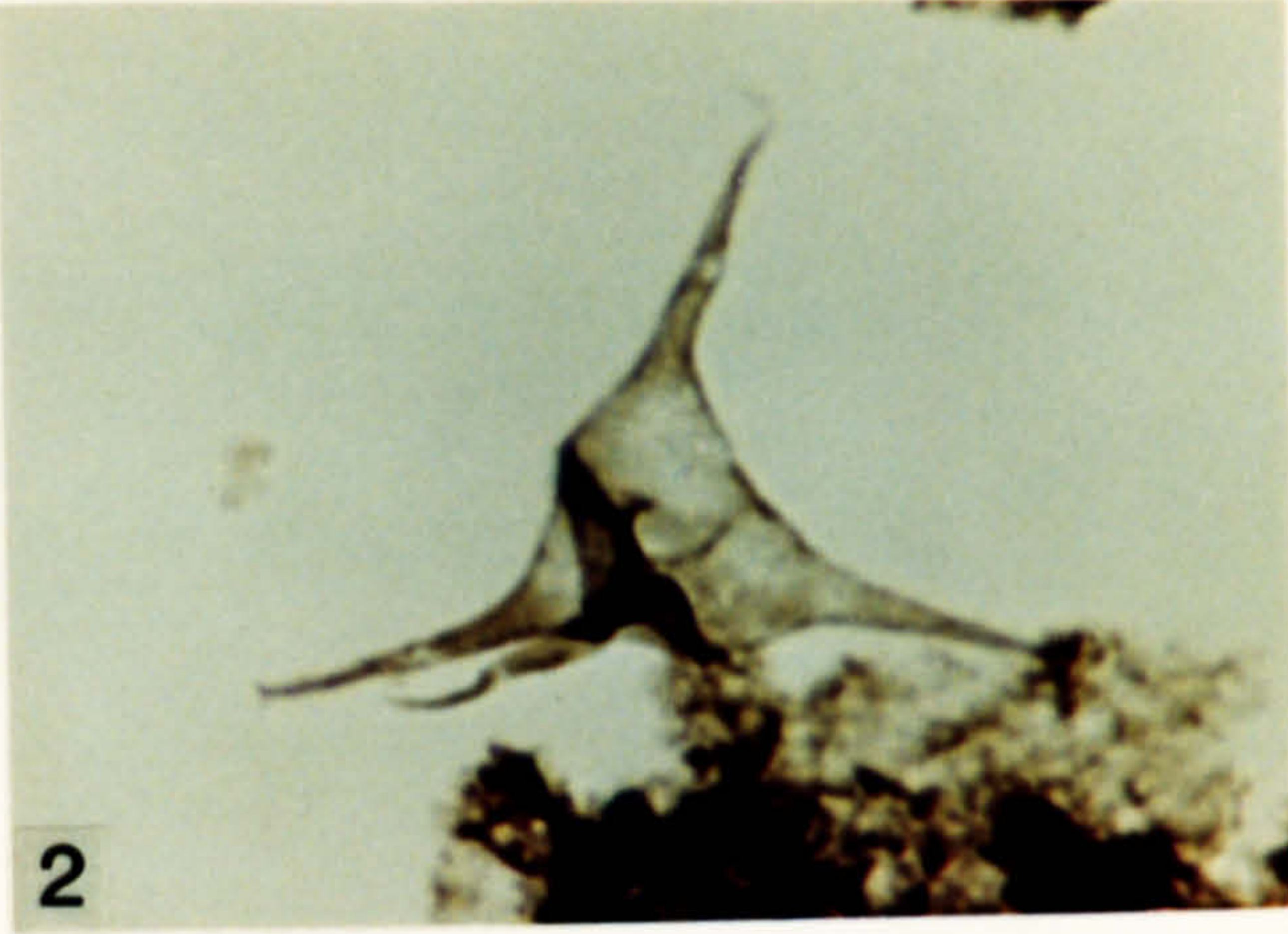
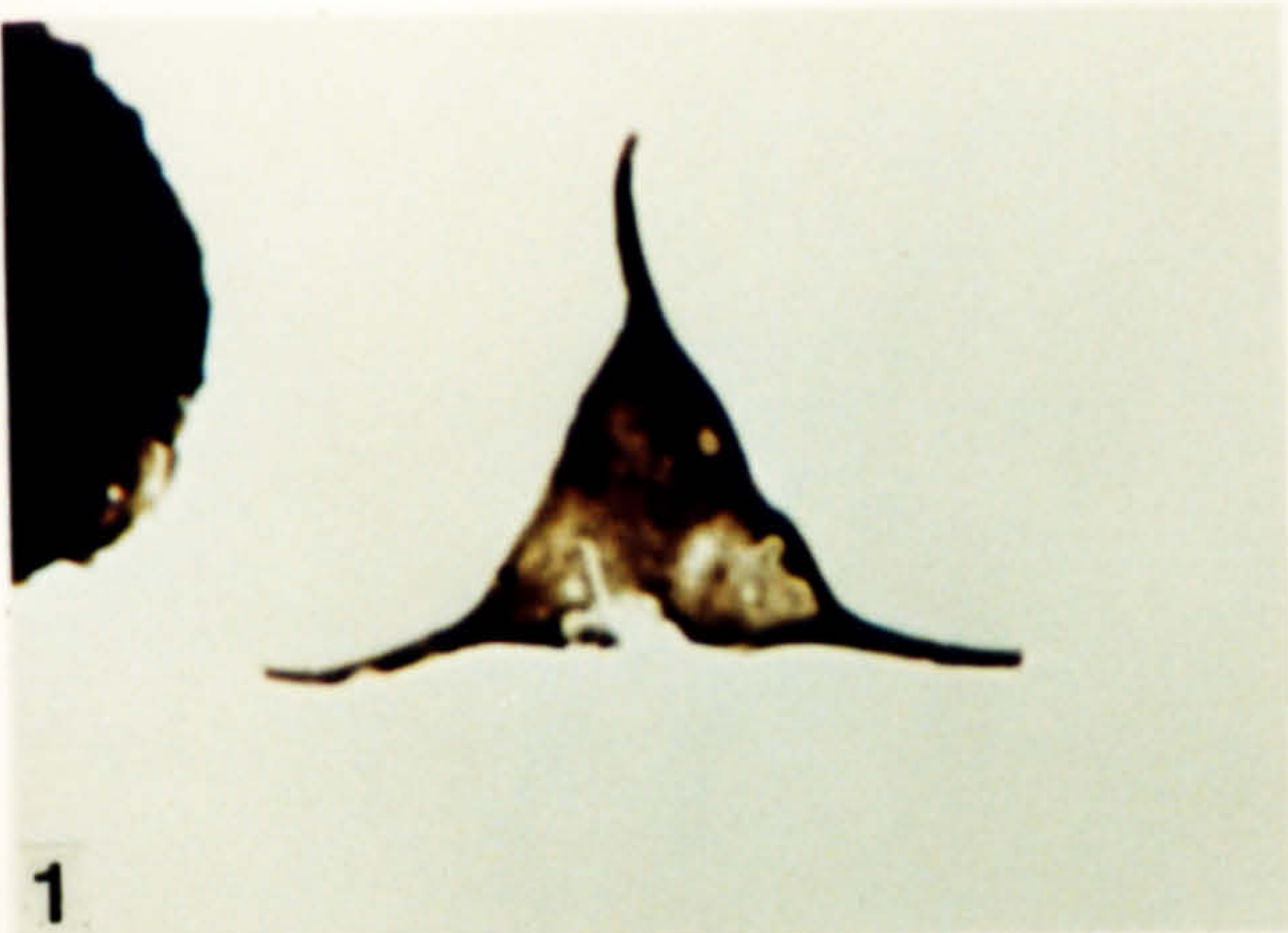
1. *Pratulasphaera novacula* Wicander & Playford 1985. OD 2409.65, S-1, E23\2.
2. *Pratulasphaera novacula* Wicander & Playford 1985. OD 2409.65, S-1, G21\2
3. *Umbellasphaeridium deflandrei* Moreau-Benoit 1967 ex Jardine *et al.* 1972. OD 2409.65, S-1, U33\2.
4. *Umbellasphaeridium deflandrei* Moreau-Benoit 1967 ex Jardine *et al.* 1972. OD 2409.65, S-1, H29\1.
5. *Stellinium octoaster* (Staplin) Jardine *et al.* 1972. OD 2409.65, S-2, N9\3.
6. *Stellinium octoaster* (Staplin) Jardine *et al.* 1972. OD 2409.65, S-1, H14\1.
7. *Stellinium comptum* Wicander & Loeblich 1977. OD 2409.65, S-1, K43\3.
8. *Stellinium comptum* Wicander & Loeblich 1977. OD 2409.65, S-2, E21\1.



**Plate 177.**

Acritarchs and prasinophycean algae from the Anou Smaira Formation, Frasnian in age.

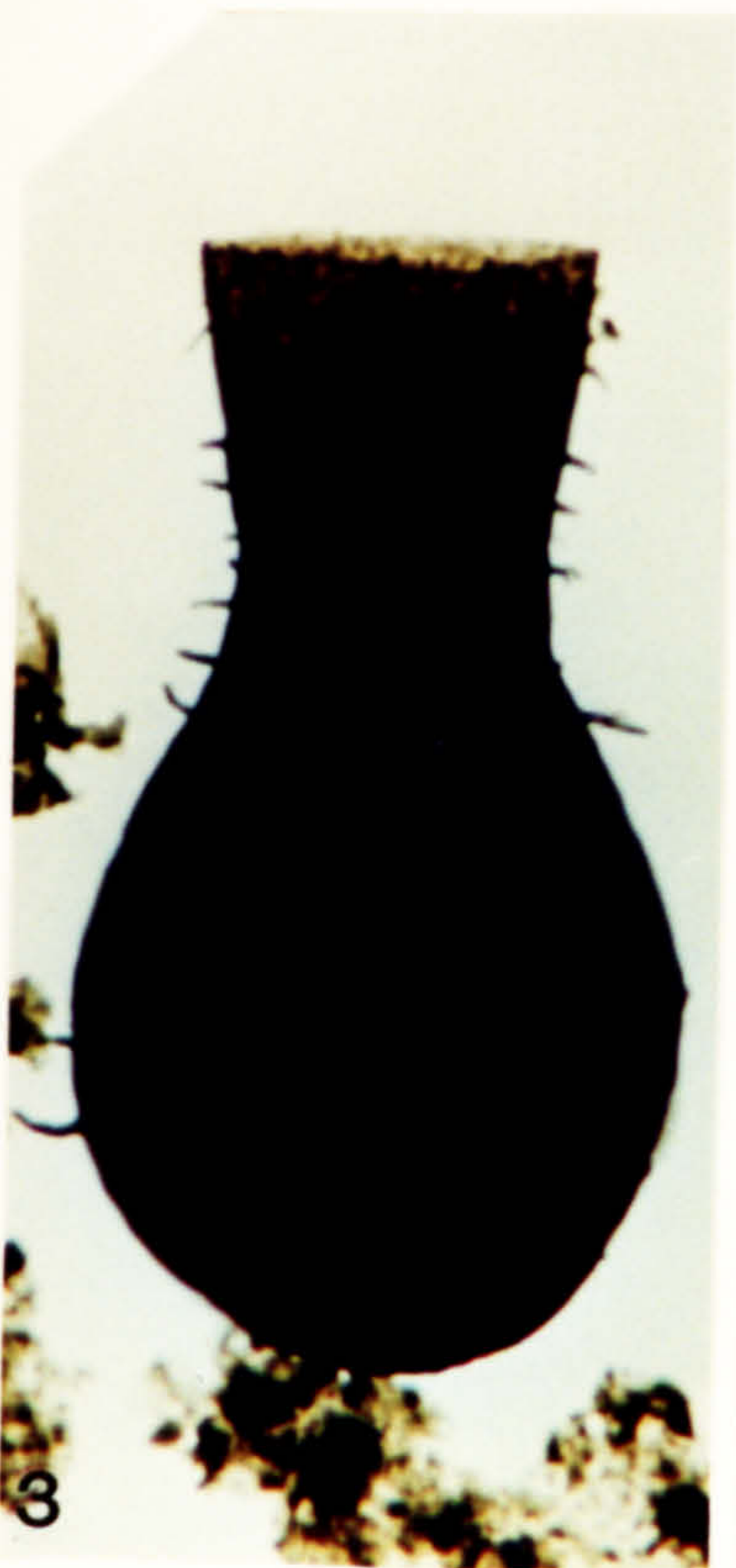
1. *Veryhachium downiei* var. *downiei* Stockmans & Williere 1962. OD 2409.65, S-1, J40\4.
2. *Veryhachium europeanum* Stockmans & Williere 1960. OD 2409.65, S-1, V30\3.
3. *Tasmanites* sp. OD 2409.65, S-2, N12\2.
4. *Tasmanites* sp. OD 2409.65, S-1, C35\2.
5. *Winwaloesusia distracta* (Deunff) Deunff 1977. OD 2409.65, S-1, D30\1.
6. *Cymatiosphaera* sp. OD 2409.65, S-1, E27\3.
7. *Cymatiosphaera* sp. OD 2409.65, S-1, D30\1.
8. *Cymatiosphaera nebulosa* (Deunff) Deflandre 1954. OD 2409.65, S-1, F27\4.
9. *Cymatiosphaera nebulosa* (Deunff) Deflandre 1954. OD 2409.65, S-1, C42\1.



**Plate 178.**

Chitinozoa from the Anou Smaira Formation, Frasnian in age.

1. *Sphaerochitina pilosa* Collinson & Scott 1958. OD 2409.65; S-1, O26\1.
2. *Sphaerochitina pilosa* Collinson & Scott 1958. OD 2409.65, S-1, J28\3.
3. *Sphaerochitina pilosa* Collinson & Scott 1958. OD 2409.65, S-1, K24\1.
4. *Sphaerochitina pilosa* Collinson & Scott 1958. OD 2409.65, S-1, K14\4.
5. *Sphaerochitina sphaerocephala?* (Eisenack) Eisenack 1955. OD 2409.65, S-2, D7\3.

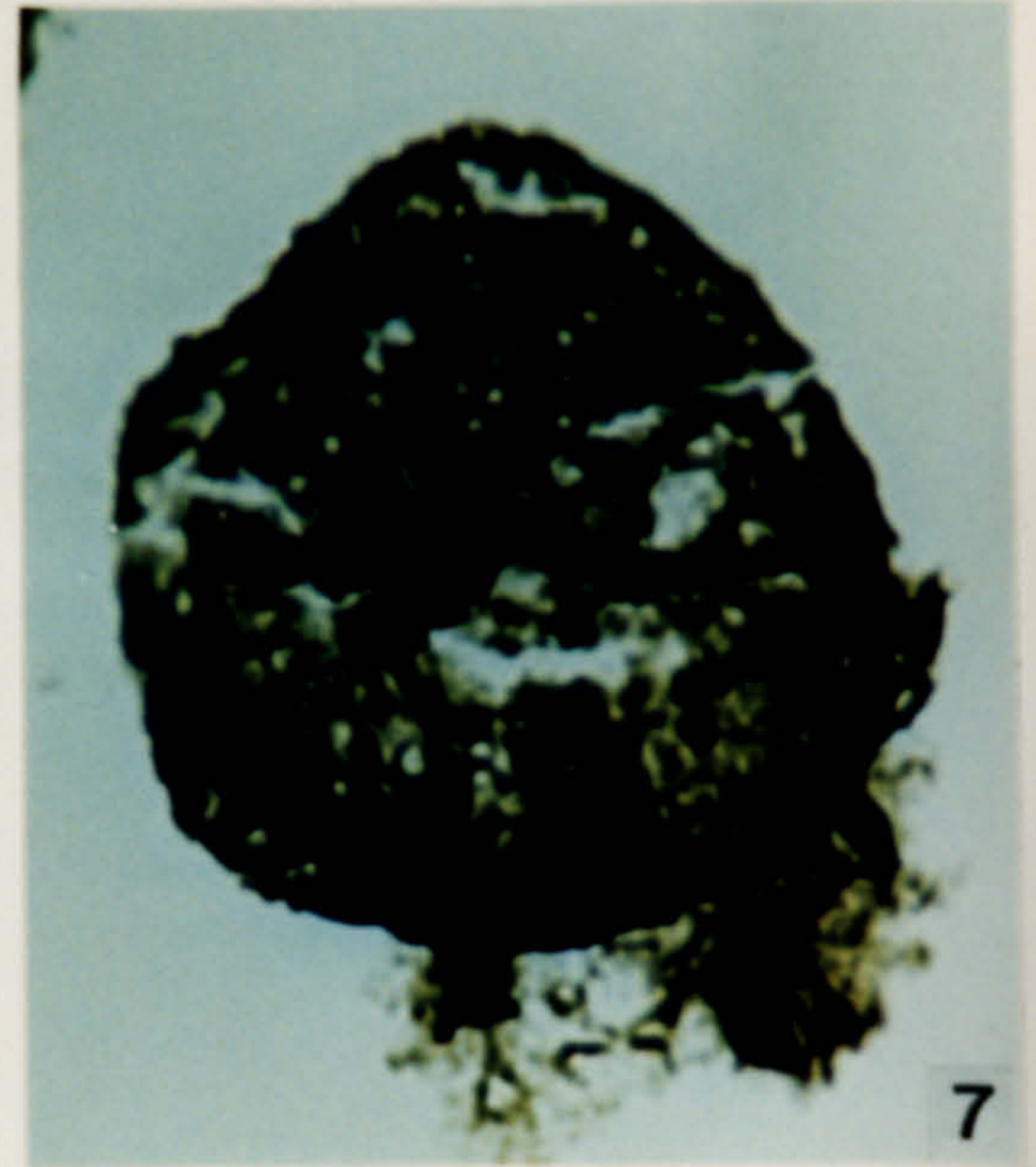
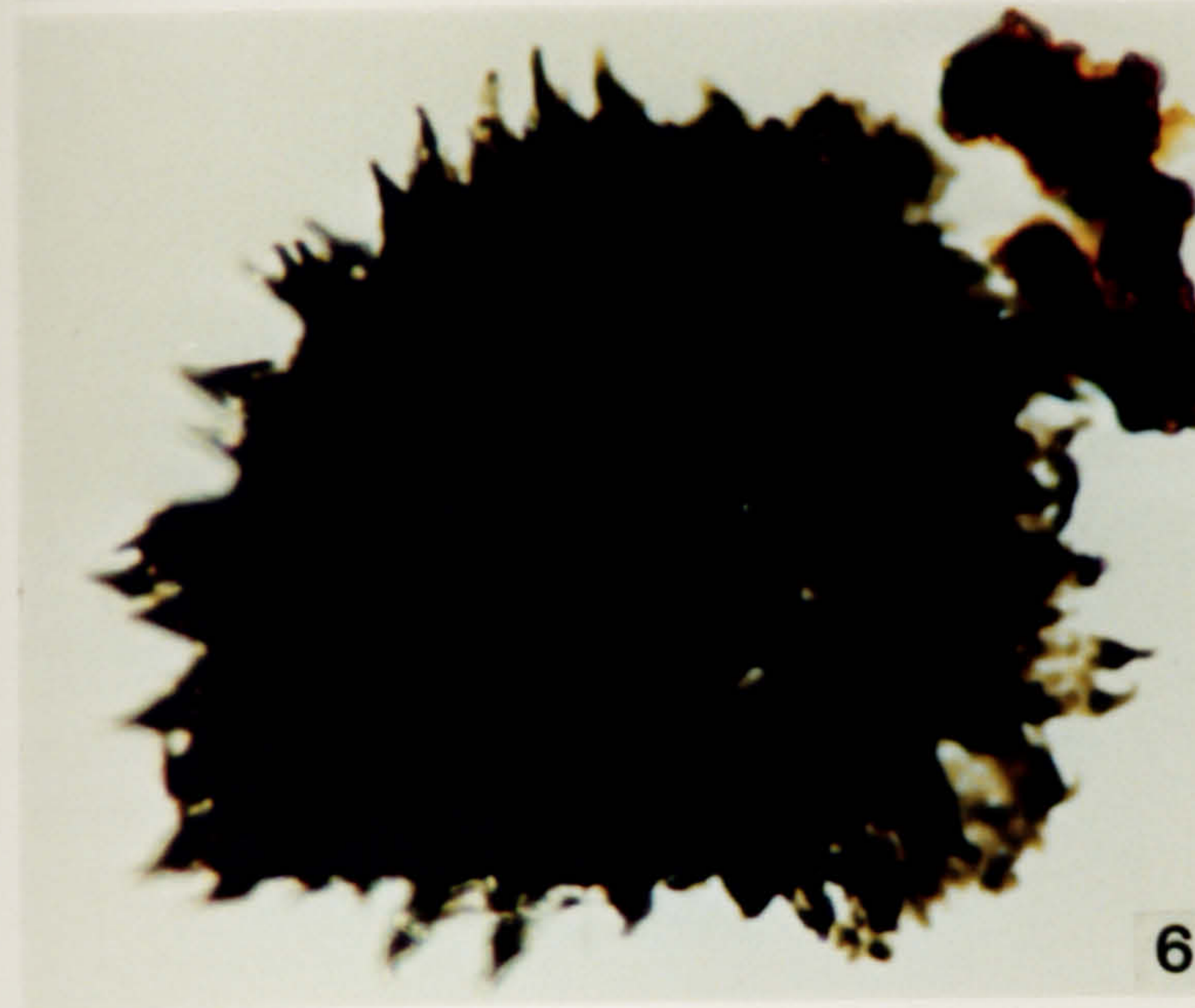
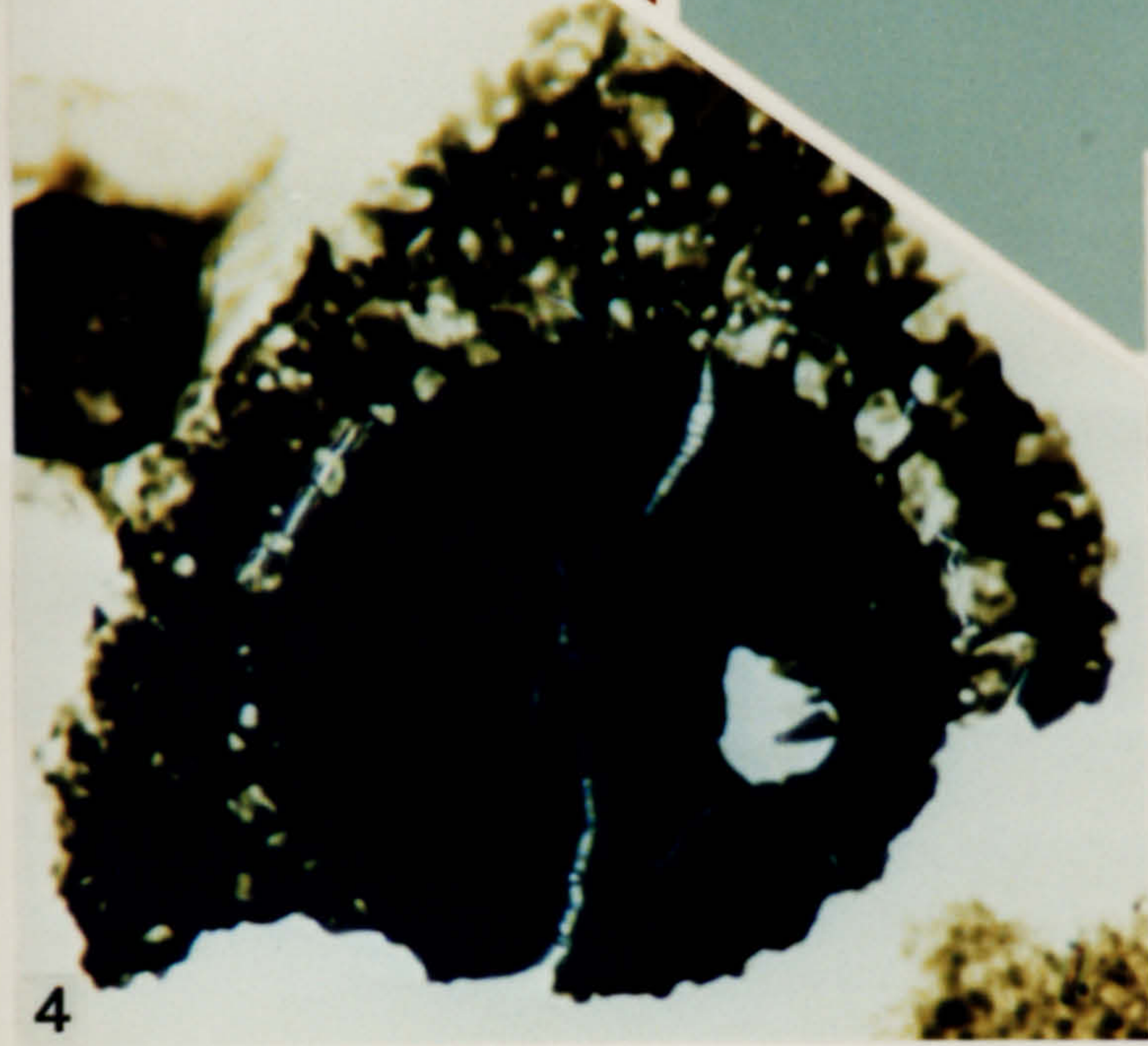
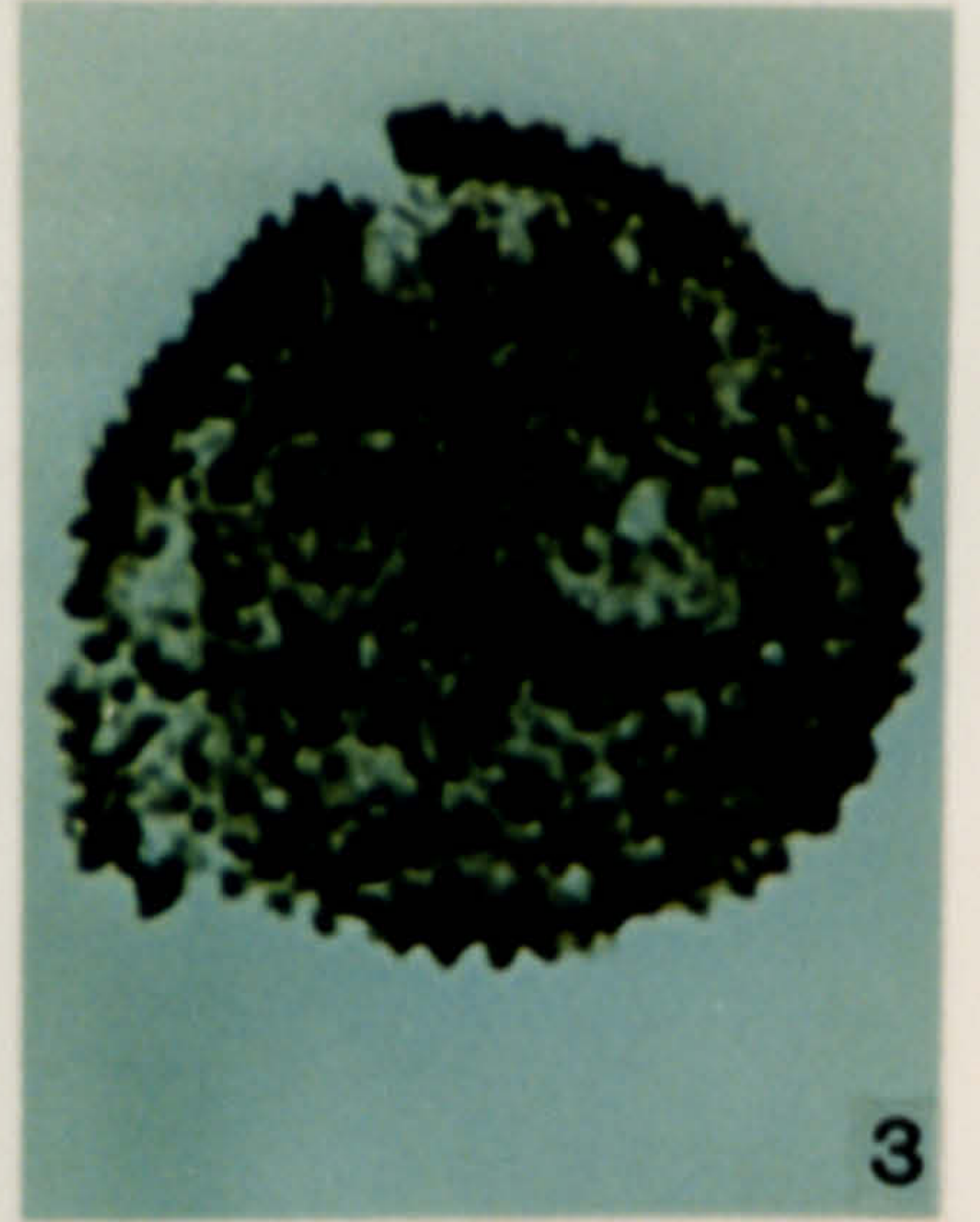




**Plate 179.**

Spores from the Anou Smaira Formation, Frasnian in age.

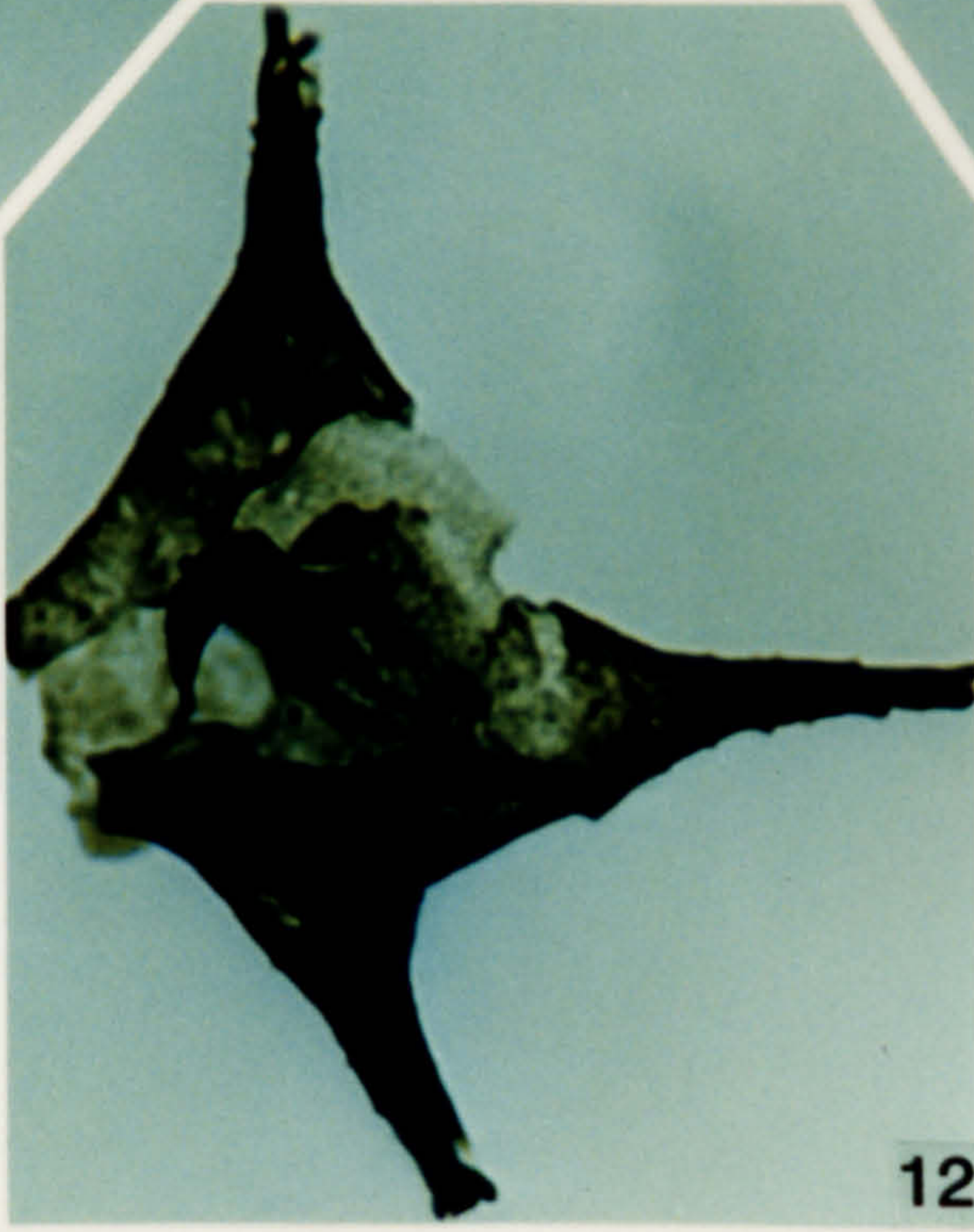
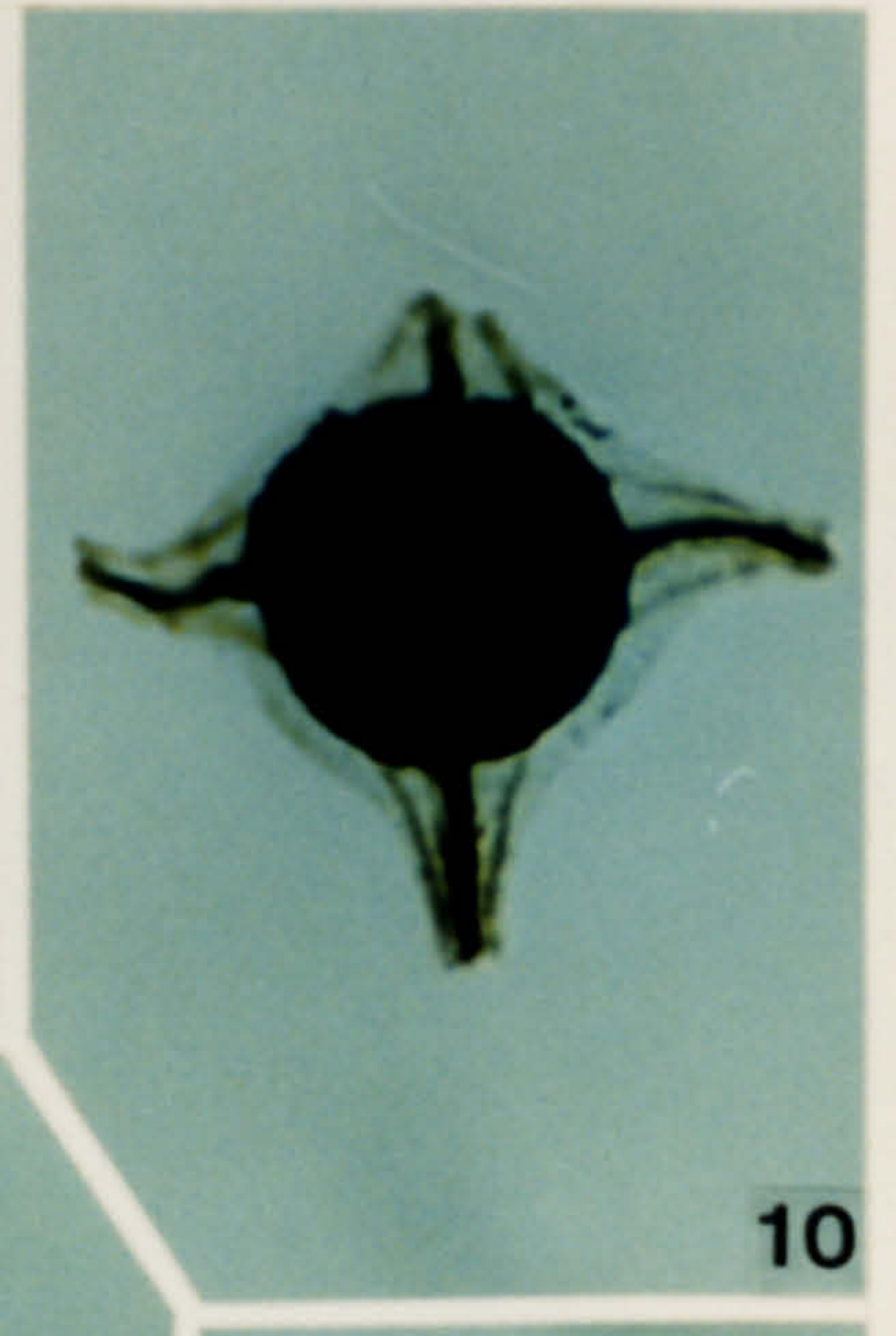
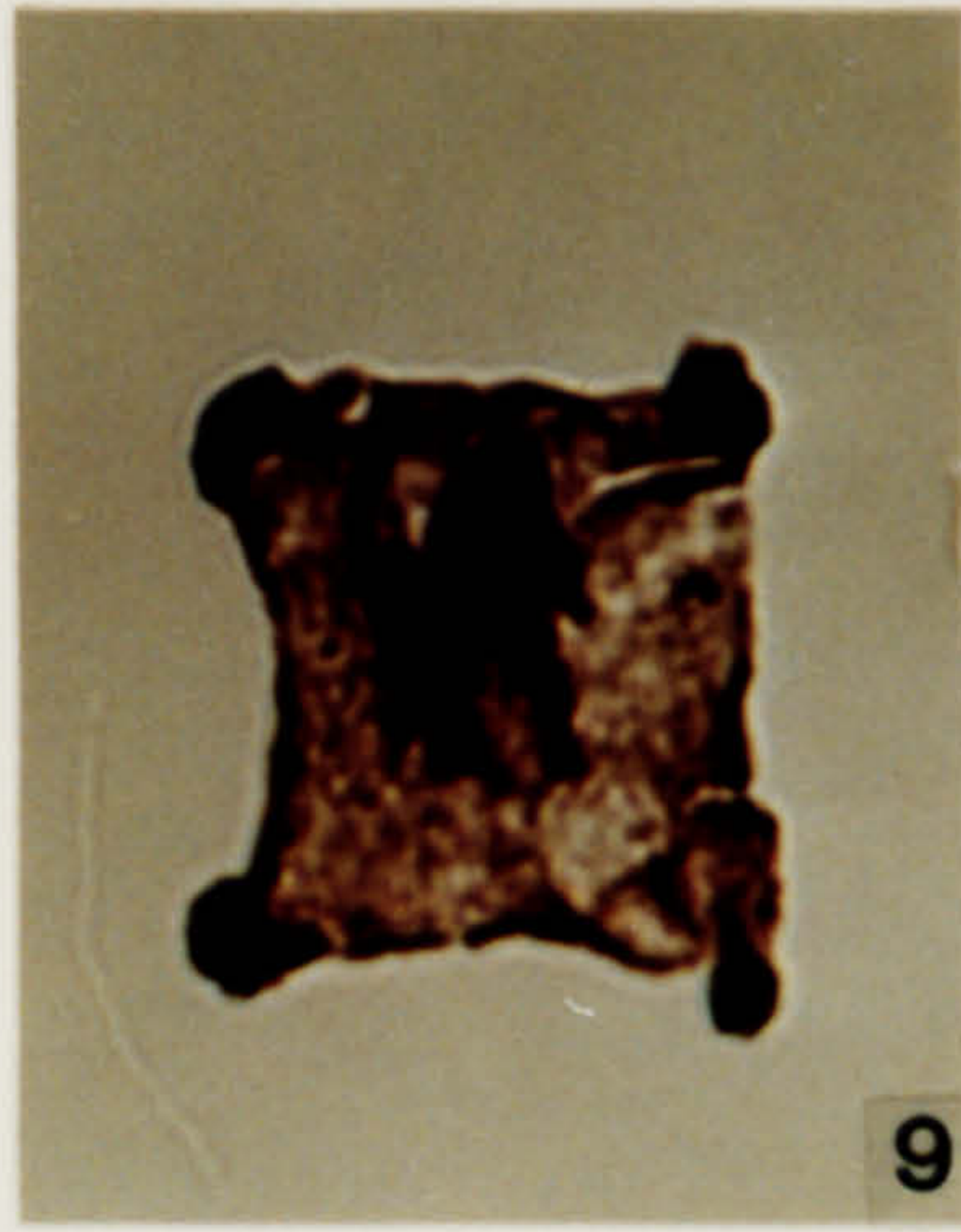
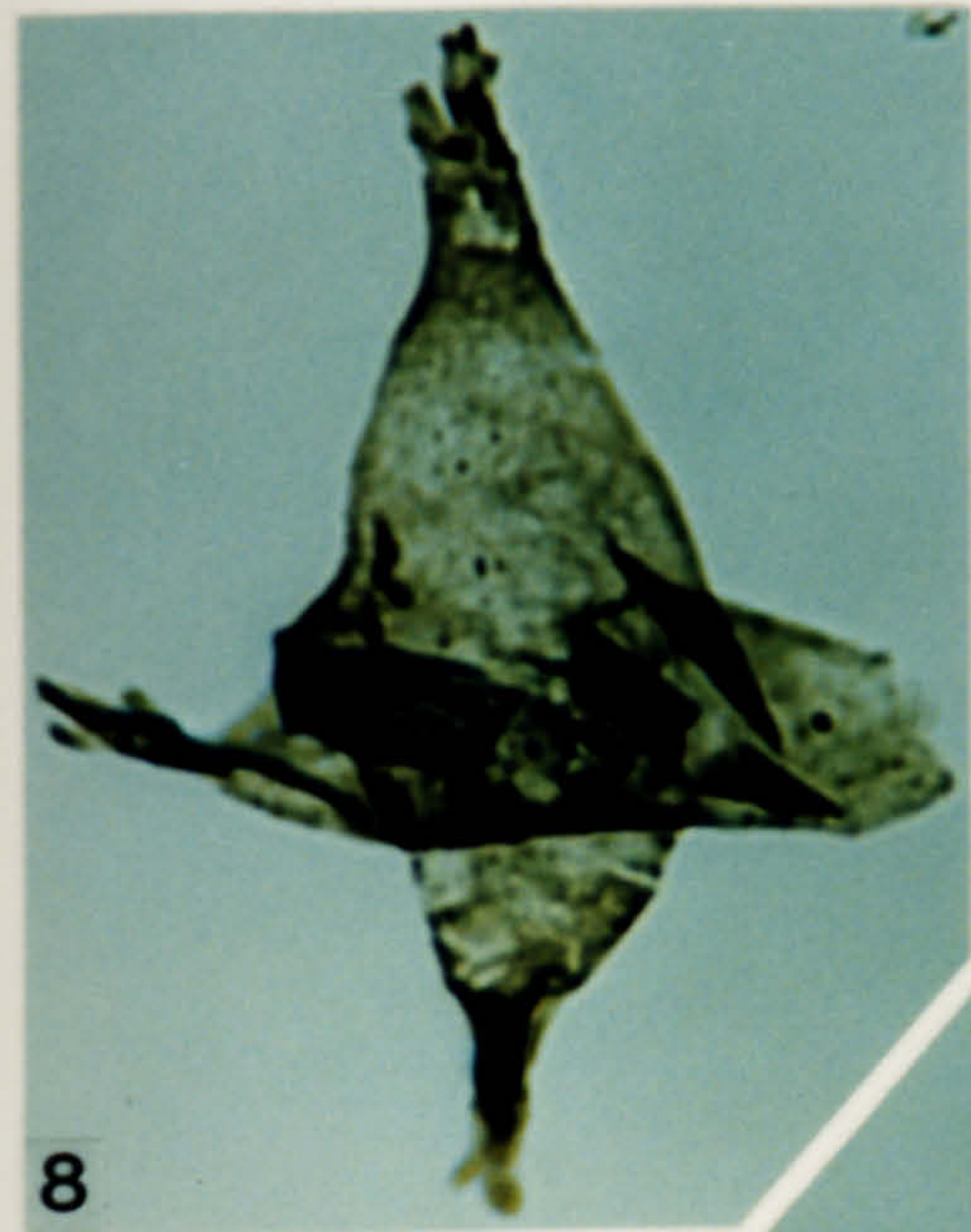
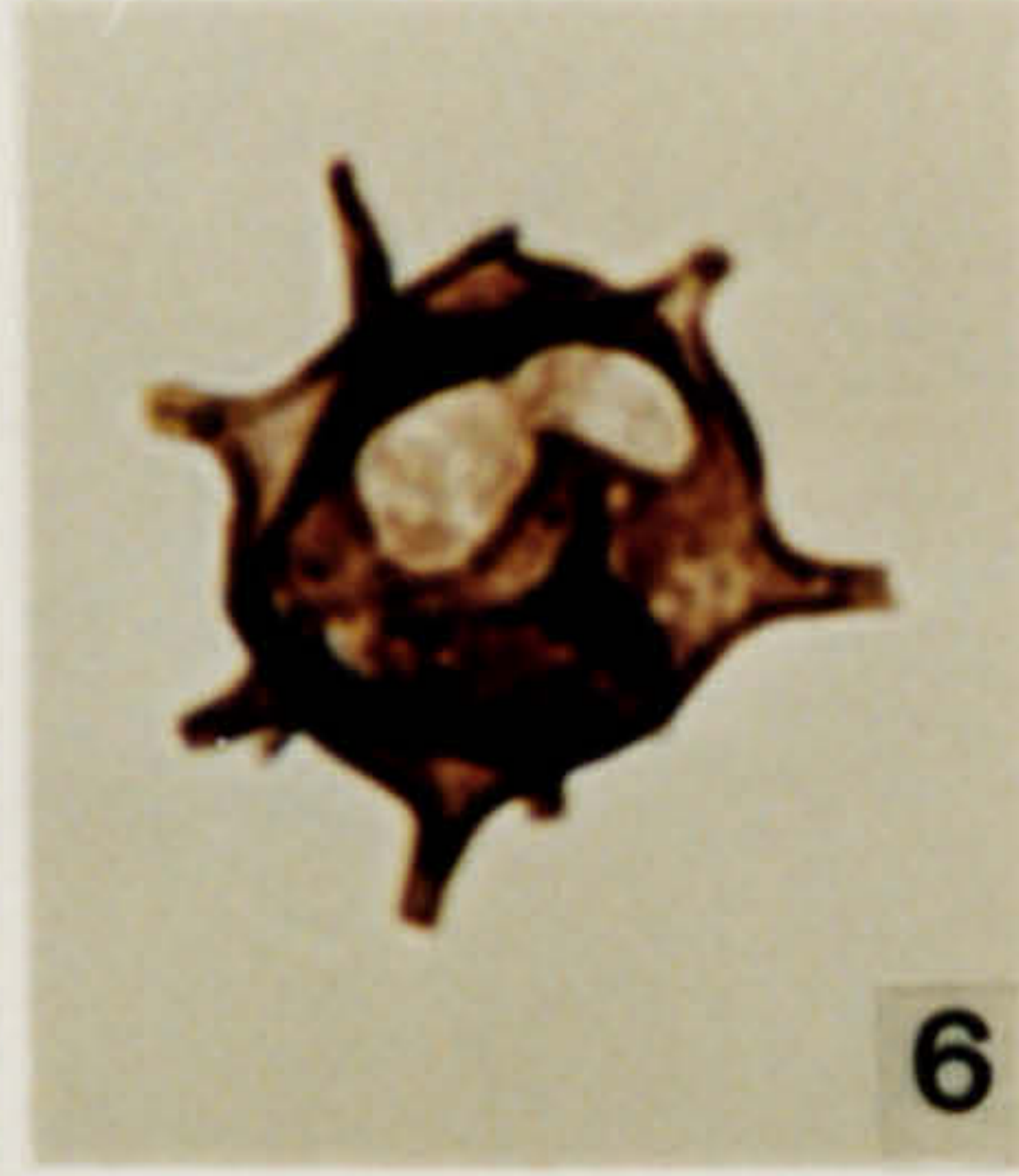
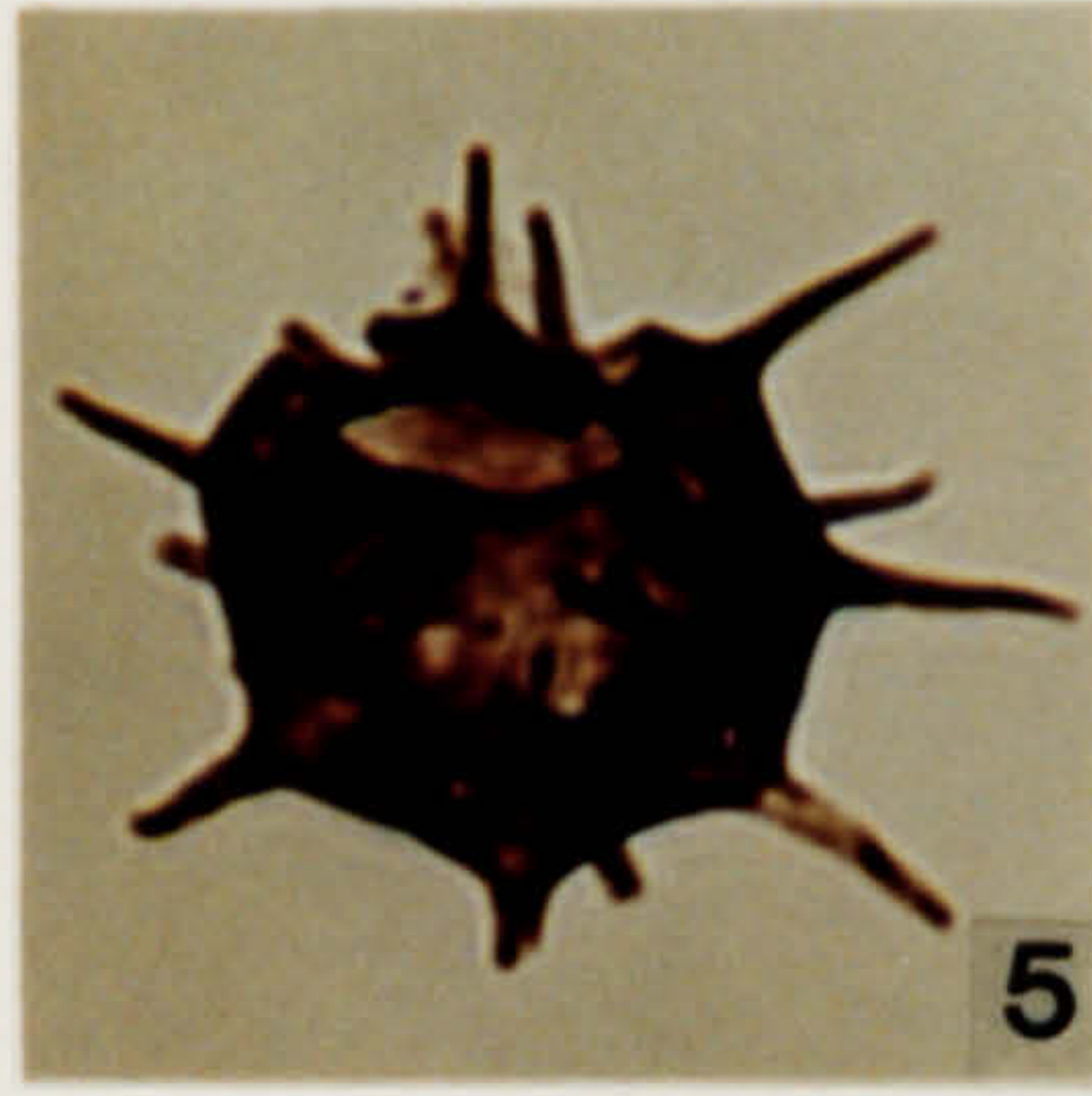
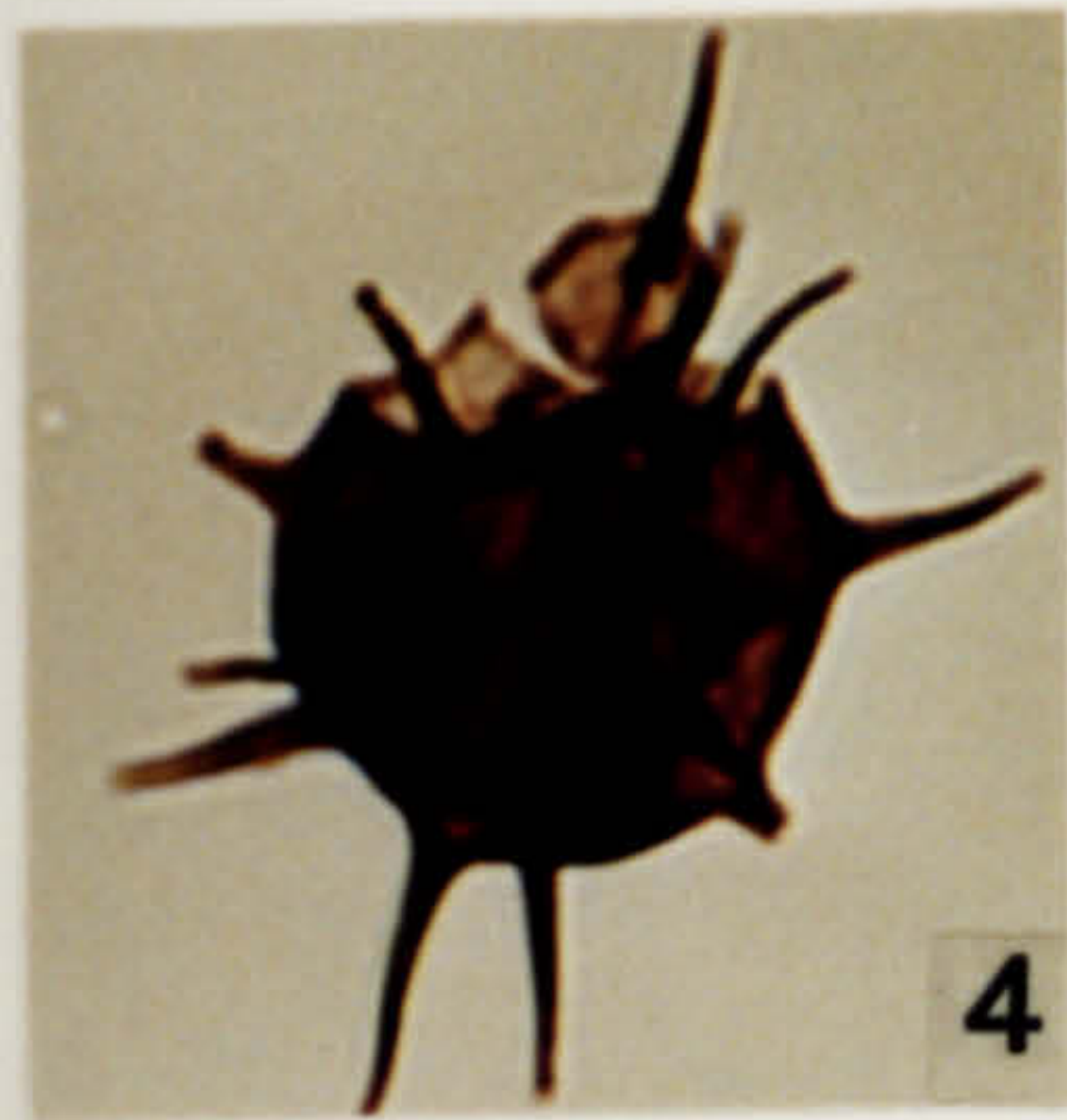
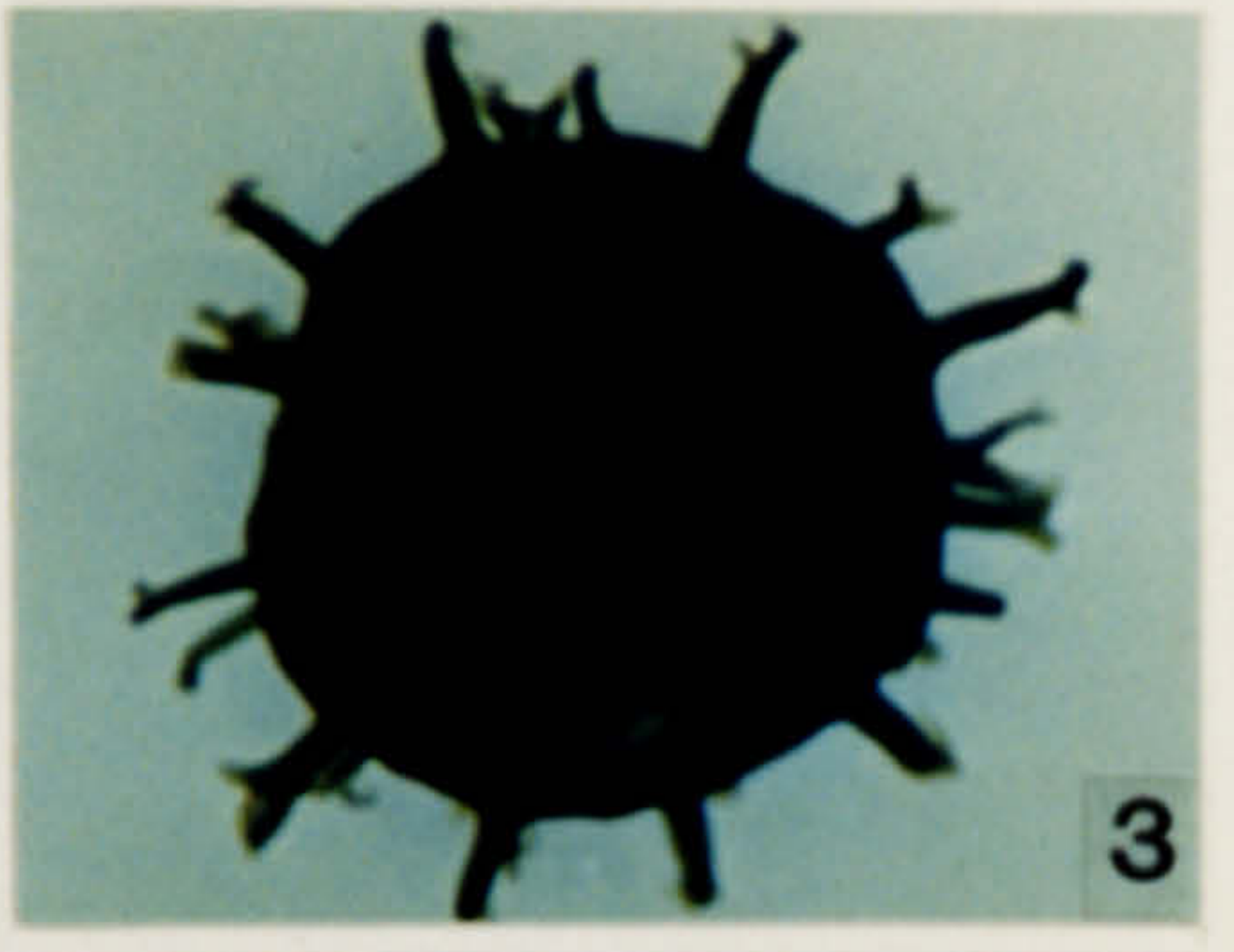
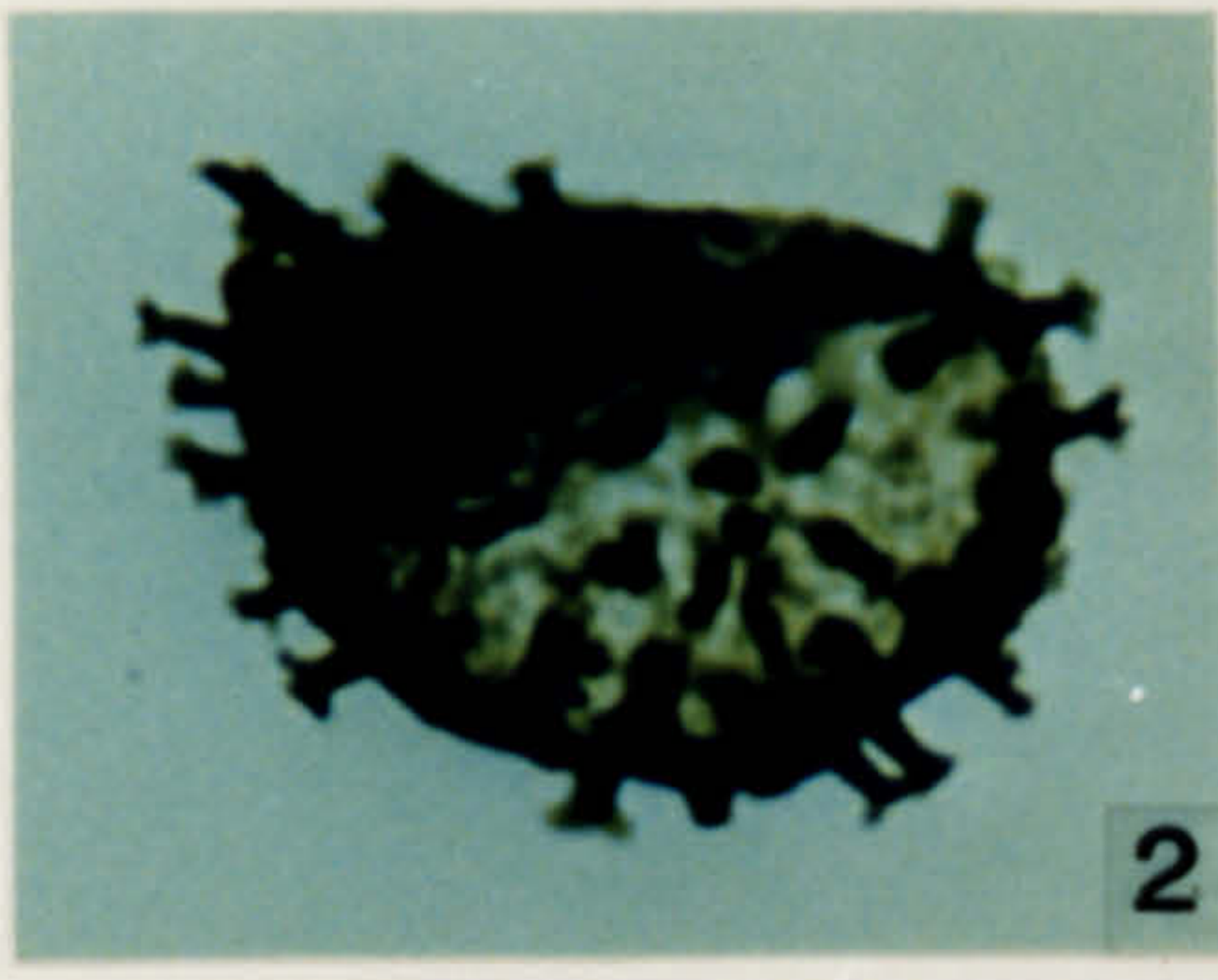
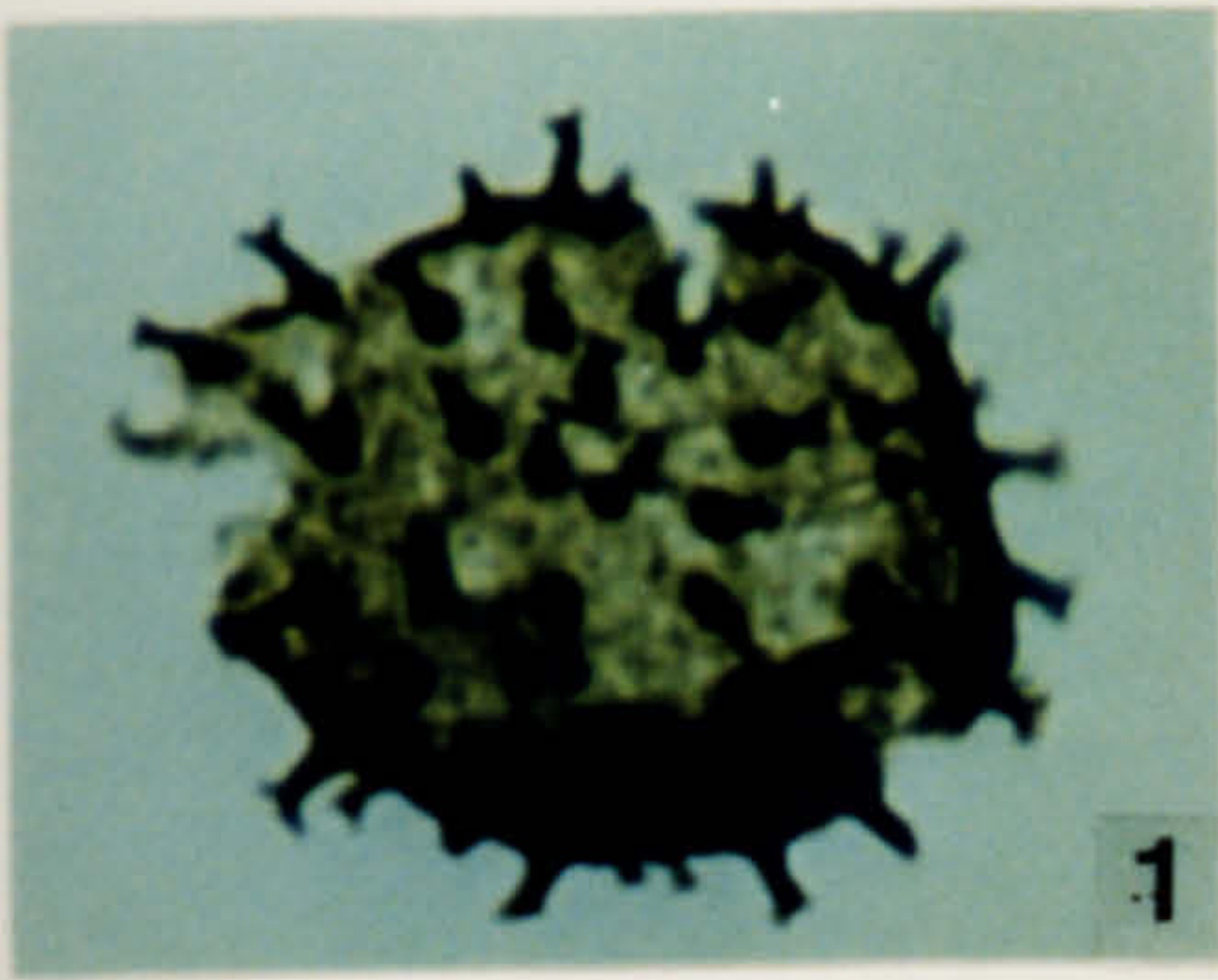
1. *Apiculiretusotriletes* sp. OD 2409.65, S-1, L22\2.
2. *Retusotriletes* sp. OD 2409.65, S-1, E39\1.
3. *Grandispora* sp. OD 2409.65, S-1, F39\1.
4. *Vellatisporites* sp. OD 2409.65, S-1, S20\4.
5. *Spelaeotriletes* sp. OD 2409.65, S-1, U41\1.
6. *Ancyrospora?* sp. OD 2409.65, S-1, V8\4.
7. *Spelaeotriletes* sp. OD 2409.65, S-1, E15\-.



**Plate 180.**

Acritarchs from the Draa Formation, early Famennian in age.

