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THE
VOYAGE OF H.M.S. CHALLENGER.

ZOOLOGY—VOL. XVIII.
PLATES.

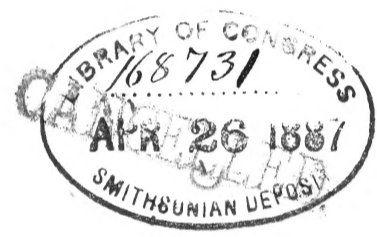
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REPORT
ON THE
SCIENTIFIC RESULTS
OF THE
VOYAGE OF H.M.S. CHALLENGER
DURING THE YEARS 1873-76

UNDER THE COMMAND OF
CAPTAIN GEORGE S. NARES, R.N., F.R.S.
AND THE LATE
CAPTAIN FRANK TOURLE THOMSON, R.N.

PREPARED UNDER THE SUPERINTENDENCE OF
THE LATE
Sir C. WYVILLE THOMSON, Knt., F.R.S., &c.
REGIUS PROFESSOR OF NATURAL HISTORY IN THE UNIVERSITY OF EDINBURGH
DIRECTOR OF THE CIVILIAN SCIENTIFIC STAFF ON BOARD

AND NOW OF
JOHN MURRAY
ONE OF THE NATURALISTS OF THE EXPEDITION



ZOOLOGY—VOL. XVIII.
PLATES

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C O N T E N T S.

REPORT on the RADIOLARIA collected by H.M.S. CHALLENGER during the years
1873-1876.

By ERNST HÆCKEL, M.D., Ph.D., Professor of Zoology in the University of Jena.

PLATES.

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PLATES	1-50.	SPUMELLARIA.
„	51-98.	NASSELLARIA.
„	99-128.	PHÆODARIA.
„	129-140.	ACANTHARIA.

MAP, SHOWING THE GEOGRAPHICAL DISTRIBUTION OF THE RADIOLARIA.

PLATE 1.

Legion SPUMELLARIA.

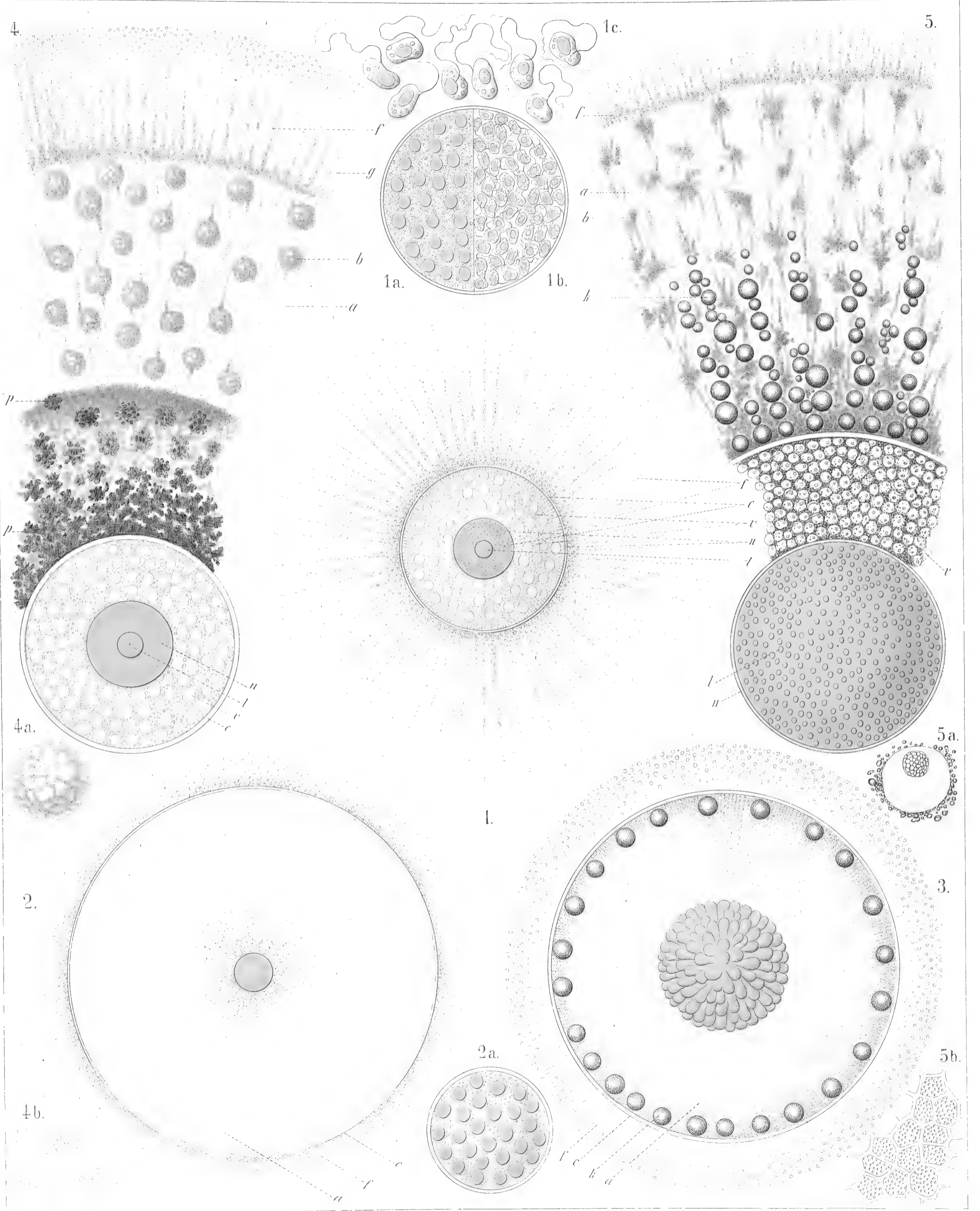
Order COLLOIDEA.

Family THALASSICOLLIDA.

PLATE 1.

THALASSICOLLIDA.

	Diam.	Page
Fig. 1. <i>Actissa princeps</i> , n. sp.,	× 300	13
The entire living Spumellarium. <i>c</i> , The spherical central capsule containing finely granulated protoplasm, which is radially striated in the cortical zone; <i>v</i> , spherical vacuoles enclosed by the protoplasm; <i>n</i> , the spherical nucleus in the centre; <i>l</i> , the concentric nucleolus; <i>f</i> , the radial pseudopodia which pierce the calymma or the (yellowish) jelly-envelope of the central capsule and arise from the granular sarcomatrix.		
Fig. 1a. Half of the central capsule of another specimen, in which the original central nucleus is cleft into numerous small nuclei,	× 400	
Fig. 1b. Half of the central capsule of another specimen, filled up by flagellate spores,	× 400	
Fig. 1c. Eight isolated flagellate spores,	× 800	
Fig. 2. <i>Thalassolampe maxima</i> , n. sp.,	× 8	17
The entire living Spumellarium. <i>c</i> , The big spherical central capsule; <i>a</i> , the large alveoles filling the central capsule and surrounding a central nucleus; <i>f</i> , the pseudopodia piercing the extracapsular calymma.		
Fig. 2a. The nucleus alone, with numerous nucleoli,	× 30	
Fig. 3. <i>Thalassopila cladococcus</i> , n. sp.,	× 20	17
<i>c</i> , The big central capsule; <i>a</i> , numerous large alveoles contained in the central capsule; <i>k</i> , oil globules, many of which are placed in the radially striped cortical zone; the nucleus placed centrally, is covered with numerous radial apophyses or cæcal sacs. <i>f</i> , The radially striped calymma.		
Fig. 4. <i>Thalassicolla maculata</i> , n. sp.,	× 100	21
<i>c</i> , The central capsule; <i>v</i> , vacuoles filling this capsule; <i>n</i> , the central nucleus; <i>l</i> , the concentric nucleolus; <i>g</i> , the voluminous calymma, a small radial piece of which is only represented; <i>a</i> , the large alveoles; <i>b</i> , peculiar exoplasmatic bodies; <i>p</i> , black pigment in the inner zone; <i>f</i> , the retracted pseudopodia in the outer zone.		
Fig. 4a. An exoplasmatic body,	× 300	
Fig. 4b. Vacuoles in the endoplasm,	× 300	
Fig. 5. <i>Thalassicolla melacapsa</i> , n. sp.,	× 300	21
<i>n</i> , The large nucleus; <i>l</i> , numerous small nucleoli inside the nucleus; <i>v</i> , the vacuoles filling up the central capsule and separated by black pigment; <i>a</i> , large alveoles in the calymma; <i>k</i> , oil globules; <i>b</i> , exoplasmatic bodies; <i>f</i> , the retracted pseudopodia in the outer zone of the calymma.		
Fig. 5a. An endoplasmatic vacuole, resembling a cell,	× 600	
Fig. 5b. A piece of the central capsule,	× 600	



1. ACTISSA, 2. THALASSOLAMPE, 3. THALASSOPILA,
4, 5. THALASSOCOLLA.

PLATE 2.

Legion SPUMELLARIA.

Order BELOIDEA.

Family THALASSOSPHERIDA.

PLATE 2.

THALASSOSPHERIDA.

	Diam.	Page
Fig. 1. <i>Lampoxanthium pandora</i> , n. sp.,	× 120	38
<p>The central capsule exhibits distinct pore-canals in its membrane, and a clear interval between this and the coagulated and vacuolated protoplasm. The central nucleus contains numerous dark nucleoli. The spicula are scattered throughout the alveolate calymma.</p>		
Fig. 2. <i>Thalassoplaneta brevispicula</i> , n. sp. (vel <i>Lampoxanthium brevispiculum</i>),	× 120	36
<p>The central capsule contains numerous clear vacuoles, and in the cortical zone a layer of large oil-globules. The central nucleus includes numerous dark nucleoli. The calymma is alveolate. The spicula lie only in the cortical zone.</p>		
Fig. 3. <i>Thalassoxanthium cervicorne</i> , n. sp.,	× 300	33
<p>The central capsule is filled up by clear vacuoles and contains a large central nucleus, with a single nucleolus. The spicula surround the thin calymma.</p>		
Fig. 4. <i>Thalassoxanthium cervicorne</i> , n. sp.,	× 600	33
<p>A single spiculum.</p>		
Fig. 5. <i>Thalassoxanthium medusinum</i> , n. sp.,	× 120	32
<p>The central capsule is filled up by clear vacuoles and contains on its cortical zone a layer of large oil-globules. The central nucleus contains numerous dark nucleoli. The calymma is radially striped, contains numerous small xanthellæ, and is surrounded by the spicula.</p>		
Fig. 6. <i>Thalassoxanthium octoceras</i> , n. sp.,	× 400	34
<p>Three isolated spicula.</p>		

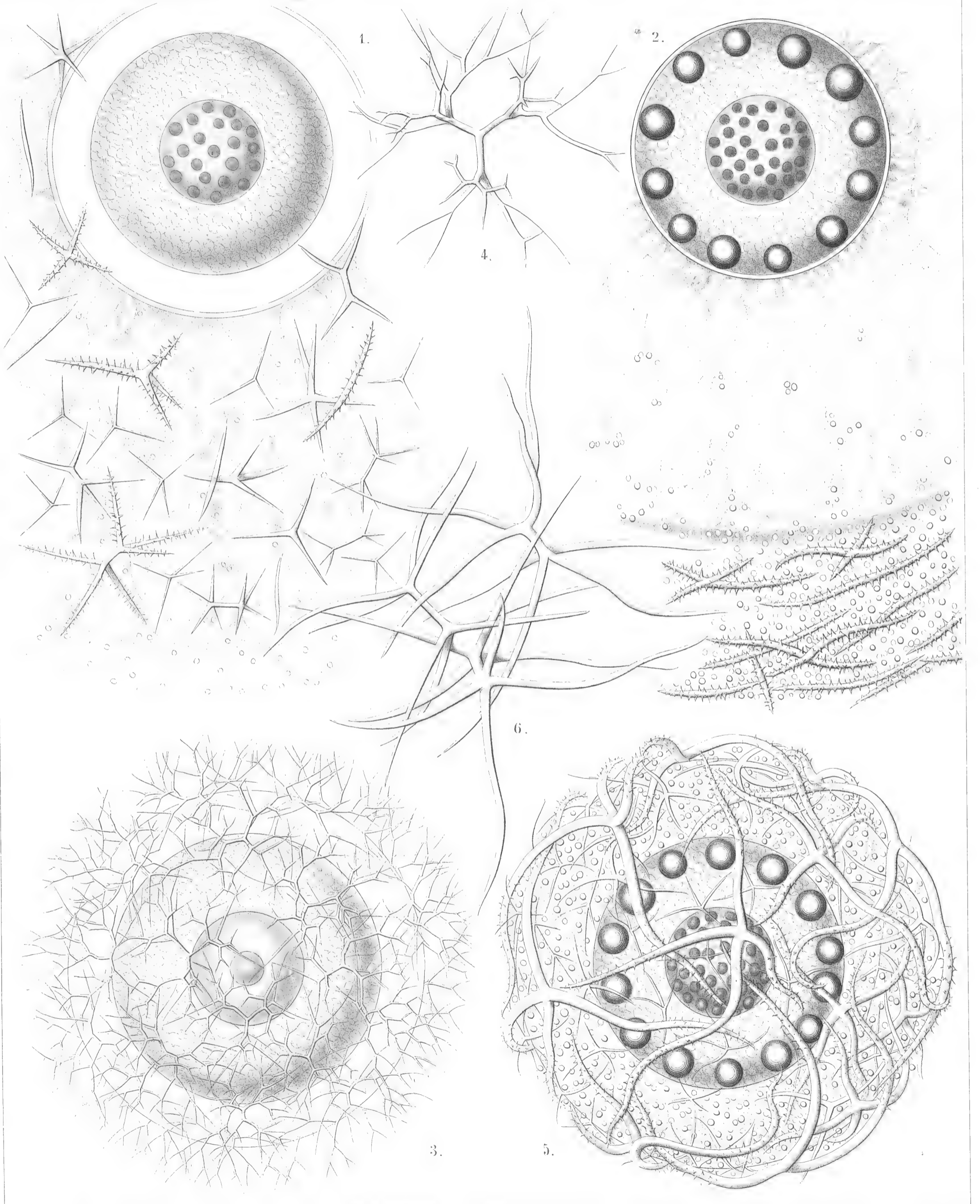


PLATE 3.

Legion SPUMELLARIA.

Order COLLOIDEA.

Family COLLOZOIDA.

PLATE 3.

COLLOZOIDA.

		Diam.	Page
Fig. 1.	<i>Collozoum serpentinum</i> , n. sp. (vel <i>Collophidium serpentinum</i> , Hkl.),	× 10	26
	A living cœnobium, with expanded pseudopodia. The spherical calymma (or the common jelly-mass of the colony) is alveolate and contains numerous cylindrical, serpentine, central capsules. Numerous yellow cells or xanthellæ are scattered between the radial pseudopodia in the periphery.		
Fig. 2.	<i>Collozoum serpentinum</i> , n. sp.,	× 50	26
	An isolated, cylindrical, worm-shaped, central capsule, with an axial series of oil-globules; the red points are nuclei.		
Fig. 3.	<i>Collozoum serpentinum</i> , n. sp.,	× 150	26
	An isolated, cylindrical, serpentine, central capsule. <i>k</i> , Oil-globules forming an axial series; <i>n</i> , densely placed, red-coloured nuclei; <i>c</i> , the capsule membrane under which are scattered small black pigment spots in the colourless cortical zone of the endoplasm; <i>a</i> , extracapsular alveoles; <i>x</i> , xanthellæ or "yellow cells."		
Fig. 4.	<i>Collozoum amœboides</i> , n. sp.,	× 100	28
	A spherical cœnobium or jelly-colony. Each amœboid central capsule contains an oil-globule; the small red points are nuclei.		
Fig. 5.	<i>Collozoum amœboides</i> , n. sp.,	× 400	28
	<i>c</i> , A single isolated central capsule; <i>n</i> , nuclei; <i>k</i> , oil-globule.		
Fig. 6.	<i>Collozoum vermiforme</i> , n. sp.,	× 30	27
	<i>g</i> , A spherical cœnobium or jelly-colony; <i>a</i> , large alveoles, forming a cortical zone; <i>c</i> , central capsules; <i>k</i> , oil-globules.		
Fig. 7.	<i>Collozoum vermiforme</i> , n. sp.,	× 100	27
	<i>c</i> , A single isolated central capsule; <i>x</i> , xanthellæ surrounding this central capsule; <i>k</i> , oil-globules; <i>n</i> , nuclei.		
Fig. 8.	<i>Collozoum ellipsoides</i> , n. sp.,	× 2	26
	A spherical colony; the red points are central capsules.		
Fig. 9.	<i>Collozoum ellipsoides</i> , n. sp.,	× 150	26
	<i>c</i> , A single isolated central capsule; <i>k</i> , oil-globules; <i>n</i> , nuclei.		
Fig. 10.	<i>Collozoum inerme</i> , Hkl.,	× 2	25
	An old, cylindrical, articulated cœnobium; the red points are central capsules.		
Fig. 11.	<i>Collozoum inerme</i> , Hkl.,	× 2	25
	A young cylindrical cœnobium; the red points are central capsules.		
Fig. 12.	<i>Collozoum inerme</i> , Hkl.,	× 400	25
	A piece of a young colony with eight small central capsules, without oil-globules. <i>n</i> , The central nucleus in different stages of division. Two capsules are also dividing. <i>x</i> , Xanthellæ in the jelly-like calymma (blue), which also contains numerous vacuoles.		

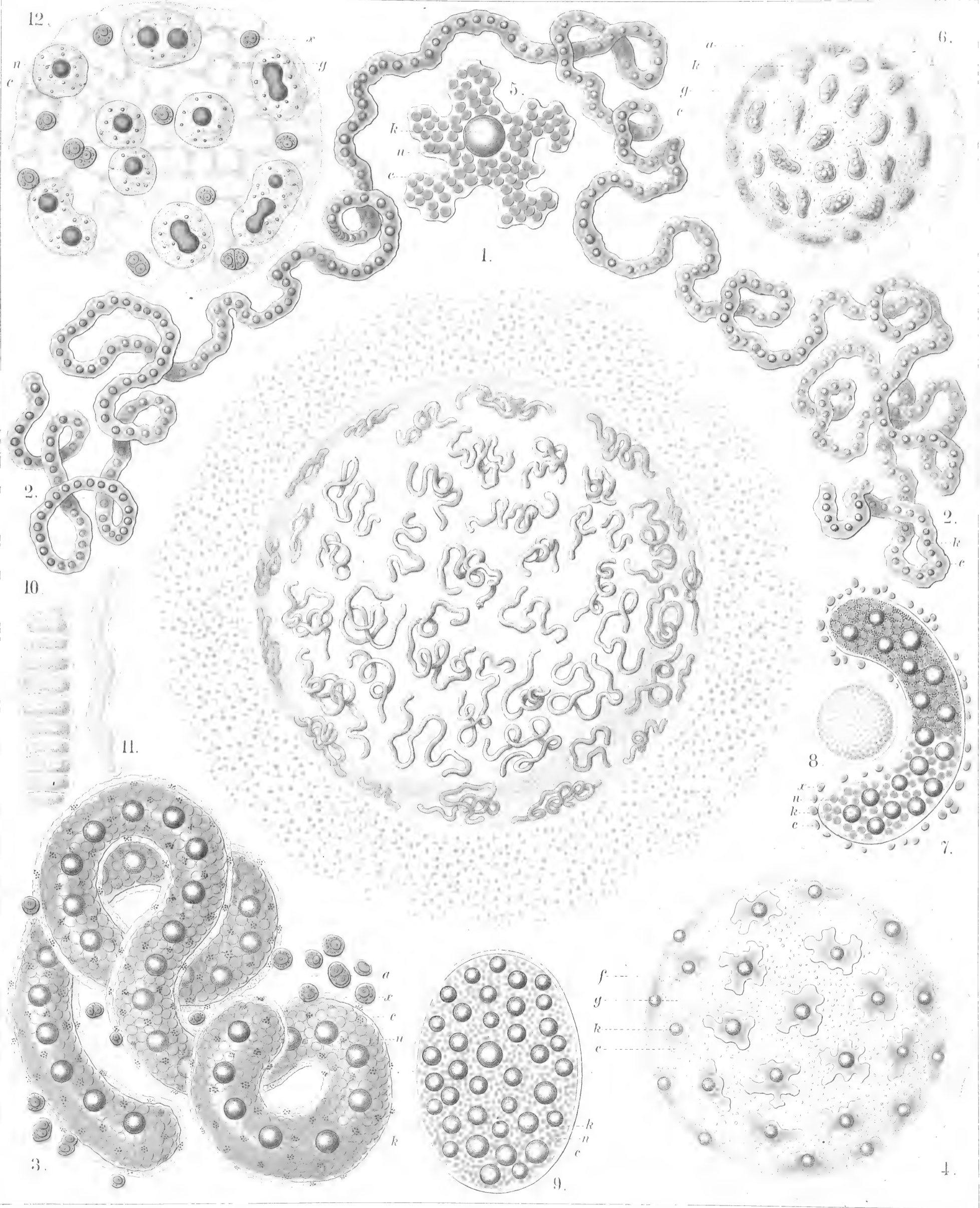


PLATE 4.

Legion SPUMELLARIA.

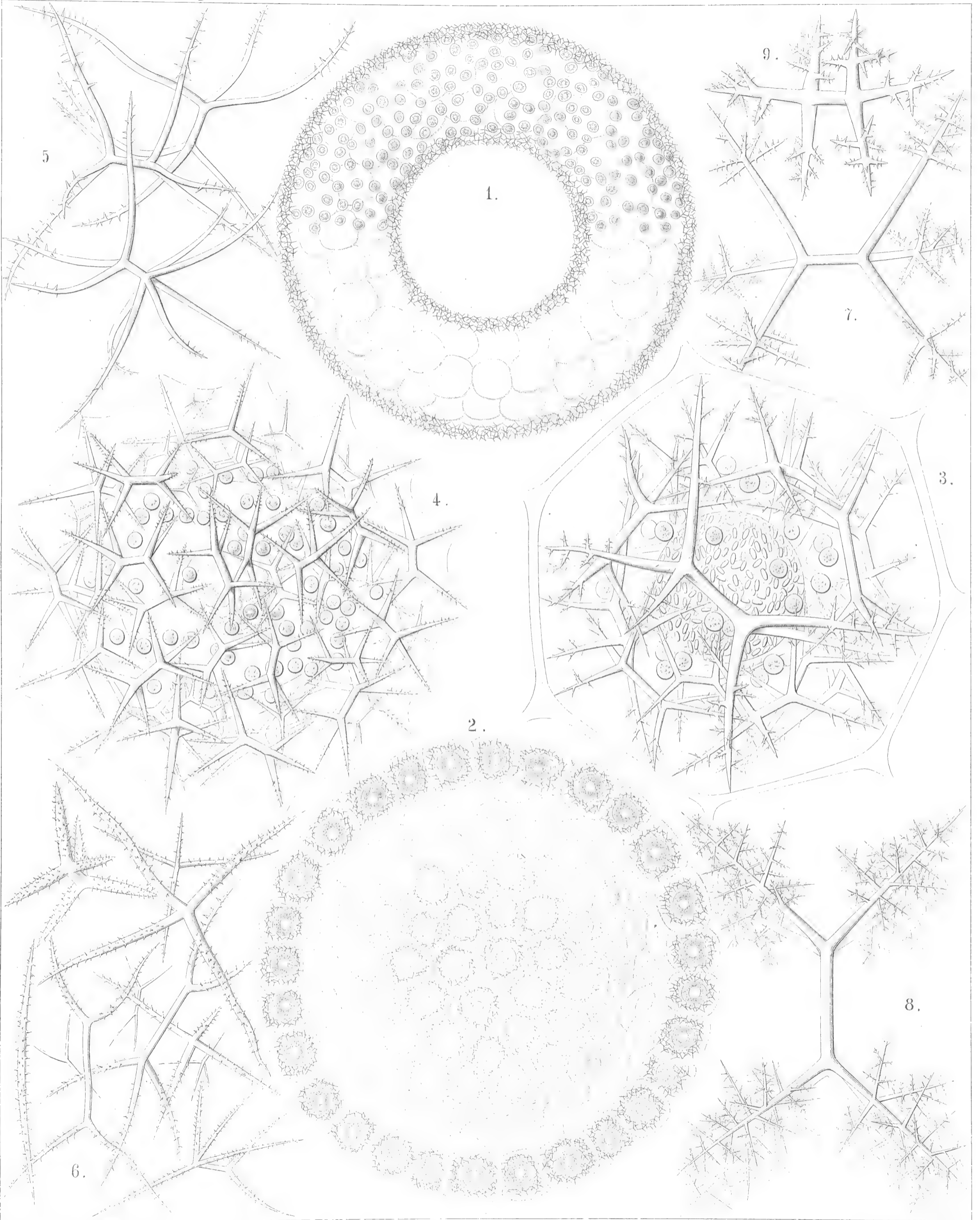
Order LARCOIDEA.

Family THOLONIDA.

PLATE 4.

SPHÆROZOIDA.

	Diam.	Page
Fig. 1. <i>Sphærozoum trigeminum</i> , n. sp.,	× 50	43
An annular colony. The main mass of the jelly-colony is filled up by large alveoles; the entire surface is densely covered with spicula, and beyond this skeleton-cover lie the spherical central capsules, each with an oil-globule. This species is by mistake not mentioned in the text.		
Fig. 2. <i>Sphærozoum alveolatum</i> , n. sp.,	× 50	43
Section through a spherical colony; displaying the inside of a hemisphere. All the central capsules lie in a single stratum on the surface of the jelly-sphere, each being surrounded by a thick-walled alveole. The spicula lie between the alveole and the capsule, which includes a central oil-globule.		
Fig. 3. <i>Sphærozoum alveolatum</i> , n. sp.,.	× 400	43
A single central capsule, filled up by crystal-spores. Numerous geminato-radiate spicula and spherical xanthellæ lie between the capsule and the including thick-walled alveole. In the jelly-calymma, between the capsule and the alveole, numerous thin ramified pseudopodia are expanded.		
Fig. 4. <i>Sphærozoum geminatum</i> , n. sp.,	× 400	45
A single central capsule, with a central oil-globule, surrounded by numerous spicula and spherical xanthellæ. The jelly-substance of the calymma is expanded between the points of the spicula.		
Fig. 5. <i>Sphærozoum variabile</i> , n. sp.,	× 300	45
Three isolated spicula.		
Fig. 6. <i>Sphærozoum pandora</i> , n. sp. (vel <i>Rhaphidozoum pandora</i>),	× 300	49
A group of various spicula.		
Fig. 7. <i>Sphærozoum verticillatum</i> , n. sp.,	× 300	44
A single spiculum.		
Fig. 8. <i>Sphærozoum arborescens</i> , n. sp.,	× 300	44
A single spiculum.		
Fig. 9. <i>Sphærozoum armatum</i> , n. sp.,	× 300	43
A single spiculum.		



SPHAEROZOUUM.

PLATE 5.

Legion SPUMELLARIA.

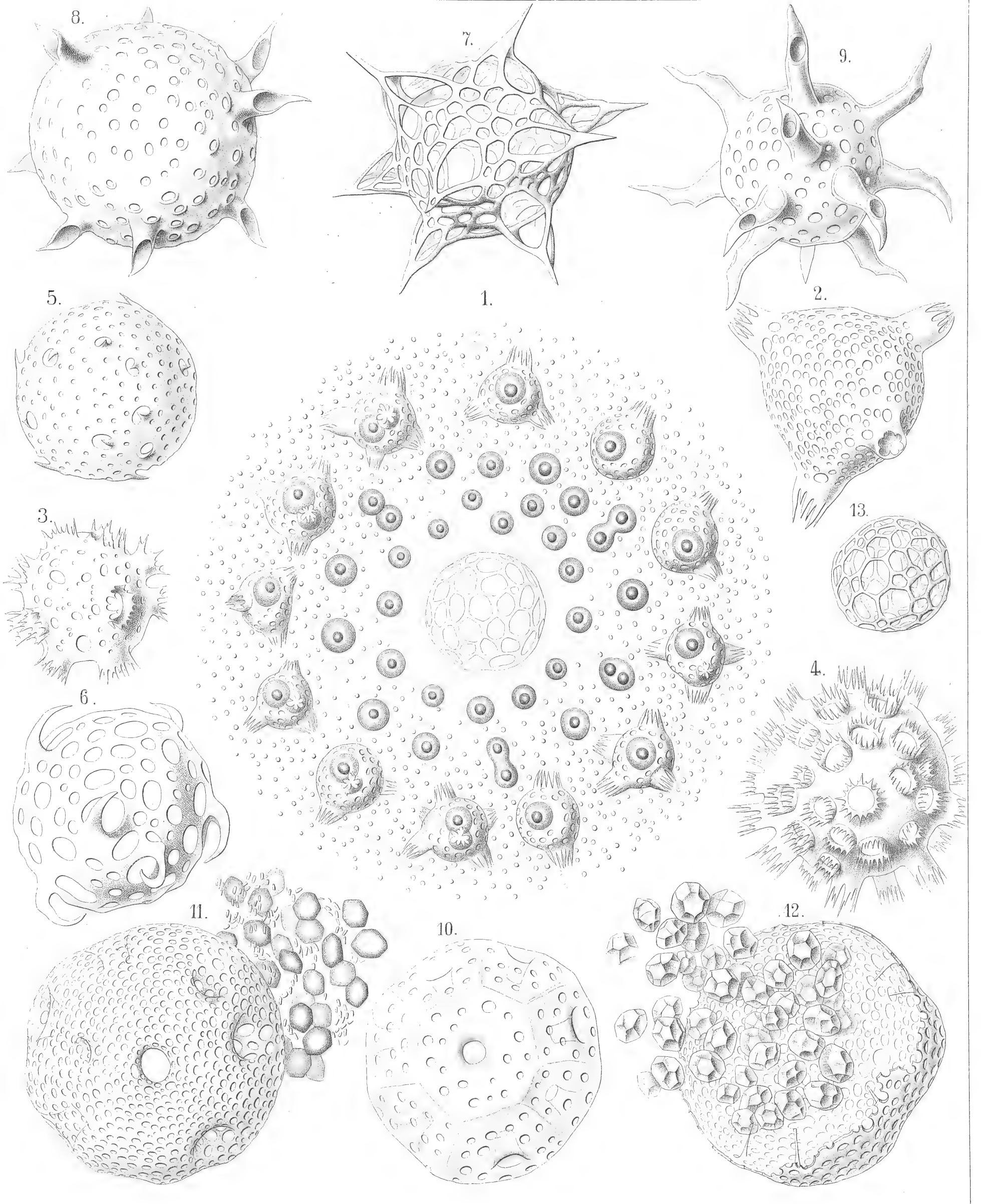
Order SPHÆROIDEA.

Family COLLOSPHÆRIDA.

PLATE 5.

COLLOSPHÆRIDA.

	Diam.	Page
Fig. 1. <i>Trypanosphæra transformata</i> , n. sp.,	× 150	111
A living colony. The centre of the spherical cœnobium contains a large alveole, surrounded by a net of sarcode. The entire calymma is filled up by smaller, thin-walled alveoles. Its inner part contains numerous small, young, central capsules (each with an oil-globule) without shells; in the cortical zone of the calymma lie larger capsules, each of which is enclosed by a fenestrated shell with from two to four or more dentated tubes. Between the radiant pseudopodia very numerous small yellow cells (xanthellæ), which are scattered everywhere.		
Fig. 2. <i>Trypanosphæra transformata</i> , n. sp.,	× 300	111
A single shell.		
Fig. 3. <i>Trypanosphæra coronata</i> , n. sp.,	× 300	110
Fig. 4. <i>Trypanosphæra trepanata</i> , n. sp.,	× 300	110
Fig. 5. <i>Odontosphæra monodon</i> , n. sp.,	× 300	102
Fig. 6. <i>Odontosphæra cyrtodon</i> , n. sp.,	× 300	102
Fig. 7. <i>Acrosphæra inflata</i> , n. sp.,	× 300	101
Fig. 8. <i>Mazosphæra hippotis</i> , n. sp.,	× 400	108
Fig. 9. <i>Mazosphæra lagotis</i> , n. sp.,	× 300	108
Fig. 10. <i>Pharyngosphæra stomodæa</i> , n. sp.,	× 400	98
Fig. 11. <i>Buccinosphæra invaginata</i> , n. sp.,	× 500	99
Each shell contains numerous larger and smaller crystals.		
Fig. 12. <i>Tribonosphæra centripetalis</i> , n. sp.,	× 500	98
Each shell contains numerous large crystals.		
Fig. 13. <i>Collosp hæra polygona</i> , n. sp.,	× 200	96



A. Haackel, in J. A. Giltson, Del.

E. Giltson, Jena, Lithogr.

1-4. TRYPANOSPHERA, 5-9. MAZOSPHERA, 10, 11, BUCCINOSPHERA.
12, 13. COLLOSPHERA.

PLATE 6.

Legion SPUMELLARIA.

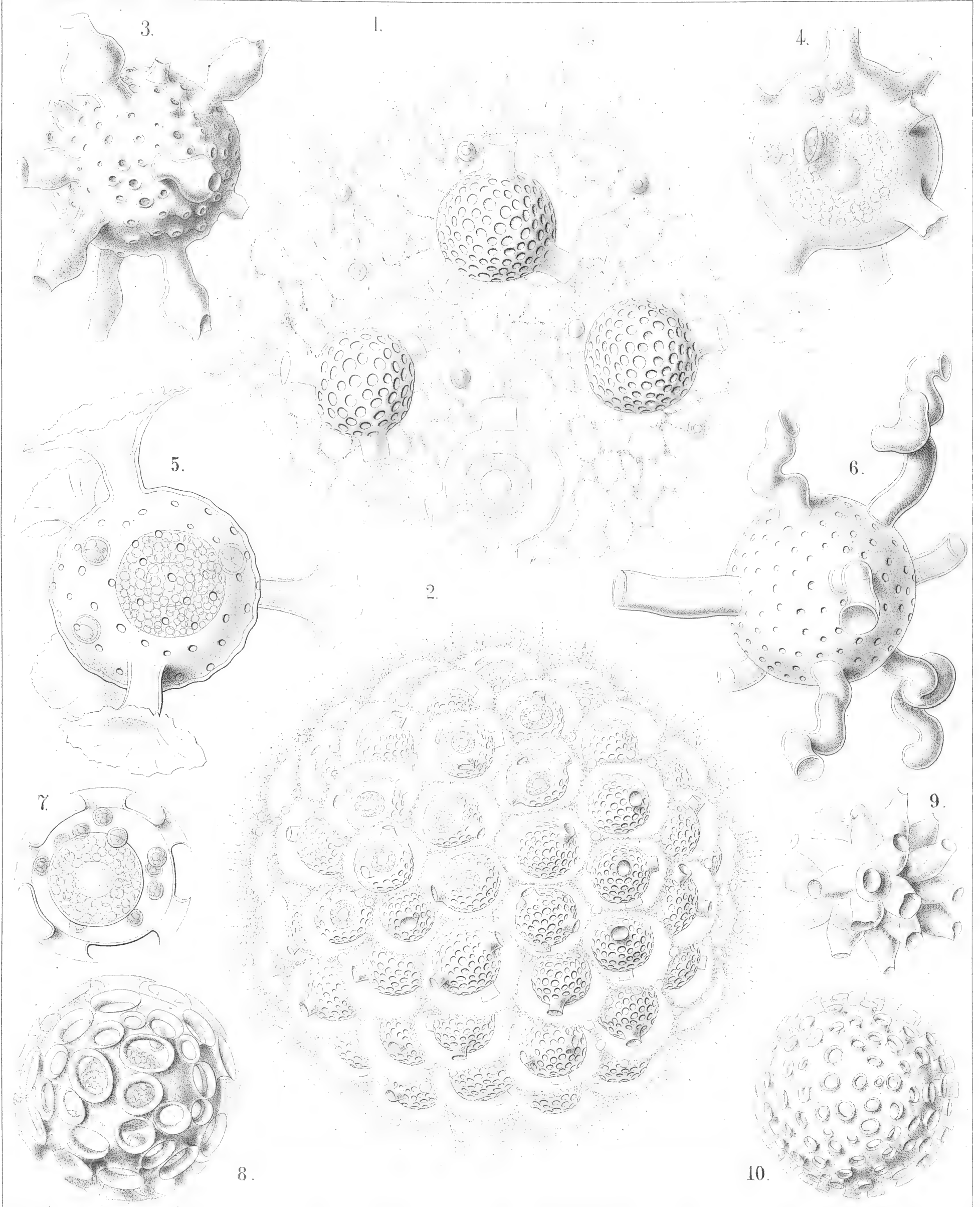
Order SPHÆROIDEA.

Family COLLOSPHÆRIDA.

PLATE 6.

COLLOSPHÆRIDA.

	Diam.	Page
Fig. 1. <i>Siphonosphæra socialis</i> , n. sp.,	× 500	106
<p style="margin-left: 40px;">A small piece of the surface of a living cœnobium, seen from the surface. Only four individuals are visible, the central capsule of which contains numerous small nuclei and a central oil-globule. The including spherical lattice-shell is provided with a few (one to four) larger apertures, which are prolonged into short cylindrical tubules. Through these latter radiate bundles of fine pseudopodia, branching and anastomosing, and forming a fine sarcode network between the alveoles of the calymma. On the surface of the alveolated jelly-sphere the pseudopodia form a dense radiating zone. Xanthella or yellow cells are everywhere scattered.</p>		
Fig. 2. <i>Siphonosphæra socialis</i> , n. sp.,	× 300	106
<p style="margin-left: 40px;">A small cœnobium or colony in the state of alveolation, forming a jelly-sphere, composed of a great number of capsulated individuals, densely aggregated. Each central capsule contains an oil-globule, and is enclosed by a spherical lattice-shell, which bears a few (one to four) short cylindrical tubules. Each shell is again enveloped by a membranous polyhedral alveole and separated from it by structureless jelly. The thick cortical jelly-envelope, which surrounds the whole spherical colony, exhibits a fine radial striation, produced by radiating pseudopodia; many xanthellæ or yellow cells are scattered in the calymma.</p>		
Fig. 3. <i>Siphonosphæra pipetta</i> , n. sp.,	× 300	108
Fig. 4. <i>Siphonosphæra tubulosa</i> , J. Müller,	× 300	105
<p style="margin-left: 40px;">The central capsule, enclosed in the cavity of the shell, has a central oil-globule, and is surrounded by a few xanthella.</p>		
Fig. 5. <i>Siphonosphæra chonophora</i> , n. sp.,	× 300	107
<p style="margin-left: 40px;">Central capsule as in figs. 4 and 7.</p>		
Fig. 6. <i>Siphonosphæra serpula</i> , n. sp.,	× 300	107
Fig. 7. <i>Siphonosphæra patinaria</i> , n. sp.,	× 300	105
<p style="margin-left: 40px;">The central capsule, enclosed in the cavity of the shell, contains a central oil-globule, and is surrounded by a few xanthella.</p>		
Fig. 8. <i>Siphonosphæra patinaria</i> , n. sp.,	× 300	105
Fig. 9. <i>Siphonosphæra conifera</i> , n. sp.,	× 300	106
Fig. 10. <i>Siphonosphæra cyathina</i> , n. sp.,	× 300	105



SIPHONOSPHERA.

PLATE 7.

Legion SPUMELLARIA.

Order SPHÆROIDEA.

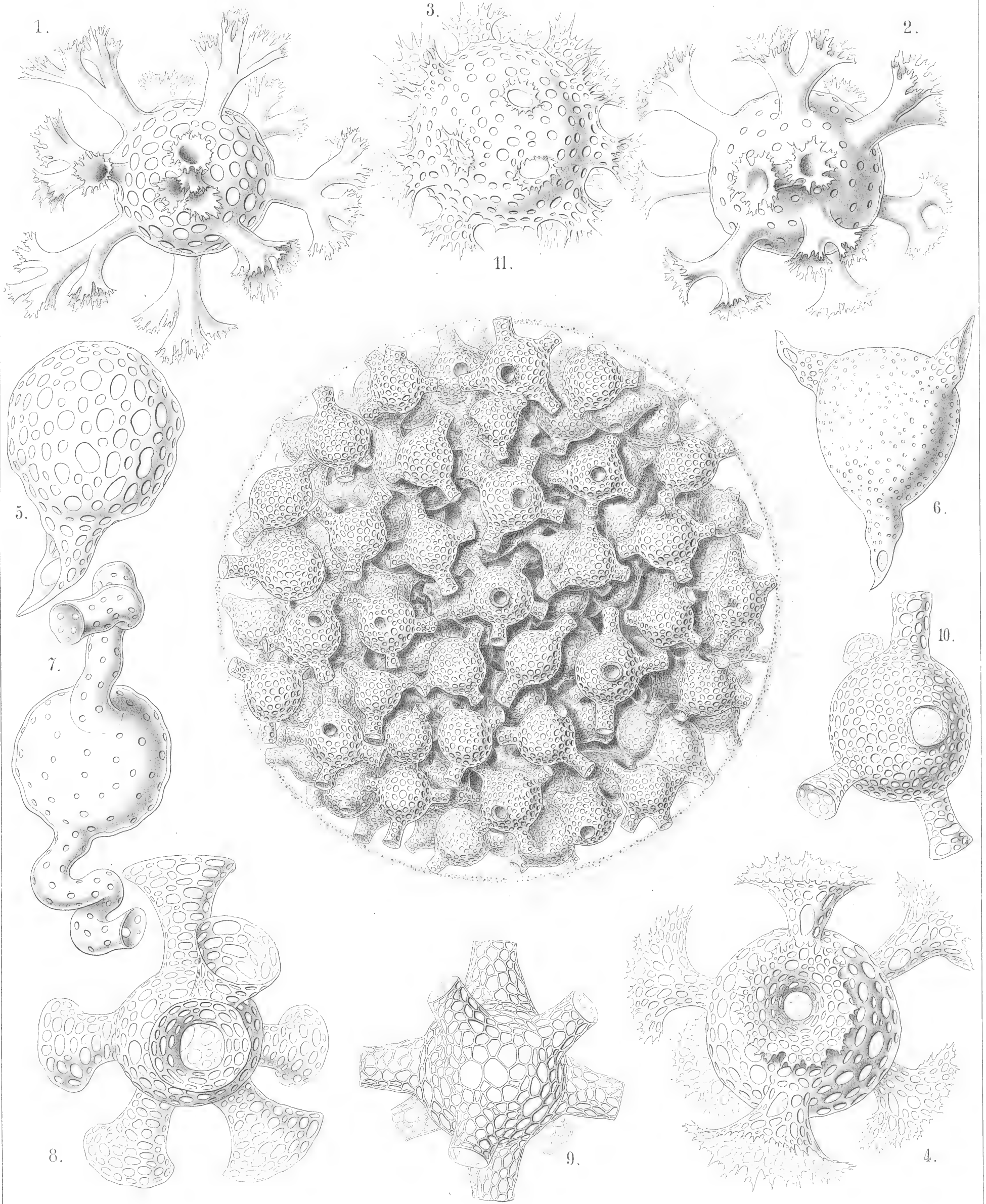
Family COLLOSPHERIDA.

PLATE 7.

COLLOSPHÆRIDA.

		Diam.	Page
Fig. 1.	<i>Caminosphæra dendrophora</i> , n. sp.,	× 300	112
Fig. 2.	<i>Caminosphæra dichotoma</i> , n. sp.,	× 300	112
Fig. 3.	<i>Coronosphæra diadema</i> , n. sp.,	× 300	117
Fig. 4.	<i>Coronosphæra calycina</i> , n. sp.,	× 300	117
Fig. 5.	<i>Otosphæra auriculata</i> , n. sp.,	× 300	116
Fig. 6.	<i>Otosphæra polymorpha</i> , n. sp.,	× 300	116
Fig. 7.	<i>Solenosphæra serpentina</i> , n. sp.,	× 300	114
Fig. 8.	<i>Solenosphæra cornucopia</i> , n. sp.,	× 300	115
Fig. 9.	<i>Solenosphæra ascensionis</i> , n. sp.,	× 300	115
Fig. 10.	<i>Solenosphæra pandora</i> , n. sp.,	× 300	113
Fig. 11.	<i>Solenosphæra pandora</i> , n. sp.,	× 100	113

An entire spherical cœnobium. The shells of the colony bear a variable number of fenestrated radial tubes and are densely crowded in the jelly-sphere of the calymma, the cortical zone of which is radially striped.



E. Haeckel and A. Gilsch, Del.

E. Gilsch, Jena, Lithogr.

1, 2. CAMINOSPHERA , 3, 4. CORONOSPHERA , 5, 6. OTOSPHERA ,
7-11. SOLENSPHERA .

PLATE 8.

Legion SPUMELLARIA.

Order SPHÆROIDEA.

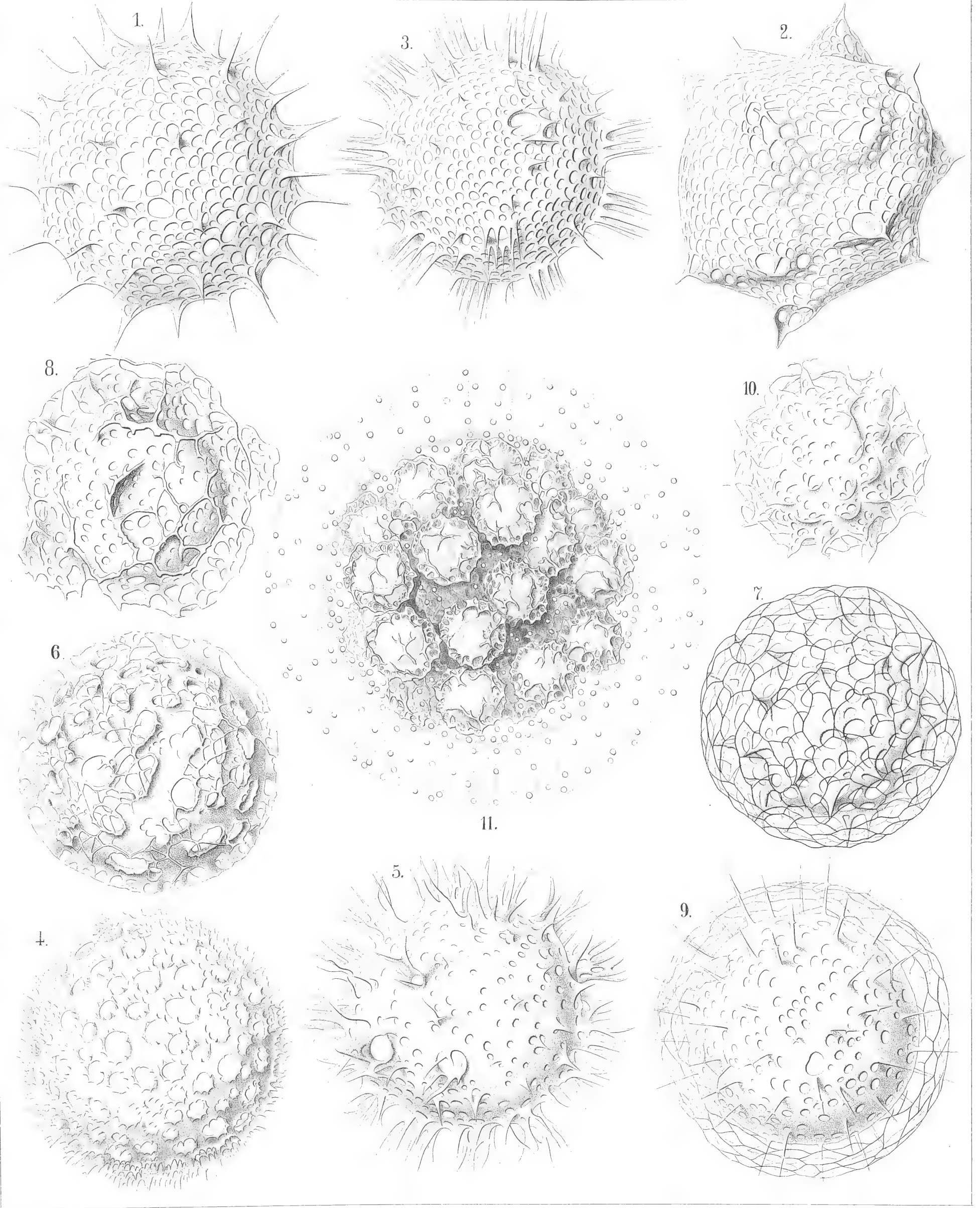
Family COLLOSPHÆRIDA.

PLATE 8.

COLLOSPHÆRIDA.

	Diam.	Page
Fig. 1. <i>Acrosphæra echinoides</i> , n. sp.,	× 400	100
Fig. 2. <i>Acrosphæra collina</i> , n. sp.,	× 300	101
Fig. 3. <i>Chænicosphæra nassiterna</i> , n. sp.,	× 400	103
Fig. 4. <i>Chænicosphæra murrayana</i> , n. sp.,	× 300	102
Fig. 5. <i>Chænicosphæra flammabunda</i> , n. sp.,	× 300	103
Fig. 6. <i>Clathrosphæra circumtexta</i> , n. sp.,	× 400	118
Fig. 7. <i>Clathrosphæra arachnoides</i> , n. sp.,	× 300	119
Fig. 8. <i>Clathrosphæra lamellosa</i> , n. sp.,	× 300	119
Fig. 9. <i>Xanthiosphæra erinacea</i> , n. sp.,	× 400	120
Fig. 10. <i>Xanthiosphæra lappacea</i> , n. sp.,	× 300	120
Fig. 11. <i>Xanthiosphæra lappacea</i> , n. sp.,	× 100	120

A complete spherical cœnobium. The associated central capsules (each with a double shell) are densely crowded in the central part of the calymma, whilst its peripheral part is occupied by a layer of large alveoles. Numerous xanthellæ or yellow cells are scattered in the calymma.



1. 2. ACROSPHAERA, 3-5. CHOENICOSPHAERA, 6-8. CLATHROSPHAERA,
9-11. XANTHIOSPHAERA.

A. S. P. Sch. Ann. Naturg.

PLATE 9.

Legion SPUMELLARIA.

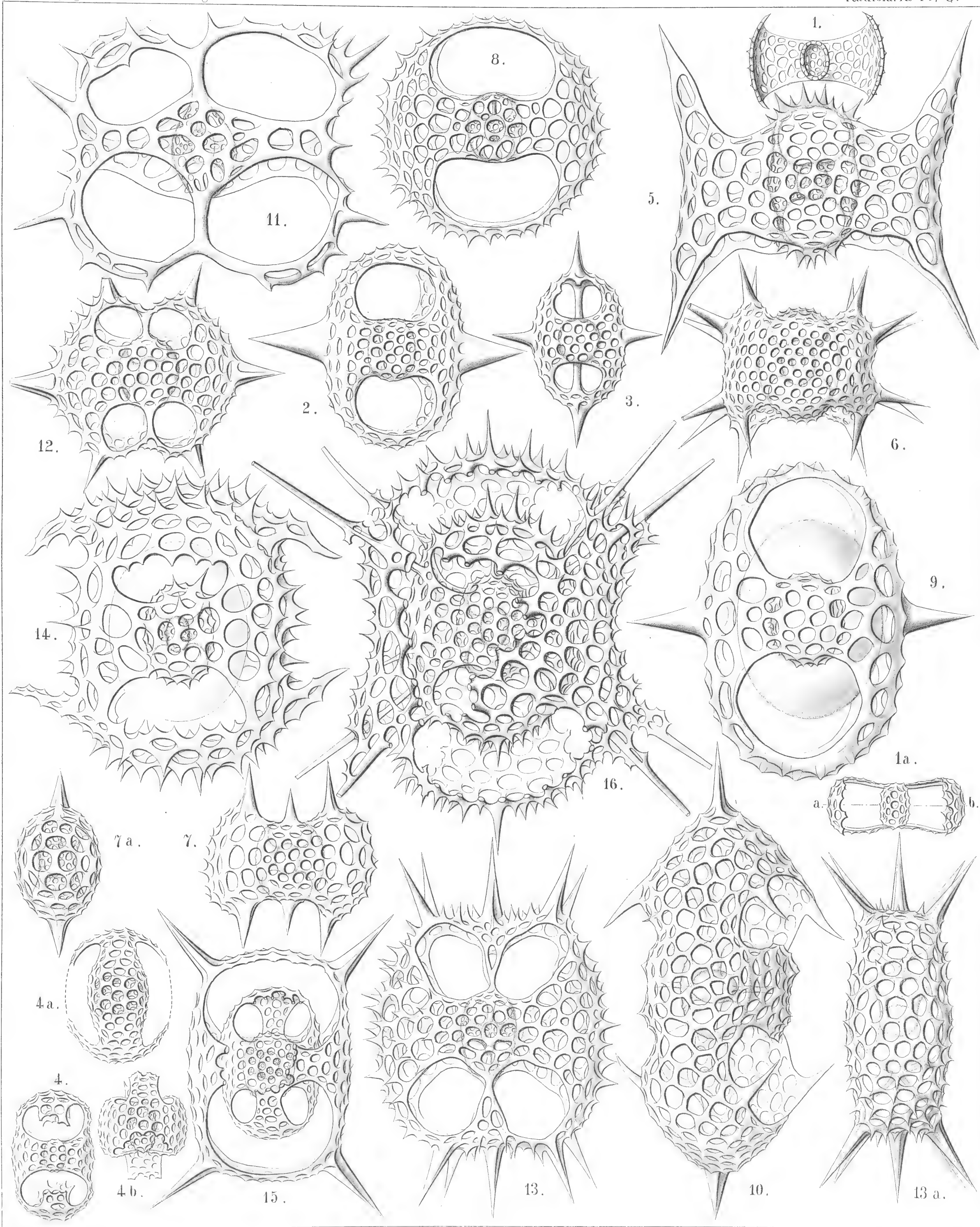
Order LARCOIDEA.

Family PYLONIDA.

PLATE 9.

PYLONIDA.

	Diam.	Page
Fig. 1. <i>Monozonium alatum</i> , n. sp.,	× 300	633
Dorsal view.		
Fig. 1a. Apical view.		
Fig. 2. <i>Dizonium pleuracanthum</i> , n. sp.,	× 400	636
Fig. 3. <i>Dizonium stauracanthum</i> , n. sp.,	× 300	636
Fig. 4. <i>Trizonium tricinctum</i> , n. sp.,	× 300	637
Dorsal view.		
Fig. 4a. Lateral view.		
Fig. 4b. Apical view.		
Fig. 5. <i>Amphipyle tetraceros</i> , n. sp.,	× 400	642
Dorsal view.		
Fig. 6. <i>Amphipyle callizona</i> , n. sp.,	× 300	644
Dorsal view.		
Fig. 7. <i>Amphipyle amphiptera</i> , n. sp.,	× 300	642
Dorsal view.		
Fig. 7a. Lateral view.		
Fig. 8. <i>Tetrapyle circularis</i> , n. sp.,	× 300	645
Dorsal view.		
Fig. 9. <i>Tetrapyle pleuracantha</i> , n. sp.,	× 400	646
Dorsal view. The lentelliptical central capsule is visible between medullary and cortical shell.		
Fig. 10. <i>Tetrapyle turrita</i> , n. sp.,	× 400	649
Oblique view, half dorsal, half lateral.		
Fig. 11. <i>Octopyle stenozonia</i> , n. sp.,	× 400	652
Dorsal view.		
Fig. 12. <i>Octopyle sexangulata</i> , n. sp.,	× 300	653
Dorsal view.		
Fig. 13. <i>Octopyle decastyle</i> , n. sp.,	× 300	654
Dorsal view.		
Fig. 13a. Lateral view.		
Fig. 14. <i>Pylonium quadricorne</i> , n. sp.,	× 400	655
Dorsal view.		
Fig. 15. <i>Tetrapylonium quadrangulare</i> , n. sp.,	× 300	658
Dorsal view.		
Fig. 16. <i>Pylozonium octacanthum</i> , n. sp.,	× 300	660
Dorsal view.		



L. Laacke and A. Giltch Del.

E. Giltch Jena Lithogr.

1-4. TRIZONIUM, 5-7. AMPHIPYLE, 8-10. TETRAPYLE, 11-13. OCTOPYLE, 14-16 PYLONIUM.

PLATE 10.

Legion SPUMELLARIA.

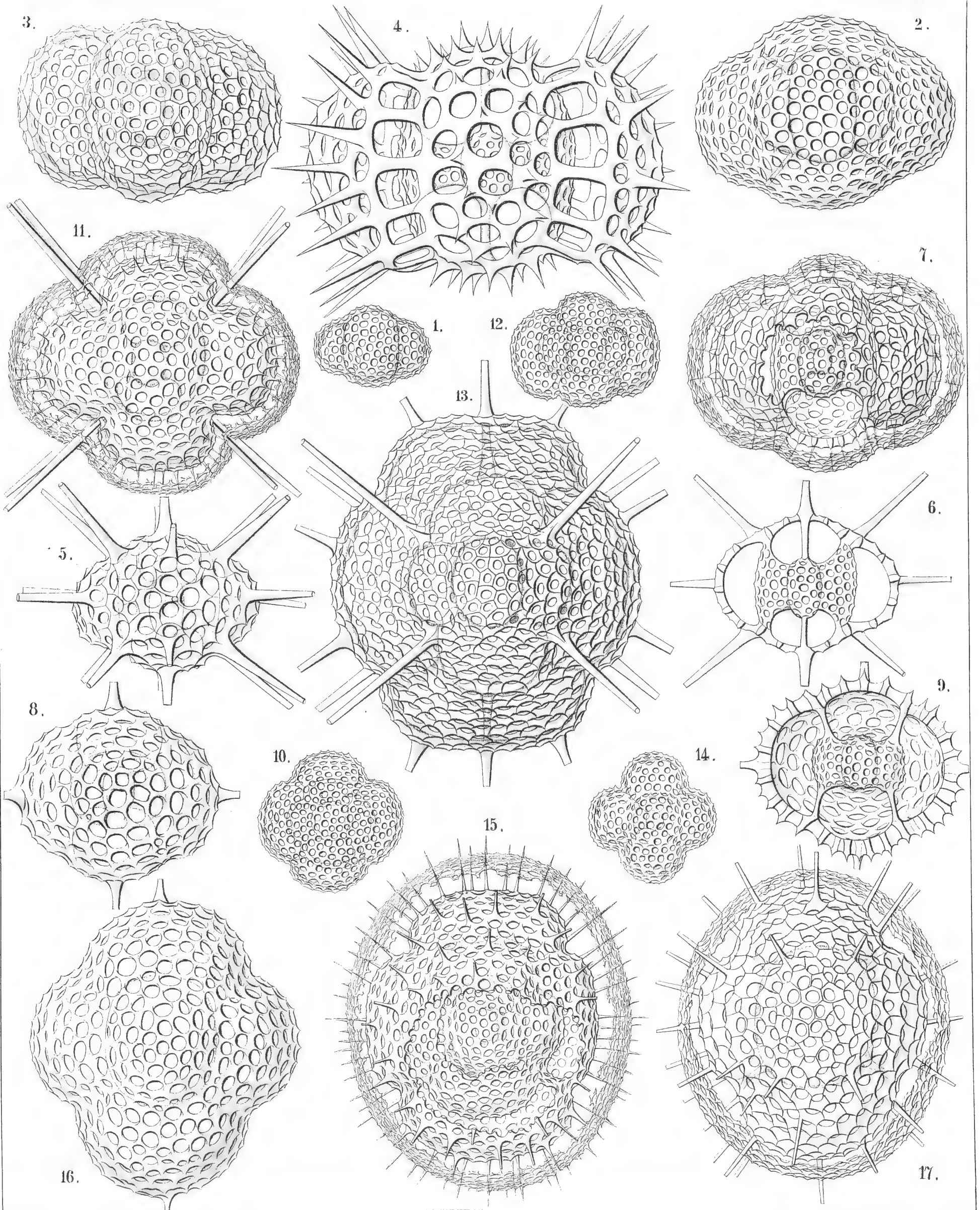
Order LARCOIDEA.

Family THOLONIDA.

PLATE 10.

THOLONIDA.

	Diam.	Page
Fig. 1. <i>Tholartus tricolus</i> , n. sp.,	× 200	664
Fig. 2. <i>Tholodes cupula</i> , n. sp.,	× 500	665
Fig. 3. <i>Amphitholus artiscus</i> , n. sp.,	× 400	666
Fig. 4. <i>Amphitholus panicium</i> , n. sp.,	× 500	668
Fig. 5. <i>Amphitholus acanthometra</i> , n. sp.,	× 300	667
Fig. 6. <i>Amphitholus acanthometra</i> , n. sp.,	× 300	667
Frontal section of the shell.		
Fig. 7. <i>Amphitholonium tricolonium</i> , n. sp.,	× 300	669
Fig. 8. <i>Staurotholus tetrastylus</i> , n. sp.,	× 300	673
Fig. 9. <i>Staurotholus dodecastylus</i> , n. sp.,	× 400	674
Fig. 10. <i>Tholoma quadrigeminum</i> , n. sp.,	× 200	672
Fig. 11. <i>Staurotholonium octodoronium</i> , n. sp.,	× 300	676
Fig. 12. <i>Tholocubus tessellatus</i> , n. sp.,	× 200	677
Fig. 13. <i>Tholoma metallasson</i> , n. sp.,	× 300	672
Fig. 14. <i>Cubotholus regularis</i> , n. sp.,	× 200	680
Fig. 15. <i>Cubotholonium ellipsoides</i> , n. sp.,	× 300	682
Fig. 16. <i>Tholocubus tesseralis</i> , n. sp.,	× 400	678
Fig. 17. <i>Tholonium hexonium</i> ,	× 400	679



1. 2. THOLARTUS, 3-7. AMPHITHOLUS, 8-10. STAUROTHOLUS,
11-13. THOLOMA, 14. 15. CUBOTHOLUS, 16. 17. THOLONIUM.

PLATE 11.

Legion SPUMELLARIA.

Order SPHÆROIDEA.

Family ASTROSPHÆRIDA.

PLATE 11.

ASTROSPHÆRIDA.

	Diam.	Page
Fig. 1. <i>Lychnosphæra regina</i> , n. sp.,	× 200	277
<p>The entire shell and the central capsule. Numerous club-shaped radial apophyses or cœcal sacs arise from the pink central capsule and are protruded through the pores of the medullary shell, which is completely hidden by them. The sarcomatrix in the calymma, surrounding the central capsule, exhibits a fine radial striation. Numerous retracted pseudopodia, bearing red granules, arise from the sarcomatrix and pierce the calymma radially. The interval between the two concentric shells is filled up by the hyaline calymma.</p>		
Fig. 2. <i>Lychnosphæra regina</i> , n. sp.,	× 400	277
<p>A part of the cortical shell, with a radial spine.</p>		
Fig. 3. <i>Lychnosphæra regina</i> , n. sp.,	× 400	277
<p>The medullary shell and the basal parts of the radial spines arising from it.</p>		
Fig. 4. <i>Lychnosphæra regina</i> , n. sp.,	× 400	277
<p>Distal end of a radial spine.</p>		
Fig. 5. <i>Rhizoplegma lychnosphæra</i> , n. sp.,	× 200	276
<p>The central capsule and the enclosed parts of the skeleton. The protoplasm is radially striped. The central nucleus (red) sends out numerous radial apophyses, which are protruded through the pores of the medullary shell.</p>		

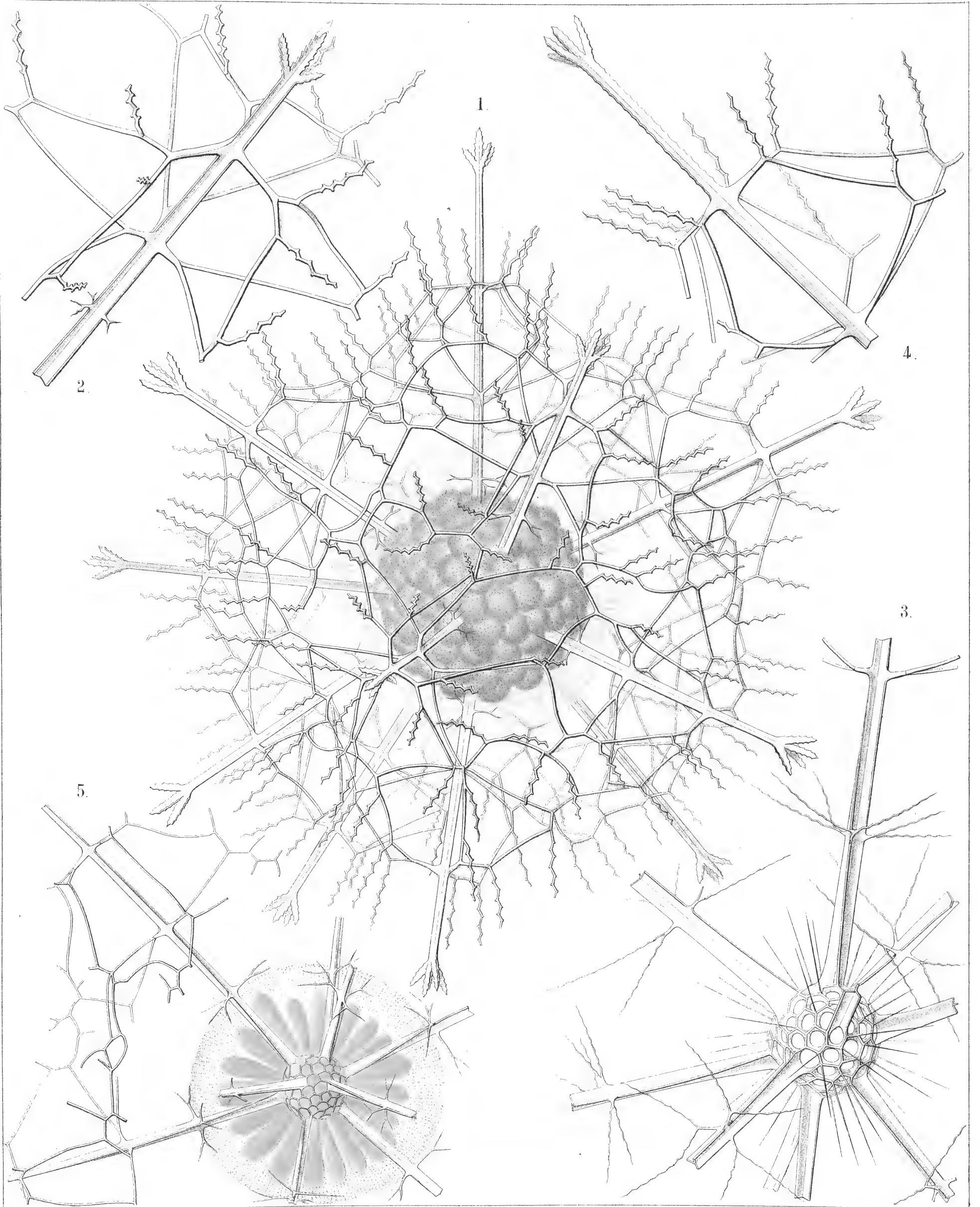


PLATE 12.

Legion SPUMELLARIA.

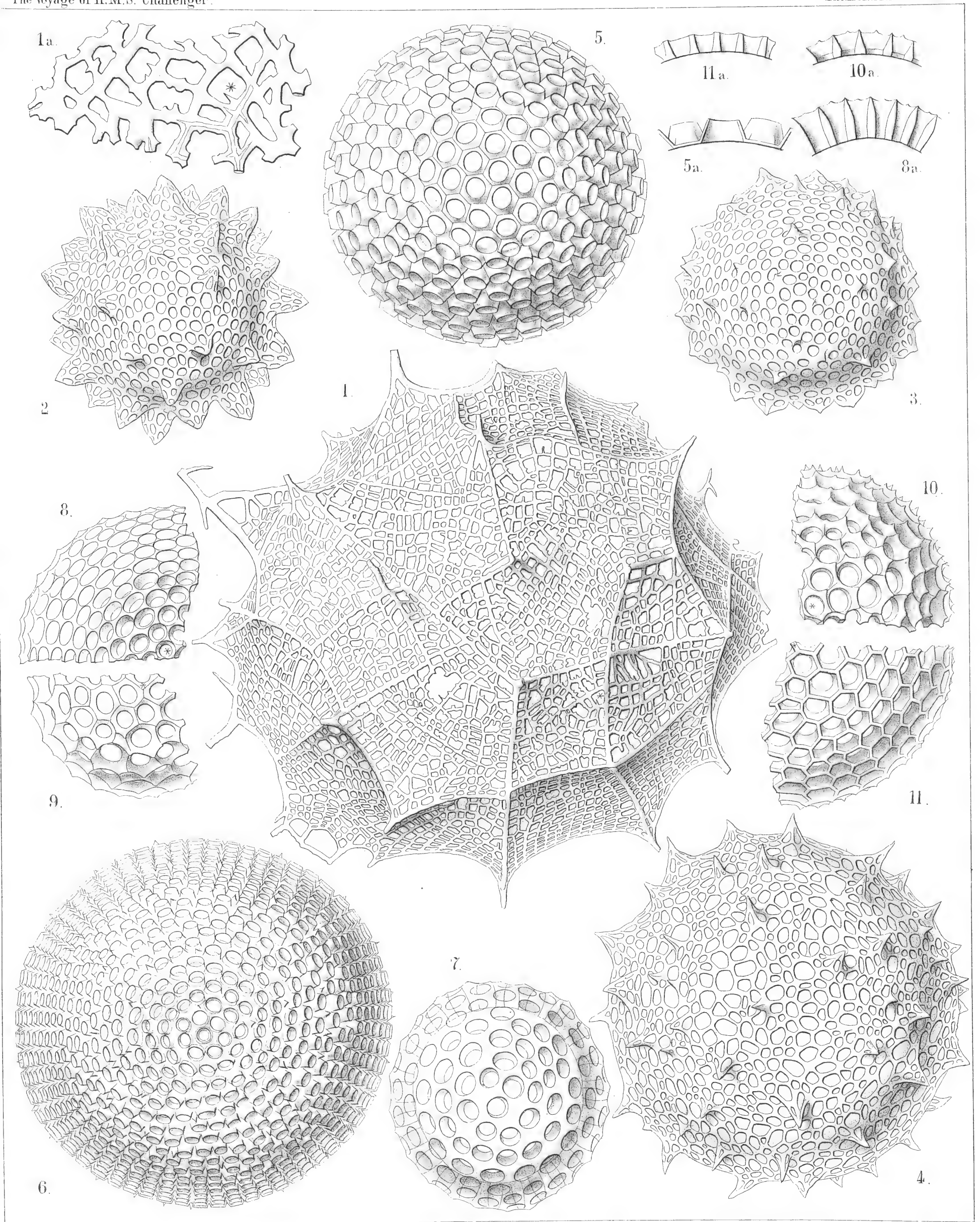
Orders PHÆOSPHERIA ET SPHÆROIDEA.

Families OROSPHERIDA, ASTROSPHERIDA et LIOSPHERIDA.

PLATE 12.

OROSPHERIDA, ASTROSPHERIDA et LIOSPHERIDA.

		Diam.	Page
Fig. 1.	<i>Orosphæra huxleyi</i> , n. sp. (vel <i>Oroscena huxleyi</i>),	× 50	1599
	Fig. 1a. A piece of the network, the bars of which contain partly an axial canal,	× 200	1599
Fig. 2.	<i>Conosphæra orthoconus</i> , n. sp.,	× 200	221
Fig. 3.	<i>Conosphæra platyconus</i> , n. sp.,	× 300	221
Fig. 4.	<i>Conosphæra plagioconus</i> , n. sp.,	× 300	222
Fig. 5.	<i>Ethmosphæra conosiphonia</i> , n. sp.,	× 400	69
	Fig. 5a. Vertical section through the wall.		
Fig. 6.	<i>Ethmosphæra polysiphonia</i> , n. sp.,	× 400	70
Fig. 7.	<i>Cenosphæra compacta</i> , n. sp.,	× 300	65
Fig. 8.	<i>Cenosphæra elysia</i> , n. sp.,	× 300	64
	Fig. 8a. Vertical section through the wall.		
Fig. 9.	<i>Cenosphæra mellifica</i> , n. sp.,	× 300	62
Fig. 10.	<i>Cenosphæra favosa</i> , n. sp.,	× 300	62
	Fig. 10a. Vertical section through the wall.		
Fig. 11.	<i>Cenosphæra vesparia</i> , n. sp.,	× 300	62
	Fig. 11a. Vertical section through the wall.		



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E. Giltisch, Jena, Lithogr.

1. OROSPHAERA. 2-4. CONOSPHAERA, 5, 6. ETHMOSPHAERA, 7-11. CERIOSPHAERA.

PLATE 13.

Legion SPUMELLARIA.

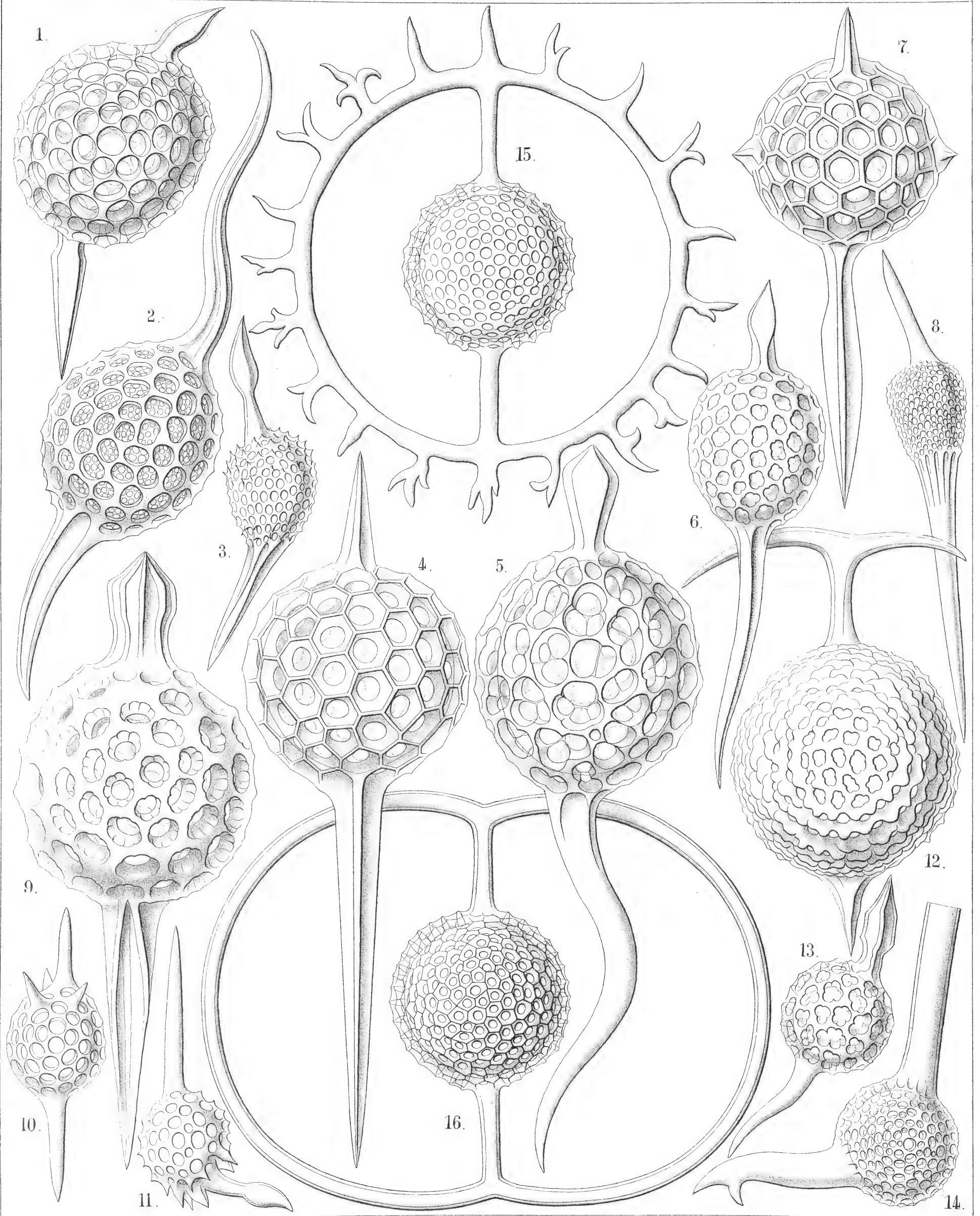
Orders SPHÆROIDEA ET PRUNOIDEA.

Families STYLOSPHÆRIDA et ELLIPSIDA.

PLATE 13.

STYLOSPHÆRIDA et ELLIPSIDA.

	Diam.	Page
Fig. 1. <i>Ellipsostylus aquila</i> , n. sp.,	× 300	300
Fig. 2. <i>Ellipsostylus hirundo</i> , n. sp.,	× 300	301
Fig. 3. <i>Ellipsostylus columba</i> , n. sp.,	× 300	300
Fig. 4. <i>Xiphostylus alcedo</i> , n. sp.,	× 400	127
Fig. 5. <i>Xiphostylus edolius</i> , n. sp.,	× 400	130
Fig. 6. <i>Ellipsostylus psittacus</i> , n. sp.,	× 400	300
Fig. 7. <i>Stylostaurus caudatus</i> , n. sp.,	× 400	157
Fig. 8. <i>Ellipsostylus ciconia</i> , n. sp.,	× 300	300
Fig. 9. <i>Xiphostylus phasianus</i> , n. sp.,	× 400	127
Fig. 10. <i>Xiphostylus trochilus</i> , n. sp.,	× 300	129
Fig. 11. <i>Xiphostylus emberiza</i> , n. sp.,	× 300	131
Fig. 12. <i>Saturnalis circoideus</i> , n. sp.,	× 400	132
Not fully developed.		
Fig. 13. <i>Xiphostylus alca</i> , n. sp.,	× 300	130
Fig. 14. <i>Xiphostylus falco</i> , n. sp.,	× 300	130
Fig. 15. <i>Saturnalis rotula</i> , n. sp.,	× 400	133
Fig. 16. <i>Saturnalis annularis</i> , n. sp.,	× 400	132



1-14. XIPHOSTYLUS, 15, 16. SATURNALIS.

PLATE 14.

Legion SPUMELLARIA.

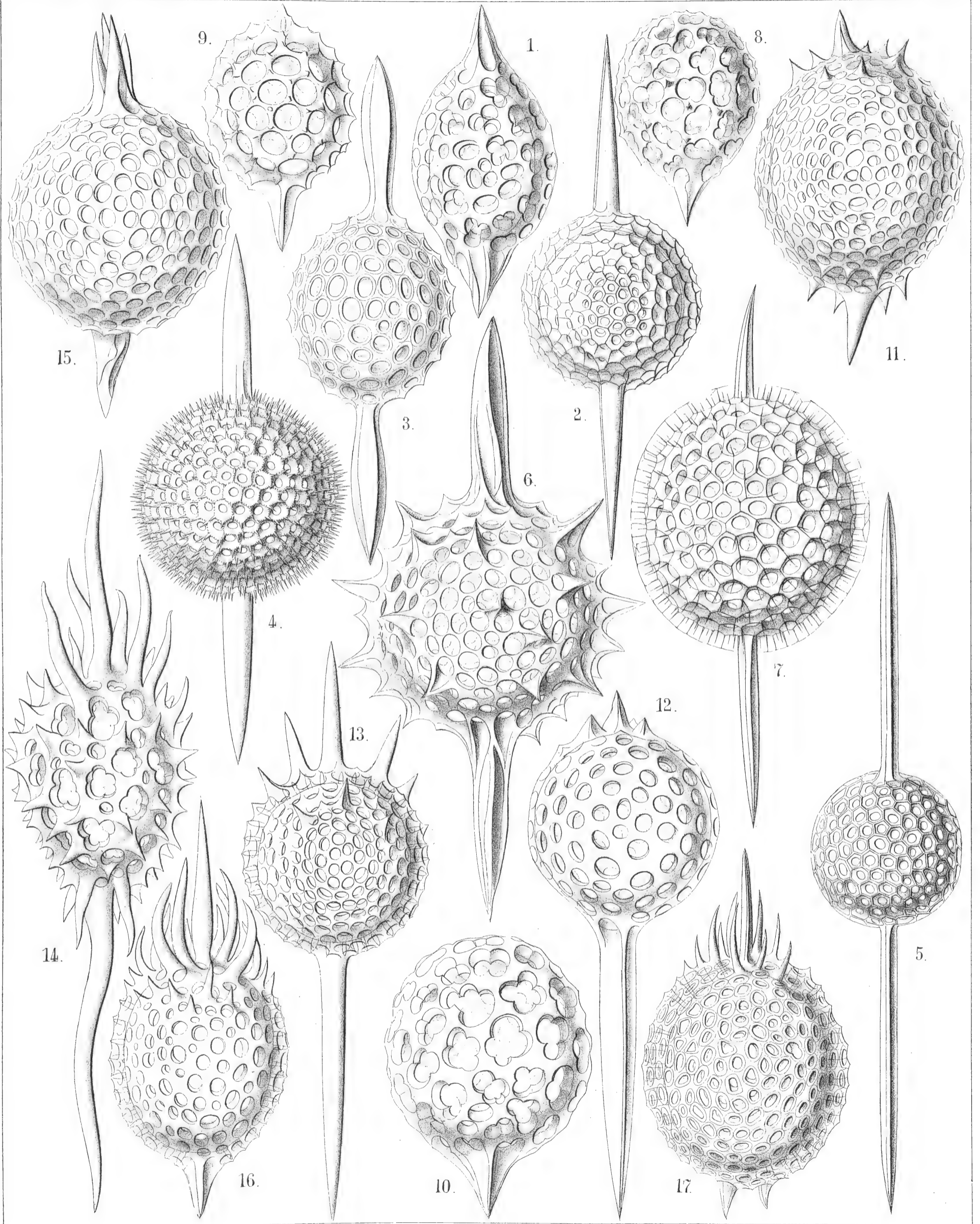
Orders SPHÆROIDEA ET PRUNOIDEA.

Families STYLOSPHÆRIDA et ELLIPSIDA.

PLATE 14.

STYLOSPHÆRIDA et ELLIPSIDA.

	Diam.	Page
Fig. 1. <i>Ellipsoxiphus atractus</i> , n. sp.,	× 300	298
Fig. 2. <i>Xiphosphæra venus</i> , n. sp.,	× 300	123
Fig. 3. <i>Ellipsoxiphus claviger</i> , n. sp.,	× 300	297
Fig. 4. <i>Xiphosphæra pallas</i> , n. sp.,	× 400	124
Fig. 5. <i>Xiphosphæra gæa</i> , n. sp.,	× 400	123
Fig. 6. <i>Xiphosphæra vesta</i> , n. sp.,	× 300	126
Fig. 7. <i>Ellipsoxiphus elegans</i> , n. sp., var. <i>palliatu</i> s,	× 400	296
Fig. 8. <i>Lithapium halicapsa</i> , n. sp.,	× 300	303
Fig. 9. <i>Lithapium pyriforme</i> , n. sp.,	× 300	303
Fig. 10. <i>Lithapium monocyrtis</i> , n. sp.,	× 300	304
Fig. 11. <i>Ellipsoxiphus bipolaris</i> , n. sp.,	× 600	297
Fig. 12. <i>Xiphostylus trogon</i> , n. sp.,	× 400	129
Fig. 13. <i>Xiphostylus picus</i> , n. sp.,	× 300	129
Fig. 14. <i>Lithomespilus flammabundus</i> , n. sp.,	× 400	303
Fig. 15. <i>Xiphostylus alauda</i> , n. sp.,	× 400	128
Fig. 16. <i>Lithomespilus phloginus</i> , n. sp.,	× 600	302
Fig. 17. <i>Lithomespilus phlogoides</i> , n. sp.,	× 600	302



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E. Giltch, Jena, Lithogr.

1 - 11. XIPHOSPHAERA, 12 - 17. LITHOMESPILUS.

PLATE 15.

Legion SPUMELLARIA.

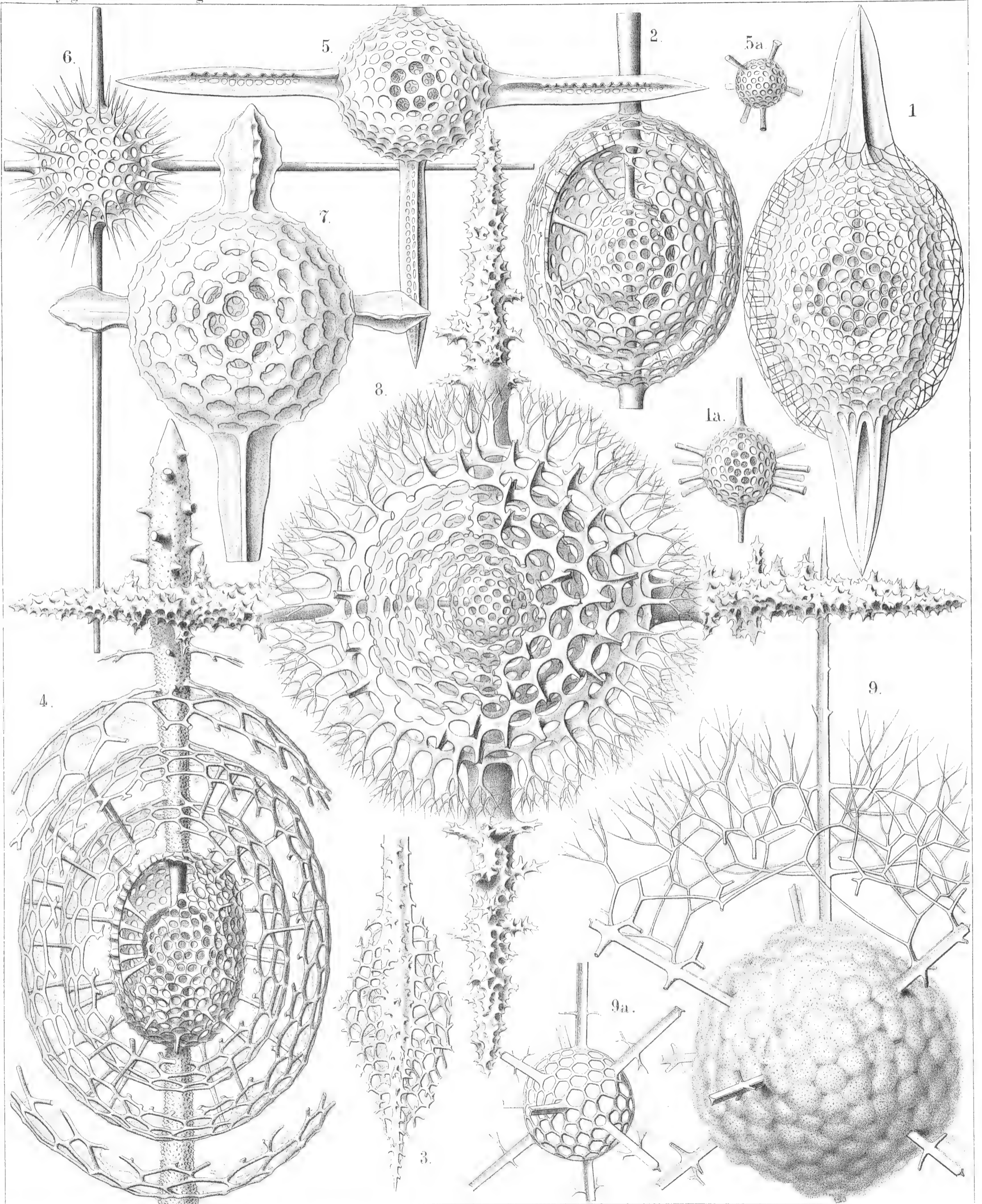
Orders SPHÆROIDEA ET PRUNOIDEA.

Families STAUROSPHÆRIDA et DRUPPULIDA.

PLATE 15.

STAUROSPHÆRIDA et DRUPPULIDA.

	Diam.	Page
Fig. 1. <i>Cromyatractus tetracelyphus</i> , n. sp.,	× 300	335
Fig. 1a. The two inner medullary shells.		
Fig. 2. <i>Cromyatractus tetraphractus</i> , n. sp.,	× 300	335
Fig. 3. <i>Cromyatractus cepicius</i> , n. sp.,	× 300	336
The spongy distal part of a polar spine.		
Fig. 4. <i>Cromyatractus ceparius</i> , n. sp. (vel <i>Caryostylus ceparius</i>),	× 300	336
Fig. 5. <i>Staurolonche pertusa</i> , n. sp.,	× 300	159
Fig. 5a. Its medullary shell.		
Fig. 6. <i>Staurosphæra philippi</i> , n. sp.,	× 300	154
Fig. 7. <i>Stauroxiphus gladius</i> , n. sp.,	× 400	163
Fig. 8. <i>Staurocaryum arborescens</i> , n. sp.,	× 300	167
Fig. 9. <i>Rhizoplegma radicum</i> , n. sp.,	× 200	276
Fig. 9a. The medullary shell, which is completely hidden in fig. 9 by the numerous club-shaped apophyses of the central capsule.		



1, 2. STYLOCROMYUM, 3, 4. CARYOSTYLOS, 5-7. STAUROLONCHE,
8. STAUROCARYUM, 9. RHIZOPLEGMA.

PLATE 16.

Legion SPUMELLARIA.

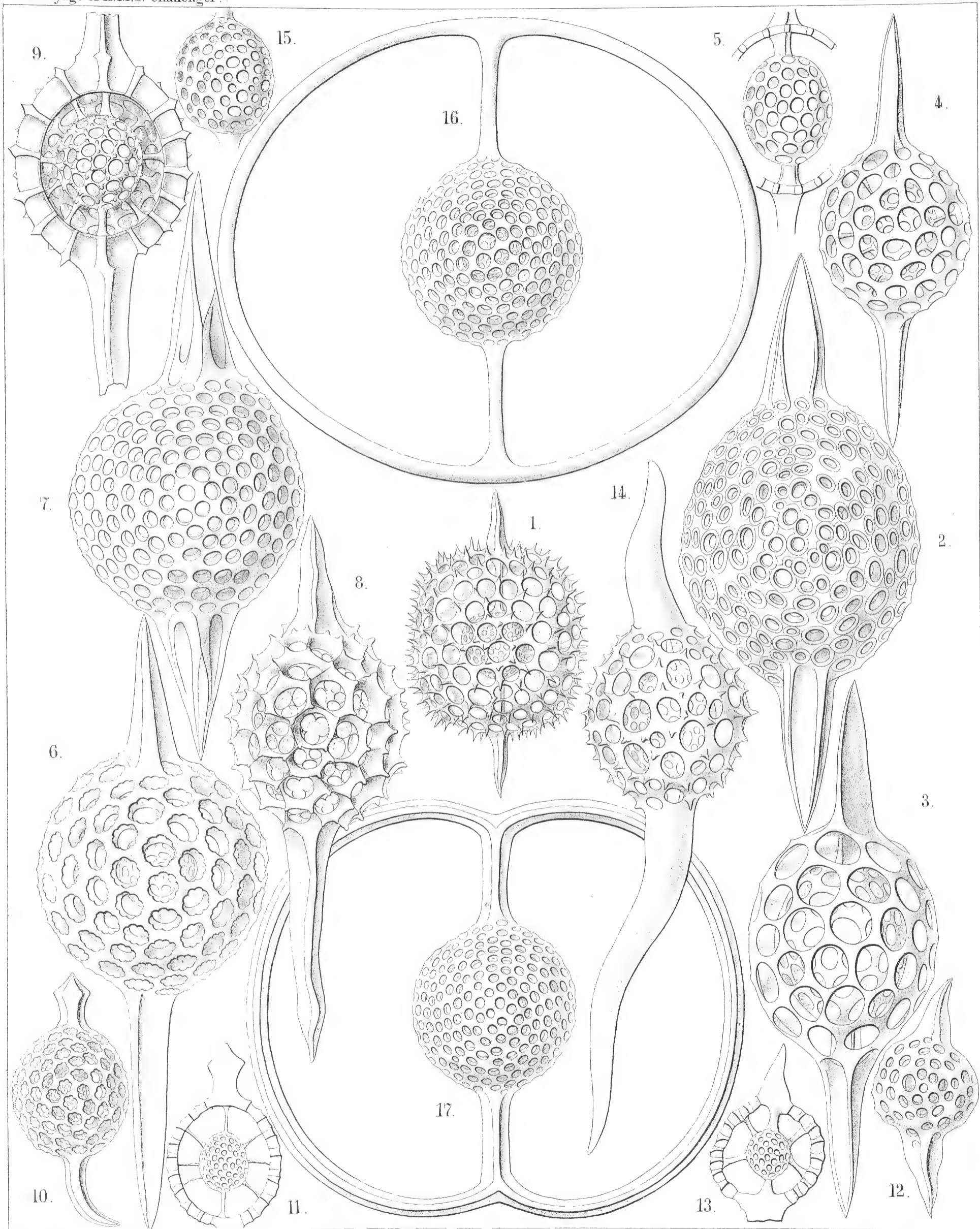
Orders SPHÆROIDEA ET PRUNOIDEA.

Families STYLOSPHÆRIDA et DRUPPULIDA.

PLATE 16.

STYLOSPHÆRIDA et DRUPPULIDA.

	Diam.	Page
Fig. 1. <i>Stylosphæra melpomene</i> , n. sp.,	× 300	135
Fig. 2. <i>Lithatractus jugatus</i> , n. sp. (vel <i>Stylosphæra jugata</i>),	× 400	323
Fig. 3. <i>Lithatractus fragilis</i> , n. sp. (vel <i>Stylosphæra fragilis</i>),	× 400	319
Fig. 4. <i>Stylosphæra lithatractus</i> , n. sp.,	× 300	
The entire shell.		
Fig. 5. <i>Stylosphæra lithatractus</i> , n. sp.,	× 300	
The greater part of the cortical shell and the two spines taken off.		
The description of <i>Stylosphæra lithatractus</i> (intermediate between <i>Stylosphæra jugata</i> and <i>Stylosphæra terpsichore</i> , p. 137) is by mistake not given in the text.		
Fig. 6. <i>Stylosphæra calliope</i> , n. sp.,	× 400	134
Fig. 7. <i>Stylosphæra clio</i> , n. sp.,	× 400	134
Fig. 8. <i>Drupptractus ostracion</i> , n. sp.,	× 300	326
The entire shell.		
Fig. 9. <i>Drupptractus ostracion</i> , n. sp.,	× 300	326
The anterior half of the cortical shell has been removed.		
Fig. 10. <i>Drupptractus hippocampus</i> , n. sp.,	× 300	324
The entire shell.		
Fig. 11. <i>Drupptractus hippocampus</i> , n. sp.,	× 300	324
The greater part of the cortical shell has been removed.		
Fig. 12. <i>Stylosphæra nana</i> , n. sp.,	× 300	136
The entire shell.		
Fig. 13. <i>Stylosphæra nana</i> , n. sp.,	× 300	136
The greater part of the cortical shell taken off.		
Fig. 14. <i>Sphærostylus ophidium</i> , n. sp.,	× 300	140
The entire shell.		
Fig. 15. <i>Sphærostylus ophidium</i> , n. sp.,	× 300	140
The medullary shell alone.		
Fig. 16. <i>Saturnulus ellipticus</i> , n. sp.,	× 400	141
Fig. 17. <i>Saturnulus planetes</i> , n. sp.,	× 400	142



F. Haeckel and A. Giltch Del.

E. Giltch, Jena, Lithogr.

1-15. STYLOSPHAERA, 16, 17. SATURNULUS.

