

**High resolution comparative palynostratigraphy and palaeoecology
of Oligocene sequences in the terrestrial basins of the Western
British Isles and the marine North Sea Basin.**

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Volume III

PLATES

A thesis submitted in partial fulfilment of the requirements for the Degree of Doctor
of Philosophy

**Centre for Palynological Studies
Department of Earth Sciences
University of Sheffield**

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PLATES

For each plate illustration the taxa figured are listed on the adjacent page. For each figure the name of the taxon is given followed by the location of the sample, the depth of the sample, the slide letter (i.e. a,b,c etc.), the England Finder reference and the magnification.

The photomicrographs were taken on a Olympus BH-2 transmitted light palynological microscope, using phase contrast objectives and the attached Olympus 35mm camera set up.

Plates 1 to 36 illustrate the spore, fungal spore and pollen taxa encountered and are organised in the same order as the systematic chapter. Plates 37 to 69 illustrate dinoflagellates, acritarchs and other algae again following the same order as presented in the systematic chapter. Plate 70 illustrates a thin section of a lignite from the Stanley Bank Basin Borehole.

PLATE 1

Figure 1 *Corrusporis granotuberculatus* 73/36, 12.65m, slide a, U36, x870

Figure 2 and 3 *Corrusporis tuberculatus* 88/12, 41.25m, slide a, H33/1, x870

Figure 4 and 5 *Corrusporis tuberculatus* 80/14, 64.26m, slide a, F33/1, x1720

Figure 6 *Echinosporis echinatus* 21/28, 3180m, slide a, S37, x870

Figure 7 *Echinosporis echinatus* 78/1, 133m, slide c, R42/4, x870

Figure 8 *Echinosporis* sp. 1 80/14, 74.47m, slide d, K49, x1720

PLATE 1

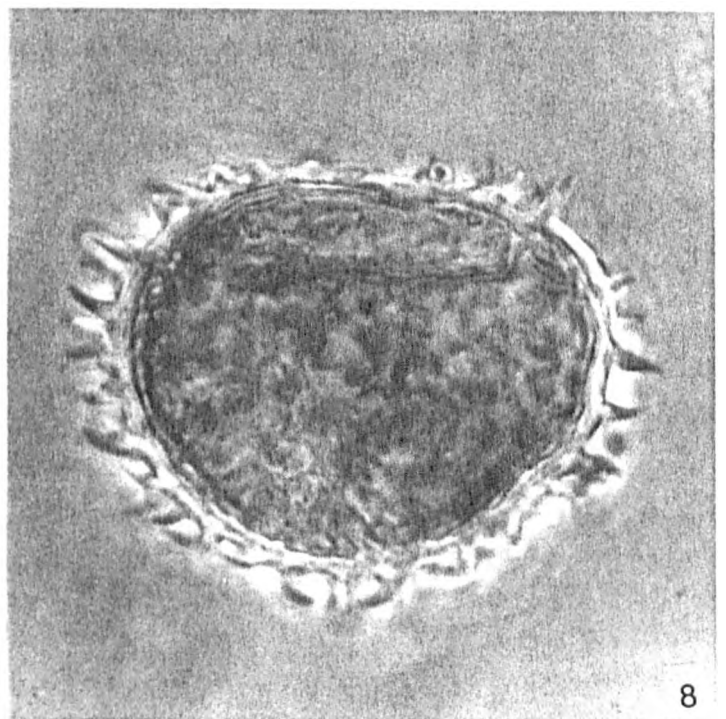
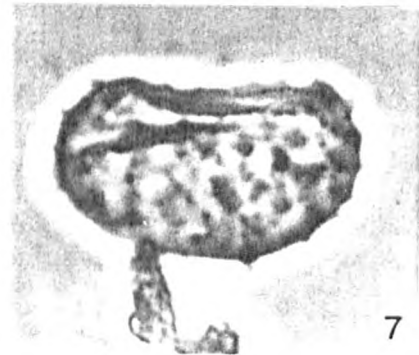
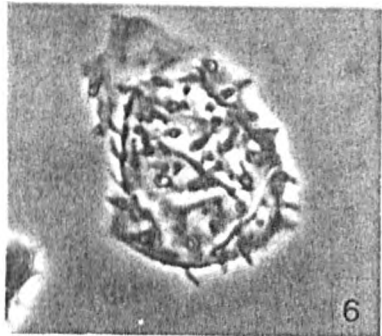
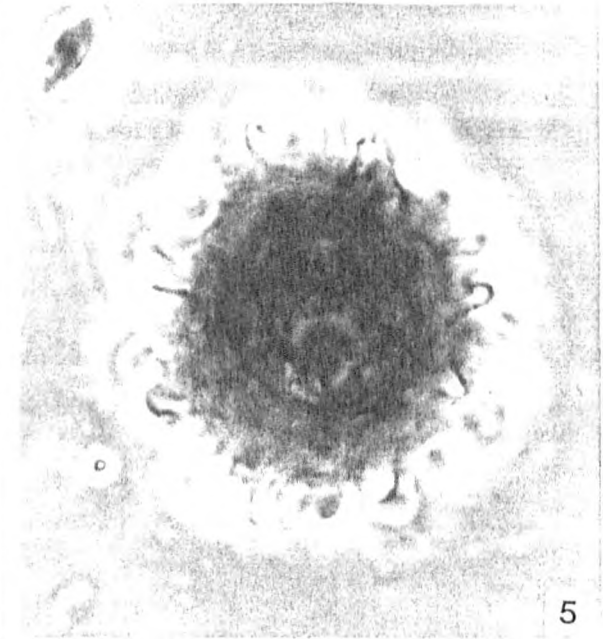
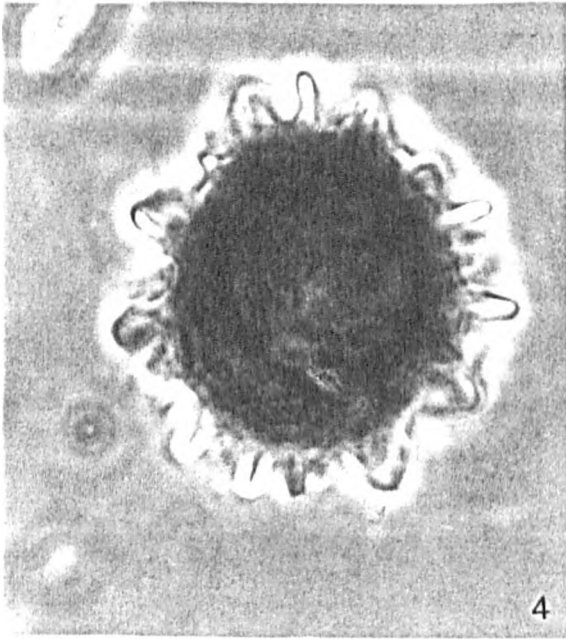
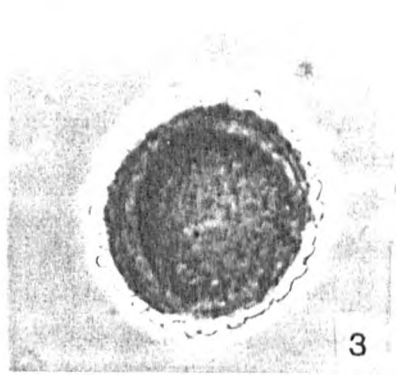
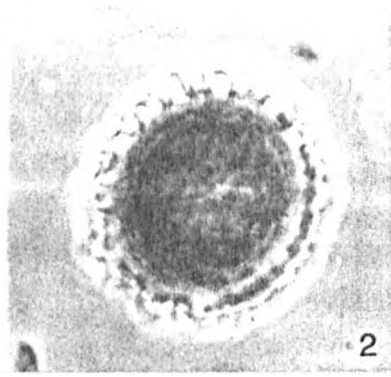


PLATE 2

Figure 1 and 2 *Laevigatosporites discordatus* Well 28, 6.1m, slide a, S46, x870

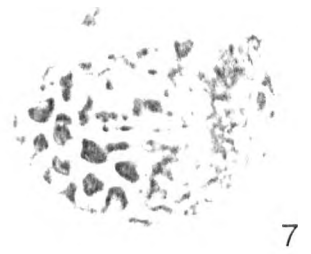
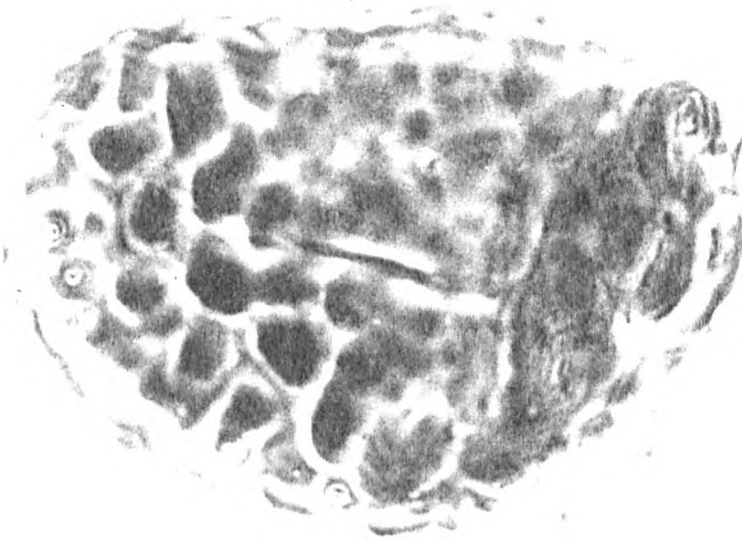
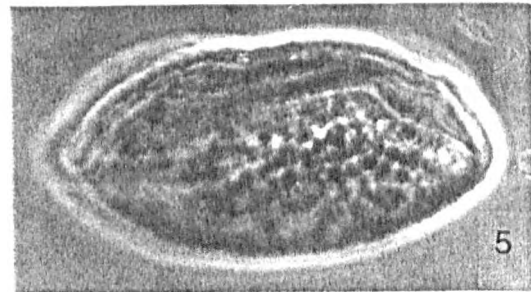
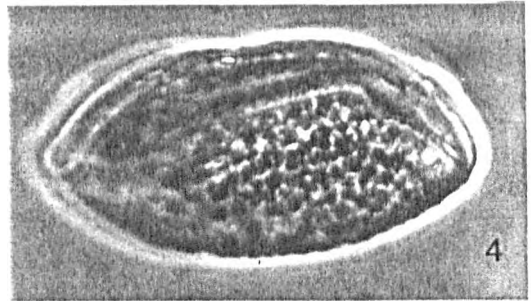
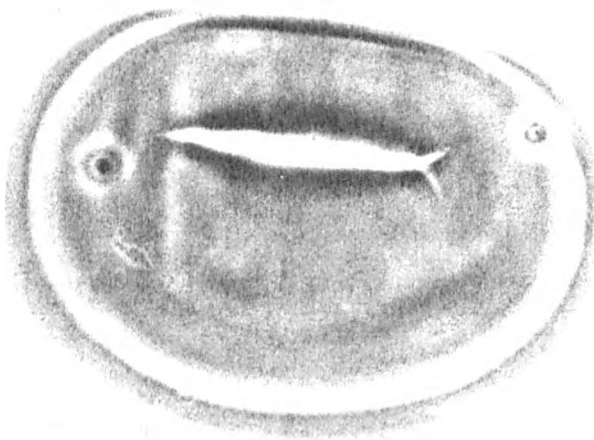
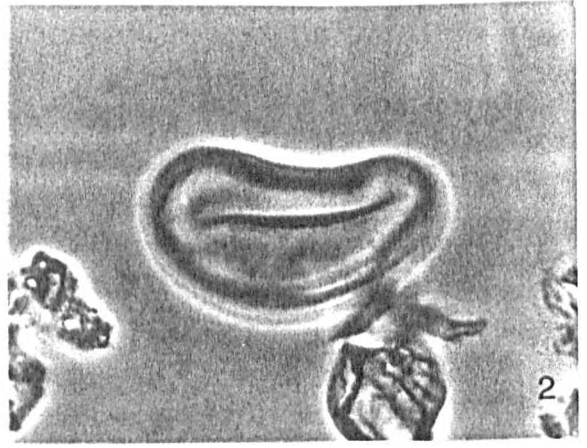
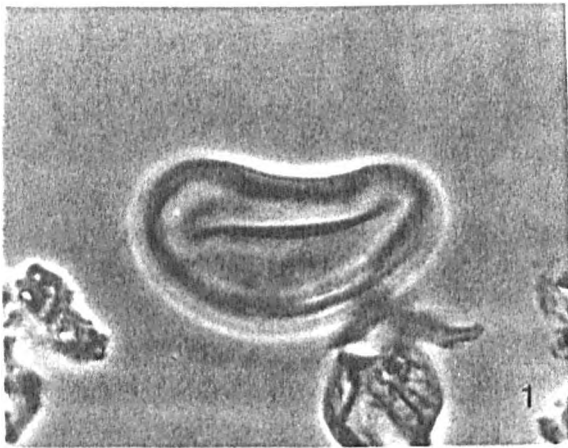
Figure 3 *Laevigatosporites haardti* 73/36, 8-10m, slide a, O37/2, x1720

Figure 4 and 5 *Microfoveolatosporis pseudodentatus* 80/14, 74.47m, slide d, S37/3, x870

Figure 6 *Verrucatosporites alienus* 78/1, 124.37m, slide c, U35/2, x1720

Figure 7 *Verrucatosporites alienus* 78/1, 124.37m, slide c, U35/2, x870

Figure 8 *Verrucatosporites alienus* 78/1, 123.04m, slide c, T39/2, x870



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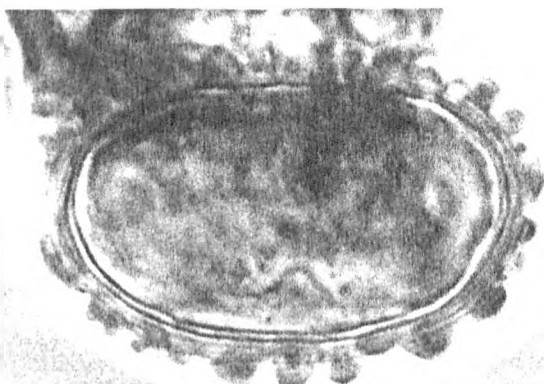
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PLATE 3

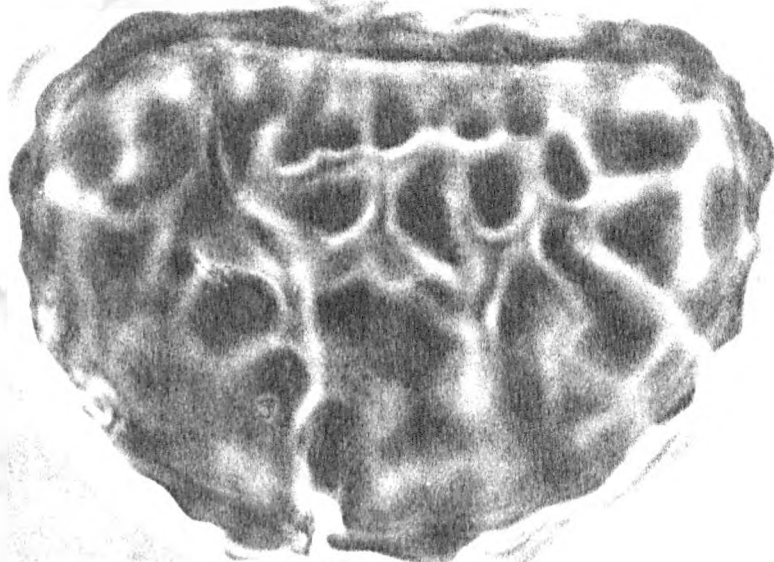
Figure 1 *Verrucatosporites balticus* 78/1, 130.1m, slide a, H45/1, x870

Figure 2 *Verrucatosporites favus* 78/1, 123.04m, slide c, T39/2, x1720

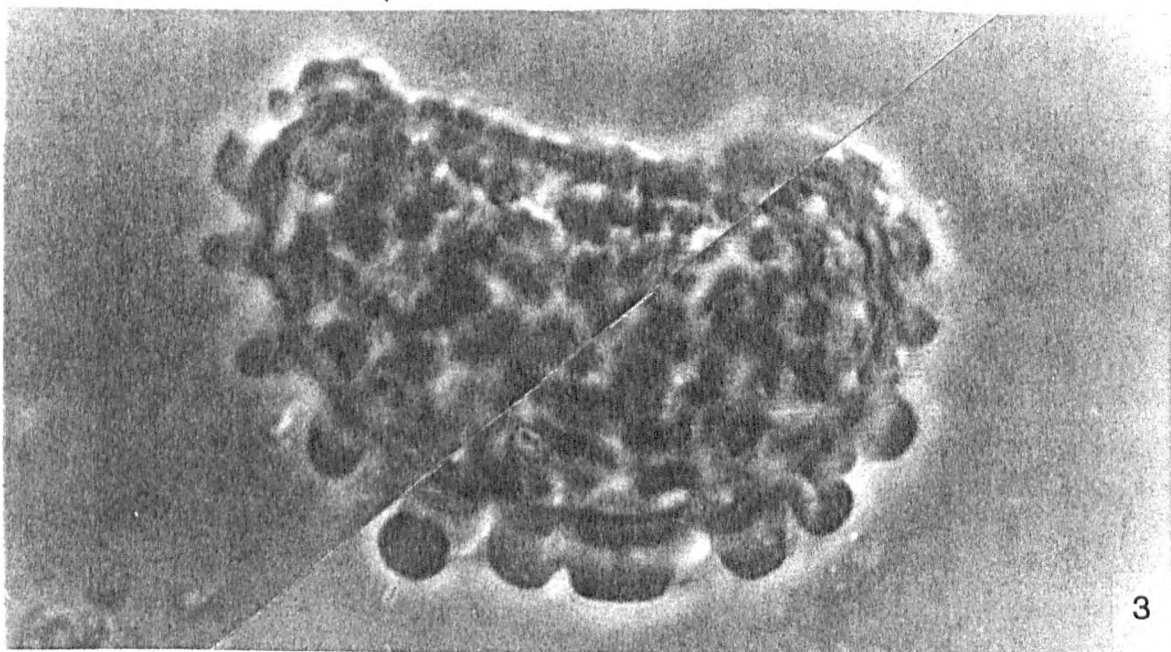
Figure 3 *Verrucatosporites histiopteroides* 80/14, 77.0m, slide a, P45/3, x1720



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2



3

PLATE 4

Figure 1 *Verrucatosporites histiopteroides* 80/14, 63.97m, slide b, T29/4, x1720

Figure 2 and 3 *Verrucatosporites megabalticus* 80/14, 67.75m, slide a, X45/4,
x1720

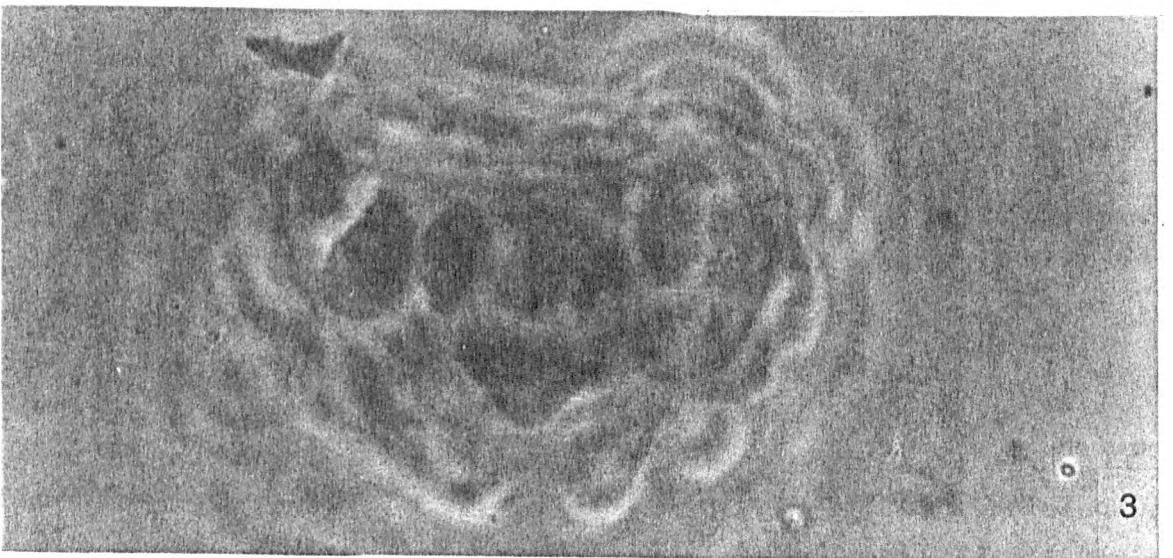
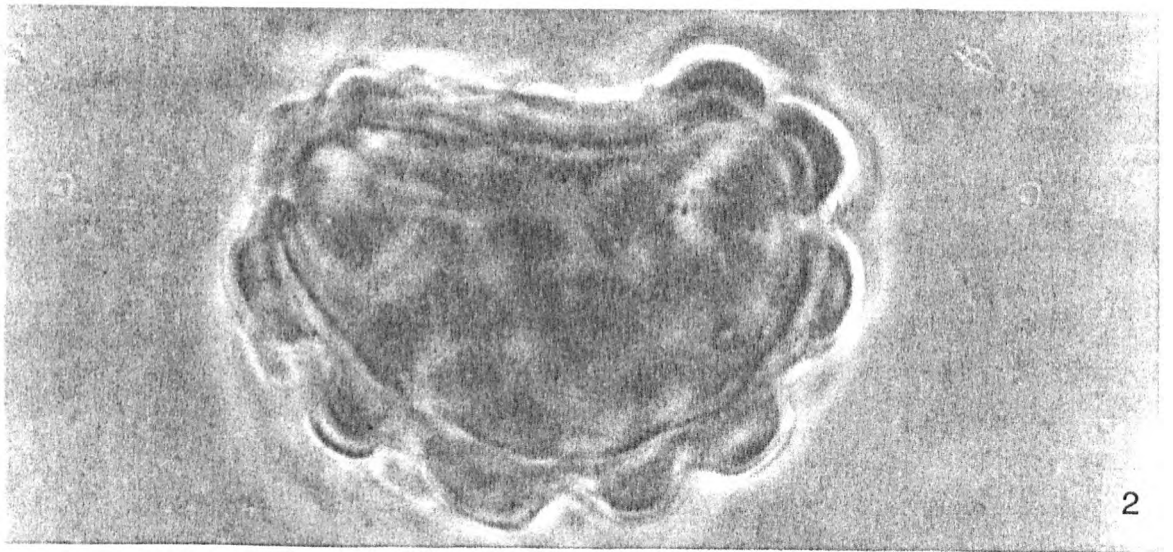
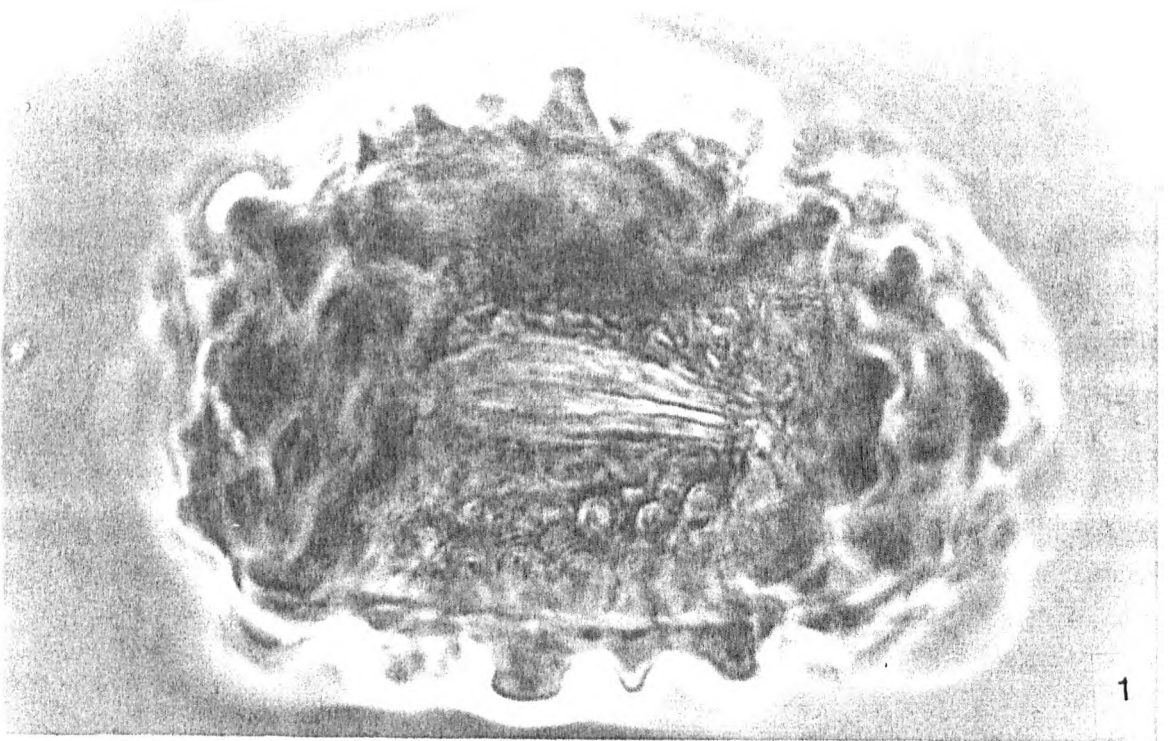


PLATE 5

Figure 1 *Baculatisporites nanus* 73/36, 11.17m, slide a, O23/4, x870

Figure 2 *Baculatisporites primarius* 77/7, 111.3m, slide a, X35/2, x870

Figure 3 and 4 *Camerozonosporites heskemsis* 77/7, 111.8m, slide b, B31/2, x1720

Figure 5 and 6 *Cicatricosisporites chattensis* 77/7, 110.6m, slide a, Q30, x870

Figure 7 *Cicatricosisporites chattensis* 16/16, 4220m, slide a, K37, x870

Figure 8 *Cicatricosisporites chattensis* 16/16 3440m, slide a, O42/4, x870

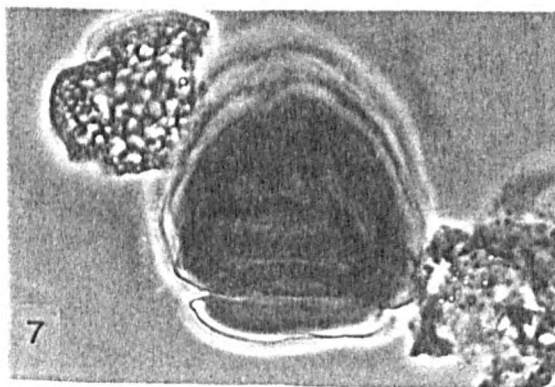
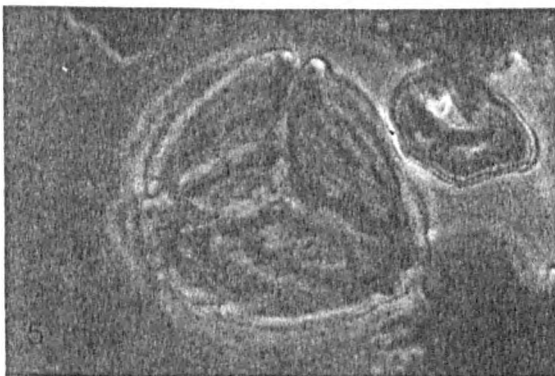
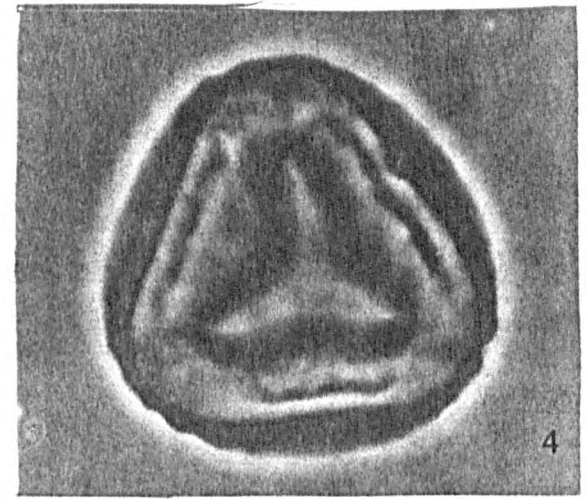
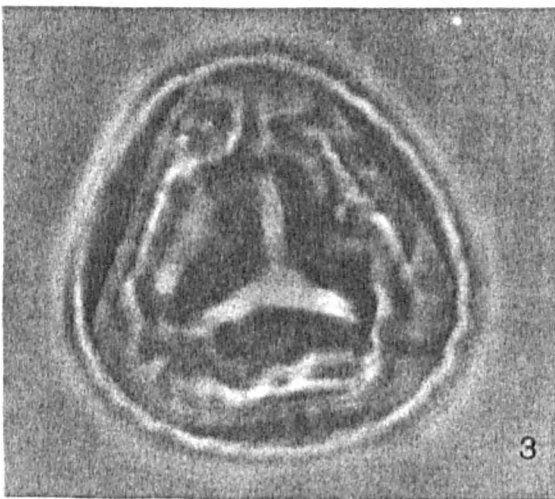
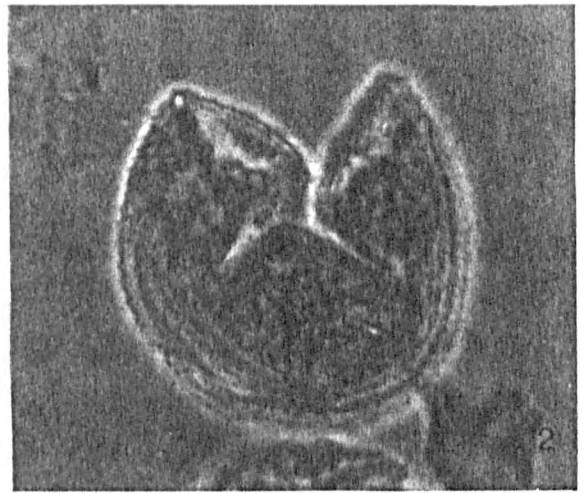
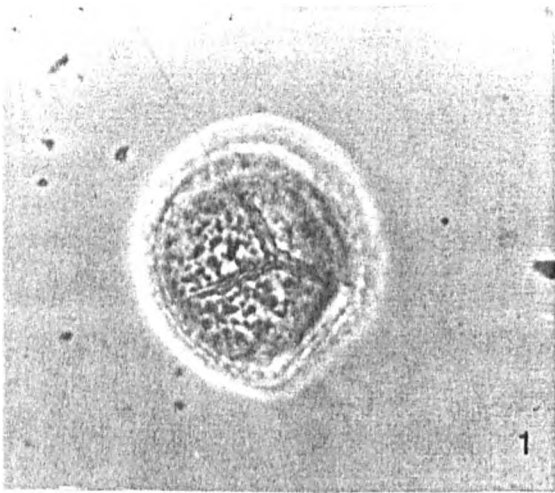


PLATE 6

Figure 1 *Cicatricosisporites dorogensis* 77/7, 112-115m, slide a, N30/2, x1720

Figure 2 *Cicatricosisporites paradorogensis* 73/36, 18.03m, slide a, R45, x1720

Figure 3 and 4 *Deltoidospora apheles* 80/14, 73.77m, slide a, J32/2, x1720

Figure 5 *Deltoidospora maxoides* 77/7, 111.1m, slide a, R37/2, x870

Figure 6 *Deltoidospora wolffi* 78/1, 139.57m, slide a, X30/4, x870

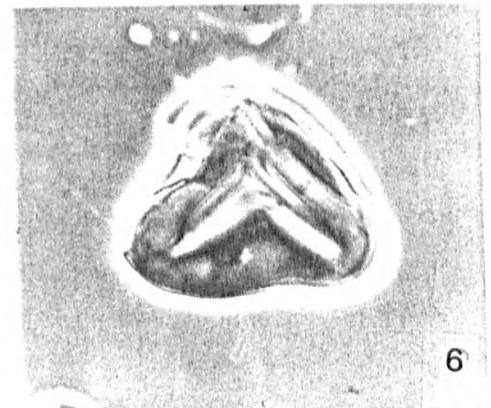
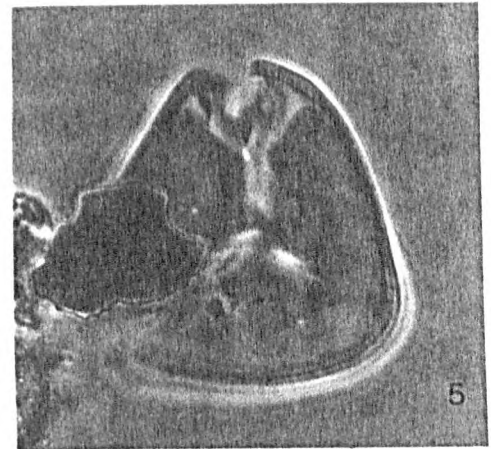
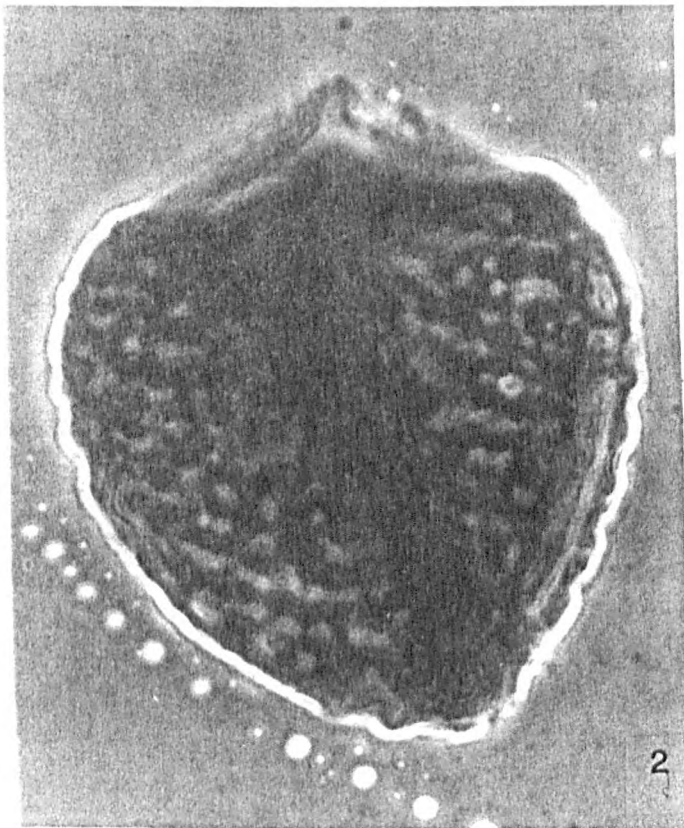
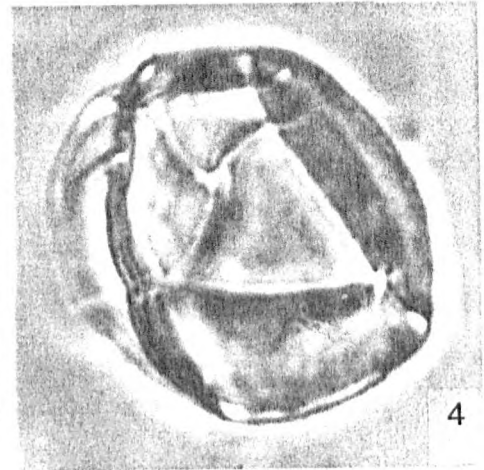
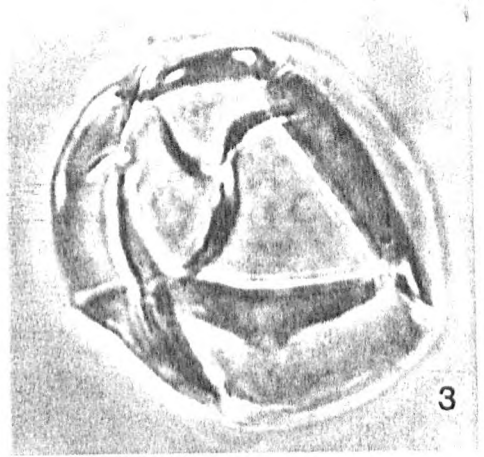


PLATE 7

Figure 1 *Echinatisporis echinoides* 80/14, 63.97m, slide b, S46/2, x870

Figure 2 *Echinatisporis miocenicus* 16/16, 4140m, slide a, T39/1, x870

Figure 3 *Gleicheniidites senonicus* 88/12, 33.5m, slide c, G48, x1720

Figure 4 *Gleicheniidites senonicus* 73/36, 20.30m, slide a, E48, x1720

Figure 5 *Kekryphalospora* spp. 77/7, 111.8m, slide b, P47/2, x1720

Figure 6 *Lycopodiumsporites* spp. 77/7, 132m, slide a, T33/2, x1720

PLATE 7

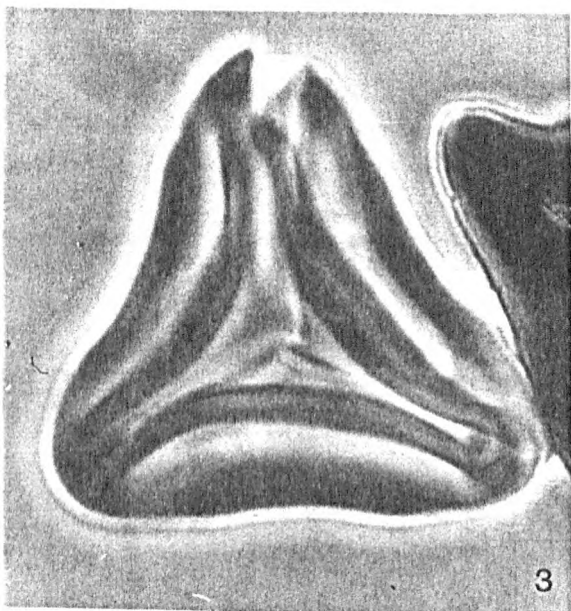
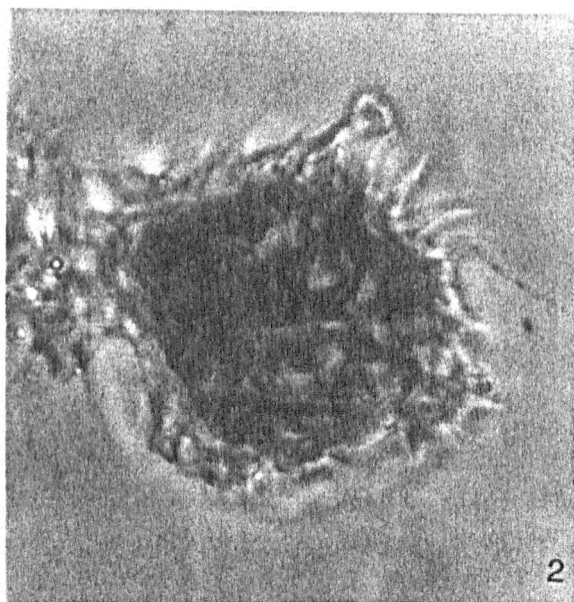
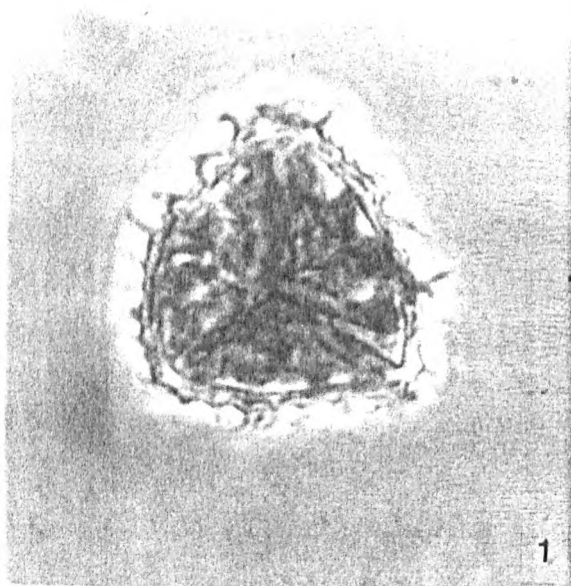


PLATE 8

Figure 1 *Microfoveolatisporis tuemmlitzensis* 78/1, 128.2m, slide d, W38/4, x1720

Figure 2 *Polypodiaceoisporites gracillimus* 77/7, 111.01m, slide a, V23, x870

Figure 3 *Polypodiaceoisporites marxheimensis* 77/7, 111.3m, slide a, X39/3, x870

Figure 4 *Polypodiaceoisporites* sp. 1 77/7, 115.7m, slide b, J45/3, x1720

Figure 5 *Stereisporites (Cingulitriletes)* spp. 78/1, 136.6m, slide a, G31/4, x870

Figure 6 *Stereisporites (Stereisporites) stereioides* 16/16, 4320m, slide b, N32/2, x1720

Figure 7 *Stereisporites (Stereisporites) stereioides* 16/16, 4320m, slide b, N32/2, x870

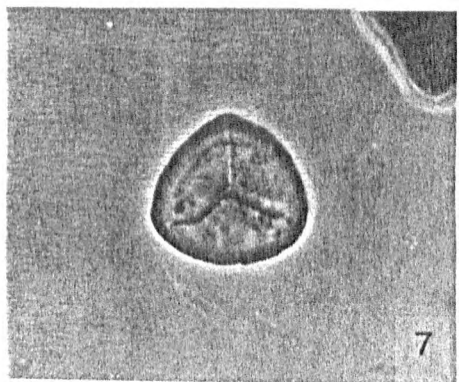
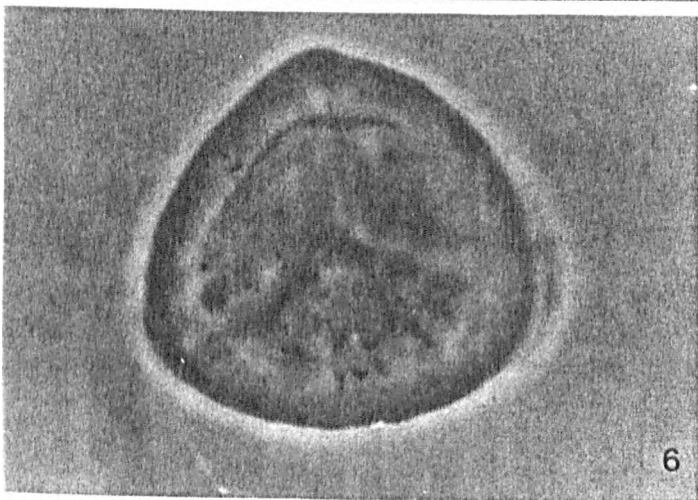
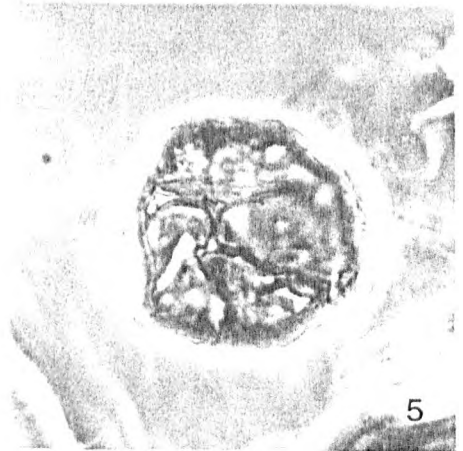
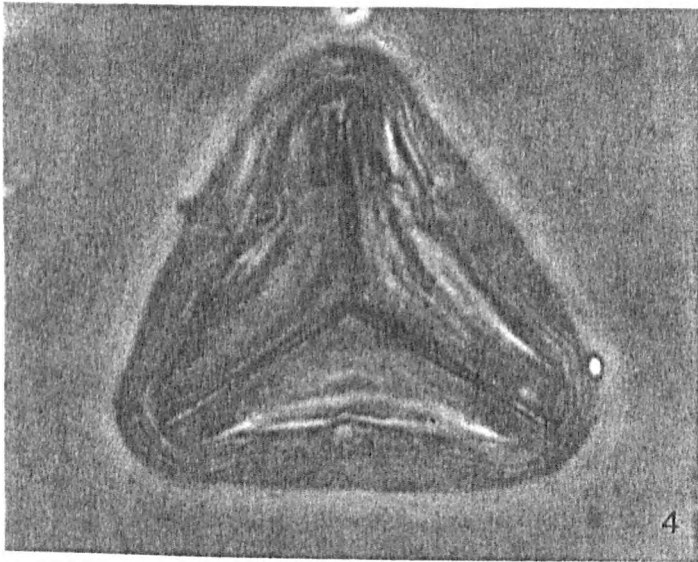
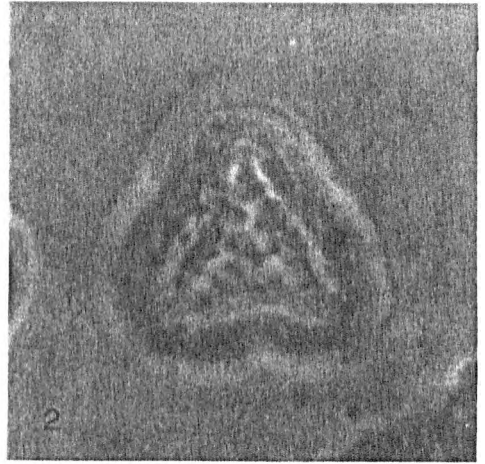


PLATE 9

Figure 1 *Stereisporites (Structisporis) intrareticulatus* 73/36, 18.75m, slide a, N45/1, x1720

Figure 2 *Stereisporites (Structisporis) intrareticulatus* 73/36, 17.22m, slide b, G46/3, x1720

Figure 3 *Stereisporites (Distgranisporis) spp.* 16/16, 3500m, slide a, S42/1, x1720

Figure 4 *Stereisporites sp. 1* 77/7, 111.8m, slide b, X39/2, x1720

Figure 5 *Stereisporites sp. 1* 77/7, 111.01m, slide a, Q40, x1720

Figure 6 *Toroisporis spp.* 78/1, 128.2m, slide d, R39, x870

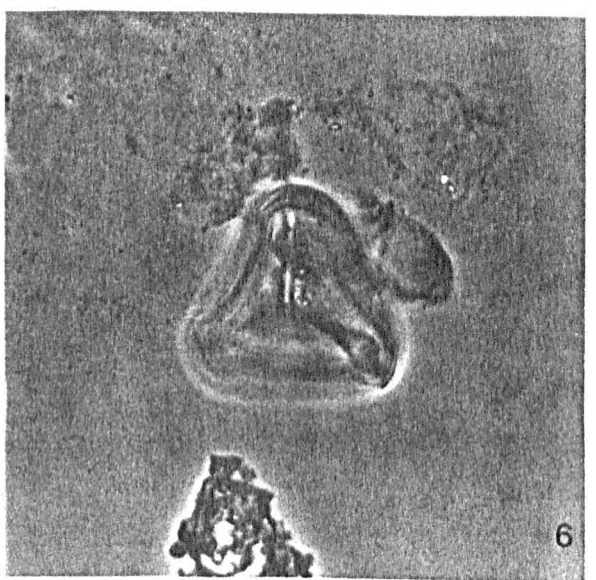
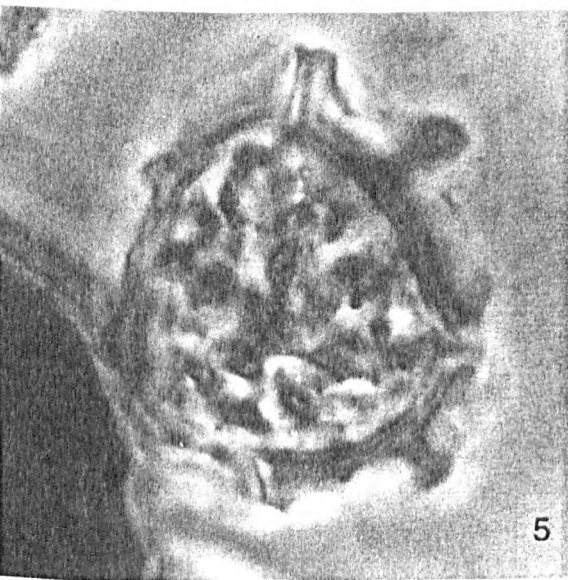
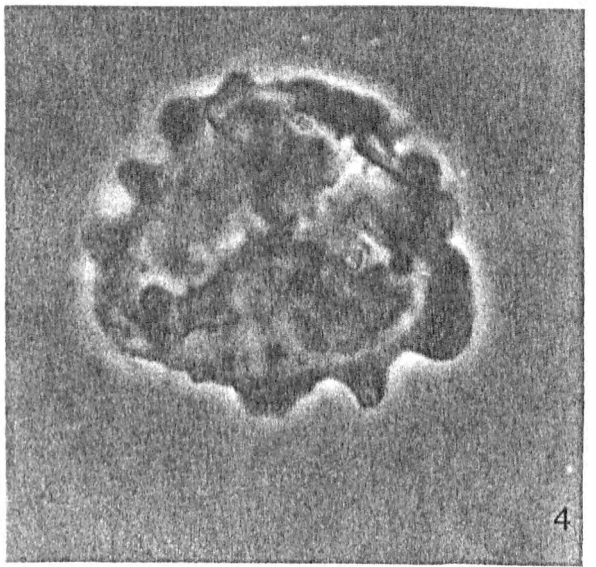
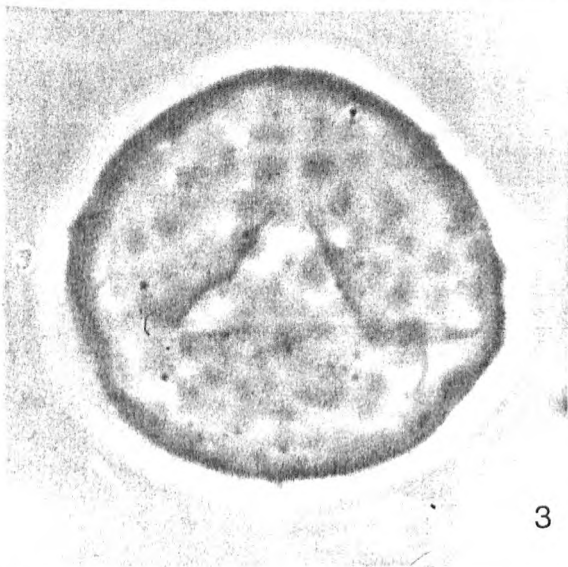
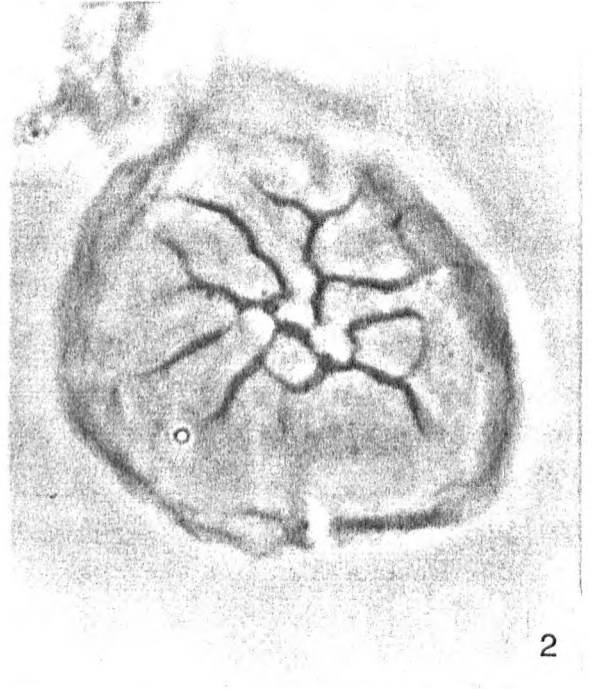
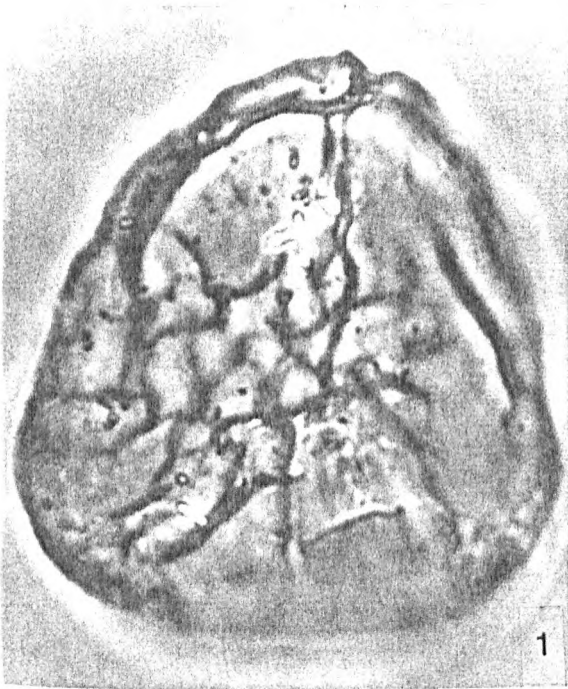


PLATE 10

Figure 1 *Trilites corruvallatus* 77/7, 110.6m, slide a, R30/2, x870

Figure 2 *Trilites multivallatus* 77/7, 111.3m, slide a, W37, x870

Figure 3 *Trilites* sp. 1 16/16, 4140m, slide a, X33/2, x870

Figure 4 *Triplanosporites* spp. 80/14, 64.26m, slide a, U35, x1720

Figure 5 and 6 *Undulatisporites sculpturis* 77/7, 111.82m, slide b, D45/2, x1720