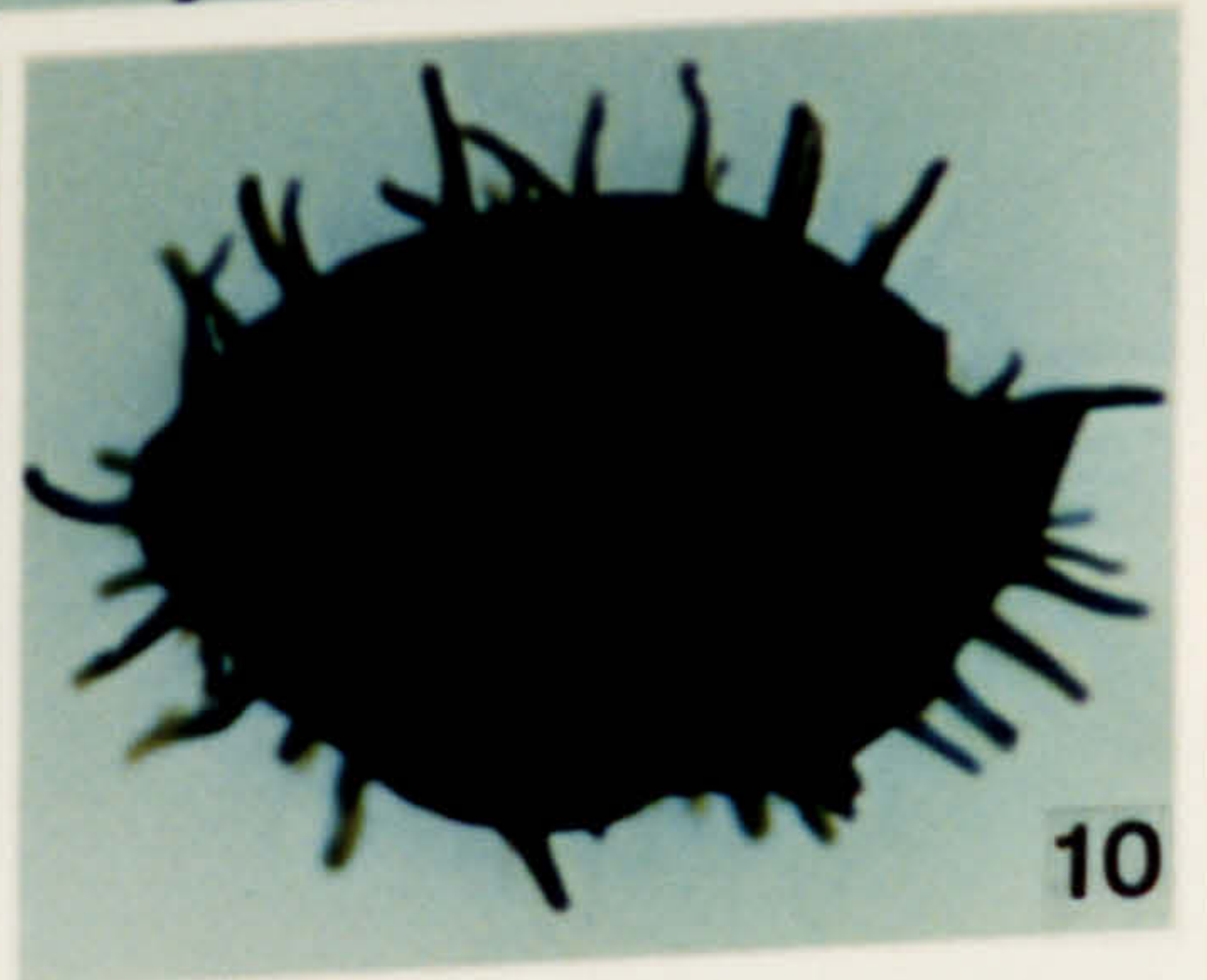
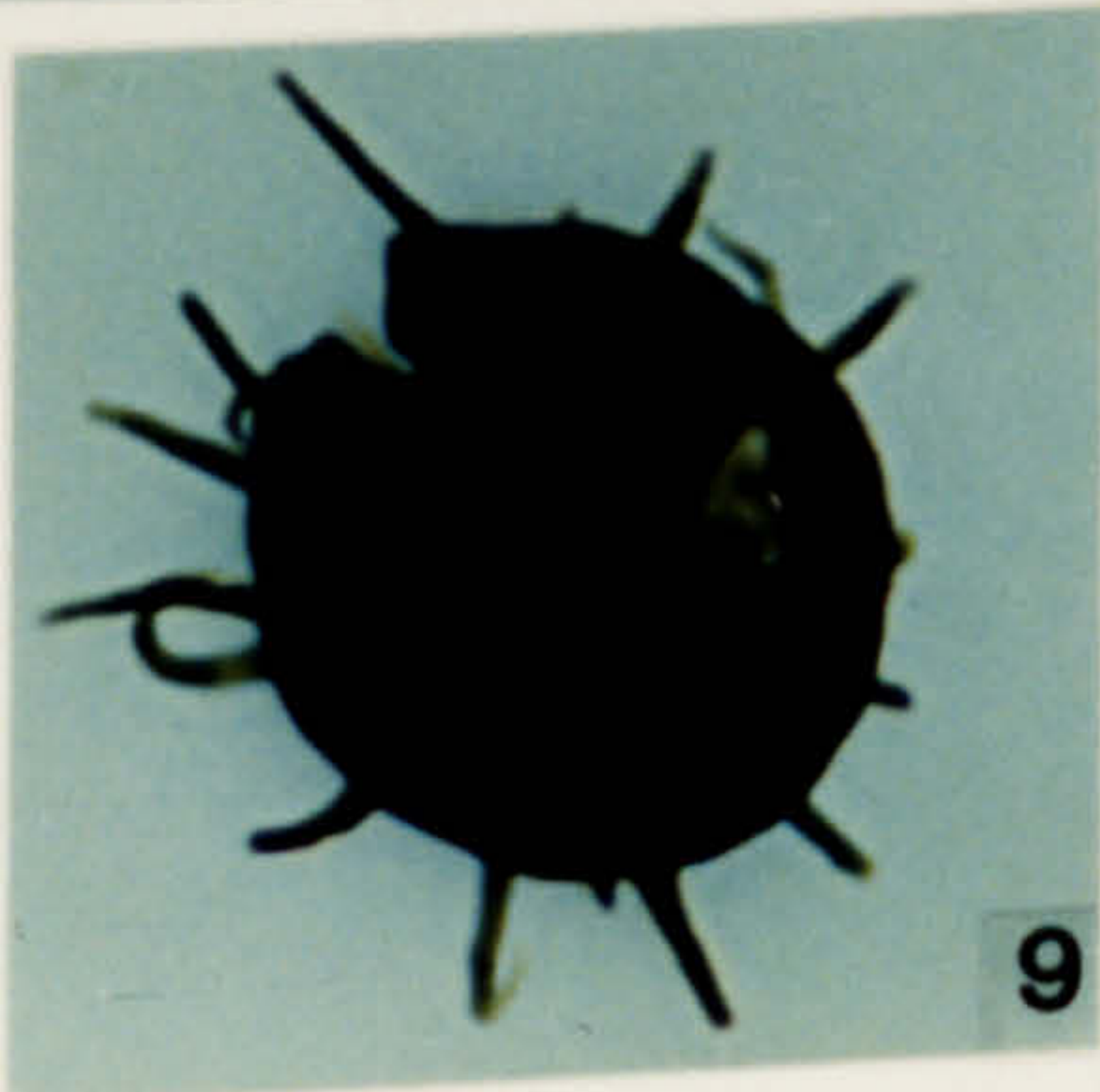
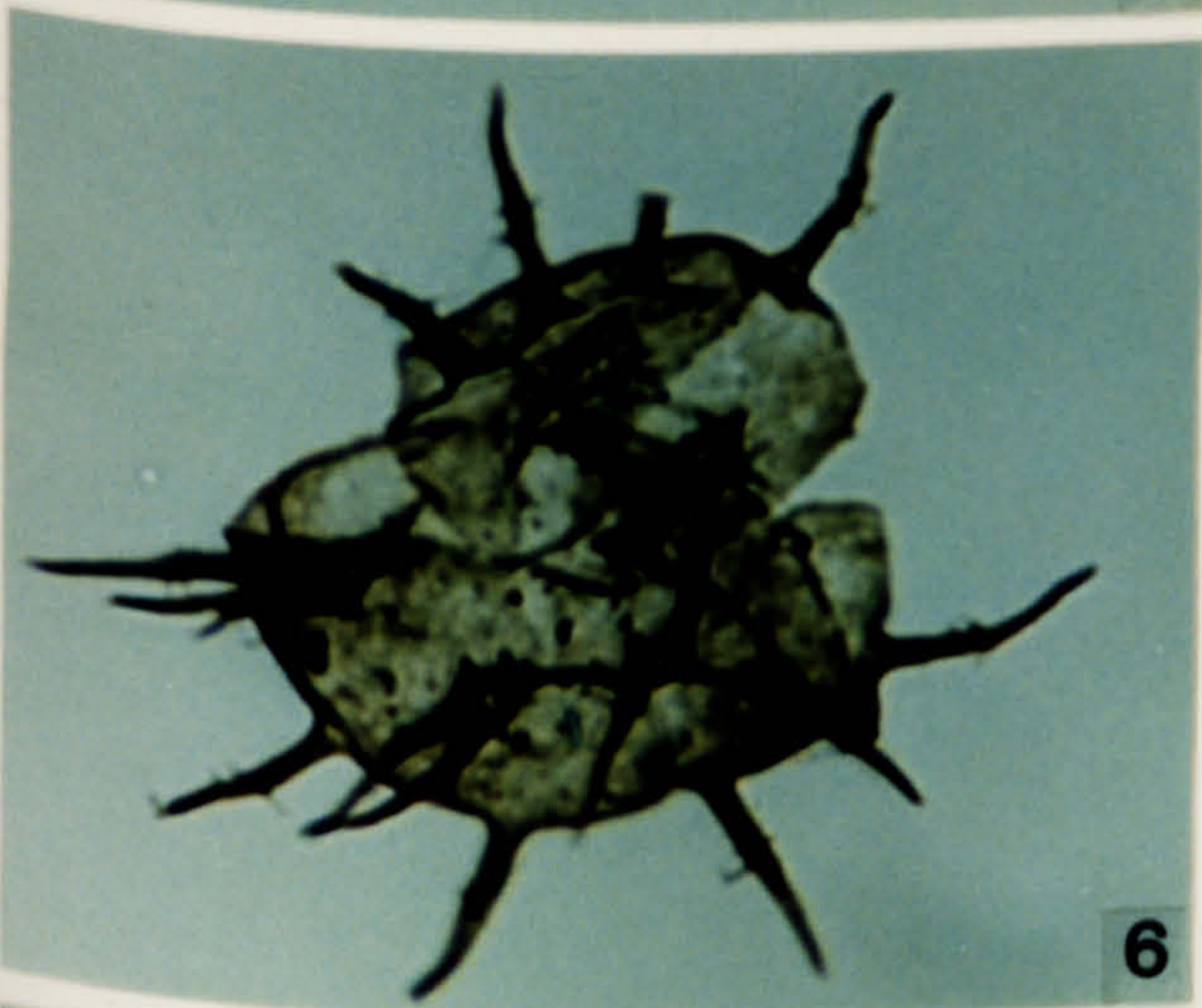
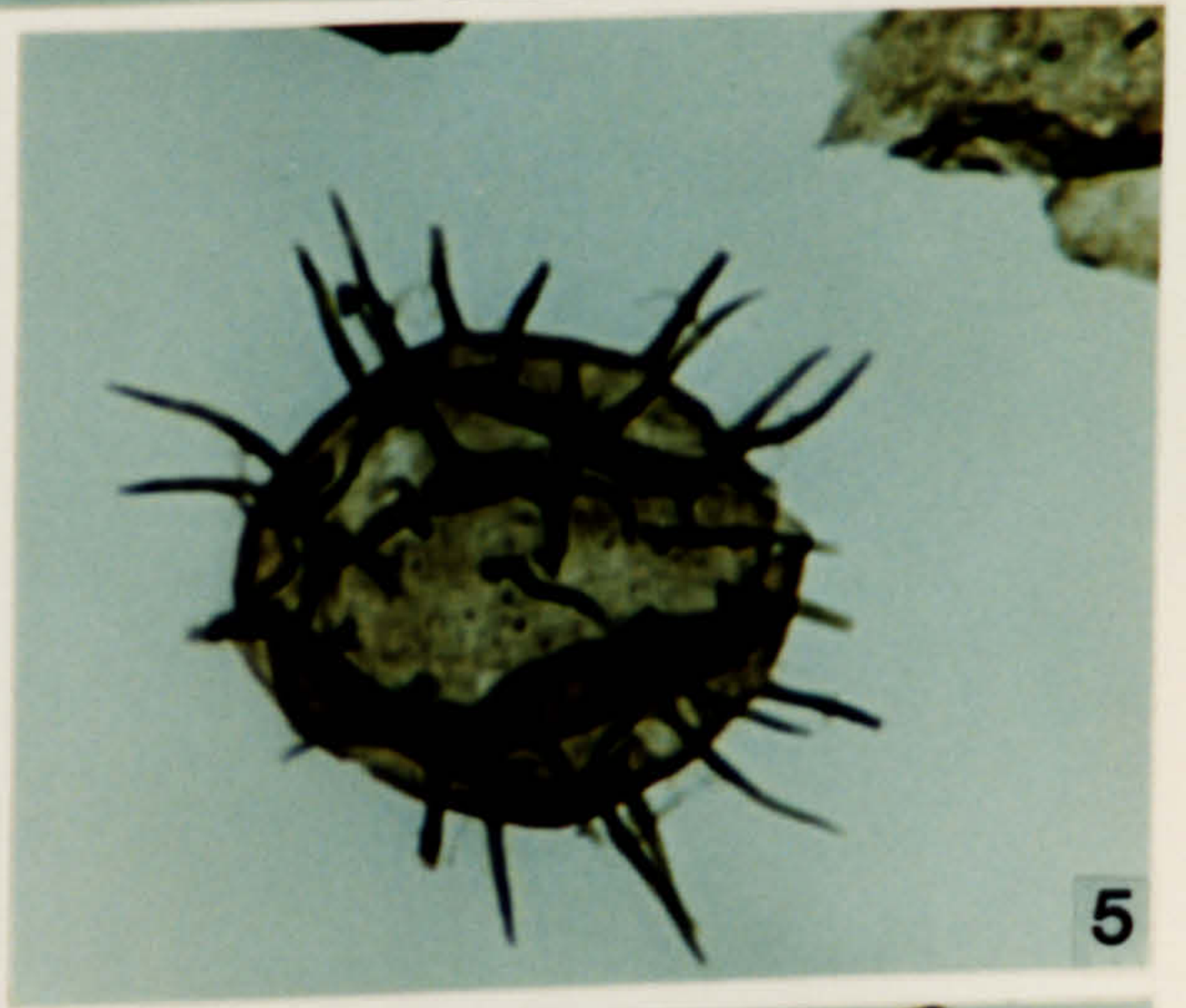
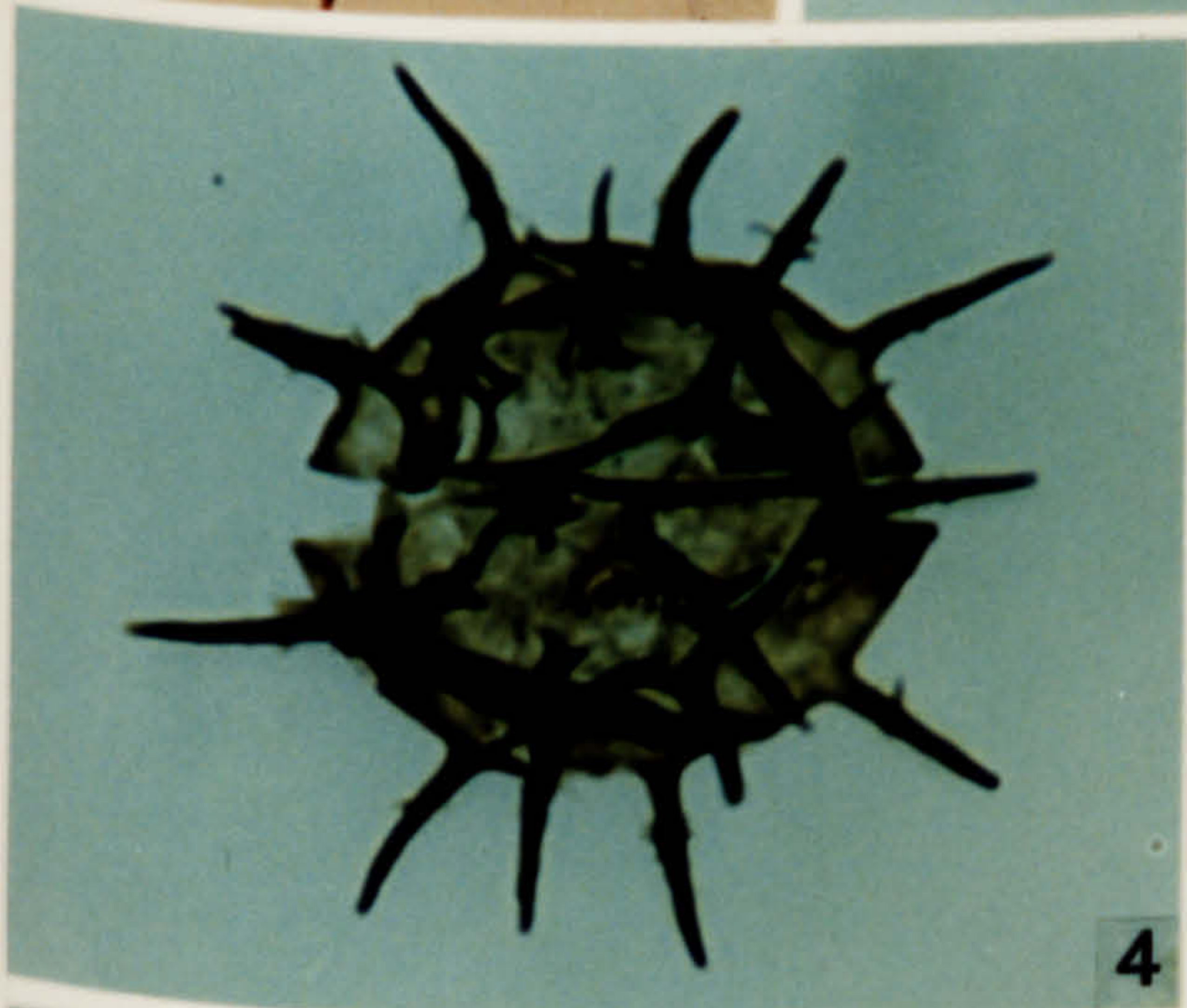
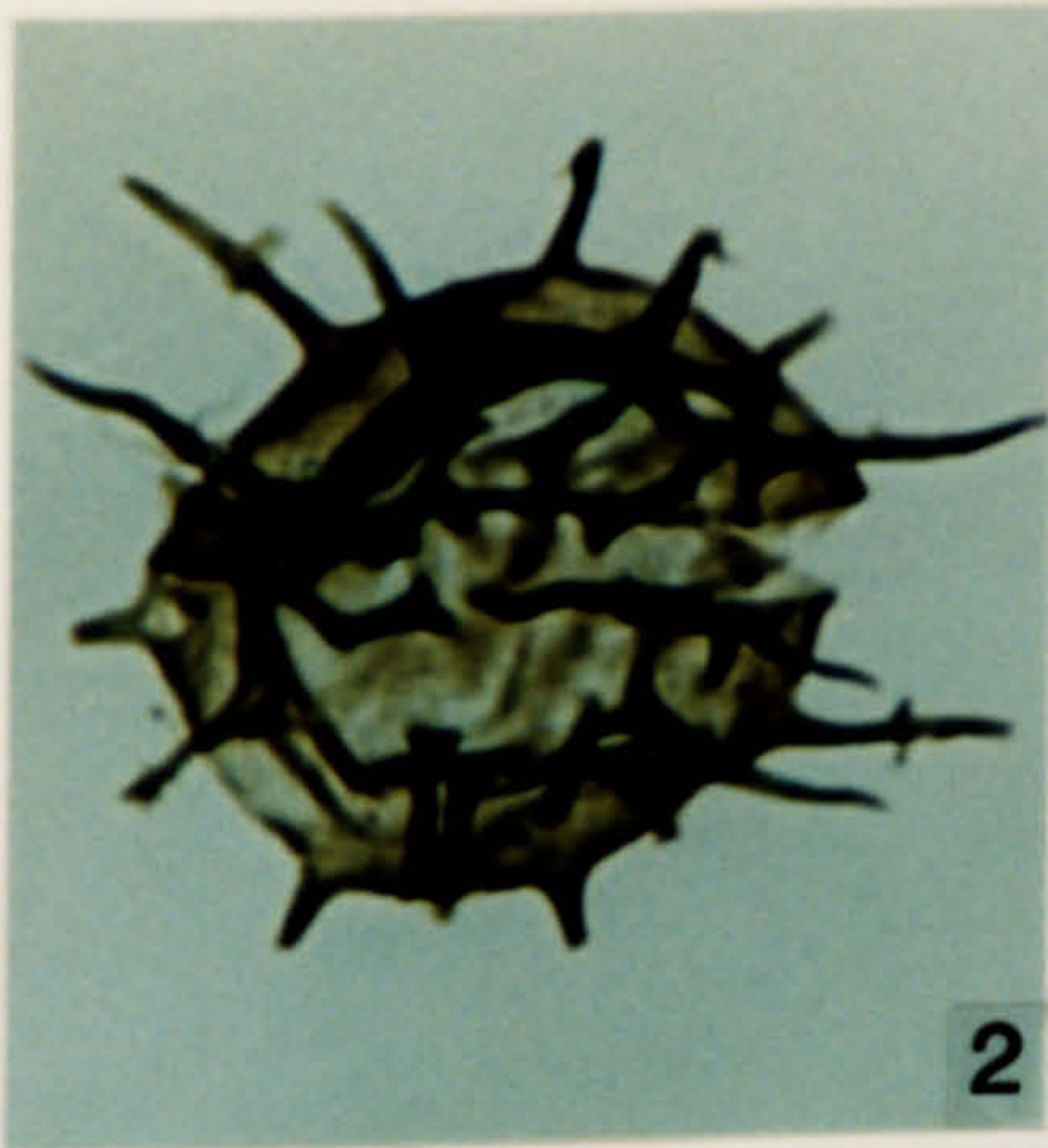
1. *Ammonidium? alloiteaui* (Deunff) Deunff 1976. OD 1809, S-4, W4\1.
2. *Ammonidium? alloiteaui* (Deunff) Deunff 1976. OD 1809, S-4, L23\2.
3. *Ammonidium grosjeanii* (Stockmans & Williere) Martin 1981. OD 1809, S-4, L11\2.
4. *Baltisphaeridium? sp. 5.* OD 1809, S-1, R33\4.
5. *Baltisphaeridium? sp. 5.* OD 1809, S-2, J11\2.
6. *Baltisphaeridium? sp. 5.* OD 1809, S-1, L33\4.
7. *Baltisphaeridium? sp. 5.* OD 1809, S-1, H42\1.
8. *Diexallophasis remota var. thyrae* (Cramer) comb. nov. OD 1809, S-4, S28\1.
9. *Crassiangulina tesselita* Jardine *et al.* 1972. OD 1809, S-4, D17\3.
10. *Daillydium pentaster* (Staplin) Playford *in* Playford & Dring 1981. OD 1809, S-4, S22\1.
11. *Diexallophasis remota var. thyrae* (Cramer) comb. nov. OD 1809, S-4, O23\2.
12. *Diexallophasis remota var. thyrae* (Cramer) comb. nov. OD 1809, S-4, D22\1.
13. *Daillydium pentaster* (Staplin) Playford *in* Playford & Dring 1981. OD 1809, S-4, W39\4.



**Plate 181.**

Acritarchs from the Draa Formation, early Famennian in age.

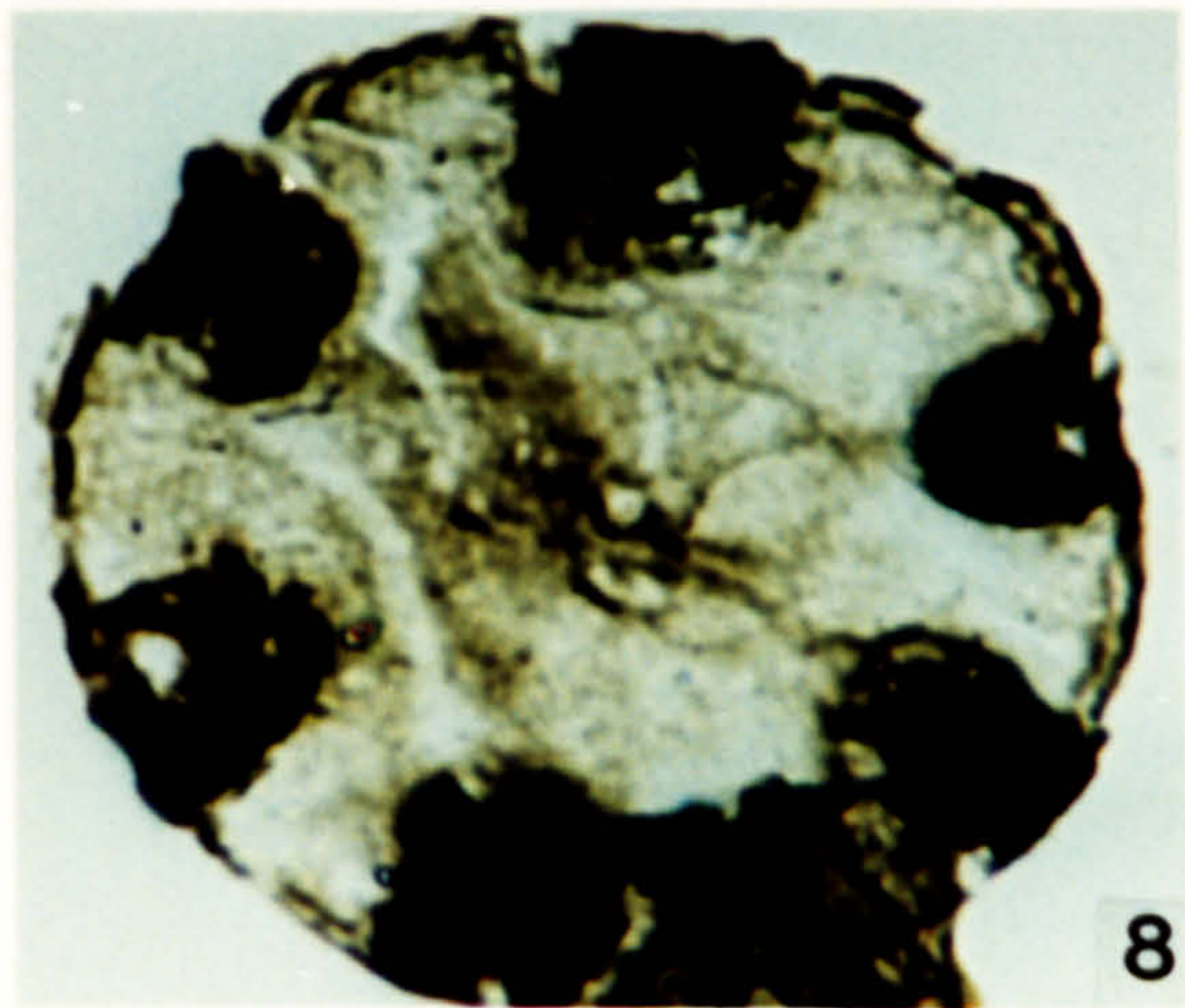
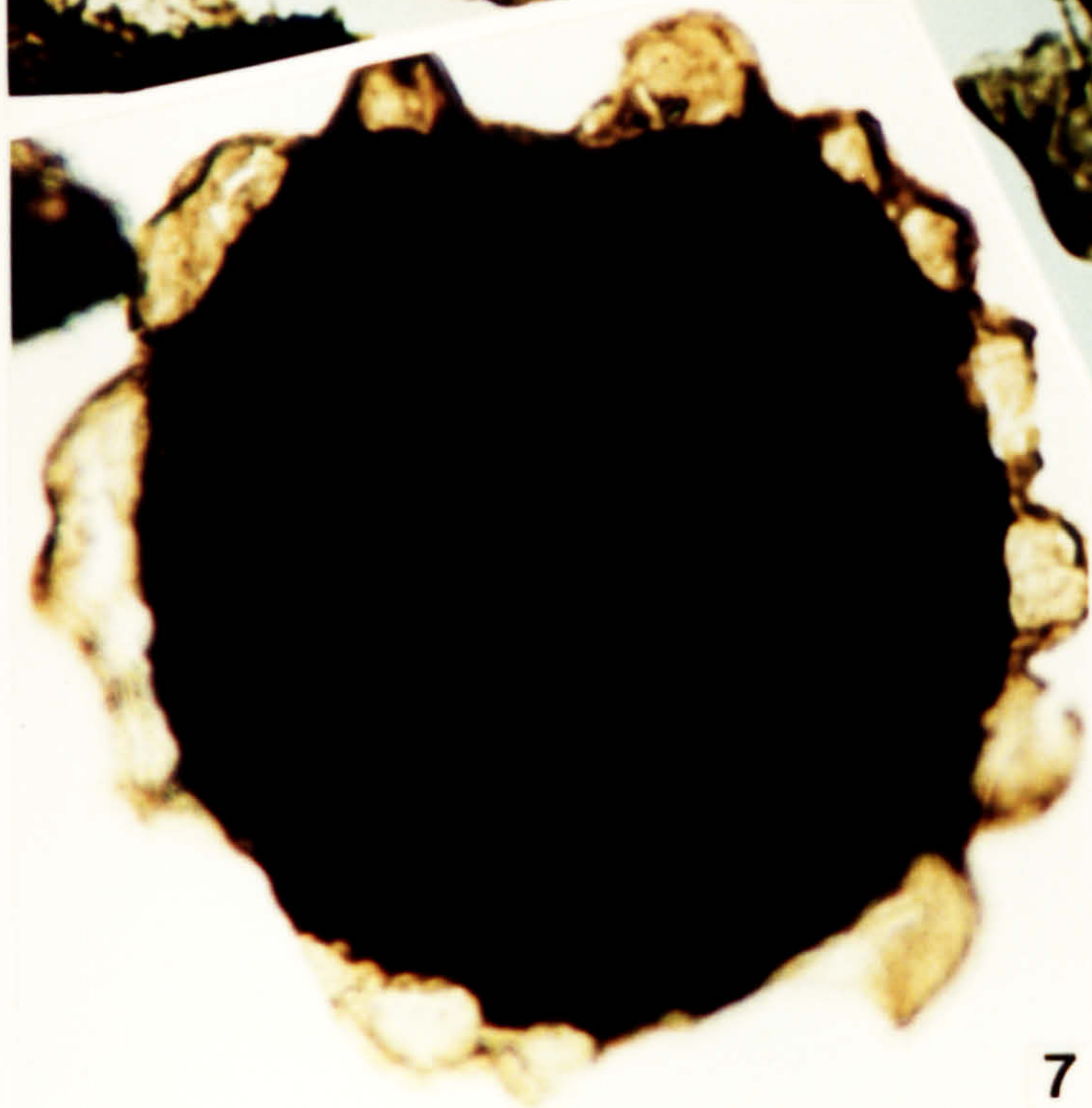
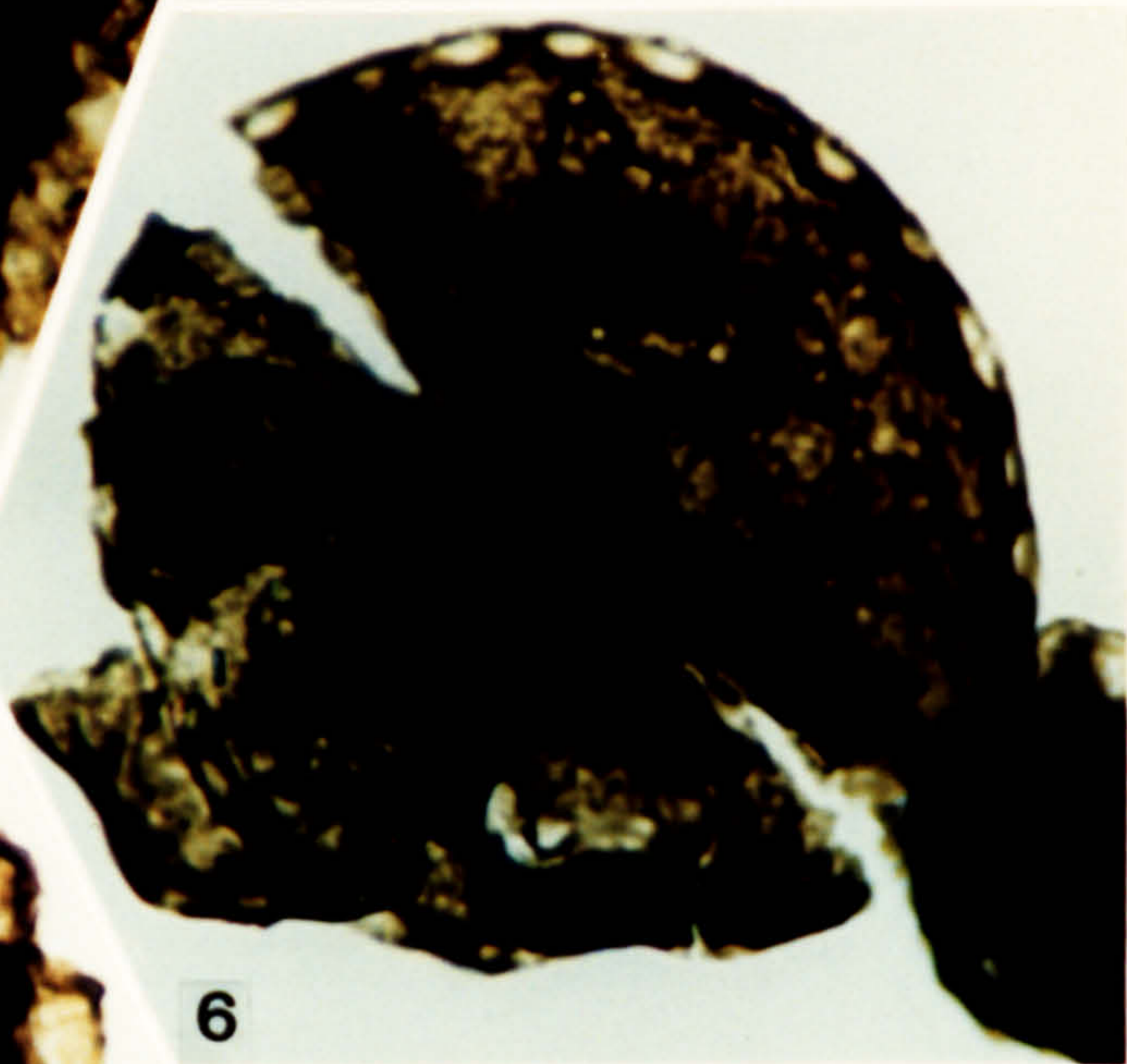
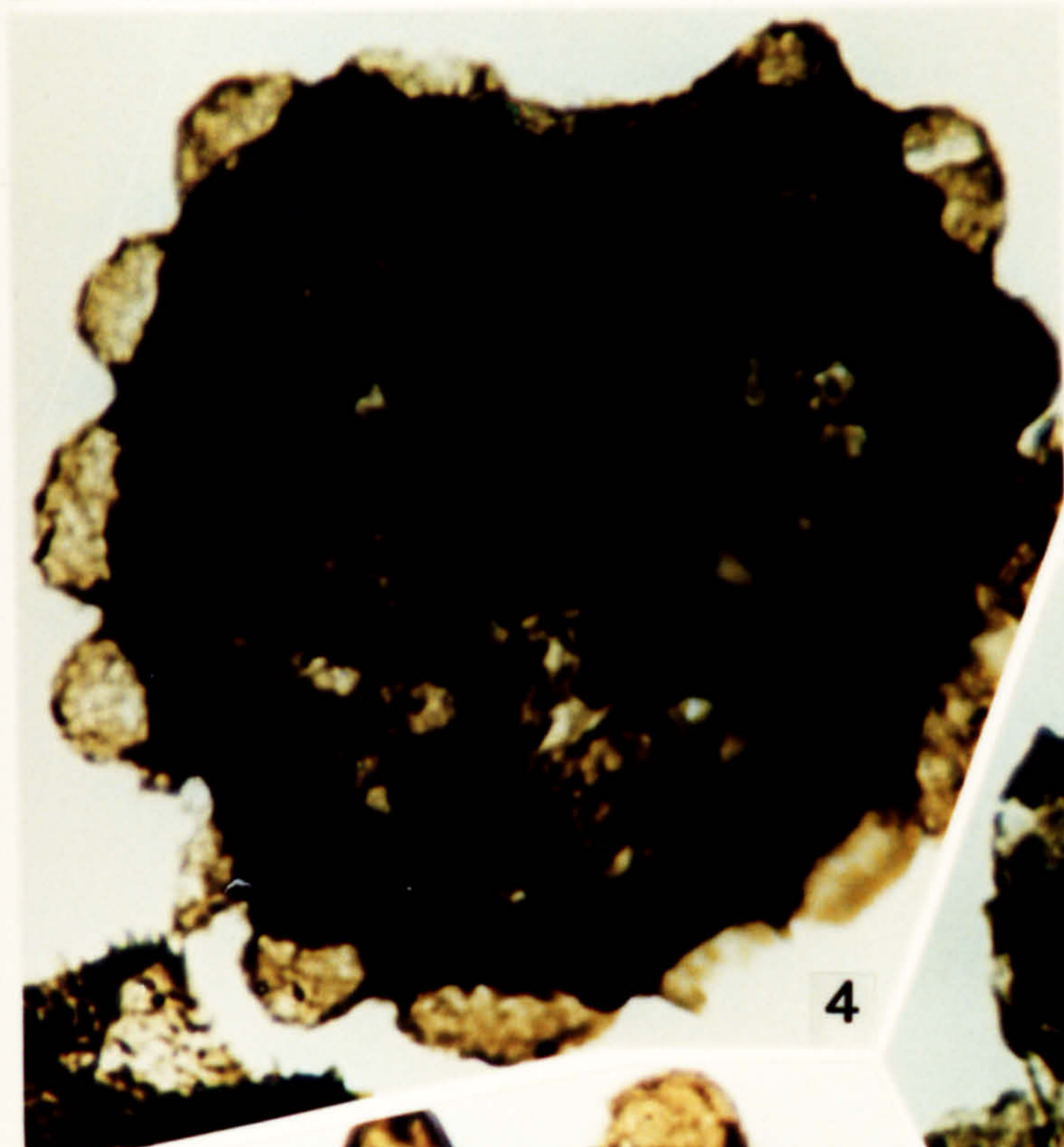
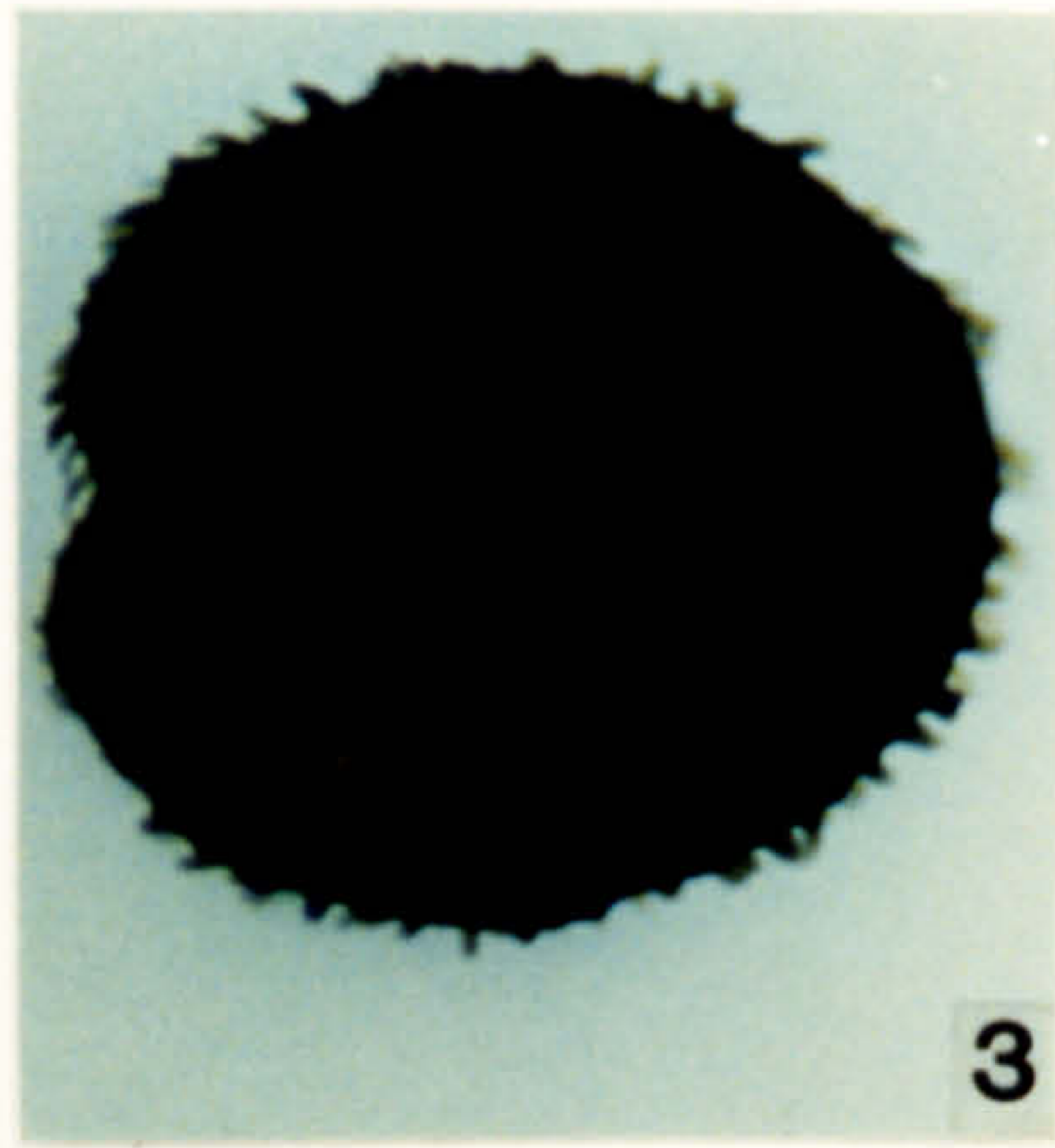
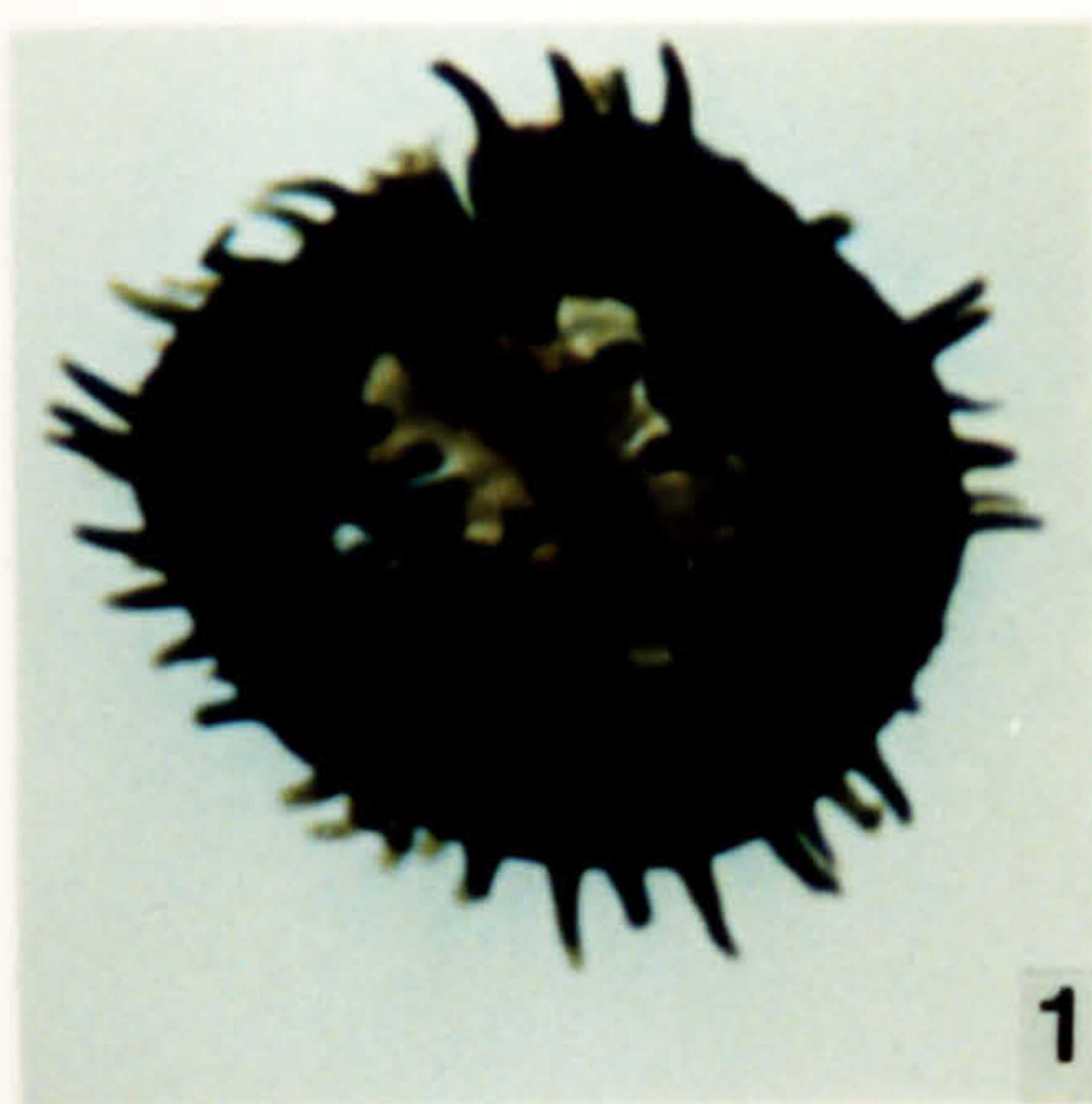
1. *Eophalopalla gorkae* Martin 1983. OD 1809, S-2, S6\-.
2. *Eophalopalla gorkae* Martin 1983. OD 1809, S-4, L12\3.
3. *Eophalopalla gorkae* Martin 1983. OD 1809, S-4, S37\4.
4. *Eophalopalla gorkae* Martin 1983. OD 1809, S-4, K30\3.
5. *Eophalopalla gorkae* Martin 1983. OD 1809, S-4, J17\4.
6. *Eophalopalla gorkae* Martin 1983. OD 1809, S-4, D22\4.
7. *Eophalopalla* sp. OD 1809, S-4, M3\3.
8. *Gorgonisphaeridium ohioense* Complex. OD 1809, S-4, G40\2.
9. *Gorgonisphaeridium ohioense* Complex. OD 1809.3, S-1, F31\3.
10. *Gorgonisphaeridium ohioense* Complex. OD 1809, S-4, G19\1.



**Plate 182.**

**Acritarchs from the Draa Formation, early Famennian in age.**

- 1. *Gorgonisphaeridium spicatum* Complex. OD 1809, S-4, R31\1.**
- 2. *Gorgonisphaeridium spicatum* Complex. OD 1809, S-4, H22\3.**
- 3. *Gorgonisphaeridium spicatum* Complex. OD 1809, S-4, M14\3.**
- 4. *Maranhites* sp. 2. OD 1809, S-4, S5\-.**
- 5. *Multiplicisphaeridium ramispinosum* Staplin 1961. OD 1809, S-4, Q32\4.**
- 6. *Maranhites stockmansii* Martin 1981 emend. Martin 1984. OD 1809, S-4, R36\1.**
- 7. *Maranhites* sp. 2. OD 1809, S-4, N15\3.**
- 8. *Maranhites mosessii* (Sommer) Brito 1967. OD 1809, S-4, S23\2.**

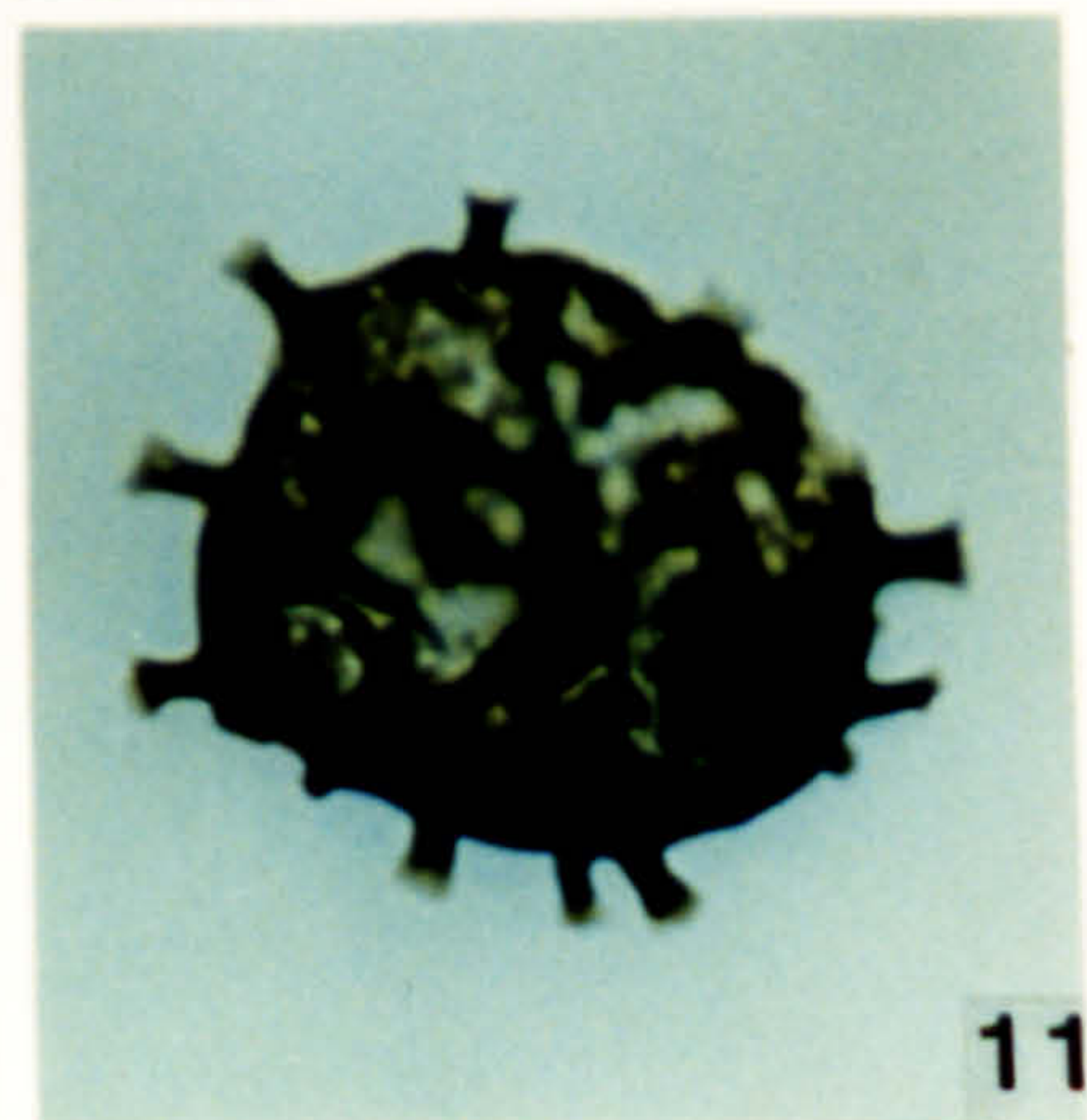
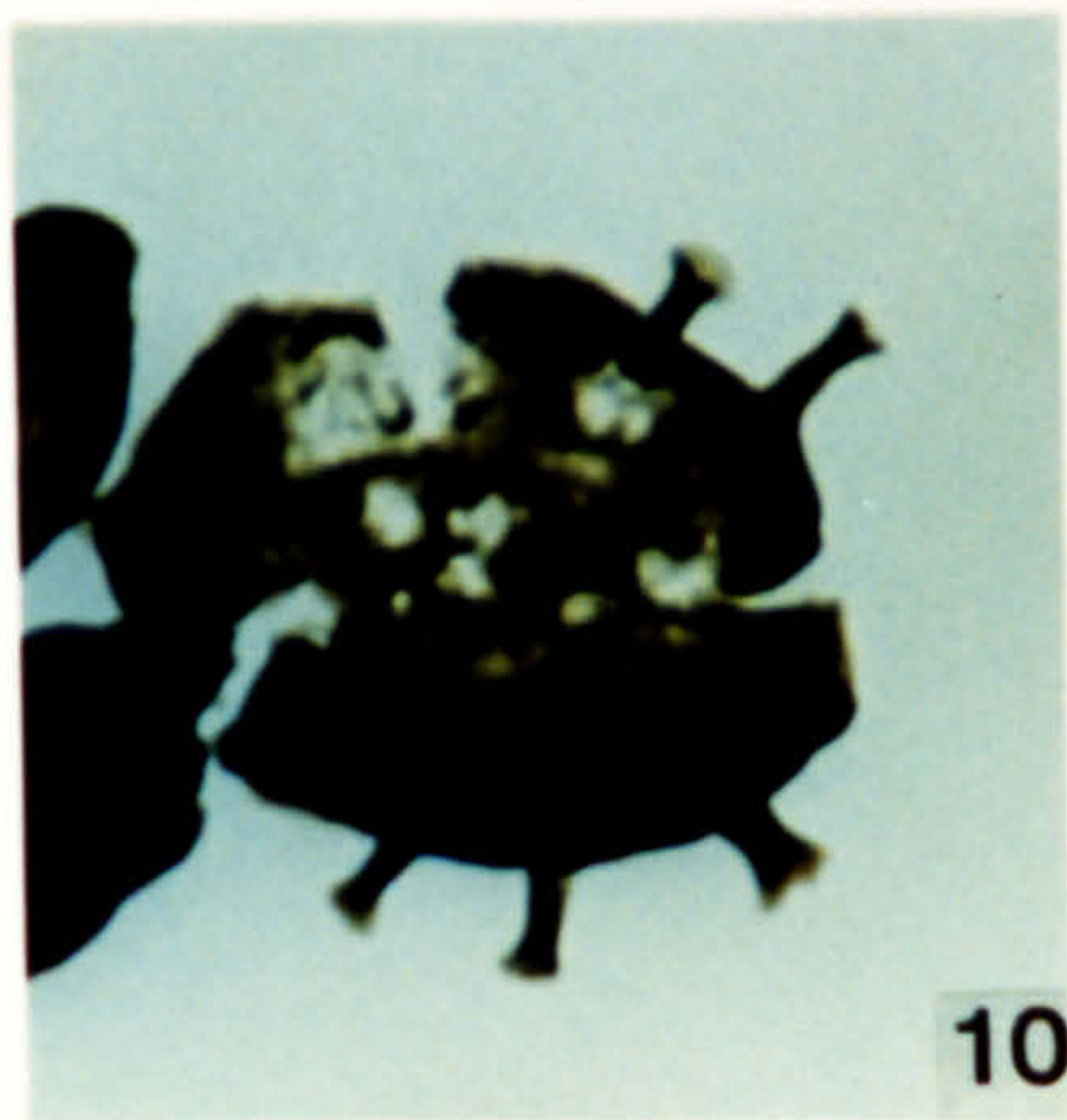
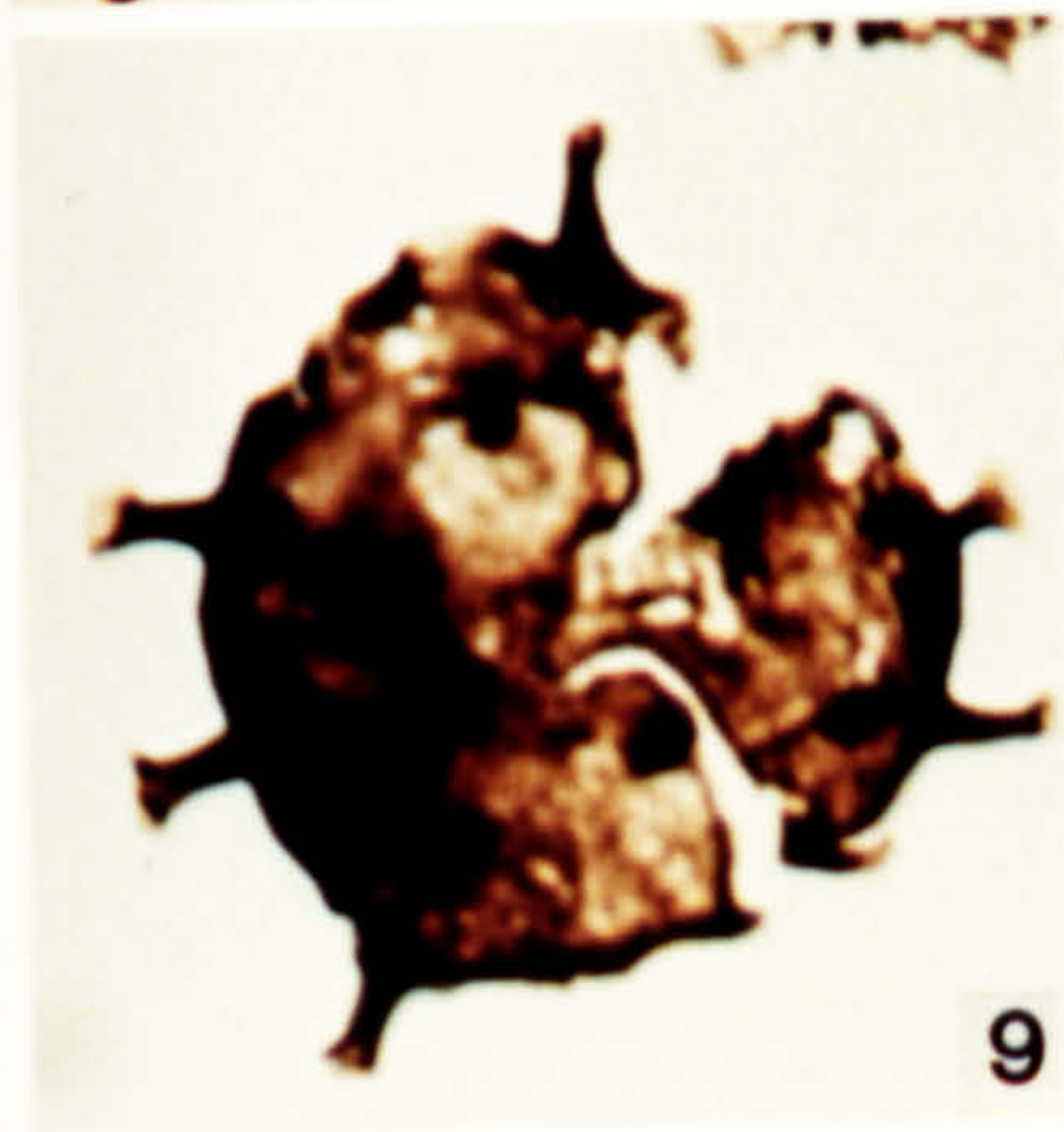
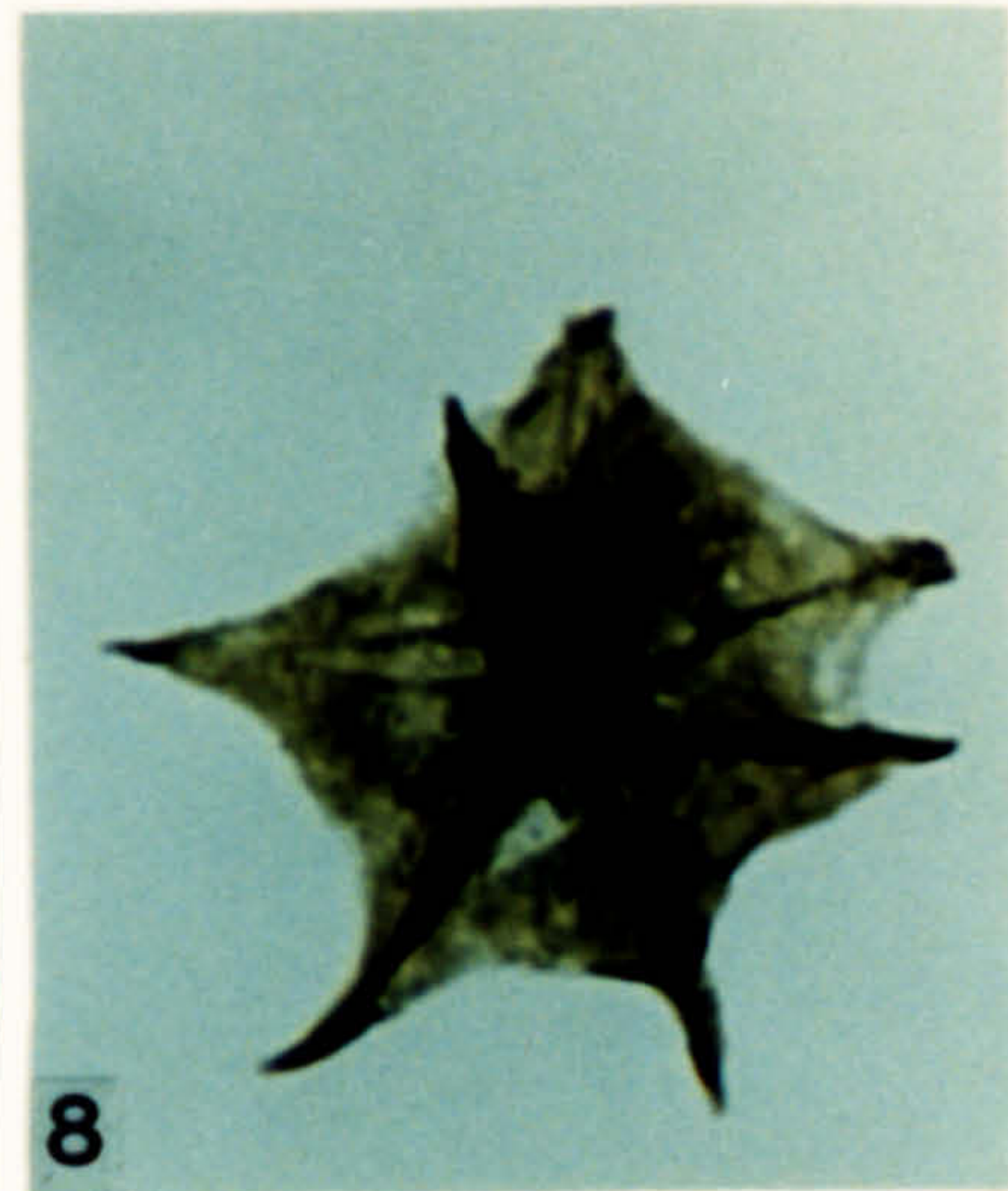
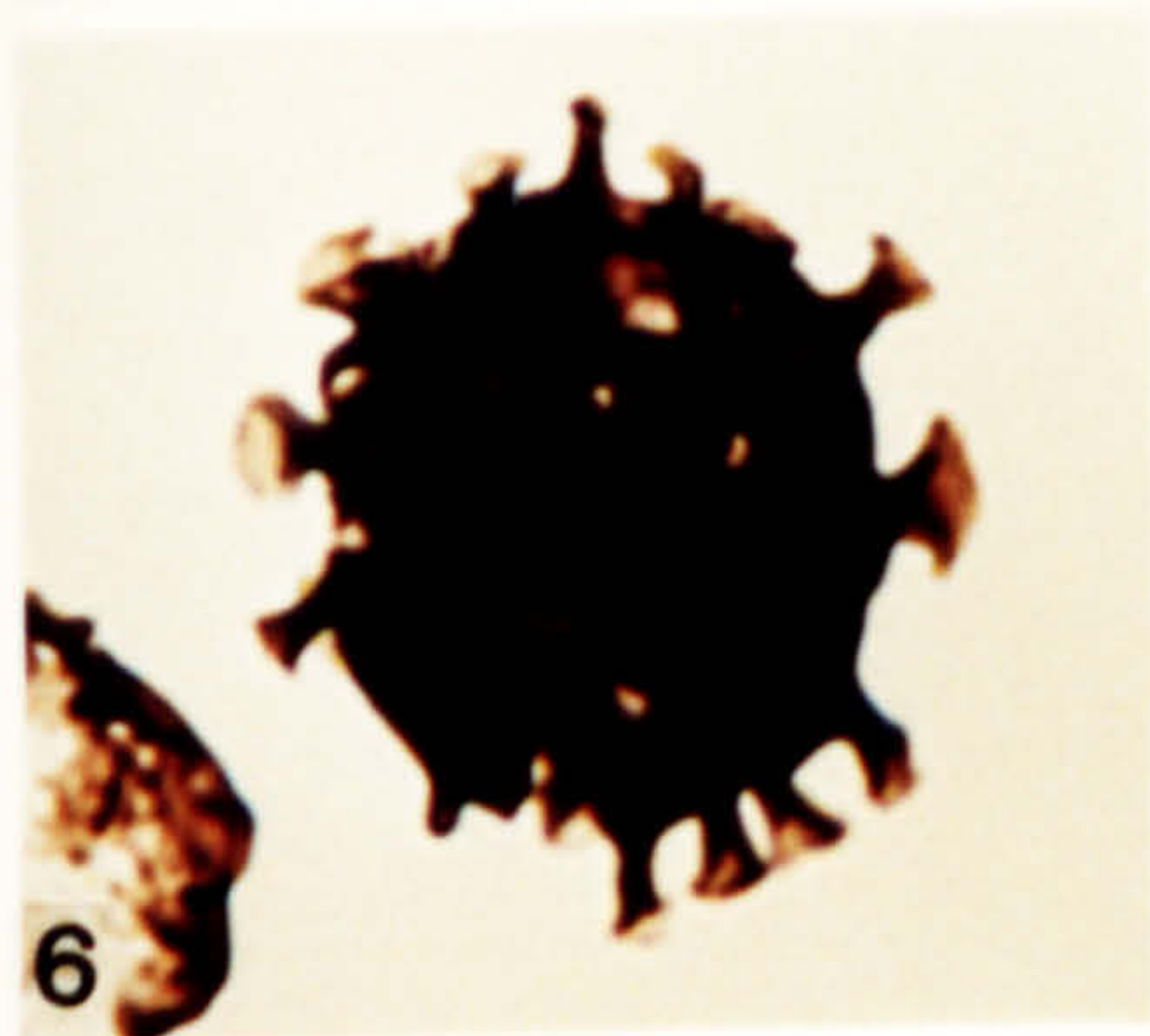
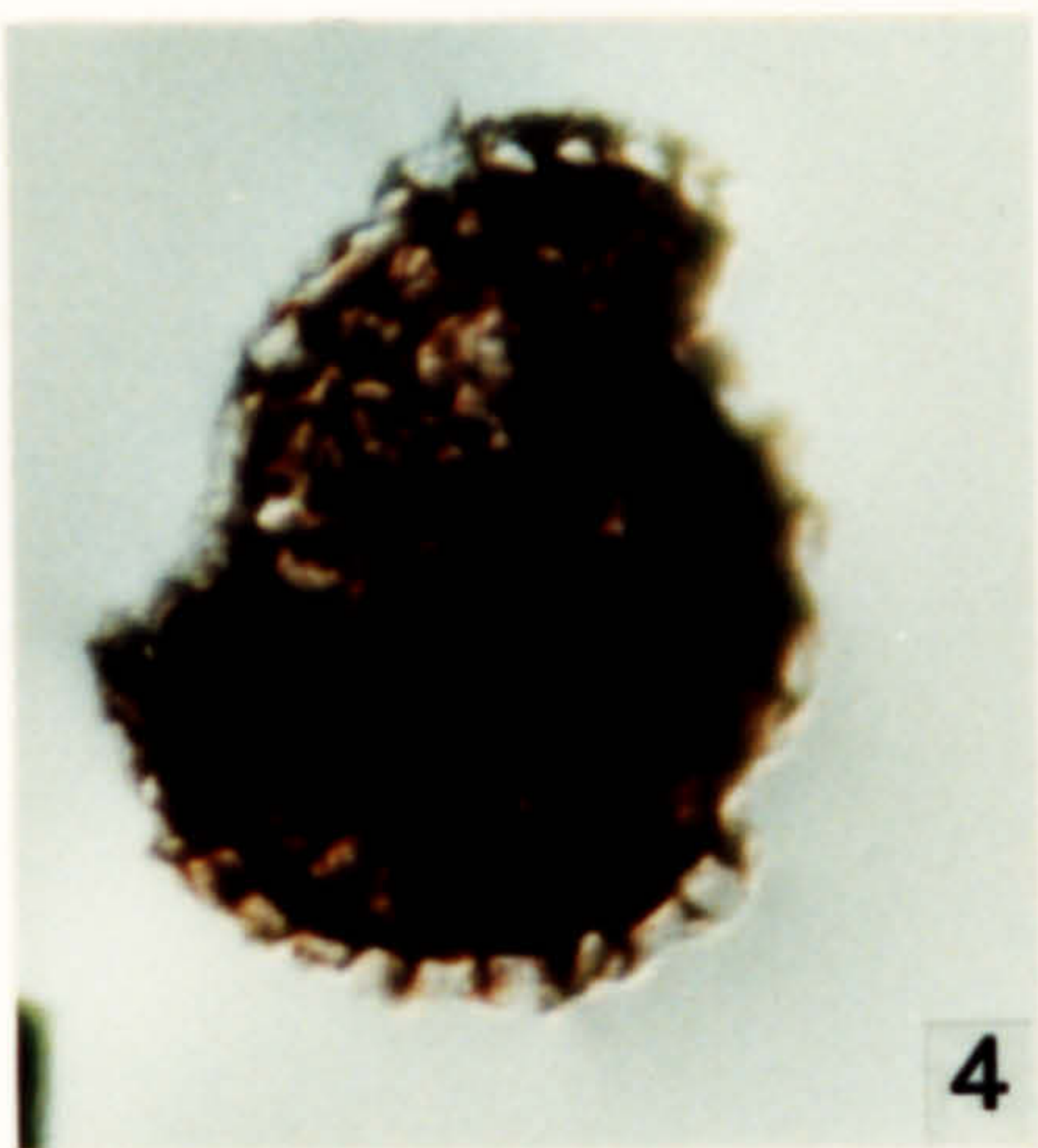
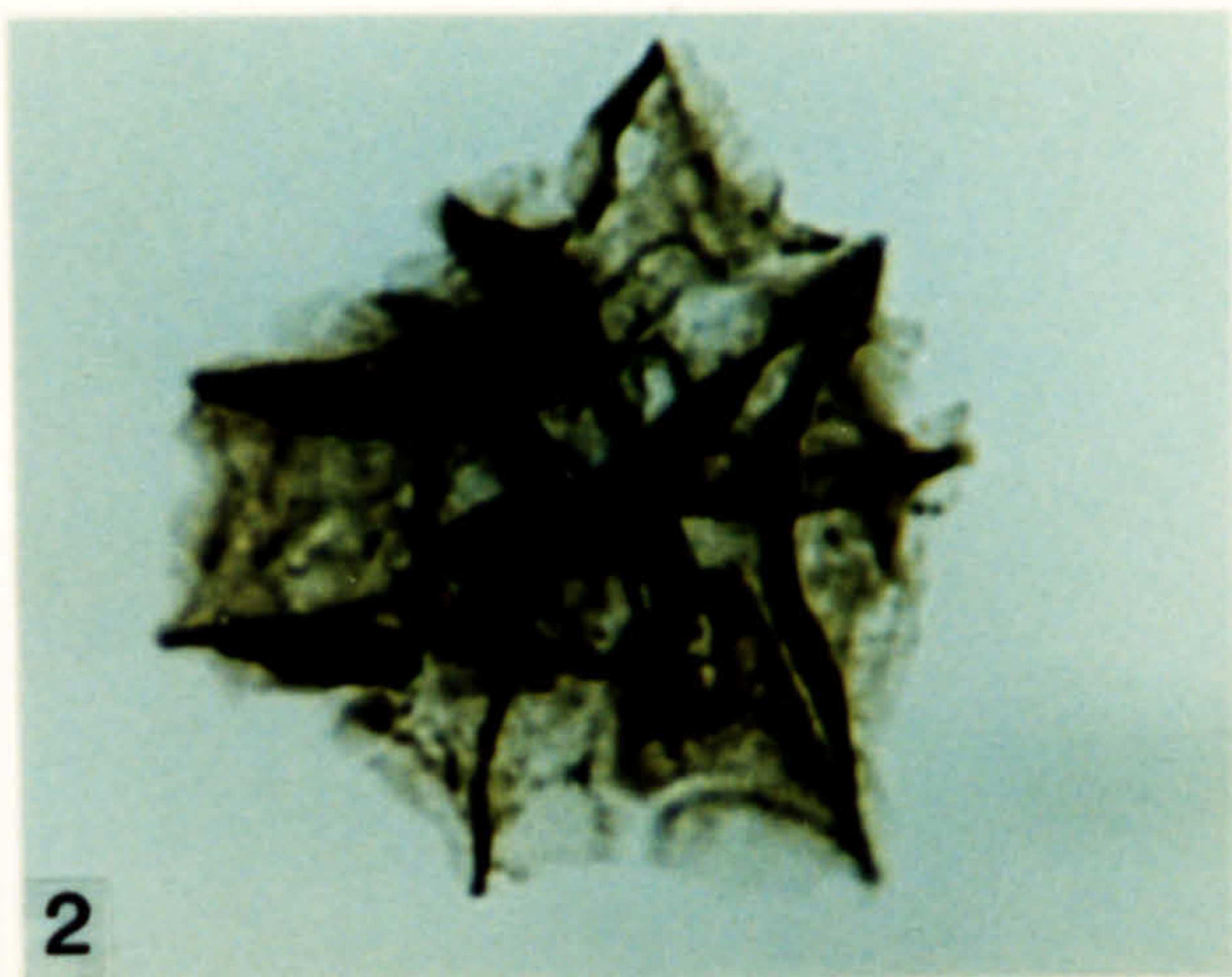
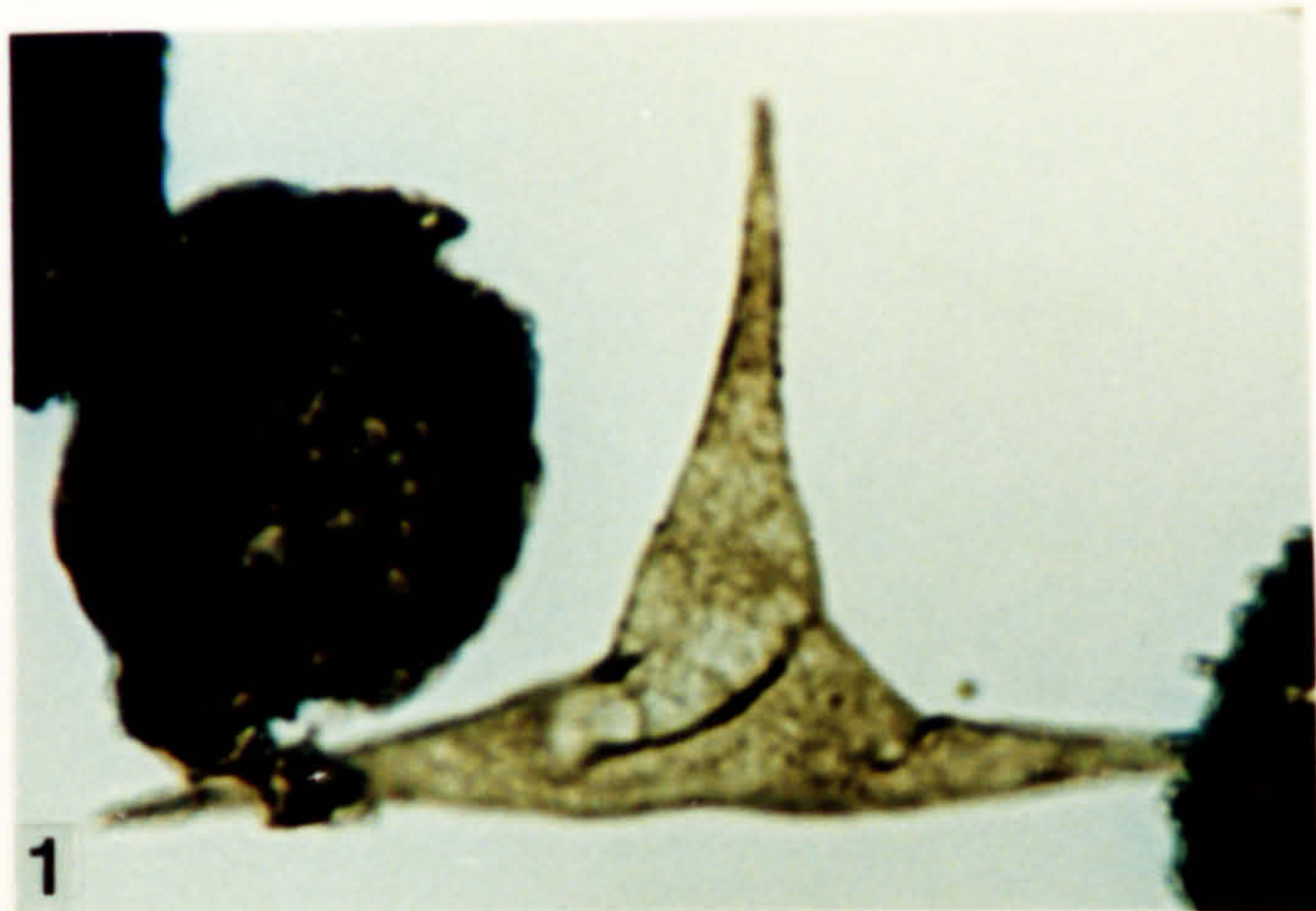




**Plate 183.**

Acritarchs from the Draa Formation, early Famennian in age.