PLATE 17.

Legion SPUMELLARIA.

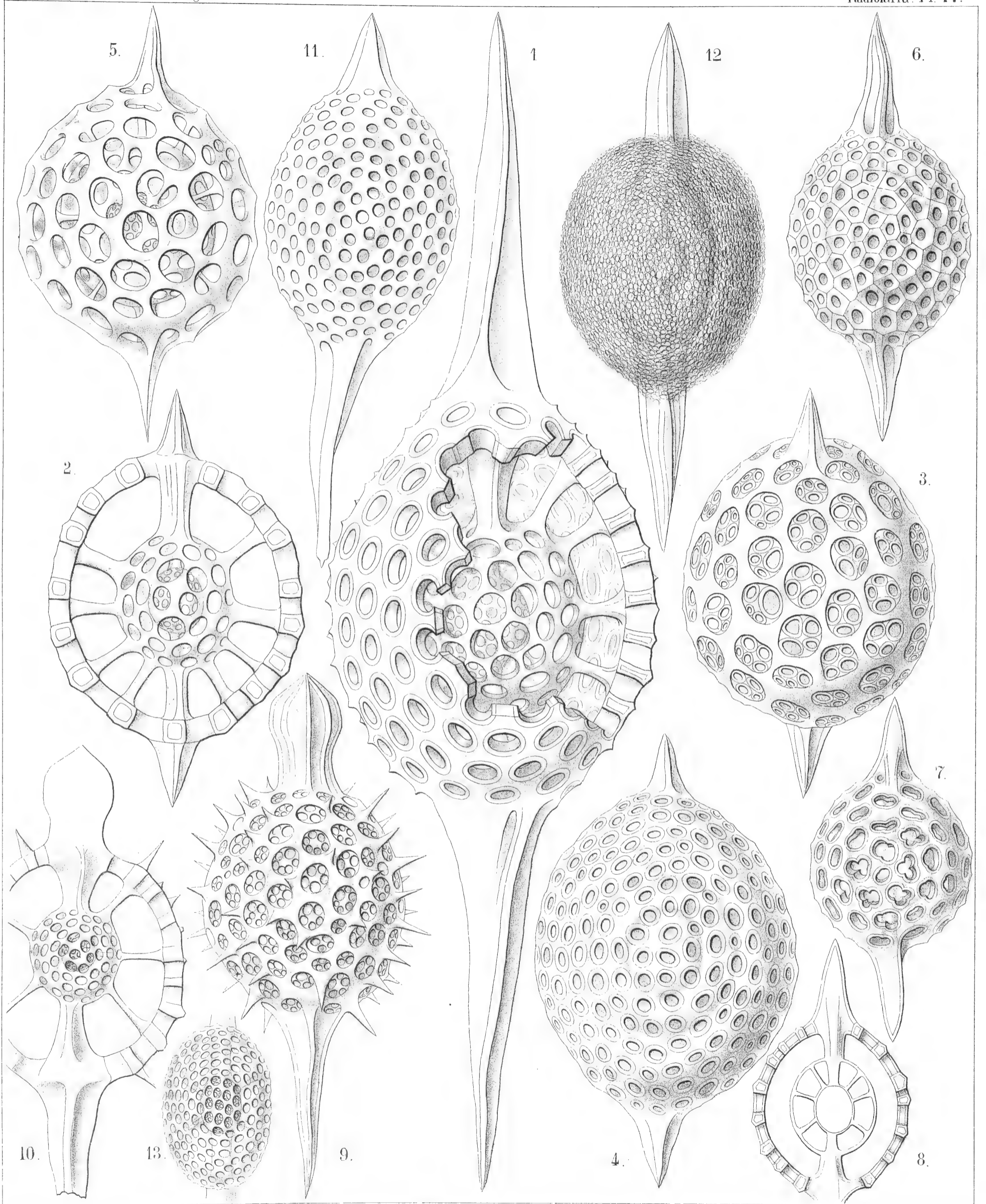
Orders SPHÆROIDEA ET PRUNOIDEA.

Families STYLOSPHÆRIDA, DRUPPULIDA et SPONGURIDA.

PLATE 17.

STYLOSPHÆRIDA, DRUPPULIDA et SPONGURIDA.

	Diam.	Page
Fig. 1. <i>Stylatractus giganteus</i> , n. sp. (vel <i>Amphistylus giganteus</i>),	× 300	329
Fig. 2. <i>Stylatractus sethoporius</i> , n. sp.	× 400	330
The greater part of the cortical shell taken off.		
Fig. 3. <i>Stylatractus sethoporius</i> , n. sp.,	× 400	330
The entire cortical shell.		
Fig. 4. <i>Stylatractus compactus</i> , n. sp.,	× 400	329
Fig. 5. <i>Amphisphæra cronos</i> , n. sp. (vel <i>Amphistylus cronos</i>),	× 400	144
Fig. 6. <i>Stylatractus neptunus</i> , n. sp. (vel <i>Amphisphæra neptunus</i>),	× 300	328
Fig. 7. <i>Amphisphæra pluto</i> , n. sp.,	× 300	144
The entire cortical shell.		
Fig. 8. <i>Amphisphæra pluto</i> , n. sp.,	× 300	144
Meridional section through the three concentric shells.		
Fig. 9. <i>Xiphatractus glyptodon</i> , n. sp.,	× 400	334
The entire cortical shell.		
Fig. 10. <i>Xiphatractus glyptodon</i> , n. sp.,	× 400	334
The greater part of the cortical shell taken off.		
Fig. 11. <i>Xiphatractus armadillo</i> , n. sp.	× 400	332
Fig. 12. <i>Spongoxiphus prunococcus</i> , n. sp.,	× 300	354
The spongy cortical shell.		
Fig. 13. <i>Spongoxiphus prunococcus</i> , n. sp.,	× 600	354
The two concentric latticed medullary shells.		



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E. Giltch, Jena. Lithogr.

1 - 11. AMPHISTYLUS , 12, 13. SPONGOSTYLUS .

PLATE 18.

Legion SPUMELLARIA.

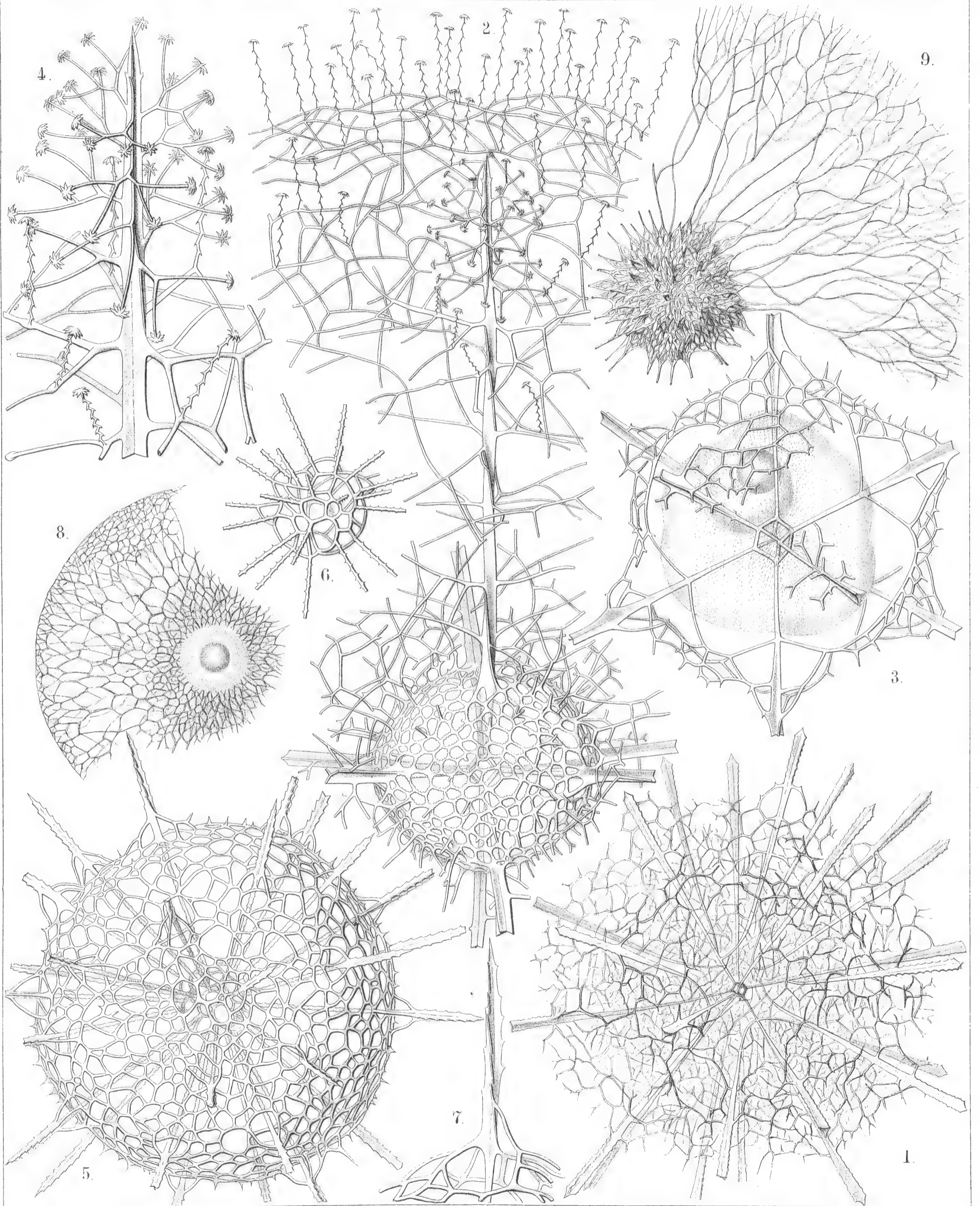
Order SPHÆROIDEA.

Families LIOSPHERIDA et ASTROSPHERIDA.

PLATE 18.

LIOSPHERIDA et ASTROSPHERIDA.

	Diam.	Page
Fig. 1. <i>Centrocubus cladostylus</i> , n. sp.,	× 100	278
Fig. 2. <i>Octodendron spathillatum</i> , n. sp.,	× 300	280
The entire inner shell, but a small part only of the outer shell is represented.		
Fig. 3. <i>Octodendron cubocentron</i> , n. sp.,	× 400	279
The central capsule (somewhat irregular by compression?) exhibits a large excentric nucleus (probably dislocated artificially?).		
Fig. 4. <i>Octodendron spathillatum</i> , n. sp.,	× 800	280
Free distal end of a radial spine, with the spathillæ on the end of the branches.		
Fig. 5. <i>Rhizosphæra serrata</i> , n. sp.,	× 300	284
Fig. 6. <i>Rhizosphæra serrata</i> , n. sp.,	× 300	284
Medullary shell.		
Fig. 7. <i>Rhizosphæra serrata</i> , n. sp.,	× 600	284
A single radial spine.		
Fig. 8. <i>Plegmosphæra exodictyon</i> , n. sp.,	× 200	89
The central shell-cavity encloses the spherical central capsule and the concentric nucleus.		
Fig. 9. <i>Spongodymus elaphococcus</i> , n. sp.,	× 150	272
The entire inner shell, but only a small part of the outer spongy envelope is represented.		



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1-4. CENTROCUBUS, 5-7. RHIZOSPHAERA, 8. PLEGMOSPHAERA,
9. SPONGODRYMUS.

PLATE 19.

Legion SPUMELLARIA.

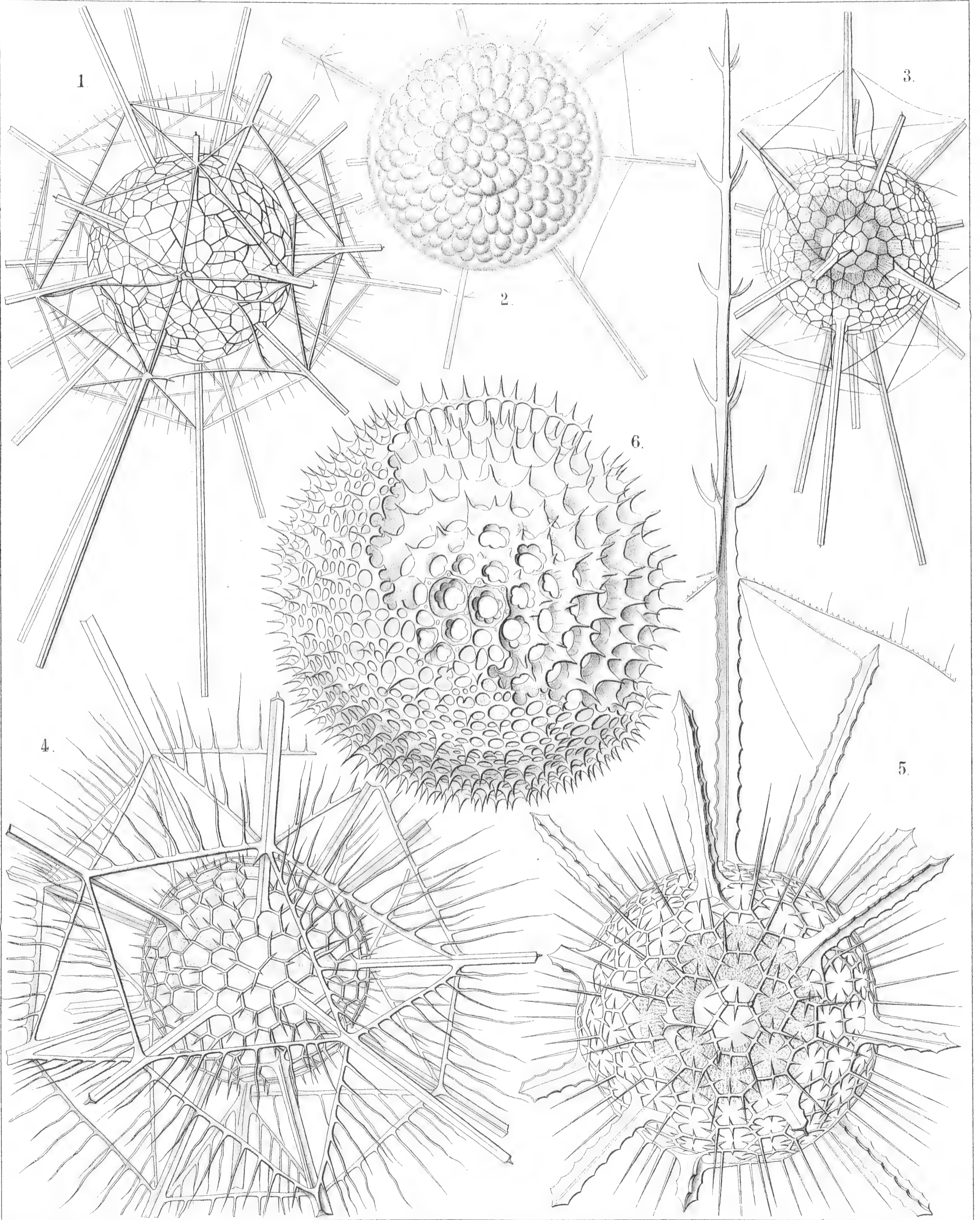
Order SPHÆROIDEA.

Family ASTROSPHÆRIDA.

PLATE 19.

ASTROSPHÆRIDA.

	Diam.	Page
Fig. 1. <i>Drymosphæra polygonalis</i> , n. sp.,	× 200	249
Fig. 2. <i>Leptosphæra hexagonalis</i> , n. sp.,	× 200	244
Showing the central capsule (forming numerous club-shaped protuberances) and the simple spherical nucleus in its centre. The skeleton is nearly the same as in <i>Diploosphæra hexagonalis</i> (fig. 3).		
Fig. 3. <i>Diploosphæra hexagonalis</i> , n. sp.,	× 200	246
The spherical central capsule, with radially striped protoplasm, is enclosed in the inner shell, and exhibits in its centre the clear spherical nucleus.		
Fig. 4. <i>Astrosphæra hexagonalis</i> , n. sp.,	× 300	250
Fig. 5. <i>Astrosphæra stellata</i> , n. sp.,	× 300	251
The central capsule, enclosed in the inner shell, exhibits a distinct radial striation of the protoplasm, and in the centre a clear spherical nucleus.		
Fig. 6. <i>Haliomma rhodococcus</i> , n. sp. (vel <i>Sethosphæra rhodococcus</i>),	× 400	237
The greater part of the outer shell is removed.		



1-5. DIPLOSPHAERA, 6. SETHOSPHAERA.

PLATE 20.

Legion SPUMELLARIA.

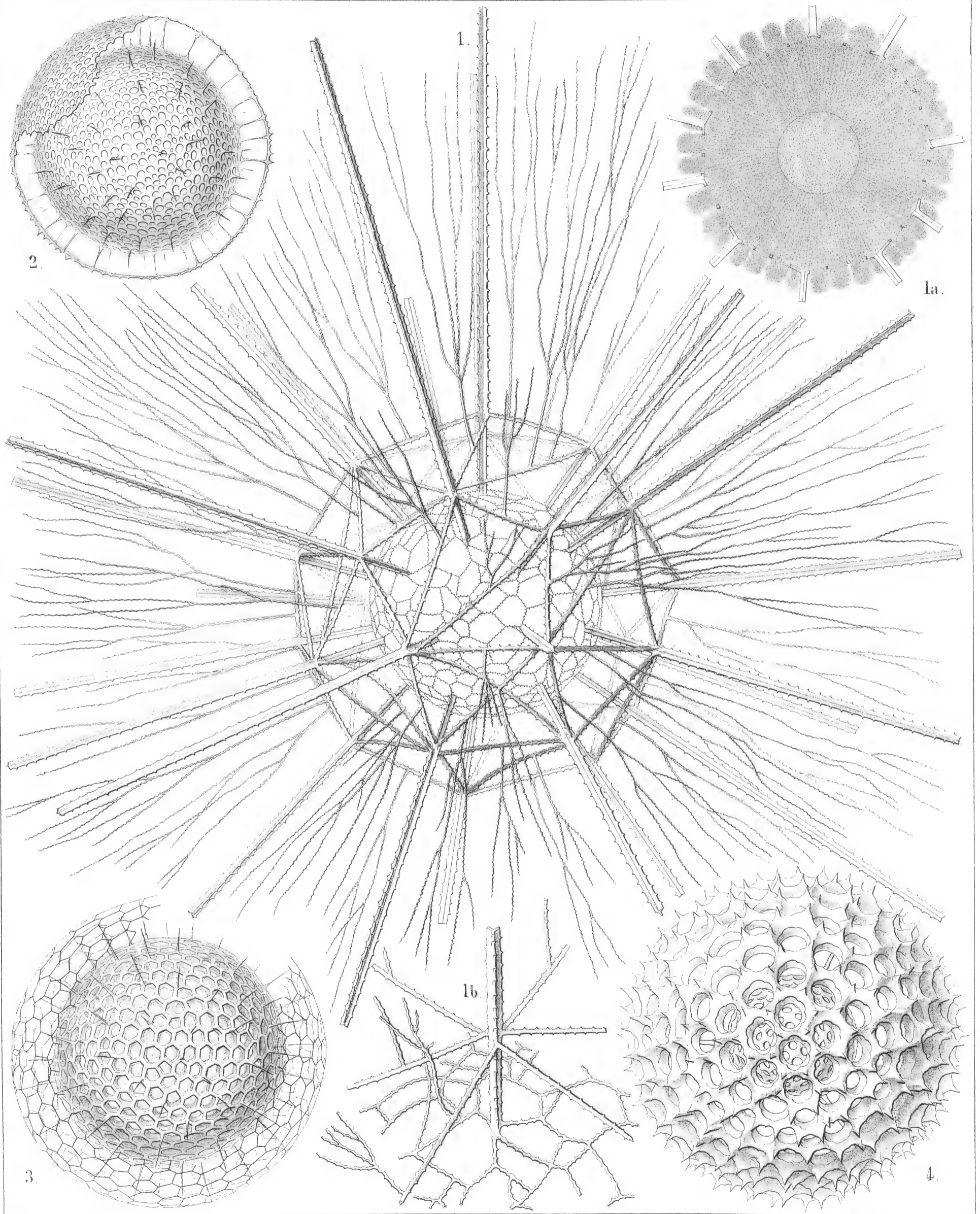
Order SPHÆROIDEA.

Families LIOSPHERIDA et ASTROSPHERIDA.

PLATE 20.

LIOSPHÆRIDA et ASTROSPHÆRIDA.

	Diam.	Page
Fig. 1. <i>Drymosphæra dendrophora</i> , n. sp.,	× 300	249
Fig. 1 <i>a</i> . Meridional section through the central capsule. In the centre the large spherical nucleus is visible. The protoplasm around it is distinctly radiate. From the central capsule arise numerous club-shaped apophyses or cæcal sacs, which are protruded through the meshes of the inner shell,	× 300	
Fig. 1 <i>b</i> . Basal part of a single radial spine, and its connection with the net- work of the two shells,	× 400	
Fig. 2. <i>Liosphæra polypora</i> , n. sp.,	× 300	78
The greater part of the outer shell is removed.		
Fig. 3. <i>Liosphæra hexagonia</i> , n. sp.,	× 400	76
Fig. 4. <i>Carposphæra melitomma</i> , n. sp. (vel <i>Melitomma melittosphæra</i>),	× 400	73



1. DRYMOSPHAERA, 2-4. MELITOMMA.

PLATE 21.

Legion SPUMELLARIA.

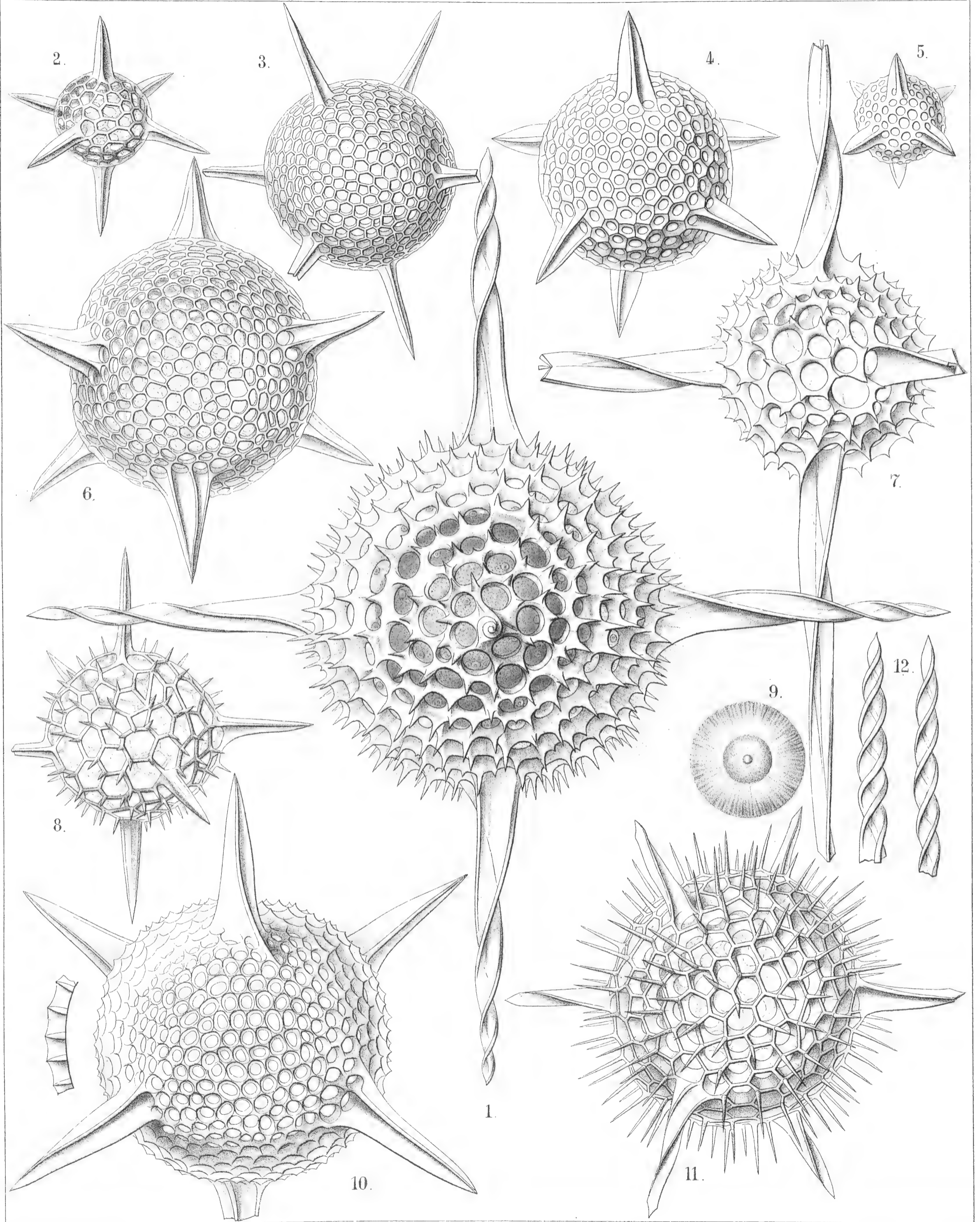
Order SPHÆROIDEA.

Family CUBOSPHERIDA.

PLATE 21.

CUBOSPHERIDA.

	Diam.	Page
Fig. 1. <i>Hexastylus cochleatus</i> , n. sp.,	× 400	174
From the central capsule, enclosed in the shell, numerous delicate radial pseudopodia arise, which are protruded through the pores of the shell.		
Fig. 2. <i>Hexastylus triaxoni</i> us, n. sp.,	× 400	175
Fig. 3. <i>Hexastylus phaenaxoni</i> us, n. sp.,	× 300	171
Fig. 4. <i>Hexastylus thaletis</i> , n. sp.,	× 400	172
Fig. 5. <i>Hexastylus minimus</i> , n. sp.,	× 400	172
Fig. 6. <i>Hexastylus dimensivus</i> , n. sp.,	× 400	175
Fig. 7. <i>Hexastylus spiralis</i> , n. sp.,	× 400	177
Fig. 8. <i>Hexastylus dictyotus</i> , n. sp.,	× 400	176
Fig. 9. <i>Hexastylus dictyotus</i> , n. sp.,	× 400	176
Central capsule with concentric nucleus and nucleolus; the protoplasm is radially striped.		
Fig. 10. <i>Hexastylus marginatus</i> , n. sp.,	× 400	176
Fig. 10a. Radial section through the shell-wall.		
Fig. 11. <i>Hexastylus solonis</i> , n. sp.,	× 400	173
Fig. 12. <i>Hexastylus contortus</i> , n. sp.,	× 300	177



HEXASTYLUS.

PLATE 22.

Legion SPUMELLARIA.

Order SPHÆROIDEA.

Family CUBOSPHERIDA.

PLATE 22.

CUBOSPHERIDA.

				Diam.	Page
Fig. 1.	<i>Hexalonche pythagoræa</i> , n. sp.,	.	.	× 300	185
Fig. 2.	<i>Hexalonche conicornis</i> , n. sp.,	.	.	× 300	181
Fig. 3.	<i>Hexalonche aristarchi</i> , n. sp.,	.	.	× 400	185
Fig. 4.	<i>Hexalonche philosophica</i> , n. sp.,	.	.	× 400	186
Fig. 5.	<i>Hexalonche anaximandri</i> , n. sp.,	.	.	× 400	182
Fig. 6.	<i>Hexalonche octocolpa</i> , n. sp.,	.	.	× 300	183
	Fig. 6a. The inner shell alone.				
Fig. 7.	<i>Hexalonche heracliti</i> , n. sp.,	.	.	× 300	187
Fig. 8.	<i>Hexalonche octahedra</i> , n. sp.,	.	.	× 400	181
	Fig. 8a. The inner shell alone.				
Fig. 9.	<i>Hexancistra tricuspis</i> , n. sp.,	.	.	× 300	188
Fig. 10.	<i>Hexancistra triserrata</i> , n. sp.,	.	.	× 300	188
Fig. 11.	<i>Hexancistra quadricuspsis</i> , n. sp.,	.	.	× 300	189

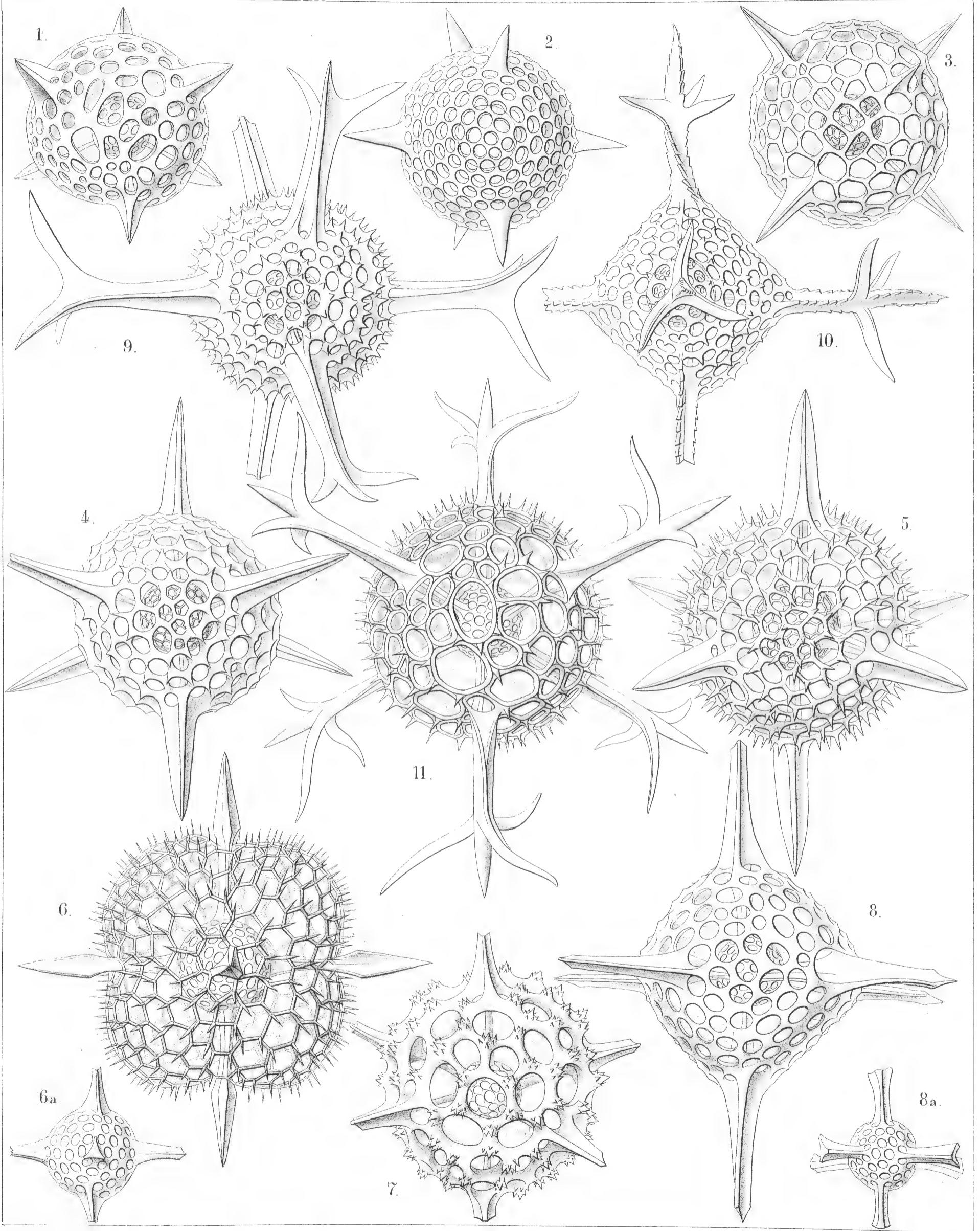


PLATE 23.

Legion SPUMELLARIA.

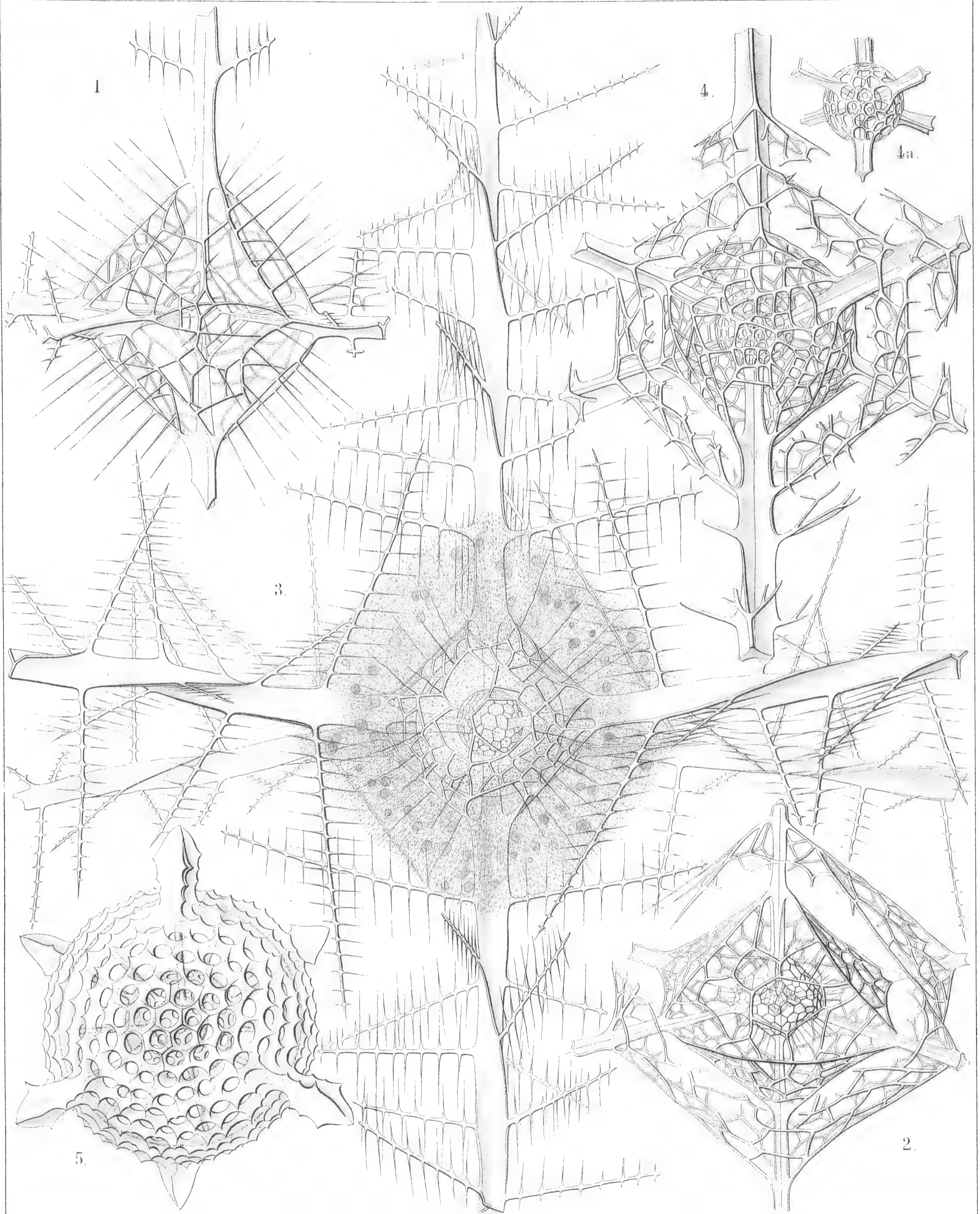
Order SPHÆROIDEA

Family CUBOSPHERIDA.

PLATE 23.

CUBOSPHERIDA.

	Diam.	Page
Fig. 1. <i>Hexadendron bipinnatum</i> , n. sp.,	× 400	200
Fig. 2. <i>Hexacromyrum octahedrum</i> , n. sp.,	× 400	202
Fig. 3. <i>Hexancistra mirabilis</i> , n. sp. (= <i>Hexapitys mirabilis</i>),	× 400	189
The spherical central capsule encloses the concentric spherical inner shell (which is filled up by the nucleus), and is surrounded by the octahedral outer shell. The latter is enveloped by the octahedral calymma, which is radially striated and contains numerous xanthellæ.		
Fig. 4. <i>Hexacaryum arborescens</i> , n. sp.,	× 400	203
Fig. 5. <i>Hexacantium clavigerum</i> , n. sp.,	× 300	19



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F. Giltisch, Jena, Lithogr.

1. 2. HEXADENDRUM, 3. HEXAPYTIS, 4. HEXACARYUM,
5. HEXACONTIUM.

PLATE 24.

Legion SPUMELLARIA.

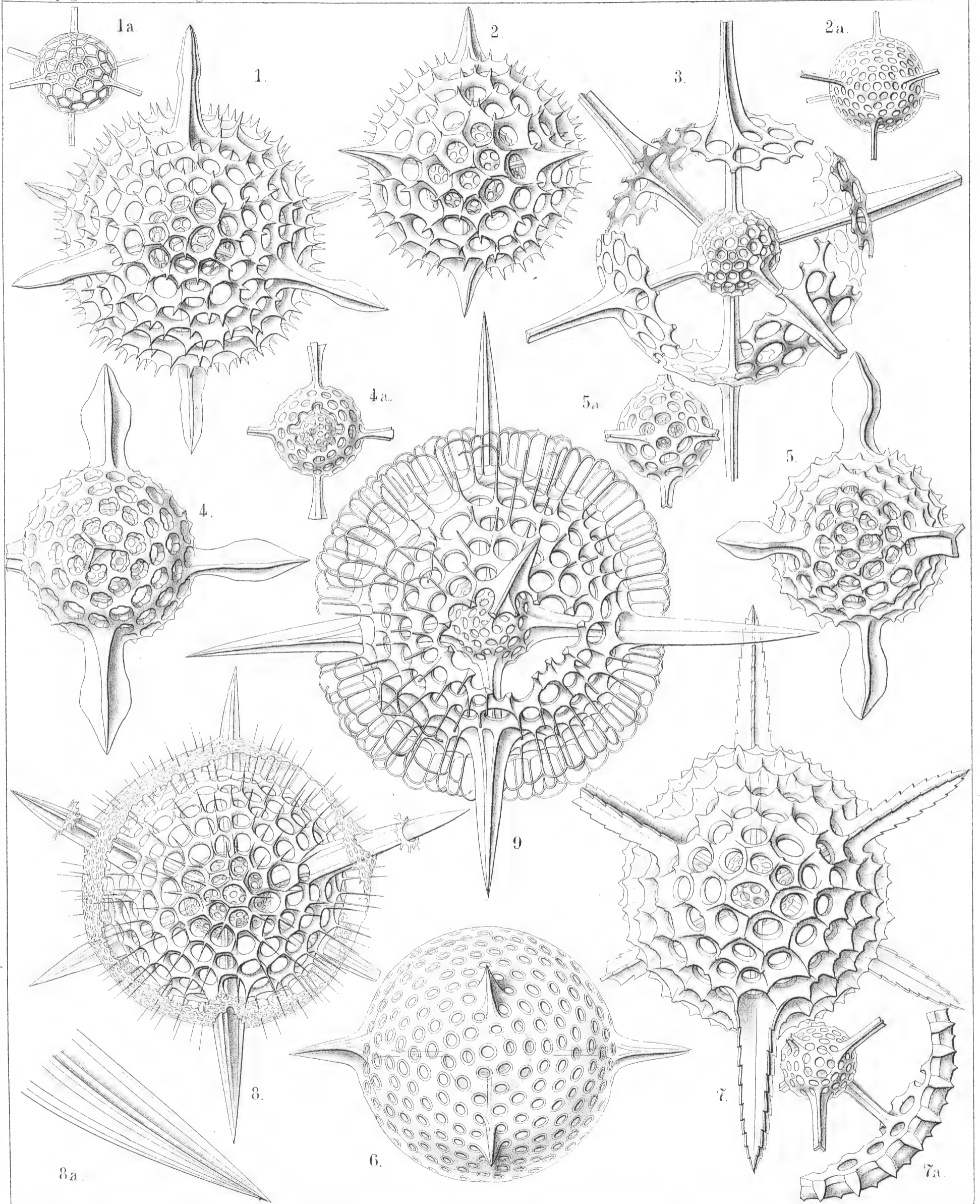
Order SPHÆROIDEA.

Family CUBOSPHERIDA.

PLATE 24.

CUBOSPHERIDA.

	Diam.	Page
Fig. 1. <i>Hexacontium sceptrum</i> , n. sp.,	× 400	194
Fig. 1a. The two medullary shells.		
Fig. 2. <i>Hexacontium favosum</i> , n. sp.,	× 400	194
Fig. 2a. The two medullary shells.		
Fig. 3. <i>Hexacontium axotrias</i> , n. sp.,	× 300	192
The six lattice-plates, which form the cortical shell, are not yet fully developed.		
Fig. 4. <i>Hexacontium floridum</i> , n. sp.,	× 300	195
Fig. 4a. The two medullary shells.		
Fig. 5. <i>Hexacontium papillosum</i> , n. sp.,	× 400	197
Fig. 5a. The two medullary shells.		
Fig. 6. <i>Hexacontium lævigatum</i> , n. sp.,	× 400	193
The contours of the two medullary shells are visible in the centre.		
Fig. 7. <i>Hexacontium prionacanthum</i> , n. sp.	× 400	195
Fig. 7a. The two medullary shells, connected with a fragment of the cortical shell.		
Fig. 8. <i>Cubosphæra cubaxonia</i> , n. sp.,	× 400	203
Fig. 8a. A single radial spine.		
Fig. 9. <i>Hexacromyum elegans</i> , n. sp.,	× 400	201
A part of the two cortical shells is broken off.		



1-7. HEXACONTIUM, 8, 9. HEXACROMYUM.



PLATE 25.

Legion SPUMELLARIA.

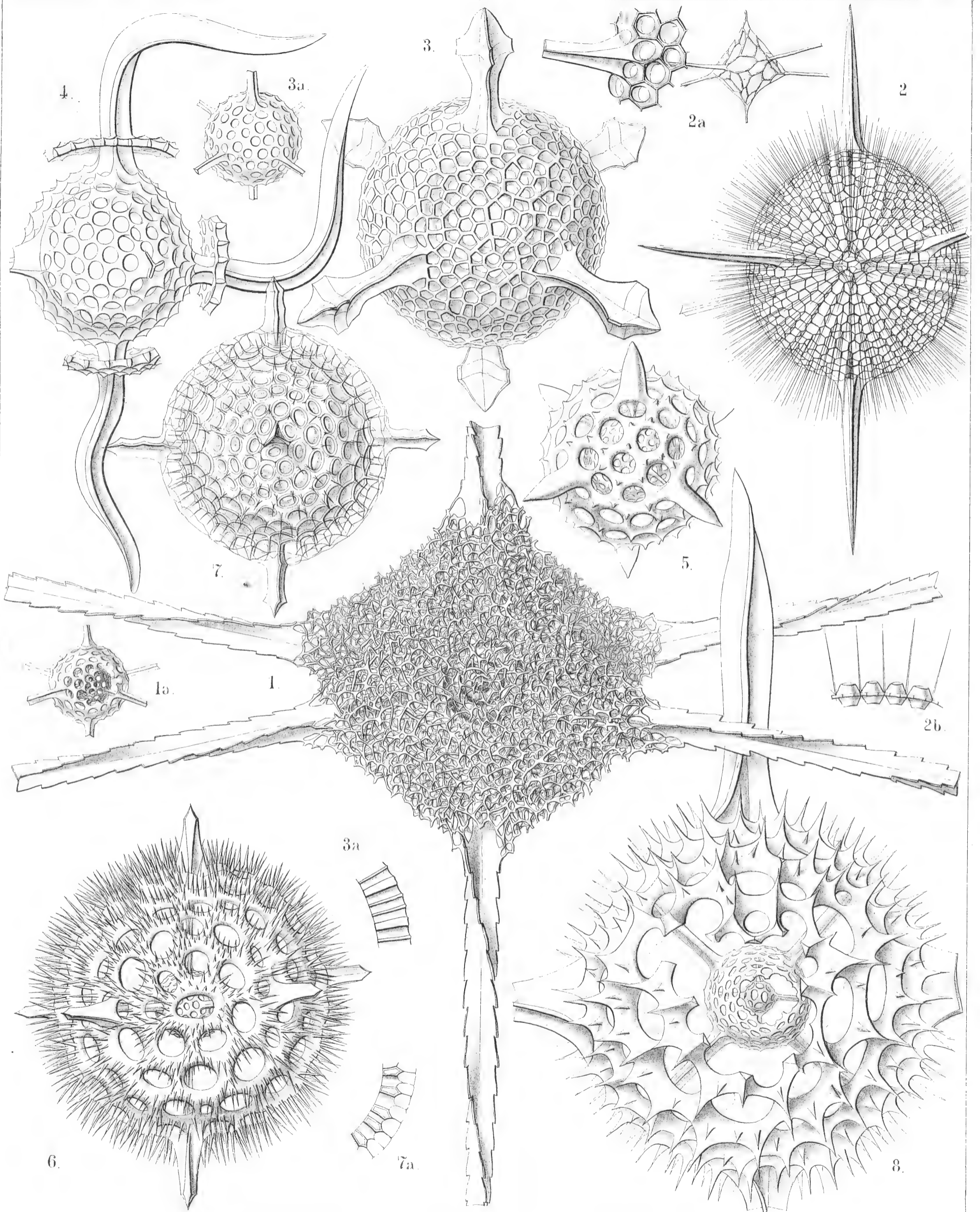
Order SPHÆROIDEA.

Family CUBOSPHERIDA.

PLATE 25.

CUBOSPHERIDA.

	Diam.	Page
Fig. 1. <i>Hexadoridium streptacanthum</i> , n. sp.,	× 400	206
Fig. 1a. The two concentric medullary shells.		
Fig. 2. <i>Hexalonche amphisiphon</i> , n. sp.,	× 300	182
Fig. 2a. Medullary shell connected with a fragment of the cortical shell.		
Fig. 2b. Vertical section through the wall of the cortical shell. (Below the centre of the Plate, also lettered 3a by mistake.)		
Fig. 3. <i>Hexalonche rosetta</i> , n. sp.,	× 400	180
Fig. 3a. Medullary shell.		
Fig. 3b. Vertical section through the wall of the cortical shell.		
Fig. 4. <i>Hexalonche curvicornis</i> , n. sp.,	× 300	181
Outer shell not yet complete, or partly broken off (?).		
Fig. 5. <i>Hexalonche anaximenis</i> , n. sp.,	× 400	183
Fig. 6. <i>Hexalonche hystericina</i> , n. sp.,	× 300	187
Fig. 7. <i>Hexacontium circumtextum</i> , n. sp.,	× 400	193
Fig 7a. Vertical section through the double wall of the cortical shell.		
Fig. 8. <i>Hexacontium gladiatum</i> , n. sp.,	× 400	198
A part of the two outer shells and of the radial spines is broken off.		



1. HEXADORAS, 2-6. HEXALONCHE, 7, 8. HEXACANTIUM.

PLATE 26.

Legion SPUMELLARIA.

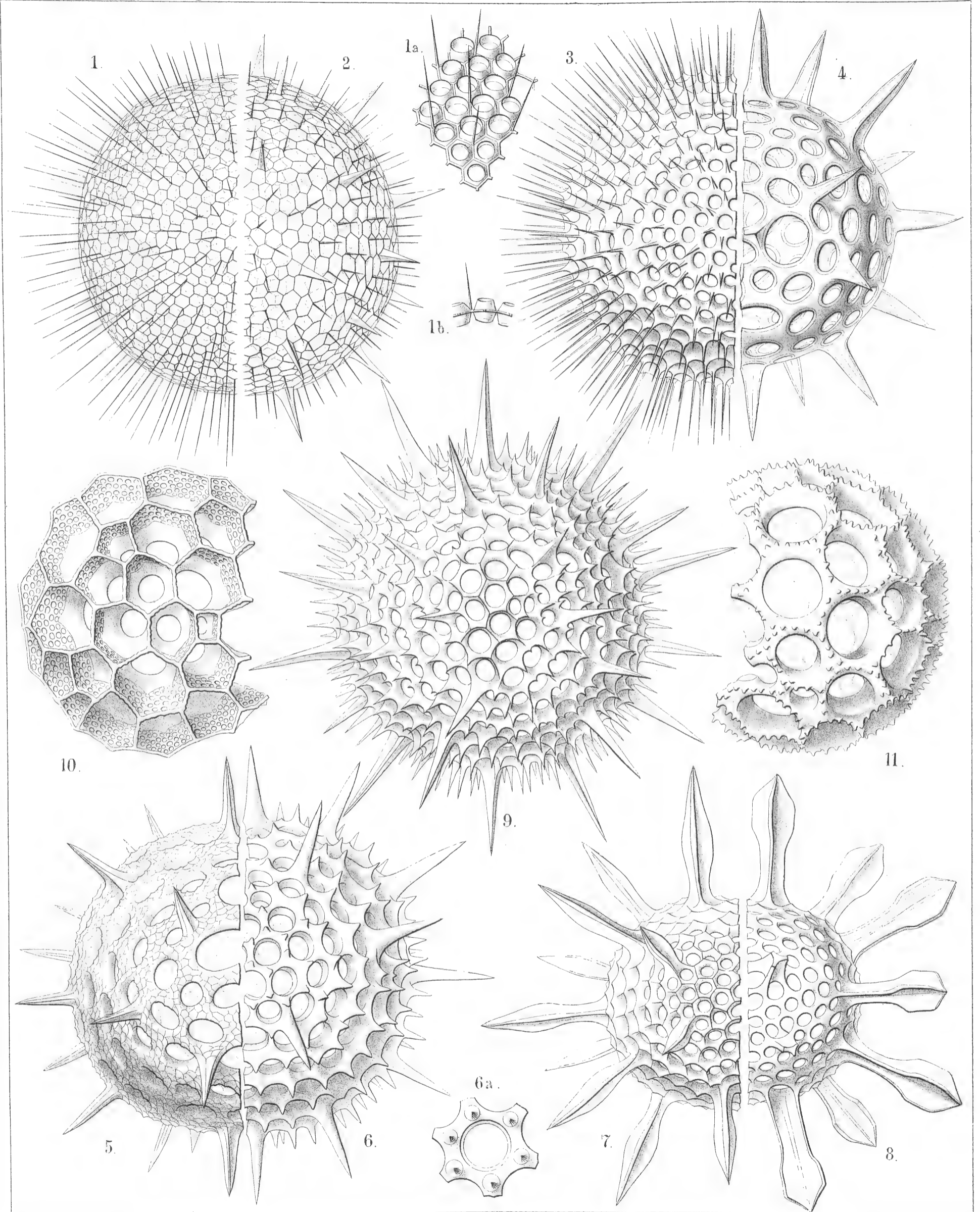
Order SPHÆROIDEA.

Families LIOSPHERIDA et ASTROSPHERIDA.

PLATE 26.

LIOSPHERIDA et ASTROSPHERIDA.

	Diam.	Page
Fig. 1. <i>Coscinomma amphisiphon</i> , n. sp.,	× 300	222
Fig. 1a. A piece of the lattice-shell,	× 600	
Fig. 1b. Vertical section through the shell-wall,	× 600	
Fig. 2. <i>Heliosphæra hexagonaria</i> , n. sp.,	× 300	217
Fig. 3. <i>Acanthosphæra castanea</i> , n. sp.,	× 400	211
Fig. 4. <i>Acanthosphæra angulata</i> , n. sp.,	× 300	216
Fig. 5. <i>Acanthosphæra reticulata</i> , n. sp.,	× 300	217
Fig. 6. <i>Heliosphæra coronata</i> , n. sp.,	× 400	219
Fig. 6a. A single pore with its coronal,	× 300	
Fig. 7. <i>Acanthosphæra mucronata</i> , n. sp.,	× 400	212
Fig. 8. <i>Acanthosphæra clavata</i> , n. sp.,	× 400	212
Fig. 9. <i>Heliosphæra pectinata</i> , n. sp.,	× 400	218
Fig. 10. <i>Cenosphæra perforata</i> , n. sp.,	× 400	66
Fig. 11. <i>Cenosphæra coronata</i> , n. sp.,	× 400	67



1. 2. HELIOSPHAERA, 3. - 9. ACANTHOSPHAERA, 10. 11. CERIOSPHAERA.

PLATE 27.

Legion SPUMELLARIA

Order SPHÆROIDEA.

Family ASTROSPHÆRIDA.

PLATE 27.

ASTROSPHÆRIDA.

	Diam.	Page
Fig. 1. <i>Cladococcus pinetum</i> , n. sp.,	× 300	226
Fig. 2. <i>Cladococcus scoparius</i> , n. sp.,	× 300	225
Fig. 3. <i>Cladococcus abietinus</i> , n. sp.,	× 300	226
<p>The central capsule, enclosed originally in the shell, sends out numerous club-shaped apophyses through the pores of the lattice-sphere. The central spherical nucleus fills up half the shell-cavity.</p>		
Fig. 4. <i>Cladococcus stalactites</i> , n. sp.,	× 300	227
Fig. 5. <i>Cladococcus dendrites</i> , n. sp.,	× 200	227

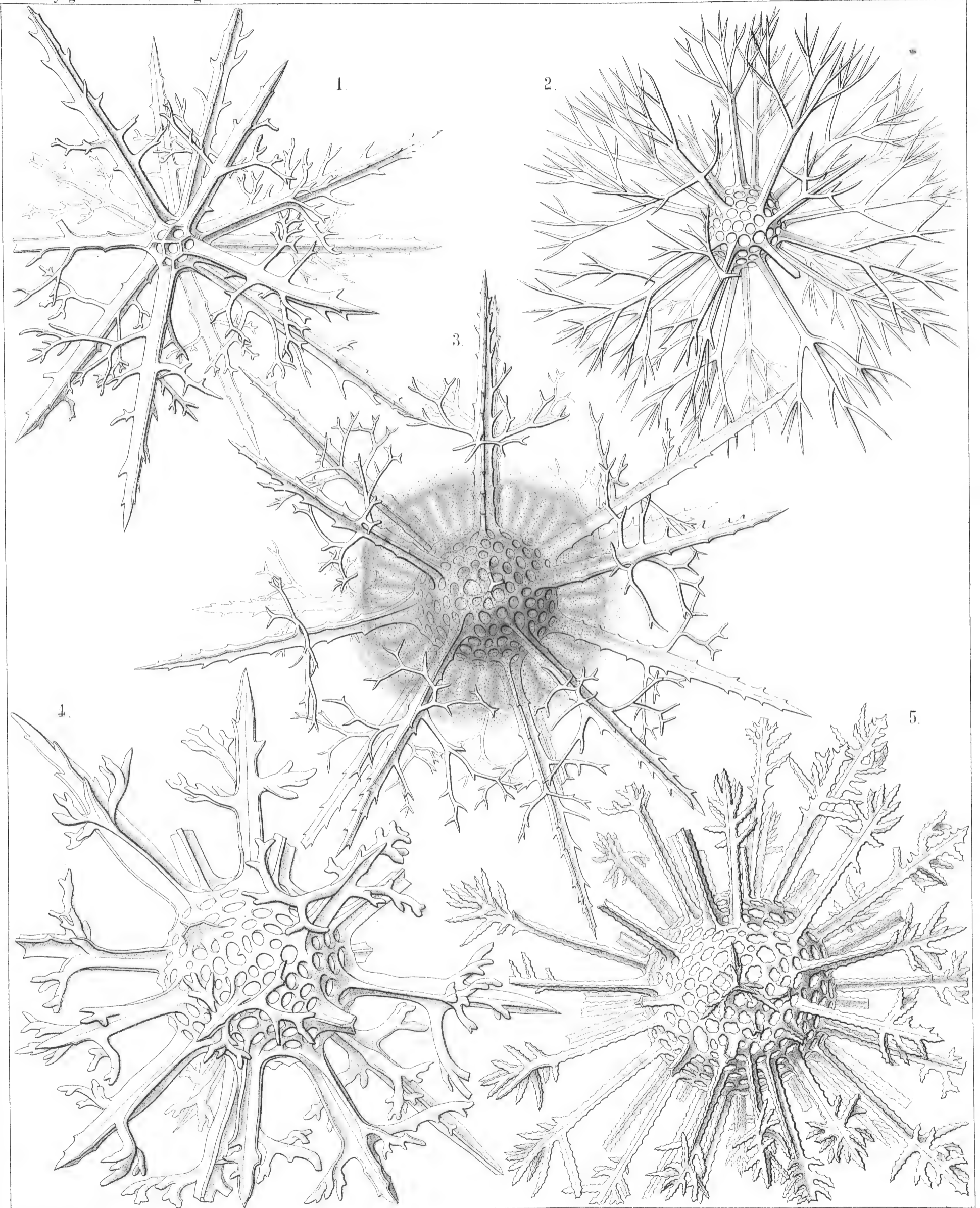


PLATE 28.

Legion SPUMELLARIA.

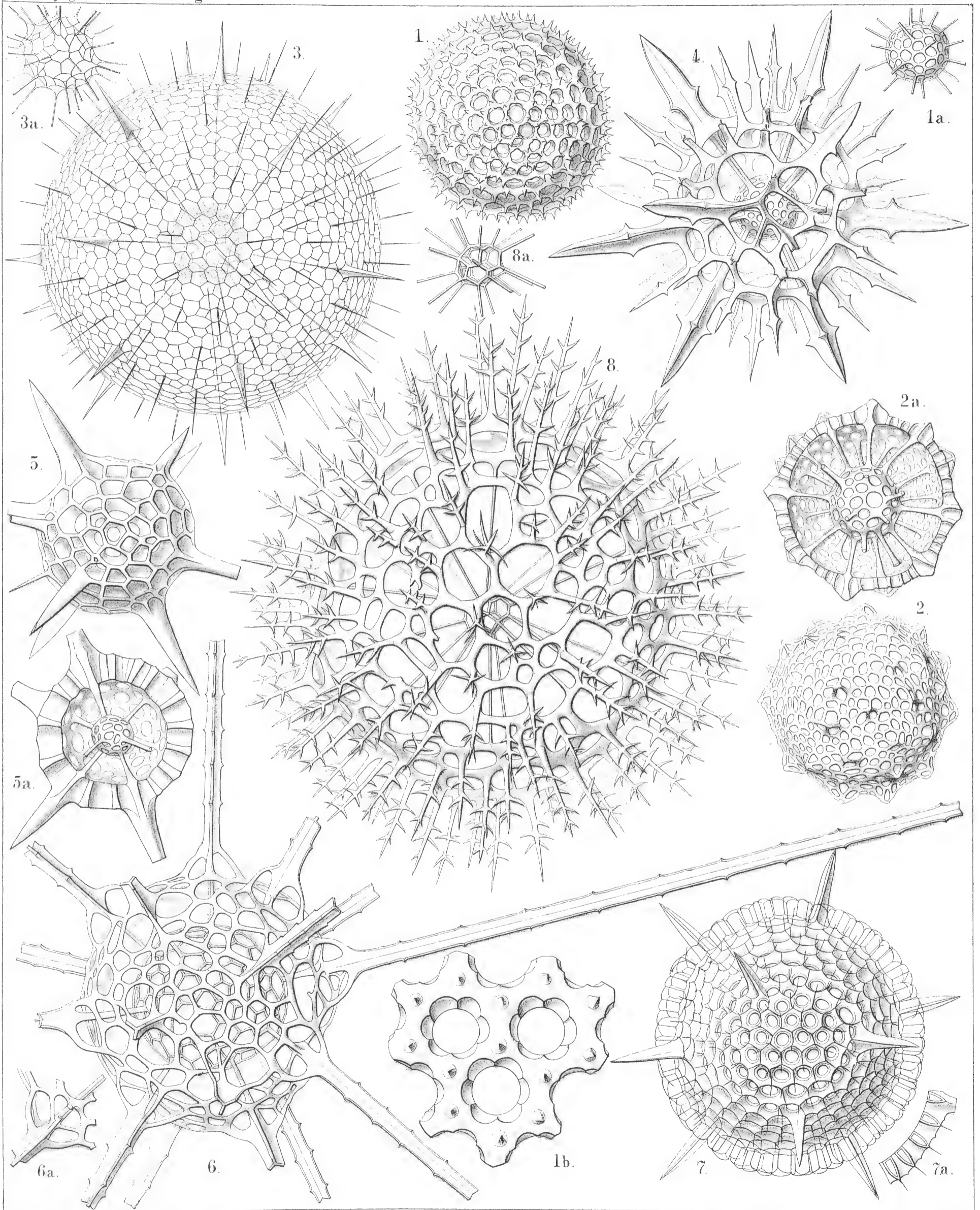
Order SPHÆROIDEA.

Families LIOSPHERIDA et ASTROSPHERIDA.

PLATE 28.

LIOSPHERIDA et ASTROSPHERIDA.

	Diam.	Page
Fig. 1. <i>Haliomma lirianthus</i> , n. sp.,	× 300	232
Fig. 1a. Medullary shell,	× 300	
Fig. 1b. Three pores of the cortical shell,	× 900	
Fig. 2. <i>Carposphæra nodosa</i> , n. sp.,	× 300	76
Fig. 2a. The medullary shell is visible, the upper half of the cortical shell being taken off,	× 300	
Fig. 3. <i>Heliosoma radians</i> , n. sp.,	× 300	240
Fig. 3a. Medullary shell,	× 300	
Fig. 4. <i>Heliosoma hastatum</i> , n. sp.,	× 400	241
Fig. 5. <i>Haliomma compactum</i> , n. sp.,	× 400	239
Fig. 5a. The upper half of the cortical shell is removed,	× 300	
Fig. 6. <i>Haliomma macrodoras</i> , n. sp.,	× 400	238
Fig. 7. <i>Haliomma circumtextum</i> , n. sp.,	× 400	233
Fig. 8. <i>Elatomma juniperinum</i> , n. sp.,	× 400	243
Fig. 8a. Medullary shell,	× 400	



1. 2. ANTHOMMA, 3. HELIOSOMA, 4-7. HALIOMMA,
8. ELATOMMA.

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E. Giltch, Jena, Lithogr.

PLATE 29.

Legion SPUMELLARIA.

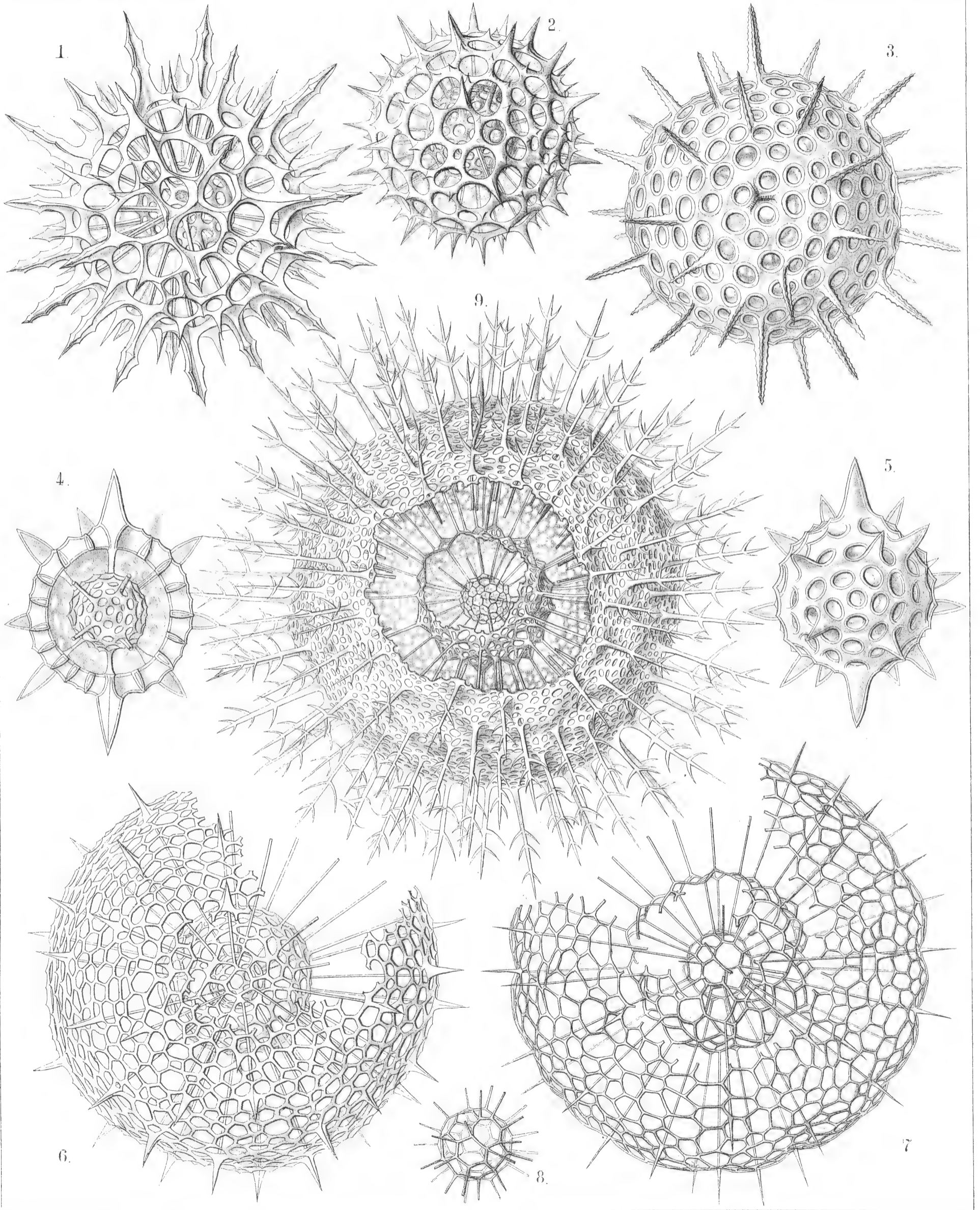
Order SPHÆROIDEA.

Family ASTROSPHÆRIDA.

PLATE 29.

ASTROSPHÆRIDA.

				Diam.	Page
Fig. 1.	<i>Echinomma toxopneustes</i> , n. sp.,	.	.	× 400	259
Fig. 2.	<i>Echinomma sphærechinus</i> , n. sp.,	.	.	× 400	258
Fig. 3.	<i>Actinomma denticulatum</i> , n. sp.,	.	.	× 400	254
Fig. 4.	<i>Actinomma pachyderma</i> , n. sp.,	.	.	× 400	254
	The half of the cortical shell is removed.				
Fig. 5.	<i>Actinomma pachyderma</i> , n. sp.,	.	.	× 400	254
Fig. 6.	<i>Actinomma capillaceum</i> , n. sp.,	.	.	× 300	255
Fig. 7.	<i>Actinomma arcadophorum</i> , n. sp.,	.	.	× 400	255
	A part of the two outer shells is removed.				
Fig. 8.	<i>Actinomma arcadophorum</i> , n. sp.,	.	.	× 400	255
	Inner medullary shell.				
Fig. 9.	<i>Pityomma drymodes</i> , n. sp.,	.	.	× 300	260
	A part of the two outer shells is removed.				



1-8. ACTINOMMA, 9. PITYOMMA.

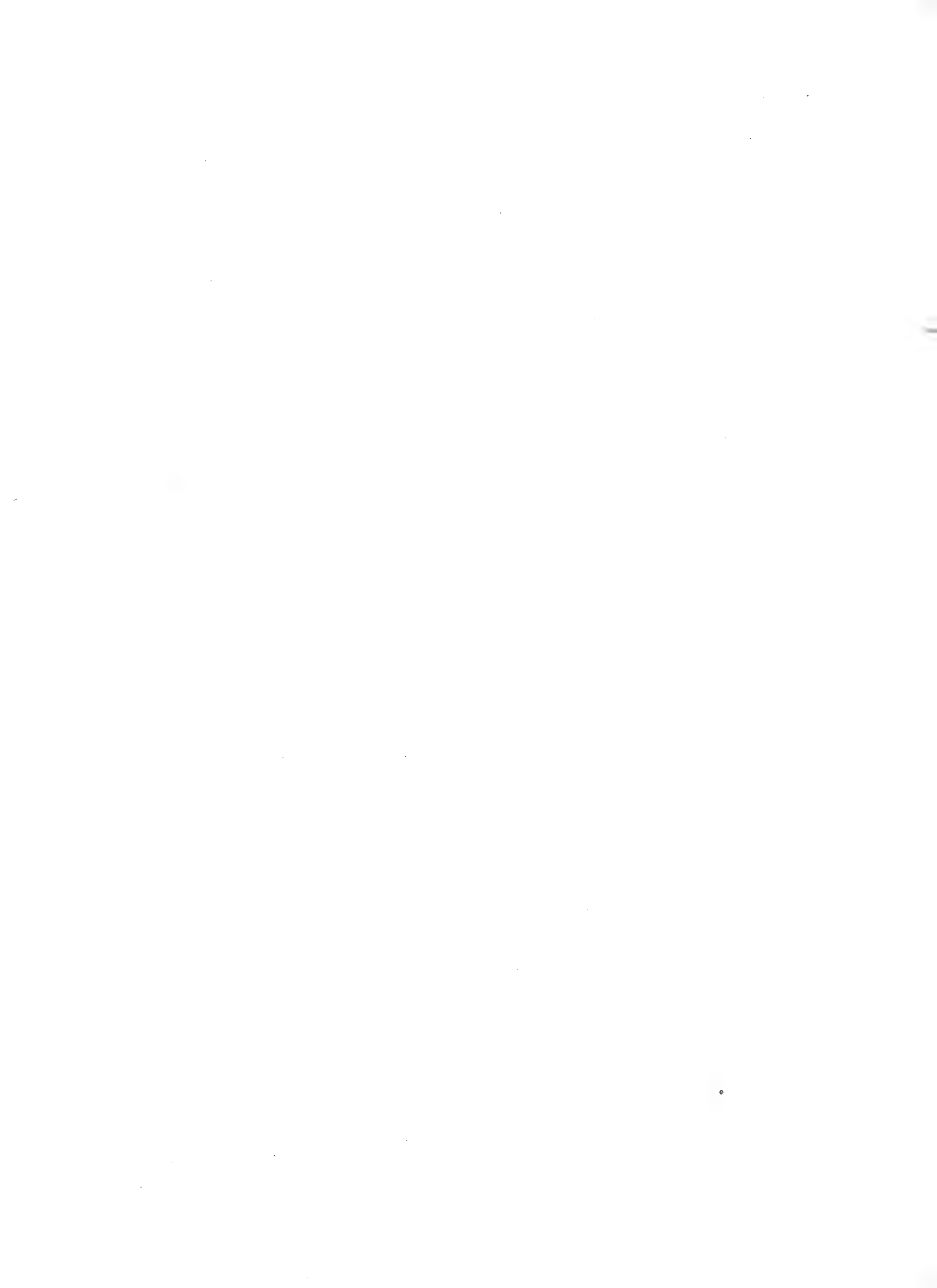


PLATE 30.

Legion SPUMELLARIA.

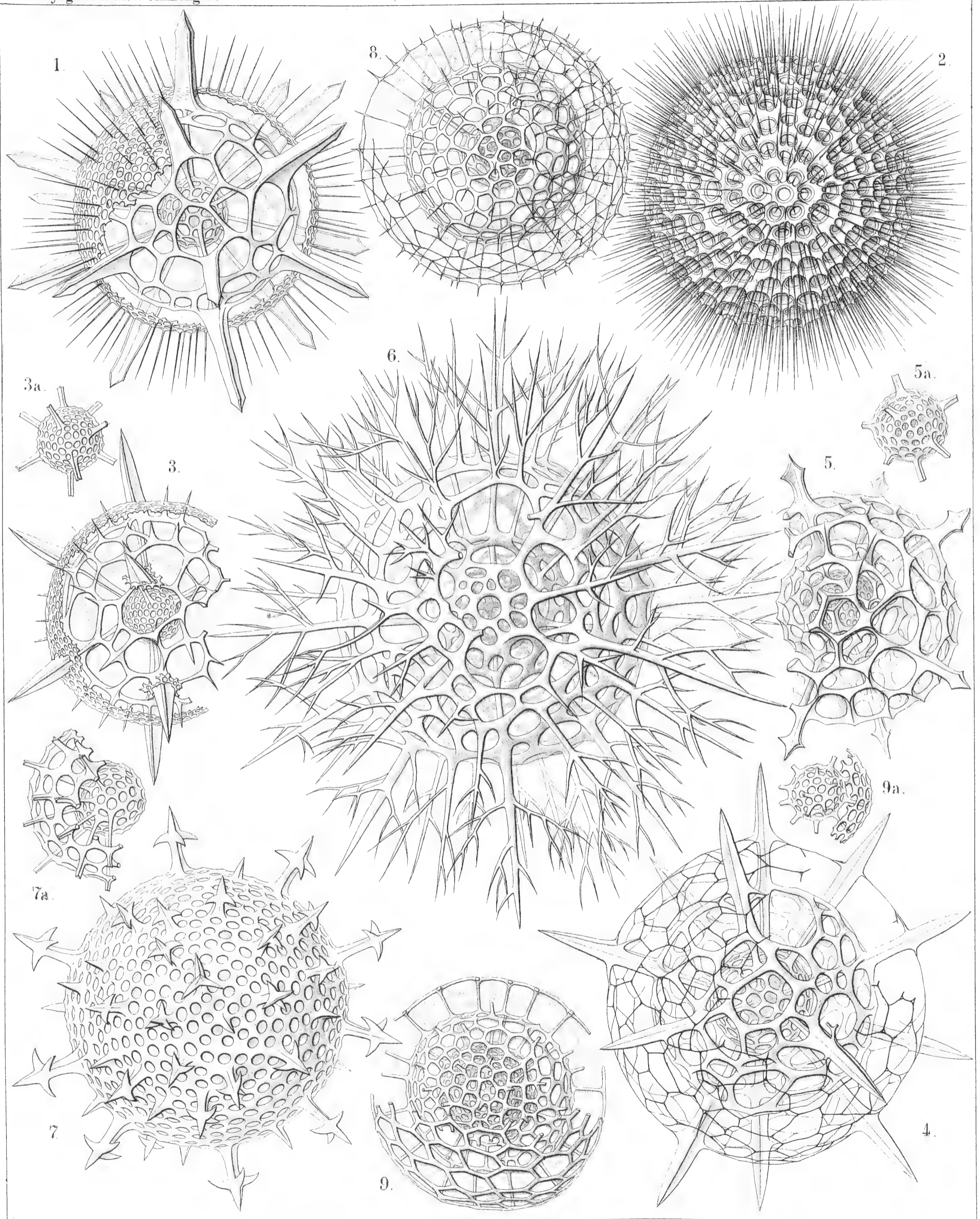
Order SPHÆROIDEA.

Families LIOSPHERIDA et ASTROSPHERIDA.

PLATE 30.

LIOSPHERIDA et ASTROSPHERIDA.

	Diam.	Page
Fig. 1. <i>Cromyechinus icosacanthus</i> , n. sp.,	× 300	263
Fig. 2. <i>Cromyomma villosum</i> , n. sp.,	× 300	261
Fig. 3. <i>Cromyechinus dodecacanthus</i> , n. sp.,	× 400	264
Fig. 3a. The innermost shells.		
Fig. 4. <i>Cromyomma circumtextum</i> , n. sp.,	× 300	262
Fig. 5. <i>Cromyomma mucronatum</i> , n. sp.,	× 200	263
Fig. 5a. The innermost shells.		
Fig. 6. <i>Cromyodrymus abietinus</i> , n. sp.,	× 300	265
Fig. 7. <i>Cromyodrymus quadricuspis</i> , n. sp.,	× 400	264
Fig. 7a. The inner concentric shells.		
Fig. 8. <i>Cromyomma perspicuum</i> , n. sp.,	× 300	262
Fig. 9. <i>Cromyosphæra quadruplex</i> , n. sp.,	× 300	84
Fig. 9a. The innermost shells.		



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E. Giltisch, Jena, Lithogr.

1-5. CROMYOMMA, 6. 7. CROMYODRYMUS, 8. 9. CROMYOSPHAERA.

PLATE 31.

Legion SPUMELLARIA.

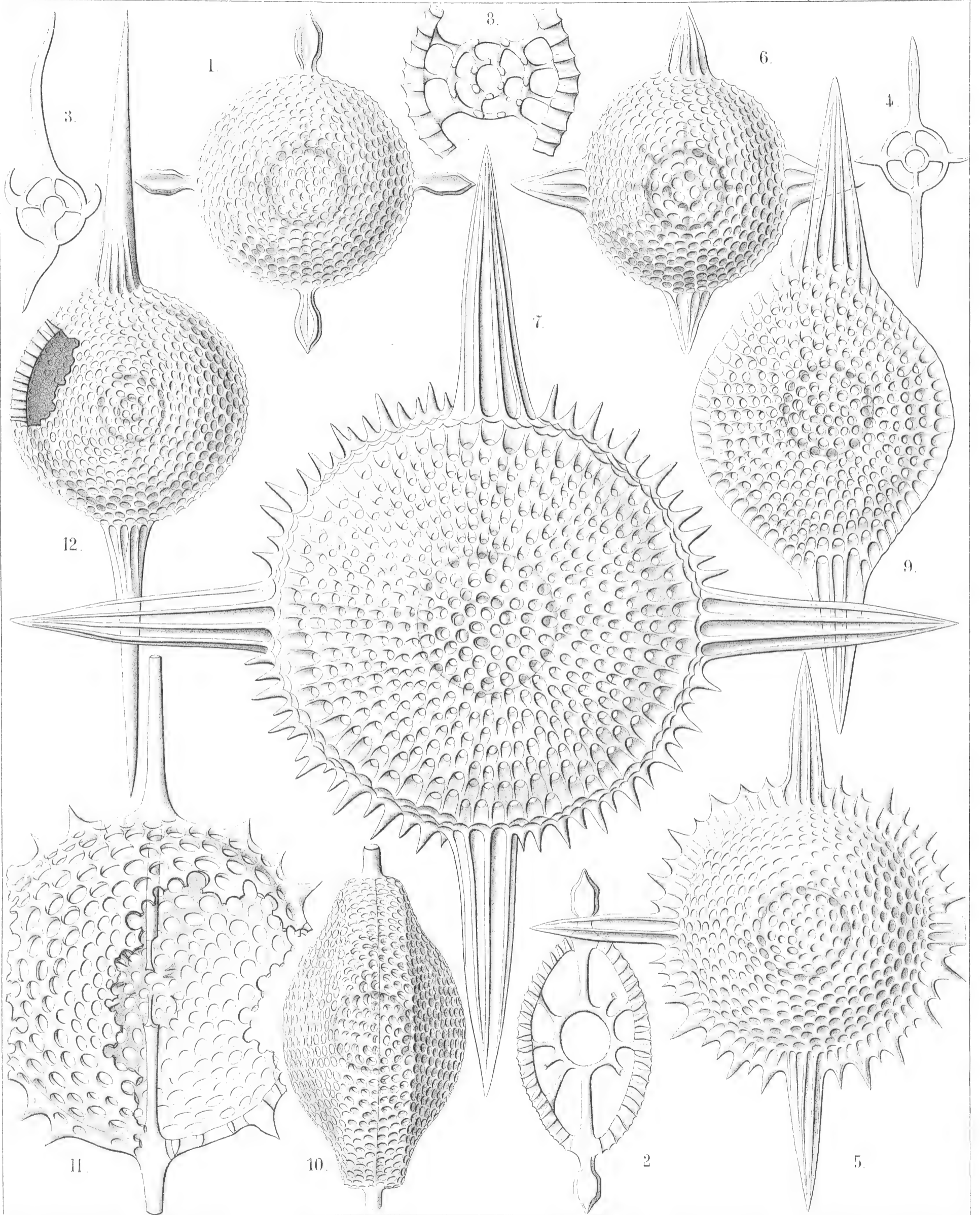
Order DISCOIDEA.

Families CENODISCIDA et PHACODISCIDA.

PLATE 31.

CENODISCIDA et PHACODISCIDA.

	Diam.	Page
Fig. 1. <i>Sethostaurus orthostaurus</i> , n. sp.,	× 300	433
Fig. 2. <i>Sethostaurus orthostaurus</i> , n. sp.,	× 300	433
Vertical section through the centrum.		
Fig. 3. <i>Sethostaurus recurvatus</i> , n. sp.,	× 100	434
Optical section through the equatorial plane.		
Fig. 4. <i>Sethostaurus rhombostaurus</i> , n. sp.,	× 100	434
Optical section through the equatorial plane.		
Fig. 5. <i>Sethostaurus cruciatus</i> , n. sp. (vel <i>Heliosaurus cruciatus</i>),	× 300	434
Fig. 6. <i>Phacostaurus oceanidum</i> , n. sp.,	× 300	435
Fig. 7. <i>Phacostaurus magnificus</i> , n. sp.,	× 400	436
Fig. 8. <i>Phacostaurus magnificus</i> , n. sp.,	× 200	436
Vertical section through the centrum.		
Fig. 9. <i>Sethostylus dictyliscus</i> , n. sp.,	× 400	428
Fig. 10. <i>Sethostylus dicylindrus</i> , n. sp.,	× 300	428
Marginal view.		
Fig. 11. <i>Stylodiscus endostylus</i> , n. sp. (vel <i>Sethostylus endostylus</i>),	× 300	413
Fig. 12. <i>Phacostylus amphistylus</i> , n. sp.,	× 300	430



1-4. SETHOSTAURUS, 5. HELIOSTAURUS, 6. PHACOSTAURUS,
7-8. ASTROSTAURUS, 9-11. SETHOSTYLUS, 12. PHACOSTYLUS.

PLATE 32.

Legion SPUMELLARIA.

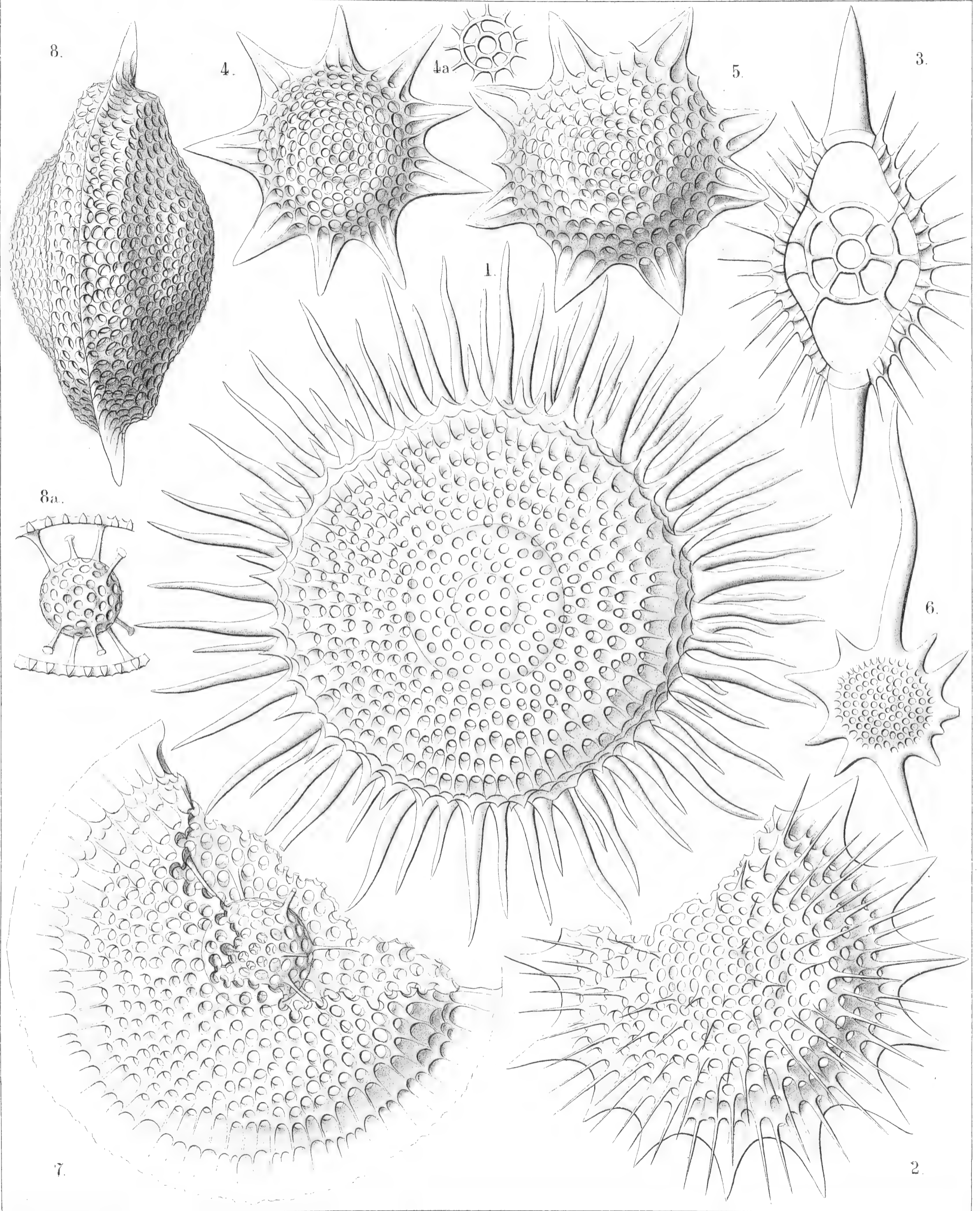
Order DISCOIDEA.

Family PHACODISCIDA.

PLATE 32.

PHACODISCIDA.

	Diam.	Page
Fig. 1. <i>Astrophacus solaris</i> , n. sp.,	× 300	453
Fig. 2. <i>Astrophacus apollinis</i> , n. sp.,	× 300	455
Fig. 3. <i>Astrophacus phacodiscus</i> , n. sp.,	× 300	454
Vertical section through the centrum.		
Fig. 4. <i>Astrosestrum ephyra</i> , n. sp.,	× 300	442
Fig. 4a. Transverse section through the double medullary shell,	× 300	442
Fig. 5. <i>Astrosestrum nauphanta</i> , n. sp.,	× 300	442
Fig. 6. <i>Phacostylus caudatus</i> , n. sp. (vel <i>Astrosestrum caudatum</i>),	× 200	431
Fig. 7. <i>Perizona scutella</i> , n. sp.,	× 400	427
Fig. 8. <i>Perizona pterygota</i> , n. sp.,	× 400	427
Fig. 8a ₁ . Medullary shells and radial beams connecting them with the disk,	× 300	427



1-3. ASTROPHACUS, 4-6. ASTROSESTRUM, 7, 8. PERIZONA.

PLATE 33.

Legion SPUMELLARIA.

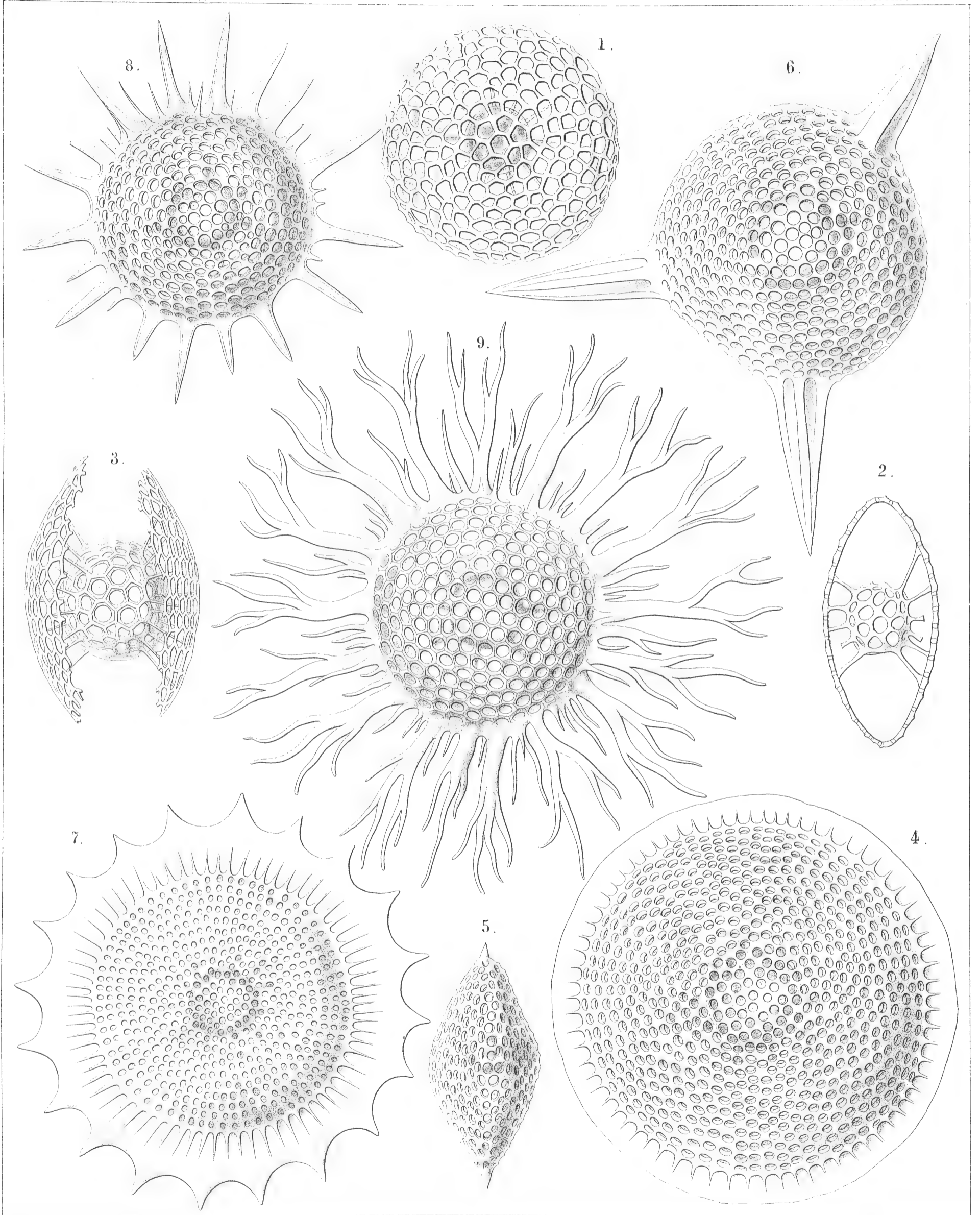
Order DISCOIDEA.

Family PHACODISCIDA.

PLATE 33.

PHACODISCIDA.

	Diam.	Page
Fig. 1. <i>Sethodiscus lenticula</i> , n. sp.,	× 300	423
Fig. 2. <i>Sethodiscus lenticula</i> , n. sp.,	× 300	423
Vertical section.		
Fig. 3. <i>Sethodiscus macrococcus</i> , n. sp.,	× 300	423
Young shell, not yet closed, seen from the margin.		
Fig. 4. <i>Periphæna cincta</i> , n. sp.,	× 400	426
Fig. 5. <i>Triactiscus tricuspis</i> , n. sp.,	× 300	432
Marginal view.		
Fig. 6. <i>Triactiscus tripyramis</i> , n. sp.,	× 400	432
Fig. 7. <i>Heliodiscus cingillum</i> , n. sp.,	× 300	448
Fig. 8. <i>Heliodiscus asteriscus</i> , n. sp.,	× 300	445
Fig. 9. <i>Heliodrymus dendrocyclus</i> , n. sp. (vel <i>Heliocladus dendrocyclus</i>),	× 300	451



1-3. SETHODISCUS, 4. PERIPHAENA, 5. 6. TRIACTIS,
7. 8. HELIODISCUS, 9. HELIOCLADUS.

PLATE 34.

Legion SPUMELLARIA.

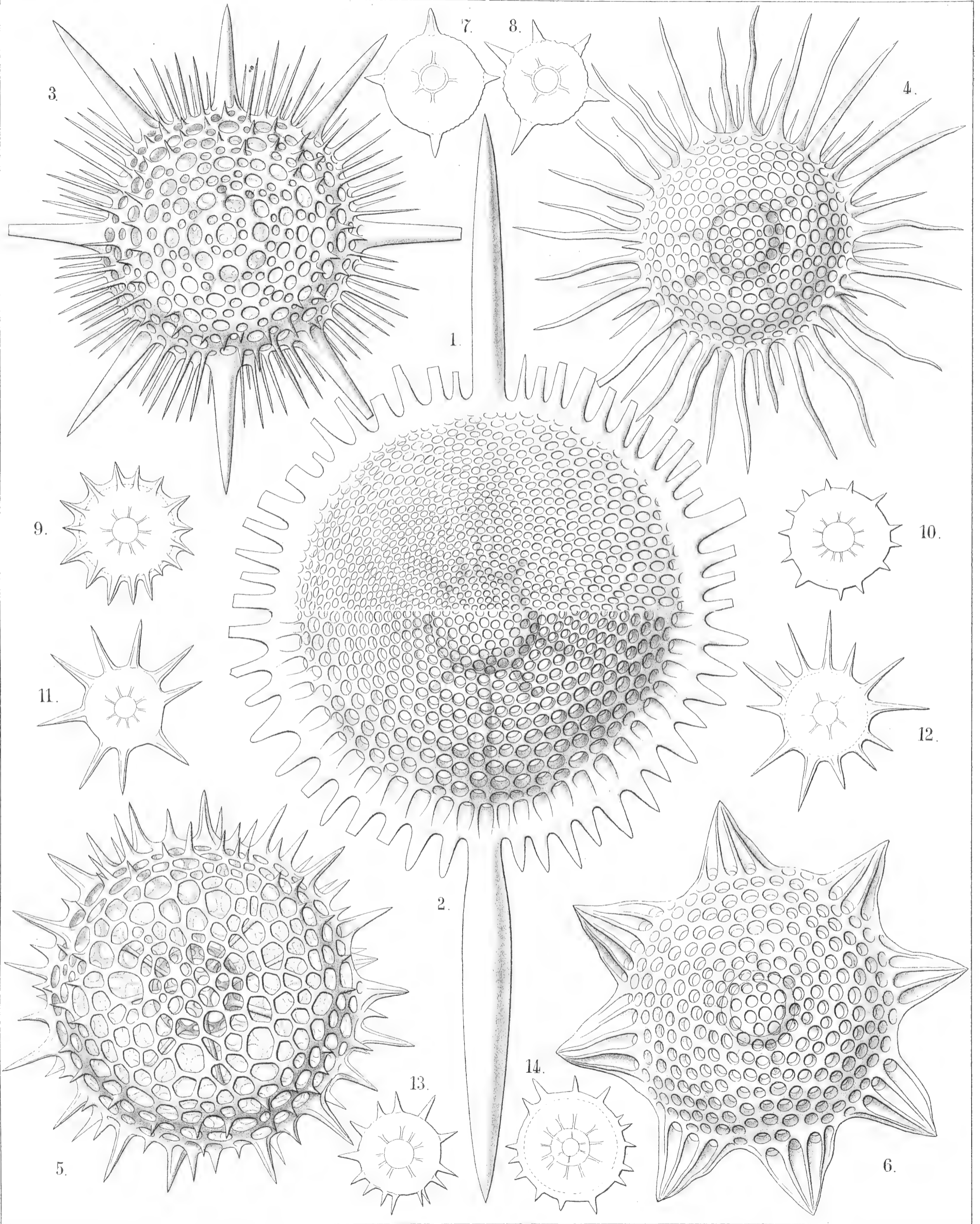
Order DISCOIDEA.