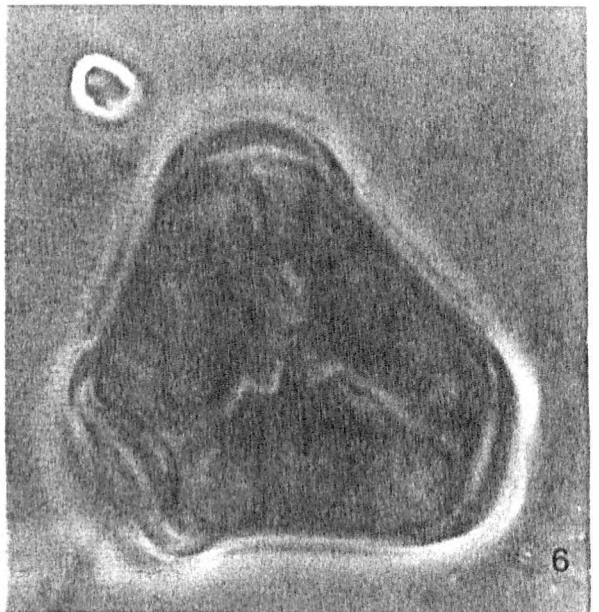
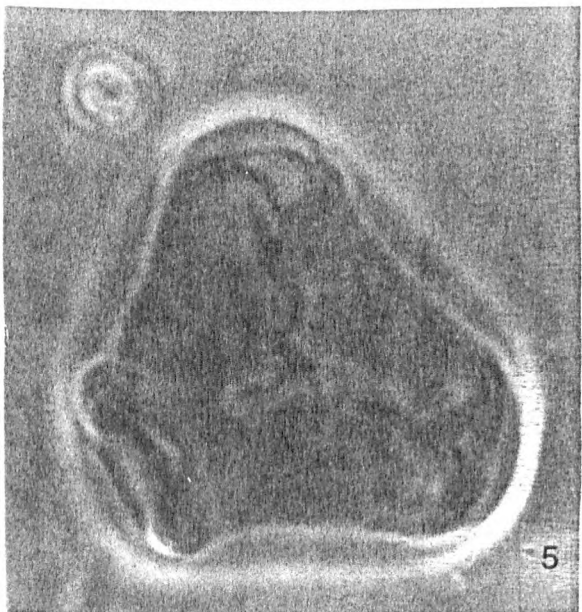
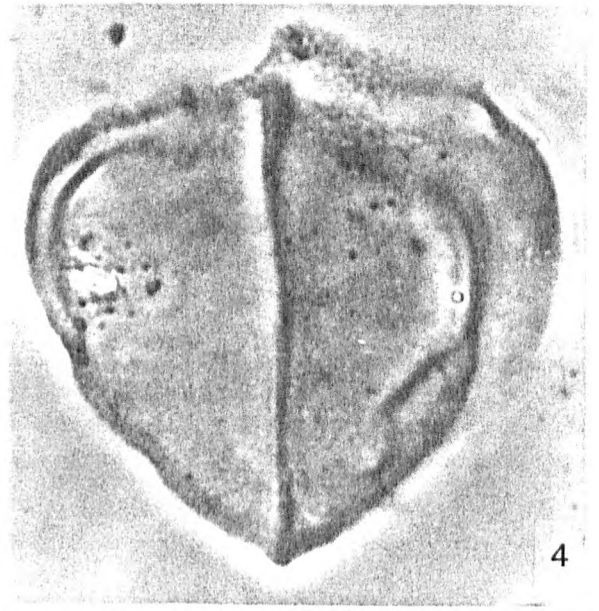
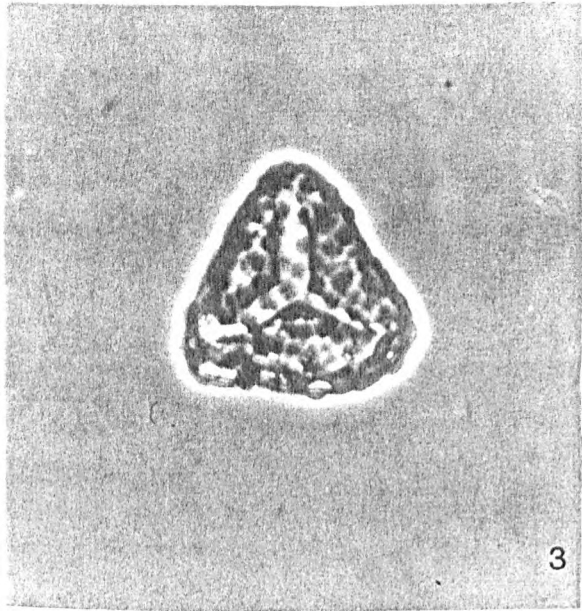
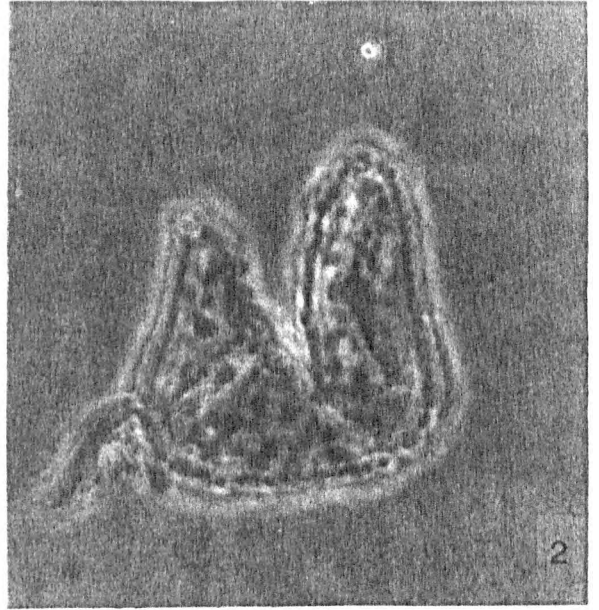
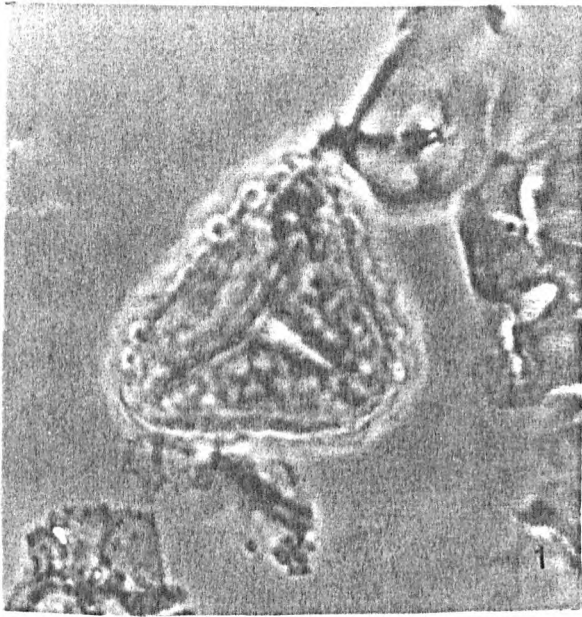


PLATE 11

Figure 1 *Verrucingulatisporites treplinensis* 88/12, 33.5m, slide a, S40, x1720

Figure 2 *Verrucingulatisporites treplinensis* 88/12, 33.5m, slide a, S40, x870

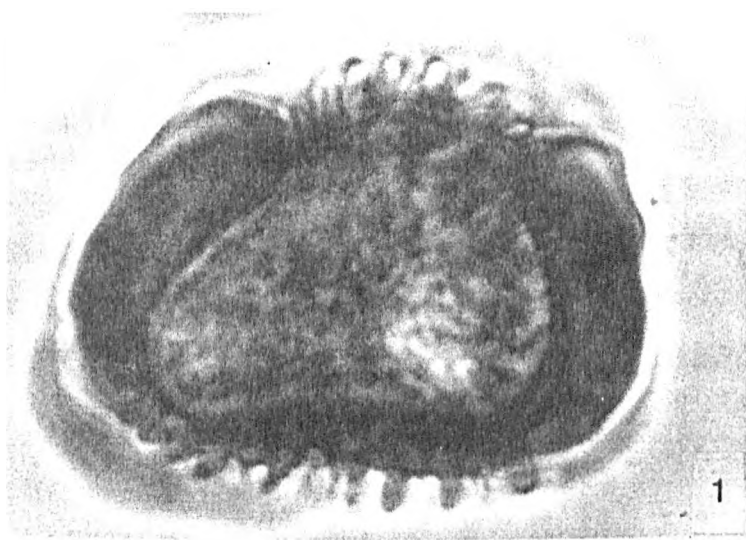
Figure 3 Spore sp.88 88/12, 32.78m, slide a, O33, x870

Figure 4 Spore sp.88 88/12, 32.78m, slide a, S41/2, x870

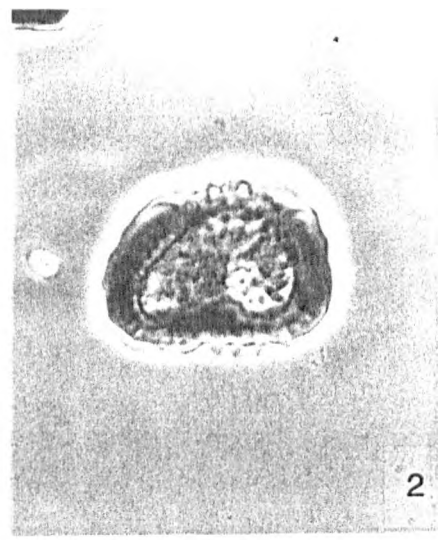
Figure 5 *Diporicellaesporites* spp. 88/12, 41.25m, slide a, H33, x1720

Figure 6 *Fusiformisporites* spp. 73/36, 26.79m, slide a, U33/2, x870

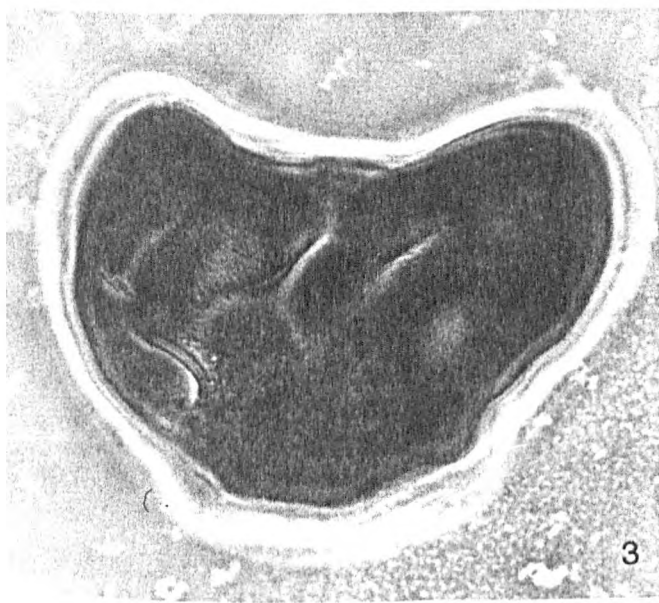
Figure 7 *Hyphae* spp. Well 28, 5.1m, slide a, E32, x870



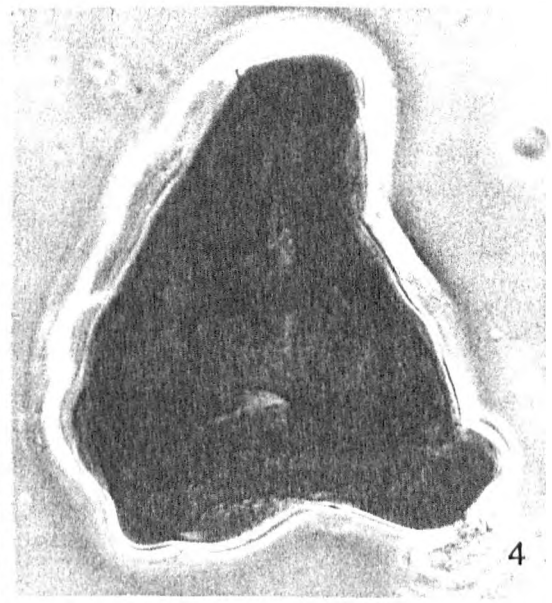
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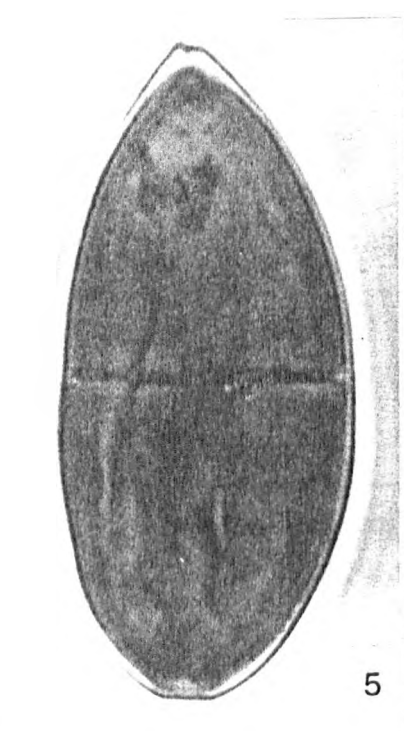
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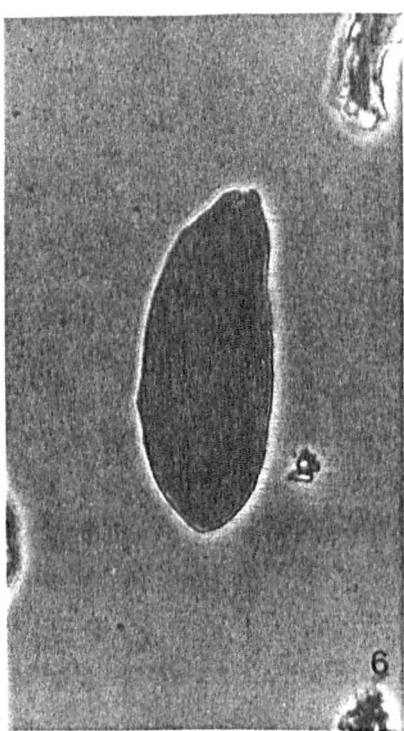
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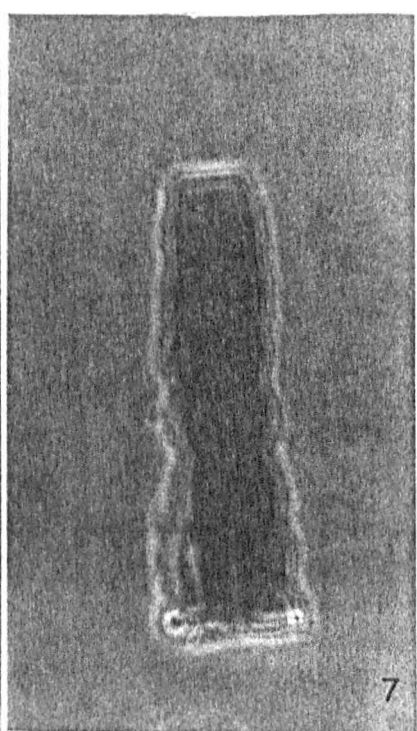
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5



6



7

PLATE 12

Figure 1 *Microthallites* spp. 78/1, 134.92m, slide a, O30/2, x870

Figure 2 *Pesavis tagluensis* 73/36, 26.79m, slide a, W50/4, x1720

Figure 3 *Pesavis tagluensis* 78/1, 123.04m, slide c, O35/3, x1720

Figure 4 *Scolecospirites* spp. and *Fusiformisporites* spp. 73/36, 8-10m, slide a, X34/2, x870

Figure 5 *Scolecospirites* spp. 78/1, 134.92m, slide a, V32/1, x430

Figure 6 *Pluricellaesporites* spp. 78/1, 134.92m, slide a, J15, x870

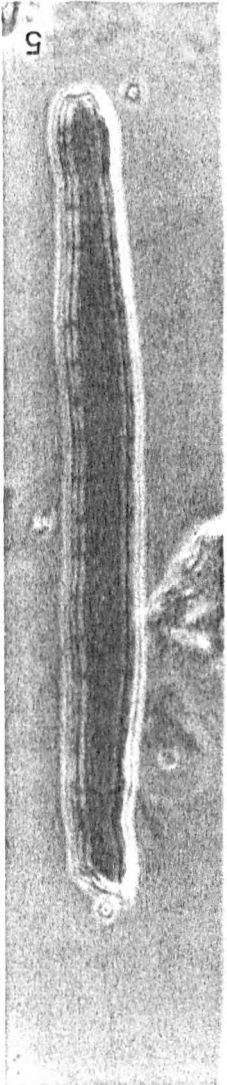
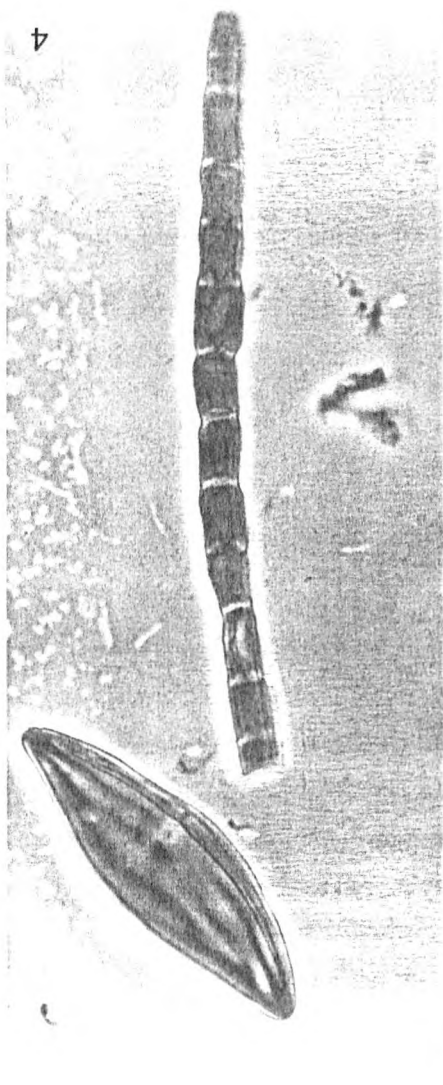
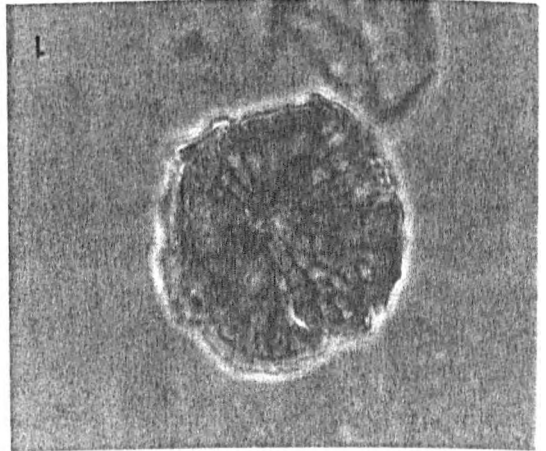
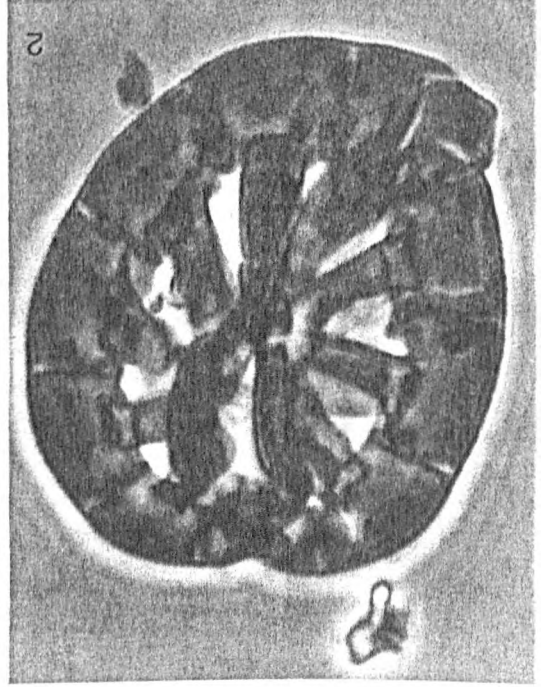
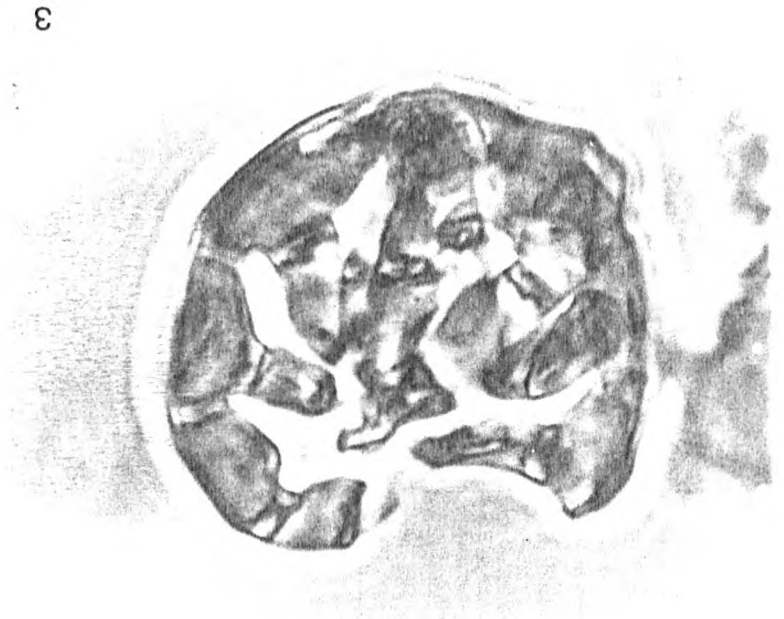
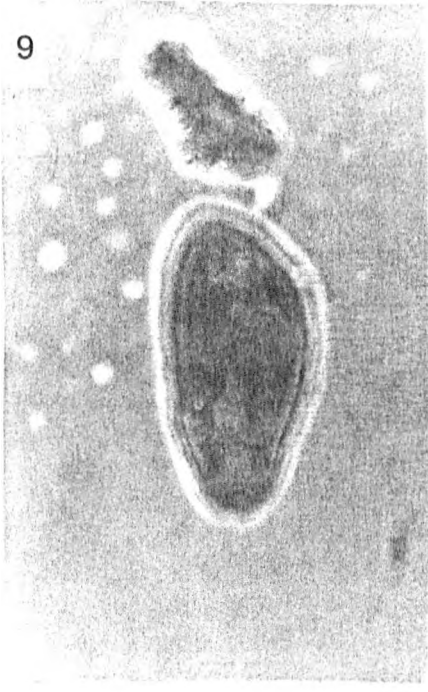


PLATE 13

Figure 1 *Abiespollenites* spp. 73/36, 18.75m, slide a, H46/1, x870

Figure 2 *Piceapollis* spp. 88/12, 44.75m, slide a, V46/4, x870

Figure 3 *Pityosporites* spp. 80/14, 64.95m, slide c, Q43, x870

Figure 4 *Podocarpidites* spp. 21/28, 2940m, slide d, R38/3, x870

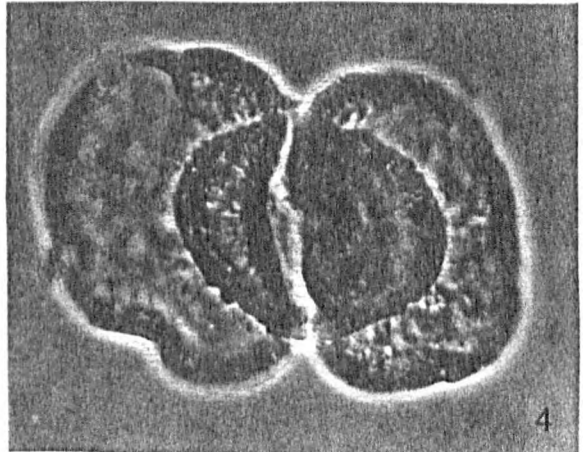
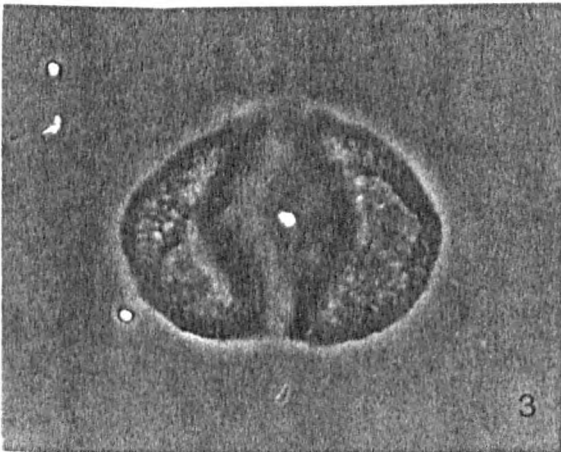
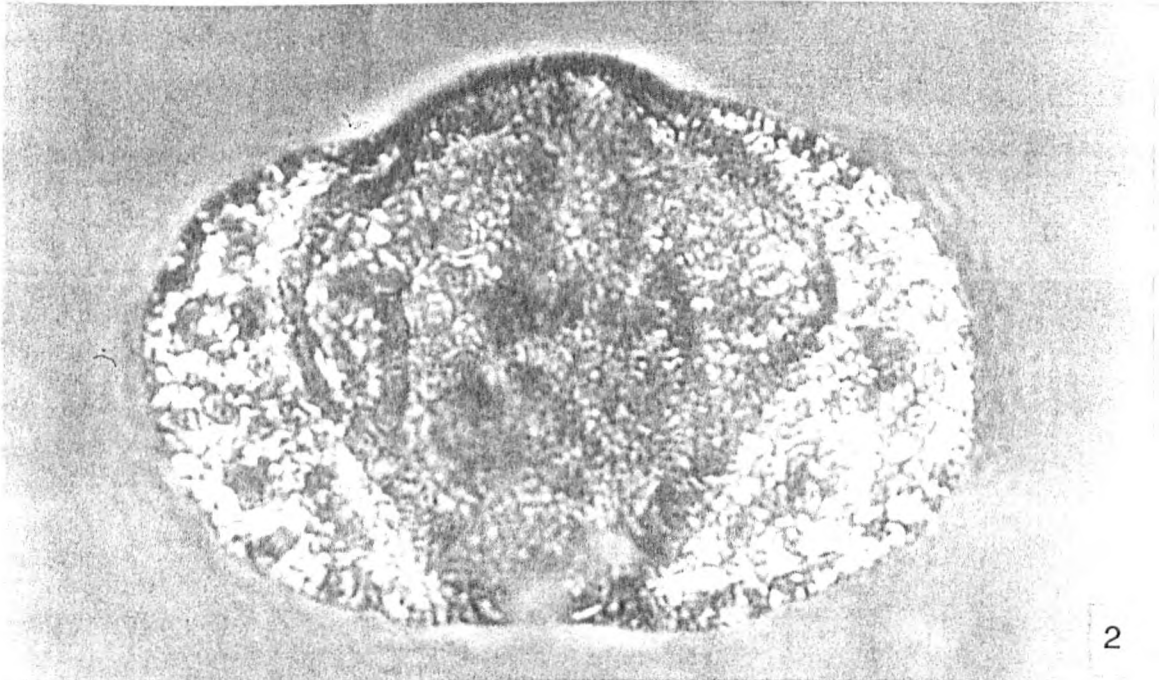
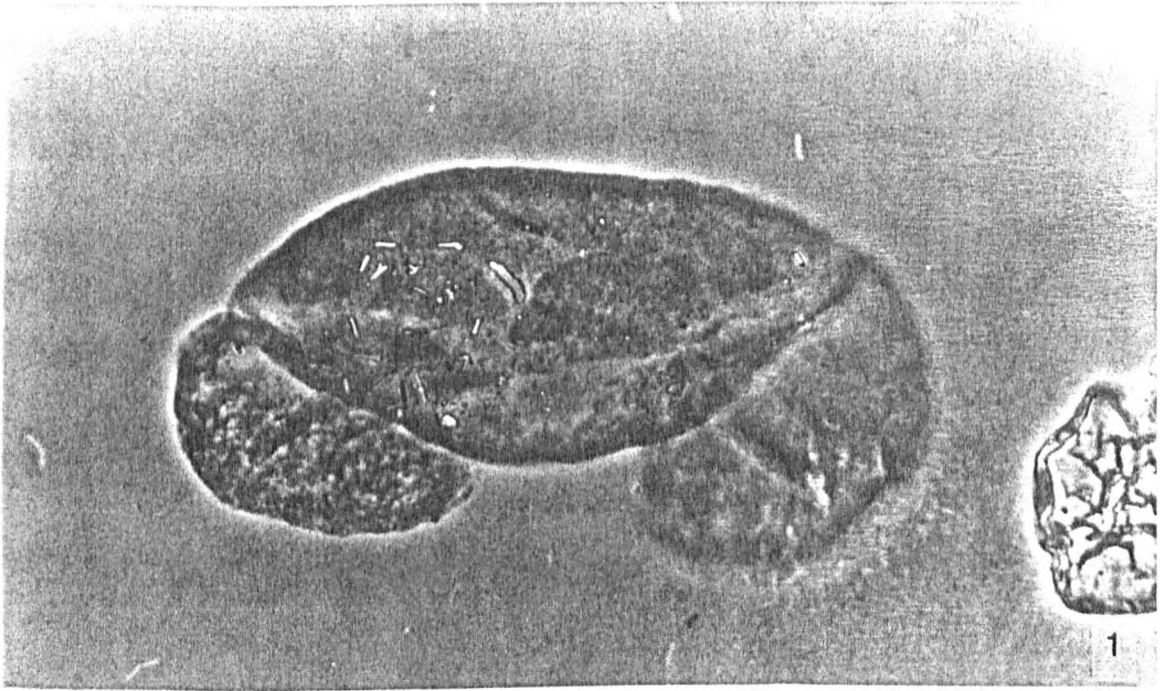


PLATE 14

Figure 1 and 2 *Arecipites* spp. 73/36, 8-10m, slide a, P37/4, x1720

Figure 3 and 4 *Arecipites* spp. 80/14, 63.97m, slide b, H43/1, x1720

Figure 5 *Monocolpopollenites tranquillus* 73/36, 8-10m, slide a, V43/1, x1720

Figure 6 *Monocolpopollenites tranquillus* 73/36, 8-10m, slide a, P47/4, x1720

Figure 7 *Monocolpopollenites tranquillus* 88/12, 41.25m, slide a, O42/2, x1720

Figure 8 *Monocolpopollenites tranquillus* 80/14, 64.95m, slide c, X38/3, x1720

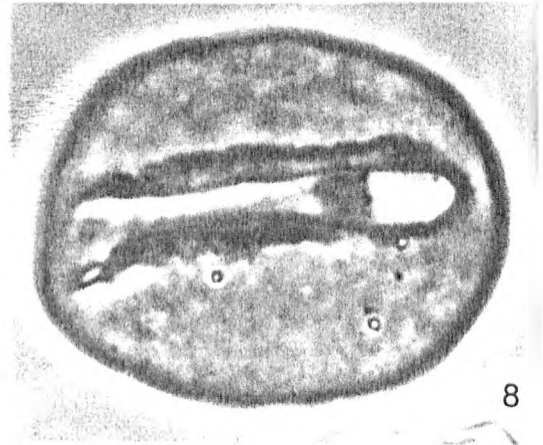
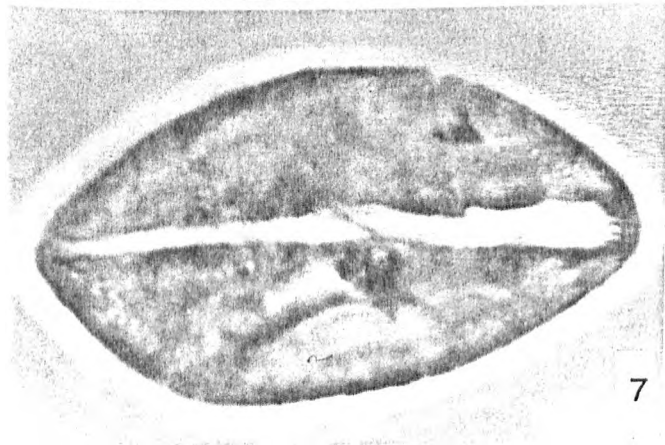
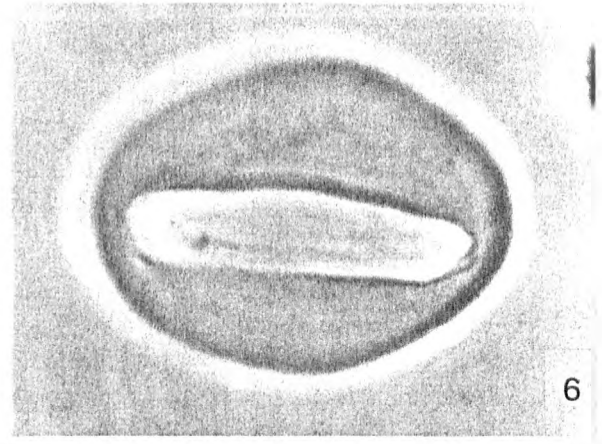
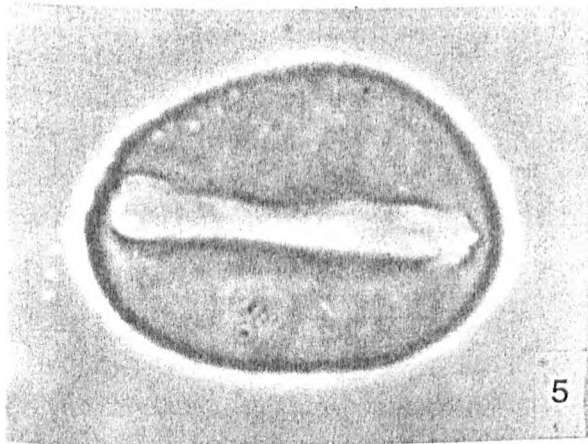
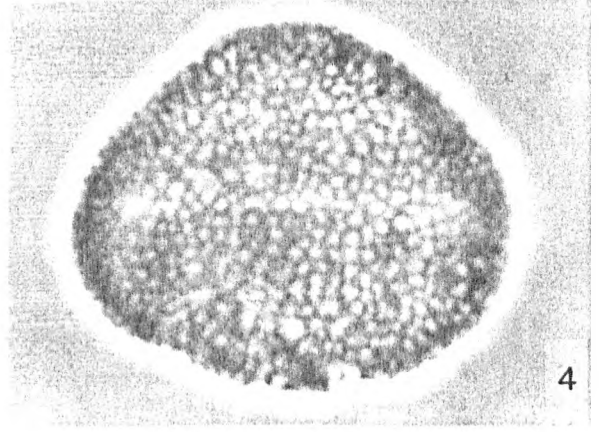
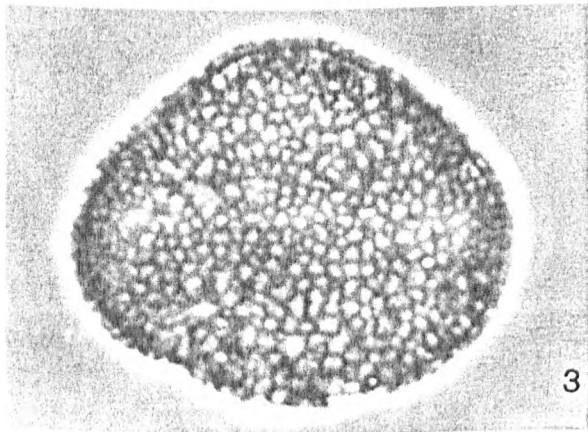
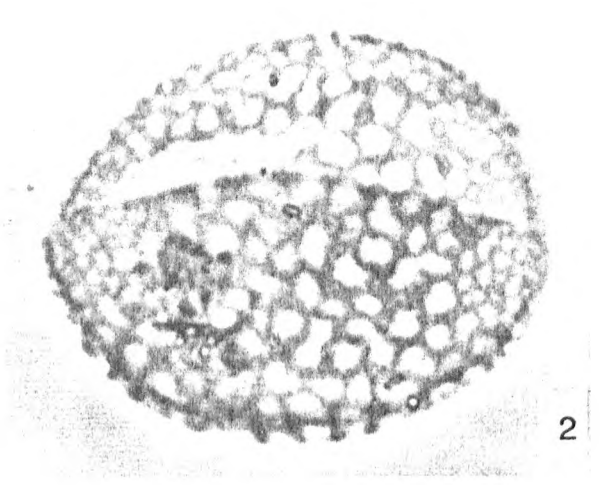
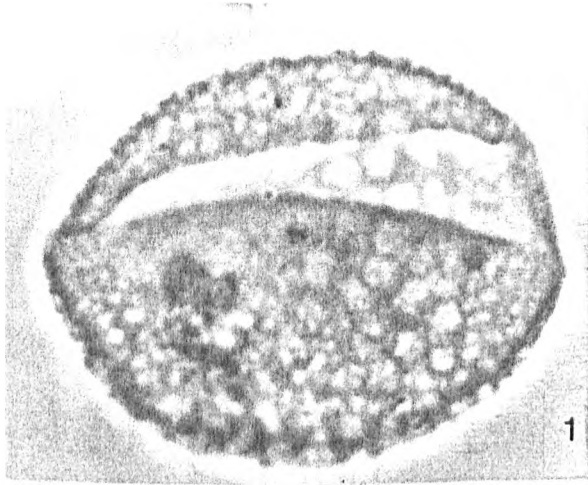


PLATE 15

Figure 1 and 2 *Dicolpopollis kockeli* 77/7, 110.6m, slide a, X41/4, x1720

Figure 3 *Graminidites annulatus* 73/36, 17.22m, slide b, V49/1, x1720

Figure 4 *Graminidites annulatus* 21/28, 3060m, slide a, L41/2, x1720

Figure 5 and 6 *Milfordia incerta* 73/36, 12.65m, slide b, U51/1, x1720

Figure 7 *Sparganiaceapollenites polygonalis* 73/36, 27.78m, slide a, C49/3, x1720

Figure 8 *Sparganiaceapollenites polygonalis* 73/36, 18.75m, slide a, T49/4, x1720

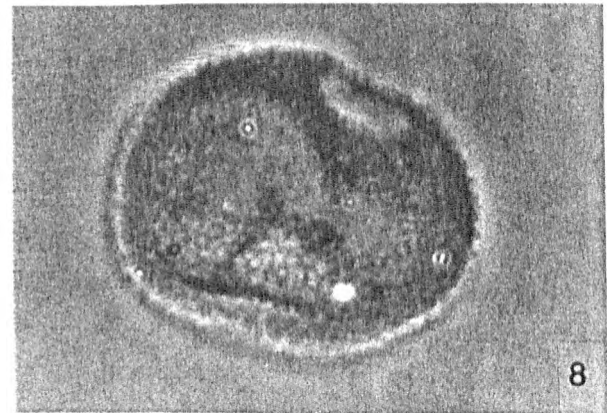
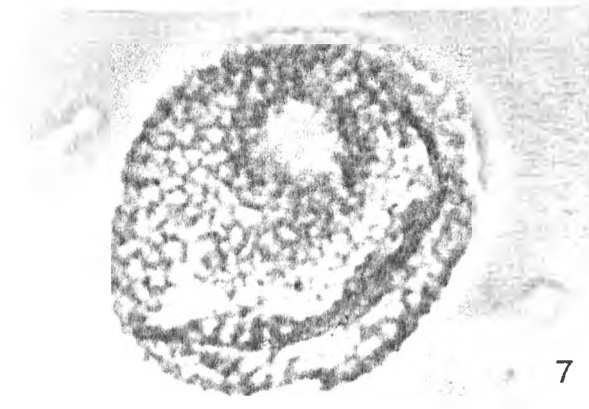
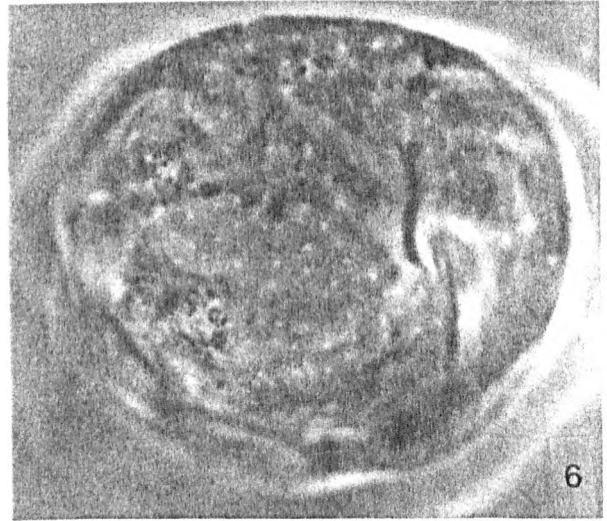
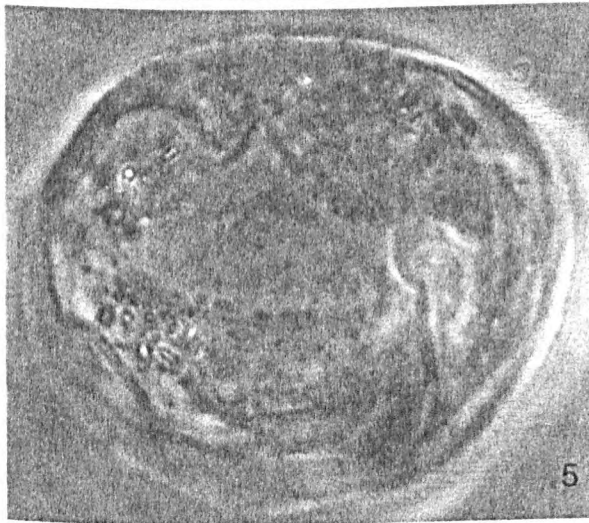
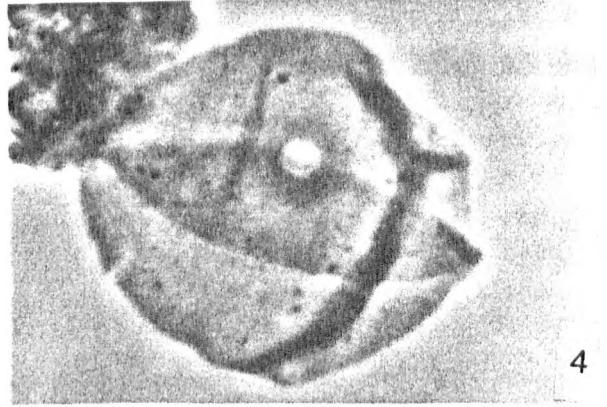
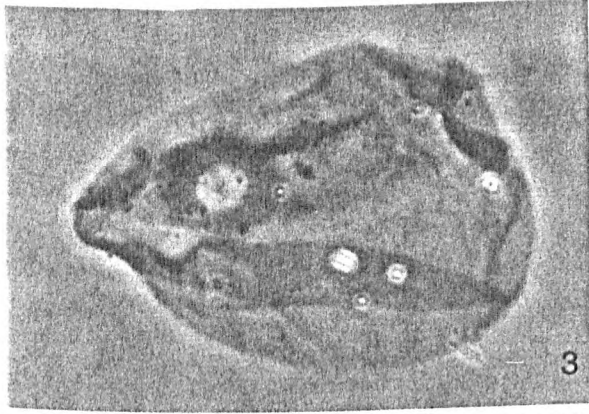
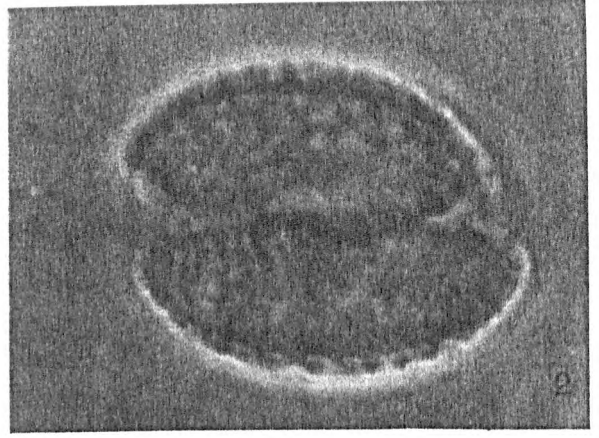
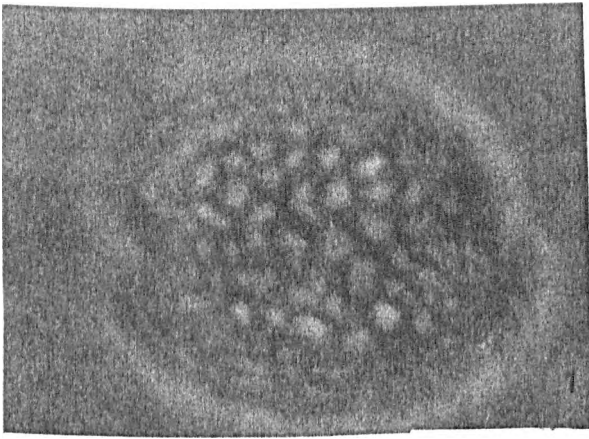


PLATE 16

Figure 1 *Inaperturopollenites distichiforme* 77/7, 110.6m, slide a, Y38/1, x1720

Figure 2 *Inaperturopollenites dubius* 16/16, 3720m, slide a, N41/1, x1720

Figure 3 *Inaperturopollenites hiatus* 80/14, 64.95m, slide c, W41, x1720

Figure 4 *Inaperturopollenites magnus* 77/7, 111.3m, slide a, U39/4, x870

Figure 5 *Sequoiapollenites polyformosus* 16/16, 3720m, slide d, H51, x870

Figure 6 and 7 *Sciadopityspollenites serratus* 78/1, 128.2m, slide d, U35. x1720

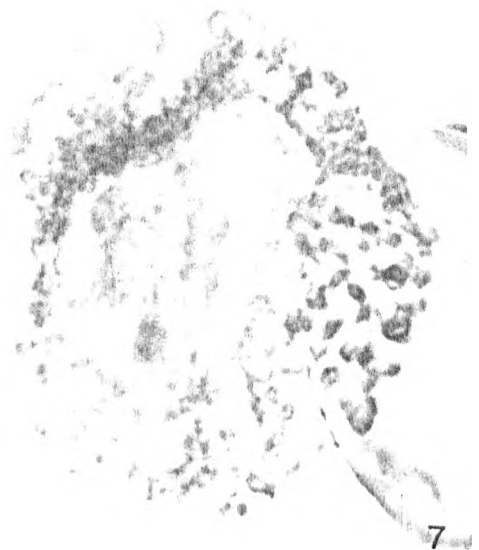
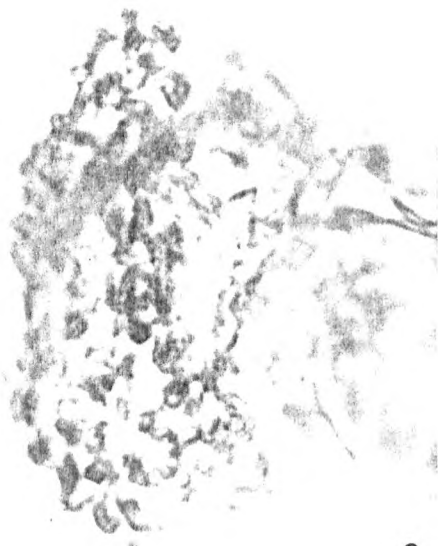
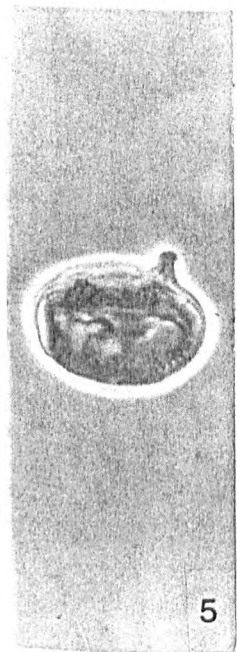
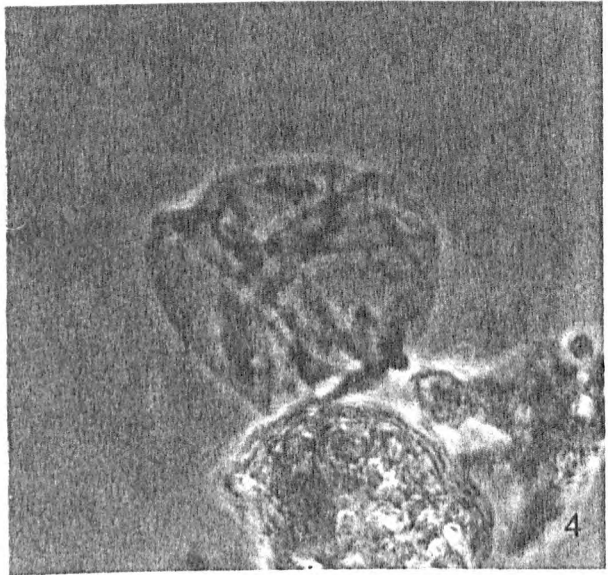
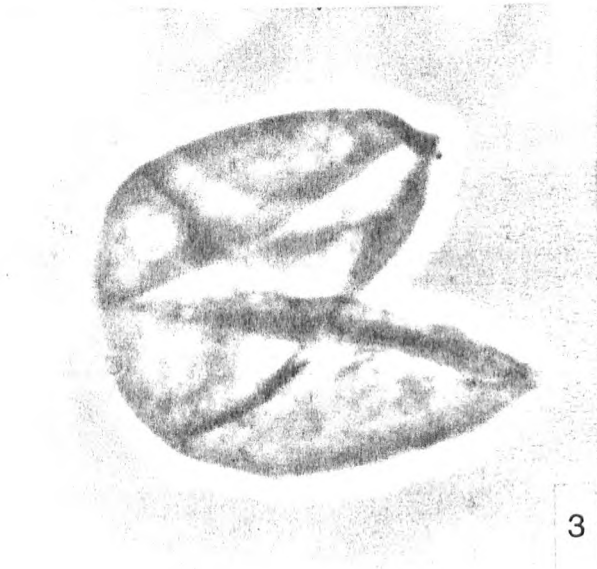
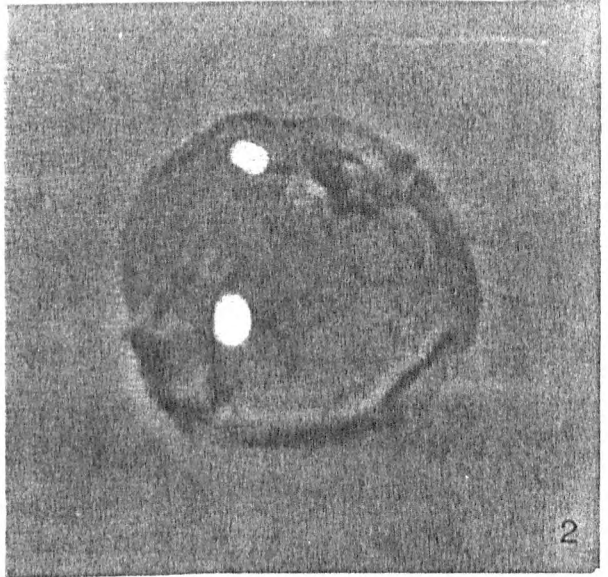
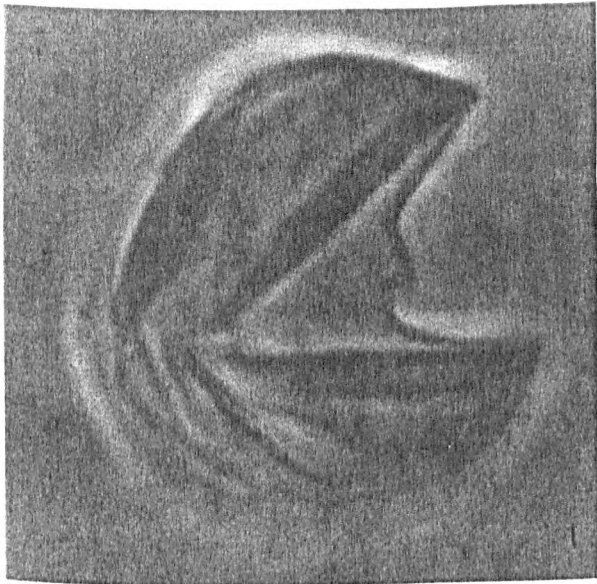


PLATE 17

Figure 1 *Caryapollenites circulus* 21/28, 3060m, slide a, W32/3, x1720

Figure 2 *Caryapollenites imparalis* 16/16, 3680m, slide b, U37, x870

Figure 3 *Caryapollenites simplex* 16/16, 3580m, slide b, F47, x1720

Figure 4 *Caryapollenites triangulus* 73/36, 12.65m, slide b, M49/4, x1720

Figure 5 *Caryapollenites veripites* 77/7, 110.6m, slide a, H44, x1720

Figure 6 *Momipites anellus* Well 28, 4.1m, slide a, B41, x1720

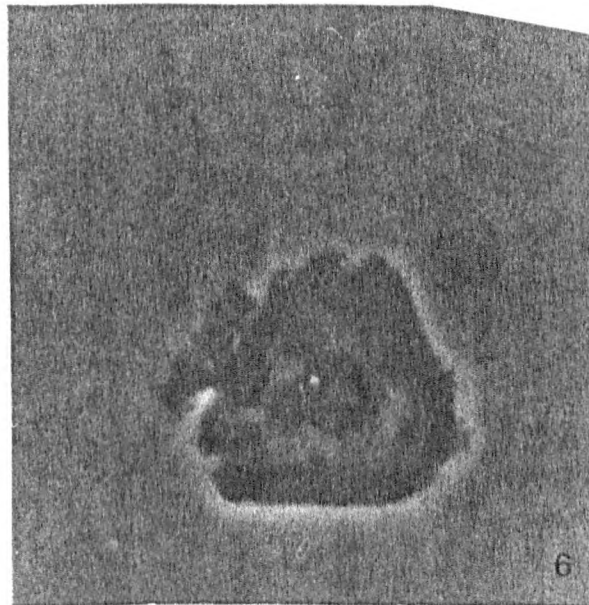
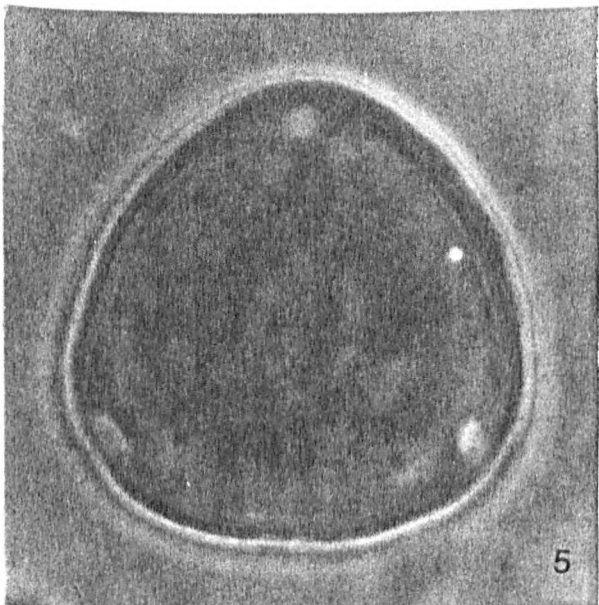
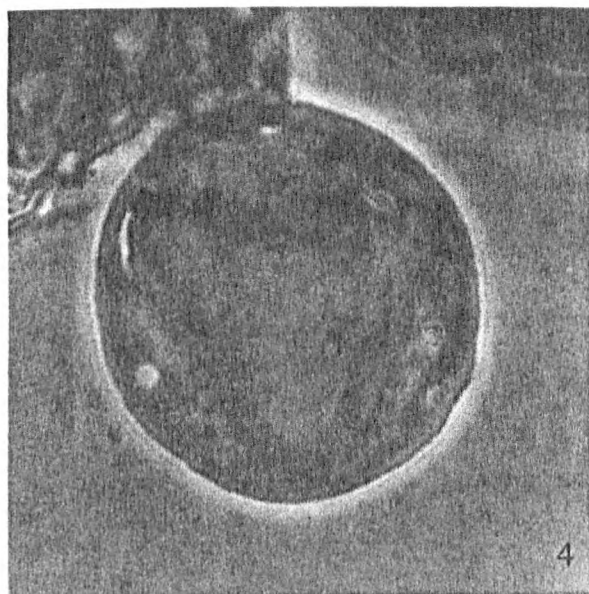
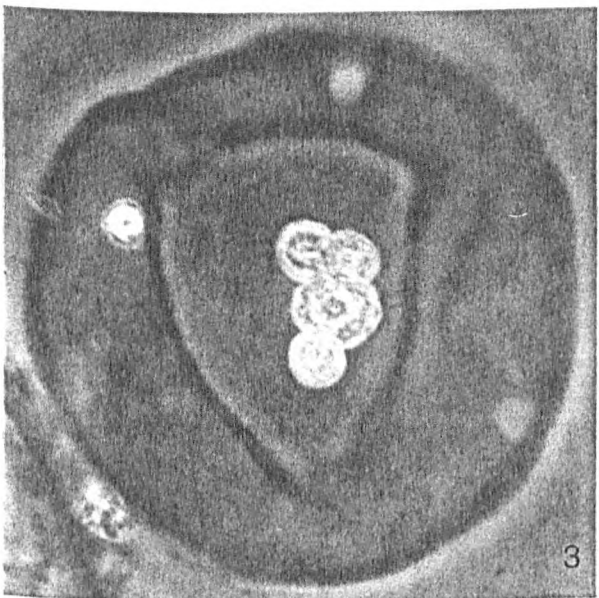
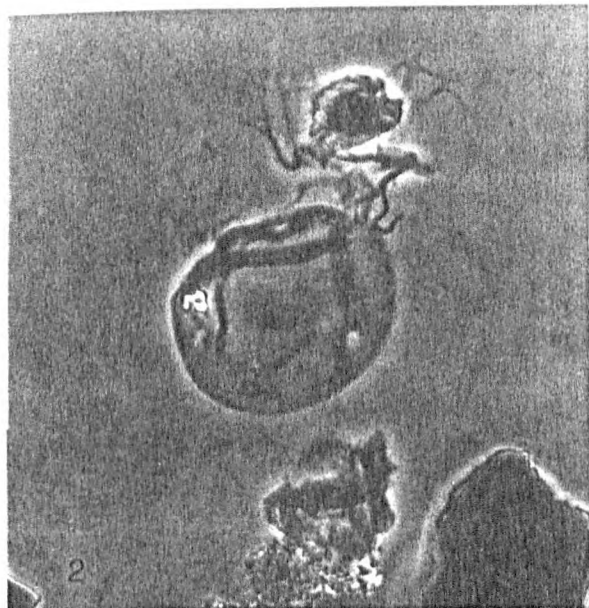
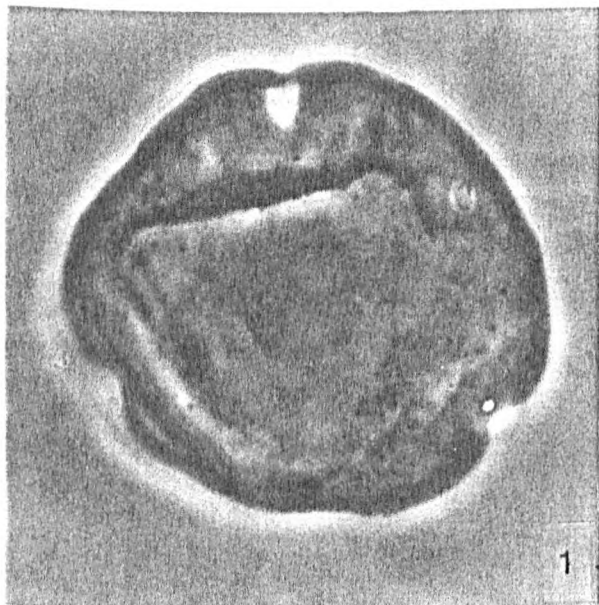