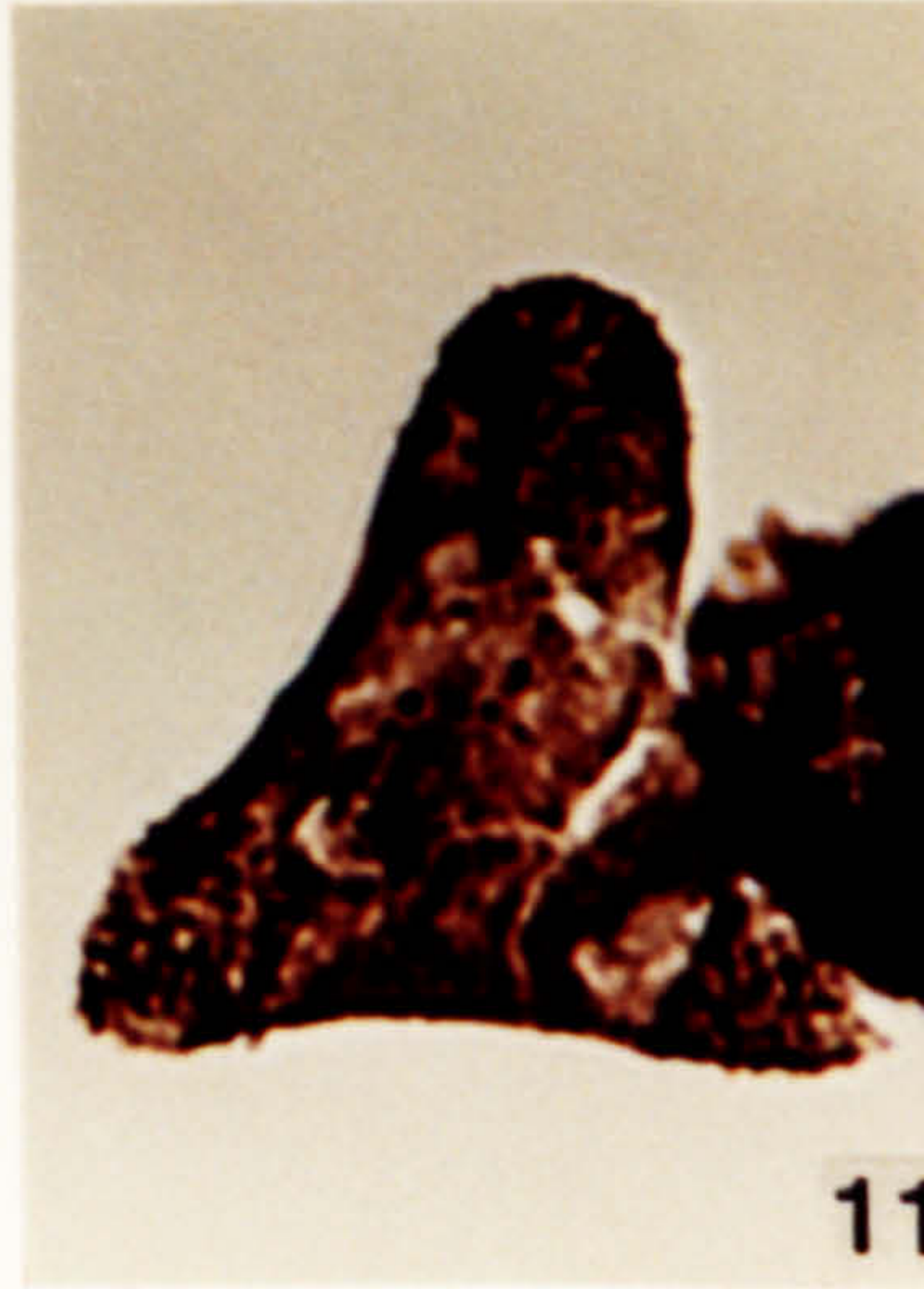
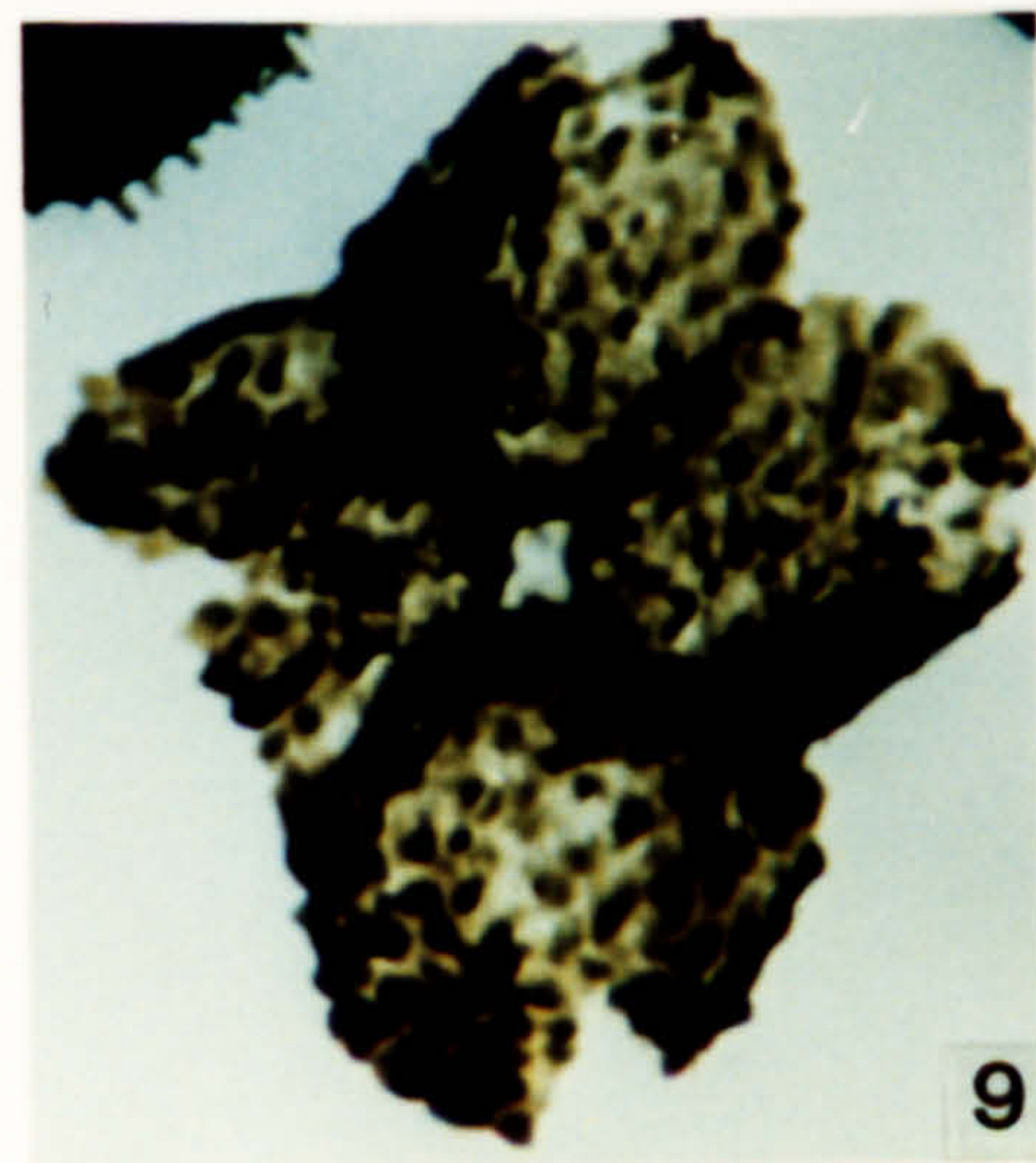
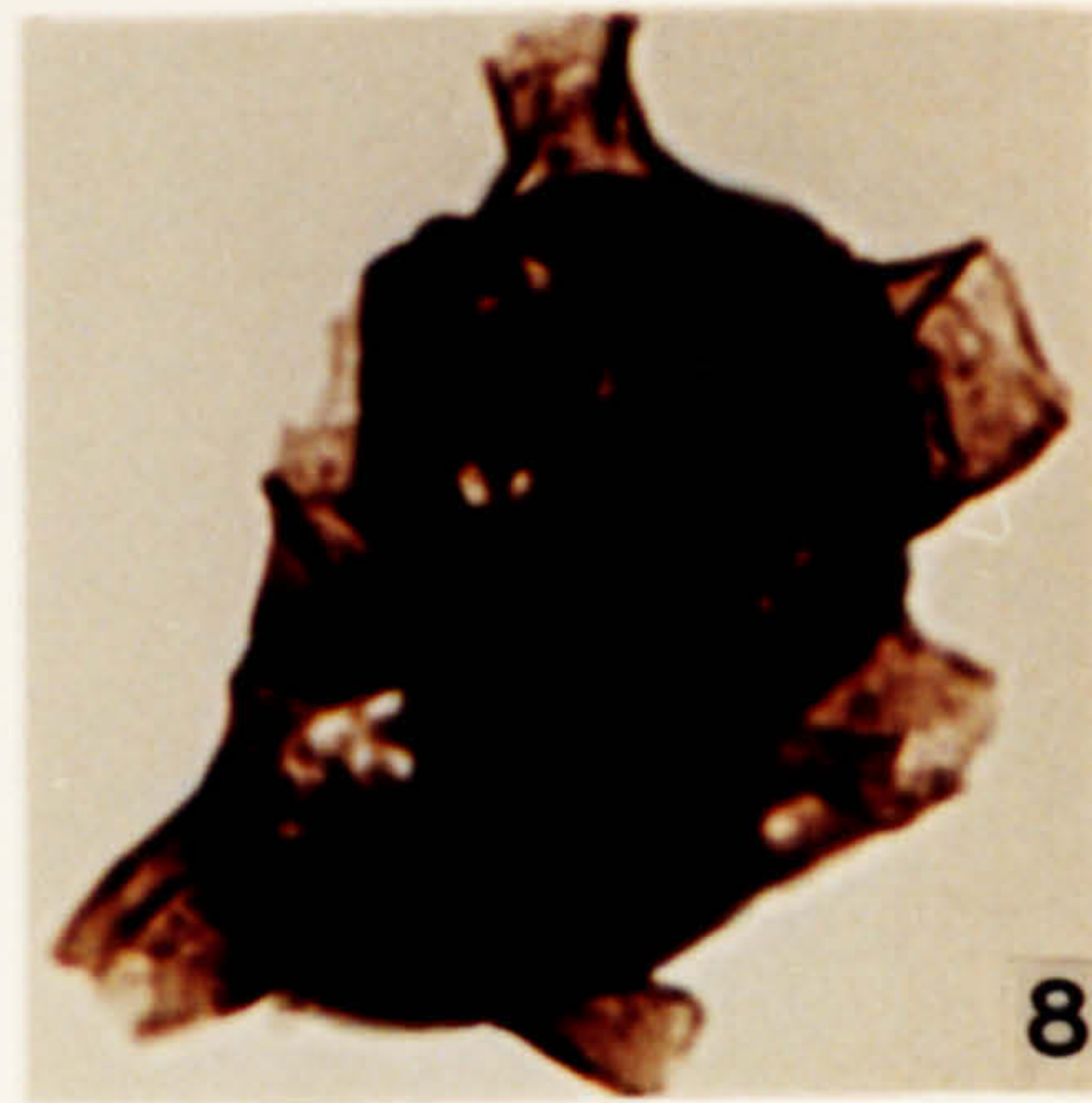
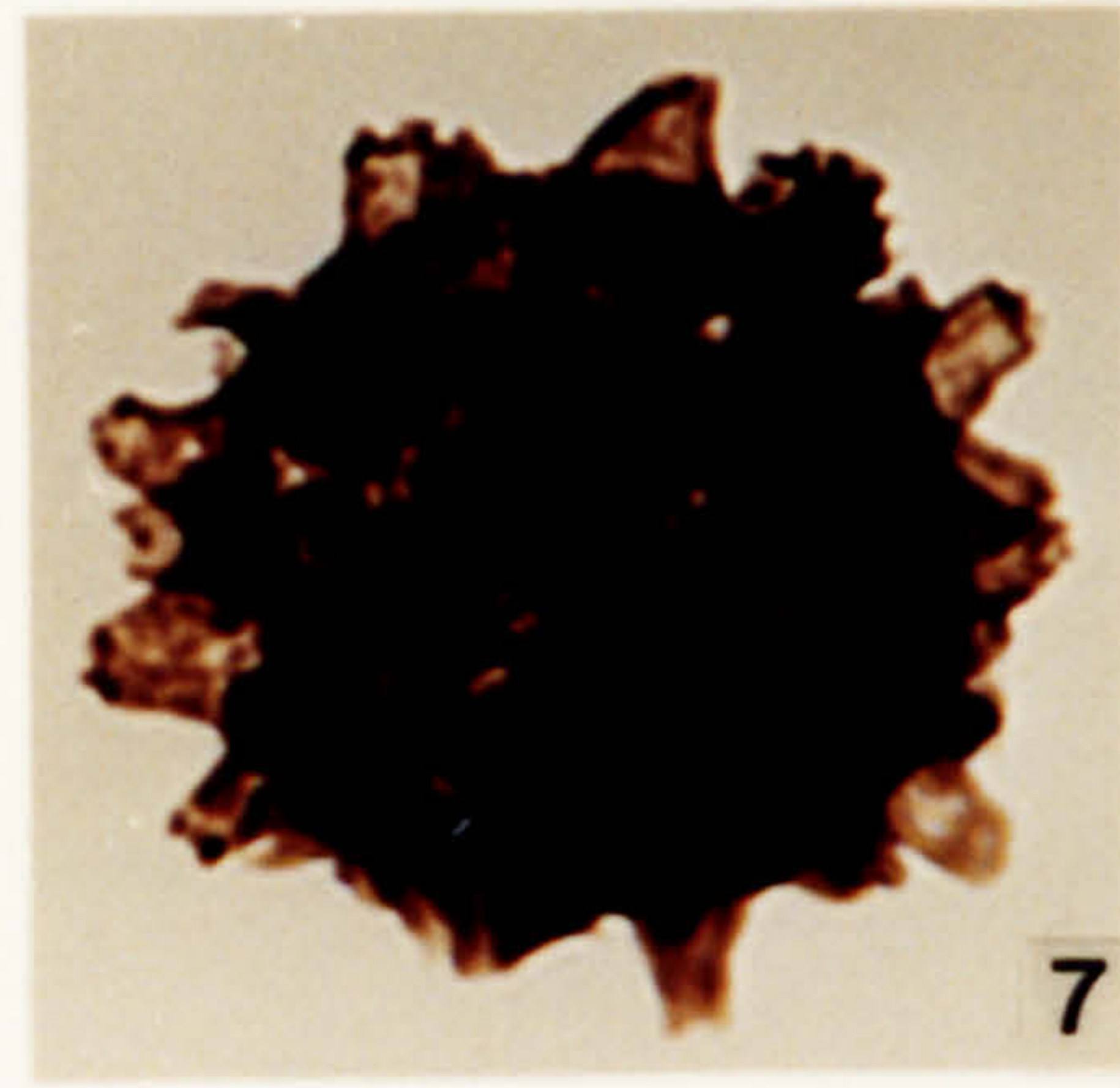
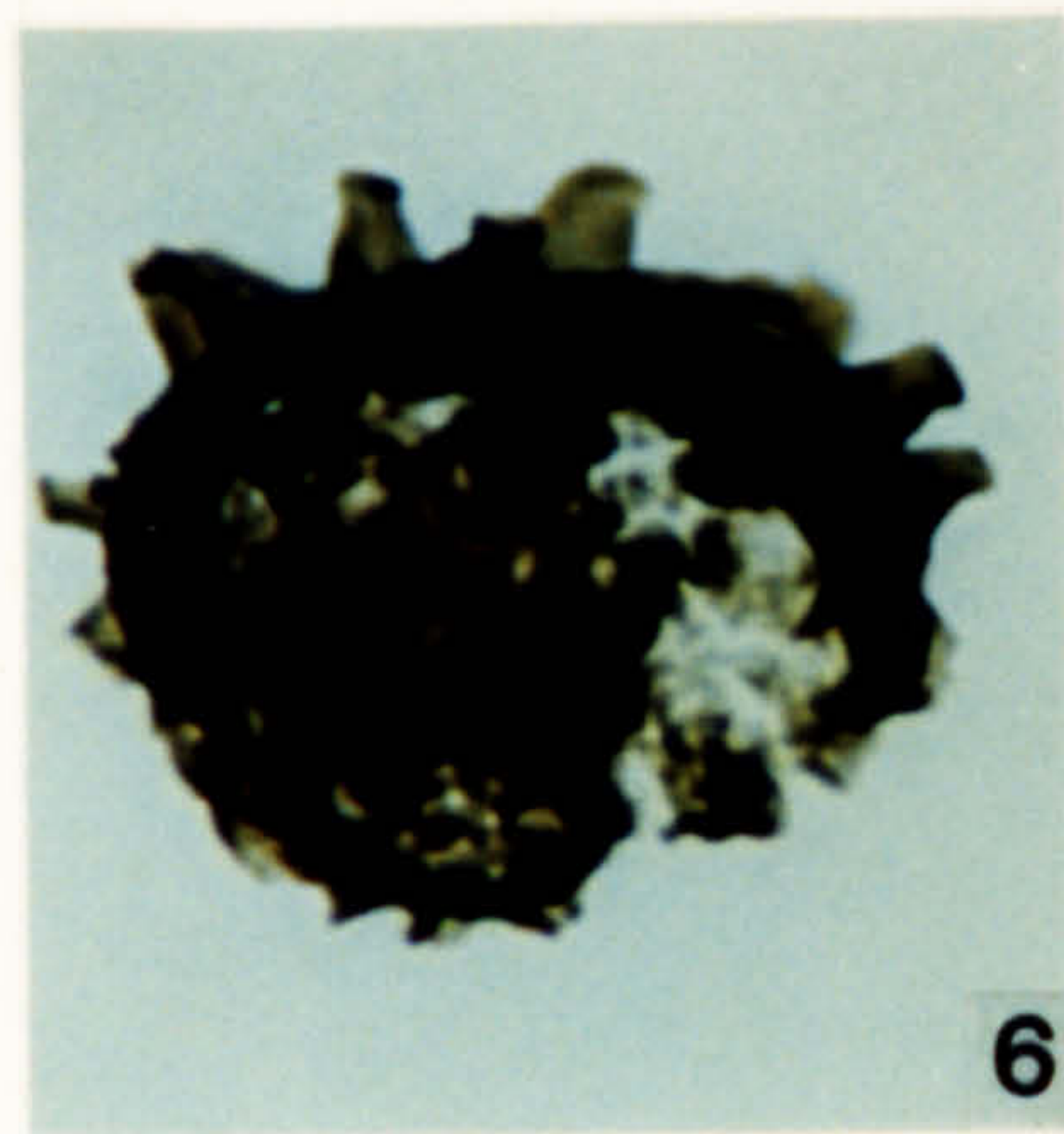
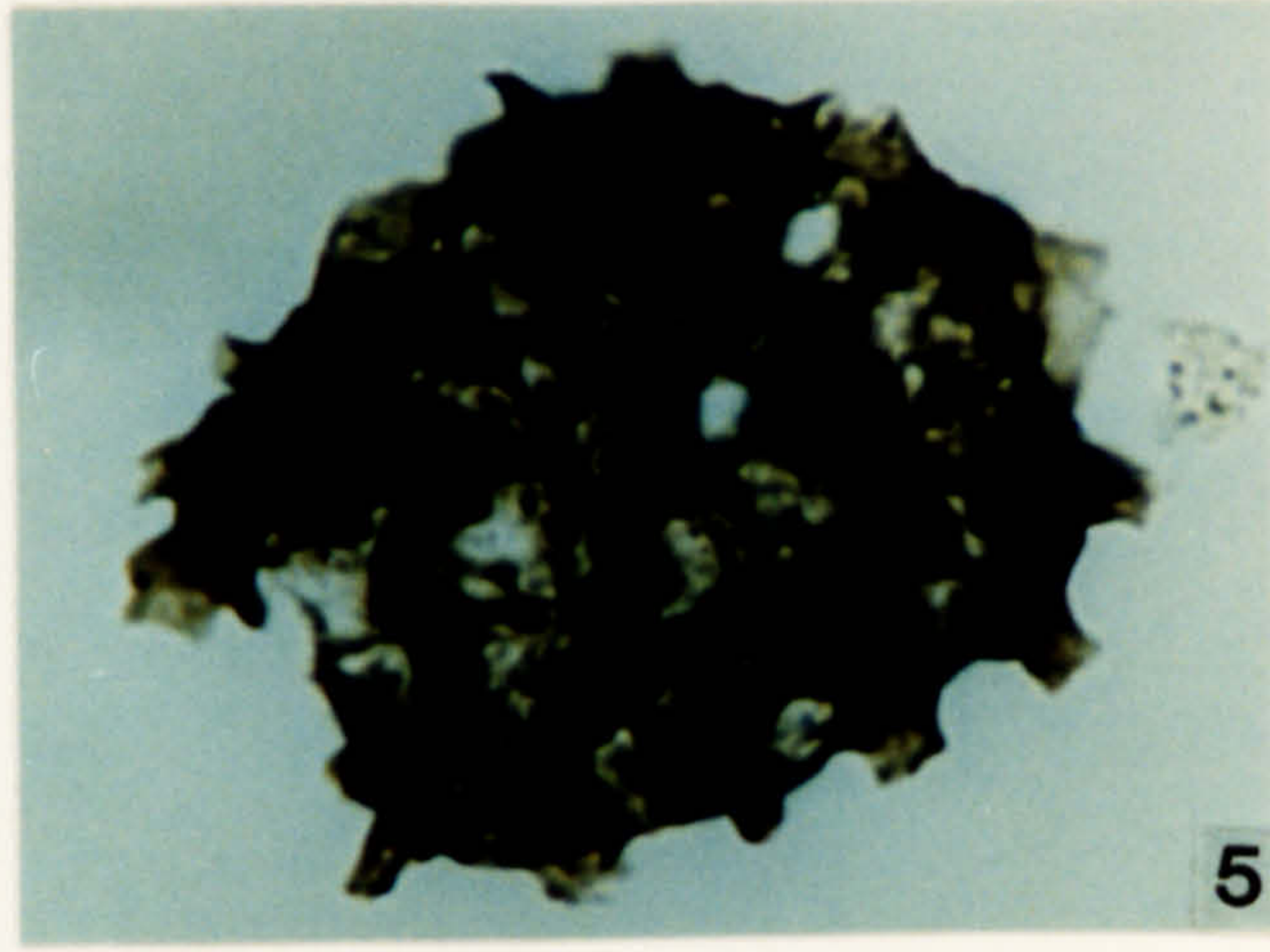
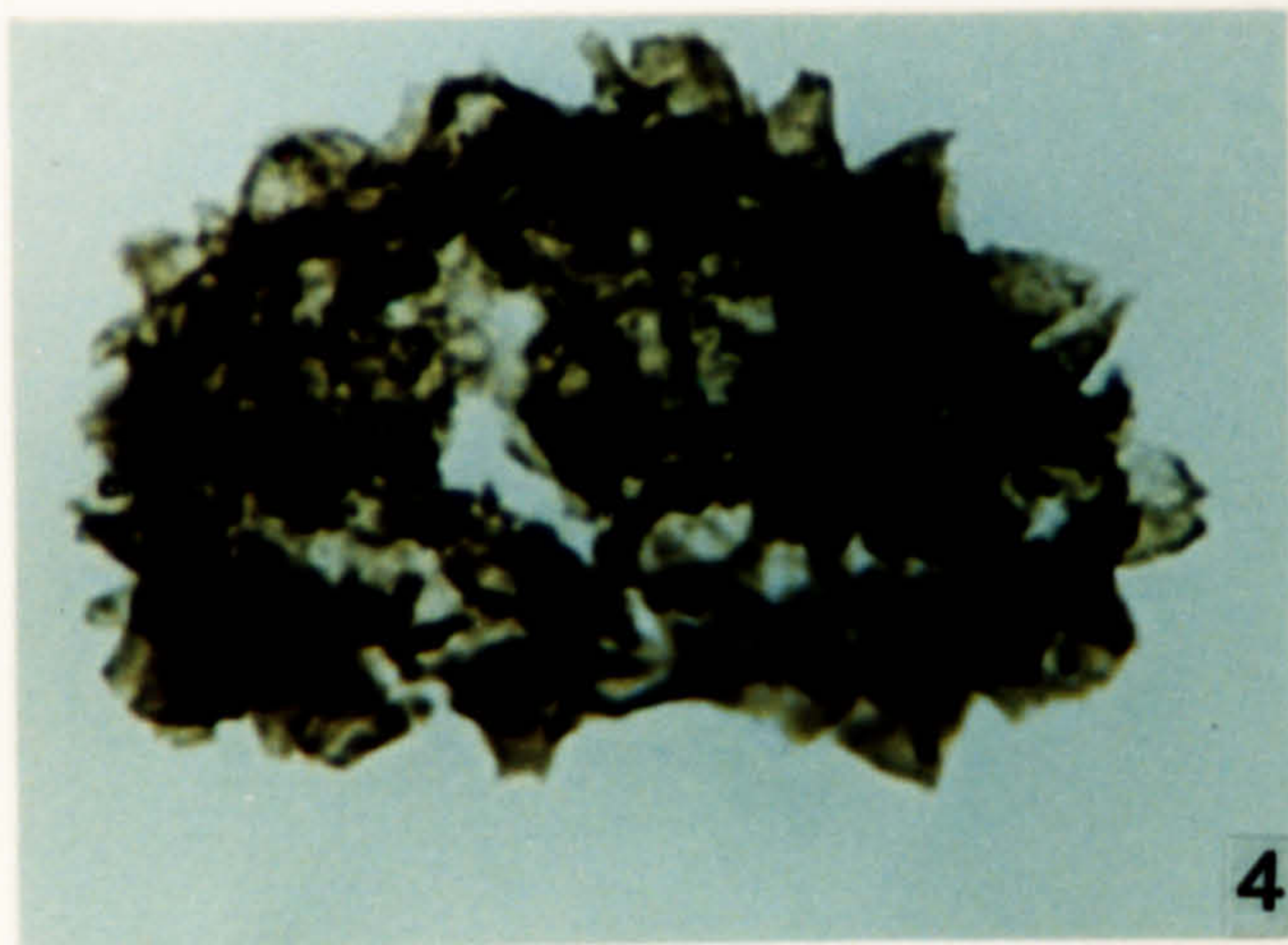
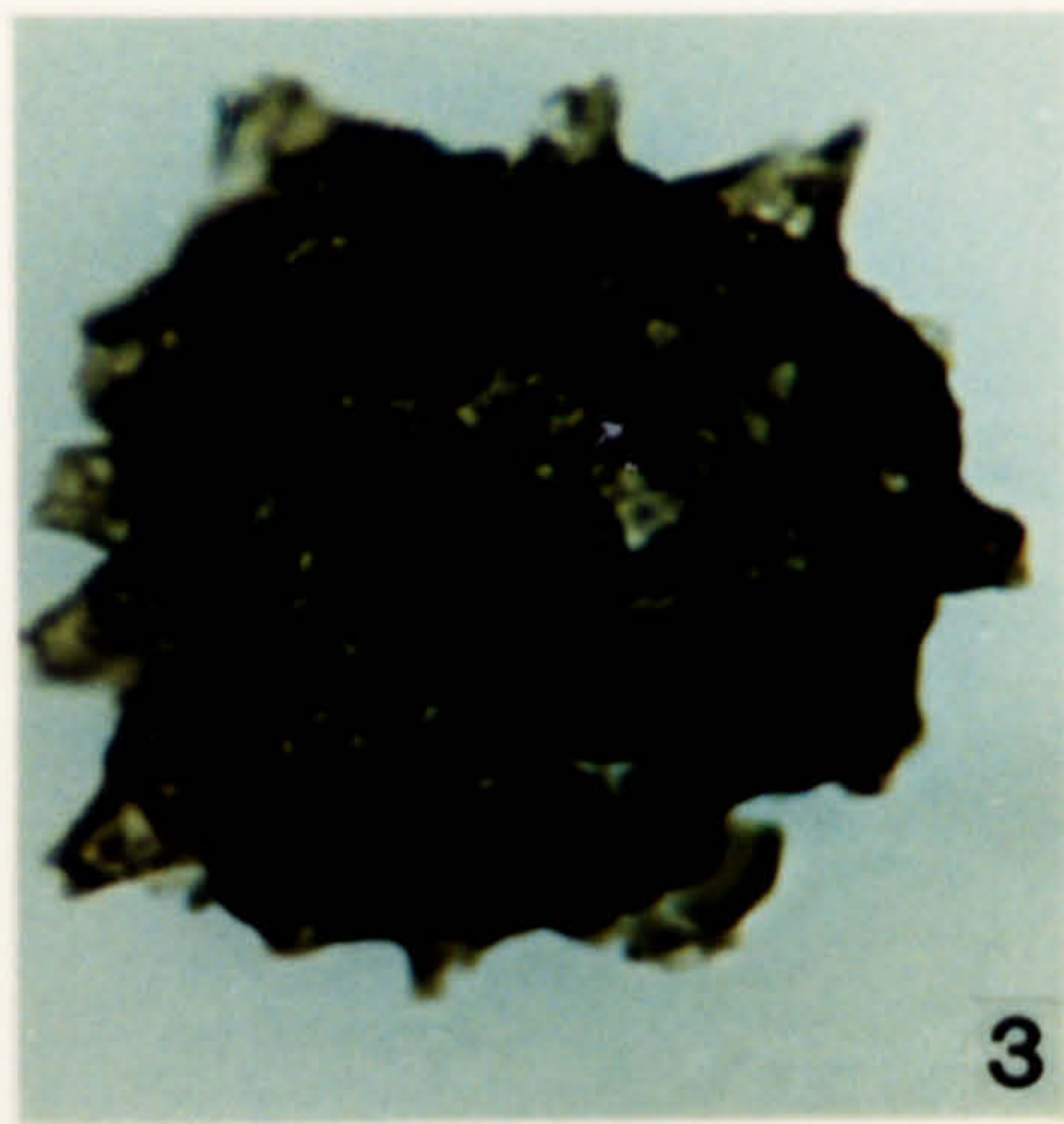
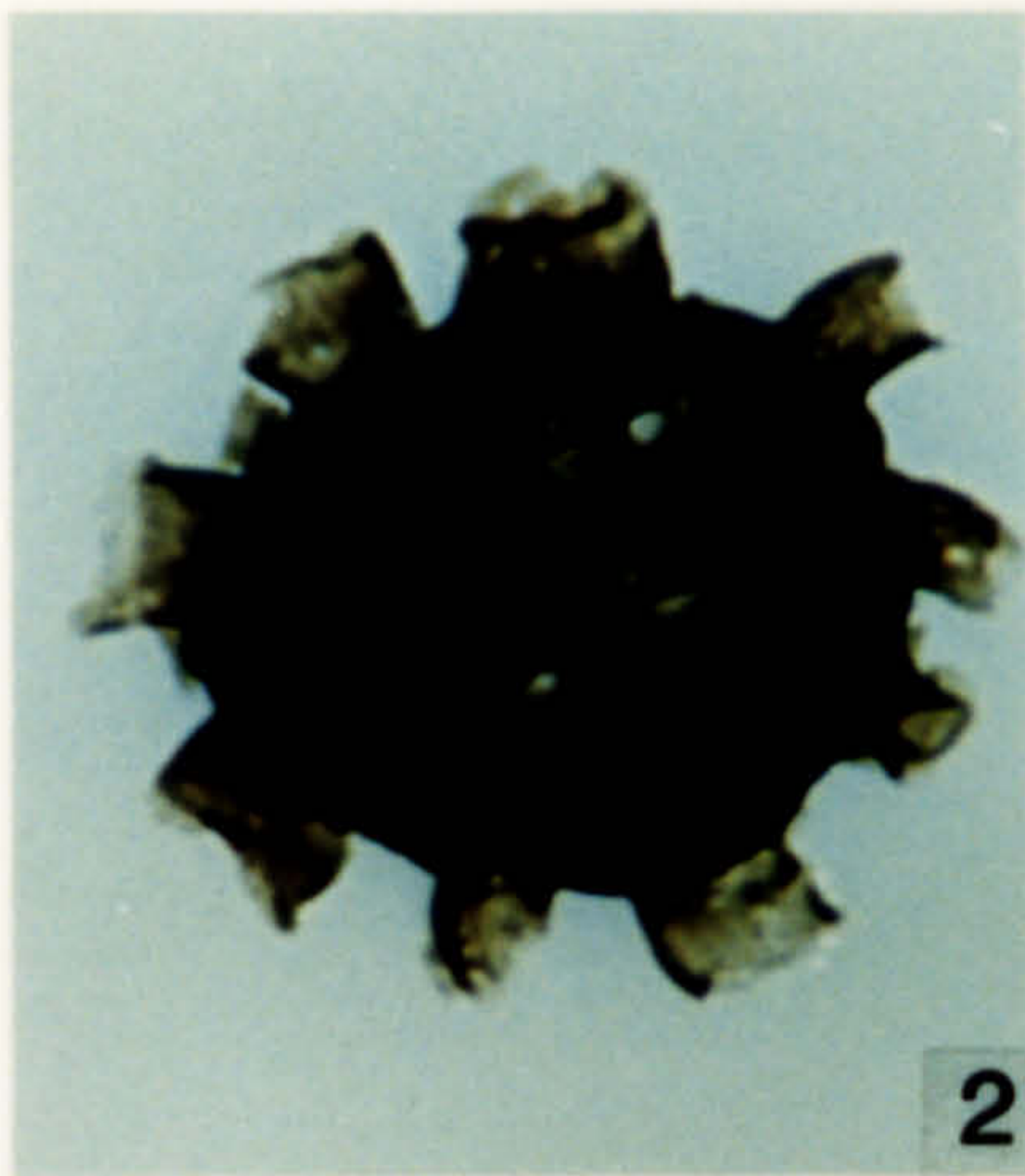
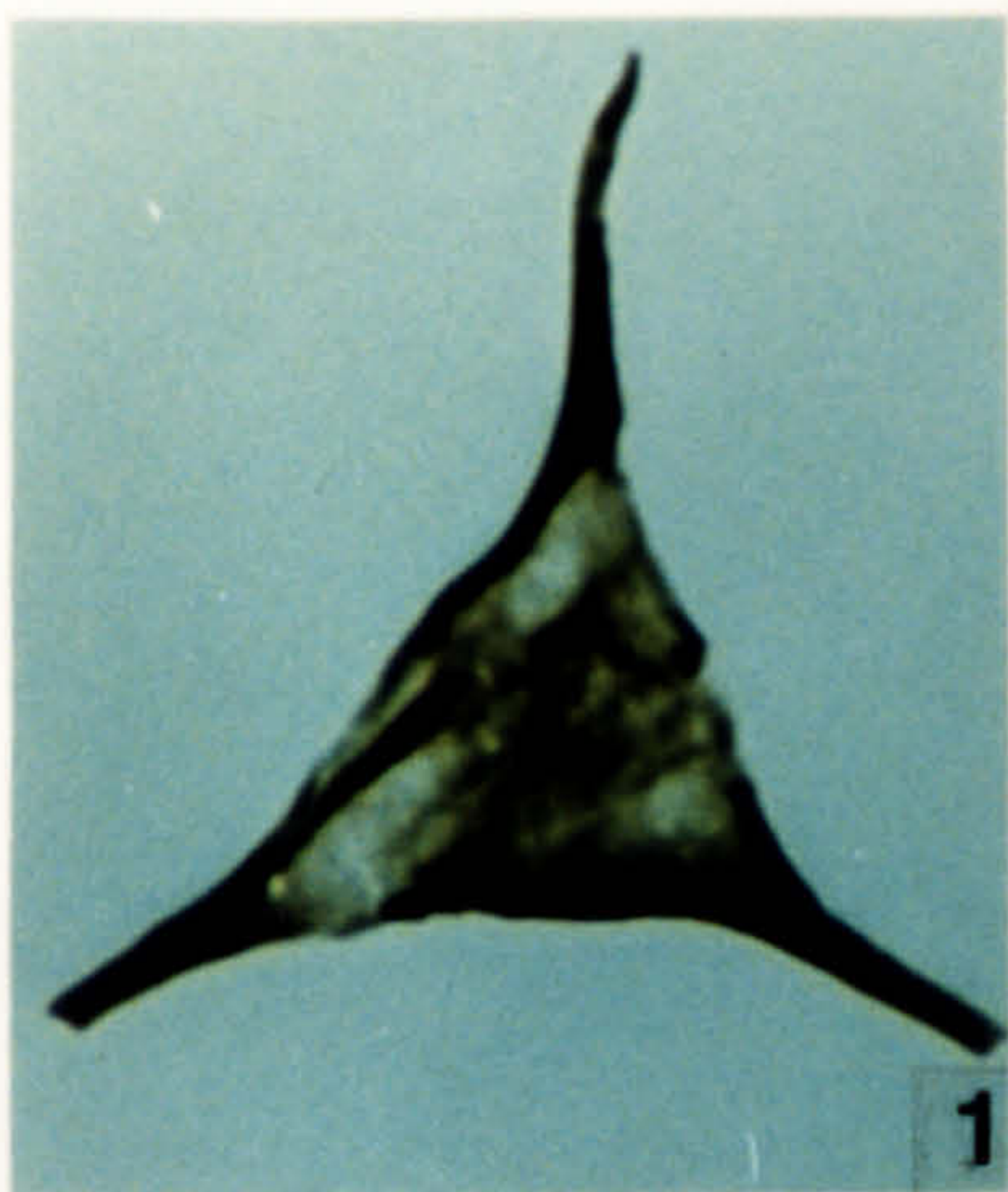
1. *Palacanthus tripus* Martin 1984. OD 1809, S-4, Q26\2.
2. *Poledrixium* sp. OD 1809, S-4, L22\3.
3. *Navifusa minuta* (Deunff) Eisenack, Cramer & Diez 1979. OD 1809, 1-1, L33\4.
4. *Tunisphaeridium* sp. OD 1809, S-1, M34\3, IC.
5. *Tunisphaeridium* sp. OD 1809, S-4, S6-1
6. *Umbellasphaeridium deflandrei* Moreau-Benoit 1967 ex Jardine *et al.* 1972. OD 1809, S-4, F16\3.
7. *Stellinium comptum* Wicander & Loeblich 1977. OD 1809, S-4, L17\1.
8. *Stellinium octoaster* (Staplin) Jardine *et al.* 1972. OD 1809, S-4, N5\1.
9. *Umbellasphaeridium deflandrei* Moreau-Benoit 1967 ex Jardine *et al.* 1972. OD 1809, S-4, N28\3.
10. *Umbellasphaeridium deflandrei* Moreau-Benoit 1967 ex Jardine *et al.* 1972. OD 1809, S-4, L9\2.
11. *Umbellasphaeridium deflandrei* Moreau-Benoit 1967 ex Jardine *et al.* 1972. OD 1809, S-4, J18\1.



**Plate 184.**

**Acritarchs from the Draa Formation, early Famennian in age.**

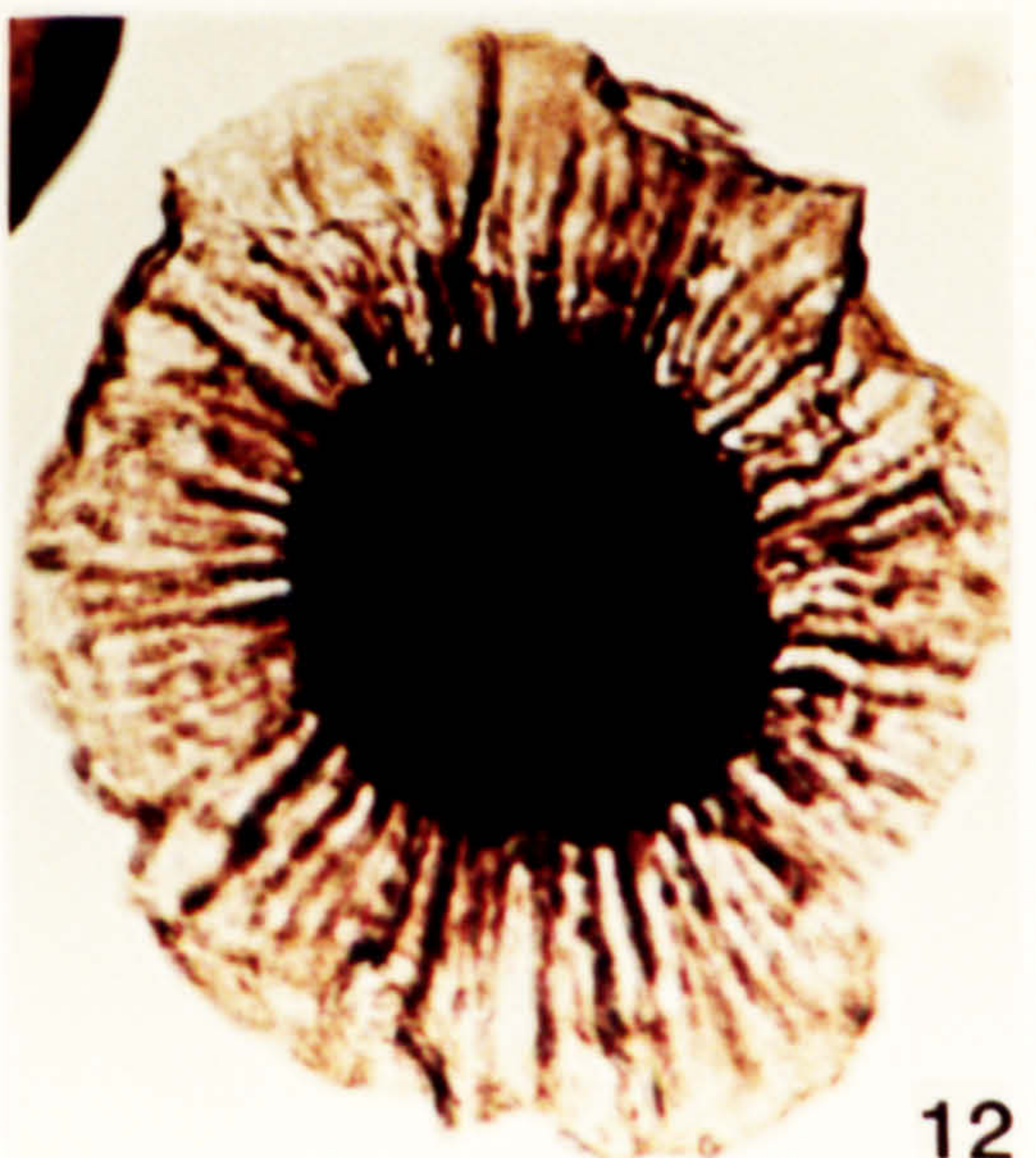
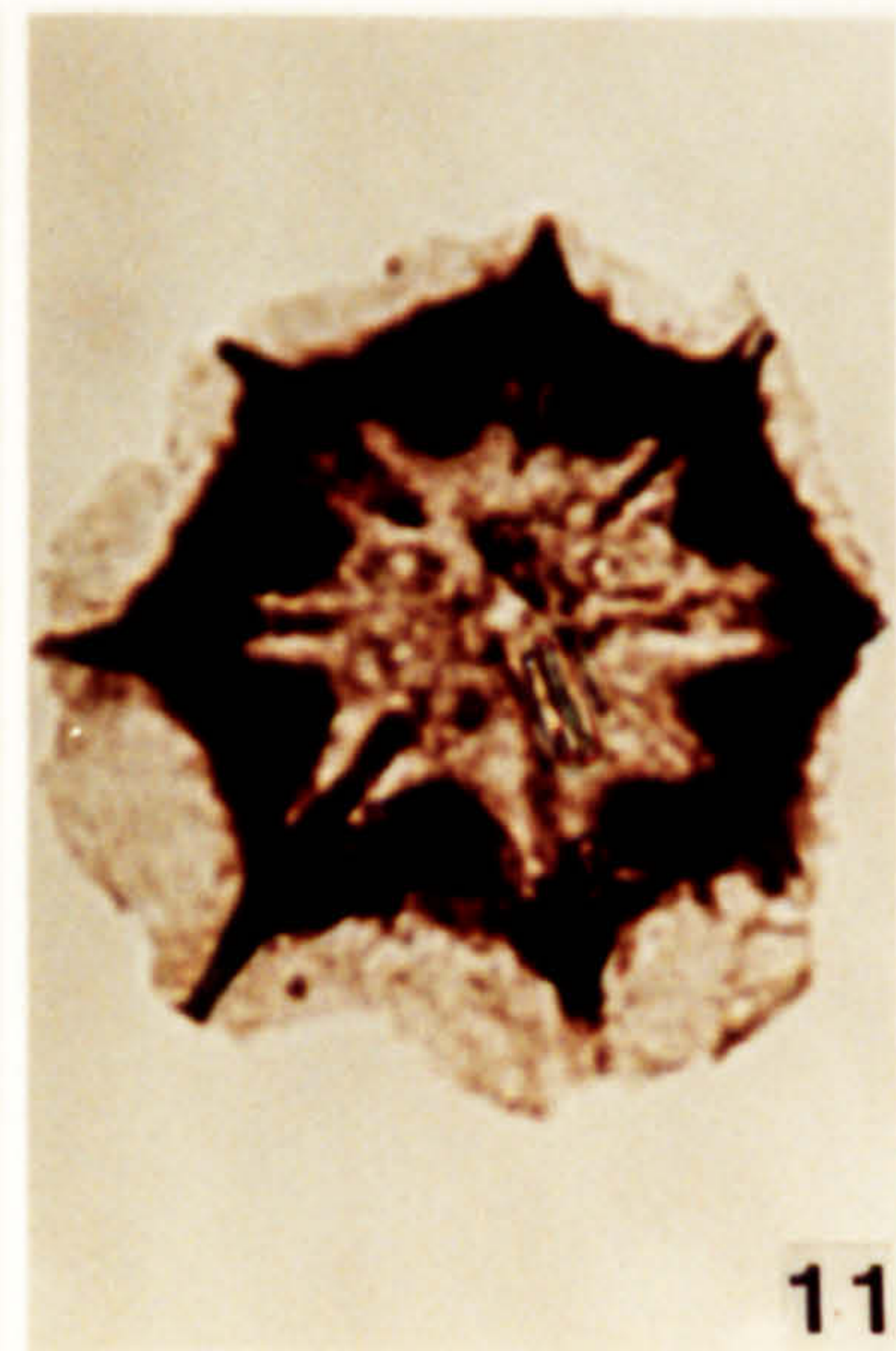
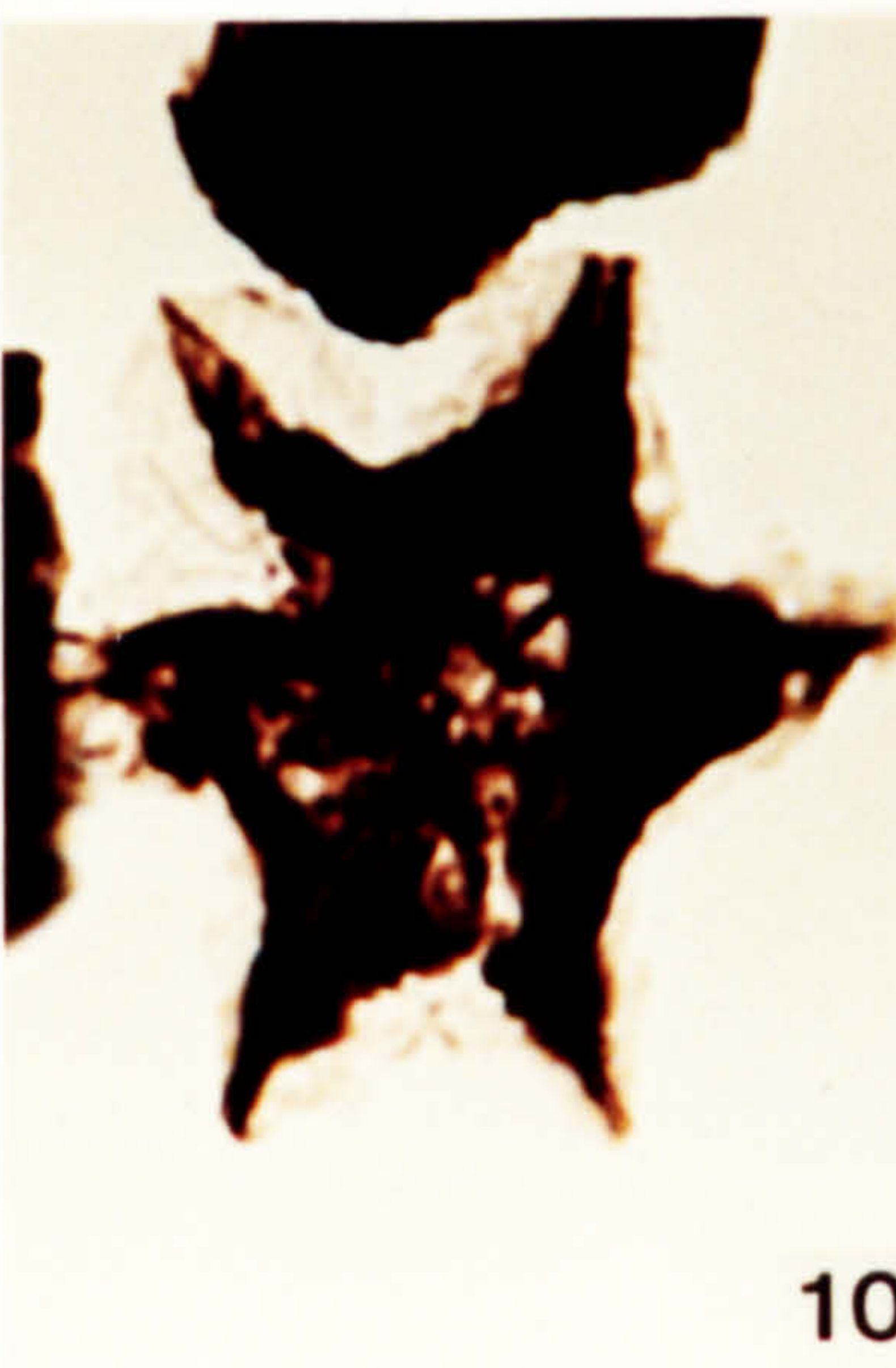
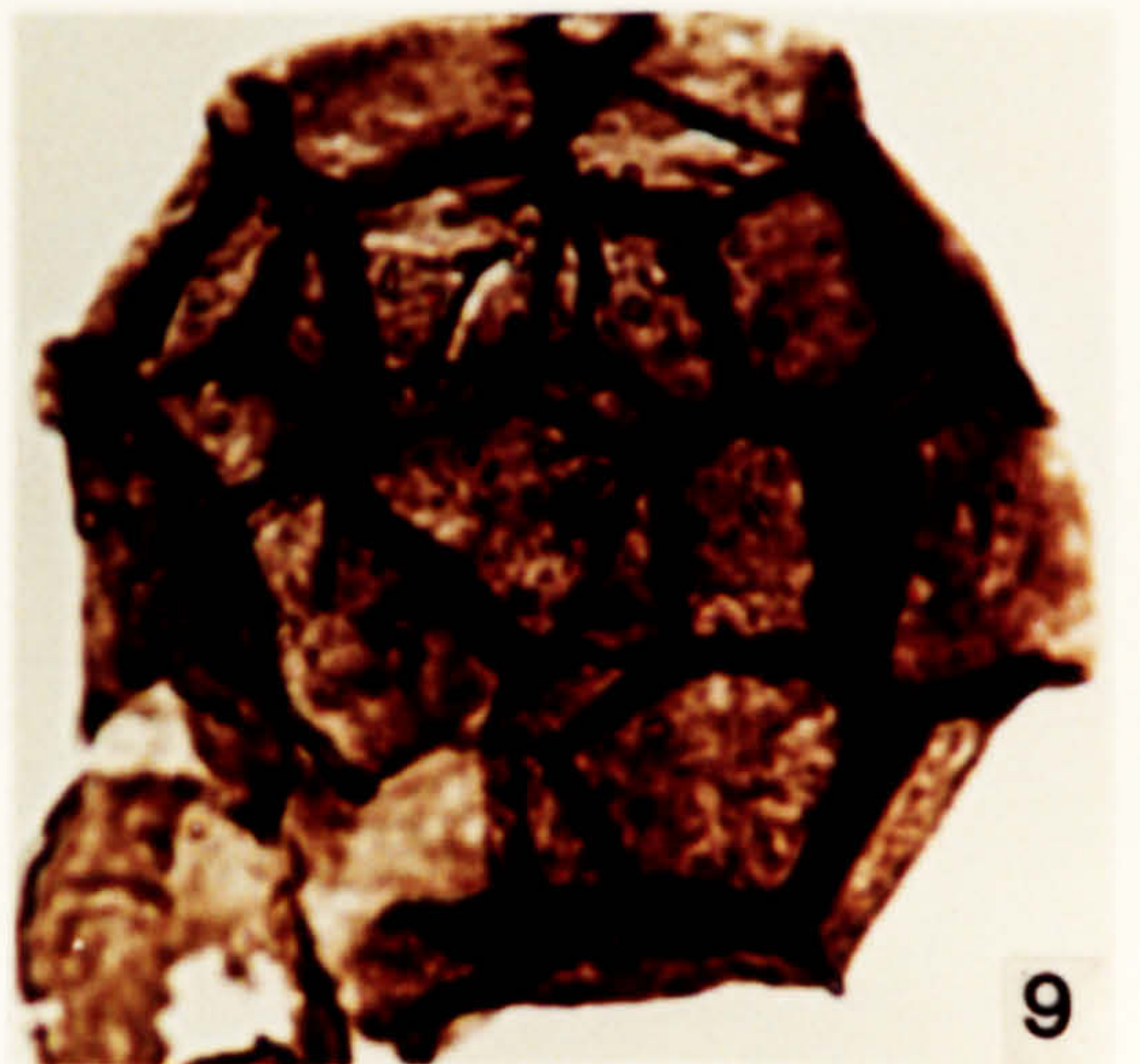
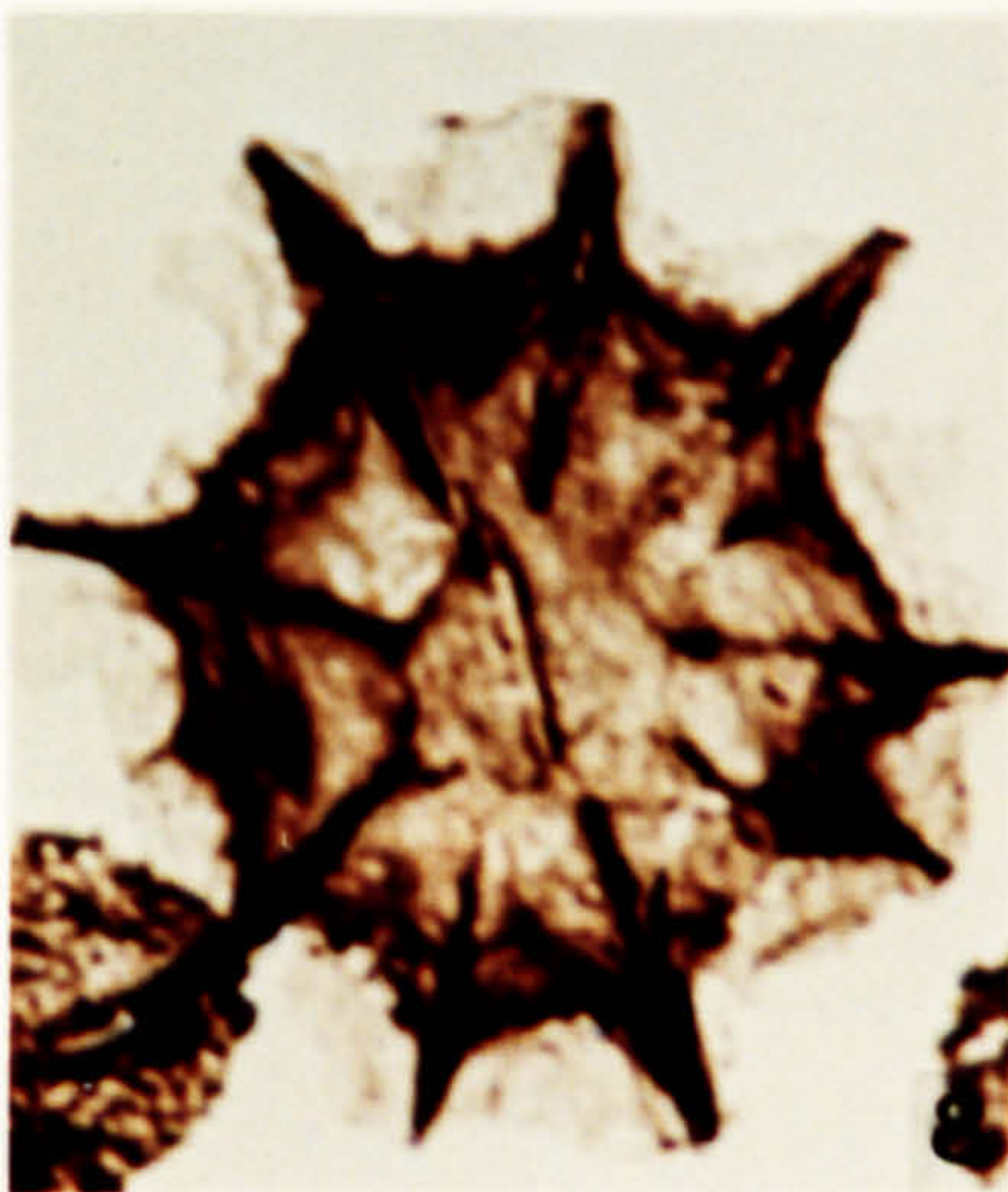
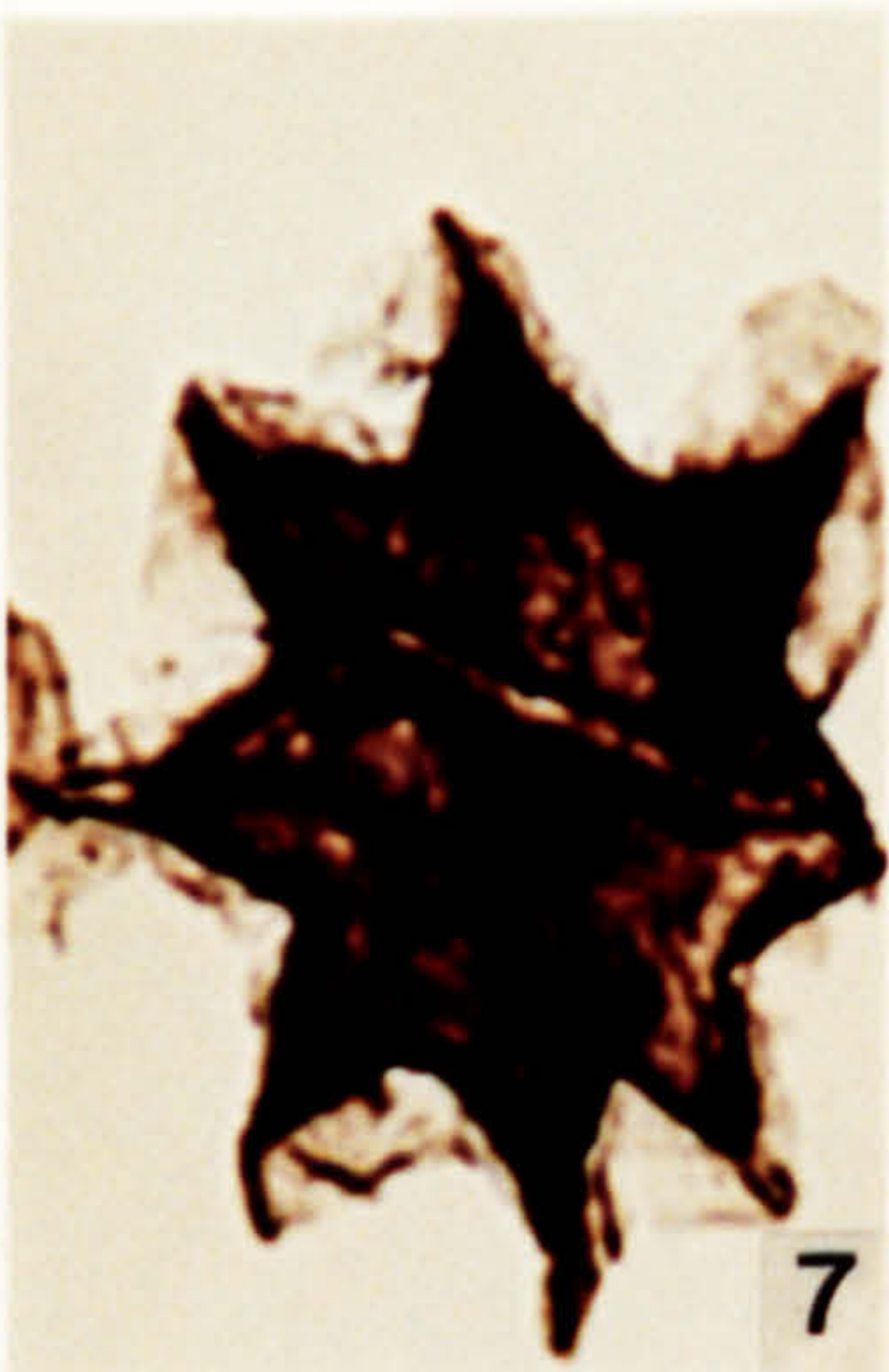
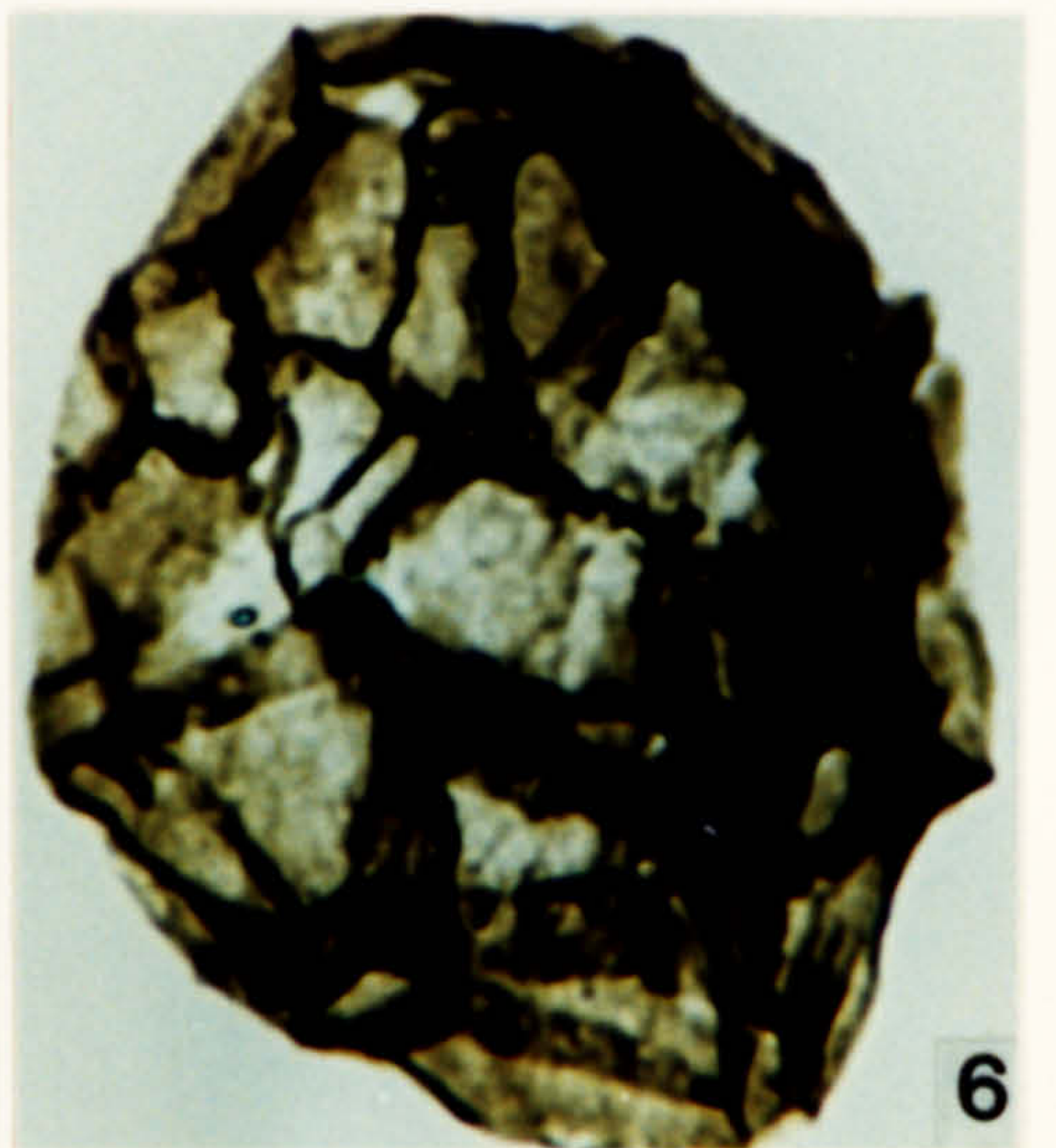
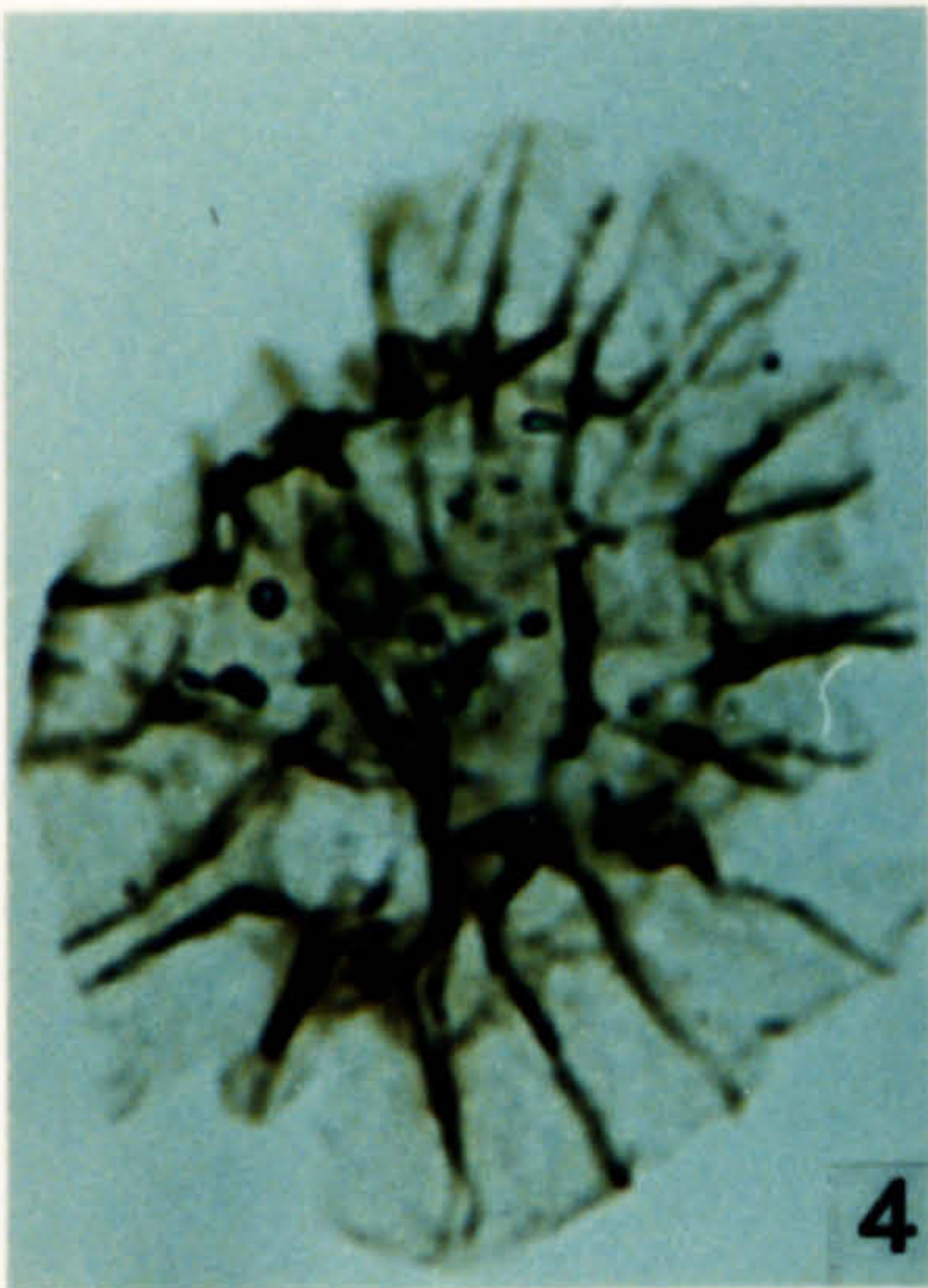
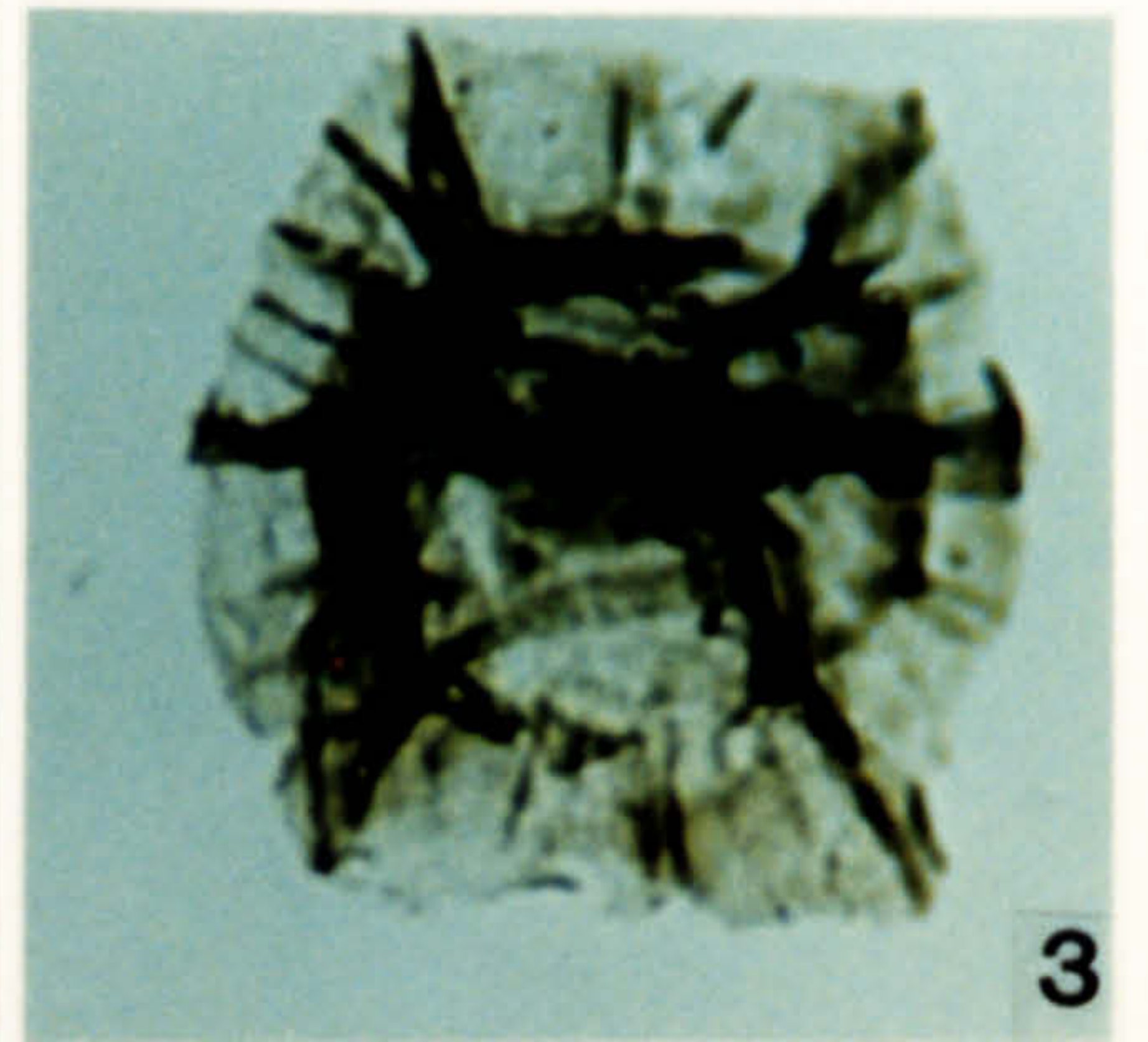
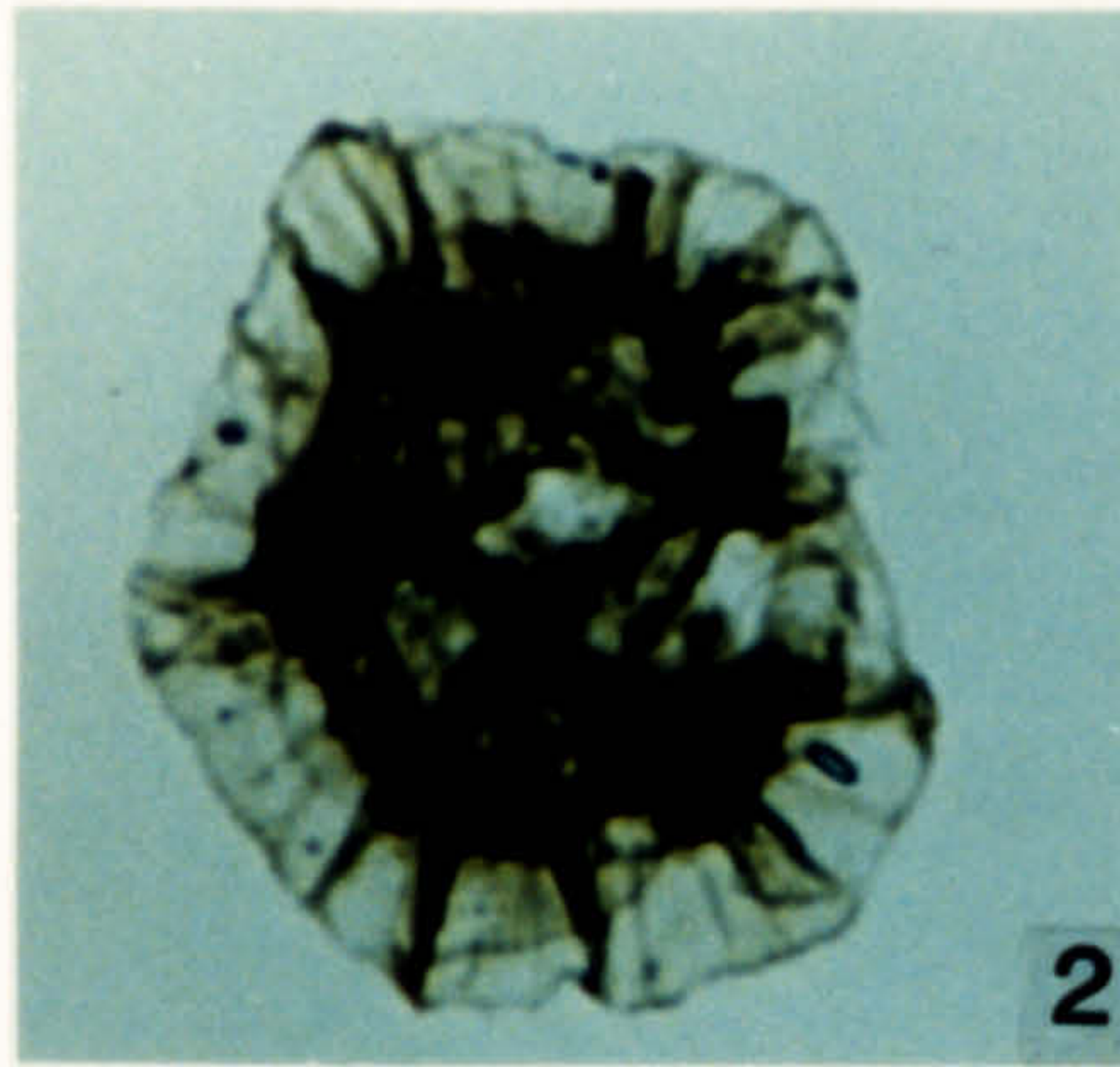
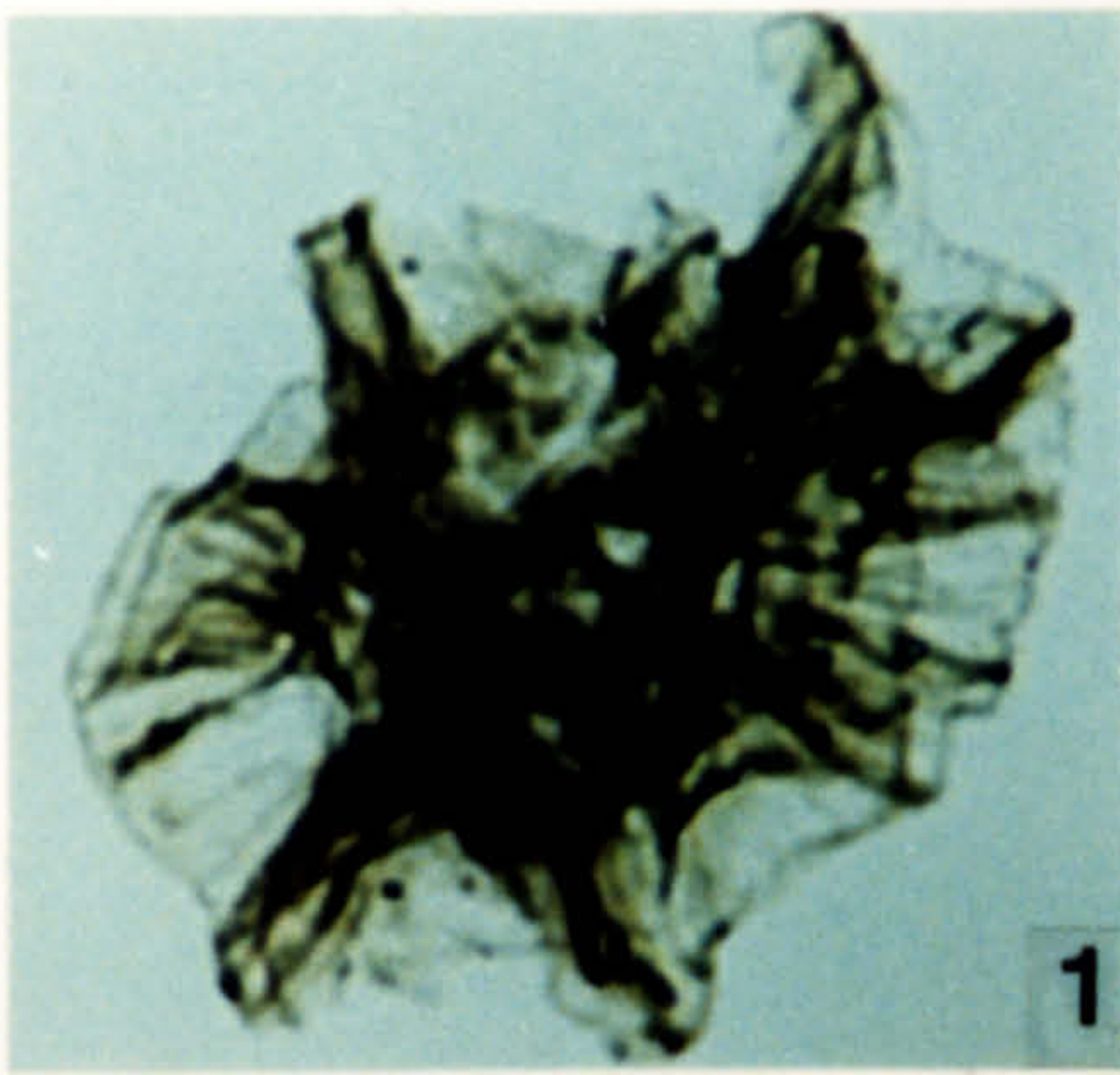
1. *Veryhachium downiei* var. *downiei* Stockmans & Williere 1962. OD 1809, S-4, L7\2.
2. Acritarch Form P. OD 1809.3, S-1, G30\2.
3. Acritarch Form P. OD 1809, S-4, R27\3.
4. Acritarch Form P. OD 1809, S-4, K39\1.
5. Acritarch Form P. OD 1809, S-4, V14\3.
6. Acritarch Form P. OD 1809, S-4, R13\4.
7. Acritarch Form P. OD 1809, S-4, D26\4.
8. Acritarch Form P. OD 1809, S-4, J35\1.
9. Acritarch Form Q. OD 1809, S-4, L8\3.
10. Acritarch Form R. OD 1809, S-1, E16\4.
11. Acritarch Form S. OD 1809, S-1, P26\3.