Family PHACODISCIDA.

PLATE 34.

PHACODISCIDA.

	Diam.	Page
Fig. 1. <i>Sethostylus dentatus</i> , n. sp. (vel <i>Heliostylus dentatus</i>), Upper half of the disk.	× 300	429
Fig. 2. <i>Sethostylus serratus</i> , n. sp. (vel <i>Heliostylus serratus</i>), Lower half of the disk.	× 300	429
Fig. 3. <i>Heliosestrum octonum</i> , n. sp.,	× 300	440
Fig. 4. <i>Heliodiscus solaster</i> , n. sp.,	× 300	447
Fig. 5. <i>Heliodiscus echiniscus</i> , n. sp.,	× 400	448
Fig. 6. <i>Heliosestrum medusinum</i> , n. sp.,	× 300	438
Fig. 7. <i>Sethostaurus conostaurus</i> , n. sp., Normal form with four regular spines.	× 100	433
Fig. 8. <i>Sethostaurus conostaurus</i> , n. sp., Abnormal form with five spines.	× 100	433
Fig. 9. <i>Heliodiscus marginatus</i> , n. sp.,	× 100	449
Fig. 10. <i>Heliodiscus trochiscus</i> , n. sp.,	× 100	445
Fig. 11. <i>Heliodiscus polymorphus</i> , n. sp.,	× 100	447
Fig. 12. <i>Heliodiscus polymorphus</i> , n. sp.,	× 100	447
Fig. 13. <i>Heliodiscus trochiscus</i> , n. sp.,	× 100	445
Fig. 14. <i>Astrophacus trochiscus</i> , n. sp.,	× 100	453



1 2. HELIOSTYLUS, 3-14. HELIODISCUS.

PLATE 35.

Legion SPUMELLARIA.

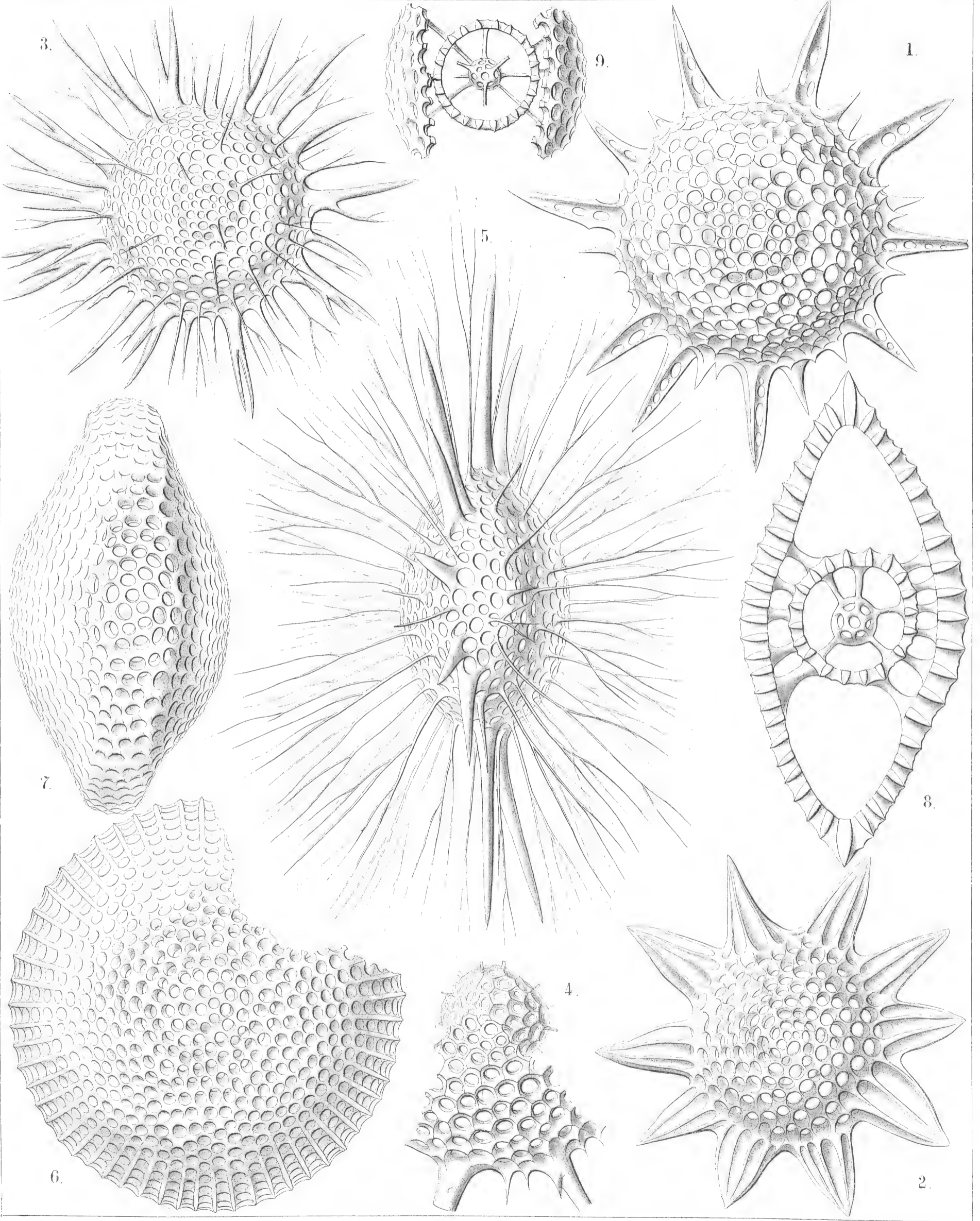
Order DISCOIDEA.

Family PHACODISCIDA.

PLATE 35.

PHACODISCIDA.

	Diam.	Page
Fig. 1. <i>Heliodiscus pertusus</i> , n. sp. (vel <i>Heliosestrum pertusum</i>), Irregular form with ten (instead of eight) larger latticed spines.	× 400	448
Fig. 2. <i>Heliodiscus glyphodon</i> , n. sp. (vel <i>Heliosestrum glyphodon</i>),	× 300	446
Fig. 3. <i>Heliodrymus ramosus</i> , n. sp.,	× 300	452
Fig. 4. <i>Heliodrymus ramosus</i> , n. sp., Medullary shell and a segment of the disk.	× 500	452
Fig. 5. <i>Heliodrymus viminalis</i> , n. sp., Marginal view.	× 400	452
Fig. 6. <i>Phacodiscus clypeus</i> , n. sp.,	× 400	425
Fig. 7. <i>Phacodiscus rotula</i> , n. sp., Marginal view.	× 400	424
Fig. 8. <i>Phacodiscus lentiformis</i> , n. sp., Vertical section nearly through the centre.	× 400	425
Fig. 9. <i>Phacodiscus clypeus</i> , n. sp., Vertical section nearly through the centre.	× 400	425



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1 2. HELIOSESTRUM 3.-5. HELIODRYMUS 6.-9. PHACODISCUS

PLATE 36.

Legion SPUMELLARIA.

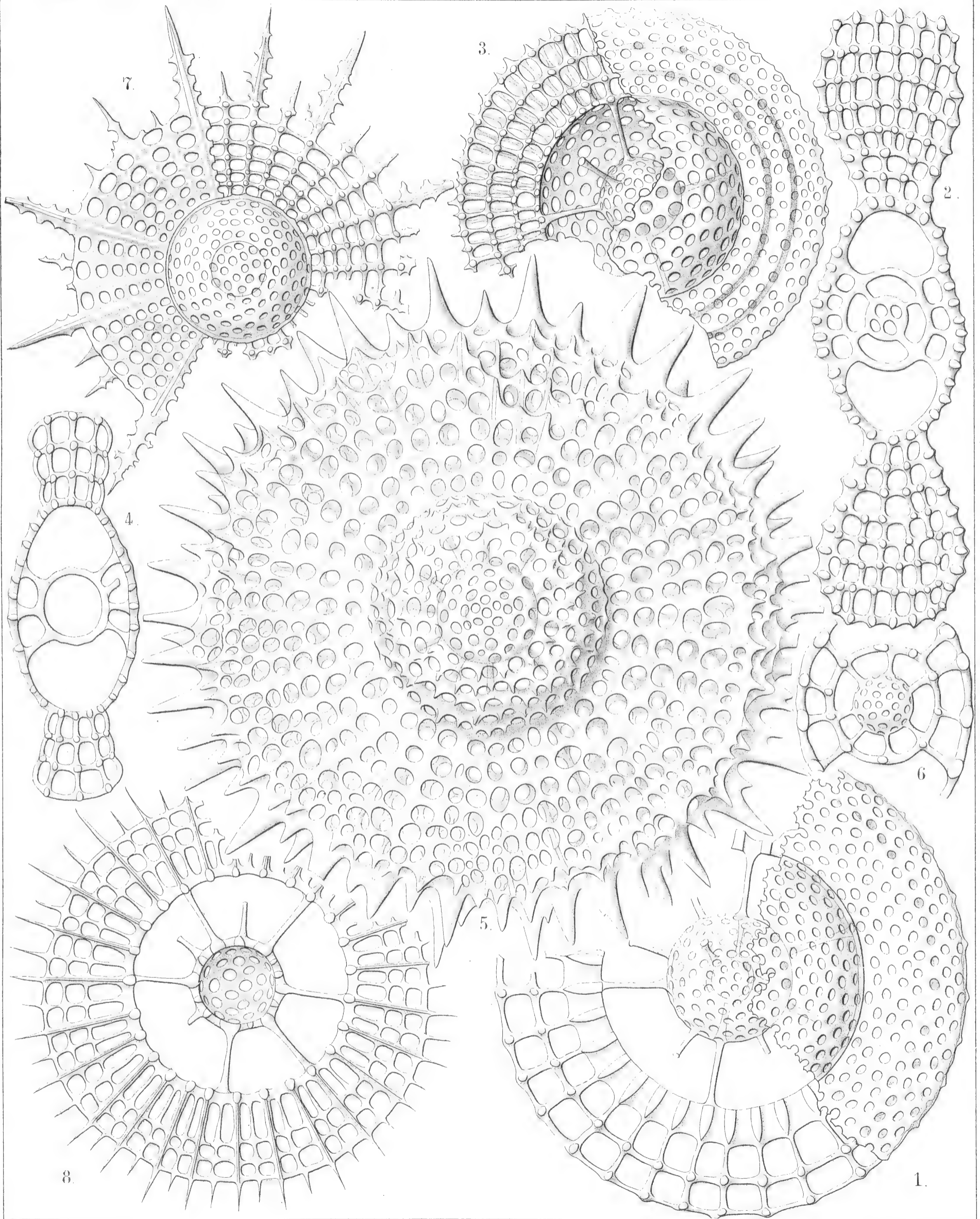
Order DISCOIDEA.

Family COCCODISCIDA.

PLATE 36.

COCCODISCIDA.

	Diam.	Page
Fig. 1. <i>Coccodiscus lamarckii</i> , n. sp.,	× 500	459
The left half of the figure represents a horizontal section through the peripheral shell, the right half a view of the surface.		
Fig. 2. <i>Coccodiscus goethei</i> , n. sp.,	× 500	461
Vertical section nearly through the centre.		
Fig. 3. <i>Lithocyclia lenticula</i> , n. sp.,	× 400	459
Fig. 4. <i>Lithocyclia lenticula</i> , n. sp.,	× 400	459
Vertical section through the centre.		
Fig. 5. <i>Coccocyclia helianthus</i> , n. sp.,	× 400	468
Fig. 6. <i>Coccocyclia helianthus</i> , n. sp.,	× 500	468
Vertical section through the outer medullary shell, showing the inner.		
Fig. 7. <i>Astrocyclia solaster</i> , n. sp.,	× 300	466
Fig. 8. <i>Astrocyclia heterocycla</i> , n. sp.,	× 400	468
Horizontal section through the equatorial plane.		



1. 2. COCCODISCUS 3. 4. LITHOCYCLIA 5. 6. COCCOCYCLIA
 7. 8. ASTROCYCLIA

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H. Giltseh, Jena, Lithogr.

PLATE 37.

Legion SPUMELLARIA.

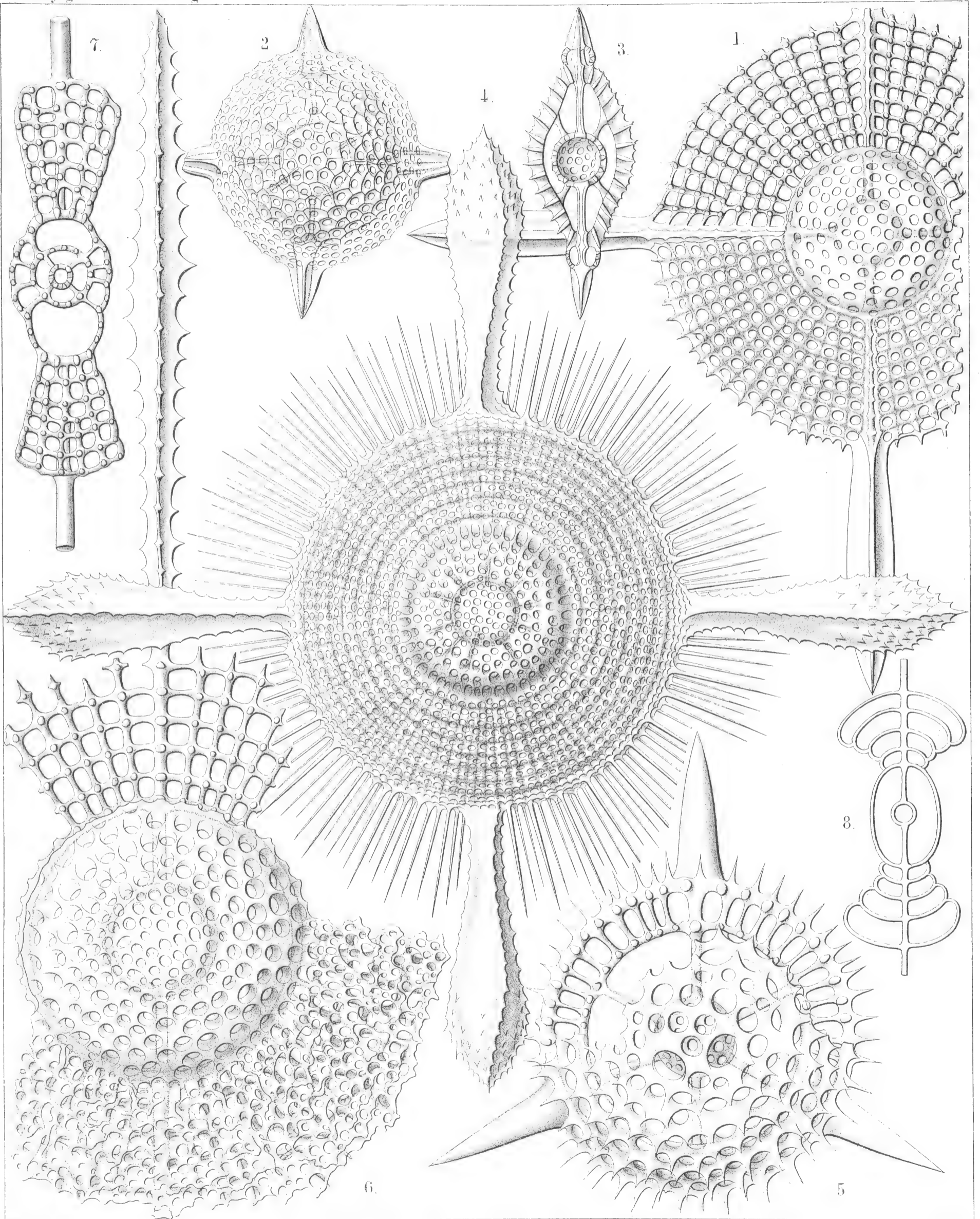
Order DISCOIDEA.

Family COCCODISCIDA.

PLATE 37.

COCCODISCIDA.

	Diam.	Page
Fig. 1. <i>Staurocycelia cruciata</i> , n. sp.,	× 400	465
Fig. 2. <i>Staurocycelia phacostaurus</i> , n. sp.,	× 300	465
Fig. 3. <i>Staurocycelia phacostaurus</i> , n. sp.,	× 300	465
Vertical section through the centre.		
Fig. 4. <i>Staurocycelia magniducis</i> , n. sp. (<i>Coccostaurus magniducis</i>),	× 300	466
Fig. 5. <i>Trigonocycelia triangularis</i> , n. sp.,	× 400	464
Fig. 6. <i>Stylocycelia prionacantha</i> , n. sp.,	× 500	462
A great part of the peripheral shell is removed.		
Fig. 7. <i>Amphicyclia amphistyla</i> , n. sp.,	× 300	464
Vertical section through the centre.		
Fig. 8. <i>Stylocycelia excavata</i> , n. sp.,	× 200	463
Vertical section through the centre.		



1-3. STAUROCYCLIA, 4. COCCOSTAURUS, 5. TRIGONOCYCLIA,
6-8. STYLOCYCLIA.

PLATE 38.

Legion SPUMELLARIA.

Order DISCOIDEA.

Family COCCODISCIDA.

PLATE 38.

COCCODISCIDA.

	Diam.	Page
Fig. 1. <i>Amphicyclia chronometra</i> , n. sp.,	× 400	463
Fig. 2. <i>Amphicyclia pachydiscus</i> , n. sp.,	× 500	464
Vertical section through the centre.		
Fig. 3. <i>Amphiactura amphibrachia</i> , n. sp.,	× 300	470
Fig. 4. <i>Amphiactura amphibrachia</i> , n. sp.,	× 150	470
Vertical section through the centre.		
Fig. 5. <i>Diplactura diploconus</i> , n. sp.,	× 300	470
Fig. 6. <i>Trigonactura triacantha</i> , n. sp.,	× 200	472
Fig. 7. <i>Trigonactura triacantha</i> , n. sp.,	× 400	472
Vertical section nearly through the centre.		
Fig. 8. <i>Hymenactura archimedis</i> , n. sp.,	× 300	473
Fig. 9. <i>Hymenactura copernici</i> , n. sp.,	× 200	475

PLATE 39.

Legion SPUMELLARIA.

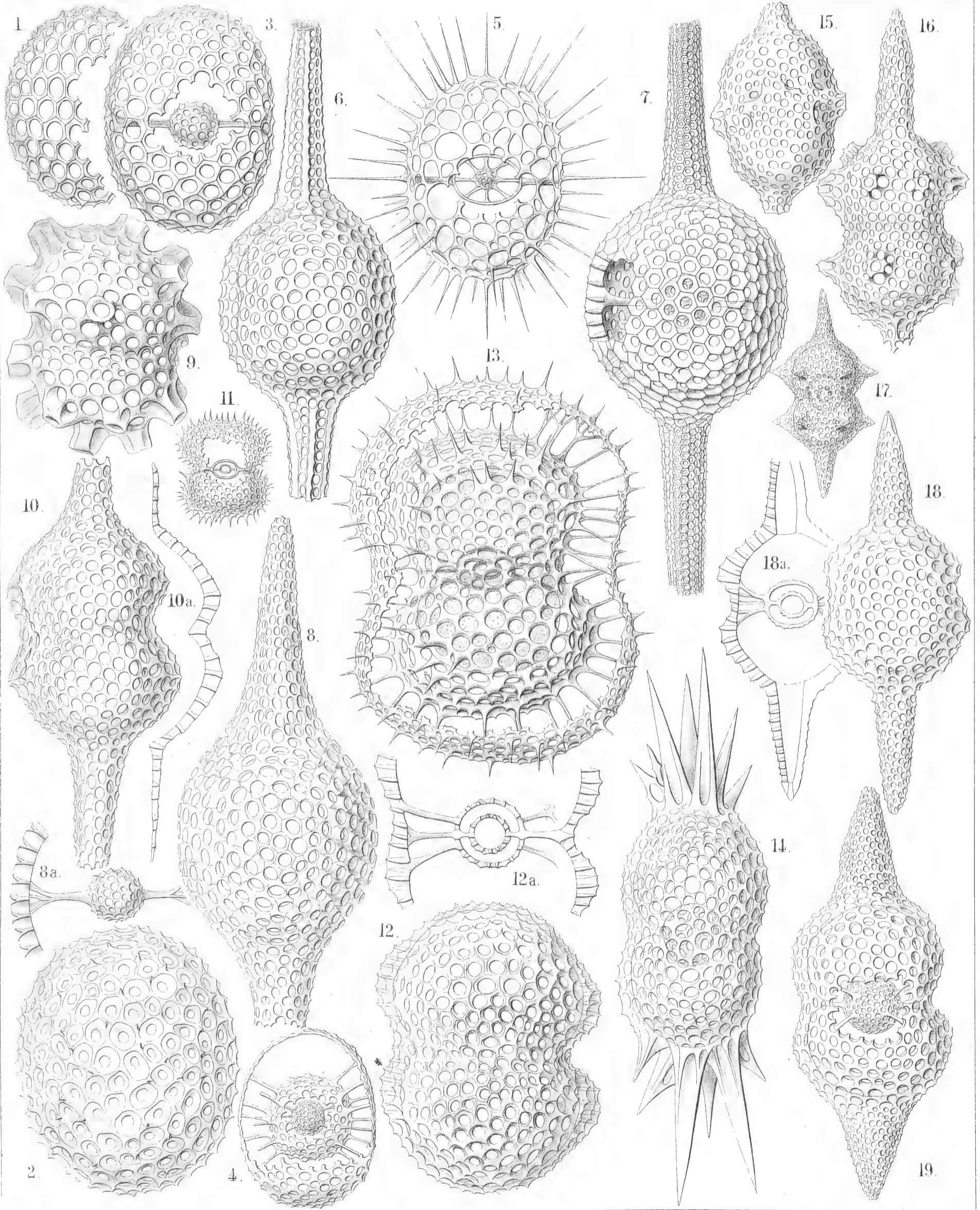
Order PRUNOIDEA.

Families ELLIPSIDA, DRUPPULIDA, ARTISCIDA et CYPHINIDA.

PLATE 39.

ELLIPSIDA, DRUPPULIDA, ARTISCIDA et CYPHINIDA.

	Diam.	Page
Fig. 1. <i>Cenellipsis faceta</i> , n. sp. (vel <i>Ellipsis faceta</i>),	× 300	291
Fig. 2. <i>Cenellipsis infundibulum</i> , n. sp. (vel <i>Ellipsis infundibulum</i>),	× 300	292
Fig. 3. <i>Druppula pandanus</i> , n. sp. (vel <i>Coccymelium pandanus</i>),	× 300	308
Fig. 4. <i>Prunulum coccymelium</i> , n. sp. (vel <i>Coccymelium prunulum</i>),	× 300	313
Fig. 5. <i>Prunocarpus artocarpium</i> , n. sp. (vel <i>Artocarpium indicum</i>),	× 300	316
Fig. 6. <i>Pipettella prismatica</i> , n. sp.,	× 300	305
Fig. 7. <i>Pipetta tuba</i> , n. sp.,	× 300	337
Fig. 8. <i>Pipetta fusus</i> , n. sp.,	× 300	337
Fig. 8a. The enclosed medullary shell.		
Fig. 9. <i>Artiscus nodosus</i> , n. sp. (vel <i>Artidium nodosum</i>),	× 400	356
Fig. 10. <i>Cannartus violina</i> , n. sp.,	× 300	358
Fig. 11. <i>Cyphonium cribellum</i> , n. sp.,	× 200	365
Fig. 12. <i>Cyphonium virgineum</i> , n. sp. (vel <i>Ommatospyris virginea</i>),	× 400	363
Fig. 12a. Vertical section through the double medullary shell.		
Fig. 13. <i>Cypassis puella</i> , n. sp. (vel <i>Didymospyris puella</i>),	× 400	367
The enclosed central capsule is visible.		
Fig. 14. <i>Cyphinus amphiphophus</i> , n. sp.,	× 300	370
Fig. 15. <i>Pipettaria tubaria</i> , n. sp.,	× 300	339
Fig. 16. <i>Cannartidium mammiferum</i> , n. sp.,	× 300	375
Fig. 17. <i>Cannartidium mastophorum</i> , n. sp.,	× 150	375
Fig. 18. <i>Cannartidium bicinctum</i> , n. sp.,	× 300	374
Fig. 18a. Vertical section through the main axis.		
Fig. 19. <i>Cannartiscus amphiconiscus</i> , n. sp.,	× 300	372



H. Haeckel and A. Giltisch, Del.

E. Giltisch, Jena, lithogr.

1, 2. ELLIPSIS, 3, 4. COCCYMELIUM, 5. ARTOCARPIUM, 6. PIPETTELLA,
 7, 8. PIPETTA, 9. ARTIDIUM, 10. CANNARTUS, 11, 12. OMMATOSPYRIS,
 13. DIDYMOSPYRIS, 14. CYPHINIDIUM, 15-19. CANNARTIDIUM.

PLATE 40.

Legion SPUMELLARIA.

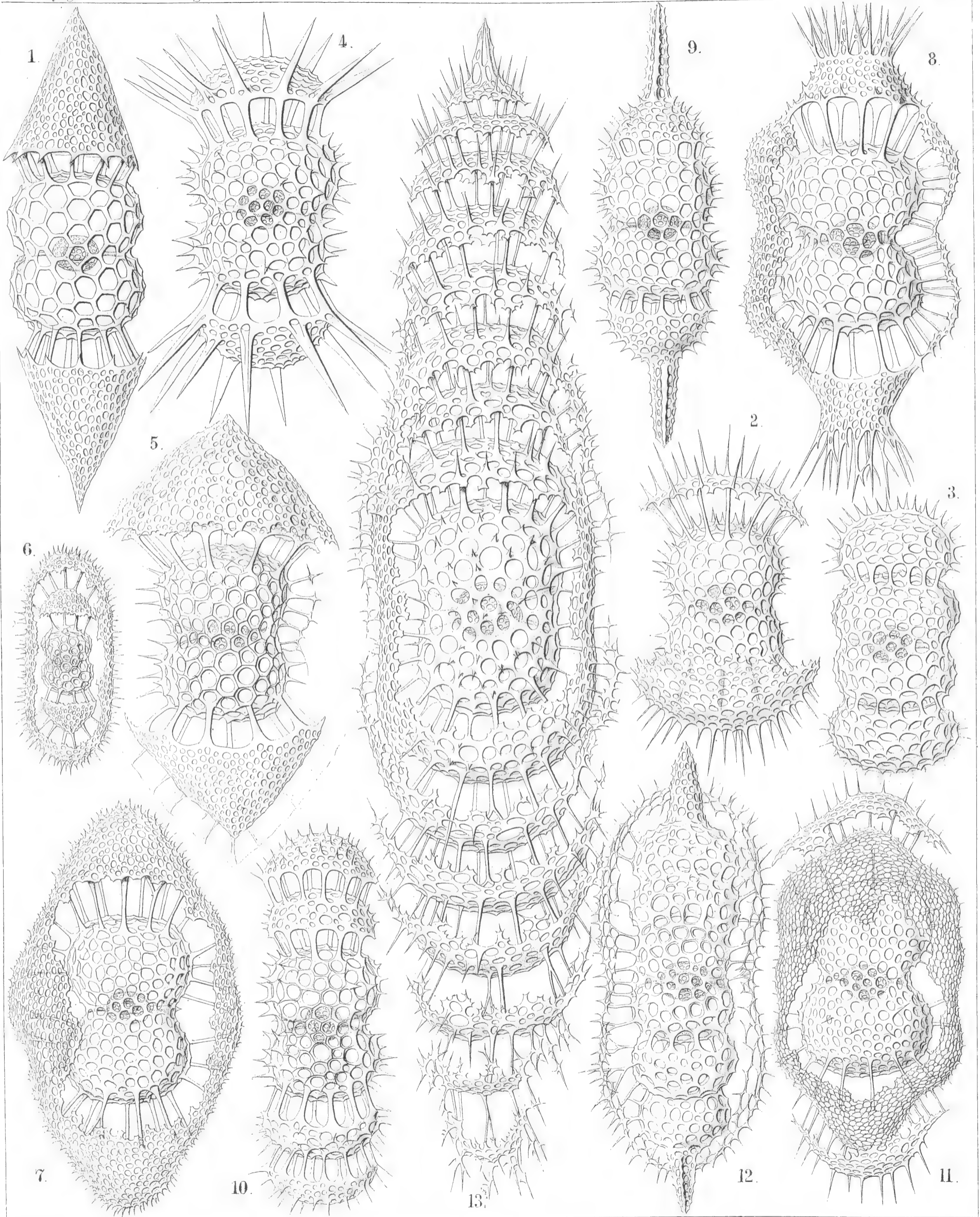
Order PRUNOIDEA.

Families PANARTIDA et ZYGARTIDA.

PLATE 40.

PANARTIDA et ZYGARTIDA.

	Diam.	Page
Fig. 1. <i>Panartus diploconus</i> , n. sp.,	× 300	379
Fig. 2. <i>Panartus pluteus</i> , n. sp.,	× 300	382
Fig. 3. <i>Panartus tetrathalamus</i> , n. sp.,	× 300	378
Fig. 4. <i>Panicium coronatum</i> , n. sp. (vel <i>Panartidium coronatum</i>),	× 300	386
Fig. 5. <i>Peripanartus amphiconus</i> , n. sp.,	× 300	383
Fig. 6. <i>Peripanartus cylindrus</i> , n. sp.,	× 150	384
Fig. 7. <i>Peripanartus attractus</i> , n. sp.,	× 300	384
Fig. 8. <i>Peripanicium ampicorona</i> , n. sp.,	× 300	387
Fig. 9. <i>Panarium tubularium</i> , n. sp.,	× 300	390
Fig. 10. <i>Ommatocampe nereides</i> , n. sp.,	× 300	394
Fig. 11. <i>Cyphocolpus virginis</i> , n. sp. (vel <i>Zygartus virginis</i>),	× 300	369
Fig. 12. <i>Desmartus larvalis</i> , n. sp. (vel <i>Zygartus larvalis</i>),	× 300	398
Fig. 13. <i>Zygartus chrysalis</i> , n. sp. (vel <i>Zygocampe chrysalis</i>),	× 400	401



1-3. PANARTUS, 4. PANARTIDIUM, 5.-8. PERIPANARTUS,
9. PANARIUM, 10. OMMATOCAMPE, 11-13 ZYGARTUS.

PLATE 41.

Legion SPUMELLARIA.

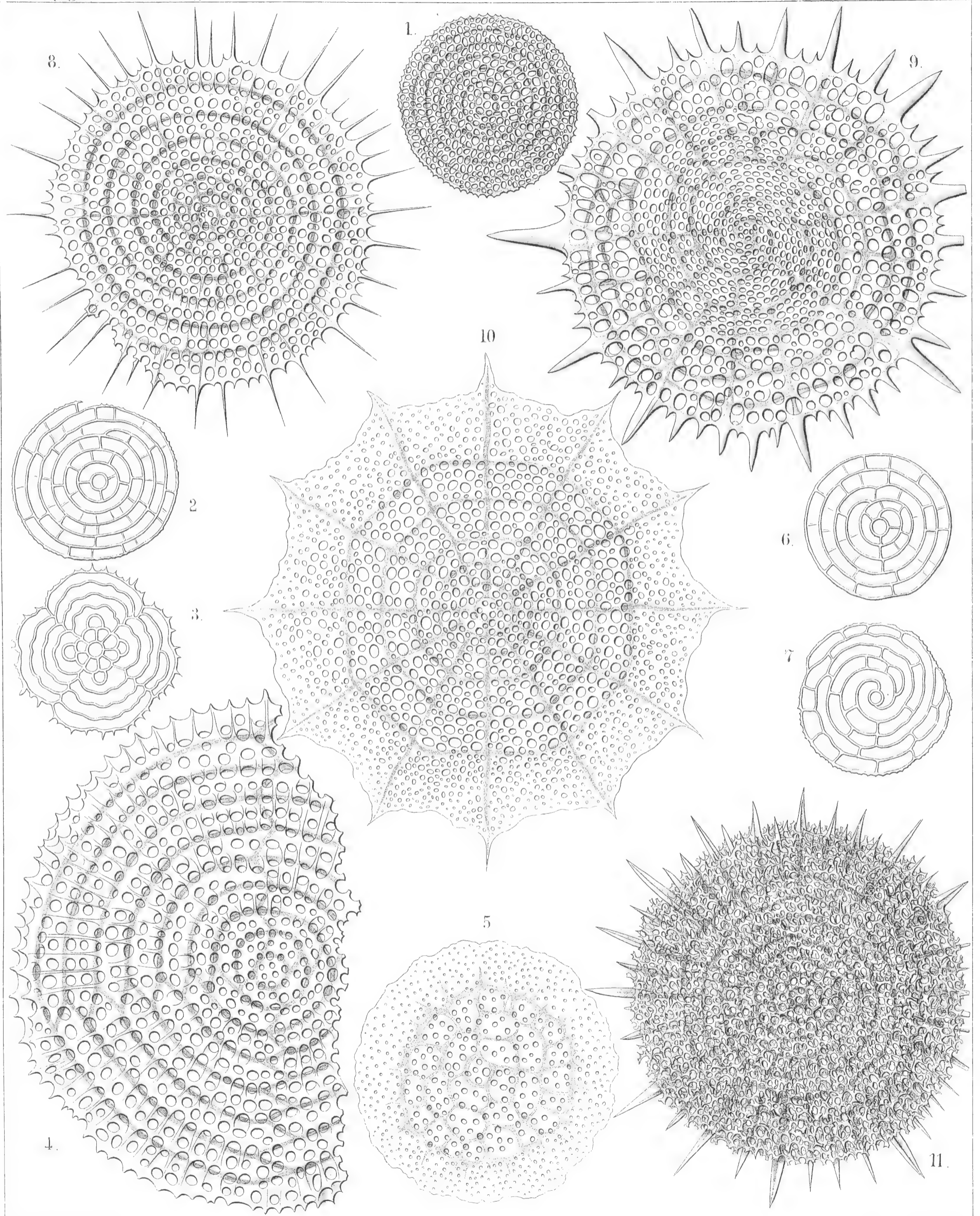
Order DISCOIDEA.

Families PORODISCIDA et SPONGODISCIDA.

PLATE 41.

PORODISCIDA et SPONGODISCIDA.

				Diam.	Page
Fig. 1.	<i>Porodiscus flustrella</i> , n. sp.,	.	.	× 300	493
Fig. 2.	<i>Porodiscus perispira</i> , n. sp.,	.	.	× 200	495
	The rings alone (equatorial section).				
Fig. 3.	<i>Porodiscus quadrigatus</i> , n. sp.,	.	.	× 200	494
	The rings alone (equatorial section).				
Fig. 4.	<i>Porodiscus semispiralis</i> , n. sp.,	.	.	× 500	497
Fig. 5.	<i>Perichlamyidium saturnus</i> , n. sp.,	.	.	× 300	499
Fig. 6.	<i>Porodiscus centrospira</i> , n. sp. (vel <i>Perispongidium centrospira</i>),			× 200	495
	The rings alone (equatorial section).				
Fig. 7.	<i>Porodiscus irregularis</i> , n. sp. (vel <i>Perispongidium irregulare</i>),			× 200	498
	The rings alone (equatorial section).				
Fig. 8.	<i>Stylodictya heliospira</i> , n. sp.,	.	.	× 400	512
Fig. 9.	<i>Stylodictya centrospira</i> , n. sp.,	.	.	× 400	512
Fig. 10.	<i>Stylochlamyidium asteriscus</i> , n. sp.,	.	.	× 400	514
7 Fig. 11.	<i>Stylotrochus geddesii</i> , n. sp.,	.	.	× 300	585



1-4. PORODISCUS, 5 PERICHLAMYDIUM, 6, 7. PERISPONGIDIUM,
8, 9. STYLODICTYA, 10. STYLOCHLAMYDIUM, 11. STYLOSPONGIDIUM.

PLATE 42.

Legion SPUMELLARIA.

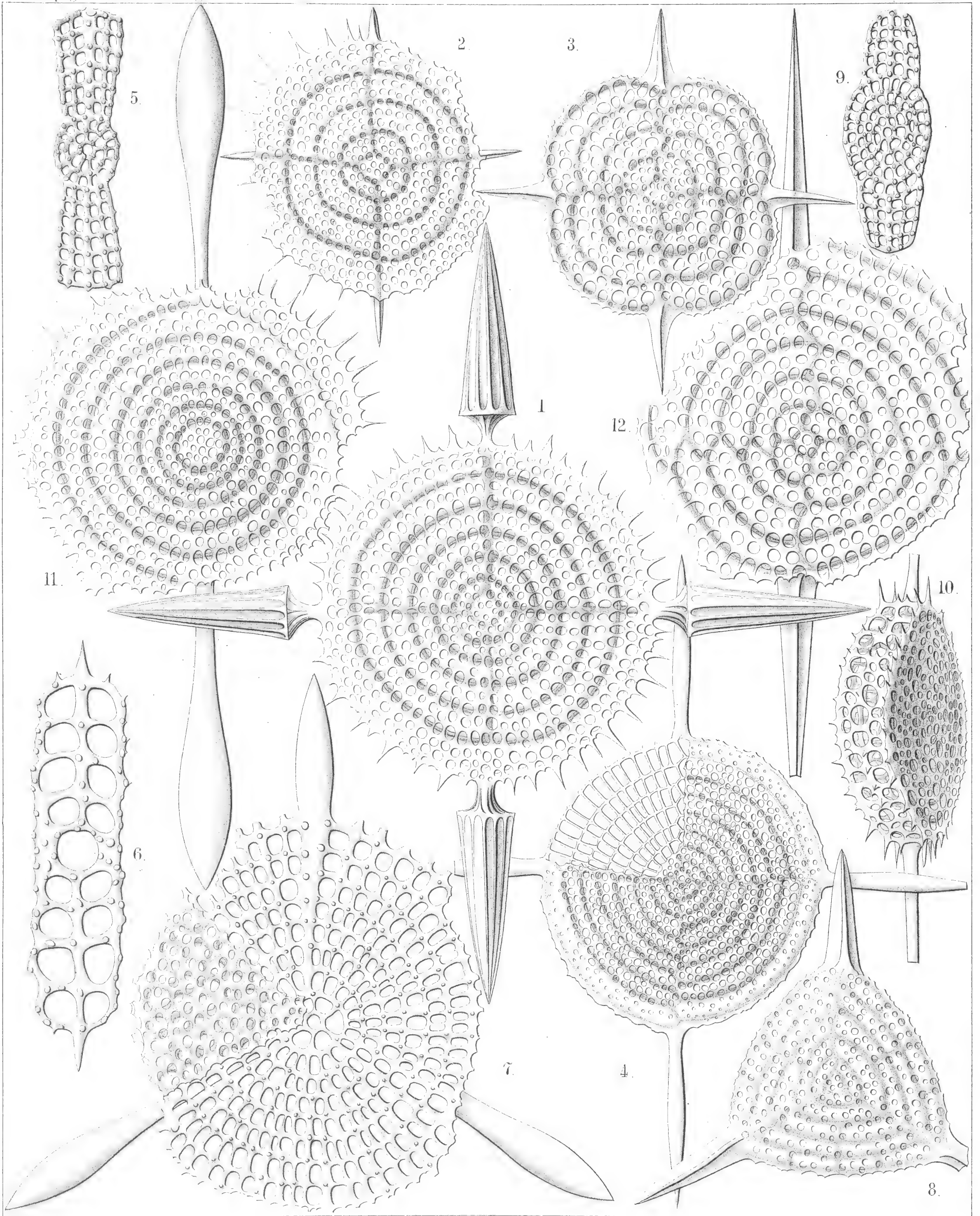
Order DISCOIDEA.

Family PORODISCIDA.

PLATE 42.

PORODISCIDA.

	Diam.	Page
Fig. 1. <i>Staurodictya elegans</i> , n. sp.,	× 500	507
Fig. 2. <i>Staurodictya ciliata</i> , n. sp.,	× 400	506
Fig. 3. <i>Staurodictya medusa</i> , n. sp.,	× 400	506
Fig. 4. <i>Staurodictya cruciata</i> , n. sp.,	× 300	507
Fig. 5. <i>Staurodictya cruciata</i> , n. sp.,	× 300	507
Vertical section through the disk.		
Fig. 6. <i>Staurodictya grandis</i> , n. sp.,	× 300	508
Vertical section through the disk.		
Fig. 7. <i>Tripodictya triacantha</i> , n. sp.,	× 400	505
Fig. 8. <i>Tripodictya trigonaria</i> , n. sp.,	× 400	505
Fig. 9. <i>Tripodictya tribelonica</i> , n. sp.,	× 400	505
Vertical section through the disk.		
Fig. 10. <i>Xiphodictya amphibelonica</i> , n. sp.,	× 300	503
Marginal view.		
Fig. 11. <i>Xiphodictya amphirrhopalica</i> , n. sp.,	× 400	504
Fig. 12. <i>Xiphodictya staurospira</i> , n. sp.,	× 500	504



H. Focke and A. Gilsch Del.

E. Gilsch, Jena Lithogr.

1-6. STAURODICTYA, 7-9. TRIPODICTYA, 10-12. XIPHODICTYA.

PLATE 43.

Legion SPUMELLARIA.

Order DISCOIDEA.

Family PORODISCIDA.

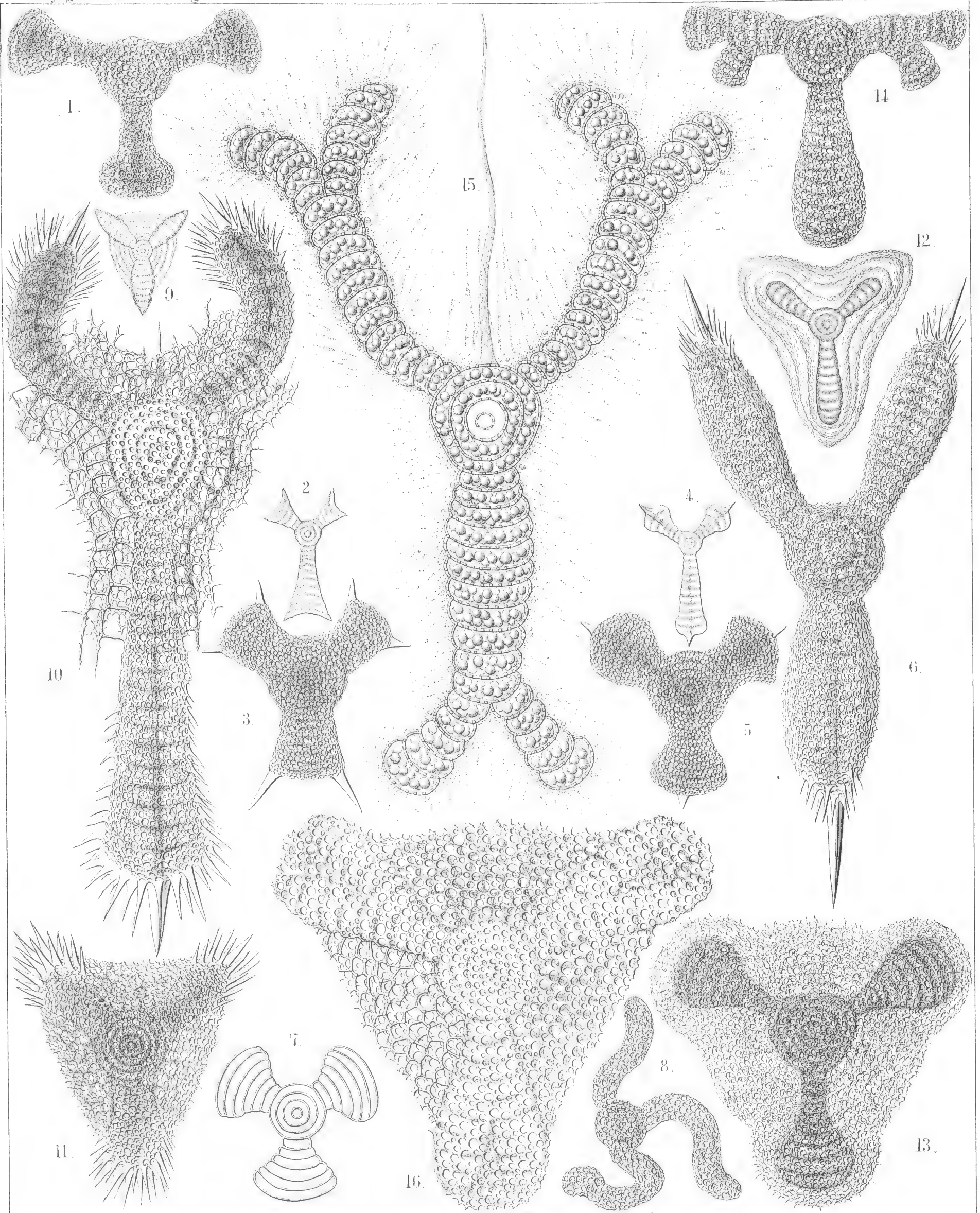
PLATE 43.

PORODISCIDA.

	Diam.	Page
Fig. 1. <i>Rhopalastrum malleus</i> , n. sp.,	× 100	527
Fig. 2. <i>Rhopalastrum ypsilinum</i> , n. sp.,	× 50	528
Fig. 3. <i>Rhopalastrum hexaceros</i> , n. sp.,	× 100	529
Fig. 4. <i>Rhopalastrum triceros</i> , n. sp.,	× 50	529
Fig. 5. <i>Rhopalastrum trispinosum</i> , n. sp. (vel <i>Dictyastrum trispinosum</i>),	× 150	525
Fig. 6. <i>Rhopalastrum arcticum</i> , n. sp.,	× 300	529
Fig. 7. <i>Rhopalastrum hexagonum</i> , n. sp. (vel <i>Dictyastrum hexagonum</i>),	× 100	525
Fig. 8. <i>Rhopalastrum irregulare</i> , n. sp.,	× 100	528
Fig. 9. <i>Euchitonia tanceolata</i> , n. sp.,	× 80	534
Fig. 10. <i>Euchitonia carcinus</i> , n. sp.,	× 300	535
Fig. 11. <i>Euchitonia echinata</i> , n. sp.,	× 120	536
Fig. 12. <i>Euchitonia stohrii</i> , n. sp.,	× 100	534
Fig. 13. <i>Hymeniastrum euclidis</i> , n. sp.,	× 200	531
Fig. 14. <i>Chitonastrum jugatum</i> , n. sp.,	× 200	537
Fig. 15. <i>Chitonastrum lyra</i> , n. sp.,	× 500	538

A living specimen observed. The entire shell is enveloped by the calymma and surrounded by radiating pseudopodia (drawn much too short). Between the two paired arms arises a large "sarcode-flagellum." The central chamber and the first enveloping ring are filled by the clear nucleus; the other rings and all the chambers of the arms contain numerous pink oil-globules.

Fig. 16. <i>Trigonastrum regulare</i> , n. sp. (vel <i>Chitonastrum regulare</i>),	× 200	539
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H. Waackel and A. Giltch Del.

B. Giltch, Jena, Lithogr.

1-8. RHOPALASTRUM, 9-11. HYMENIASTRUM, 12. 13. EUCHITONIA, 14. 15. DICTYASTRUM, 16. CHITONASTRUM.

PLATE 44.

Legion SPUMELLARIA.

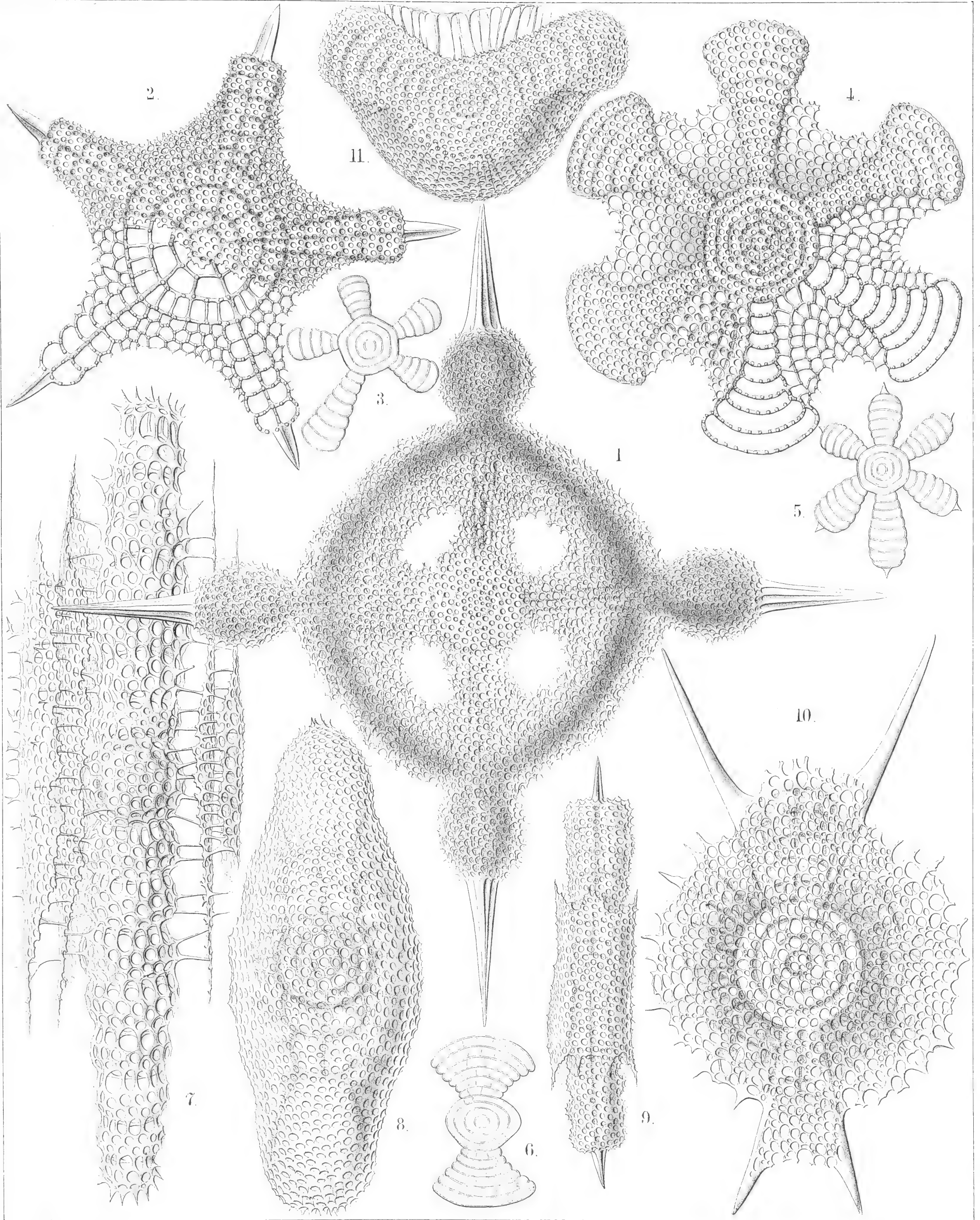
Order DISCOIDEA.

Family PORODISCIDA.

PLATE 44.

PORODISCIDA.

	Diam.	Page
Fig. 1. <i>Stephanastrum capitatum</i> , n. sp.,	× 200	549
Fig. 2. <i>Pentinastrum asteriscus</i> , n. sp.,	× 300	557
Fig. 3. <i>Pentalastrum ophidiaster</i> , n. sp.,	× 100	557
Fig. 4. <i>Hexinastrum geryonidum</i> , n. sp.,	× 300	560
Fig. 5. <i>Hexalastrum orchidaceum</i> , n. sp.,	× 50	560
Fig. 6. <i>Amphibrachium dilatatum</i> , n. sp.,	× 50	517
Fig. 7. <i>Amphymenium zygartus</i> , n. sp.,	× 400	520
Fig. 8. <i>Amphymenium pupula</i> , n. sp.,	× 300	519
Fig. 9. <i>Amphymenium amphistylum</i> , n. sp.,	× 200	520
Fig. 10. <i>Amphicraspedum murrayanum</i> , n. sp.,	× 300	523
Fig. 11. <i>Amphymenium monstrosum</i> , n. sp.,	× 300	520



H. Harckel and A. Giltch Del.

H. Giltch, Jena, lithogr.

1 STEPHANASTRUM, 2. 3. PENTALASTRUM, 4. 5. HEXALASTRUM,
6. AMPHIBRACHIUM, 7-11. AMPHYMENIUM.

PLATE 45.

Legion SPUMELLARIA.

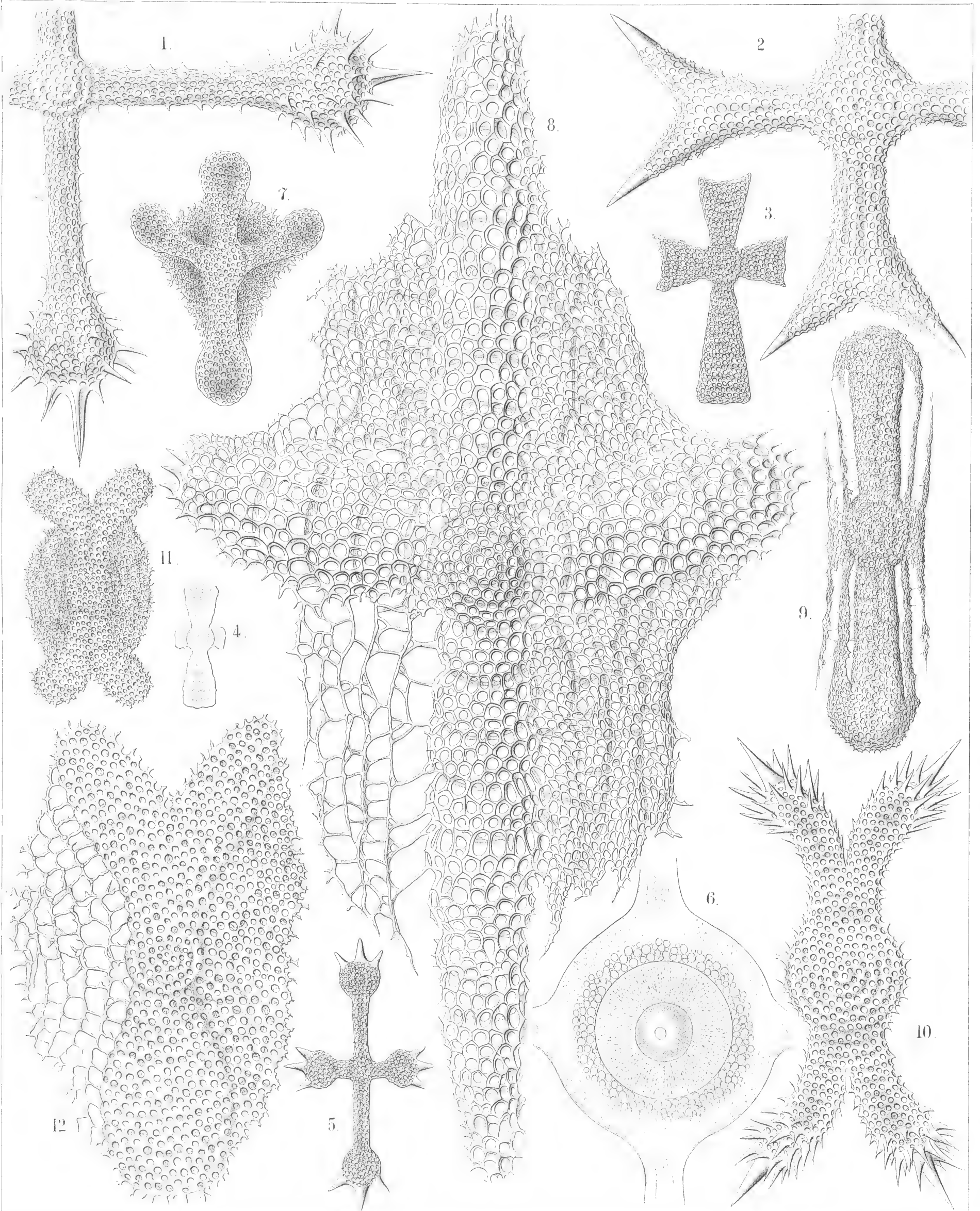
Order DISCOIDEA.

Family PORODISCIDA.

PLATE 45.

PORODISCIDA.

	Diam.	Page
Fig. 1. <i>Stauralastrum rhopalophorum</i> , n. sp.,	× 200	541
Fig. 2. <i>Dicranastrum cornutum</i> , n. sp.,	× 200	551
Fig. 3. <i>Hagiastrum mosis</i> , n. sp.,	× 100	543
Fig. 4. <i>Hagiastrum mosis</i> , n. sp., Lateral view, from the edge.	× 50	543
Fig. 5. <i>Hagiastrum buddhæ</i> , n. sp.,	× 50	542
Fig. 6. <i>Stauralastrum cruciforme</i> , n. sp. (in glycerine), The central capsule contains a large central nucleus with nucleolus, and is surrounded by the jelly calymma and numerous small zooxanthellæ. The endoplasm is radially striped.	× 500	540
Fig. 7. <i>Tesserastrum democriti</i> , n. sp.,	× 100	548
Fig. 8. <i>Tesserastrum straussii</i> , n. sp.,	× 500	547
Fig. 9. <i>Tesserastrum brunonis</i> , n. sp., Disk seen from the edge.	× 200	548
Fig. 10. <i>Amphirhopalum echinatum</i> , n. sp.,	× 300	522
Fig. 11. <i>Amphicraspedum maclagganum</i> , n. sp.,	× 100	523
Fig. 12. <i>Amphicraspedum wyvilleanum</i> , n. sp.,	× 300	523



1-6. HAGIASTRUM, 7-9. HISTIASTRUM, 10. AMPHIRHOPALUM,
11. 12. AMPHICRASPEDUM.

PLATE 46.

Legion SPUMELLARIA.

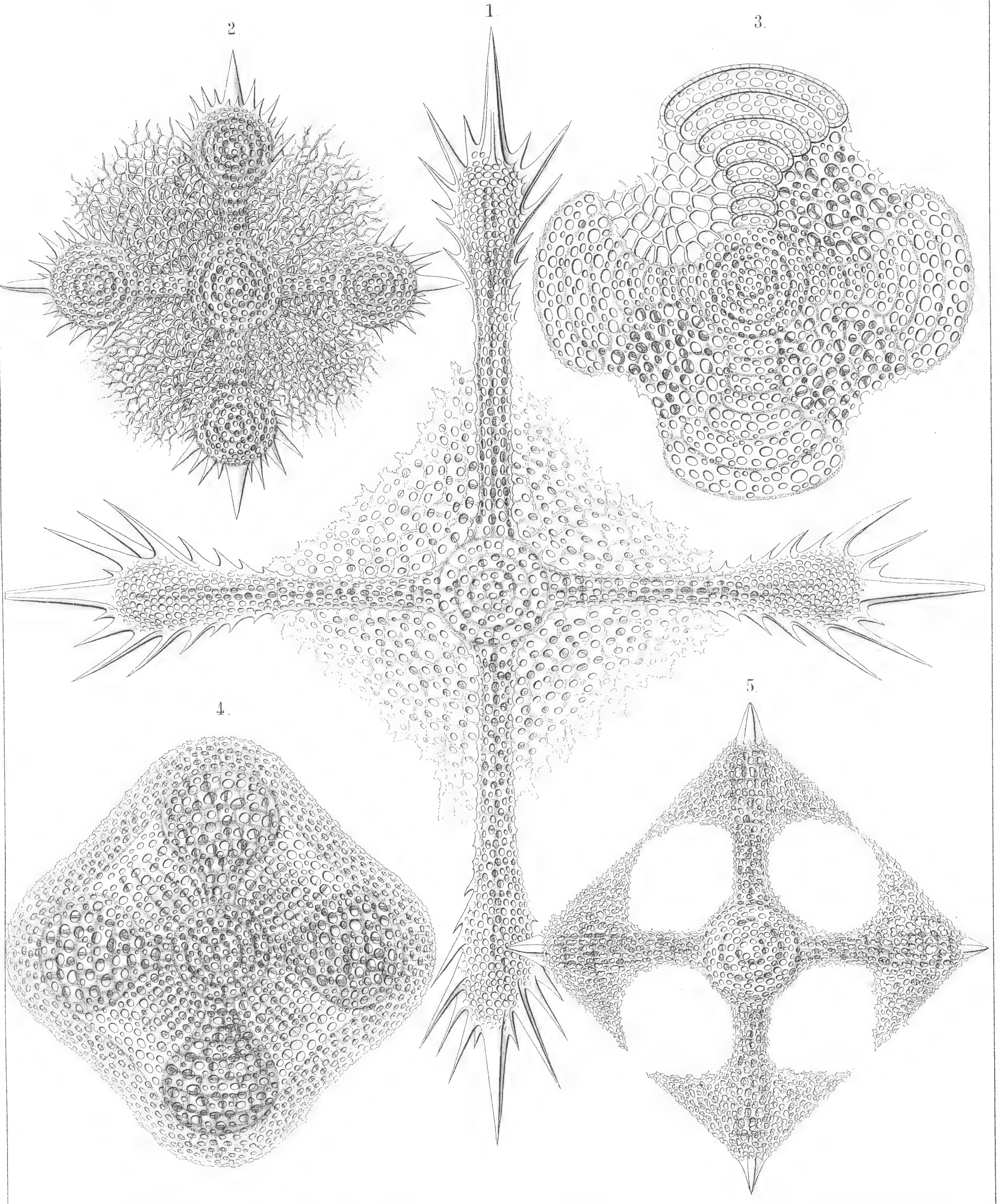
Order DISCOIDEA.

Family PORODISCIDA.

PLATE 46.

PORODISCIDA.

	Diam.	Page
Fig. 1. <i>Histiastrum boseanum</i> , n. sp.,	× 400	546
Fig. 2. <i>Histiastrum pentadiscus</i> , n. sp.,	× 200	546
Fig. 3. <i>Histiastrum quadrigatum</i> , n. sp.,	× 300	544
Fig. 4. <i>Histiastrum velatum</i> , n. sp.,	× 200	545
Fig. 5. <i>Stephanastrum quadratum</i> , n. sp.,	× 200	549



H. Haeckel and A. Giltisch Del.

E. Giltisch, Jena, Lithogr.

1-3. HISTIASTRUM, 4. DICTYASTRUM, 5. STEPHANASTRUM,

PLATE 47.

Legion SPUMELLARIA.

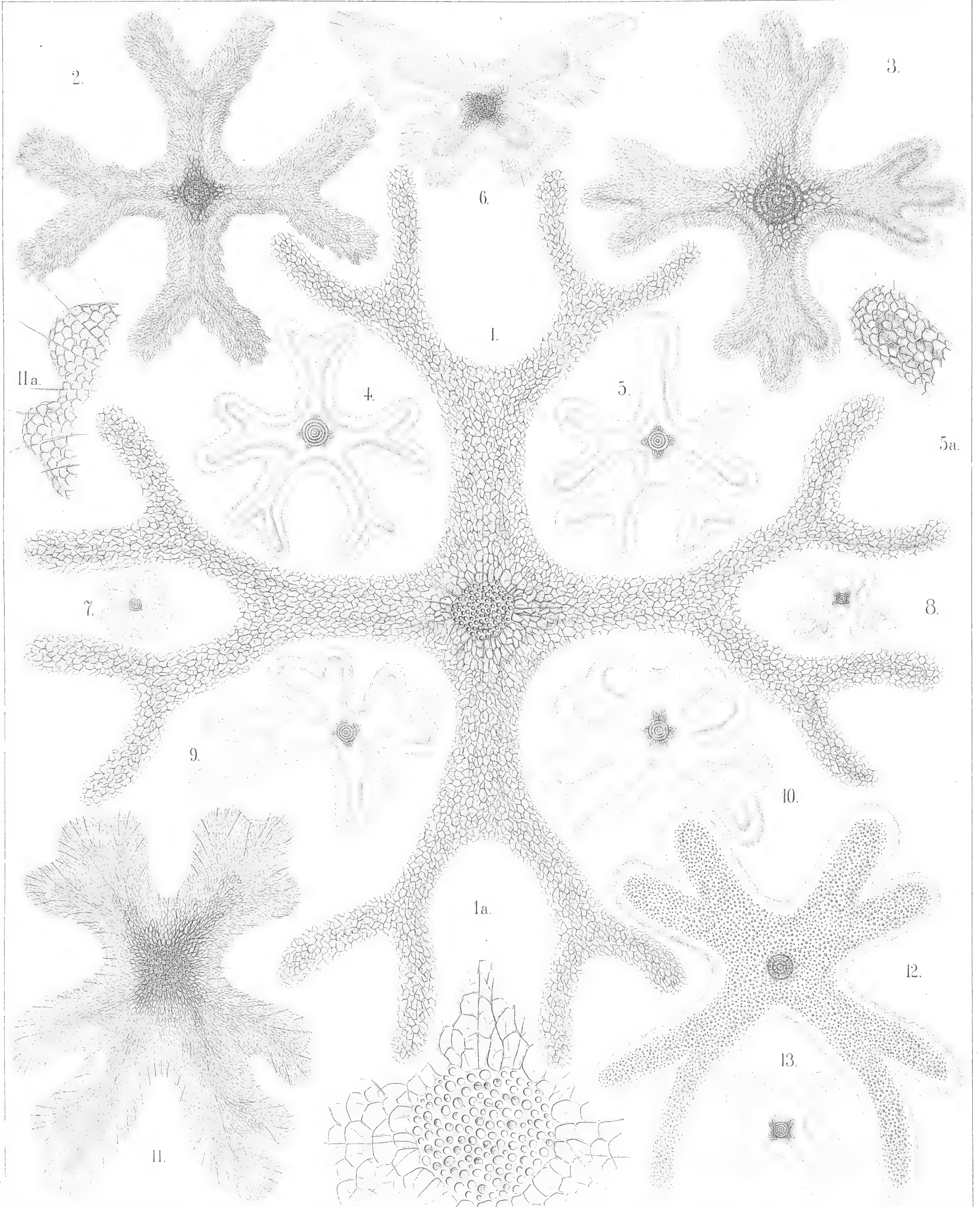
Order DISCOIDEA.

Family PORODISCIDA.

PLATE 47.

PORODISCIDA.

			Diam.	Page
Fig. 1.	<i>Dicranastrum bifurcatum</i> , n. sp.,	.	× 200	552
	Fig. 1a. Central disc of the same,	.	× 600	
Fig. 2.	<i>Dicranastrum furcatum</i> , n. sp.,	.	× 100	550
Fig. 3.	<i>Dicranastrum wyvillei</i> , n. sp.,	.	× 100	551
Fig. 4.	<i>Pentophastrum forcipatum</i> , n. sp.,	.	× 50	559
Fig. 5.	<i>Pentophastrum caudatum</i> , n. sp.,	.	× 50	559
Fig. 6.	<i>Myelastrum papilio</i> , n. sp.,	.	× 50	554
Fig. 7.	<i>Myelastrum decaceros</i> , n. sp.,	.	× 20	554
Fig. 8.	<i>Myelastrum heteropterum</i> , n. sp.,	.	× 20	553
Fig. 9.	<i>Myelastrum anomalum</i> , n. sp.,	.	× 50	556
Fig. 10.	<i>Myelastrum farfalla</i> , n. sp.,	.	× 50	554
Fig. 11.	<i>Myelastrum dodecaceros</i> , n. sp.,	.	× 100	554
Fig. 12.	<i>Myelastrum octocorne</i> , n. sp.,	.	× 90	553
Fig. 13.	<i>Myelastrum medullare</i> , n. sp.,	.	× 50	553



1. 2. DICRANASTRUM, 3. TRICANASTRUM, 4. 5. PENTALASTRUM,
6-13. MYELASTRUM.

F. Sch. et. Jern. Lithogr.

PLATE 48.

Legion SPUMELLARIA.

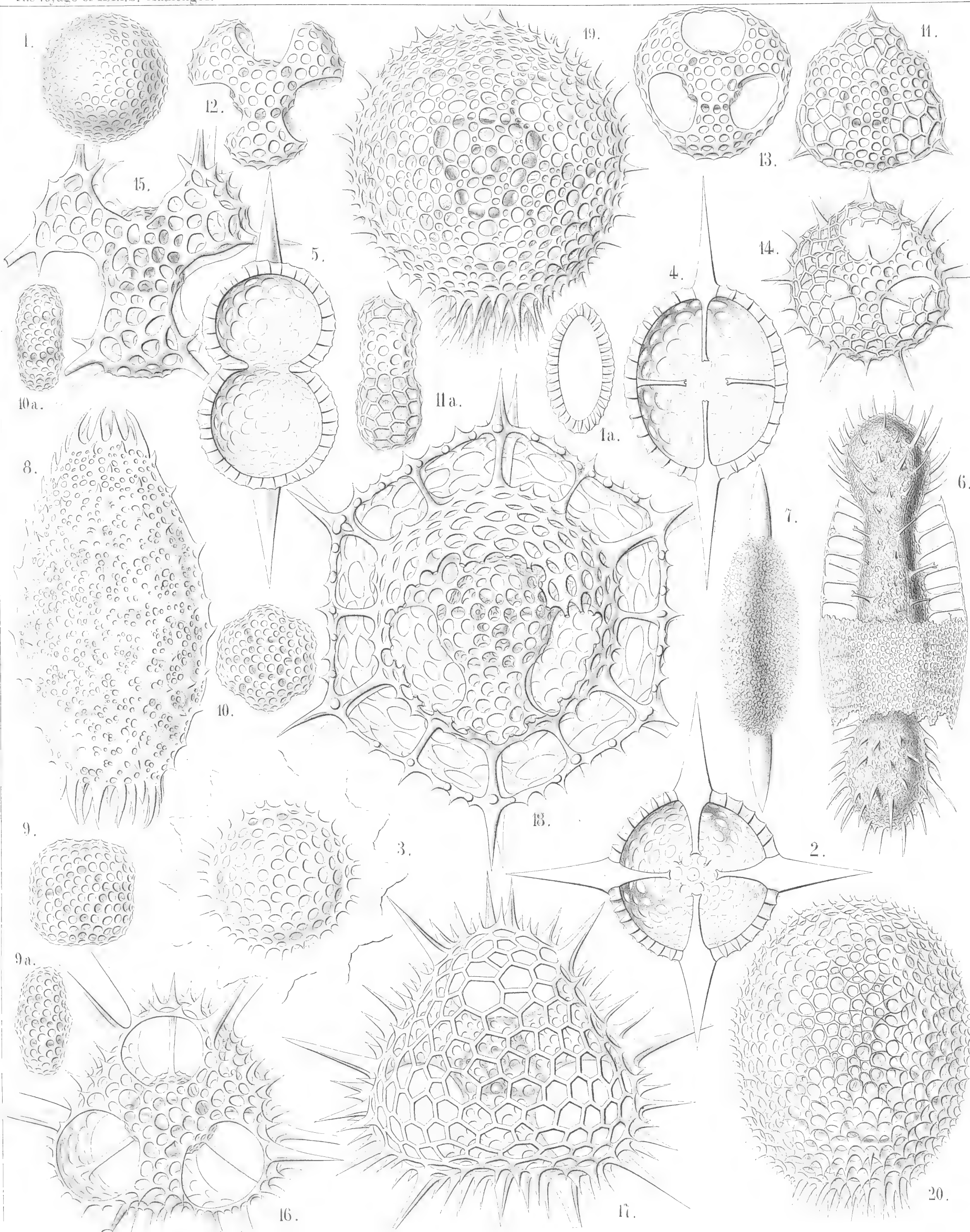
Orders PRUNOIDEA ET DISCOIDEA.

Families ELLIPSIDA, ARTISCIDA, SPONGURIDA, CENODISCIDA,
PORODISCIDA et PYLODISCIDA.

PLATE 48.

ELLIPSIDA, ARTISCIDA, SPONGURIDA, CENODISCIDA, PORODISCIDA, et PYLODISCIDA.

	Diam.	Page
Fig. 1. <i>Cenodiscus phacoides</i> , n. sp.,	× 100	411
Fig. 1a. Vertical section.		
Fig. 2. <i>Crucidiscus endostaurus</i> , n. sp.,	× 200	416
Equatorial section.		
Fig. 3. <i>Trochodiscus stellaris</i> , n. sp.,	× 200	418
Fig. 4. <i>Axoprunum stauraxonium</i> , n. sp.,	× 300	298
Equatorial section.		
Fig. 5. <i>Stylartus bipolaris</i> , n. sp.,	× 200	357
Vertical section.		
Fig. 6. <i>Spongocore puella</i> , n. sp.,	× 300	347
Fig. 7. <i>Spongoprunum amphilonche</i> , n. sp.,	× 300	347
Fig. 8. <i>Stomatodiscus osculatus</i> , n. sp.,	× 600	503
Fig. 9. <i>Archidiscus stauroniscus</i> , n. sp.,	× 400	487
Fig. 9a. Marginal view.		
Fig. 10. <i>Archidiscus hexoniscus</i> , n. sp.,	× 400	488
Fig. 10a. Marginal view.		
Fig. 11. <i>Archidiscus pyloniscus</i> , n. sp.,	× 400	488
Fig. 11a. Marginal view.		
Fig. 12. <i>Triolena primordialis</i> , n. sp.,	× 800	564
Fig. 13. <i>Triopyle hexagona</i> , n. sp.,	× 600	565
Fig. 14. <i>Triodiscus spinosus</i> , n. sp.,	× 600	565
Fig. 15. <i>Pylolena armata</i> , n. sp.,	× 300	568
Fig. 16. <i>Hexapyle dodecantha</i> , n. sp.,	× 300	569
Fig. 17. <i>Pylodiscus triangularis</i> , n. sp.,	× 400	570
Fig. 18. <i>Discozonium hexagonium</i> , n. sp.,	× 400	572
Fig. 19. <i>Discopyle osculata</i> , n. sp.,	× 400	573
Fig. 20. <i>Discopyle elliptica</i> , n. sp.,	× 400	573



1-3. GENODISCUS, 4. AXOPRUNUM, 5. STYLARTUS, 6. SPONGOCORE, 7. SPONGOPRUNUM, 8. STOMATODISCUS, 9-11. ARCHIDISCUS, 12-20. PYLODISCUS.

PLATE 49.

Legion SPUMELLARIA.

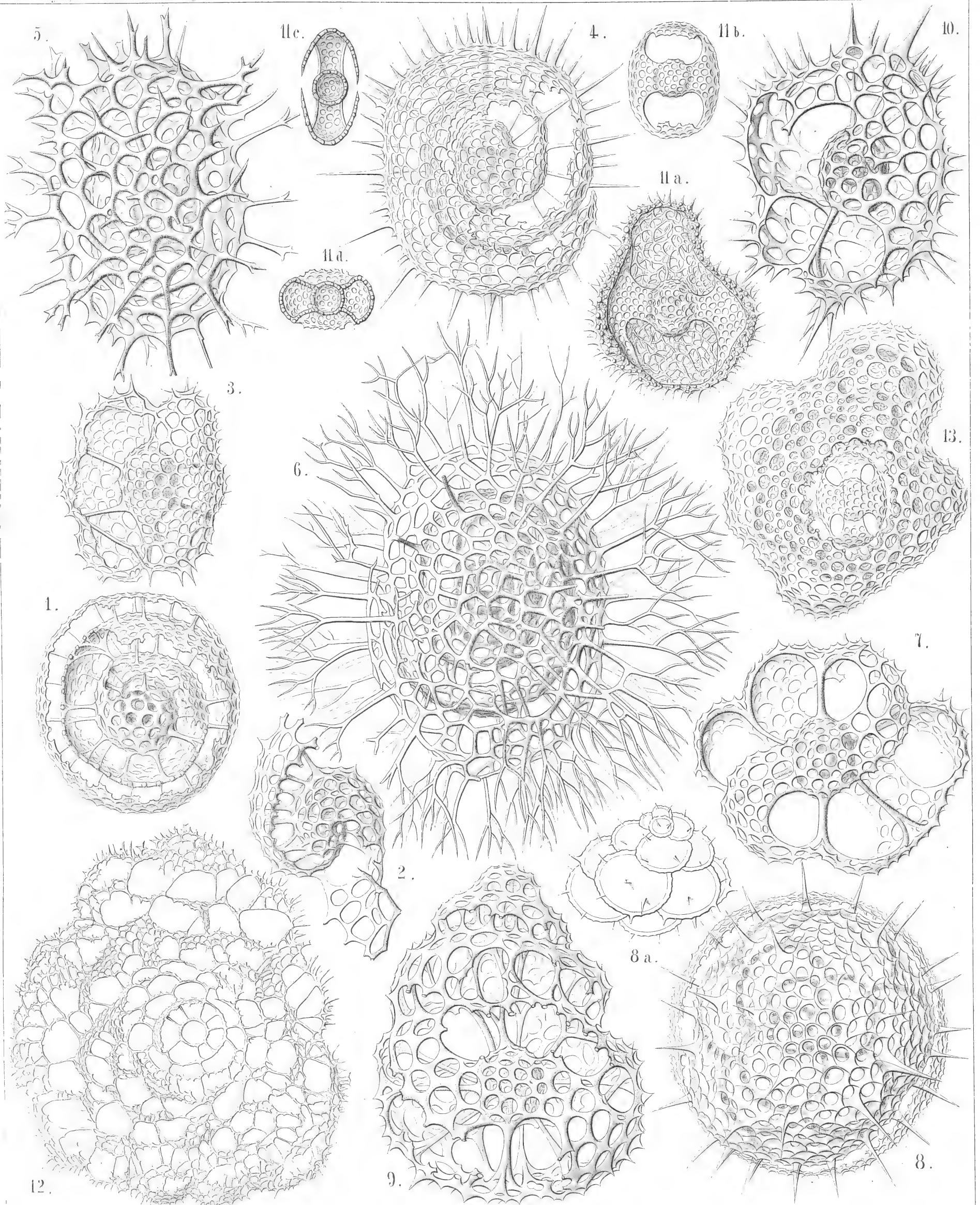
Order LARCOIDEA.

Families LITHELIDA, STREBLONIDA, PHORTICIDA et SOREUMIDA.

PLATE 49.

LITHELIDA, STREBLONIDA, PHORTICIDA et SOREUMIDA.

	Diam.	Page
Fig. 1. <i>Spirema melonia</i> , n. sp.,	× 300	692
Fig. 2. <i>Lithelius solaris</i> , n. sp. (the first central convolutions only), .	× 300	695
Fig. 3. <i>Larcospira quadrangula</i> , n. sp.,	× 300	696
Fig. 4. <i>Pylospira octopyle</i> , n. sp.,	× 300	698
Fig. 5. <i>Tholospira cervicornis</i> , n. sp.,	× 300	700
Fig. 6. <i>Tholospira dendrophora</i> , n. sp.,	× 300	700
Fig. 7. <i>Spiroonium octonium</i> , n. sp.,	× 300	701
Fig. 8. <i>Streblacantha siderolina</i> , n. sp.,	× 300	706
Fig. 8a. Outlines of the chambers,	× 200	
Fig. 9. <i>Streblopyle helicina</i> , n. sp.,	× 300	707
Fig. 10. <i>Phorticium pylonium</i> , n. sp.,	× 300	709
Fig. 11. <i>Spongophortis larnacilla</i> , n. sp.,	× 200	711
Fig. 11a. The upper half of the cortical shell is removed.		
Figs. 11b to 11d. The enclosed medullary <i>Larnacilla</i> -shell. <i>b</i> , Dorsal view; <i>c</i> , lateral view; <i>d</i> , basal view.		
Fig. 12. <i>Soreuma irregulare</i> , n. sp.,	× 200	713
Fig. 13. <i>Sorolarcus larnacillifer</i> , n. sp.,	× 300	715



W. H. C. and A. B. Lithogr.

F. Wittich, Jena Lithogr.

1-7. LITHELIUS, 8, 9. STREBLONIA, 10, 11. PHORTICIUM, 12, 13. SOREUMA.

PLATE 50.

Legion SPUMELLARIA.

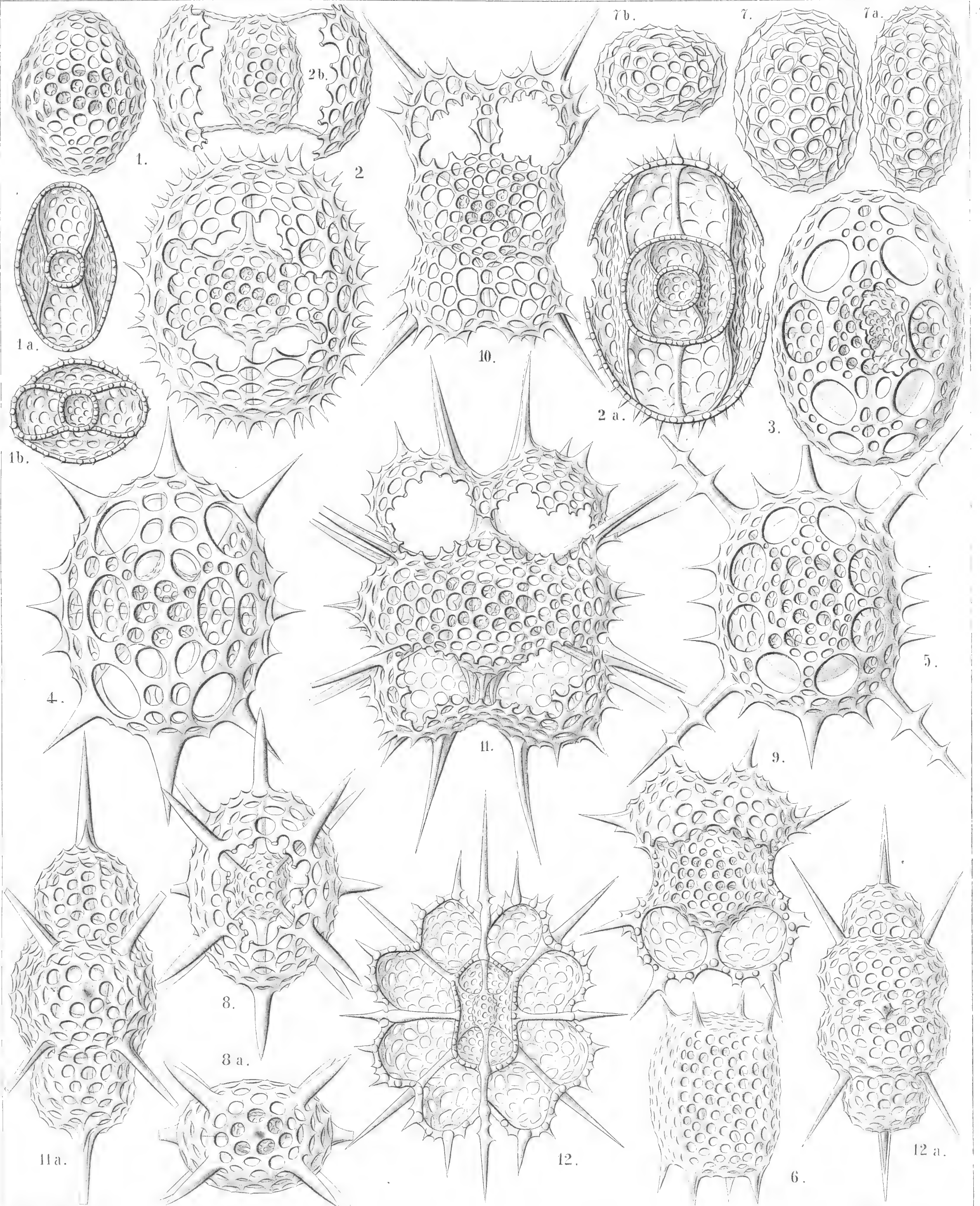
Order LARCOIDEA.

Families LARCARIDA, LARNACIDA et ZONARIDA.

PLATE 50.

LARCARIDA, LARNACIDA et ZONARIDA.

	Diam.	Page
Fig. 1. <i>Larnacilla typus</i> , n. sp., From the sagittal pole (dorsal view). Fig. 1a. From the lateral pole (sagittal section). Fig. 1b. From the principal pole (equatorial section).	× 300	617
Fig. 2. <i>Larnacalpis lentellipsis</i> , n. sp., From the sagittal pole (dorsal view). Fig. 2a. From the lateral pole (sagittal section). Fig. 2b. From the principal pole (equatorial section).	× 400	620
Fig. 3. <i>Larnacalpis triaxonia</i> , n. sp., From the sagittal pole (dorsal view).	× 400	621
Fig. 4. <i>Larnacantha hexacantha</i> , n. sp., From the sagittal pole (dorsal view).	× 400	622
Fig. 5. <i>Larnacantha bicrucata</i> , n. sp., Frontal view.	× 300	623
Fig. 6. <i>Larnacantha prismatica</i> , n. sp., Half frontal, half lateral view.	× 300	623
Fig. 7. <i>Cenolarcus primordialis</i> , n. sp., From the sagittal pole. Fig. 7a. From the lateral pole. Fig. 7b. From the principal pole.	× 300	607
Fig. 8. <i>Larcidium dodecanthum</i> , n. sp., From the sagittal pole. Fig. 8a. From the principal pole.	× 300	612
Fig. 9. <i>Zonarium octangulum</i> , n. sp., Frontal view.	× 300	685
Fig. 10. <i>Zoniscus tetracanthus</i> , n. sp., Frontal view.	× 300	687
Fig. 11. <i>Zoniscus hexatholius</i> , n. sp., Dorsal view (from the sagittal pole). Fig. 11a. Lateral view (from the frontal pole).	× 400	687
Fig. 12. <i>Zonidium octotholium</i> , n. sp., Frontal section (from the sagittal pole). Fig. 12a. Lateral view (from the frontal pole).	× 300	688



1. LARNACILLA, 2-6. LARNACALPIS, 7. CENOLARCUS,
8. LARCIDIUM, 9-12. ZONARIUM.

PLATE 51.

Legion NASSELLARIA.

Order CYRTOIDEA.

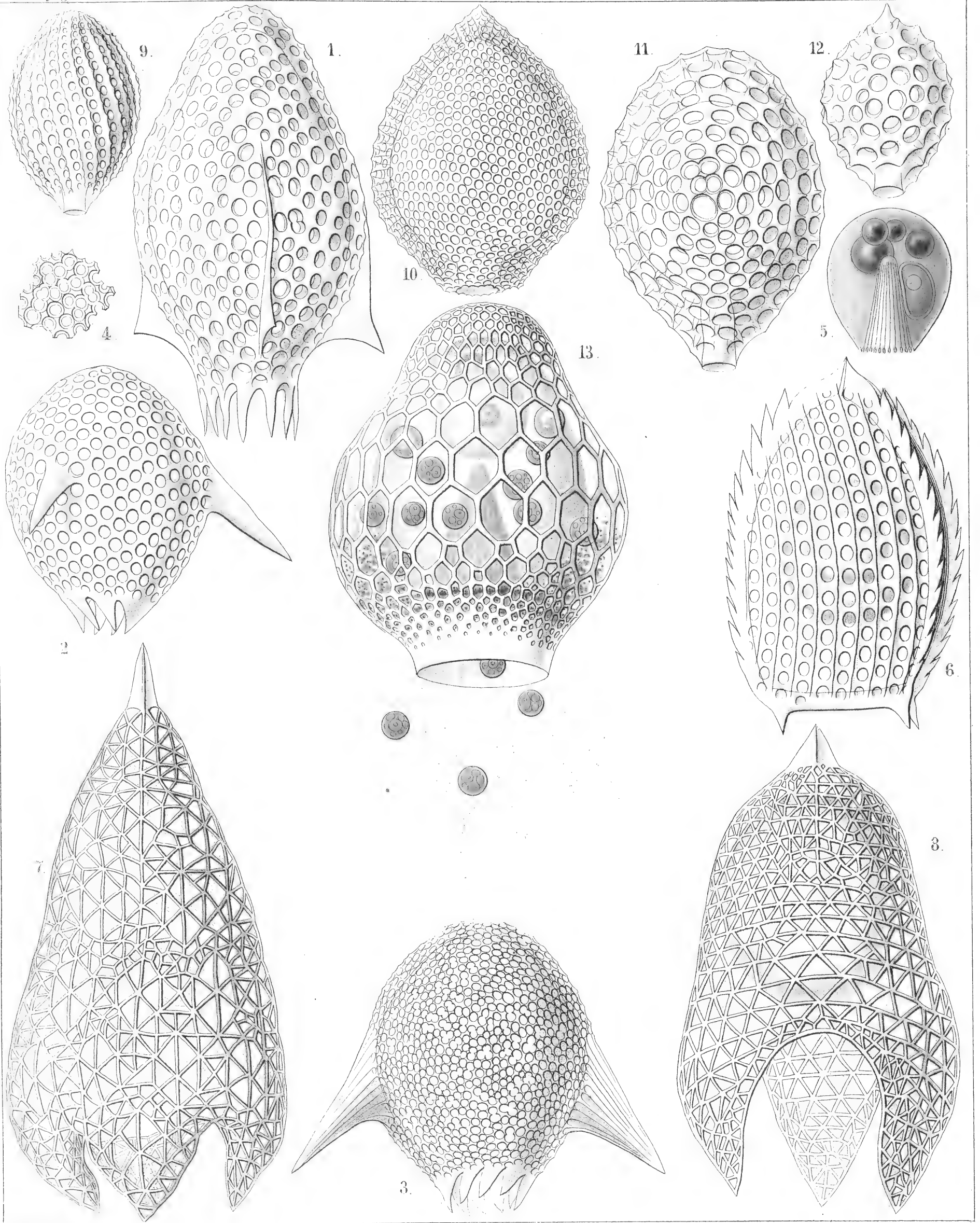
Families TRIPOCALPIDA, PHÆNOCALPIDA et CYRTOCALPIDA.

PLATE 51.

TRIPOCALPIDA, PHÆNOCALPIDA et CYRTOCALPIDA.

	Diam.	Page
Fig. 1. <i>Tripteroalpida phylloptera</i> , n. sp.,	× 400	1138
Fig. 2. <i>Tripteroalpida conoptera</i> , n. sp.,	× 300	1138
Fig. 3. <i>Tripteroalpida ogmoptera</i> , n. sp.,	× 300	1138
Fig. 4. <i>Tripteroalpida ogmoptera</i> , n. sp.,	× 500	1138
A group of confluent pores, more enlarged.		
Fig. 5. <i>Tripteroalpida ogmoptera</i> , n. sp.,	× 300	1138
Central capsule. In the centre the striate podoconus, above it four oil-globules, to the right the nucleus.		
Fig. 6. <i>Tripocalpida triserrata</i> , n. sp.,	× 600	1136
Fig. 7. <i>Tridictyopus conicus</i> , n. sp.,	× 300	1145
Fig. 8. <i>Tridictyopus vatillum</i> , n. sp.,	× 400	1145
Fig. 9. <i>Cyrtophormis spiralis</i> , n. sp.,	× 400	1166
Fig. 10. <i>Archicorys ovata</i> , n. sp.,	× 300	1185
Fig. 11. <i>Cyrtocalpida gromia</i> , n. sp.,	× 400	1188
Fig. 12. <i>Archicorys microstoma</i> , n. sp.,	× 400	1185
Fig. 13. <i>Cyrtocalpida urceolus</i> , n. sp.,	× 500	1186

The ovate central capsule exhibits in the lower half the podoconus, in the upper half the spherical nucleus and three oil-globules. Between the capsule and the shell numerous xanthellæ, partly protruded through the shell-mouth along the radiating pseudopodia.



1-6. TRIPTEROCALPIS, 7, 8. TRIDICTYOPUS, 9.-13. CYRTOCALPIS.

R. Giltch, Jena, Lithogr.

PLATE 52.

Legion NASSELLARIA.

Order CYRTOIDEA.

Families TRIPOCALPIDA, PHÆNOCALPIDA, CYRTOCALPIDA
et ANTHOCYRTIDA.

PLATE 52.