PLATE 18

Figure 1 *Momipites coryloides* Well 28, 3.1m, slide a, N32/2, x870

Figure 2 *Momipites tenuipolus* Well 28, 3.1m, slide a, M42/4, x870

Figure 3 *Momipites tenuipolus* Well 28, 3.1m, slide a, L33/4, x870

Figure 4 *Momipites triradiatus* 16/16, 3500m, slide a, H43/1, x870

Figure 5 *Platcaryapollenites* spp. 77/7, 112m, slide a, R43, x1720

Figure 6 *Triatriopollenites aroboratus* Well 28, 12.2m, slide a, Q33, x1720

Figure 7 *Triatriopollenites bituitus* 78/1, 139.57m, slide a, Q45/3, x1720

Figure 8 *Triatriopollenites confusus* 73/36, 20.90m, slide a, U47/1, x870

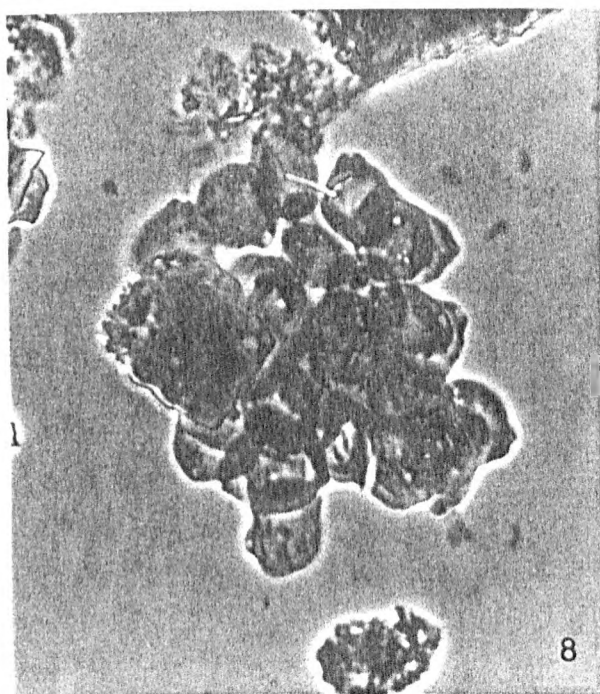
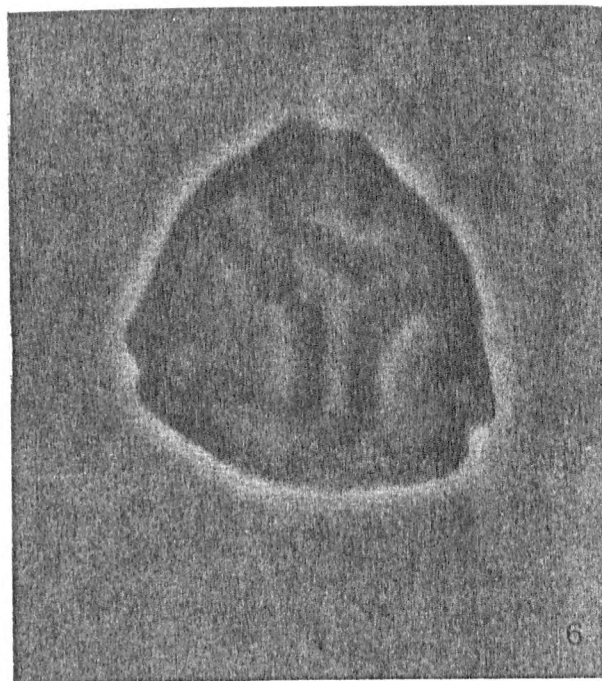
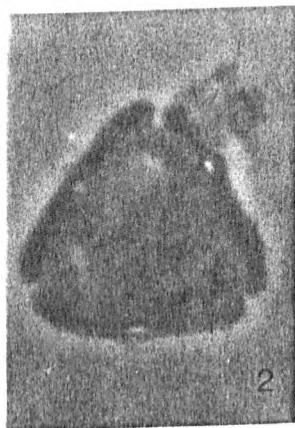


PLATE 19

Figure 1 *Triatriopollenites roboratus* Well 28, 3.1m, slide a, 4.8/133.5, x1720

Figure 2 *Triatriopollenites rurensis* 77/7, 111.3m, slide a, V38/2, x1720

Figure 3 *Triatriopollenites rurensis* 88/12, 41.25m, slide a, F36/4, x1720

Figure 4 *Triatriopollenites subtriangulus* 73/36, 19.8m, slide a, O50/2, x1720

Figure 5 *Juglanspollenites* spp. 16/16, 4320m, slide b, X30, x870

Figure 6 *Juglanspollenites* spp. 77/7, 111.01, slide ?, R37/2, x1720

Figure 7 *Polyatriopollenites carpinoides* 80/14, 66.19m, slide d, U35, x1720

Figure 8 *Polyatriopollenites carpinoides* 80/14, 64.95m, slide c, S32. x1720

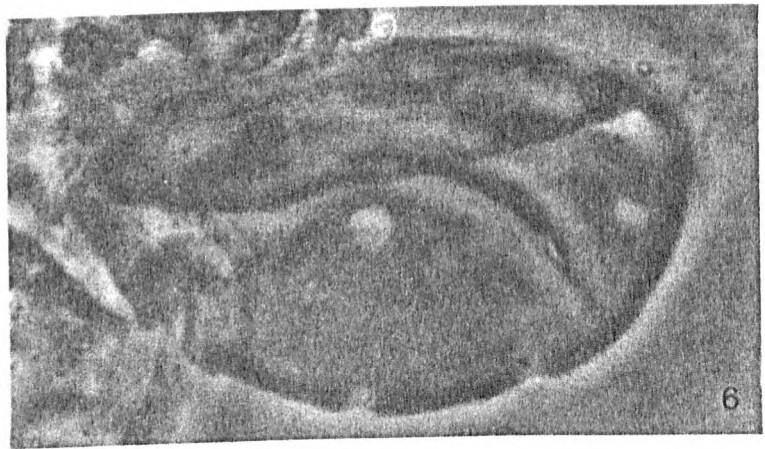
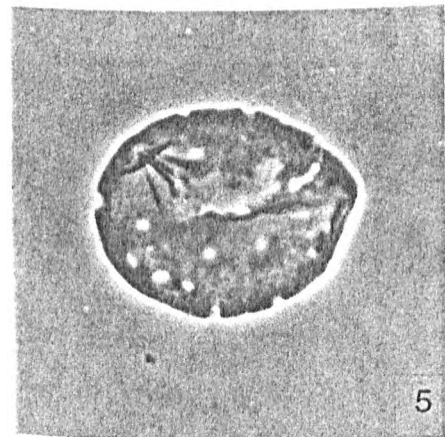
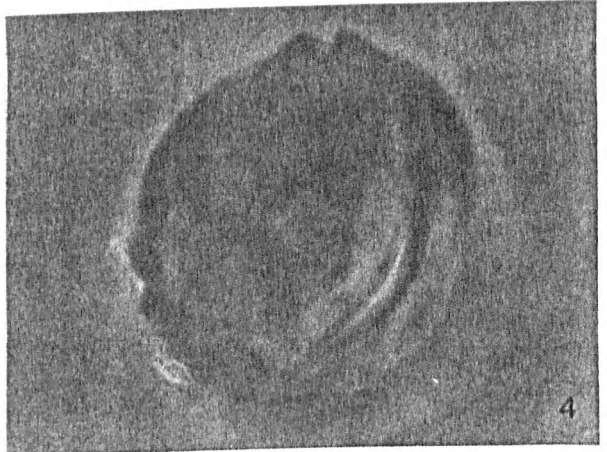
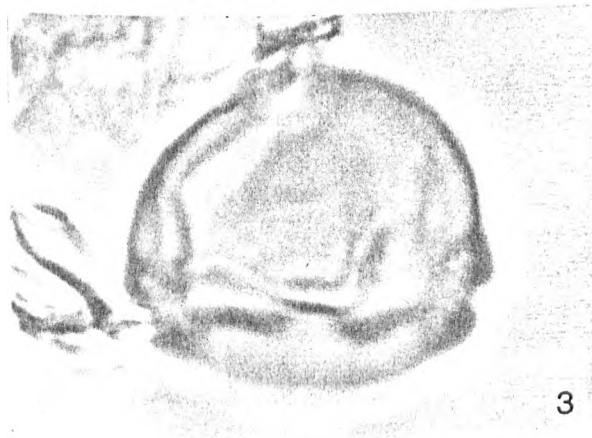
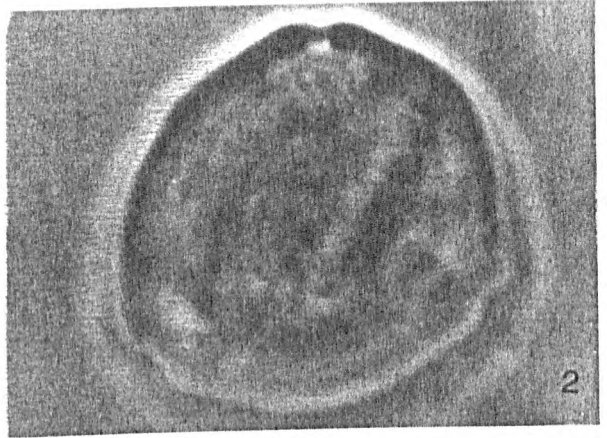
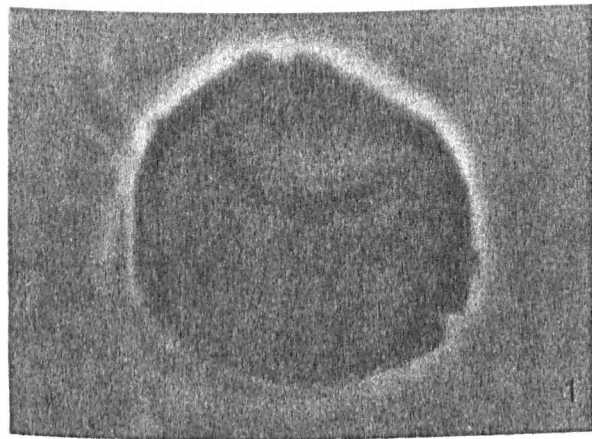


PLATE 20

Figure 1 *Polyatriopollenites stellatus* 80/14, 63.97m, slide b, T38, x1720

Figure 2 *Pterocarya* spp. 16/16, 4140m, slide a, G46/1, x1720

Figure 3 *Pterocarya* spp. 73/36/18.03m, slide a, O35/1, x870

Figure 4 *Plicatopollis* spp. 77/7, 111.8m, slide b, O29, x1720

Figure 5 *Plicatopollis* spp. 88/12, 40.02m, slide a, E31/3, x1720

Figure 6 *Plicatopollis* spp. 77/7, 112m, slide a, R32/2, x870

Figure 7 and 8 *Pompeckjoidaepollenites subhercynicus* 77/7, 111.8, slide b, D31/3, x1720

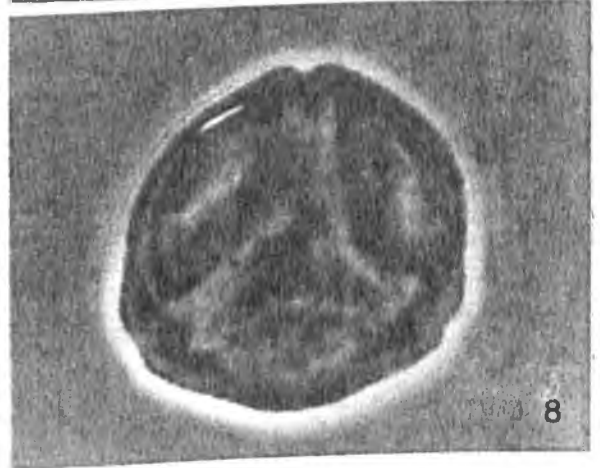
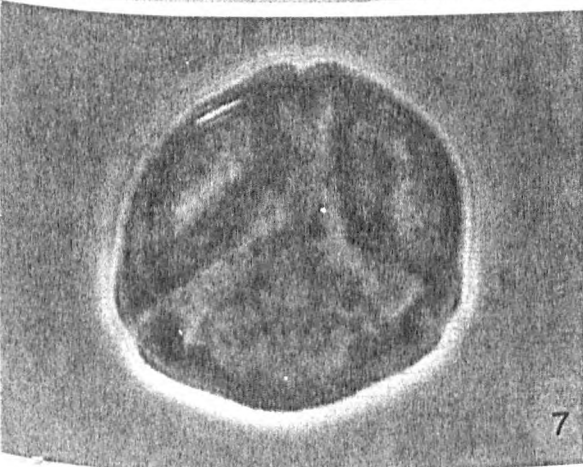
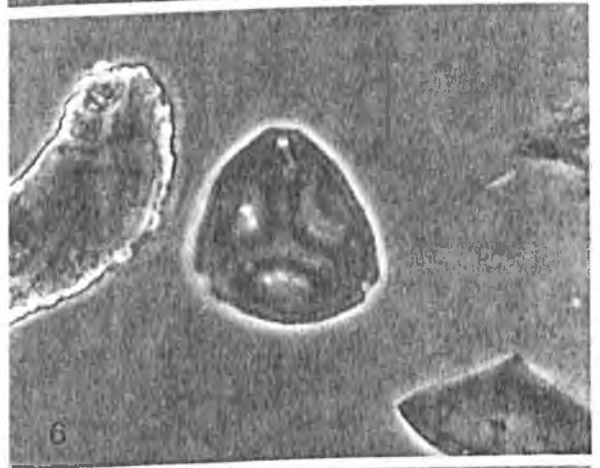
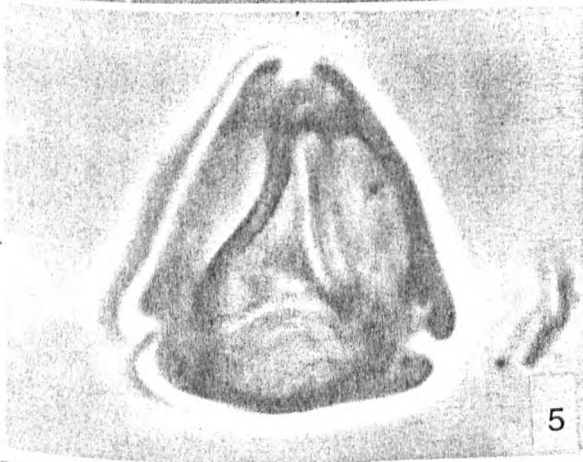
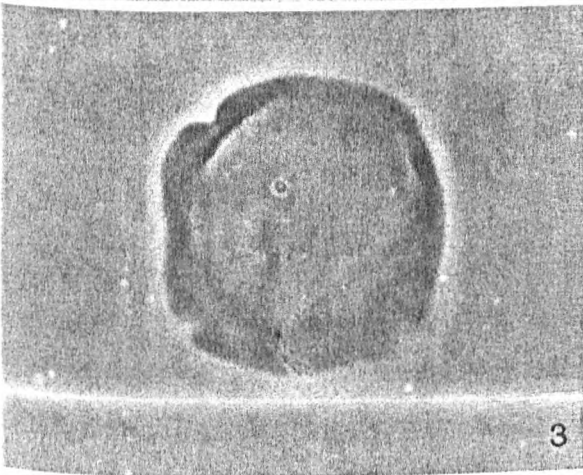
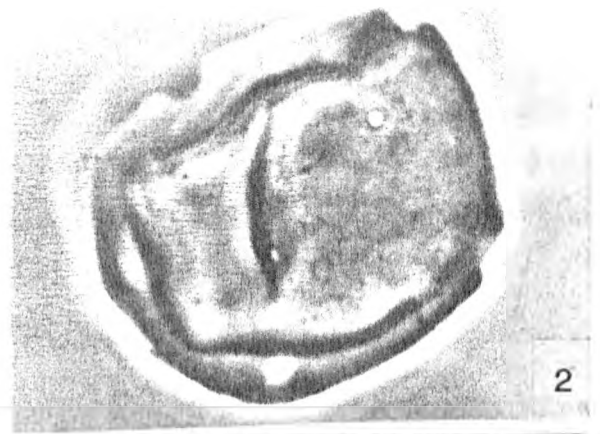
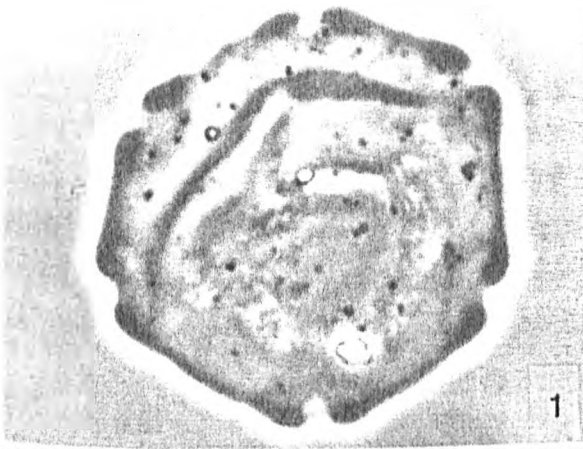


PLATE 21

Figure 1 *Alnipollenites verus* 80/14, 66.88m, slide a, U34/4, x870

Figure 2 *Alnipollenites verus* 78/1, 130.1m, slide b, E43/4, x870

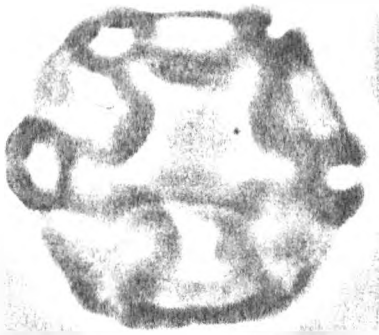
Figure 3 *Corsinipollenites oculusnoctis* 73/36, 17.22m, slide b, R50/1, x870

Figure 4 *Corsinipollenites oculusnoctis* 73/36, 17.22m, slide b, R50/1, x1720

Figure 5 *Corsinipollenites oculusnoctis minor* 16/16, 3640m, slide d, H38, x1720

Figure 6 *Trivestibulopollenites betuloides* 77/7, 104m, slide a, V35/4, x1720

Figure 7 *Trivestibulopollenites betuloides* 78/1, 131.5m, slide c, L45, x1720



1



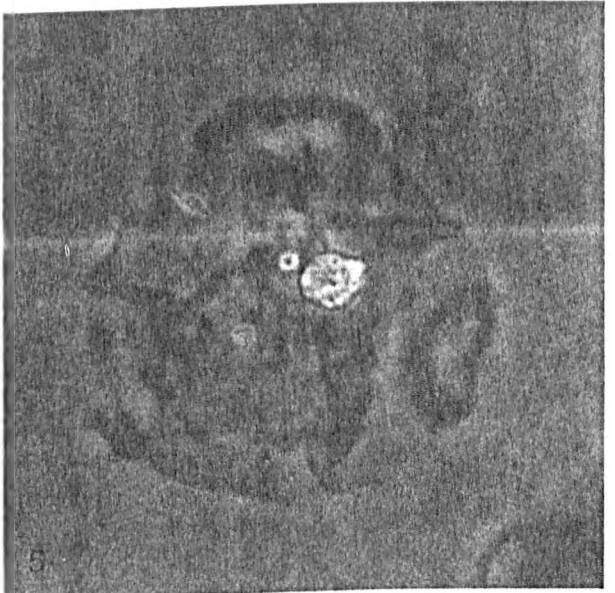
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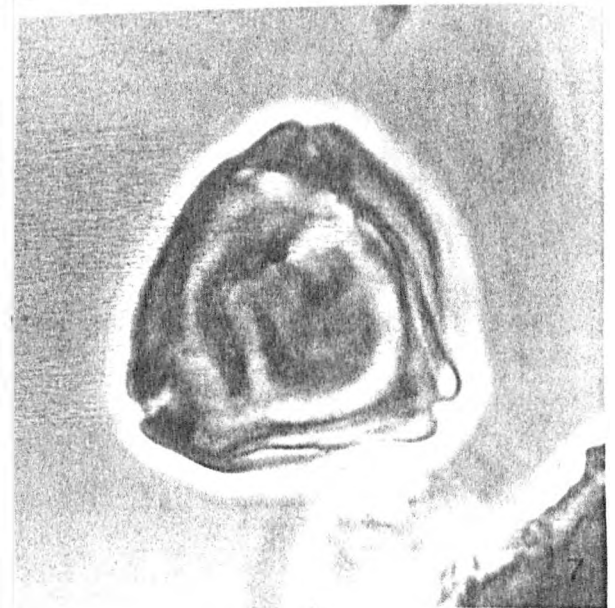
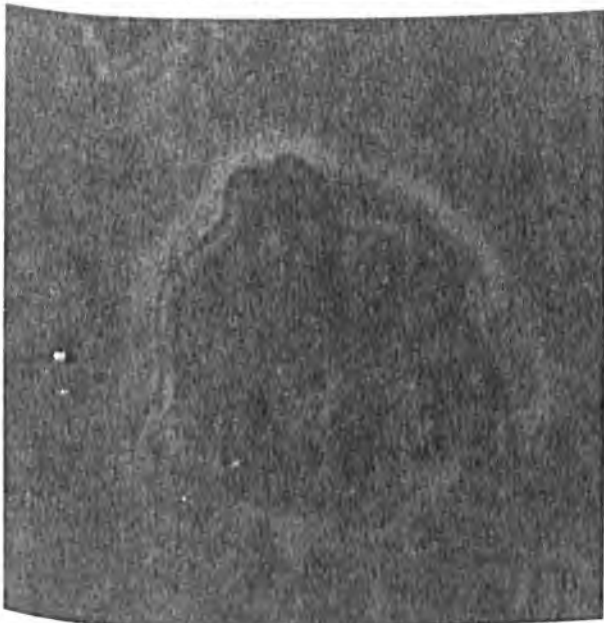
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7

PLATE 22

Figure 1 *Compositoipollenites rhizophorous* subsp. *burghasungensis* 73/36, 30.20m, slide a, J42/1, x870

Figure 2 *Compositoipollenites rhizophorous* subsp. *rhizophorous* 73/36, 27.78m, slide a, K35, x870

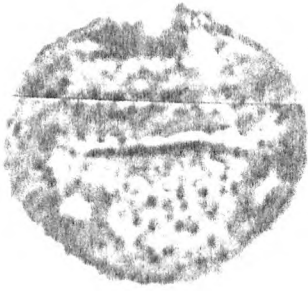
Figure 3 *Echitriporites* sp. 1 73/36, 17.22m, slide b, W37/1, x870

Figure 4 *Echitriporites* sp. 1 73/36/18.75m, slide a, M41/4, x870

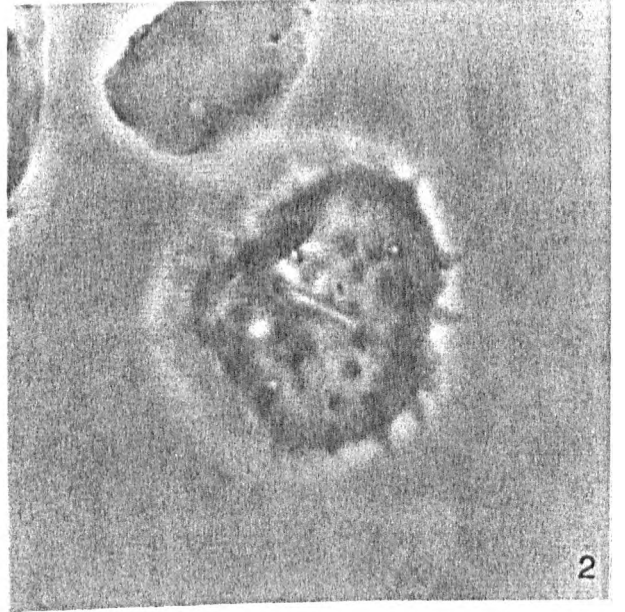
Figure 5 *Liquidambarpollenites stigmosus* 16/16, 3920m, slide a, P33/2, x870

Figure 6 *Liquidambarpollenites stigmosus* 78/1, 139.57m, slide b, U30/1, x1720

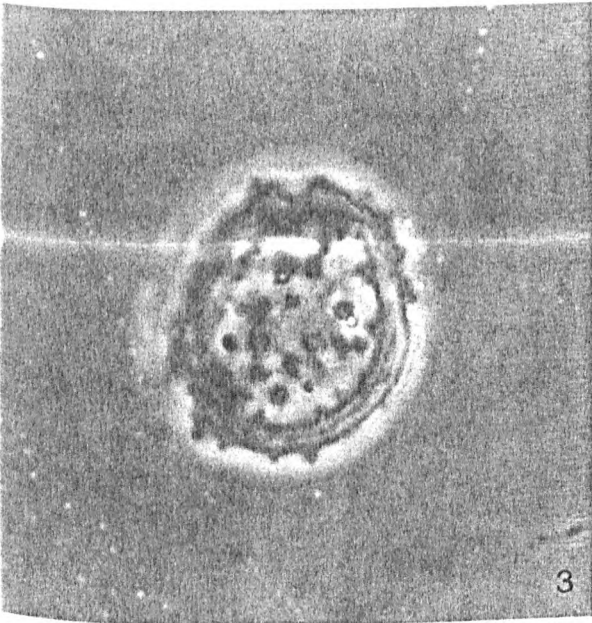
Figure 7 *Liquidambarpollenites* cf. *stigmosus* 73/36, 27.78m, slide a, W49/1, x1720



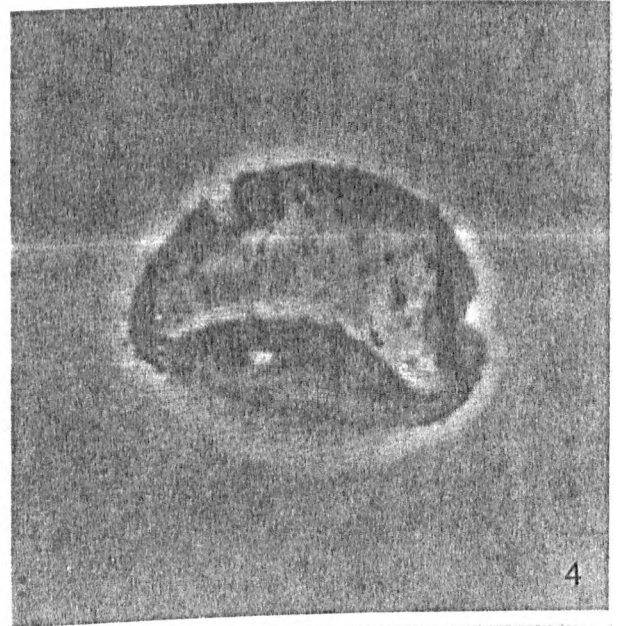
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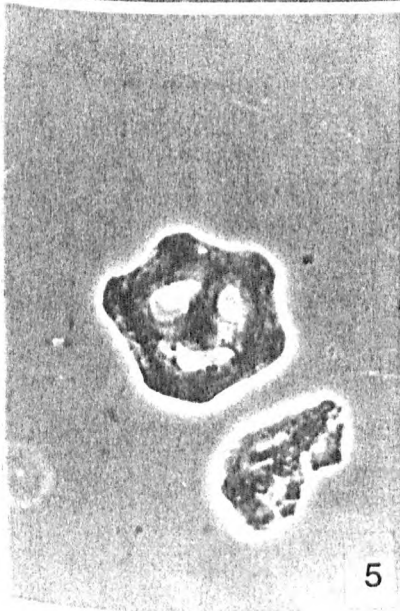
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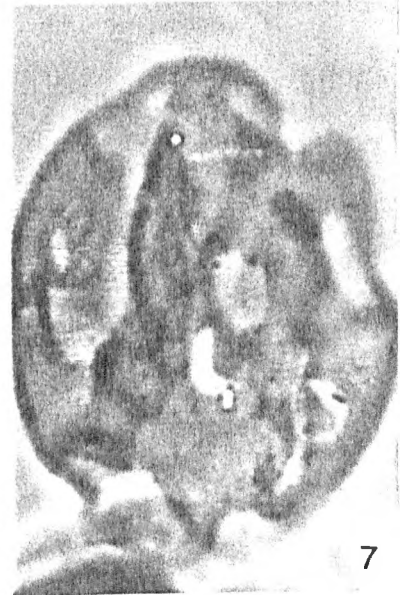
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PLATE 23

Figure 1 *Triporopollenites coryloides* 80/14, 67.21m, slide a, S31/1, x870

Figure 2 *Triporopollenites coryloides* 80/14, 66.88m, slide a, O32/4, x870

Figure 3 and 4 *Triporopollenites cf. plectosus* 80/14, 75.20m, slide a, J44/3, x870

Figure 5 *Triporopollenites robustus* Well 28, 5.1m, slide e, Q26/2, x870

Figure 6 *Triporopollenites robustus* 80/14, 66.88, slide a, W39, x870

Figure 7 *Ulmipollenites undulosus* 73/36, 12.22m, slide a, N38/3, x870

Figure 8 *Ulmipollenites undulosus* 80/14, 78.93m, slide b, M39/3, x870

PLATE 23

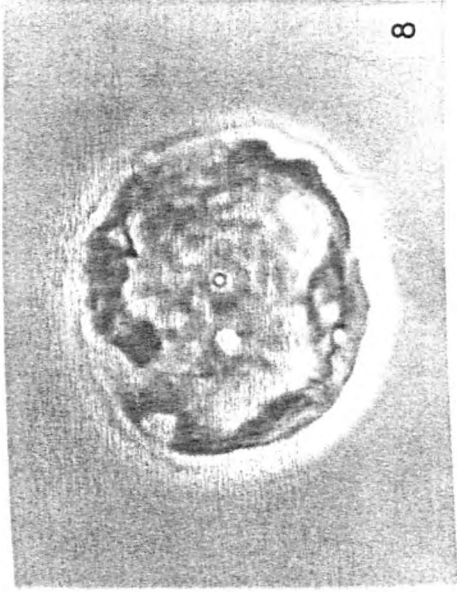
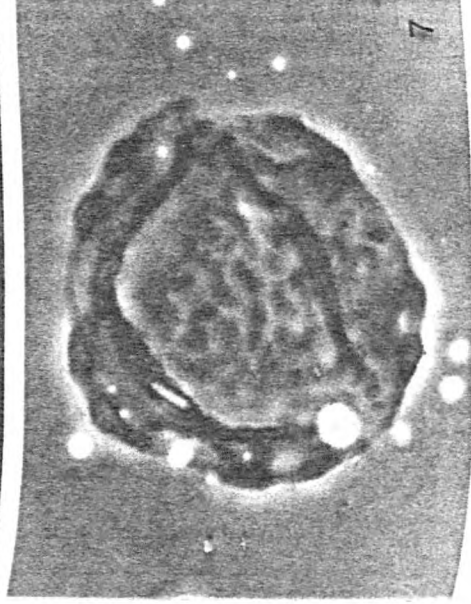
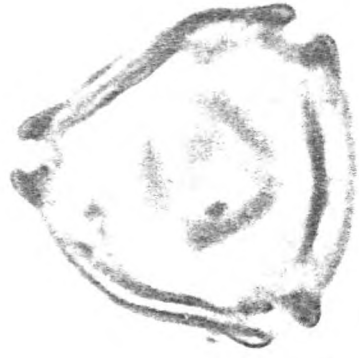
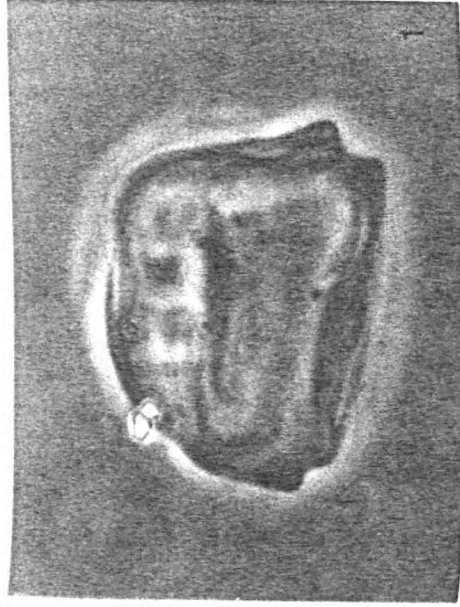


PLATE 24

Figure 1 and 2 *Intratropopollenites ceciliensis* 73/36, 20.90m, slide a, V43/4, x870

Figure 3 *Intratropopollenites instructus* 73/36, 30.20m, slide a, K34/2, x870

Figure 4 and 5 *Intratropopollenites microreticulatus* 78/1, 134.92m, slide a, H41, x1720

Figure 6 *Intratropopollenites pseudoinstructus* Well 28, 5.5m, slide e, 9/125, x1720

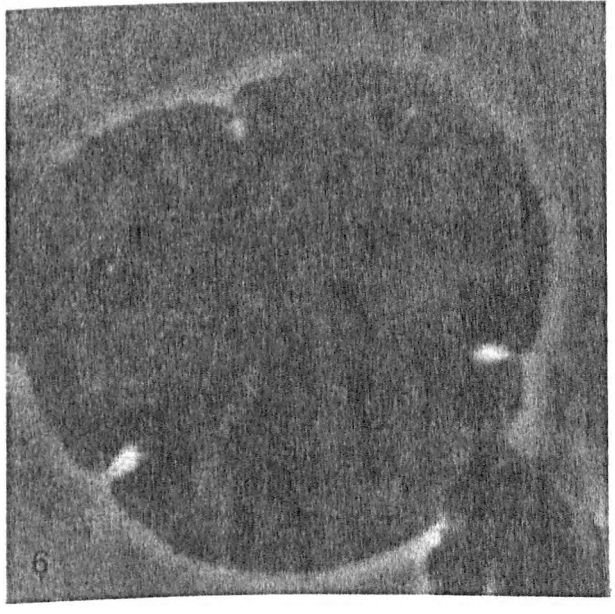
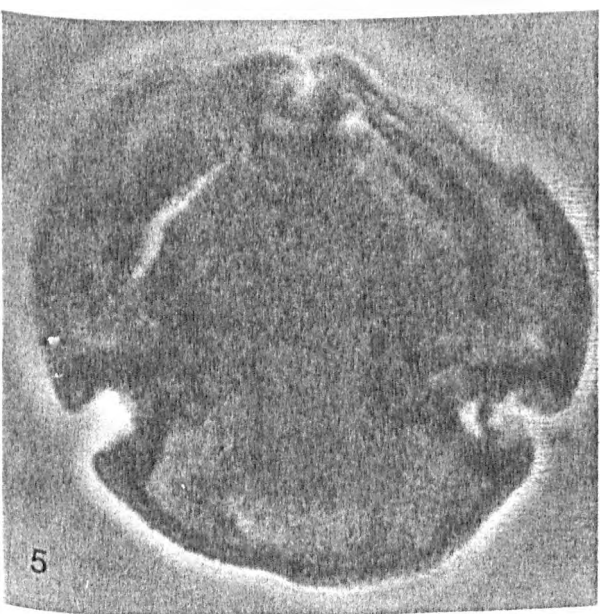
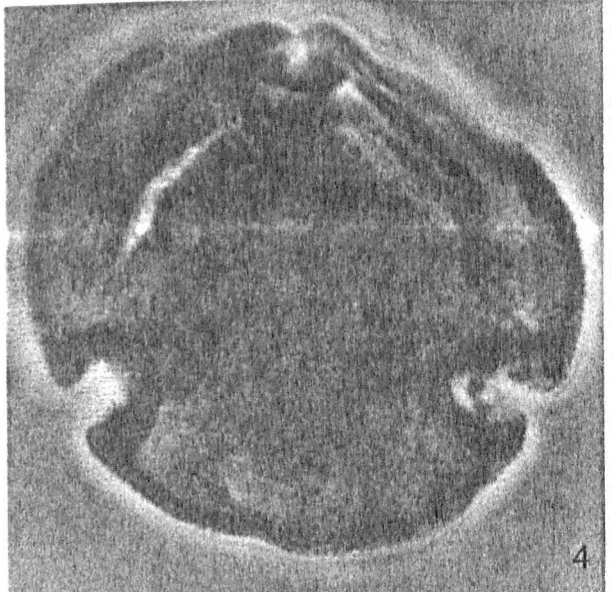
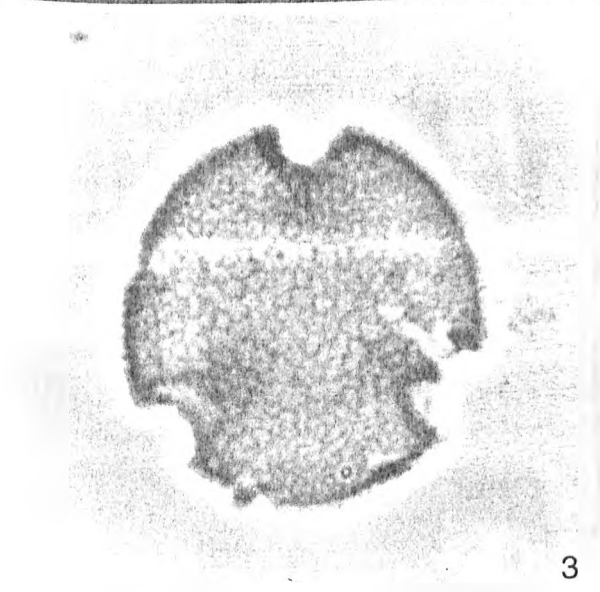
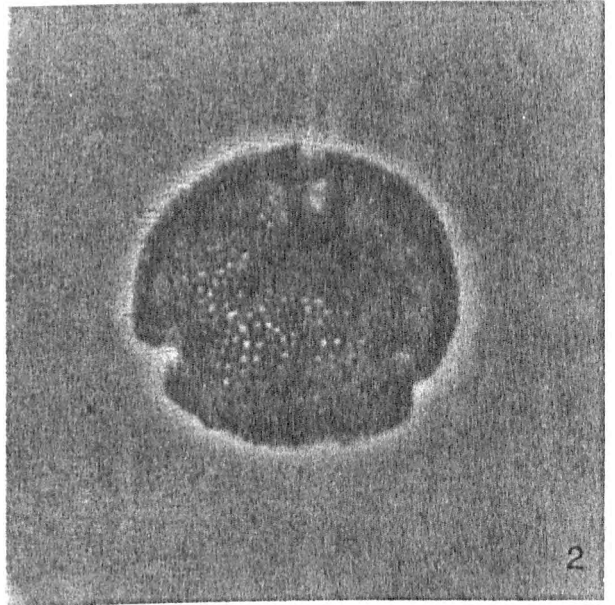
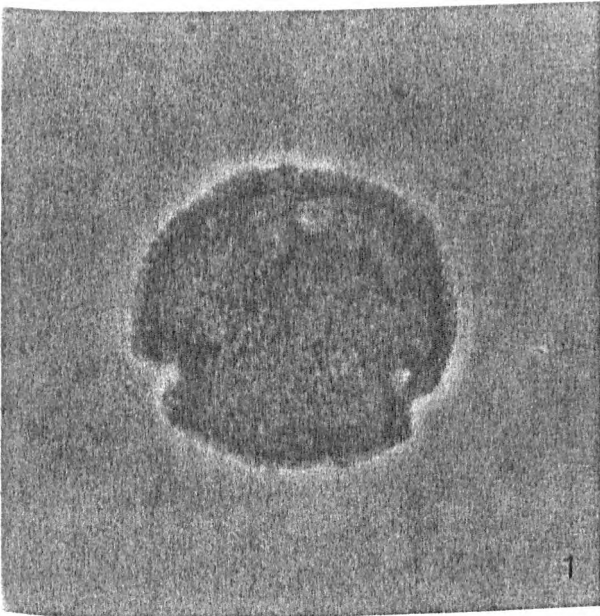


PLATE 25

Figure 1 *Porocolpopollenites vestibulum* 77/7, 110.6m, slide a, W29/4, x1720

Figure 2 *Porocolpopollenites vestibulum* 80/14, 76.73m, slide a, H34/1, x1720

Figure 3 *Porocolpopollenites vestibulum* 77/7, 111.01m, slide a, R29/4, x870

Figure 4 *Porocolpopollenites vestibulum* 73/36, 19.31, slide a, U21/2, x1720

Figure 5 *Porocolpopollenites vestibulum* 80/14, 67.21, slide a, N40/2, x870

Figure 6 *Reevesiapollis triangulus* 78/1, 130.1m, slide b, P52/3, x870

Figure 7 *Reevesiapollis triangulus* 73/36, 30.20m, slide a, K48/3, x870

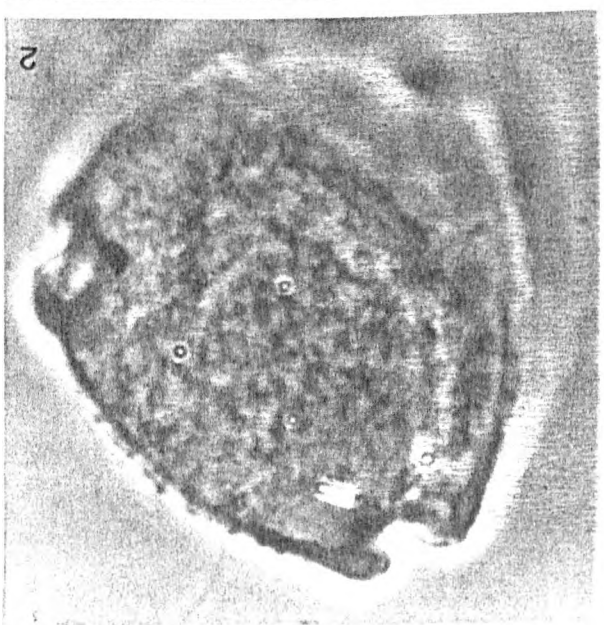
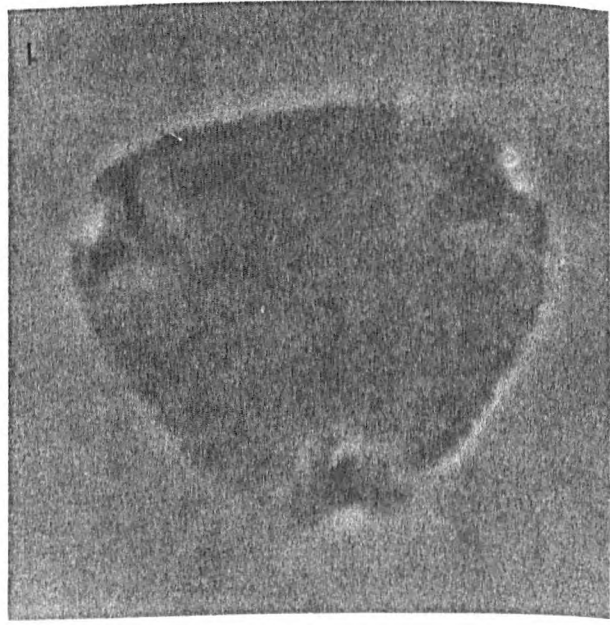
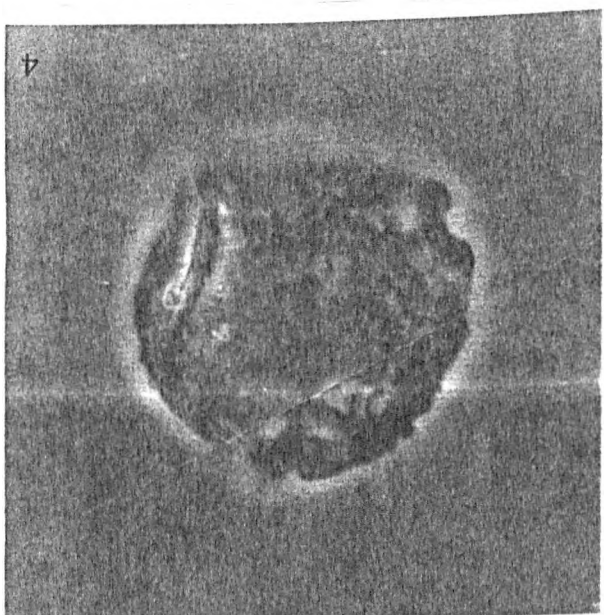
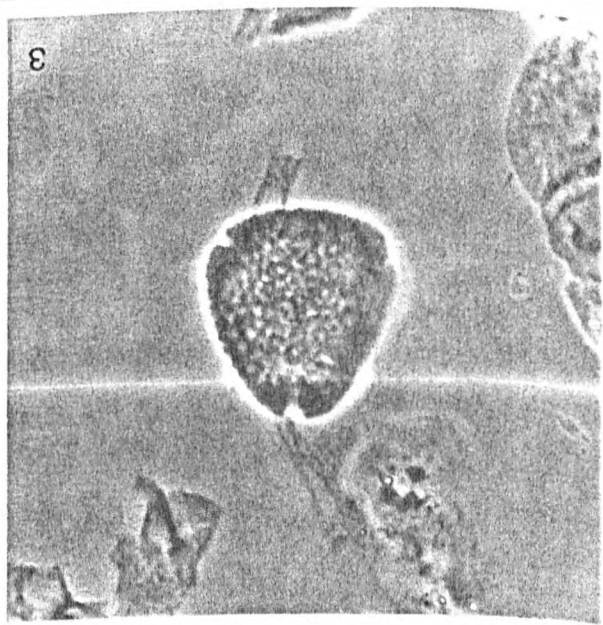
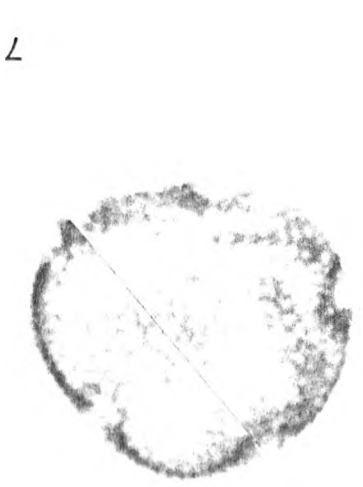


PLATE 25

PLATE 26

Figure 1 *Boehlensipollis hohli* 80/14, 76.73m, slide b, H34/1, x1720

Figure 2 *Boehlensipollis hohli* 73/36, 10.35m, slide b, G38, x1720

Figure 3 *Boehlensipollis hohli* 73/36, 10.35m, slide a, Q46, x1720

Figure 4 *Boehlensipollis hohli* 73/36, 18.75m, slide a, U36/4, x1720

Figure 5 *Boehlensipollis hohli* 73/36, 10.35m, slide a, Q43/4, x1720

Figure 6 *Boehlensipollis hohli* 73/36, 19.8m, slide a, L33, x1720

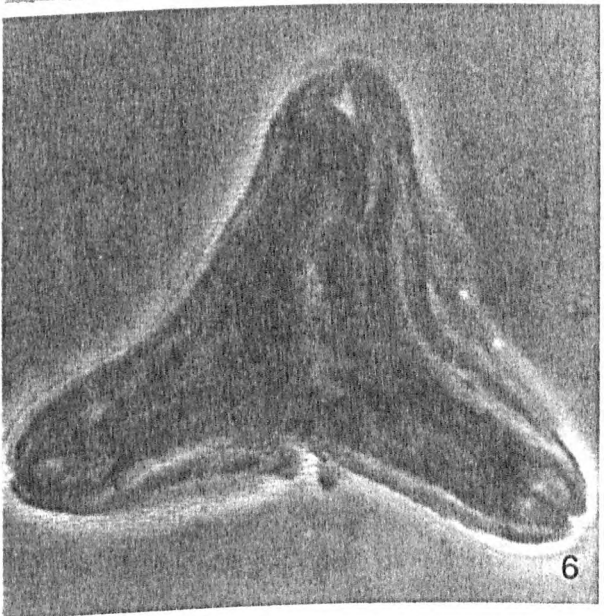
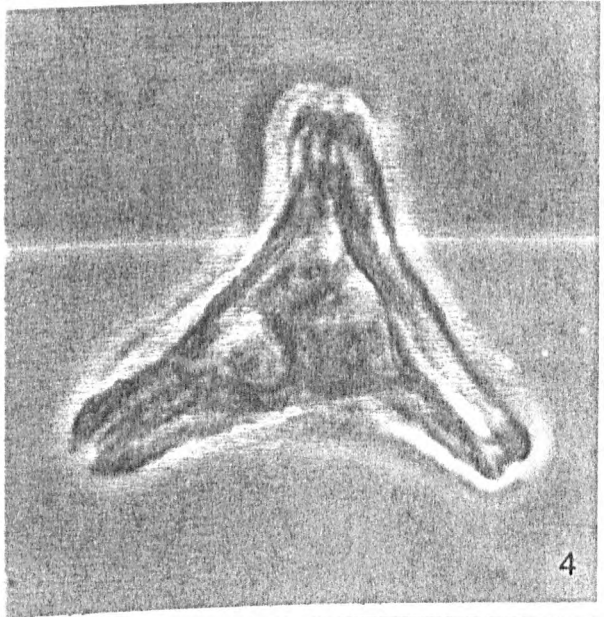
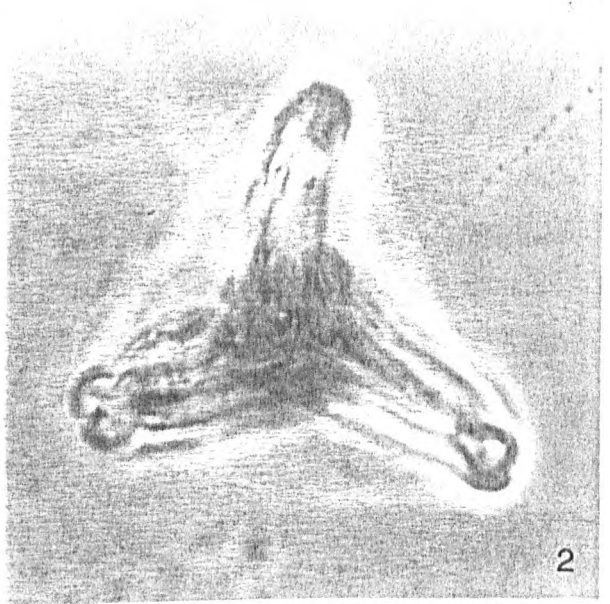
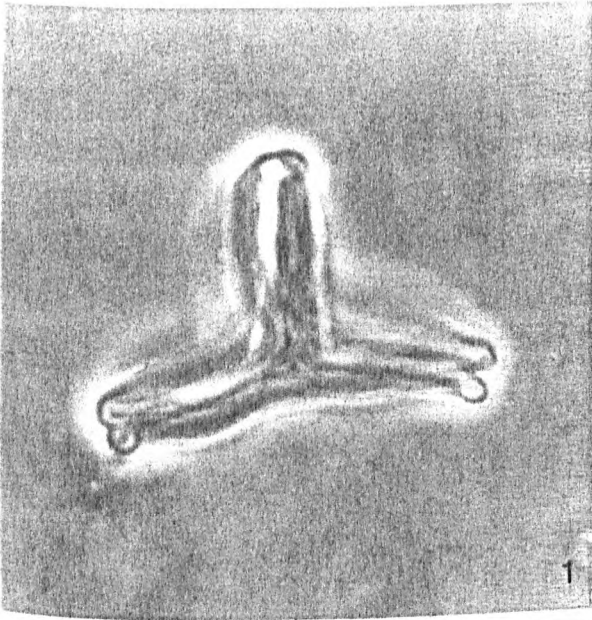


PLATE 27

Figure 1 *Cupanieidites eucalyptoides* 77/7, 110.6m, slide a, J31/4, x1720

Figure 2 *Cupanieidites eucalyptoides* 73/36, 26.79m, slide a, H36, x1720

Figure 3 and 4 *Cupanieidites eucalyptoides* 73/36, 19.31m, slide a, L18, x1720

Figure 5 *Gothanipollis gothanii* 80/14, 64.95m, slide c, S41, x1720

Figure 6 *Gothanipollis gothanii* Well 28, 4.1m, slide a, O36, x870

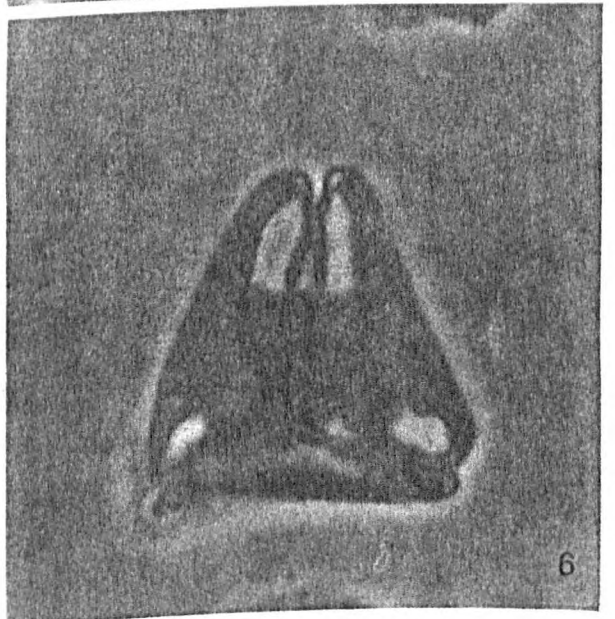
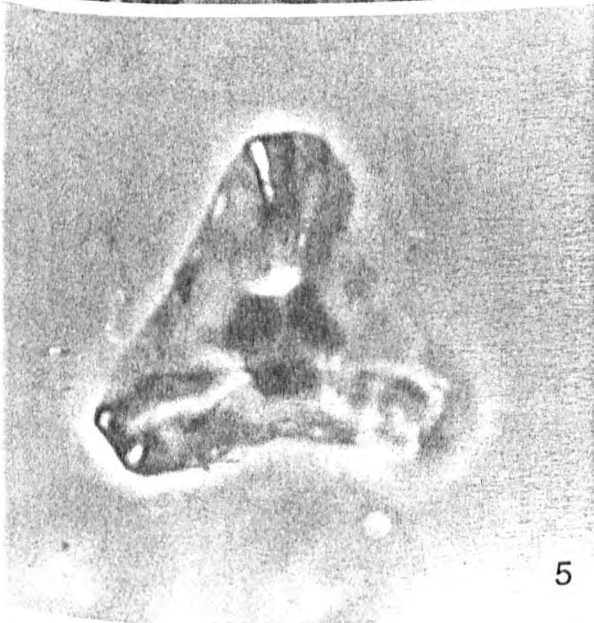
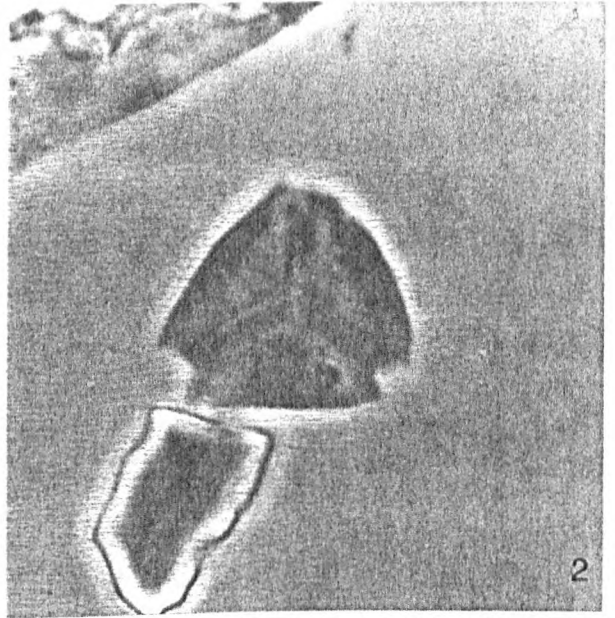
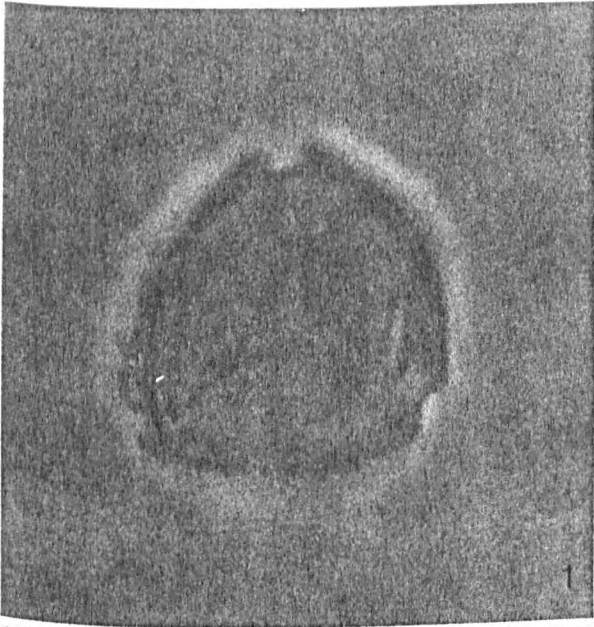