**Plate 185.**

Prasinophycean algae from the Draa Formation, early Famennian in age.

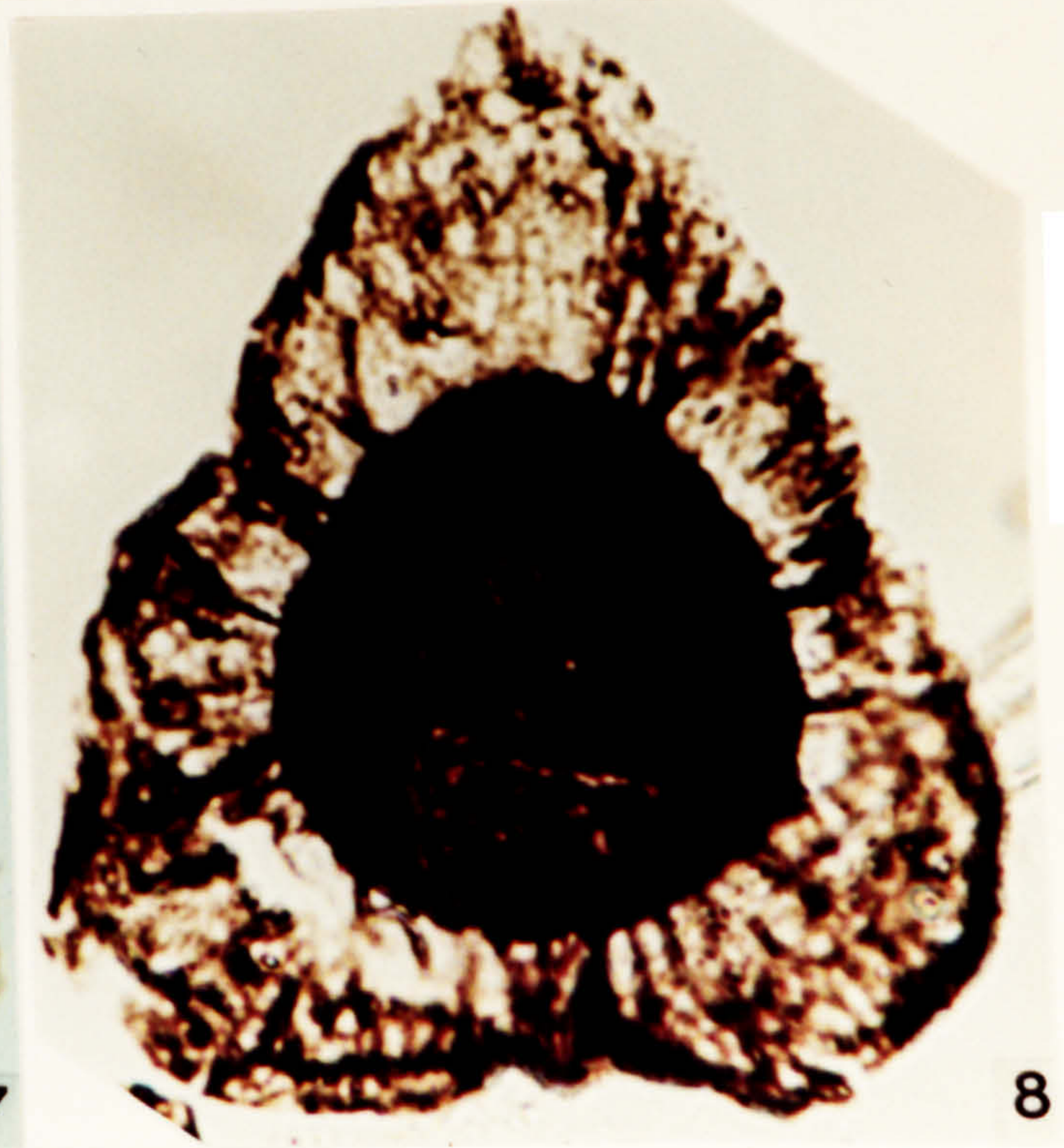
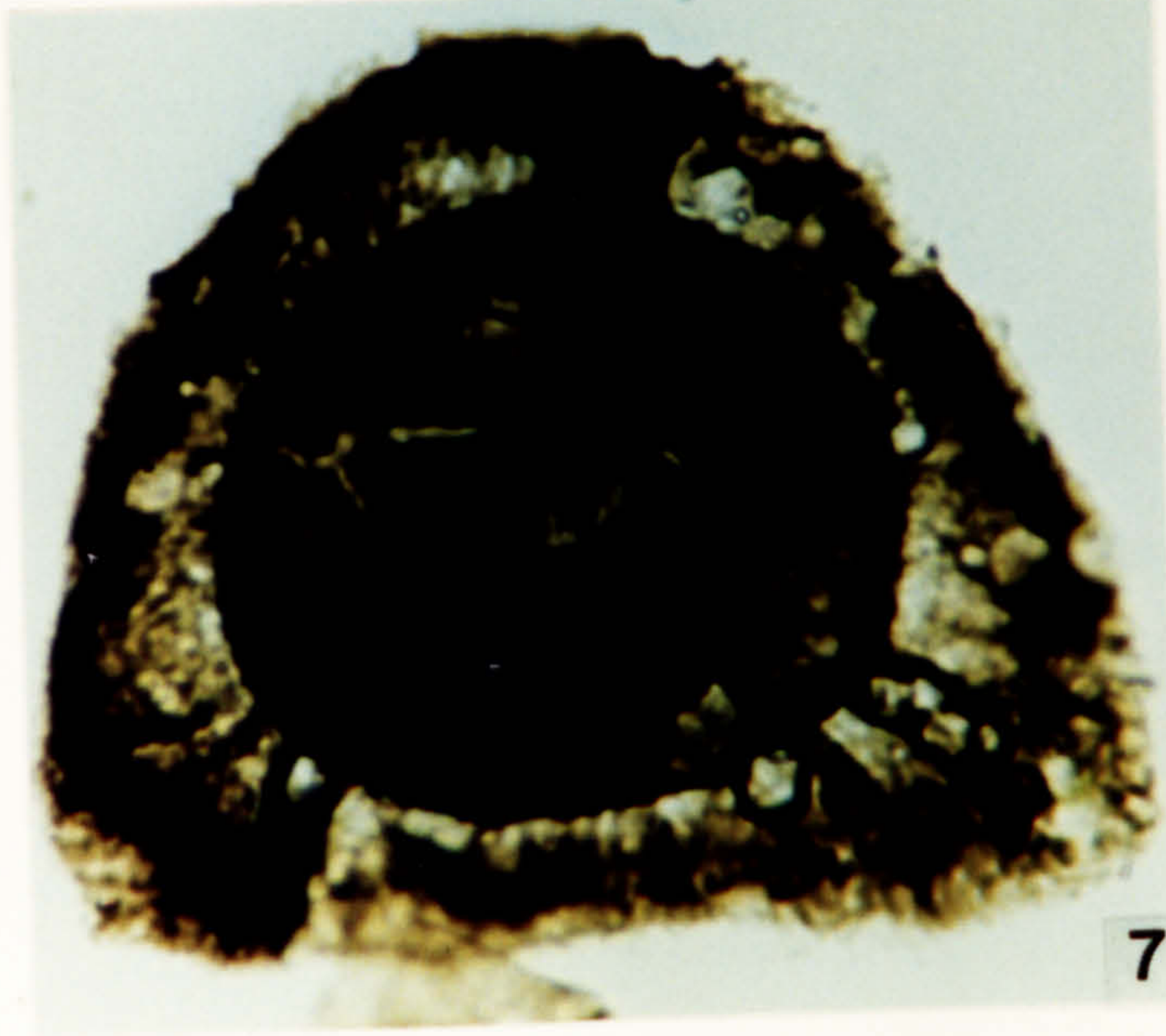
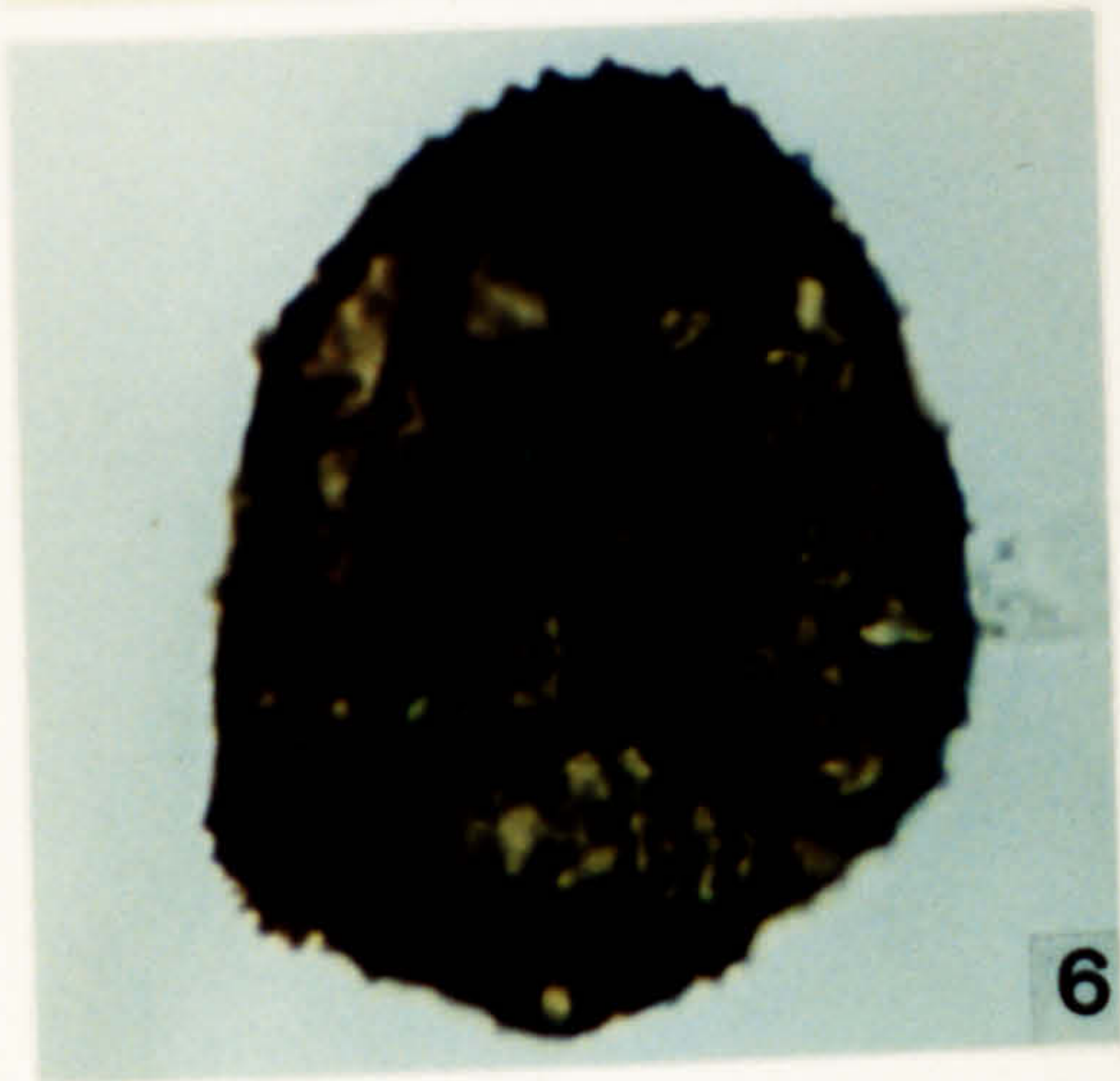
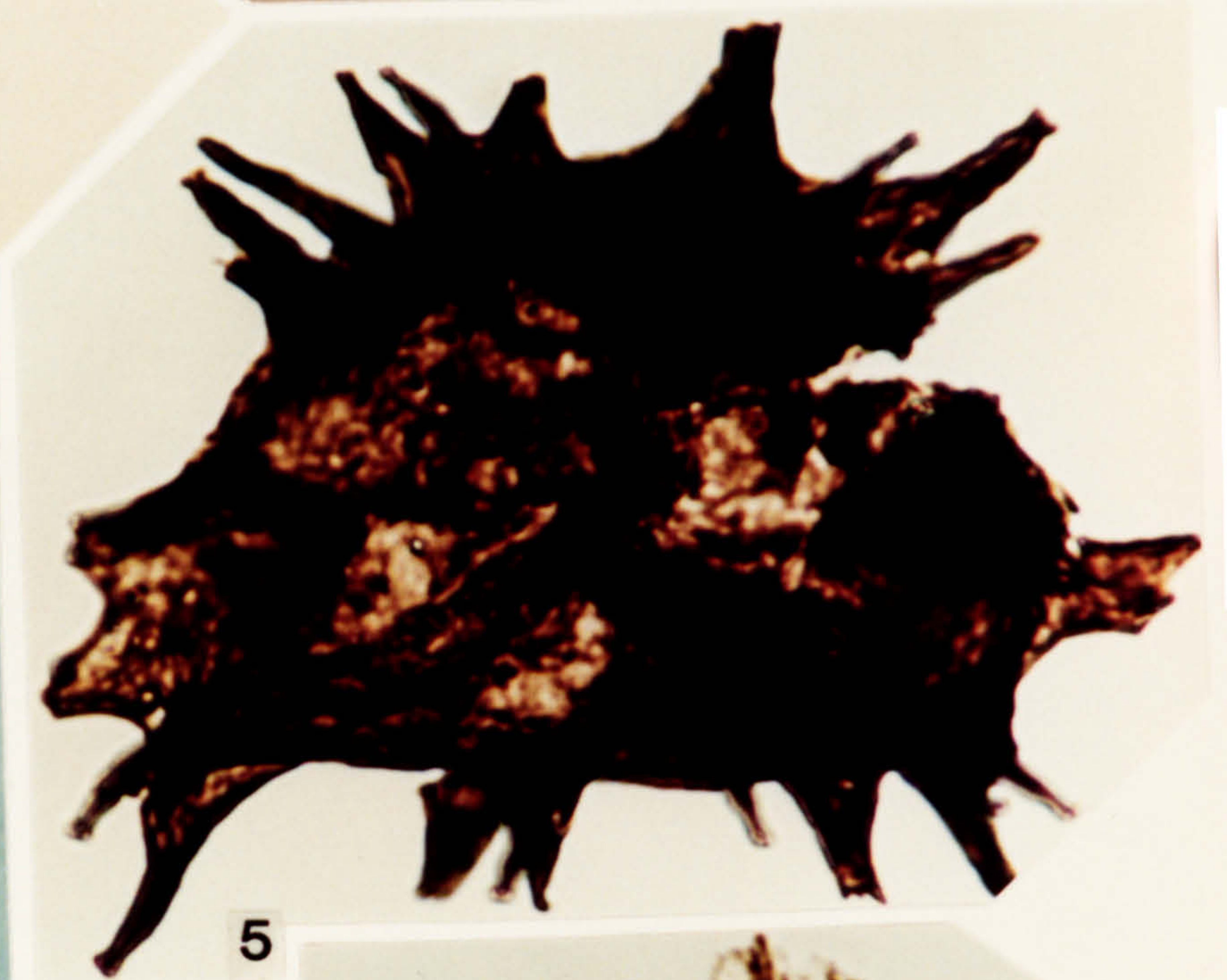
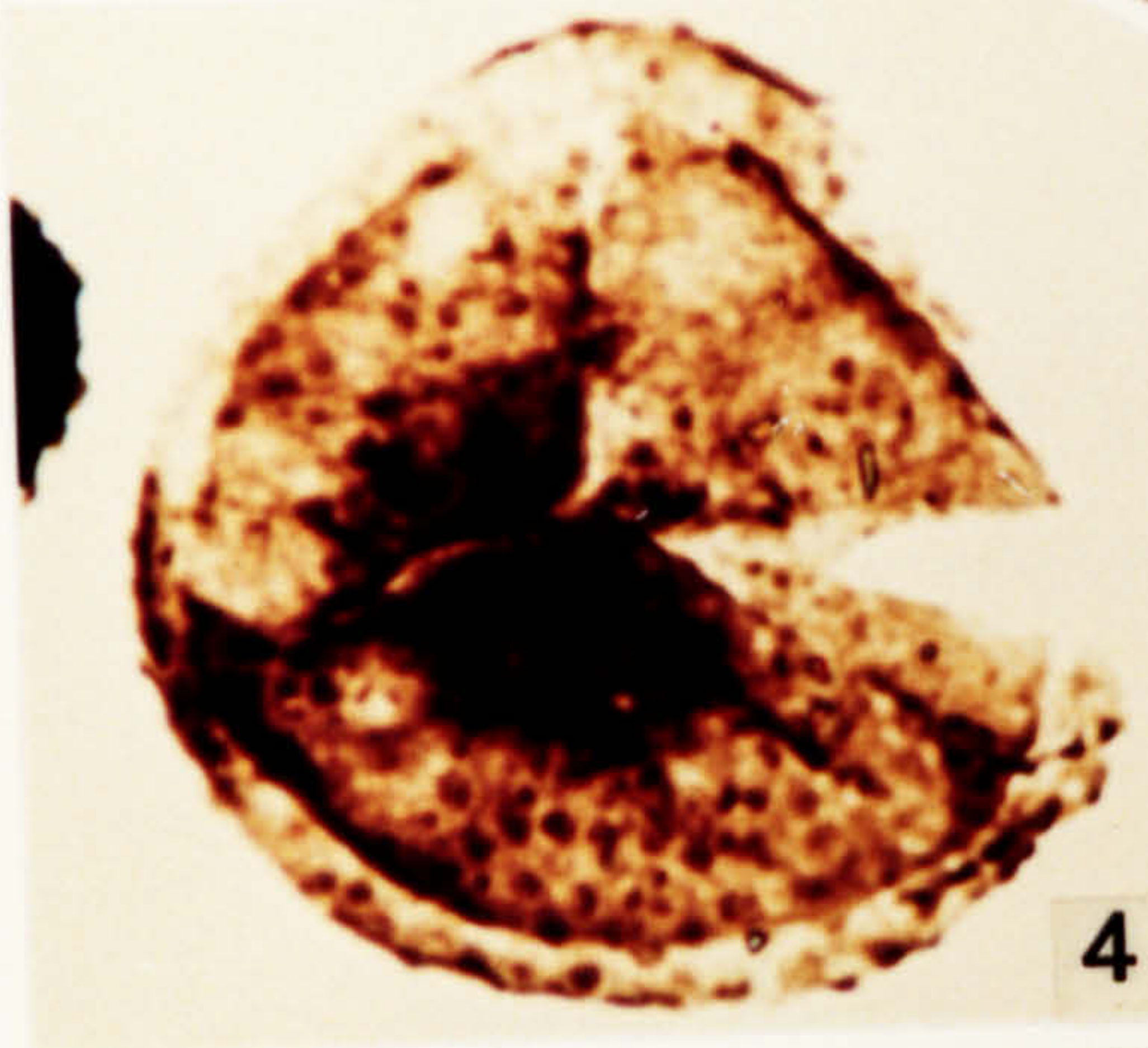
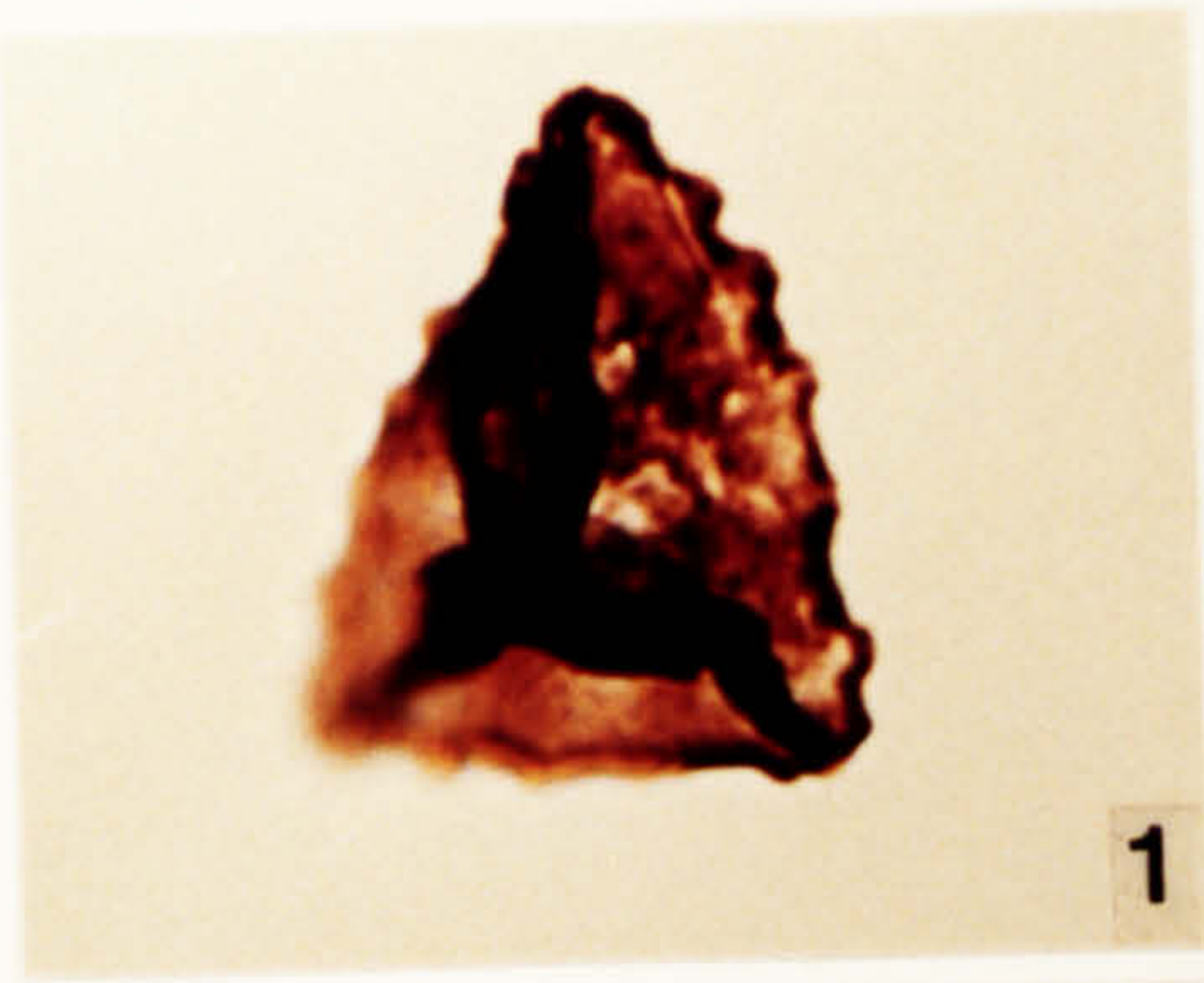
1. *Cymatiosphaera leonensis* Cramer & Diez 1976. OD 1809, S-4, N29\3.
2. *Cymatiosphaera leonensis* Cramer & Diez 1976. OD 1809, S-4, N2\3.
3. *Cymatiosphaera leonensis* Cramer & Diez 1976. OD 1809, S-4, J30\1.
4. *Duvernaysphaera radiata* Brito 1967. OD 1809, S-4, H27\4.
5. *Duvernaysphaera radiata* Brito 1967. OD 1809, S-4, L24\2.
6. *Cymatiosphaera* sp. OD 1809, S-4, N19\1.
7. *Muraticavia* sp 1. OD 1809, S-4, H29\4.
8. *Muraticavia* sp 1. OD 1809, S-4, N28\3.
9. *Muraticavia* sp 1. OD 1809, S-1, G36\2.
10. *Muraticavia* sp 1. OD 1809, S-4, K29\4.
11. *Muraticavia* sp 1. OD 1809, S-1, T43\3.
12. *Pterospermella eruptio* Martin 1983. OD 1809, S-1, K19\4.



**Plate 186.**

Spores from the Draa Formation, early Famennian in age.

1. Spore indet. OD 1809, 1-1, T33\4.
2. Spore indet. OD 1809, S-1, D27\1.
3. Spore indet. OD 1809, 1-1, K35\3.
4. *Spelaeotriletes* sp. OD 1809, S-4, H11\4.
5. *Ancyrospora furcula* Owens 1971 OD 1809, S-4, Q16\1.
6. *Grandispora* sp. OD 1809, S-1, E38\2.
7. *Auroraspora?* sp. OD 1809, S-1, H33\4.
8. *Auroraspora torquata*. Higgs 1975. OD 1809, S-2, M14\2.

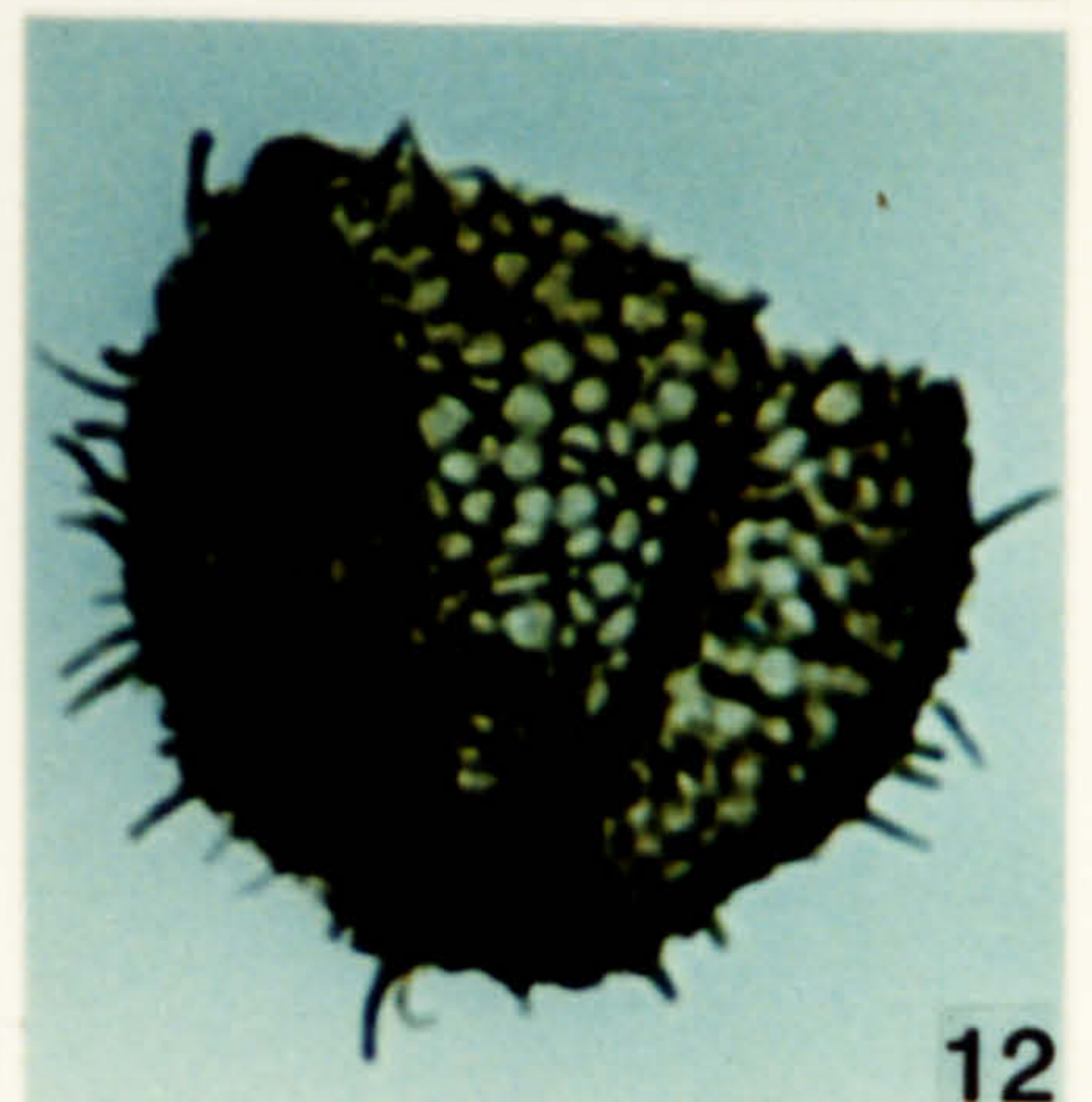
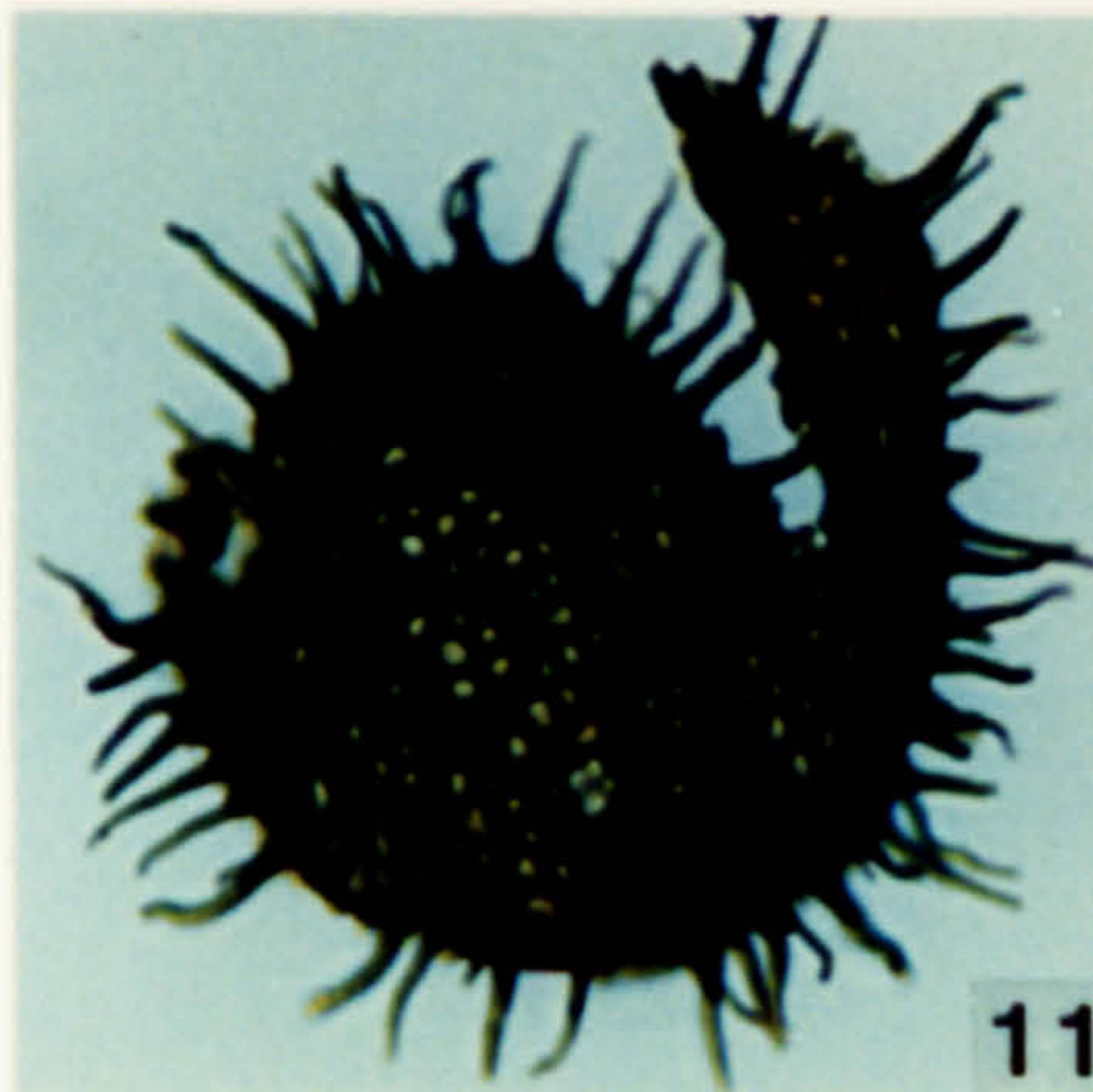
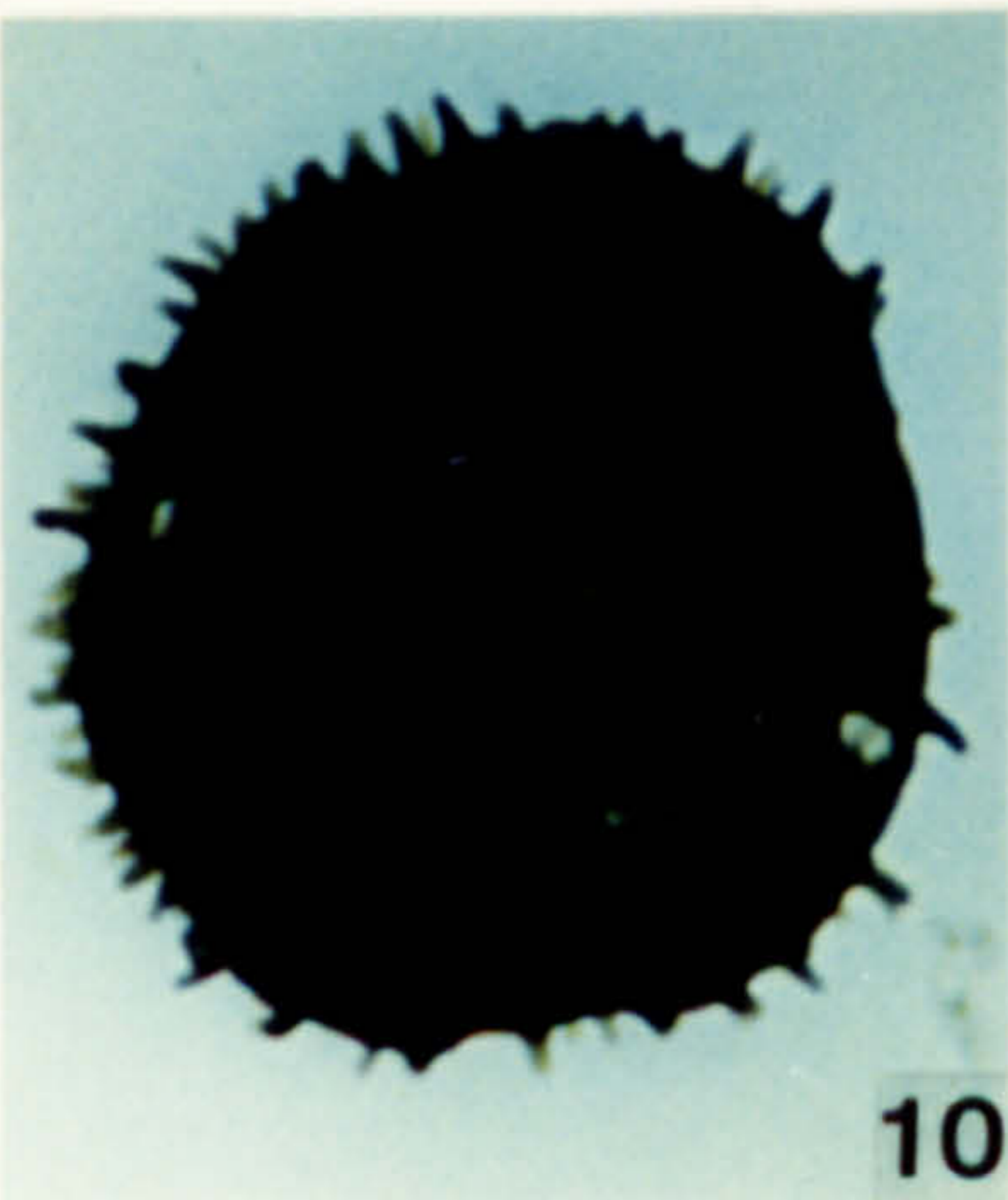
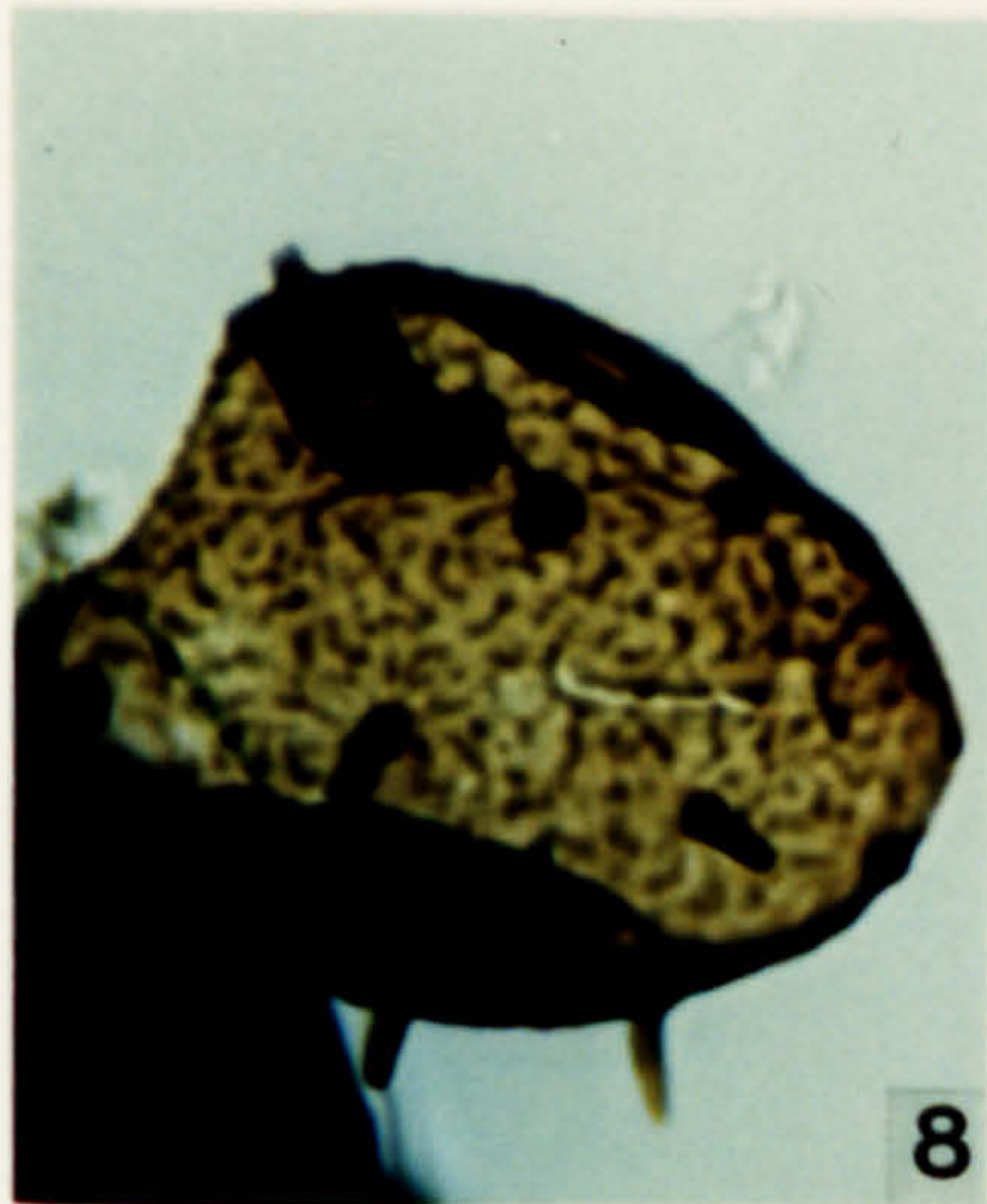
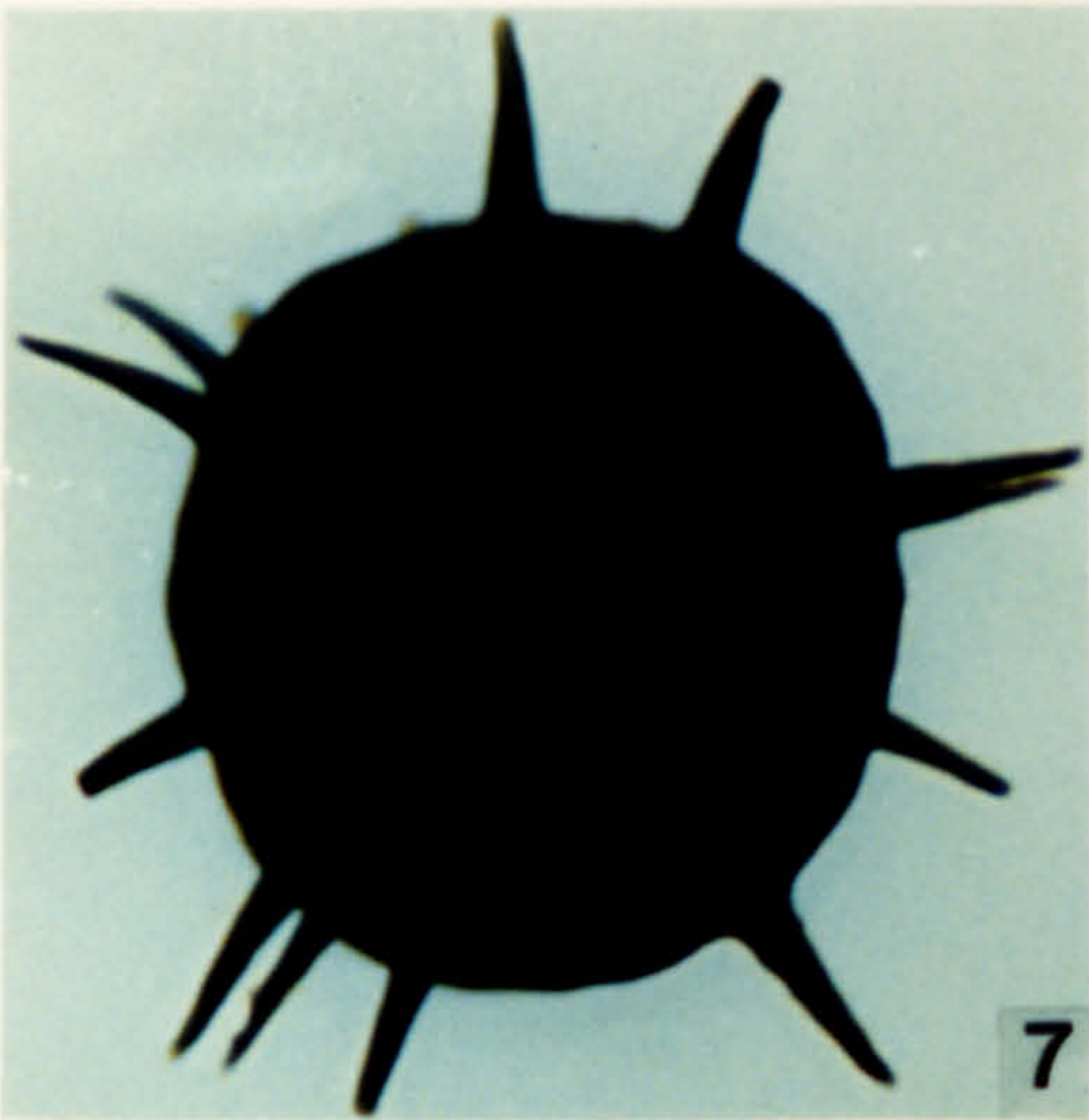
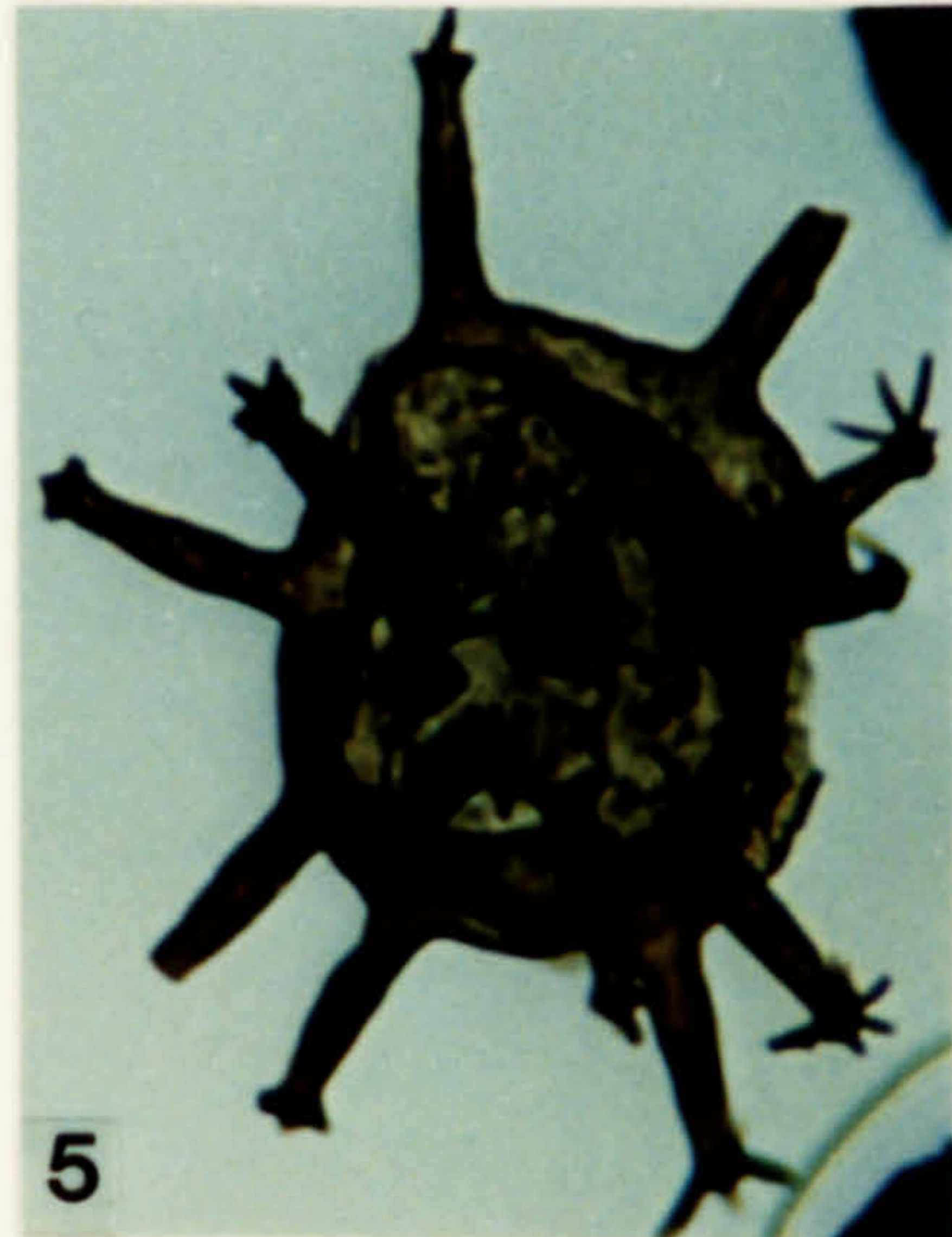
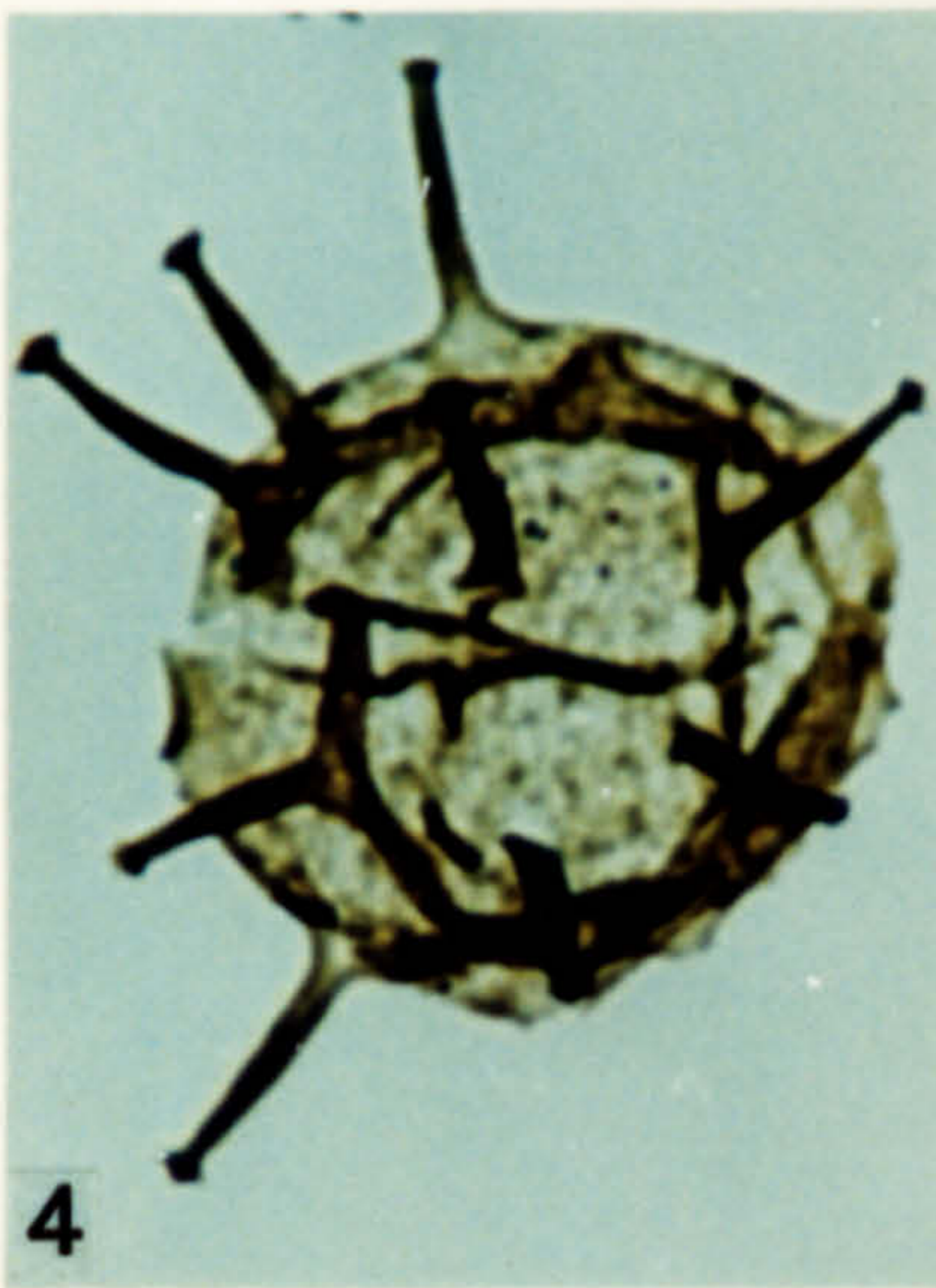
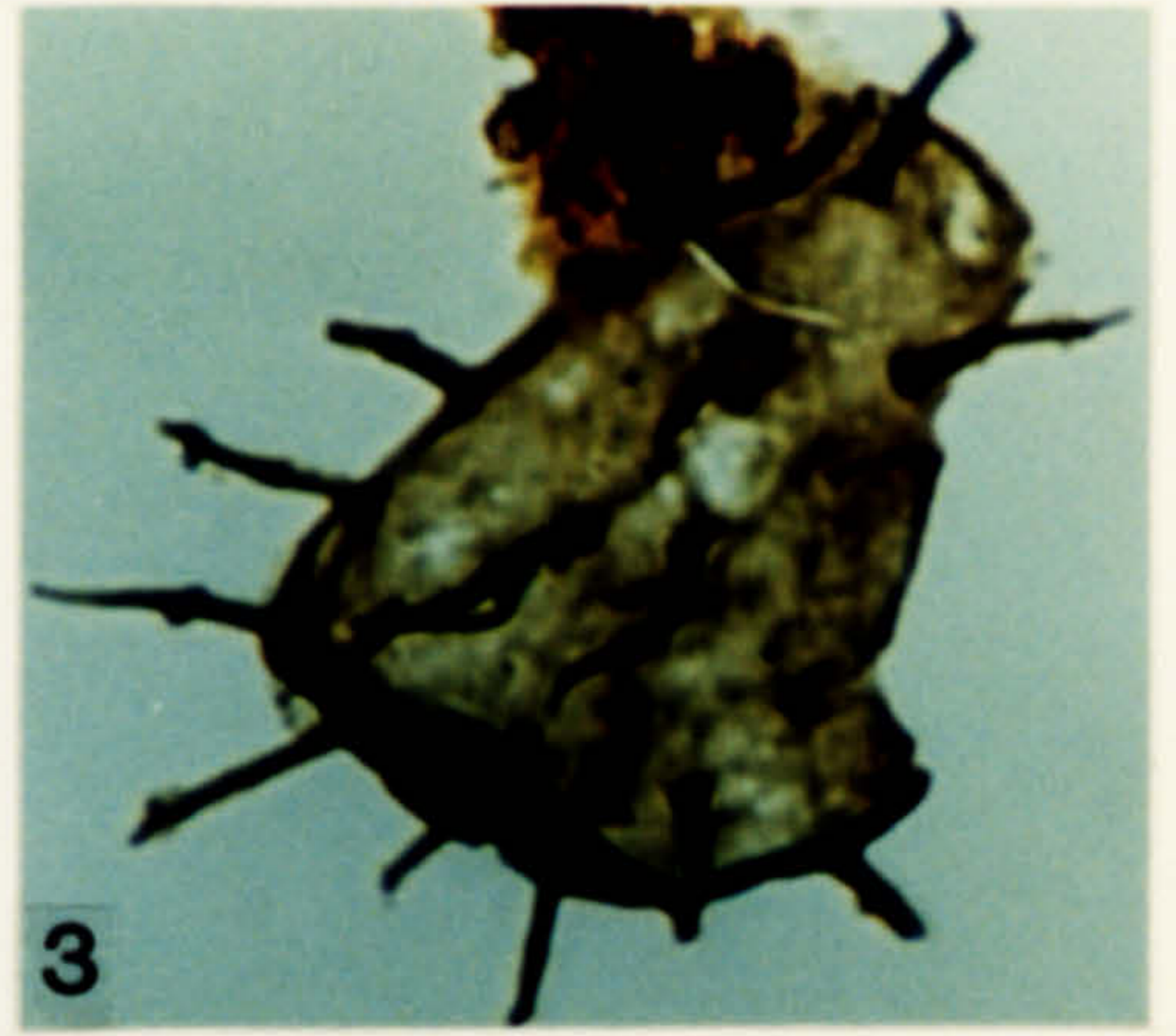
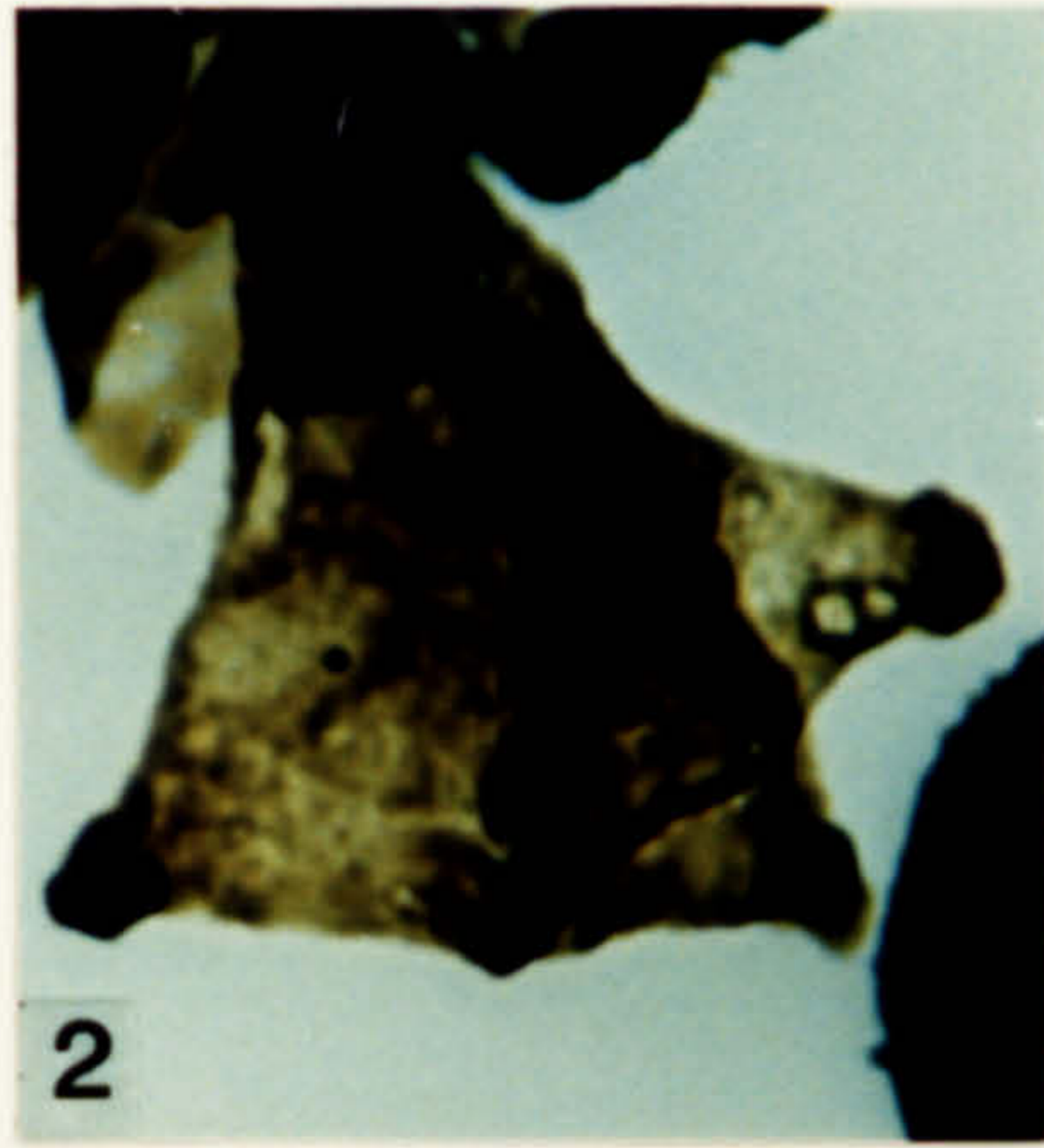




**Plate 187.**

Acritarchs from the Draa Formation, early Famennian in age.