TRIPOCALPIDA, PHÆNOCALPIDA, CYRTOCALPIDA et ANTHOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Cyrtophormis pila</i> , n. sp.,	× 300	1165
Fig. 2. <i>Cyrtophormis cerostatica</i> , n. sp.,	× 300	1166
Fig. 3. <i>Cyrtophormis cerostatica</i> , n. sp.,	× 300	1166
Longitudinal section.		
Fig. 4. <i>Cyrtocalpis sethopena</i> , n. sp.,	× 600	1187
Fig. 5. <i>Cyrtocalpis lithomitra</i> , n. sp.,	× 400	1187
Fig. 6. <i>Cyrtocalpis lithomitra</i> , n. sp.,	× 400	1187
Longitudinal section.		
Fig. 7. <i>Cyrtocalpis compacta</i> , n. sp.,	× 400	1187
Fig. 8. <i>Cyrtocalpis compacta</i> , n. sp.,	× 400	1187
Longitudinal section.		
Fig. 9. <i>Carpocanistrum flosculum</i> , n. sp.,	× 400	1171
Fig. 10. <i>Carpocanistrum cephalum</i> , n. sp.,	× 300	1171
Fig. 11. <i>Carpocanistrum evacuatum</i> , n. sp.,	× 400	1172
Fig. 12. <i>Carpocanium verecundum</i> , n. sp.,	× 400	1284
Vertical section through the top of the shell.		
Fig. 13. <i>Carpocanium verecundum</i> , n. sp.,	× 400	1284
Fig. 14. <i>Carpocanium irregulare</i> , n. sp.,	× 400	1284
Fig. 15. <i>Carpocanium hexagonale</i> , n. sp.,	× 400	1282
Fig. 16. <i>Carpocanium peristomium</i> , n. sp.,	× 500	1283
Fig. 17. <i>Carpocanium peristomium</i> , n. sp.,	× 500	1283
Vertical section.		
Fig. 18. <i>Carpocanium trepanium</i> , n. sp.,	× 600	1282
Peristome.		
Fig. 19. <i>Carpocanium petalospyris</i> , n. sp.,	× 300	1283
Fig. 20. <i>Carpocanium virgineum</i> , n. sp.,	× 600	1285
Fig. 21. <i>Tripodiscium sphærocephalum</i> , n. sp.,	× 400	1144
Fig. 22. <i>Tripodiscium tristylispyris</i> , n. sp. (vel <i>Tristylispyris tripodiscium</i>),	× 600	1143
Fig. 23. <i>Tripodiscium ramosum</i> , n. sp. (vel <i>Tristylispyris ramosa</i>),	× 600	1144

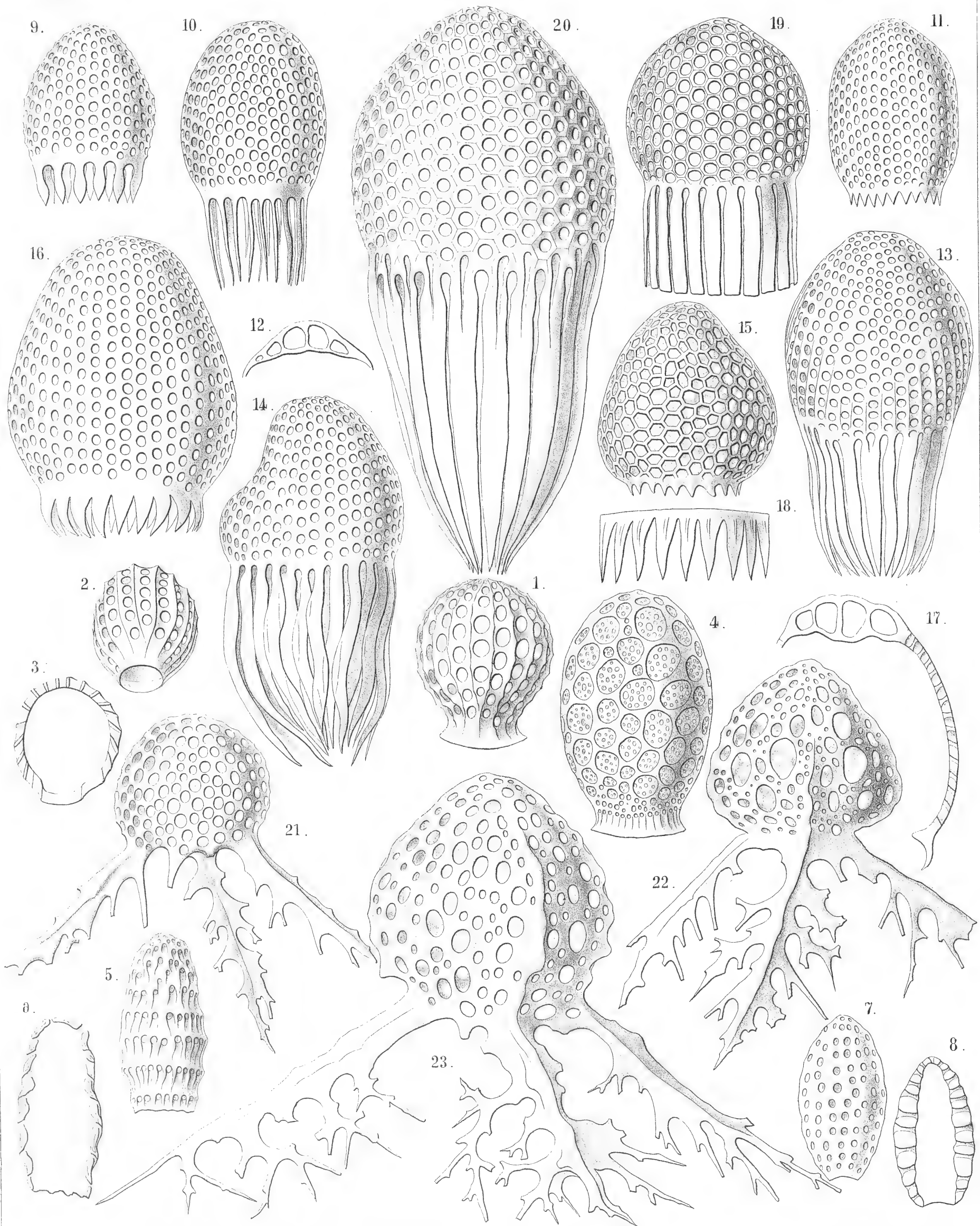


PLATE 53.

Legion NASSELLARIA.

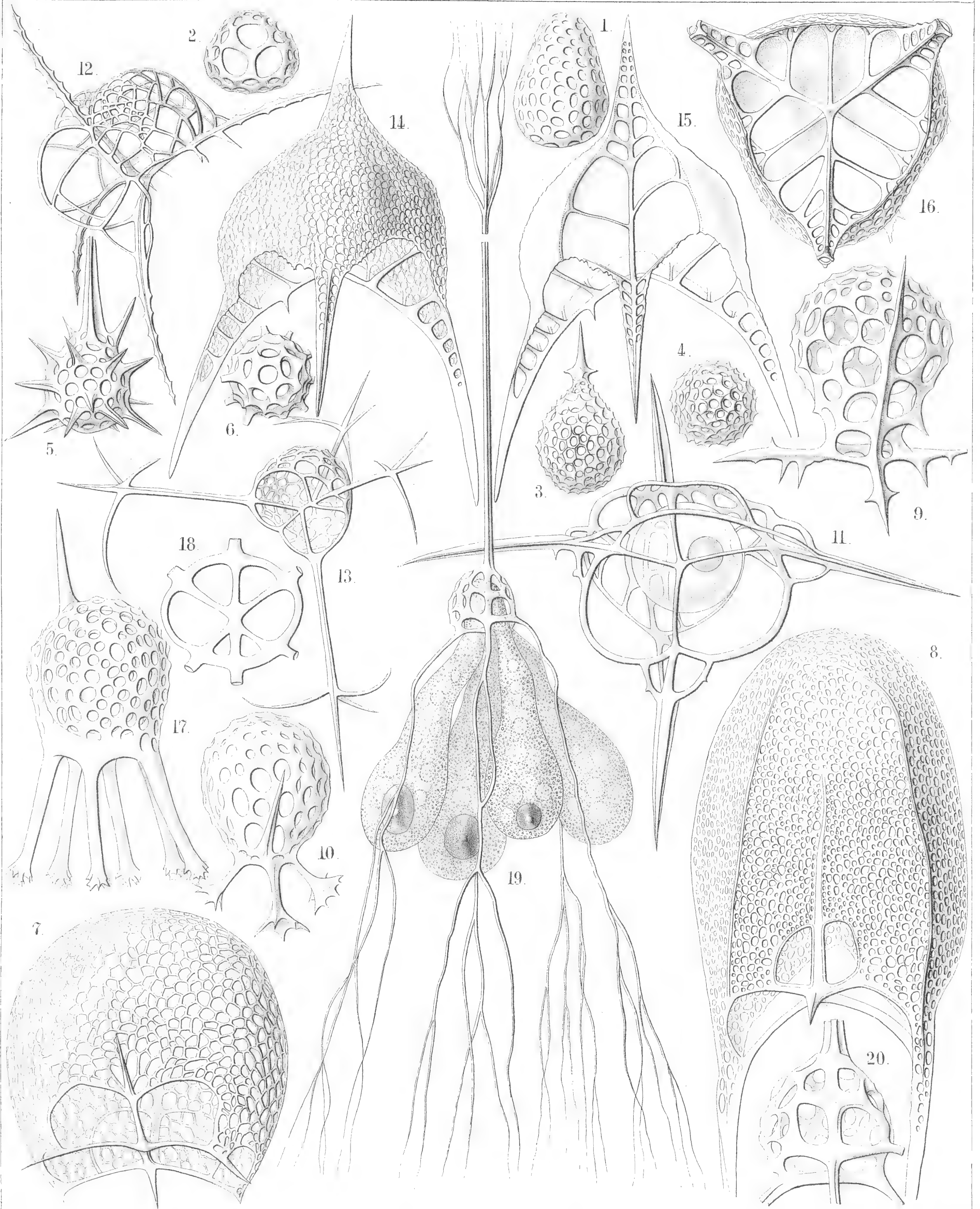
Orders SPYROIDEA ET CYRTOIDEA.

Families ZYGOSPYRIDA, TRIPOCALPIDA, PHÆNOCALPIDA
et CYRTOCALPIDA.

PLATE 53.

ZYGOSPYRIDA, TRIPOCALPIDA, PHÆNOCALPIDA et CYRTOCALPIDA.

	Diam.	Page
Fig. 1. <i>Archicapsa triforis</i> , n. sp., Lateral view.	× 300	1191
Fig. 2. <i>Archicapsa triforis</i> , n. sp., Basal view.	× 300	1191
Fig. 3. <i>Halicapsa triglochis</i> , n. sp., Lateral view.	× 200	1190
Fig. 4. <i>Halicapsa triglochis</i> , n. sp., Basal view.	× 200	1191
Fig. 5. <i>Halicapsa hystrix</i> , n. sp., Lateral view.	× 200	1191
Fig. 6. <i>Halicapsa hystrix</i> , n. sp., Basal view.	× 200	1191
Fig. 7. <i>Cantharospyris platybursa</i> , n. sp. (vel <i>Platybursa compressa</i>),	× 400	1051
Fig. 8. <i>Tessarospyris clathrobursa</i> , n. sp. (vel <i>Clathrobursa dictyopus</i>),	× 400	1045
Fig. 9. <i>Peridium spinipes</i> , n. sp.,	× 500	1154
Fig. 10. <i>Peridium palmipes</i> , n. sp.,	× 500	1154
Fig. 11. <i>Archiscenium quadrispinum</i> , n. sp., In the spherical central capsule the dark nucleus is visible.	× 500	1150
Fig. 12. <i>Euscenium eucolpium</i> , n. sp.,	× 500	1147
Fig. 13. <i>Cladoscenium ancoratum</i> , n. sp.,	× 400	1149
Fig. 14. <i>Pteroscenium pinnatum</i> , n. sp., Lateral view.	× 400	1152
Fig. 15. <i>Pteroscenium pinnatum</i> , n. sp., Vertical section.	× 400	1152
Fig. 16. <i>Pteroscenium pinnatum</i> , n. sp., Basal view.	× 400	1152
Fig. 17. <i>Calpophæna hexarrhabda</i> , n. sp.,	× 400	1176
Fig. 18. <i>Calpophæna hexarrhabda</i> , n. sp., Basal plate.	× 400	1176
Fig. 19. <i>Tetraspyris tetracorethra</i> , n. sp., With the four-lobed central capsule, in each lobe an oil-globule.	× 400	1044
Fig. 20. <i>Tetraspyris tetracorethra</i> , n. sp., Shell more enlarged.	× 800	1044



H. Haeckel and A. G. Gilsch, Del.

M. Gilsch, Jena, Lithogr.

1. 2. ARCHICAPSA, 3-6. HALICAPSA, 7. PLATYBURSA,
 8. CLATHROBURSA; 9. 10. ARCHIPERA, 11. 12. ARCHISCENIUM, 13. CLADOSCENIUM,
 14-16. PTEROSCENIUM, 17. 18. ACROCORONA, 19. 20. TETRACORETHRA.

PLATE 54.

Legion NASSELLARIA.

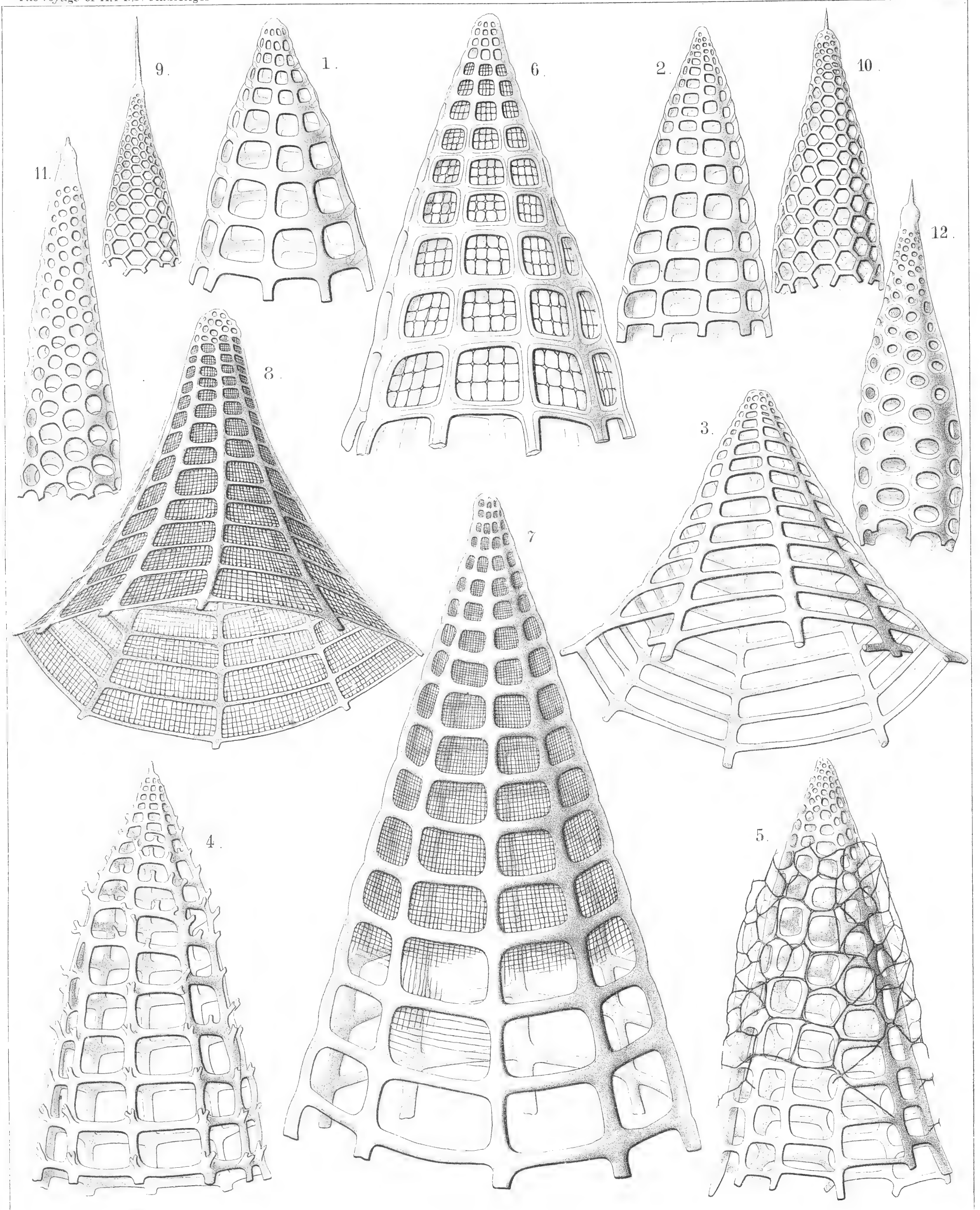
Order CYRTOIDEA.

Families PHÆNOCALPIDA, CYRTOCALPIDA, ANTHOCYRTIDA
et SETHOCYRTIDA.

PLATE 54.

PHÆNOCALPIDA, CYRTOCALPIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Bathropyramis quadrata</i> , n. sp.,	× 300	1159
Fig. 2. <i>Sethopyramis quadrata</i> , n. sp.,	× 300	1254
Fig. 3. <i>Bathropyramis trapezoides</i> , n. sp.,	× 300	1160
Fig. 4. <i>Bathropyramis ramosa</i> , n. sp.,	× 300	1161
Fig. 5. <i>Peripyramis circumtexta</i> , n. sp.,	× 300	1162
Fig. 6. <i>Plectopyramis dodecomma</i> , n. sp.,	× 400	1258
Fig. 7. <i>Cinclopyramis infundibulum</i> , n. sp.,	× 300	1161
Fig. 8. <i>Plectopyramis trapezomma</i> , n. sp.,	× 400	1258
Fig. 9. <i>Cornutella hexagona</i> , n. sp.,	× 400	1180
Fig. 10. <i>Cornutella sethoconus</i> , n. sp.,	× 400	1180
Fig. 11. <i>Sethoconus orthoceras</i> , n. sp.,	× 400	1294
Fig. 12. <i>Sethoconus bimarginatus</i> , n. sp.,	× 400	1295



E. Haeckel and A. Giltch Del.

E. Giltch, Jena Lithogr.

1-4 BATHROPYRAMIS, 5. PERIPYRAMIS, 6-8. CINCLOPYRAMIS,
9-12. CORNUTELLA.

PLATE 55.

Legion NASSELLARIA.

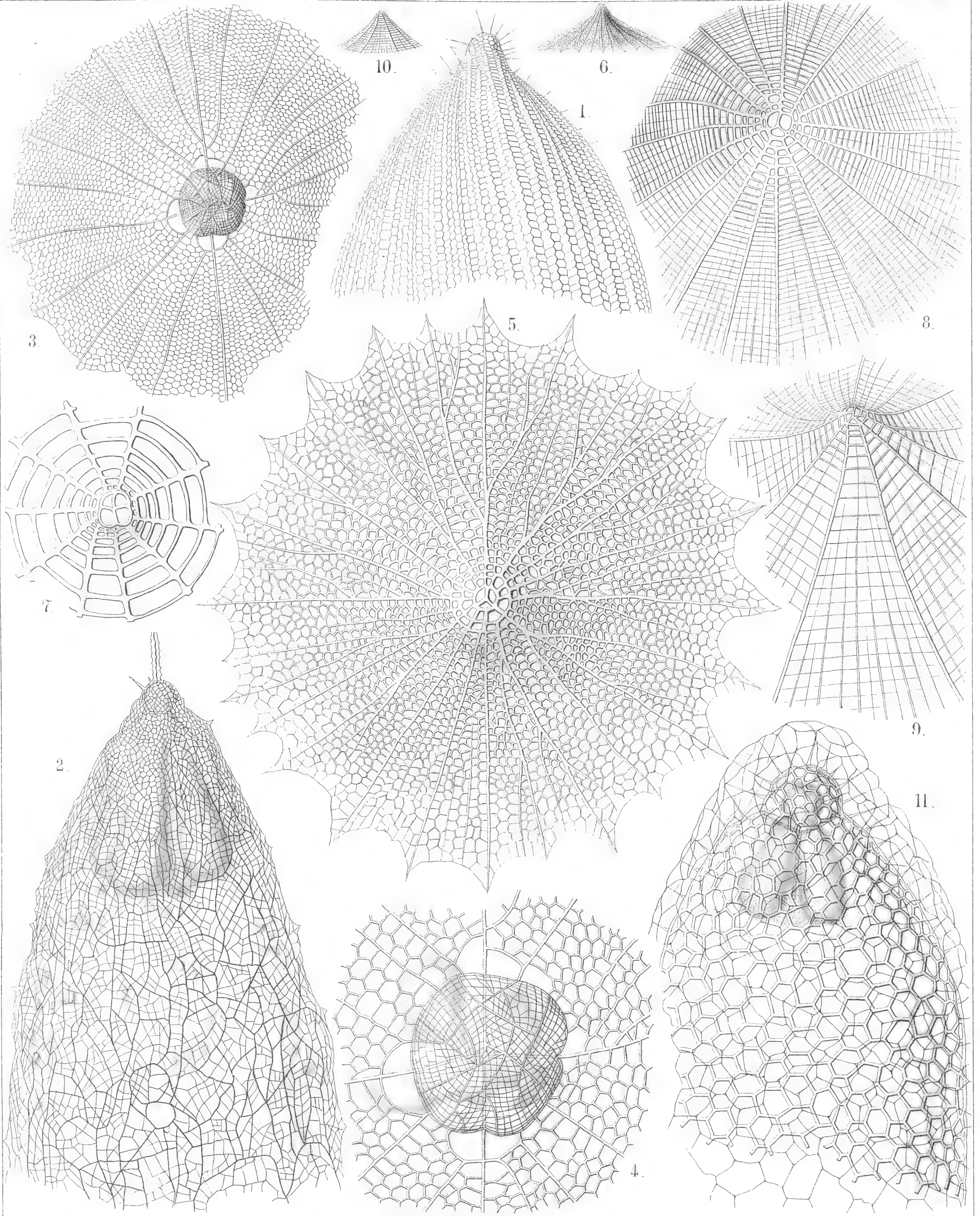
Order CYRTOIDEA.

Families PHÆNOCALPIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

PLATE 55.

PHÆNOCALPIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Sethoconus facetus</i> , n. sp. (vel <i>Phlebarachnium facetum</i>), Upper part of the shell.	× 300	1296
Fig. 2. <i>Sethoconus venosus</i> , n. sp. (vel <i>Phlebarachnium venosum</i>), Shell including the four-lobed central capsule.	× 250	1297
Fig. 3. <i>Sethophormis aurelia</i> , n. sp. (vel <i>Leptarachnium aurelia</i>), Shell seen from above.	× 100	1248
Fig. 4. <i>Sethophormis aurelia</i> , n. sp., Cephalis more enlarged, with the enclosed four-lobed central capsule.	× 400	1248
Fig. 5. <i>Cladarachnium ramosum</i> , n. sp., Apical view.	× 300	1165
Fig. 6. <i>Cladarachnium ramosum</i> , n. sp., Lateral view.	× 70	1165
Fig. 7. <i>Bathropyramis interrupta</i> , n. sp., Apical part of the shell, from above.	× 300	1160
Fig. 8. <i>Litharachnium araneosum</i> , n. sp., Apical part of the shell, from above.	× 300	1163
Fig. 9. <i>Litharachnium epeira</i> , n. sp., Oblique view of the shell.	× 500	1164
Fig. 10. <i>Litharachnium araneosum</i> , n. sp., Lateral view.	× 50	1163
Fig. 11. <i>Periarachnium periplectum</i> , n. sp., Shell enclosing the trilobed central capsule.	× 500	1297



E. Haeckel and A. Giltisch, Del.

E. Giltisch, Jena, Lithogr.

1. 2. PHLEBARACHNIUM, 3. 4. LEPTARACHNIUM, 5.-10. LITHARACHNIUM.
11. PERIARACHNIUM.

PLATE 56.

Legion NASSELLARIA.

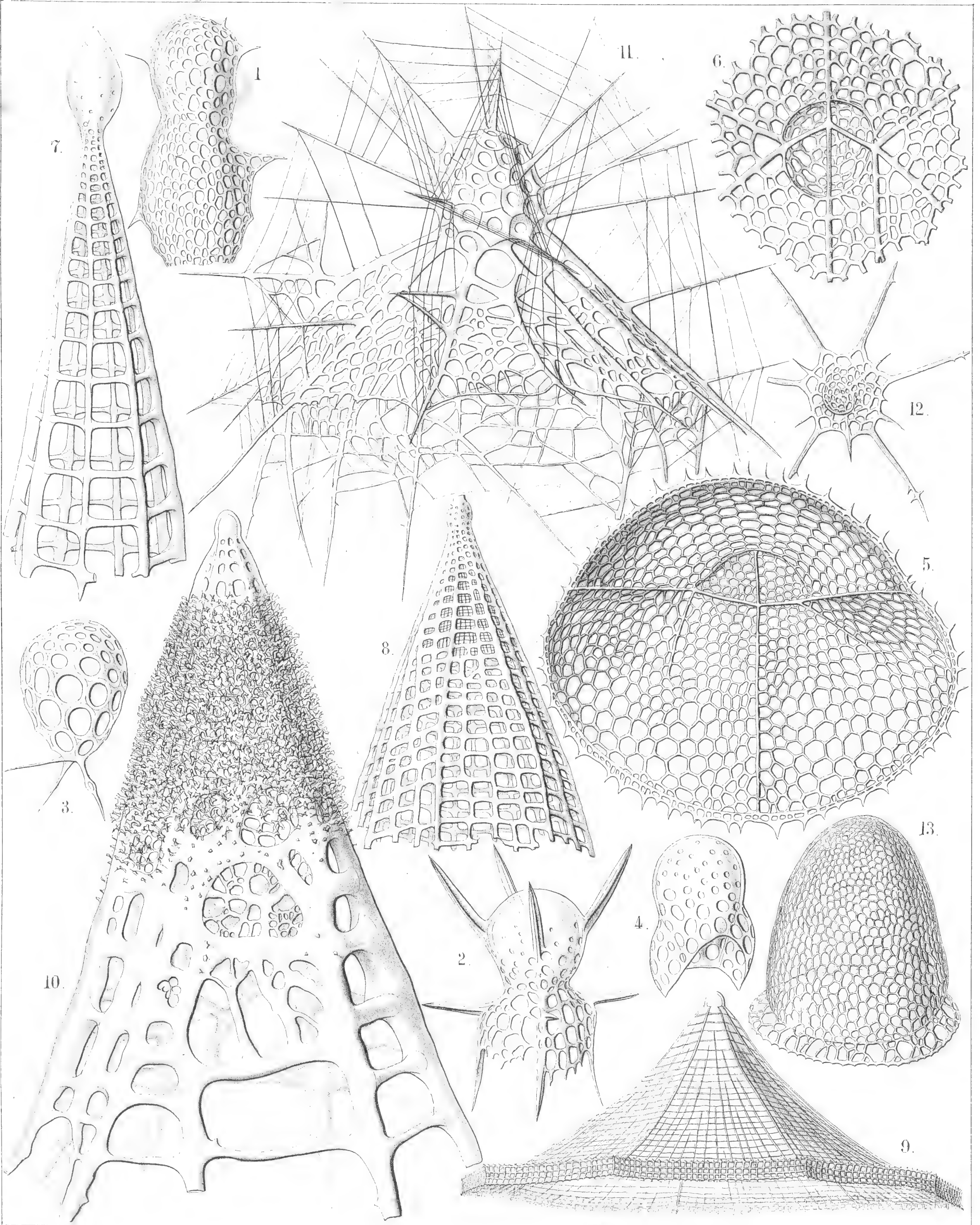
Order CYRTOIDEA.

Families TRIPOCYRTIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

PLATE 56.

TRIPOCYRTIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Lithomelissa bütschlii</i> , n. sp. (vel <i>Sethomelissa bütschlii</i>),	× 400	1207
Fig. 2. <i>Lithomelissa decacantha</i> , n. sp. (vel <i>Sethomelissa decacantha</i>),	× 400	1208
Fig. 3. <i>Psilomelissa calvata</i> , n. sp., The cephalis alone, with the three collar beams.	× 400	1209
Fig. 4. <i>Lychnodictyum scaphopodium</i> , n. sp.,	× 400	1231
Fig. 5. <i>Sethophormis pentalactis</i> , n. sp. (vel <i>Pentaphormis pentalactis</i>), Oblique view of the shell, from below.	× 400	1244
Fig. 6. <i>Sethophormis hexalactis</i> , n. sp. (vel <i>Hexaphormis hexalactis</i>), Central part of the shell, with the cortinar septum.	× 400	1245
Fig. 7. <i>Sethopyramis enneactis</i> , n. sp. (vel <i>Cephalopyramis enneactis</i>),	× 400	1254
Fig. 8. <i>Plectopyramis polypleura</i> , n. sp. (vel <i>Sethopyramis polypleura</i>),	× 200	1260
Fig. 9. <i>Sethophormis eupilium</i> , n. sp. (vel <i>Craspedilium eupilium</i>),	× 400	1247
Fig. 10. <i>Plectopyramis spongiosa</i> , n. sp. (vel <i>Spongopyramis spongiosa</i>),	× 400	1261
Fig. 11. <i>Arachnocorys araneosa</i> , n. sp.,	× 500	1266
Fig. 12. <i>Sethophormis dodecaster</i> , n. sp. (vel <i>Astrophormis dodecaster</i>),	× 200	1248
Fig. 13. <i>Sethocephalus eucecryphalus</i> , n. sp.,	× 400	1298



H. Haekel and A. Giltch Del.

A. Giltch, Jena, lithogr.

1, 2. SETHOMELISSA, 3, 4. PSILOMELISSA, 5. PENTAPHORMIS, 6. HEXAPHORMIS,
7. CEPHALOPYRAMIS, 8, 9. SETHOPYRAMIS, 10. PLECTOPYRAMIS,
11, 12. ARACHNOCORYS, 13. SETHOCEPHALUS.

PLATE 57.

Legion NASSELLARIA.

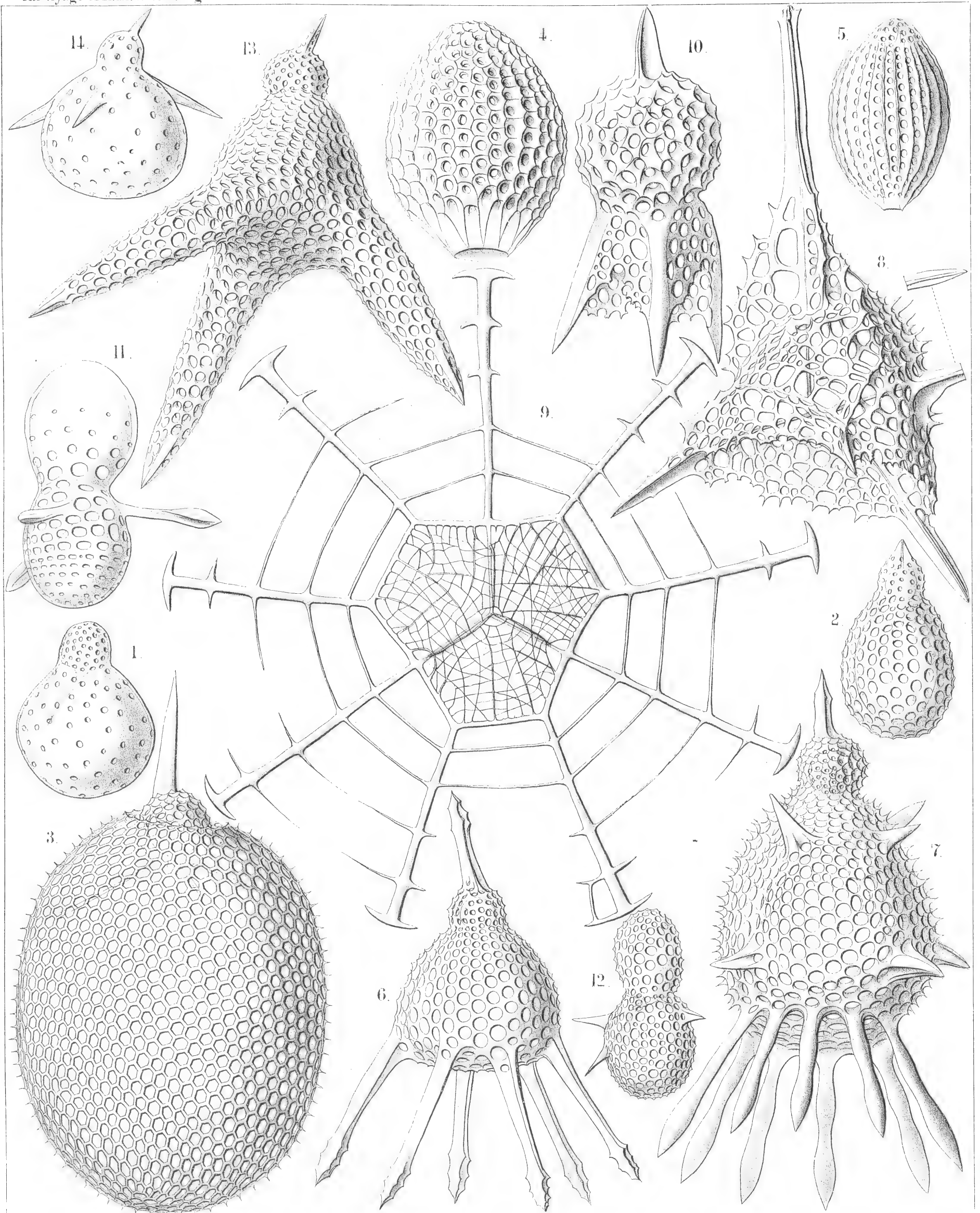
Order CYRTOIDEA.

Families TRIPOCYRTIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

PLATE 57.

TRIPOCYRTIDA, ANTHOCYRTIDA et SETHOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Dicolocapsa microcephala</i> , n. sp.,	× 400	1312
Fig. 2. <i>Sethocapsa pyriformis</i> , n. sp.,	× 300	1310
Fig. 3. <i>Lithopera ananassa</i> , n. sp.,	× 500	1234
Fig. 4. <i>Sethamphora favosa</i> , n. sp. (vel <i>Cryptoprora favosa</i>),	× 400	1252
Fig. 5. <i>Sethamphora microstoma</i> , n. sp. (vel <i>Cryptoprora microstoma</i>),	× 300	1252
Fig. 6. <i>Clistophæna hexolena</i> , n. sp.,	× 300	1287
Fig. 7. <i>Clistophæna armata</i> , n. sp.,	× 300	1288
Fig. 8. <i>Clathromitra pterophormis</i> , n. sp.,	× 400	1219
Fig. 9. <i>Sethophormis rotula</i> , n. sp. (vel <i>Enneaphormis rotula</i>),	× 400	1246
Fig. 10. <i>Dictyophimus sphærocephalus</i> , n. sp.,	× 400	1195
Fig. 11. <i>Peromelissa phalacra</i> , n. sp.,	× 400	1236
Fig. 12. <i>Peromelissa calva</i> , n. sp.,	× 300	1237
Fig. 13. <i>Sethochytris triconiscus</i> , n. sp.,	× 300	1239
Fig. 14. <i>Micromelissa bombus</i> , n. sp.,	× 300	1235



H. Haeckel and A. Giltisch Del.

K. Giltisch, Jena, lithogr.

1. SETHOCAPSA, 2. 3. LITHOPERA, 4. 5. CRYPTOPRORA, 6. 7. SETHOPHATNA,
 8. PTEROPHORMIS, 9. ENNEAPHORMIS, 10. DICTYOPHIMUS, 11. 12. PEROMELISSA,
 13. SETHOCHYTRIS, 14. SETHOPERA.

PLATE 58.

Legion NASSELLARIA.

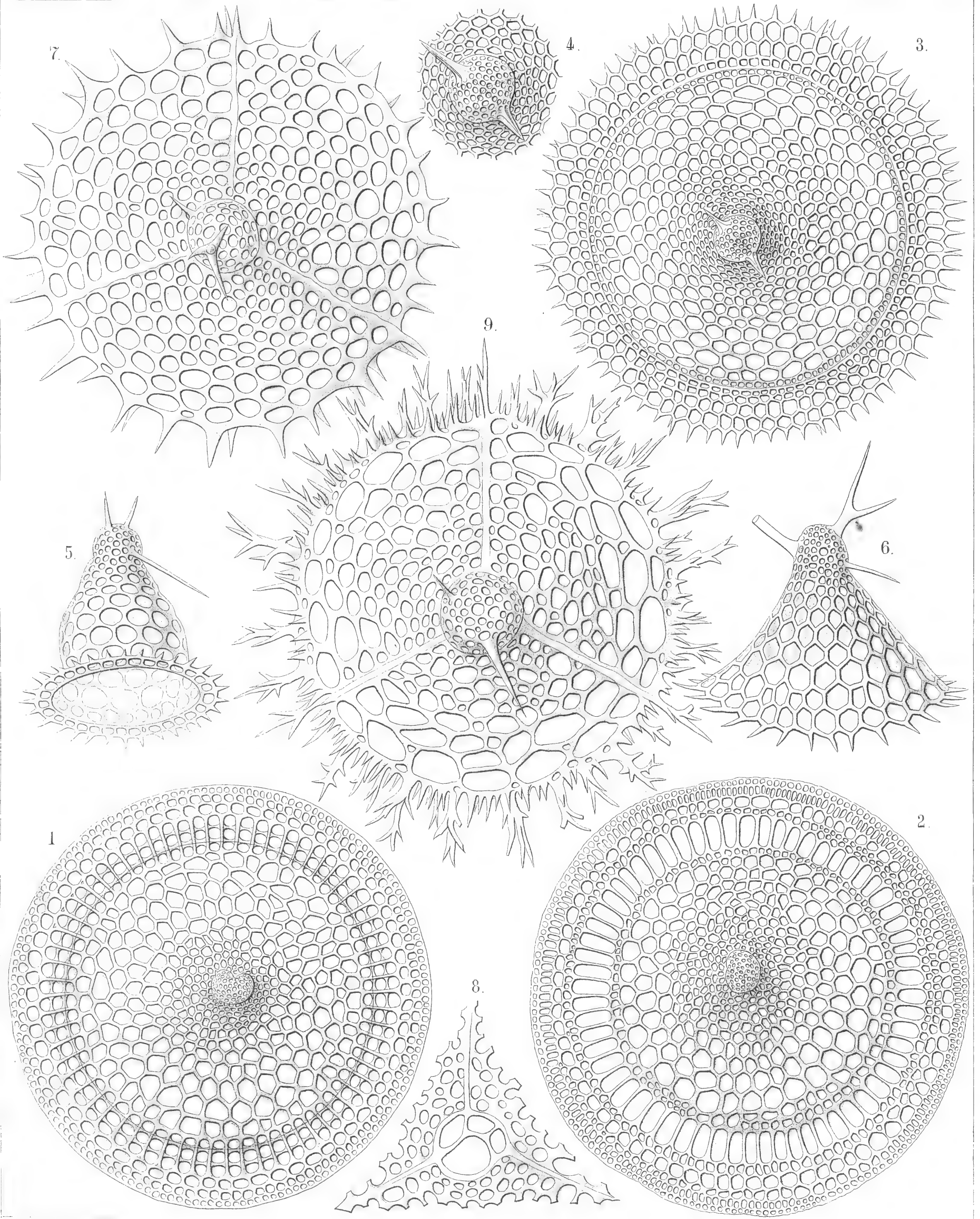
Order CYRTOIDEA.

Families TRIPOCYRTIDA, SETHOCYRTIDA, PHORMOCYRTIDA
et THEOCYRTIDA.

PLATE 58.

TRIPOCYRTIDA, SETHOCYRTIDA, PHORMOCYRTIDA et THEOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Cecryphalium sestrodiscus</i> , n. sp., Apical view.	× 400	1399
Fig. 2. <i>Cecryphalium lamprodiscus</i> , n. sp., Apical view.	× 400	1398
Fig. 3. <i>Clathrocyclas coscinodiscus</i> , n. sp., Apical view.	× 400	1389
Fig. 4. <i>Clathrocyclas coscinodiscus</i> , n. sp., The cephalis alone, with the two horns.	× 700	1389
Fig. 5. <i>Clathrocyclas semeles</i> , n. sp., Lateral view.	× 400	1388
Fig. 6. <i>Sethoconus capreolus</i> , n. sp., Lateral view.	× 400	1291
Fig. 7. <i>Lampromitra quadricuspis</i> , n. sp., Apical view.	× 400	1214
Fig. 8. <i>Lampromitra furcata</i> , n. sp., The collar septum after removal of the cephalis.	× 400	1215
Fig. 9. <i>Lampromitra dendrocorona</i> , n. sp., Apical view.	× 400	1216



1, 2. CECRYPHALIUM. 3.-6. EUCECRYPHALUS, 7-9. LAMPROMITRA.

E. Giltisch, Jena, Lithogr.

PLATE 59.

Legion NASSELLARIA.

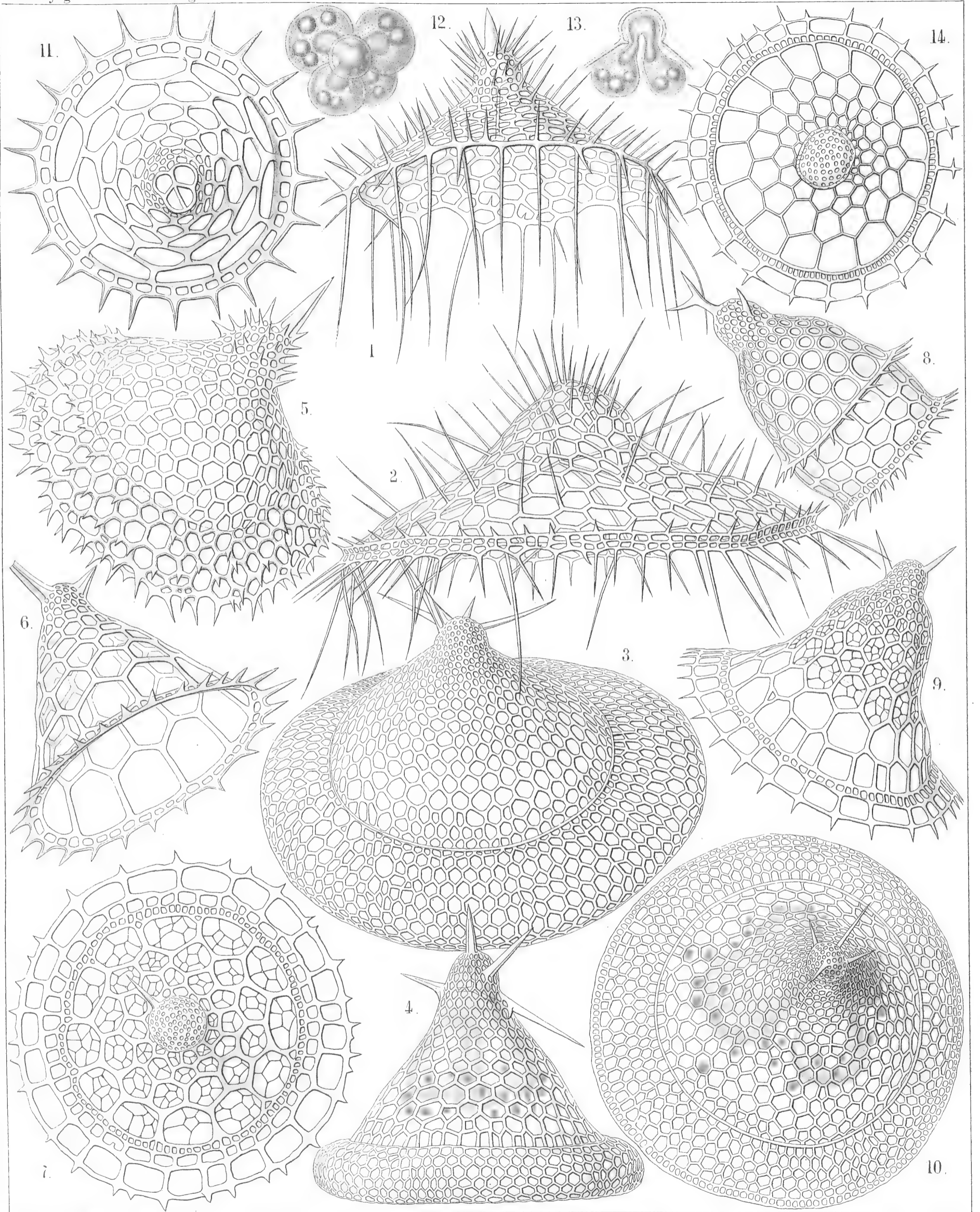
Order CYRTOIDEA.

Families TRIPOCYRTIDA, PODOCYRTIDA et PHORMOCYRTIDA.

PLATE 59.

TRIPOCYRTIDA, PODOCYRTIDA et PHORMOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Lampromitra huxleyi</i> , n. sp.,	× 400	1215
Fig. 2. <i>Amphiplecta callistoma</i> , n. sp.,	× 400	1224
Fig. 3. <i>Corocalyptra agnesæ</i> , n. sp.,	× 400	1323
Fig. 4. <i>Corocalyptra emmæ</i> , n. sp.,	× 400	1323
The shell encloses the trilobate central capsule, with the trilobate nucleus.		
Fig. 5. <i>Clathrocyclas cassiopejæ</i> , n. sp.,	× 400	1390
Fig. 6. <i>Clathrocyclas alcmenæ</i> , n. sp.,	× 400	1388
Fig. 7. <i>Clathrocyclas latonæ</i> , n. sp.,	× 400	1389
Apical view.		
Fig. 8. <i>Diplocyclas bicorona</i> , n. sp.,	× 400	1392
Fig. 9. <i>Clathrocyclas ionis</i> , n. sp.,	× 400	1389
Fig. 10. <i>Corocalyptra elisabethæ</i> , n. sp.,	× 400	1323
Oblique apical view of the shell, with the quadrilobate central capsule enclosed.		
Fig. 11. <i>Clathrocyclas europæ</i> , n. sp.,	× 400	1388
Apical view of the shell, after removal of the cephalis.		
Fig. 12. <i>Clathrocyclas europæ</i> , n. sp.,	× 400	1388
Central capsule, seen from above, with the quadrilobate nucleus.		
Fig. 13. <i>Clathrocyclas danaës</i> , n. sp.,	× 300	1388
Vertical section through the cephalis and the quadrilobate central capsule, with the quadrilobate nucleus.		
Fig. 14. <i>Clathrocyclas danaës</i> , n. sp.,	× 300	1388
Apical view of the shell.		



1-10. EUCECRYPHALUS, 11-14. CECRYPHALIUM.

PLATE 60.

Legion NASSELLARIA.

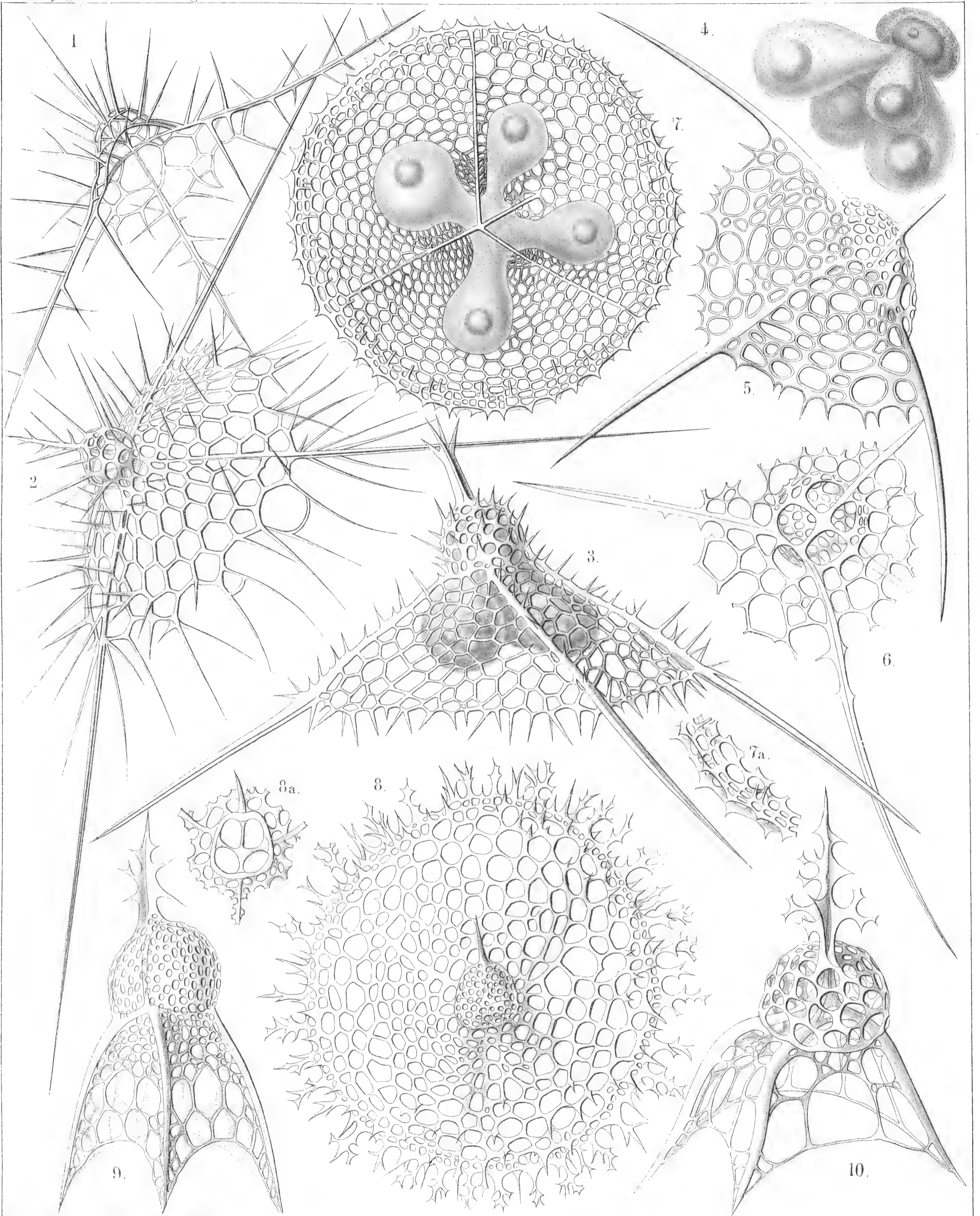
Order CYRTOIDEA.

Family TRIPOCYRTIDA.

PLATE 60.

TRIPOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Dictyophimus cienkowskii</i> , n. sp. (vel <i>Lamprotripus squarrosus</i>), Shell seen from the side.	× 300	1200
Fig. 2. <i>Dictyophimus bütschlii</i> , n. sp. (vel <i>Lamprotripus horridus</i>),	× 300	1201
Fig. 3. <i>Dictyophimus hertwigii</i> , n. sp. (vel <i>Lamprotripus spinosus</i>), The cephalis of the shell includes the central capsule, with three lobes depending in the pyramidal thorax.	× 400	1201
Fig. 4. <i>Dictyophimus platycephalus</i> , n. sp., Central capsule with four thoracic lobes, each of which contains an oil-globule; kidney-shaped nucleus in the cephalic lobe.	× 400	1198
Fig. 5. <i>Dictyophimus platycephalus</i> , n. sp., Shell seen from the side.	× 400	1198
Fig. 6. <i>Dictyophimus brandtii</i> , n. sp., Shell seen from the base, with the four large pores of the collar septum, two minor jugular and two major cardinal pores.	× 300	1198
Fig. 7. <i>Lampromitra coronata</i> , n. sp., Shell seen from below, with the quadrilobate central capsule. Fig. 7a. A portion of the shell-margin,	× 400 × 800	1214 1214
Fig. 8. <i>Lampromitra arborescens</i> , n. sp., Shell from above. Fig. 8a. The collar septum with the four crossed rods of the cortina,	× 400 × 400	1216 1216
Fig. 9. <i>Tripocyrtis plectaniscus</i> , n. sp.,	× 400	1202
Fig. 10. <i>Tripocyrtis plagoniscus</i> , n. sp.,	× 400	1201



H. Hancock, and A. Schischel

1 - 6. LAMPROTRIPUS, 7 - 10. LAMPROMITRA.

E. Giltisch, Jena, Lithogr.

PLATE 61.

Legion NASSELLARIA.

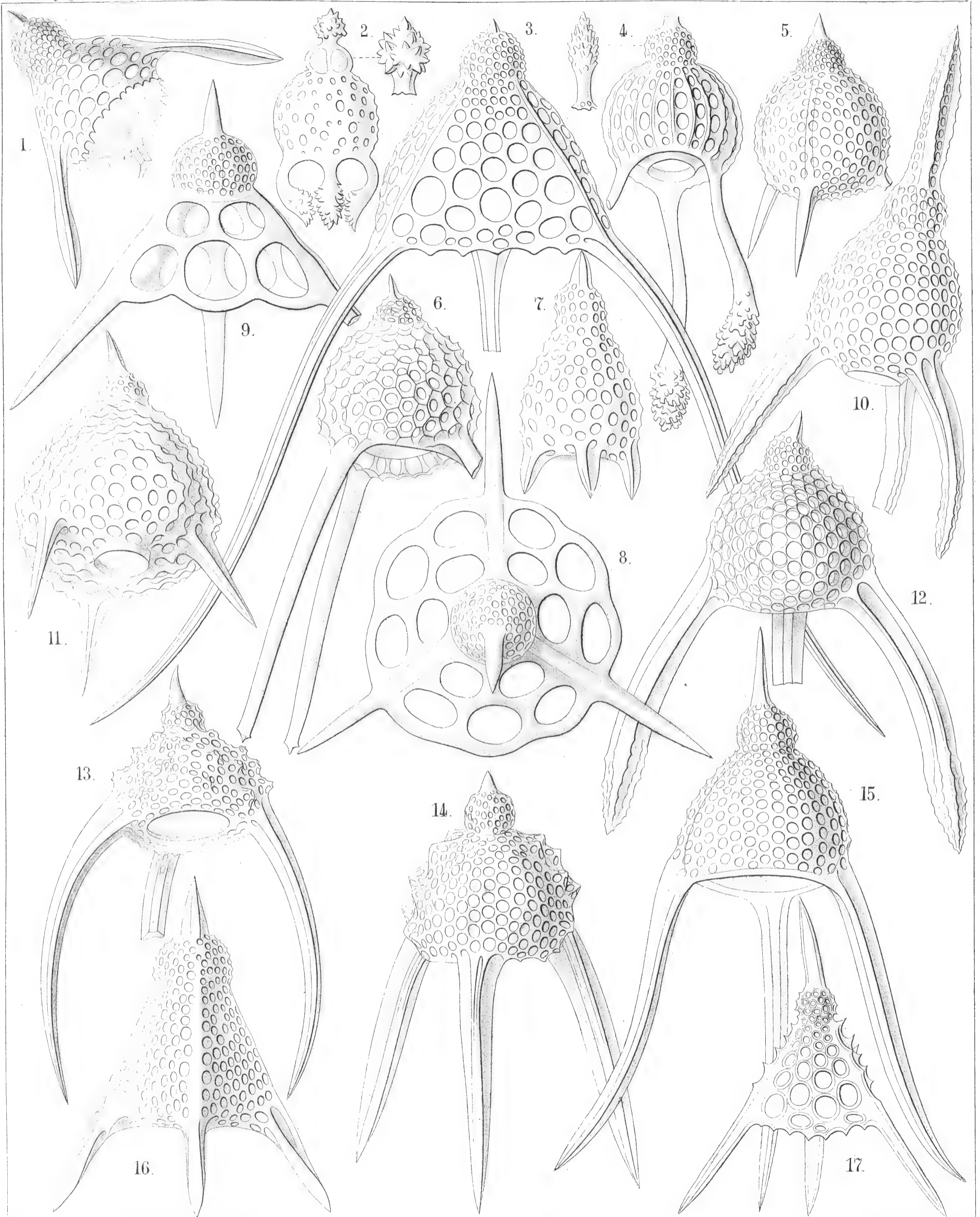
Order CYRTOIDEA.

Family TRIPOCYRTIDA.

PLATE 61.

TRIPOCYRTIDA

	Diam.	Page
Fig. 1. <i>Dictyophimus cortina</i> , n. sp.,	× 400	1197
Fig. 2. <i>Lychnocanium pudicum</i> , n. sp.,	× 200	1230
Fig. 3. <i>Dictyophimus longipes</i> , n. sp.,	× 400	1197
Fig. 4. <i>Lychnocanium clavigerum</i> , n. sp.,	× 300	1230
Fig. 5. <i>Dictyophimus lasanum</i> , n. sp.,	× 300	1197
Fig. 6. <i>Lychnocanium favosum</i> , n. sp.,	× 300	1225
Fig. 7. <i>Lychnocanium lanterna</i> , n. sp.,	× 300	1224
Fig. 8. <i>Dictyophimus plectaniscus</i> , n. sp.,	× 300	1196
Apical view.		
Fig. 9. <i>Dictyophimus plectaniscus</i> , n. sp.,	× 300	1196
Lateral view.		
Fig. 10. <i>Lychnocanium fenestratum</i> , n. sp.,	× 400	1228
Fig. 11. <i>Lychnocanium pyriforme</i> , n. sp.,	× 300	1225
Fig. 12. <i>Lychnocanium fortipes</i> , n. sp.,	× 300	1227
Fig. 13. <i>Lychnocanium tuberosum</i> , n. sp.,	× 300	1227
Fig. 14. <i>Lychnocanium nodosum</i> , n. sp.,	× 300	1225
Fig. 15. <i>Lychnocanium sigmopodium</i> , n. sp.,	× 400	1228
Fig. 16. <i>Dictyophimus pyramis</i> , n. sp.,	× 300	1196
Fig. 17. <i>Dictyophimus triserratus</i> , n. sp.,	× 300	1200



LYCHNOCANIUM

PLATE 62.

Legion NASSELLARIA.

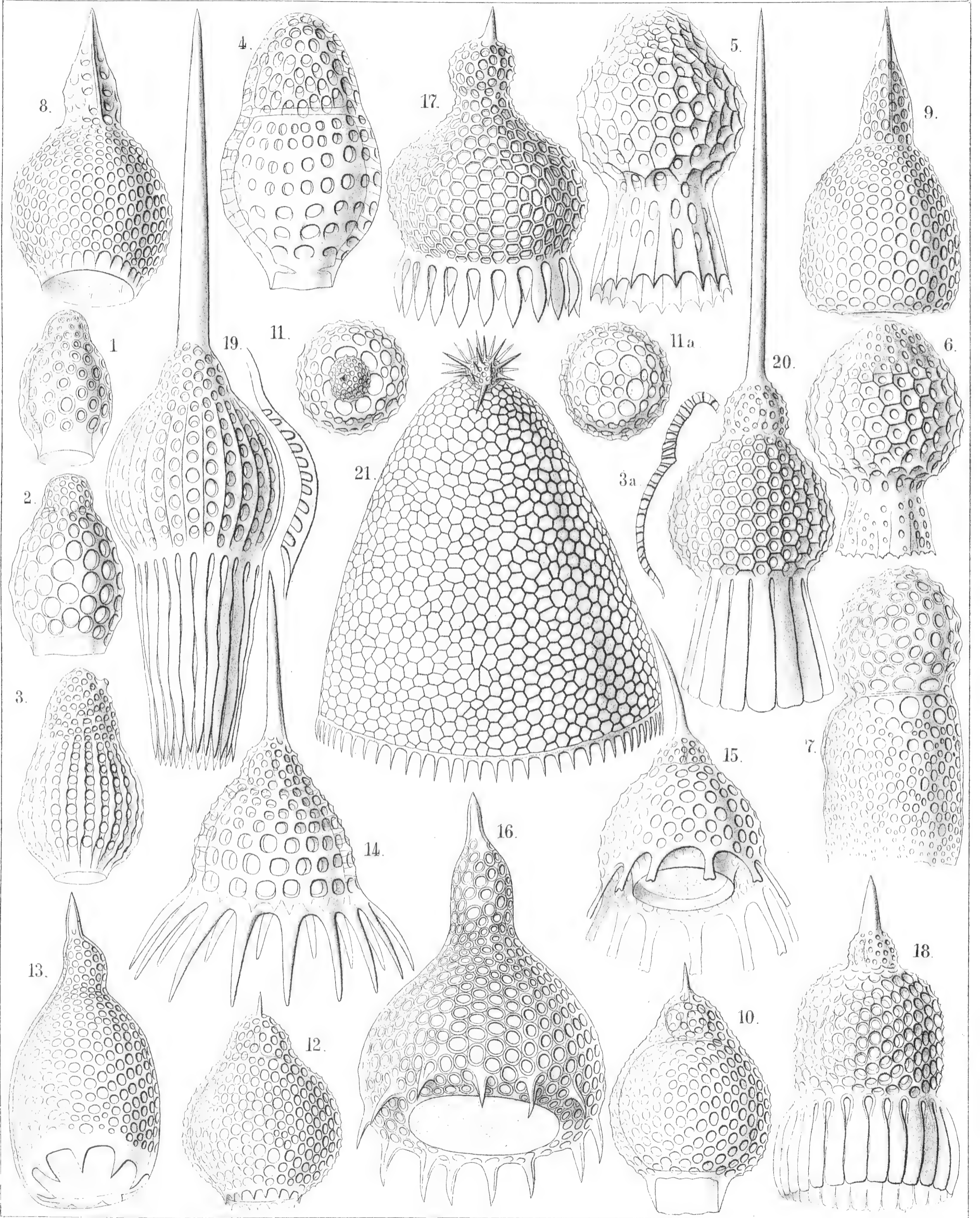
Order CYRTOIDEA.

Families ANTHOCYRTIDA, SETHOCYRTIDA et PHORMOCYRTIDA.

PLATE 62.

ANTHOCYRTIDA, SETHOCYRTIDA et PHORMOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Dictyocephalus australis</i> , n. sp.,	× 300	1306
Fig. 2. <i>Dictyocephalus mediterraneus</i> , n. sp.,	× 300	1307
Fig. 3. <i>Sethamphora costata</i> , n. sp. (vel <i>Dictyocephalus costatus</i>),	× 300	1251
Fig. 4. <i>Dictyocephalus amphora</i> , n. sp.,	× 400	1305
Fig. 5. <i>Cycladophora</i> (?) <i>favosa</i> , n. sp. (an <i>Dictyocephalus</i> ?),	× 400	1380
Fig. 6. <i>Cycladophora</i> (?) <i>favosa</i> , n. sp. (an <i>Dictyocephalus</i> ?), A variety with obliterated ribs (?).	× 400	1380
Fig. 7. <i>Dictyocephalus globiceps</i> , n. sp.,	× 400	1308
Fig. 8. <i>Sethocorys achillis</i> , n. sp.,	× 400	1301
Fig. 9. <i>Sethocyrtis oxycephalis</i> , n. sp.,	× 400	1299
Fig. 10. <i>Sethocorys odysseus</i> , n. sp.,	× 400	1302
Fig. 11. <i>Sethocyrtis agamemnonis</i> , n. sp., Seen from above (apical view).	× 300	1300
Fig. 11A. <i>Sethocyrtis agamemnonis</i> , n. sp., Seen from above, after removal of the cephalis.	× 300	1300
Fig. 12. <i>Anthocyrtium pyrum</i> , n. sp.,	× 400	1276
Fig. 13. <i>Anthocyrtis ovata</i> , n. sp.,	× 300	1272
Fig. 14. <i>Anthocyrtium chrysanthemum</i> , n. sp.	× 400	1272
Fig. 15. <i>Anthocyrtidium ligularia</i> , n. sp.,	× 400	1278
Fig. 16. <i>Anthocyrtidium cineraria</i> , n. sp.,	× 400	1278
Fig. 17. <i>Anthocyrtium campanula</i> , n. sp.,	× 400	1274
Fig. 18. <i>Anthocyrtium doronicum</i> , n. sp.,	× 300	1276
Fig. 19. <i>Anthocyrtium flosculus</i> , n. sp.,	× 300	1277
Fig. 20. <i>Anthocyrtium adonis</i> , n. sp.,	× 300	1273
Fig. 21. <i>Sethoconus anthocyrtis</i> , n. sp. (vel <i>Anthocyrtium sethoconium</i>),	× 300	1296



1-7. DICTYOCEPHALUS, 8-11. LOPHOPHAENA, 12-21. ANTHOCYRTIS.

PLATE 63.

Legion NASSELLARIA.

Order CYRTOIDEA.

Family TRIPOCYRTIDA.

PLATE 63.

TRIPOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Callimitra carolotæ</i> , n. sp., Lateral view.	× 400	1217
Fig. 2. <i>Callimitra annæ</i> , n. sp., Dorsal view.	× 400	1217
Fig. 3. <i>Callimitra emmæ</i> , n. sp., Lateral view.	× 300	1218
Fig. 4. <i>Callimitra emmæ</i> , n. sp., Cephalis alone, with the enclosed four-lobed central capsule, and the inter- nal four divergent beams; surrounded by some scattered xanthellæ.	× 400	1218
Fig. 5. <i>Callimitra agnesæ</i> , n. sp., Dorsal view.	× 400	1217
Fig. 6. <i>Callimitra elisabethæ</i> , n. sp., Lateral view.	× 400	1218
Fig. 7. <i>Callimitra carolotæ</i> , n. sp., Seen from above (from the apical pole).	× 200	1217
Fig. 8. <i>Callimitra carolotæ</i> , n. sp., Seen from below (from the basal pole).	× 200	1217

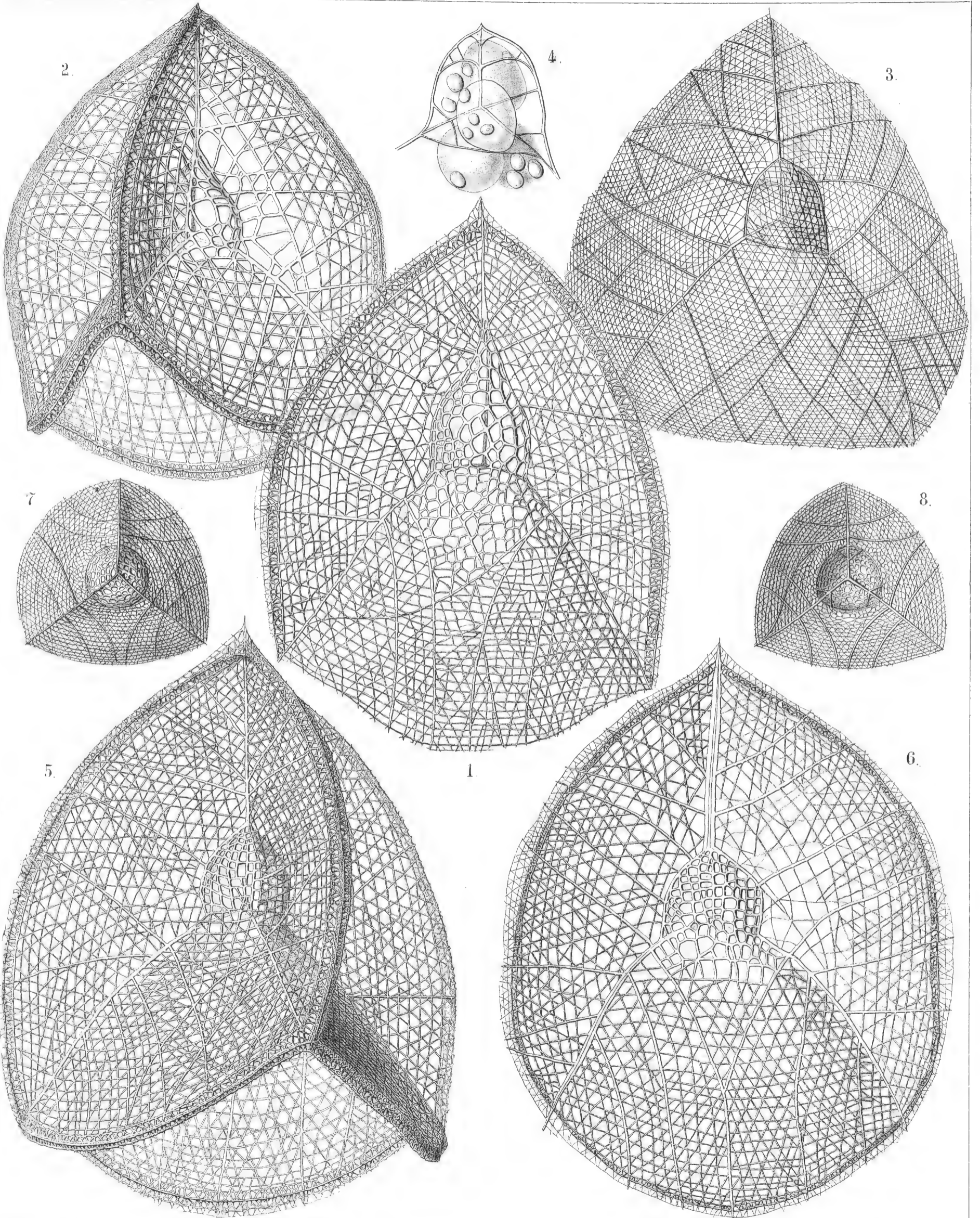


PLATE 64.

Legion NASSELLARIA.

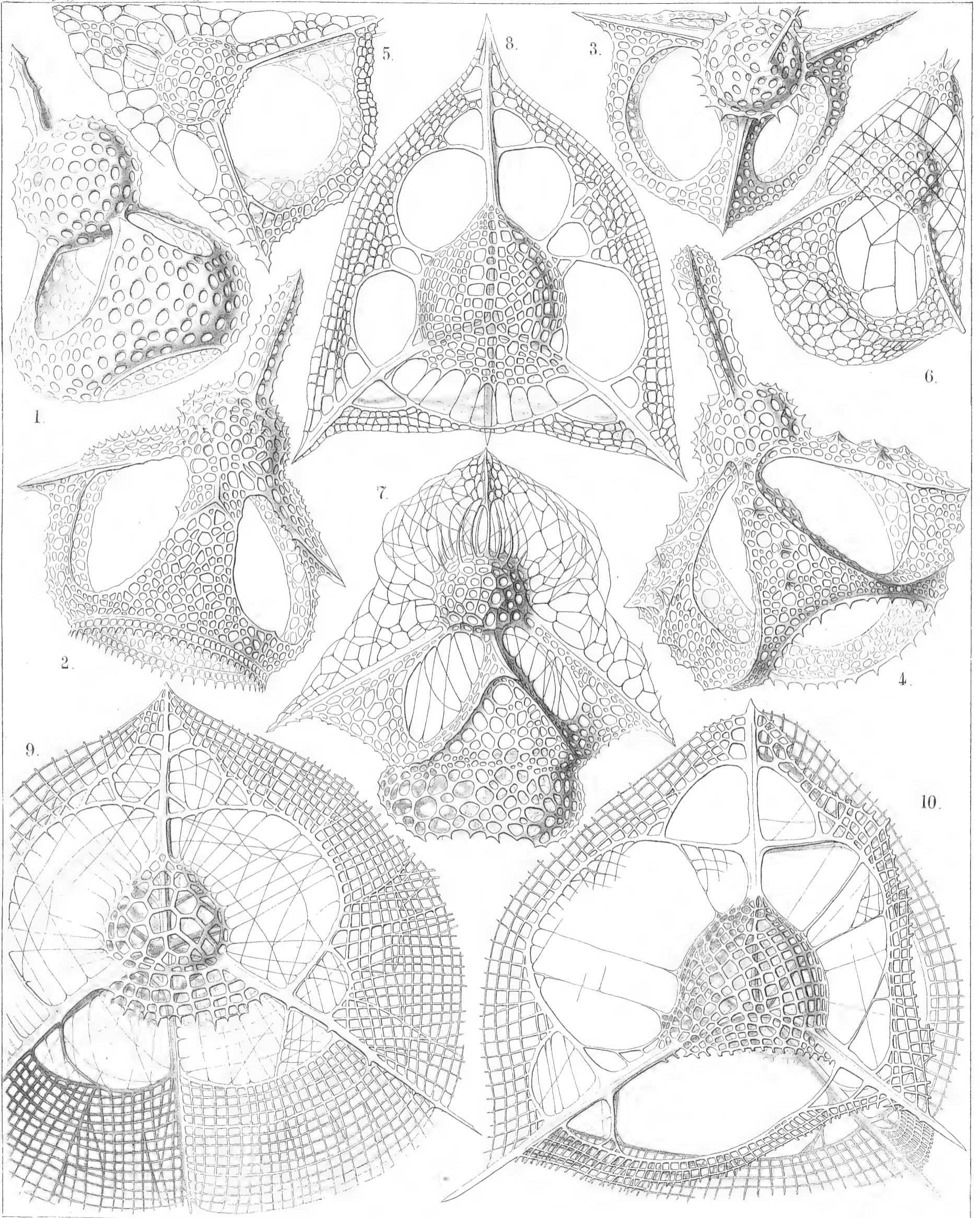
Order CYRTOIDEA.

Families TRIPOCYRTIDA et PODOCYRTIDA.

PLATE 64.

TRIPOCYRTIDA et PODOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Clathrocanium sphærocephalum</i> , n. sp.,	× 600	1211
Fig. 2. <i>Clathrocanium diadema</i> , n. sp.,	× 600	1212
Fig. 3. <i>Clathrocanium triomma</i> , n. sp.,	× 600	1211
Fig. 4. <i>Clathrocanium reginæ</i> , n. sp.,	× 600	1212
Fig. 5. <i>Clathrolychnus araneosus</i> , n. sp.,	× 600	1240
Fig. 6. <i>Clathrolychnus periplectus</i> , n. sp.,	× 600	1241
Fig. 7. <i>Pteropilium clathrocanium</i> , n. sp.,	× 400	1327
Fig. 8. <i>Clathrocorys murrayi</i> , n. sp.,	× 600	1219
Fig. 9. <i>Clathrocorys giltschii</i> , n. sp.,	× 600	1220
Fig. 10. <i>Clathrocorys teuscheri</i> , n. sp.,	× 600	1220



H. Haeckel and A. Giltisch, Del.

E. Giltisch, Jena, Lithogr.

1-4. CLATHROCANIUM, 5-7. CLATHROLYCHNUS, 8-10. CLATHROCORYS.

PLATE 65.

Legion NASSELLARIA.

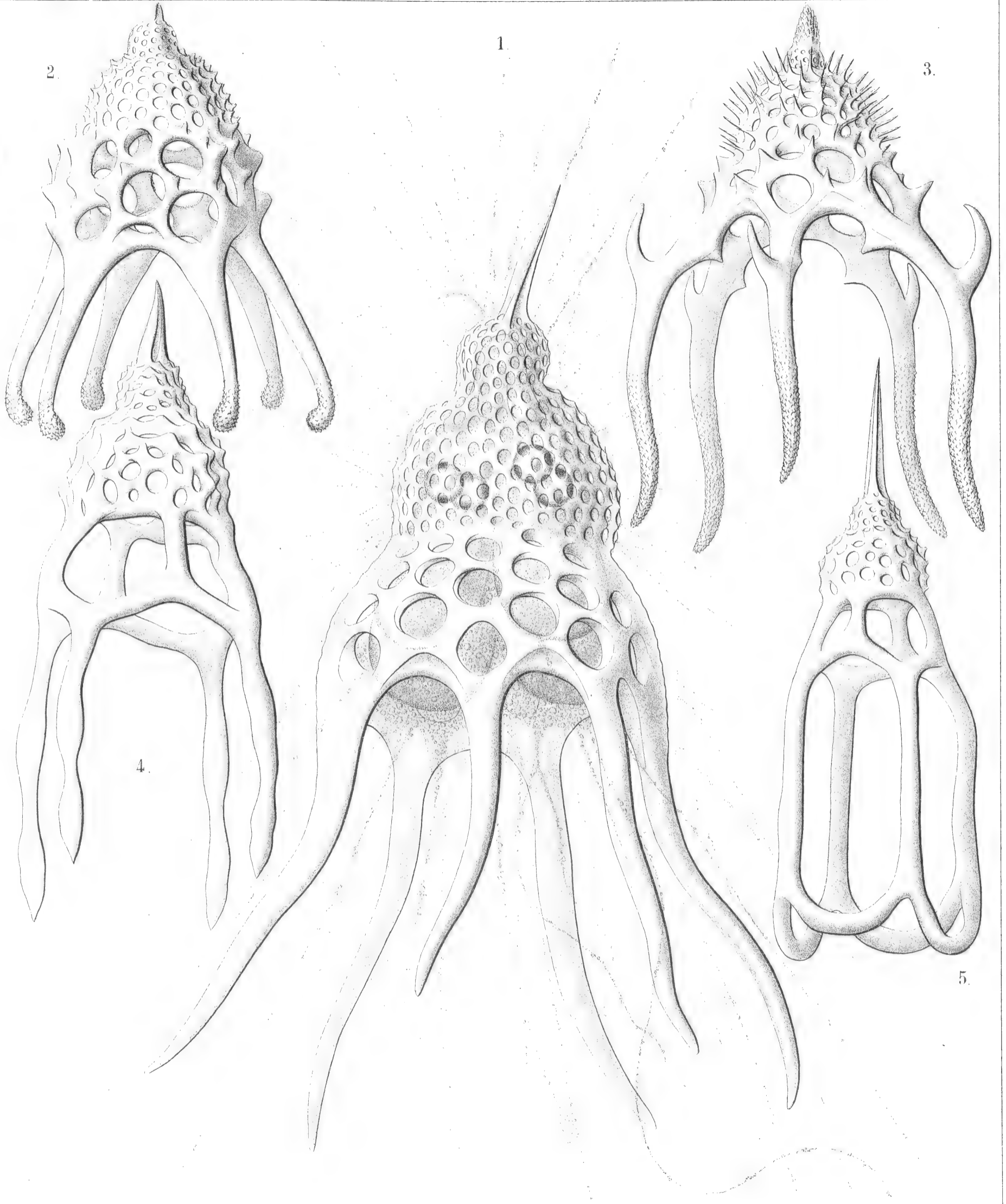
Order CYRTOIDEA.

Family PHORMOCYRTIDA.

PLATE 65.

PHORMOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Alacorys friderici</i> , n. sp. (vel <i>Hexalacorys friderici</i>), .	× 400	1372
<p>The central capsule, enclosed in the fenestrated shell, exhibits in its lower half four large club-shaped lobes, each of which includes in its upper part a large oil-globule. The uppermost, undivided part of the capsule includes the nucleus, which protrudes four small nuclear lobes through the four holes of the cortinar septum into the thorax. Numerous long pseudopodia arise from the granular sarcomatrix, which the capsule surrounds, and pass through the pores of the siliceous shell.</p>		
Fig. 2. <i>Alacorys guilelmi</i> , n. sp. (vel <i>Hexalacorys guilelmi</i>), .	× 300	1372
Fig. 3. <i>Alacorys bismarckii</i> , n. sp. (vel <i>Pentalacorys bismarckii</i>), .	× 200	1372
Fig. 4. <i>Alacorys lutheri</i> , n. sp. (vel <i>Tetralacorys lutheri</i>), .	× 400	1370
Fig. 5. <i>Cycladophora goetheana</i> , n. sp. (vel <i>Lampterium goetheanum</i>),	× 300	1376



1. 2. HEXALACORYS, 3. PENTALACORYS, 4. TETRALACORYS,
5. THEOPHORMIS.

PLATE 66.

Legion NASSELLARIA.

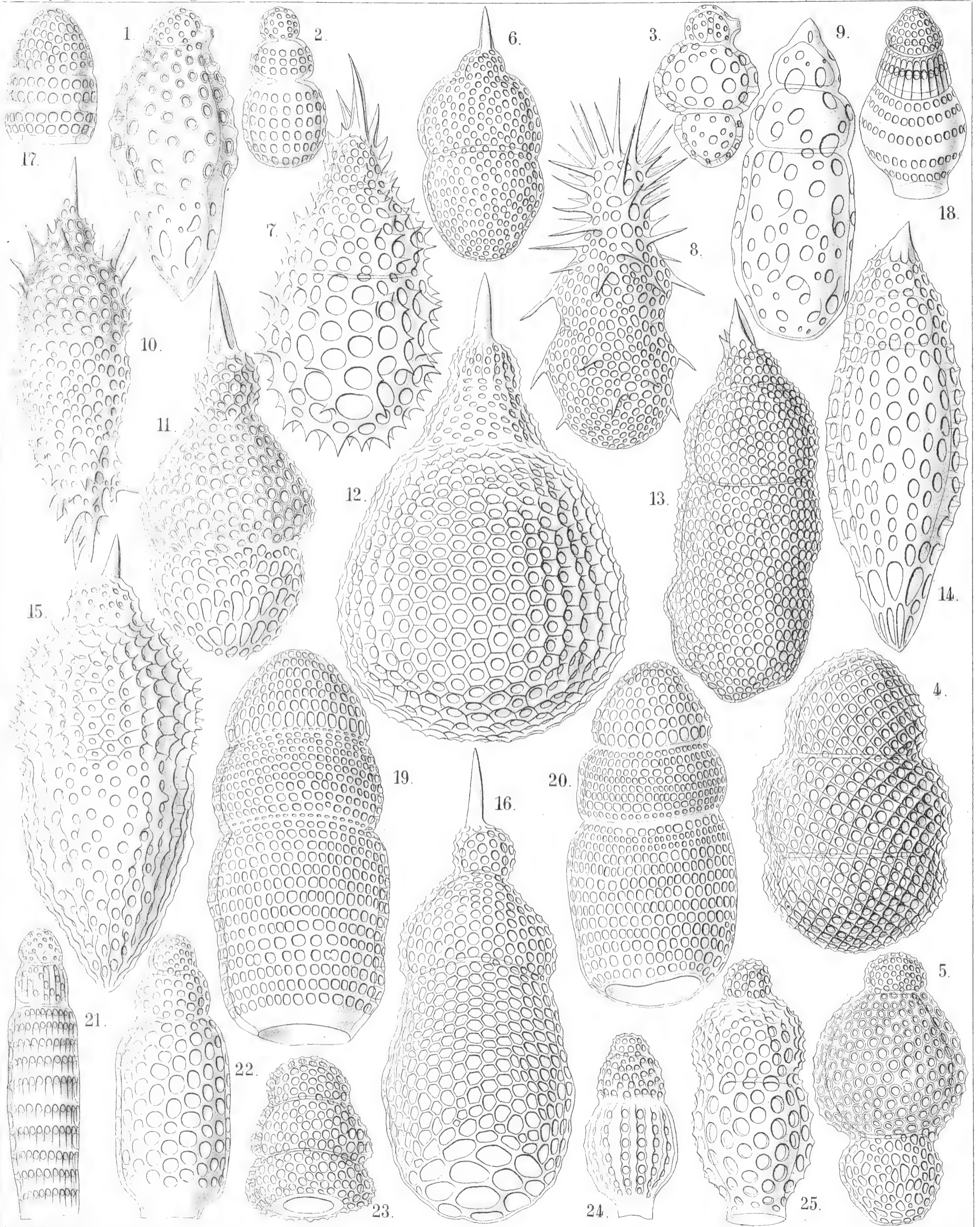
Order CYRTOIDEA.

Family THEOCYRTIDA.

PLATE 66.

THEOCYRTIDA.

						Diam.	Page
Fig. 1.	<i>Tricolocapsa theophrasti</i> , n. sp.,	.	.	.	.	× 400	1432
Fig. 2.	<i>Tricolocapsa schleidenii</i> , n. sp.,	.	.	.	.	× 300	1433
Fig. 3.	<i>Tricolocapsa discoridis</i> , n. sp.,	.	.	.	.	× 300	1432
Fig. 4.	<i>Tricolocapsa decandollei</i> , n. sp.,	.	.	.	.	× 300	1433
Fig. 5.	<i>Tricolocapsa linnæi</i> , n. sp.,	.	.	.	.	× 400	1432
Fig. 6.	<i>Theocapsa aristotelis</i> , n. sp.,	.	.	.	.	× 300	1427
Fig. 7.	<i>Theocapsa mülleri</i> , n. sp.,	.	.	.	.	× 400	1431
Fig. 8.	<i>Theocapsa democriti</i> , n. sp.,	.	.	.	.	× 400	1427
Fig. 9.	<i>Theocapsa forskalii</i> , n. sp.,	.	.	.	.	× 400	1429
Fig. 10.	<i>Theocapsa cuvieri</i> , n. sp.,	.	.	.	.	× 400	1430
Fig. 11.	<i>Theocapsa wottonis</i> , n. sp.,	.	.	.	.	× 400	1428
Fig. 12.	<i>Theocapsa darwini</i> , n. sp.,	.	.	.	.	× 300	1431
Fig. 13.	<i>Theocapsa linnæi</i> , n. sp.,	.	.	.	.	× 400	1429
Fig. 14.	<i>Theocapsa wolffi</i> , n. sp.,	.	.	.	.	× 400	1429
Fig. 15.	<i>Theocapsa malpighii</i> , n. sp.,	.	.	.	.	× 400	1428
Fig. 16.	<i>Theocapsa lamarckii</i> , n. sp.,	.	.	.	.	× 400	1430
Fig. 17.	<i>Tricolocampe amphizona</i> , n. sp.,	.	.	.	.	× 400	1413
Fig. 18.	<i>Theocampe collaris</i> , n. sp.,	.	.	.	.	× 300	1425
Fig. 19.	<i>Tricolocampe polyzona</i> , n. sp.,	.	.	.	.	× 400	1412
Fig. 20.	<i>Tricolocampe stenozone</i> , n. sp.,	.	.	.	.	× 400	1413
Fig. 21.	<i>Tricolocampe cylindrica</i> , n. sp.,	.	.	.	.	× 300	1412
Fig. 22.	<i>Tricolocampe urnula</i> , n. sp.,	.	.	.	.	× 400	1422
Fig. 23.	<i>Theocampe stenostoma</i> , n. sp.,	.	.	.	.	× 300	1423
Fig. 24.	<i>Theocampe costata</i> , n. sp.,	.	.	.	.	× 300	1424
Fig. 25.	<i>Theocampe sphaerotherax</i> , n. sp.,	.	.	.	.	× 300	1424



1- 5. TRICOLOCAPSA, 6.-16. TRICOLOPERA, 17.-25. TRICOLOCAMPE.

PLATE 67.

Legion NASSELLARIA.

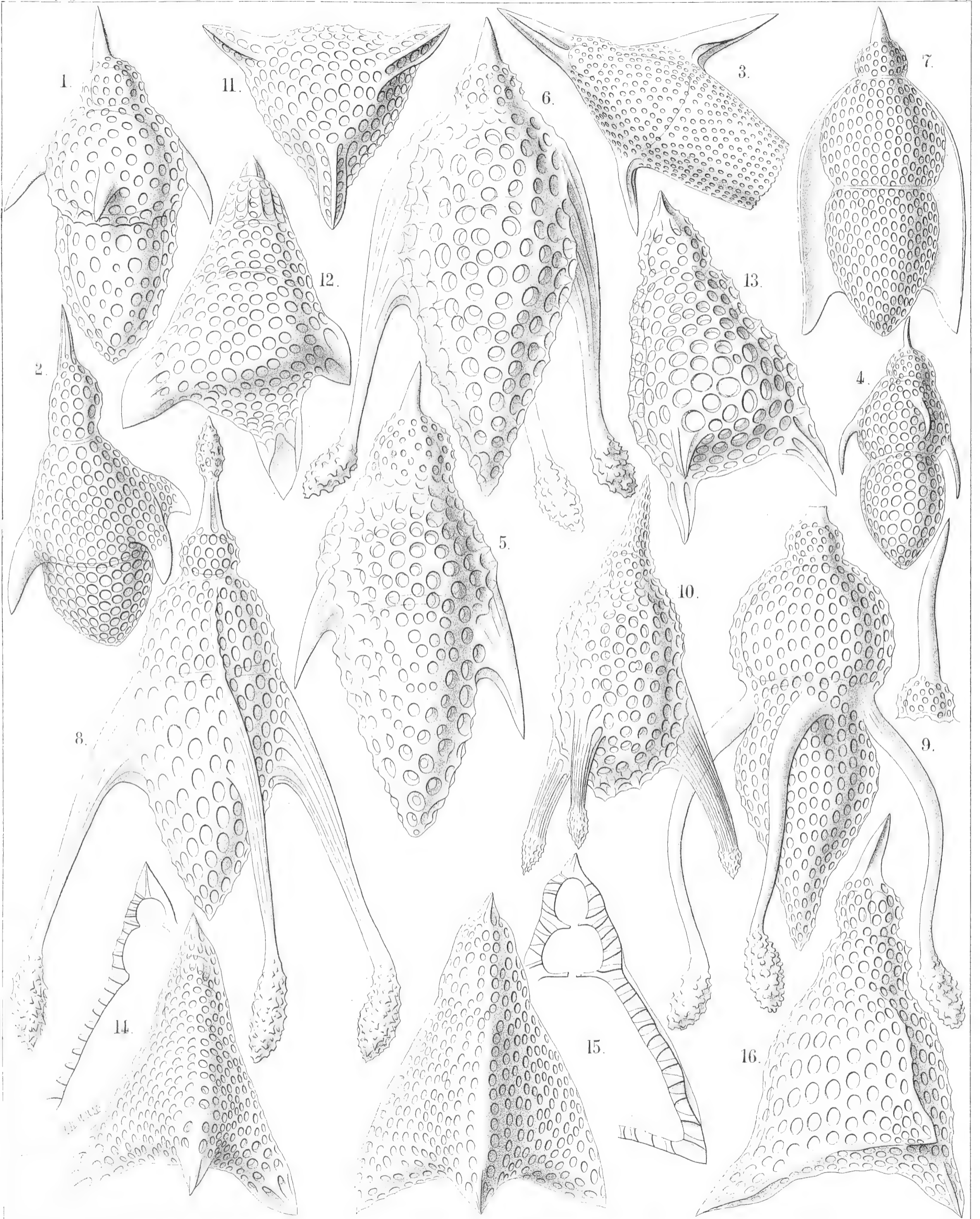
Order CYRTOIDEA.

Family PODOCYRTIDA.

PLATE 67.

PODOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Lithornithium falco</i> , n. sp.,	× 400	1355
Fig. 2. <i>Lithornithium fringilla</i> , n. sp.,	× 400	1355
Fig. 3. <i>Lithornithium ciconia</i> , n. sp.,	× 400	1354
Fig. 4. <i>Lithornithium trochilus</i> , n. sp.,	× 400	1355
Fig. 5. <i>Theopera fusiformis</i> , n. sp.,	× 400	1357
Fig. 6. <i>Theopera chytropus</i> , n. sp.,	× 400	1358
Fig. 7. <i>Theopera prismatica</i> , n. sp.,	× 300	1357
Fig. 8. <i>Theopera cortina</i> , n. sp.,	× 400	1358
Fig. 9. <i>Rhopalocanium delphicum</i> , n. sp.,	× 400	1360
Fig. 10. <i>Rhopalocanium lasanum</i> , n. sp.,	× 300	1359
Fig. 11. <i>Lithochytris lanterna</i> , n. sp.,	× 300	1364
Fig. 12. <i>Lithochytris cortina</i> , n. sp.,	× 300	1362
Fig. 13. <i>Lithochytris pyriformis</i> , n. sp.,	× 400	1362
Fig. 14. <i>Lithochytris lucerna</i> , n. sp.,	× 300	1364
Fig. 15. <i>Lithochytris pteropus</i> , n. sp.,	× 300	1364
Fig. 16. <i>Lithochytris galeata</i> , n. sp.,	× 400	1363



1-5. LITHORNITHIUM, 6-10. RHOPALOCANIUM, 11-16. LITHOCHYTRIS.

F. Gilchrist, Iona, Lithogr.

PLATE 68.

Legion NASSELLARIA.

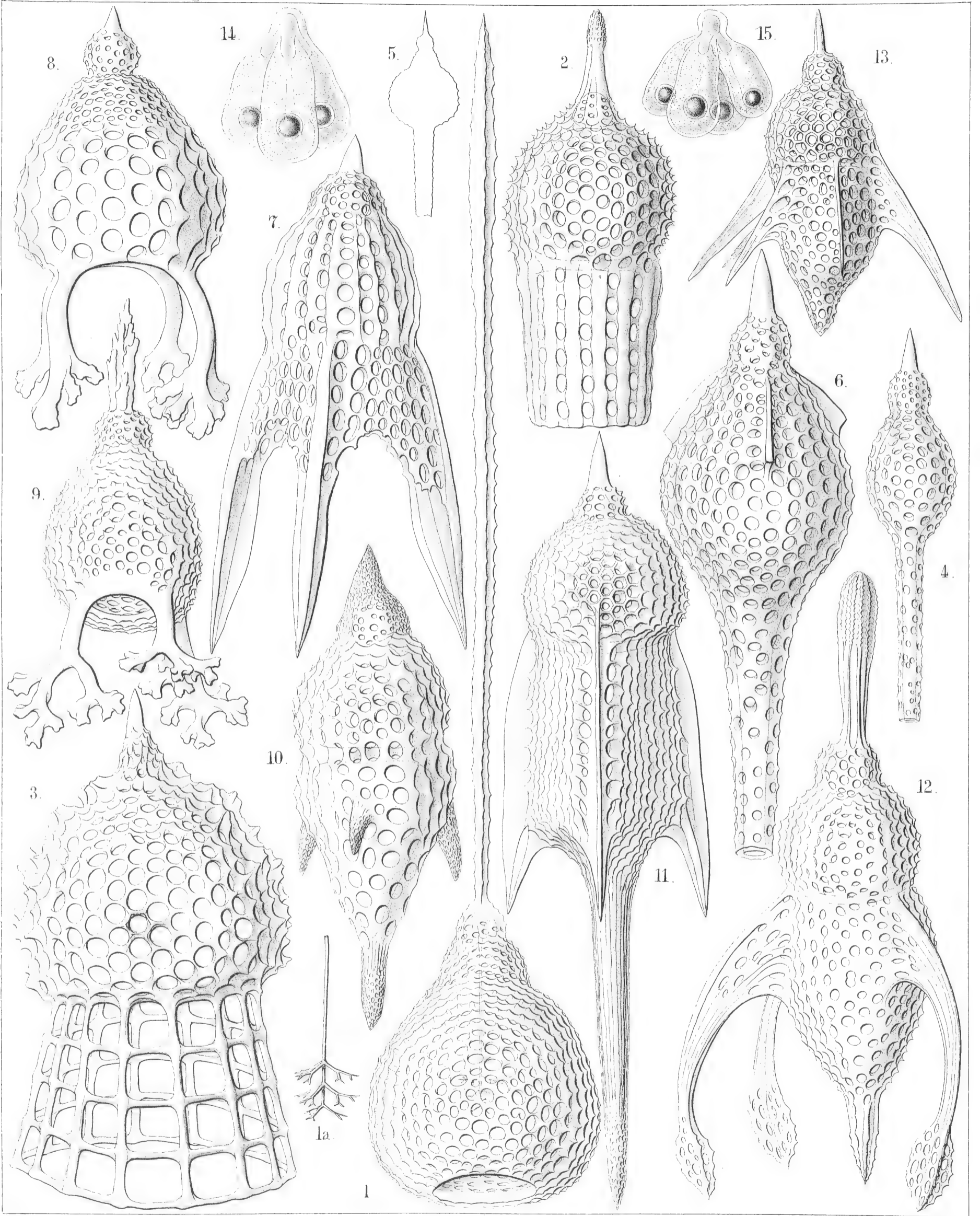
Order CYRTOIDEA.

Families PODOCYRTIDA, PHORMOCYRTIDA et THEOCYRTIDA.

PLATE 68.

PODOCYRTIDA, PHORMOCYRTIDA et THEOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Axocorys macroceros</i> , n. sp.,	× 300	1420
Fig. 1a. The internal axial rod of the shell, which bears on its basal part three verticils of three diverging forked spines,	× 300	
Fig. 2. <i>Cycladophora fenestrata</i> , n. sp.,	× 300	1380
Fig. 3. <i>Cycladophora pantheon</i> , n. sp.,	× 400	1379
Fig. 4. <i>Theosyringium tibia</i> , n. sp.,	× 300	1409
Fig. 5. <i>Theosyringium pipetta</i> , n. sp.,	× 200	1409
Fig. 6. <i>Pterocorys tubulosa</i> , n. sp.,	× 400	1319
Fig. 7. <i>Pterocanium pyramis</i> , n. sp.,	× 400	1330
Fig. 8. <i>Thyrsocyrtis rhizopodium</i> , n. sp.,	× 300	1351
Fig. 9. <i>Thyrsocyrtis arborescens</i> , n. sp.,	× 400	1350
Fig. 10. <i>Rhopalatractus foveolatus</i> , n. sp.,	× 400	1361
Fig. 11. <i>Rhopalatractus pentacanthus</i> , n. sp.,	× 300	1361
Fig. 12. <i>Rhopalatractus fenestratus</i> , n. sp. (vel <i>Dictyatractus fene-</i> <i>stratus</i>),	× 300	1361
Fig. 13. <i>Hexalatractus fusiformis</i> , n. sp.,	× 300	1394
Fig. 14. <i>Sethornithium dictyopterum</i> , n. sp.,	× 300	1356
The trilobate central capsule, which contains in its uppermost part the trilobate nucleus, and in the basal part of each lobe an oil-globule.		
Fig. 15. <i>Lophocyrtis synapta</i> , n. sp.,	× 300	1411
The quadrilobate central capsule, which contains in its uppermost part the quadrilobate nucleus, and in the basal part of each lobe an oil- globule.		



H. Haeckel and A. G. Sch. Del.

E. Giltch, Jena, Lithogr.

1. AXOCORYS, 2. 3. CYCLADOPHORA, 4. 5. THEOSYRINGIUM, 6. PTEROSYRINGIUM,
 7. PTEROCANIUM, 8. 9. THYRSOCYRTIS, 10. 11. RHOPALATRACTUS,
 12. DICTYATRACTUS, 13. HEXALATRACTUS.

PLATE 69.