PLATE 28

Figure 1 *Cupuliferoideaepollenites liblarensis* subsp. *liblarensis* 77/7, 111.3m, slide a, S31/2, x1720

Figure 2 *Cupuliferoideaepollenites liblarensis* subsp. *fallax* Well 28, 3.1m, slide a, Y39/1, x1720

Figure 3 *Cupuliferoideaepollenites liblarensis* subsp. *fallax* 73/36, 10.35m, slide a, Q42/4, x1720

Figure 4 *Quercoidites microhenrici* Well 28, 3.1m, slide a, V42, x1720

Figure 5 and 6 *Quercoidites microhenrici* Well 28, 6.1m, slide a, W32, x1720

Figure 7 and 8 *Retitricolpites anguloluminosus* 77/7, 110.6m, slide a, Y38/1, x1720

Figure 9 *Retitricolpites retiformis* 80/14, 64.95m, slide c, U38, x1720

Figure 10 *Retitricolpites retiformis* Well 28, 6.1m, slide a, O37, x1720

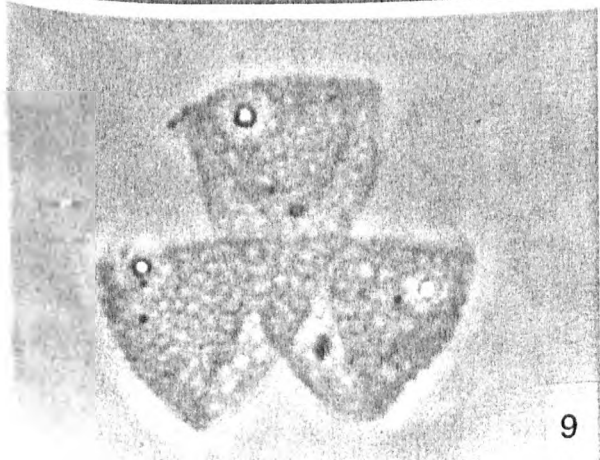
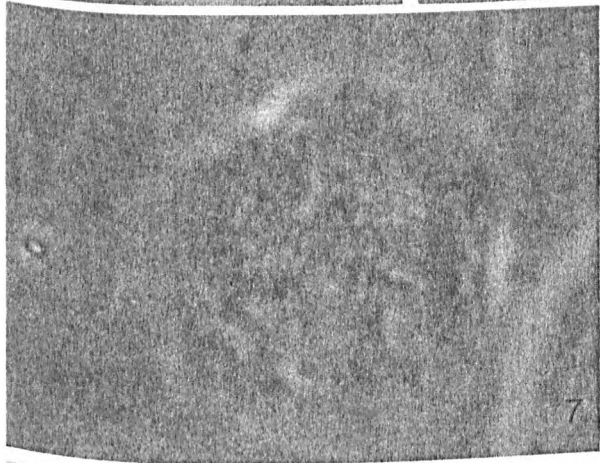
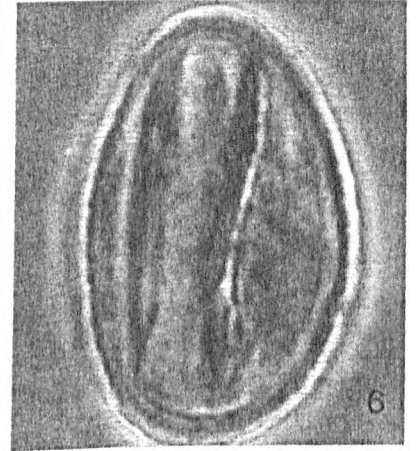
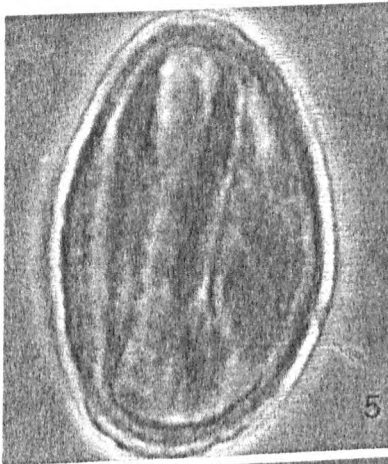
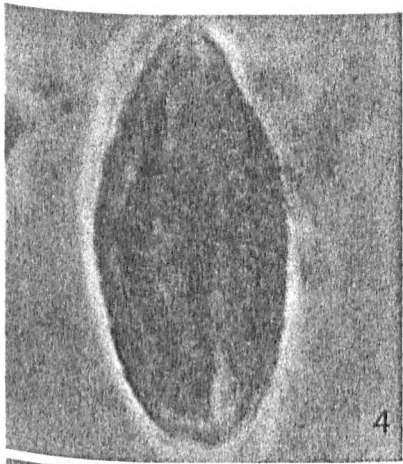
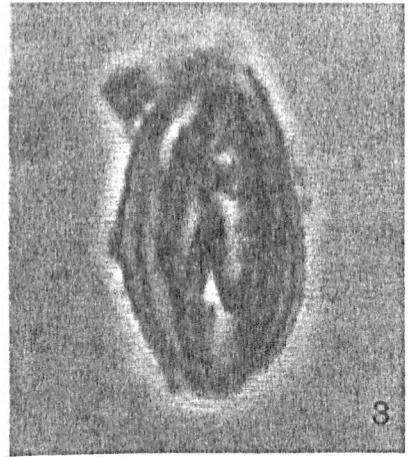
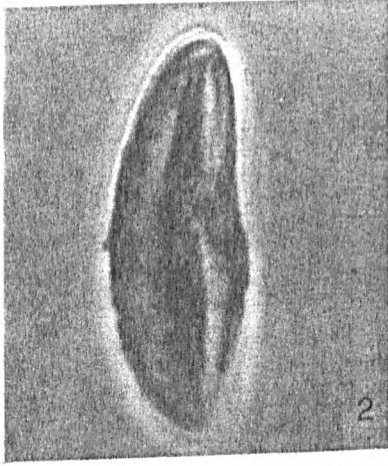


PLATE 29

Figure 1 and 2 *Tricolpopollenites* cf. *discus* 80/14, 66.19m, slide d, T37/2, x870

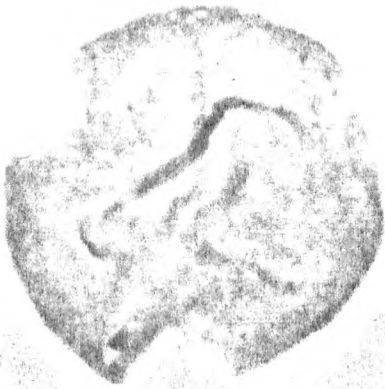
Figure 3 and 4 *Tricolpopollenites hians* 80/14, 64.95m, slide c, Q37/1, x870

Figure 5 *Tricolpopollenites hians* 88/112, 40.02m, slide a, T36, x870

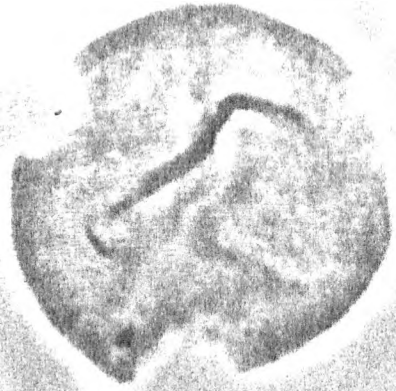
Figure 6 *Tricolpopollenites* cf. *hians* Well 28, 8.3m, slide a, 20.2/128.2, x870

Figure 7 *Tricolpopollenites* cf. *hians* 88/12, 40.02m, slide a, V36/4, x870

Figure 8 *Tricolpopollenites* cf. *hians* 78/1, 133m, slide c, Q47/2, x870



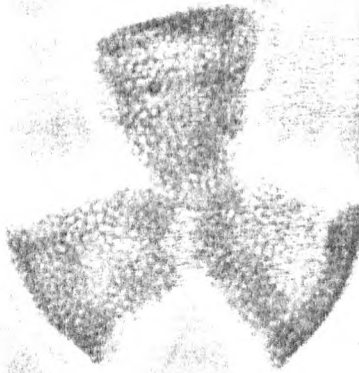
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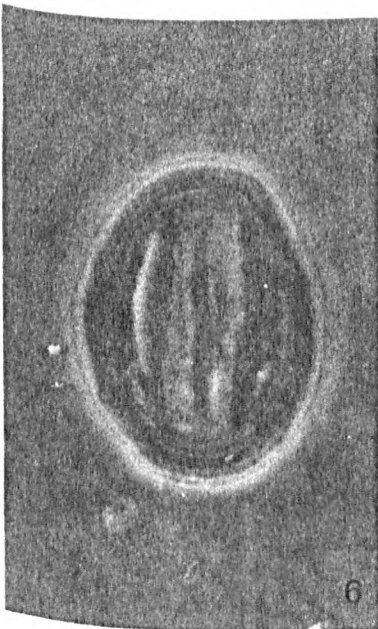
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4



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6



7



8

PLATE 30

Figure 1 *Tetracolpites* spp. 78/1, 128.2m, slide d, U35, x1720

Figure 2 *Tetracolpites reticulatus* 78/1, 124.37m, slide c, U31/2, x1720

Figure 3 and 4 *Cupuliferoipollenites cingulum* subsp. *fuscus* Well 28, 3.1m, slide a, U49/3, x1720

Figure 5 *Cupuliferoipollenites cingulum* subsp. *oviformis* Well 28, 6.1m, slide a, W39, x1720

Figure 6 and 7 *Cupuliferoipollenites cingulum* subsp. *pusillus* 77/7, 111.8m, slide b, P42/2, x1720. NB 20um long

Figure 8 *Cyrillaceaepollenites megaexactus* 77/7, 111.01, slide a, Q29, x1720

Figure 9 *Cyrillaceaepollenites megaexactus* 80/14, 66.19m, slide d, V43/2, x1720

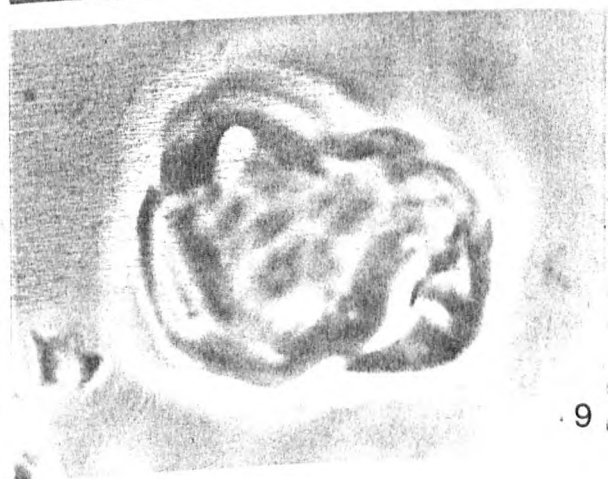
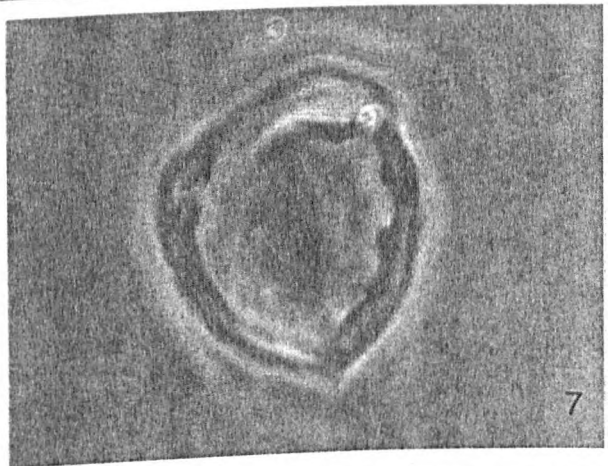
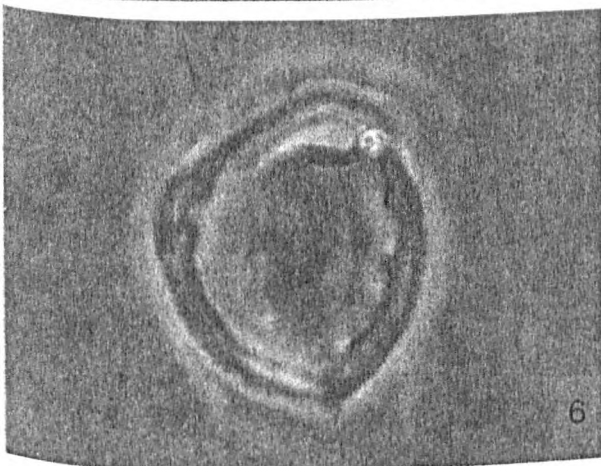
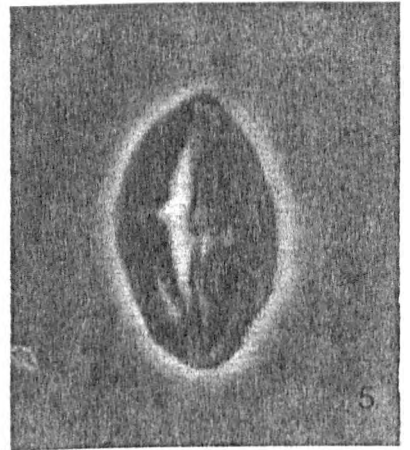
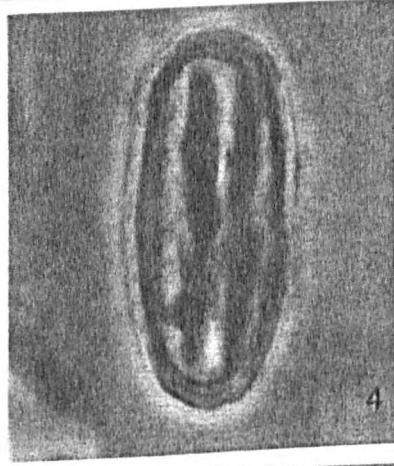
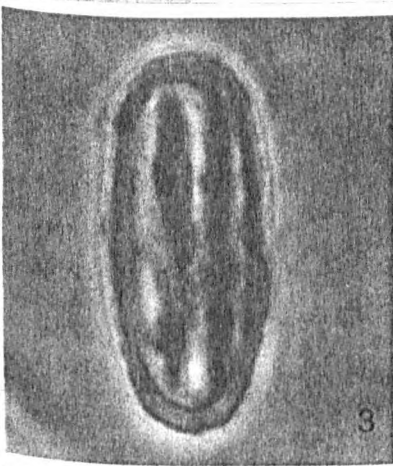


PLATE 31

Figure 1 and 2 *Echitricolporites spinosus* 21/28, 2910m, slide b, W43, x1720

Figure 3 *Favitricolporites microreticulatus* 78/1, 136.6m, slide a, Q49, x870

Figure 4 *Favitricolporites microreticulatus* 73/36, 20.30m, slide a, P39, x870

Figure 5 *Ilexpollenites iliacus* 16/16, 3800m, slide a, L36/1, x1720

Figure 6 *Ilexpollenites iliacus* 73/36, 8-10m, slide a, S42/4, x870

Figure 7 and 8 *Ilexpollenites iliacus* 80/14, 66.88m, slide a, Q46/2, x1720

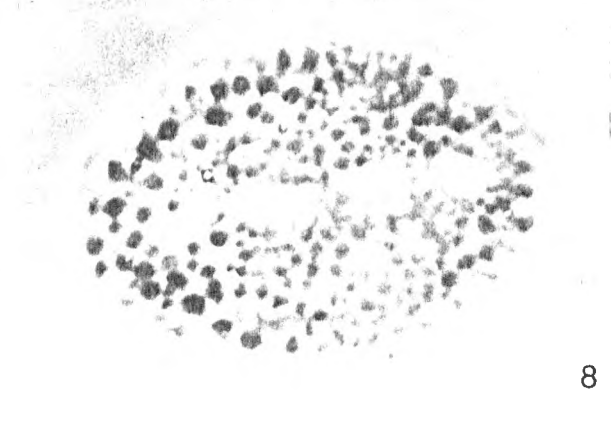
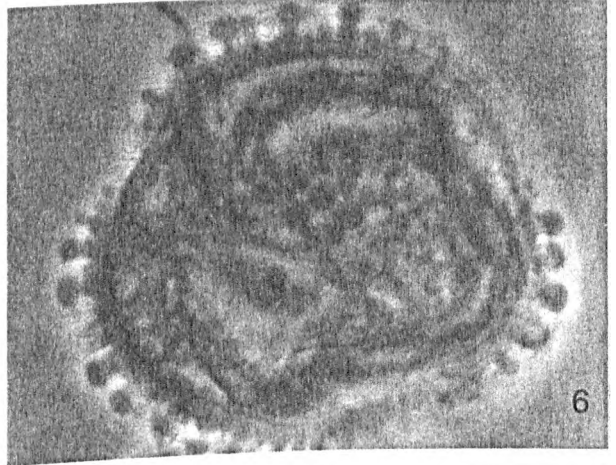
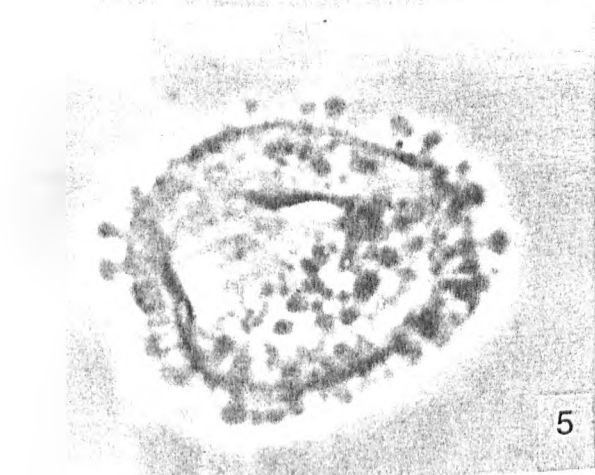
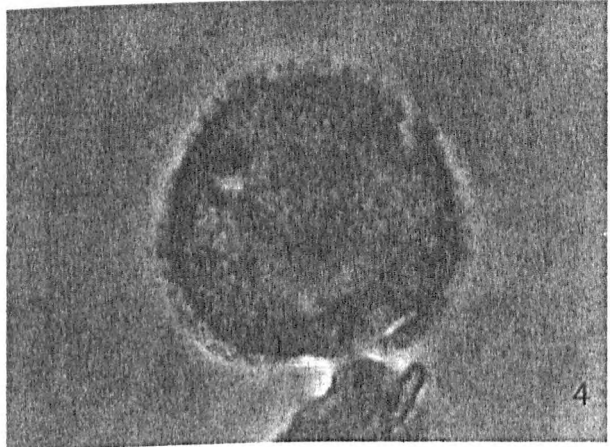
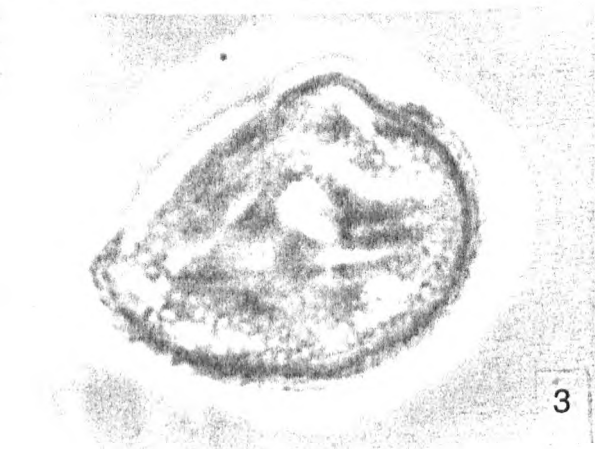
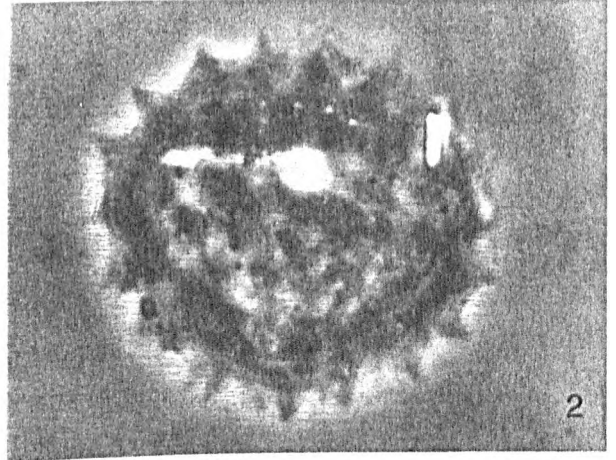
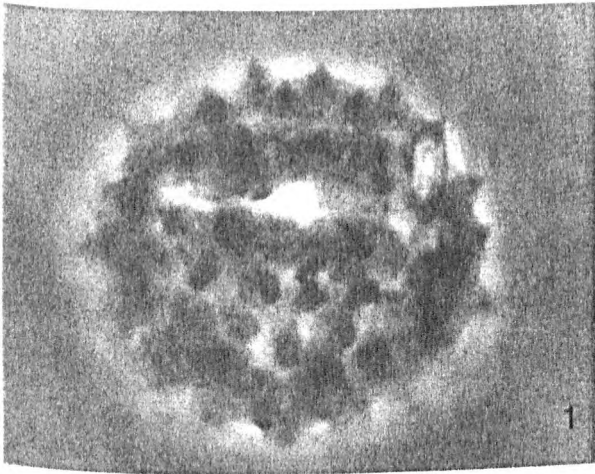


PLATE 32

Figure 1 *Ilexpollenites margaritatus* 80/14, 78.93m, slide a, S43, x870

Figure 2 *Ilexpollenites margaritatus* 80/14, 66.19m, slide d, W49/3, x870

Figure 3 and 4 *Ilexpollenites microiliaceous* 80/14, 64.26m, slide a, T37/4, x1720

Figure 5 *Mediocolpopollis* spp. 73/36, 10.35m, slide a, D41/2, x1720

Figure 6 *Mediocolpopollis* spp. 73/36, 10.35m, slide a, Q42/4, x1720

Figure 7 *Nyssapollenites kruschi* subsp. *analepticus* 88/12, 34.6m, slide a, U34/4, x870

Figure 8 *Nyssapollenites kruschi* subsp. *analepticus* 73/36, 12.65m, slide b, V41/3, x870

Figure 9 *Nyssapollenites kruschi* subsp. *analepticus* 73/36, 12.65m, slide b, H43, x870

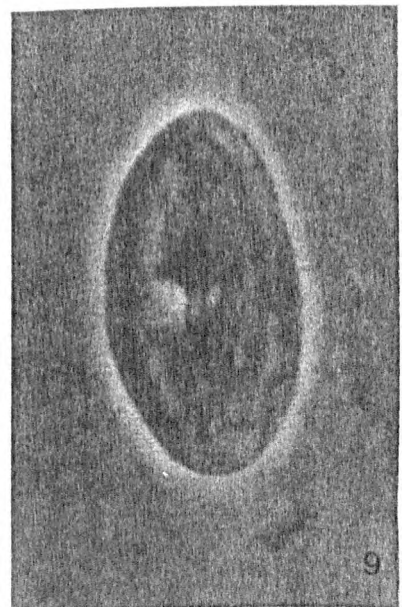
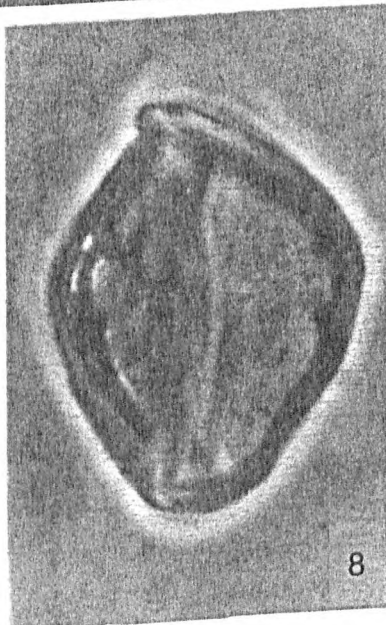
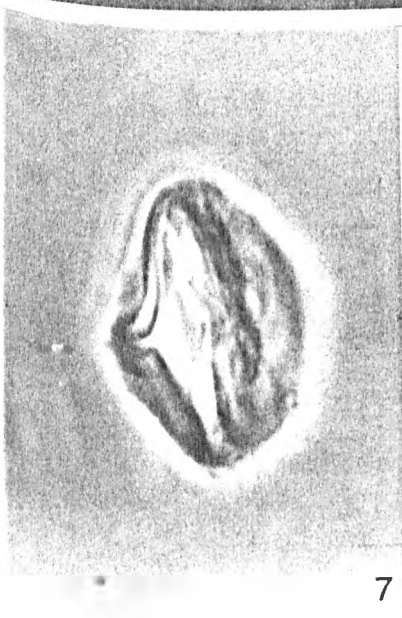
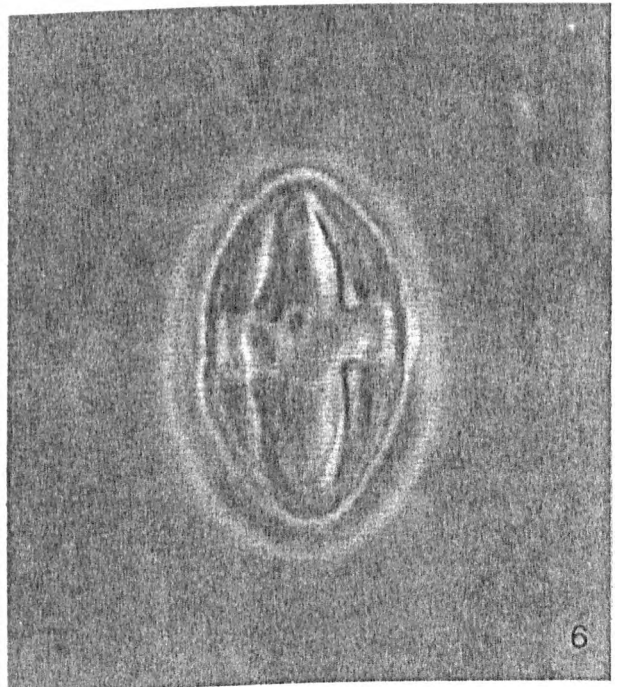
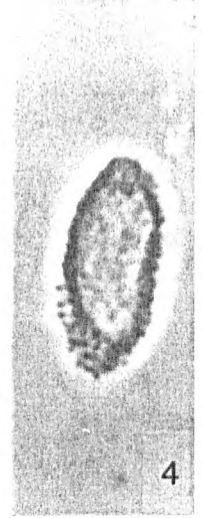
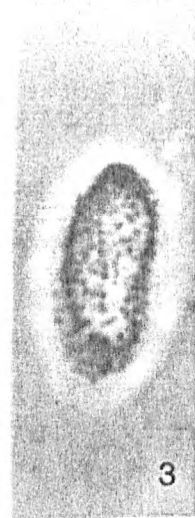


PLATE 33

Figure 1 and 2 *Nyssapollenites kruschi* subsp. *accessorius* 73/36, 26.79m, slide a, V48/3, x1720

Figure 3 *Nyssapollenites satzveyensis* 78/1, 136.6m, slide a, M45/1, x1720

Figure 4 *Nyssapollenites satzveyensis* 78/1, 139.57m, slide a, Q30, x1720

Figure 5 *Tricolporopollenites baculoferus* 80/14, 64.95m, slide c, V35/3, x1720

Figure 6 *Tricolporopollenites baculoferus* 73/36, 18.03m, slide a, U30/1, x1720

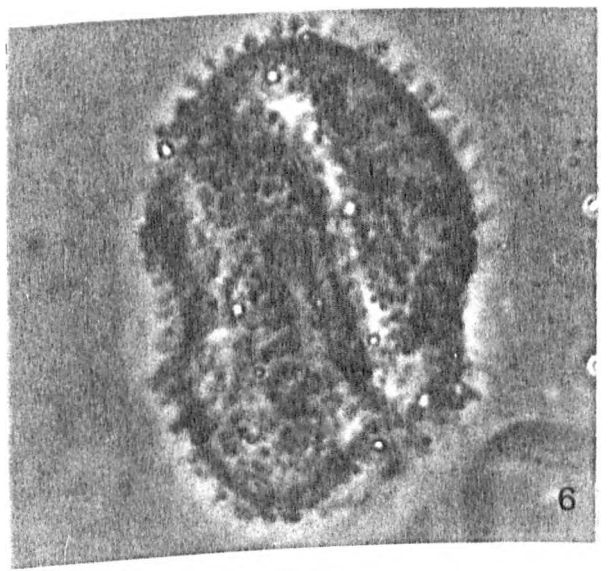
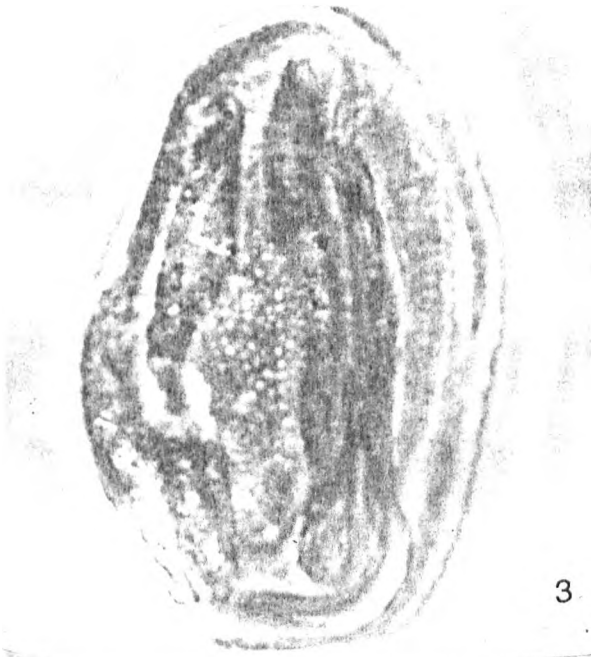


PLATE 34

Figure 1 *Tricolporopollenites edmundi* Well 28, 6.1m, slide a, G33, x1720

Figure 2 *Tricolporopollenites edmundi* 80/14, 78.93m, slide b, O47, x1720

Figure 3 *Tricolporopollenites edmundi* 78/1, 130.1m, slide a, G37/3, x1720

Figure 4 *Tricolporopollenites cf. edmundi* 78/1, 133m, slide c, Q38/4, x1720

Figure 5 *Tricolporopollenites cf. pseudocingulum* 80/14, 76.73m, slide a, U38/2, x1720

Figure 6 *Tricolporopollenites pseudocingulum* 73/36, 19.31m, slide a, L23/2, x870

Figure 7 *Tricolporopollenites spinus* 73/36, 19.31m, slide a, L23/2, x870

Figure 8 *Tricolporopollenites spinus* 73/36, 19.81m, slide a, N35/1, x870

Figure 9 *Tricolporopollenites spinus* Well 28, 6.1m, slide a, G33, x870

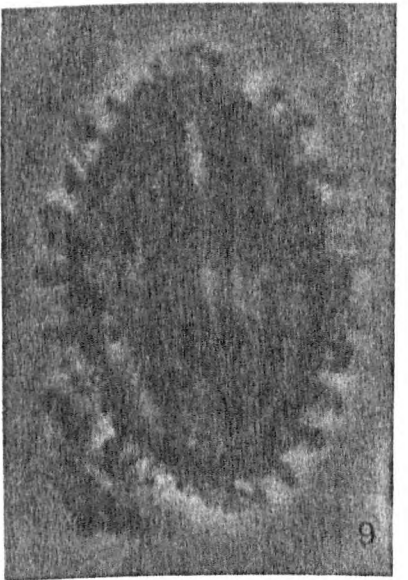
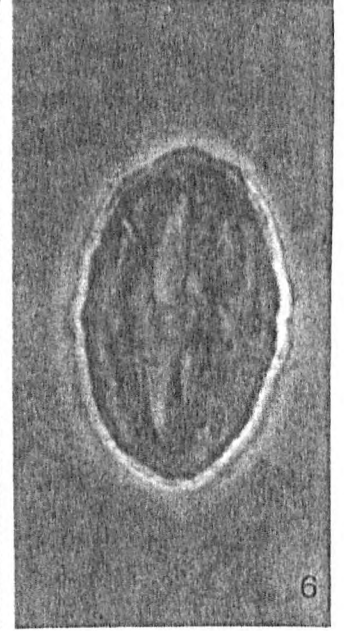
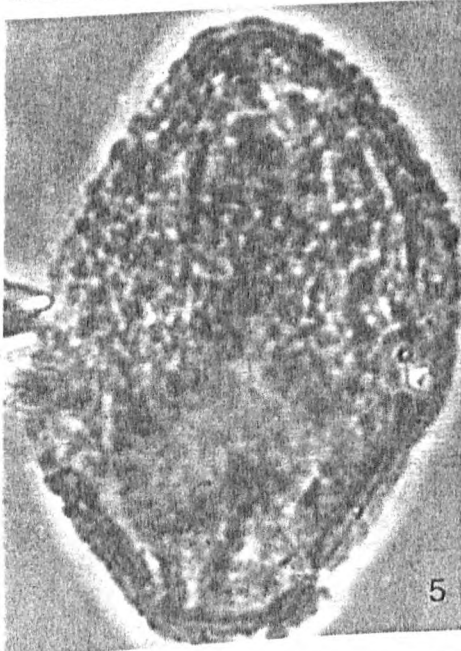
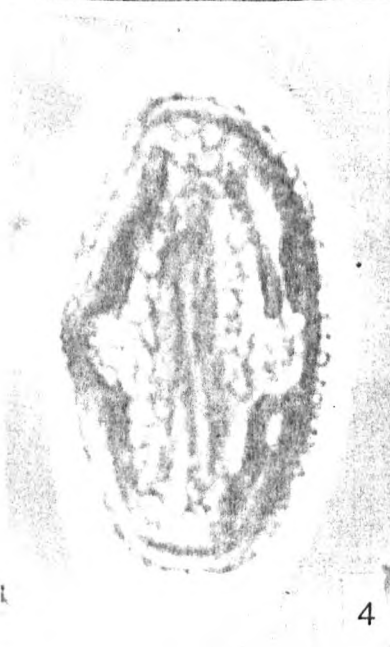
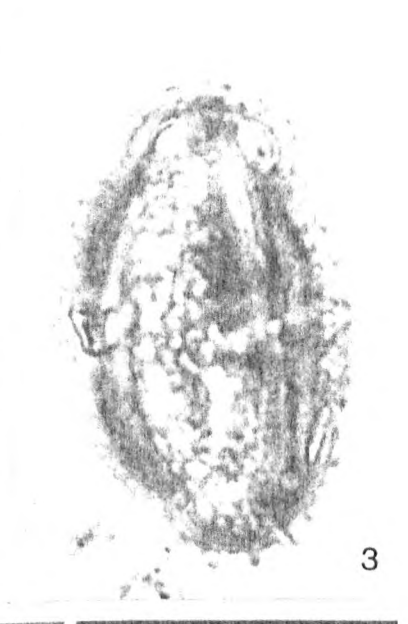
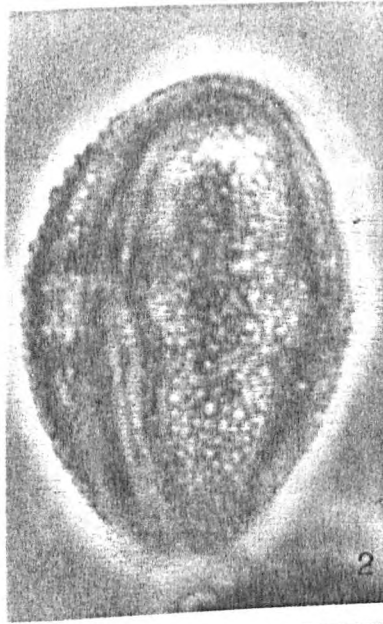


PLATE 35

Figure 1 *Tricolporopollenites viburnoides* Well 28, 6.1m, slide a, P38, x1720

Figure 2 *Tricolporopollenites viburnoides* 77/7, 112-115m, slide a, T45/2, X1720

Figure 3 *Tricolporopollenites viburnoides* 77/7, 110.6m, slide a, X39/4, x1720

Figure 4 and 5 *Tricolporopollenites viburnoides* 88/12, 34.6m, slide a, J42/3, x870

Figure 6 *Tricolporopollenites viburnoides* 88/12, 41.70m, slide a, G40/2, x870

Figure 7 *Tricolporopollenites* sp. 1 73/36, 22.15m, slide a, V47, x870

Figure 8 *Tricolporopollenites* sp. 1 73/36, 10.35m, slide a, Q47, x870

Figure 9 *Tricolporopollenites* sp. 1 Well 28, 6.1m, slide a, T40, x870

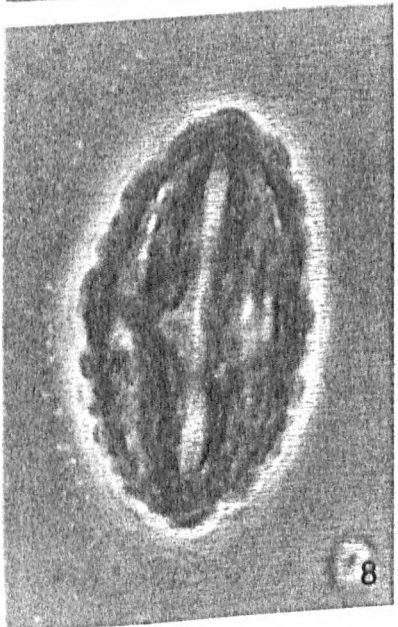
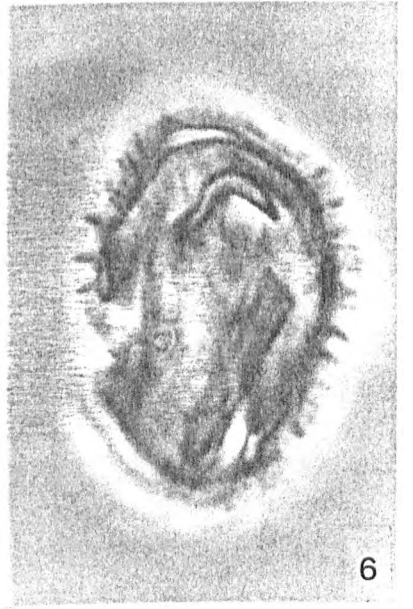
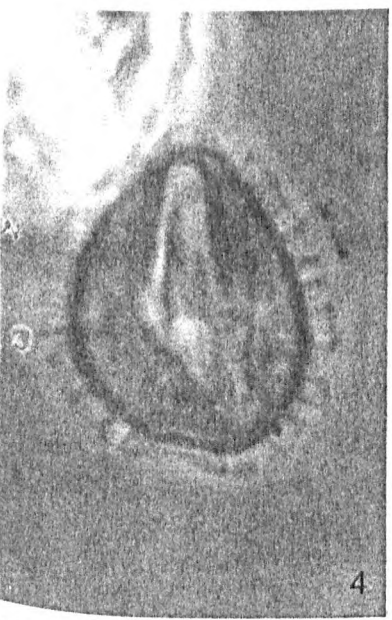
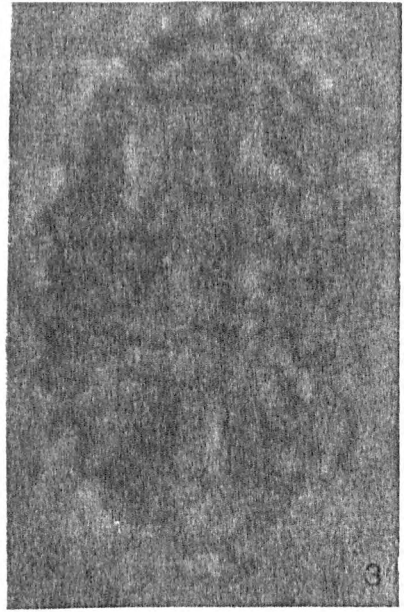
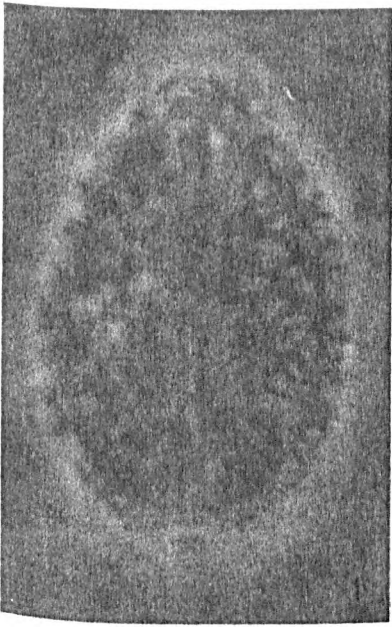


PLATE 36

Figure 1 and 2 *Tricolporopollenites* sp. 1 Well 28, 6.1m, slide a, S45/1, x870

Figure 3 *Tricolporopollenites* sp. 1 Well 28, 5.1m, slide a, 9.5/147, x870

Figure 4 and 5 *Ericipites* spp. 73/36, 10.35m, slide a. D41/2, x1720

Figure 6 *Incertae sedis* A 73/36, 20.30m, slide a, C37/4, x870

Figure 7 *Fenestrites spinosus* 21/28, 2970m, slide a, K34/1, x1720. This probably represents a caved taxa

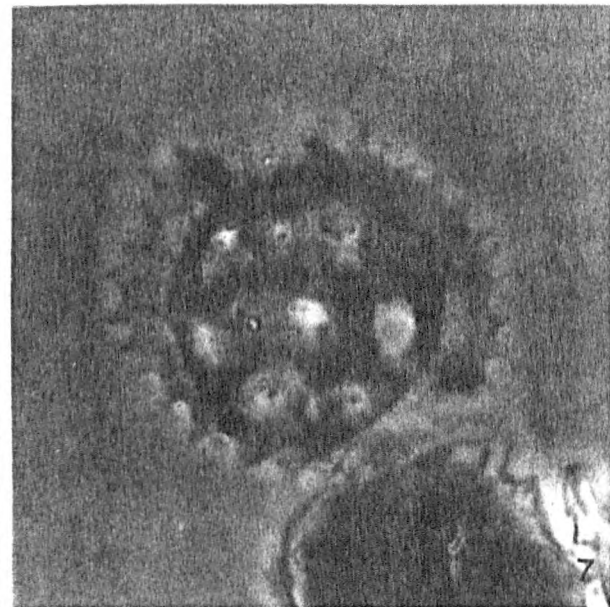
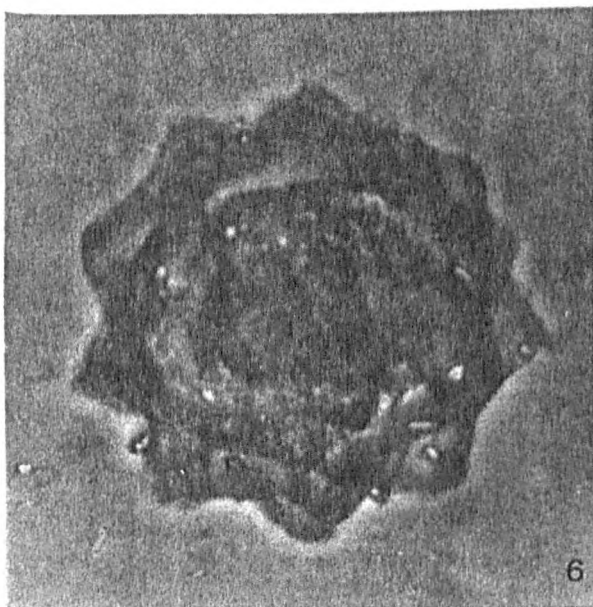
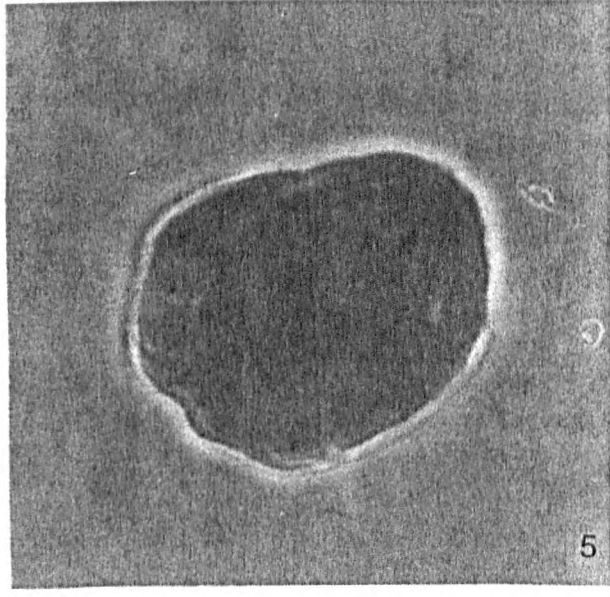
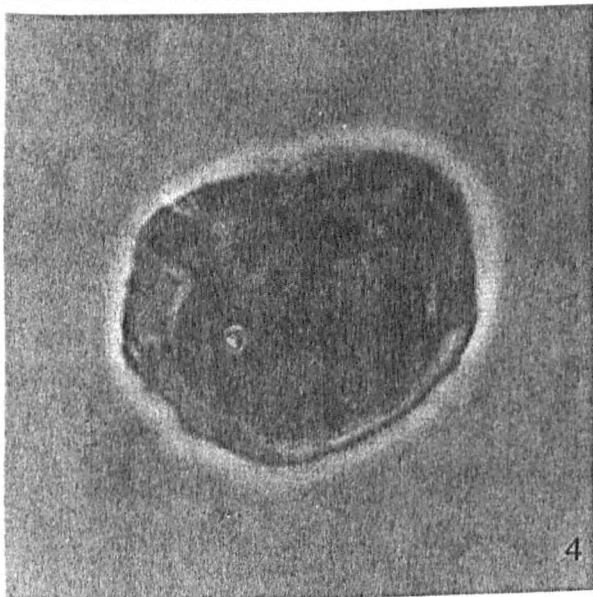


PLATE 37

Figure 1 *Rhombodinium draco* 21/28, 3090m, slide a, N43, x870

Figure 2 *Wetziella gochti* 21/28, 3090m, slide a, Q48, x870

Figure 3 *Wetziella gochti* 16/16, 3960m, slide a, O36, x870

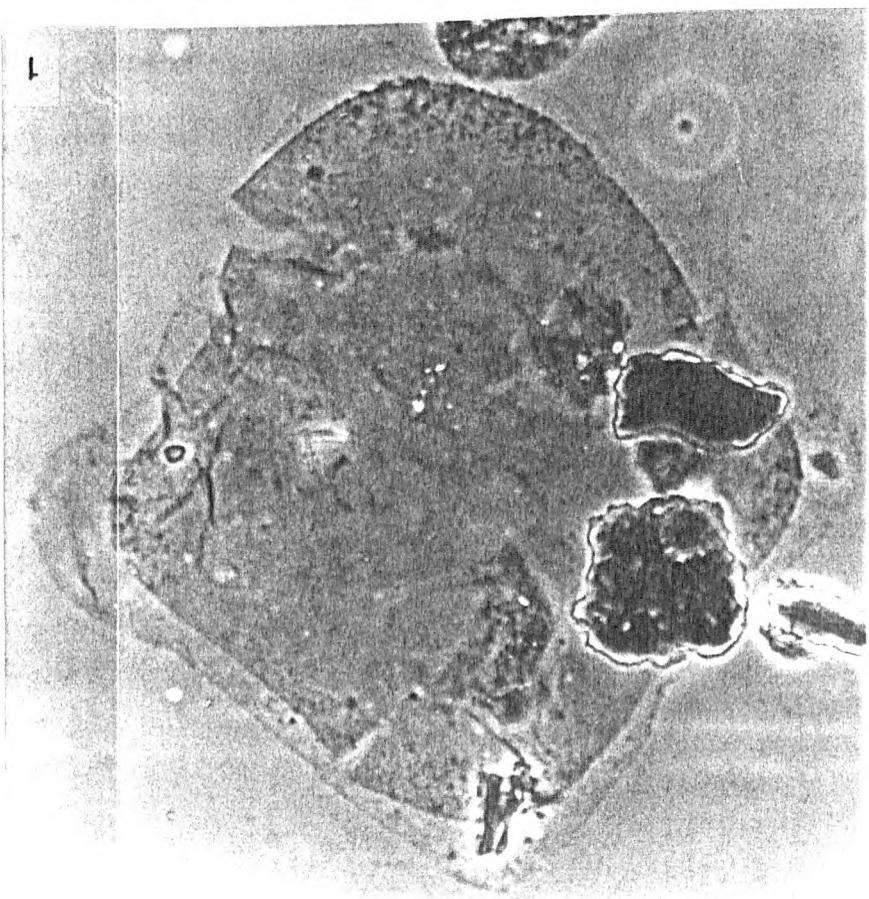
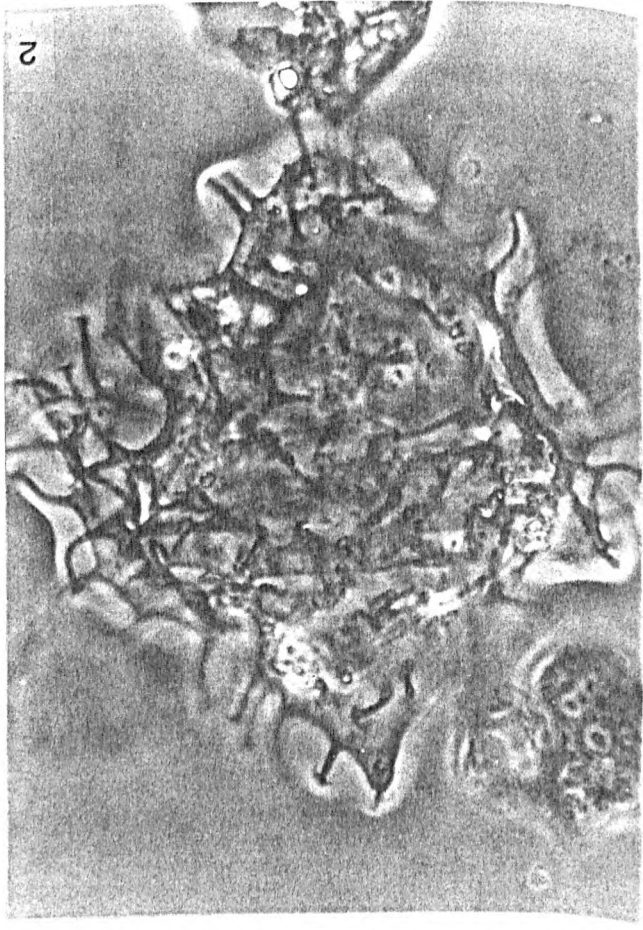
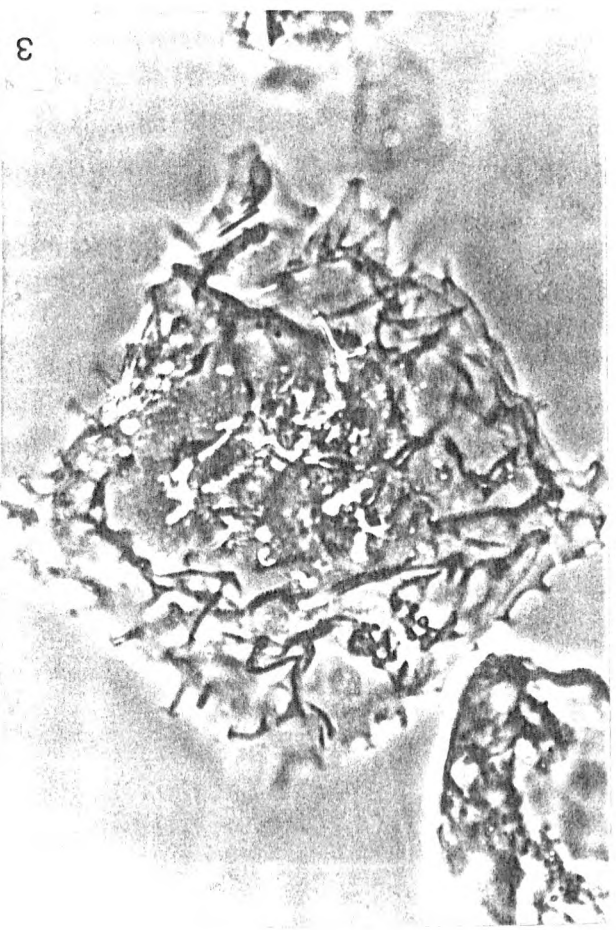