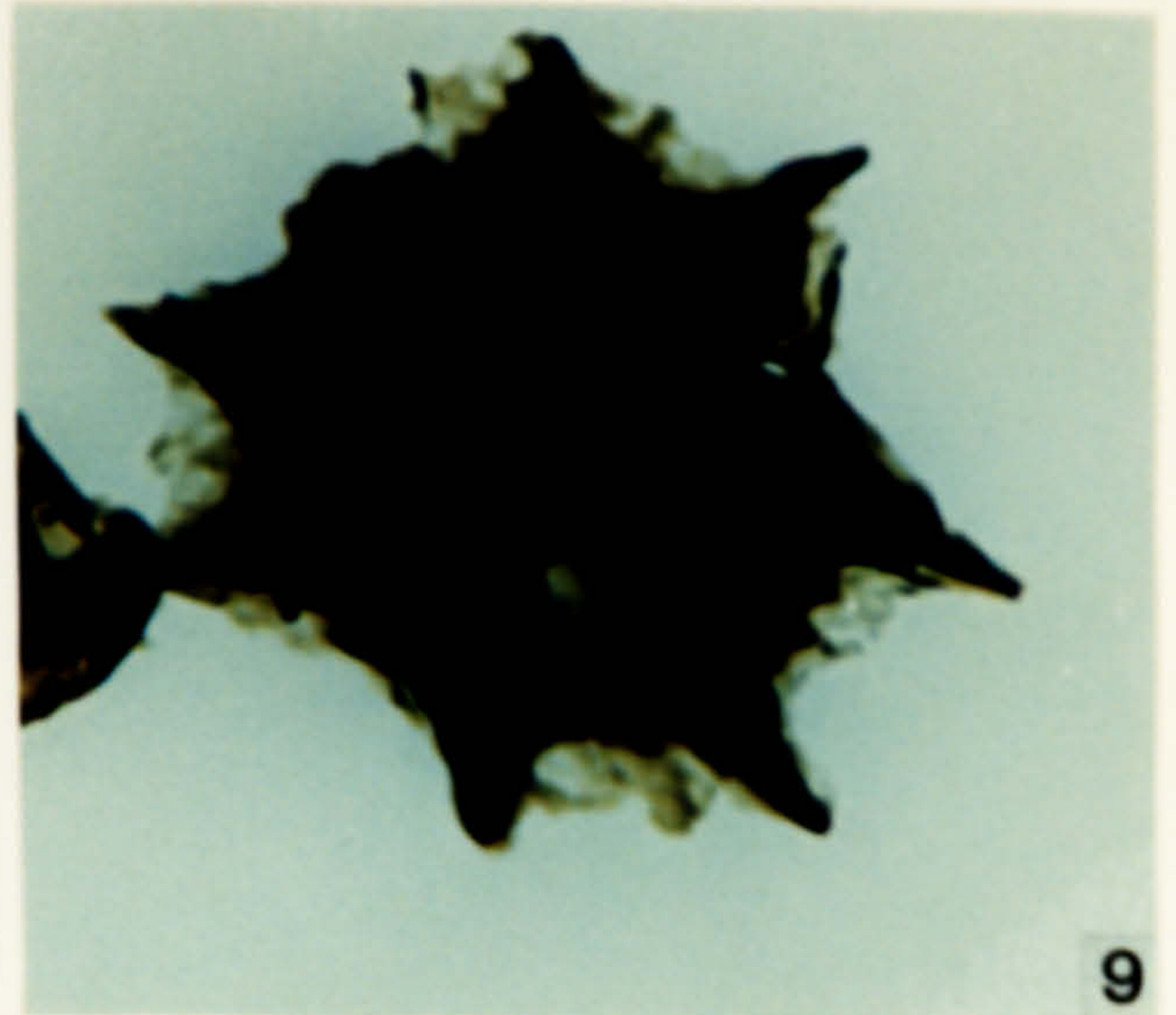
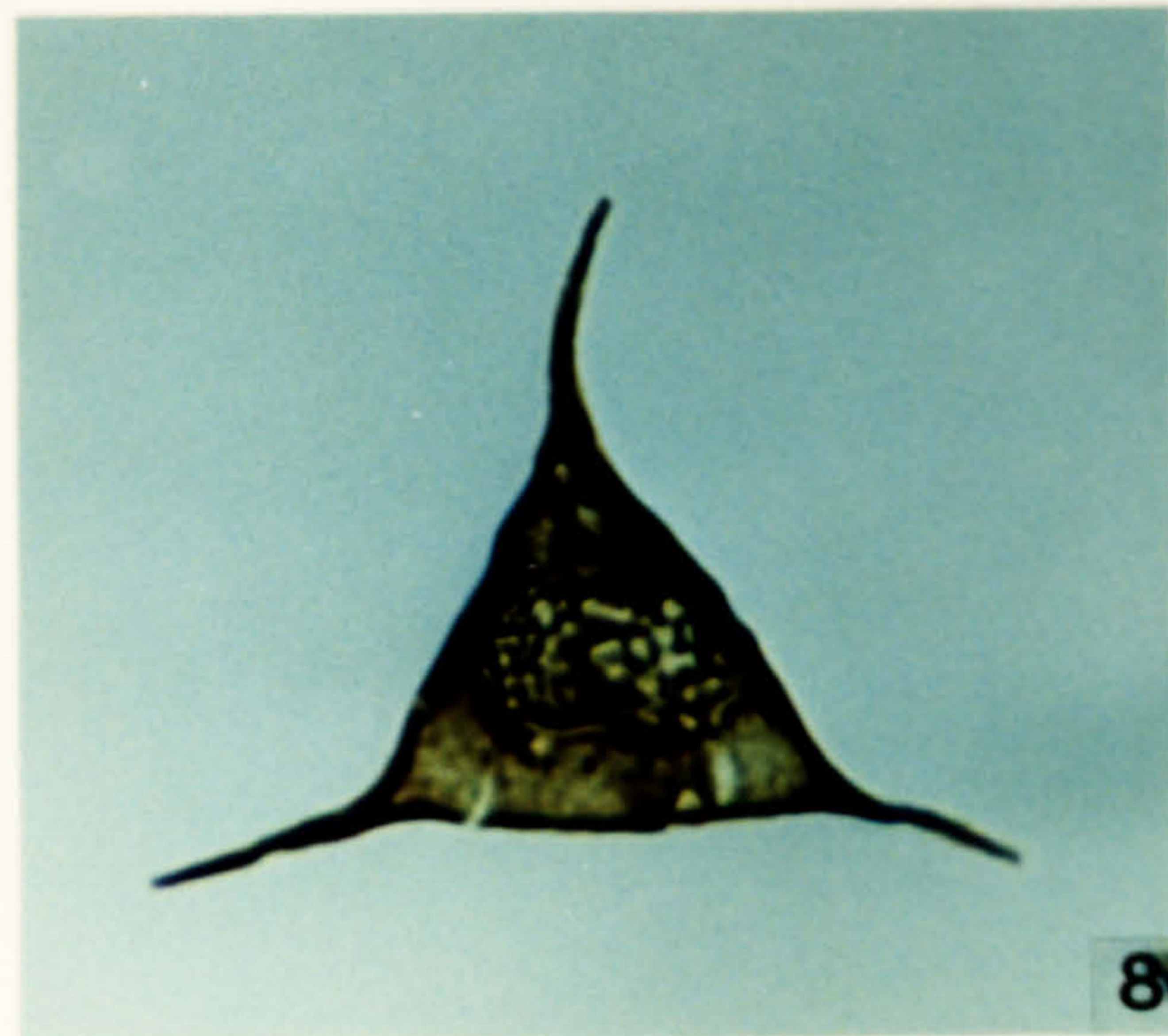
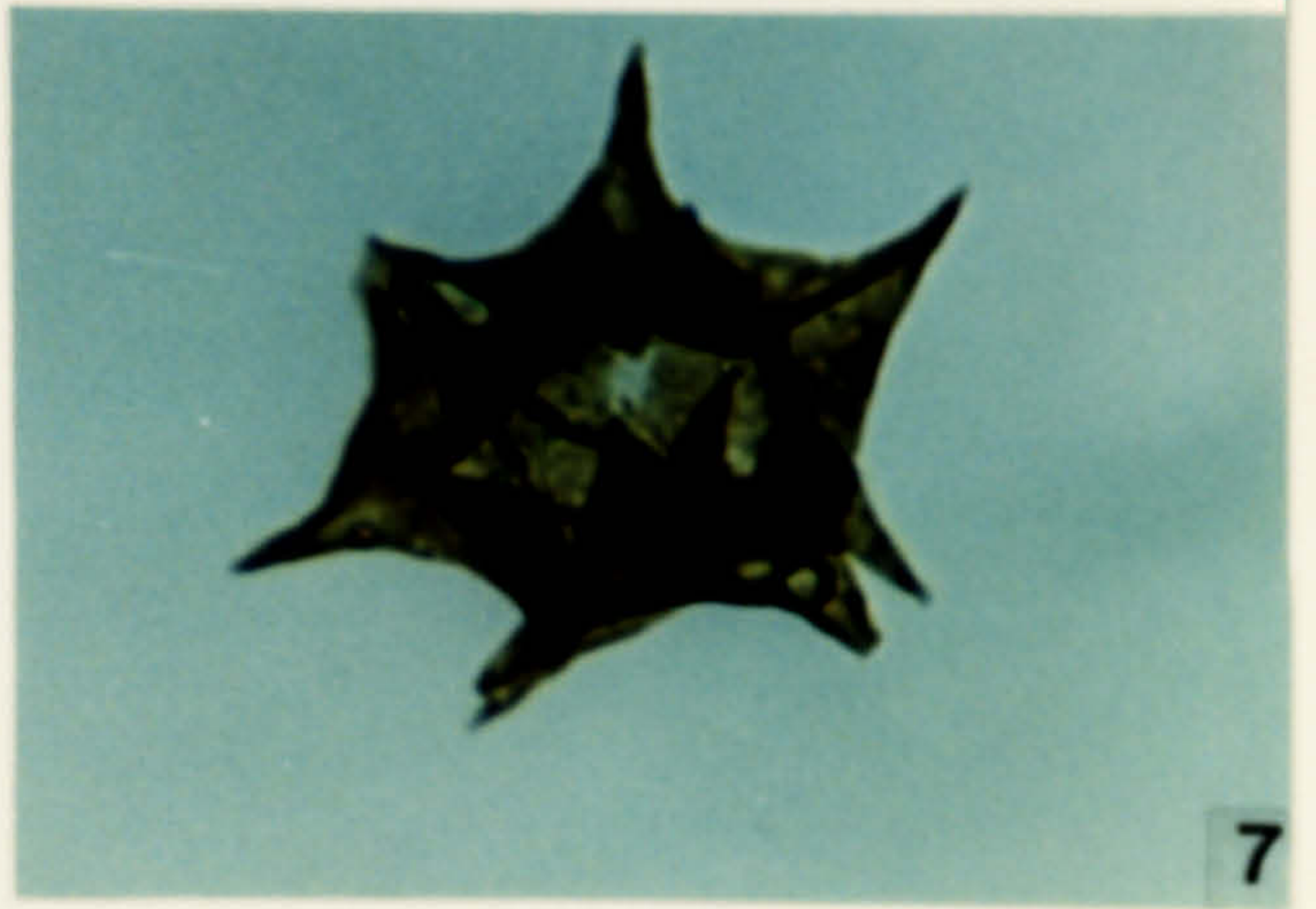
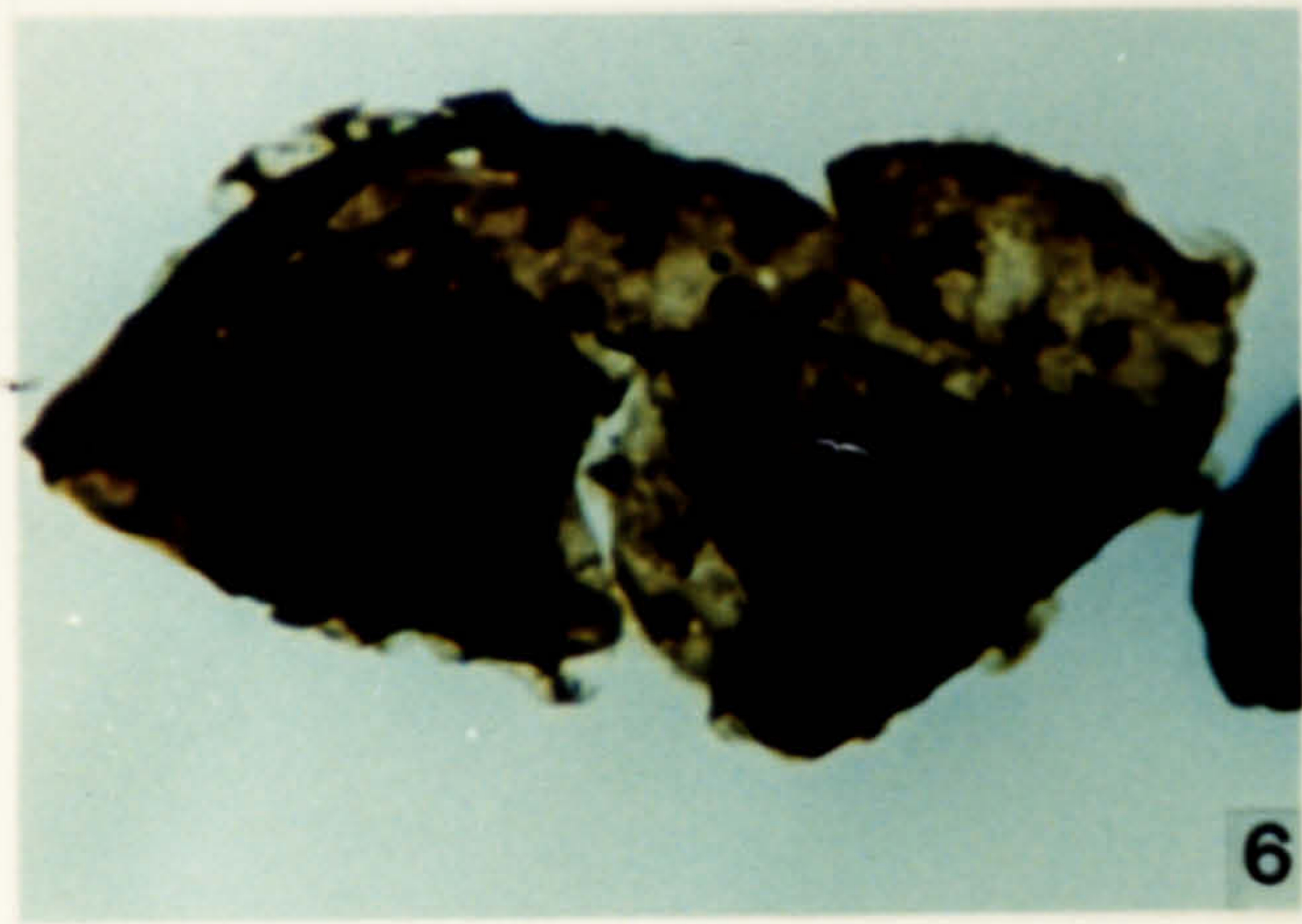
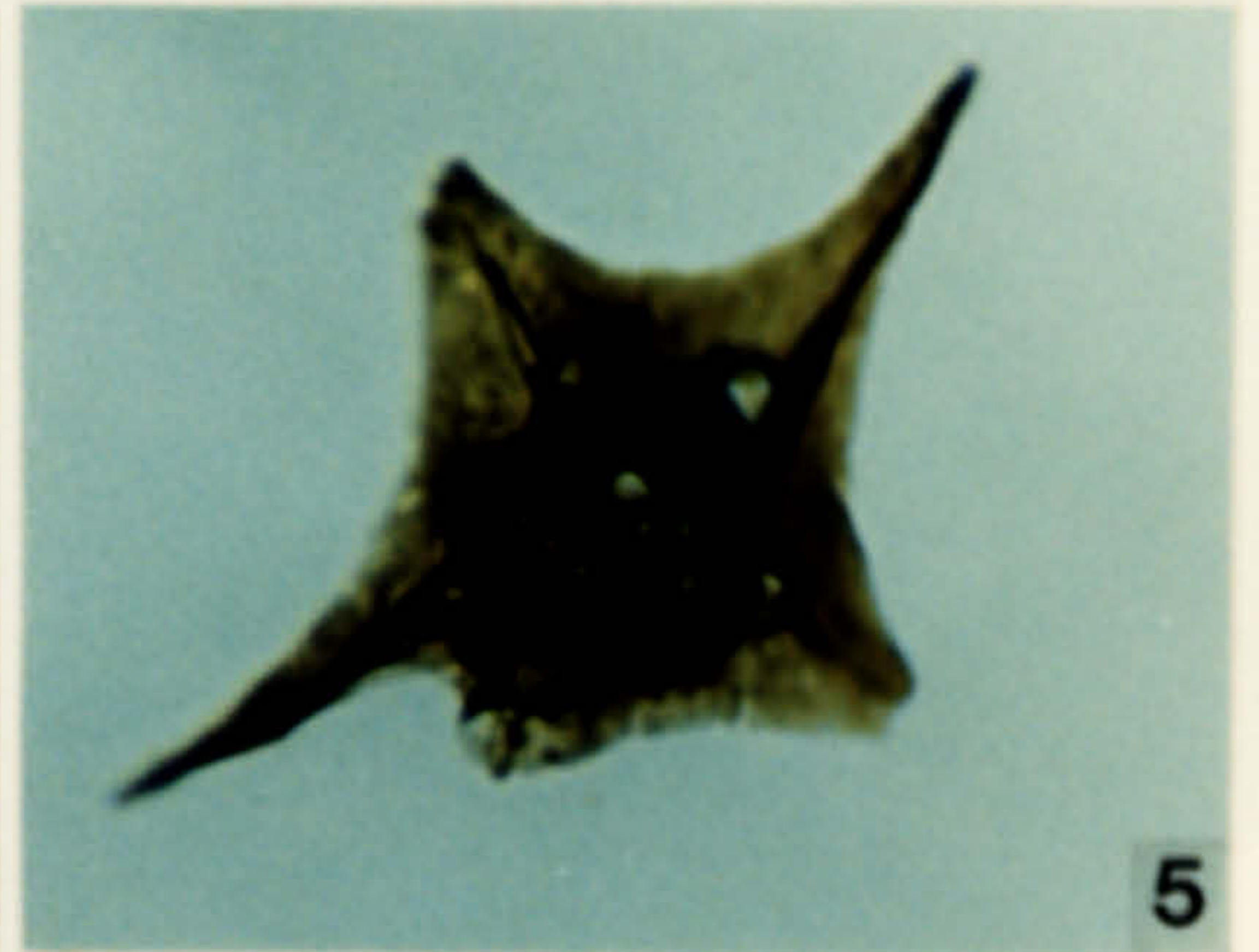
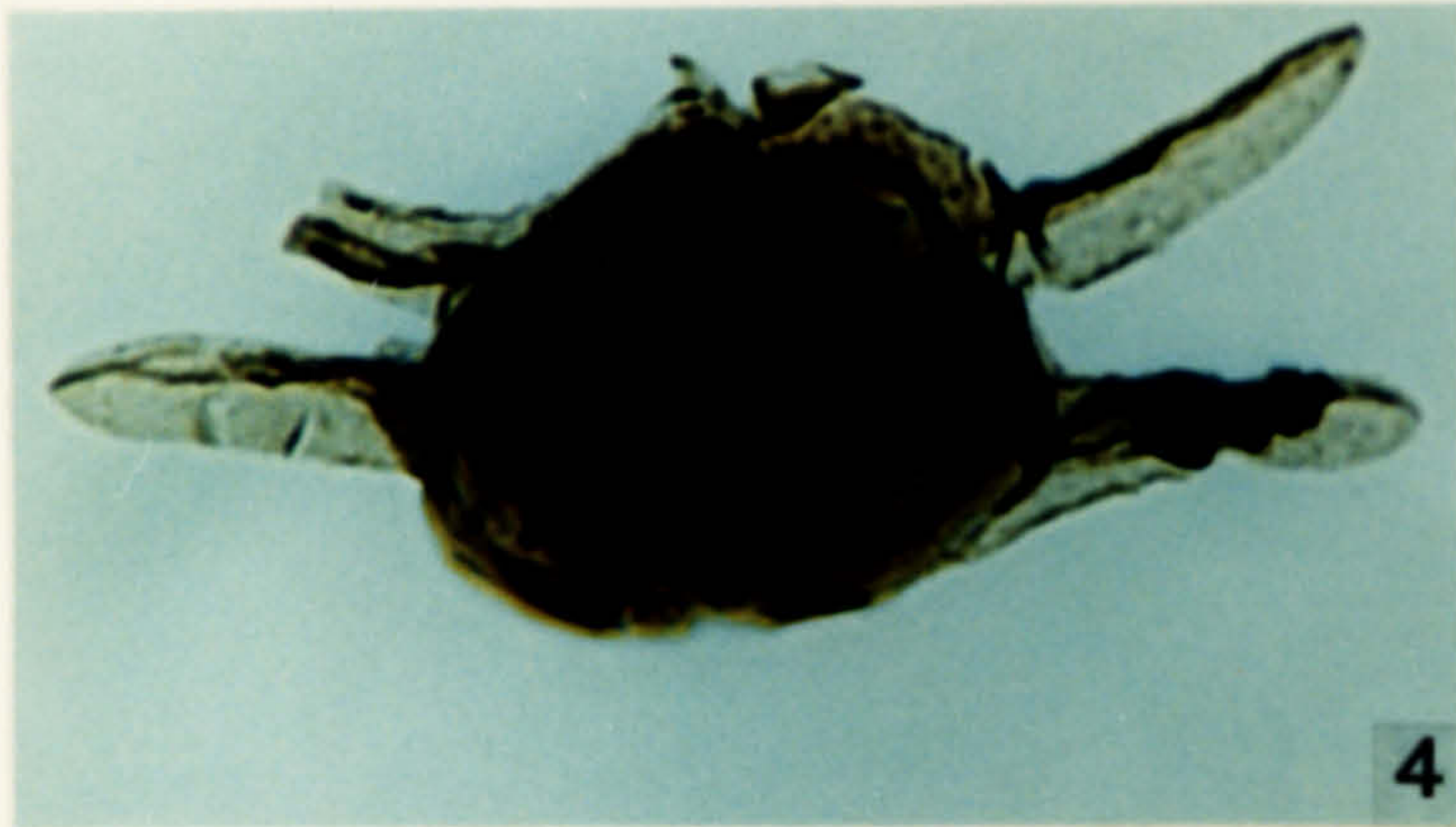
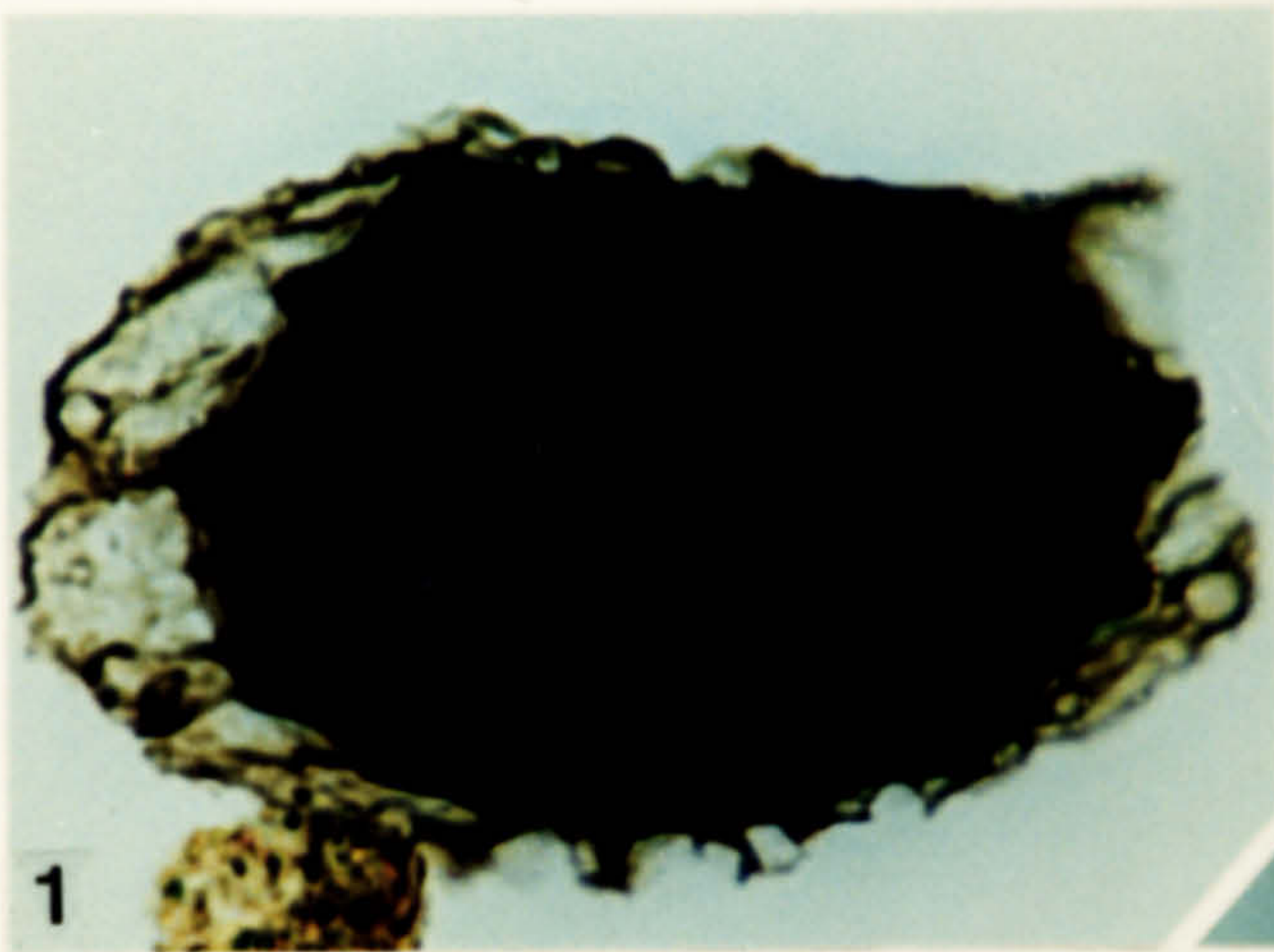
1. *Crassiangulina tesselita* Jardine *et al.* 1972. OD 1612, S-2, H7\4.
2. *Crassiangulina tesselita* Jardine *et al.* 1972. OD 1612, S-2, N21\4.
3. *Eophalopalla gorkae* Martin 1983. OD 1612, S-2, X8\1.
4. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 1612, S-2, M10\3.
5. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 1612, 53-1, L22\3.
6. *Gorgonisphaeridium ohioense* Complex. OD 1612, S-2, F10\4.
7. *Gorgonisphaeridium ohioense* Complex. OD 1612, S-2, U3\2.
8. *Gorgonisphaeridium* ? sp. 2. OD 1612, S-2, M7\4.
9. *Gorgonisphaeridium* ? sp. 2. OD 1612, S-2, J14\2.
10. *Gorgonisphaeridium spicatum* Complex. OD 1612, S-2, G29\2.
11. *Gorgonisphaeridium* sp. 3. OD 1612.1, 1-1, K16\3.
12. *Gorgonisphaeridium* sp. 3. OD 1612, S-2, J13\4.



**Plate 188.**

**Acritarchs and prasinophycean algae from the Draa Formation, early Famennian in age.**

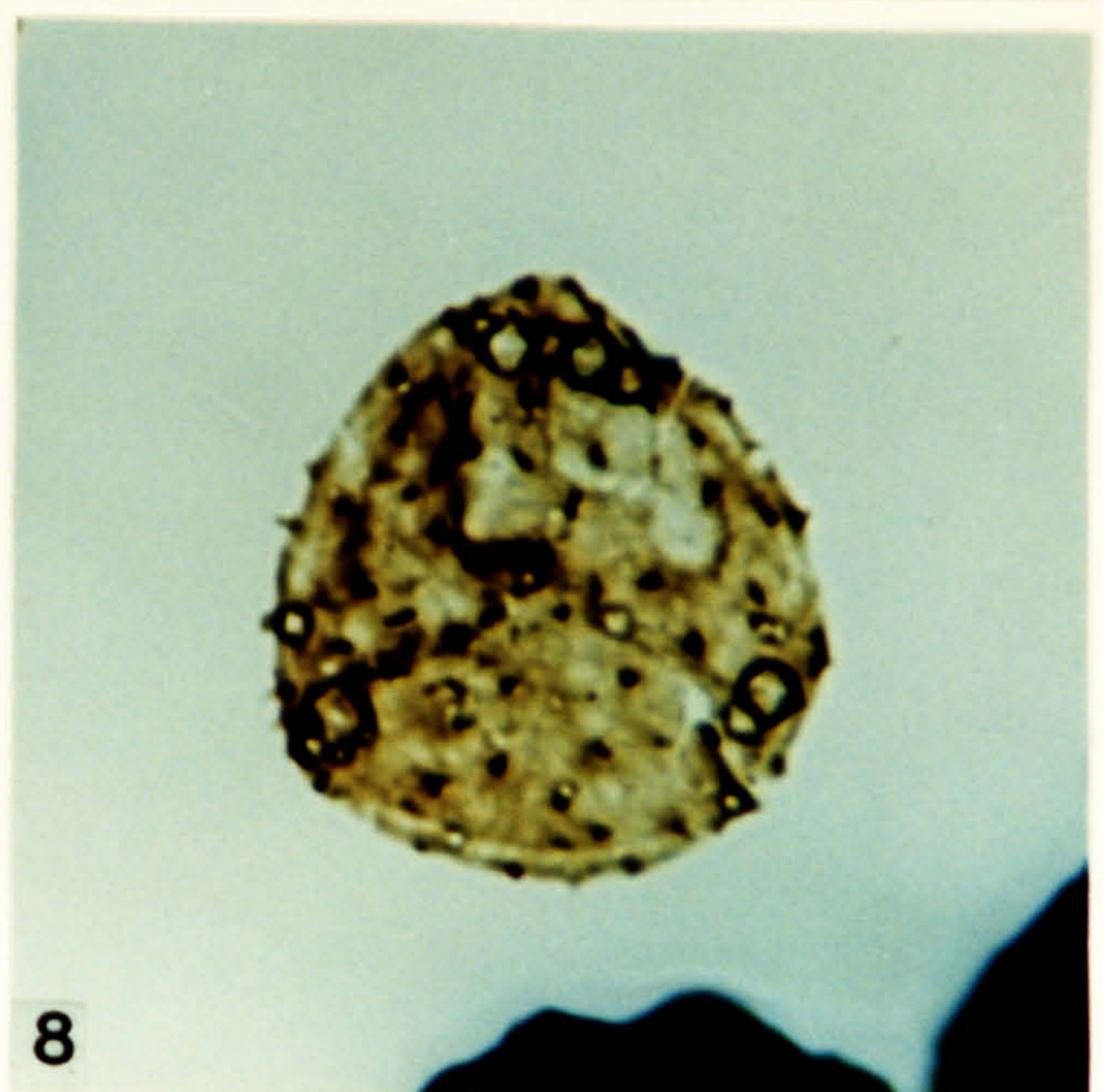
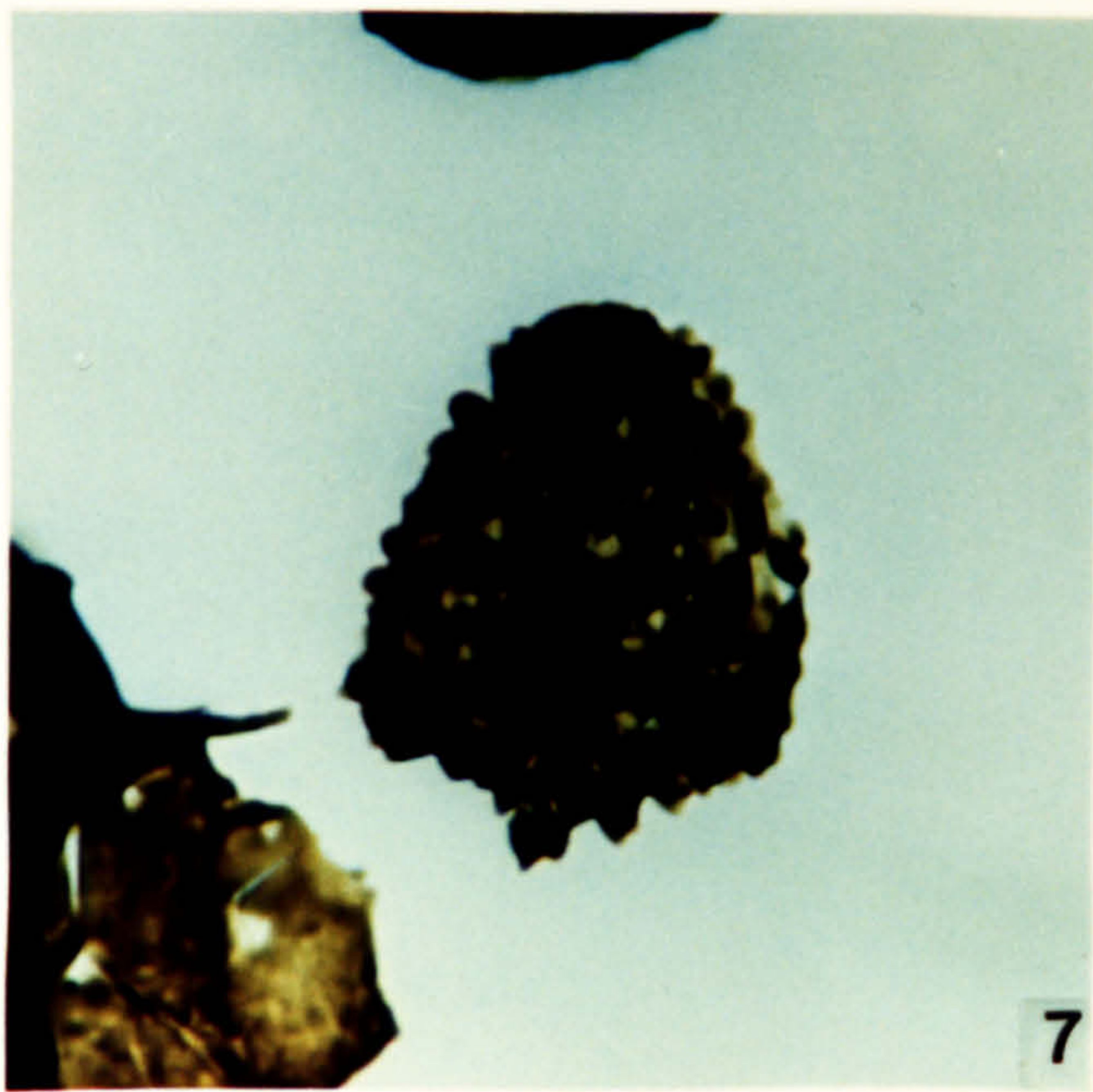
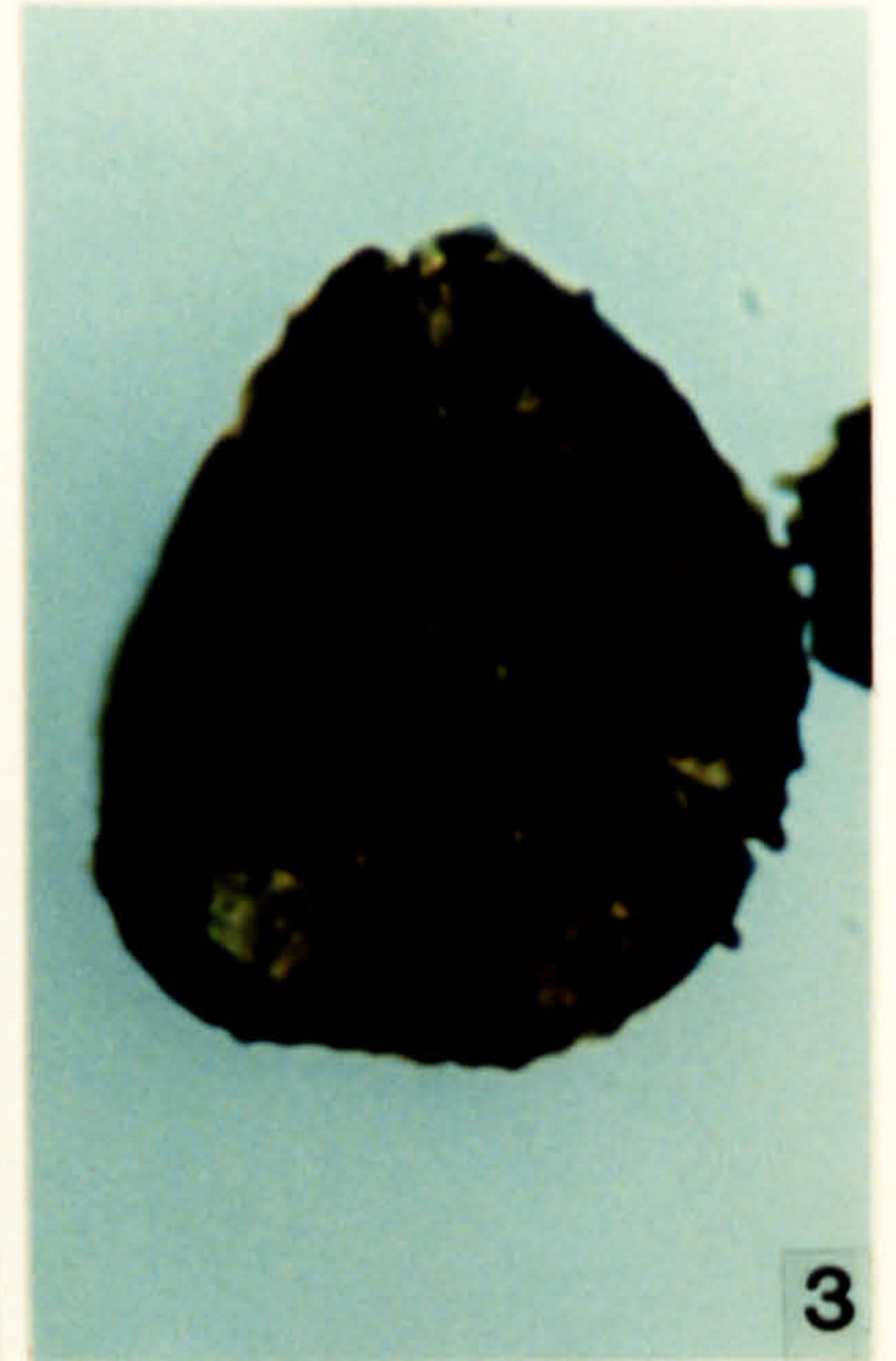
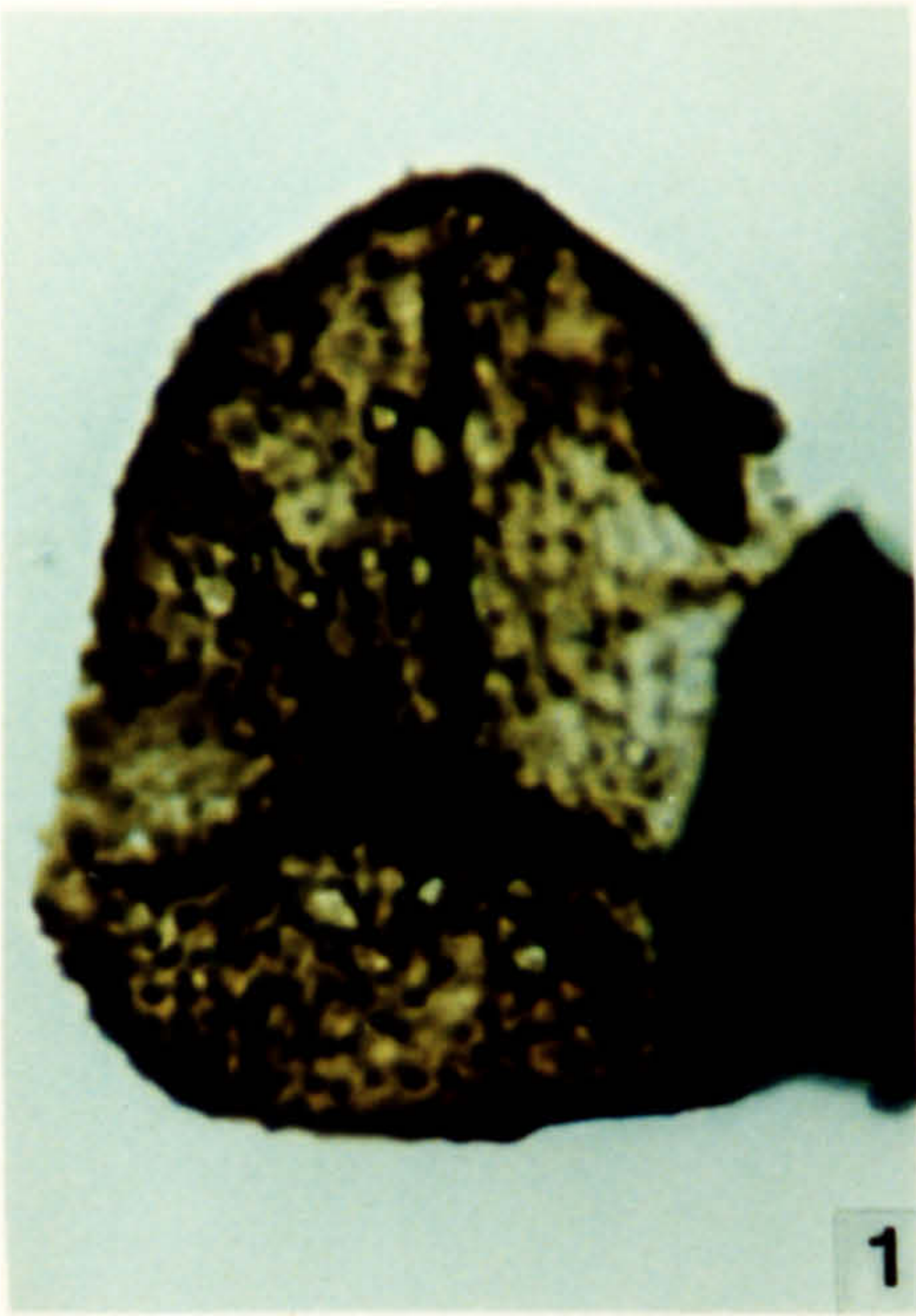
1. *Maranhites britoi* Stockmans & Williere 1969. OD 1612, S-2, K21\1.
2. *Polyedrixium* sp. OD 1612, S-2, G8\1.
3. *Multiplicisphaeridium ramispinosum* Staplin 1961. OD 1612, S-2, G8\2.
4. *Polyedrixium* sp. OD 1612.1, 1-1, R18\4.
5. *Stellinium comptum* Wicander & Loeblich 1977. OD 1612,S-2, Q16\1.
6. *Tunisphaeridium* sp. OD 1612, S-2, F10\3.
7. *Stellinium octoaster* (Staplin) Jardine *et al.* 1972. OD 1612, S-2, T19\1.
8. *Veryhachium downiei* var. *downiei* Stockmans & Williere 1962. OD 1612, S-2, H16\3.
9. *Muraticavia* sp 1. OD 1612, S-2, D26\2.



**Plate 189.**

Spores from the Draa Formation, early Famennian in age.

1. Spore indet. OD 1612, S-1, M13\1.
2. Spore indet. OD 1612, S-2, P43\1.
3. Spore indet. OD 1612, S-1, H40\4.
4. *Synorisporites cf. flexuosus* (Jushko) Richardson 1988. OD 1612, S-2, D19\1.
5. Spore indet. OD 1612, S-2, F19\3.
6. Spore indet. OD 1612, S-3, J21\1.
7. Spore indet. OD 1612, S-3, Q4\1.
8. *Grandispora echinata*. Haquard 1957. OD 1612, S-3, Q4\1.



**Plate 190.**

Spores from the Draa Formation, early Famennian in age.

1. *Spelaeotriletes* sp. OD 1612, S-1, C31\1.
2. *Hystrichosporites* sp. OD 1612, 53-2, N28\3.
3. *Auroraspora* sp. OD 1612, S-2, N40\2.
4. *Vellatisporites* sp. OD 1612, S-1, M33\1.
5. *Hystrichosporites* sp. OD 1612, 53-1, V28\3.

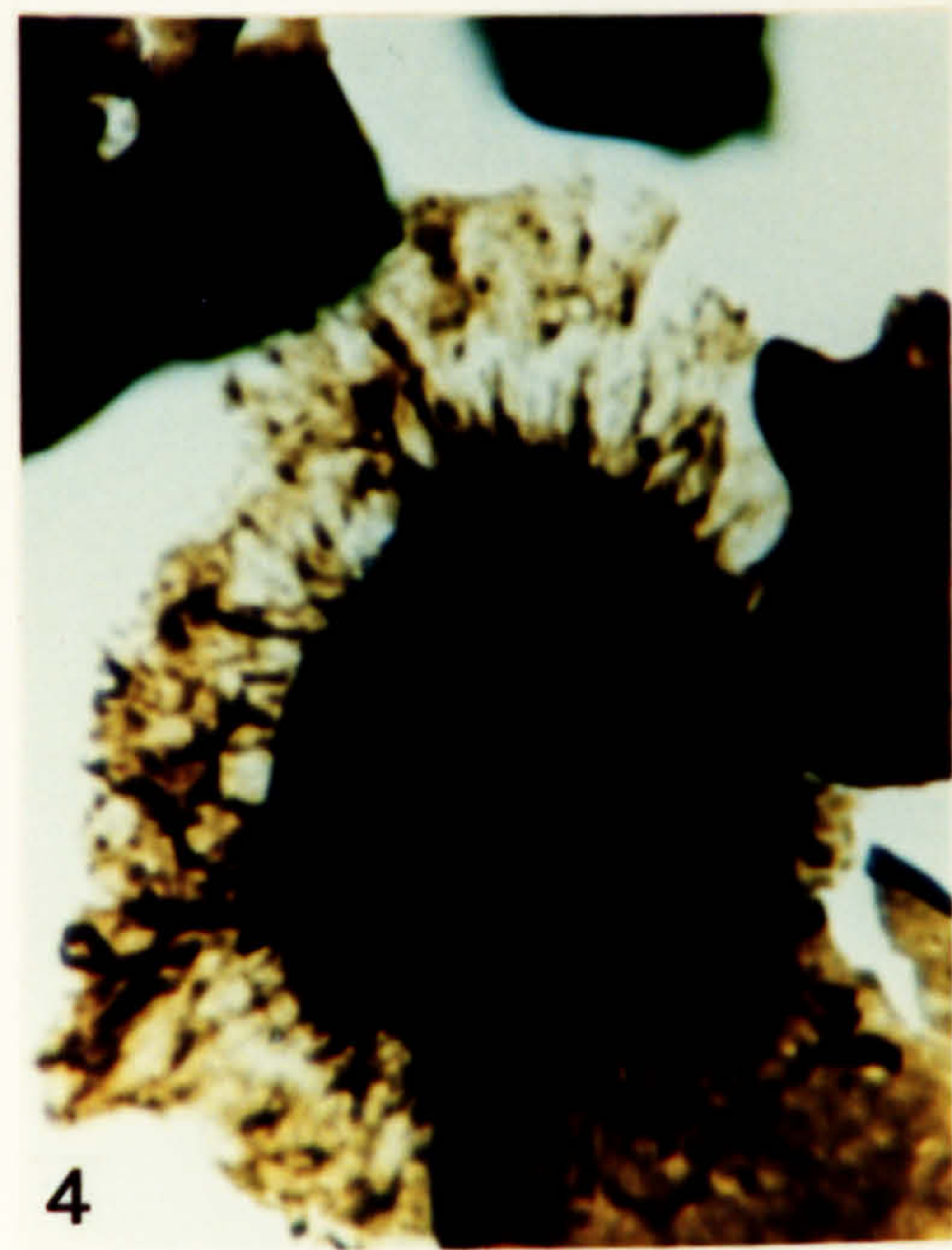
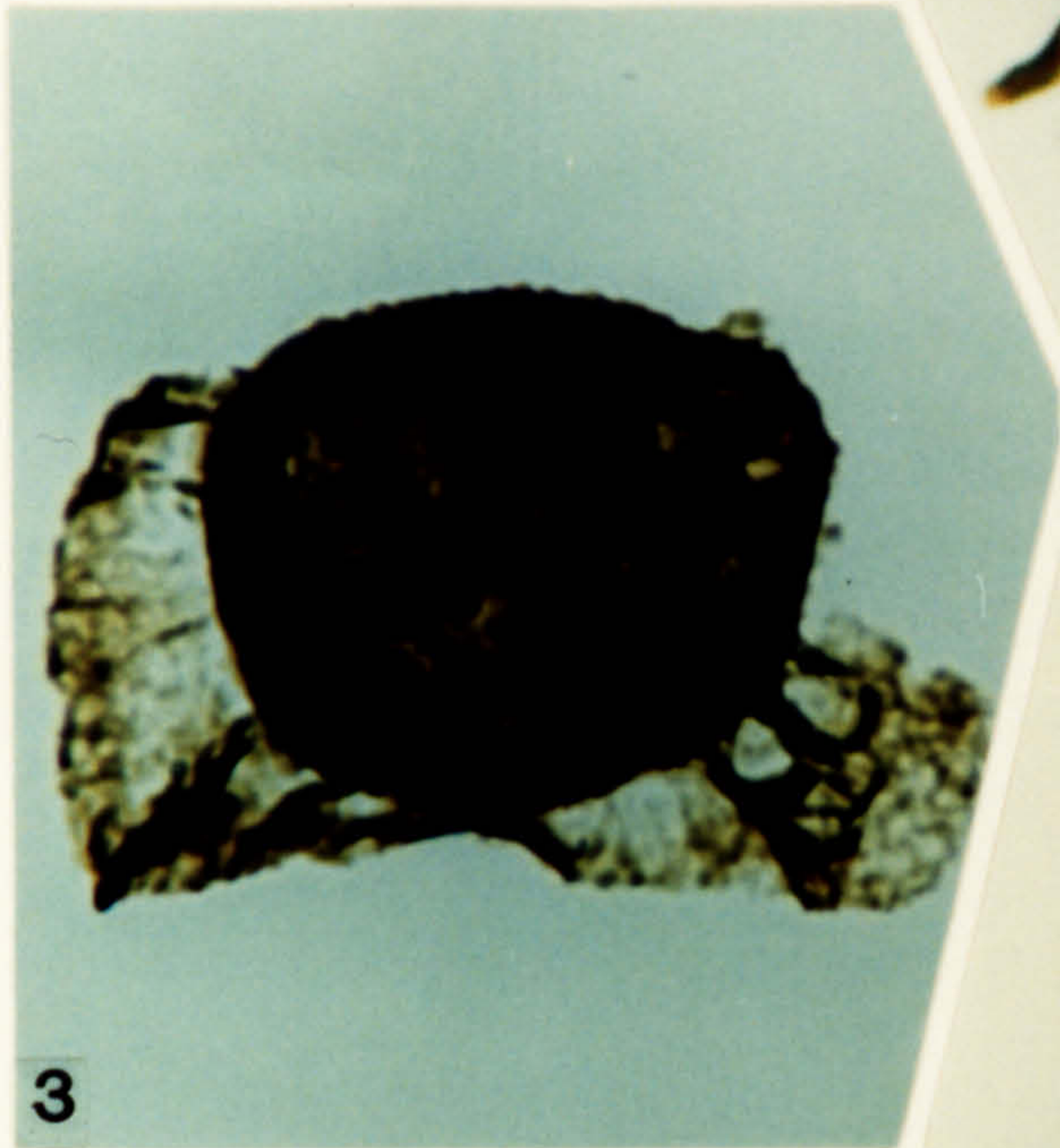
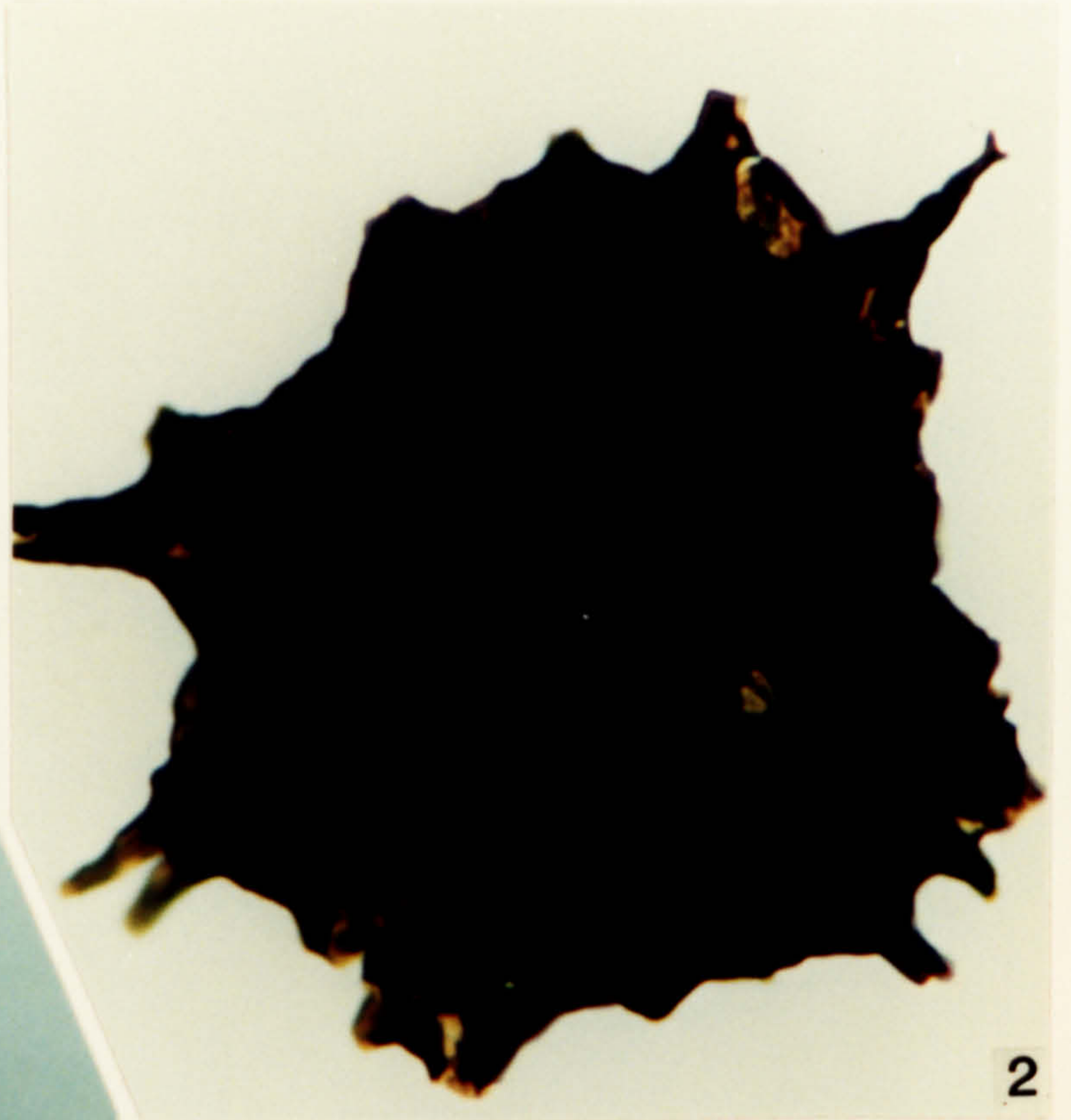
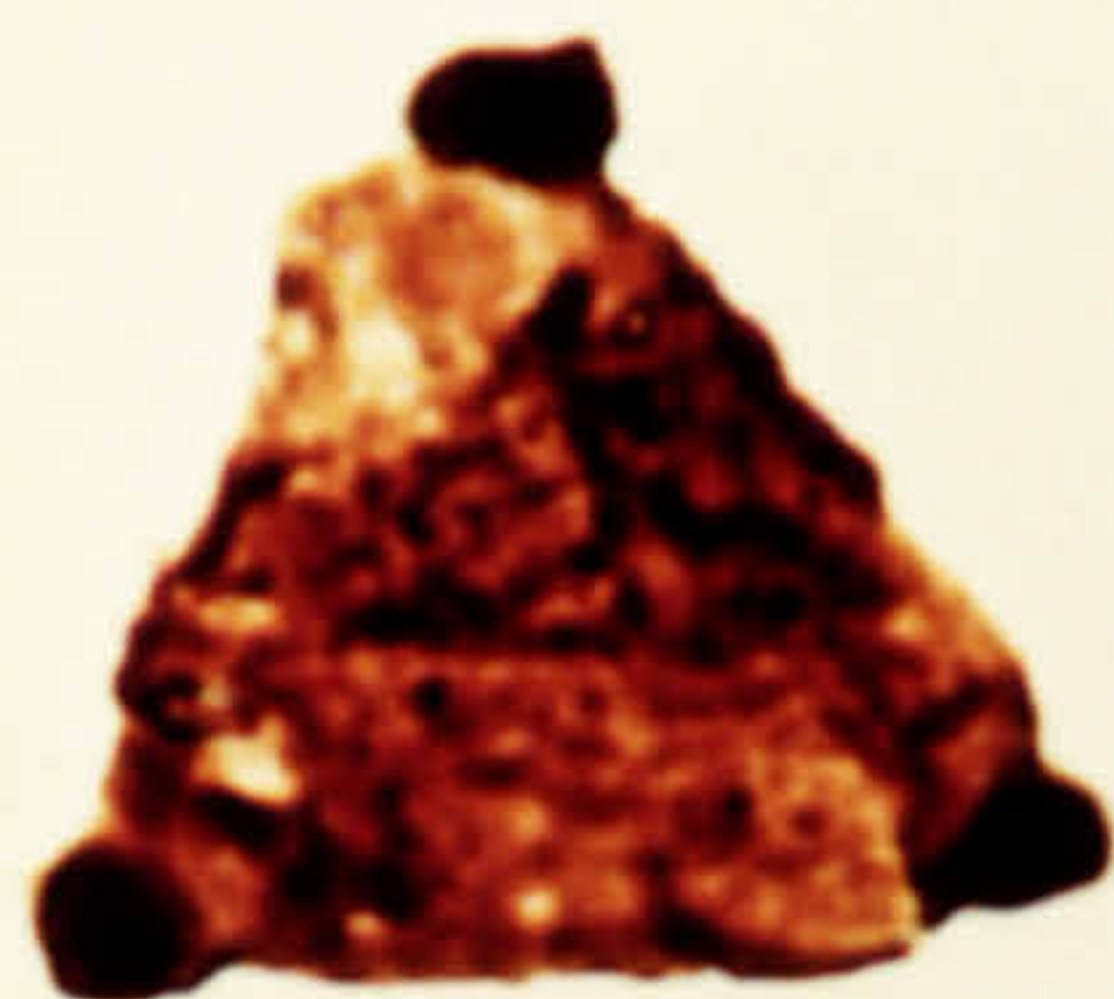




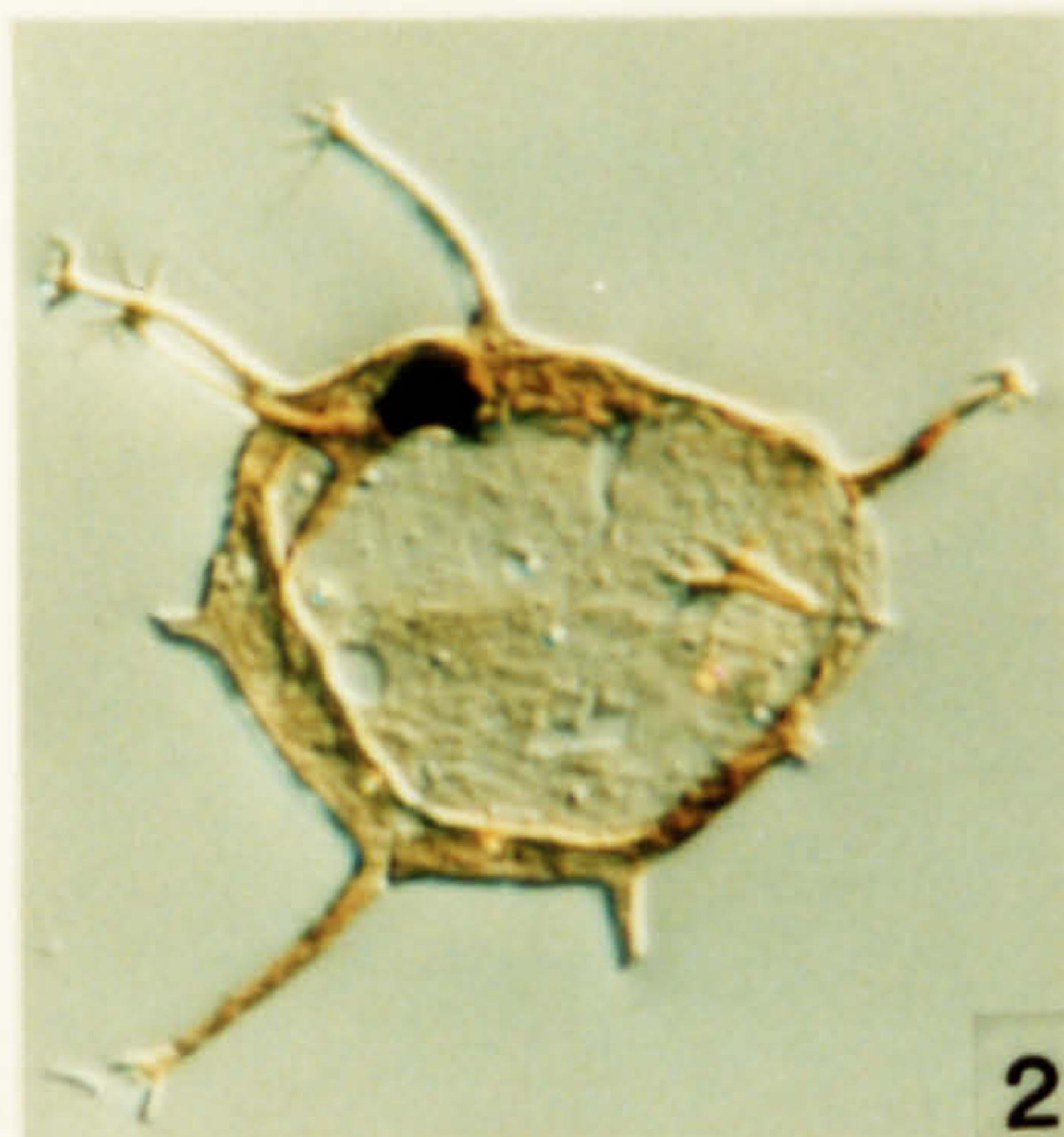
Plate 191.

Acritarchs from the Lefdar Formation, early Strunian in age.

1. *Crassianguлина tesselita* Jardine *et al.* 1972. OD 1496, 1-3, T47\-.
2. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 1496, S-1, Q44\1.
3. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 1496, 1-4, X10\4.
4. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 1496, 1-1, K32\1.
5. *Craterisphaeridium sprucegrovense* (Staplin) emend. Turner 1986. OD 1496, 1-1, J19\4.
6. *Daillydium pentaster* (Staplin) Playford *in* Playford & Dring 1981. OD 1496, 1-15, T33\-.
7. *Eophalopalla gorkae* Martin 1983. OD 1496, 1-1, F8\1.
8. *Eophalopalla gorkae* Martin 1983. OD 1496, 1-1, F33\-.
9. *Gorgonisphaeridium?* sp. 2. OD 1496, 1-4, M28\2
10. *Eophalopalla gorkae* Martin 1983. OD 1496, 1-4, K32\-.
11. *Gorgonisphaeridium?* sp. 2. OD 1496, S-1, R40\1.
12. *Gorgonisphaeridium?* sp. 2. OD 1496, S-1, M32\1.