Legion NASSELLARIA.

Order CYRTOIDEA.

Families PHORMOCYRTIDA et THEOCYRTIDA.

PLATE 69.

PHORMOCYRTIDA et THEOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Theocorys plutonis</i> , n. sp.,	× 400	1416
Fig. 2. <i>Lophoconus rhinoceros</i> , n. sp.,	× 400	1405
Fig. 3. <i>Theocorys apollinis</i> , n. sp.,	× 300	1418
Fig. 4. <i>Theoconus jovis</i> , n. sp.,	× 400	1401
Fig. 5. <i>Theocorys veneris</i> , n. sp.,	× 300	1415
Fig. 6. <i>Phormocyrtis costata</i> , n. sp.,	× 300	1369
Fig. 7. <i>Theoconus junonis</i> , n. sp.,	× 300	1401
Fig. 8. <i>Theocyrtis ptychodes</i> , n. sp.,	× 400	1408
Fig. 9. <i>Lophocorys astrocephala</i> , n. sp.,	× 300	1421
Fig. 10. <i>Theocorys obliqua</i> , n. sp.,	× 400	1417
Fig. 11. <i>Theocorys dianæ</i> , n. sp.,	× 400	1416
Fig. 12. <i>Lophocorys bovicornis</i> , n. sp.,	× 300	1422
Fig. 13. <i>Theocyrtis macroceros</i> , n. sp.,	× 400	1407
Fig. 14. <i>Theocorys minervæ</i> , n. sp.,	× 300	1419
Fig. 15. <i>Phormocyrtis longicornis</i> , n. sp.,	× 400	1370
Fig. 16. <i>Theocorys ovata</i> , n. sp.,	× 300	1416

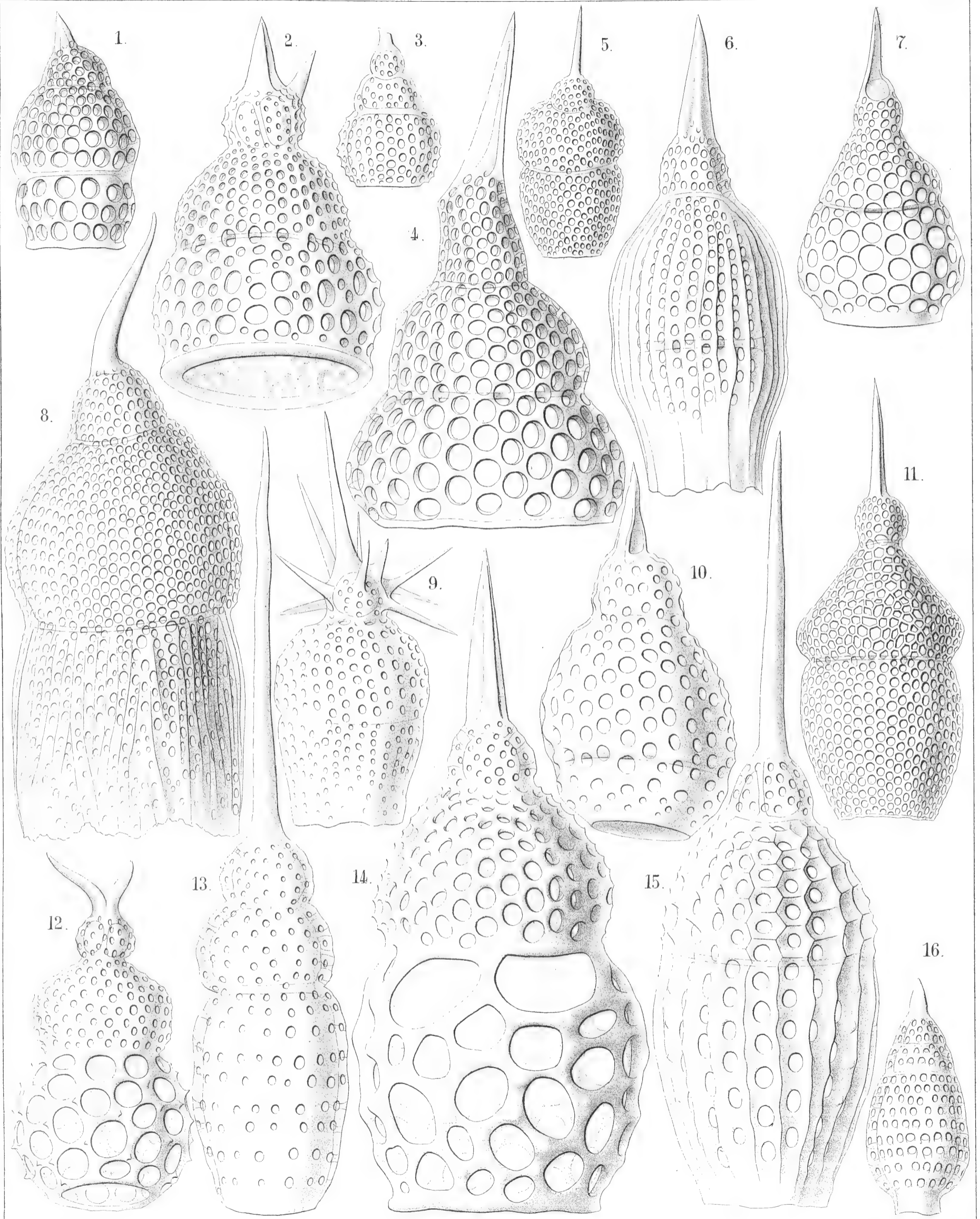


PLATE 70.

Legion NASSELLARIA.

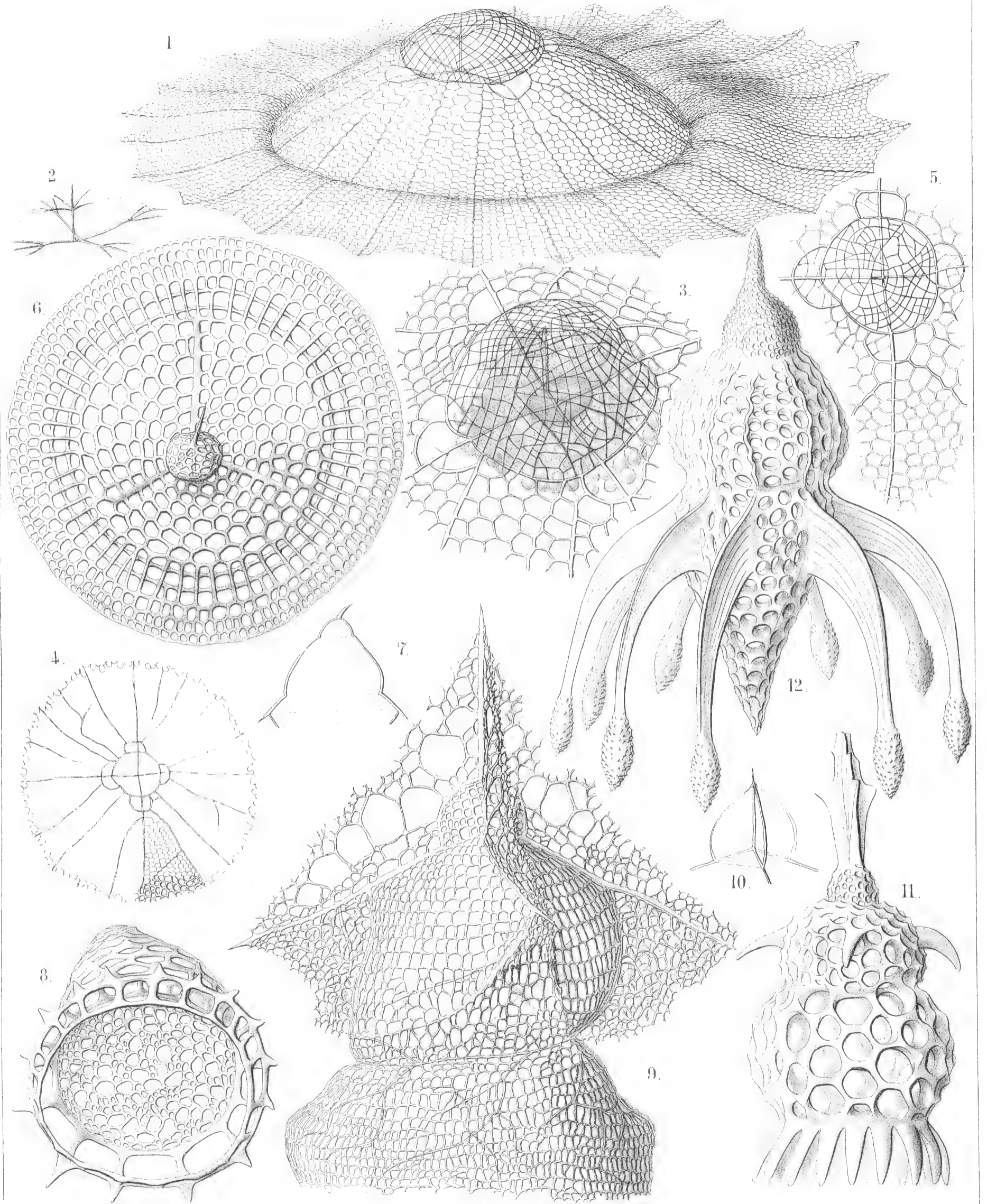
Order CYRTOIDEA.

Families ANTHOCYRTIDA, PODOCYRTIDA, PHORMOCYRTIDA
et THEOCYRTIDA.

PLATE 70.

ANTHOCYRTIDA, PODOCYRTIDA, PHORMOCYRTIDA et THEOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Theophormis callipilium</i> , n. sp.,	× 300	1367
Fig. 2. <i>Theophormis callipilium</i> , n. sp.,	× 300	1367
The four cruciate rods of the cortinar septum and the vertical columella in its centre.		
Fig. 3. <i>Theophormis callipilium</i> , n. sp.,	× 400	1367
The cephalis alone with the enclosed quadrilobate central capsule, which is surrounded by numerous xanthellæ.		
Fig. 4. <i>Sethophormis umbrella</i> , n. sp.,	× 150	1248
Fig. 5. <i>Sethophormis umbrella</i> , n. sp.,	× 400	1248
Cephalis with the cruciform cortinar septum.		
Fig. 6. <i>Theopilium tricostatum</i> , n. sp.,	× 400	1322
Seen from above.		
Fig. 7. <i>Phrenocodon clathrostomium</i> , n. sp.,	× 250	1434
Vertical section through the shell.		
Fig. 8. <i>Phrenocodon clathrostomium</i> , n. sp.,	× 500	1434
Shell seen half from below, and exhibiting the fenestrated septum between thorax and abdomen.		
Fig. 9. <i>Pteropilium stratiotes</i> , n. sp.,	× 400	1326
Fig. 10. <i>Pteropilium stratiotes</i> , n. sp.,	× 400	1326
The three rods of the cortinar septum and the three arches connecting them with the central axial columella.		
Fig. 11. <i>Pterocodon ornatus</i> , n. sp.,	× 300	1333
Fig. 12. <i>Theophæna corona</i> , n. sp.,	× 300	1394



H. Haeckel and A. Giltisch Del.

E. Giltisch, Jena, Lithogr.

1-5. THEOPHORMIS, 6. THEOPILIUM, 7. 8. CLATHROSTOMIUM,
9. 10. PTEROPILIUM, 11. PTEROCODON, 12. THEOPHATNA.

PLATE 71.

Legion NASSELLARIA.

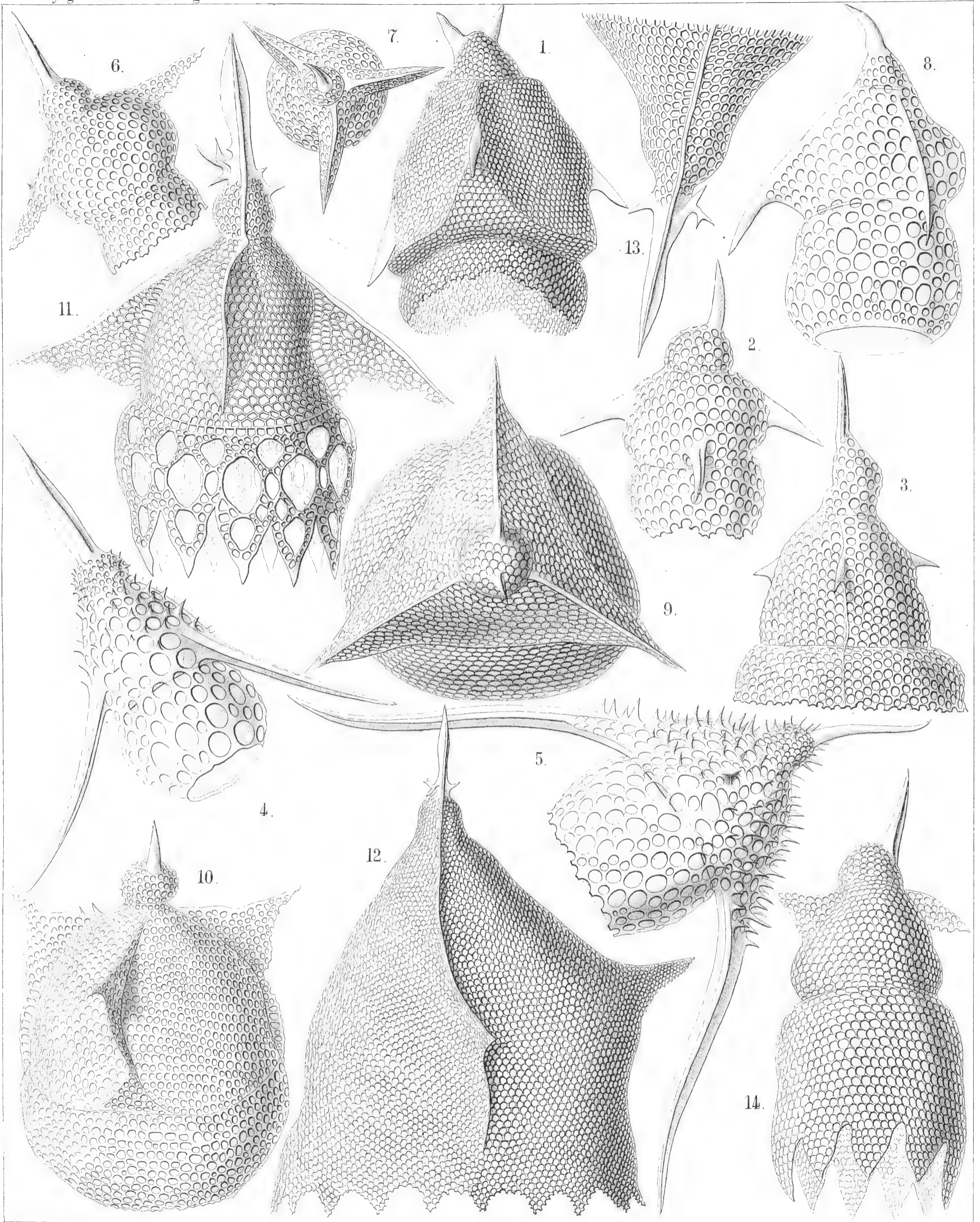
Order CYRTOIDEA.

Family PODOCYRTIDA.

PLATE 71.

PODOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Pterocorys rhinoceros</i> , n. sp.,	× 400	1320
Fig. 2. <i>Pterocorys columba</i> , n. sp.,	× 400	1317
Fig. 3. <i>Pterocorys campanula</i> , n. sp.,	× 400	1316
Fig. 4. <i>Pterocorys hirundo</i> , n. sp.,	× 300	1318
Fig. 5. <i>Pterocorys aquila</i> , n. sp.,	× 300	1317
Fig. 6. <i>Dictyoceras insectum</i> , n. sp.,	× 400	1324
Fig. 7. <i>Dictyoceras insectum</i> , n. sp.,	× 400	1324
Seen from the apex.		
Fig. 8. <i>Dictyoceras formica</i> , n. sp.,	× 400	1325
Fig. 9. <i>Dictyoceras melitta</i> , n. sp.,	× 400	1325
Seen from the apex.		
Fig. 10. <i>Dictyoceras bombus</i> , n. sp.,	× 400	1325
Fig. 11. <i>Dictyocodon annasethe</i> , n. sp.,	× 400	1334
Fig. 12. <i>Dictyocodon palladius</i> , n. sp.,	× 300	1335
Fig. 13. <i>Dictyocodon palladius</i> , n. sp.,	× 600	1335
Apical part of the shell alone.		
Fig. 14. <i>Dictyocodon carolotæ</i> , n. sp.,	× 300	1335



E. Haeckel and A. Giltch Del.

E. Giltch, Jena, Lithogr.

1-5. PTEROCORYS, 6-10. DICTYOCERAS, 11-14. DICTYOCODON.

PLATE 72.

Legion NASSELLARIA.

Order CYRTOIDEA.

Family PODOCYRTIDA.

PLATE 72.

PODOCYRTIDA.

				Diam.	Page
Fig. 1.	<i>Podocyrtis prismatica</i> , n. sp.,	.	.	× 300	1340
Fig. 2.	<i>Podocyrtis corythæola</i> , n. sp.,	.	.	× 300	1339
Fig. 3.	<i>Podocyrtis lithoconus</i> , n. sp.,	.	.	× 300	1348
Fig. 4.	<i>Podocyrtis tripodiscus</i> , n. sp.,	.	.	× 300	1338
Fig. 5.	<i>Podocyrtis magnifica</i> , n. sp.,	.	.	× 500	1341
Fig. 6.	<i>Podocyrtis divergens</i> , n. sp.,	.	.	× 400	1340
Fig. 7.	<i>Podocyrtis cristata</i> , n. sp.,	.	.	× 400	1342
Fig. 8.	<i>Podocyrtis pedicellaria</i> , n. sp.,	.	.	× 300	1347
Fig. 9.	<i>Podocyrtis flosculata</i> , n. sp.,	.	.	× 500	1341
Fig. 10.	<i>Podocyrtis surena</i> , n. sp.,	.	.	× 400	1339

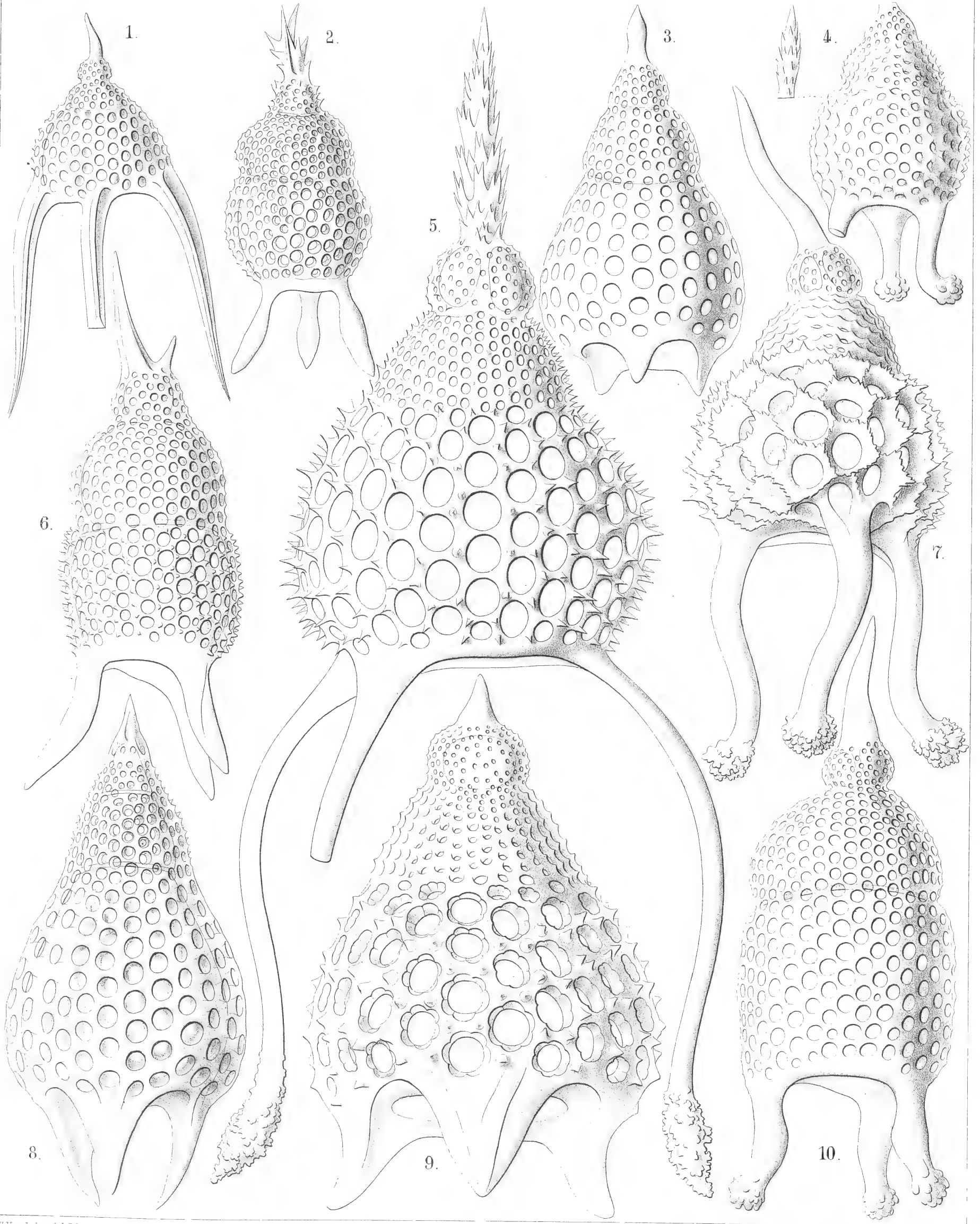


PLATE 73.

Legion NASSELLARIA.

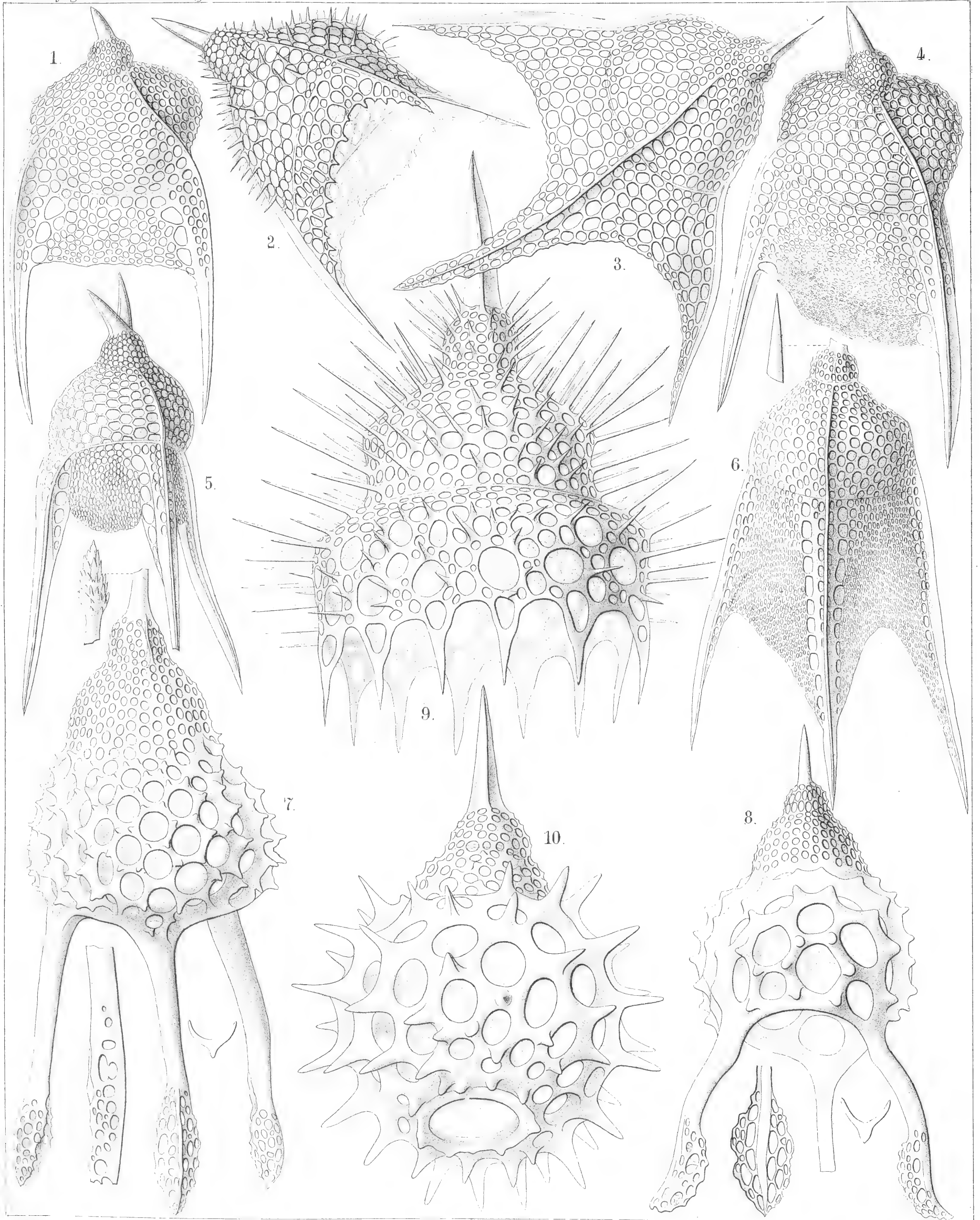
Order CYRTOIDEA.

Families PODOCYRTIDA et PHORMOCYRTIDA.

PLATE 73.

PODOCYRTIDA et PHORMOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Pterocanium tricolpum</i> , n. sp.,	× 400	1331
Fig. 2. <i>Pterocanium orcinum</i> , n. sp.,	× 400	1329
Fig. 3. <i>Pterocanium gravidum</i> , n. sp.,	× 400	1329
Fig. 4. <i>Pterocanium eucolpum</i> , n. sp.,	× 400	1332
Fig. 5. <i>Pterocanium bicornne</i> , n. sp.,	× 400	1332
Fig. 6. <i>Pterocanium virgineum</i> , n. sp.,	× 400	1330
Fig. 7. <i>Dictyopodium thyrsolophus</i> , n. sp.,	× 300	1354
Fig. 8. <i>Dictyopodium scaphopodium</i> , n. sp.,	× 300	1353
Fig. 9. <i>Calocyclus monumentum</i> , n. sp.,	× 400	1385
Fig. 10. <i>Calocyclus casta</i> , n. sp.,	× 400	1384



E. Haeckel and A. Giltsch Del.

E. Giltsch, Jena, Lithogr.

1-8. DICTYOPODIUM, 9, 10. LAMPROCYCLAS.

PLATE 74.

Legion NASSELLARIA.

Order CYRTOIDEA.

Family PHORMOCYRTIDA.

PLATE 74.

PHORMOCYRTIDA.

	Diam.	Page
Fig. 1. <i>Calocyclus parthenia</i> , n. sp.,	× 400	1385
Fig. 2. <i>Calocyclus amicæ</i> , n. sp.,	× 400	1382
Fig. 3. <i>Calocyclus vestalis</i> , n. sp.,	× 400	1382
Fig. 4. <i>Calocyclus virginis</i> , n. sp.,	× 300	1381
Fig. 5. <i>Calocyclus veneris</i> , n. sp.,	× 300	1381
Fig. 6. <i>Clathrocyclas basilea</i> , n. sp. (vel <i>Calocyclus basilea</i>),	× 400	1386
Fig. 7. <i>Clathrocyclas principessa</i> , n. sp. (vel <i>Calocyclus principessa</i>),	× 400	1386
Fig. 8. <i>Clathrocyclas collaris</i> , n. sp. (vel <i>Calocyclus collaris</i>),	× 400	1387
Fig. 9. <i>Alacorys carcinus</i> , n. sp. (vel <i>Calocyclus carcinus</i>),	× 300	1375
Fig. 10. <i>Lamprocyclas deflorata</i> , n. sp.,	× 200	1391
Fig. 11. <i>Lamprocyclas reginæ</i> , n. sp.,	× 400	1391
Fig. 12. <i>Lamprocyclas reginæ</i> , n. sp.,	× 800	1391
Two meshes of the network.		
Fig. 13. <i>Lamprocyclas maritalis</i> , n. sp.,	× 400	1390
Fig. 14. <i>Lamprocyclas maritalis</i> , n. sp.,	× 400	1390
Vertical section.		
Fig. 15. <i>Lamprocyclas nuptialis</i> , n. sp.,	× 400	1390
Fig. 16. <i>Lamprocyclas saltatricis</i> , n. sp.,	× 400	1391

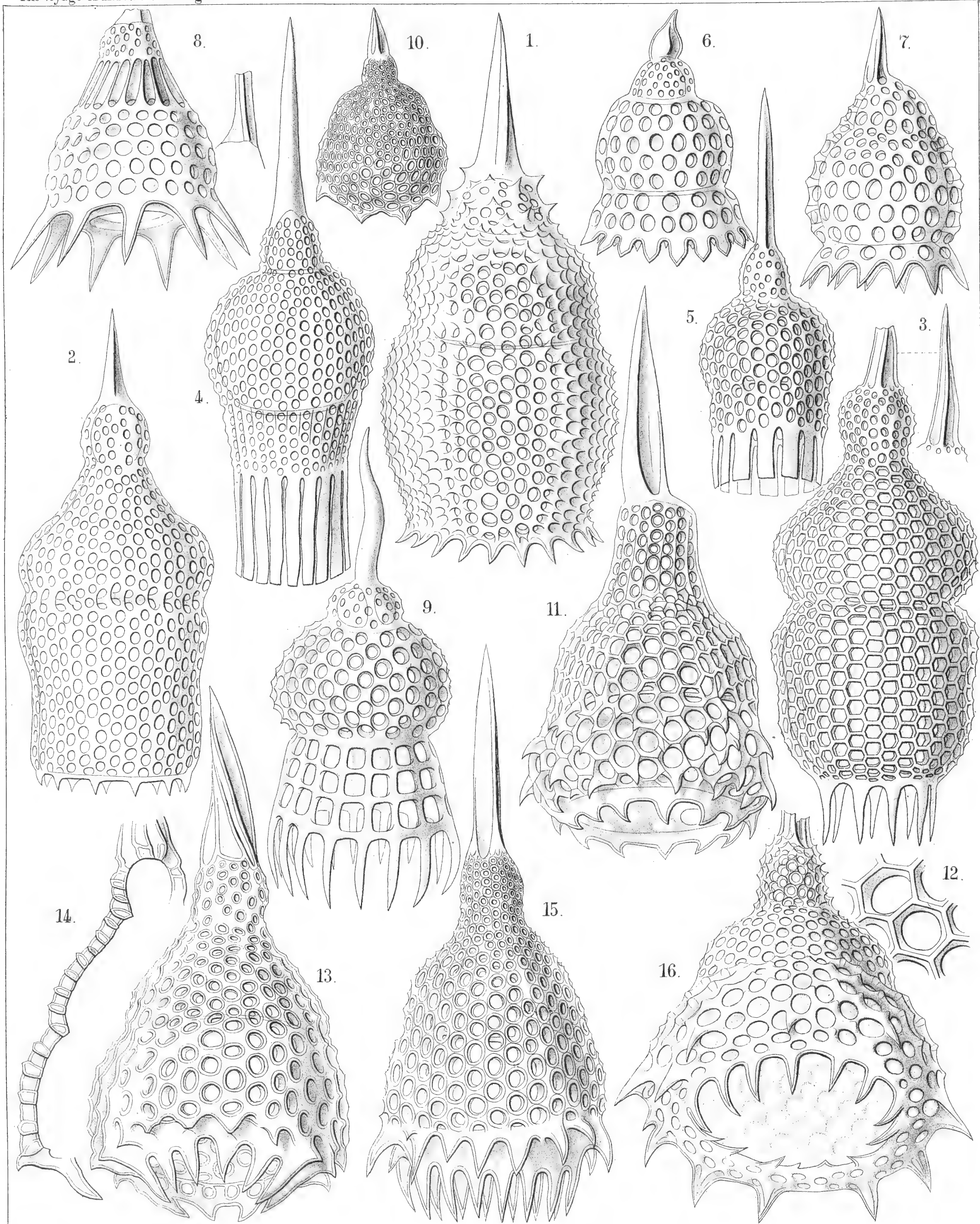


PLATE 75.

Legion NASSELLARIA.

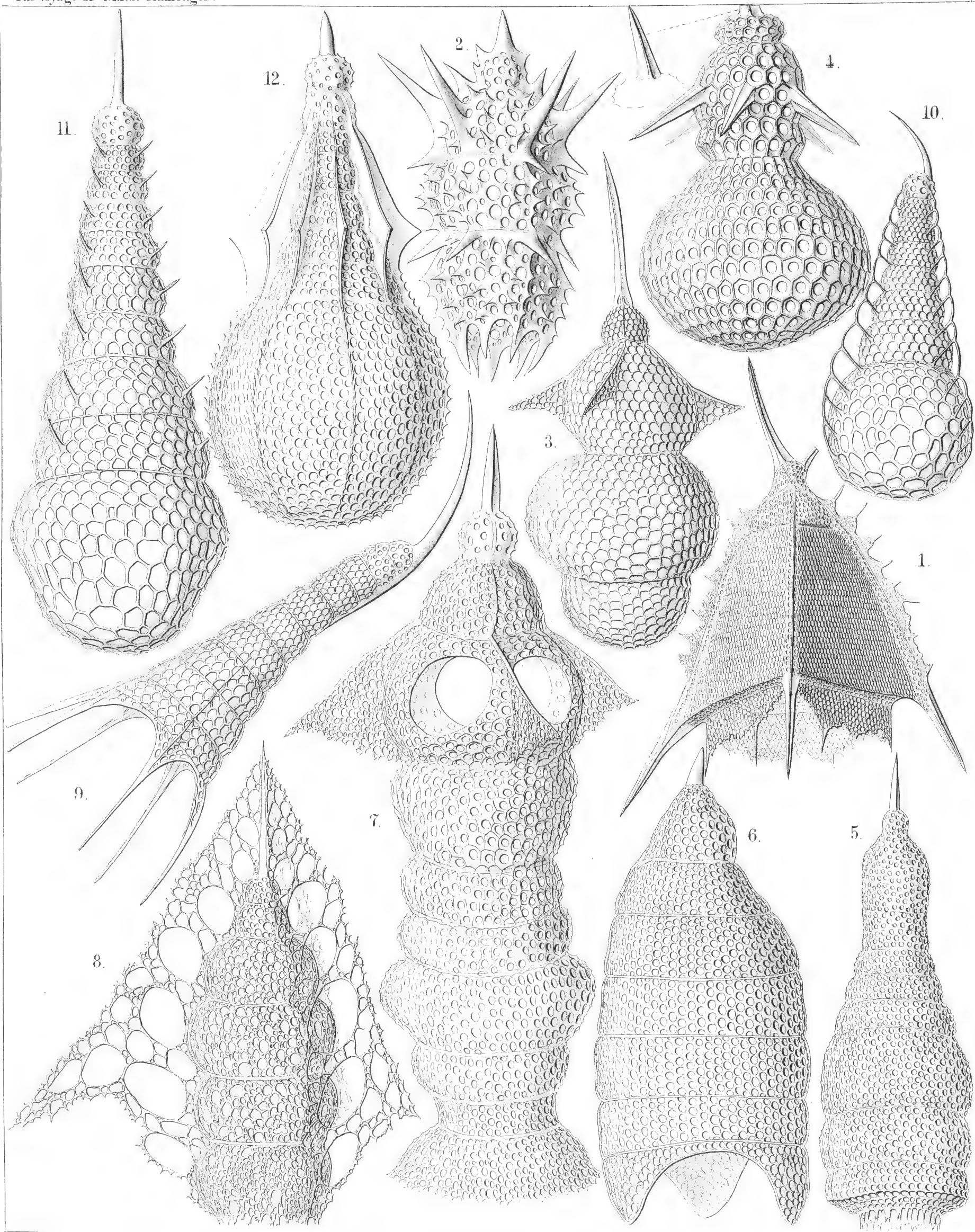
Order CYRTOIDEA.

Families PODOCAMPIDA et PHORMOCAMPIDA.

PLATE 75.

PODOCAMPIDA et PHORMOCAMPIDA.

	Diam.	Page
Fig. 1. <i>Artopilium elegans</i> , n. sp. (vel <i>Trictenartus elegans</i>), .	× 200	1440
Fig. 2. <i>Artophormis horrida</i> , n. sp.,	× 300	1458
Fig. 3. <i>Cyrtopera thoracoptera</i> , n. sp. (vel <i>Artopera thoracoptera</i>),	× 300	1450
Fig. 4. <i>Stichophæna ærostatica</i> , n. sp. (vel <i>Artophæna ærostatica</i>), .	× 400	1463
Fig. 5. <i>Cyrtophormis turricula</i> , n. sp.,	× 300	1463
Fig. 6. <i>Stichopodium dictyopodium</i> , n. sp.,	× 400	1447
Fig. 7. <i>Artopilium trifenestra</i> , n. sp. (vel <i>Clathropyrgus trifenestra</i>),	× 500	1441
Fig. 8. <i>Artopilium stichopterygium</i> , n. sp.,	× 400	1442
Fig. 9. <i>Stichophormis cornutella</i> , n. sp.,	× 400	1455
Fig. 10. <i>Cyrtopera laguncula</i> , n. sp. (vel <i>Cyrtolagena laguncula</i>), .	× 400	1451
Fig. 11. <i>Stichopera pectinata</i> , n. sp.,	× 500	1449
Fig. 12. <i>Stichophæna ritteriana</i> , n. sp.,	× 400	1465



M. Sars and A. Ultsch Del.

W. Giltch, Jena, Lithogr.

1. ARTOPILIUM, 2. ARTOPHORMIS, 3. ARTOPERA, 4. ARTOPHATNA, 5. STICHOCORYS,
 6. STICHOPODIUM, 7. CLATHROPYRGUS, 8. STICHOPTERYGIUM, 9. STICHOPHORMIS,
 10. CYRTOLAGENA, 11. STICHOPERA, 12. STICHOPHATNA.

PLATE 76.

Legion NASSELLARIA.

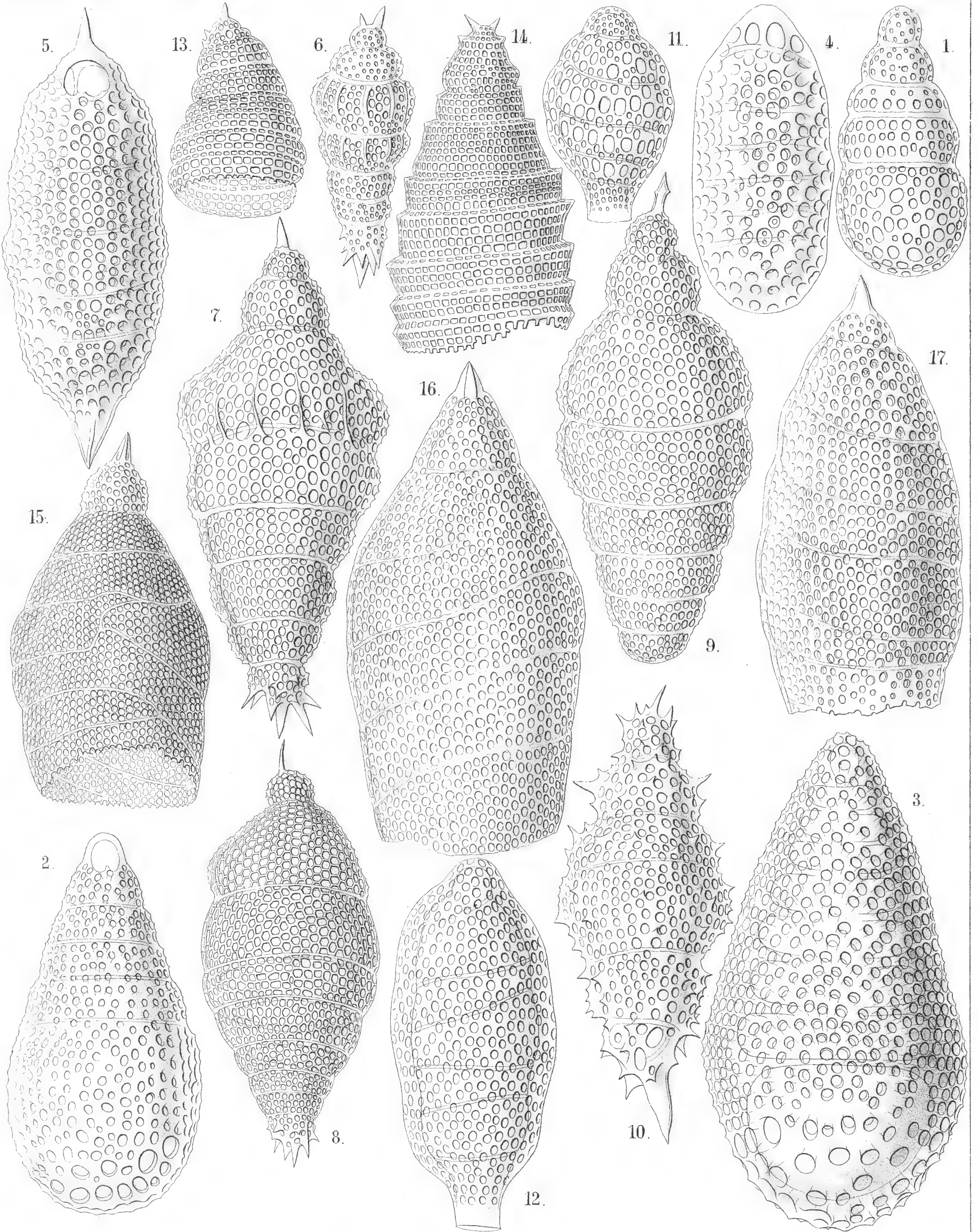
Order CYRTOIDEA.

Families PHORMOCAMPIDA et LITHOCAMPIDA.

PLATE 76.

PHORMOCAMPIDA et LITHOCAMPIDA.

	Diam.	Page
Fig. 1. <i>Stichocapsa pentacola</i> , n. sp.,	× 400	1517
Fig. 2. <i>Stichocapsa hexacola</i> , n. sp.,	× 400	1517
Fig. 3. <i>Stichocapsa compacta</i> , n. sp.,	× 400	1517
Fig. 4. <i>Stichocapsa paniscus</i> , n. sp.,	× 400	1518
Fig. 5. <i>Artocapsa fusiformis</i> , n. sp.,	× 400	1519
Fig. 6. <i>Stichophæna nonaria</i> , n. sp.,	× 200	1466
Fig. 7. <i>Stichophæna novena</i> , n. sp.,	× 400	1466
Fig. 8. <i>Artocapsa elegans</i> , n. sp.,	× 400	1520
Fig. 9. <i>Cyrtocapsa chrysalidium</i> , n. sp.,	× 400	1515
Fig. 10. <i>Artocapsa spinosa</i> , n. sp.,	× 400	1519
Fig. 11. <i>Spirocampe callispira</i> , n. sp.,	× 300	1511
Fig. 12. <i>Spirocampe allospira</i> , n. sp.,	× 400	1511
Fig. 13. <i>Spirocyrtis cornutella</i> , n. sp.,	× 400	1509
Fig. 14. <i>Spirocyrtis scalaris</i> , n. sp.,	× 400	1509
Fig. 15. <i>Spirocyrtis merospira</i> , n. sp.,	× 500	1510
Fig. 16. <i>Spirocyrtis holospira</i> , n. sp.,	× 400	1509
Fig. 17. <i>Spirocyrtis diplospira</i> , n. sp.,	× 400	1510



1- 4. STICHOCAPSA , 5-10. STICHOPERA , 11.12. SPIROCAMPE ,
13-17. SPIROCIRTIS .

PLATE 77.

Legion NASSELLARIA.

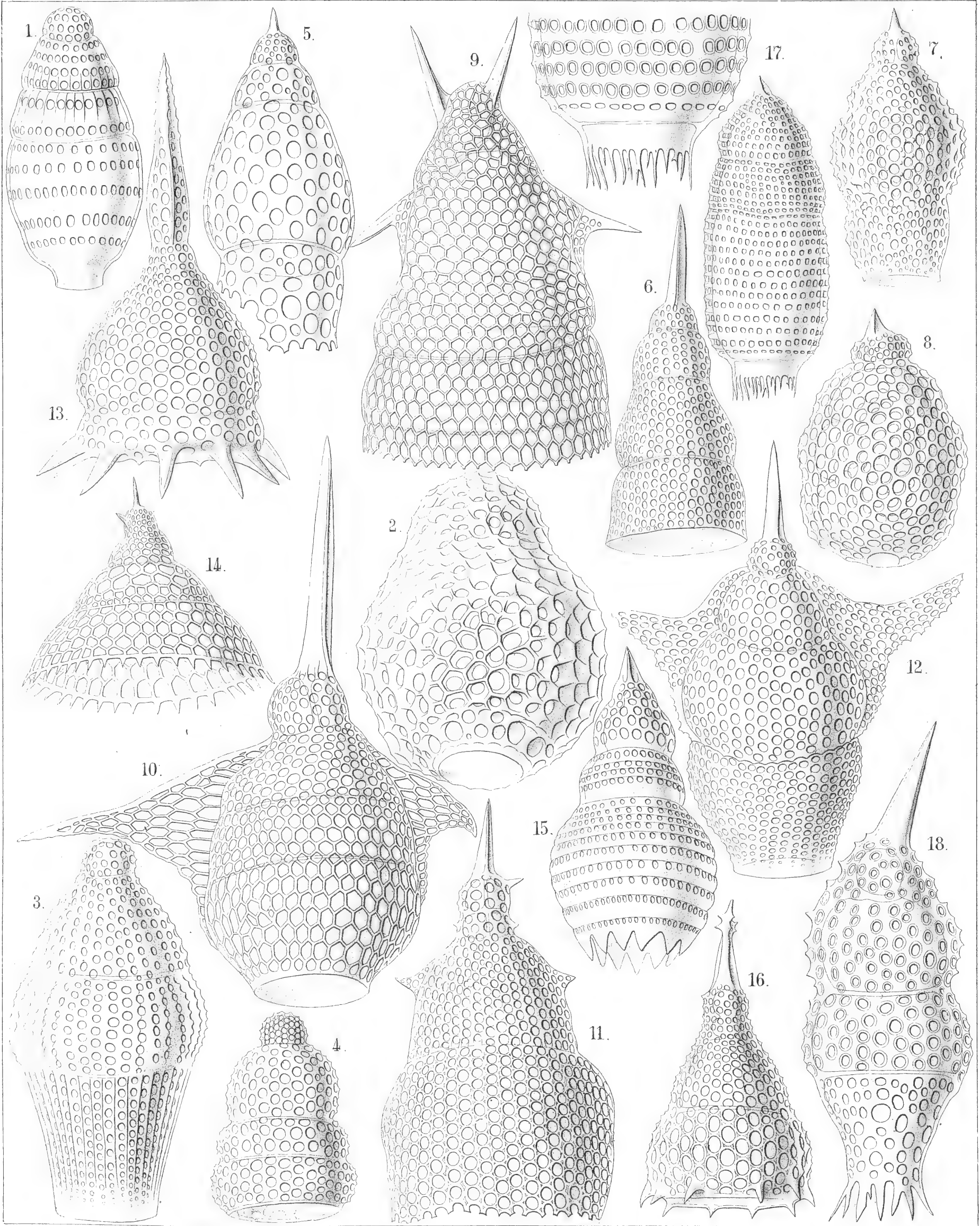
Order CYRTOIDEA.

Families PODOCAMPIDA, PHORMOCAMPIDA et LITHOCAMPIDA.

PLATE 77.

PODOCAMPIDA, PHORMOCAMPIDA et LITHOCAMPIDA.

	Diam.	Page
Fig. 1. <i>Lithocampe ovata</i> , n. sp.,	× 500	1504
Fig. 2. <i>Lithocampe urceolata</i> , n. sp.,	× 400	1507
Fig. 3. <i>Lithocampe diploconus</i> , n. sp.,	× 400	1505
Fig. 4. <i>Dictyomitra eurythorax</i> , n. sp.,	× 300	1477
Fig. 5. <i>Eucyrtidium teuscheri</i> , n. sp.,	× 400	1491
Fig. 6. <i>Lithostrobos cornutus</i> , n. sp.,	× 400	1474
Fig. 7. <i>Eucyrtidium bütschlii</i> , n. sp.,	× 400	1492
Fig. 8. <i>Cyrtocapsa compacta</i> , n. sp.,	× 300	1512
Fig. 9. <i>Stichopilium bicorne</i> , n. sp.,	× 600	1437
Fig. 10. <i>Artopilium longicorne</i> , n. sp.,	× 500	1440
Fig. 11. <i>Stichopilium campanulatum</i> , n. sp.,	× 400	1438
Fig. 12. <i>Artopilium cyrtopterum</i> , n. sp.,	× 400	1440
Fig. 13. <i>Phormocampe campanula</i> , n. sp.,	× 400	1456
Fig. 14. <i>Phormocampe eucalyptra</i> , n. sp.,	× 300	1457
Fig. 15. <i>Cyrtophormis corona</i> , n. sp.,	× 300	1462
Fig. 16. <i>Phormocampe lamprocyclas</i> , n. sp.,	× 300	1457
Fig. 17. <i>Cyrtophormis cylindrica</i> , n. sp.,	× 300	1461
Fig. 18. <i>Cyrtophormis cornuta</i> , n. sp.,	× 500	1462



F. Haeckel and A. Giltch, Del.

E. Giltch, Jena, Lithogr.

1-4. LITHOCAMPIUM, 5-8. EUCYRTIDIUM, 9-12. PTEROCORYTHIUM, 13-18. ANTHOCORYS.

PLATE 78.

Legion NASSELLARIA.

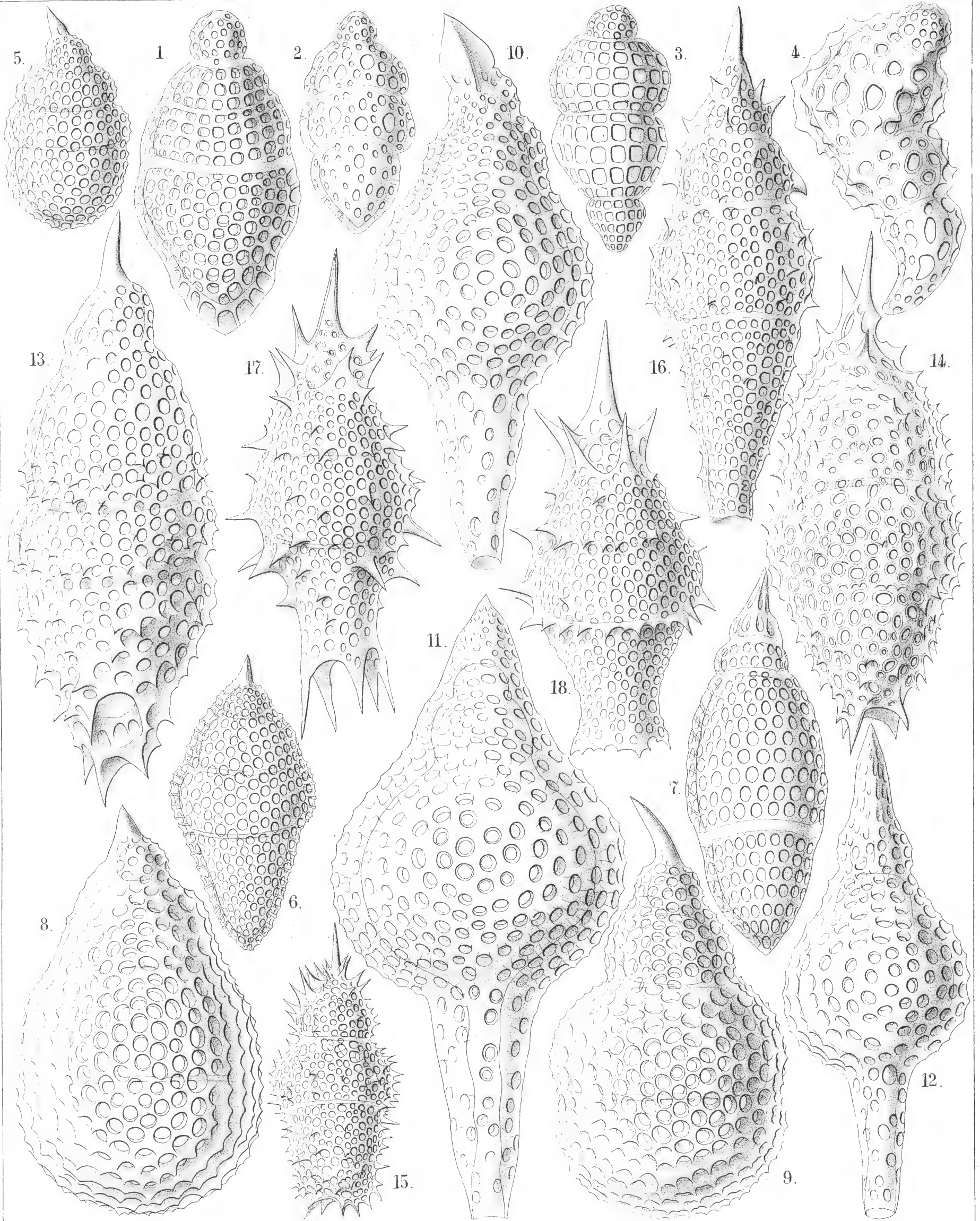
Order CYRTOIDEA.

Families PHORMOCAMPIDA et LITHOCAMPIDA.

PLATE 78.

PHORMOCAMPIDA et LITHOCAMPIDA.

	Diam.	Page
Fig. 1. <i>Stichocapsa tetracola</i> , n. sp.,	× 600	1515
Fig. 2. <i>Stichocapsa tricincta</i> , n. sp.,	× 400	1516
Fig. 3. <i>Stichocapsa quadrigata</i> , n. sp.,	× 400	1515
Fig. 4. <i>Stichocapsa monstrosa</i> , n. sp.,	× 400	1517
Fig. 5. <i>Cyrtocapsa tetrapera</i> , n. sp.,	× 300	1512
Fig. 6. <i>Cyrtocapsa diploconus</i> , n. sp.,	× 300	1513
Fig. 7. <i>Cyrtocapsa fusulus</i> , n. sp.,	× 400	1514
Fig. 8. <i>Cyrtocapsa pyrum</i> , n. sp.,	× 400	1513
Fig. 9. <i>Cyrtocapsa cornuta</i> , n. sp.,	× 400	1513
Fig. 10. <i>Eusyringium conosiphon</i> , n. sp.,	× 400	1496
Fig. 11. <i>Eusyringium pachysiphon</i> , n. sp.,	× 400	1496
Fig. 12. <i>Eusyringium macrosiphon</i> , n. sp.,	× 400	1497
Fig. 13. <i>Eucyrtidium tricinctum</i> , n. sp.,	× 400	1494
Fig. 14. <i>Eucyrtidium armatum</i> , n. sp.,	× 400	1495
Fig. 15. <i>Eucyrtidium ehrenbergii</i> , n. sp.,	× 300	1495
Fig. 16. <i>Eucyrtidium conostoma</i> , n. sp.,	× 400	1495
Fig. 17. <i>Cyrtophormis armata</i> , n. sp.,	× 400	1460
Fig. 18. <i>Cyrtophormis cingulata</i> , n. sp.,	× 400	1460



H. Haeckel and A. Giltisch, Del.

R. Giltisch, Jena, Lithogr.

1 - 4. TETRACAPSA, 5 - 9. TETRAPERA, 10 - 12. EUSYRINGIUM.
13 - 18. ACANTHOCYRTE.

PLATE 79.

Legion NASSELLARIA.

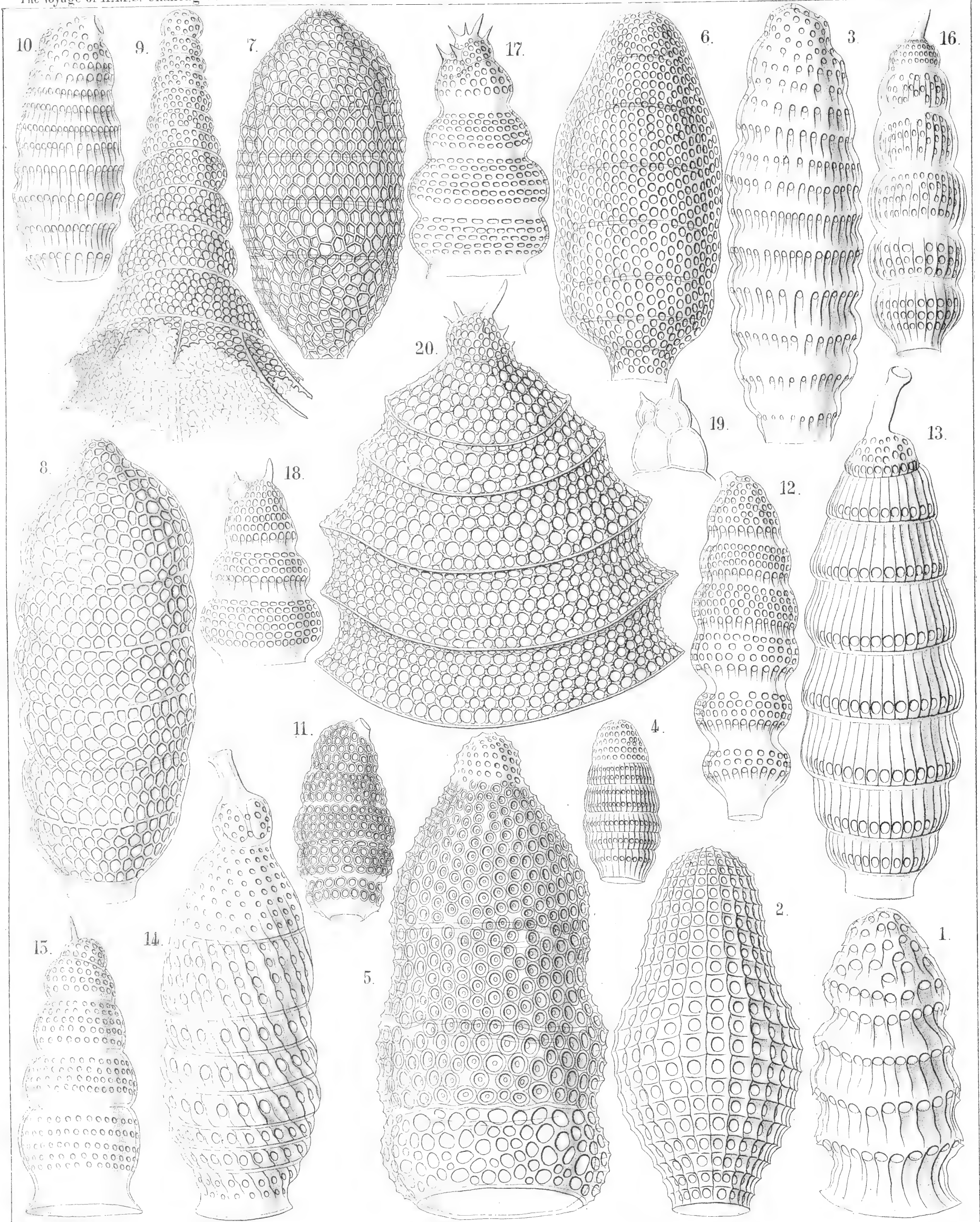
Order CYRTOIDEA.

Families PHORMOCAMPIDA et LITHOCAMPIDA.

PLATE 79.

PHORMOCAMPIDA et LITHOCAMPIDA.

				Diam.	Page
Fig. 1.	<i>Lithomitra nodosaria</i> , n. sp.,	.	.	× 600	1484
Fig. 2.	<i>Cyrtophormis tabulata</i> , n. sp.,	.	.	× 400	1166
Fig. 3.	<i>Lithomitra eruca</i> , n. sp.,	.	.	× 500	1485
Fig. 4.	<i>Lithomitra chrysalis</i> , n. sp.,	.	.	× 300	1485
Fig. 5.	<i>Lithomitra infundibulum</i> , n. sp.,	.	.	× 500	1487
Fig. 6.	<i>Lithocampe octocola</i> , n. sp.,	.	.	× 400	1508
Fig. 7.	<i>Lithocampe hexacola</i> , n. sp.,	.	.	× 400	1507
Fig. 8.	<i>Lithocampe heptacola</i> , n. sp.,	.	.	× 400	1508
Fig. 9.	<i>Stichophormis novena</i> , n. sp.,	.	.	× 400	1455
Fig. 10.	<i>Siphocampe annulosa</i> , n. sp.,	.	.	× 300	1500
Fig. 11.	<i>Siphocampe erucosa</i> , n. sp.,	.	.	× 300	1500
Fig. 12.	<i>Siphocampe caminosa</i> , n. sp.,	.	.	× 400	1500
Fig. 13.	<i>Siphocampe tubulosa</i> , n. sp.,	.	.	× 400	1500
Fig. 14.	<i>Siphocampe spiralis</i> , n. sp.,	.	.	× 500	1501
Fig. 15.	<i>Lithostrobos seriatus</i> , n. sp.,	.	.	× 400	1474
Fig. 16.	<i>Artostrobos articulatus</i> , n. sp.,	.	.	× 400	1483
Fig. 17.	<i>Lithostrobos lithobotrys</i> , n. sp.,	.	.	× 400	1475
Fig. 18.	<i>Lithostrobos botryocyrtris</i> , n. sp.,	.	.	× 400	1475
Fig. 19.	<i>Lithostrobos botryocyrtris</i> , n. sp.,	.	.	× 400	1475
	Vertical section through the cephalis.				
Fig. 20.	<i>Lithostrobos hexagonalis</i> , n. sp.,	.	.	× 400	1475



1 - 14. LITHOCAMPE, 15. 20. EUCYRTIS.

PLATE 80.

Legion NASSELLARIA.

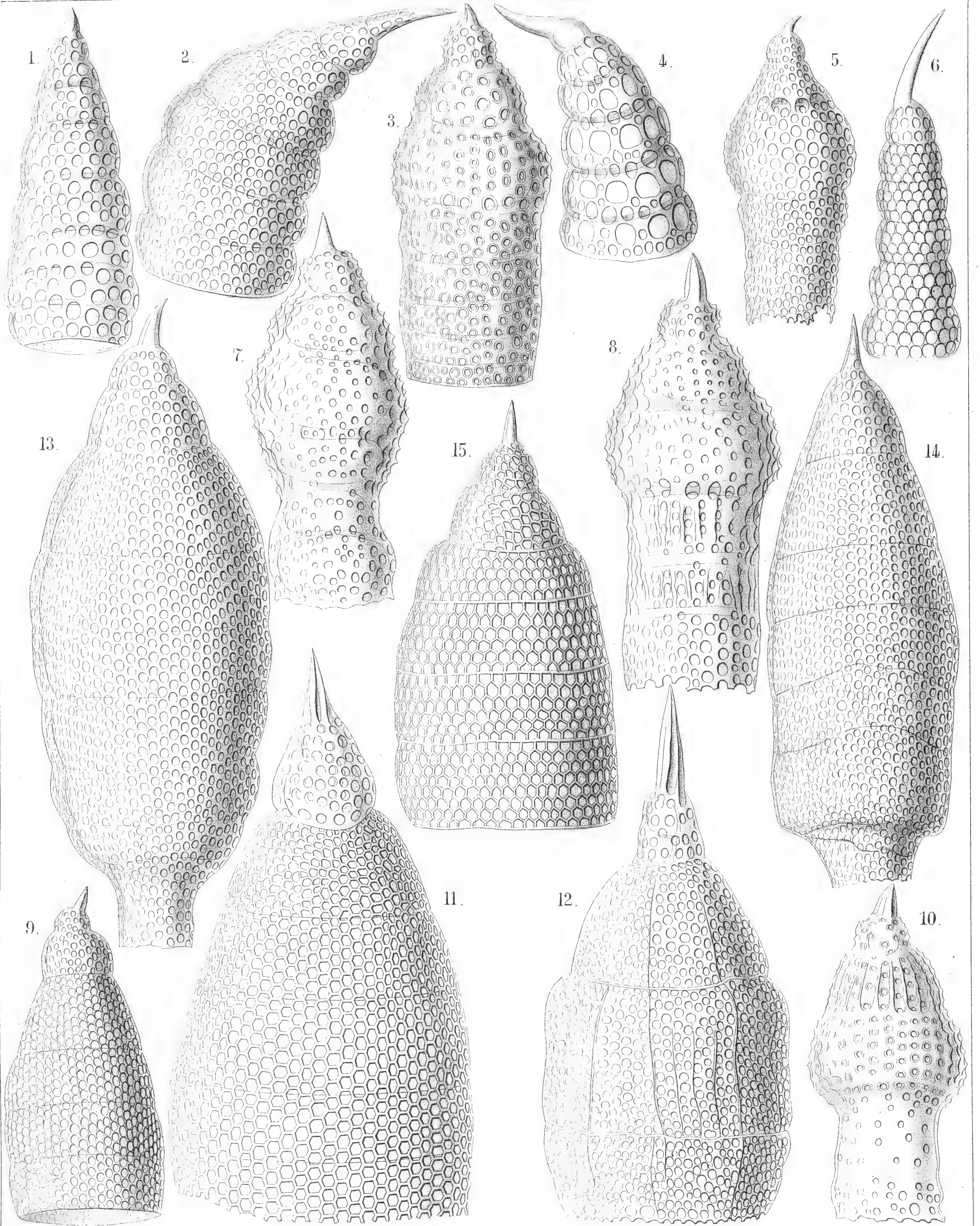
Order CYRTOIDEA.

Family LITHOCAMPIDA.

PLATE 80.

LITHOCAMPIDA.

	Diam.	Page
Fig. 1. <i>Lithostrobos conulus</i> , n. sp. (vel <i>Cyrtostrobos conulus</i>),	× 400	1472
Fig. 2. <i>Lithostrobos cyrtoceras</i> , n. sp. (vel <i>Cornustrobos cyrtoceras</i>),	× 400	1470
Fig. 3. <i>Stichocorys huschkei</i> , n. sp.,	× 400	1480
Fig. 4. <i>Lithostrobos caloceras</i> , n. sp. (vel <i>Cornustrobos caloceras</i>),	× 400	1471
Fig. 5. <i>Stichocorys okenii</i> , n. sp.,	× 300	1480
Fig. 6. <i>Lithostrobos tetrastichus</i> , n. sp. (vel <i>Conostrobos tetrastichus</i>),	× 500	1470
Fig. 7. <i>Stichocorys panderi</i> , n. sp.,	× 400	1479
Fig. 8. <i>Stichocorys baerii</i> , n. sp.,	× 400	1479
Fig. 9. <i>Eucyrtidium cienkowskii</i> , n. sp.,	× 400	1493
Fig. 10. <i>Stichocorys wolffii</i> , n. sp.,	× 400	1479
Fig. 11. <i>Eucyrtidium hexagonatum</i> , n. sp.,	× 600	1489
Fig. 12. <i>Eucyrtidium hertwigii</i> , n. sp.,	× 400	1491
Fig. 13. <i>Eusyngium cannostoma</i> , n. sp.,	× 600	1499
Fig. 14. <i>Eusyngium siphonostoma</i> , n. sp.,	× 500	1499
Fig. 15. <i>Lithostrobos hexastichus</i> , n. sp. (vel <i>Artostrobos hexastichus</i>),	× 500	1470



EUCYRTIS.



PLATE 81.

Legion NASSELLARIA.

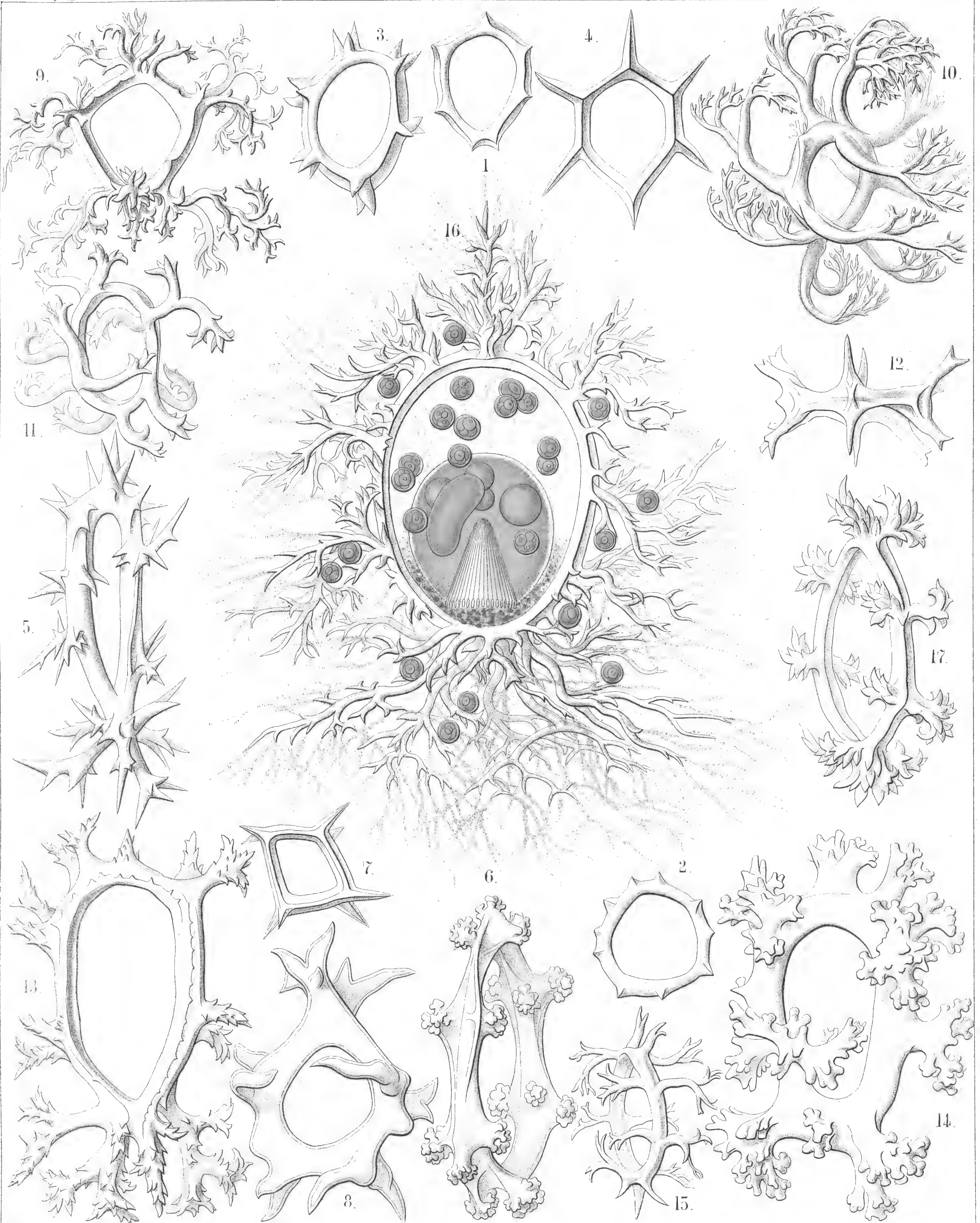
Order STEPHOIDEA.

Family STEPHANIDA.

PLATE 81.

STEPHANIDA.

	Diam.	Page
Fig. 1. <i>Archicircus primordialis</i> , n. sp.,	× 200	942
Fig. 2. <i>Zygocircus polygonus</i> , n. sp.,	× 200	947
Fig. 3. <i>Zygocircus triquetrus</i> , n. sp.,	× 300	947
Fig. 4. <i>Archicircus hexacanthus</i> , n. sp.,	× 300	942
Fig. 5. <i>Zygocircus acacia</i> , n. sp.,	× 300	947
Fig. 6. <i>Lithocircus crambessa</i> , n. sp.,	× 400	944
Fig. 7. <i>Archicircus rhombus</i> , n. sp.,	× 300	942
Fig. 8. <i>Zygocircus pentagonus</i> , n. sp.,	× 300	946
Fig. 9. <i>Lithocircus quadricornis</i> , n. sp.,	× 300	944
Fig. 10. <i>Dendrocircus arborescens</i> , n. sp.,	× 300	949
Fig. 11. <i>Dendrocircus dodecancistra</i> , n. sp.,	× 300	949
Fig. 12. <i>Archicircus sexangularis</i> , n. sp.,	× 300	943
Fig. 13. <i>Dendrocircus elegans</i> , n. sp.,	× 400	949
Fig. 14. <i>Dendrocircus stalactites</i> , n. sp.,	× 400	950
Fig. 15. <i>Lithocircus decimalis</i> , n. sp.,	× 300	944
Fig. 16. <i>Lithocircus magnificus</i> , n. sp.,	× 400	945
<p>The ovate, red-coloured central capsule exhibits in the lower half the striate podoconus, in the upper half four oil-globules, and at the left the kidney-shaped nucleus. Numerous "yellow cells" or xanthellæ are scattered in the calymma, which contains brown pigment around the porochora. Numerous pseudopodia radiate from the supporting spines of the sagittal ring.</p>		
Fig. 17. <i>Lithocircus hexablastus</i> , n. sp.,	× 400	944



1-8 LITHOCIRCUS, 9-17 DENDROCIRCUS.

11-17 from the Challenger

Gilchrist, 1880, p. 100, pl. 10

PLATE 82.

Legion NASSELLARIA.

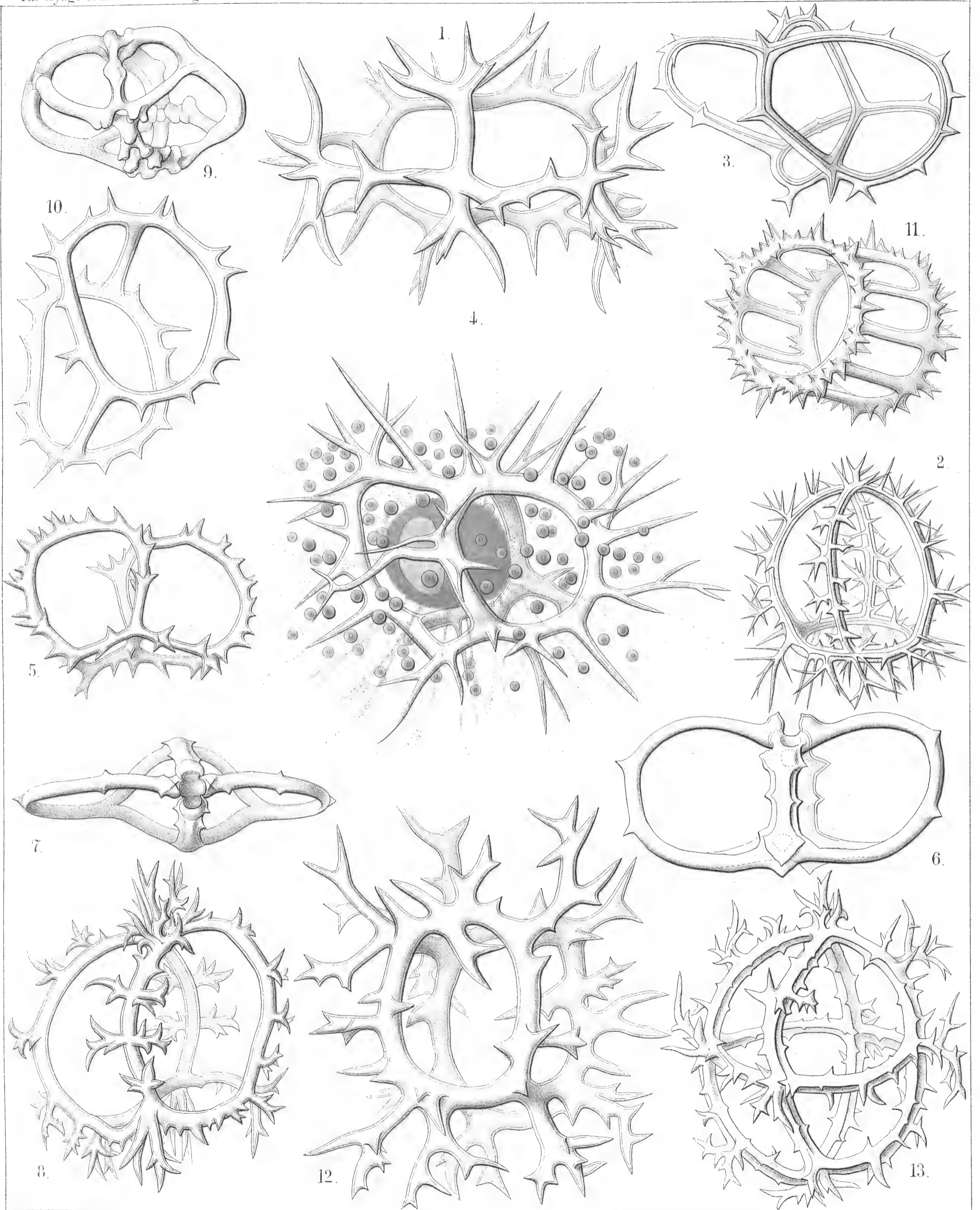
Order STEPHOIDEA.

Families CORONIDA et TYMPANIDA.

PLATE 82.

CORONIDA et TYMPANIDA.

		Diam.	Page
Fig. 1.	<i>Coronidium cervicorne</i> , n. sp., Seen from the apical pole.	× 400	974
Fig. 2.	<i>Coronidium acacia</i> , n. sp.,	× 300	975
Fig. 3.	<i>Eucoronis angulata</i> , n. sp., Half from the apical, half from the dorsal side.	× 400	978
Fig. 4.	<i>Eucoronis challengerii</i> , n. sp., The red central capsule encloses a large ovate nucleus and is surrounded by numerous xanthellæ.	× 400	978
Fig. 5.	<i>Eucoronis nephrospyris</i> , n. sp.,	× 300	977
Fig. 6.	<i>Eucoronis perspicillum</i> , n. sp.,	× 300	977
Fig. 7.	<i>Coronidium dyostephanus</i> , n. sp., Seen from the apical pole.	× 400	974
Fig. 8.	<i>Coronidium diadema</i> , n. sp.,	× 300	974
Fig. 9.	<i>Acrocubus octopylus</i> , n. sp.,	× 300	993
Fig. 10.	<i>Parastephanus asymmetricus</i> , n. sp.,	× 400	1008
Fig. 11.	<i>Eutympanium militare</i> , n. sp., Oblique view.	× 400	1014
Fig. 12.	<i>Lithocubus astragalus</i> , n. sp.,	× 400	1012
Fig. 13.	<i>Trissocircus globus</i> , n. sp.,	× 400	986



1. 2. EUCORONIS, 3.-8. LITHOCORONIS, 9.-12. TYMPANIUM,
13. TRISSOCIRCUS.

K. Giltch, Jena, Lithogr.

PLATE 83.

Legion NASSELLARIA.

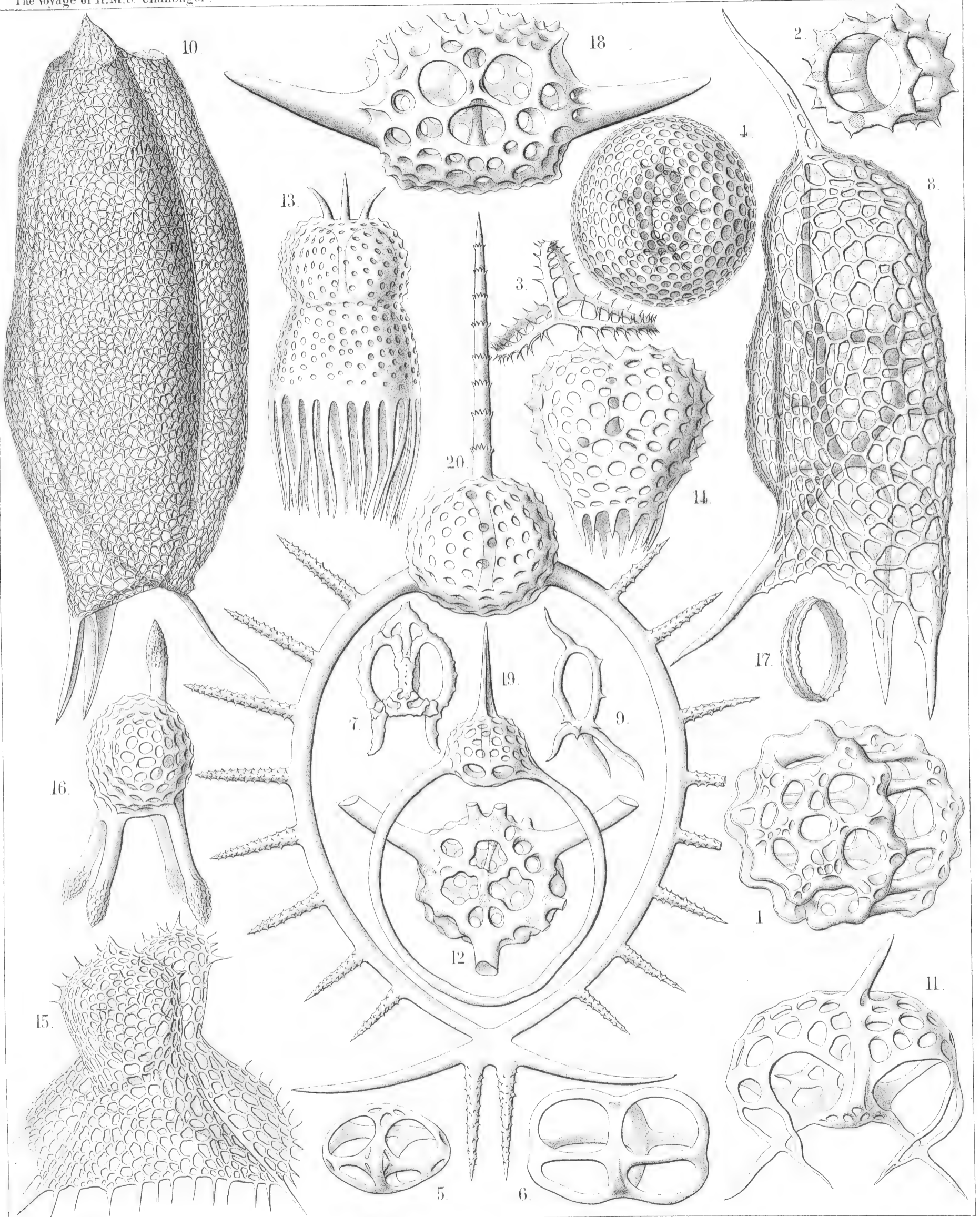
Orders STEPHOIDEA ET SPYROIDEA.

Families STEPHANIDA, SEMANTIDA, CORONIDA, TYMPANIDA,
ZYGOSPYRIDA, PHORMOSPYRIDA et ANDROSPYRIDA.

PLATE 83.

STEPHANIDA, SEMANTIDA, CORONIDA, TYMPANIDA, ZYGOSPYRIDA,
PHORMOSPYRIDA et ANDROSPYRIDA.

	Diam.	Page
Fig. 1. <i>Lithotympanum tuberosum</i> , n. sp.,	× 400	1006
Fig. 2. <i>Eutympanium musicantum</i> , n. sp.,	× 300	1013
Fig. 3. <i>Semantis distephanus</i> , n. sp.,	× 300	957
Fig. 4. <i>Sphærospyris globosa</i> , n. sp.,	× 300	1100
Fig. 5. <i>Trissocyclus stauroporus</i> , n. sp.,	× 200	987
Fig. 6. <i>Trissocircus binellipsis</i> , n. sp.,	× 300	985
Fig. 7. <i>Podocoronis toxarium</i> , n. sp.,	× 200	980
Fig. 8. <i>Androspyris anthropiscus</i> , n. sp.,	× 400	1093
Fig. 9. <i>Cortina tripus</i> , n. sp.,	× 200	950
Fig. 10. <i>Cephalospyris cancellata</i> , n. sp.,	× 400	1035
Fig. 11. <i>Tripospyris furcata</i> , n. sp.,	× 400	1029
Fig. 12. <i>Petalospyris novena</i> , n. sp.,	× 400	1062
Basal view of the shell, with the cortinar septum.		
Fig. 13. <i>Rhodospyris tricornis</i> , n. sp.,	× 400	1089
Fig. 14. <i>Desmospyris mammillata</i> , n. sp.,	× 400	1089
Fig. 15. <i>Phormospyris tricostata</i> , n. sp.,	× 400	1087
Fig. 16. <i>Zygospyris equus</i> , n. sp.,	× 300	1056
Fig. 17. <i>Archicircus monostephus</i> , n. sp.,	× 300	941
Fig. 18. <i>Dipospyris cubus</i> , n. sp.,	× 400	1036
Basal view of the shell, with the cortinar septum.		
Fig. 19. <i>Gamospyris circulus</i> , n. sp.,	× 200	1042
Fig. 20. <i>Stephanospyris excellens</i> , n. sp.,	× 300	1043



H. Haeckel and E. Gietsch Del.

E. Gietsch, Jena, Lithogr.

1 2 LITHOTYMPANIUM, 3. DYOSTEPHANUS, 4. SPHAEROCIRCUS, 5. 6. TRISSOCYCLUS,
 7. DIPOCORONIS, 8 - 10. LAMPROSPYRIS, 11. 12. CLADOSPYRIS, 13. RHODOSPYRIS,
 14. 15. DESMOSPYRIS, 16. 17. TETRASPYRIS, 18-20. STEPHANOSPYRIS.

PLATE 84.

Legion NASSELLARIA.

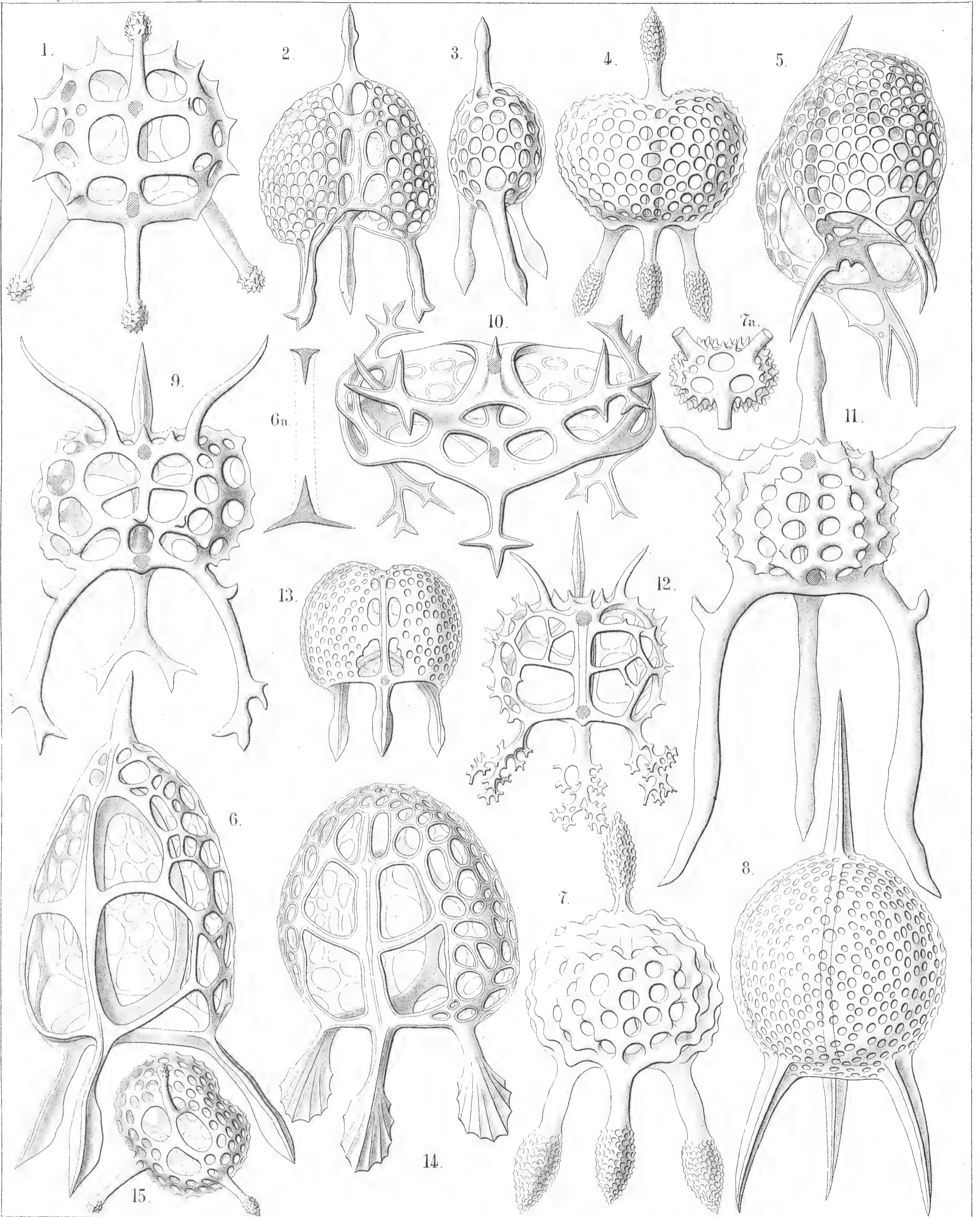
Order SPYROIDEA.

Family ZYGOSPYRIDA.

PLATE 84.

ZYGOSPYRIDA.

	Diam.	Page
Fig. 1. <i>Tripospyris capitata</i> , n. sp., Seen from the dorsal side.	× 400	1028
Fig. 2. <i>Tripospyris semantis</i> , n. sp., Seen from the ventral side.	× 300	1026
Fig. 3. <i>Tripospyris semantis</i> , n. sp., Seen from the lateral side.	× 300	1026
Fig. 4. <i>Tripospyris eucolpos</i> , n. sp., Seen from the dorsal side.	× 300	1029
Fig. 5. <i>Tripospyris diomma</i> , n. sp., Half from the right side, half from the basal side.	× 400	1026
Fig. 6. <i>Tripospyris cortiniscus</i> , n. sp., Half from the dorsal, half from the right side. Fig. 6a. Frontal section through the ring,	× 500 × 500	1026
Fig. 7. <i>Tripospyris conifera</i> , n. sp., Seen from the dorsal side. Fig. 7a. From the basal side,	× 400 × 200	1027
Fig. 8. <i>Tripospyris euscenium</i> , n. sp. (vel <i>Euscenium tripospyris</i>), Seen from the frontal or ventral side.	× 400	1147
Fig. 9. <i>Triceraspyris gazella</i> , n. sp., Seen from the ventral side.	× 500	1031
Fig. 10. <i>Triceraspyris damæcornis</i> , n. sp. (vel <i>Elaphospyris damæ-</i> <i>cornis?</i>); compare p. 1032, Seen from the apical (or basal?) side.	× 400	1057
Fig. 11. <i>Triceraspyris giraffa</i> , n. sp., Seen from the frontal side.	× 400	1031
Fig. 12. <i>Triceraspyris corallorrhiza</i> , n. sp., Seen from the frontal side.	× 400	1031
Fig. 13. <i>Tristylospyris scaphipes</i> , n. sp., Seen from the dorsal side.	× 400	1033
Fig. 14. <i>Tristylospyris palmipes</i> , n. sp., Seen from the dorsal side.	× 400	1033
Fig. 15. <i>Tristylospyris clavipes</i> , n. sp., Seen from the basal side.	× 400	1033



1-8. TRIPODOSPYRIS, 9-12. TRICERASPYRIS, 13-15. TRISTYLOSPYRIS

PLATE 85.

Legion NASSELLARIA.

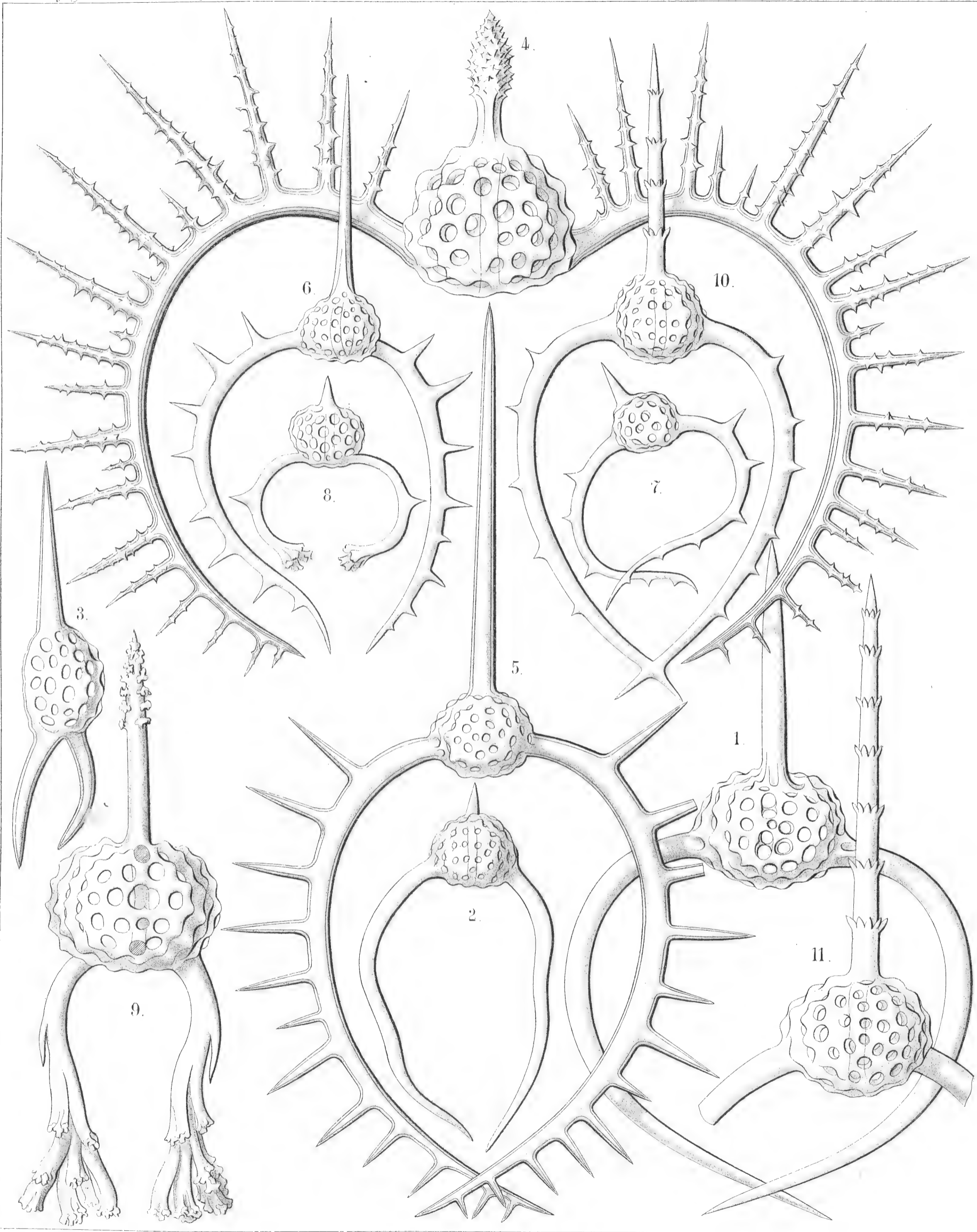
Order SPYROIDEA.