PLATE 37

PLATE 38

Figure 1 *Wetziella symmetrica* 21/28, 3000m, slide b, H37, x870

Figure 2 *Wetziella symmetrica* 16/16, 4020m, slide a, L39/1, x870

Figure 3 *Wetziella symmetrica* 21/28, 3060m, slide a, R33, x870

Figure 4 *Wetziella symmetrica* 16/16, 4140m, slide a, T48/3, x870

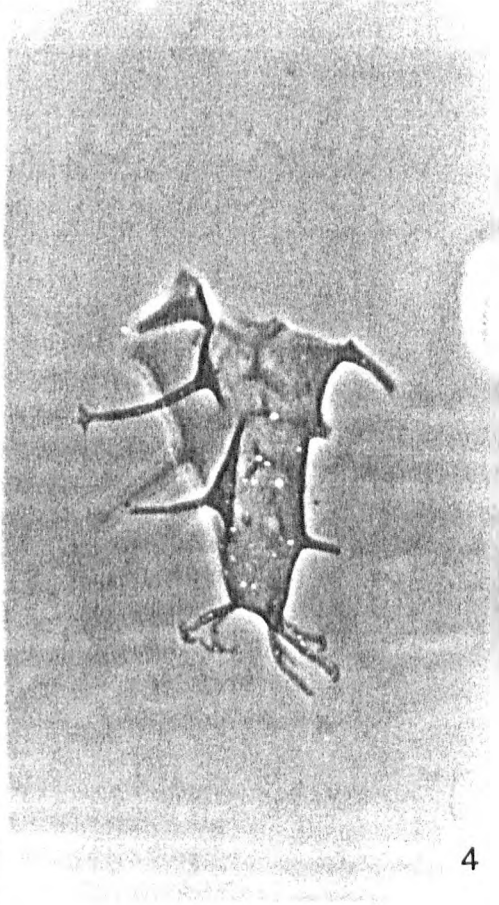
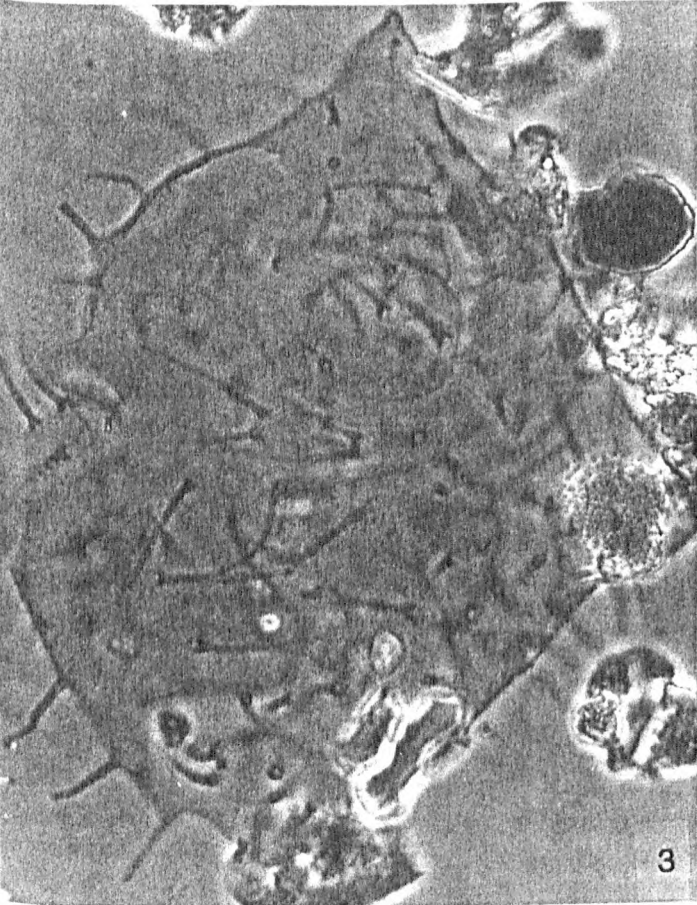
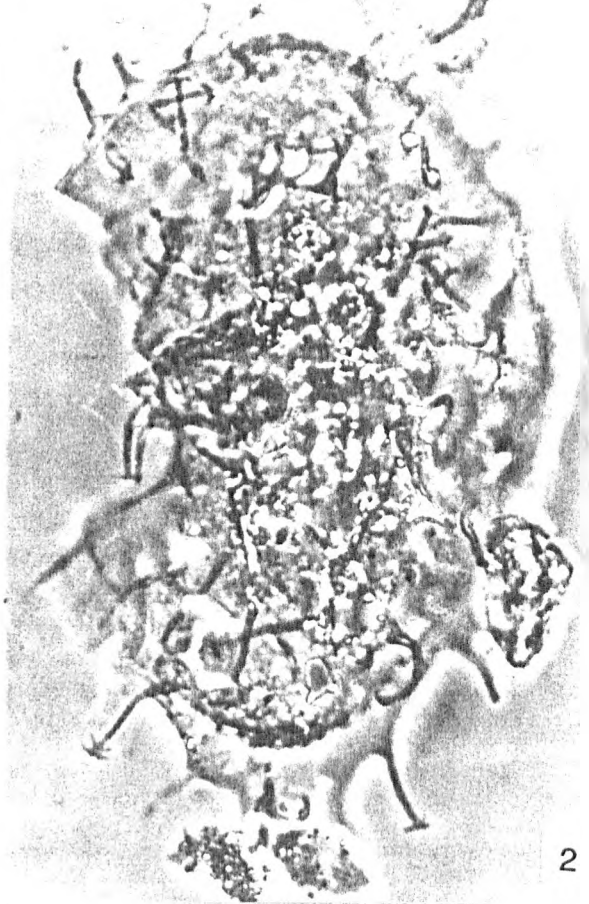
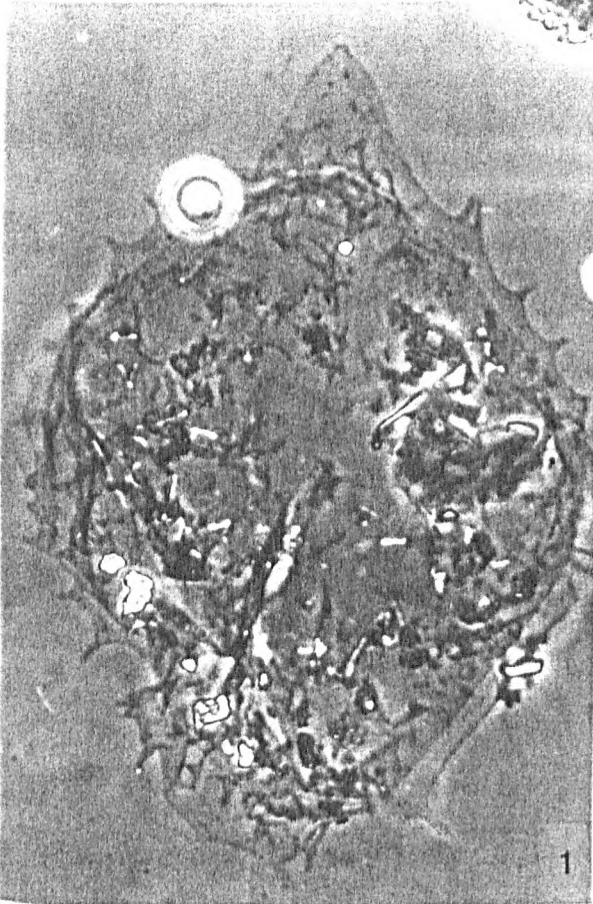


PLATE 39

Figure 1 *Deflandrea heterophlycta* 21/28, 3060m, slide a, R33/4, x870

Figure 2 *Deflandrea heterophlycta* 21/28, 2880m, slide a, P47/3, x870

Figure 3 *Deflandrea heterophlycta* 21/28, 3150m, slide a, R40/4, x870

Figure 4 *Deflandrea heterophlycta* 21/28, 3150m, slide a, R40/4, x870

Figure 5 *Deflandrea phosphoritica* 21/28, 3150m, slide a, J15, x870

Figure 6 *Deflandrea phosphoritica* 21/28, 3150m, slide a, J15, x870

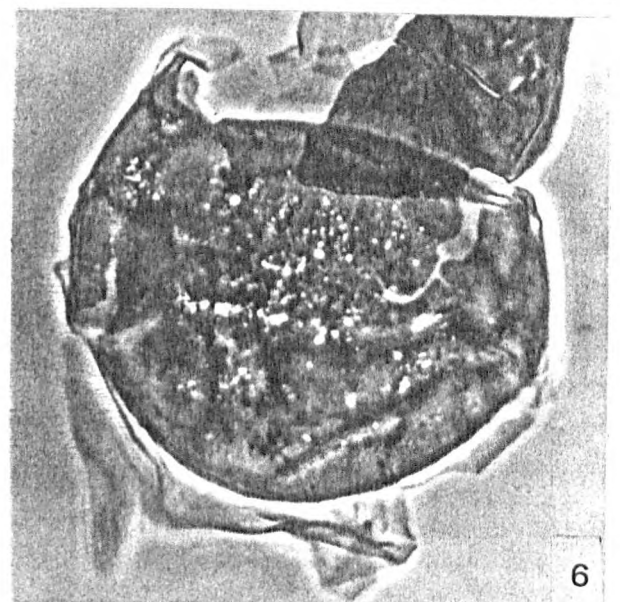
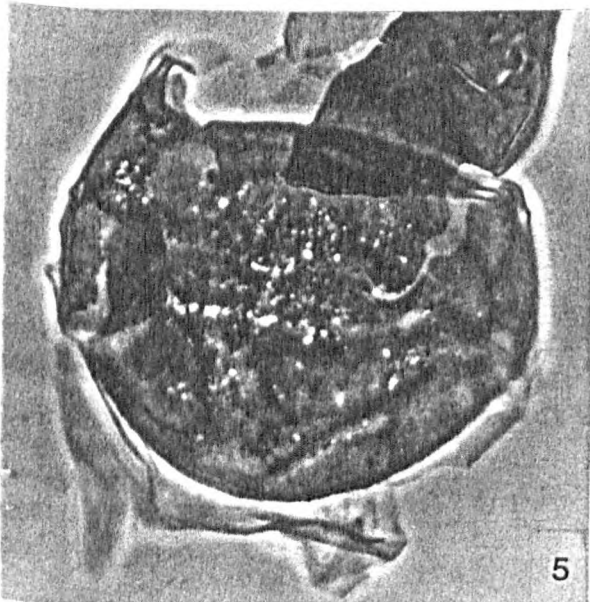
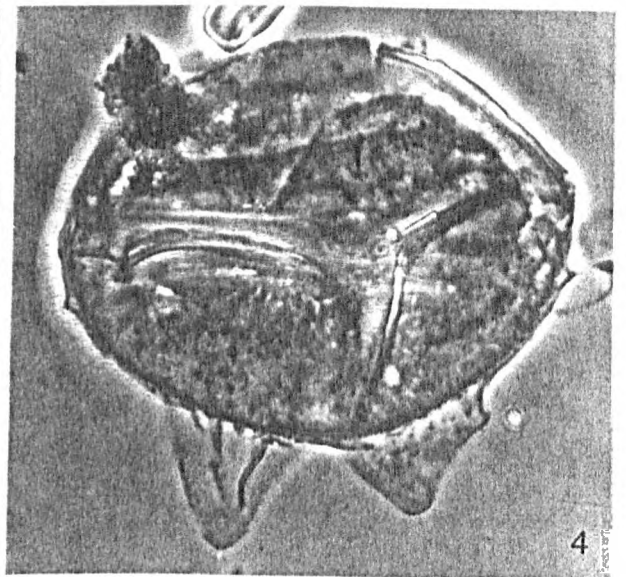
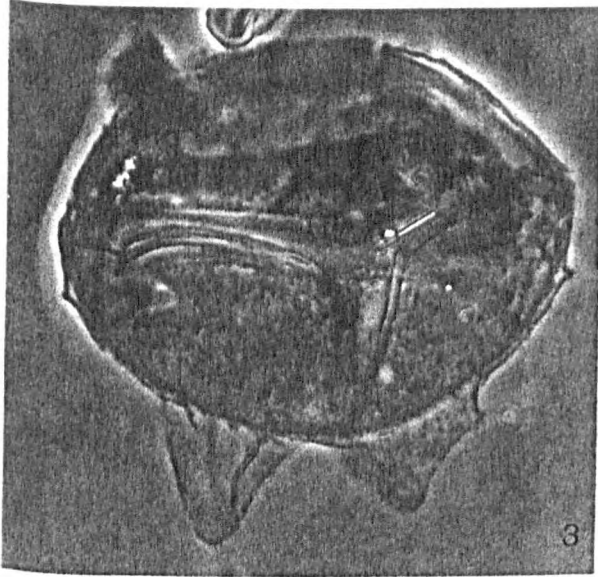
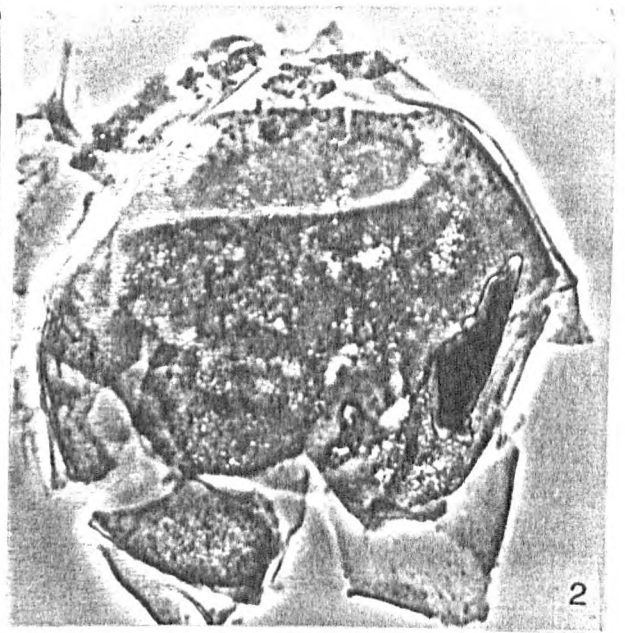
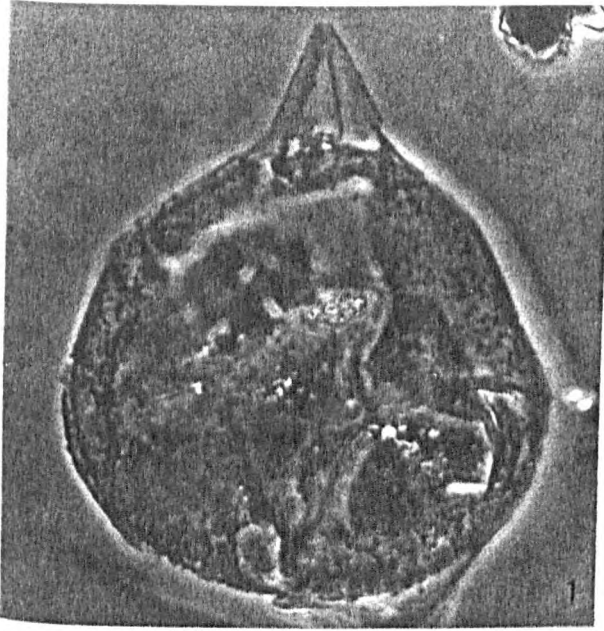


PLATE 40

Figure 1 *Lentinia wetzelii* 21/28, 3210m, slide b, J15, x870

Figure 2 *Lentinia wetzelii* 21/28, 3150m, slide a, Q38/1, x870

Figure 3 *Palaeocystodinium golzowense* 16/16, 4020m, slide a, N38/3, x870

Figure 4 *Palaeocystodinium* sp. A of Costa & Downie (1979) 16/16, 3290m, slide a, U45/4, x870

Figure 5 *Palaeocystodinium* sp. A of Costa & Downie (1979) 16/16, 3840m, slide a, G35/1, x870

Figure 6 *Palaeocystodinium* sp. A of Costa & Downie (1979) 16/16, 3920m, slide a, L40/1, x870

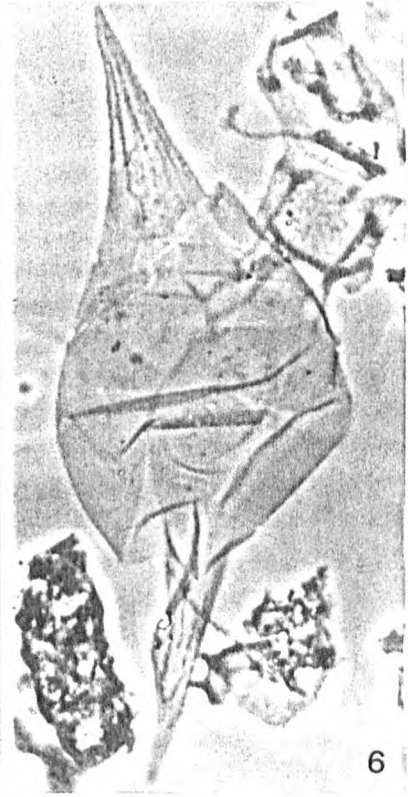
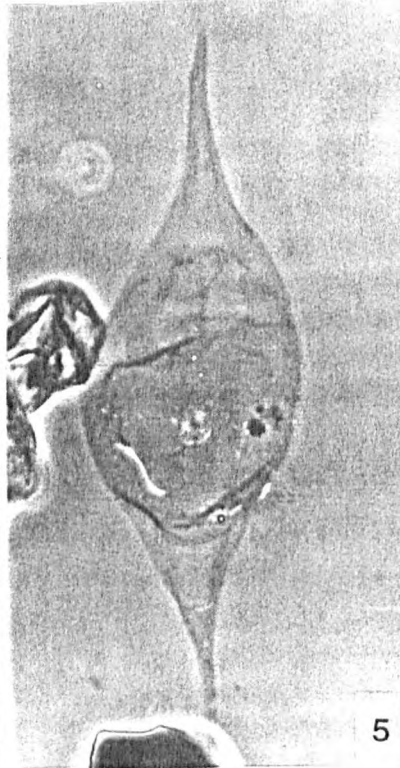
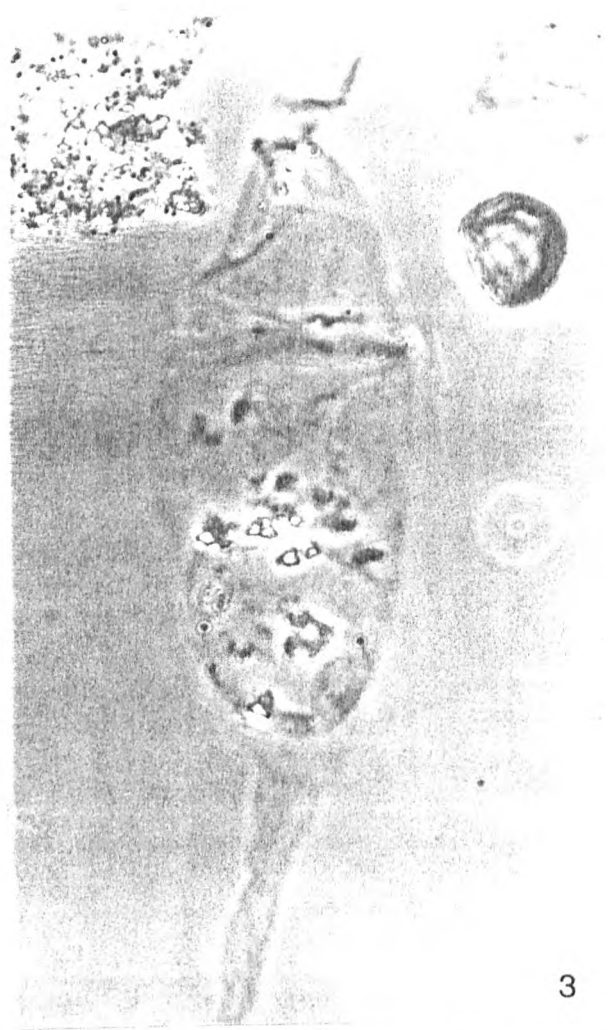
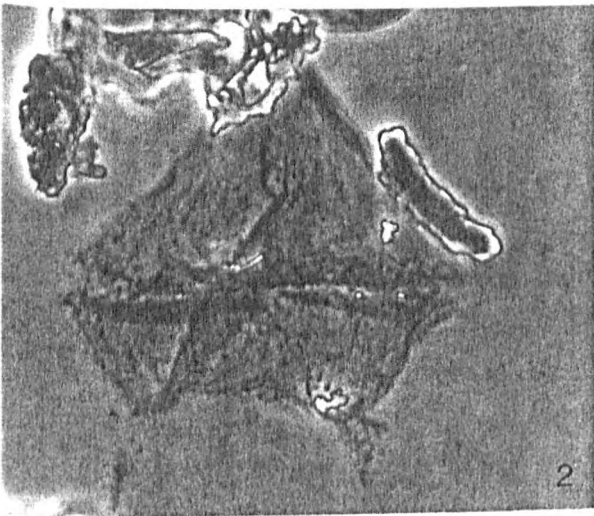
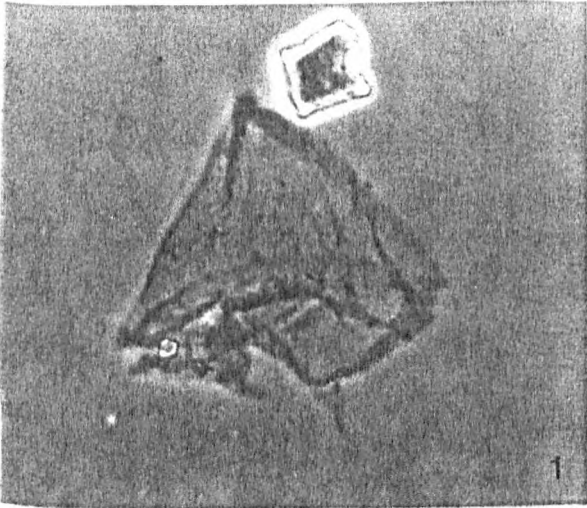


PLATE 41

Figure 1 *Phthanoperidinium alectrolophum* 16/16, 4320m, slide b, X33/4, x870

Figure 2 *Phthanoperidinium amoenum* 16/16, 4000m, slide a, S42/4, x870

Figure 3 *Phthanoperidinium amoenum* 16/16, 4260m, slide a, X40/4, x870

Figure 4 *Phthanoperidinium comatum* 16/16, 4180m, slide a, K43/1, x870. Note 2A archeopyle.

Figure 5 *Phthanoperidinium comatum* 21/28, 3060m, slide a, F31/4, x870

Figure 6 *Phthanoperidinium echinatum* 16/16, 3960m, slide a, P33, x870

Figure 7 *Phthanoperidinium filigranum* 21/28, 3150m, slide a, N47/2, x870. Fragment.

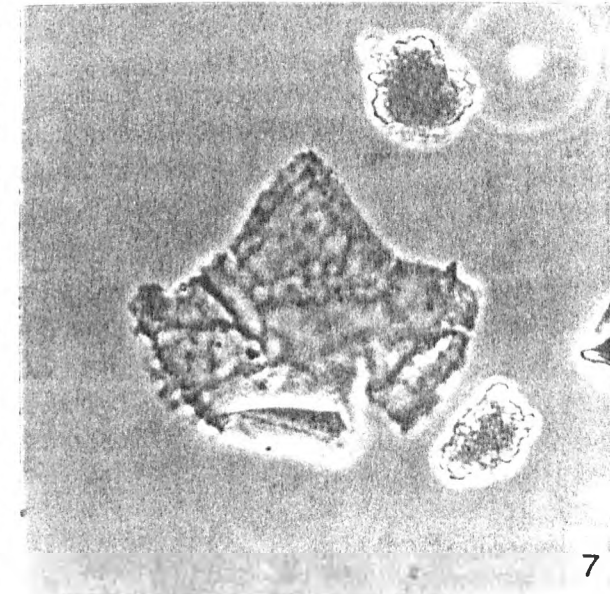
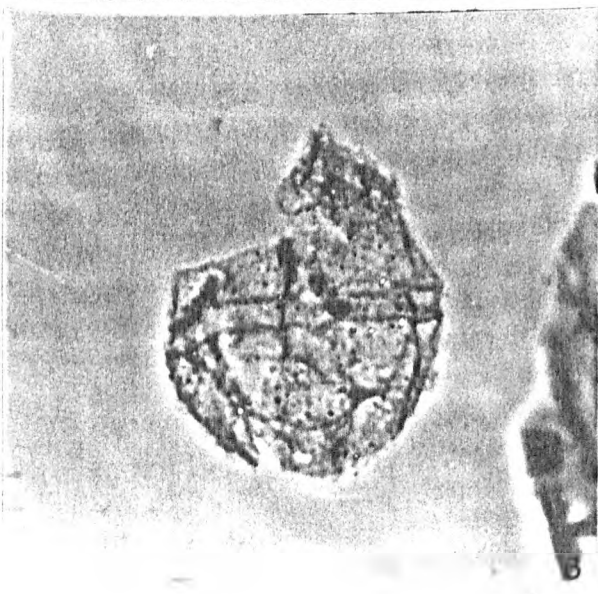
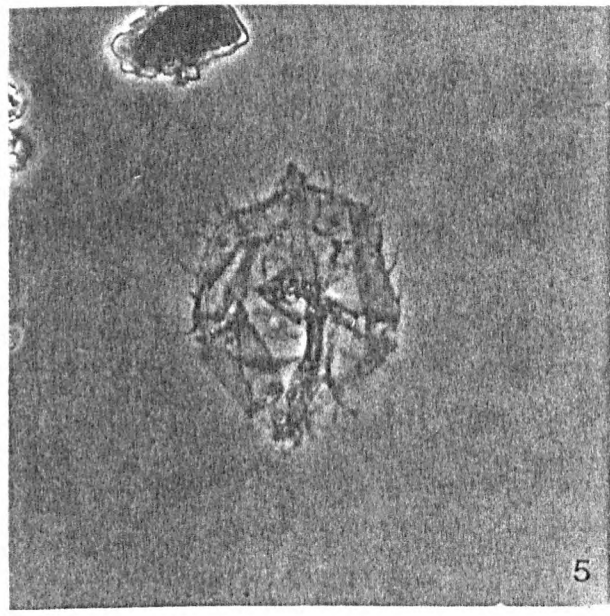
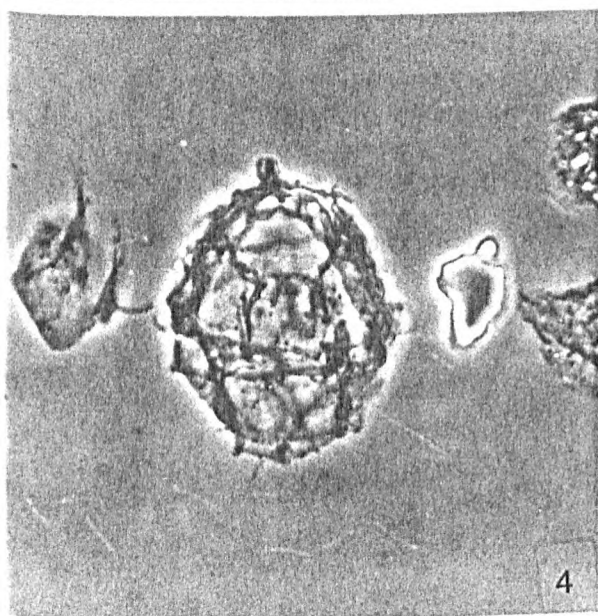
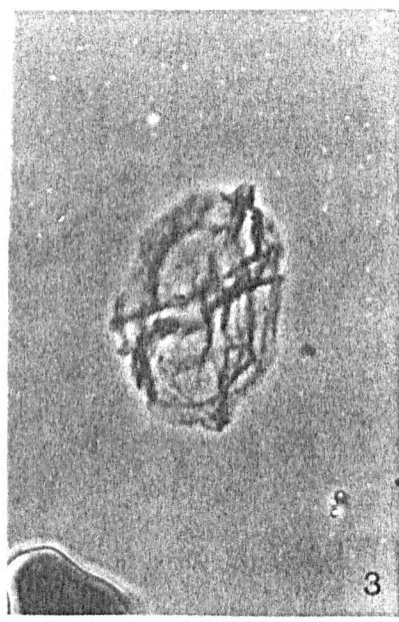
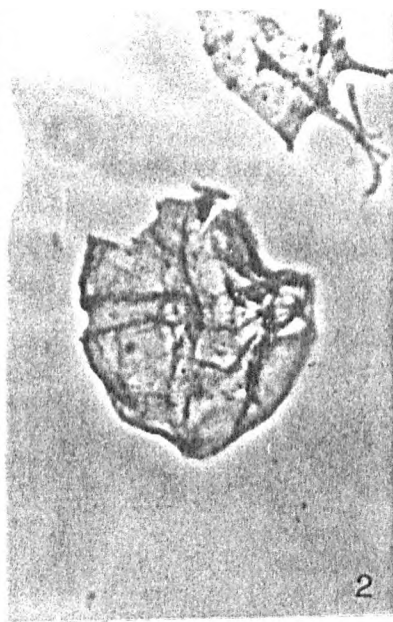


PLATE 42

Figure 1 *Phthanoperidinium geminatum* 16/16, 4260m, slide a, W50/3, x870

Figure 2 and 3 *Phthanoperidinium geminatum* 16/16, 4140m, slide a, S34, x870

Figure 4 *Phthanoperidinium levimurum* 16/16, 4260m, slide a, W45/3, x870

Figure 5 *Phthanoperidinium levimurum* 21/28, 3210m, slide b, O48/1, x870

Figure 6 *Phthanoperidinium levimurum* 21/28, 2910m, slide b, S41/4, x870

Figure 7 *Selenopemphix nephroides* 21/28, 3270m, slide d, O41/2, x870

Figure 8 *Selenopemphix nephroides* 21/28, 3150m, slide a, X44/2, x870

Figure 9 *Selenopemphix nephroides* 21/28, 2880m, slide a, E46/3, x870

Figure 10 *Selenopemphix nephroides* 21/28, 3090m, slide a, U30/1, x870

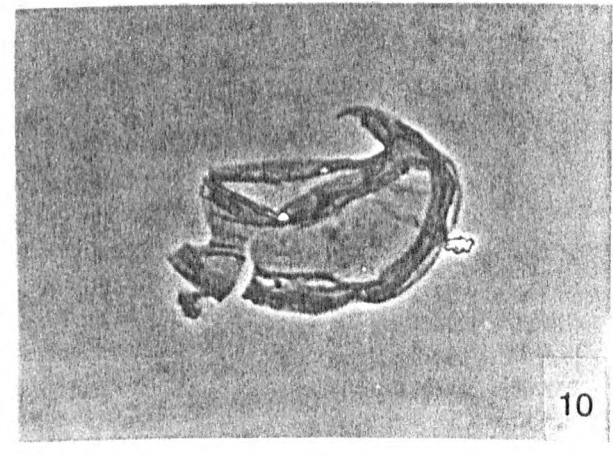
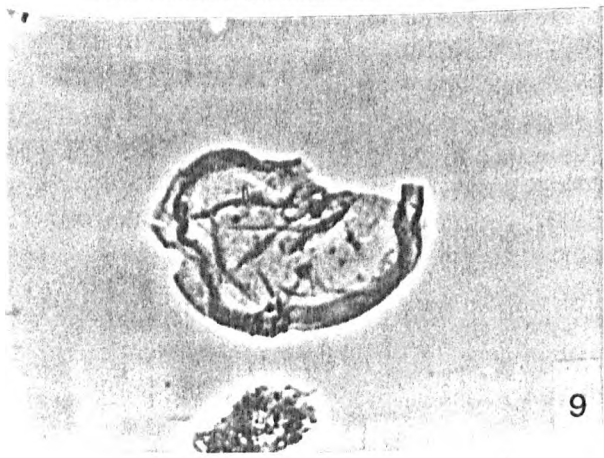
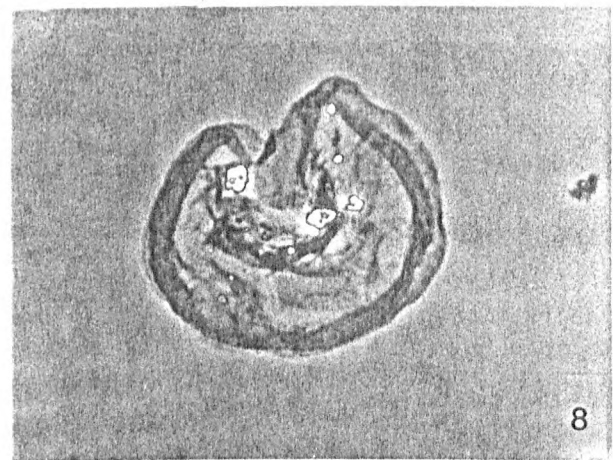
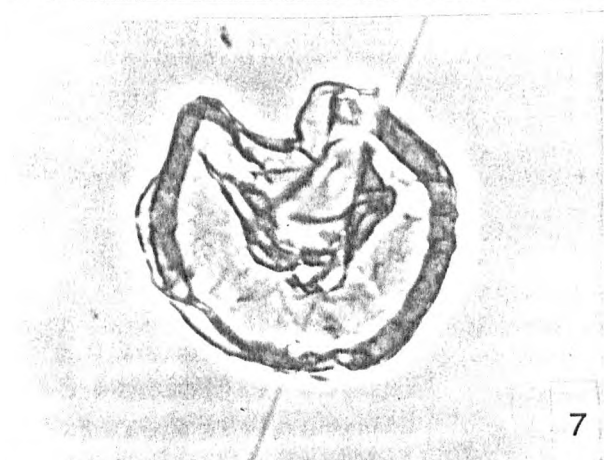
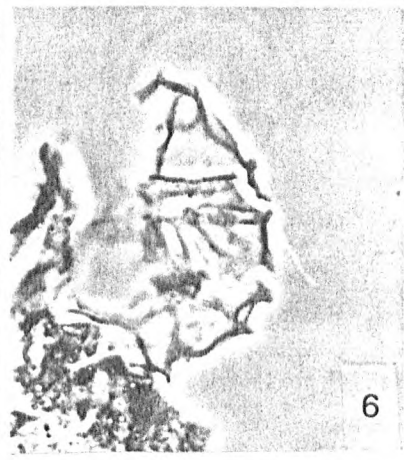
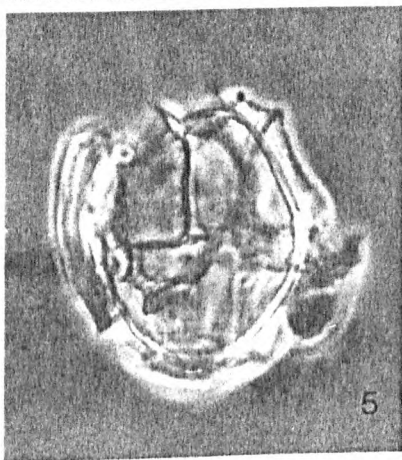
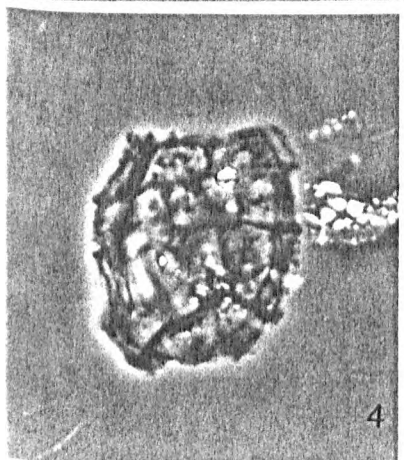
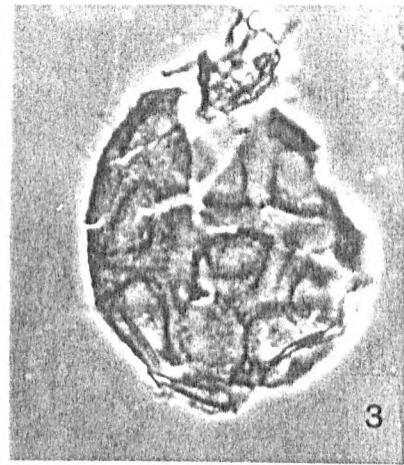
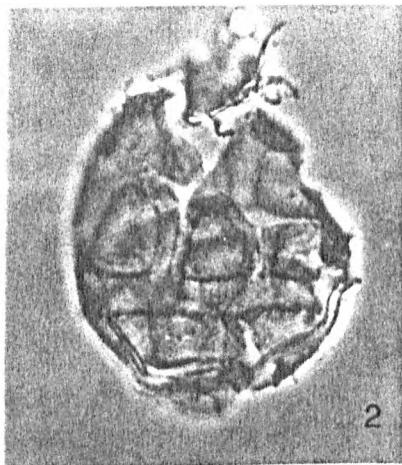
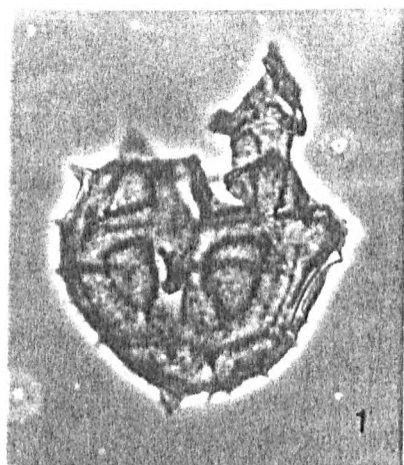


PLATE 43

Figure 1 *Svalbardella cooksoniae* 21/28, 3210m, slide b, M46/3, x870

Figure 2 *Svalbardella cooksoniae* 16/16, 3920m, slide a, Q44/1, x870

Figure 3 *Svalbardella cooksoniae* 16/16, 4020m, slide a, T40, x870

Figure 4 *Svalbardella* sp. 1 21/28, 3090m, slide a P42, x870

Figure 5 *Svalbardella* sp. 1 21/28, 3090m, slide a P42, x1720

Figure 6 *Svalbardella* sp. 2 21/28, 3090m, slide a, L28/1, x870

Figure 7 *Svalbardella* sp. 2 21/28, 3060m, slide a, J38, x870

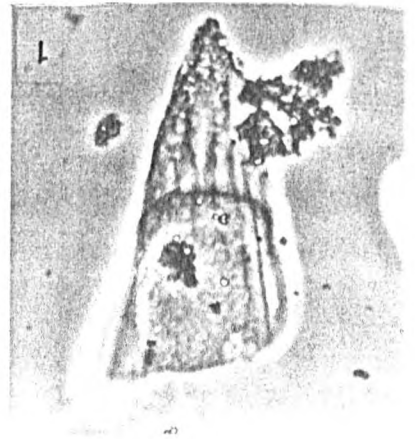
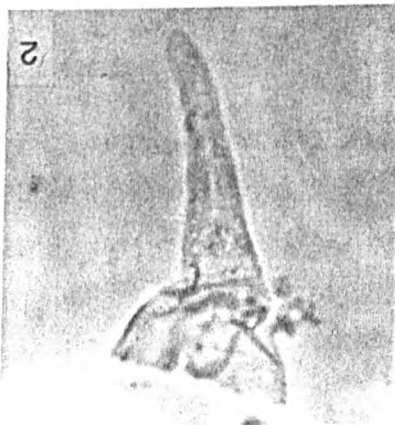
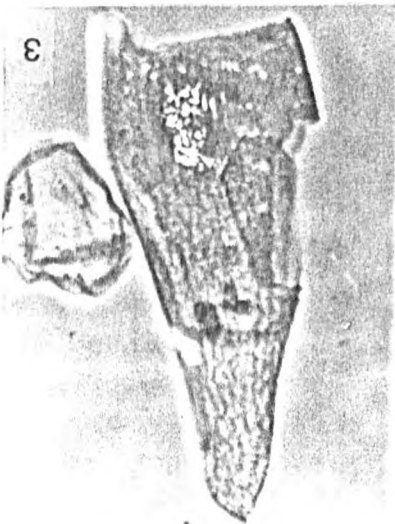
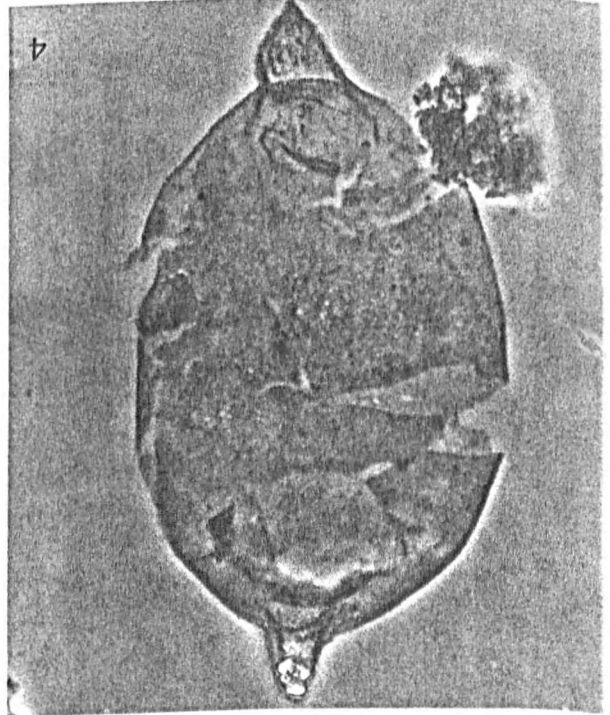
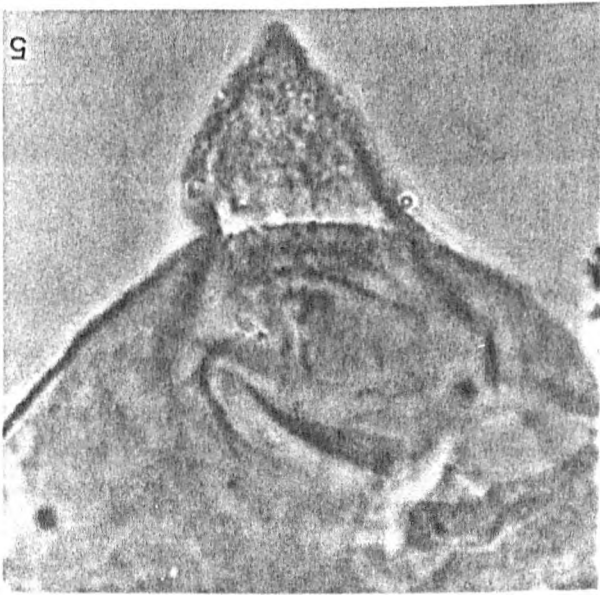
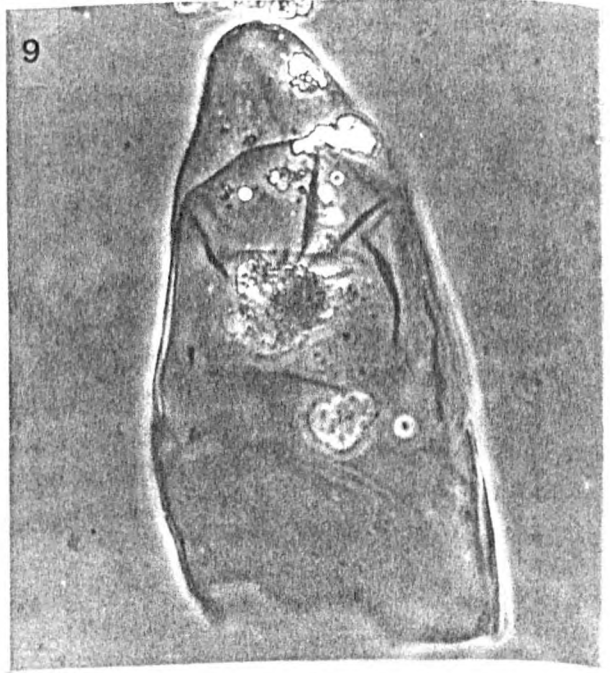
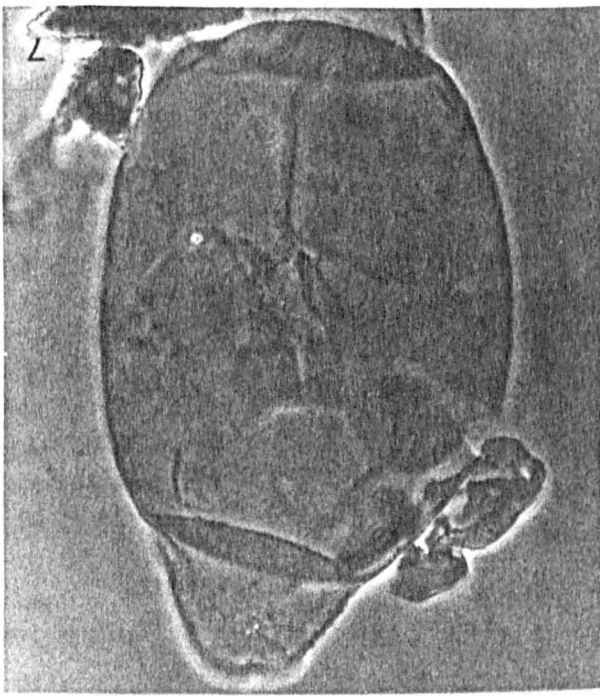


PLATE 43

PLATE 44

Figure 1 *Amiculosphaera umbracula* 21/28, 2910m, slide b, S49/3, x870

Figure 2 *Apteodinium spiridoides* 16/16, 3460m, slide a, M44, x870

Figure 3 *Apteodinium spiridoides* 21/28, 2880m, slide a, Q45/2, x870

Figure 4 *Apteodinium spiridoides* 16/16, 3580m, slide b, X35, x870

Figure 5 *Apteodinium 'trinovantium'* 21/28, 3090m, slide a, V43/3, x870

Figure 6 and 7 *Corrudinium incompositum* 16/16, 3920m, slide a, S44, x870

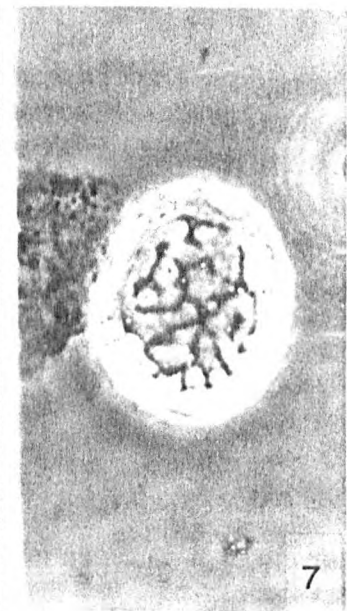
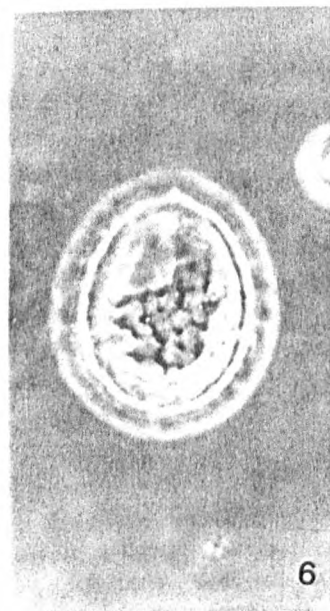
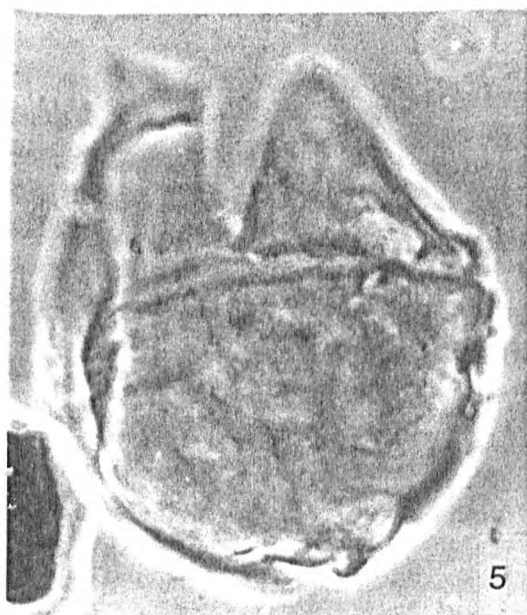
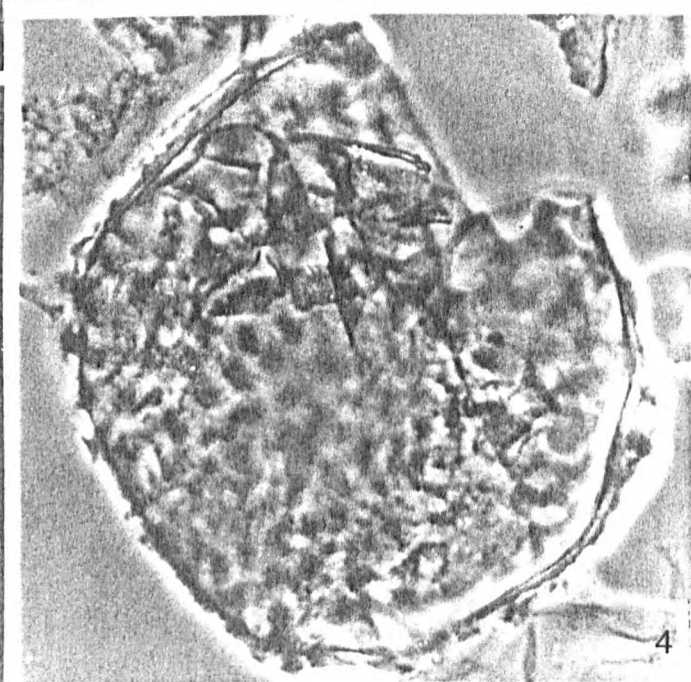
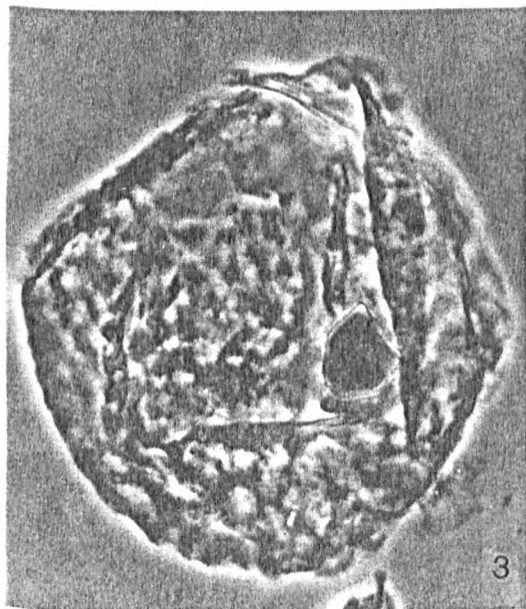
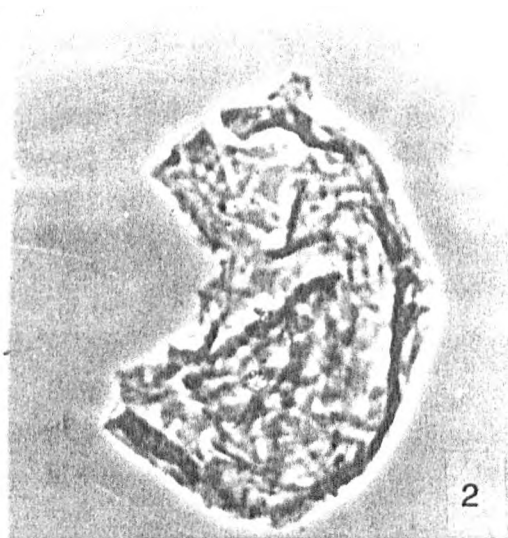
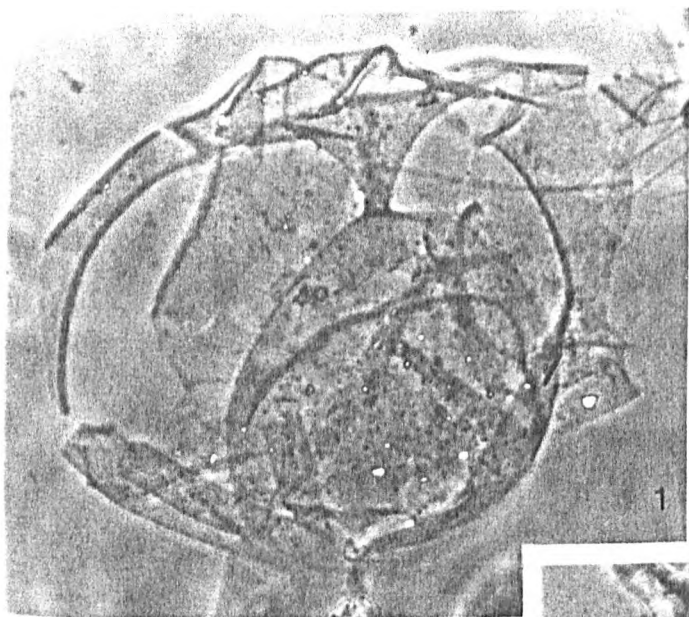


PLATE 45

Figure 1 *Cribroperidinium giuseppei* 16/16, 4140m, slide a, W41, x870

Figure 2 *Cribroperidinium giuseppei* 21/28, 3060m, slide a, U41, x870

Figure 3 *Fromea fragilis* 21/28, 3090m, slide a, X39, x870

Figure 4 *Kallosphaeridium brevibartatum* 16/16, 4180m, slide a, R36/3, x1720

Figure 5 *Kallosphaeridium* sp. 1 21/28, 2880m, slide a, L34/2, x870 smooth

Figure 6 *Membranosphaera* spp. 16/16, 3840m, slide a, T36/2, x870

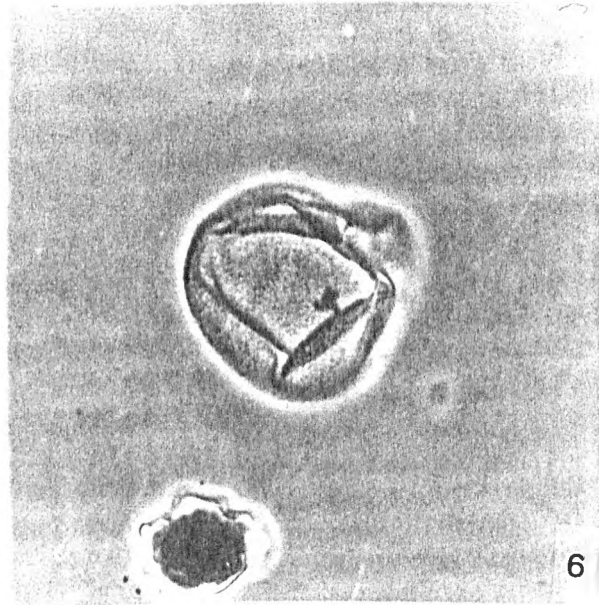
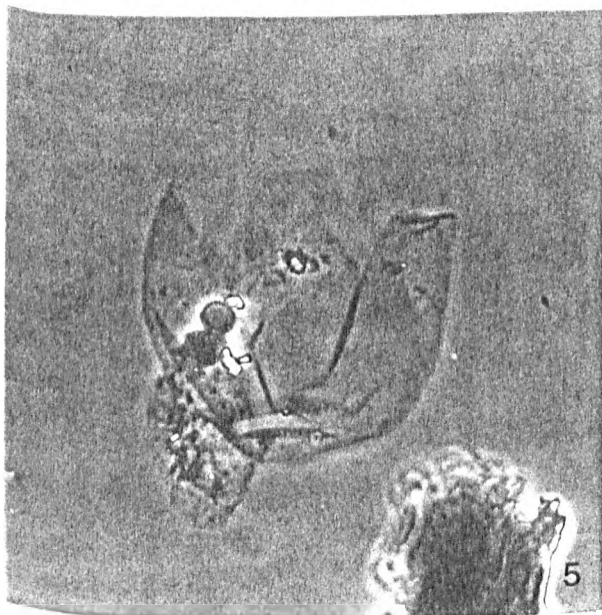
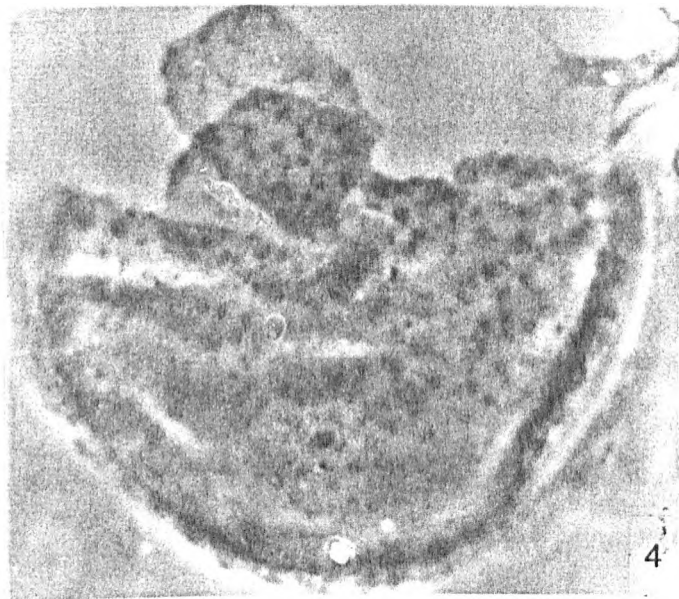
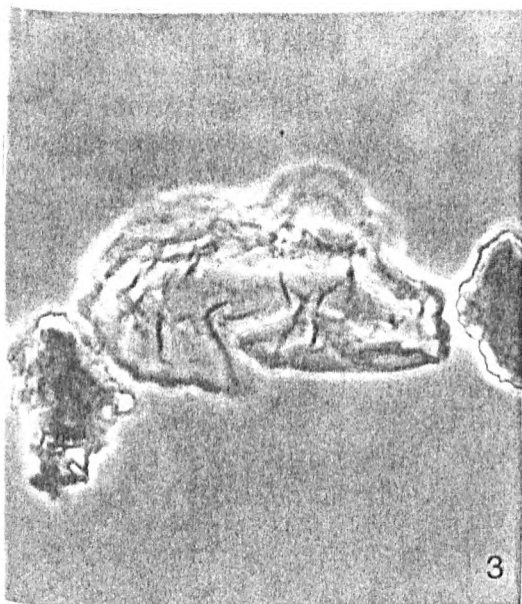
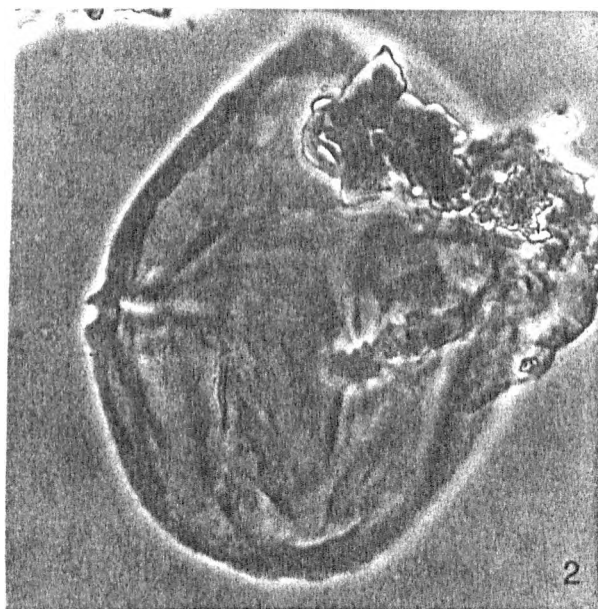
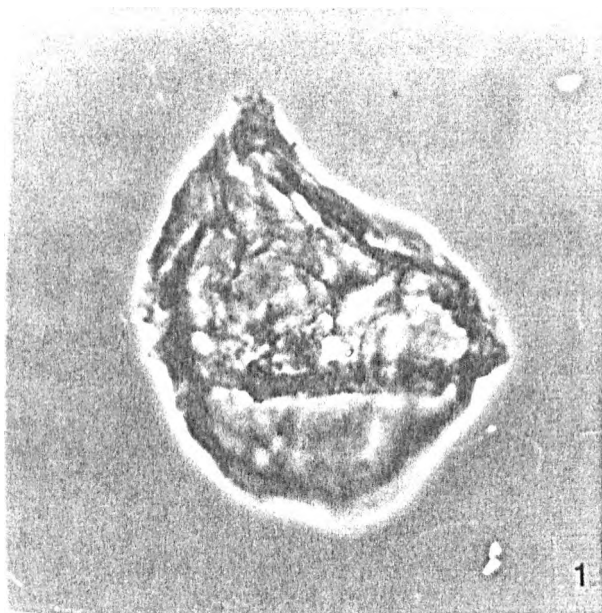