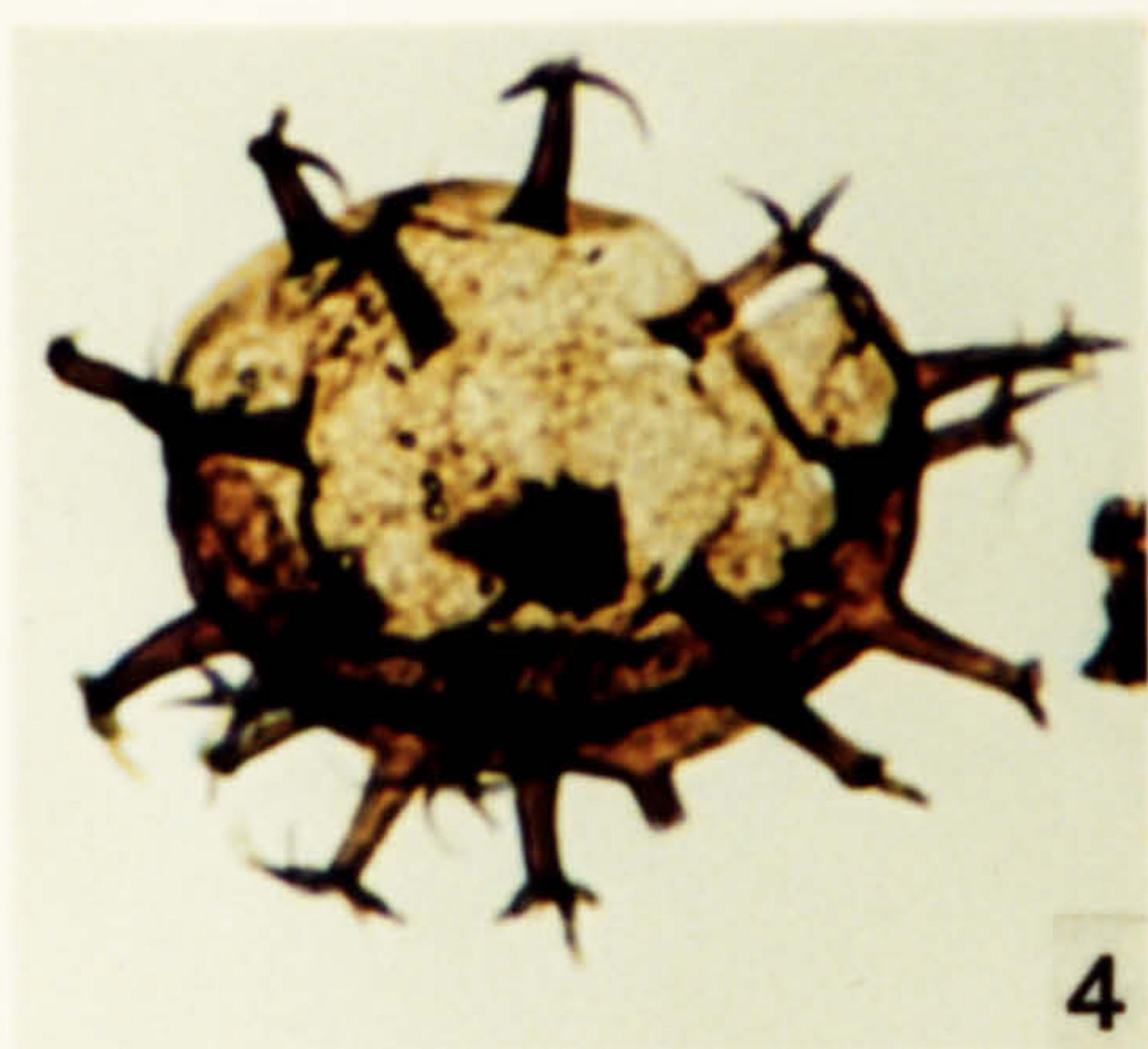
1



2



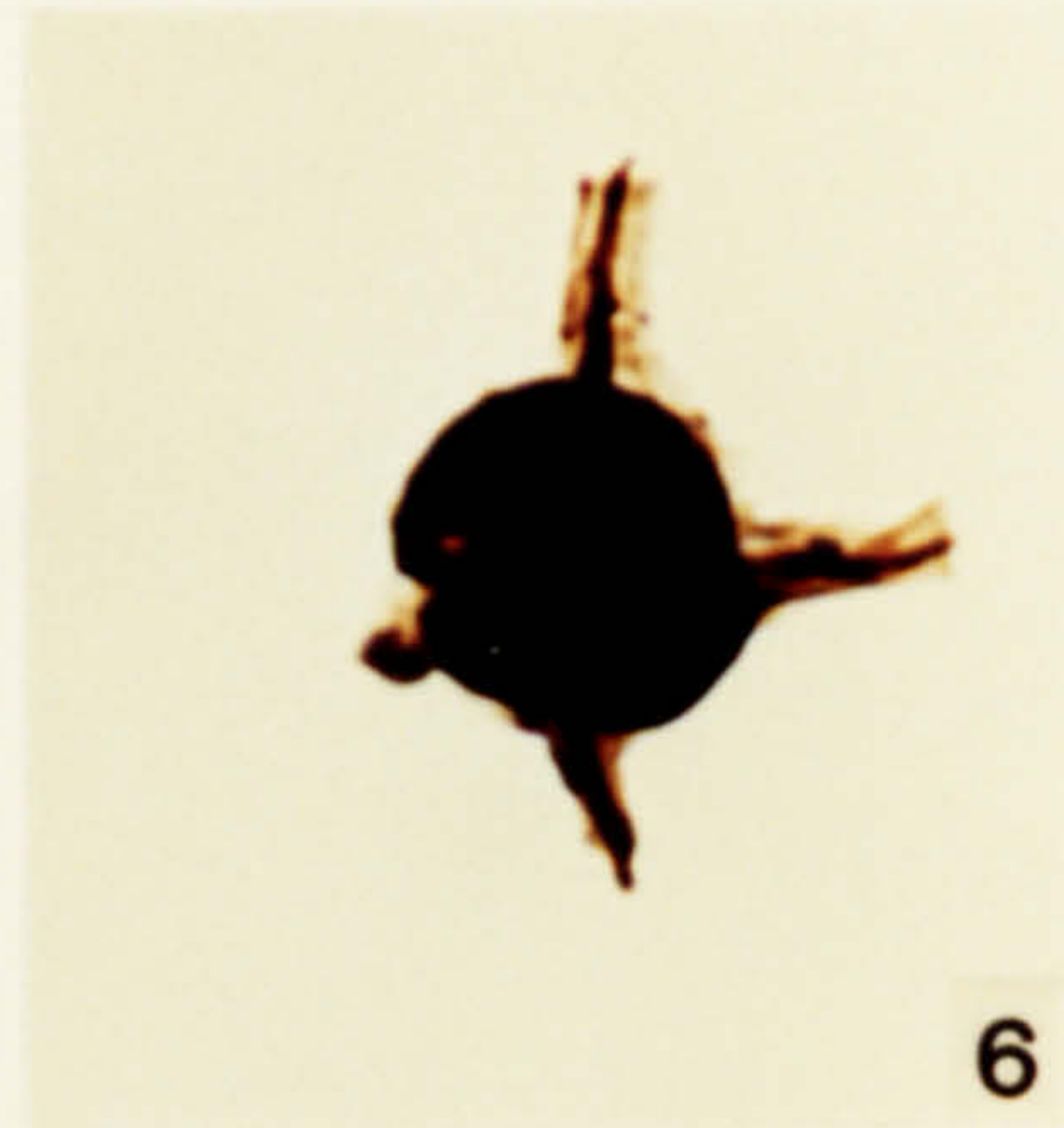
3



4



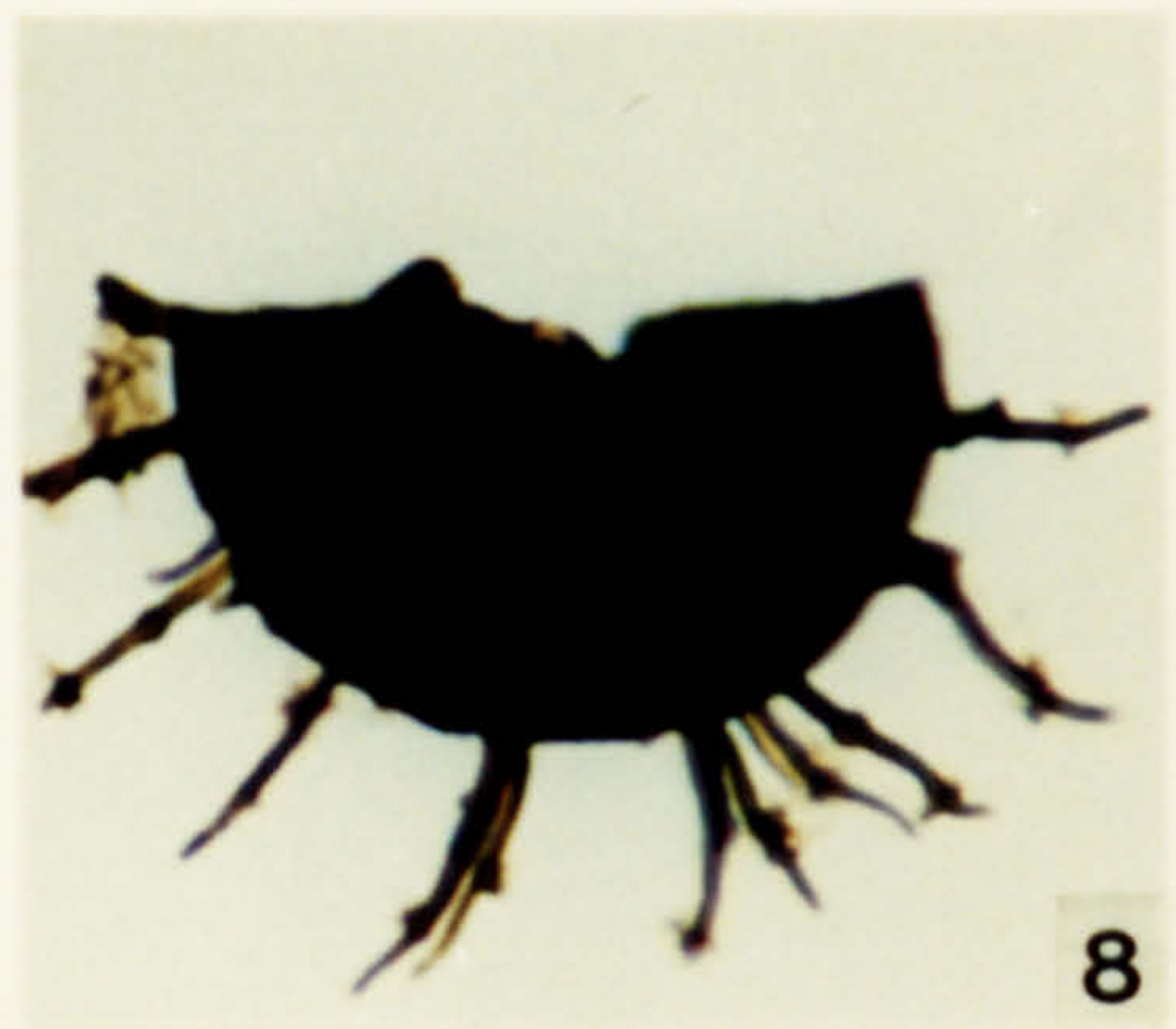
5



6



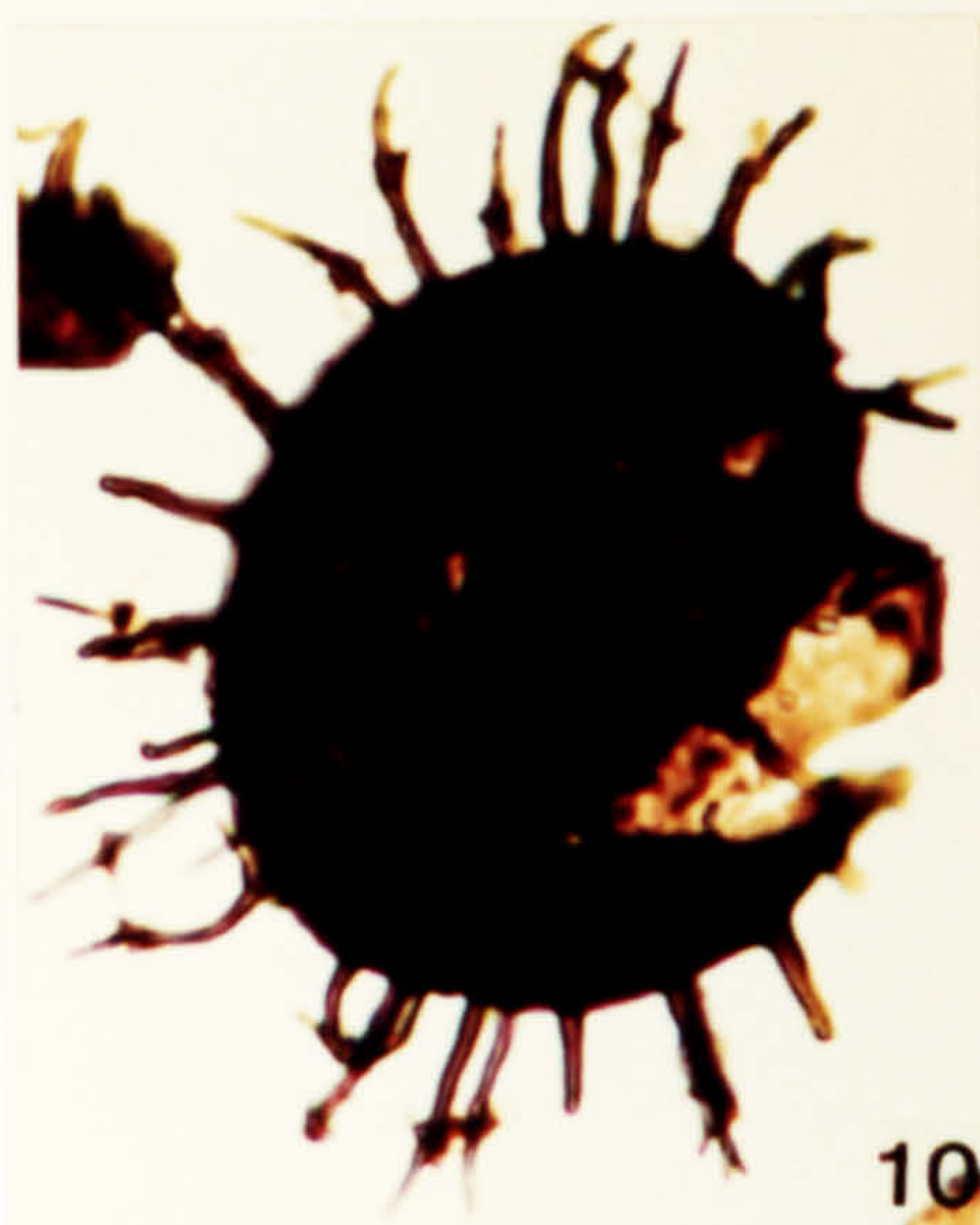
7



8



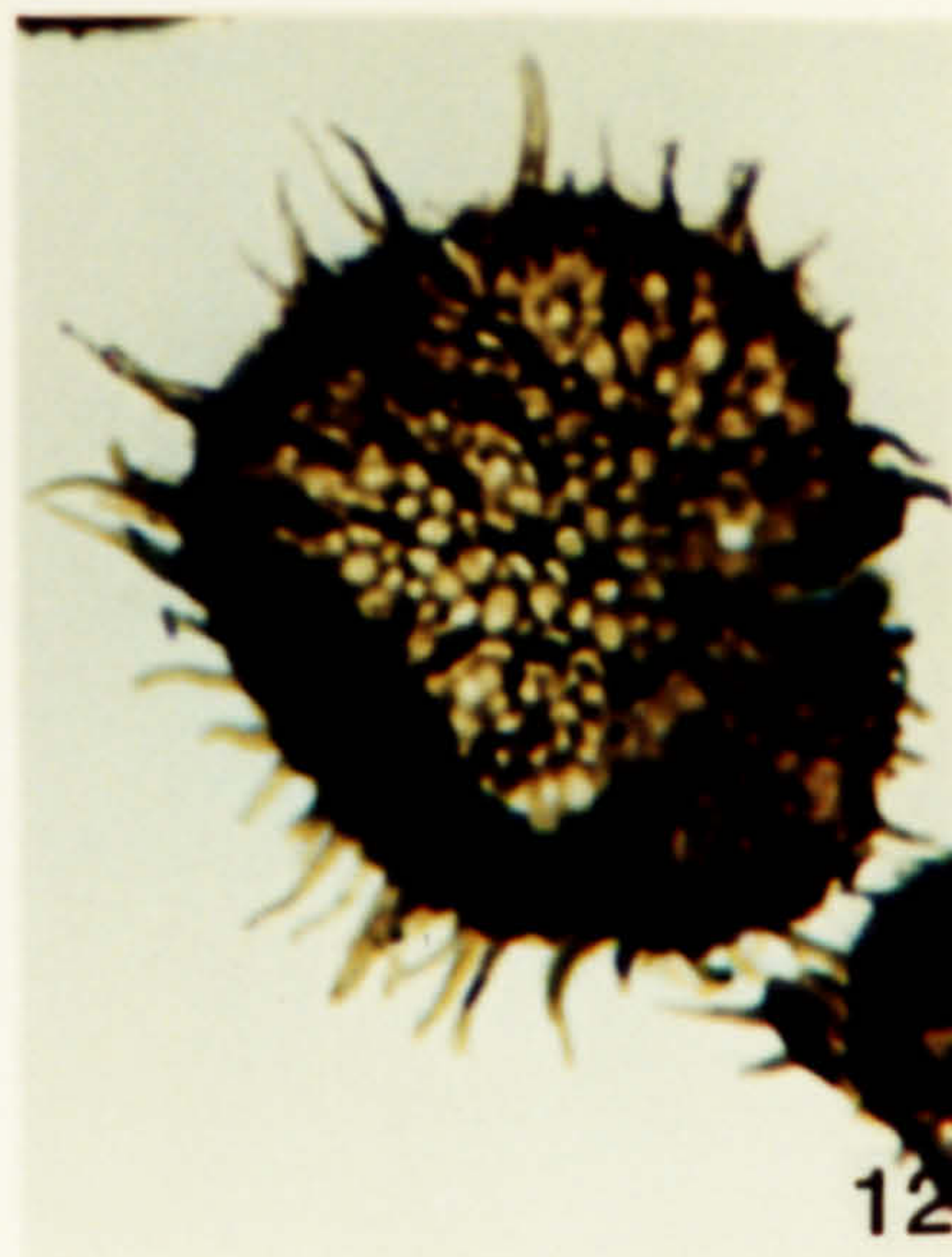
9



10



11

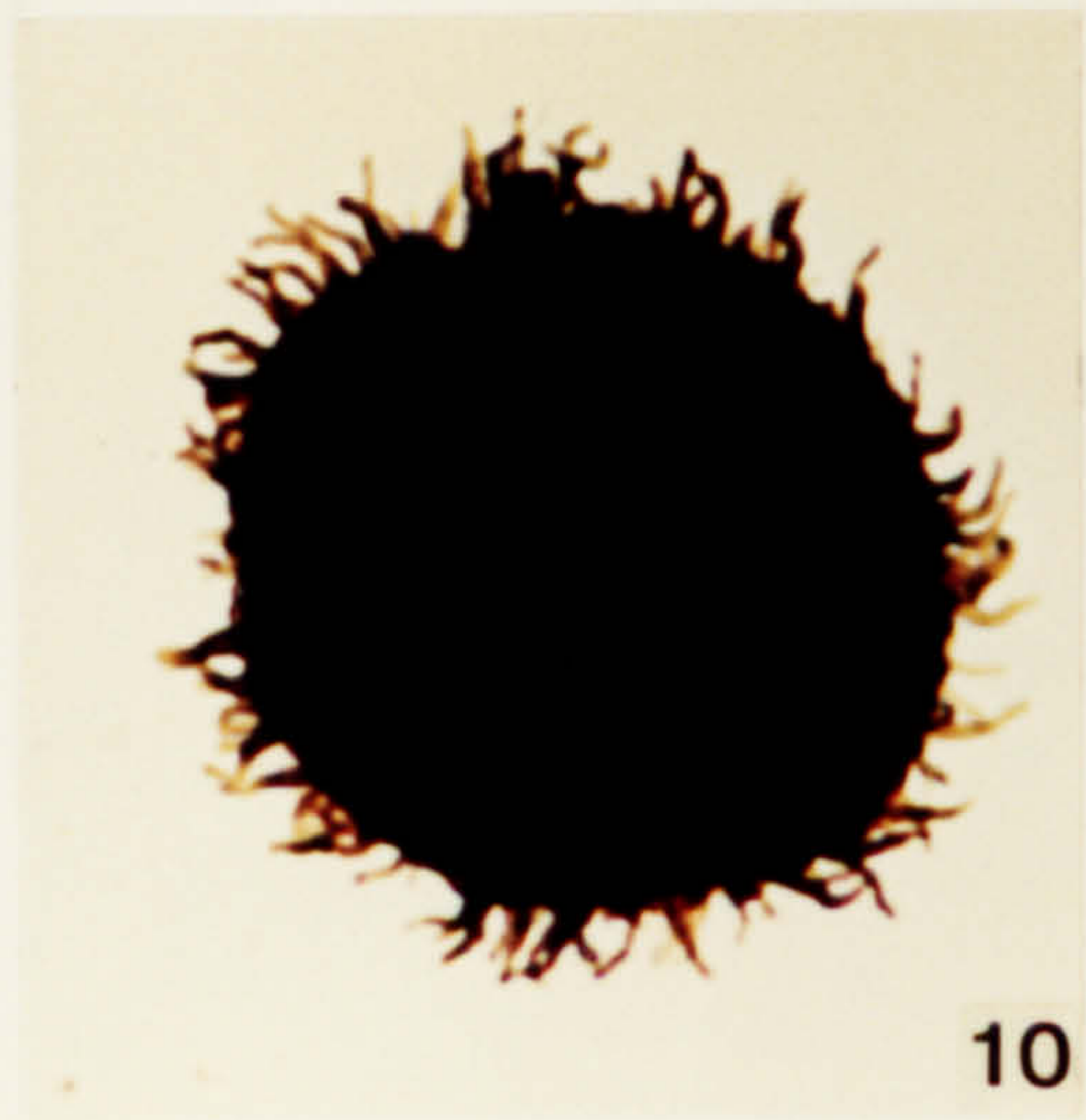
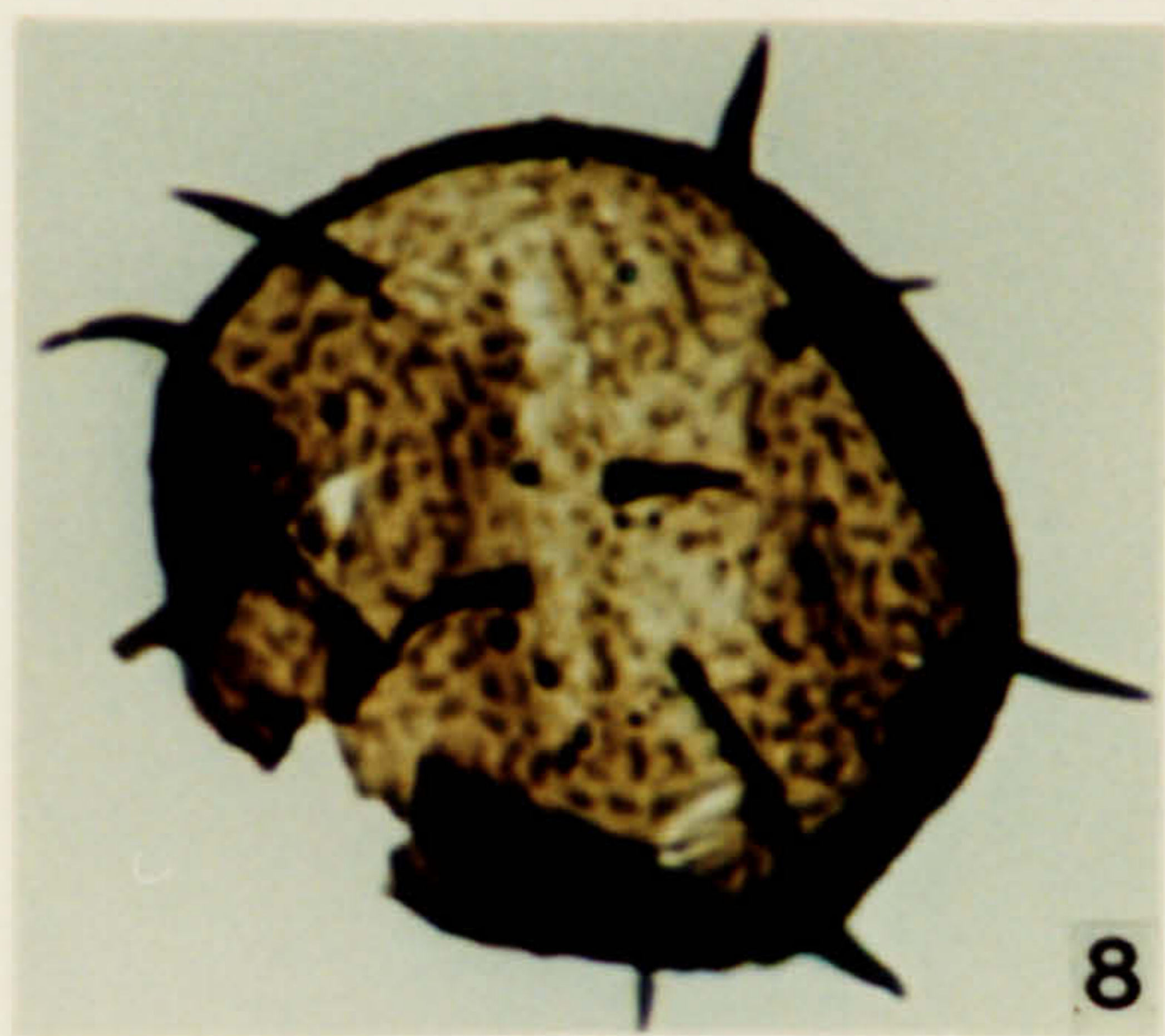
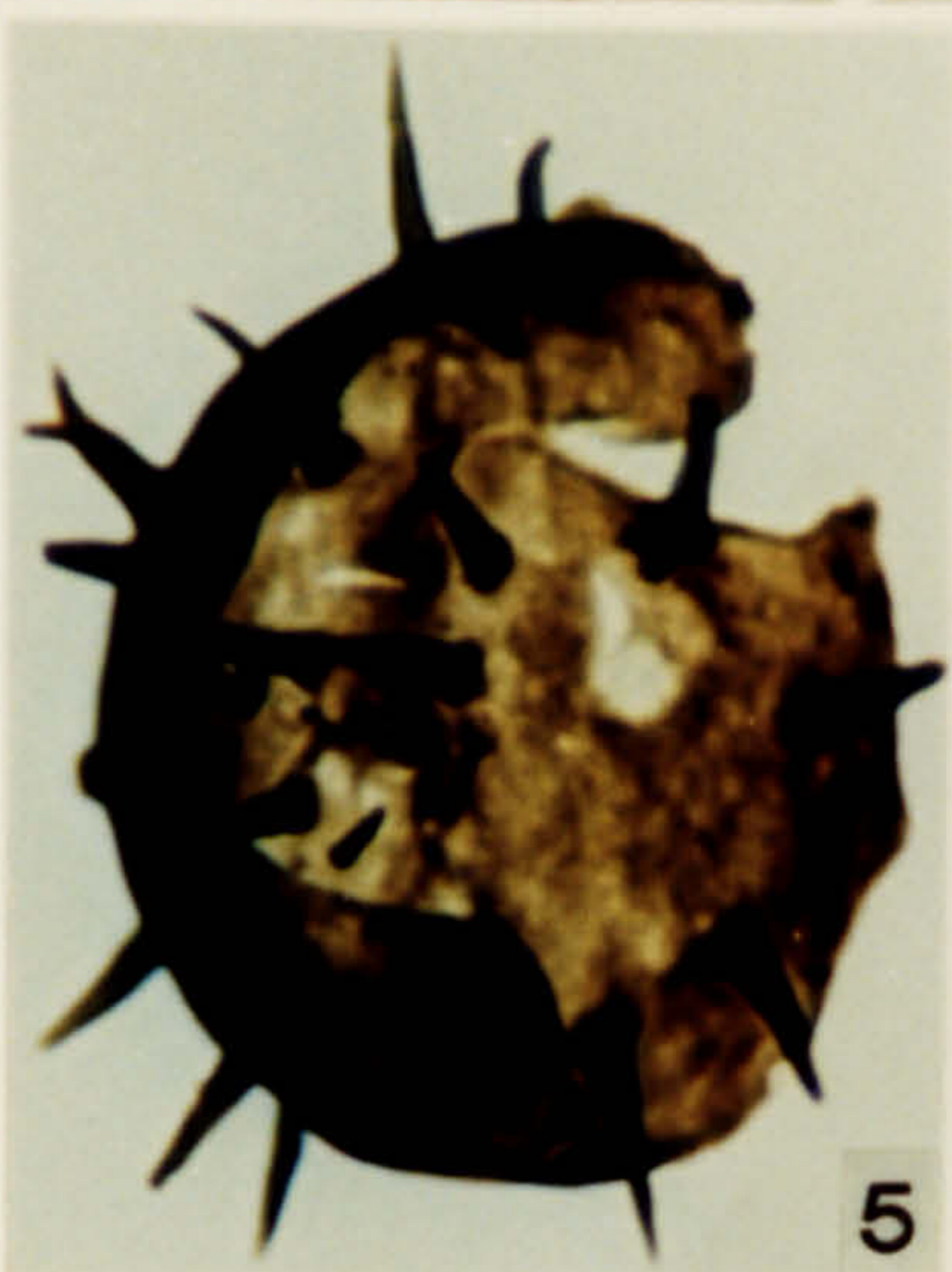
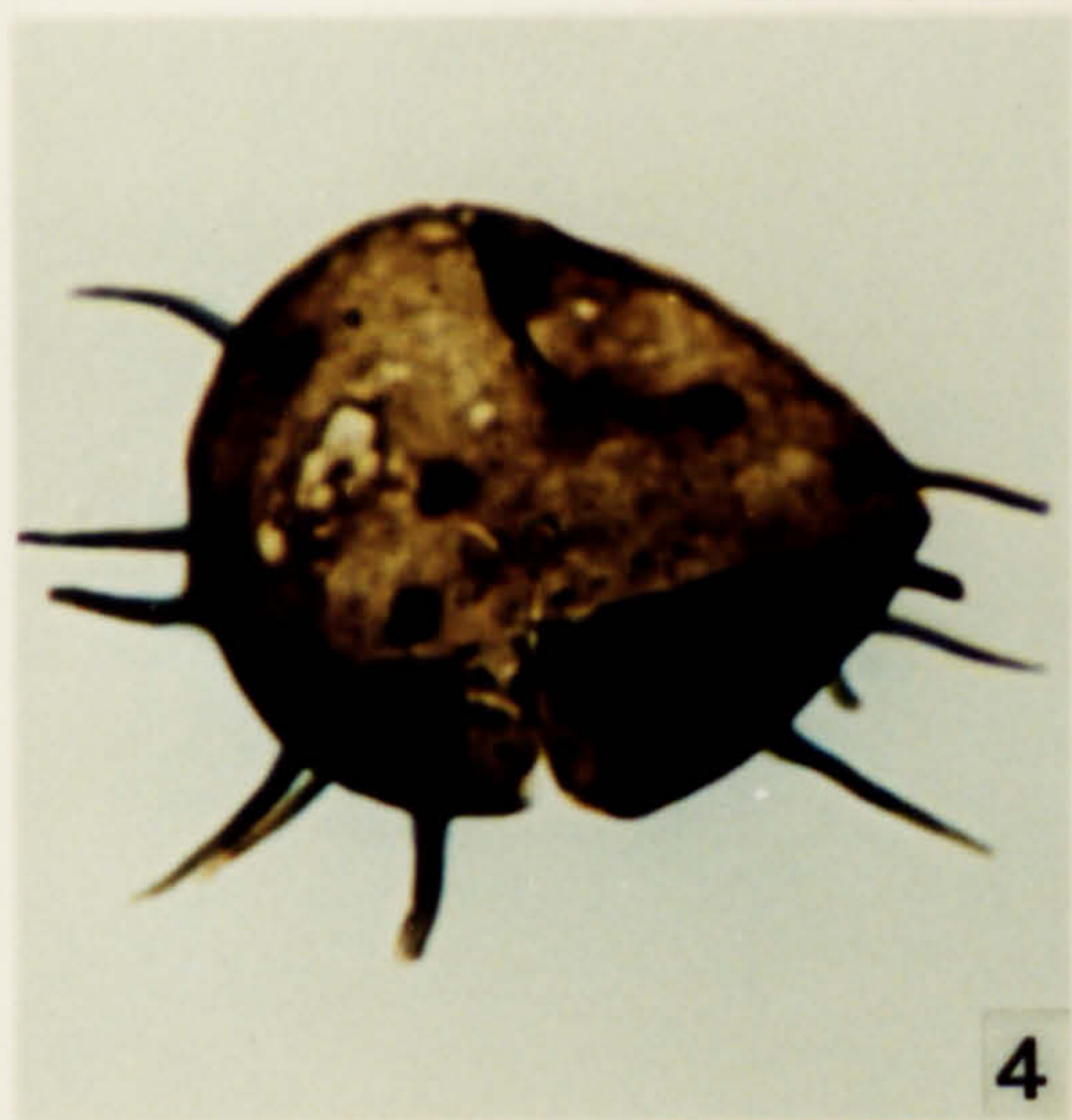
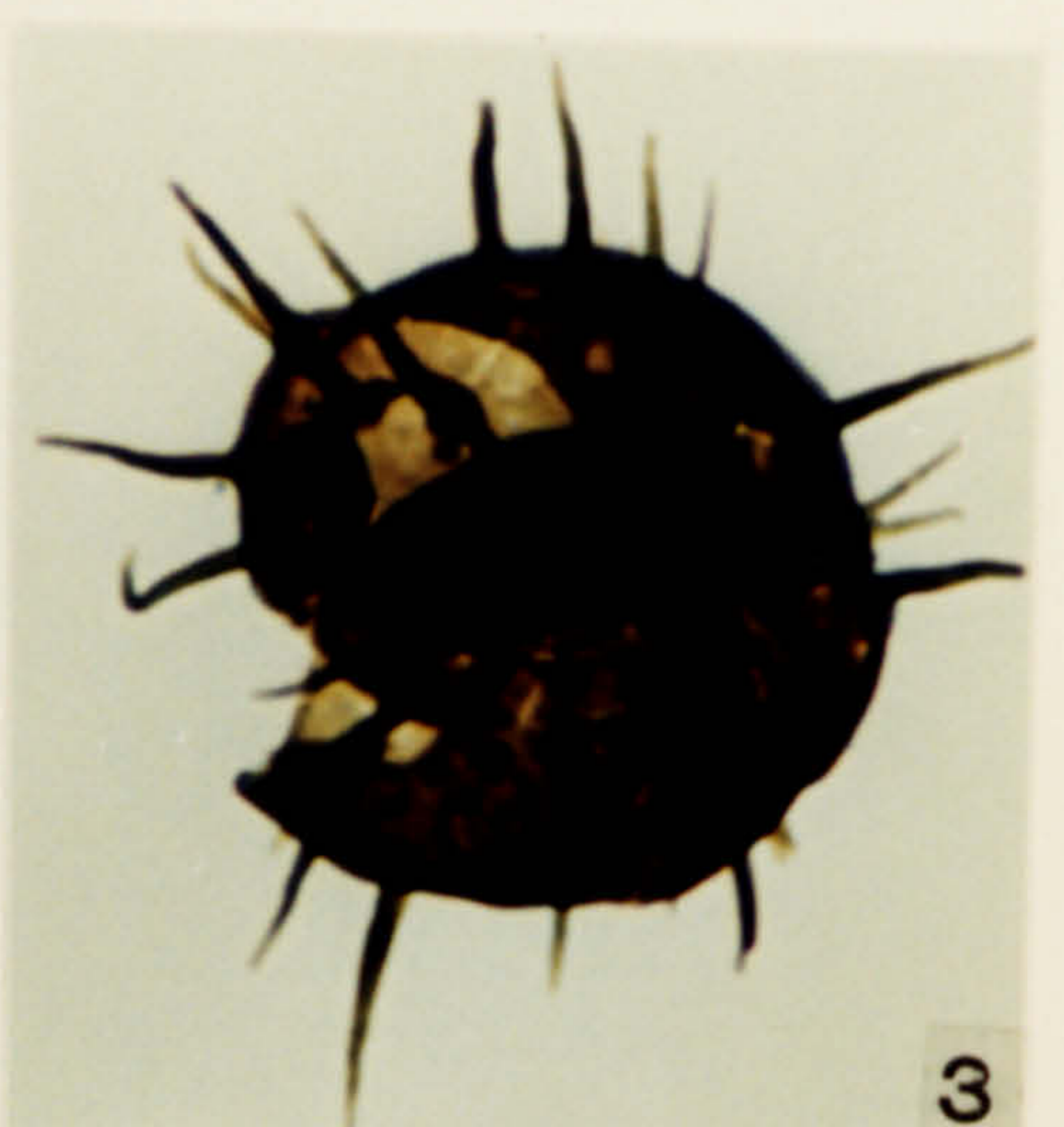


12

**Plate 192.**

Acritarchs from the Lefdar Formation, early Strunian in age.

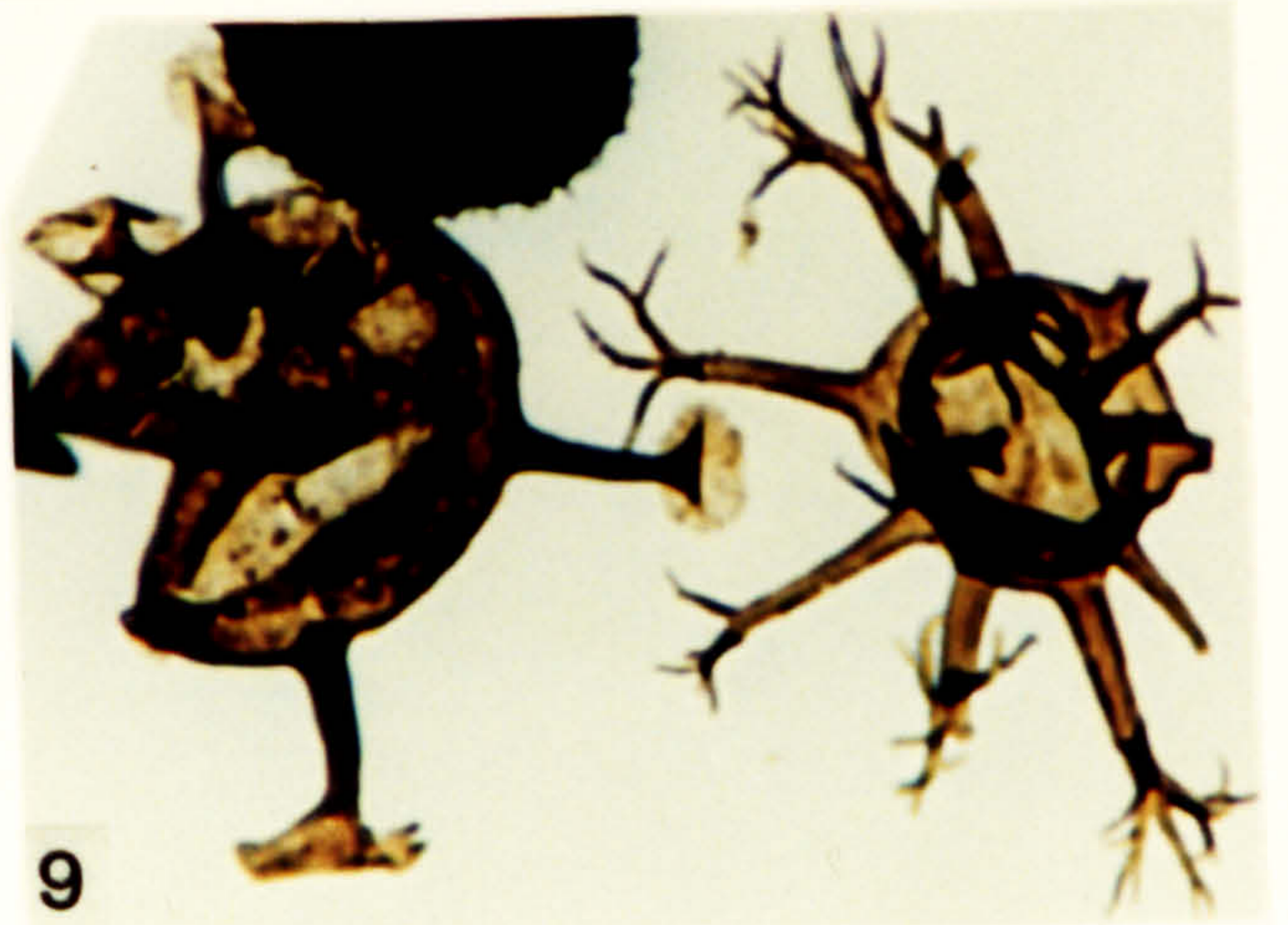
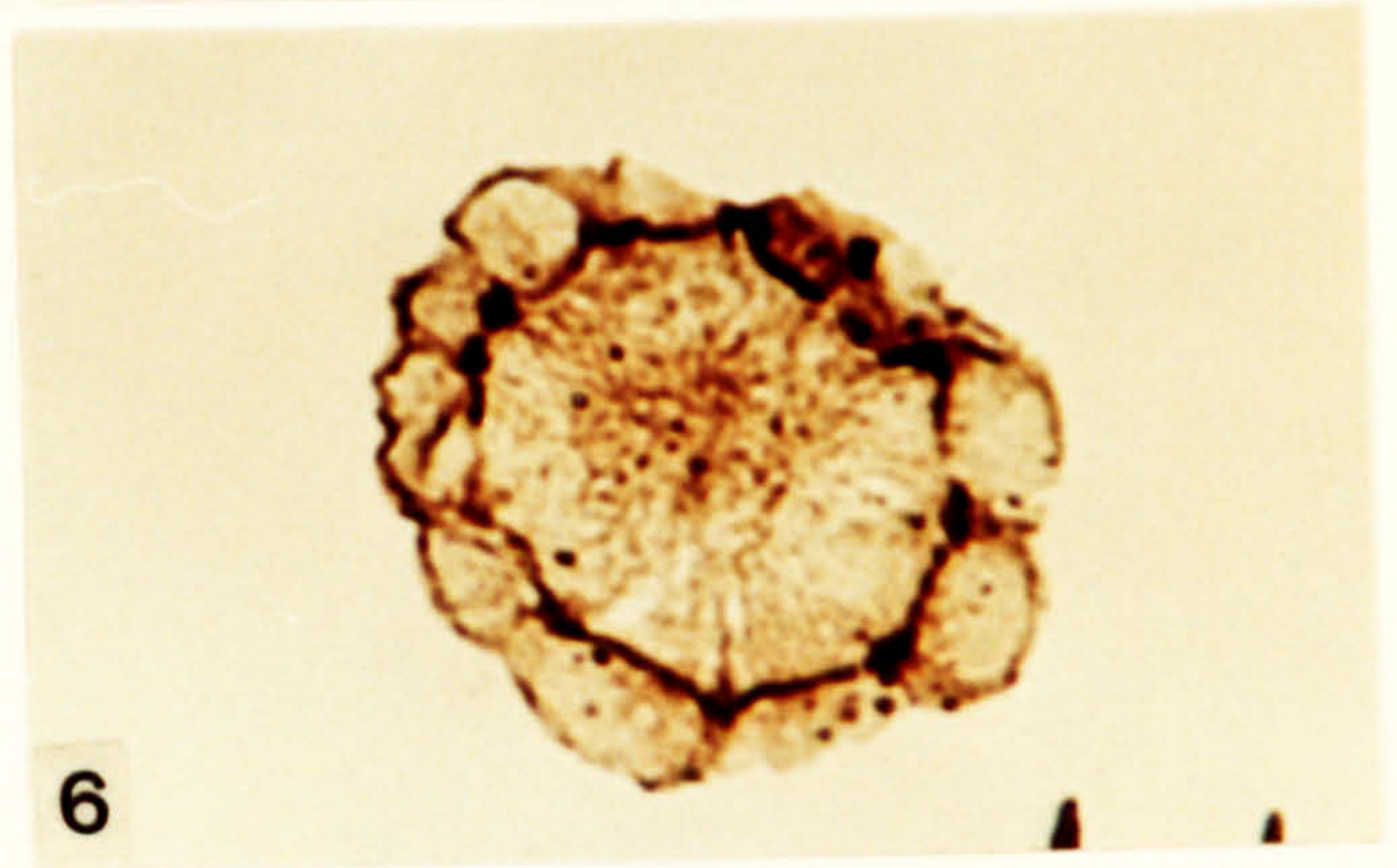
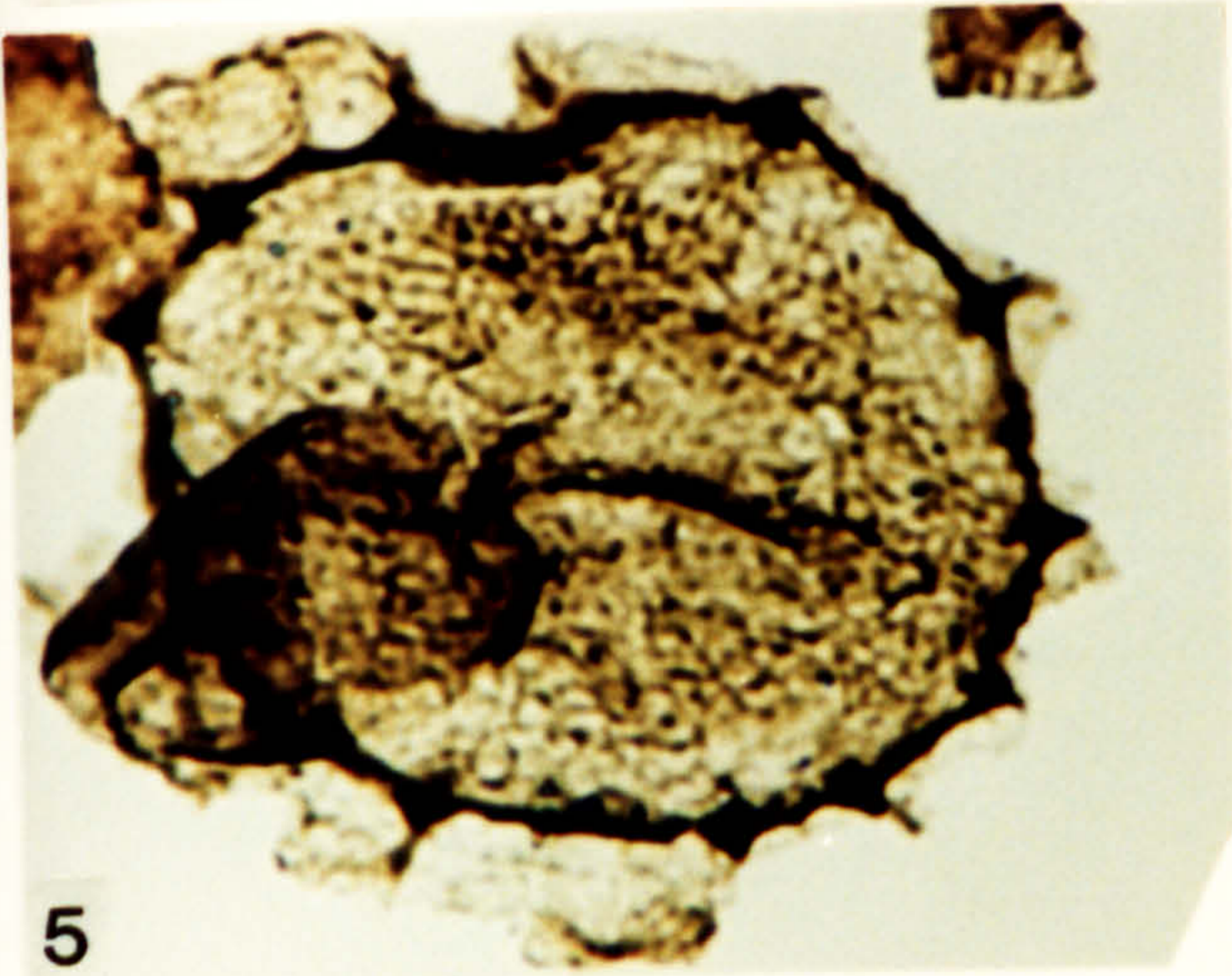
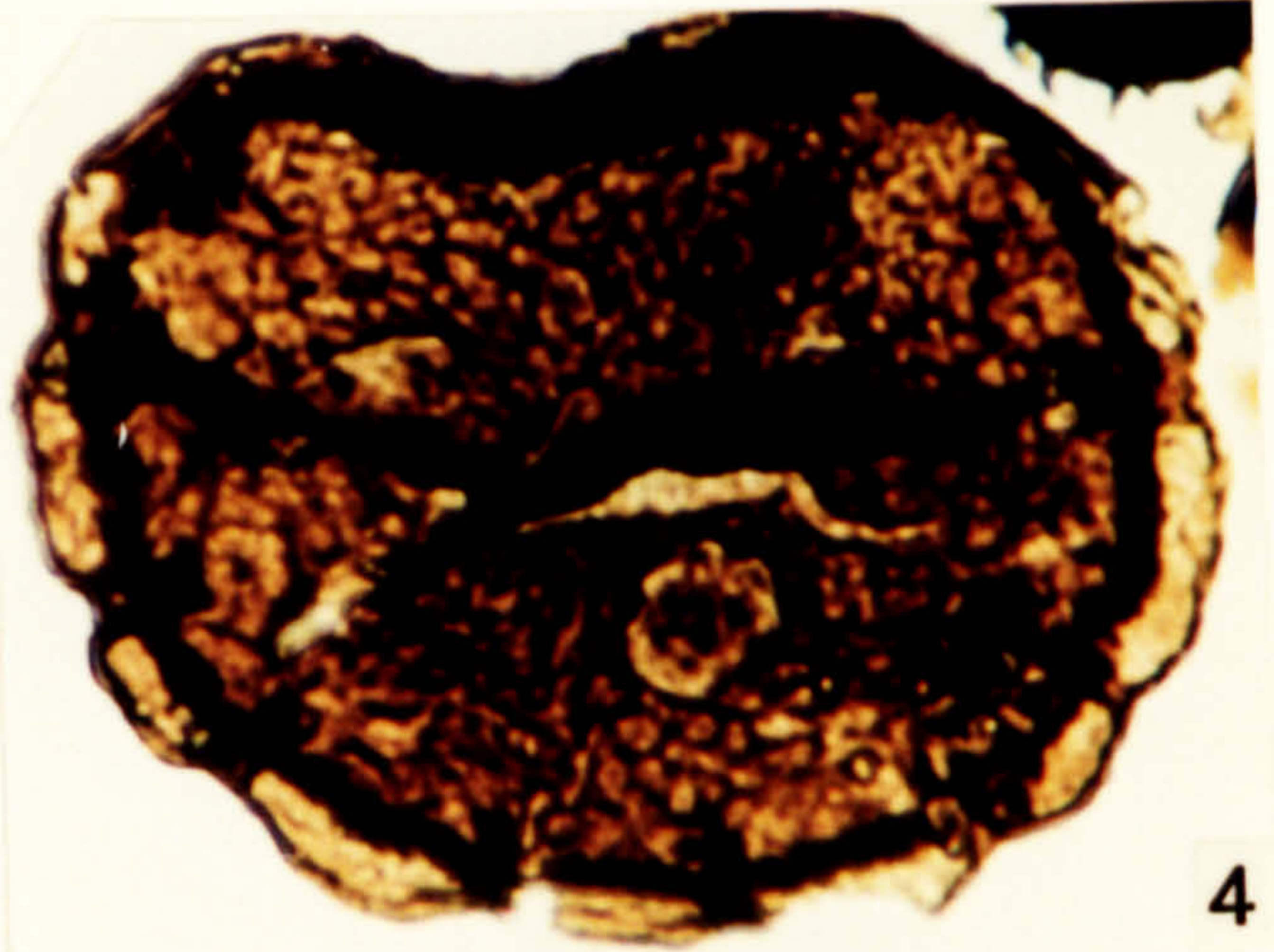
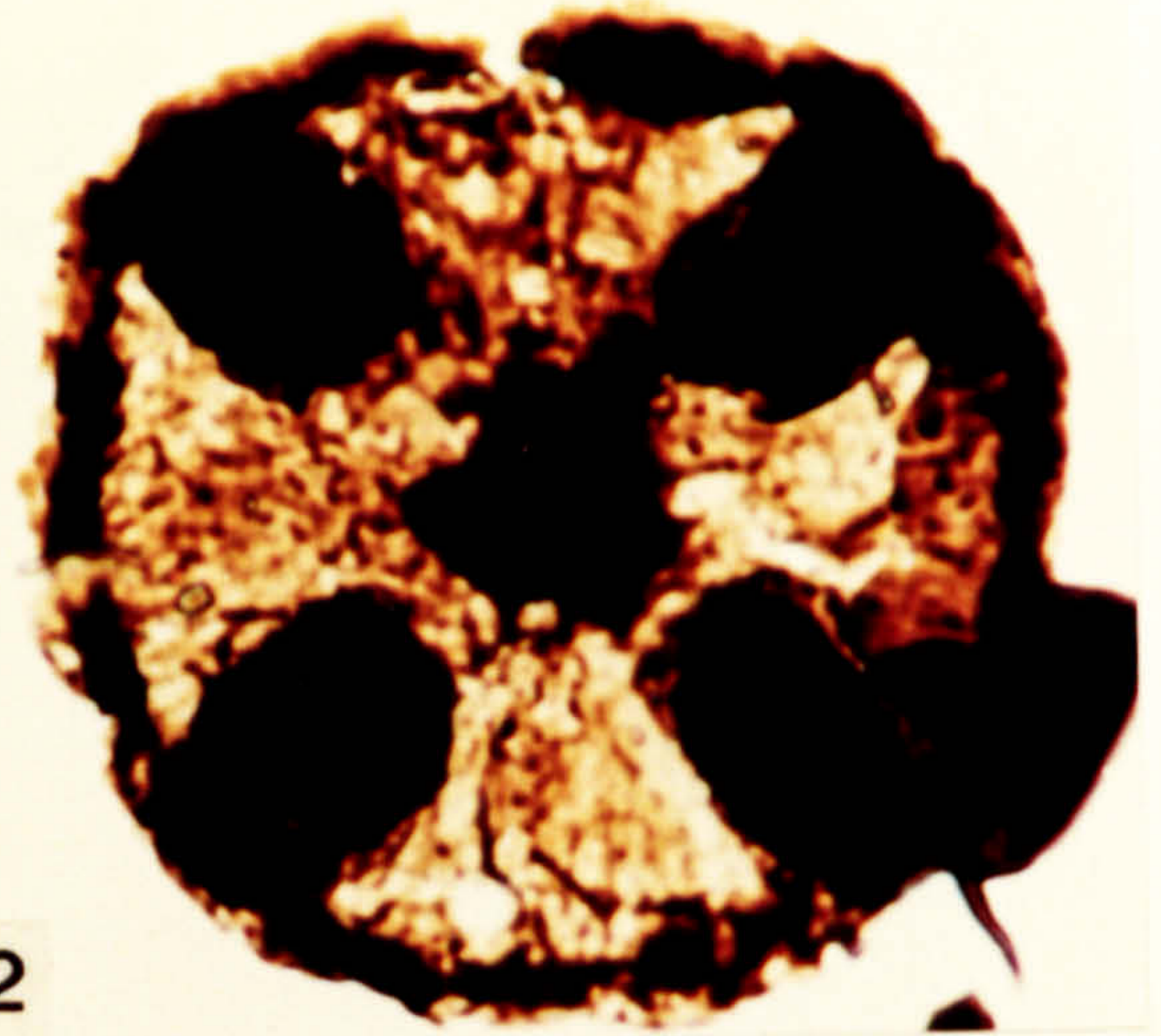
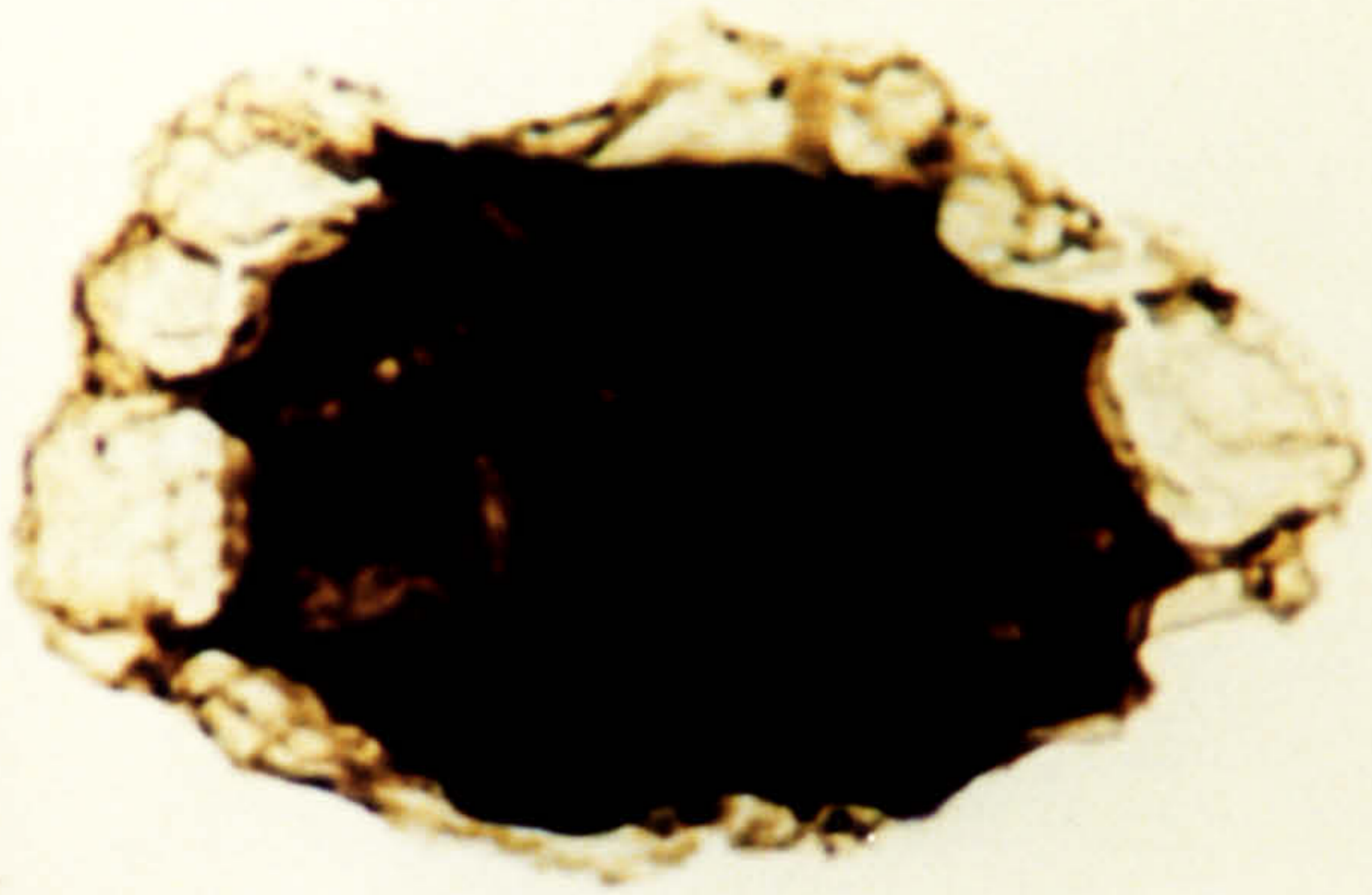
1. *Gorgonisphaeridium ohioense* Complex. OD 1496, 1-4, M28\2.
2. *Gorgonisphaeridium ohioense* Complex. OD 1496, S-1, M43\3.
3. *Gorgonisphaeridium ohioense* Complex. OD 1496, S-1, J21\4.
4. *Gorgonisphaeridium ohioense* Complex. OD 1496, S-1, E28\1.
5. *Gorgonisphaeridium winslowiae* Complex. OD 1496, 1-5, F22\1.
6. *Gorgonisphaeridium spicatum* Complex. OD 1496, S-1, K39\1
7. *Gorgonisphaeridium* sp. OD 1496, S-1, J19\3.
8. *Gorgonisphaeridium* sp. OD 1496, S-1, M39\3.
9. *Gorgonisphaeridium telum* Wicander & Playford 1985. OD 1496, S-1, K37\2.
10. *Gorgonisphaeridium* sp. OD 1496, 1-4, D18\1.
11. *Gorgonisphaeridium* sp. OD 1496, 1-15, Q26\4.
12. *Gorgonisphaeridium telum* Wicander & Playford 1985. OD 1496, S-1, K23\1.



**Plate 193.**

Acritarchs from the Lefdar Formation, early Strunian in age.

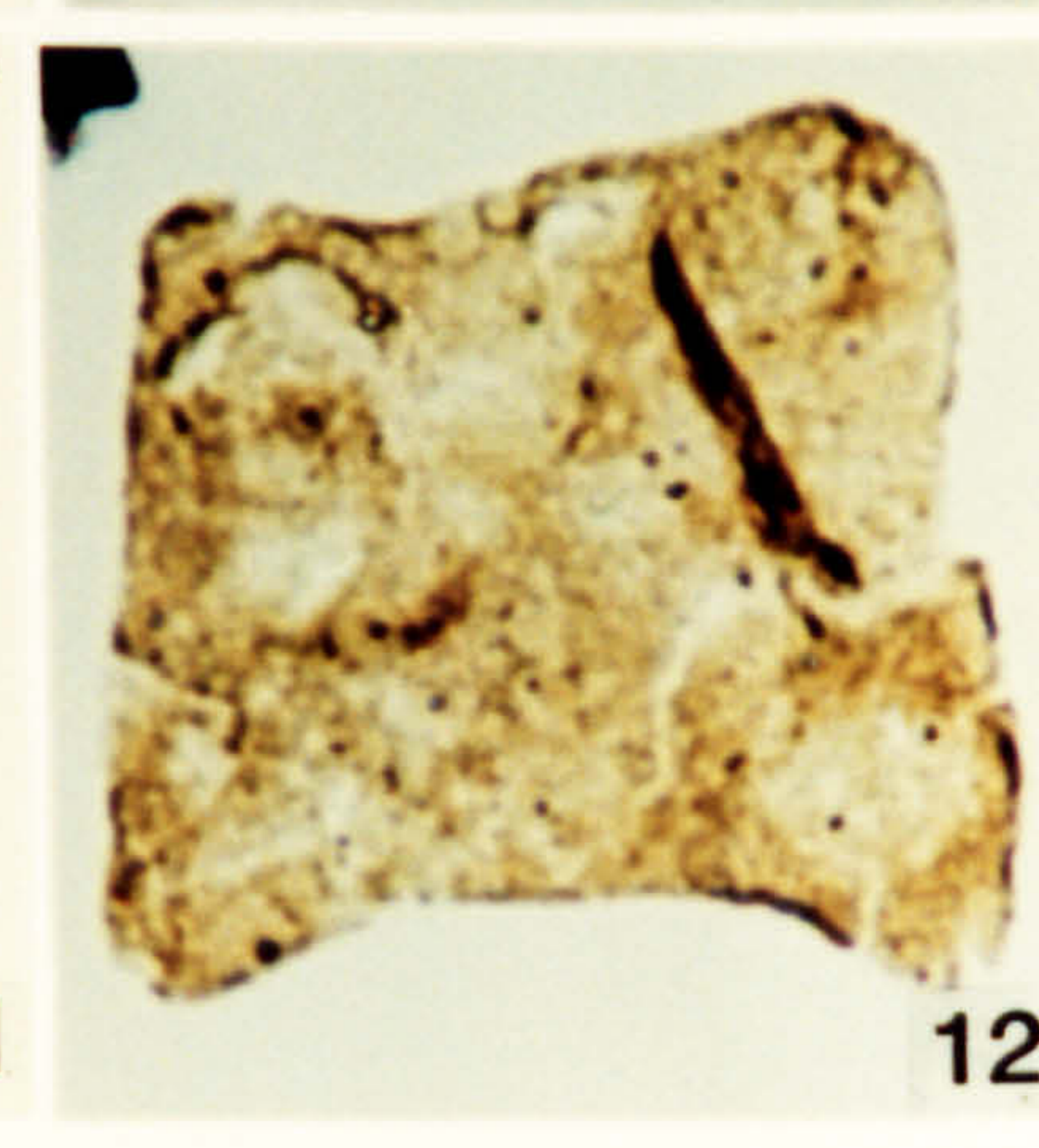
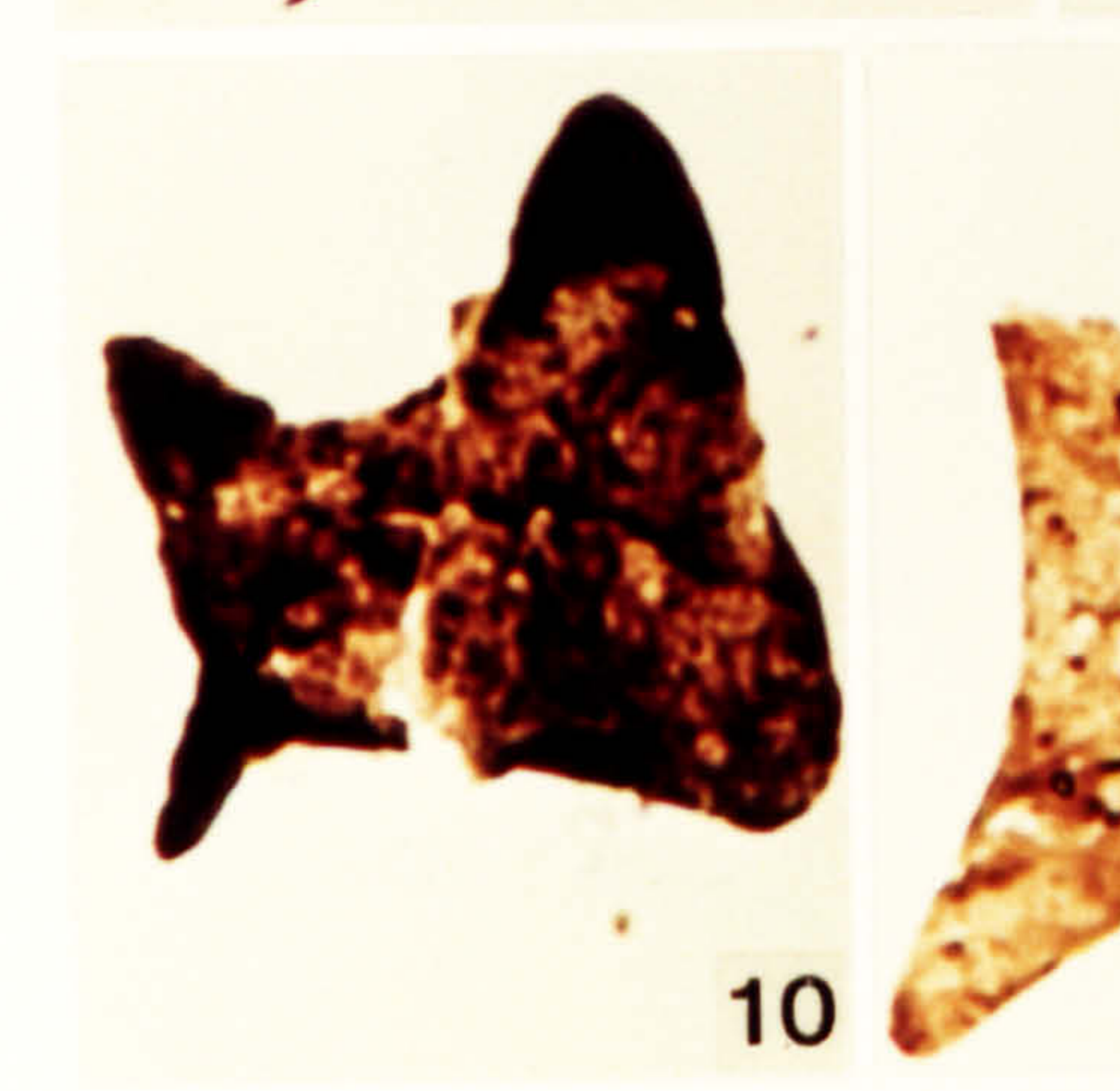
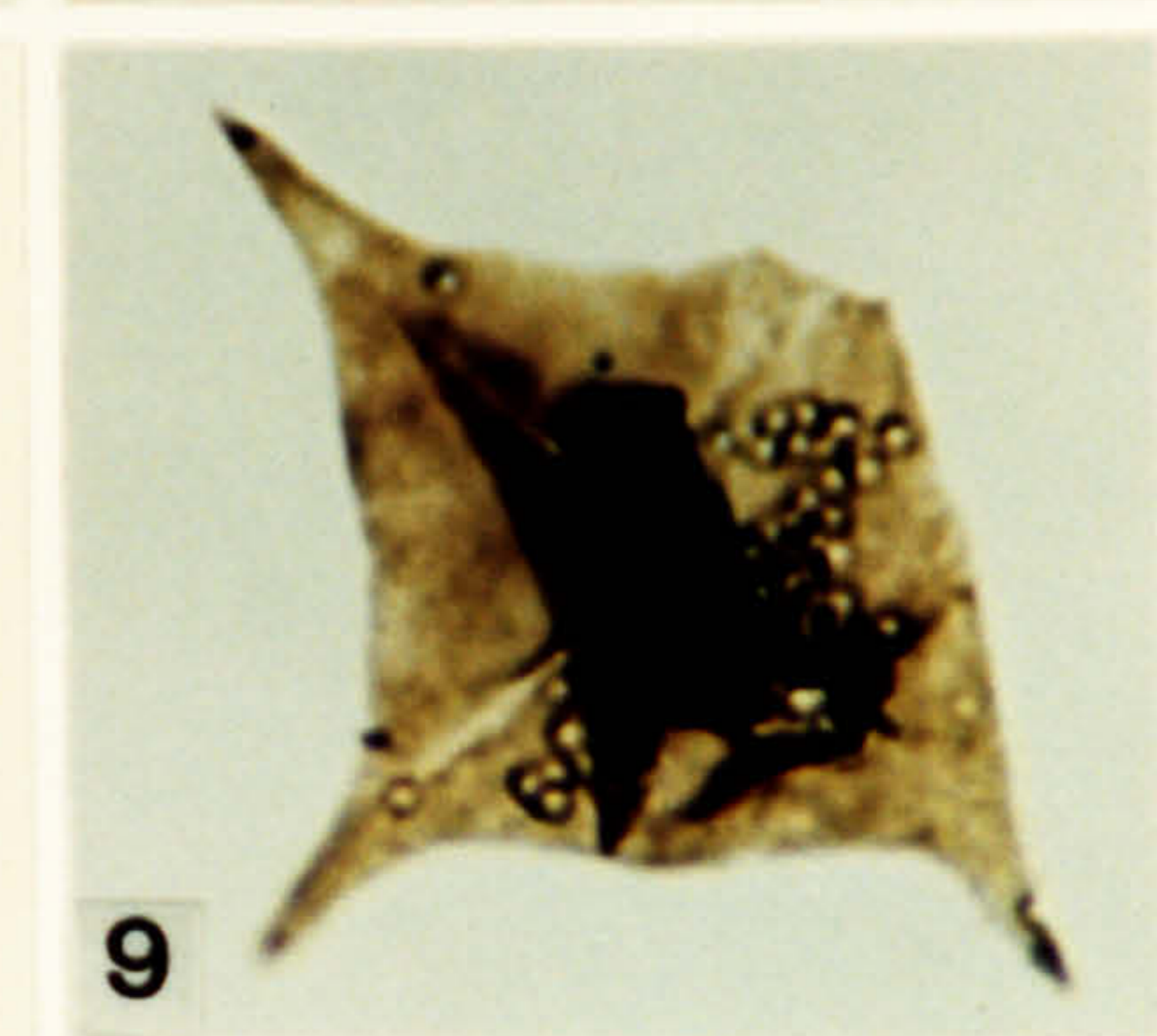
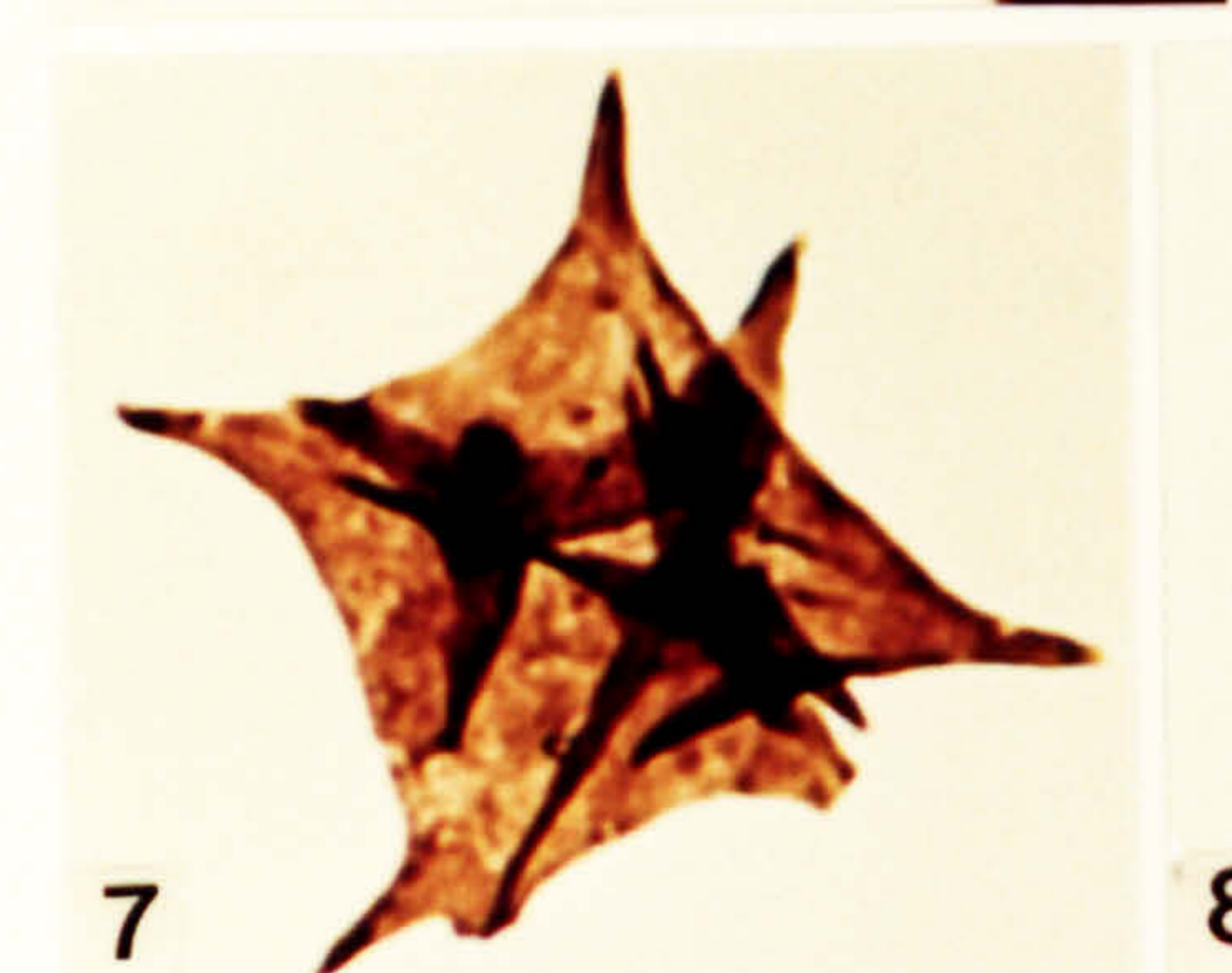
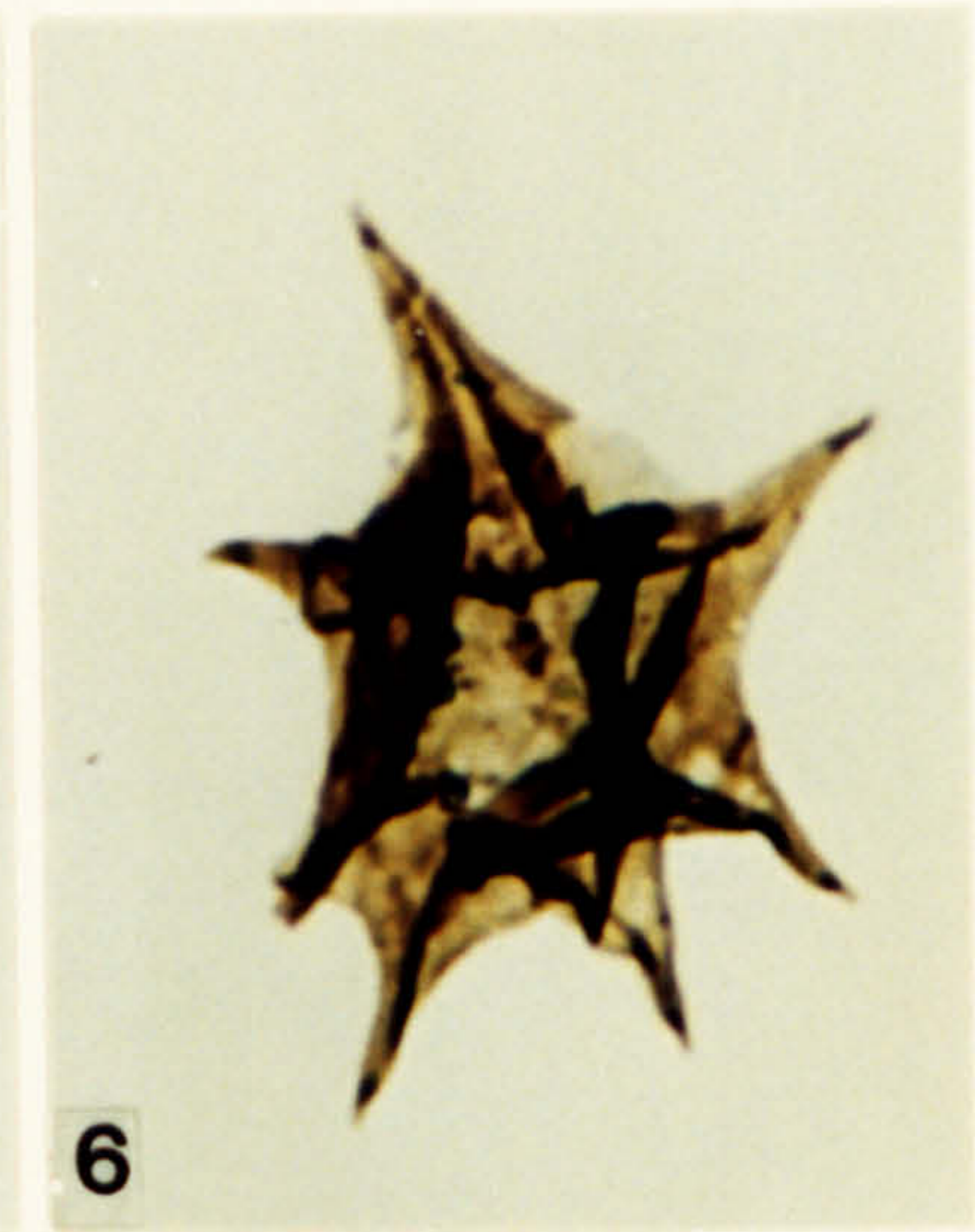
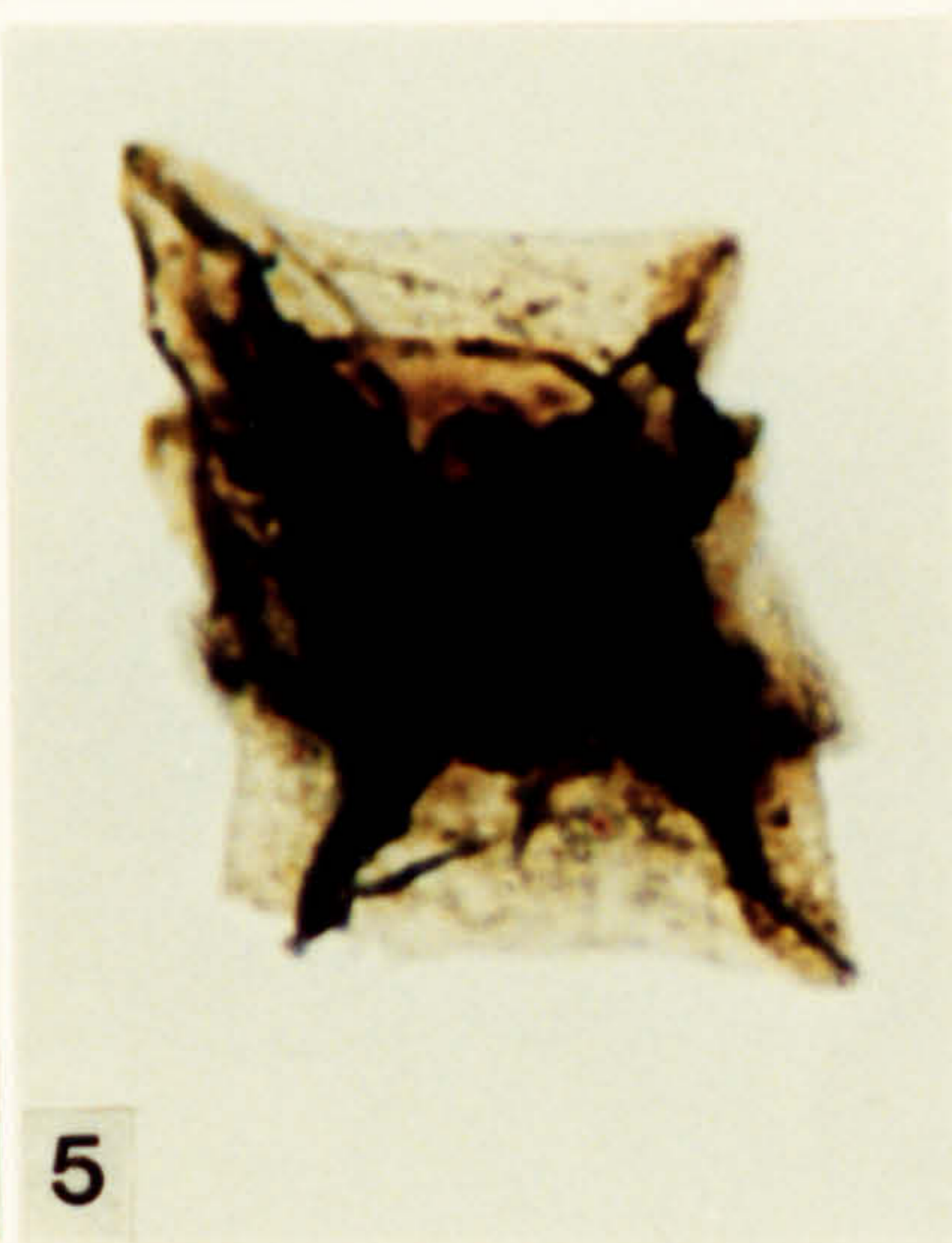
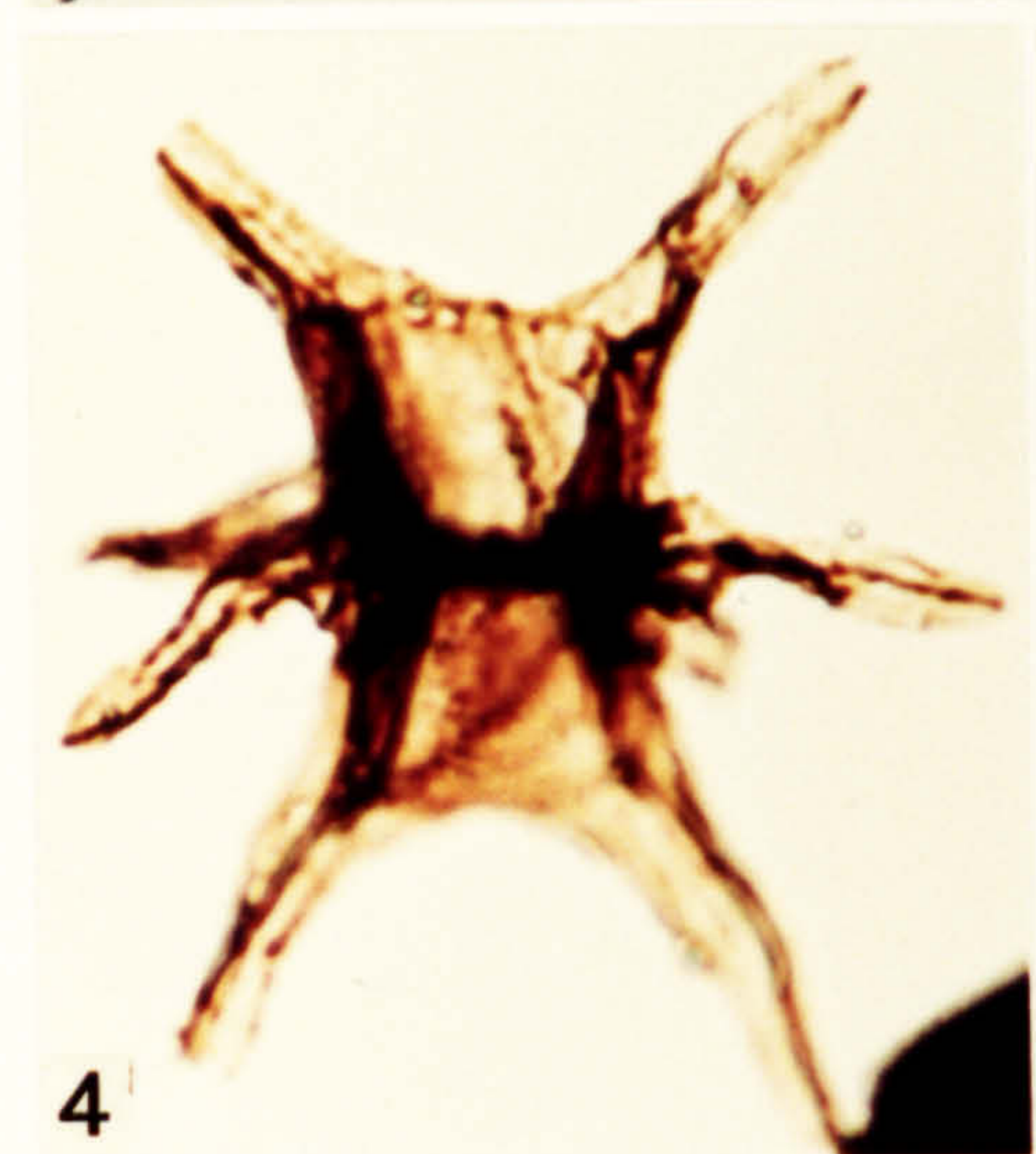
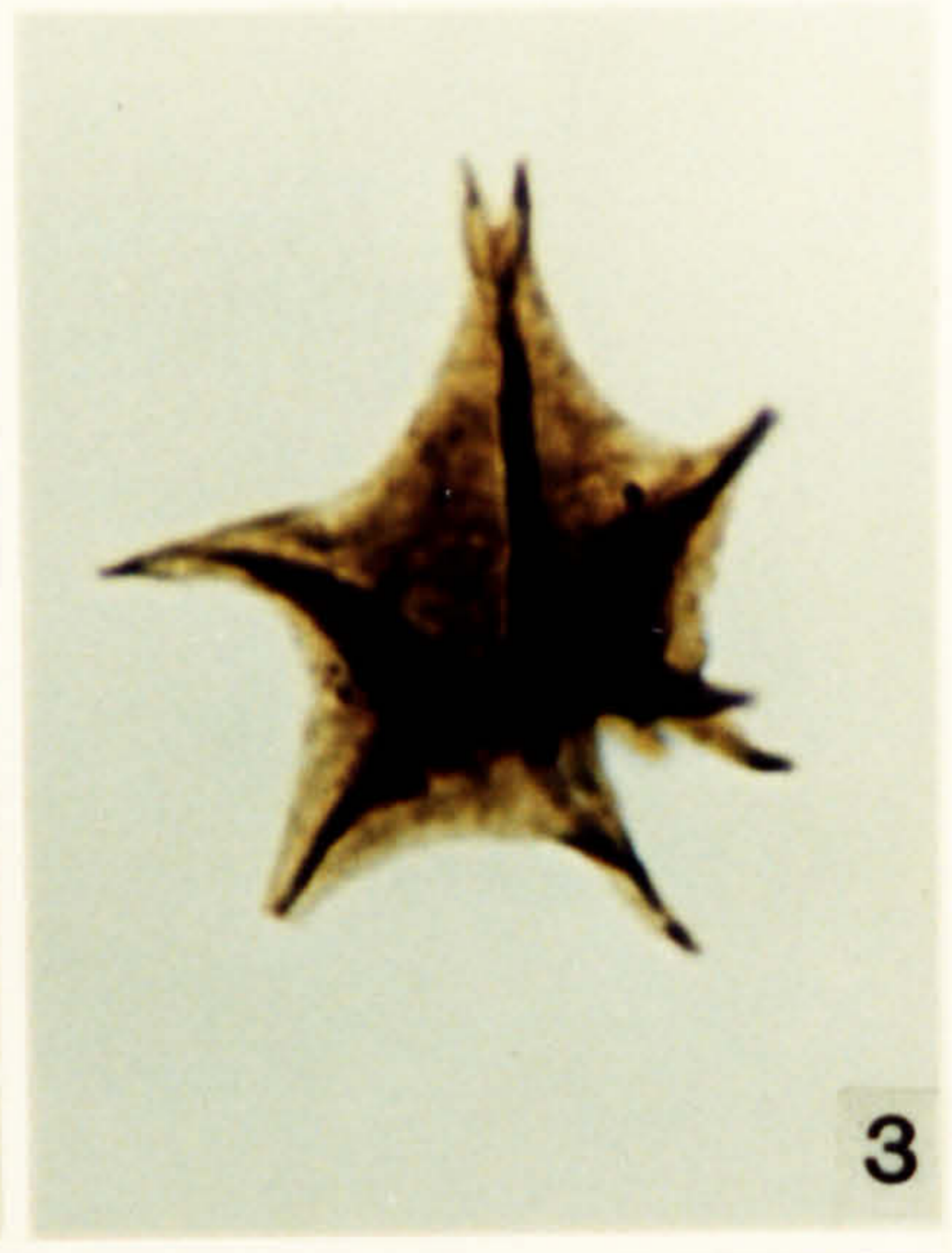
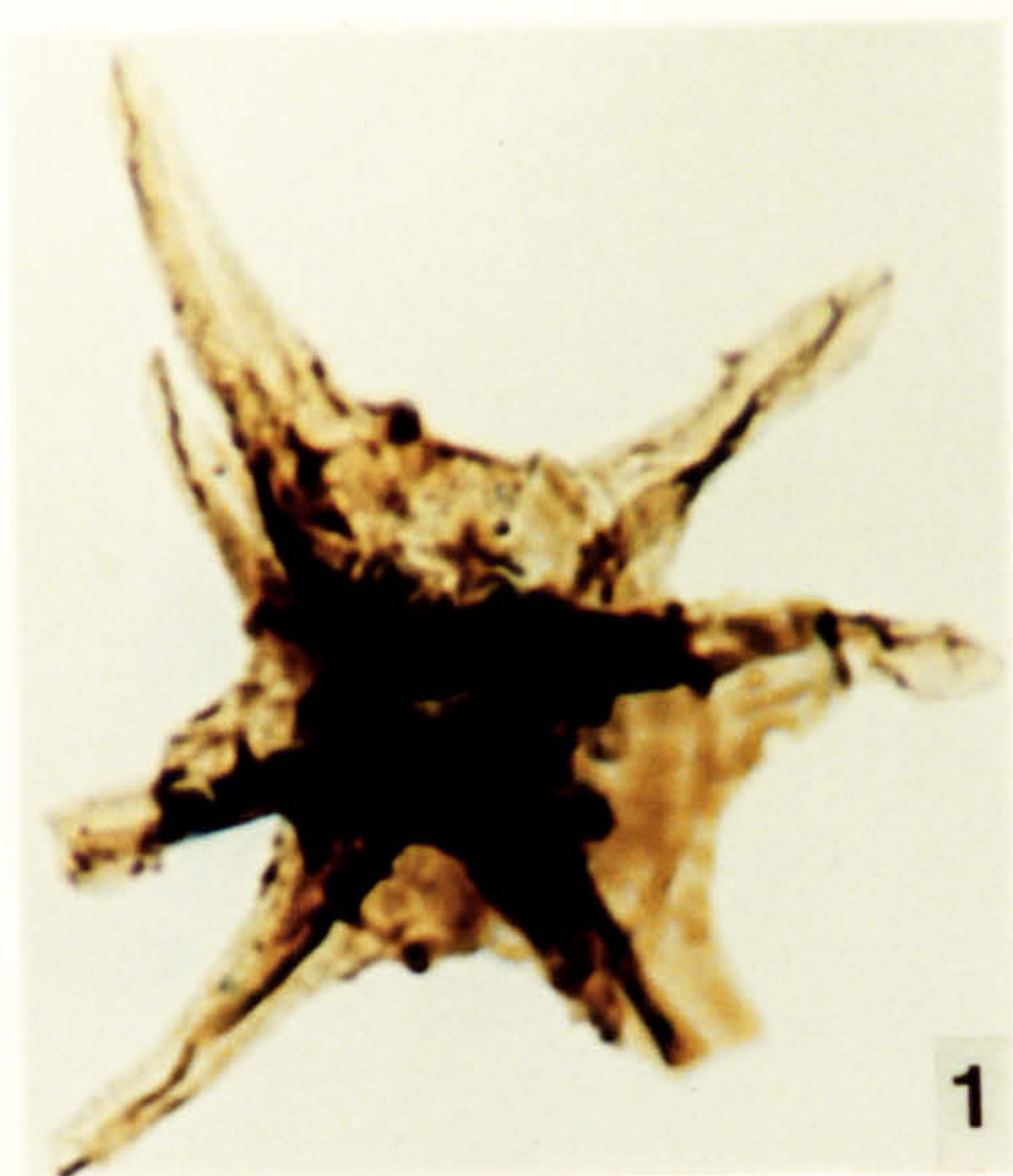
1. *Maranhites britoi* Stockmans & Williere 1969. OD 1496, S-1, E11\1.
2. *Maranhites mosessii* (Sommer) Brito 1967. OD 1496, 1-3, M44\1.
3. *Maranhites* sp. 1. OD 1496, 1-5, M24\3.
4. *Maranhites* sp. 1. OD 1496, 1-1, T32\4.
5. *Maranhites* sp. 1. OD 1496, S-1, K13\1.
6. *Maranhites perplexus* Wicander & Playford 1985. OD 1496, 1-4, D15\2.
7. *Multiplicisphaeridium ramispinosum* Staplin 1961. OD 1496, 1-4, N3\4.
8. *Multiplicisphaeridium ramispinosum* Staplin 1961. OD 1496, 1-4, G38\4.
9. To the east *Multiplicisphaeridium ramispinosum* Staplin 1961. To the west *Umbellasphaeridium saharicum* Jardine *et al.* 1972. OD 1496, 1-1, E42\3.