Family ZYGOSPYRIDA.

PLATE 85.

ZYGOSPYRIDA.

				Diam.	Page
Fig. 1.	<i>Dipospyris forcipata</i> , n. sp.,	.	.	× 300	1037
Fig. 2.	<i>Dipospyris irregularis</i> , n. sp.,	.	.	× 200	1037
Fig. 3.	<i>Dipospyris chelifera</i> , n. sp.,	.	.	× 300	1037
Fig. 4.	<i>Dorcadospyris dinoceras</i> , n. sp.,	.	.	× 400	1041
Fig. 5.	<i>Dorcadospyris antilope</i> , n. sp.,	.	.	× 200	1041
Fig. 6.	<i>Dorcadospyris dentata</i> , n. sp.,	.	.	× 200	1040
Fig. 7.	<i>Dorcadospyris decussata</i> , n. sp.,	.	.	× 200	1041
Fig. 8.	<i>Dendrospyris polyrrhiza</i> , n. sp.,	.	.	× 200	1039
Fig. 9.	<i>Dendrospyris arborescens</i> , n. sp.,	.	.	× 400	1040
Fig. 10.	<i>Stephanospyris cordata</i> , n. sp.,	.	.	× 200	1042
Fig. 11.	<i>Stephanospyris verticillata</i> , n. sp.,	.	.	× 300	1043



H. Haackel and A. G. G. Del.

E. Giltch, Jena, Lithogr.

1-3. DIPODOSPYRIS, 4-11. DORCADOSPYRIS.

PLATE 86.

Legion NASSELLARIA.

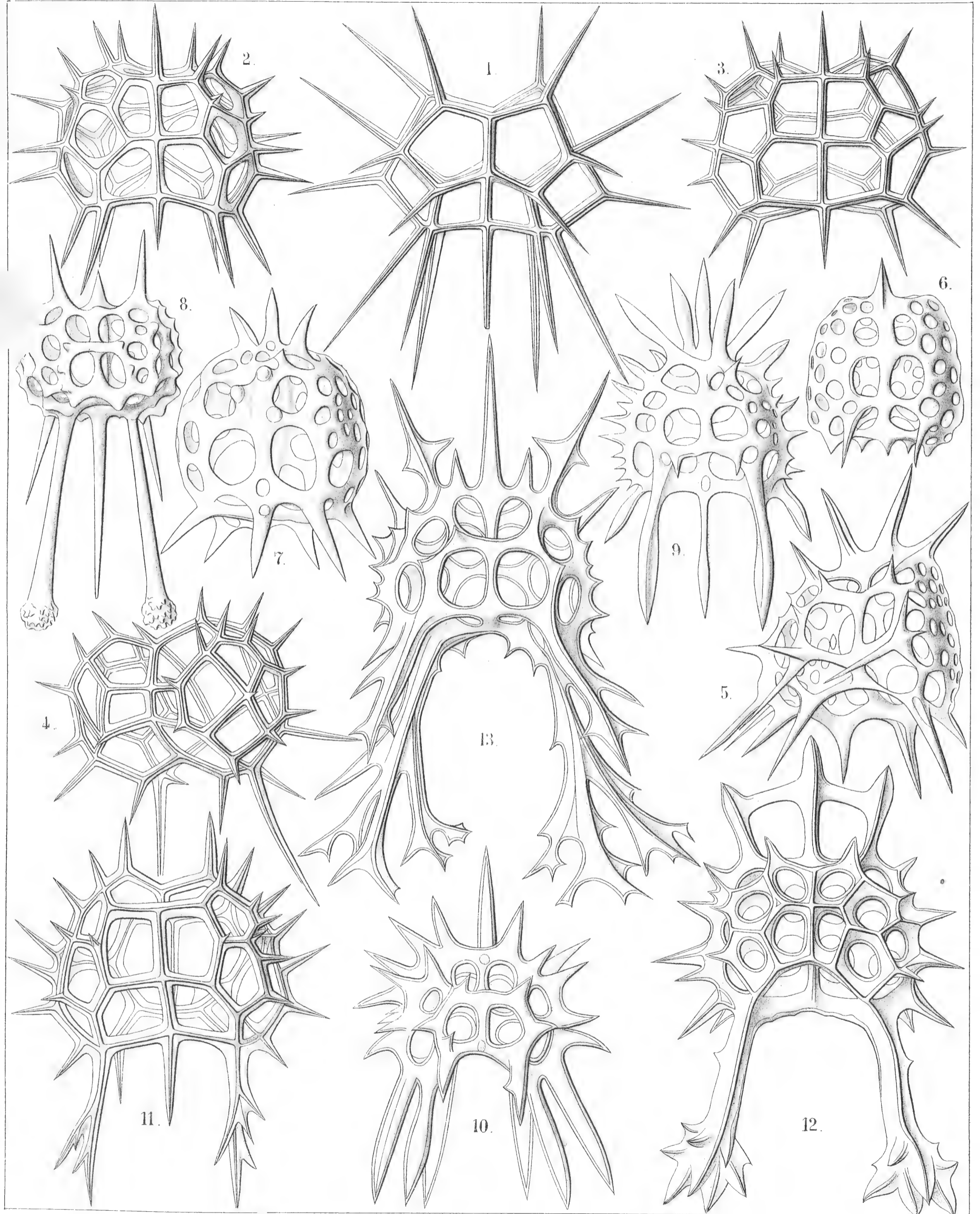
Order SPYROIDEA.

Family ZYGOSPYRIDA.

PLATE 86.

ZYGOSPYRIDA.

	Diam.	Page
Fig. 1. <i>Ceratospyris polygona</i> , n. sp.,	× 400	1066
Fig. 2. <i>Ceratospyris strasburgeri</i> , n. sp.,	× 400	1067
Fig. 3. <i>Ceratospyris allmersii</i> , n. sp.,	× 400	1067
Fig. 4. <i>Ceratospyris mulderi</i> , n. sp.,	× 400	1067
Fig. 5. <i>Anthospyris aculeata</i> , n. sp.,	× 400	1065
Fig. 6. <i>Petalospyris dictyocubus</i> , n. sp.,	× 400	1063
Fig. 7. <i>Liriospyris hexapoda</i> , n. sp.,	× 400	1049
Fig. 8. <i>Aegospyrus caprina</i> , n. sp.,	× 400	1054
Fig. 9. <i>Ceratospyris preyeri</i> , n. sp.,	× 400	1068
Fig. 10. <i>Ceratospyris krausei</i> , n. sp.,	× 400	1068
Fig. 11. <i>Ceratospyris carnerii</i> , n. sp.,	× 400	1069
Fig. 12. <i>Elaphospyris alcicornis</i> , n. sp.,	× 400	1057
Fig. 13. <i>Elaphospyris cervicornis</i> , n. sp.,	× 400	1057



H. Haeckel and A. Giltisch Del.

E. Giltisch, Jena, Lithogr.

1-7. CERATOSPYRIS, 8-13. ELAPHOSPYRIS.

PLATE 87.

Legion NASSELLARIA.

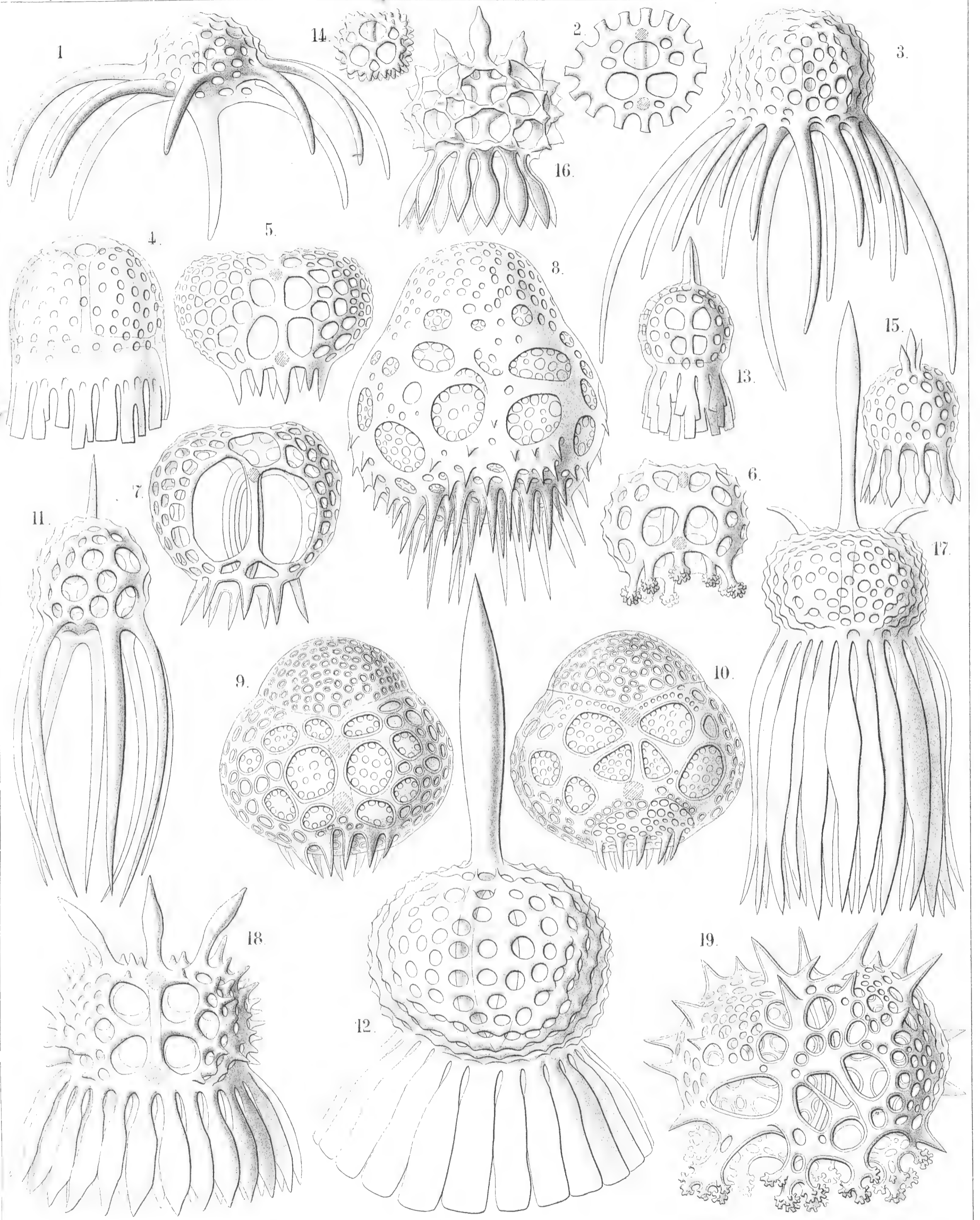
Order SPYROIDEA.

Families ZYGOSPYRIDA et THOLOSPYRIDA.

PLATE 87.

ZYGOSPYRIDA et THOLOSPYRIDA.

	Diam.	Page
Fig. 1. <i>Gorgospyris medusa</i> , n. sp.,	× 300	1070
Fig. 2. <i>Gorgospyris medusetta</i> , n. sp.,	× 300	1070
From the basal side, with the nine cortinar pores.		
Fig. 3. <i>Gorgospyris polypus</i> , n. sp.,	× 300	1070
Fig. 4. <i>Gorgospyris schizopodia</i> , n. sp.,	× 400	1071
Fig. 5. <i>Gorgospyris eurycolpos</i> , n. sp.,	× 300	1071
Fig. 6. <i>Gorgospyris liriopoe</i> , n. sp.,	× 300	1071
Fig. 7. <i>Tiarospyris pervia</i> , n. sp.,	× 400	1082
Fig. 8. <i>Tiarospyris amphora</i> , n. sp.,	× 400	1083
Fig. 9. <i>Tiarospyris mitra</i> , n. sp.,	× 400	1082
From the ventral side.		
Fig. 10. <i>Tiarospyris mitra</i> , n. sp.,	× 400	1082
From the dorsal side.		
Fig. 11. <i>Petalospyris octopus</i> , n. sp.,	× 400	1061
Fig. 12. <i>Petalospyris dinoceras</i> , n. sp.,	× 400	1063
Fig. 13. <i>Petalospyris lobata</i> , n. sp.,	× 300	1064
Fig. 14. <i>Petalospyris triomma</i> , n. sp.,	× 200	1060
From the basal side, with the six cortinar pores.		
Fig. 15. <i>Anthospyris spathulata</i> , n. sp.,	× 400	1065
Fig. 16. <i>Anthospyris mammillata</i> , n. sp.,	× 400	1064
Fig. 17. <i>Anthospyris tragopogon</i> , n. sp.,	× 300	1066
Fig. 18. <i>Anthospyris daronicum</i> , n. sp.,	× 300	1065
Fig. 19. <i>Ceratospyris calorrhiza</i> , n. sp.,	× 400	1069



1-6. GORGOSPYRIS, 7-10. TIAROSPYRIS, 11-14. PETALOSPYRIS,
15-19. ANTHOSPYRIS.

PLATE 88.

Legion NASSELLARIA.

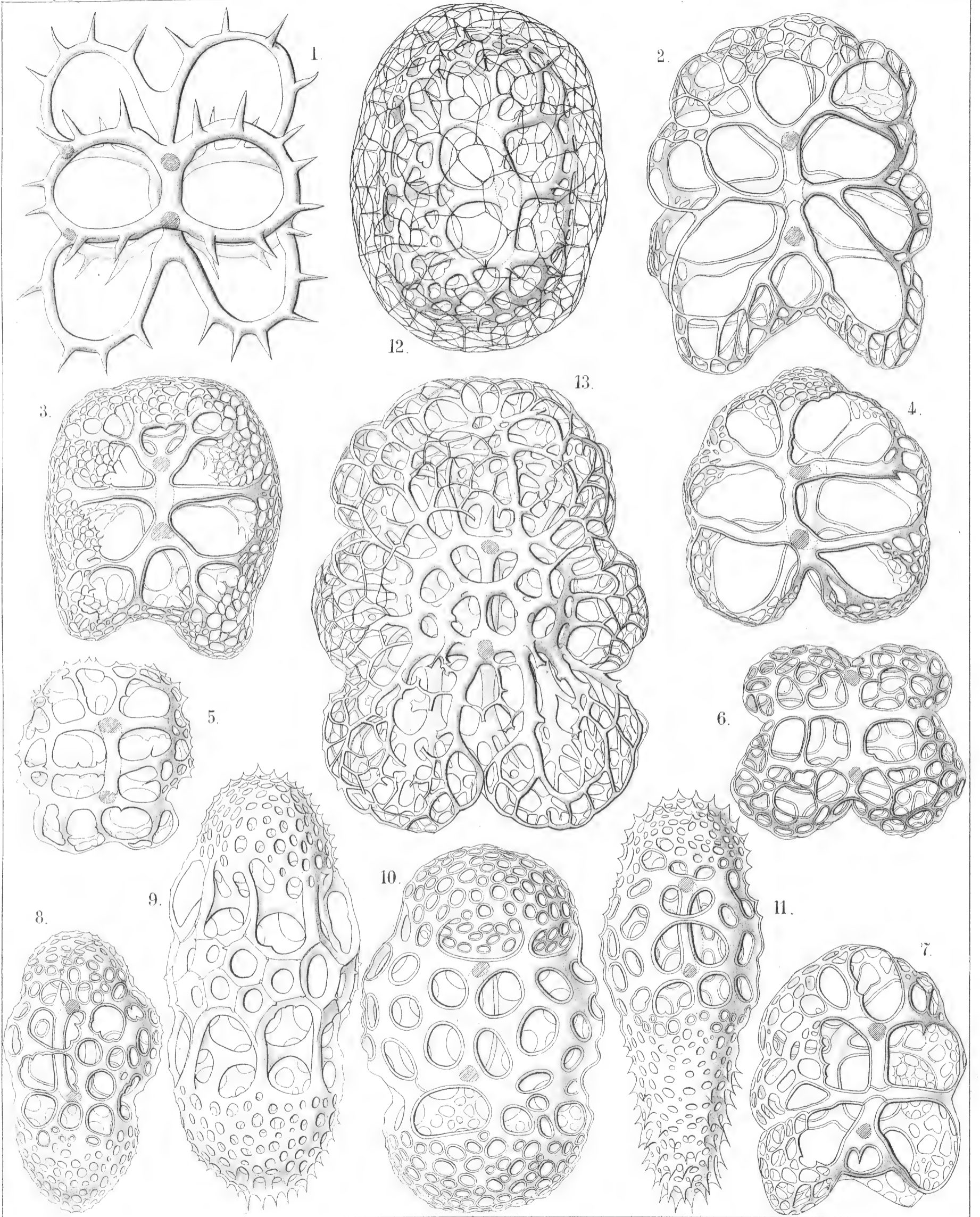
Orders STEPHOIDEA ET SPYROIDEA.

Families TYMPANIDA et ANDROSPYRIDA.

PLATE 88.

TYMPANIDA et ANDROSPYRIDA.

	Diam.	Page
Fig. 1. <i>Toxarium circospyris</i> , n. sp.,	× 400	995
Fig. 2. <i>Amphispyris sternalis</i> , n. sp.,	× 300	1096
Fig. 3. <i>Amphispyris costata</i> , n. sp.,	× 300	1097
Fig. 4. <i>Amphispyris thorax</i> , n. sp.,	× 300	1096
Fig. 5. <i>Amphispyris subquadrata</i> , n. sp.,	× 300	1097
Fig. 6. <i>Amphispyris quadrigemina</i> , n. sp.,	× 300	1096
Fig. 7. <i>Amphispyris toxarium</i> , n. sp.,	× 300	1097
Fig. 8. <i>Tricolospyris baconiana</i> , n. sp.,	× 400	1098
Fig. 9. <i>Tricolospyris leibnitziana</i> , n. sp.,	× 600	1098
Fig. 10. <i>Tricolospyris kantiana</i> , n. sp.,	× 600	1098
Fig. 11. <i>Tricolospyris newtoniana</i> , n. sp.,	× 400	1098
Fig. 12. <i>Perispyris lentellipsis</i> , n. sp.,	× 400	1099
Fig. 13. <i>Perispyris bicincta</i> , n. sp.,	× 400	1099



H. Haeckel and A. Giltsch, Del.

E. Giltsch, Jena, Lithogr.

1. CIRCOSPYRIS, 2-7. AMPHISPYRIS, 8-11. TRICOLOSPYRIS,
12, 13. PERISPYRIS.

PLATE 89.

Legion NASSELLARIA.

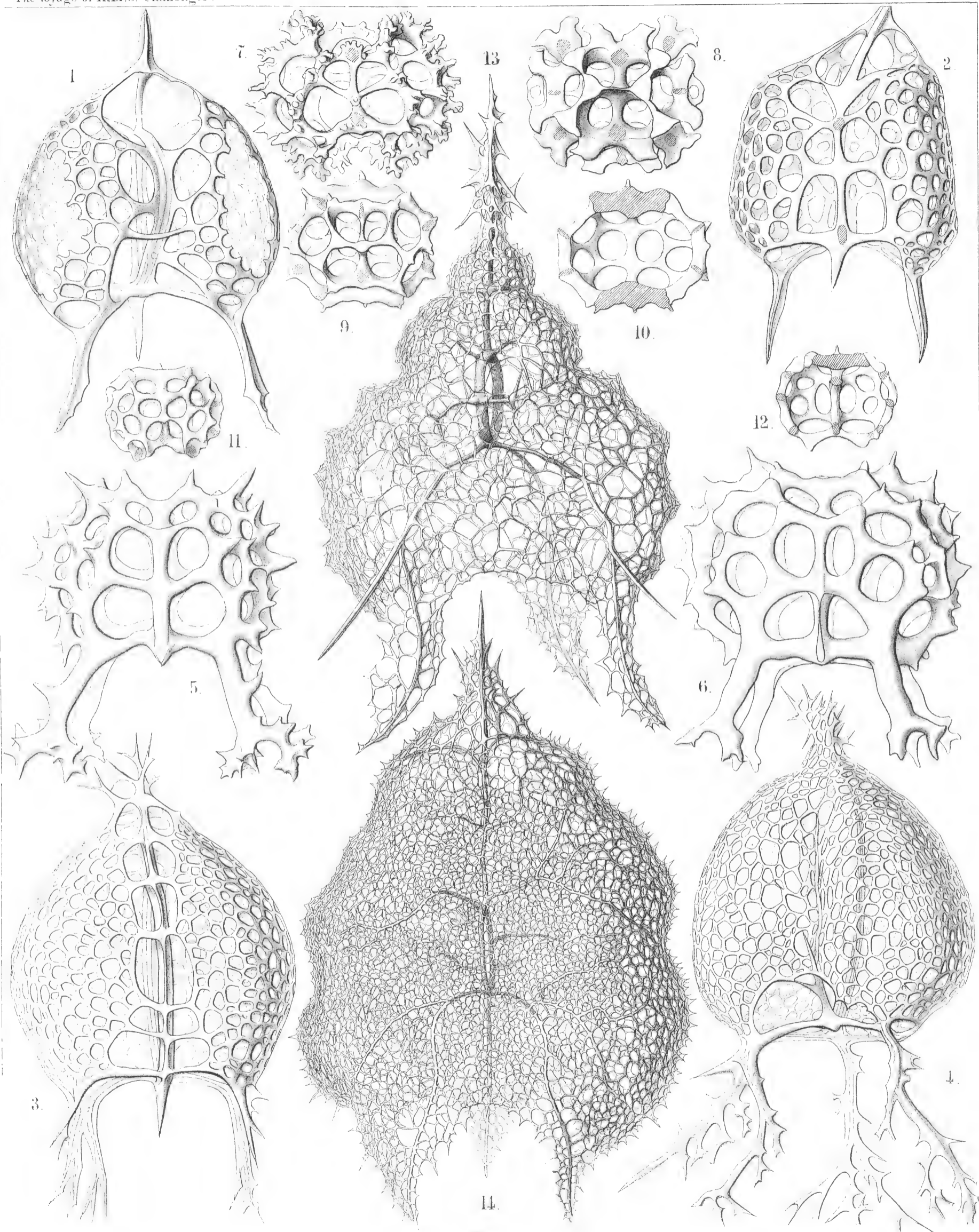
Order SPYROIDEA.

Families ZYGOSPYRIDA, THOLOSPYRIDA et ANDROSPYRIDA.

PLATE 89.

ZYGOSPYRIDA, THOLOSPYRIDA et ANDROSPYRIDA.

				Diam.	Page
Fig. 1.	<i>Tholospyris tripodiscus</i> , n. sp.,	.	.	× 400	1079
	Ventral side.				
Fig. 2.	<i>Tholospyris fenestrata</i> , n. sp.,	.	.	× 400	1079
	Dorsal side.				
Fig. 3.	<i>Tholospyris ramosa</i> , n. sp.,	.	.	× 400	1079
	Dorsal side.				
Fig. 4.	<i>Tholospyris cupola</i> , n. sp.,	.	.	× 400	1080
	Ventral side.				
Fig. 5.	<i>Therospyris leo</i> , n. sp.,	.	.	× 400	1059
	Ventral side.				
Fig. 6.	<i>Therospyris felis</i> , n. sp.,	.	.	× 400	1059
	Dorsal side.				
Fig. 7.	<i>Dictyospyris stalactites</i> , n. sp.,	.	.	× 400	1073
	Ventral side.				
Fig. 8.	<i>Dictyospyris anthophora</i> , n. sp.,	.	.	× 400	1076
	Ventral side.				
Fig. 9.	<i>Dictyospyris mammillaris</i> , n. sp.,	.	.	× 400	1076
	Ventral side.				
Fig. 10.	<i>Dictyospyris mammillaris</i> , n. sp.,	.	.	× 400	1076
	Frontal section.				
Fig. 11.	<i>Dictyospyris distoma</i> , n. sp.,	.	.	× 300	1073
	Ventral side.				
Fig. 12.	<i>Dictyospyris distoma</i> , n. sp.,	.	.	× 300	1073
	Frontal section.				
Fig. 13.	<i>Lamprospyris darwinii</i> , n. sp.,	.	.	× 300	1094
	Ventral side.				
Fig. 14.	<i>Lamprospyris huxleyi</i> , n. sp.,	.	.	× 300	1094
	Ventral side.				



H. Haavel and A. Giltsch, Del.

A. Giltsch, Jena, Lithogr.

1-4. THOLOSPYRIS, 5,6. TESSARASPYRIS, 7-12. DICTYOSPYRIS
13, 14. LAMPROSPYRIS.

PLATE 90.

Legion NASSELLARIA.

Order SPYROIDEA.

Family ANDROSPYRIDA.

PLATE 90.

ANDROSPYRIDA.

	Diam.	Page
Fig. 1. <i>Nephrospyris paradictyum</i> , n. sp. (vel <i>Paradictyum paradoxum</i>),	× 250	1102
The complete shell, seen from the frontal side.		
Fig. 2. <i>Nephrospyris paradictyum</i> , n. sp.,	× 250	1102
The incomplete shell, seen from the dorsal side.		
Fig. 3. <i>Nephrospyris paradictyum</i> , n. sp.,	× 500	1102
The sagittal ring, isolated, from the dorsal side; more enlarged.		
Fig. 4. <i>Nephrospyris paradictyum</i> , n. sp.,	× 120	1102
Vertical section through half the shell, exhibiting the thickened margin with the included symbiontes (compare page 1101).		
Fig. 5. <i>Nephrospyris paradictyum</i> , n. sp.,	× 200	1102
Oblique marginal view of the shell.		
Fig. 6. <i>Nephrospyris paradictyum</i> , n. sp.,	× 250	1102
Marginal view of a young specimen, with open fissure between the two parallel net-plates.		
Fig. 7. <i>Nephrospyris paradictyum</i> , n. sp.,	× 250	1102
The soft body alone, without the skeleton. The bilobed central capsule exhibits a central transverse nucleus, and on each lobe a stratum of oil-globules. The kidney-shaped calymma contains on the margin numerous symbiontes (<i>Xanthellæ</i> or <i>Vorticellinæ</i> ? Compare page 1102).		
Fig. 8. <i>Nephrospyris paradictyum</i> , n. sp.,	× 500	1102
Three single unicellular symbiontes (<i>Zooxanthellæ</i> ?).		
Fig. 9. <i>Nephrospyris renilla</i> , n. sp. (vel <i>Nephrodictyum renilla</i>),	× 250	1101
The bilobed central capsule is enclosed by the discoidal shell and in the middle constricted by the sagittal ring; it contains a transverse nucleus. The kidney-shaped calymma contains in the peripheral part numerous symbiontes (<i>Xanthellæ</i> or <i>Vorticellinæ</i> ? Compare page 1101).		
Fig. 10. <i>Nephrospyris renilla</i> , n. sp.,	× 250	1101
A singular abnormality (occurring not rarely), in which the reduced skeleton has nearly disappeared and the sagittal ring alone remained. The kidney-shaped calymma, however, which encloses numerous symbiontes, has preserved the form of the skeleton. The bilobed central capsule is similar to that in figs. 7 and 9, and is encircled by the thickened sagittal ring.		

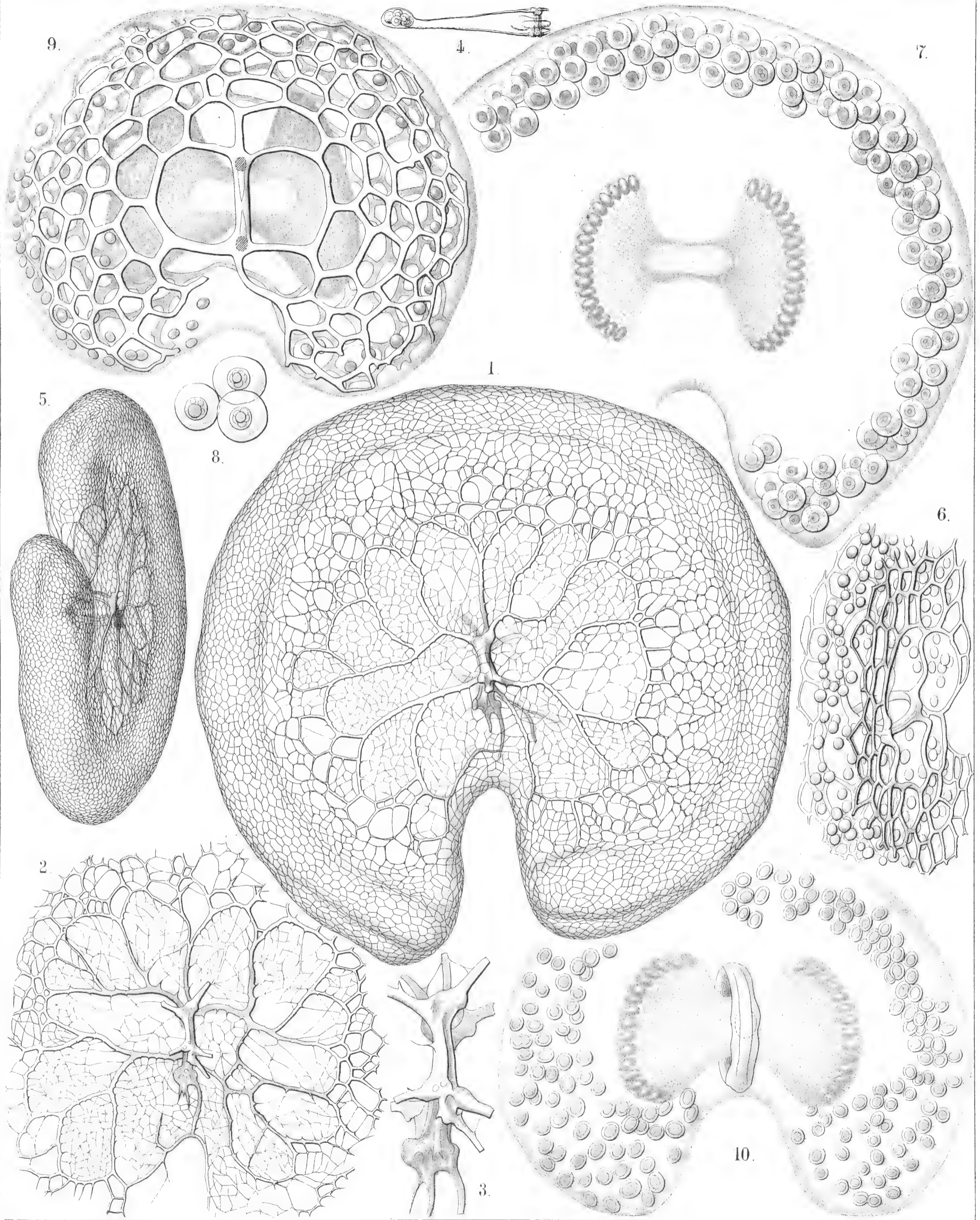


PLATE 91.

Legion NASSELLARIA.

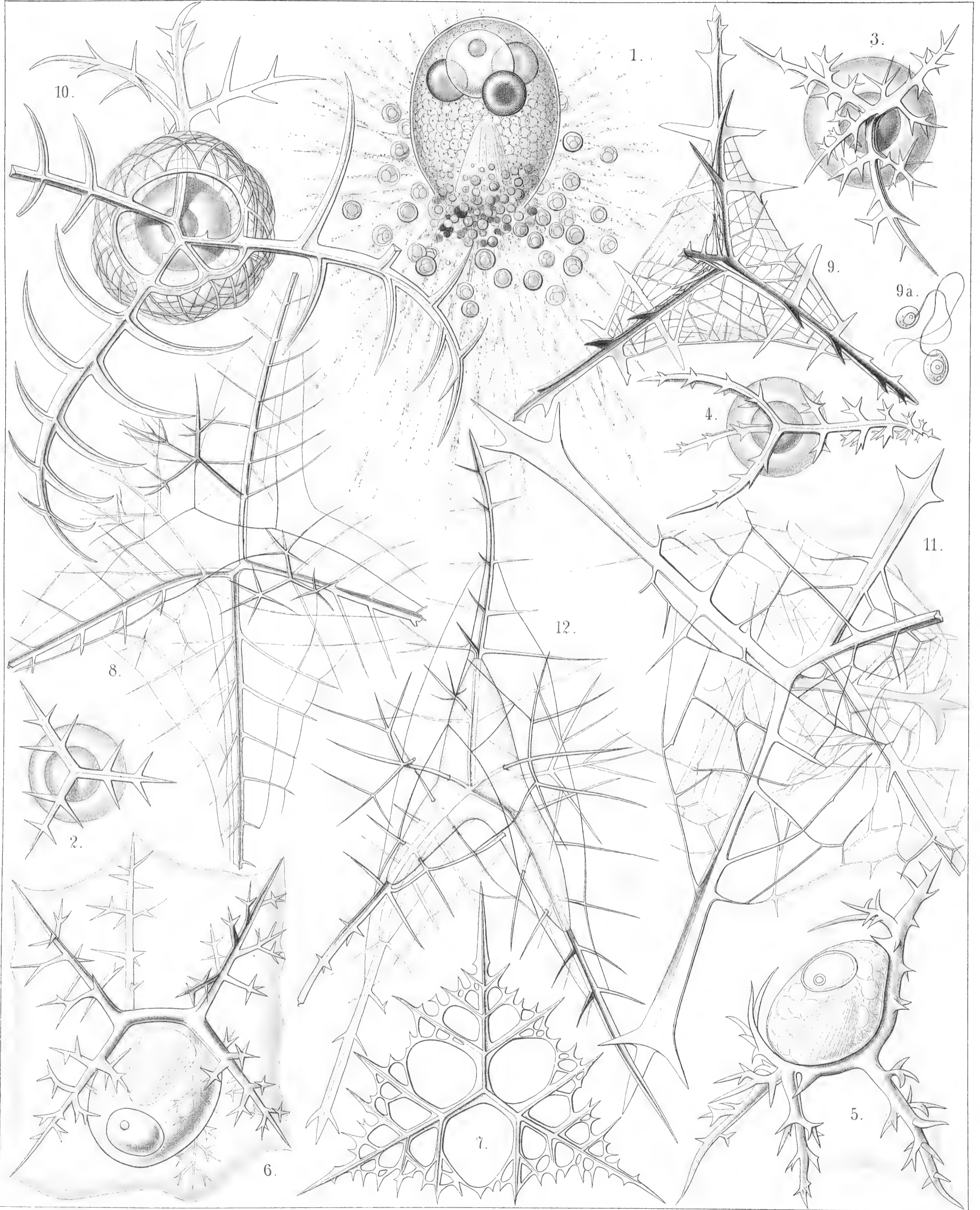
Orders NASSOIDEA ET PLECTOIDEA.

Families NASSELLIDA, PLAGONIDA et PLECTANIDA.

PLATE 91.

NASSELLIDA, PLAGONIDA et PLECTANIDA.

	Diam.	Page
Fig. 1. <i>Cystidium princeps</i> , n. sp.,	× 400	897
Fig. 2. <i>Triplagia primordialis</i> , n. sp.,	× 100	909
Fig. 3. <i>Tetraplagicia phænaxonia</i> , n. sp.,	× 200	911
Fig. 4. <i>Plagoniscus tripodiscus</i> , n. sp.,	× 200	912
Fig. 5. <i>Plagiocarpa procortina</i> , n. sp.,	× 300	914
Fig. 6. <i>Plagonium sphærozoum</i> , n. sp.,	× 300	916
Fig. 7. <i>Triplecta triactis</i> , n. sp.,	× 300	922
Fig. 8. <i>Tetraplecta pinigera</i> , n. sp.,	× 300	924
Fig. 9. <i>Plectaniscus cortiniscus</i> , n. sp.,	× 300	925
Fig. 10. <i>Periplecta cortina</i> , n. sp.,	× 400	926
Fig. 11. <i>Plectanium trigeminum</i> , n. sp.,	× 400	928
Fig. 12. <i>Polyplecta heptacantha</i> , n. sp.,	× 300	929



E. Haeckel and A. Gilsch Del.

A. Gilsch, Jena, Lithogr.

1. CYSTIDIUM . 2-6. PLAGONIDA . 7-12. PLECTANIDA .

PLATE 92.

Legion NASSELLARIA.

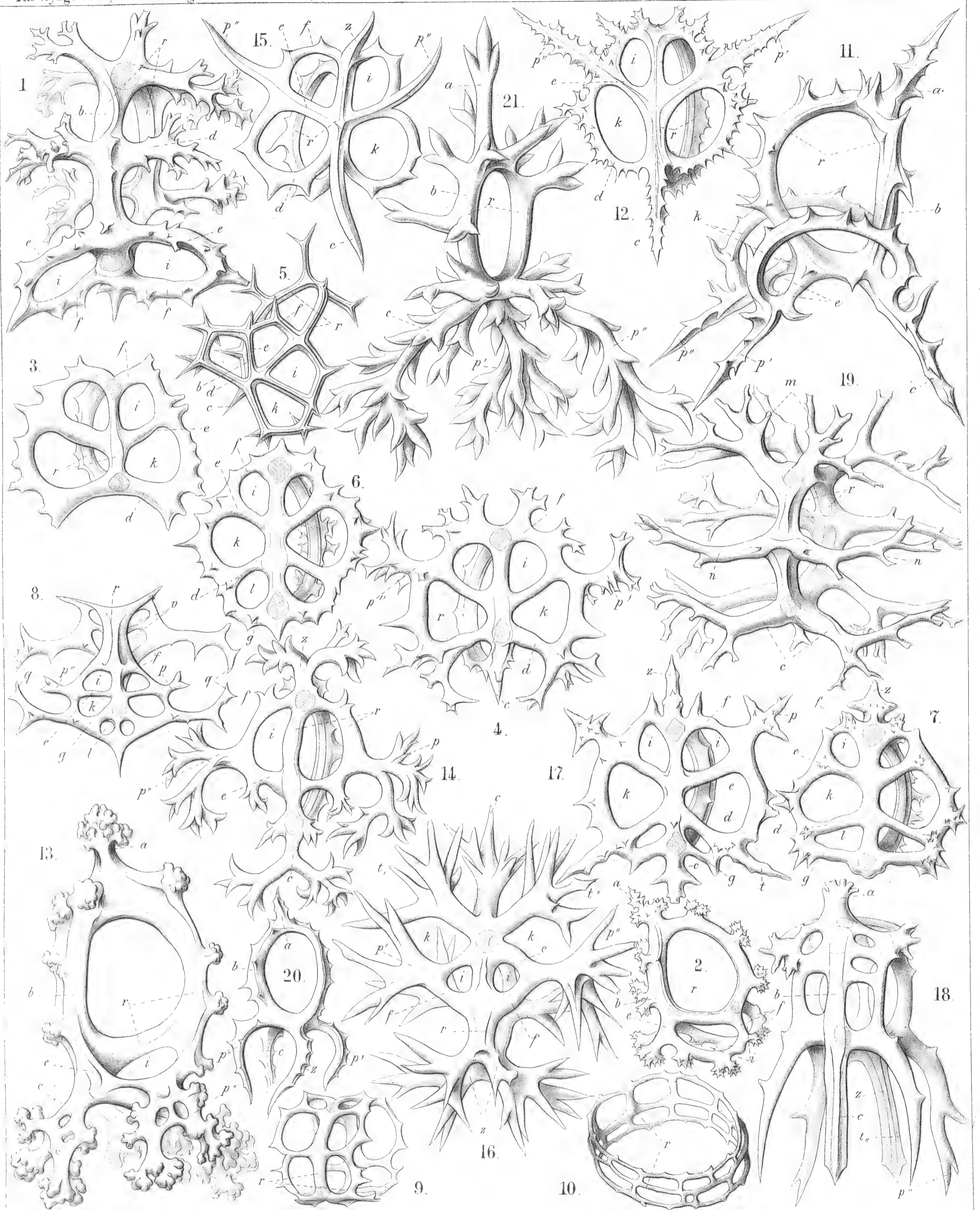
Order STEPHOIDEA.

Families STEPHANIDA et SEMANTIDA.

PLATE 92.

STEPHANIDA et SEMANTIDA.

	Diam.	Page
Fig. 1. <i>Semantis sigillum</i> , n. sp.,	× 400	957
Fig. 2. <i>Semantis biforis</i> , n. sp.,	× 300	956
Fig. 3. <i>Semantrum tetrastoma</i> , n. sp.,	× 300	959
Fig. 4. <i>Semantrum signarium</i> , n. sp.,	× 400	960
Fig. 5. <i>Semantrum quadrifore</i> , n. sp.,	× 400	958
Fig. 6. <i>Semantidium hexastoma</i> , n. sp.,	× 400	960
Fig. 7. <i>Semantidium signatorium</i> , n. sp.,	× 400	961
Fig. 8. <i>Clathrocircus stapedius</i> , n. sp.,	× 400	962
Fig. 9. <i>Clathrocircus dictyospyris</i> , n. sp.,	× 300	963
Fig. 10. <i>Clathrocircus multiforis</i> , n. sp.,	× 300	963
Fig. 11. <i>Cortiniscus tripodiscus</i> , n. sp.,	× 400	963
Fig. 12. <i>Cortiniscus typicus</i> , n. sp.,	× 300	964
Fig. 13. <i>Cortiniscus dipylaris</i> , n. sp.,	× 400	964
Fig. 14. <i>Stephaniscus quadrifurcus</i> , n. sp.,	× 300	965
Fig. 15. <i>Stephaniscus quadrigatus</i> , n. sp.,	× 400	965
Fig. 16. <i>Semantiscus hexapodius</i> , n. sp.,	× 400	966
Fig. 17. <i>Semantiscus hexapylus</i> , n. sp.,	× 400	967
Fig. 18. <i>Semantiscus hexaspyris</i> , n. sp.,	× 400	966
Fig. 19. <i>Lithocircus tarandus</i> , n. sp.,	× 400	944
Fig. 20. <i>Stephanium quadrupes</i> , n. sp.,	× 200	952
Fig. 21. <i>Cortina cervina</i> , n. sp.,	× 300	952



E. Haeckel and A. G. S. Del.

H. G. S. Jena Lithogr.

1-7. SEMANTIS, 8-10. CLATHROCIRCUS, 11-13. CORTINISCUS,
14-15. STEPHANISCUS, 16-19, SEMANTISCUS, 20-21. STEPHANIUM.

PLATE 93.

Legion NASSELLARIA.

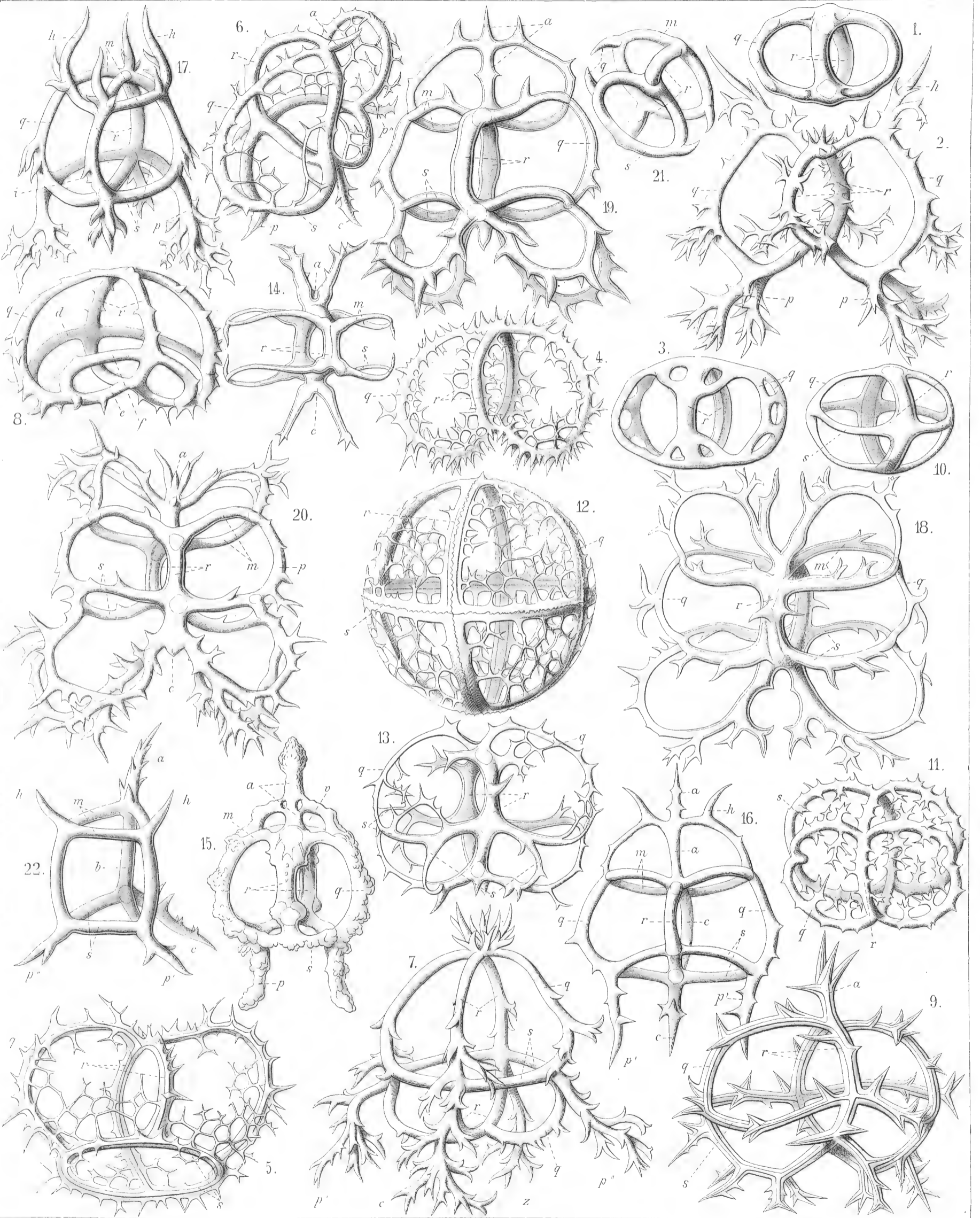
Order STEPHOIDEA.

Families CORONIDA et TYMPANIDA.

PLATE 93.

CORONIDA et TYMPANIDA.

	Diam.	Page
Fig. 1. <i>Zygostephanus dissocius</i> , n. sp.,	× 300	971
Fig. 2. <i>Zygostephanus bicornis</i> , n. sp.,	× 300	972
Fig. 3. <i>Zygostephanium dizonium</i> , n. sp.,	× 300	973
Fig. 4. <i>Zygostephanium paradictyum</i> , n. sp.,	× 300	973
Fig. 5. <i>Acanthodesmia corona</i> , n. sp.,	× 400	976
Fig. 6. <i>Plectocoronis pentacantha</i> , n. sp.,	× 300	979
Fig. 7. <i>Tristephanium quadricorne</i> , n. sp.,	× 300	984
Fig. 8. <i>Tristephanium octopyle</i> , n. sp.,	× 300	983
Fig. 9. <i>Tristephanium dimensivum</i> , n. sp.,	× 400	983
Fig. 10. <i>Trissocircus lentellipsis</i> , n. sp.,	× 300	985
Fig. 11. <i>Trissocircus octostoma</i> , n. sp.,	× 300	986
Fig. 12. <i>Trissocyclus sphæridium</i> , n. sp.,	× 300	987
Fig. 13. <i>Tricyclidium dictyospyris</i> , n. sp.,	× 300	984
Fig. 14. <i>Protympanium amphipodium</i> , n. sp.,	× 300	992
Fig. 15. <i>Acrocubus arcuatus</i> , n. sp.,	× 300	993
Fig. 16. <i>Acrocubus cortina</i> , n. sp.,	× 300	994
Fig. 17. <i>Acrocubus amphithecus</i> , n. sp.,	× 300	995
Fig. 18. <i>Toxarium thorax</i> , n. sp.,	× 300	996
Fig. 19. <i>Toxarium cordatum</i> , n. sp.,	× 300	996
Fig. 20. <i>Toxarium bifurcum</i> , n. sp.,	× 300	997
Fig. 21. <i>Parastephanus quadrispinus</i> , n. sp.,	× 300	1008
Fig. 22. <i>Prismatium tripodium</i> , n. sp.,	× 300	1009



E. Haeckel and A. Giltch, Del.

A. Giltch, Jena, Lithogr.

1-4. ZYGOSTEPHANUS, 5-6. ACANTHODESMIA, 7-13. TRISTEPHANIMUM,
 14-17. ACROCUBUS, 18-20. TOXARIUM, 21, 22. PRISMATIUM.

PLATE 94.

Legion NASSELLARIA.

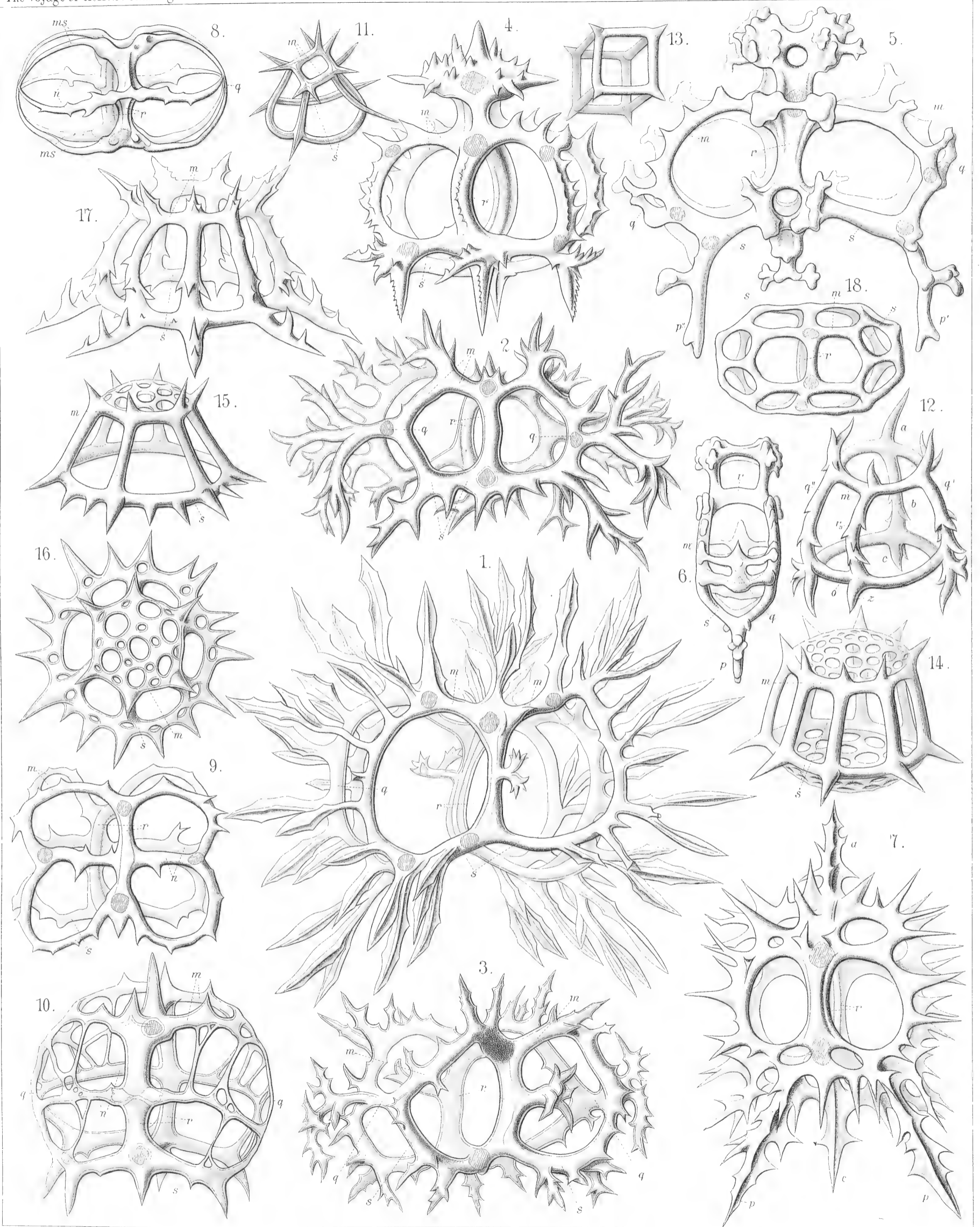
Order STEPHOIDEA.

Family TYMPANIDA.

PLATE 94.

TYMPANIDA.

	Diam.	Page
Fig. 1. <i>Tympanidium foliosum</i> , n. sp.,	× 400	1003
Fig. 2. <i>Octotympanum cervicorne</i> , n. sp.,	× 400	1000
Fig. 3. <i>Octotympanum octonarium</i> , n. sp.,	× 400	1000
Fig. 4. <i>Tympaniscus quadripes</i> , n. sp.,	× 400	1002
Fig. 5. <i>Tympaniscus dipodiscus</i> , n. sp.,	× 400	1001
Frontal view.		
Fig. 6. <i>Tympaniscus dipodiscus</i> , n. sp.,	× 400	1001
Lateral view.		
Fig. 7. <i>Tympaniscus tripodiscus</i> , n. sp.,	× 400	1002
Frontal view.		
Fig. 8. <i>Microcubus zonarius</i> , n. sp.,	× 300	998
Fig. 9. <i>Microcubus dodecastoma</i> , n. sp.,	× 300	998
Fig. 10. <i>Microcubus amphispuris</i> , n. sp.,	× 400	999
Fig. 11. <i>Pseudocubus obeliscus</i> , n. sp.;	× 400	1010
Fig. 12. <i>Pseudocubus hexapylus</i> , n. sp.,	× 300	1011
Fig. 13. <i>Lithocubus geometricus</i> , n. sp.,	× 200	1011
Fig. 14. <i>Paratympanum octostylum</i> , n. sp.,	× 400	1005
Fig. 15. <i>Dystympanium dictyocha</i> , n. sp.,	× 400	1007
Lateral view.		
Fig. 16. <i>Dystympanium dictyocha</i> , n. sp.,	× 400	1007
Apical view.		
Fig. 17. <i>Circotympanum octogonium</i> , n. sp.,	× 500	1013
Fig. 18. <i>Tympanidium binoctonum</i> , n. sp.,	× 400	1004



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A. Giltch, Jena, Lithogr.

1-3, 18. TYMPANIDIUM, 4-7. TYMPANISCUS, 8-10. MICROCUBUS,
 11-13. LITHOCUBUS, 14. PARATYMPANIUM, 15-17. DYSTYMPANIUM.

PLATE 95.

Legion NASSELLARIA.

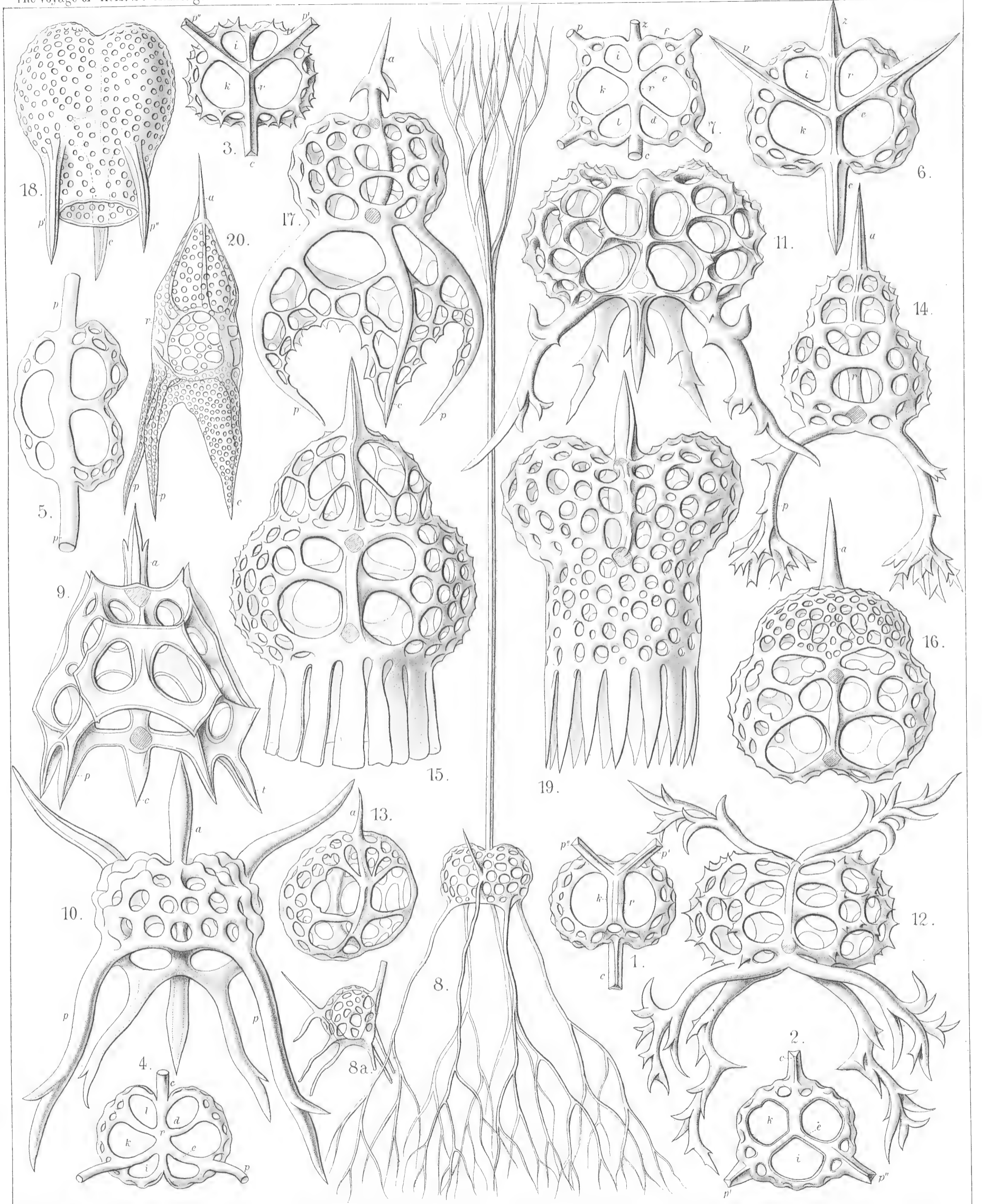
Order SPYROIDEA.

Families ZYGOSPYRIDA, THOLOSPYRIDA, PHORMOSPYRIDA
et ANDROSPYRIDA.

PLATE 95.

ZYGOSPYRIDA, THOLOSPYRIDA, PHORMOSPYRIDA et ANDROSPYRIDA.

				Diam.	Page
Fig. 1.	<i>Tripospyris cortina</i> , n. sp., .	.	.	× 300	1025
	Basal view.				
Fig. 2.	<i>Tripospyris triplecta</i> , n. sp., .	.	.	× 300	1027
	Basal view.				
Fig. 3.	<i>Tripospyris semantrum</i> , n. sp., .	.	.	× 400	1027
	Basal view.				
Fig. 4.	<i>Tripospyris hexomma</i> , n. sp., .	.	.	× 300	1028
	Basal view.				
Fig. 5.	<i>Brachiospyris diacantha</i> , n. sp., .	.	.	× 400	1038
	Basal view.				
Fig. 6.	<i>Tetraspyris stephanium</i> , n. sp., .	.	.	× 300	1044
	Basal view.				
Fig. 7.	<i>Liriospyris amphitecta</i> , n. sp., .	.	.	× 300	1050
	Basal view.				
Fig. 8.	<i>Hexaspyris hexacorethra</i> , n. sp., .	.	.	× 300	1048
	Frontal view.				
Fig. 9.	<i>Clathrospyris pyramidalis</i> , n. sp., .	.	.	× 500	1052
	Frontal view.				
Fig. 10.	<i>Aegospyris aegoceras</i> , n. sp., .	.	.	× 400	1054
	Frontal view.				
Fig. 11.	<i>Pentaspysis pentacantha</i> , n. sp., .	.	.	× 400	1054
	Dorsal view.				
Fig. 12.	<i>Taurospyris cervina</i> , n. sp., .	.	.	× 400	1058
	Frontal view.				
Fig. 13.	<i>Circospyris nucula</i> , n. sp., .	.	.	× 300	1072
	Dorsal view.				
Fig. 14.	<i>Lophospyris dipodiscus</i> , n. sp., .	.	.	× 400	1080
	Frontal view.				
Fig. 15.	<i>Sepalospysis platyphylla</i> , n. sp., .	.	.	× 400	1081
	Dorsal view.				
Fig. 16.	<i>Pylospyris canariensis</i> , n. sp., .	.	.	× 400	1084
	Frontal view.				
Fig. 17.	<i>Acrospyris clathrocanium</i> , n. sp., .	.	.	× 300	1085
	Dorsal view.				
Fig. 18.	<i>Phormospyris tridentata</i> , n. sp., .	.	.	× 400	1087
	Frontal view.				
Fig. 19.	<i>Patagospysis anthocyrtis</i> , n. sp., .	.	.	× 500	1088
	Dorsal view.				
Fig. 20.	<i>Androspyris pithecus</i> , n. sp., .	.	.	× 400	1093
	Lateral view.				



E. Haeckel and A. Giltch. Del.

A. Giltch. Jena, lith. gr.

1-13. ZYGOSPYRIS, 14-16. THOLOSPYRIS, 17-19. PHORMOSPYRIS, 20. ANDROSPYRIS.

PLATE 96.

Legion NASSELLARIA.

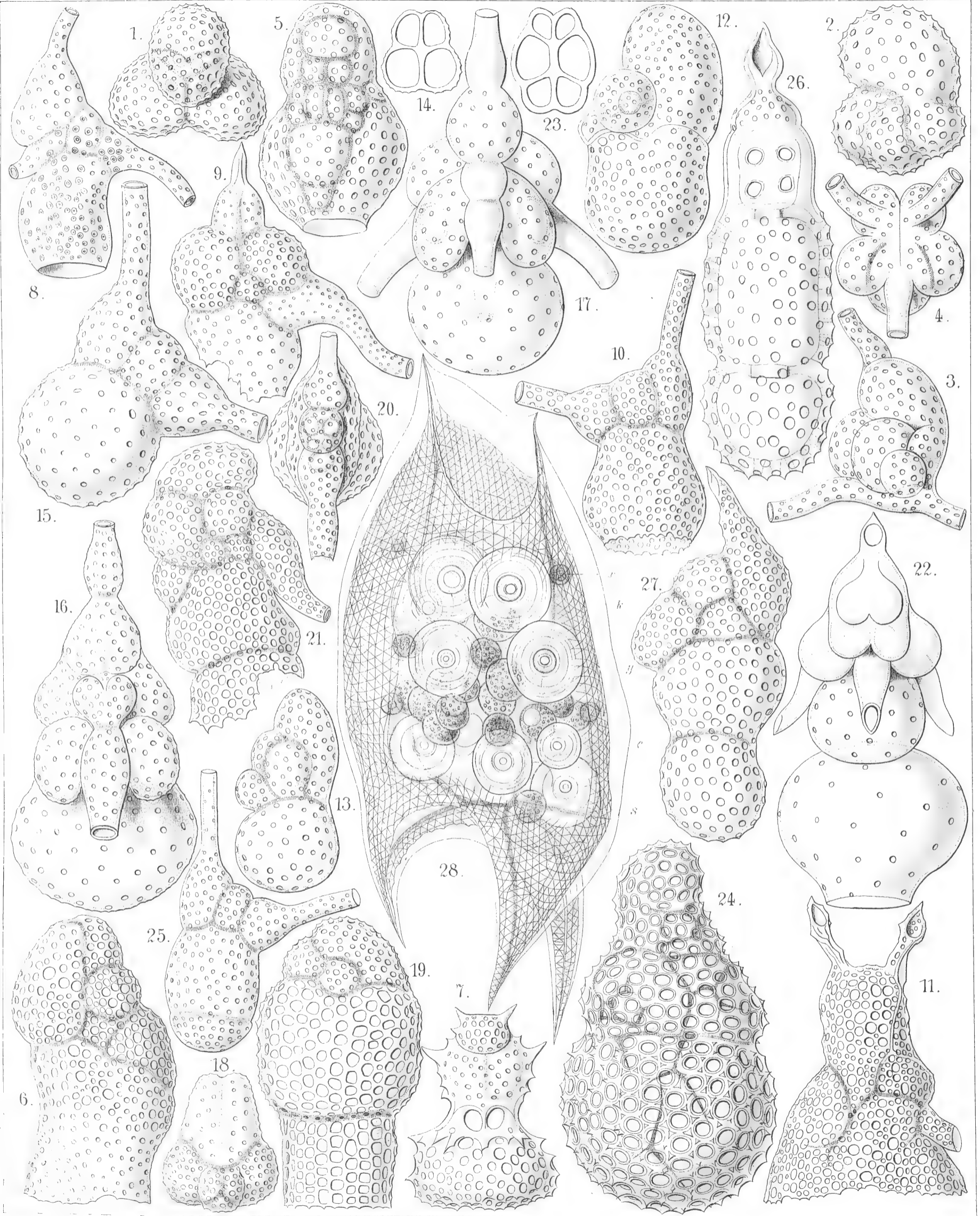
Order BOTRYODEA.

Families CANNOBOTRYIDA, LIHTOBOTRYIDA et PYLOBOTRYIDA.

PLATE 96.

CANNOBOTRYIDA, LITHOBOTRYIDA et PYLOBOTRYIDA.

	Diam.	Page
Fig. 1. <i>Botryopera cyrtoloba</i> , n. sp., Apical view.	× 500	1108
Fig. 2. <i>Botryopera quinqueloba</i> , n. sp., Half lateral, half frontal view.	× 500	1109
Fig. 3. <i>Cannobotrys tricanna</i> , n. sp., View half from the frontal, half from the left side.	× 400	1110
Fig. 4. <i>Cannobotrys cortina</i> , n. sp., Basal view.	× 400	1110
Fig. 5. <i>Botryopyle inclusa</i> , n. sp., Frontal view.	× 500	1113
Fig. 6. <i>Botryopyle dictyocephalus</i> , n. sp., Lateral view (right side).	× 500	1113
Fig. 7. <i>Botryopyle sethocorys</i> , n. sp., Frontal view.	× 400	1112
Fig. 8. <i>Acrobotrys trisolenia</i> , n. sp., Lateral view (right side).	× 400	1115
Fig. 9. <i>Acrobotrys acuminata</i> , n. sp., Lateral view (right side).	× 400	1115
Fig. 10. <i>Acrobotrys disolenia</i> , n. sp., Lateral view (left side).	× 400	1114
Fig. 11. <i>Acrobotrys auriculata</i> , n. sp., Lateral view (right side).	× 500	1115
Fig. 12. <i>Botryocella multicellaris</i> , n. sp., Lateral view (left side).	× 500	1117
Fig. 13. <i>Botryocella quadricellaris</i> , n. sp., Lateral view (left side).	× 400	1117
Fig. 14. <i>Botryocella quadrigemina</i> , n. sp., Collar septum, between cephalis and thorax.	× 400	1117
Fig. 15. <i>Lithobotrys sphaerothorax</i> , n. sp., Lateral view (right side).	× 500	1119
Fig. 16. <i>Lithobotrys mascula</i> , n. sp., Frontal view.	× 500	1119
Fig. 17. <i>Lithobotrys orchidea</i> , n. sp., Frontal view.	× 500	1119
Fig. 18. <i>Botryocyrtis cerebellum</i> , n. sp., Apical view.	× 400	1121
Fig. 19. <i>Botryocyrtis theocampe</i> , n. sp., Lateral view (left side).	× 500	1121
Fig. 20. <i>Pylobotrys fontinalis</i> , n. sp., Apical view.	× 400	1122
Fig. 21. <i>Pylobotrys putealis</i> , n. sp., Lateral view (right side).	× 500	1121
Fig. 22. <i>Pylobotrys cerebralis</i> , n. sp., Dorsal view.	× 500	1122
Fig. 23. <i>Botryocampe rotalia</i> , n. sp., Collar septum.	× 400	1123
Fig. 24. <i>Botryocampe camerata</i> , n. sp., Lateral view (left side).	× 500	1124
Fig. 25. <i>Phormobotrys cannothalamia</i> , n. sp., Lateral view (right side).	× 400	1125
Fig. 26. <i>Phormobotrys trithalamia</i> , n. sp., Frontal section. The dorsal wall is visible, in the cephalis the cruciform frontal septum.	× 500	1124
Fig. 27. <i>Phormobotrys pentathalamia</i> , n. sp., Lateral view (left side).	× 400	1124
Fig. 28. <i>Cephalospyris triangulata</i> , n. sp., The central capsule encloses numerous spherical concretions.	× 400	1035



E. Haeckel and A. Giltch, Del.

A. Giltch, Jena, Lithogr.

1-4 BOTRYOPERA, 5-11. BOTRYOPYLE, 12-17. BOTRYOCELLA,
18-22. BOTRYOCYRTIS, 23-27. BOTRYOCAMPE, 28. CEPHALOSPYSIS.

PLATE 97.

Legion NASSELLARIA.

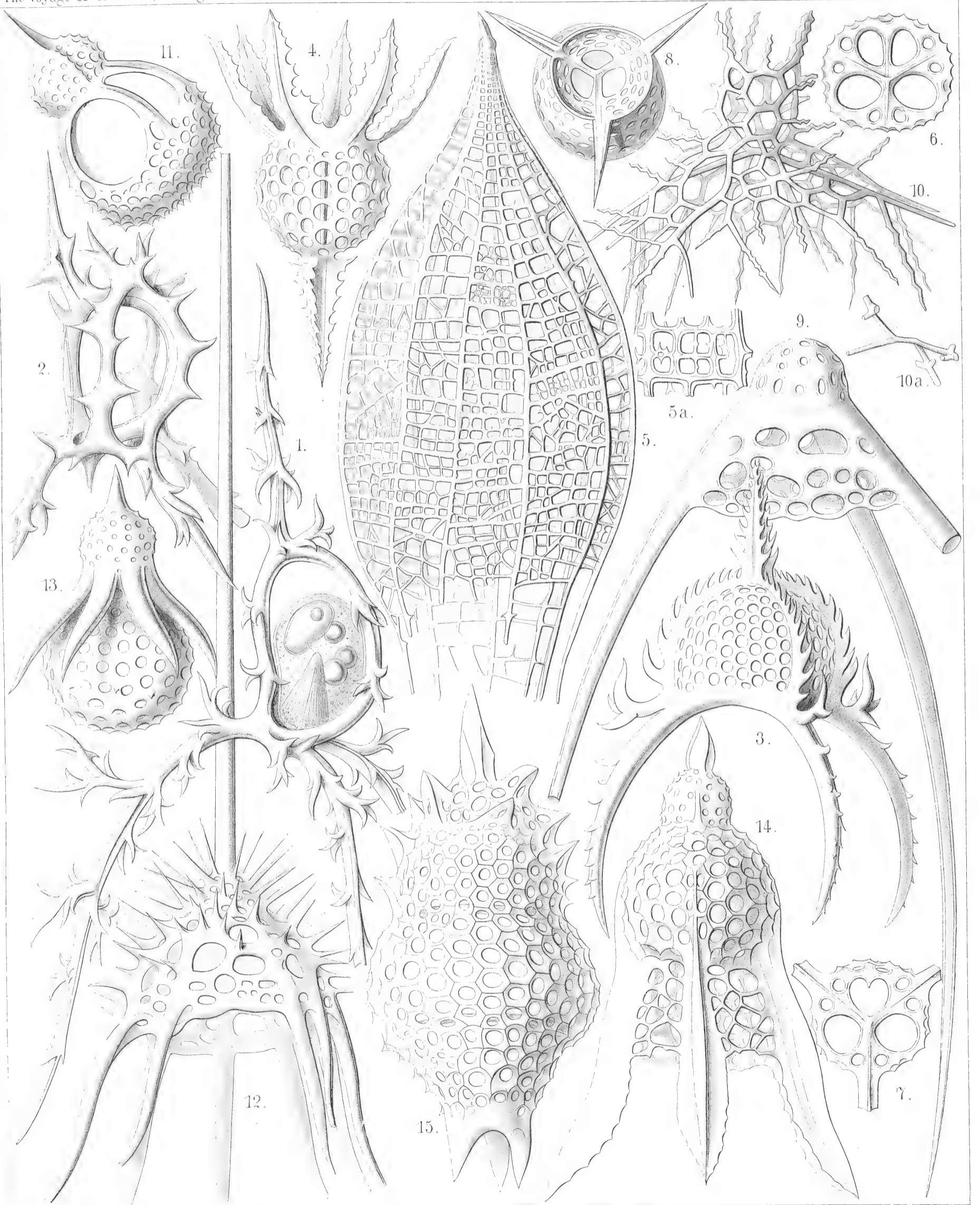
Orders STEPHOIDEA ET CYRTOIDEA.

Families STEPHANIDA, CORONIDA, TRIPOCALPIDA, PHÆNOCALPIDA,
TRIPOCYRTIDA, PODOCYRTIDA et PODOCAMPIDA.

PLATE 97.

STEPHANIDA, CORONIDA, TRIPOCALPIDA, PHÆNOCALPIDA, TRIPOCYRTIDA,
PODOCYRTIDA et PODOCAMPIDA.

	Diam.	Page
Fig. 1. <i>Cortina typus</i> , n. sp.,	× 300	951
View from the right side. The upper part of the central capsule includes the nucleus, the lower part the podoconus, besides some oil-globules. The two pectoral feet are partly broken off.		
Fig. 2. <i>Podocoronis cortiniscus</i> , n. sp.,	× 400	981
View from the right anterior side.		
Fig. 3. <i>Tripocalpis cortinaris</i> , n. sp.,	× 400	1137
Fig. 4. <i>Phænocalpis petalospyris</i> , n. sp.,	× 400	1173
Lateral view (inverted).		
Fig. 5. <i>Haliphormis lagena</i> , n. sp.,	× 200	1167
Fig. 6. <i>Halicapsa lithapium</i> , n. sp.,	× 300	1190
Basal view.		
Fig. 7. <i>Peridium alatum</i> , n. sp.,	× 300	1155
Basal view.		
Fig. 8. <i>Sethopilium orthopus</i> , n. sp.,	× 300	1202
Basal view.		
Fig. 9. <i>Sethopilium macropus</i> , n. sp.,	× 400	1203
Fig. 10. <i>Amphiplecta acrostoma</i> , n. sp.,	× 400	1223
Fig. 11. <i>Sethopera tricostata</i> , n. sp.,	× 400	1232
Fig. 12. <i>Acanthocorys macroceras</i> , n. sp.,	× 200	1264
Fig. 13. <i>Sethophæna hexaptera</i> , n. sp.,	× 400	1286
Fig. 14. <i>Theopodium tricostatum</i> , n. sp.,	× 400	1328
Fig. 15. <i>Podocampe trictenota</i> , n. sp.,	× 500	1446



A. Gutsch, Jena, Lithogr.

1. 2. CORTINA. 3-7. MONOCYRTIDA. 8 13. DICYRTIDA.
14. THEOPODIUM. 15. PODOCAMPE.

PLATE 98.

Legion NASSELLARIA.

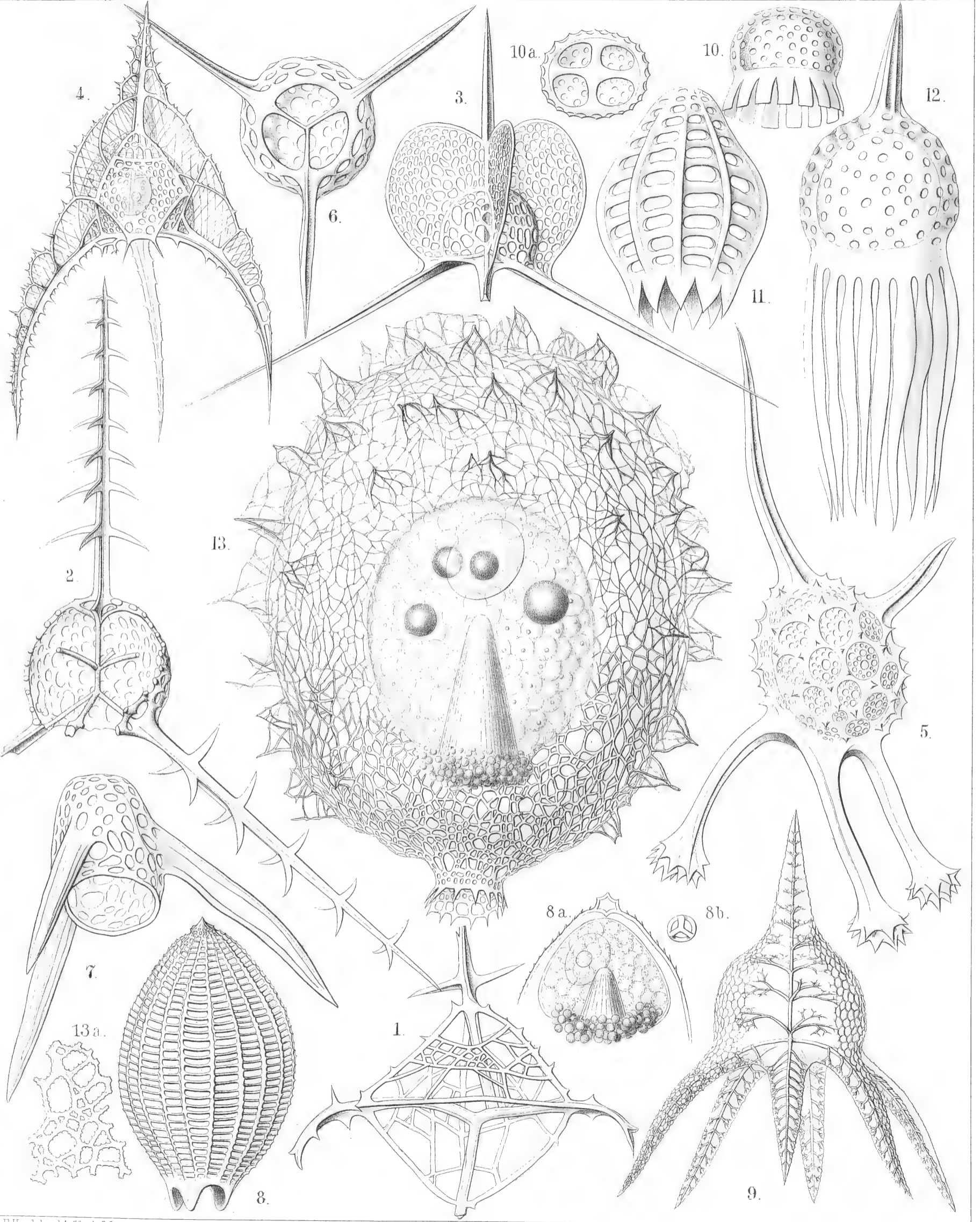
Order CYRTOIDEA.

Families TRIPOCALPIDA et PHÆNOCALPIDA.

PLATE 98.

TRIPOCALPIDA et PHÆNOCALPIDA.

		Diam.	Page
Fig. 1.	<i>Euscenium plectaniscus</i> , n. sp., Half frontal, half basal view.	× 300	1146
Fig. 2.	<i>Cladoscenium pectinatum</i> , n. sp., Shell opened by a vertical section.	× 400	1150
Fig. 3.	<i>Archiscenium cyclopterum</i> , n. sp., View from the dorsal side.	× 400	1151
Fig. 4.	<i>Pteroscenium arcuatum</i> , n. sp., The central capsule contains a large spherical nucleus with a nucleolus.	× 400	1152
Fig. 5.	<i>Archipera cortiniscus</i> , n. sp.,	× 400	1155
Fig. 6.	<i>Archibursa tripodiscus</i> , n. sp., Basal view.	× 400	1157
Fig. 7.	<i>Archipilium orthopterum</i> , n. sp.,	× 400	1139
Fig. 8.	<i>Tripilidium costatum</i> , n. sp., Fig. 8a. Central capsule in the upper part of the shell, Fig. 8b. Cortinar septum,	× 300 × ×	1141
Fig. 9.	<i>Phænoscenium hexapodium</i> , n. sp.,	× 300	1175
Fig. 10.	<i>Archiphæna gorgospyris</i> , n. sp., Fig. 10a. Cortinar septum with four collar pores,	× 300 × 300	1178
Fig. 11.	<i>Archiphormis urceolata</i> , n. sp.,	× 300	1168
Fig. 12.	<i>Halicalyptra petalospyris</i> , n. sp.,	× 400	1169
Fig. 13.	<i>Arachnocalpis ellipsoides</i> , n. sp., The central capsule is filled up by clear vacuoles and exhibits in the upper half the ellipsoidal nucleus and four oil-globules, in the lower half the slender striated podoconus. Fig. 13a. A piece of the network, more enlarged,	× 300 × 900	1172



F. Haeckel and A. Giltch, Del.

E. Giltch Jena, Lithogr.

1-4. EUSCENIUM, 5. 6. ARCHIPERA, 7. 8. TRIPILIDIUM, 9. 10. ARCHIPHAENA, 11. 12. ARCHIPHORMIS, 13. ARACHNOCALPIS.

PLATE 99.

Legion PHÆODARIA.

Order PHÆOGROMIA.

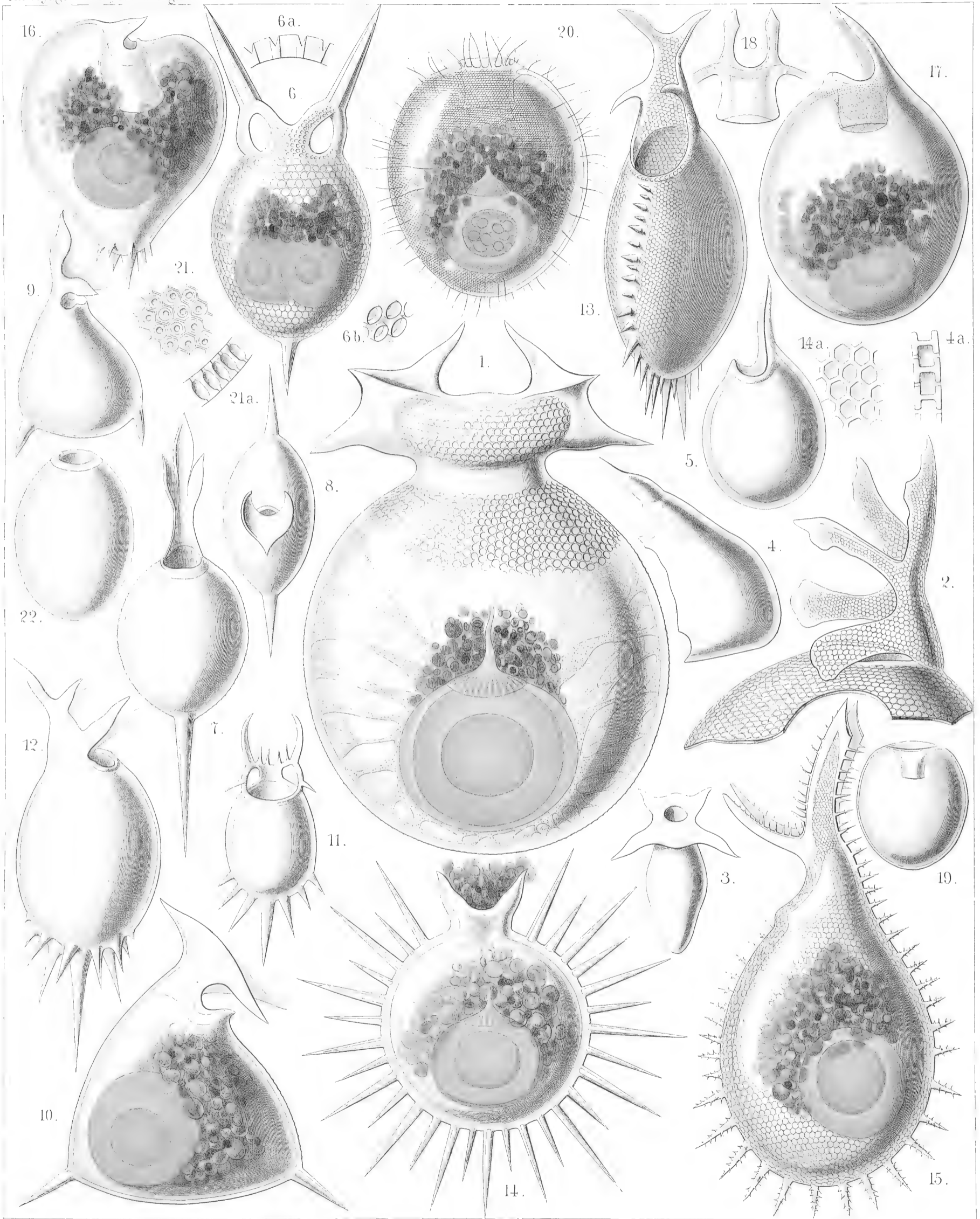
Family CHALLENGERIDA.

PLATE 99.

CHALLENGERIDA.

(The central capsule is coloured red and the phæodium green in Figs. 1, 6, 10, 14-17, 20).

		Diam.	Page
Fig. 1.	<i>Challengeria murrayi</i> , n. sp., From the dorsal side. Numerous streams of sarcode arise from the central capsule and pierce the calymma inside the shell.	× 50	1653
Fig. 2.	<i>Challengeria wildi</i> , n. sp., The peristome from the left side.	× 400	1653
Fig. 3.	<i>Challengeria bromleyi</i> , n. sp., From the dorsal side.	× 400	1652
Fig. 4.	<i>Challengeria sloggettii</i> , John Murray, The ventral corner broken off. From the left side. Fig. 4a. Vertical section through the shell-wall.	× 150	1649
Fig. 5.	<i>Challengeria tritonis</i> , n. sp.,	× 150	1649
Fig. 6.	<i>Challengeron diodon</i> , n. sp., From the dorsal side. The shell contains two central capsules.	× 400	1654
Fig. 7.	<i>Challengeron pearceyi</i> , n. sp., From the dorsal side.	× 300	1654
Fig. 8.	<i>Challengeron richardsii</i> , n. sp., From the oral margin.	× 100	1655
Fig. 9.	<i>Challengeron fergusonii</i> , n. sp., From the right side.	× 100	1656
Fig. 10.	<i>Challengeron triangulum</i> , n. sp., From the right side.	× 200	1656
Fig. 11.	<i>Challengeron crosbiei</i> , n. sp., From the ventral side.	× 300	1657
Fig. 12.	<i>Challengeron buchanani</i> , n. sp., From the right side.	× 300	1657
Fig. 13.	<i>Challengeron willemoesii</i> , n. sp., From the ventral side.	× 400	1659
Fig. 14.	<i>Challengeron moseleyi</i> , n. sp., From the right side.	× 300	1658
Fig. 15.	<i>Challengeron wyvillei</i> , n. sp., From the left side.	× 300	1660
Fig. 16.	<i>Porcupinia cordiformis</i> , n. sp., From the right side.	× 200	1663
Fig. 17.	<i>Pharyngella gastræa</i> , n. sp.,	× 150	1662
Fig. 18.	<i>Pharyngella gastrula</i> , n. sp.,	× 150	1662
Fig. 19.	<i>Entocannula infundibulum</i> , n. sp.,	× 100	1661
Fig. 20.	<i>Entocannula hirsuta</i> , n. sp.,	× 150	1661
Fig. 21.	<i>Lithogromia diatomacea</i> , n. sp., A piece of the shell with diatomaceous structure. Fig. 21a. Vertical section through the shell-wall.	× 400	1647
Fig. 22.	<i>Lithogromia silicea</i> , n. sp.,	× 150	1647



Edwards, Challenger

Am. Mus. Nat. Hist.

1-15. CHALLENGERIA. 16-18. PHARYNGELLA. 19, 20. ENTOCANNULA.
21, 22. LITHOGROMIA.



PLATE 100.

Legion PHÆODARIA.

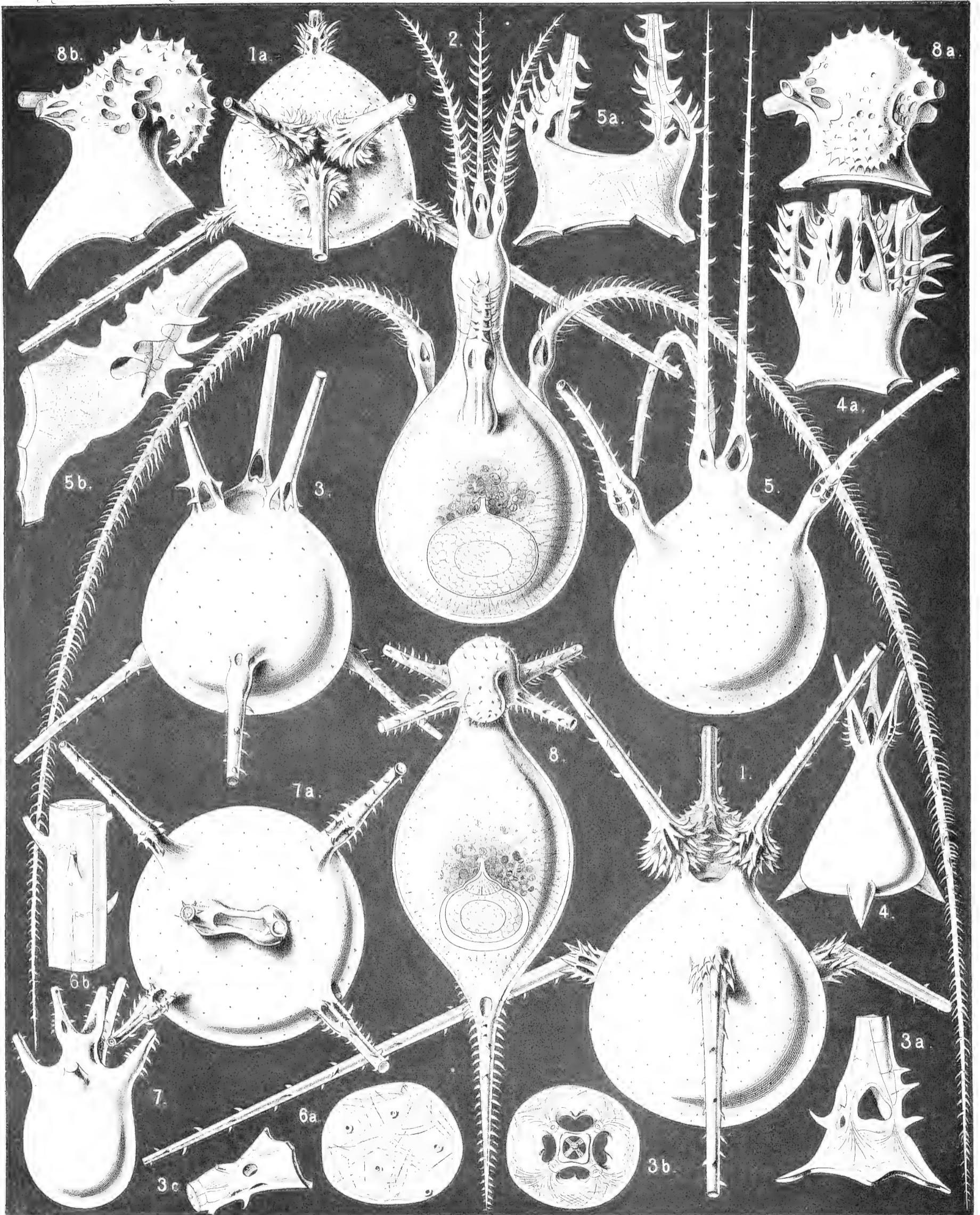
Order PHÆOGROMIA.

Family TUSCARORIDA.

PLATE 100.

TUSCARORIDA.

			Diam.	Page
Fig. 1.	<i>Tuscarora bisternaria</i> , John Murray,	.	× 30	1706
	View from the dorsal side.			
	Fig. 1a. View from the mouth pole	.	× 25	
Fig. 2.	<i>Tuscarora murrayi</i> , n. sp.,	.	× 30	1706
	View from the dorsal side. The central capsule (in the aboral half), and the phæodium (in the middle of the shell-cavity) are visible. A fine network of pseudopodia pierces the calymma, which fills up the shell-cavity.			
Fig. 3.	<i>Tuscarora wyvillei</i> , n. sp.,	.	× 30	1707
	View from the dorsal side.			
	Fig. 3a. Base of a tooth,	.	× 100	
	Fig. 3b. Transverse section through the base of a tooth.			
	Fig. 3c. Base of a foot.			
Fig. 4.	<i>Tuscarora tetrahedra</i> , John Murray,	.	× 15	1707
	View from the dorsal side.			
	Fig. 4a. Mouth with the three teeth,	.	× 50	
Fig. 5.	<i>Tuscarora tubulosa</i> , John Murray,	.	× 40	1707
	View from the ventral side.			
	Fig. 5a. Mouth with the two teeth,	.	× 100	
	Fig. 5b. Basal part of a single tooth,	.	× 150	
Fig. 6.	<i>Tuscarora porcellana</i> , John Murray,	.	× 600	1708
	Fig. 6a. A piece of the shell, with five pores.			
	Fig. 6b. A piece of a tooth, with the internal axial rod and its transverse branches.			
Fig. 7.	<i>Tuscarusa medusa</i> , n. sp.,	.	× 25	1709
	View from the side.			
	Fig. 7a. View from the mouth,	.	× 50	
Fig. 8.	<i>Tuscaridium lithornithium</i> , n. sp.,	.	× 20	1710
	View from the ventral side. Central capsule and calymma as in fig. 2.			
	Fig. 8a. Peristome from the ventral side.			
	Fig. 8b. Peristome from the right side.			



L. Beudanticus del. J. S. G. sculp.

A. Giltsch, Jena, Lithogr.

TUSCARORA.

PLATE 101.

Legion PHÆODARIA.