PLATE 46

Figure 1 *Microdinium* sp. 1 of Chateauneuf (1980) 21/28, 3150m, slide a, U40, x870

Figure 2 *Microdinium* sp. 1 of Chateauneuf (1980) 21/28, 3090m, slide a, J34, x870

Figure 3 *Microdinium* sp. 2 16/16, 4180m, slide a, P52/1, x870

Figure 4 *Microdinium* sp. A 21/28, 2880m, slide a, X35/2, x870

Figure 5 *Tectatodinium* spp. 21/28, 2880m, slide a, H38/4, x870

Figure 6 *Thalassiphora fenestrata* 21/28, 3180m, slide a, M42/1, x430

Figure 7 *Thalassiphora fenestrata* 21/28, 3210m, slide b, G44/3, x430

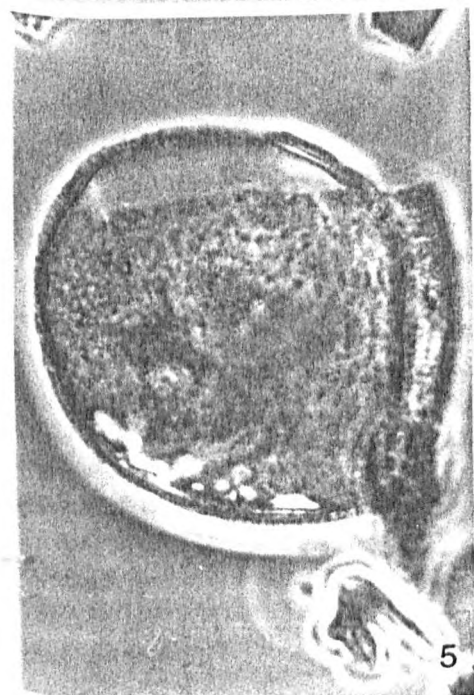
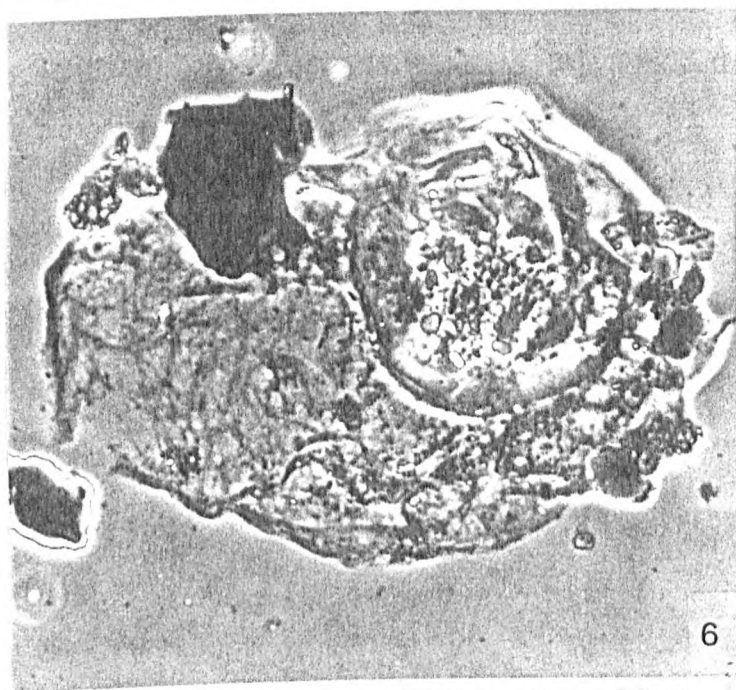
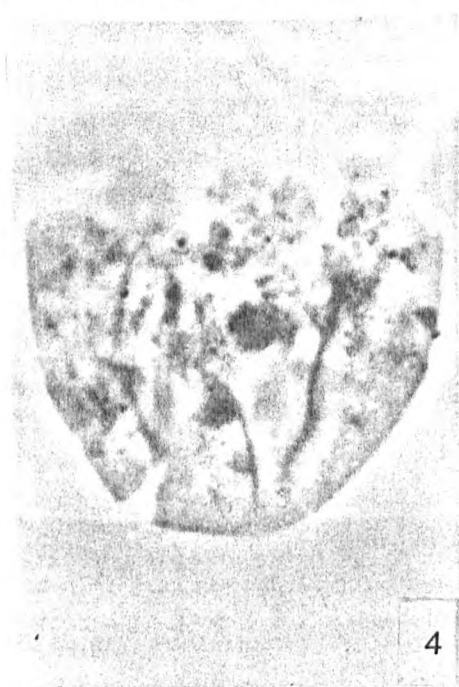
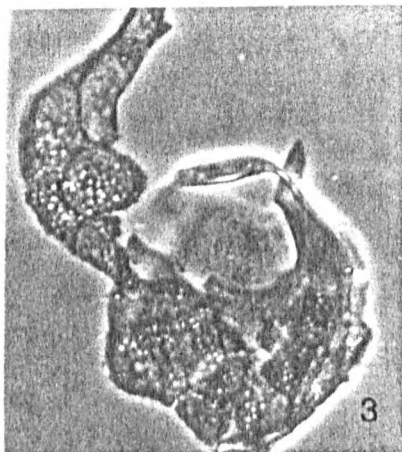
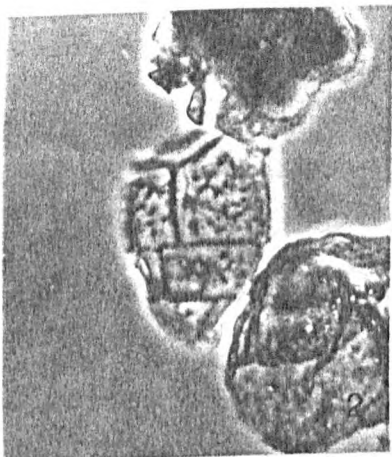
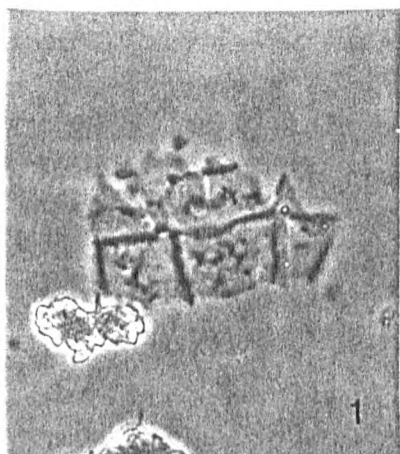


PLATE 47

Figure 1 *Thalassiphora pelagica* 16/16, 3600m, slide a, G45, x870

Figure 2 *Tuberculodinium vancampoeae* 16/16, 3460m, slide a, D51/1, x870

Figure 3 *Achilleodinium biformoides* 16/16, 4140m, slide a, W33, x870

Figure 4 *Adnatosphaeridium vittatum* 16/16, 4320m, slide b, V34, x870

Figure 5 *Aiora* spp. 16/16, 3440m, slide a, V37/2, x870

Figure 6 *Areoligera medusettiformis* 21/28, 3270m, slide b, O42/3, x870

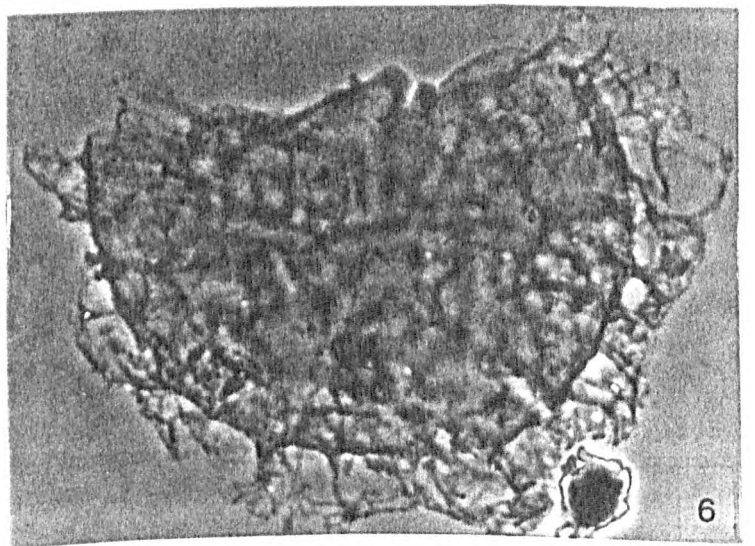
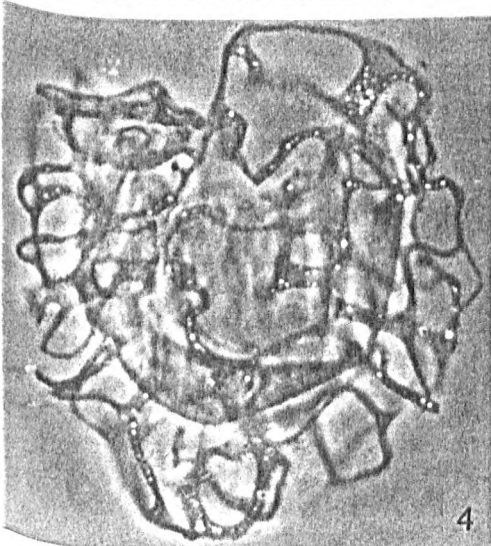
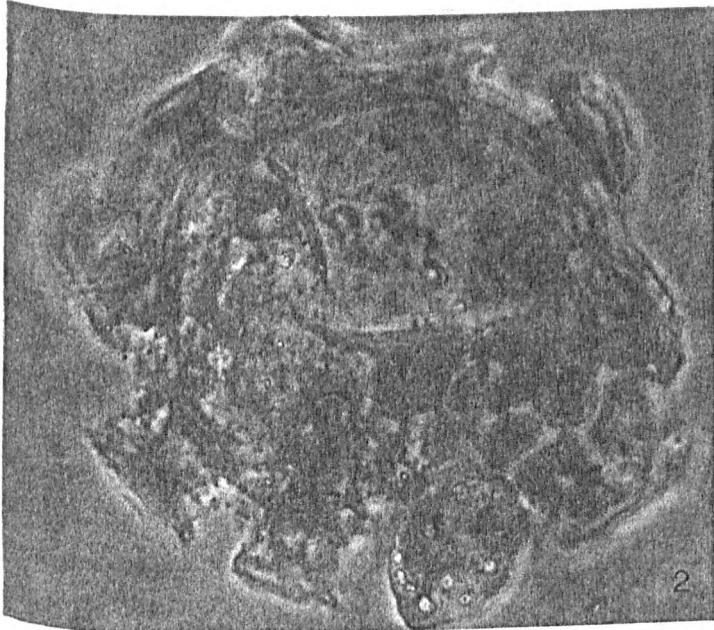
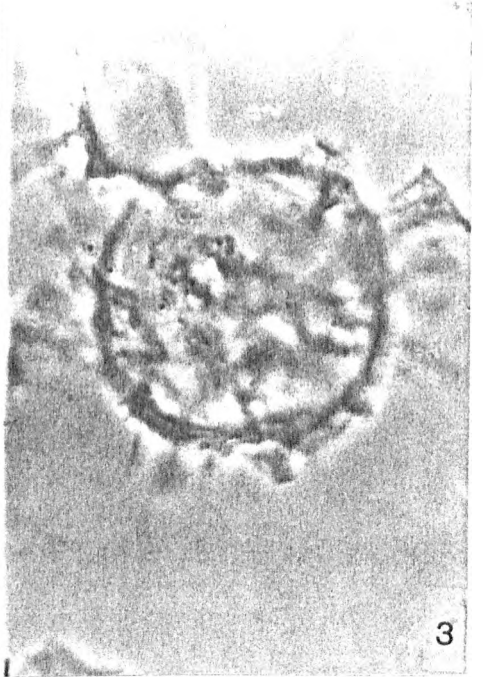


PLATE 48

Figure 1 *Areoligera semicirculata* 21/28, 3060m, slide a, Q34, x870

Figure 2 *Areoligera semicirculata* 21/28, 3060m, slide a, R47/3, x870

Figure 3 *Areoligera semicirculata* 21/28, 3270m, slide b, D46/3, x870

Figure 4 *Areoligera semicirculata* 16/16, 4140m, slide a, N51/4, x870

Figure 5 and 6 *Areoligera semicirculata* 21/28, 2940m, slide d, X37, x870

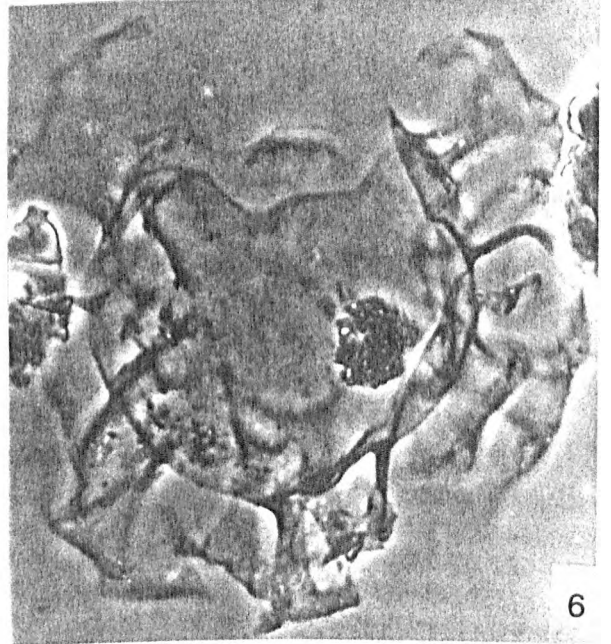
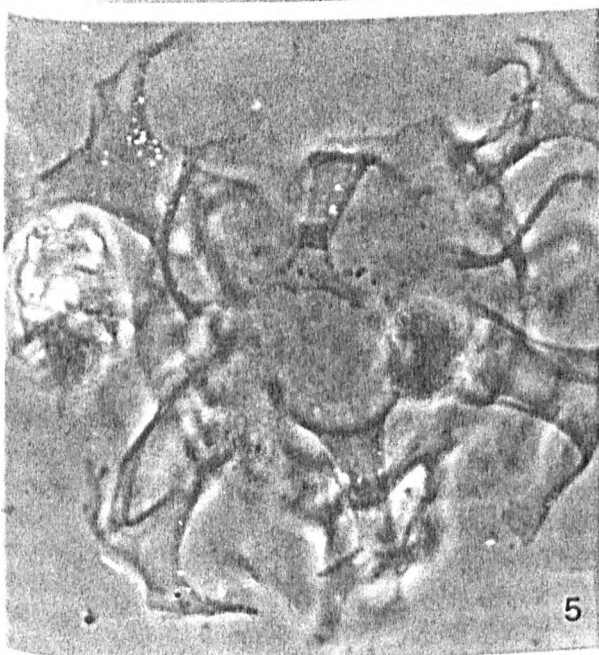
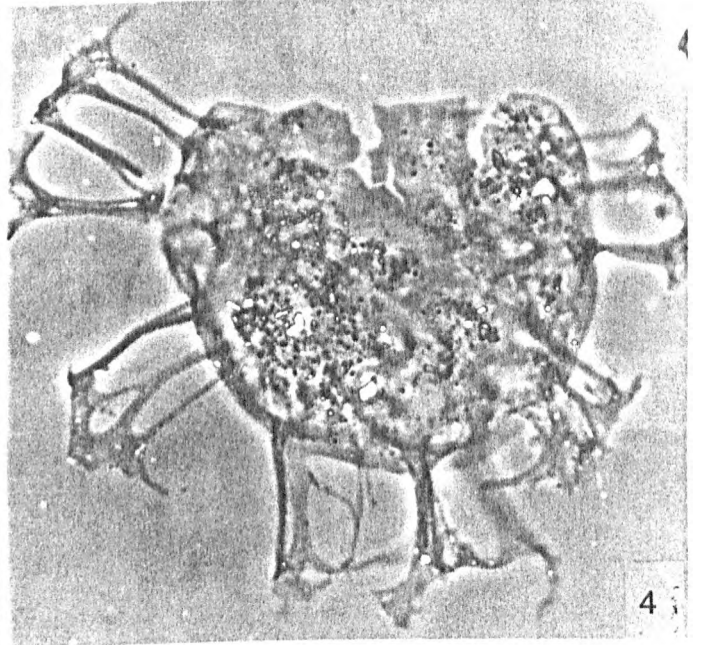
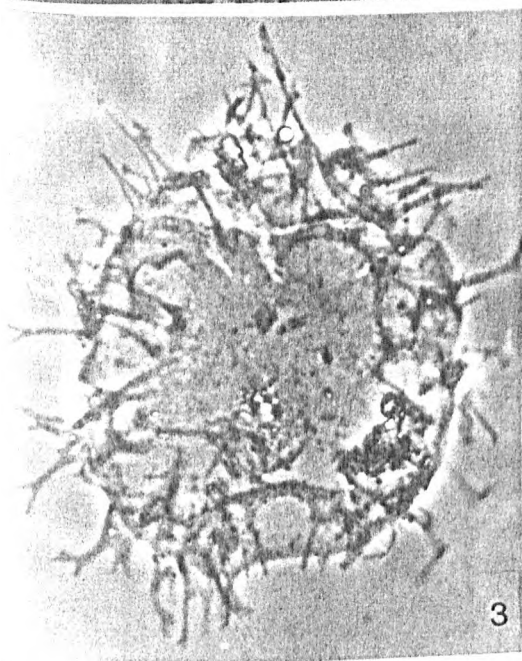
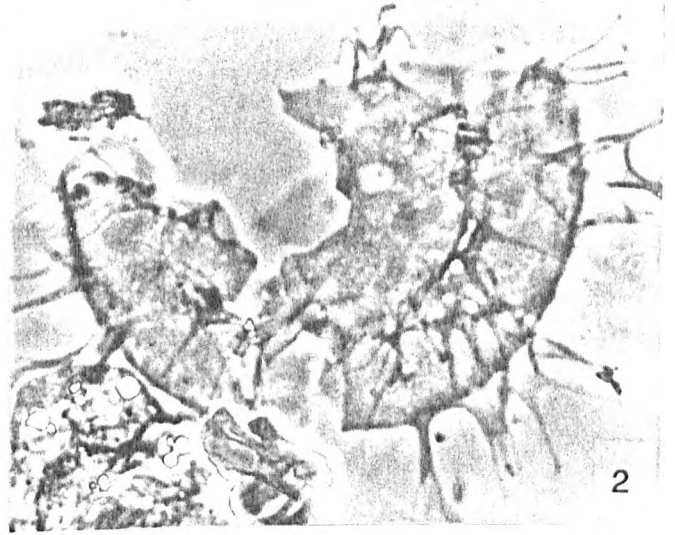
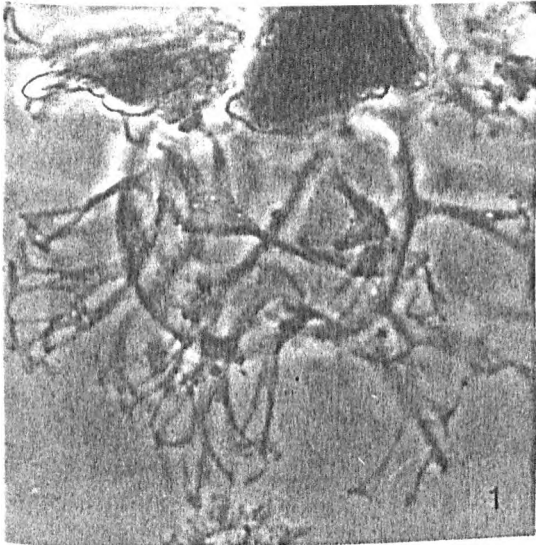


PLATE 49

Figure 1 *Areosphaeridium arcuatum* 21/28, 3060m, slide a, H43/2, x870

Figure 2 *Areosphaeridium actinocoronatum* 21/28, 3060m, slide a, Y37, x870

Figure 3 *Areosphaeridium actinocoronatum* 16/16, 4140m, slide a, U44, x870

Figure 4 *Areosphaeridium actinocoronatum* 16/16, 4260m, slide a, E46/3, x870

Figure 5 *Areosphaeridium dicktypolokus* 21/28, 3150m, slide a O31/1, x870

Figure 6 *Callaiosphaeridium* spp. 16/16, 3600m, slide a, P48/4, x870

Figure 7 *Callaiosphaeridium* spp. 16/16, 3580m, slide b, U35/4, x870

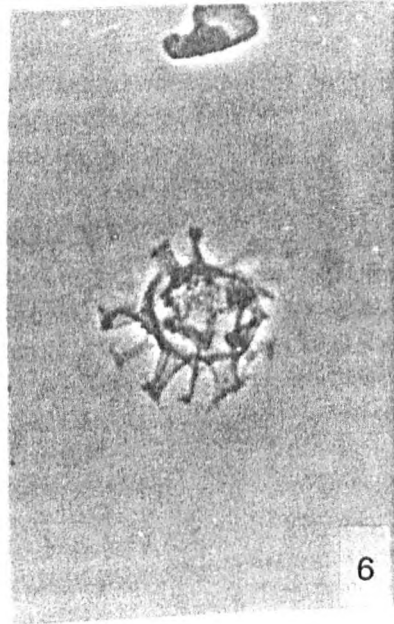
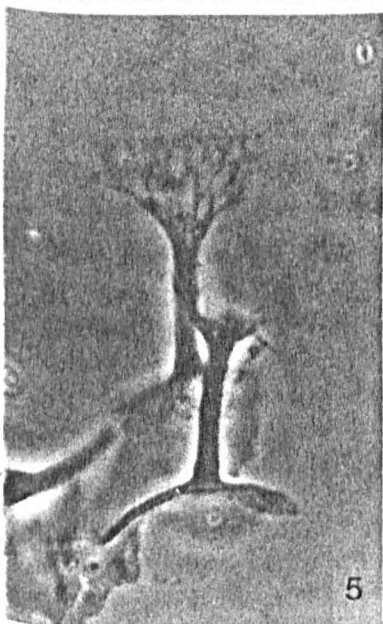
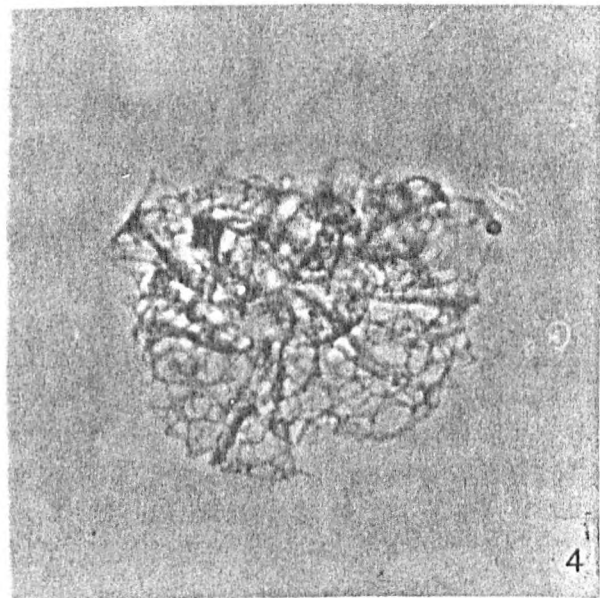
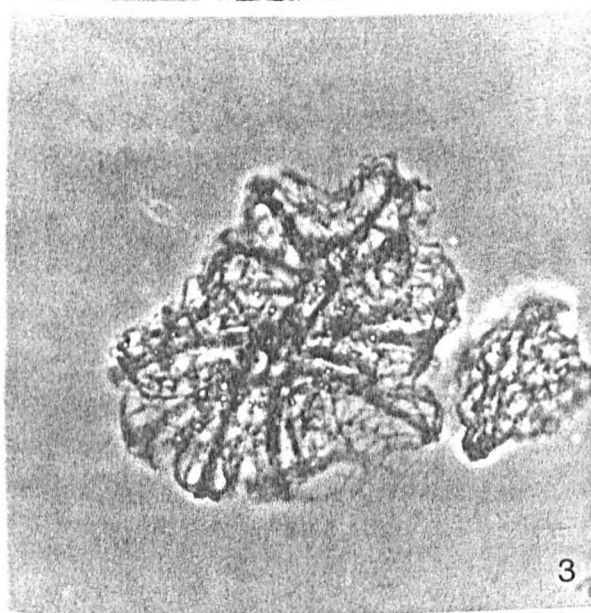
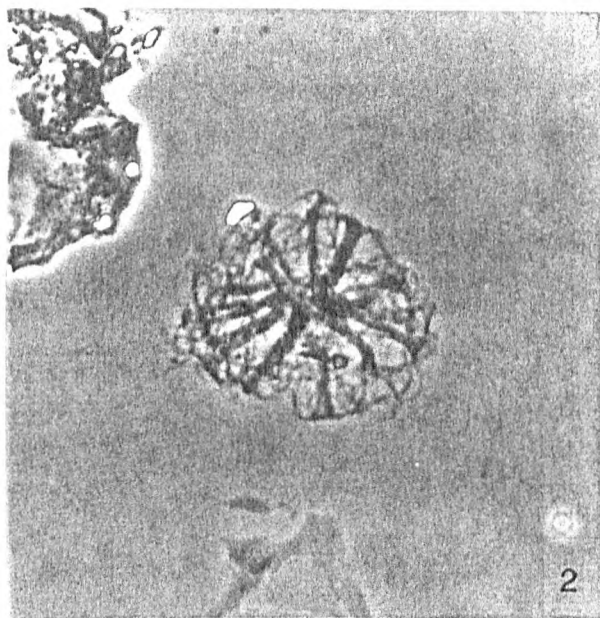
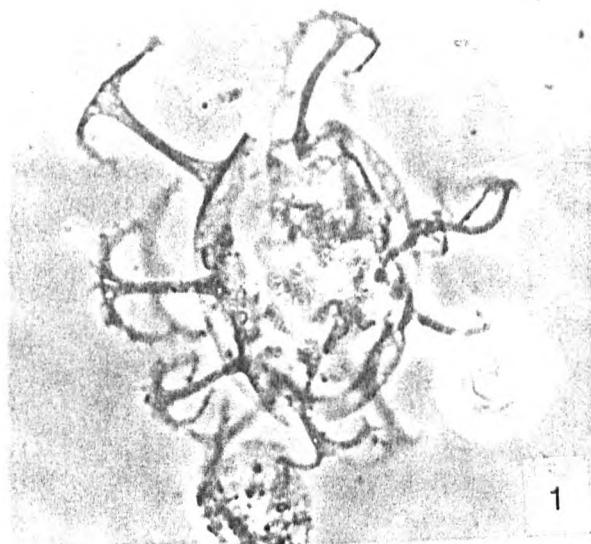


PLATE 50

Figure 1 *Cannosphaeropsis utinensis* 16/16, 3440m, slide a, H35, x870

Figure 2 *Chiropteridium lobospinosum* 21/28, 3090m, slide a, R49, x870

Figure 3 *Chiropteridium lobospinosum* 21/28, 3090m, slide a, R49, x870. Note process detail.

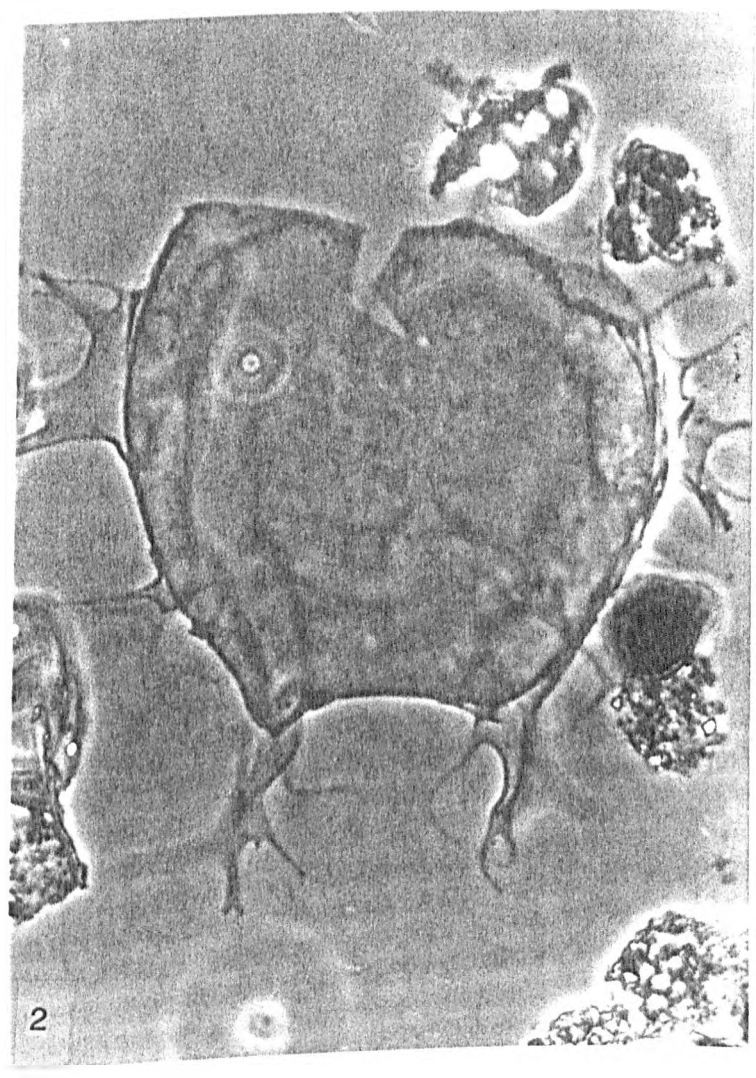
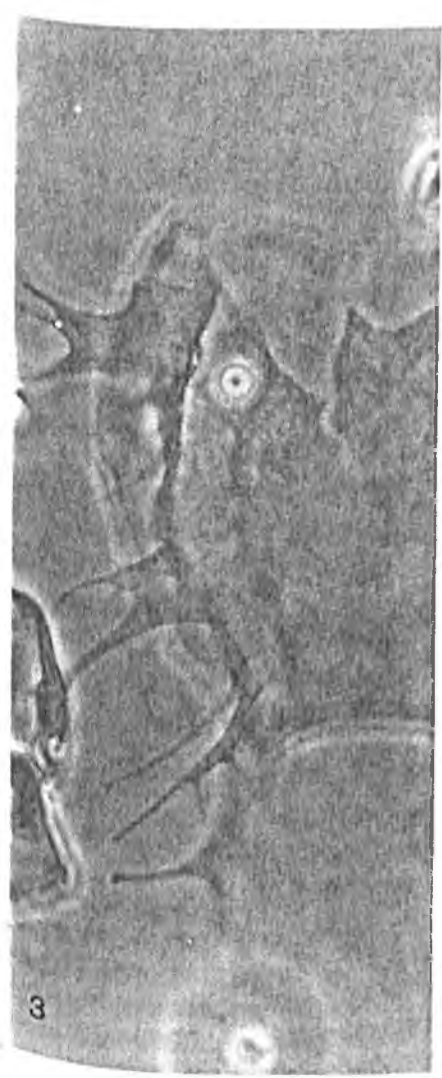
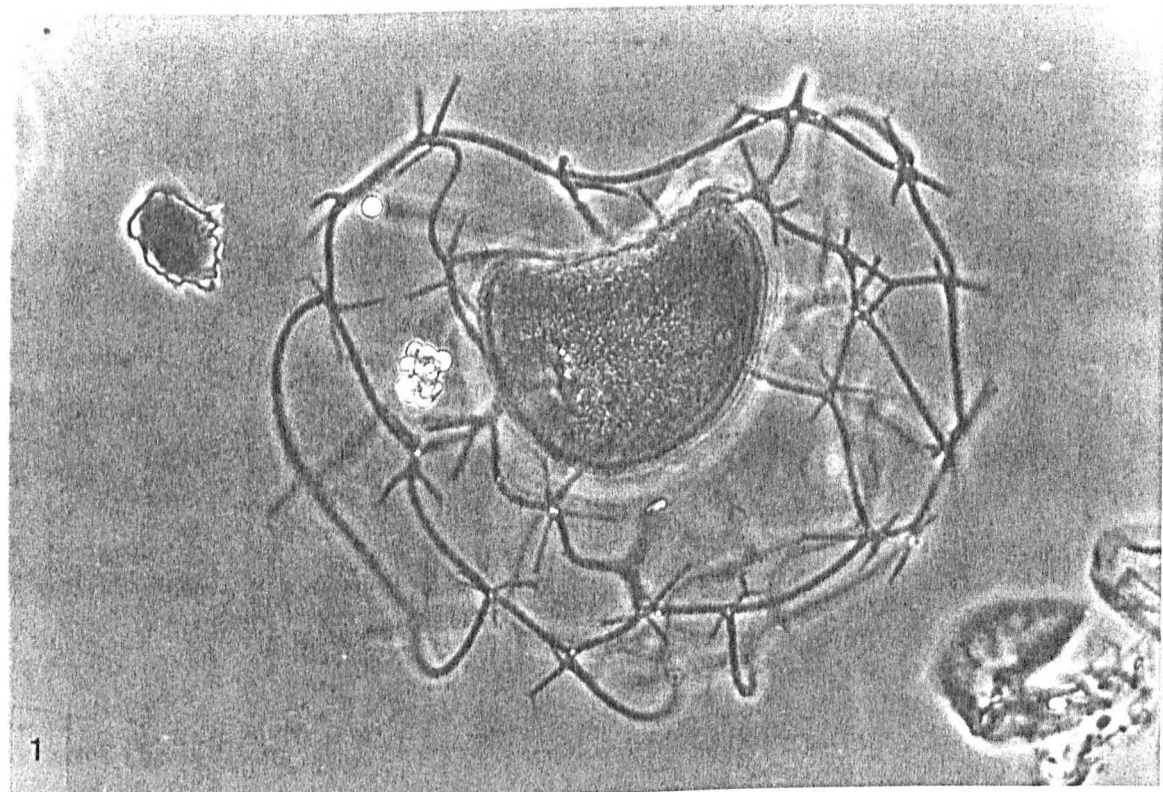


PLATE 51

Figure 1 *Chiropteridium mespilanum* 21/28, 2910m, slide b, V47/1, x870

Figure 2 *Chiropteridium mespilanum* 21/28, 3000m, slide b, G38, x870

Figure 3 *Chiropteridium partispinosum* 16/16, 4140m, slide a, V45, x870

Figure 4 *Cleistosphaeridium* sp. 1 of Manum *et al.* (1989) 16/16, 4140m, slide a, S38/4, x870

Figure 5 *Cleistosphaeridium* sp. 1 of Manum *et al.* (1989) 78/1, 131.5m, slide a, U34, x1720

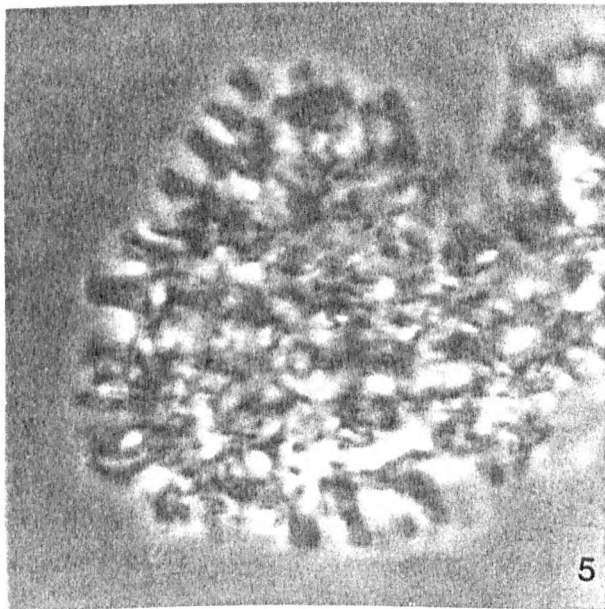
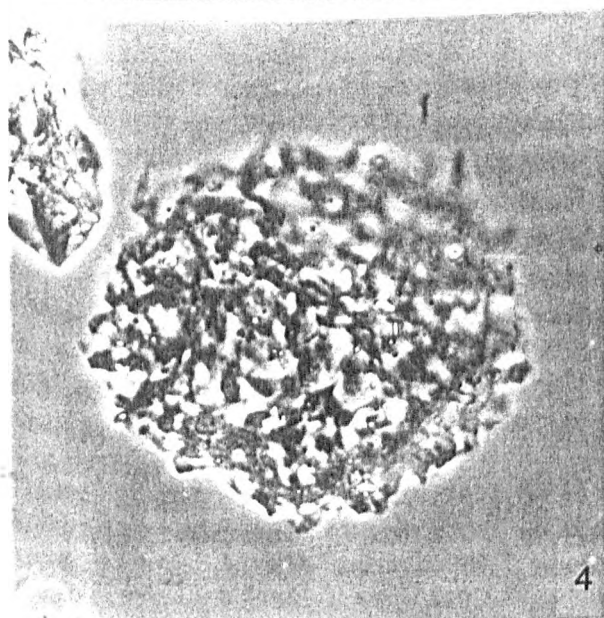
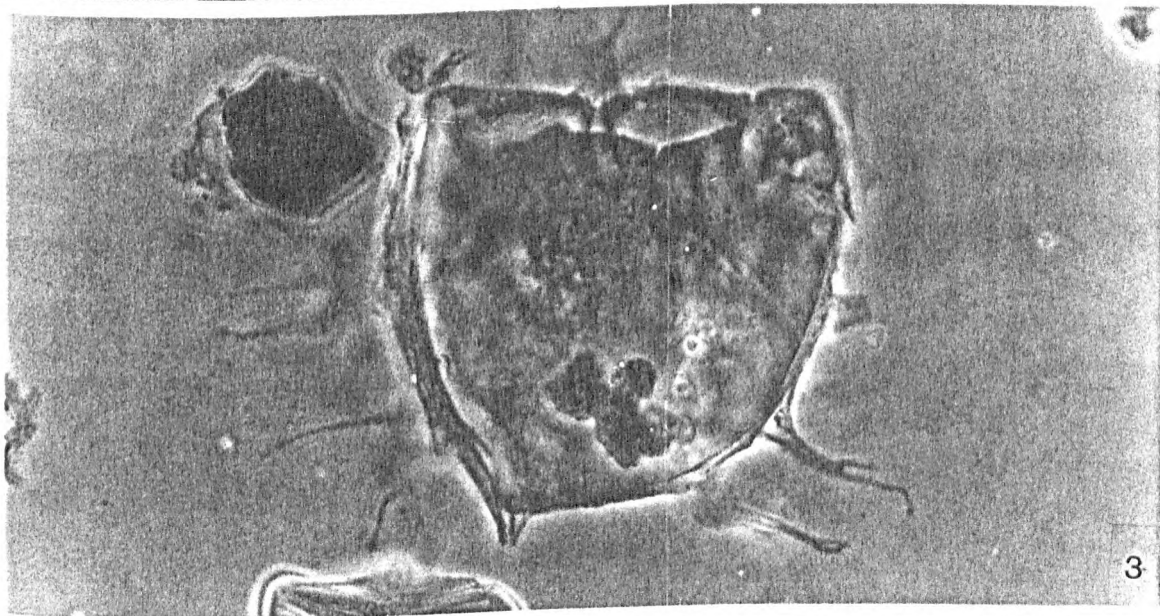
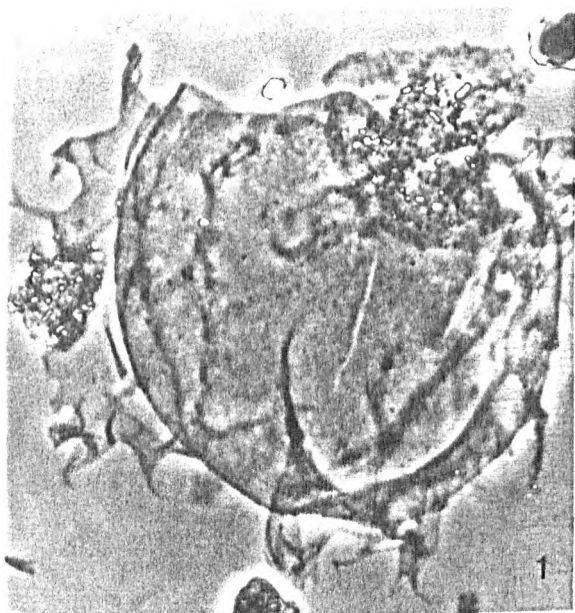


PLATE 52

Figure 1 *Cordosphaeridium cantharellum* 16/16, 3640m, slide a, V43/2, x870

Figure 2 *Cordosphaeridium cantharellum* 21/28, 3060m, slide a, S31/2, x870

Figure 3 *Cordosphaeridium fibrospinosum* 21/28, 2940m, slide d, X36, x870

Figure 4 and 7 *Cordosphaeridium funiculatum* 21/28, 3060m, slide a, X38/3, x870

Figure 5 and 6 *Cordosphaeridium funiculatum* 21/28, 3210m, slide b, W32, x870

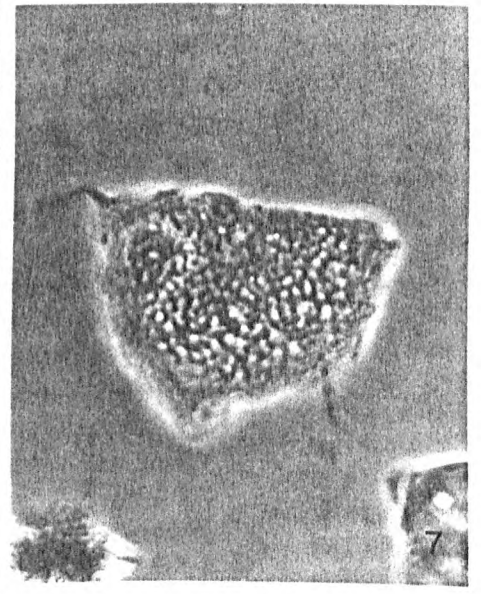
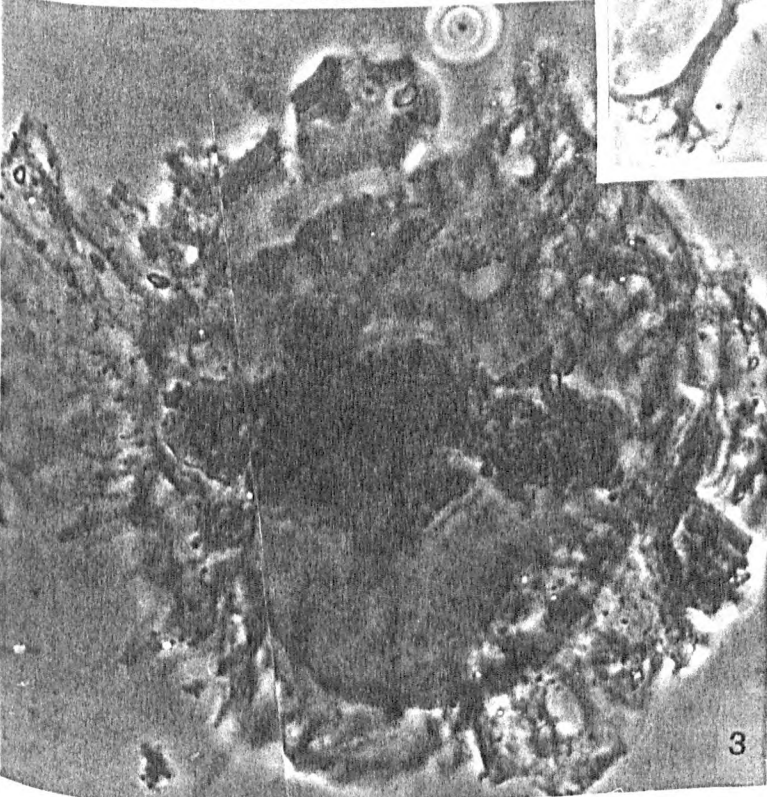
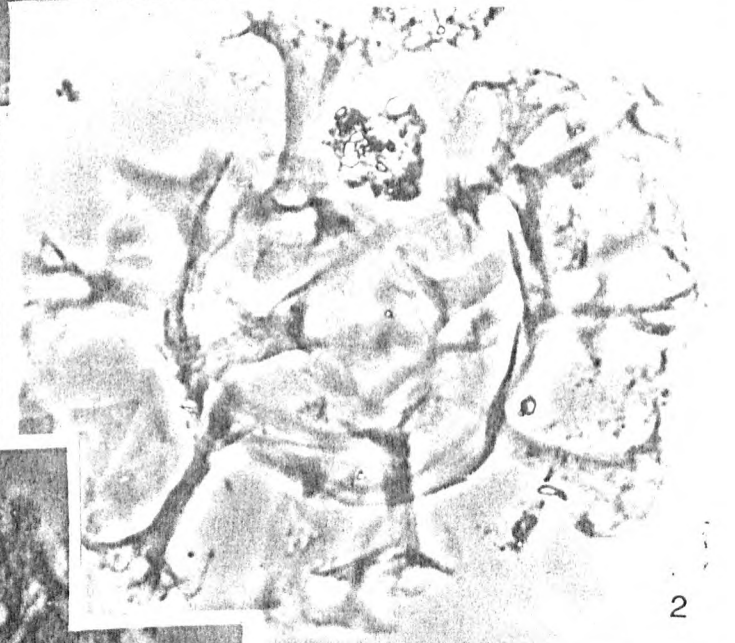
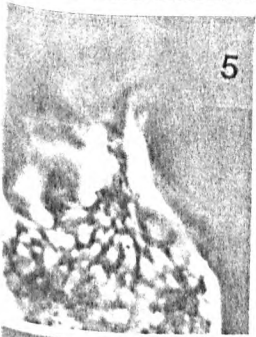
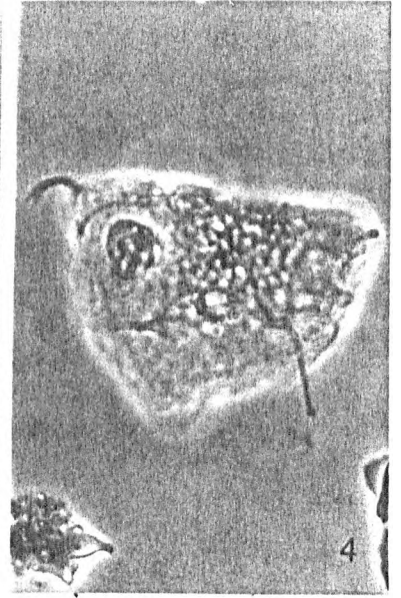
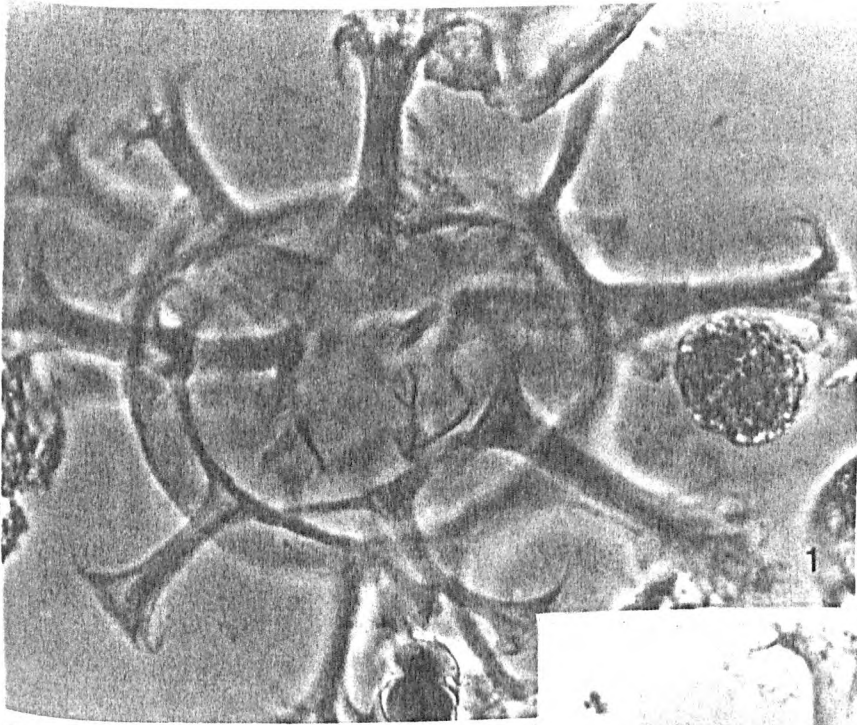


PLATE 53

Figure 1 *Cordosphaeridium minimum* 16/16, 3500m, slide a, S35/1, x870

Figure 2 *Cordosphaeridium minimum* 16/16, 3500m, slide a, S35/1, x1720

Figure 3 *Cordosphaeridium minimum* 16/16, 3600m, slide a, G48/4, x870

Figure 4 *Cordosphaeridium minimum* 16/16, 3600m, slide a, G48/4, x1720

Figure 5 *Dapsilidinium pastielsii* 16/16, 4100m, slide a, U46/4, x870

Figure 6 *Dapsilidinium pastielsii* 16/16, 3920m, slide a, W48, x870

Figure 7 and 8 *Dapsilidinium simplex* 16/16, 4220m, slide a, P43/4, x870

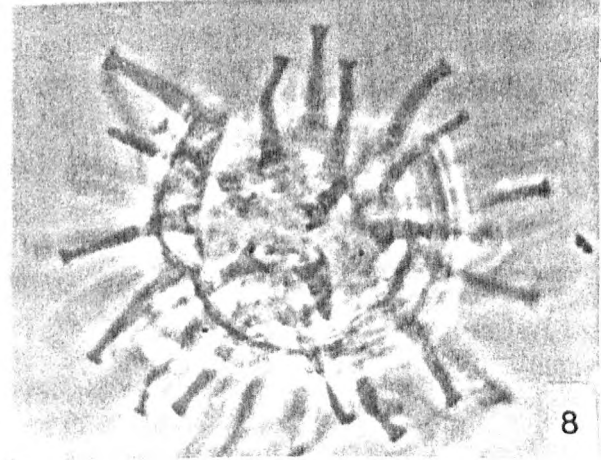
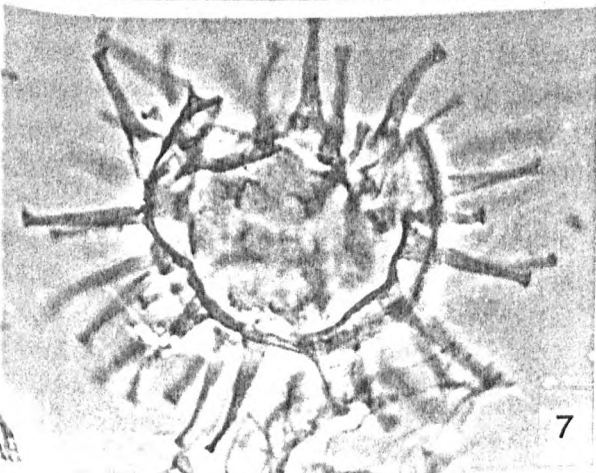
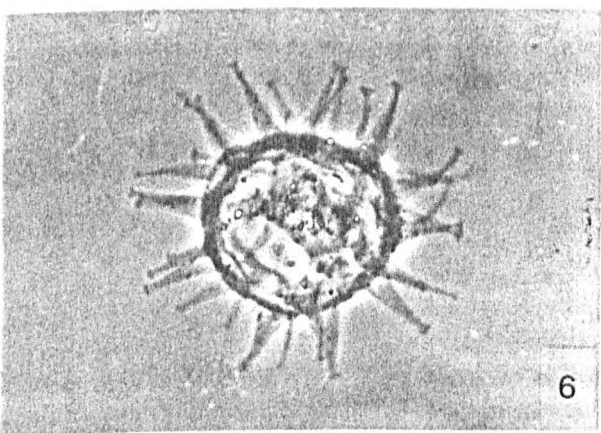
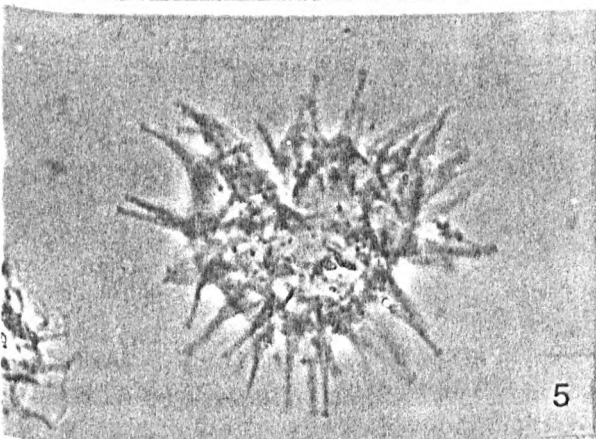
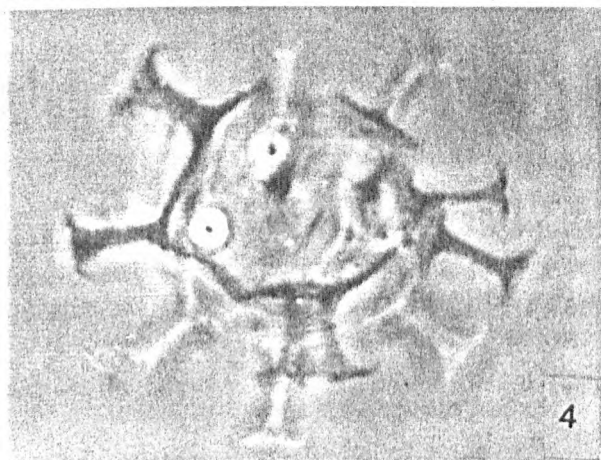
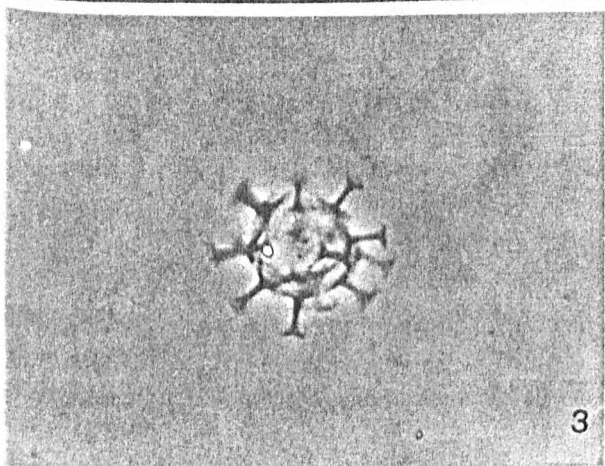
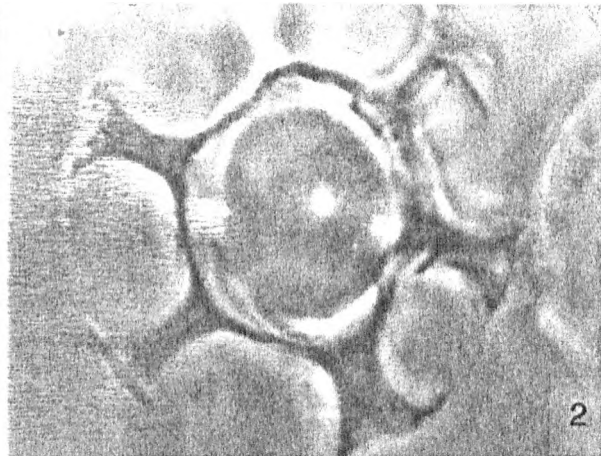
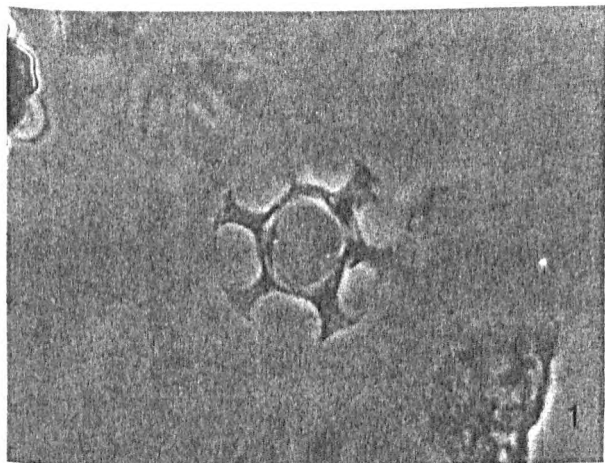