**Plate 194.**

Acritarchs from the Lefdar Formation, early Strunian in age.

1. *Polyedrixium pharoane* Deunff 1954 ex Deunff 1961. OD 1496, 1-1, Q38\3, (R).
2. *Polyedrixium pharoane* Deunff 1954 ex Deunff 1961. OD 1496, 1-1, E28\1, (R).
3. *Stellinium octoaster* (Staplin) Jardine *et al.* 1972. OD 1496, S-1, J17\1.
4. *Polyedrixium pharoane* Deunff 1954 ex Deunff 1961. OD 1496, 1-3, K34\1, (R).
5. *Polyedrixium embudum*. Cramer 1964. OD 1496, 1-5, Y15\4, (R).
6. *Stellinium octoaster* (Staplin) Jardine *et al.* 1972. OD 1496, S-1, K14\2.
7. *Stellinium octoaster* (Staplin) Jardine *et al.* 1972. OD 1496, 1-3, E39\4.
8. *Stellinium octoaster* (Staplin) Jardine *et al.* 1972. OD 1496, 1-4, P38\3.
9. *Stellinium comptum* Wicander & Loeblich 1977. OD 1496, S-1, J13\4.
10. *Tetraporina quadrispina* (Jardine *et al.*) comb nov. OD 1496, 1-3, E39\4.
11. *Tetraporina quadrispina* (Jardine *et al.*) comb nov. OD 1496, 1-3, K33\2.
12. *Tetraporina horologia* (Staplin) Playford 1963. OD 1496, 1-5, N29\4.

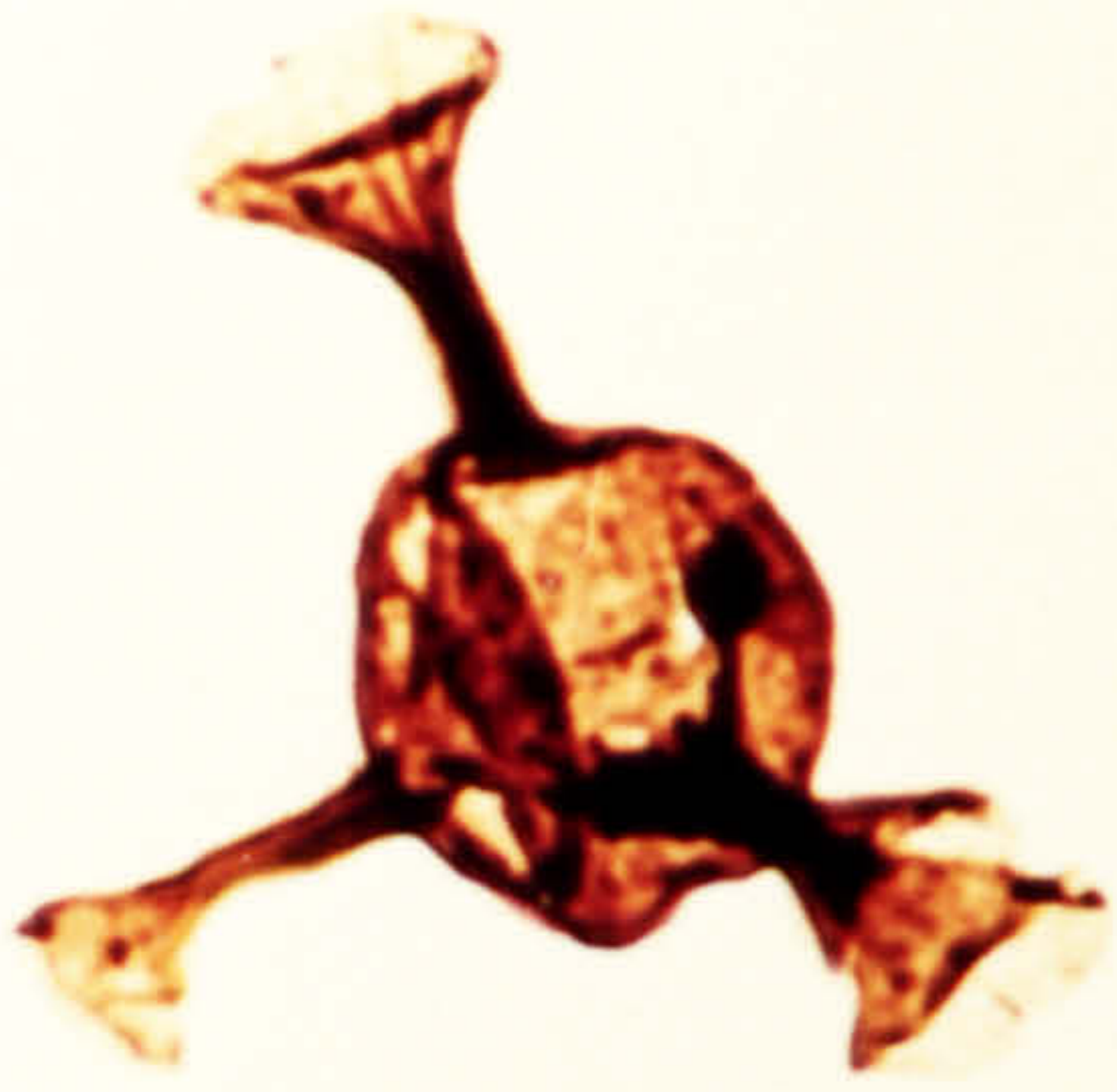




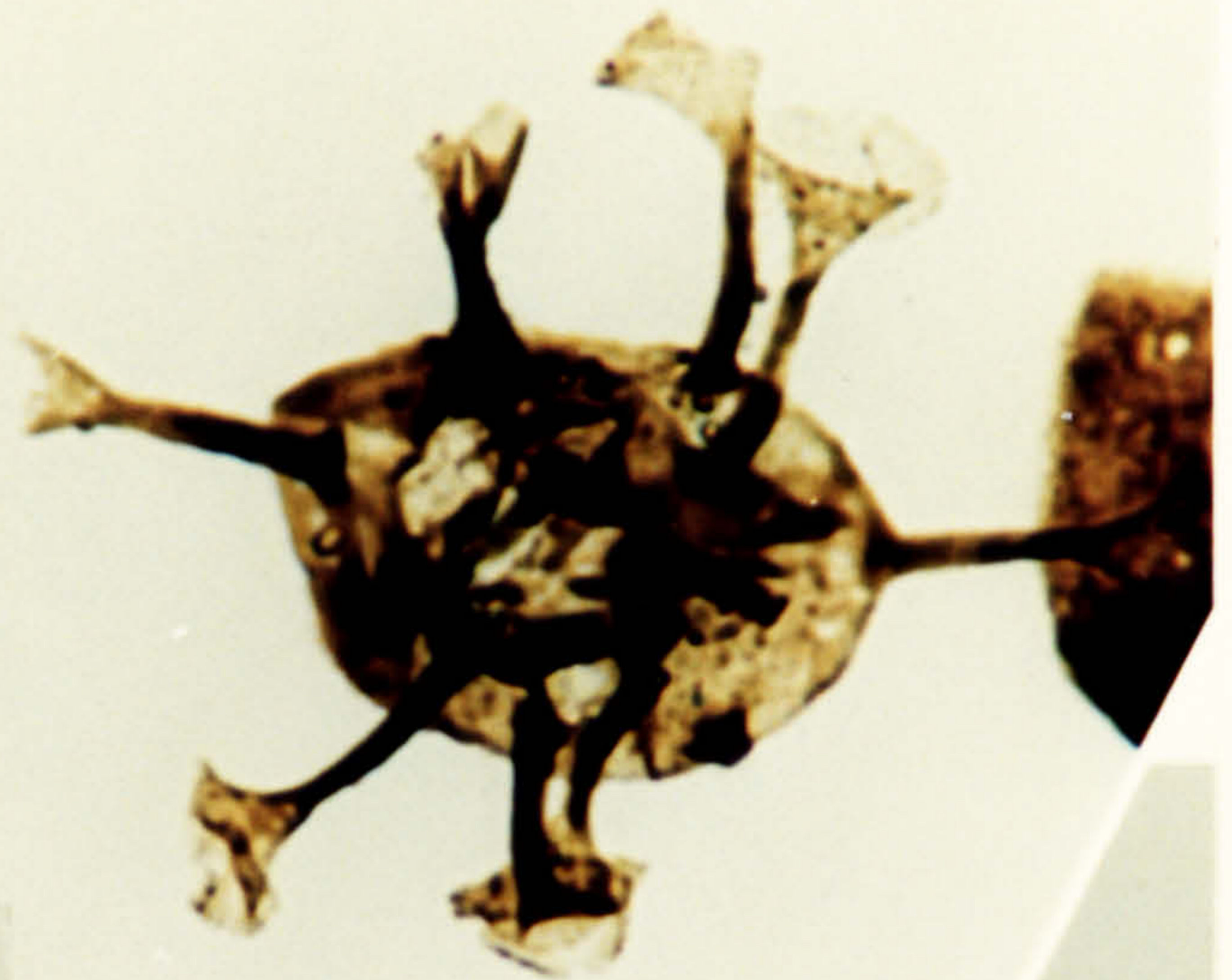
**Plate 195.**

Acritarchs from the Lefdar Formation, early Strunian in age.

1. *Umbellasphaeridium saharicum* Jardine *et al.* 1972. OD 1496, 1-3, J42\2.
2. *Umbellasphaeridium saharicum* Jardine *et al.* 1972. OD 1496, S-1, K43\1.
3. *Umbellasphaeridium* sp. OD 1496, 1-3, R48\1.
4. *Umbellasphaeridium deflandrei* Moreau-Benoit 1967 *ex* Jardine *et al.* 1972. OD 1496, 1-1, F32\3.
5. *Umbellasphaeridium deflandrei* Moreau-Benoit 1967 *ex* Jardine *et al.* 1972. OD 1496, 1-1, F32\3.
6. *Veryhachium downiei* var. *downiei* Stockmans & Williere 1962. OD 1496, 1-3, S20\2.
7. *Veryhachium downiei* var. *downiei* Stockmans & Williere 1962. OD 1496, 1-1, F23\2.
8. *Veryhachium downiei* var. *downiei* Stockmans & Williere 1962. OD 1496, 1-11, T33\3.
9. *Veryhachium downiei?* Stockmans & Williere 1962. OD 1496, 1-1, H38\2.



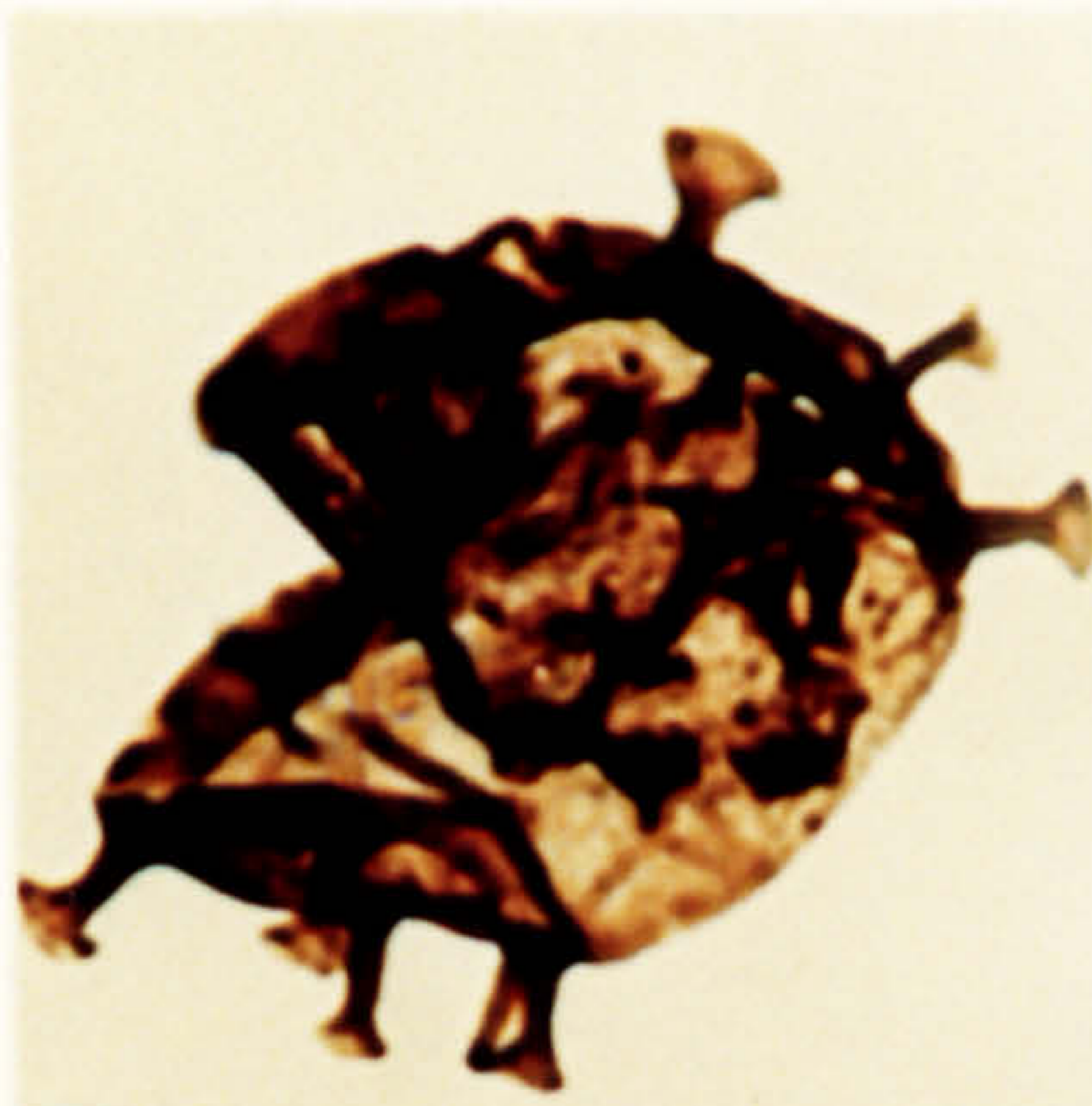
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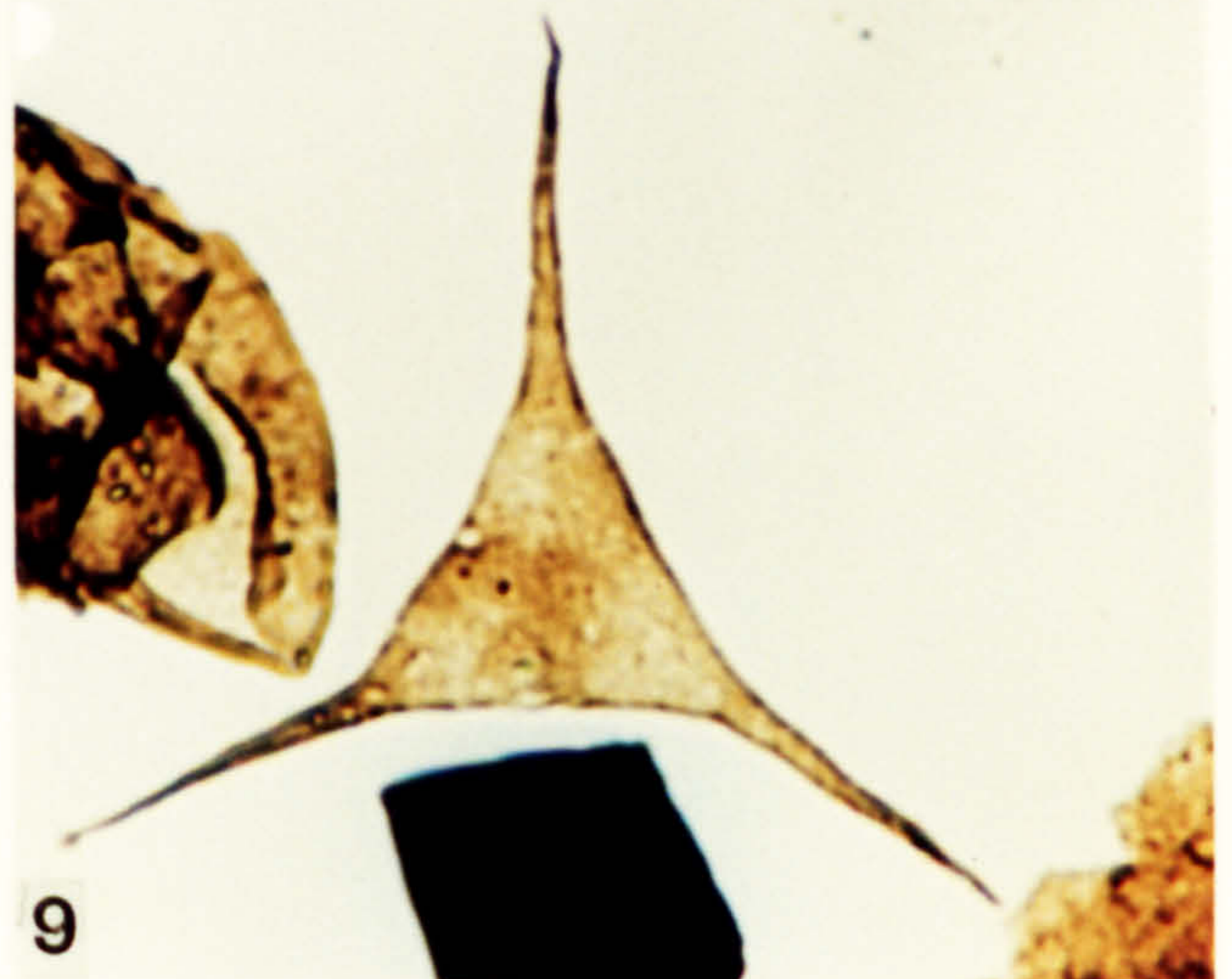
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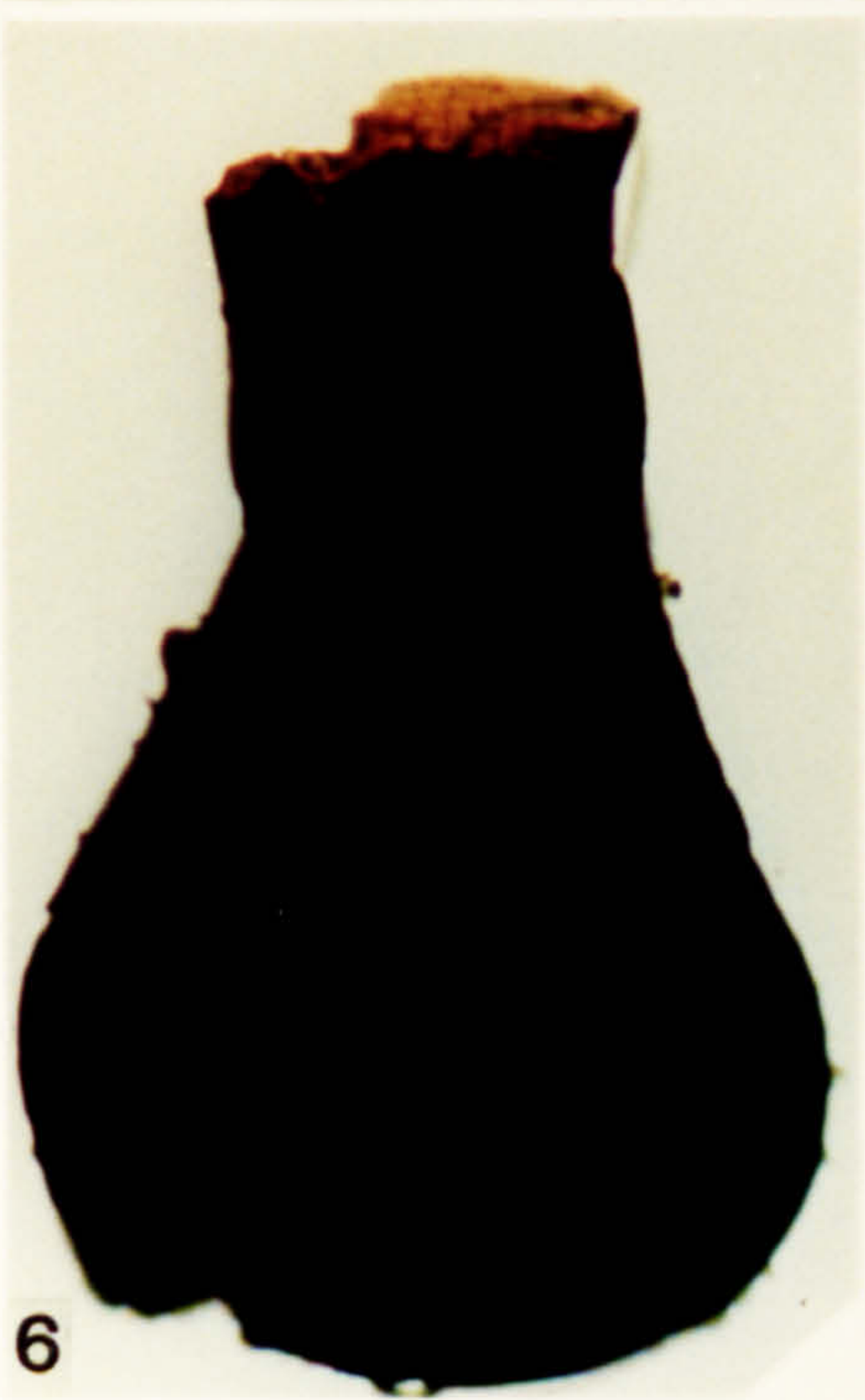
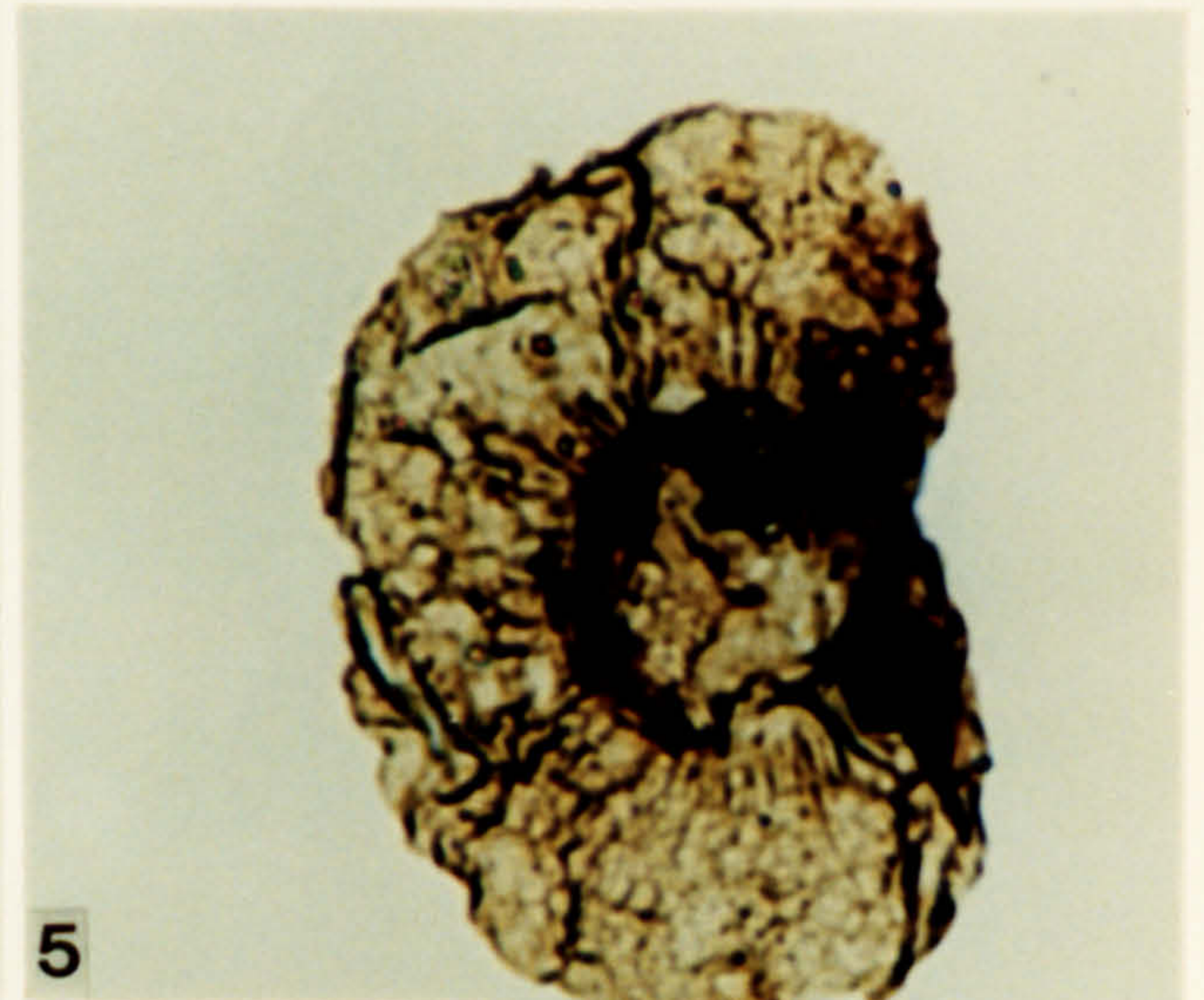
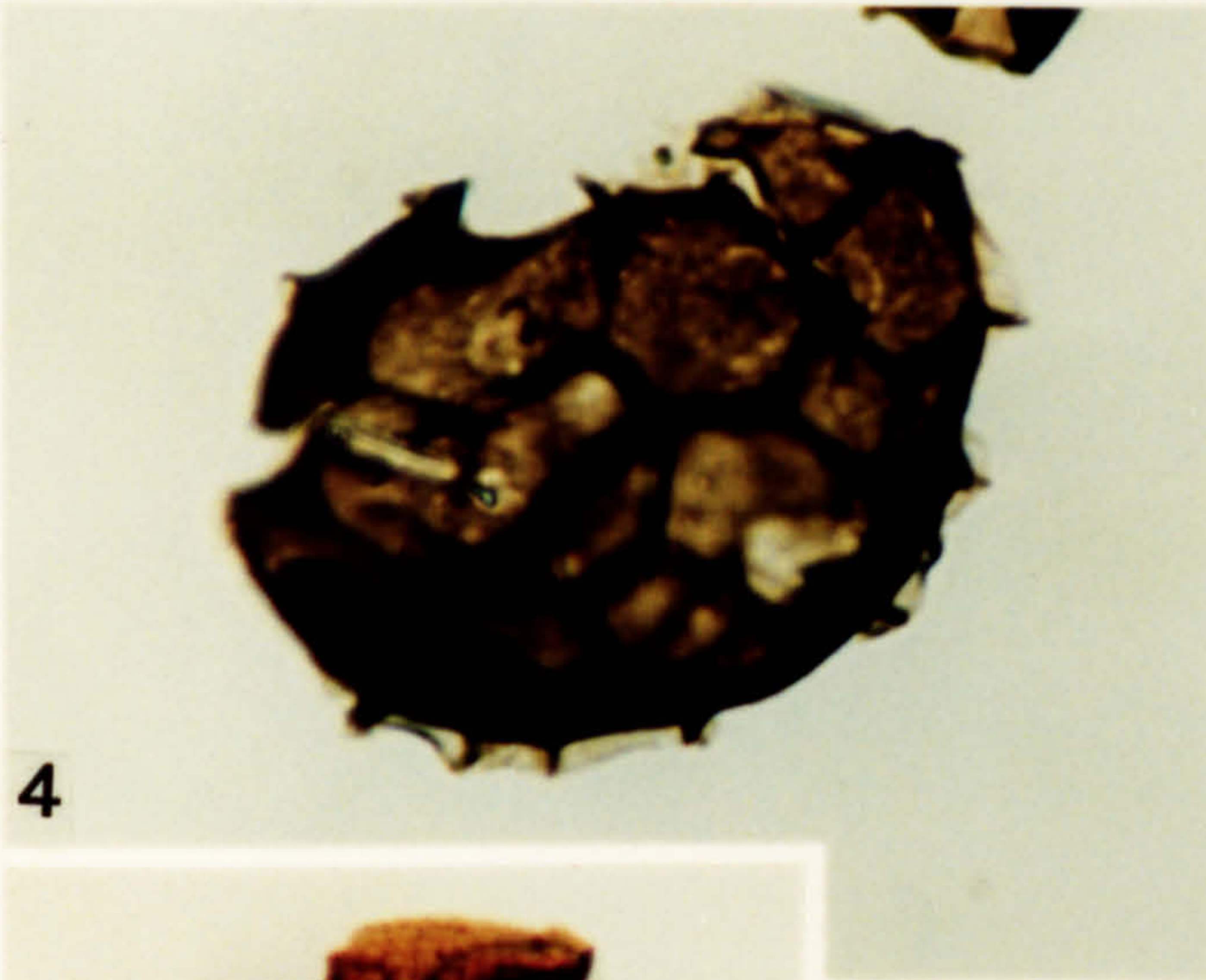
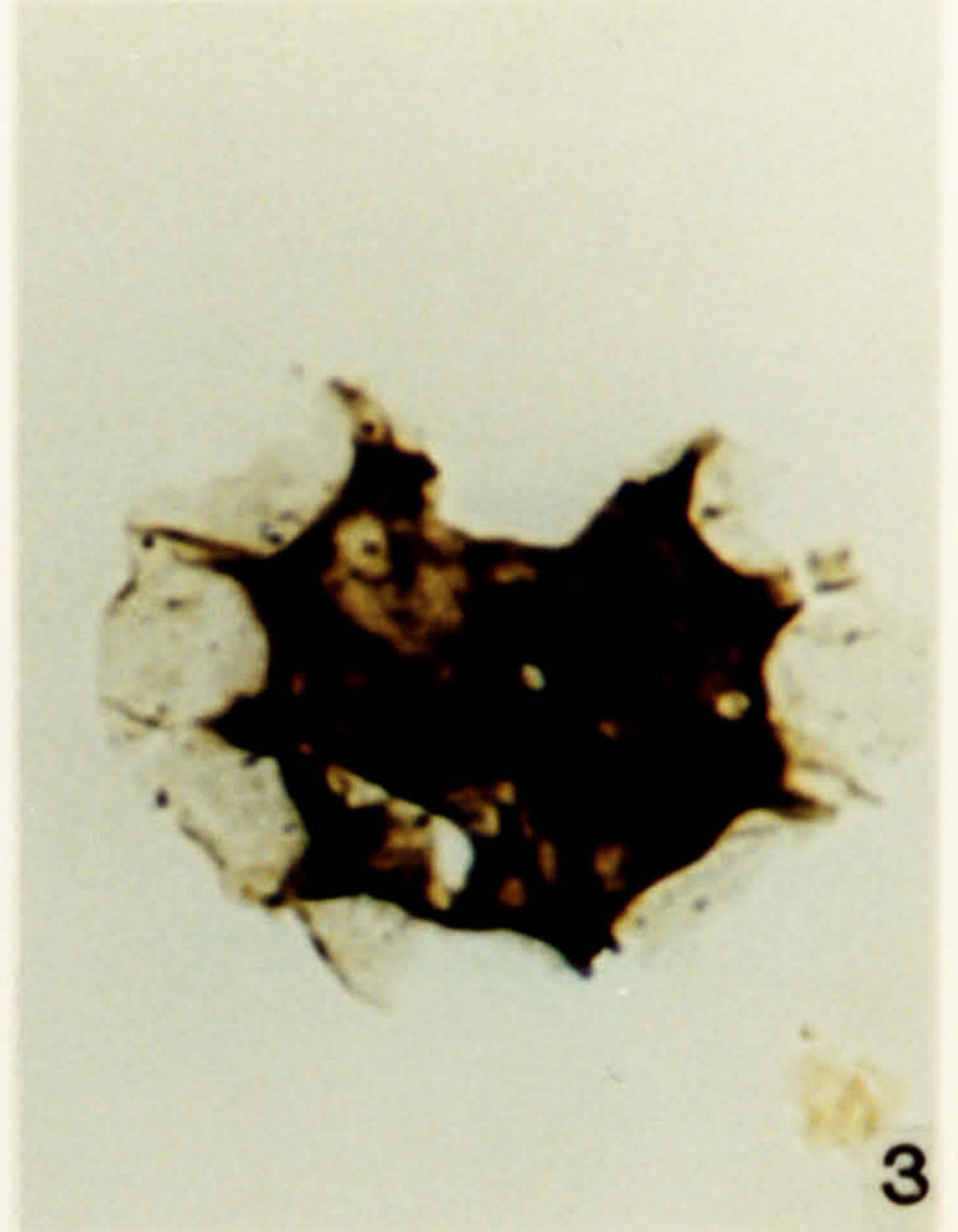
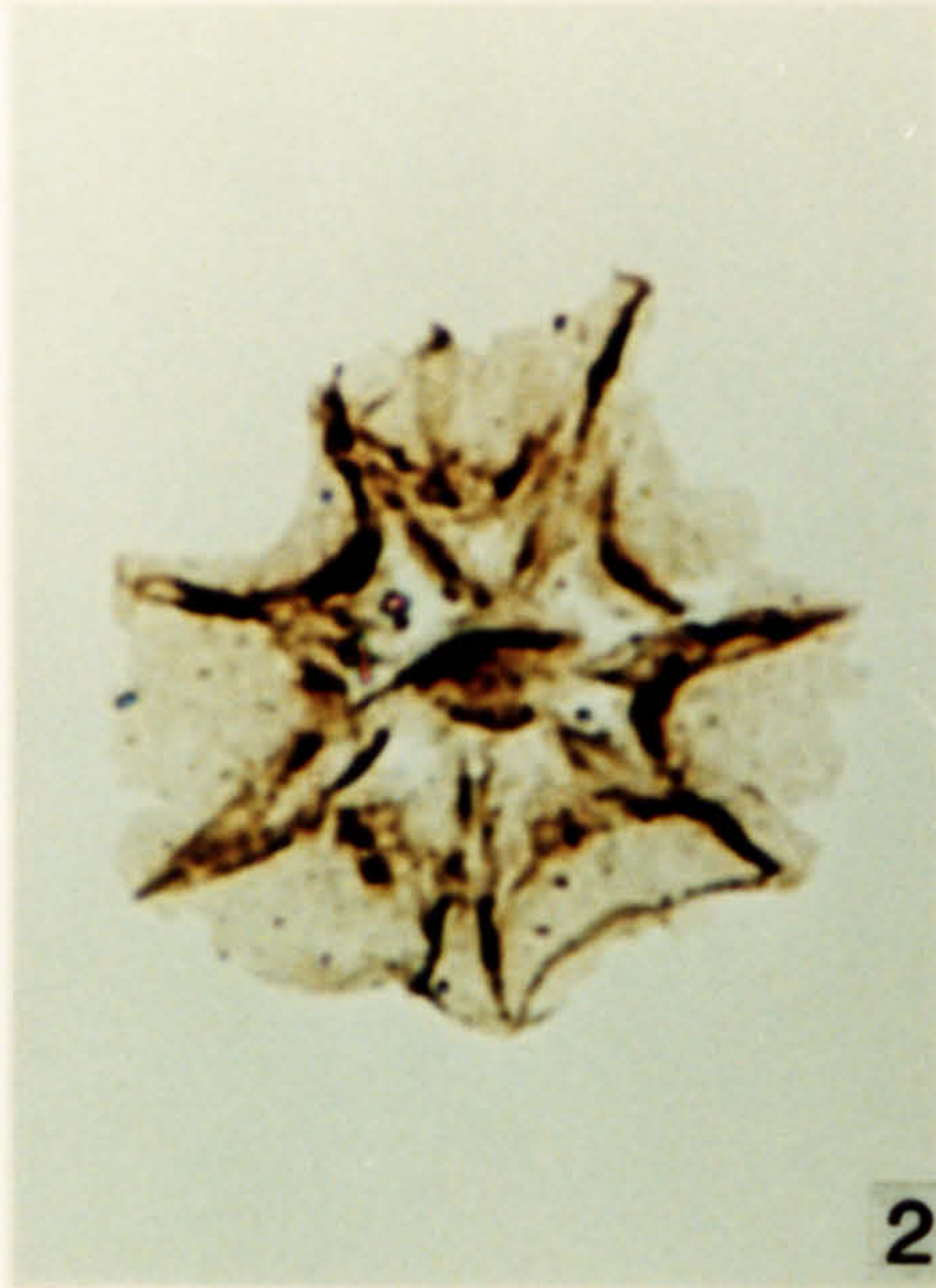
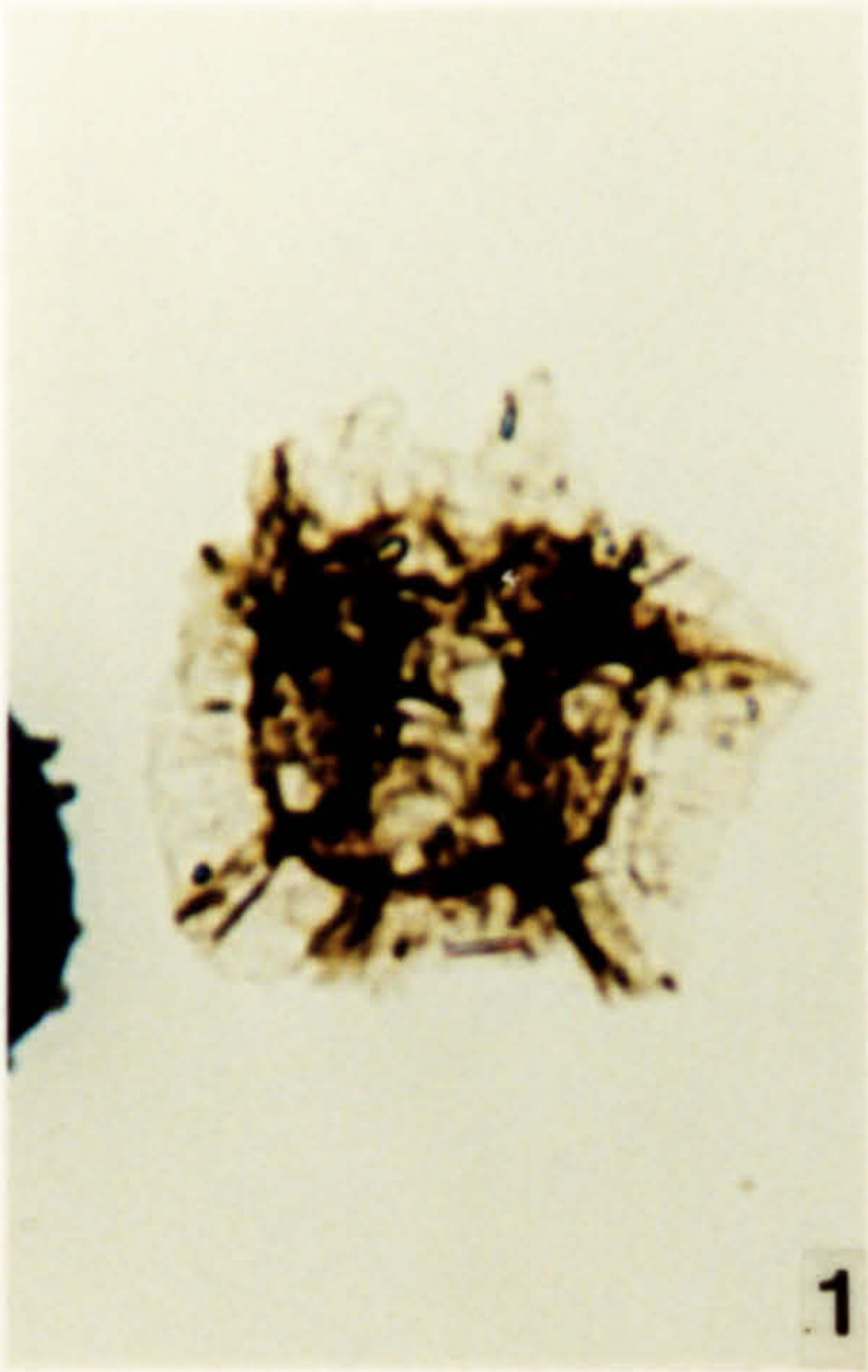


9

**Plate 196.**

Prasinophycean algae and chitinozoa from the Lefdar Formation, early Strunian in age.

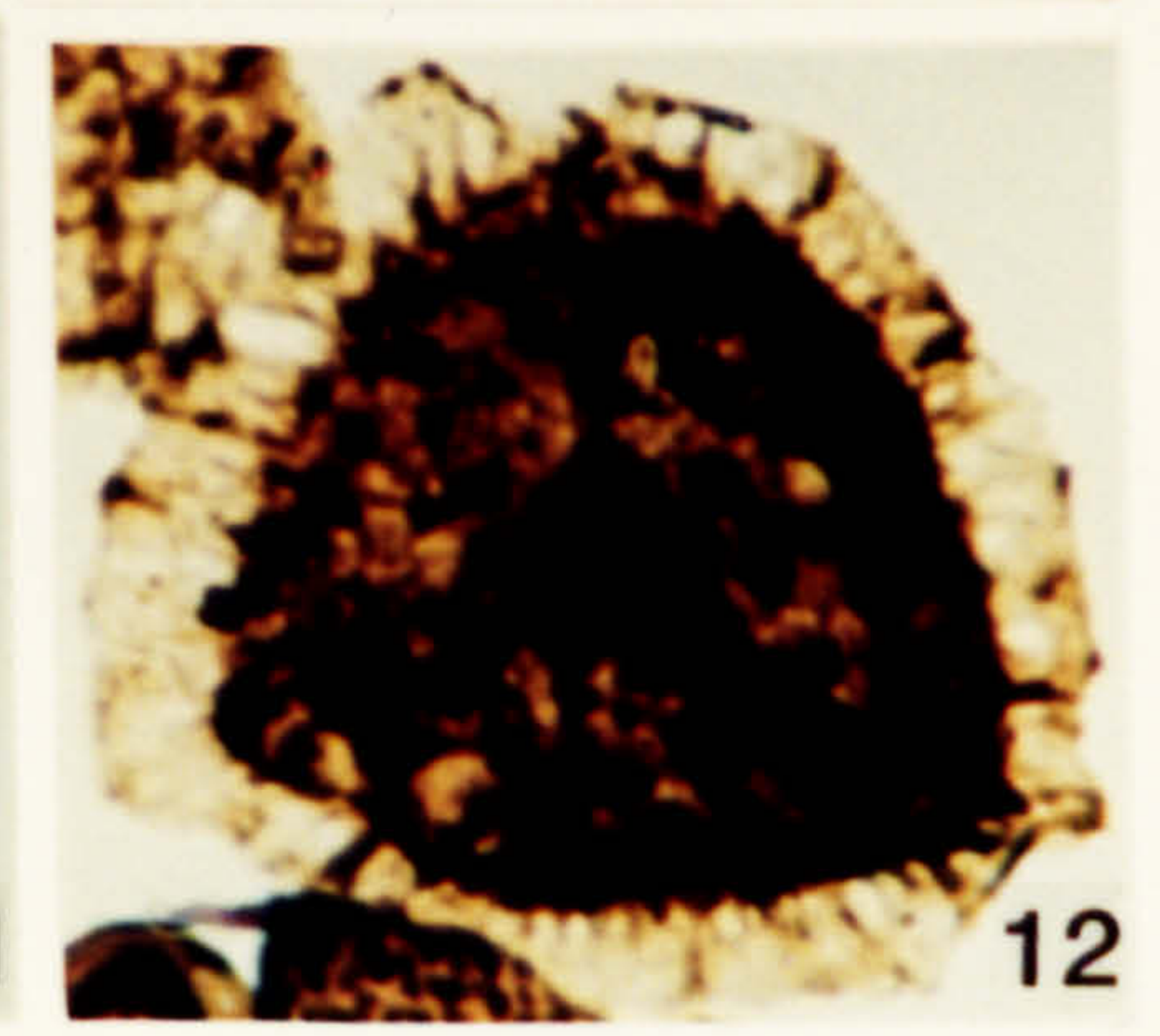
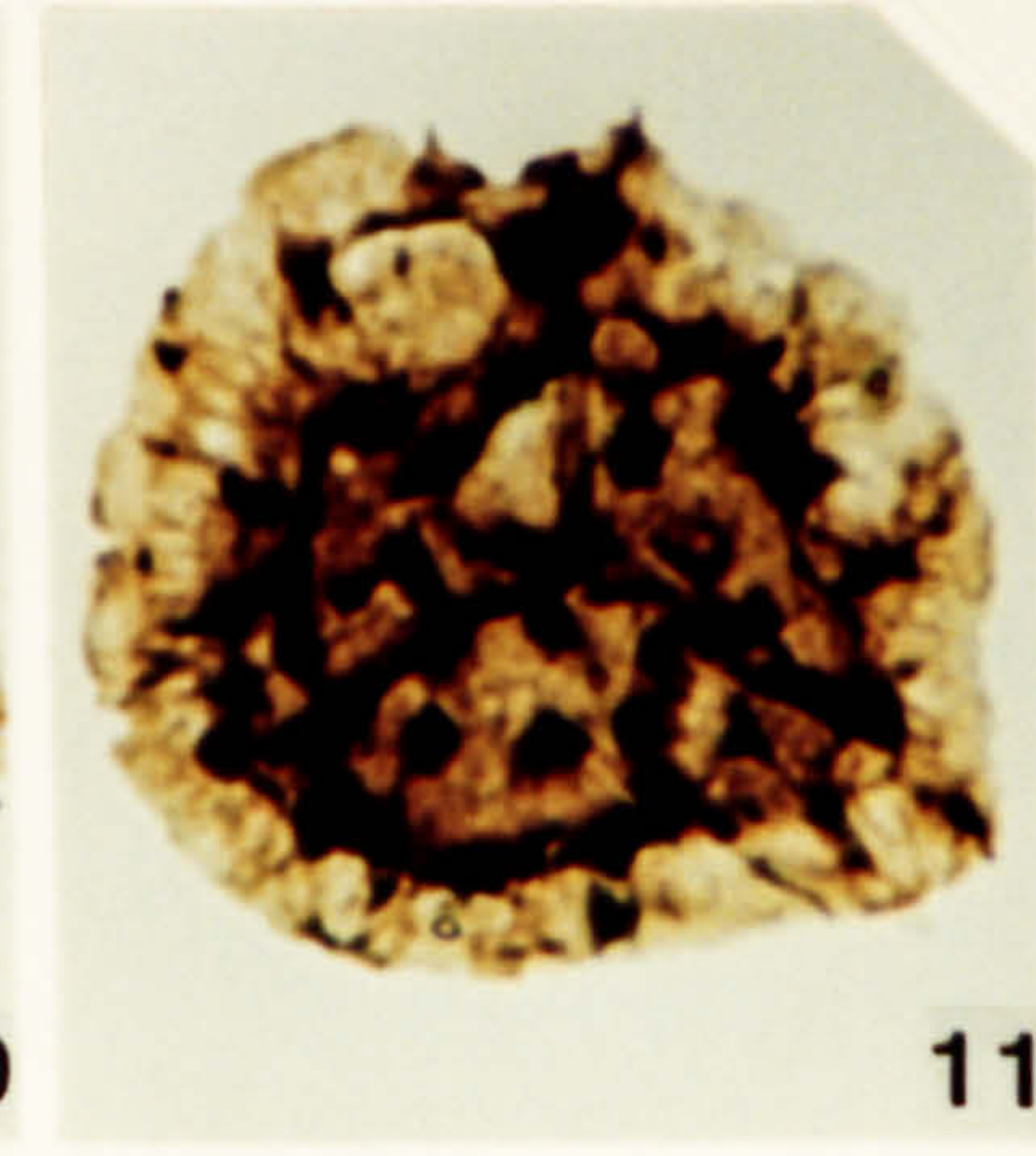
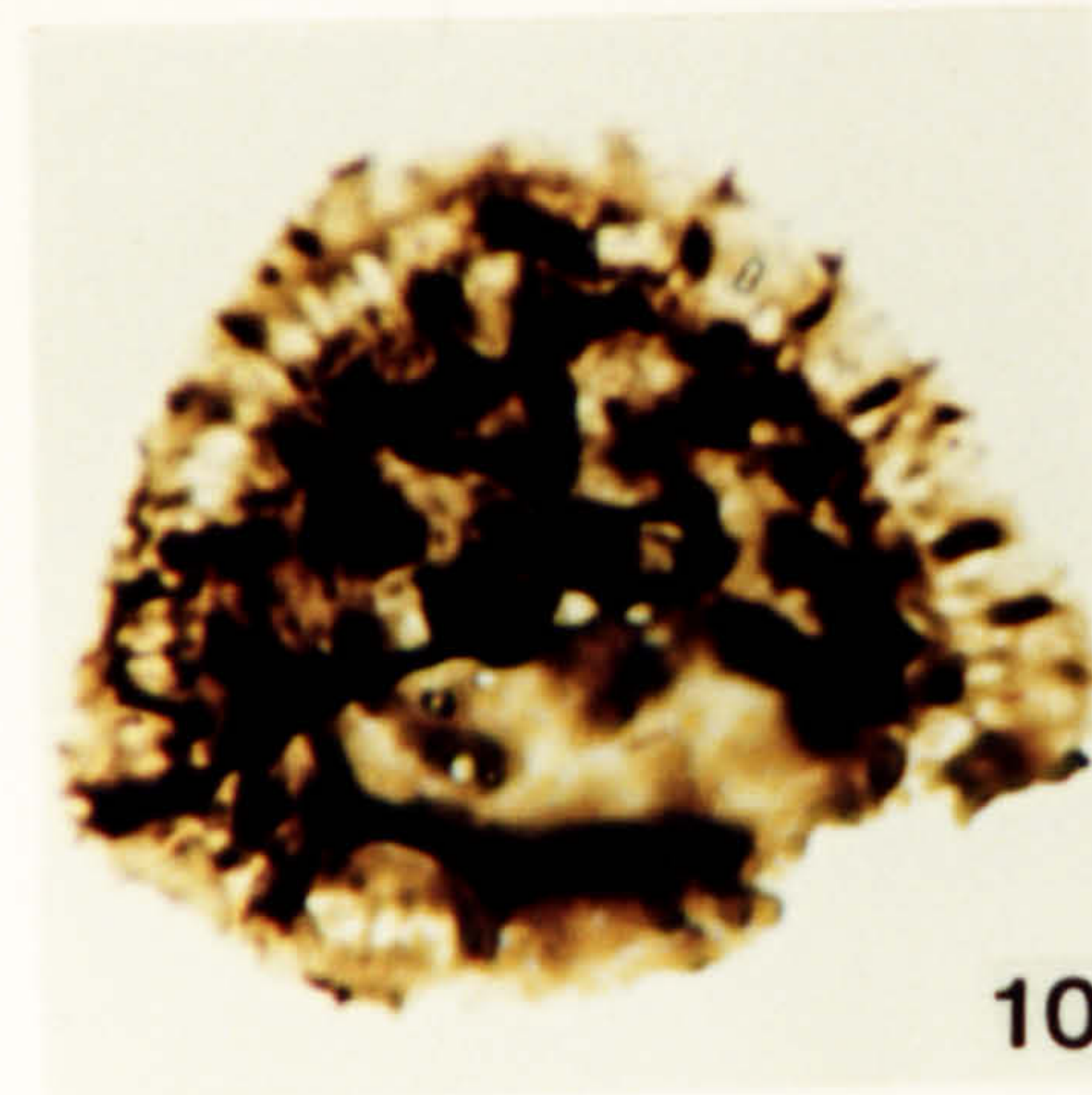
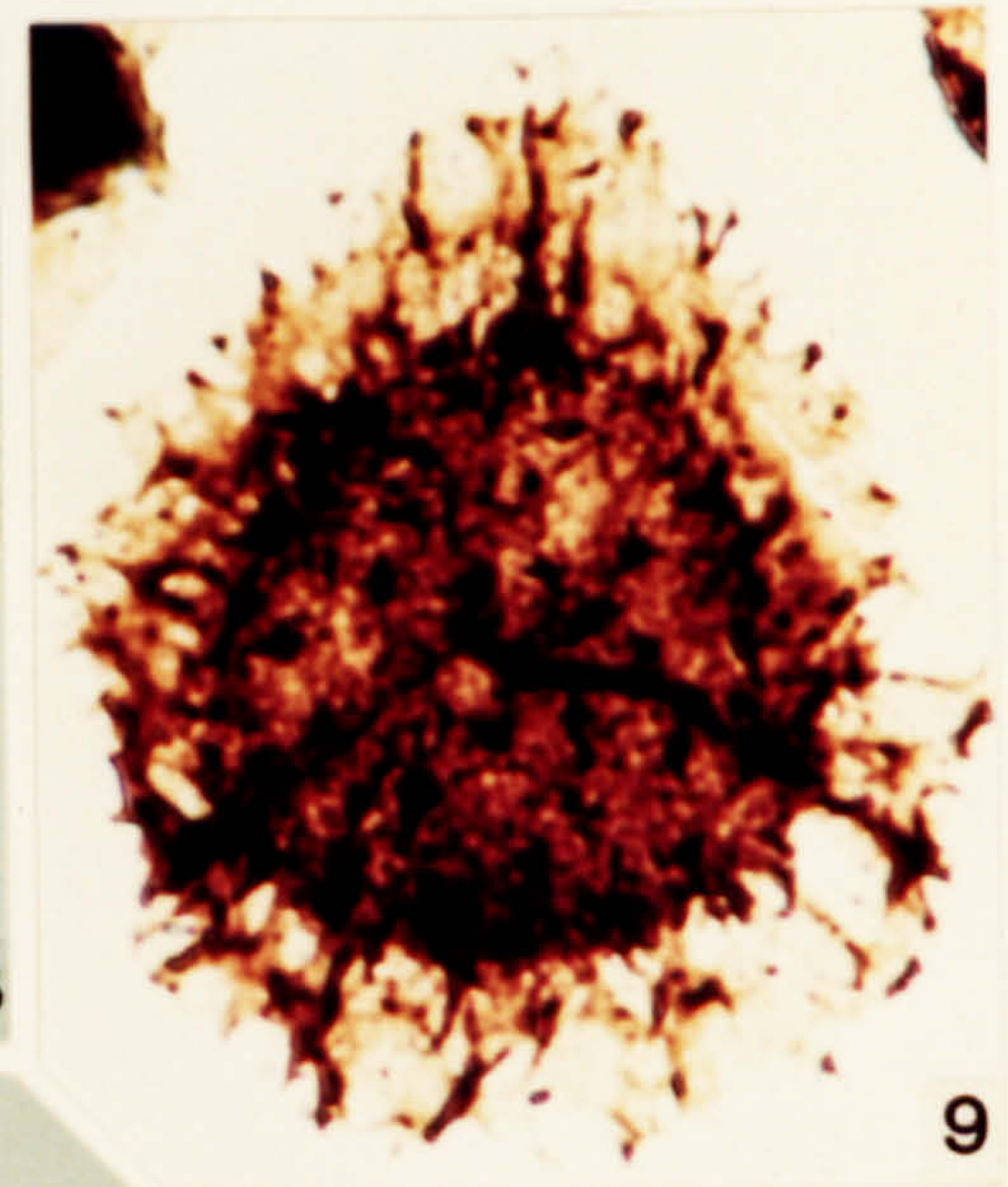
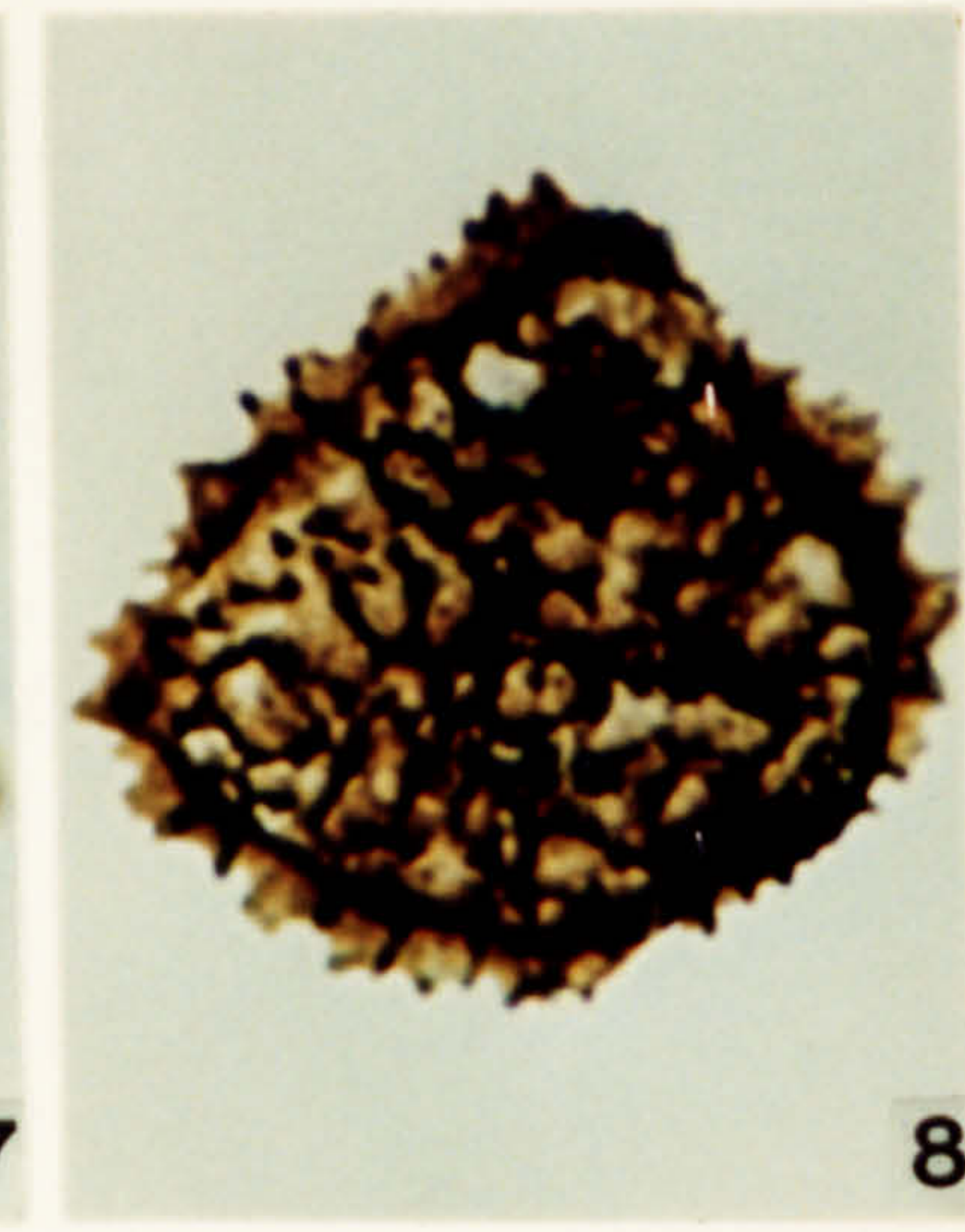
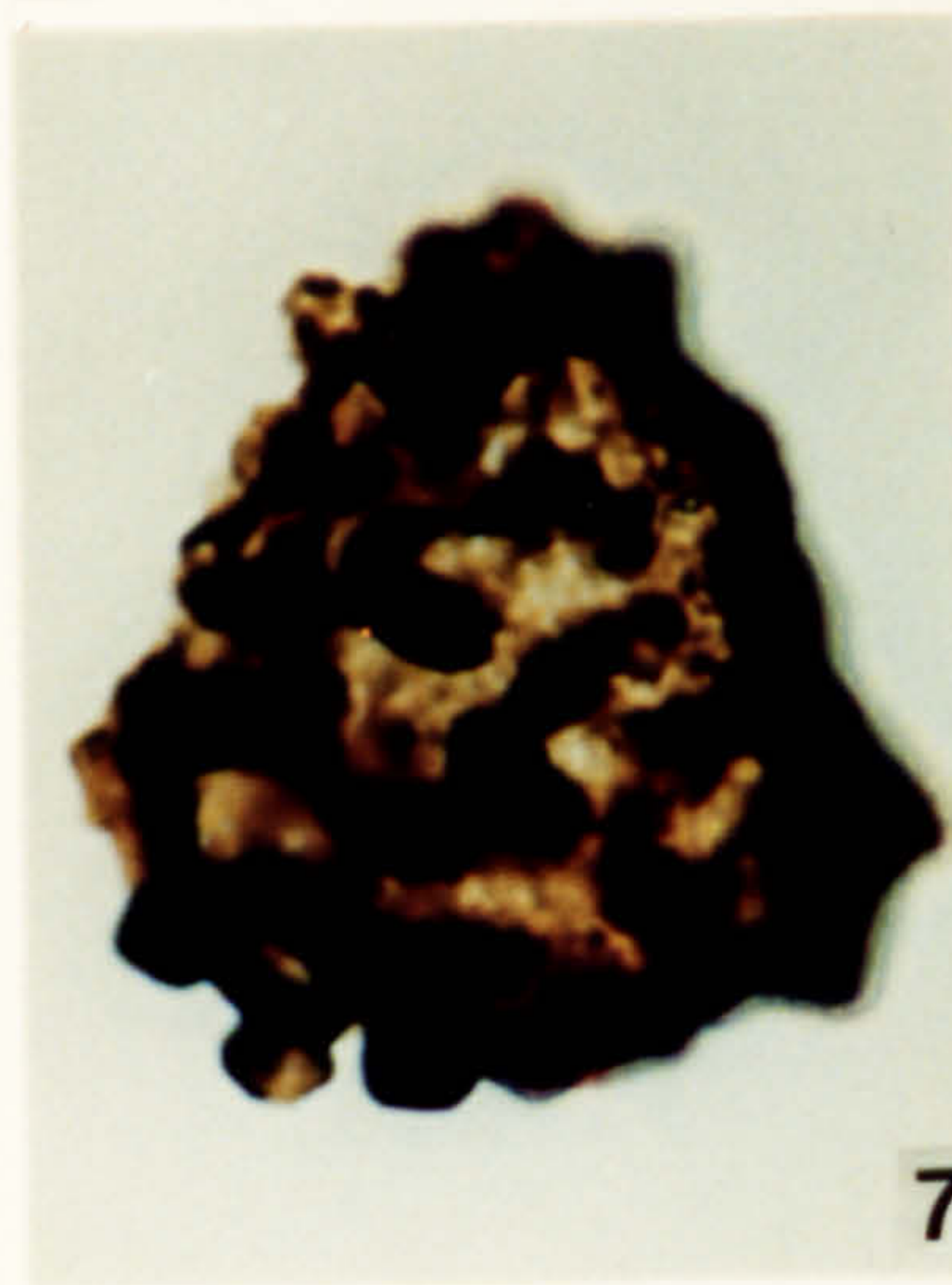
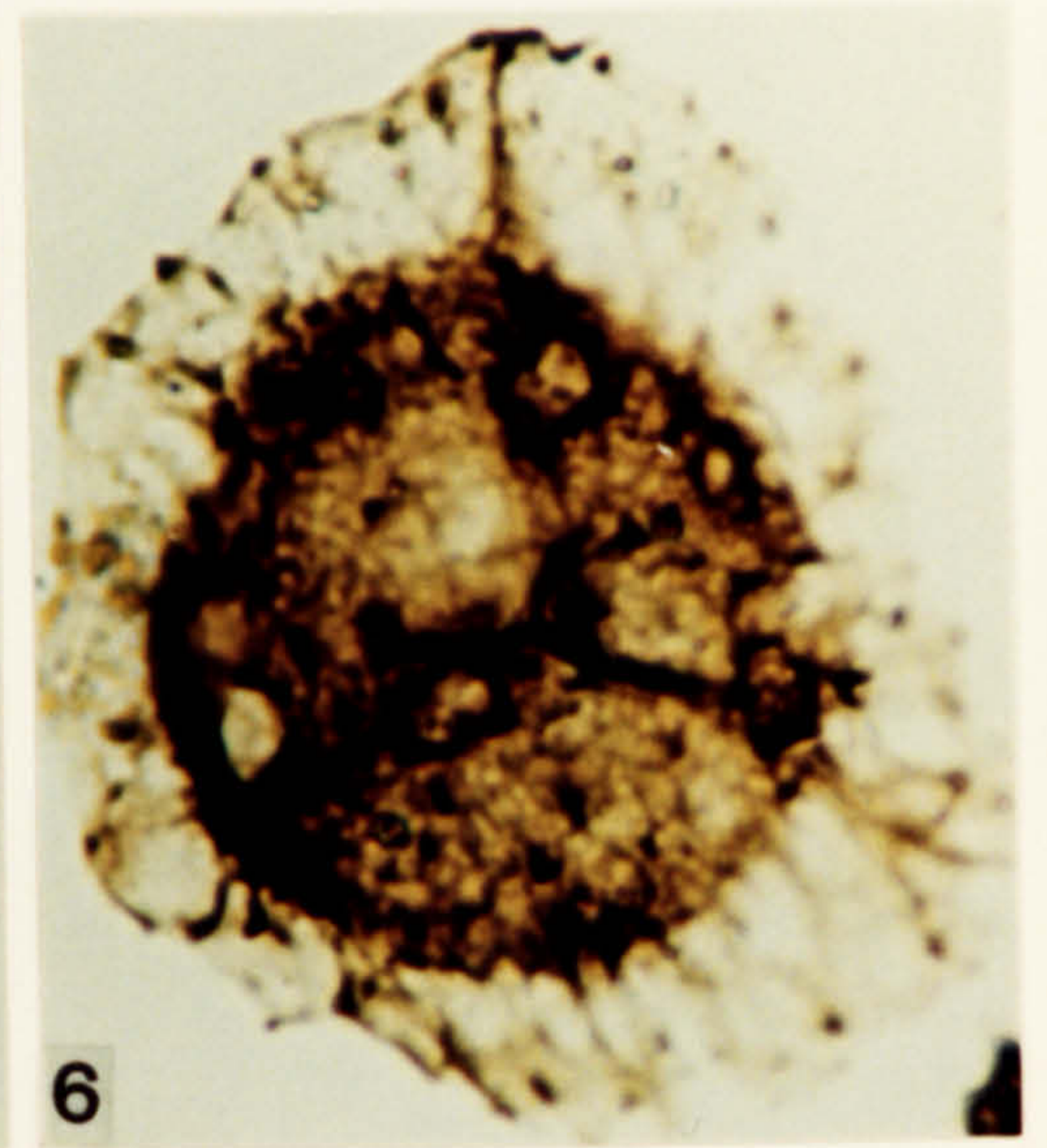
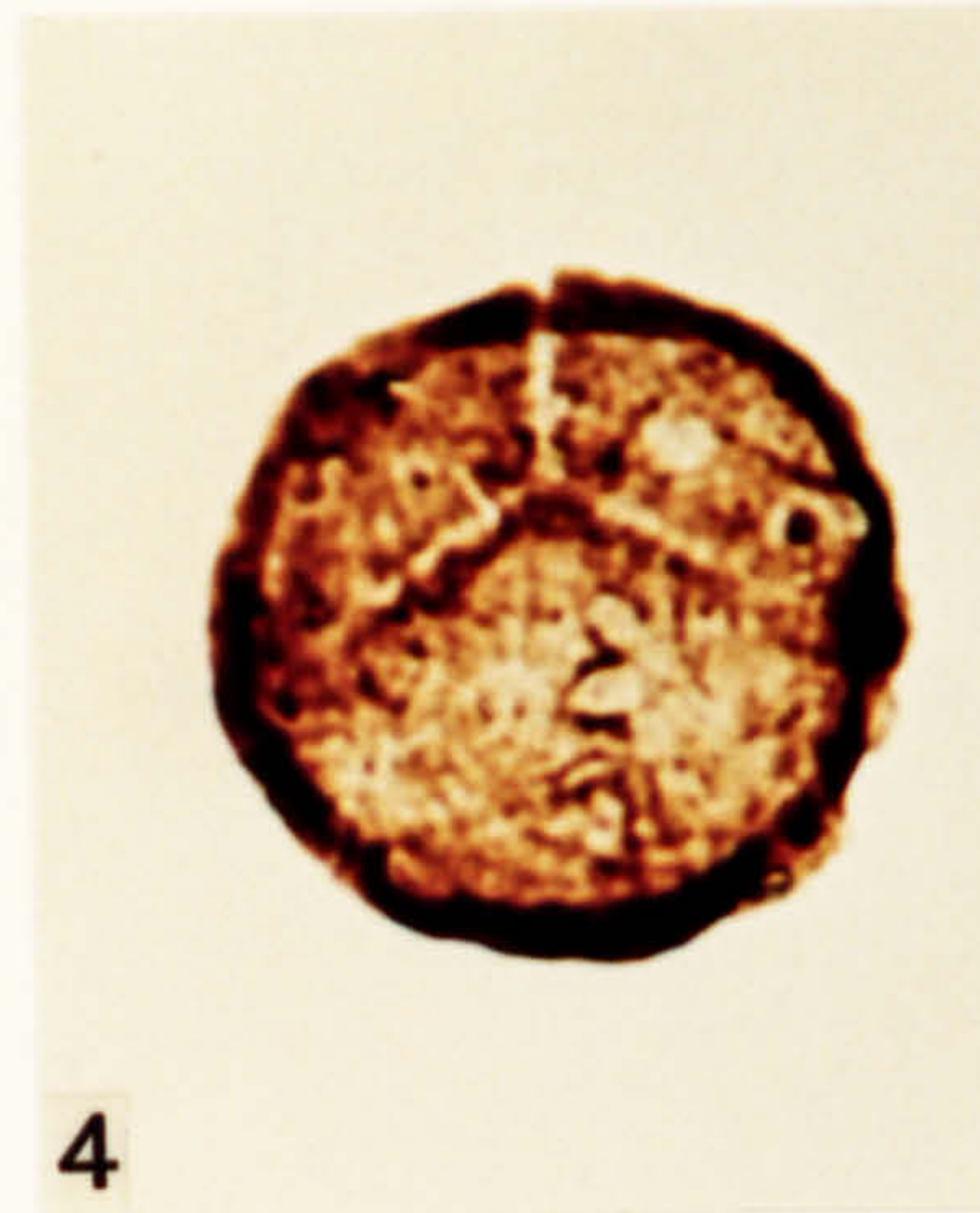
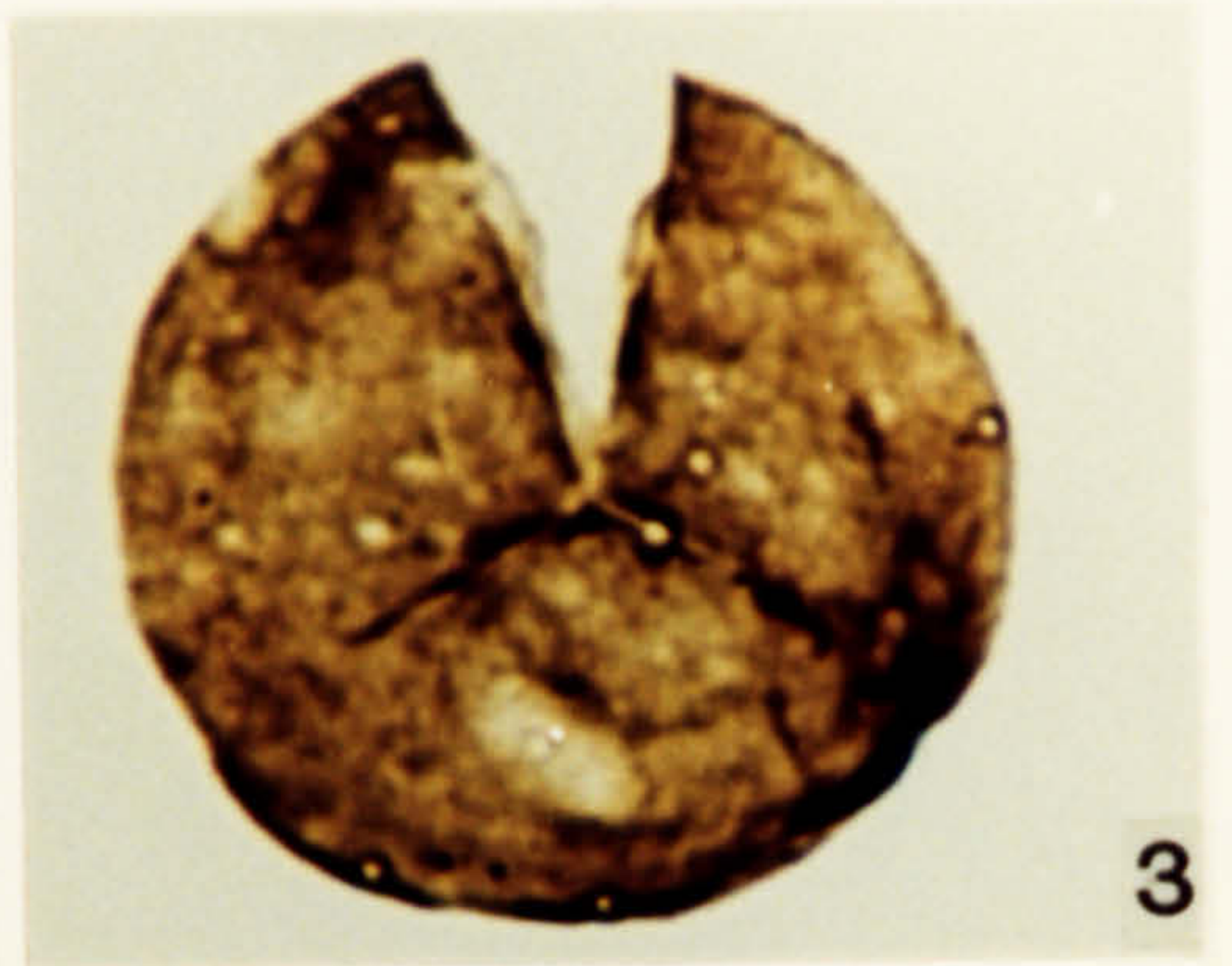
1. *Cymatiosphaera leonensis* Cramer & Diez 1976. OD 1496, S-1, E24\2.
2. *Muraticavia* sp. 1. OD 1496, 1-5, M14\3.
3. *Muraticavia* sp. 1. OD 1496, S-1, S19\2.
4. *Cymatiosphaera* sp. OD 1496, S-1, E45\3.
5. *Pterospermella eruptio?* Martin 1983. OD 1496, 1-1, W13\2.
6. *Sphaerochitina pilosa* Collinson & Scott 1958. OD 1496, 53um-1, O36\2 (R).
7. Filamentous elements. OD 1496, 53um-1, O36\2.