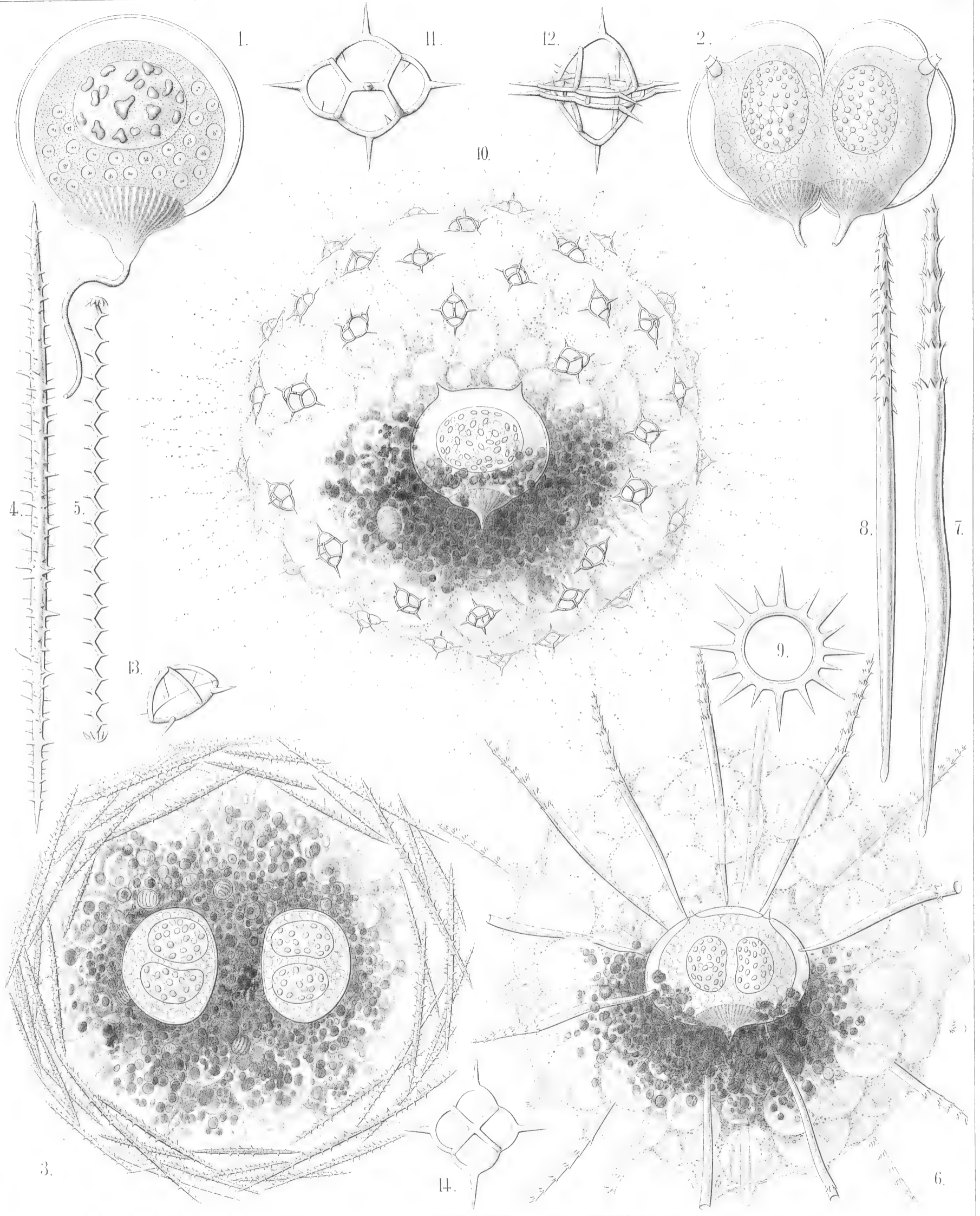
Order PHÆOCYSTINA.

Families PHÆODINIDA, CANNORRHAPHIDA et AULACANTHIDA.

PLATE 101.

PHÆODINIDA, CANNORRHAPHIDA et AULACANTHIDA.

		Diam.	Page
Fig. 1.	<i>Phæocollla primordialis</i> , n. sp., Central capsule, isolated. The double contoured outer membrane exhibits only one opening, with a radiate operculum and long proboscis. The granular protoplasm encloses clear spherical vacuoles. The spheroidal nucleus contains irregular amœboid nucleoli.	× 300	1544
Fig. 2.	<i>Phæodina tripylea</i> , n. sp., A central capsule in self-division, with two elliptical nuclei. The astropyle is already bisected and has two proboscides.	× 300	1545
Fig. 3.	<i>Cannorrhaphis spinulosa</i> , n. sp., A complete specimen with two central capsules, each of which contains two nuclei. The alveolate calymma contains a dark phæodium and is surrounded by tangential tubular needles.	× 100	1552
Fig. 4.	<i>Cannorrhaphis spinulosa</i> , n. sp., A single tangential tube.	× 300	1552
Fig. 5.	<i>Cannorrhaphis spathillata</i> , n. sp., A single tangential tube.	× 300	1552
Fig. 6.	<i>Aulactinium actinastrum</i> , n. sp., A complete specimen, seen in optical meridional section. In the centre the spheroidal central capsule, with its double membrane and three openings (above two lateral parapylæ, below the large astropyle with its radiate operculum). The capsule encloses numerous spherical vacuoles and two hemispherical nuclei, each with numerous nucleoli. The anterior half of the capsule is surrounded by the blackish phæodium. The spherical calymma contains numerous globular alveoles and is pierced by the radial tubes, the proximal ends of which are in contact with the surface of the central capsule (compare Pl. 103, fig. 1).	× 100	1574
Fig. 7.	<i>Aulactinium actinastrum</i> , n. sp., A single radial tube.	× 300	1574
Fig. 8.	<i>Aulactinium actinellium</i> , n. sp., A single radial tube.	× 200	1574
Fig. 9.	<i>Mesocena stellata</i> , n. sp., A single annular piece of the skeleton	× 600	1557
Fig. 10.	<i>Dictyocha stapedia</i> , n. sp., A complete specimen, observed living at Ceylon. In the centre is visible the large, spheroidal, tripylean central capsule, with its three openings, containing a large nucleus with numerous nucleoli. Its oral half is covered with the dark phæodium. The voluminous spherical calymma contains numerous globular alveoles and its surface is covered with scattered, stirrup-shaped pieces of the skeleton. Numerous free pseudopodia arise from the surface.	× 300	1561
Fig. 11.	<i>Dictyocha stapedia</i> , n. sp., A single piece of the skeleton, from above.	× 800	1561
Fig. 12.	<i>Dictyocha stapedia</i> , n. sp., A twin piece of the skeleton.	× 800	1561
Fig. 13.	<i>Dictyocha medusa</i> , n. sp., A single piece of the skeleton, from the side.	× 800	1560
Fig. 14.	<i>Dictyocha medusa</i> , n. sp., A single piece of the skeleton, from above.	× 800	1560



1 2. PHAEODINA, 3 5 CANNORRHAPHIS, 6-8. AULACTINIUM,
 9, MESOCENA, 10-14. DICTYOCHA.

PLATE 102.

Legion PHÆODARIA.

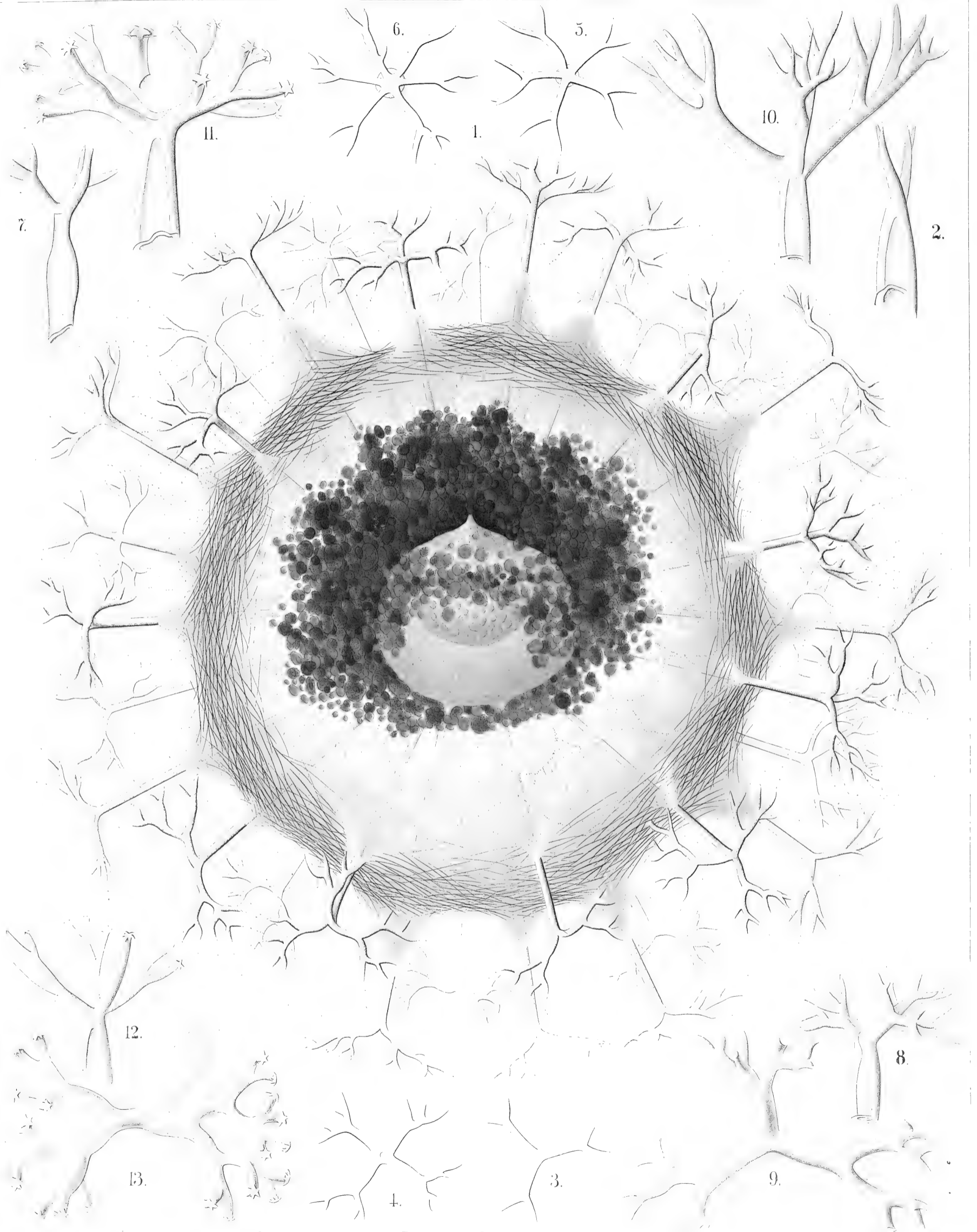
Order PHÆOCYSTINA.

Family AULACANTHIDA.

PLATE 102.

AULACANTHIDA.

	Diam.	Page
Fig. 1. <i>Auloceros elegans</i> , n. sp.,	× 80	1584
<p>A complete specimen, observed living at Ceylon. In the centre is visible the red central capsule with its three openings, containing a large nucleus of half the size, with numerous nucleoli. The alveolate calymma encloses a green excentric phæodium, is surrounded by a veil of interwoven tangential needles, and forms conical elevations, which enclose the piercing radial tubes. Between these radiate numerous pseudopodia (compare for the single parts, Pl. 103, fig. 1 and Pl. 104, figs. 1-3, and their explanation).</p>		
Figs. 2-6. <i>Auloceros furcosus</i> , n. sp.,	× 100	1583
<p>Distal ends of different radial tubes, exhibiting the great variability of this species.</p>		
Fig. 7. <i>Auloceros trigeminus</i> n. sp.,	× 300	1584
<p>Distal end of a single tube.</p>		
Fig. 8. <i>Auloceros capreolus</i> , n. sp.,	× 200	1584
<p>Distal end of a single tube</p>		
Figs. 9, 10. <i>Auloceros cervinus</i> , n. sp.,	× 300	1584
<p>Distal ends of two single tubes.</p>		
Fig. 12. <i>Auloceros spathillaster</i> , n. sp.,	× 300	1585
<p>Distal end of a single tube.</p>		
Figs. 11, 13. <i>Auloceros arborescens</i> , n. sp.,	× 300	1585
<p>Distal ends of two single tubes.</p>		



AULOCERA.

PLATE 103.

Legion PHÆODARIA.

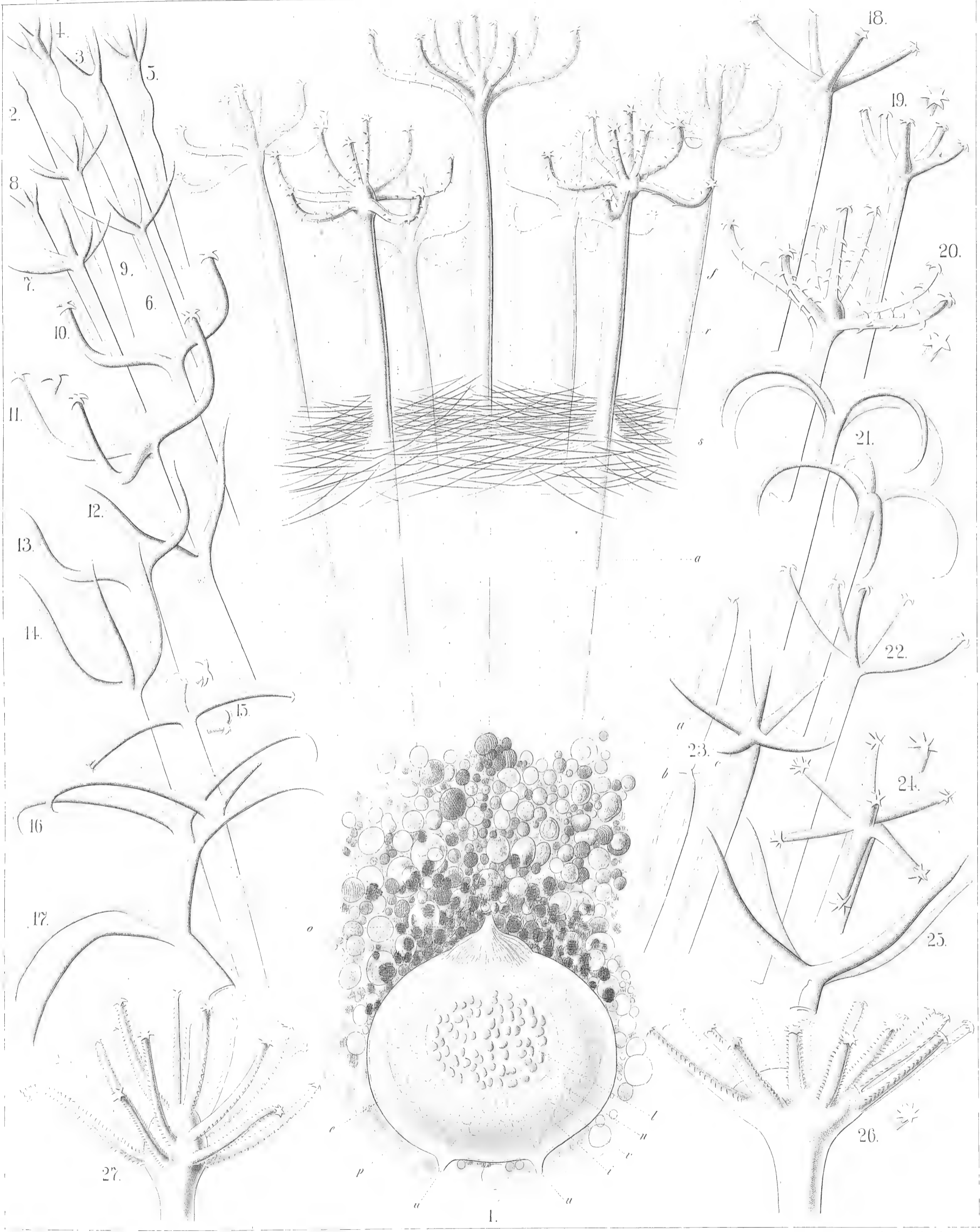
Order PHÆOCYSTINA.

Family AULACANTHIDA.

PLATE 103.

AULACANTHIDA.

	Diam.	Page
Fig. 1. <i>Aulographis candelabrum</i> , n. sp.,	× 100	1583
<p style="margin-left: 40px;"><i>p</i>, The dark phæodium surrounding the central capsule on its oral part; <i>a</i>, a part of the surrounding alveolate calymma, also surrounding the central capsule; <i>s</i>, the veil of tangential needles covering the surface of the alveolate calymma; <i>r</i>, the big radial tubes, seven of which are visible, with an elegant verticil of terminal branches; <i>f</i>, the numerous pseudopodia radiating between the branches. The central capsule exhibits the following parts:—<i>o</i>, Astropyle; <i>u</i>, parapylæ; <i>e</i>, outer membrane; <i>i</i>, inner membrane; <i>v</i>, vacuoles; <i>n</i>, nucleus; <i>l</i>, nucleoli.</p>		
Figs. 2–9. <i>Aulographis pandora</i> , n. sp.,	× 100	1577
<p style="margin-left: 40px;">Distal ends of various radial tubes of a single specimen, exhibiting the extraordinary variability of this species.</p>		
Fig. 10. <i>Aulographis furcula</i> , n. sp.,	× 400	1580
<p style="margin-left: 40px;">A two-branched tube.</p>		
Fig. 11. <i>Aulographis furcula</i> , n. sp.,	× 400	1580
<p style="margin-left: 40px;">A three-branched tube.</p>		
Figs. 12, 13. <i>Aulographis bovicornis</i> , n. sp.,	× 200	1577
<p style="margin-left: 40px;">Two tubes with two branches.</p>		
Fig. 14. <i>Aulographis bovicornis</i> , n. sp.,	× 200	1577
<p style="margin-left: 40px;">A tube with three branches.</p>		
Fig. 15. <i>Aulographis triangulum</i> , n. sp.,	× 200	1580
<p style="margin-left: 40px;">A single tube.</p>		
Fig. 16. <i>Aulographis taumorpha</i> , n. sp.,	× 300	1577
<p style="margin-left: 40px;">Two tubes, each with two branches.</p>		
Fig. 17. <i>Aulographis triglochis</i> , n. sp.,	× 300	1578
<p style="margin-left: 40px;">A tube with three branches.</p>		
Figs. 18, 19. <i>Aulographis hexancistra</i> , n. sp.,	× 300	1581
<p style="margin-left: 40px;">Distal end of two tubes (one with four, the other with five terminal branches).</p>		
Fig. 20. <i>Aulographis dentata</i> , n. sp.,	× 200	1582
<p style="margin-left: 40px;">Distal end of a single tube.</p>		
Fig. 21. <i>Aulographis ancorata</i> , n. sp.,	× 300	1578
<p style="margin-left: 40px;">Two tubes, each with four recurved branches.</p>		
Fig. 22. <i>Aulographis tetrancistra</i> , n. sp.,	× 300	1581
<p style="margin-left: 40px;">A single tube.</p>		
Fig. 23. <i>Aulographis stellata</i> , n. sp.,	× 300	1578
<p style="margin-left: 40px;"><i>a</i> and <i>b</i>, Two rudimentary or incompletely developed tubes; <i>c</i>, a well-developed tube of the usual form.</p>		
Fig. 24. <i>Aulographis asteriscus</i> , n. sp.,	× 300	1581
<p style="margin-left: 40px;">Terminal verticil of a single tube.</p>		
Fig. 25. <i>Aulographis cruciata</i> , n. sp.,	× 300	1578
<p style="margin-left: 40px;">Distal end of a single tube.</p>		
Fig. 26. <i>Aulographis pulvinata</i> , n. sp.,	× 400	1582
<p style="margin-left: 40px;">Distal end of a single tube.</p>		
Fig. 27. <i>Aulographis serrulata</i> , n. sp.,	× 400	1582
<p style="margin-left: 40px;">Distal end of a single tube.</p>		



AULOGRAPHIS.

PLATE 104.

Legion PHÆODARIA.

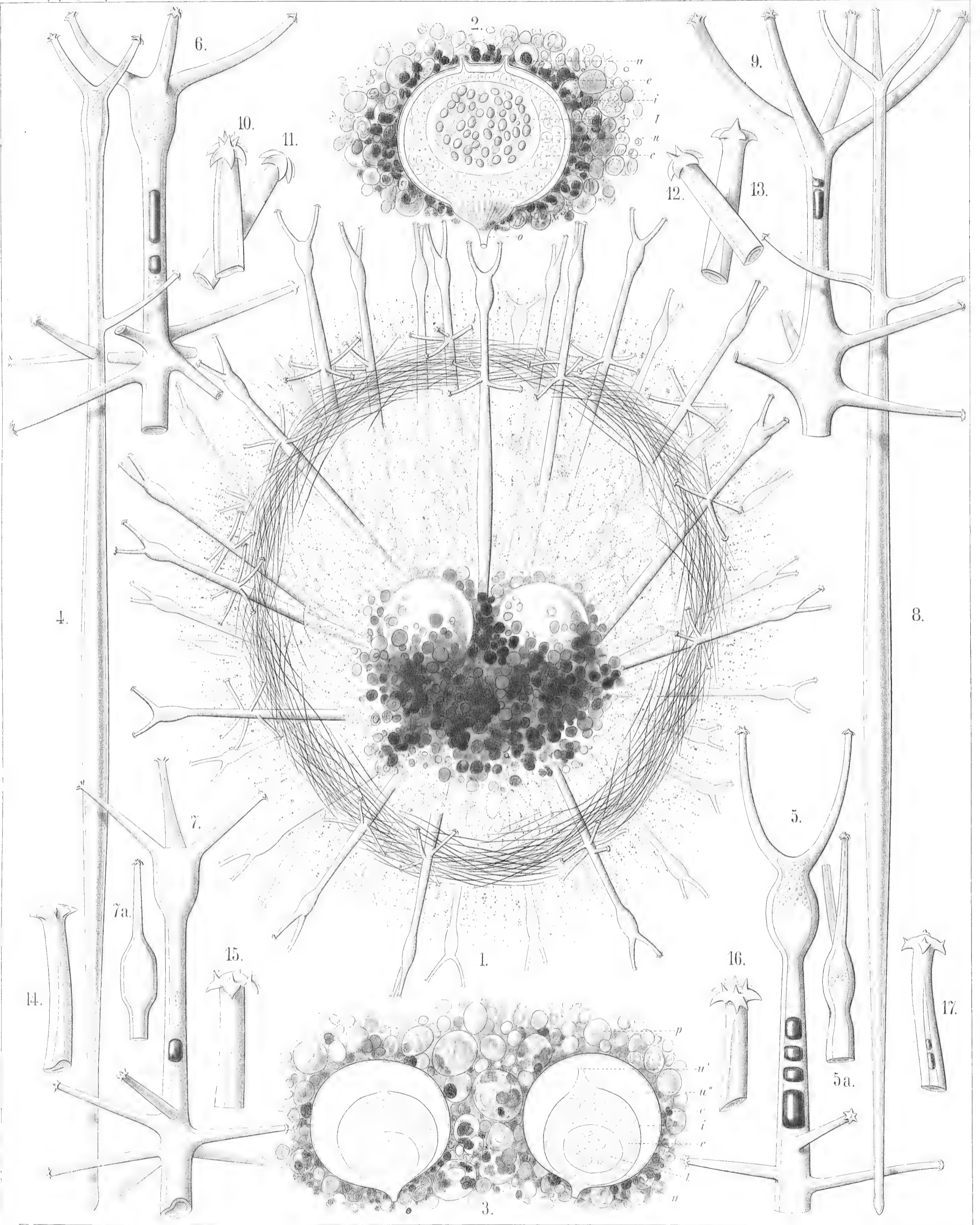
Order PHÆOCYSTINA.

Family AULACANTHIDA.

PLATE 104.

AULACANTHIDA.

	Diam.	Page
Fig. 1. <i>Aulopathis bifurca</i> , n. sp.,	× 50	1586
A complete specimen, excellently preserved, with an ovate alveolate calymma and two central capsules. The surface of the calymma is covered with tangential needles.		
Fig. 2. <i>Aulopathis bifurca</i> , n. sp.,	× 100	1586
An isolated central capsule of another specimen, surrounded by granules of the phæodium. <i>o</i> , Radiate operculum of the astropyle; <i>u</i> , the two lateral parapylæ; <i>e</i> , external membrane of the capsule; <i>i</i> , internal membrane; <i>c</i> , vacuoles in the protoplasm; <i>n</i> , nucleus; <i>l</i> , numerous nucleoli.		
Fig. 3. <i>Aulopathis bifurca</i> , n. sp.,	× 80	1586
Two central capsules of another specimen, surrounded by the phæodium (Self-division). Characters as in fig. 2.		
Fig. 4. <i>Aulopathis bifurca</i> , n. sp.,	× 100	1586
A single radial tube.		
Fig. 5. <i>Aulopathis bifurca</i> , n. sp.,	× 200	1586
Distal part of another radial tube, partly filled up by air-bubbles.		
Fig. 6. <i>Aulopathis trifurca</i> , n. sp.,	× 200	1586
Distal part of a single radial tube.		
Fig. 7. <i>Aulopathis trifurca</i> , n. sp.,	× 200	1586
Distal part of another radial tube.		
Fig. 8. <i>Aulopathis triodon</i> , n. sp.,	× 100	1587
A single radial tube.		
Fig. 9. <i>Aulopathis tetrodon</i> , n. sp.,	× 200	1588
Distal end of a single tube.		
Figs. 10–13. <i>Aulopathis polymorpha</i> , n. sp.,	× 400	1587
Four single terminal branches with very different forms of spathillæ.		
Figs. 14–17. <i>Aulopathis variabilis</i> , n. sp.,	× 400	1588
Four single terminal branches with very different forms of spathillæ.		



AULOSPETHIS

H. M. S. Challenger

PLATE 105.

Legion PHÆODARIA.

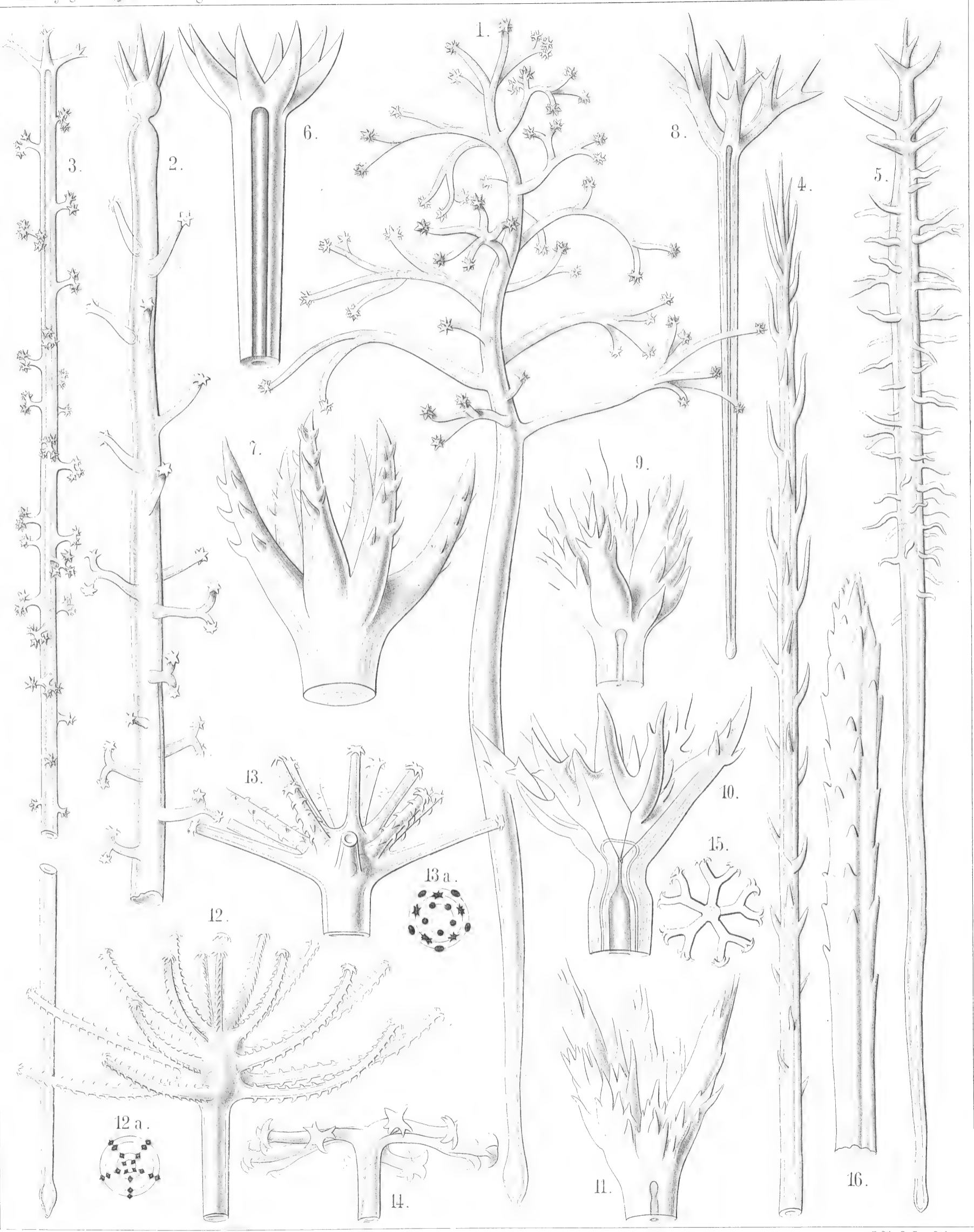
Order PHÆOCYSTINA.

Family AULACANTHIDA.

PLATE 105.

AULACANTHIDA.

				Diam.	Page
Fig. 1.	<i>Aulodendron indicum</i> , n. sp.,	.	.	× 200	1590
	A single tube.				
Fig. 2.	<i>Aulodendron pacificum</i> , n. sp.,	.	.	× 400	1589
	Distal half of a tube.				
Fig. 3.	<i>Aulodendron australe</i> , n. sp.,	.	.	× 300	1589
	A single tube.				
Fig. 4.	<i>Aulacantha spinosa</i> , n. sp.,	.	.	× 300	1575
	Distal half of a tube.				
Fig. 5.	<i>Aulodendron antarcticum</i> , n. sp.,	.	.	× 300	1589
	A single tube.				
Fig. 6.	<i>Aulographis pistillum</i> , n. sp.,	.	.	× 300	1579
	A single tube.				
Fig. 7.	<i>Aulographis martagon</i> , n. sp.,	.	.	× 300	1579
	Distal end of a single tube.				
Fig. 8.	<i>Aulographis triæna</i> , n. sp.,	.	.	× 80	1579
	A single tube.				
Fig. 9.	<i>Aulographis flammabunda</i> , n. sp.,	.	.	× 100	1579
	Distal end of a tube.				
Fig. 10.	<i>Aulographis flosculus</i> , n. sp.,	.	.	× 300	1580
	Distal end of a tube.				
Fig. 11.	<i>Aulographis gemmasceus</i> , n. sp.,	.	.	× 100	1580
	Distal end of a tube.				
Fig. 12.	<i>Aulographis verticillata</i> , n. sp.,	.	.	× 400	1582
	Distal end of a tube.				
	Fig. 12a. Apical view, with four verticils of five branches.				
Fig. 13.	<i>Aulographis tripentis</i> , n. sp.,	.	.	× 300	1582
	Distal end of a tube.				
	Fig. 13a. Apical view, with three verticils of five branches.				
Fig. 14.	<i>Auloceros dicranaster</i> , n. sp.,	.	.	× 400	1585
	Distal end of a tube, seen from the side.				
Fig. 15.	<i>Auloceros dicranaster</i> , n. sp.,	.	.	× 200	1585
	Distal end of a tube, seen from the terminal face.				
Fig. 16.	<i>Aulacantha cannulata</i> , n. sp.,	.	.	× 300	1576
	Distal end of a tube.				



1-5. AULODENDRON. 6-15. AULOGRAPHIS. 16. AULACANTHA.

PLATE 106.

Legion PHÆODARIA.

Order PHÆOSPHÆRIA.

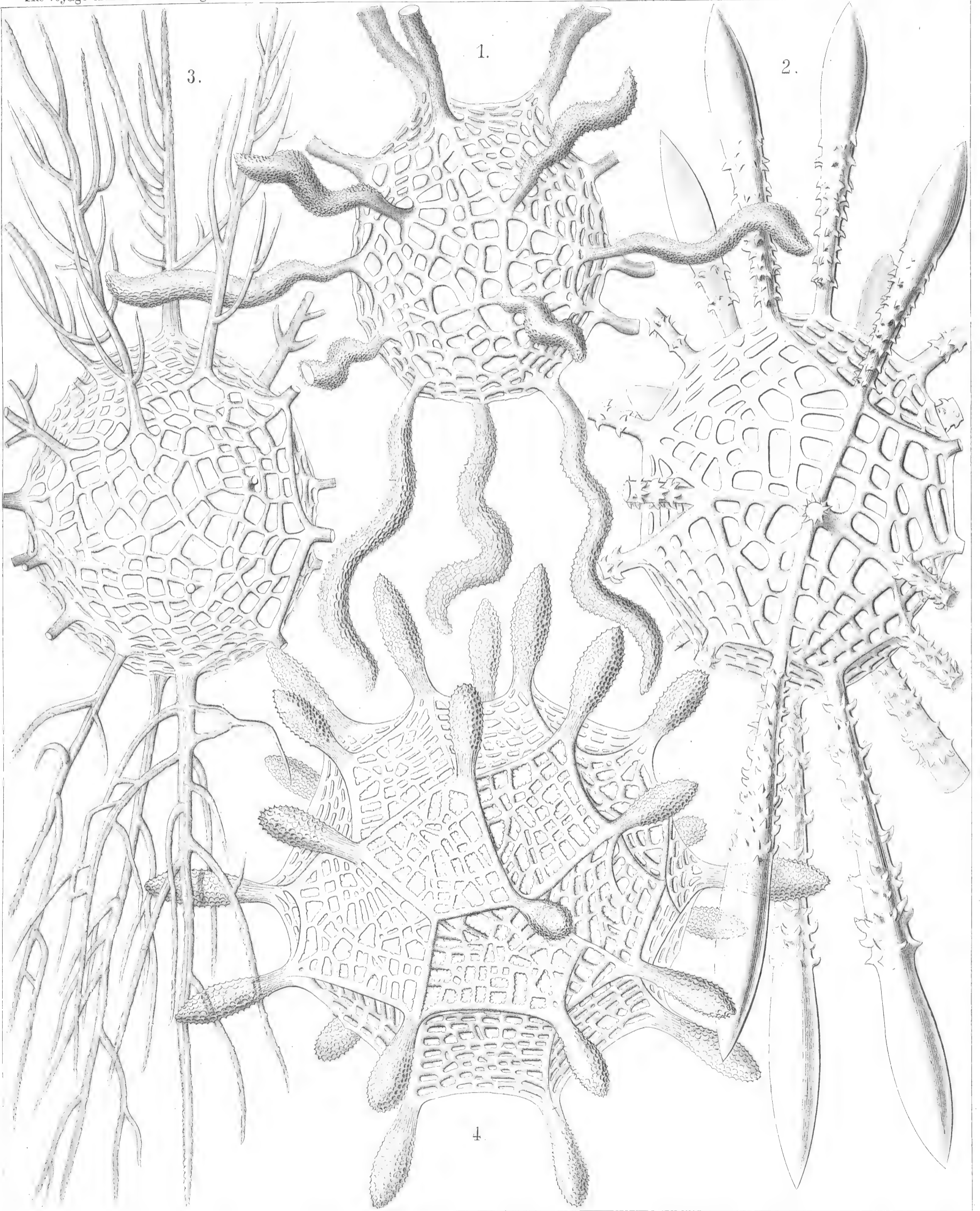
Family OROSPHÆRIDA.

PLATE 106.

OROSPHERIDA.

					Diam.	Page	
Fig. 1.	<i>Orosphæra serpentina</i> , n. sp.,	.	.	.	×	50	1595
	The entire shell.						
Fig. 2.	<i>Orosphæra horrida</i> , n. sp.,	.	.	.	×	50	1596
	The entire shell.						
Fig. 3.	<i>Orosphæra arborescens</i> , n. sp. (vel <i>Orothamnus arborescens</i>),				×	50	1597
	The entire shell.						
Fig. 4.	<i>Oroscena gegenbauri</i> , n. sp.,	.	.	.	×	50	1597
	The entire shell.						

(Compare Pl. 12, fig. 1.)



F. Heeckel and A. Giltch, Del.

A. Giltch, Jena, Lithogr.

1. 2. ORONIA, 3. OROTHAMNUS, 4. OROSCENA.

PLATE 107.

Legion PHÆODARIA.

Order PHÆOSPHERIA.

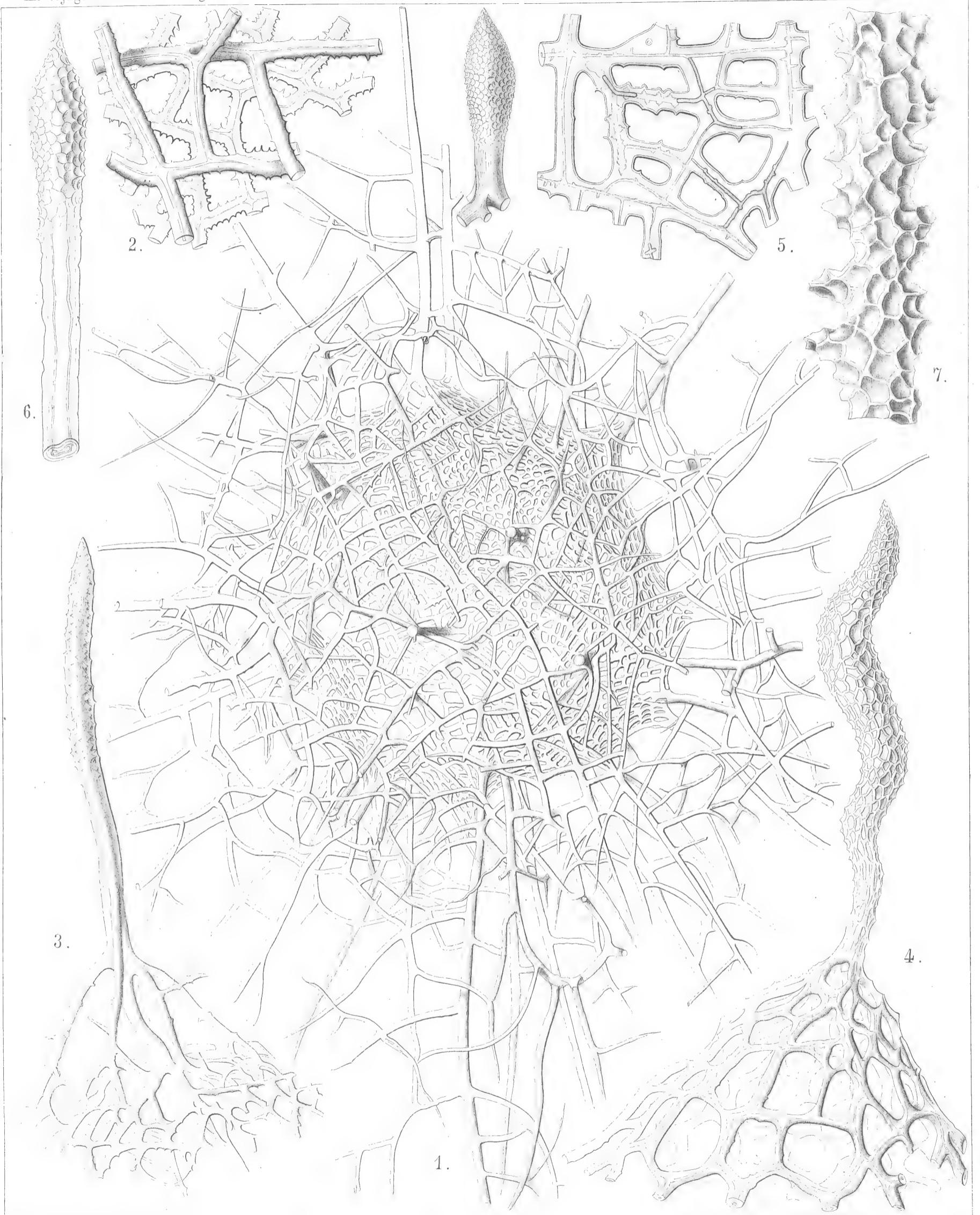
Family OROSPHERIDA.

PLATE 107.

OROSPHERIDA.

(Fig. 8 of this Plate has no number, by mistake; it is at the top in the middle.)

	Diam.	Page
Fig. 1. <i>Oroplegma diplosphæra</i> , n. sp.,	× 50	1600
The entire shell, enveloped by an outer mantle of spongy framework.		
Fig. 2. <i>Oroplegma giganteum</i> , n. sp.,	× 200	1601
A small piece of the spongy framework.		
Fig. 3. <i>Oroplegma spongiosum</i> , n. sp.,	× 50	1601
A pyramidal elevation of the inner shell, with its spongy framework, and a radial spine on the top.		
Fig. 4. <i>Oroscena bærii</i> , n. sp.,	× 100	1598
A pyramidal elevation of the shell, with a radial spine on its top.		
Fig. 5. <i>Orona maxima</i> , n. sp.,	× 300	1594
A small piece of the network; the central canals of the bars are partly filled by air.		
Fig. 6. <i>Oroscena cuvieri</i> , n. sp.,	× 50	1598
A single radial spine.		
Fig. 7. <i>Orona crassissima</i> , n. sp.,	× 300	1594
A single bar of the coarse network, with dimpled surface.		
Fig. 8. <i>Oroscena mülleri</i> , n. sp.,	× 50	1598
A single radial spine.		



E. Haeckel and A. Giltisch, Del.

E. Giltisch, Jena, Lithogr.

1-3. OROPLEGMA. 4-7. OROSCENA.

PLATE 108.

Legion PHÆODARIA.

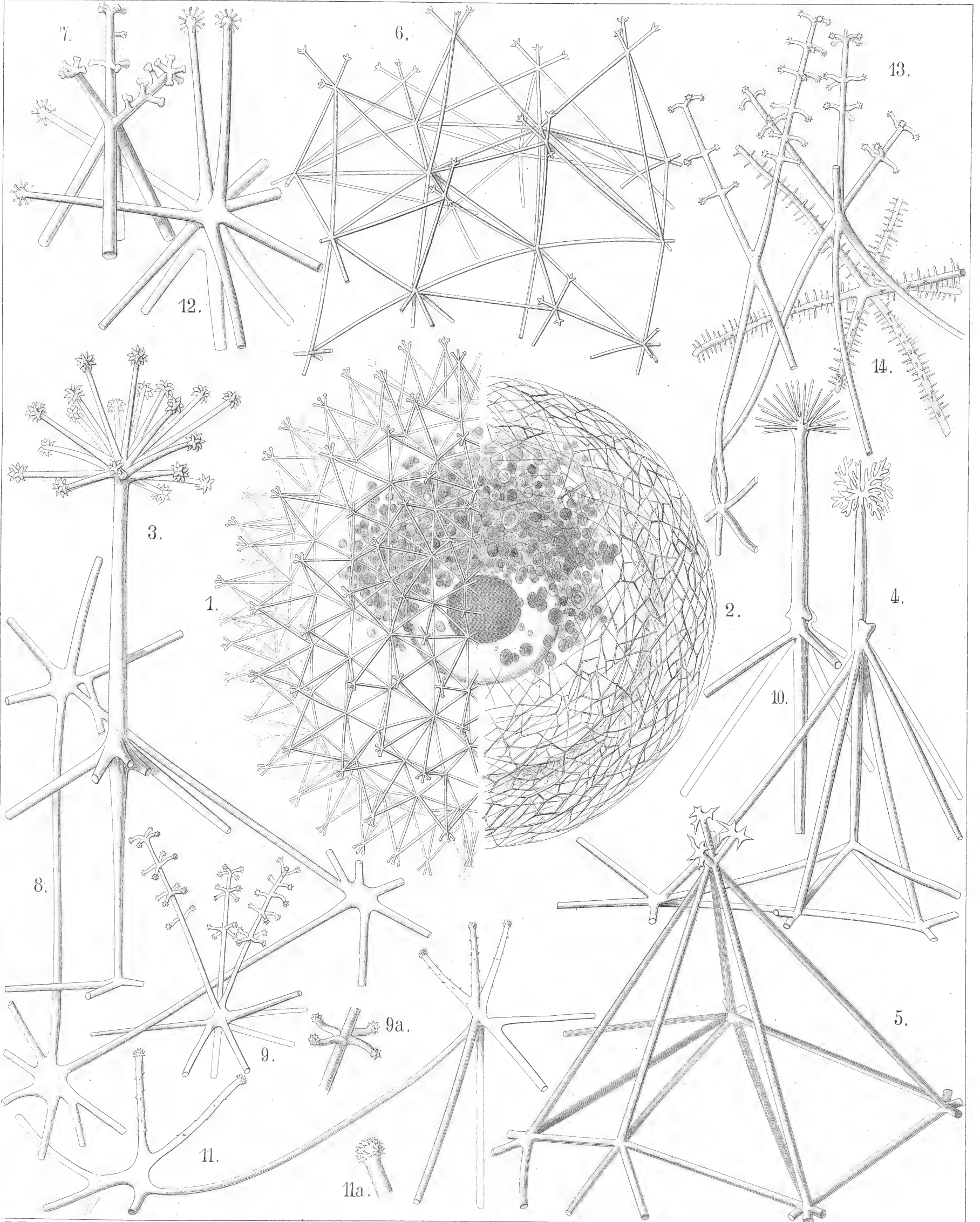
Order PHÆOSPHÆRIA.

Family SAGOSPHÆRIDA.

PLATE 108.

SAGOSPHERIDA.

		Diam.	Page
Fig. 1.	<i>Sagoscena castra</i> , n. sp.,	× 50	1608
	Half the shell, with the enclosed central capsule and the phæodium, stained by carmine. (The central nucleus dark.)		
Fig. 2.	<i>Sagmarium spongodictyum</i> , n. sp.,	× 50	1612
	Half the shell, with its delicate spongy framework.		
Fig. 3.	<i>Sagenoscena stellata</i> , n. sp.,	× 300	1610
	Top and axial rod of a pyramid, prolonged into a crowned radial spine.		
Fig. 4.	<i>Sagenoscena ornata</i> , n. sp.,	× 300	1610
	A single pyramid with its axial rod, prolonged into a crowned radial spine.		
Fig. 5.	<i>Sagoscena pellowium</i> , n. sp.,	× 300	1609
	A single pyramid of the shell-surface.		
Fig. 6.	<i>Sagoscena tentorium</i> , n. sp.,	× 100	1608
	A piece of the shell with eight pyramids.		
Fig. 7.	<i>Sagoscena prætorium</i> , n. sp.,	× 400	1609
	Top of a pyramid.		
Fig. 8.	<i>Sagena ternaria</i> , n. sp.,	× 400	1606
	A single triangular mesh of the lattice sphere.		
Fig. 9.	<i>Sagmidium crucicorne</i> , n. sp.,	× 400	1613
	A single nodal point with three radial spines. Fig. 9a. A portion of a spine, more highly magnified.		
Fig. 10.	<i>Sagosphæra penicilla</i> , n. sp.,	× 400	1607
	One nodal point and its radial spine.		
Fig. 11.	<i>Sagosphæra furcilla</i> , n. sp.,	× 300	1607
	Two nodal points of the network. Fig. 11a. Extremity of a spine.		
Fig. 12.	<i>Sagmidium quadricorne</i> , n. sp.,	× 400	1614
	A nodal point of the shell surface, with four divergent spines.		
Fig. 13.	<i>Sagoplegma scenophora</i> , n. sp.,	× 300	1615
	Tops of two pyramids.		
Fig. 14.	<i>Sagmarium plegmosphærium</i> , n. sp.,	× 300	1612
	A nodal point of the spongy framework.		



E. Haeckel and A. Giltisch Del.

E. Giltisch, Jena, Lithogr.

1-7. SAGOSCENA, 8. SAGENA, 9-14. SAGOSPHAERA.

PLATE 109.

Legion PHÆODARIA.

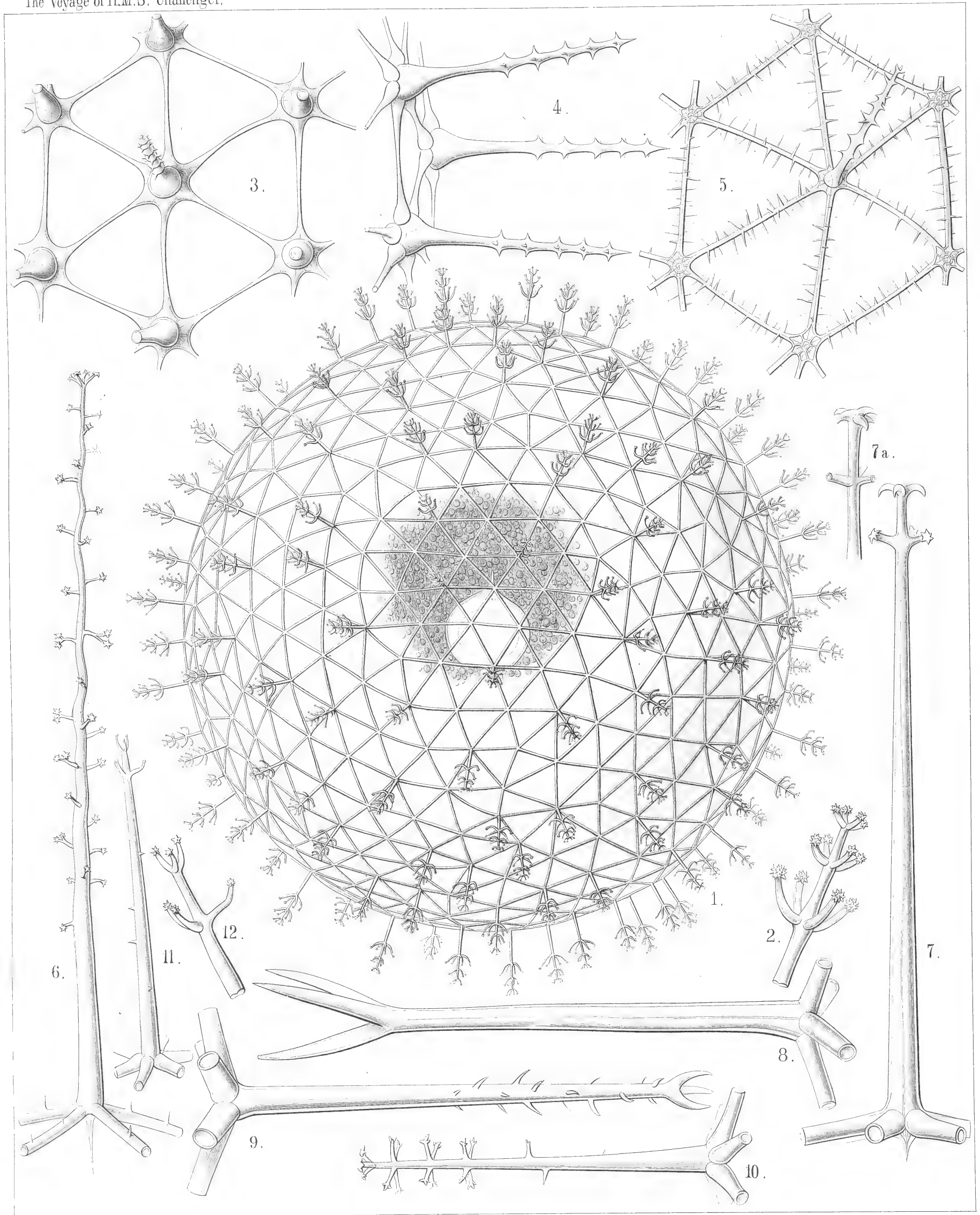
Order PHÆOSPHÆRIA.

Family AULOSPHÆRIDA.

PLATE 109.

AULOSPHERIDA.

		Diam.	Page
Fig. 1.	<i>Aulosphæra dendrophora</i> , n. sp.,	× 50	1625
	The entire shell, with the central capsule and its nucleus, enveloped by the dark granular phæodium.		
Fig. 2.	<i>Aulosphæra dendrophora</i> , n. sp.,	× 300	1625
	A single radial tube.		
Fig. 3.	<i>Aulosphæra sceptrophora</i> , n. sp.,	× 300	1625
	A hexagonal group of six triangular meshes.		
Fig. 4.	<i>Aulosphæra sceptrophora</i> , n. sp.,	× 300	1625
	A similar group, seen from the side, with three radial tubes.		
Fig. 5.	<i>Aulosphæra spinosa</i> , n. sp.,	× 300	1627
	A hexagonal group of six triangular meshes.		
Fig. 6.	<i>Aulosphæra undulata</i> , n. sp.,	× 400	1627
	A single radial tube.		
Fig. 7.	<i>Aulosphæra spathillata</i> , n. sp.,	× 400	1624
	A single radial tube.		
	Fig. 7a. An abnormal variety,	× 400	
Fig. 8.	<i>Aulosphæra triodon</i> , n. sp.,	× 400	1623
	A single radial tube.		
Fig. 9.	<i>Aulosphæra trifurca</i> , n. sp.,	× 400	1626
	A single radial tube.		
Fig. 10.	<i>Aulosphæra cruciata</i> , n. sp.,	× 300	1624
	A single radial tube.		
Fig. 11.	<i>Aulosphæra bisternaria</i> , n. sp.,	× 300	1624
	A single radial tube.		
Fig. 12.	<i>Aulosphæra bisternaria</i> , n. sp.,	× 600	1624
	Distal end of a single radial tube.		



AULOSPHERA.

PLATE 110.

Legion PHÆODARIA.

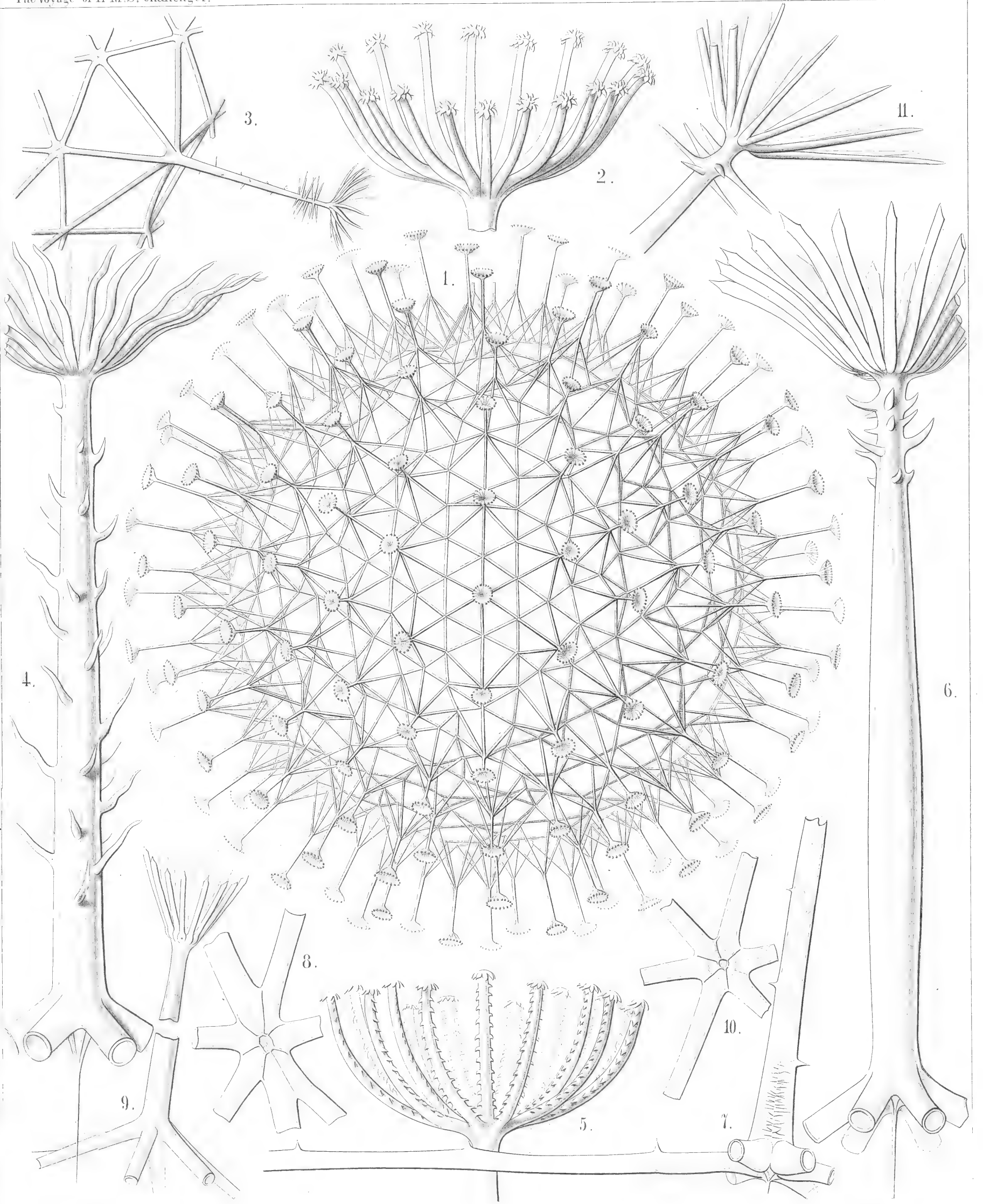
Order PHÆOSPHERIA.

Family AULOSPHERIDA.

PLATE 110.

AULOSPHERIDA.

	Diam.	Page
Fig. 1. <i>Aulosцена mirabilis</i> , n. sp.,	× 50	1628
The complete shell, representing a regular latticed sphere, which is composed of equal hexagonal pyramids; the top of each pyramid bears a radial tube with a terminal corona.		
Fig. 2. <i>Aulosцена mirabilis</i> , n. sp.,	× 600	1628
Terminal corona of a single radial tube.		
Fig. 3. <i>Aulosцена penicillus</i> , n. sp.,	× 200	1629
A single tent-shaped elevation or six-sided pyramid, bearing on the top a brush-shaped radial tube.		
Fig. 4. <i>Aulosцена flammabunda</i> , n. sp.,	× 400	1629
A single radial tube, with a centripetal free prolongation at the base and a verticil of undulate terminal branches at the distal end.		
Fig. 5. <i>Aulosцена serrata</i> , n. sp.,	× 600	1630
Terminal corona of a single radial tube.		
Fig. 6. <i>Aulosцена tentorium</i> , n. sp.,	× 400	1628
A single radial tube, with a centripetal prolongation at the base and a terminal corona at the distal end.		
Fig. 7. <i>Aulosцена gigantea</i> , n. sp.,	× 400	1629
Basal part of a radial tube, exhibiting the internal axial thread and its connection with the six tubes, which form the edges of a flat six-sided pyramid (usually more elevated than the figure exhibits).		
Fig. 8. <i>Aulosцена spectabilis</i> , n. sp.,	× 400	1628
Apex of an abnormal pyramid (sometimes occurring), in which seven radial tubes are united, instead of six.		
Fig. 9. <i>Aulosцена spectabilis</i> , n. sp.,	× 800	1628
Basal part of a radial tube, in the top of a flat six-sided pyramid; above it the distal part of the same tube with its terminal corona (middle part of the tube wanting).		
Fig. 10. <i>Aulosцена verticillus</i> , n. sp.,	× 300	1629
Apex of a six-sided pyramid, seen from the inside.		
Fig. 11. <i>Aulosцена verticillus</i> , n. sp.,	× 400	1629
Distal part of a single radial tube, with the terminal corona.		



AULOSCENA.

PLATE 111.

Legion PHÆODARIA.

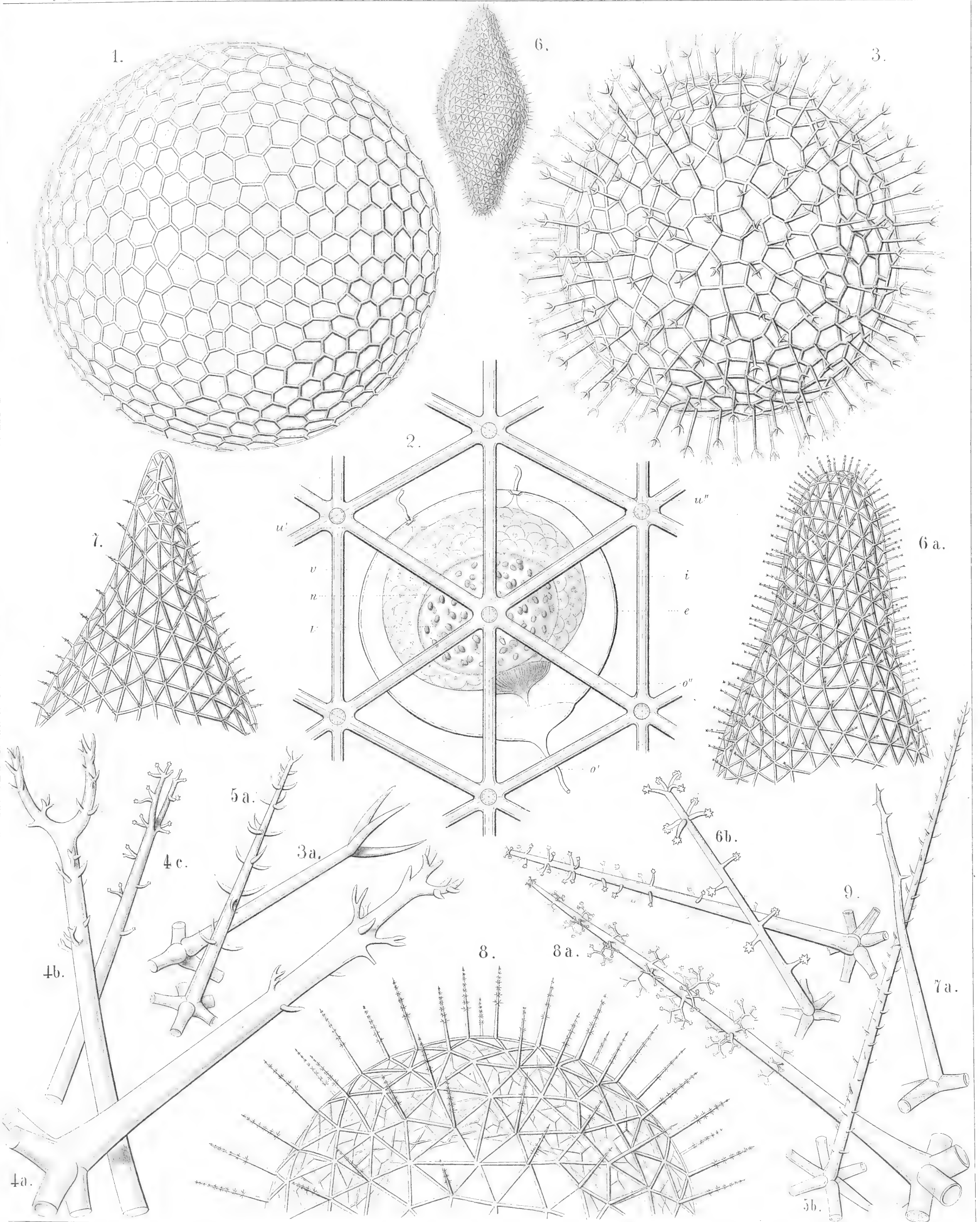
Order PHÆOSPHERIA.

Family AULOSPHERIDA.

PLATE 111.

AULOSPHERIDA.

	Diam.	Page
Fig. 1. <i>Aulonia hexagonia</i> , n. sp.,	× 30	1634
The complete spherical shell.		
Fig. 2. <i>Aularia ternaria</i> , n. sp.,	× 300	1621
A group of six triangular meshes, with seven nodal points of radial tubes. Behind the central capsule, with its double membrane (<i>e</i> , outer; <i>i</i> , inner) and radiate operculum (<i>o</i>); <i>u</i> , the two outer parapylæ; <i>v</i> , vacuoles in the protoplasm. The ellipsoidal nucleus (<i>n</i>) contains numerous nucleoli (<i>l</i>).		
Fig. 3. <i>Aulastrum triceros</i> , n. sp.,	× 50	1635
The complete shell.		
Fig. 3a. <i>Aulastrum triceros</i> , n. sp.,	× 300	1635
A single radial tube.		
Figs. 4a, 4b, 4c. <i>Aulastrum dendroceros</i> , n. sp.,	× 400	1635
Three single radial spines (taken from three different specimens).		
Fig. 5a. <i>Aulophacus lenticularis</i> , n. sp.,	× 300	1631
A single radial spine.		
Fig. 5b. <i>Aulophacus amphidiscus</i> , n. sp.,	× 300	1631
A single radial spine.		
Fig. 6. <i>Aulatractus fusiformis</i> , n. sp.,	× 5	1632
The complete shell, five times enlarged.		
Fig. 6a. <i>Aulatractus fusiformis</i> , n. sp.,	× 20	1632
Apical part of the shell.		
Fig. 6b. <i>Aulatractus fusiformis</i> , n. sp.,	× 400	1632
A single radial tube.		
Fig. 7. <i>Aulatractus diploconus</i> , n. sp.,	× 20	1632
Apical part of the shell.		
Fig. 7a. <i>Aulatractus diploconus</i> , n. sp.,	× 400	1632
A single radial tube.		
Fig. 8. <i>Auloplegma perplexum</i> , n. sp.,	× 50	1630
Half the shell.		
Fig. 8a. <i>Auloplegma perplexum</i> , n. sp.,	× 400	1630
A single radial tube.		
Fig. 9. <i>Auloplegma spongiosum</i> , n. sp.,	× 300	1631
A single radial tube.		



1. AULONIA, 2-5. AULOSPHERA, 6. 7. AULATRACTUS, 8. AULOPLEGMA.

F. Beckel and A. Giltch Del.

F. Giltch Jena Lithogr.

PLATE 112.

Legion PHÆODARIA.

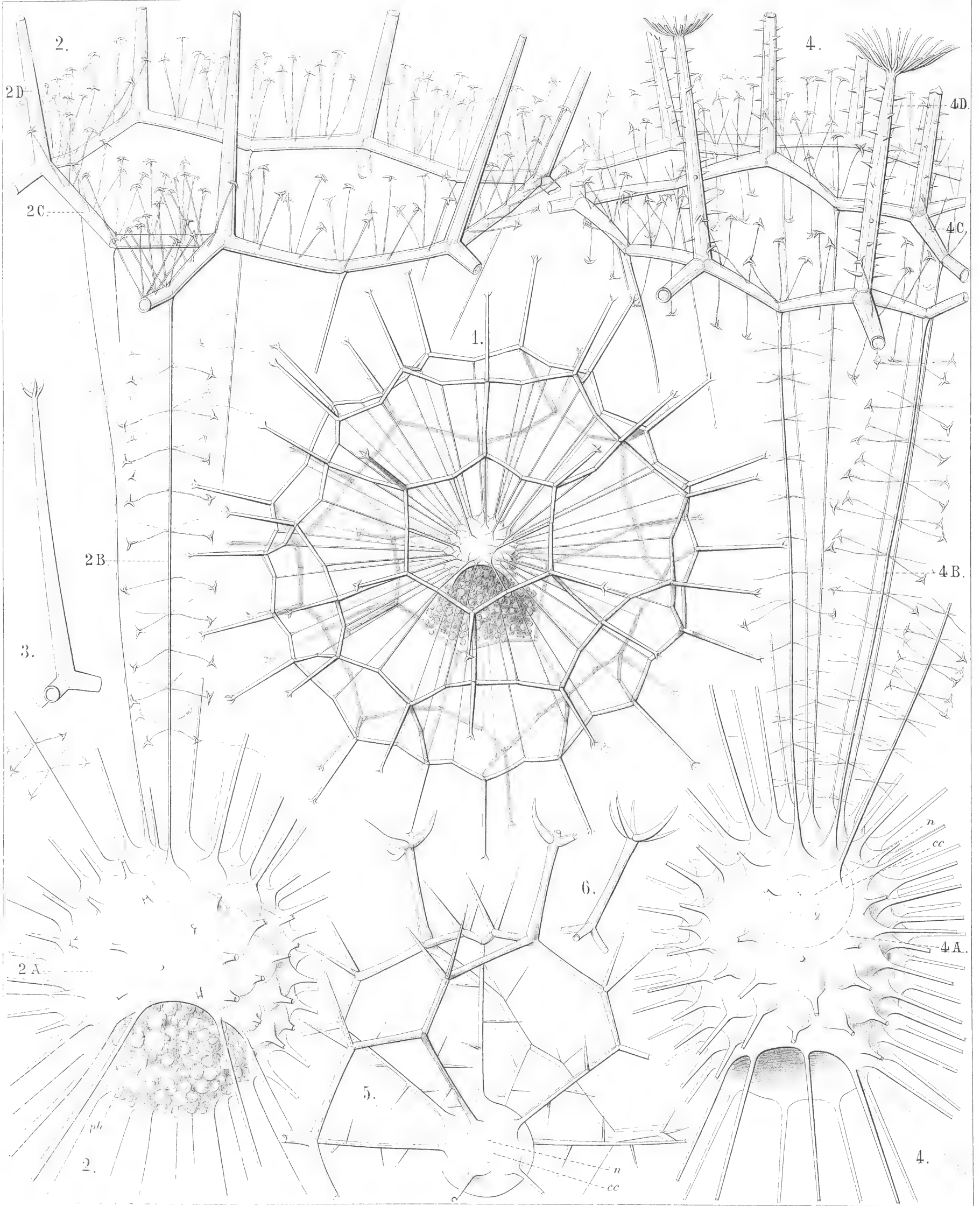
Order PHÆOSPHERIA.

Family CANNOSPHERIDA.

PLATE 112.

CANNOSPHERIDA.

	Diam.	Page
Fig. 1. <i>Cannosphæra antarctica</i> , n. sp.,	× 50	1640
The entire shell. The inner mammillate shell, from the mouth of which is prominent the phæodium, is connected by numerous radial beams with the outer shell.		
Fig. 2. <i>Cannosphæra antarctica</i> , n. sp.,	× 200	1640
The inner shell, from the mouth of which is prominent the phæodium, and a single hexagonal mesh of the outer shell, connected with the former by thin radial threads.		
Fig. 3. <i>Cannosphæra antarctica</i> , n. sp.,	× 200	1640
A single radial spine, with four terminal branches.		
Fig. 4. <i>Cannosphæra pacifica</i> , n. sp.,	× 200	1641
The inner shell, exhibiting on its base the widely open mouth, and in its upper half the transparent spherical central capsule with its nucleus. Of the outer shell (which is connected with the inner by thin radial threads), only a few polygonal meshes are visible.		
Fig. 5. <i>Cannosphæra atlantica</i> , n. sp.,	× 200	1640
The inner shell, connected by spiny radial beams with the outer shell, a quadrant only of which is visible.		
Fig. 6. <i>Cannosphæra atlantica</i> , n. sp.,	× 200	1640
A single radial spine, with five terminal branches.		



CANNOSPHAERA.

PLATE 113.

Legion PHÆODARIA.

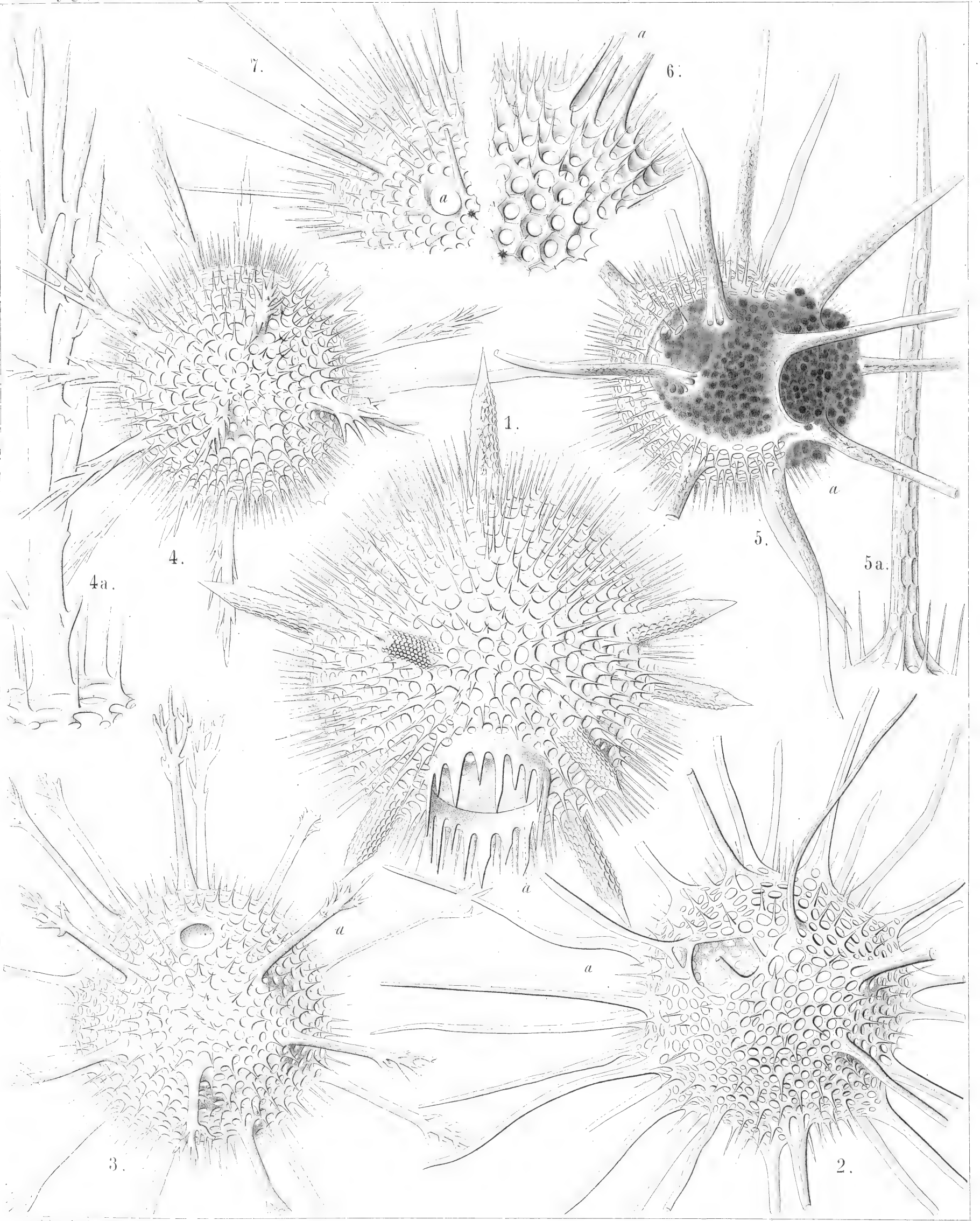
Order PHÆOGROMIA.

Family CASTANELLIDA.

PLATE 113.

CASTANELLIDA.

	Diam.	Page
Fig. 1. <i>Castanissa challenger</i> , n. sp.,	× 100	1686
In the lower part of the figure is visible the large corona of teeth around the mouth (a).		
Fig. 2. <i>Castanidium moseleyi</i> , n. sp.,	× 80	1686
In the upper part of the figure, at left, is visible the irregular polygonal mouth (a).		
Fig. 3. <i>Castanopsis naresi</i> , n. sp.,	× 80	1688
In the upper part of the figure is visible the smooth circular mouth (a).		
Fig. 4. <i>Castanura tizardi</i> , n. sp.,	× 80	1689
Fig. 4a. A single main-spine of the same,		
	× 400	
Fig. 5. <i>Castanidium murrayi</i> , n. sp.,	× 100	1685
With a large phæodium, partly protruded through the circular mouth.		
Fig. 5a. A single main-spine of the same, hexagonally dimpled,		
	× 400	
Fig. 6. <i>Castanella wyvillei</i> , n. sp.,	× 100	1683
A piece of the shell with the mouth, armed with six large teeth (a).		
Fig. 7. <i>Castanidium buehanani</i> , n. sp.,	× 100	1685
A piece of the shell with the smooth roundish mouth (a).		



CASTANELLA.

PLATE 114.

Legion PHÆODARIA.

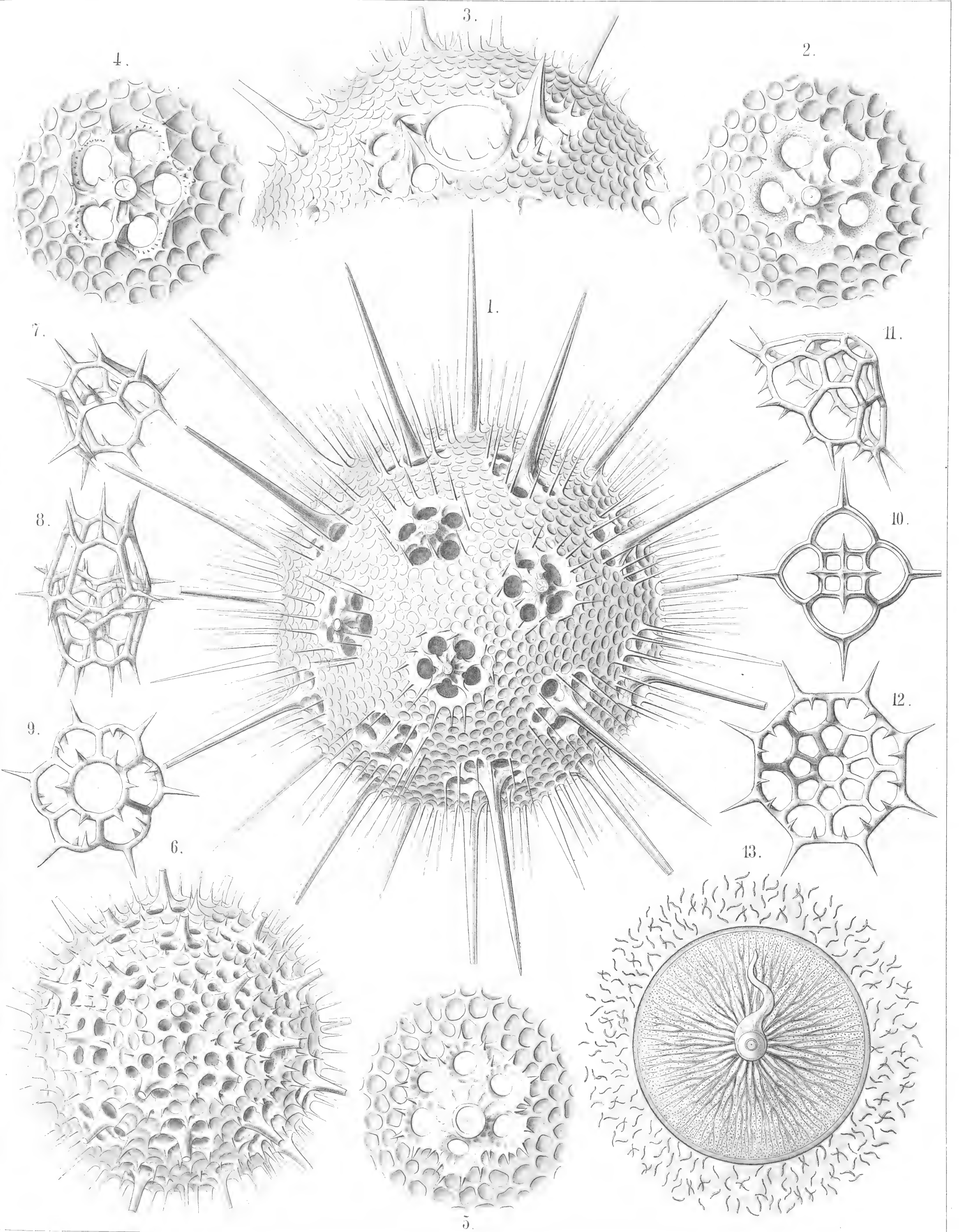
Orders PHÆOCYSTINA ET PHÆOGROMIA.

Families CANNORRHAPHIDA et CIRCOPORIDA.

PLATE 114.

CANNORRHAPHIDA et CIRCOPORIDA.

				Diam.	Page
Fig. 1.	<i>Haeckeliana darwiniana</i> , n. sp.,	.	.	× 200	1702
	A complete shell.				
Fig. 2.	<i>Haeckeliana darwiniana</i> , n. sp.,	.	.	× 400	1702
	A single coronet of pores.				
Fig. 3.	<i>Haeckeliana gætheana</i> , n. sp.,	.	.	× 300	1702
	The oral part of the shell with the mouth.				
Fig. 4.	<i>Haeckeliana lamarckiana</i> , n. sp.,	.	.	× 400	1701
	A single coronet of pores.				
Fig. 5.	<i>Haeckeliana maxima</i> , n. sp.,	.	.	× 300	1701
	A single coronet of pores.				
Fig. 6.	<i>Haeckeliana porcellana</i> , John Murray,	.	.	× 200	1701
	A complete shell.				
Fig. 7.	<i>Distephanus corona</i> , n. sp.,	.	.	× 800	1566
	A single pileated piece (half from the side, half from below).				
Fig. 8.	<i>Distephanus corona</i> , n. sp.,	.	.	× 800	1566
	Two coupled pileated pieces caught into one another (twin-piece).				
Fig. 9.	<i>Distephanus corona</i> , n. sp.,	.	.	× 800	1566
	A single pileated piece, seen from above.				
Fig. 10.	<i>Cannopilus diplostaurus</i> , n. sp.,	.	.	× 800	1568
	A single pileated piece, seen from above.				
Fig. 11.	<i>Cannopilus cyrtoides</i> , n. sp.,	.	.	× 800	1569
	A single pileated piece, seen obliquely from the side.				
Fig. 12.	<i>Cannopilus cyrtoides</i> , n. sp.,	.	.	× 800	1569
	A single pileated piece, seen from below.				
Fig. 13.	<i>Haeckeliana porcellana</i> , John Murray,	.	.	× 600	1526
	The radiate operculum of the central capsule.				



1-6. HAECKELIANA, 7-9. DISTEPHANUS, 10-13. CANNOPILUS.

PLATE 115.

Legion PHÆODARIA.

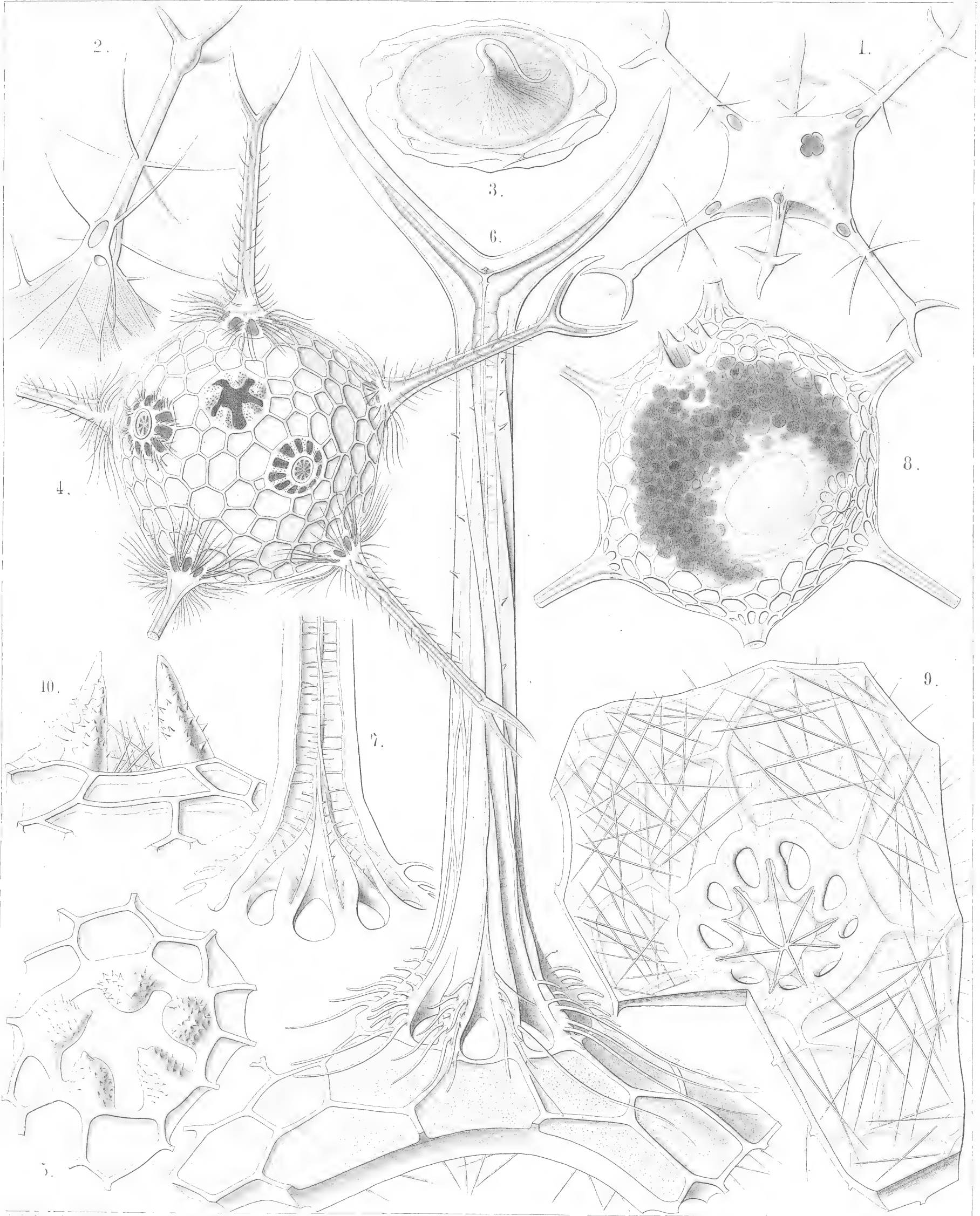
Order PHÆOGROMIA.

Family CIRCOPORIDA.

PLATE 115.

CIRCOPORIDA.

		Diam.	Page
Fig. 1.	<i>Circoporus sexfuscinus</i> , n. sp.,	× 100	1695
	The cruciform mouth is visible in the upper part of the figure, to the right.		
Fig. 2.	<i>Circoporus sexfuscinus</i> , n. sp.,	× 200	1695
	A single radial spine, with four cruciate pores at the base.		
Fig. 3.	<i>Circoporus sexfuscinus</i> , n. sp.,	× 600	1695
	The radiate operculum of the central capsule, with the proboscis.		
Fig. 4.	<i>Circospathis furcata</i> , n. sp.,	× 100	1696
	Five of the nine spines are visible, two others (on the upper face) broken off. Between the latter the pentagonal mouth (with five teeth).		
Fig. 5.	<i>Circospathis furcata</i> , n. sp.,	× 300	1696
	The mouth with its five teeth.		
Fig. 6.	<i>Circospathis furcata</i> , n. sp.,	× 400	1696
	A piece of the shell with a radial spine.		
Fig. 7.	<i>Circospathis furcata</i> , n. sp.,	× 400	1696
	Vertical section through the base of a radial spine, to show the central funicle.		
Fig. 8.	<i>Circogonia dodecacantha</i> , n. sp.,	× 100	1698
	The central capsule with the elliptical nucleus (to the right) and the dark phæodium (to the left) are visible, in the upper part (to the left) the mouth of the shell, with six teeth.		
Fig. 9.	<i>Circogonia dodecacantha</i> , n. sp.,	× 400	1698
	A fragment of the shell, exhibiting its peculiar structure (needles tangentially scattered in the cement of the porcellanous substance), and a circle of nine pores around the base of a broken spine.		
Fig. 10.	<i>Circospathis tetrodonta</i> , n. sp.,	× 400	1697
	The mouth with four teeth, in profile view.		



1-3. CIRCOPORUS, 4-10. CIRCOSPETHIS.

E. Giesch. Jena, Lithogr.

PLATE 116.

Legion PHÆODARIA.

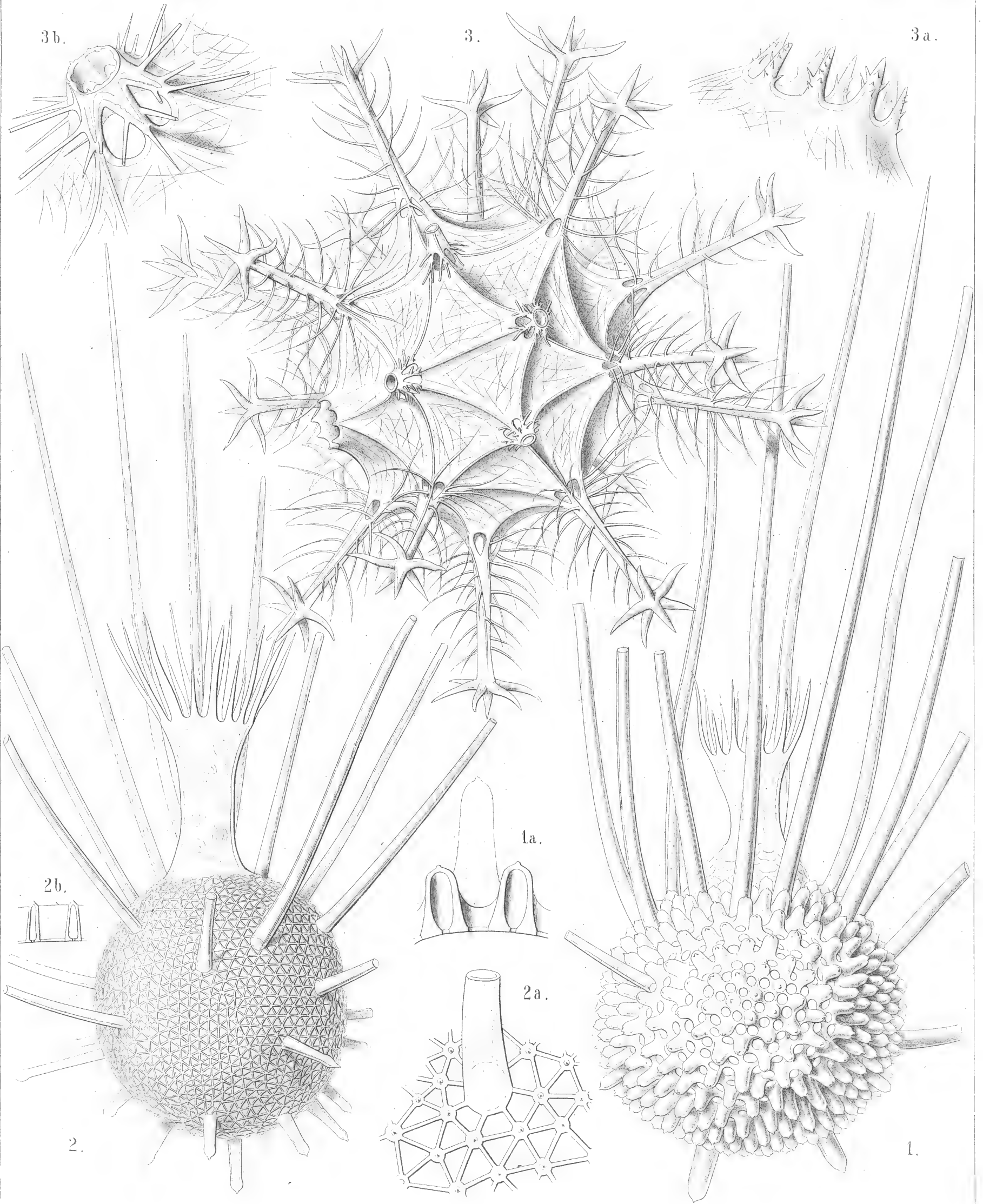
Order PHÆOGROMIA.

Families MEDUSETTIDA et CIRCOPORIDA.

PLATE 116.

MEDUSETTIDA et CIRCOPORIDA.

	Diam.	Page
Fig. 1. <i>Polypetta mammillata</i> , n. sp.,	× 500	1677
In the upper part of the figure the dentate proboscis.		
Fig. 1a. Vertical section through the shell-wall, showing two of the hollow alveoles, opening on its inside,	× 1000	
Fig. 2. <i>Polypetta tabulata</i> , n. sp.,	× 500	1677
In the upper part of the figure the dentate proboscis.		
Fig. 2a. A piece of the shell, seen from the surface, with the triangular plates,	× 1000	
Fig. 2b. Vertical section through the shell-wall, with an alveole,	× 1000	
Fig. 3. <i>Circostephanus coronarius</i> , n. sp.,	× 150	1699
The polyhedral shell exhibits in its wall the small tangential needles. The radial spines are partly broken off. The mouth of the shell, surrounded by eight short conical teeth, is visible on the left side of the figure.		
Fig. 3a. The mouth of the shell, seen in profile, with eight conical spinulate teeth,	× 400	
Fig. 3b. The base of a radial spine broken off, to show the corona of (five or six) basal pores,	× 400	



1. 2. POROSPETHIS, 3. CIRCOSTEPHANUS.

PLATE 117.

Legion PHÆODARIA.

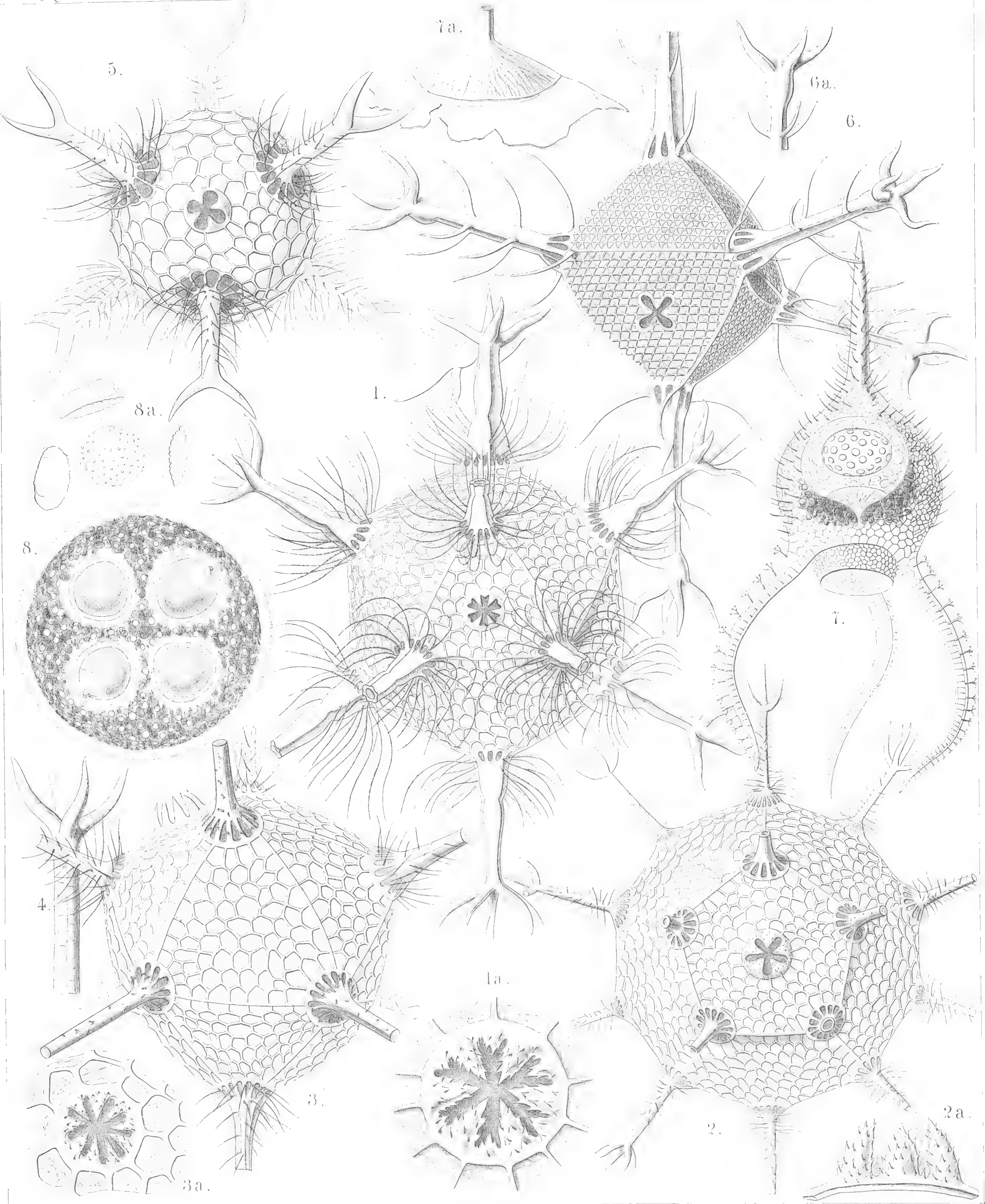
Orders PHÆOCYSTINA ET PHÆOGROMIA.