PLATE 54

Figure 1 *Diphyes colligerum* 16/16, 4000m, slide a, N44/2, x870

Figure 2 *Diphyes colligerum* 16/16, 3800m, slide a, V47/2, x870

Figure 3 *Distatodinium craterium* 16/16, 4100m, slide a, V48/3, x870

Figure 4 and 5 *Distatodinium ellipticum* 16/16, 4140m, slide a, R34/1, x870

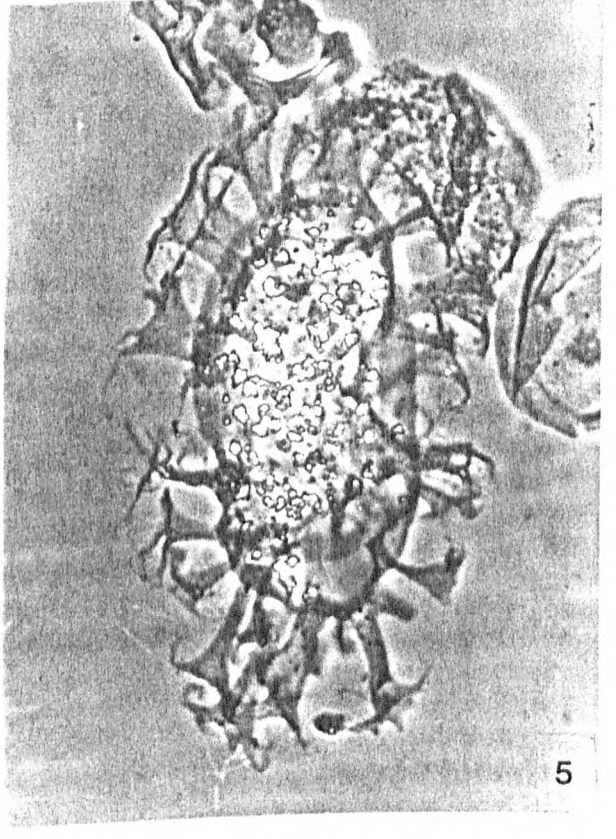
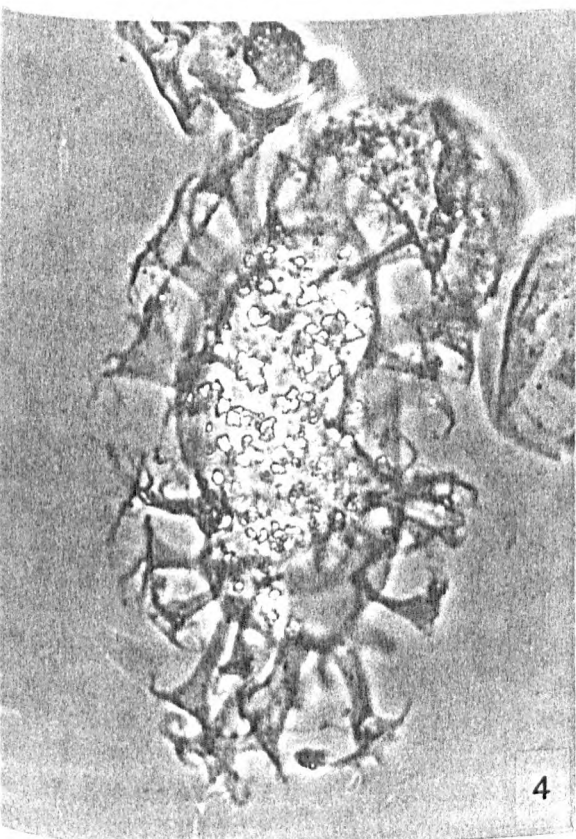
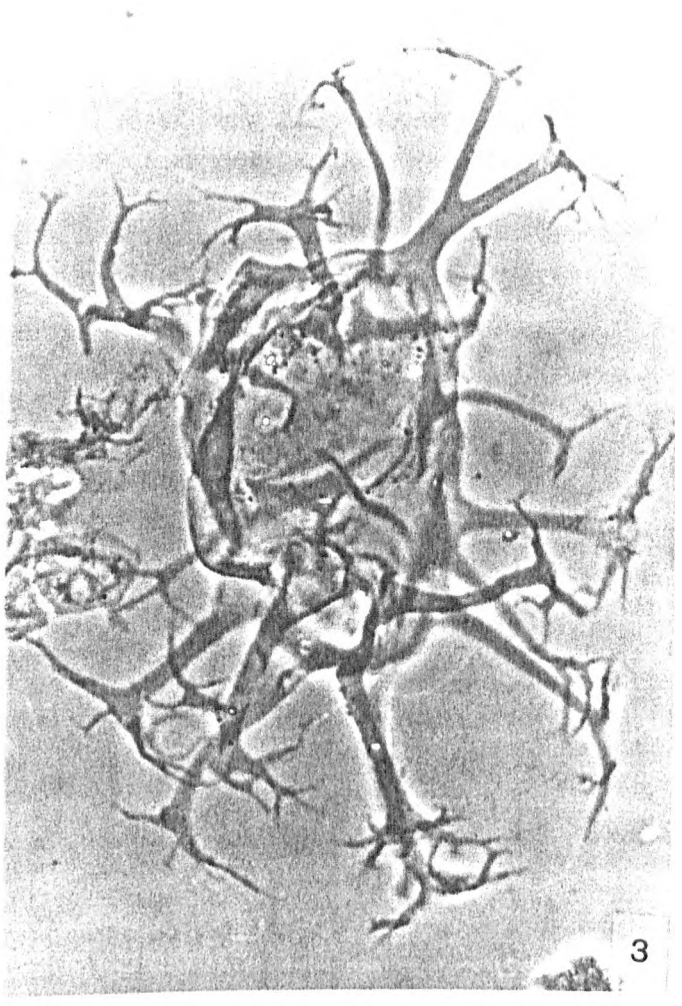
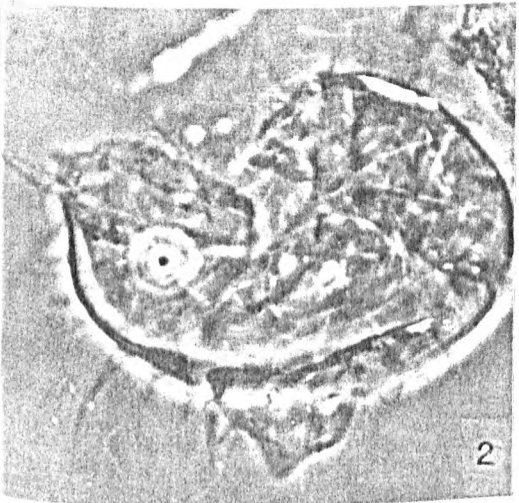
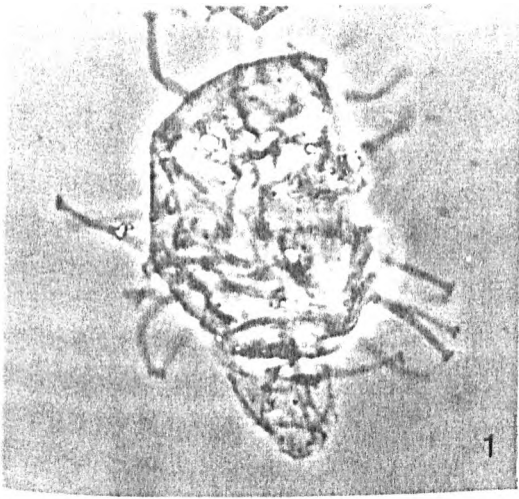


PLATE 55

Figure 1 *Distatodinium paradoxum* 21/28, 3180m, slide a, M50/3, x870

Figure 2 *Distatodinium paradoxum* 21/28, 2880m, slide a, Q36/2, x870

Figure 3 *Homotryblium floripes* 21/28, 3060m, slide a, L45, x870

Figure 4 *Homotryblium floripes* 21/28, 3060m, slide a, D34/4, x870

Figure 5 *Homotryblium floripes* 16/16, 4100m, slide a, T40/2, x870

Figure 6 *Homotryblium oceanicum* 16/16, 3460m, slide a, M44, x870

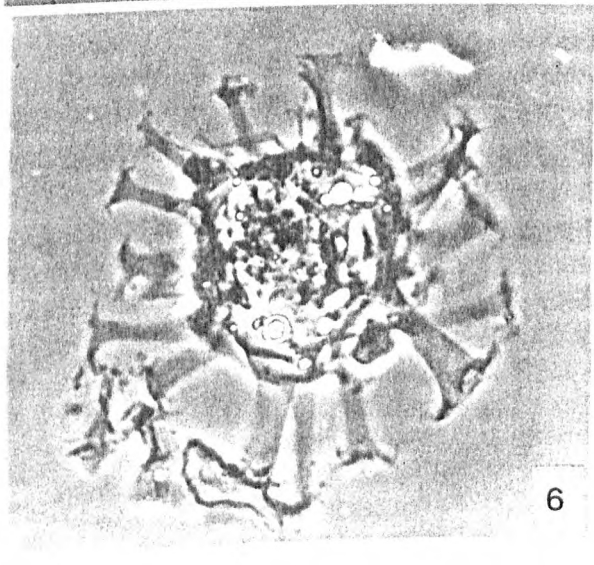
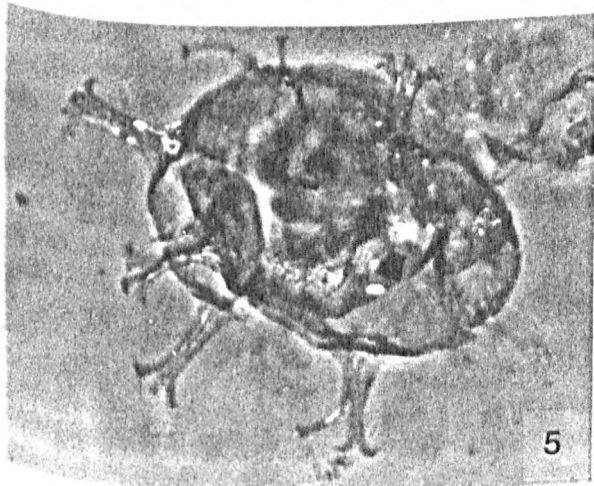
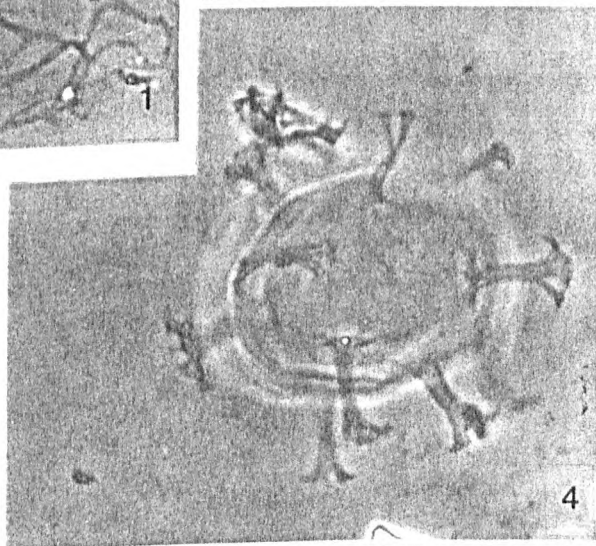
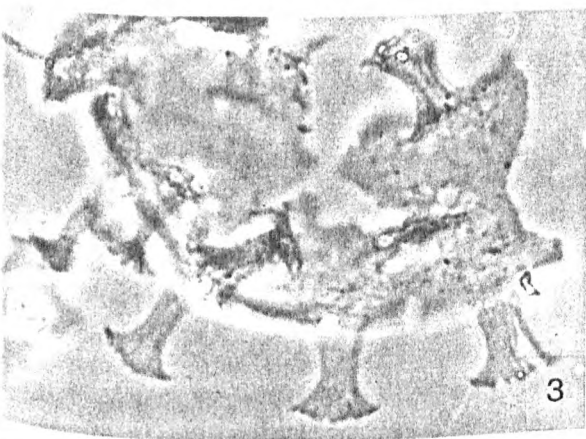
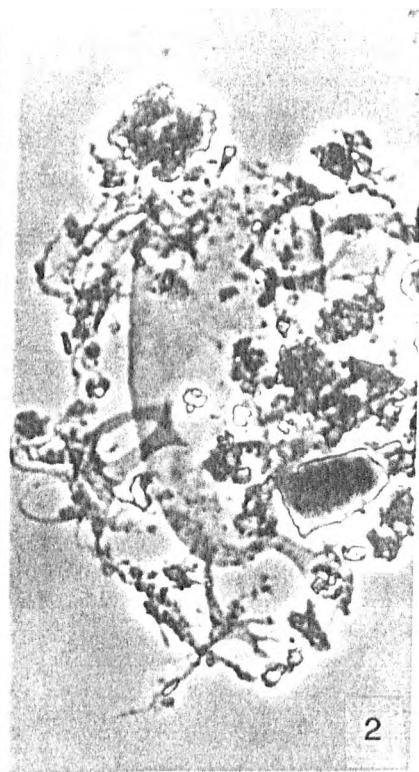
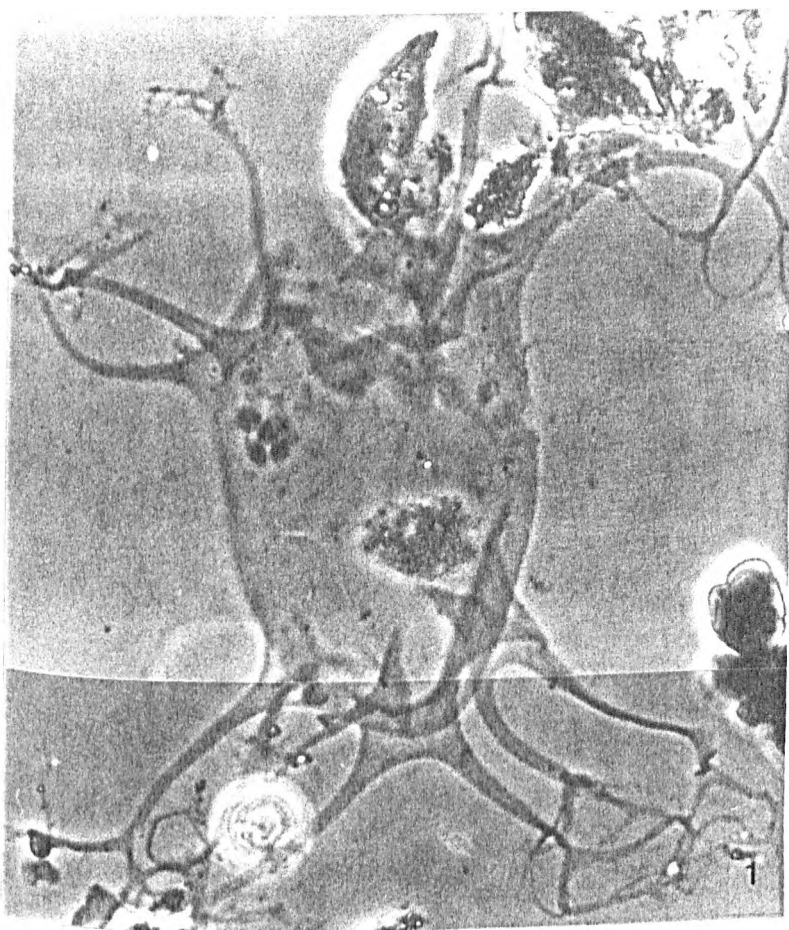


PLATE 56

Figure 1 *Homotryblium tenuispinosum* 21/28, 3060m, slide a, U30/2, x870

Figure 2 *Homotryblium vallum* 16/16, 4140m, slide a, R34/3, x870

Figure 3 and 4 *Hystrichokolpoma rigaudiae* 21/28, 3060m, R33/2, x870

Figure 5 *Hystrichokolpoma cinctum* 16/16, 4100m, slide a, U40, x870

Figure 6 *Hystrichosphaeridium latirictum* 21/28, 3060m, slide a, U31, x1720

Figure 7 *Hystrichosphaeridium patulum* 16/16, 4100m, slide a, V36, x1720

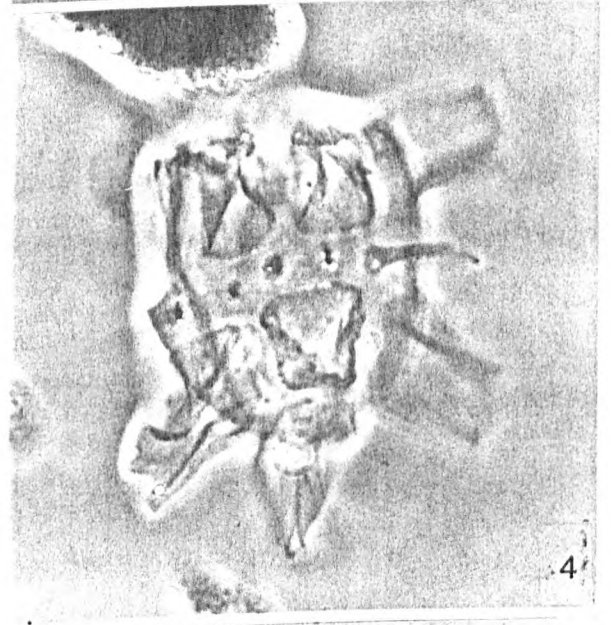
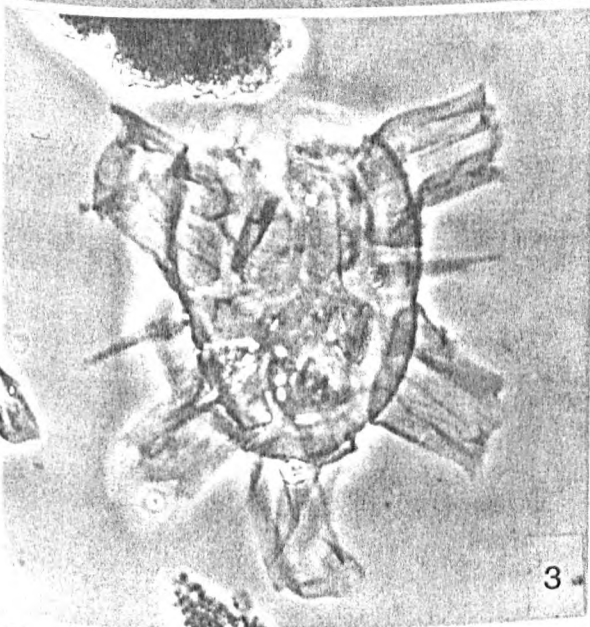
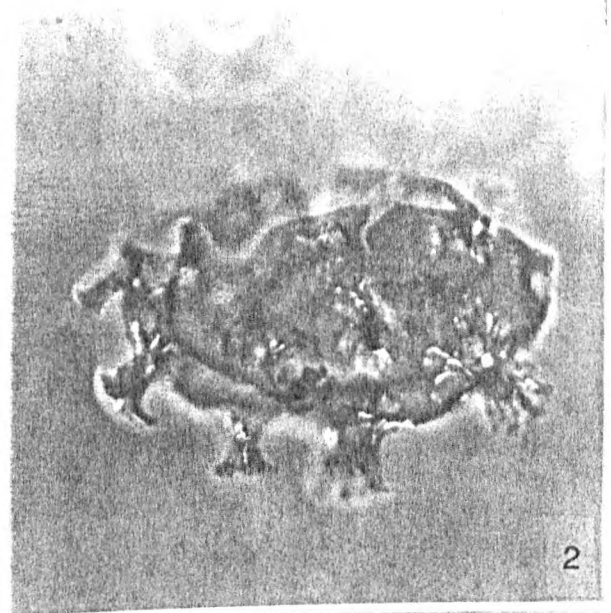
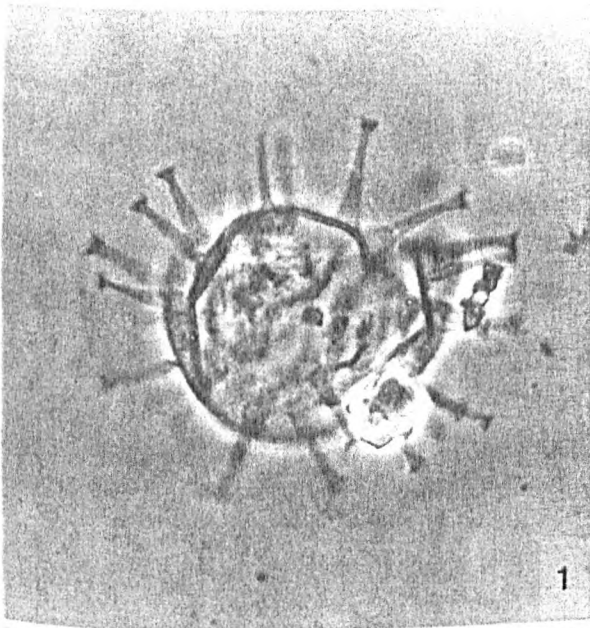


PLATE 57

Figure 1 *Hystrichostrogylon membraniphorum* 16/16, 4320m, slide b, H33, x870

Figure 2 *Hystrichostrogylon membraniphorum* 16/16, 3440m, slide a, T41/1, x870

Figure 3 *Hystrichostrogylon* sp. 1 of Manum *et al.* (1989) 16/16, 3440m, slide a, X34/3, x870 fragment

Figure 4 *Lingulodinium machaerophorum* 16/16, 4220m, slide a, L38/2, x870

Figure 5 *Lingulodinium machaerophorum* 21/28, 3180m, slide a, T47/4, x870

Figure 6 *Lingulodinium machaerophorum* 16/16, 4140m, slide a, V32/1, x870

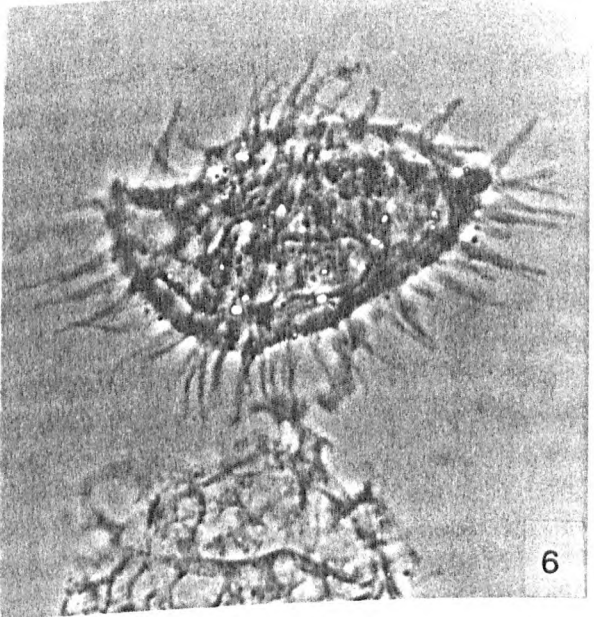
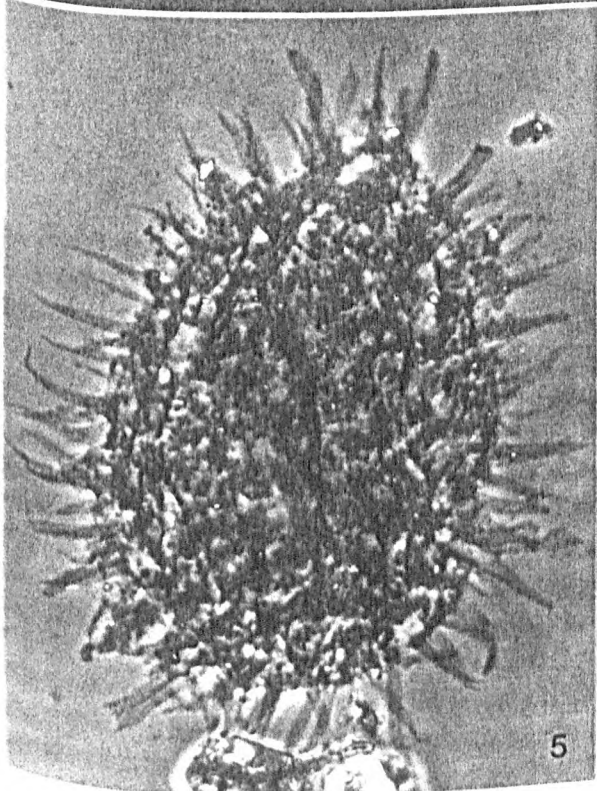
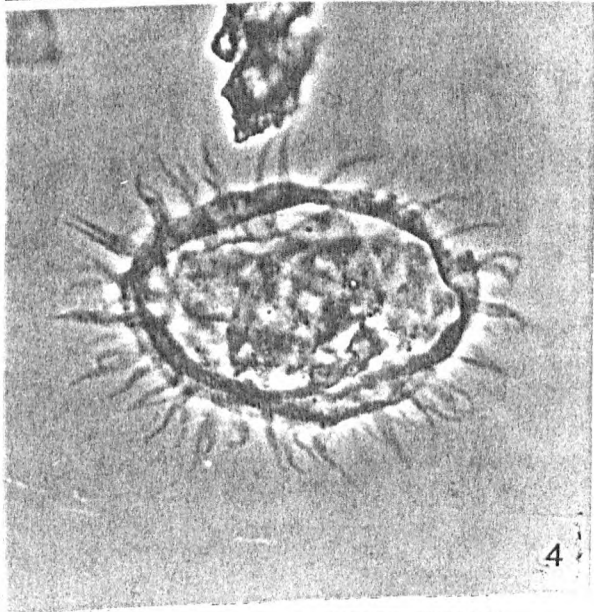
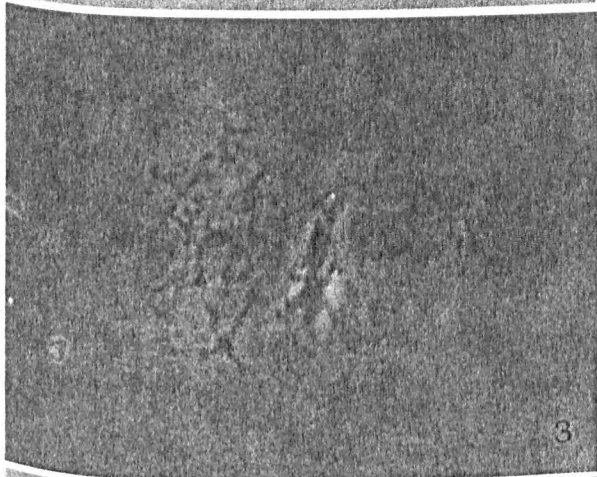
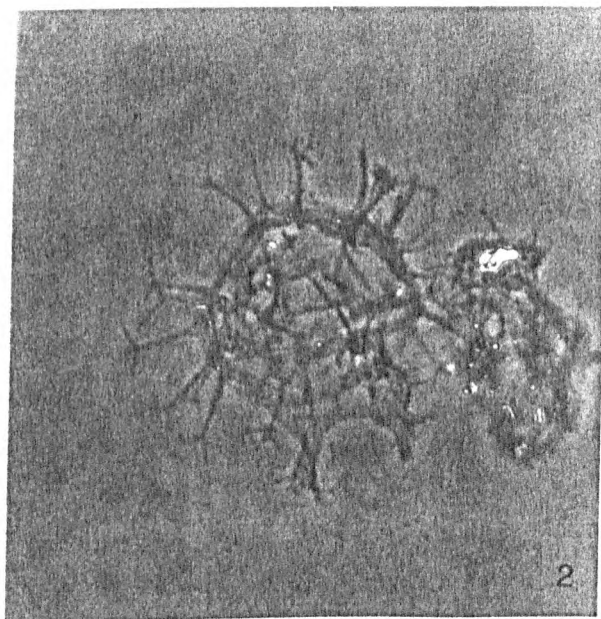
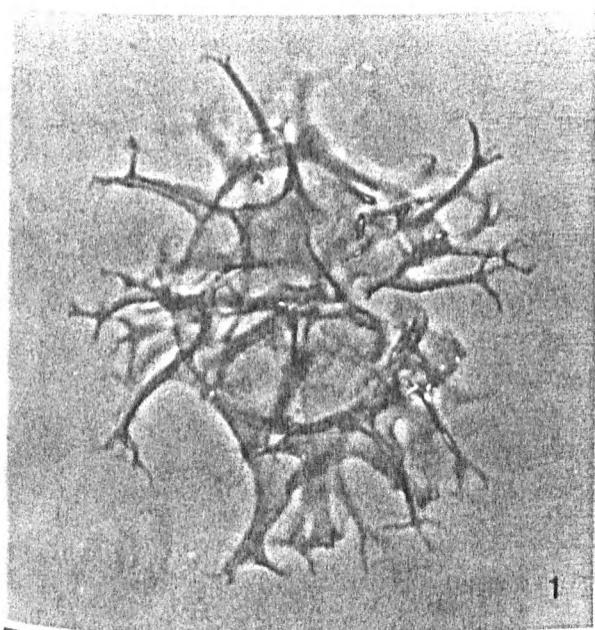


PLATE 58

Figure 1 *Melitasphaeridium asterigium* 21/28, 3270m, slide b, W44/1, x870

Figure 2 *Melitasphaeridium asterigium* 21/28, 3210m, slide b, R41, x870

Figure 3 *Melitasphaeridium choanophorum* 16/16, 3440m, slide a, H50/3, x870

Figure 4 *Melitasphaeridium pseudorecurvatum* 21/28, 2880m, slide a, H37/3, x870

Figure 5 *Melitasphaeridium pseudorecurvatum* 16/16, 3640m, slide a, D45/4, x870

Figure 6 and 7 *Pausicsphaeridium* cf. *inversibuccinum* 16/16, 3500m, slide a, W32/2, x1720

Figure 8 *Polysphaeridium subtile* 16/16, 4220m, slide a, K39, x870

Figure 9 *Polysphaeridium subtile* 16/16, 4180m, slide a, T41/2, x870

Figure 10 *Polysphaeridium* cf. *subtile* 16/16, 3720m, slide a, U35, x870. Fragment.

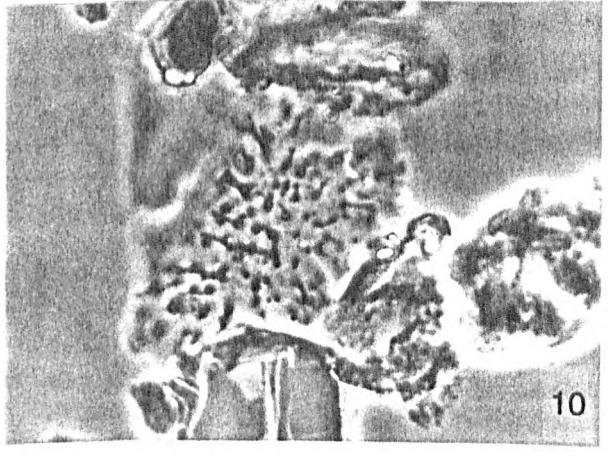
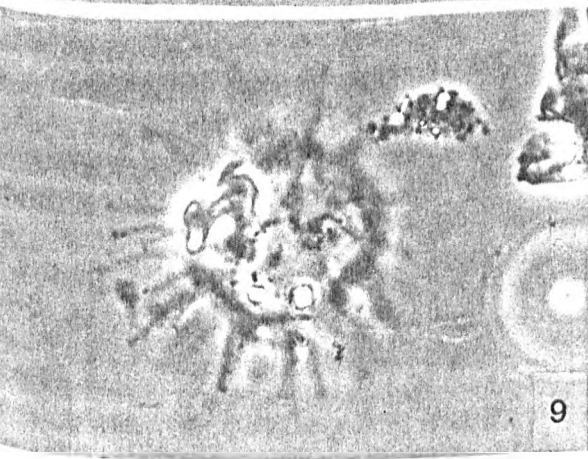
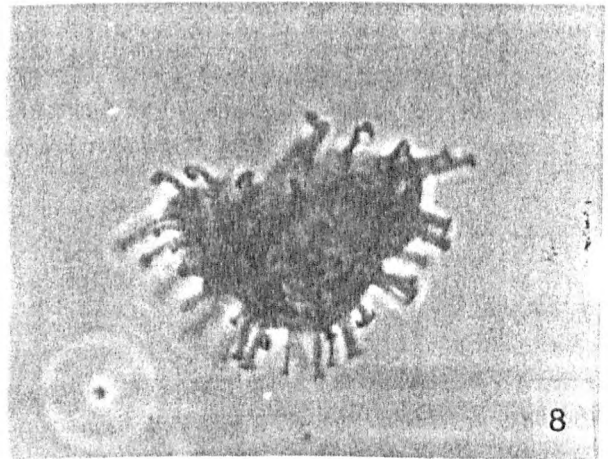
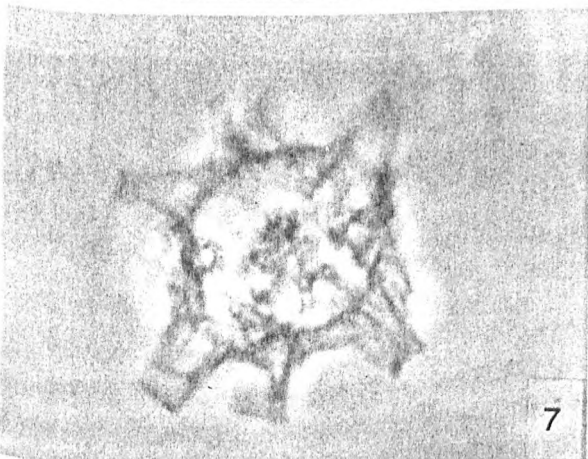
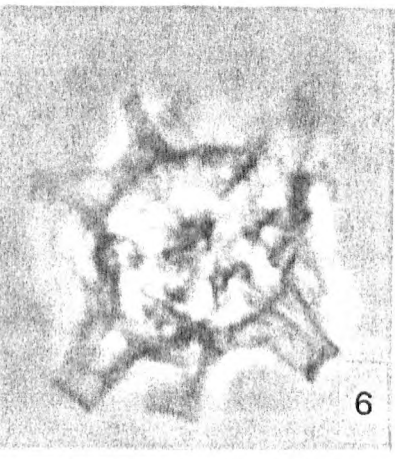
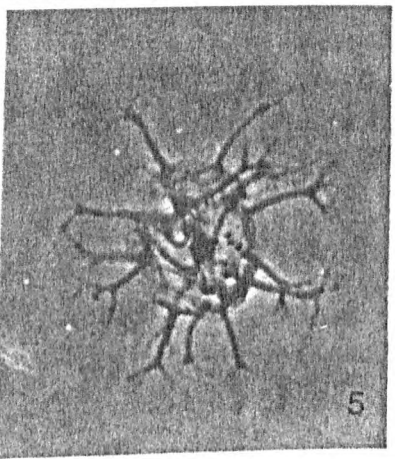
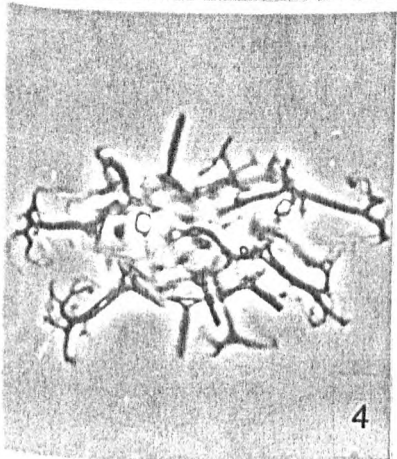
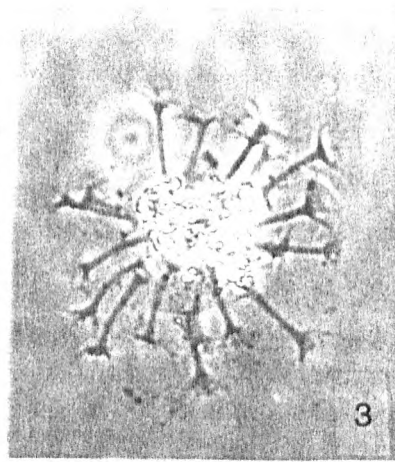
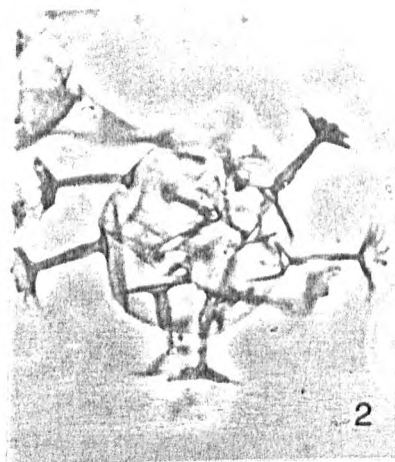
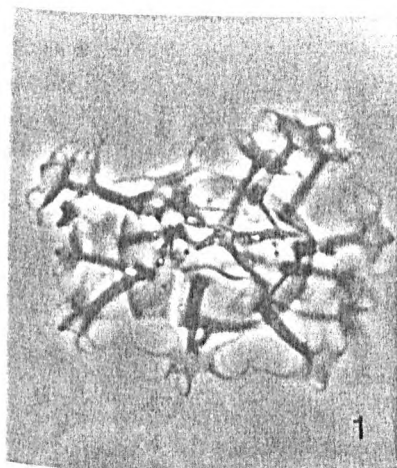


PLATE 59

Figure 1 *Systamatophora ancyrea* 16/16, 4100m, slide a, V35/1, x870

Figure 2 *Systamatophora placacantha* 21/28, 3060m, slide a, R39/1, x870

Figure 3 and 4 *Systamatophora placacantha* 16/16, 3960m, slide a, V40, x870

Figure 5 ?*Tanyosphaeridium* sp. 1 of Manum 16/16, 4220m, slide a, K30, x870.
Poor specimen

Figure 6 Dinocyst sp. 4 of Manum (1976) 21/28, 2910m, slide b, O37, x1720

Figure 7 Dinocyst sp. 4 of Manum (1976) 16/16, 4320m, slide b, V33/1, x1720

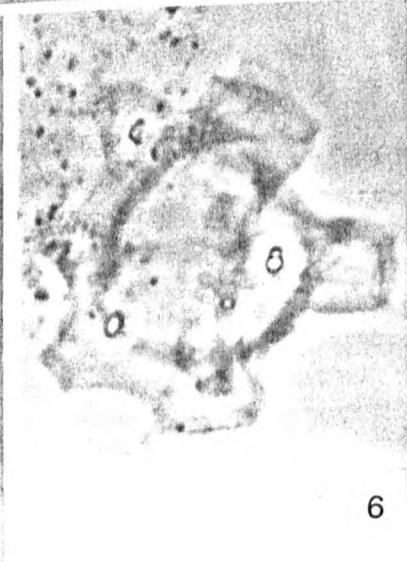
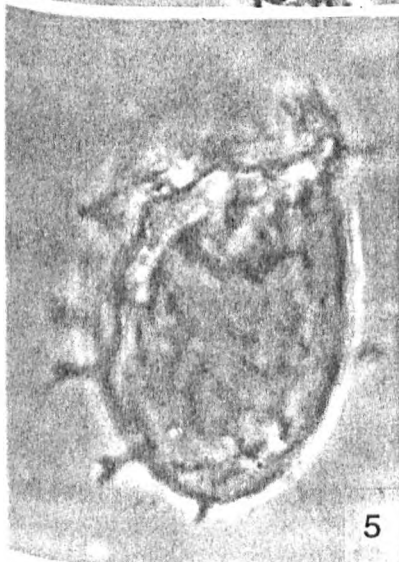
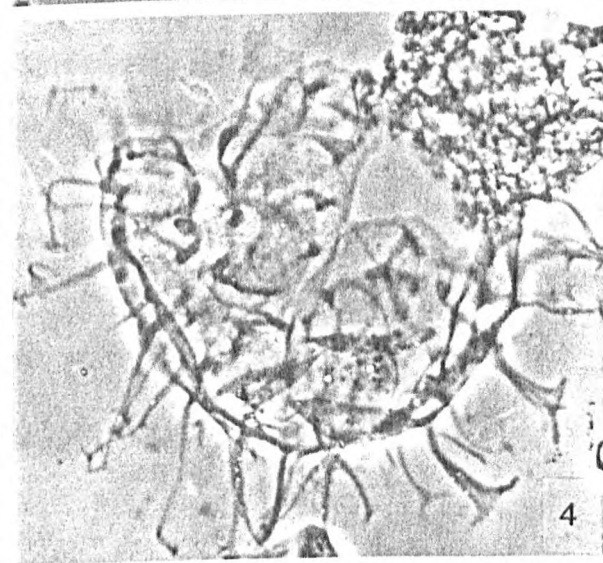
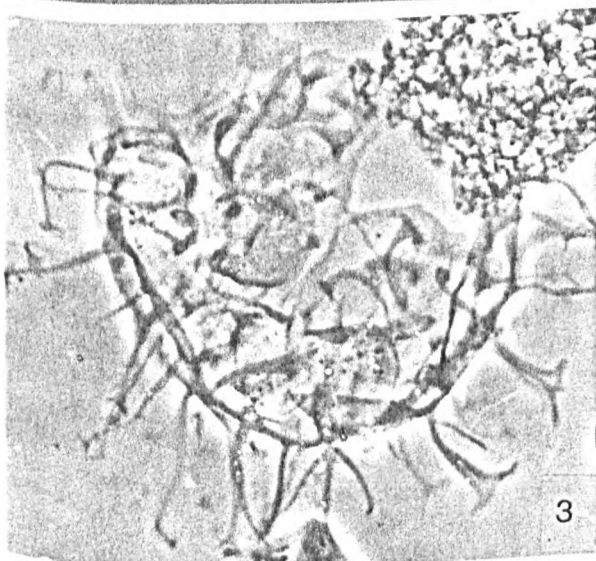
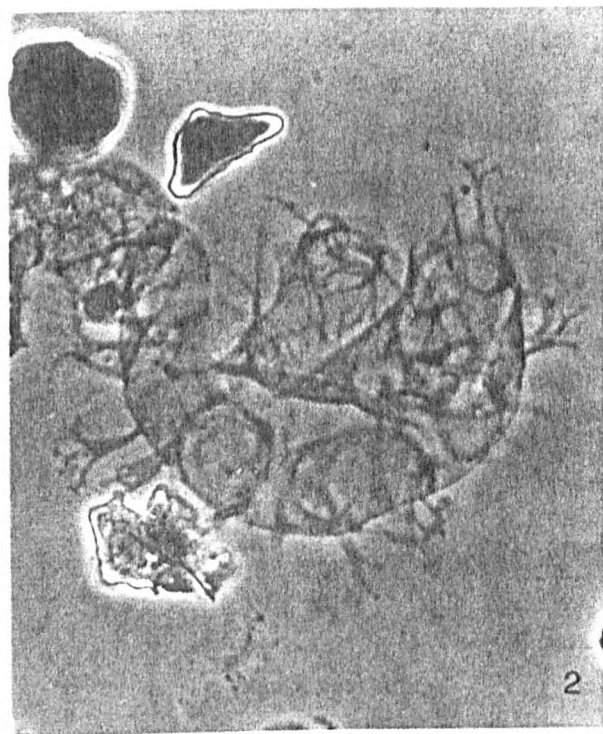
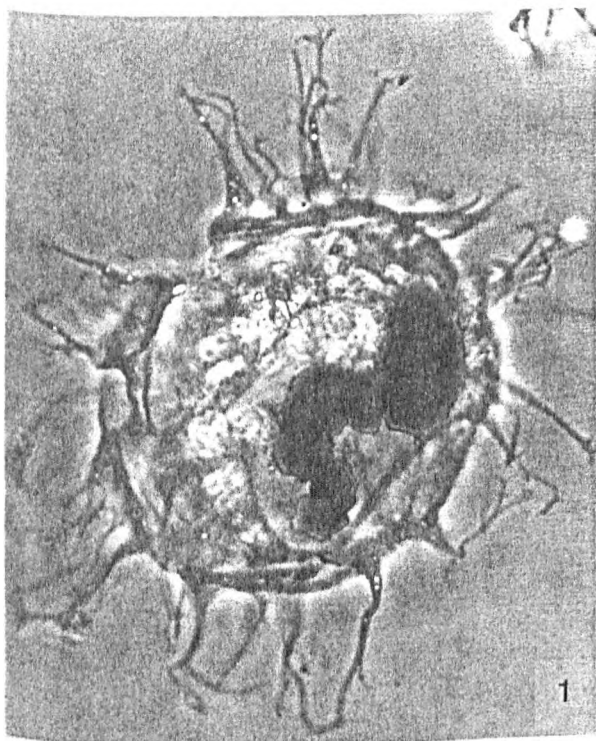


PLATE 60

Figure 1 *Achomosphaera alcicornu* 16/16, 3800m, slide a, M40, x870

Figure 2 *Achomosphaera crasipellis* 21/28, 3210m, slide b, W36/2, x870

Figure 3 and 4 *Achomosphaera ramulifera* 21/28, 3060m, slide a, M45/4, x870

Figure 5 *Dinopterygium fehmannense* 21/28, 3060m, slide a, R42/2, x870

Figure 6 *Dinopterygium fehmannense* 21/28, 3060m, slide a, H31/4, x870

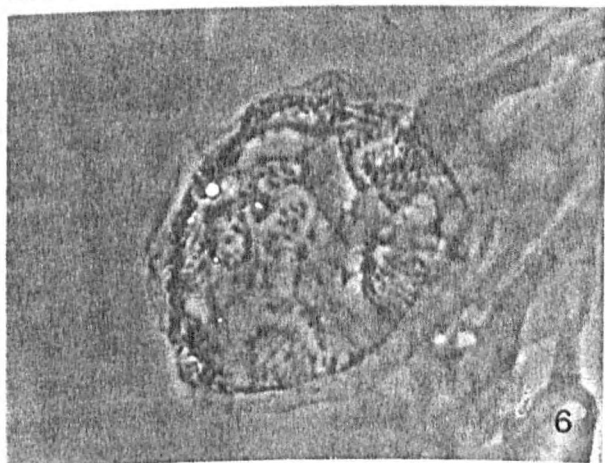
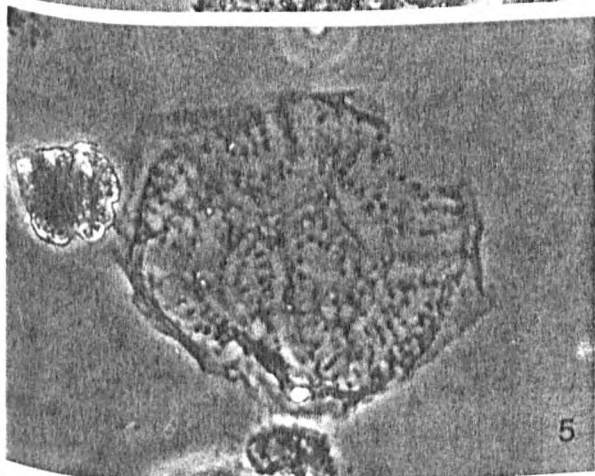
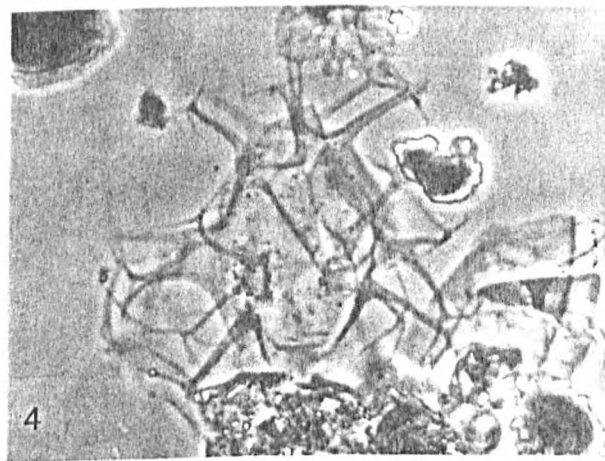
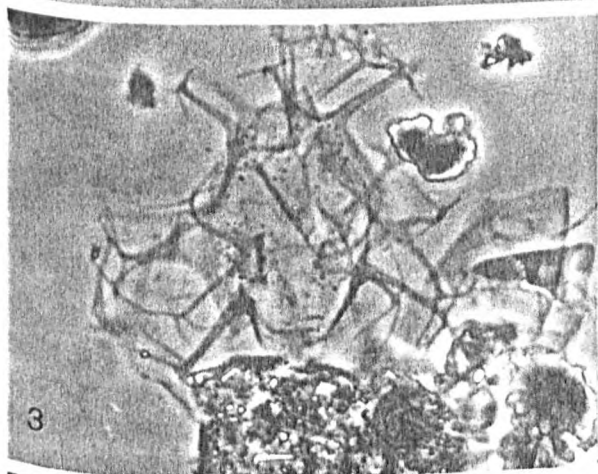
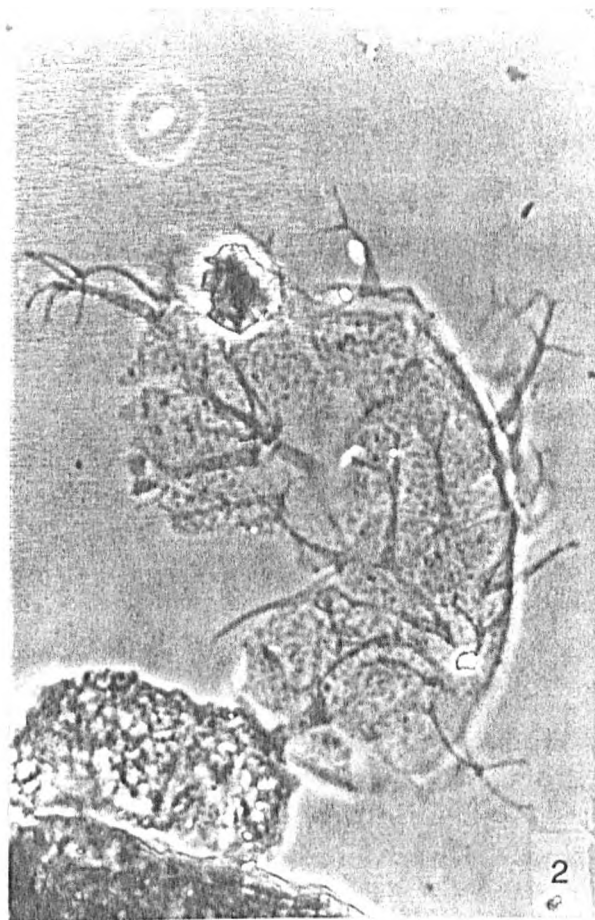
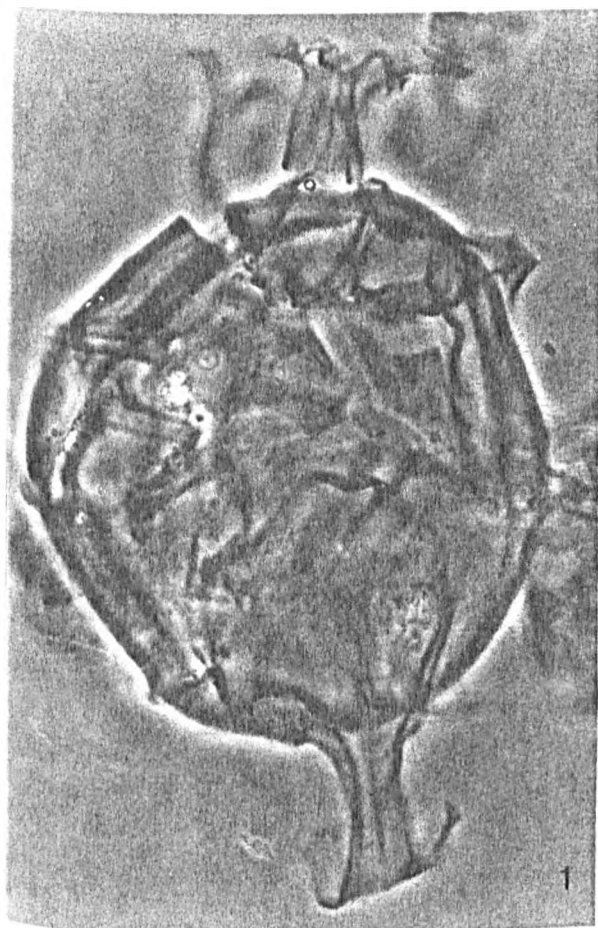