**Plate 197.**

Spores from the Lefdar Formation, early Strunian in age.

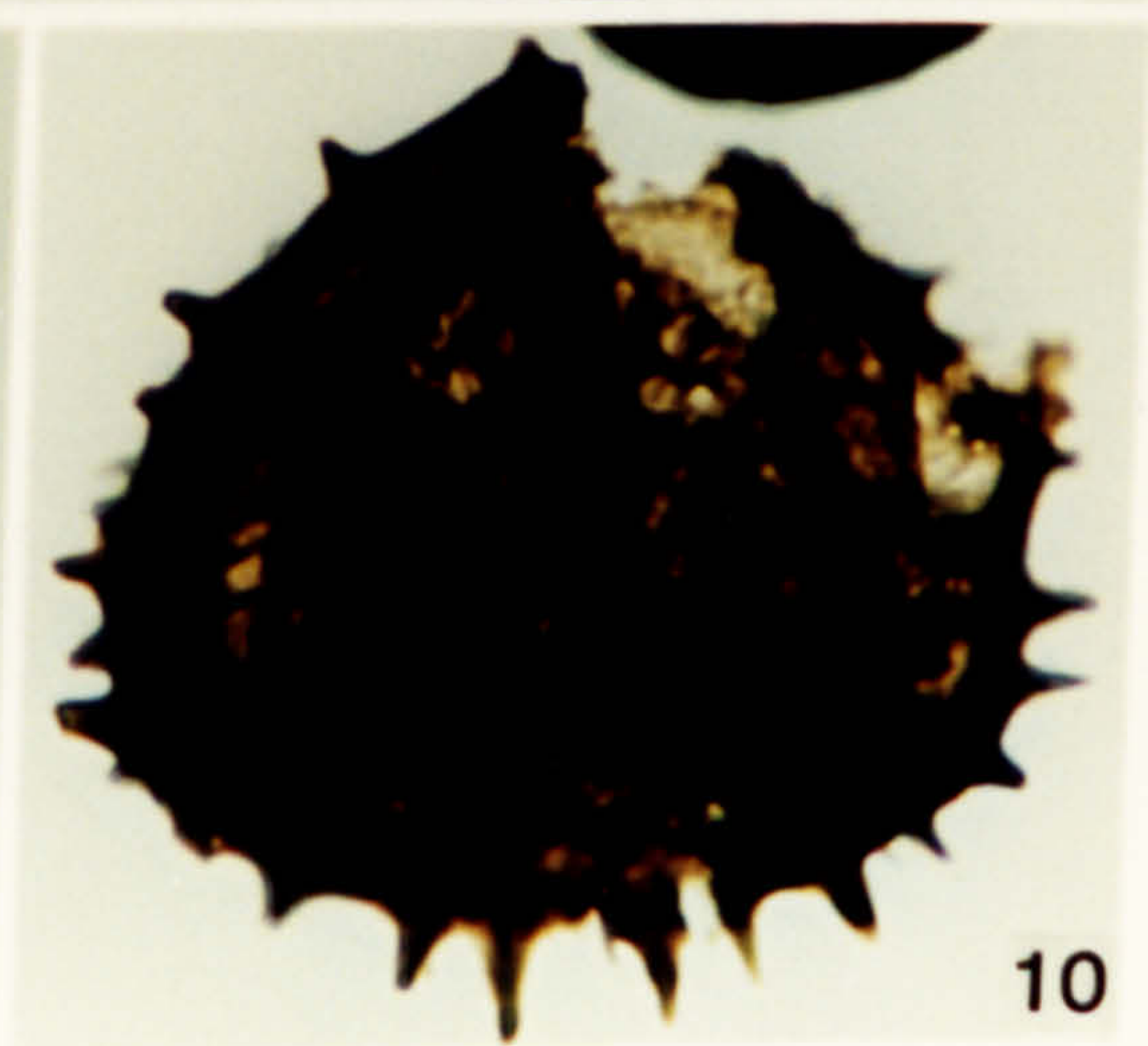
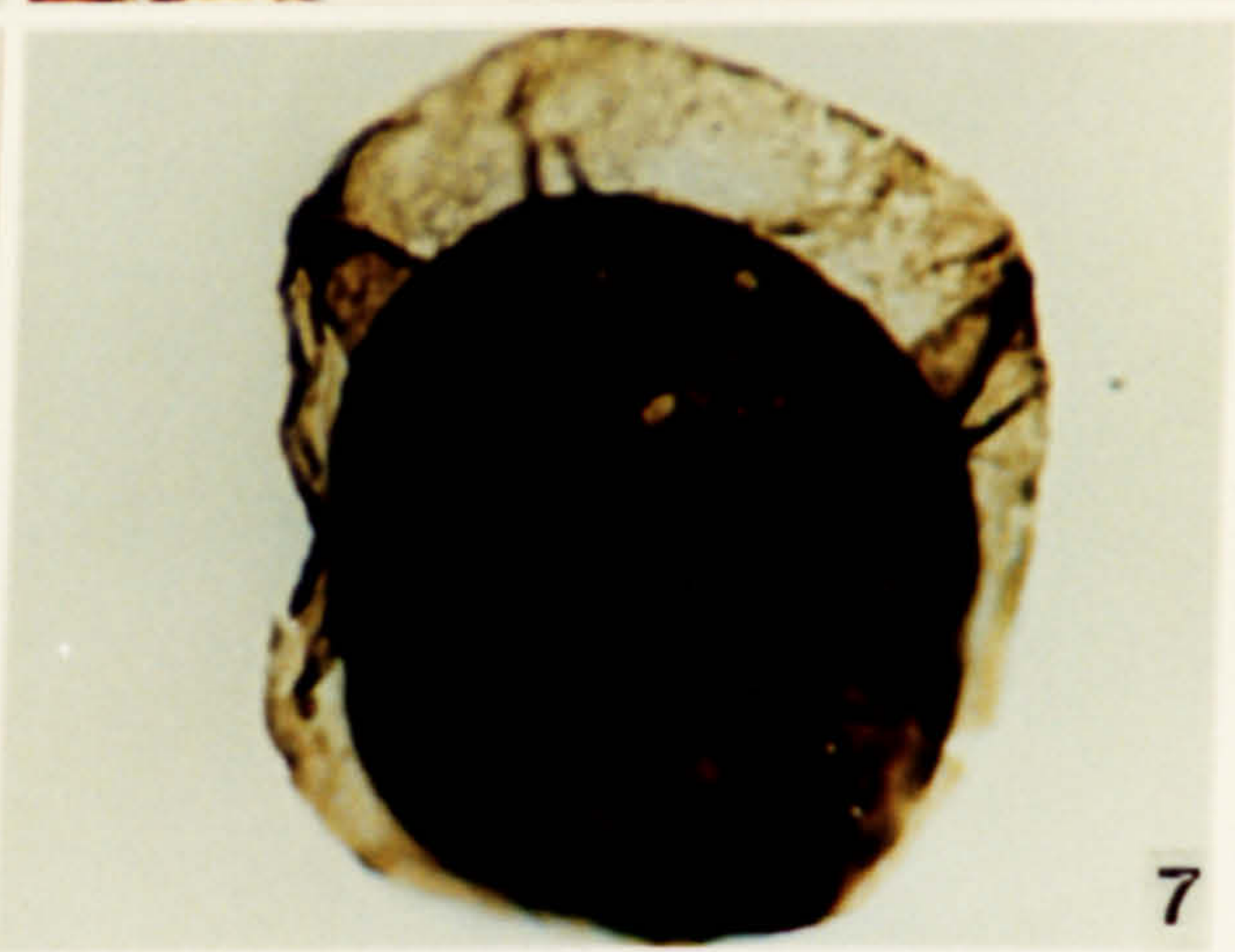
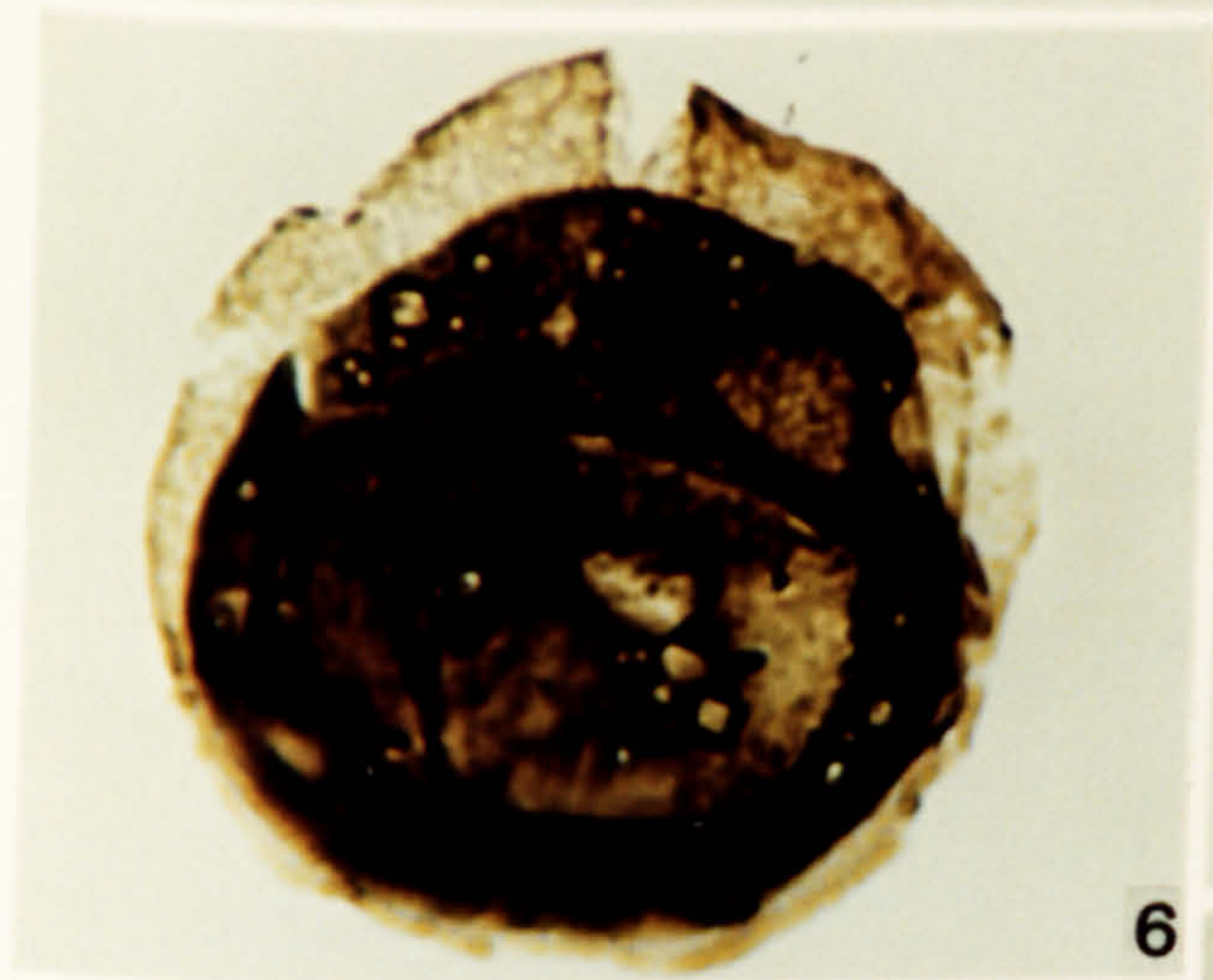
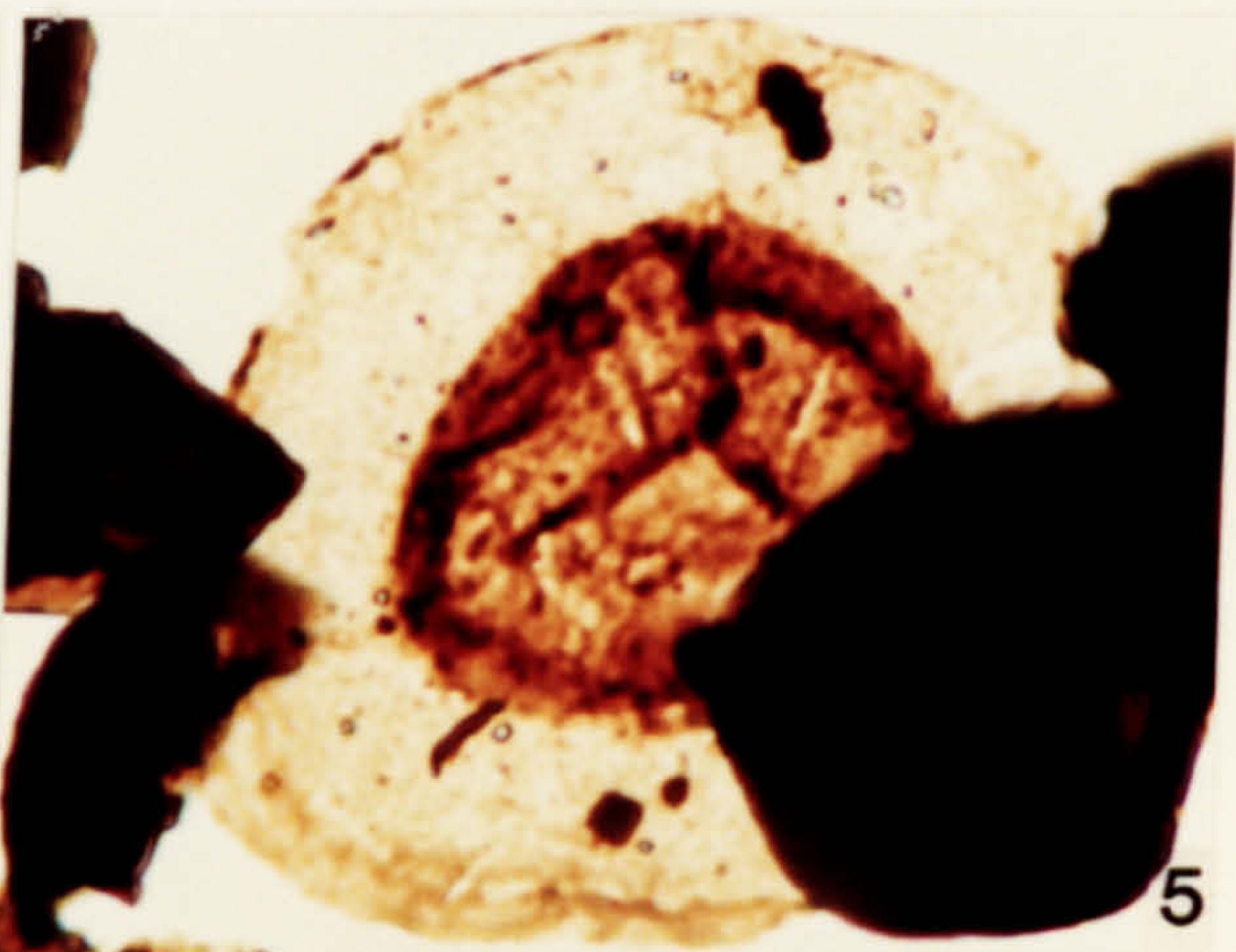
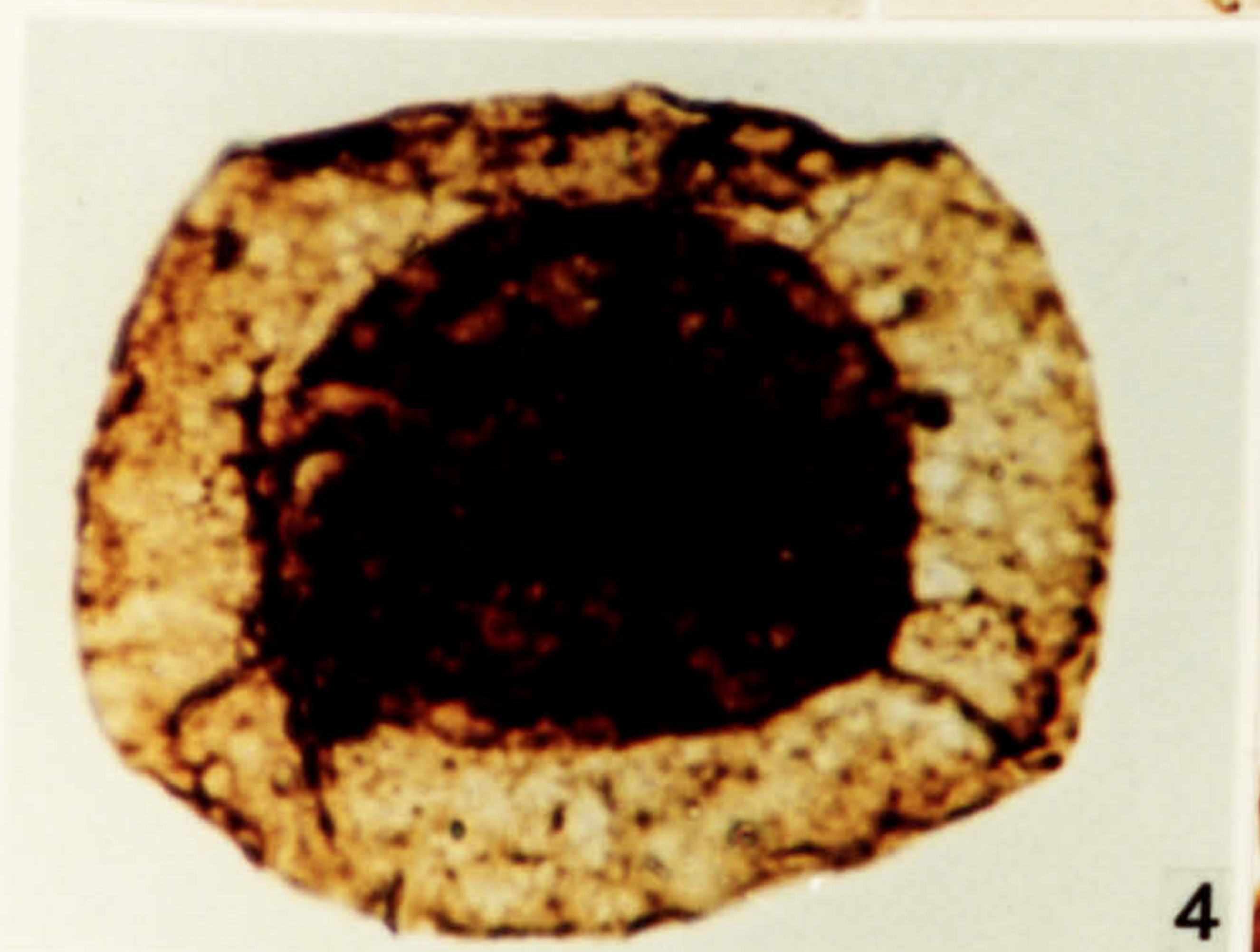
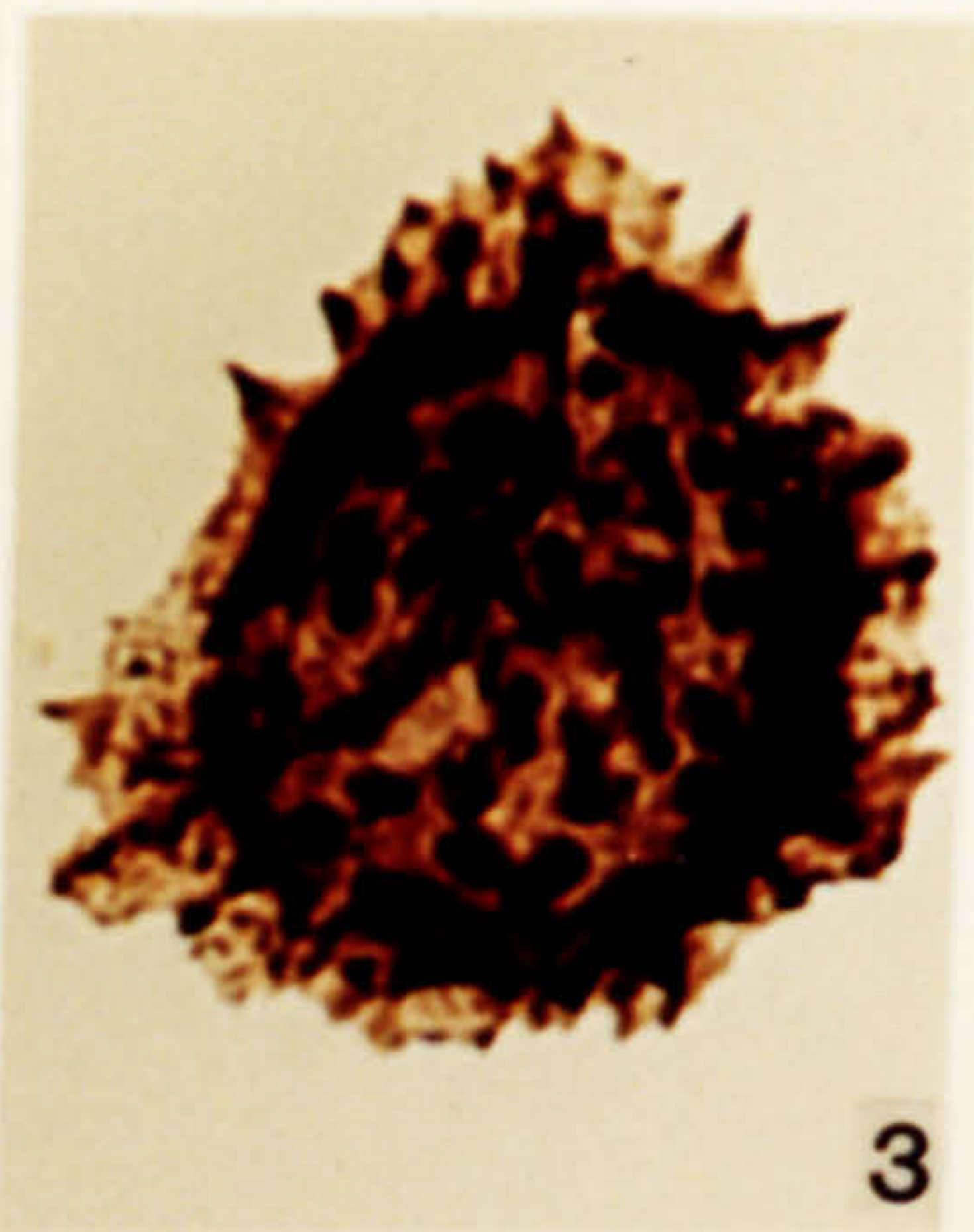
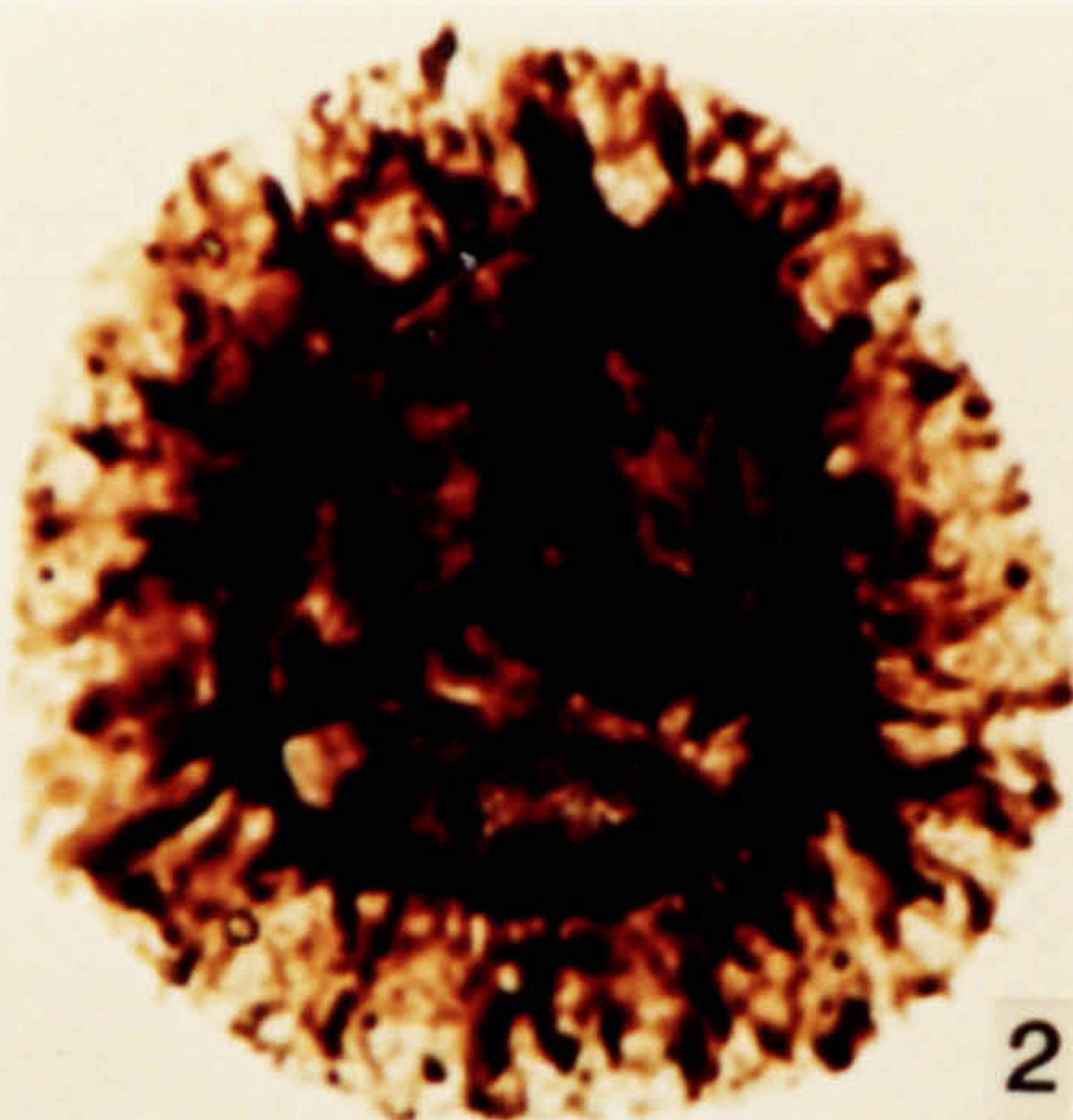
1. *Calamaspora* sp. OD 1496, 1-4, C17\4.
2. *Calamaspora* sp. OD 1496, S-1, G26\1.
3. *Punctatisporites* sp. OD 1496, S-1, H36\3.
4. *Retusotriletes* sp. OD 1496, 1-4, M34\3.
5. *Retusotriletes* sp. OD 1496, S-1, H27\4.
6. *Krauselisporites* sp. OD 1496, S-1, N13\1.
7. *Verrucosisporites scurus* (Naumova) McGregor & Camfield 1982. OD 1496, 1-5, C36\4.
8. *Cristatisporites* sp. OD 1496, 1-5, Z16\1.
9. *Krauselisporites* sp. OD 1496, 1-3, R12\4.
10. *Vallatisporites pusillites* (Kedo) Dolby & Neves 1970. OD 1496, 1-5, U18\1.
11. *Vallatisporites pusillites* (Kedo) Dolby & Neves 1970. OD 1496, S-1, E43\4.
12. *Vallatisporites pusillites* (Kedo) Dolby & Neves 1970. OD 1496, 1-1, U27\3.



**Plate 198.**

Spores from the Lefdar Formation, early Strunian in age.

1. *Vallatisporites pusillites* (Kedo) Dolby & Neves 1970. OD 1496, 1-15, D12\1.
2. *Vallatisporites pusillites* (Kedo) Dolby & Neves 1970. OD 1496, 1-3, F46\4.
3. *Vallatisporites pusillites* (Kedo) Dolby & Neves 1970. OD 1496, 1-11, R38\1.
4. *Discernisporites micromanifestus* (Hacquebard) Sabry & Neves 1971. OD 1496, 1-5, J8\4.
5. *Discernisporites micromanifestus* (Hacquebard) Sabry & Neves 1971. OD 1496, 1-3, U13\1.
6. *Auroraspora* sp. OD 1496, S-1, Y35\1.
7. *Auroraspora* sp. OD 1496, S-1, F48\1.
8. *Grandispora cornuta?* Higgs 1975. OD 1496, S-1, E26\1.
9. *Grandispora cornuta* Higgs 1975. OD 1496, S-1, S40\2.
10. *Grandispora cornuta* Higgs 1975. OD 1496, S-1, T21\1.

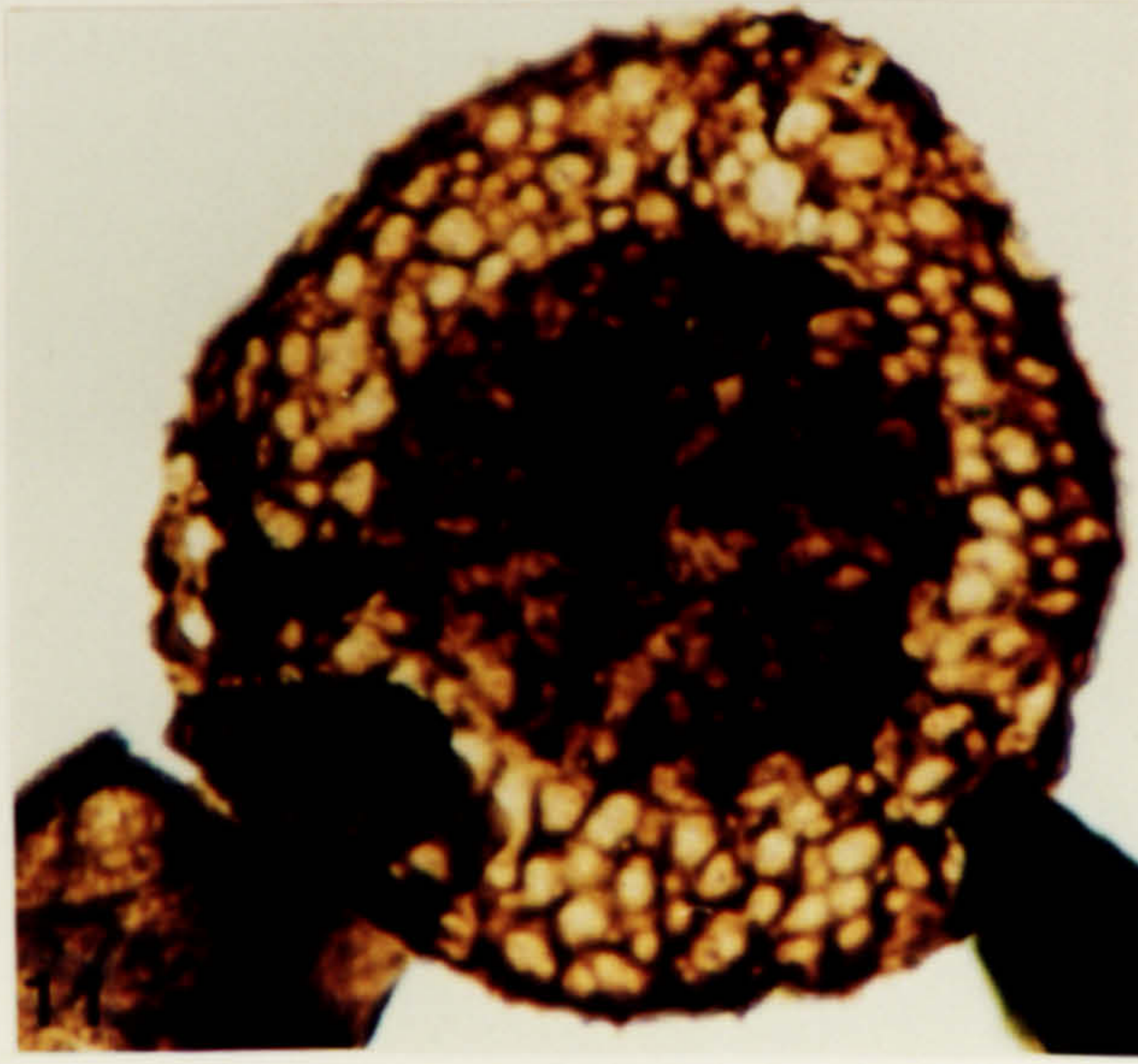
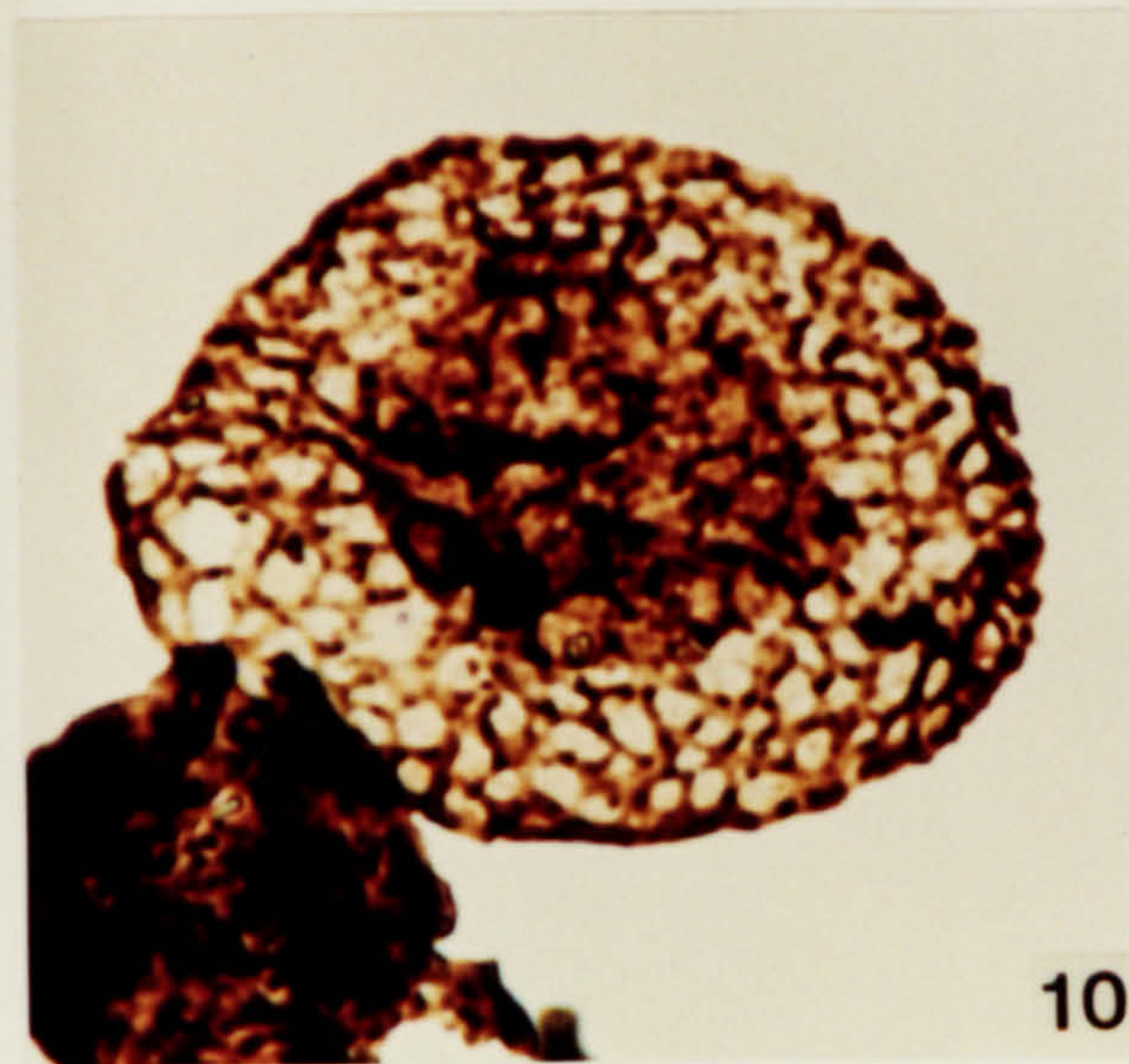
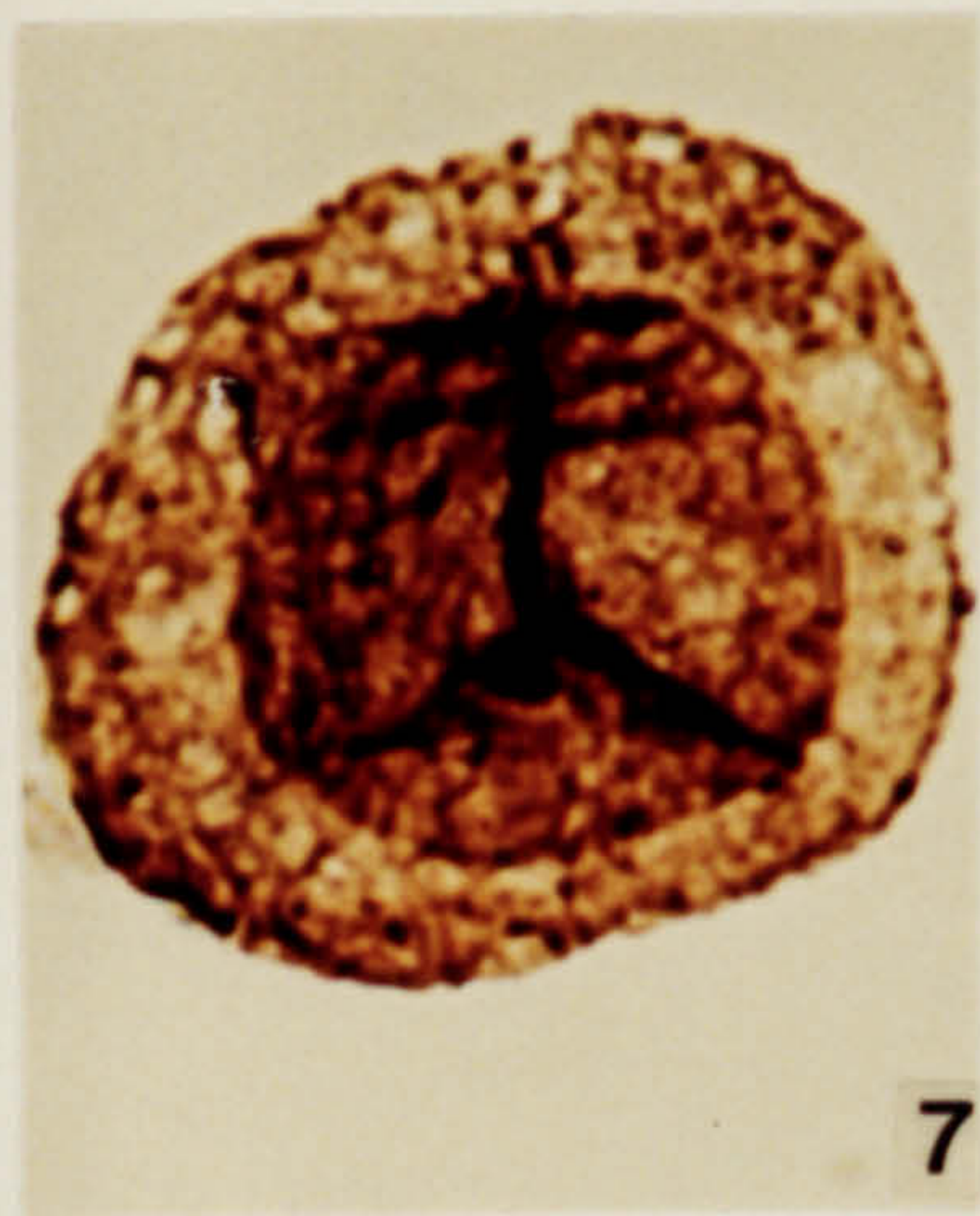
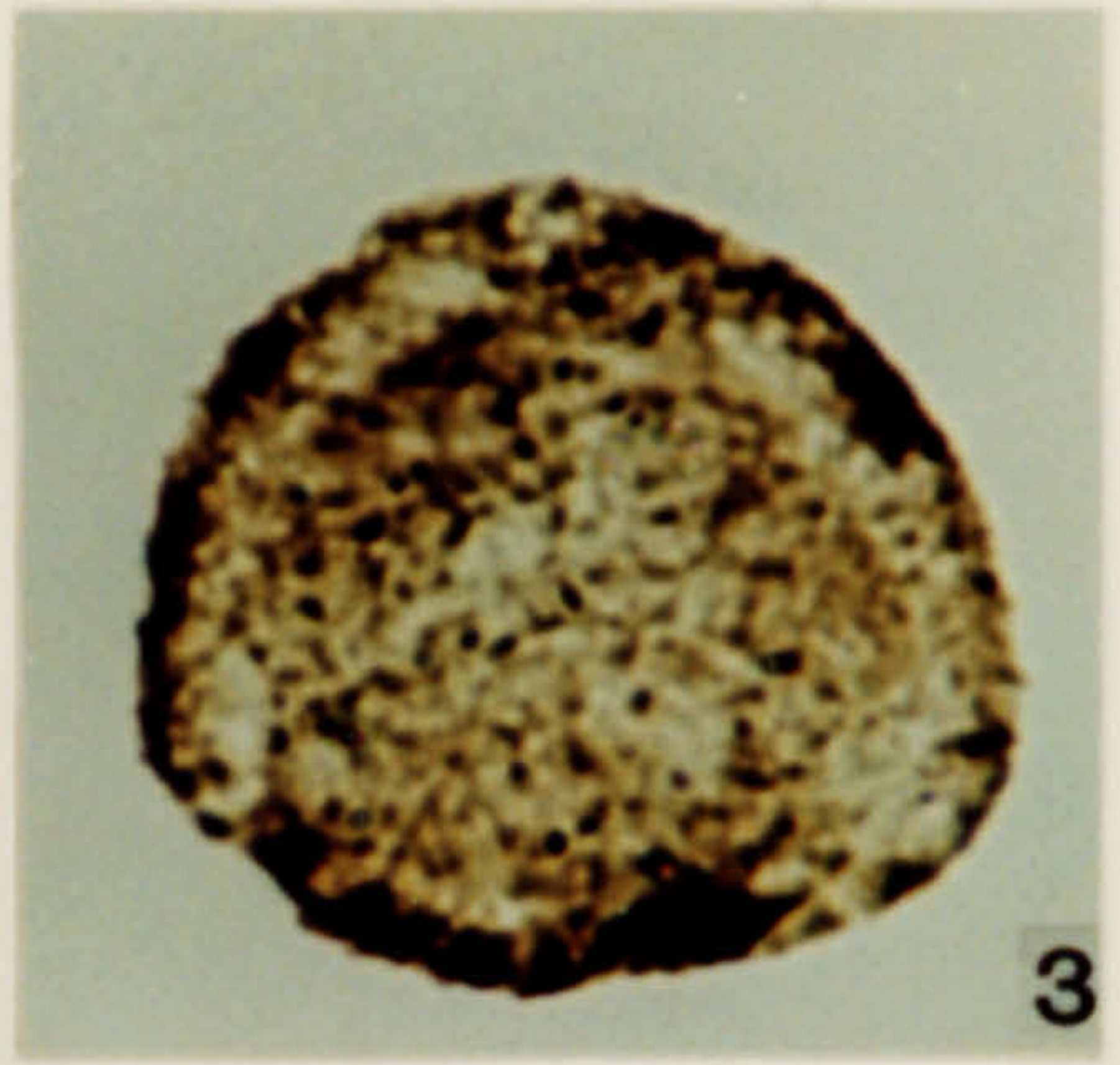
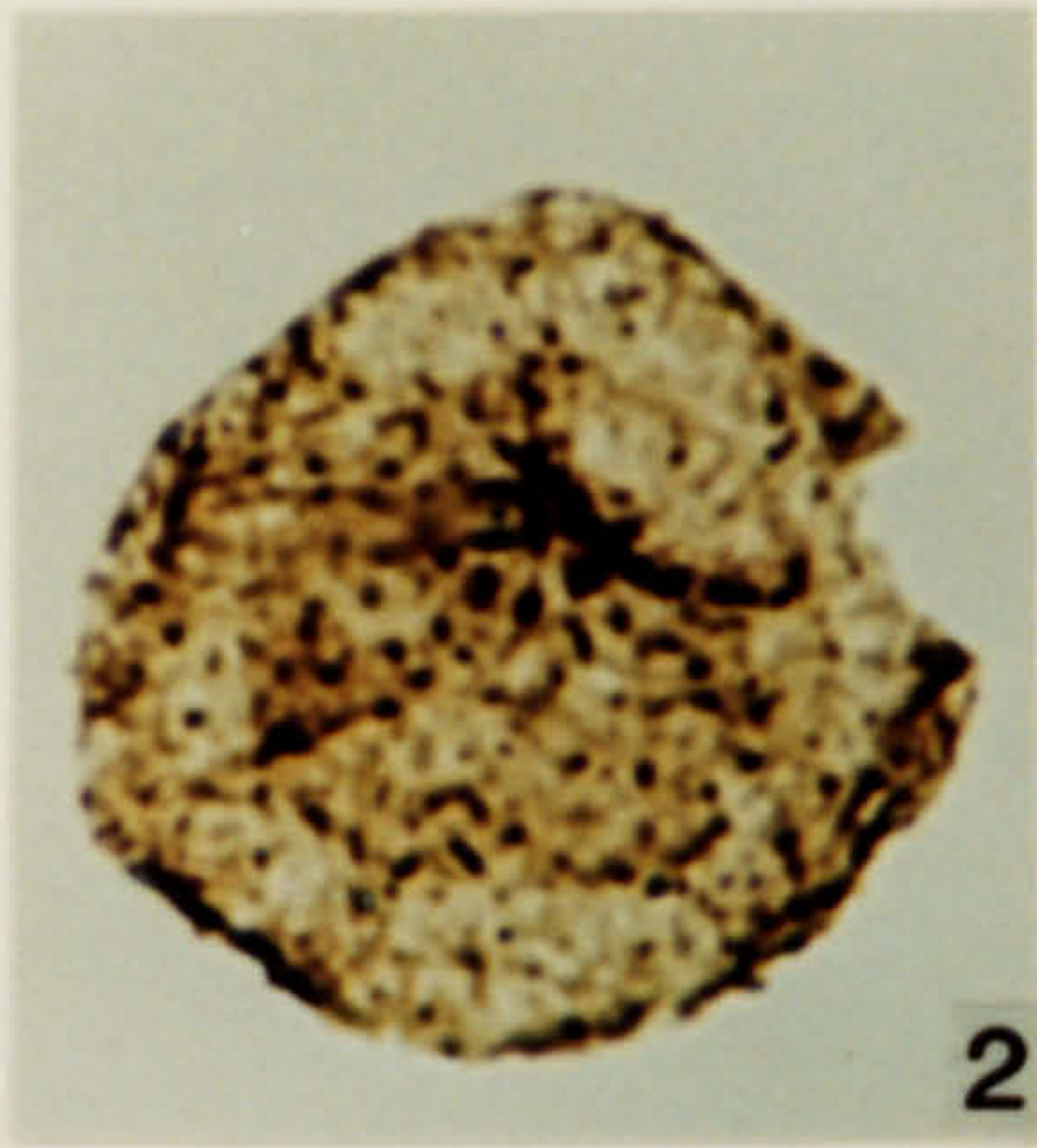




**Plate 199.**

Spores from the Lefdar Formation, early Strunian in age.

1. *Spelaeotriletes granulatus* (Naumova) Moreau-Benoit 1980. OD 1496, 1-1, V29\3.
2. *Spelaeotriletes granulatus* (Naumova) Moreau-Benoit 1980. OD 1496, S-1, U20\4.
3. *Spelaeotriletes granulatus* (Naumova) Moreau-Benoit 1980. OD 1496, S-1, P21\3.
4. *Spelaeotriletes* sp. OD 1496, 1-1, O32\2.
5. *Spelaeotriletes* sp. OD 1496, 1-4, P33\4.
6. *Spelaeotriletes granulatus* (Naumova) Moreau-Benoit 1980. OD 1496, 1-4, T8\2.
7. *Retispora lepidophyta* (Kedo) Playford 1976. OD 1496, 1-4, N3\1.
8. *Retispora lepidophyta* (Kedo) Playford 1976. OD 1496, S-1, N9\4.
9. *Retispora lepidophyta* (Kedo) Playford 1976. OD 1496, 1-5, J14\3.
10. *Retispora lepidophyta* (Kedo) Playford 1976. OD 1496, 1-3, T44\-..
11. *Retispora lepidophyta* (Kedo) Playford 1976. OD 1496, 1-1, N16\3.



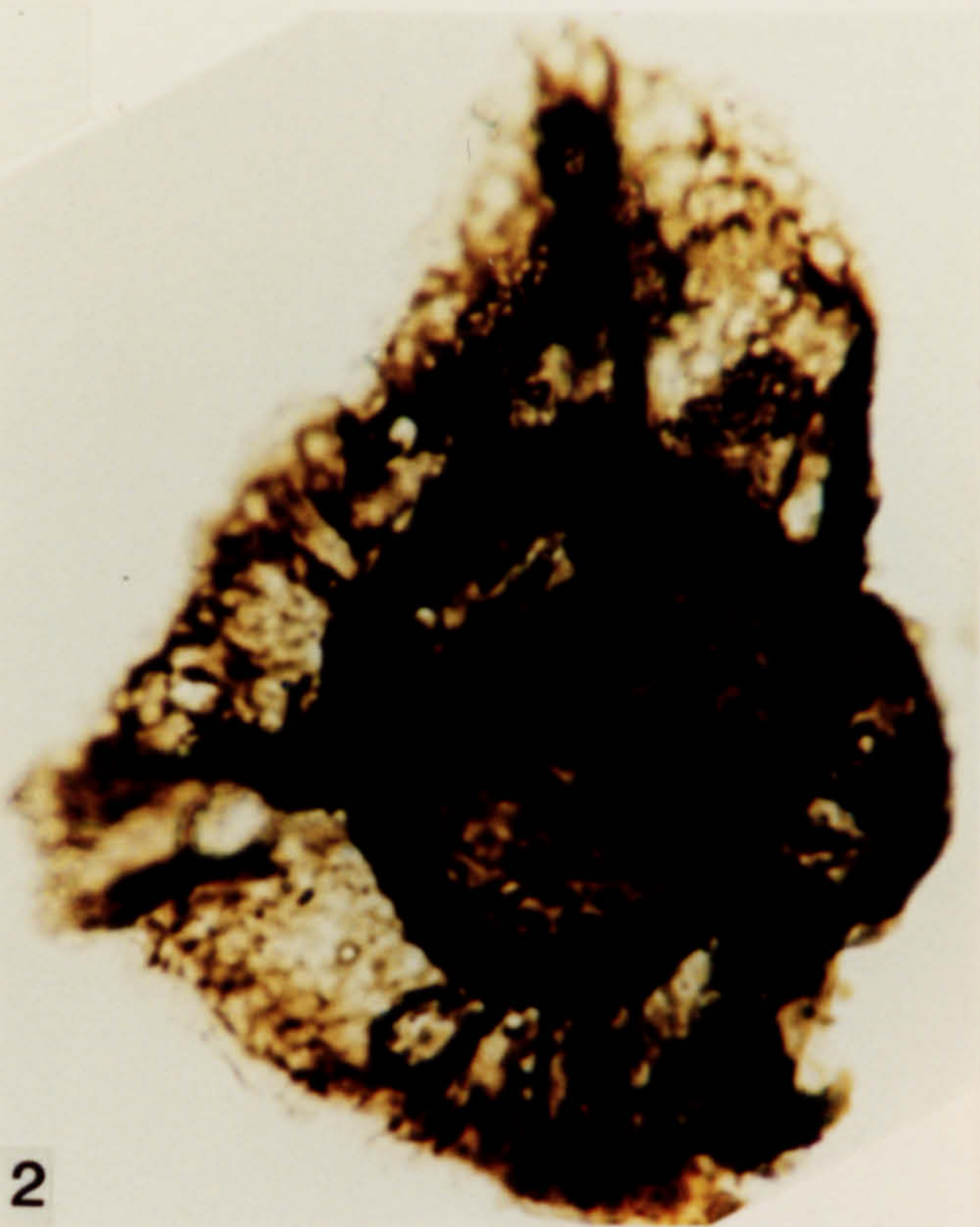
**Plate 200.**

Spores from the Lefdar Formation, early Strunian in age.

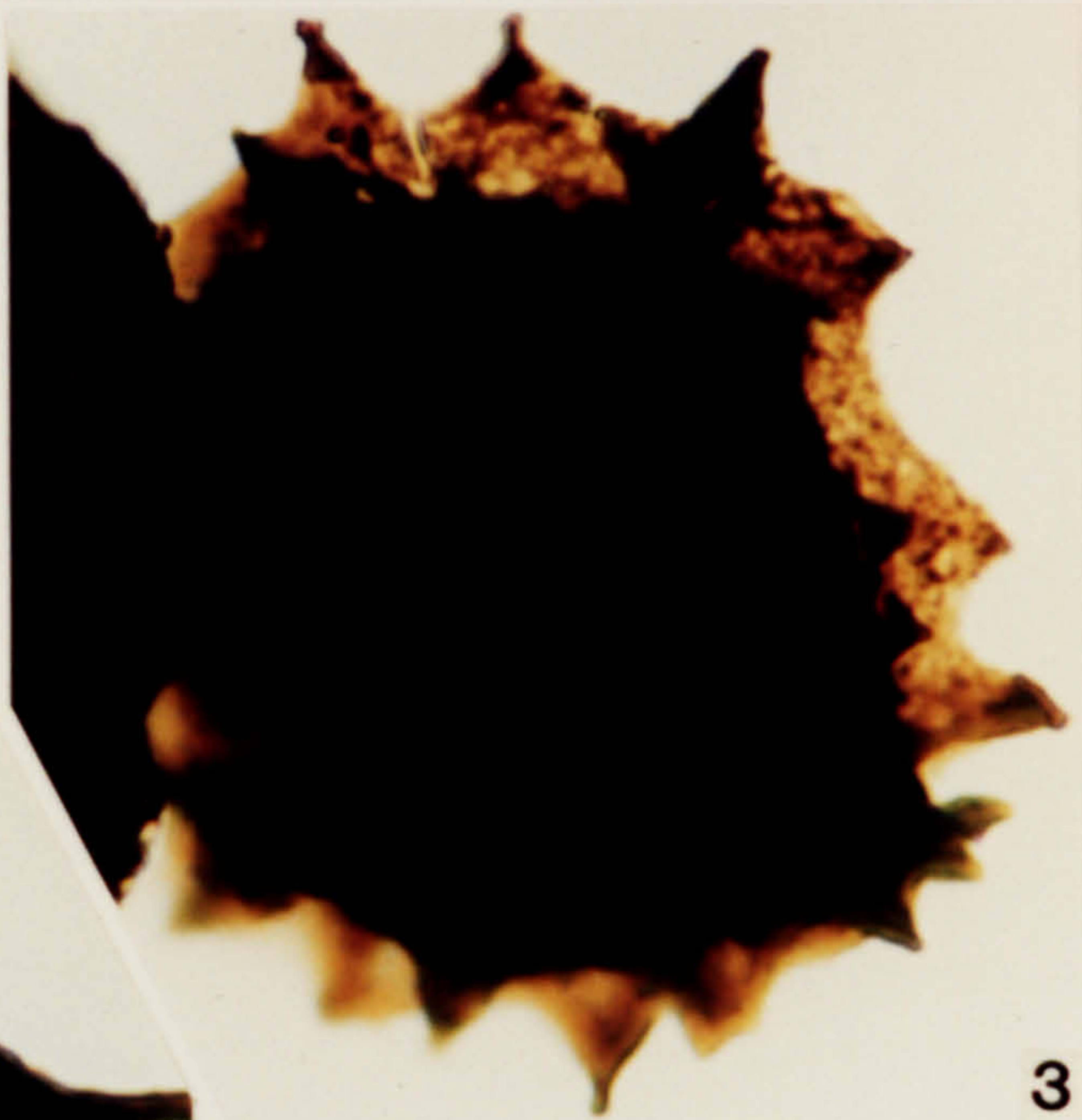
1. *Hystriehosporites porcatus* (Winslow) Allen 1965. OD 1496, 53um-1, F15\4.
2. *Auroraspora torquata* Higgs 1975. OD 1496, S-1, P13\1.
3. *Ancyrospora* sp. OD 1496, 53um-1, Q31\1.
4. *Ancyrospora furcula* Owens 1971. OD 1496, 53um-5, H35\3.
5. *Hystriehosporites* sp. OD 1496, 1-5, Y8\3.



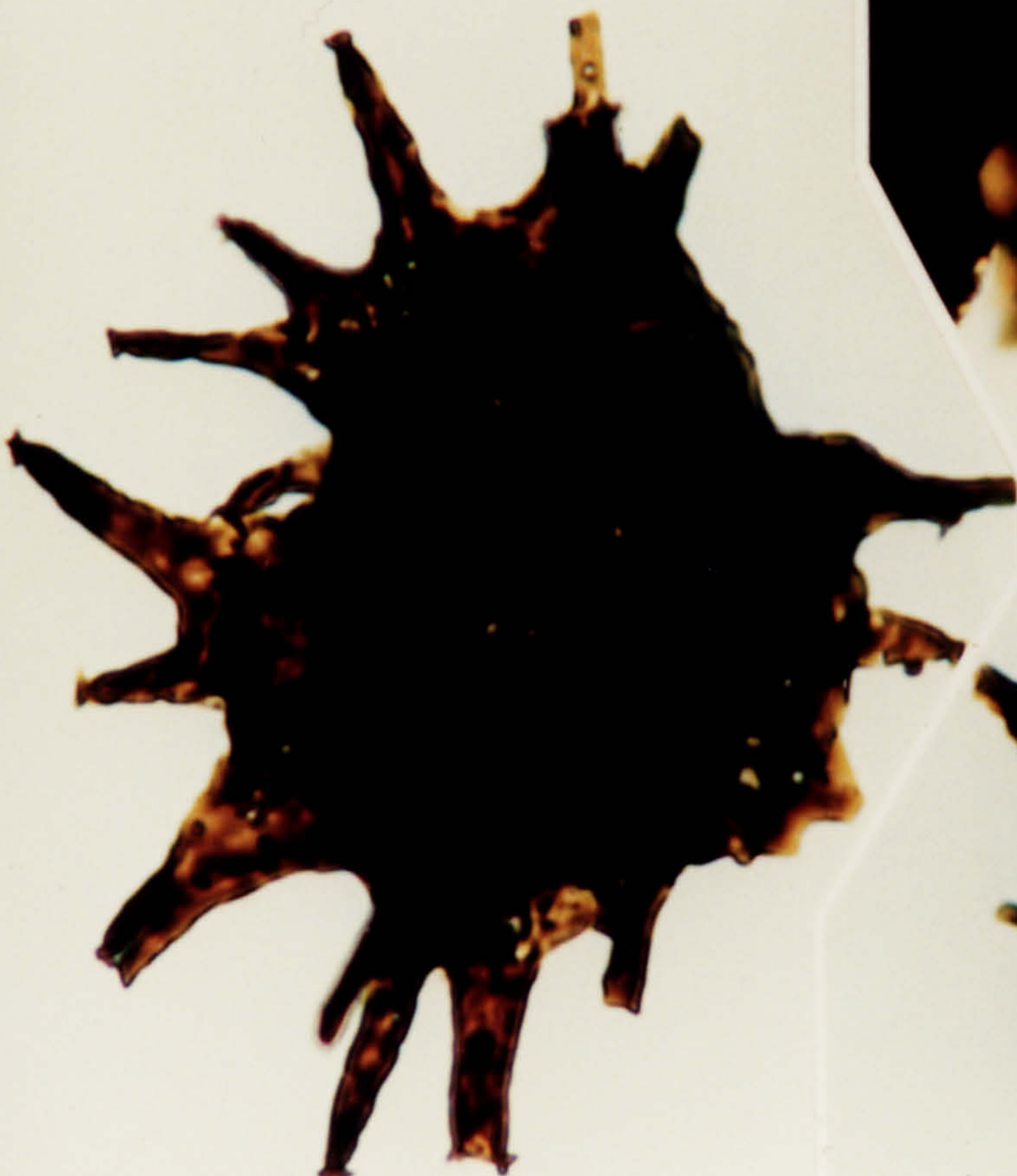
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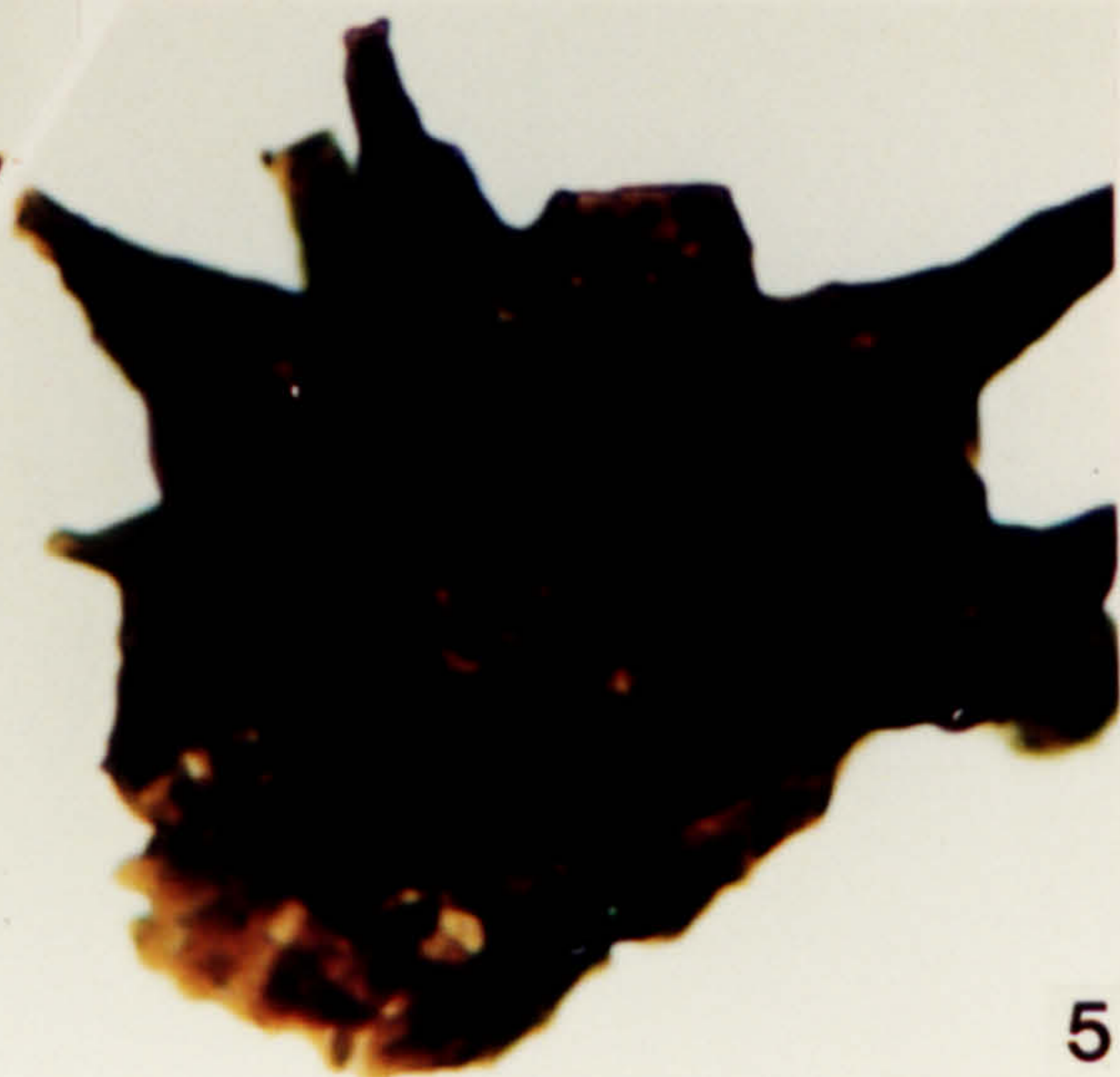
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