PLATE 61

Figure 1 and 2 *Impagidinium patulum* 21/28, 2940m, slide d, G48, x870

Figure 3 and 4 *Impagidinium patulum* 21/28, 3090m, slide a, T36/1, x870

Figure 5 *Impletosphaeridium implicatum* 16/16, 4020m, slide a, T43/3, x870

Figure 6 *Impletosphaeridium insolitum* 16/16, 3600m, slide a, G48/4, x870

Figure 7 *Impletosphaeridium ligospinosum* 16/16, 3440m, slide a, V31, x870

Figure 8 *Impletosphaeridium ligospinosum* 16/16, 4140m, slide a, V32/1, x870

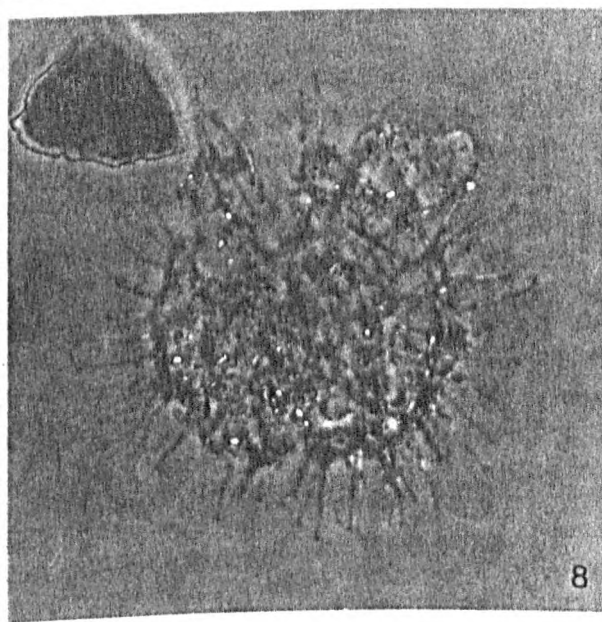
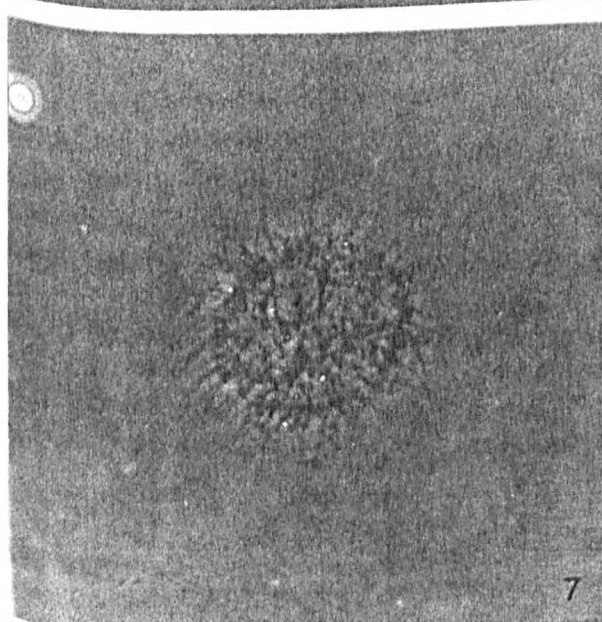
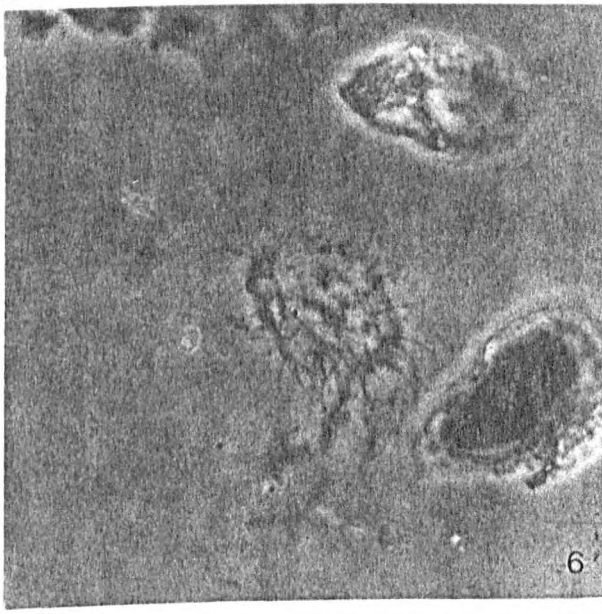
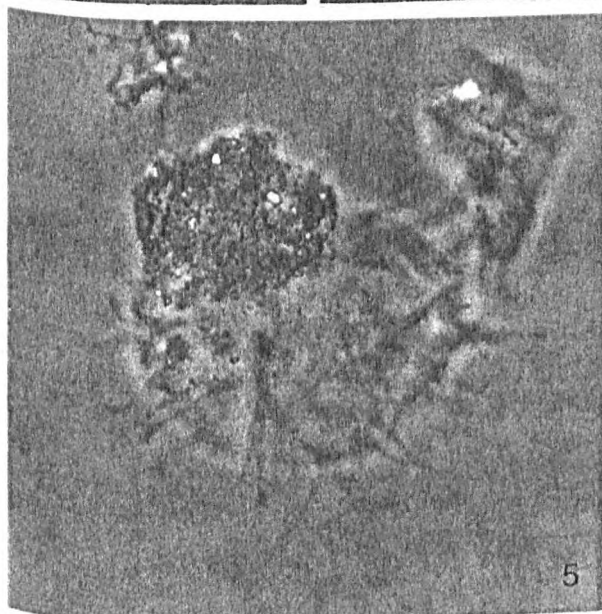


PLATE 62

Figure 1 *Membranophoridium aspinatum* 16/16, 3640m, slide a, O35, x870

Figure 2 *Membranophoridium aspinatum* 21/28, 2910m, slide b, U42/2, x870

Figure 3 *Membranophoridium aspinatum* 21/28, 2940m, slide d, K40/4, x870

Figure 4 and 5 *Nematosphaeropsis labrinthea* 21/28, 3150m, slide a, H31, x870

Figure 6 *Nematosphaeropsis labrinthea* 16/16, 3440m, slide a, V34/1, x870

Figure 7 *Nematosphaeropsis labrinthea* 21/28, 2910m, slide b, G46/1, x870

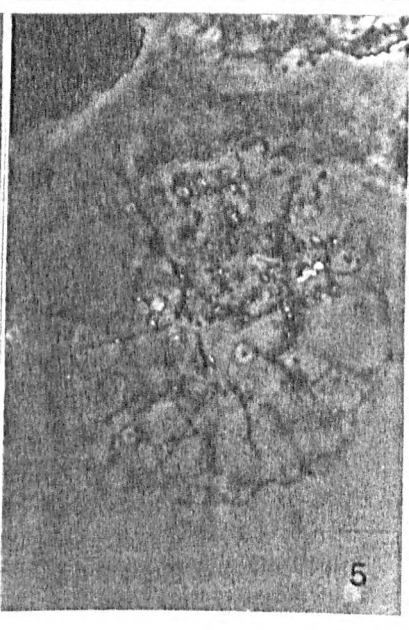
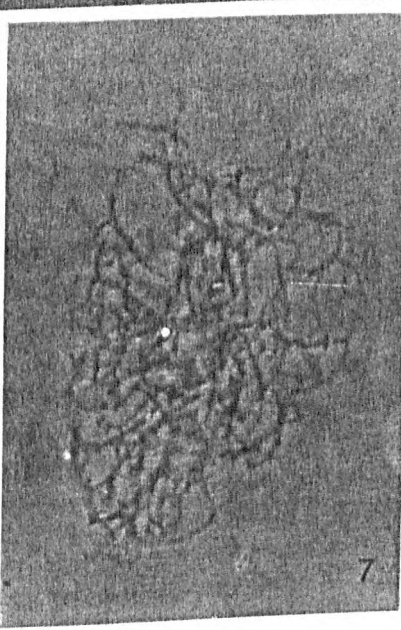
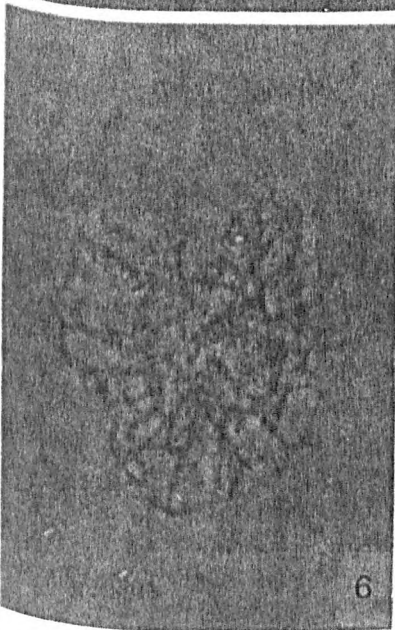
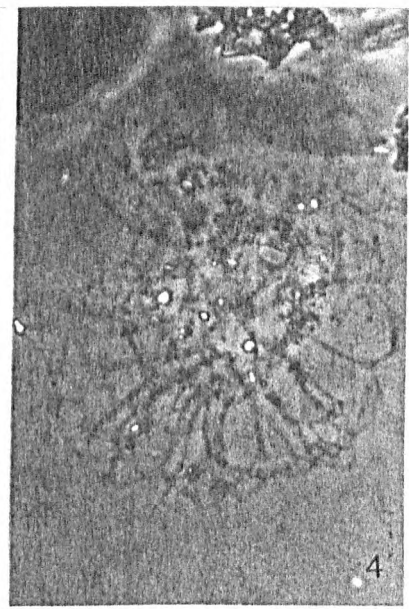
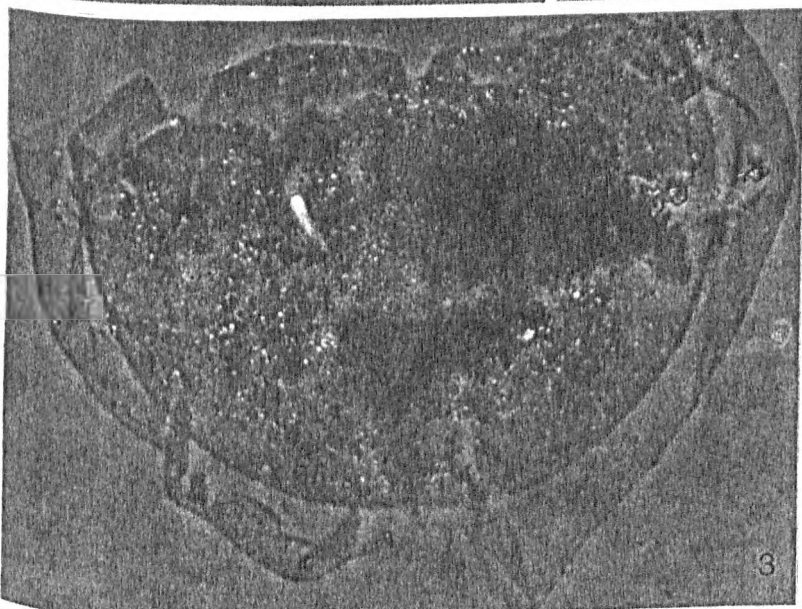
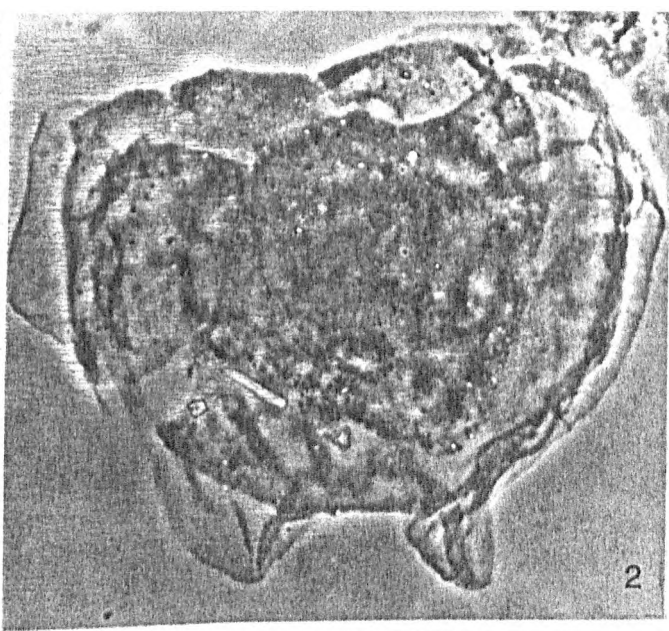
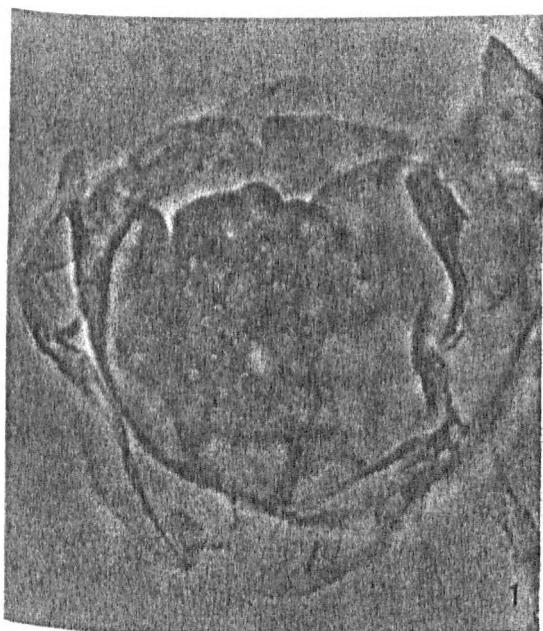


PLATE 63

Figure 1 and 2 *Nematosphaeropsis lemniscata* 21/28, 3090m, slide a, Q38, x870

Figure 3 *Nematosphaeropsis lemniscata* 16/16, 4140m, slide a, W46, x870

Figure 4 *Operculodinium bellerum* 16/16, 4320m, slide b, L33/2, x870

Figure 5 and 6 *Operculodinium centrocarpum* 21/28, 3000m, slide b, T45/4, x870

Figure 7 *Operculodinium microtriana* 16/16, 3840m, slide a, V42/3, x870

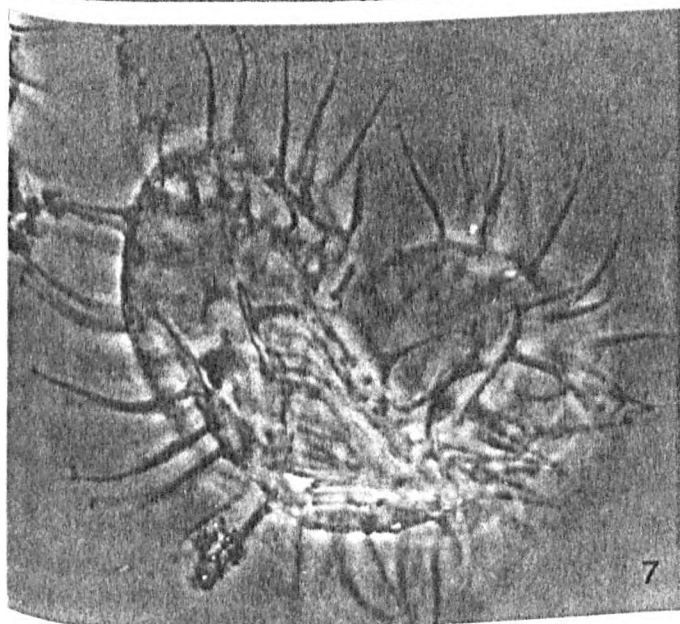
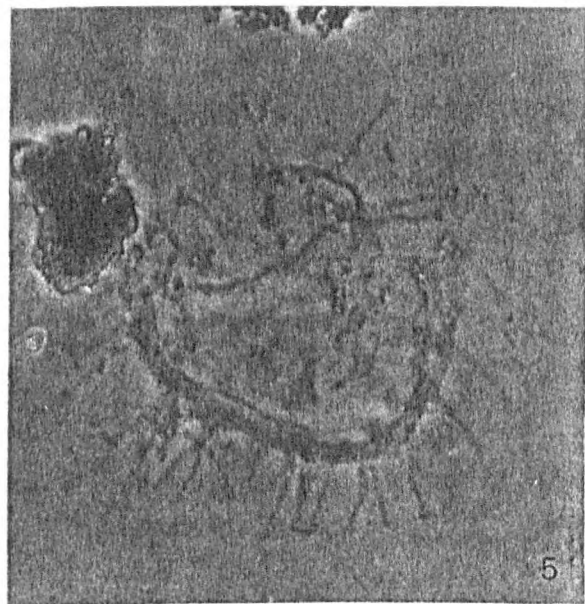
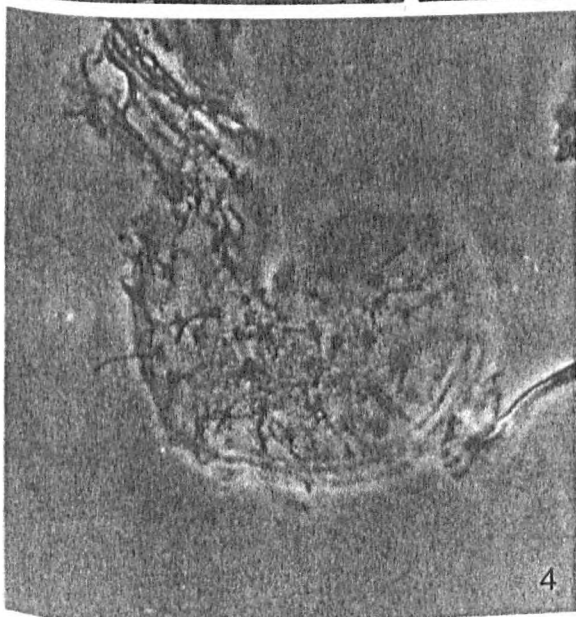


PLATE 64

Figure 1 *Operculodinium* sp. 3 21/28, 3060m, slide a, U50/3, x870

Figure 2 *Operculodinium* sp. 1 21/28, 3210m, slide b, L45/4, x870

Figure 3 *Operculodinium* sp. 2 21/28, 2880m, slide a, V38, x870

Figure 4 *Operculodinium* sp. 2 16/16, 4100m, slide a, Y45, x870

Figure 5 and 6 *Operculodinium* sp. of Piasecki (1980) or sp. 2 of Manum (1976) 16/16, 3500m, slide a, V33, x870

Figure 7 *Operculodinium* sp. of Piasecki (1980) or sp. 2 of Manum (1976) 16/16, 4320m, slide b, H33, x870

Figure 8 *Operculodinium* sp. of Piasecki (1980) or sp. 2 of Manum (1976) 16/16, 4260m, slide a, M34/2, x870

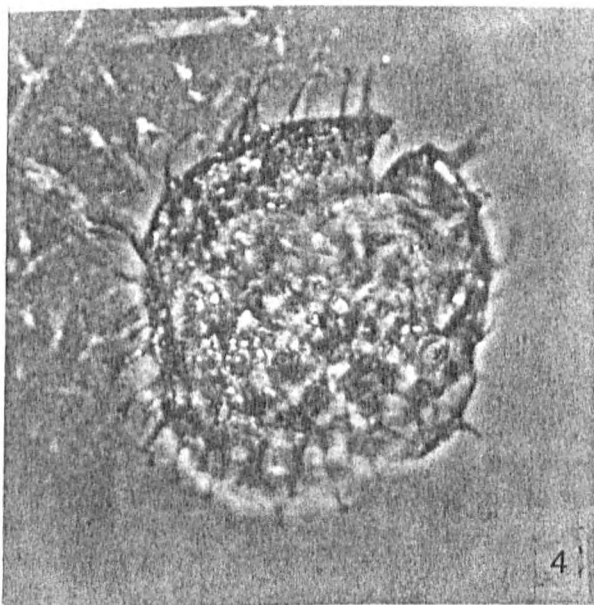
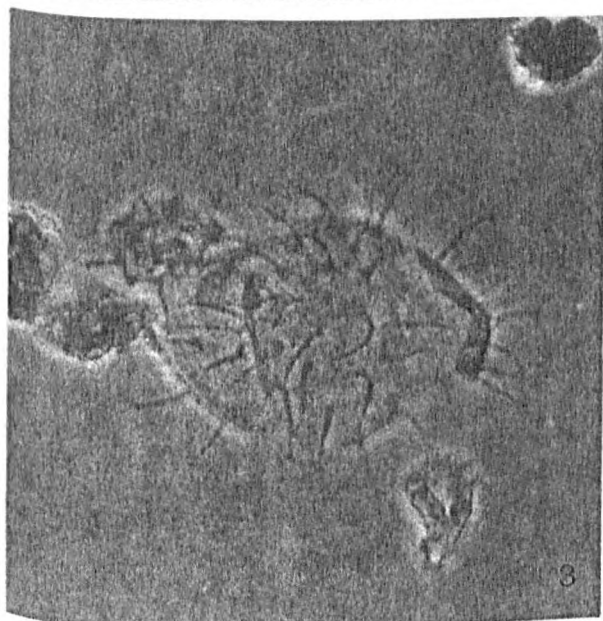
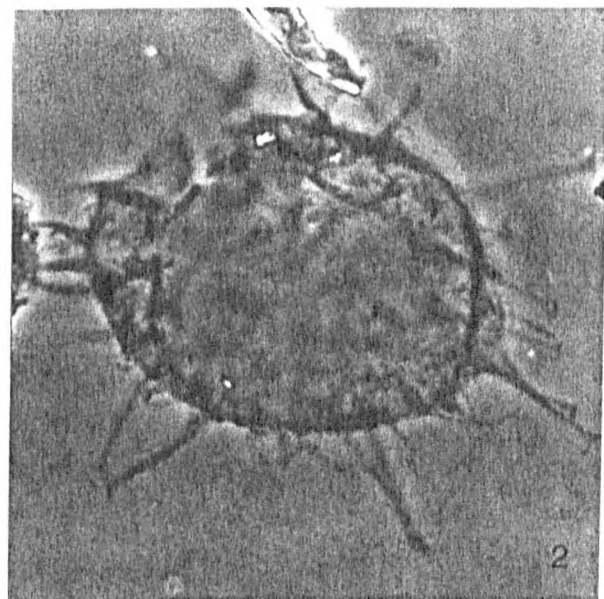
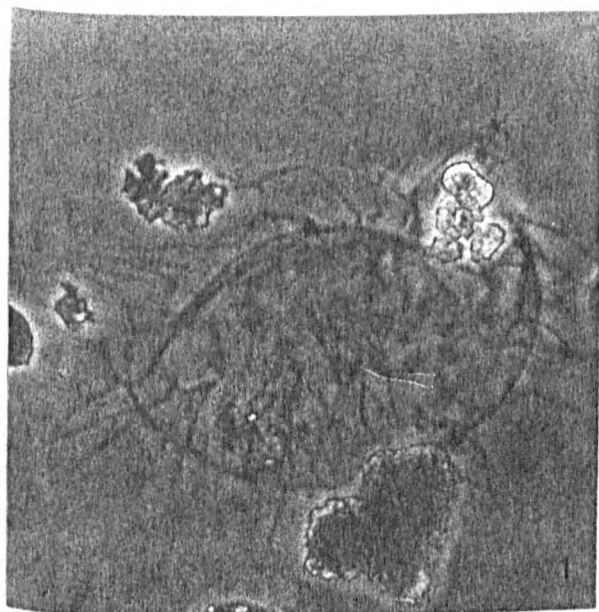


PLATE 65

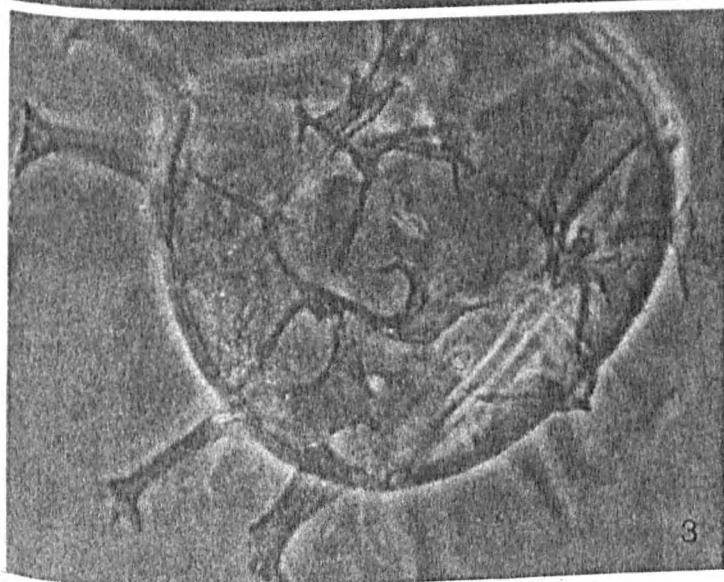
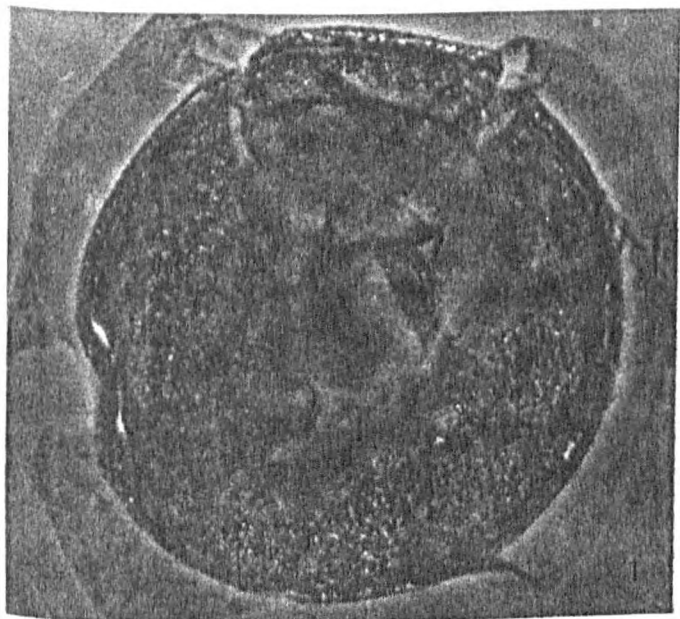
Figure 1 *Pentadinium laticinctum* 16/16, 3440m, slide a, U43/1, x870

Figure 2 *Pentadinium laticinctum* 21/28, 3090m, slide a, D43/1, x870

Figure 3 and 4 *Spiniferites pseudofurcatus* 16/16, 3460m, slide a, M48/4, x870

Figure 5 *Spiniferites multibrevis* 21/28, 3060m, slide a, N38/1, x870

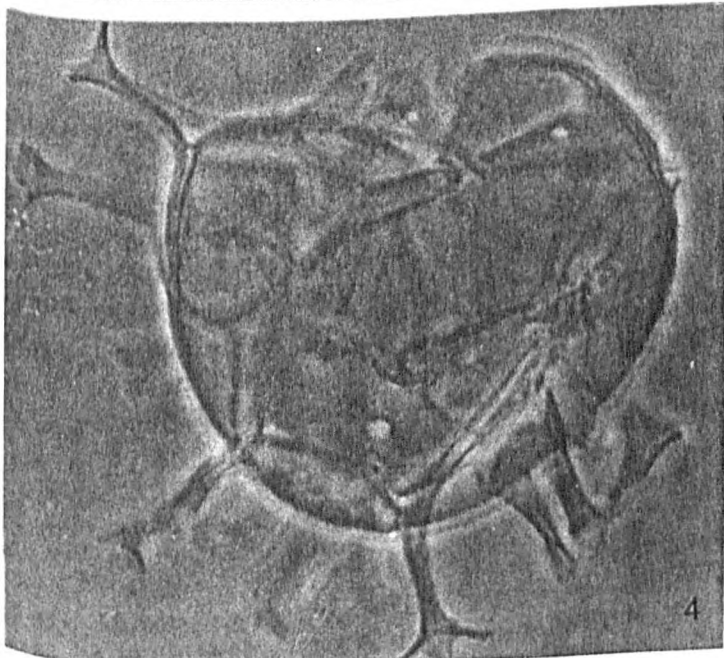
Figure 6 *Spiniferites ramosus* subsp. *ramosus* 21/28, 2910m, slide a, O37, x870



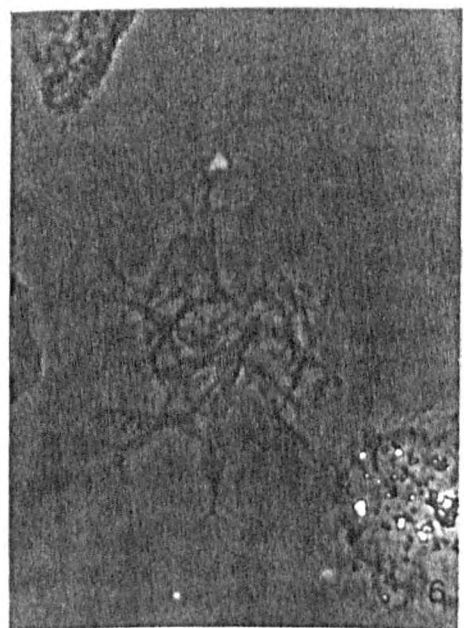
3



5



4



6

PLATE 66

Figure 1 and 2 *Spiniferites ramosus* subsp. *granosus* 16/16, 3800m, slide a, C42/4, x870

Figure 3 and 4 *Spiniferites ramosus* subsp. *granomembranaceous* 21/28, 2910m, slide b, V42/4, x870

Figure 5 and 6 *Spiniferites* sp. 1 of Manum *et al.* (1989) 16/16, 4140m, slide a, G46/1, x430

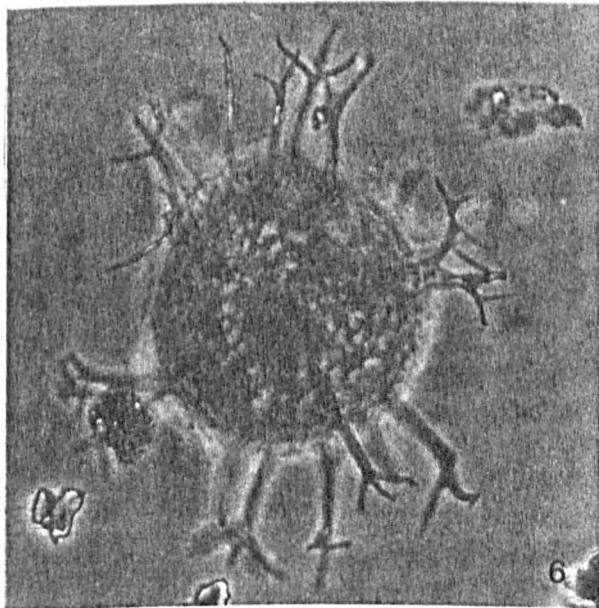
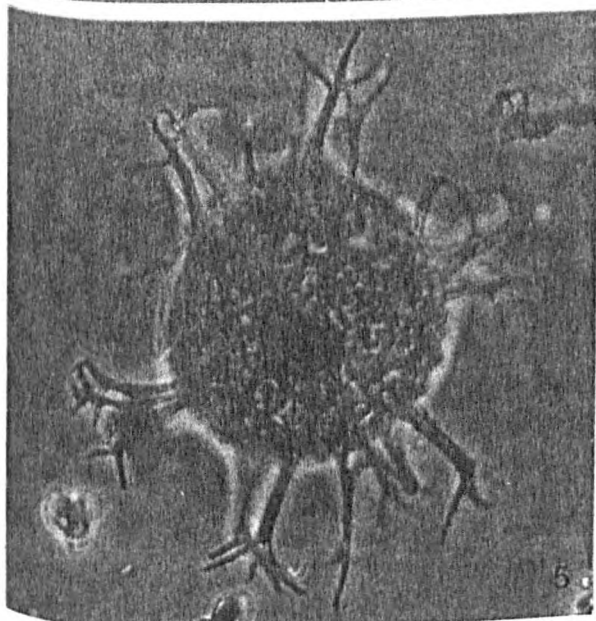
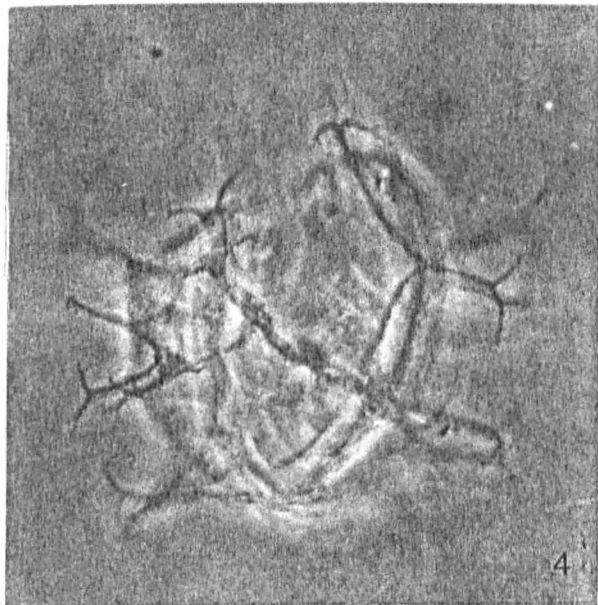
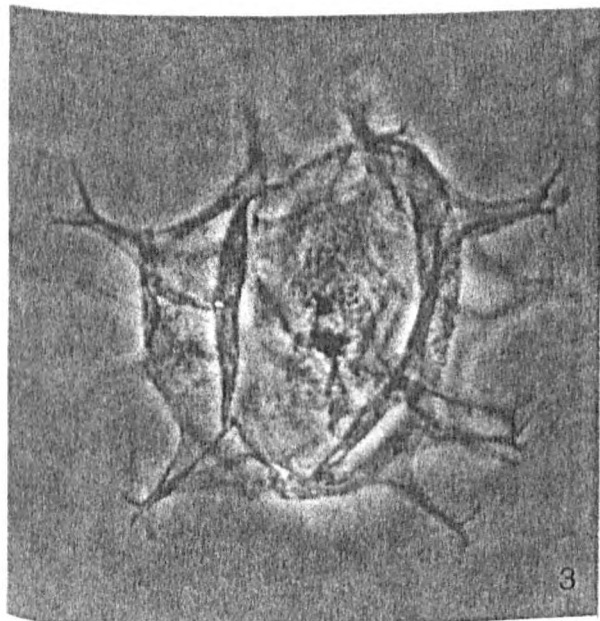
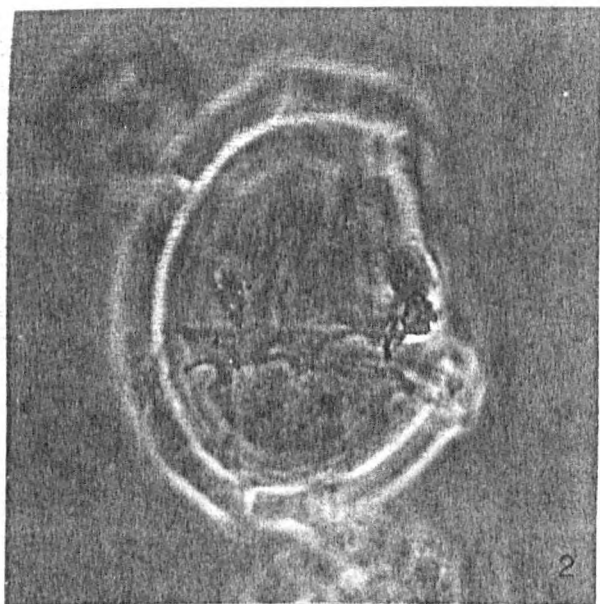
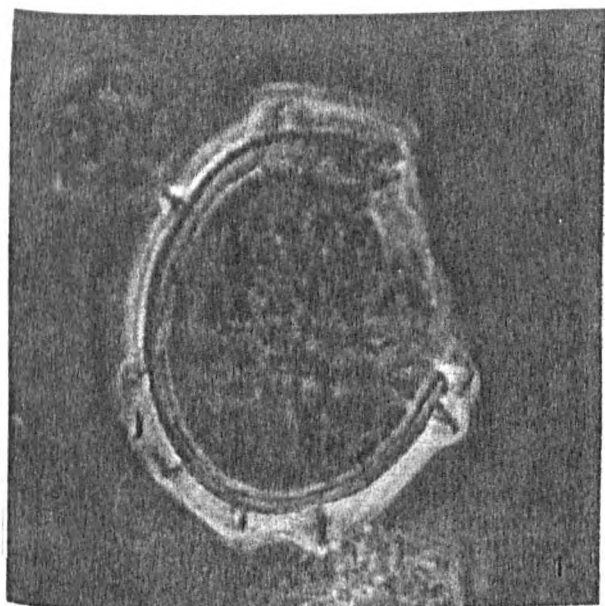


PLATE 67

Figure 1 *Spiniferites* sp. A 21/28, 3090m, slide a, V42, x870

Figure 2 *Cyclopsiella vieta* 16/16, 3800m, slide a, R43/4, x870

Figure 3 *Cyclopsiella* sp. A 21/28, 2910m, slide b, U42/2, x870

Figure 4 *Cyclopsiella* sp. B 21/28, 2880m, slide a, W38/2, x870

Figure 5 *Paralecaniella indentata* 21/28, 2970m, slide a, K49, x870

Figure 6 *Cymatiosphaeria* spp. 21/28, 3090m, slide a, Y32, x1720

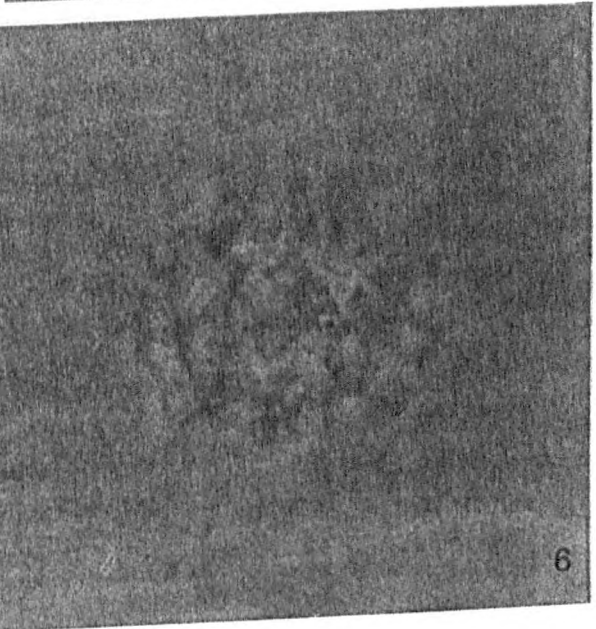
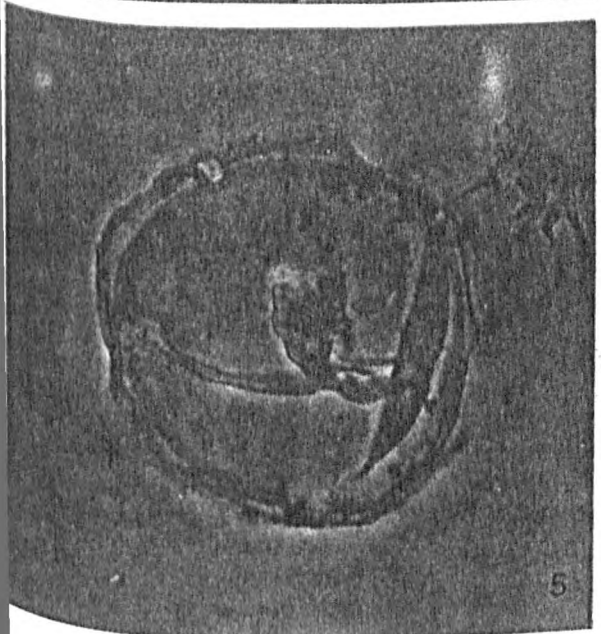
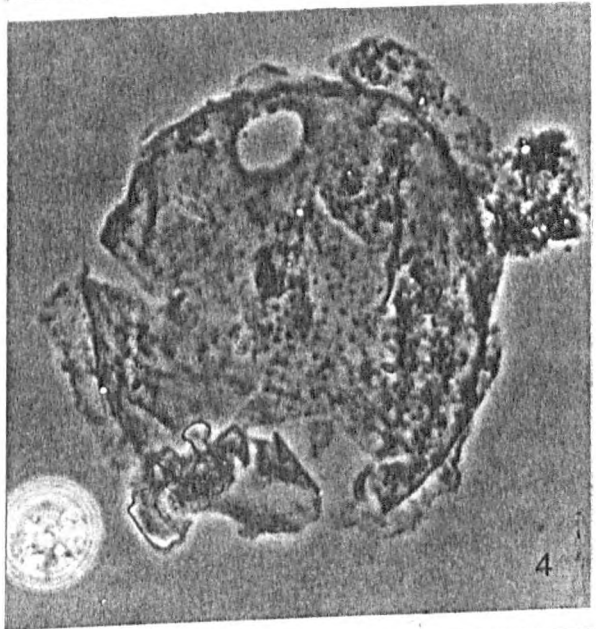
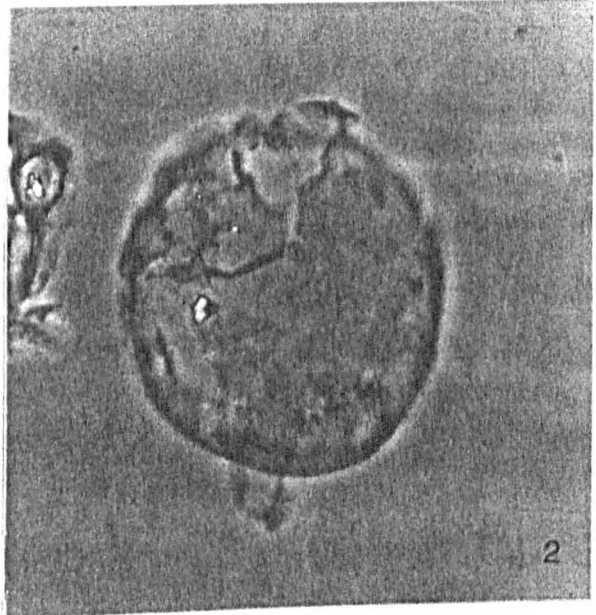
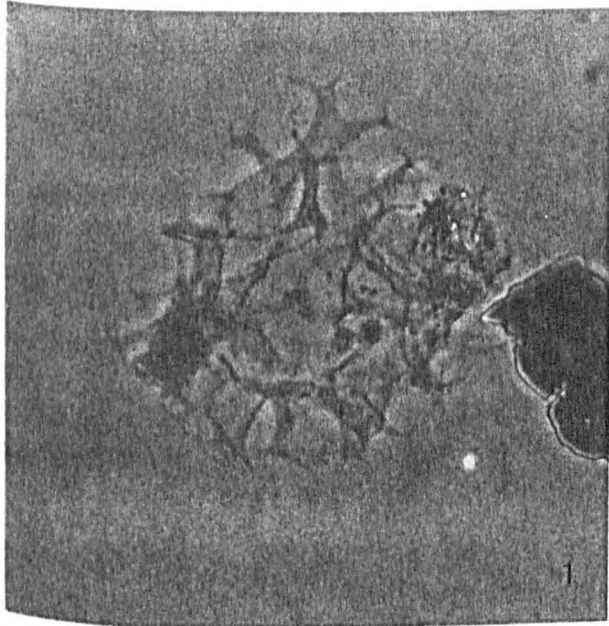


PLATE 68

Figure 1 *Tasmanites* spp. 16/16, 4180m, slide a, R35/2, x430 fragment

Figure 2 *Veryhacium* spp. 88/12, 33.5m, slide a, H41/1, x1720

Figure 3 *Micrhystridium fragile* 80/14, 66.19m, slide d, S41, x1720

Figure 4 *Micrhystridium lymense* 78/1, 131.5m, slide c, K43, x870

Figure 5 *Micrhystridium stellatum* 80/14, 72.95m, slide a, Q42/4, x1720

Figure 6 *Leiosphaeria* spp. 77/7, 111.3m, slide a, F36/1, x430

Figure 7 *Ascostomocystis granulata* 16/16, 4020m, slide a, W36, x870

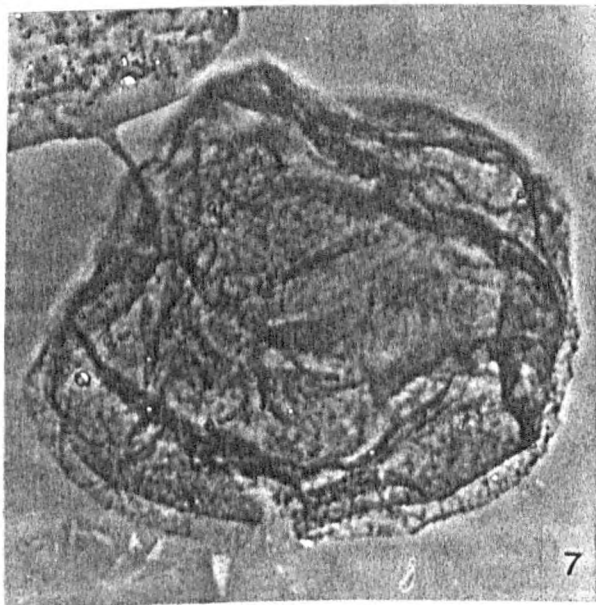
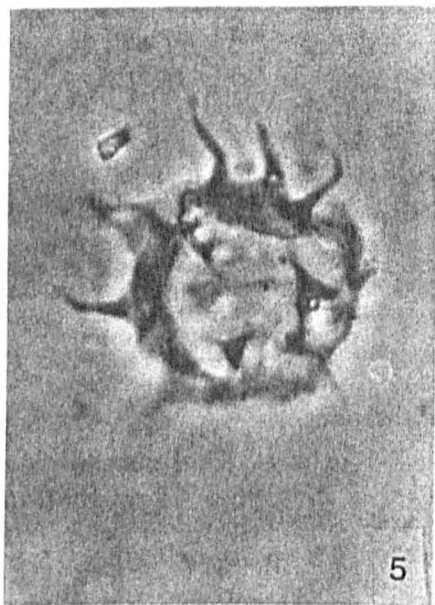
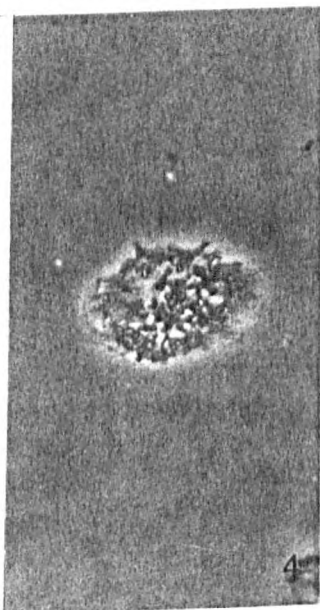
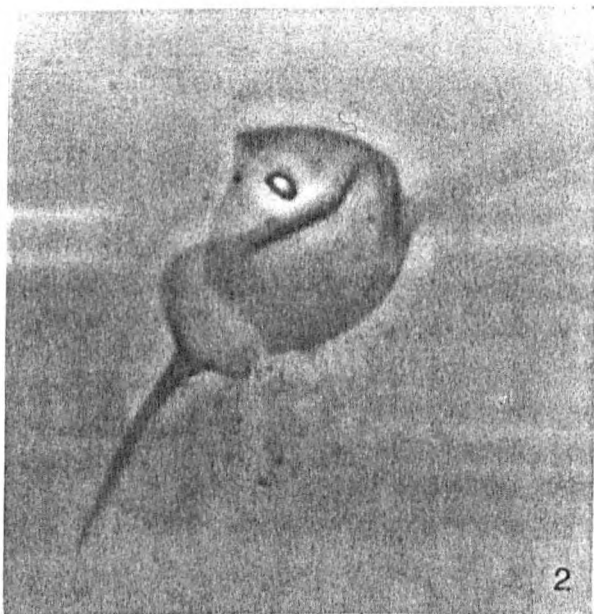
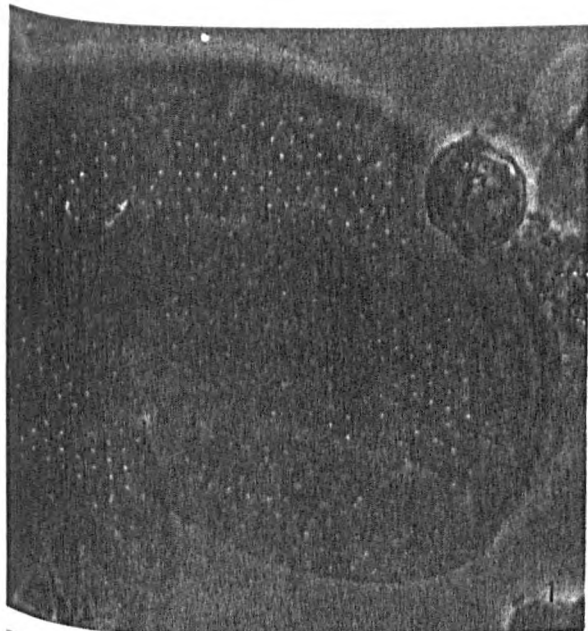


PLATE 69

Figure 1 *Pediastrum* spp. 73/36, 33.10m, slide a, P33/1, x1720

Figure 2 *Botryococcus* spp. 21/28, 3210m, slide a, W41/4, x870

Figure 3 *Botryococcus* spp. 21/28, 3210m, slide a, P38/4, x870

Figure 4 *Ovoidites* spp. 77/7, 111.8m, slide b, P47/2, x870

Figure 5 *Ovoidites* spp. 16/16, 4100m, slide a, P40/3, x870

Figure 6 *Schizosporis reticulatus* 73/36, 19.8m, slide a, U49/3, x870

Figure 7 Algae sp. 1 77/7, 111.01m, slide a, M30, x1720

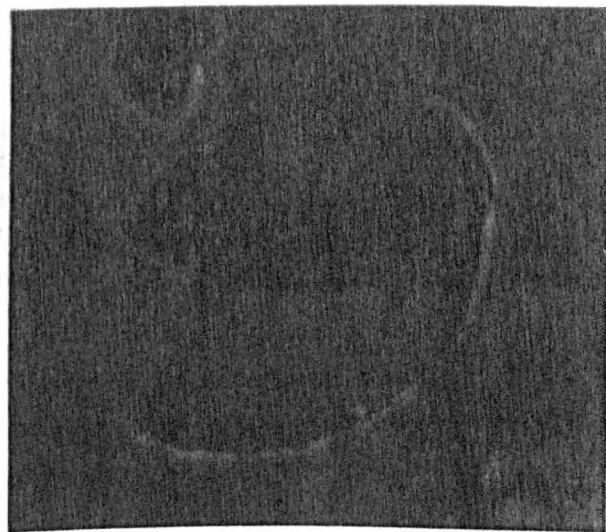
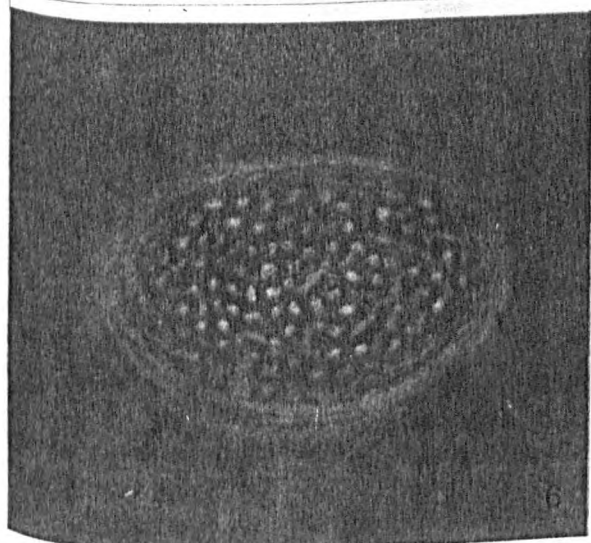
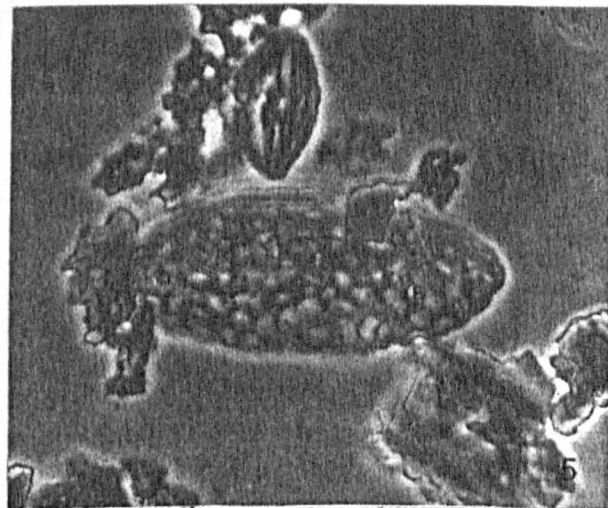
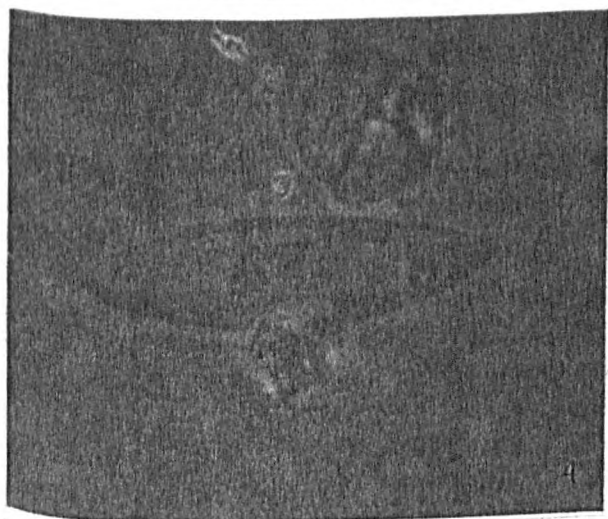
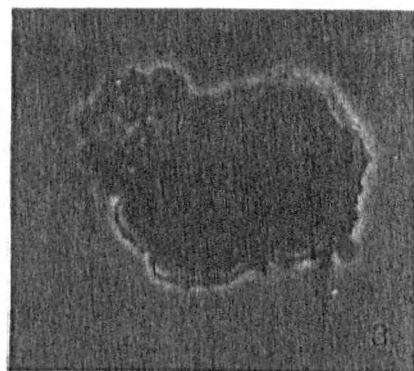
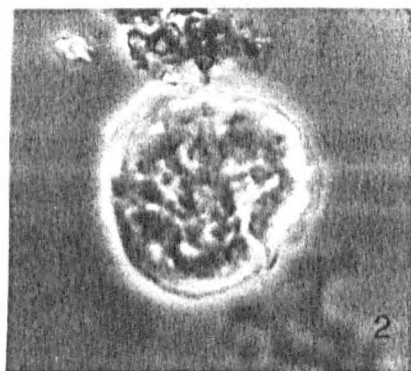
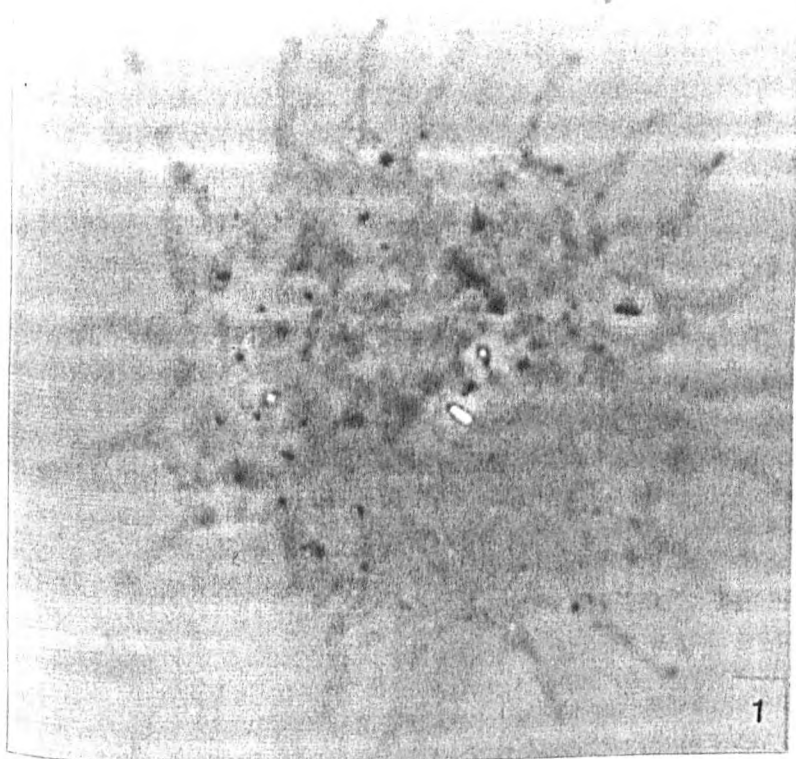


PLATE 70

Figure 1, 2 and 3 Thin section of lignite from the Stanley Bank Basin