Families CANNORRHAPHIDA, MEDUSETTIDA et CIRCOPORIDA.

PLATE 117.

CANNORRHAPHIDA, MEDUSETTIDA et CIRCOPORIDA.

	Diam.	Page
Fig. 1. <i>Circogonia icosahedra</i> , n. sp.,	× 80	1698
The entire shell, with twelve radial tubes and twenty triangular faces. In the centre of one face is the mouth, with six teeth.		
Fig. 1a. The mouth alone, with its six spinulate teeth,	× 400	
Fig. 2. <i>Circorrhagma dodecahedra</i> , n. sp.,	× 80	1699
The entire shell, with twenty radial tubes and twelve pentagonal faces. In the centre of one face is the mouth, with five teeth.		
Fig. 2a. The mouth alone, with its five spinulate teeth, seen in profile,	× 200	
Fig. 3. <i>Circospathis novena</i> , n. sp.,	× 100	1696
The entire shell, with nine radial tubes and fourteen triangular faces. In one face (to the left above) is the mouth with nine teeth.		
Fig. 3a. The mouth alone, with its nine spinulate teeth,	× 150	
Fig. 4. <i>Circoporus hexastylus</i> , n. sp.,	× 80	1695
A single radial spine.		
Fig. 5. <i>Circoporus sexfurcus</i> , n. sp.,	× 80	1694
The entire spherical shell with six forked and ciliated radial tubes. In the centre the cruciform mouth with four teeth.		
Fig. 6. <i>Circoporus octahedrus</i> , n. sp.,	× 300	1695
The entire shell, with six verticillate radial tubes and eight triangular faces. In the centre of one face is the mouth, with four teeth.		
Fig. 7. <i>Cortinetta tripodiscus</i> , n. sp.,	× 300	1667
The entire shell with the enclosed central capsule, and the phæodium around the astropyle.		
Fig. 7a. The astropyle, partly detached from the wall of the central capsule, seen in profile,	× 800	
Fig. 8. <i>Catinulus quadrifidus</i> , n. sp.,	× 80	1553
A complete specimen, with four equal central capsules, united in a single spherical calymma.		
Fig. 8a. Some single pieces of the skeleton,	× 400	



E. Haeckel and A. Giltisch, Del.

A. Giltisch, Jena, Lithogr.

1. CIRCOGONIA . 2. CIRCORHEGMA . 3. CIRCOSPETHIS .
 4-6. CIRCOPORUS . 7. CORTINETTA . 8. CATINULUS .

PLATE 118.

Legion PHÆODARIA.

Order PHÆOGROMIA.

Family MEDUSETTIDA.

PLATE 118.

MEDUSETTIDA.

	Diam.	Page
Fig. 1. <i>Gazelletta melusina</i> , n. sp.,	× 300	1674
<p style="margin-left: 40px;">From the peristome of the thorny campanulate shell arise six large descending feet, which are studded with arborescent fragile lateral branches, and armed at the distal end with stouter dichotomous terminal branches.</p>		
Fig. 2. <i>Euphysetta staurocodon</i> , n. sp.,	× 300	1670
<p style="margin-left: 40px;">The peristome of the ovate shell bears an odd large foot with three terminal branches and three cruciate rudimentary feet. In the upper part of the shell-cavity is visible the sphaeroidal central capsule (containing a nucleus of half the size, with numerous nucleoli); in the lower half the dark pigment-masses of the green phæodium.</p>		
Fig. 3. <i>Euphysetta ampicodon</i> , n. sp.,	× 300	1670
<p style="margin-left: 40px;">The shell-wall exhibits the regular alveolate structure. From the mouth are prominent large masses of the phæodium, which is more voluminous than the shell-cavity, and seems to contain nucleated cells.</p>		

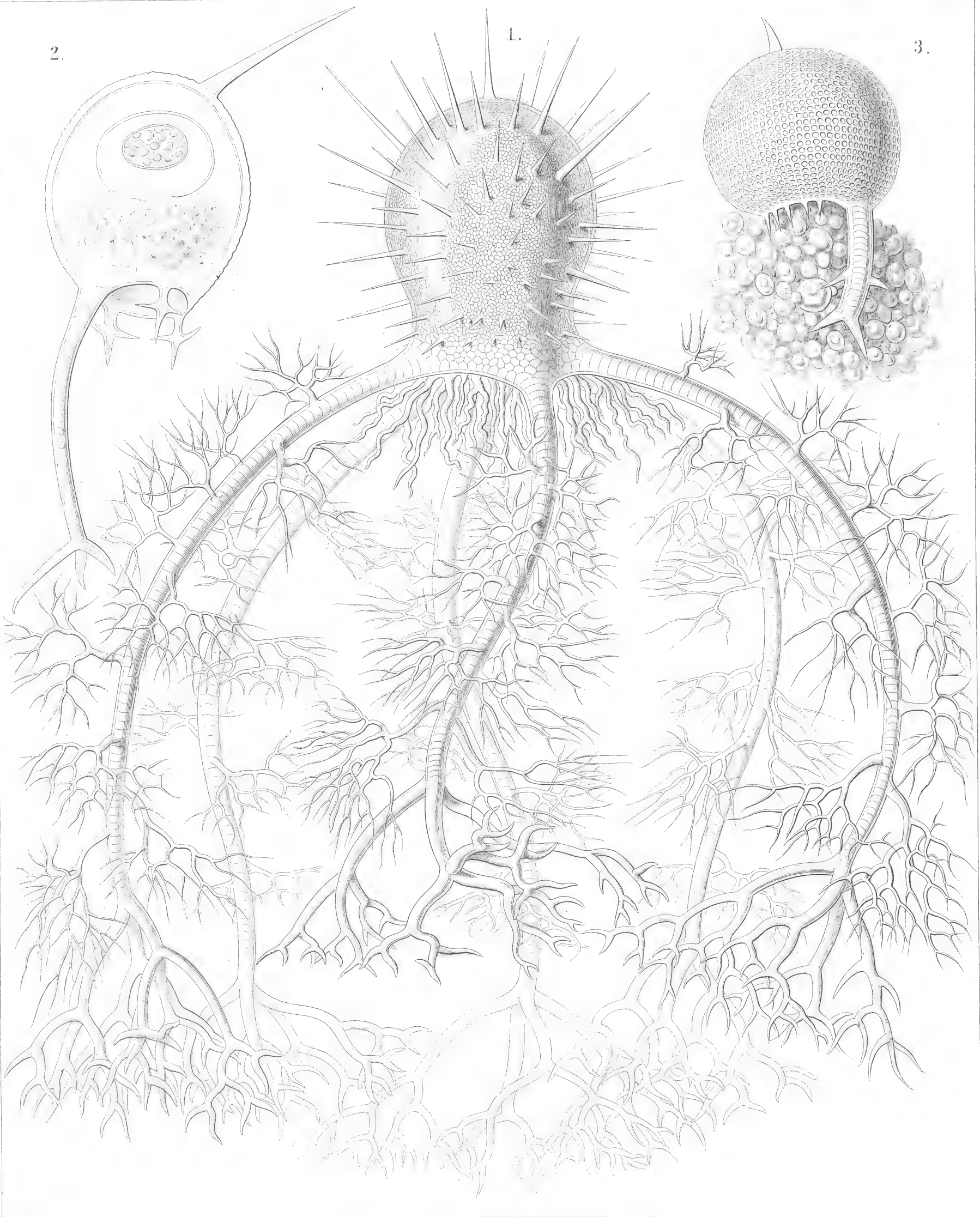


PLATE 118

E. Girsch, Jena, Lithogr.

1. GAZELLETTA, 2. 3. EUPHYSETTA.

PLATE 119.

Legion PHÆODARIA.

Order PHÆOGROMIA.

Family MEDUSETTIDA.

PLATE 119.

MEDUSETTIDA.

	Diam.	Page
Fig. 1. <i>Gorgonetta mirabilis</i> , n. sp.,	× 100	1674
<p>The entire body. From the margin of the cap-shaped shell arise six ascending arborescent feet and six alternating descending feet, which are covered with anchor-pencils and branched at the distal end. From the mouth of the delicately alveolate shell depend prominent parts of the dark voluminous phæodium.</p>		
Fig. 2. <i>Gorgonetta mirabilis</i> , n. sp.,	× 300	1674
<p>The distal end of an ascending foot; the branches bear a terminal spathilla with small recurved teeth.</p>		
Fig. 3. <i>Gorgonetta mirabilis</i> , n. sp.,	× 300	1674
<p>The distal end of a descending foot, with three lateral anchor-pencils and three terminal branches (broken off). One alveole contains an air-bubble.</p>		
Fig. 4. <i>Gorgonetta mirabilis</i> , n. sp.,	× 600	1674
<p>A single thread of an anchor-pencil, with two quadridentate spathillæ, a larger proximal and a smaller distal (terminal).</p>		

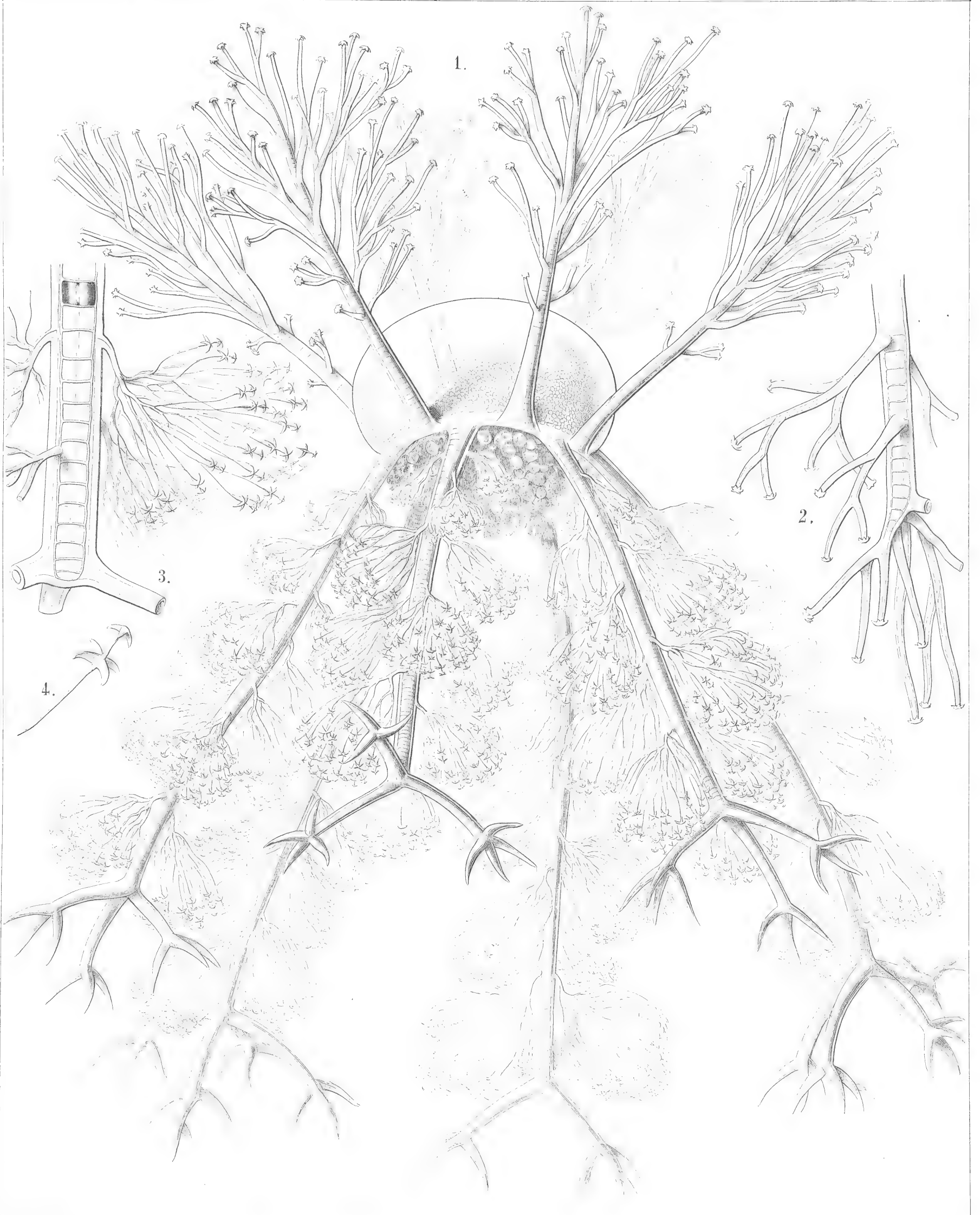


PLATE 120.

Legion PHÆODARIA.

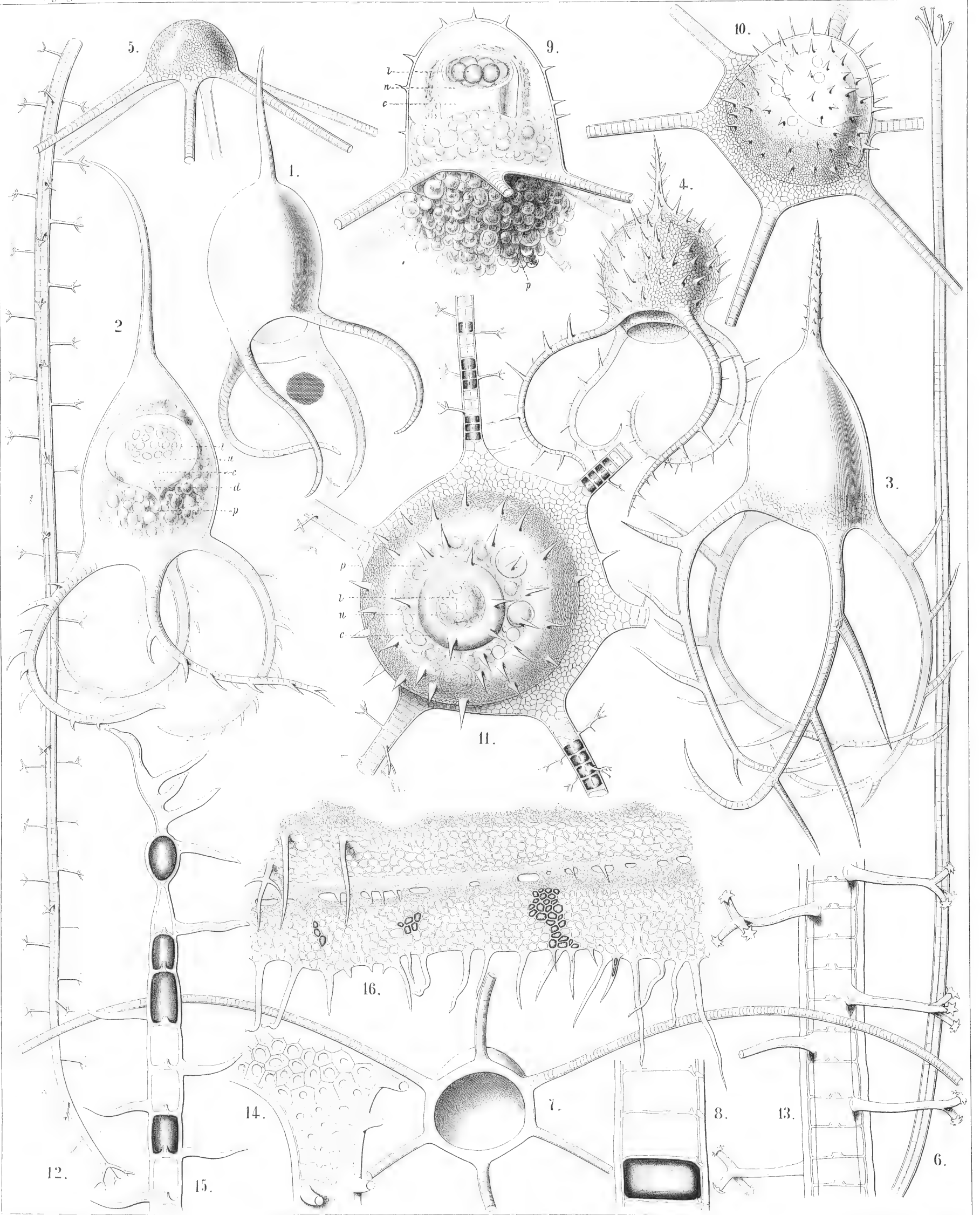
Order PHÆOGROMIA.

Family MEDUSETTIDA.

PLATE 120.

MEDUSETTIDA.

			Diam.	Page
Fig. 1.	<i>Medusetta codonium</i> , n. sp.,	. . . . .	× 400	1668
Fig. 2.	<i>Medusetta quadrigata</i> , n. sp.,	. . . . .	× 400	1668
	The central capsule is visible in the upper half, the phæodium in the lower half of the shell-cavity.			
Fig. 3.	<i>Medusetta tetranema</i> , n. sp.,	. . . . .	× 400	1669
Fig. 4.	<i>Medusetta craspedota</i> , n. sp.,	. . . . .	× 400	1669
Fig. 5.	<i>Gazelletta hexanema</i> , n. sp.,	. . . . .	× 300	1671
Fig. 6.	<i>Gazelletta bifurca</i> , n. sp.,	. . . . .	× 300	1672
	A single alveolate foot.			
Fig. 7.	<i>Gazelletta macronema</i> , n. sp.,	. . . . .	× 200	1671
	Oral view of the shell.			
Fig. 8.	<i>Gazelletta macronema</i> , n. sp.,	. . . . .	× 800	1671
	Three joints of an alveolate foot.			
Fig. 9.	<i>Gazelletta cyrtonema</i> , n. sp.,	. . . . .	× 300	1671
	The upper part of the shell encloses the central capsule with its nucleus. The voluminous phæodium is prominent over the mouth.			
Fig. 10.	<i>Gazelletta orthonema</i> , n. sp.,	. . . . .	× 200	1671
	The central capsule and its nucleus are visible in the shell-cavity.			
Fig. 11.	<i>Gazelletta schleinitzii</i> , n. sp.,	. . . . .	× 400	1673
	Oblique apical view, with the enclosed central capsule, the nucleus of which contains numerous nucleoli.			
Fig. 12.	<i>Gazelletta schleinitzii</i> , n. sp.,	. . . . .	× 300	1673
	A single alveolate foot.			
Fig. 13.	<i>Gazelletta trispathilla</i> , n. sp.,	. . . . .	× 400	1673
	The middle part of a foot.			
Fig. 14.	<i>Gazelletta robusta</i> , n. sp.,	. . . . .	× 300	1673
	The base of a foot, exhibiting the pores of the alveoli.			
Fig. 15.	<i>Gazelletta studeri</i> , n. sp.,	. . . . .	× 400	1673
	The distal end of a foot; four alveoli filled up by air-bubbles.			
Fig. 16.	<i>Gazelletta dendronema</i> , n. sp.,	. . . . .	× 300	1674
	A part of the velum, seen from the inside. The alveoles are partly filled by air.			



1-4. MEDUSETTA, 5-16. GAZELLETTA.

PLATE 121.

Legion PHÆODARIA.

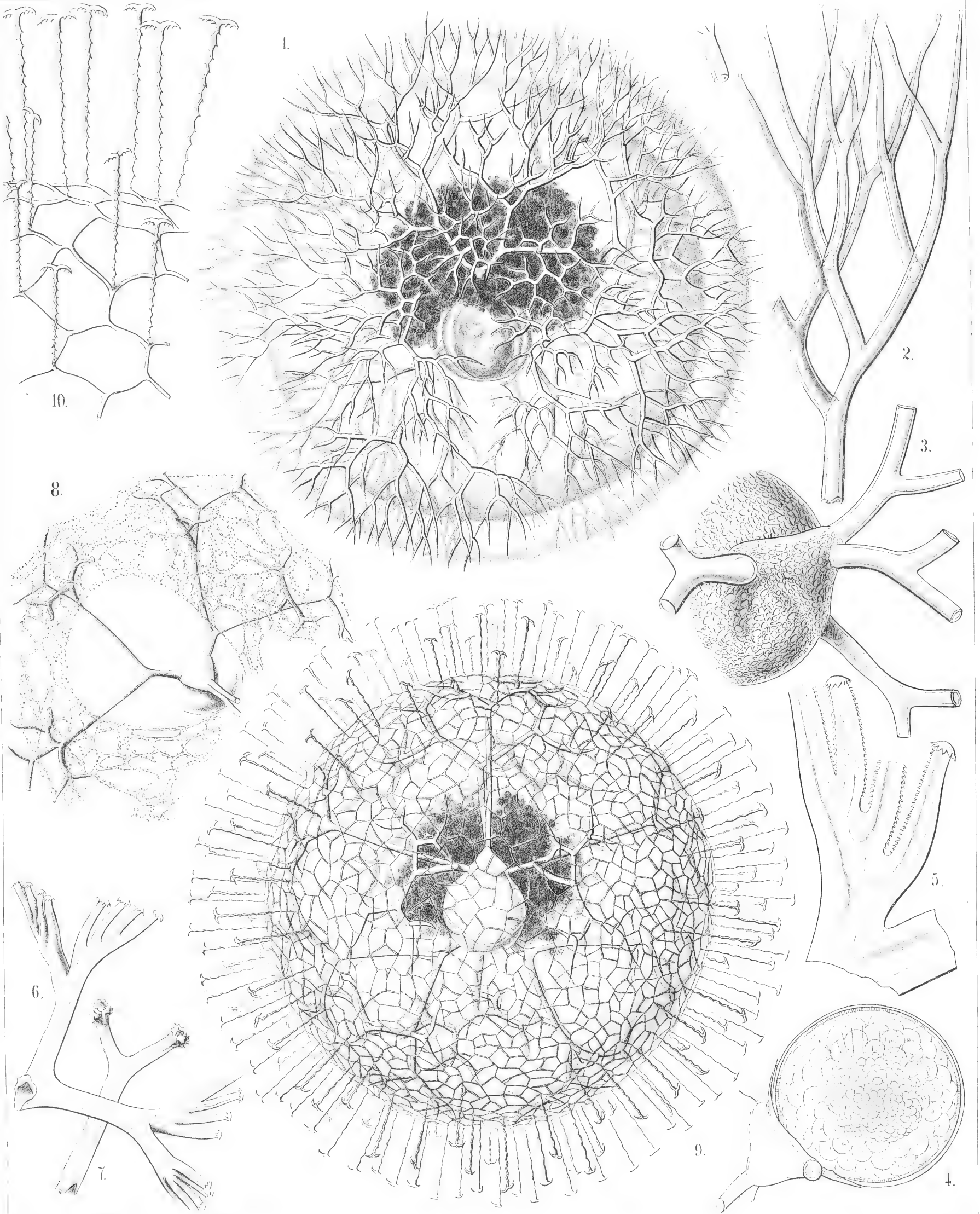
Order PHÆOCONCHIA.

Family CÆLODENDRIDA.

PLATE 121.

CÆLODENDRIDA.

		Diam.	Page
Fig. 1.	<i>Cælodendrum furcatissimum</i> , n. sp., A complete specimen with the central capsule and the big phæodium. The spherical calymma envelops almost the entire skeleton.	× 50	1735
Fig. 2.	<i>Cælodendrum furcatissimum</i> , n. sp., A distal branch with its terminal ramification.	× 300	1735
Fig. 3.	<i>Cælodendrum furcatissimum</i> , n. sp., One valve of the shell, with its galea and the four hollow forked tubes arising from it.	× 100	1735
Fig. 4.	<i>Cælodendrum furcatissimum</i> , n. sp., The central capsule with its nucleus; on the left side one valve of the closely enveloping shell (seen in vertical section), and its galea with the origin of the four tubes.	× 100	1735
Fig. 5.	<i>Cælodendrum serratum</i> , n. sp., A flabellate terminal branch.	× 400	1737
Fig. 6.	<i>Cælodendrum flabellatum</i> , n. sp., A flabellate terminal branch.	× 150	1737
Fig. 7.	<i>Cælodendrum spinosissimum</i> , n. sp., Forked distal end of a terminal branch.	× 300	1735
Fig. 8.	<i>Cælodendrum cervicorne</i> , n. sp., One valve of the shell, with its galea and the four tubes arising from it. A network of protoplasm connects the distal branches.	× 150	1736
Fig. 9.	<i>Cælodrymus ancoratus</i> , n. sp., A complete specimen, with the central capsule and the enveloping phæodium. The surface of the spherical calymma is covered by a dense network, from which arise numerous, anchor-bearing, radial tubules.	× 50	1738
Fig. 10.	<i>Cælodrymus ancoratus</i> , n. sp., A small piece of the superficial network of the skeleton, with the zigzag radial tubules arising from it, each of which bears an anchor with two recurved denticulate teeth on the distal end.	× 150	1738



1-8 COELODENDRUM, 9.10. COELODRYMUS.

PLATE 122.

Legion PHÆODARIA.

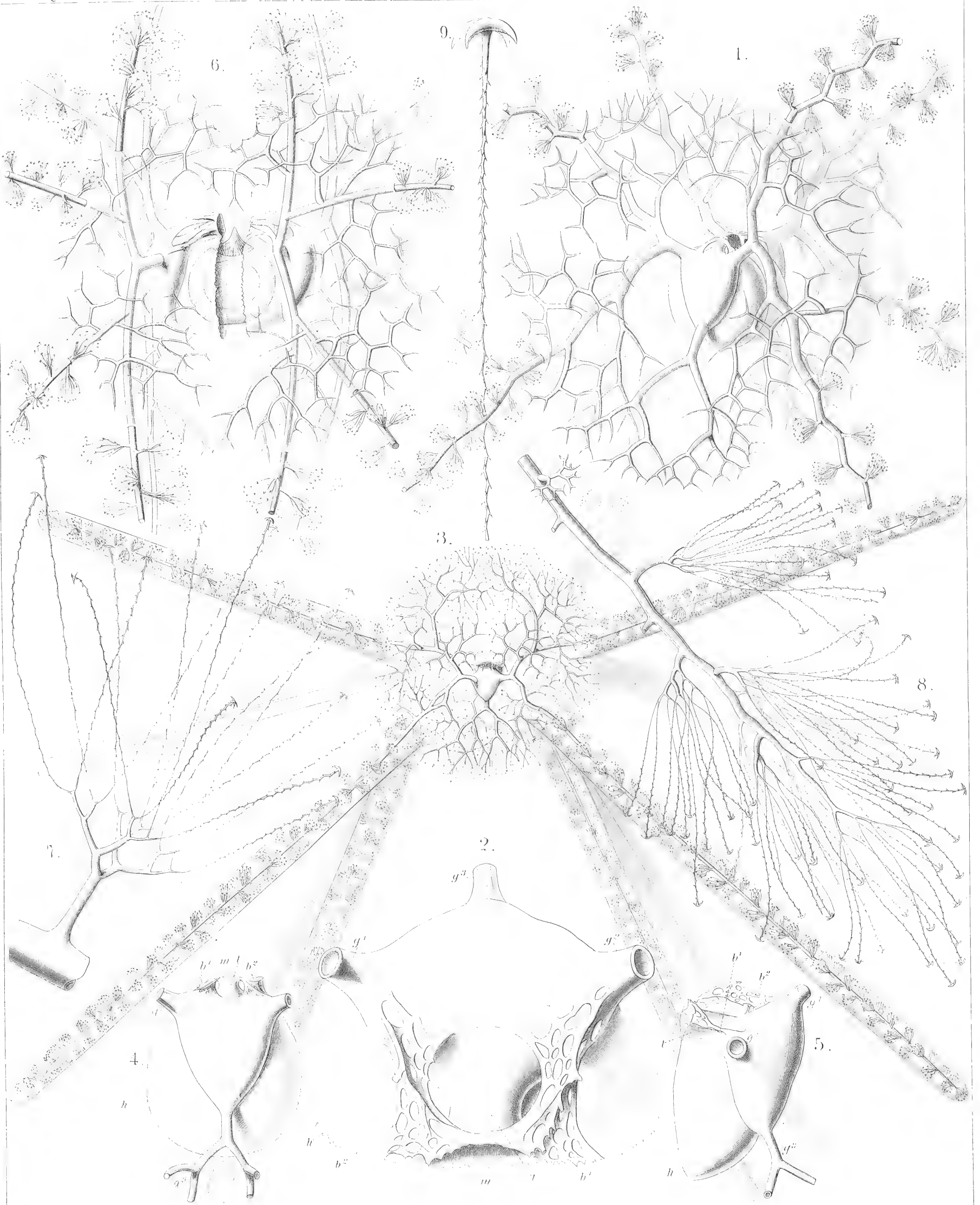
Order PHÆOCONCHIA.

Family CÆLOGRAPHIDA.

PLATE 122.

CÆLOGRAPHIDA.

	Diam.	Page
Fig. 1. <i>Cælotholus octonus</i> , n. sp.,	× 30	1749
The entire bivalved shell, seen obliquely from the dorsal and somewhat from the right side, enveloped by the yellowish calymma.		
Fig. 2. <i>Cælotholus octonus</i> , n. sp.,	× 100	1749
One valve of the shell (<i>h</i>) with its large galea and the origin of the three styles. The base of the two lateral styles (<i>g</i> ¹ , <i>g</i> ²) is connected by two latticed lateral frenula (<i>b</i> ¹ , <i>b</i> ²) with the mouth (<i>m</i>) of the rhinocanna (<i>t</i>). The odd style (<i>g</i> ³) is free.		
Fig. 3. <i>Cælothauma duodenum</i> , n. sp.,	× 20	1750
The entire shell, seen from the dorsal side. The long styles are enveloped by the yellowish calymma.		
Fig. 4. <i>Cælothauma duodenum</i> , n. sp.,	× 80	1750
One valve of the shell (<i>h</i>), seen from the apical side; <i>t</i> , rhinocanna; <i>m</i> , its mouth; <i>b</i> ¹ , <i>b</i> ² , the two lateral frenula; <i>g</i> ¹ , <i>g</i> ² , the two paired styles; <i>g</i> ³ , the odd style.		
Fig. 5. <i>Cælothauma duodenum</i> , n. sp.,	× 80	1750
One valve of the shell, seen in profile. Characters as in fig. 4.		
Fig. 6. <i>Cælothamnus bivalvis</i> , n. sp.,	× 30	1751
The entire shell, enveloped by the yellowish calymma, seen from the left side; between the two valves is the central capsule, with nucleus and astropyle.		
Fig. 7. <i>Cælothamnus bivalvis</i> , n. sp.,	× 100	1751
A single lateral anchor-pencil.		
Fig. 8. <i>Cælothamnus bivalvis</i> , n. sp.,	× 200	1751
Distal end of a style, with its anchor-pencils.		
Fig. 9. <i>Cælothamnus bivalvis</i> , n. sp.,	× 400	1751
A single anchor-thread, with its quadridentate terminal spathilla.		



E. Haeckel and A. Giltisch Del.

A. Giltisch Jena, Lithogr.

COELOTHOLUS.

PLATE 123.

Legion PHÆODARIA.

Order PHÆOCONCHIA.

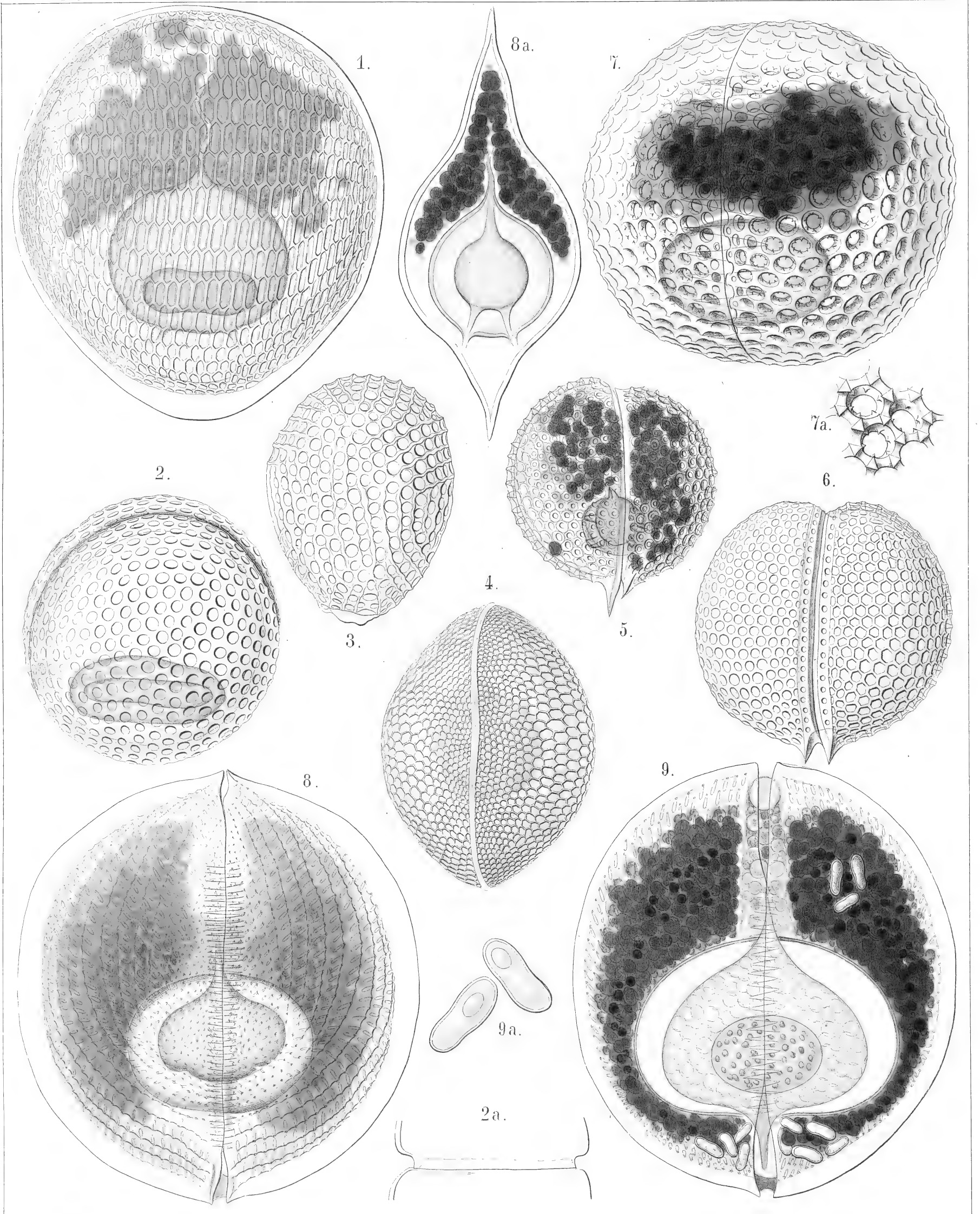
Family CONCHARIDA.

PLATE 123.

CONCHARIDA.

(The central capsule is coloured red in the figures of this plate, the phæodium green).

	Diam.	Page
Fig. 1. <i>Concharium diatomeum</i> , n. sp.,	×	1717
Dorsal view. The central capsule (red) exhibits above the anterior tubular main-opening (astropyle), and below the two small posterior lateral openings (right and left parapylæ).		
Fig. 2. <i>Concharium bivalvum</i> , n. sp.,	× 150	1717
Dorsal view. The central capsule is visible in the lower part, the margin of the two valves in the upper part of the figure.		
Fig. 2a exhibits the two smooth lateral margins of the valves, catching into one another. (Lateral view).		
Fig. 3. <i>Concharium nucula</i> , n. sp.,	×	1717
The dorsal valve alone, seen from the outside.		
Fig. 4. <i>Concharium bacillarium</i> , n. sp.,	×	1718
Lateral view from the smooth margin, by which the two valves are united.		
Fig. 5. <i>Conchasma radiolites</i> , n. sp.,	× 300	1719
Lateral view. In the aboral half of the shell-cavity lies the red central capsule, in the oral half the green phæodium.		
Fig. 6. <i>Conchasma sphaerulites</i> , n. sp.,	× 300	1719
Lateral view. On the aboral pole the two horns of the hinge.		
Fig. 7. <i>Conchellium tridacna</i> , n. sp.,	× 200	1720
Oblique lateral view (from the right and ventral side).		
Fig. 7a. Three pores of the same, with their hexagonal frames and six internal denticles,		
	×	400
Fig. 8. <i>Conchopsis carinata</i> , n. sp.,	× 150	1725
Lateral view, from the left side.		
Fig. 9. <i>Conchopsis lenticula</i> , n. sp.,	× 150	1726
Lateral view, from the right side. The two membranes of the central capsule are separated by a wide interval in this and the preceding figure. The nucleus contains numerous nucleoli.		
Fig. 9a. Two of the peculiar cells, which are contained in the green phæodium in large numbers,		
	×	400



E. Haackel and A. Giltsch Del.

E. Giltsch, Jena, Lithogr.

1-4. CONCHARIUM, 5,6. CONCHASMA, 7. CONCHELLIUM,
8,9. CONCHOPSIS.

PLATE 124.

Legion PHÆODARIA.

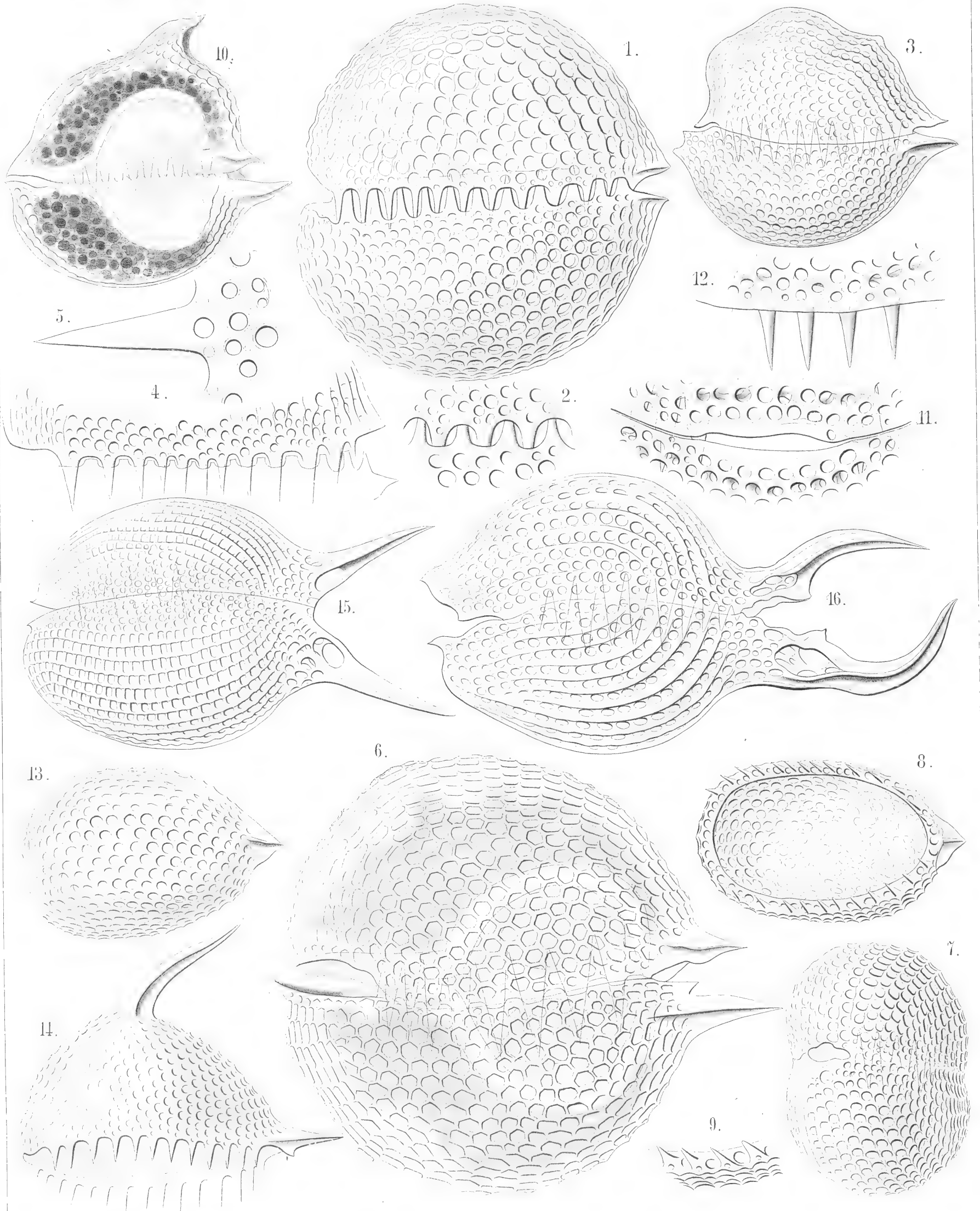
Order PHÆOCONCHIA.

Family CONCHARIDA.

PLATE 124.

CONCHARIDA.

		Diam.	Page
Fig. 1.	<i>Conchidium terebratula</i> , n. sp., Lateral view, from the left side.	× 400	1721
Fig. 2.	<i>Conchidium terebratula</i> , n. sp., A piece of the frontal girdle-fissure, with the teeth of both valves catching into one another.	× 800	1721
Fig. 3.	<i>Conchidium rhynchonella</i> , n. sp., Lateral view, from the left side.	× 200	1722
Fig. 4.	<i>Conchidium leptæna</i> , n. sp., Girdle-fissure with the teeth, seen from the left side.	× 300	1722
Fig. 5.	<i>Conchidium leptæna</i> , n. sp., A single tooth with its base.	× 800	1722
Fig. 6.	<i>Conchidium thecidium</i> , n. sp., Lateral view, from the left side. In the oral part of the shell-cavity the dark phæodium, in the aboral part the central capsule with two nuclei (a dorsal and a ventral).	× 300	1721
Fig. 7.	<i>Conchidium argiope</i> , n. sp., Oblique oral view (half from the anterior, half from the left side).	× 300	1722
Fig. 8.	<i>Conchidium argiope</i> , n. sp., Dorsal valve, from below.	× 300	1722
Fig. 9.	<i>Conchidium argiope</i> , n. sp., A piece of the valve margin, with four teeth.	× 600	1722
Fig. 10.	<i>Conchonia diodon</i> , n. sp., Lateral view, from the left side. In the anterior part of the shell-cavity the dark phæodium, in the posterior part the central capsule with the nucleus. The two valves are connected at the posterior hinge by a ligament (to the right in the figure).	× 200	1723
Fig. 11.	<i>Conchonia diodon</i> , n. sp., Mouth of the shell, with its two lips, seen from the oral pole.	× 400	1723
Fig. 12.	<i>Conchonia diodon</i> , n. sp., A piece of the valve-margin, with four teeth.	× 400	1723
Fig. 13.	<i>Conchonia triodon</i> , n. sp., Ventral valve, seen from the lower face.	× 300	1724
Fig. 14.	<i>Conchonia triodon</i> , n. sp., Dorsal valve, seen from the left side.	× 300	1724
Fig. 15.	<i>Conchoceras caudatum</i> , n. sp., Lateral view, from the left side.	× 300	1727
Fig. 16.	<i>Conchoceras cornutum</i> , n. sp., Lateral view, from the left side.	× 200	1728



1-14 CONCHIDIUM, 15, 16 CONCHOCERAS.

PLATE 125.

Legion PHÆODARIA.

Order PHÆOCONCHIA.

Family CONCHARIDA.

PLATE 125.

CONCHARIDA.

	Diam.	Page
Fig. 1. <i>Conchopsis aspidium</i> , n. sp., Lateral view, from the left side.	× 150	1726
Fig. 2. <i>Conchopsis aspidium</i> , n. sp., The hinge of another specimen, in which the two valves are connected by a ligament (as in figs. 8 and 9, Pl. 123).	× 300	1726
Fig. 3. <i>Conchopsis orbicularis</i> , n. sp., Lateral view, from the left side.	× 200	1725
Fig. 4. <i>Conchopsis navicula</i> , n. sp., Lateral view, from the right side. In the lower (posterior) half of the figure is visible the central capsule with its dark nucleus, in the upper (anterior) half the phæodium with two broad sagittal wings.	× 150	1727
Fig. 5. <i>Conchopsis navicula</i> , n. sp., Three single pores with their hexagonal external frame and the dilated internal ovate or ampullaceous channel.	× 400	1727
Fig. 6. <i>Conchopsis navicula</i> , n. sp., Hinge of the shell, from the right side.	× 400	1727
Fig. 7. <i>Conchopsis compressa</i> , n. sp., Lateral view from the left side. The triangular central capsule with the dark nucleus is visible.	× 150	1725
Fig. 8. <i>Conchopsis compressa</i> , n. sp., Dorsal view of the upper valve with its keel.	× 150	1725
Fig. 9. <i>Conchopsis pilidium</i> , n. sp., The two valves separated and seen obliquely, half from the lateral, half from the internal side. The inner opening of each valve is bordered and partly closed by a broad horizontal velum or diaphragm like the deck of a boat.	× 80	1726

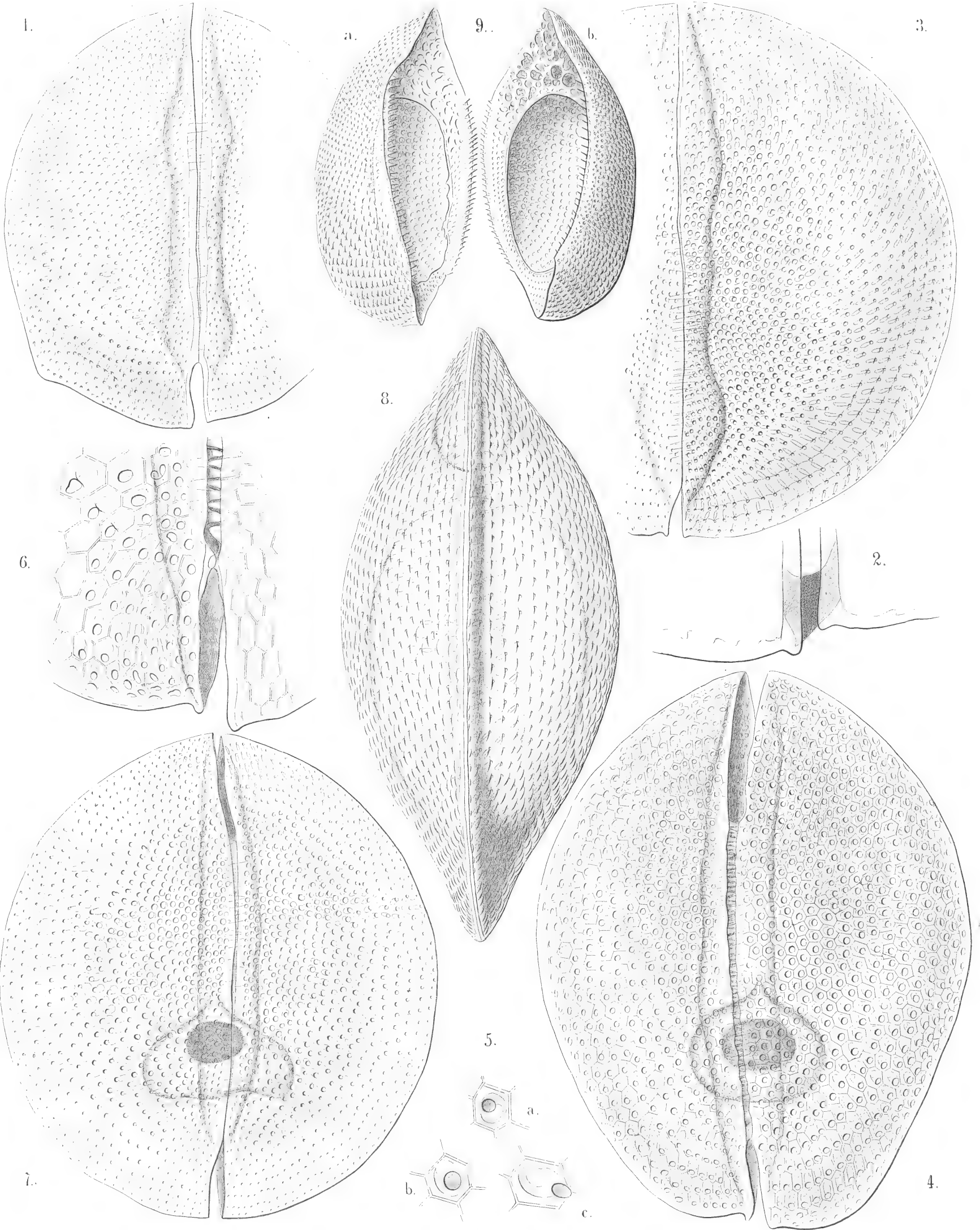


PLATE 126.

Legion PHÆODARIA.

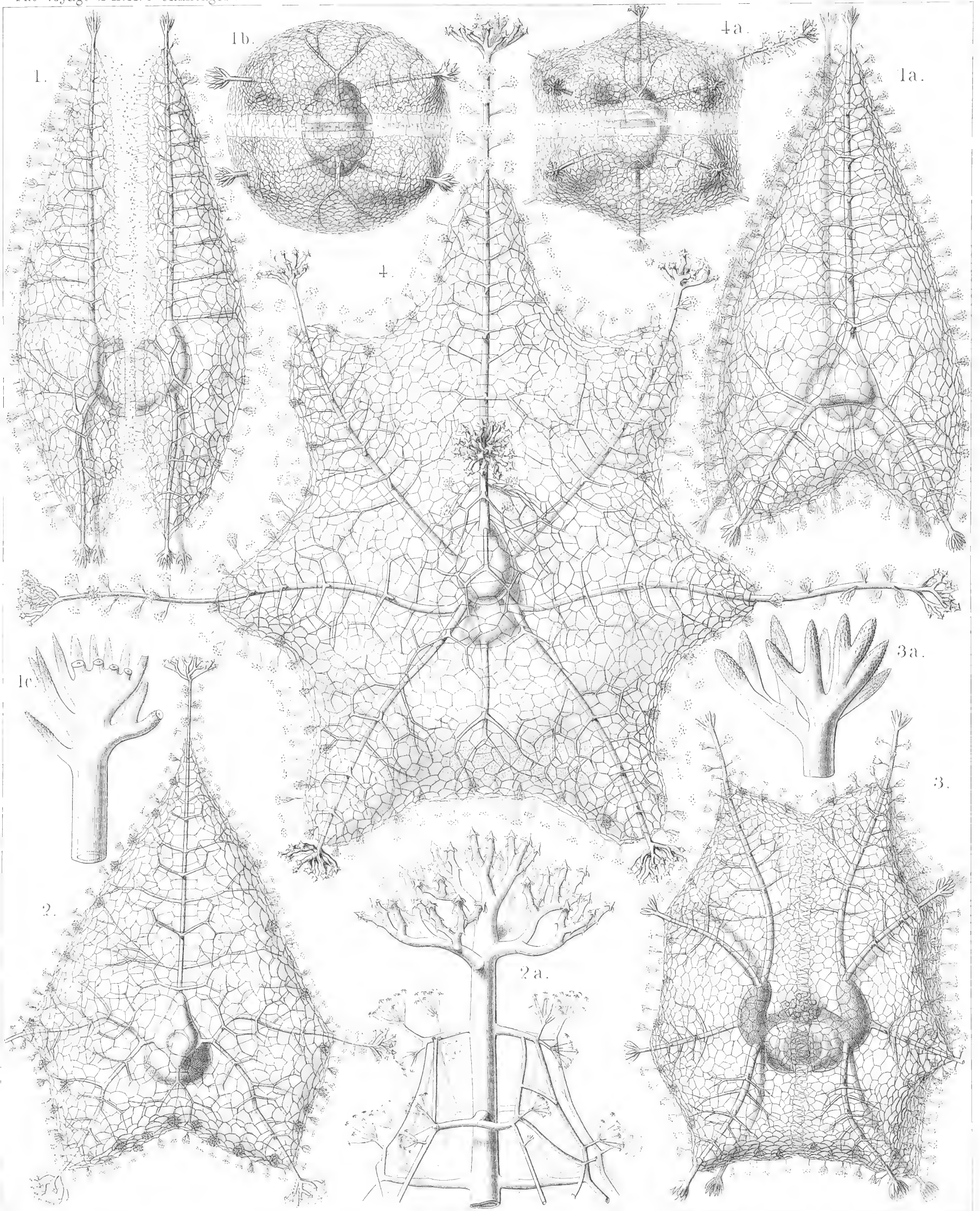
Order PHÆOCONCHIA.

Family CÆLOGRAPHIDA.

PLATE 126.

CÆLOGRAPHIDA.

	Diam.	Page
Figs. 1-1c. <i>Cælographis regina</i> , n. sp.,		1752
Fig. 1. Lateral view. The central capsule is visible between the two valves of the inner shell, the galeæ of which are filled by the phæodium,	× 20	
Fig. 1a. Dorsal view (somewhat obliquely from the left side). The galeæ appear triangular,	× 20	
Fig. 1b. Basal view,	× 20	
Fig. 1c. Distal end of a style,	× 300	
Figs. 2-2b. <i>Cælodecas sagittaria</i> , n. sp.,		1755
Fig. 2. One valve of the shell, seen from the outside,	× 30	
Fig. 2a. Distal end of a style,	× 300	
Figs. 3-3a. <i>Cælostylus bisenarius</i> , n. sp.,		1756
Fig. 3. Lateral view of the bivalved shell. The central capsule is visible between the two valves of the inner shell, the galeæ of which are filled by the phæodium,	× 20	
Fig. 3a. Distal end of a style,	× 300	
Figs. 4-4a. <i>Cælagalma mirabile</i> , n. sp.,		1759
Fig. 4. Dorsal view of the bivalved shell,	× 30	
Fig. 4a. Basal view of the bivalved shell,	× 10	



Edwards, U.S. Geol. Surv. Geol. Surv. Geol. Surv.

A. Giltisch Jena, Lithogr.

1 COELOGRAPHIS. 2. COELODECAS 3. COELOSTYLUS.
4. COELAGALMA.

PLATE 127.

Legion PHÆODARIA.

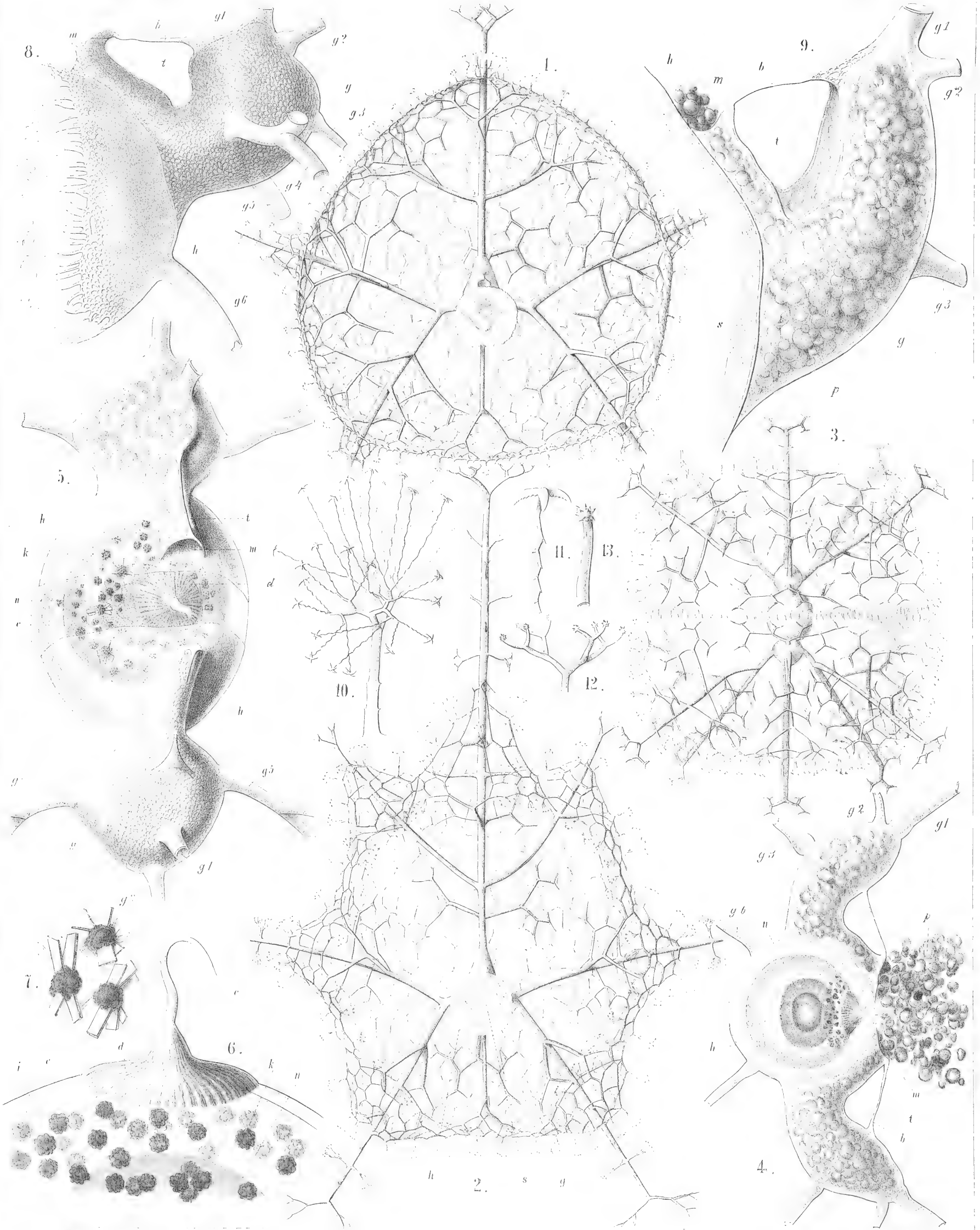
Order PHÆOCONCHIA.

Family CÆLOGRAPHIDA.

PLATE 127.

CÆLOGRAPHIDA.

		Diam.	Page
Fig. 1.	<i>Cæloplegma murrayanum</i> , n. sp., One valve of the bivalved shell, seen from the inside, of the usual ovate form.	× 40	1757
Fig. 2.	<i>Cæloplegma murrayanum</i> , n. sp., One valve of the bivalved shell, seen from the inside, of the rarer polyhedral form, which may be distinguished as a different species (<i>Cæloplegma tritonis</i> , compare p. 1758). <i>h</i> , hemispherical inner valve; <i>g</i> , galea; <i>s</i> , its base.	× 40	1757
Fig. 3.	<i>Cæloplegma murrayanum</i> , n. sp., The entire shell, seen from the base or the aboral pole (dorsal and ventral valve connected by delicate teeth, catching into one another).	× 40	1757
Fig. 4.	<i>Cæloplegma murrayanum</i> , n. sp., <i>h</i> , The two hemispherical inner valves of the shell, seen from the right side; <i>n</i> , the central nucleus inside the central capsule; <i>d</i> , the astropyle; <i>g</i> , the galea; <i>t</i> , the nasal tube, arising from its base; <i>m</i> , its mouth; <i>p</i> , the phæodium, which is partly thrown out by the nasal openings, filling up the galea and nasal tube.	× 100	1757
Fig. 5.	<i>Cæloplegma murrayanum</i> , n. sp., <i>h</i> , The two hemispherical inner valves of the shell and the enclosed central capsule, seen from the oral side; <i>d</i> , the radiate operculum of the astropyle, seen in the frontal fissure between the two valves; <i>n</i> , the nucleus; <i>k</i> , the crystals; <i>g</i> , galea; <i>g</i> ¹ - <i>g</i> ⁵ , the styles arising from the galea; <i>t</i> , nasal tube; <i>m</i> , mouth of it.	× 200	1757
Fig. 6.	<i>Cæloplegma murrayanum</i> , n. sp., Oral part of a central capsule, in profile. <i>o</i> , Opening of the proboscis; <i>d</i> , radiate operculum of the astropyle, which gives rise to the proboscis; <i>e</i> , the outer, <i>i</i> , the inner membrane of the capsule; <i>k</i> , groups of crystals; <i>n</i> , nucleus.	× 600	1757
Fig. 7.	<i>Cæloplegma murrayanum</i> , n. sp., Three single groups of crystals, taken from the central capsule.	× 1000	1757
Fig. 8.	<i>Cæloplegma murrayanum</i> , n. sp., One inner valve of the shell, in profile. <i>h</i> , hemispherical valve; <i>g</i> , galea; <i>g</i> ¹ - <i>g</i> ⁵ , the tubes arising from it; <i>t</i> , rhinocanna or nasal tube; <i>m</i> , its mouth; <i>b</i> , frenulum.	× 300	1757
Fig. 9.	<i>Cæloplegma murrayanum</i> , n. sp., <i>g</i> , The galea; <i>t</i> , rhinocanna of one inner valve; <i>m</i> , its mouth; <i>p</i> , phæodella filling up both galea and rhinocanna; <i>b</i> , the sagittal frenulum connecting the galea and the mouth of the rhinocanna. <i>g</i> ¹ - <i>g</i> ⁵ , the styles arising from the galea; <i>s</i> , sieve-plate, which separates the cavity of the galea from the hemispherical valve (<i>h</i>). View in profile.	× 400	1757
Fig. 10.	<i>Cæloplegma murrayanum</i> , n. sp., An anchor-pencil of the outer shell.	× 300	1757
Fig. 11.	<i>Cæloplegma murrayanum</i> , n. sp., A single anchor-thread of a pencil.	× 1000	1757
Fig. 12.	<i>Cæloplegma murrayanum</i> , n. sp., Terminal branches of a style.	× 300	1757
Fig. 13.	<i>Cæloplegma murrayanum</i> , n. sp., A single terminal branch of a style.	× 1000	1757



Haeckel and Müllersch. Del.

Haeckel del.

(FAR-ØER-CHANNEL) COELOPLEGMA. MURRAYANUM!

PLATE 128.

Legion PHÆODARIA.

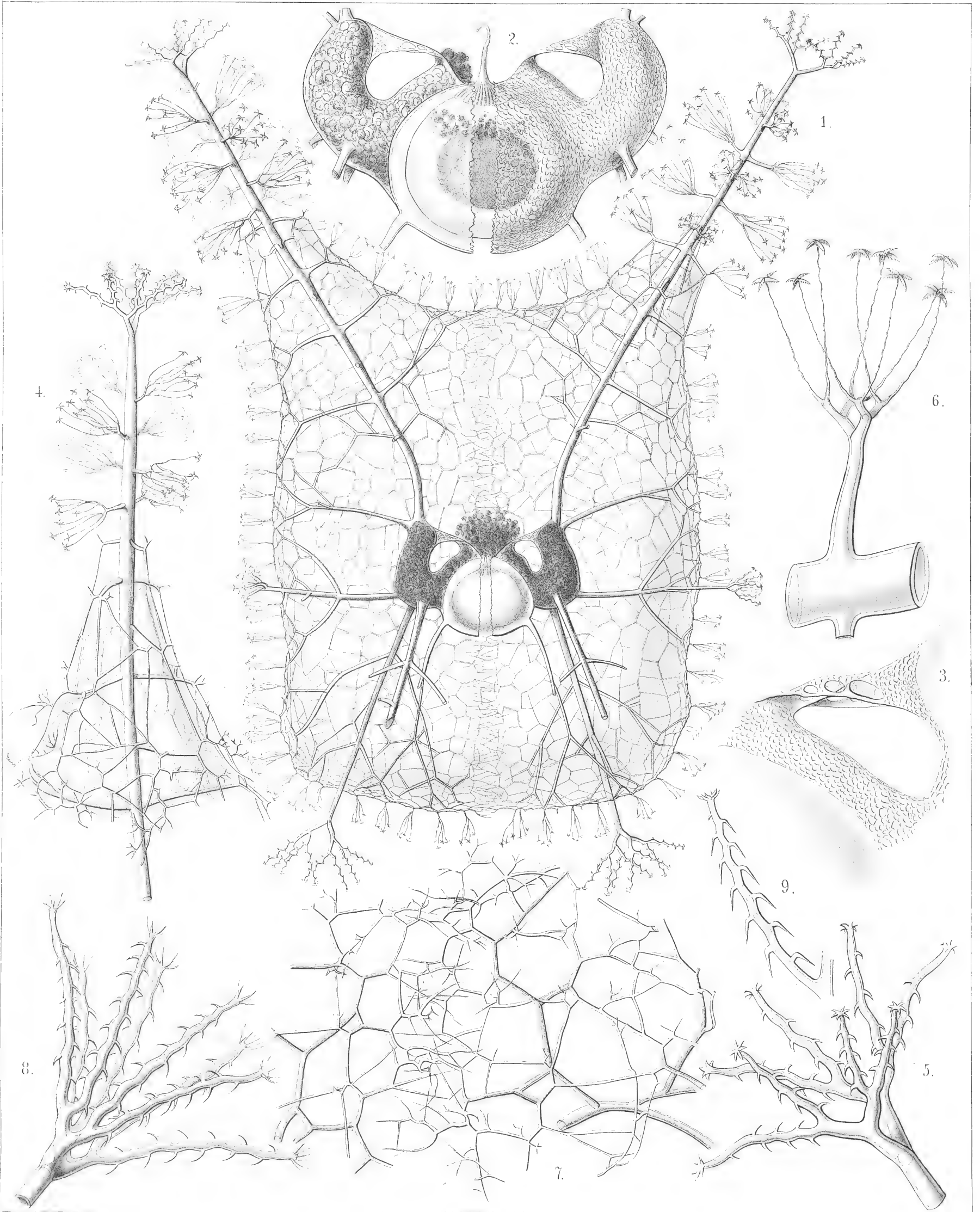
Order PHÆOCONCHIA.

Family CÆLOGRAPHIDA.

PLATE 128.

CÆLOGRAPHIDA.

	Diam.	Page
Fig. 1. <i>Cælospathis ancorata</i> , n. sp.,	× 50	1754
Lateral view of the entire shell. The central capsule is visible between the two valves of the inner shell. The galeæ and rhinocannæ of the two inner valves are filled up by the black phæodium.		
Fig. 2. <i>Cælospathis ancorata</i> , n. sp.,	× 100	1754
The two valves of the inner shell; the galeæ and rhinnocannæ of which are filled up by the black phæodium. Between the mouth of the two rhinocannæ is prominent the proboscis of the astropyle, arising from the radiate operculum of the central capsule. The latter contains numerous crystals and a big dark nucleus. Lateral view.		
Fig. 3. <i>Cælospathis ancorata</i> , n. sp.,	× 200	1754
The rhinocanna or the nasal tube of one valve, and the latticed frenulum which connects its mouth with the top of the galea.		
Fig. 4. <i>Cælospathis ancorata</i> , n. sp.,	× 80	1754
Distal end of a style.		
Fig. 5. <i>Cælospathis ancorata</i> , n. sp.,	× 200	1754
Terminal branches of a style.		
Fig. 6. <i>Cælospathis ancorata</i> , n. sp.,	× 600	1754
Lateral branch of a style, with an anchor-pencil.		
Fig. 7. <i>Cælospathis ancorata</i> , n. sp.,	× 300	1754
The lateral margins of the latticed valves of the outer shell or mantle, catching into one another, without being connected directly.		
Fig. 8. <i>Cælospathis octostyla</i> , n. sp.,	× 300	1754
Terminal branches of a style.		
Fig. 9. <i>Cælospathis octodactyla</i> , n. sp.,	× 400	1755
A single terminal branch of a style.		



H. Schmidt and A. Schmidt del.

E. Hiltsch Jena. Lithogr.

COELOSPATHIS.

PLATE 129.

Legion ACANTHARIA.

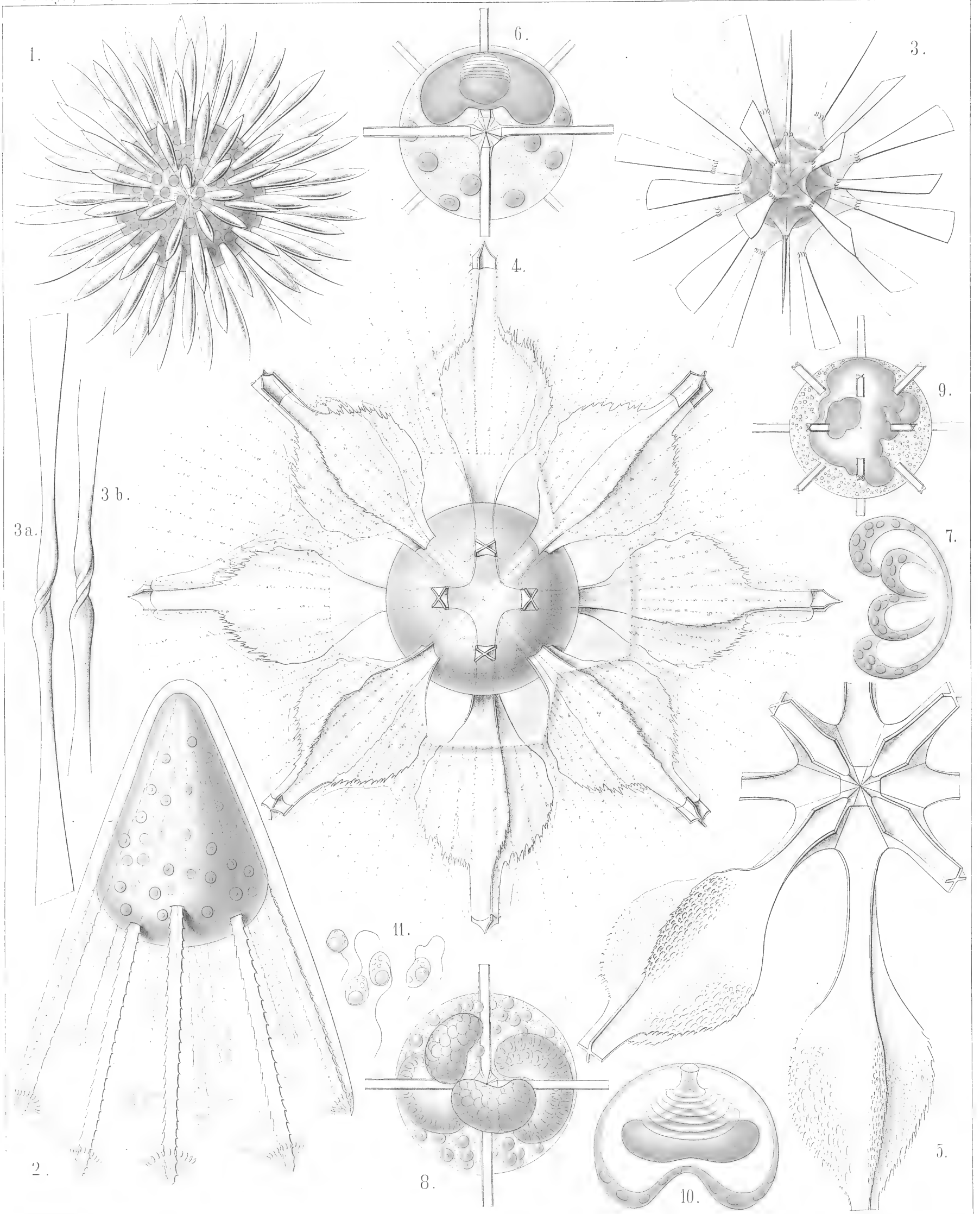
Orders ACTINELLIDA ET ACANTHONIDA.

Families ASTROLOPHIDA, LITHOLOPHIDA, CHIASTOLIDA et
ASTROLONCHIDA.

PLATE 129.

ASTROLOPHIDA, LITHOLOPHIDA, CHIASTOLIDA et ASTROLONCHIDA.

		Diam.	Page
Fig. 1.	<i>Actinelius primordialis</i> , n. sp.,	× 100	730
	The red central capsule, coloured by carmine, contains numerous intensely stained nuclei.		
Fig. 2.	<i>Litholophus decapristis</i> , n. sp.,	× 300	735
	The conical central capsule contains numerous nuclei. The calymma exhibits on the distal end of each spine a coronet of myophrises.		
Fig. 3.	<i>Chiastolus amphicopium</i> , n. sp.,	× 150	738
	Sixteen diametral spines pierce the spherical, red-coloured central capsule. The conical sheets of the calymma bear myophrises.		
	Figs. 3a, 3b. Two isolated diametral spines exhibiting the peculiar spiral revolution at their central part,		
		× 300	
Fig. 4.	<i>Xiphacantha ciliata</i> , n. sp.,	× 300	761
	The spherical central capsule is coloured red. The yellowish calymma envelops the radial spines completely. The polygonal network of lines, in which the radiating pseudopodia are symmetrically arranged, is partly visible.		
Fig. 5.	<i>Xiphacantha ciliata</i> , n. sp.,	× 300	761
	The central part of the skeleton, exhibiting the central junction of the radial spines.		
Fig. 6.	<i>Acanthometron dolichoscion</i> , n. sp.,	× 300	743
	Central capsule of a young specimen; in its upper half the peculiar kidney-shaped nucleus is visible, with its invagination; in the lower half some nucleated yellow cells are visible (intracapsular xanthellæ). These and the nucleus are stained by carmine.		
Fig. 7.	<i>Acanthometron dolichoscion</i> , n. sp.,	× 300	743
	Cleavage of an isolated nucleus, with four buds.		
Fig. 8.	<i>Acanthometron dolichoscion</i> , n. sp.,	× 300	743
	A central capsule with four large budding nuclei; and numerous small spherical nuclei produced by gemmation.		
Fig. 9.	<i>Acanthonia tetracopa</i> , n. sp.,	× 400	749
	Central capsule of a young specimen, with a large, irregularly lobate nucleus.		
Fig. 10.	<i>Acanthonia tetracopa</i> , n. sp.,	× 400	749
	An isolated nucleus, exhibiting the peculiar invagination, with its circular folds, and the connection with the flatly conical nucleolus.		
Fig. 11.	<i>Acanthonia tetracopa</i> , n. sp.,	× 800	749
	Four flagellate spores.		



1. ACTINELIUS, 2. LITHOLOPHUS, 3. CHIASTOLUS,
4-11. ACANTHONIA.

PLATE 130.

Legion ACANTHARIA.

Order ACANTHONIDA.

Family ASTROLONCHIDA.

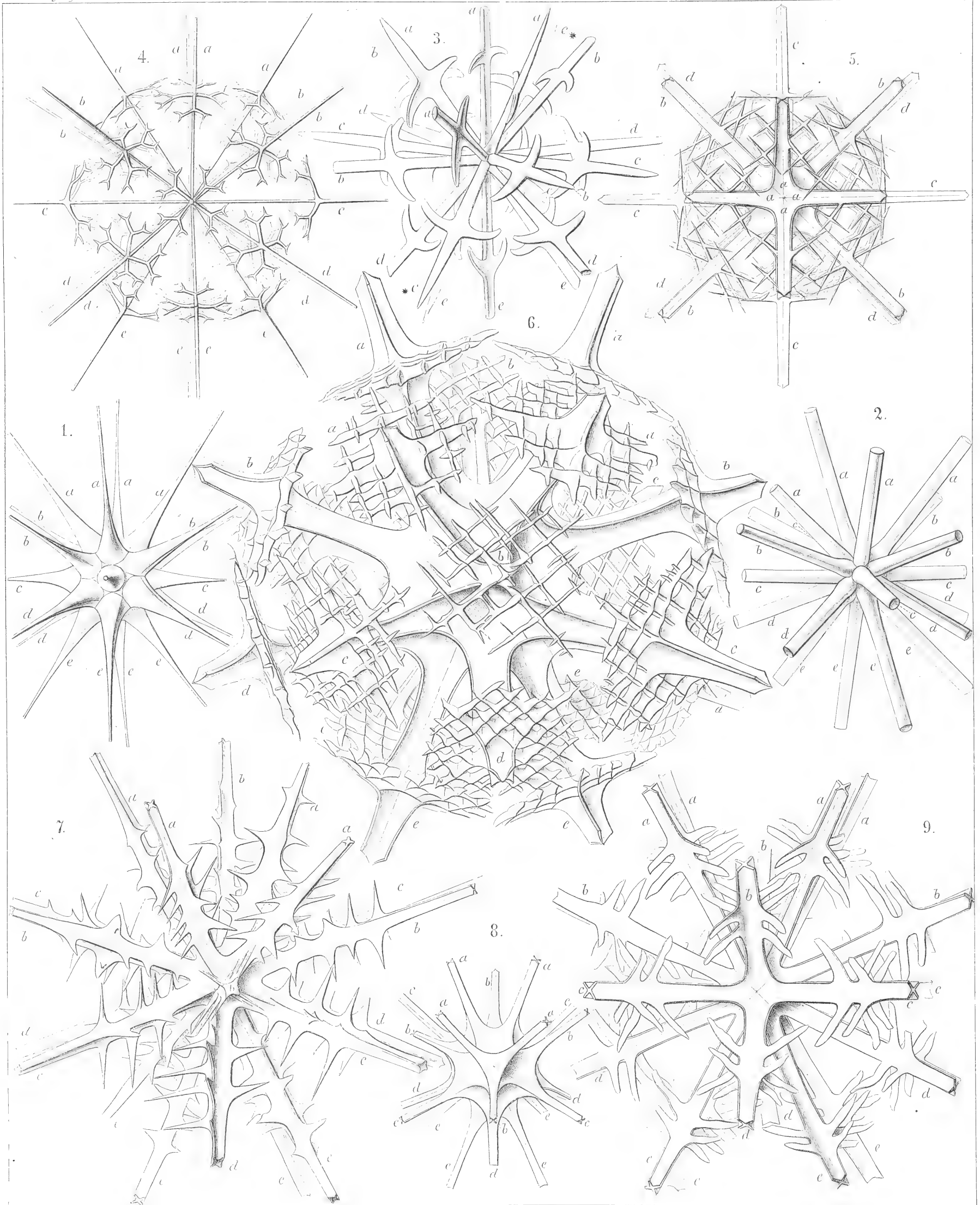
PLATE 130.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

- a.* Northern polar spines.
- b.* Northern tropical spines.
- c.* Equatorial spines.
- d.* Southern tropical spines.
- e.* Southern polar spines.

ASTROLONCHIDA.

	Diam.	Page
Fig. 1. <i>Acanthometron bulbiferum</i> , n. sp.,	× 300	745
Fig. 2. <i>Acanthometron cylindricum</i> , n. sp.,	× 200	743
Fig. 3. <i>Lithophyllum gladiatum</i> , n. sp.,	× 200	754
Fig. 4. <i>Stauracantha quadrifurca</i> , n. sp.,	× 300	764
Fig. 5. <i>Stauracantha orthostaura</i> , n. sp.,	× 200	762
Fig. 6. <i>Phatnacantha icosaspis</i> , n. sp.,	× 400	765
Fig. 7. <i>Pristacantha polyodon</i> , n. sp.,	× 300	766
Fig. 8. <i>Pristacantha dodecodon</i> , n. sp.,	× 300	766
Only the central parts and the leaf-cross.		
Fig. 9. <i>Pristacantha octodon</i> , n. sp.,	× 200	765



1. ACANTHOMETRON, 3. LITHOPHYLLIUM, 4-6. STAURACANTHA,
7-9. PRISTACANTHA.

E. Sars, Lithogr.

PLATE 131.

Legion ACANTHARIA.

Order ACANTHONIDA.

Family QUADRILONCHIDA.

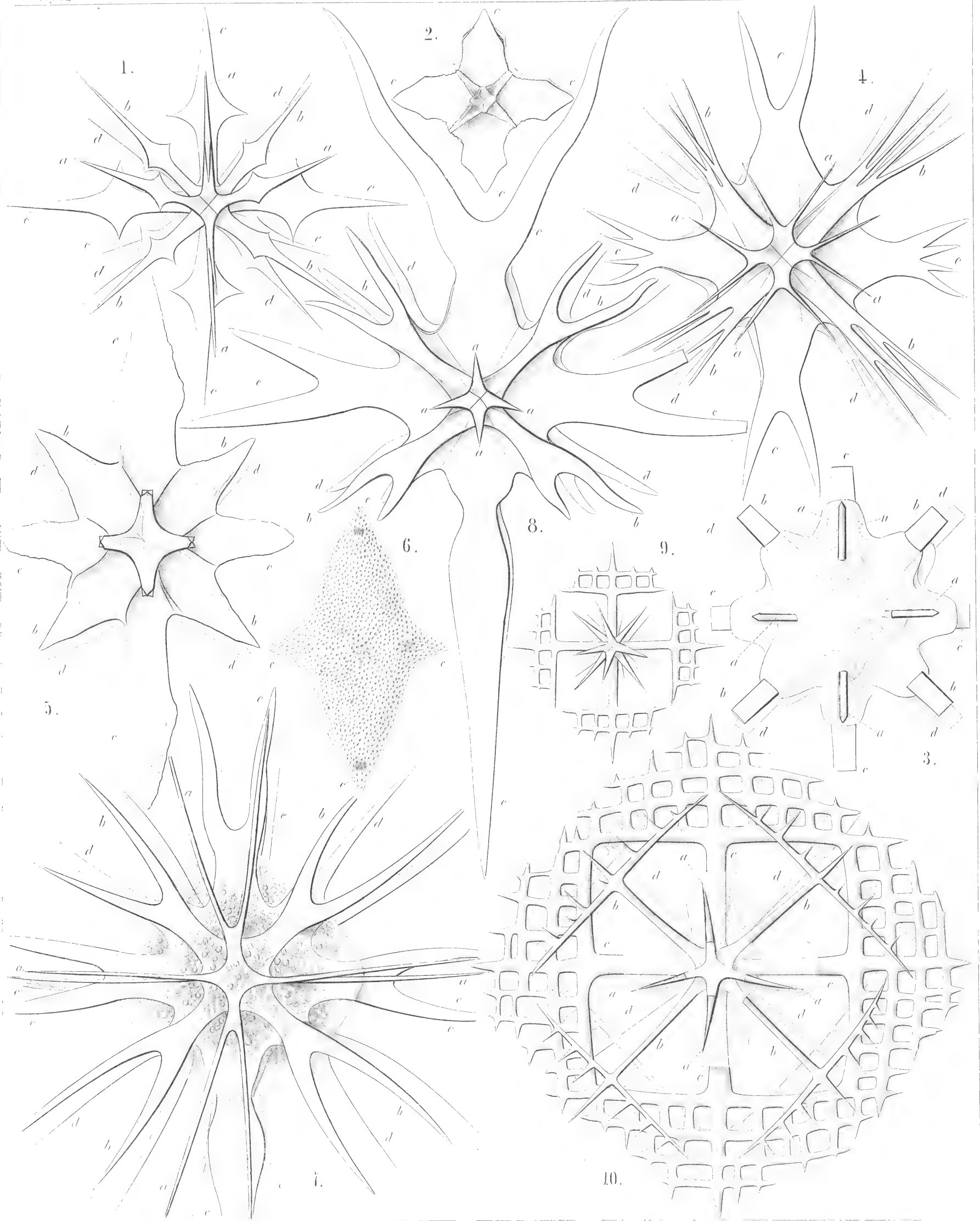
PLATE 131.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

- a.* Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

QUADRILONCHIDA.

				Diam.	Page
Fig. 1.	<i>Quadrilonche mesostaura</i> , n. sp.,	.	.	× 300	777
Fig. 2.	<i>Quadrilonche platystaura</i> , n. sp.,	.	.	× 100	777
Fig. 3.	<i>Xiphoptera dodecactena</i> , n. sp.,	.	.	× 200	778
	The central capsule with the central part of the skeleton.				
Fig. 4.	<i>Lonchostaurus bifurcus</i> , n. sp.,	.	.	× 300	773
Fig. 5.	<i>Lonchostaurus crystallinus</i> , n. sp.,	.	.	× 400	773
Fig. 6.	<i>Lonchostaurus rhomboides</i> , n. sp.,	.	.	× 200	772
	The radial spines are completely enclosed in the rhombic calymma, the surface of which is covered with small plates, similar to those in the shell of the Sphærocapsida.				
Fig. 7.	<i>Zygostaurus amphithecus</i> , n. sp.,	.	.	× 300	774
	The square central capsule envelops the half skeleton.				
Fig. 8.	<i>Zygostaurus sagittalis</i> , n. sp.,	.	.	× 300	775
Fig. 9.	<i>Lithoptera tetraptera</i> , n. sp.,	.	.	× 300	779
Fig. 10.	<i>Lithoptera quadrata</i> , n. sp.,	.	.	× 300	780
	The central part of the skeleton is enclosed by the four-lobed central capsule.				



1. 3. QUADRILONGHE, 4-6. BELONOSTAURUS, 7. 8. LONCHOSTAURUS,
9. 10. LITHOPTERA.

EGG'S & JONES, LONDON

PLATE 132.

Legion ACANTHARIA.

Orders ACTINELLIDA ET ACANTHONIDA.

Families ASTROLOPHIDA, ASTROLONCHIDA et AMPHILONCHIDA.

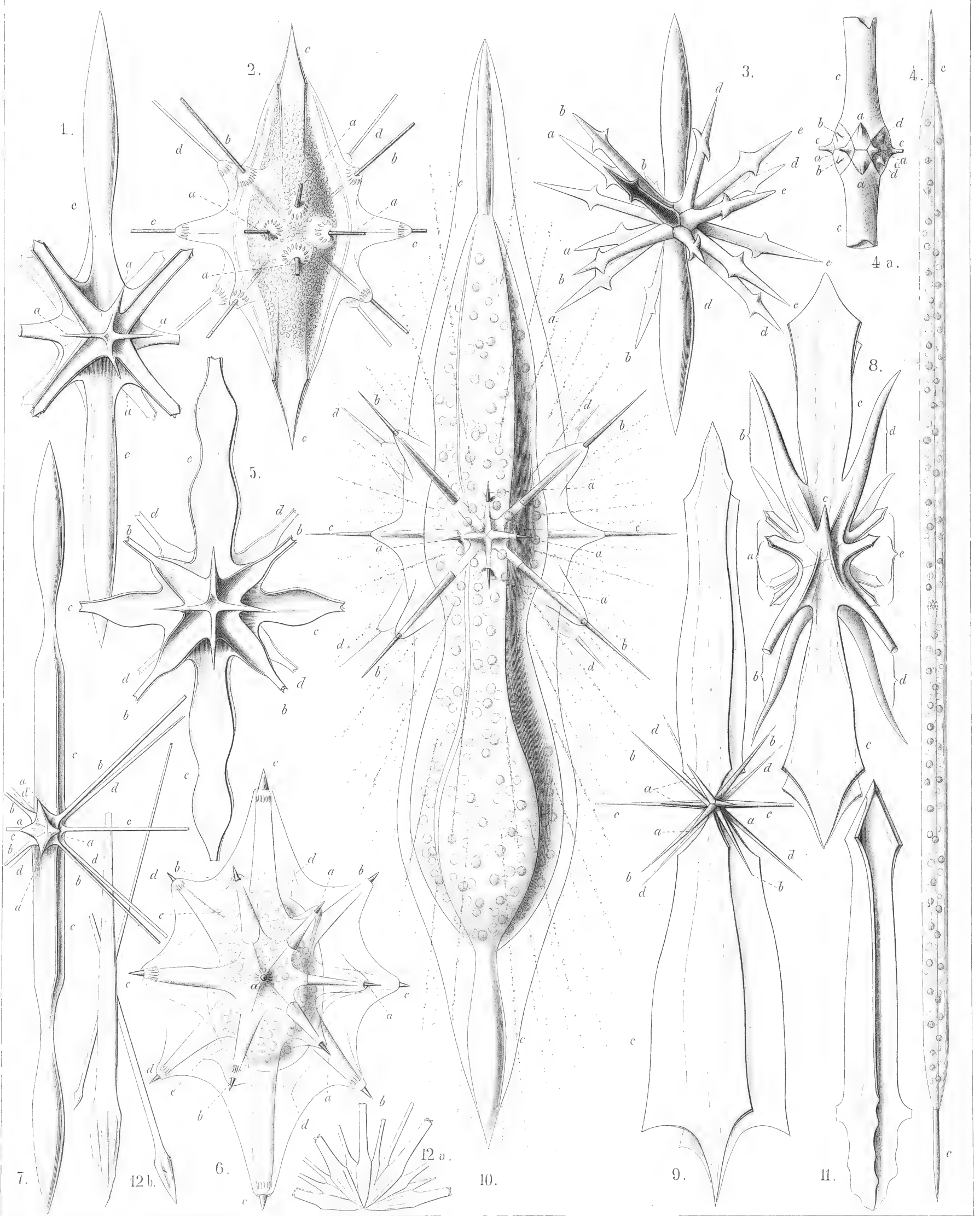
PLATE 132.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

- a.* Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

ASTROLOPHIDA, ASTROLONCHIDA et AMPHILONCHIDA.

	Diam.	Page
Fig. 1. <i>Amphilonche lanceolata</i> , n. sp.,	× 300	783
Fig. 2. <i>Amphilonche hydrotomica</i> , n. sp.,	× 300	786
The spindle-shaped central capsule is filled up with small granules. The clear calymma forms conical sheaths for the spines, with myophrises.		
Fig. 3. <i>Amphilonche diodon</i> , n. sp.,	× 300	783
Fig. 4. <i>Amphilonche concreta</i> , n. sp.,	× 100	787
A complete specimen with the cylindrical central capsule.		
Fig. 4 <i>a.</i> Central part of the skeleton,	× 400	
Fig. 5. <i>Amphilonche violina</i> , n. sp.,	× 300	787
Fig. 6. <i>Amphilonche conica</i> , n. sp.,	× 300	785
The ellipsoidal central capsule contains numerous nuclei and is enclosed by the calymma. The conical sheaths of the latter include the radial spines completely and exhibit coronets of myophrises.		
Fig. 7. <i>Acantholonche amphipolaris</i> , n. sp.,	× 200	790
Fig. 8. <i>Acantholonche peripolaris</i> , n. sp.,	× 300	791
Fig. 9. <i>Amphibelone pyramidata</i> , n. sp.,	× 300	789
Fig. 10. <i>Amphibelone cultellata</i> , n. sp.,	× 400	789
The central capsule contains numerous spherical nuclei and is enclosed by the hyaline calymma, which forms conical sheaths around the spines.		
Fig. 11. <i>Stauracantha johannis</i> , n. sp.,	× 400	763
Basal part of a radial spine, exhibiting the peculiar torsion of the basal leaf-cross and the central apex.		
Fig. 12. <i>Astrolophus solaris</i> , n. sp.,	× 200	732
Fig. 12 <i>a.</i> A group of larger and smaller radial spines united in the centre.		
Fig. 12 <i>b.</i> Three isolated spines (one larger and two smaller),		
	× 200	



E. Giltisch Jena Lithogr.

1-6. AMPHILONCHE, 7. 8. ACANTHOLONCHE, 9-12, AMPHIBELONE.

PLATE 133.

Legion ACANTHARIA.

Order SPHÆROPHRACTA.

Families SPHÆROCAPSIDA, DORATASPIDA et PHRACTOPELTIDA.

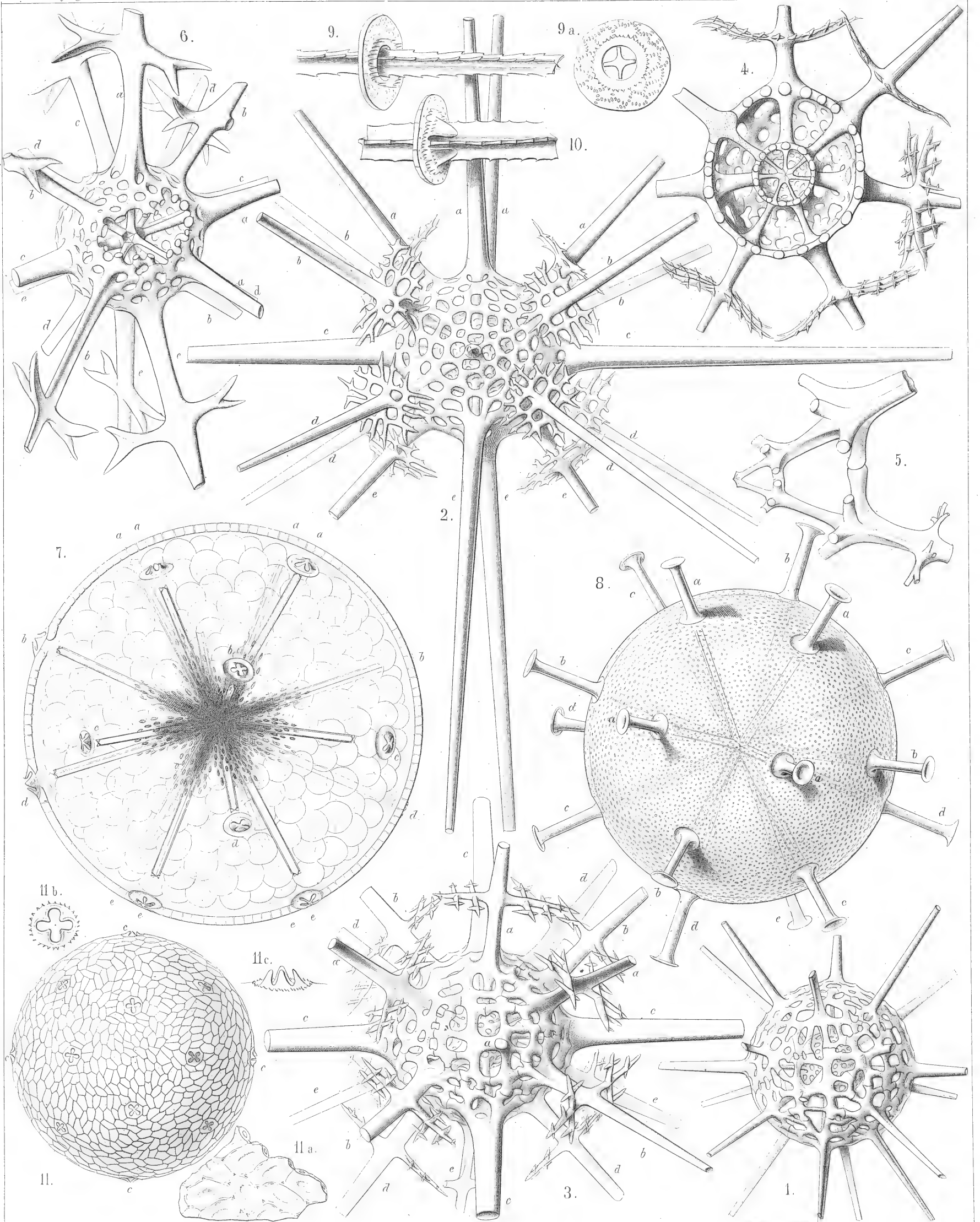
PLATE 133.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

- a.* Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

SPHÆROCAPSIDA, DORATASPIDA et PHRACTOPELTIDA.

	Diam.	Page
Fig. 1. <i>Phractopelta dorataspis</i> , n. sp.,	× 300	852
Fig. 2. <i>Dorypelta tessaraspis</i> , n. sp.,	× 300	858
Fig. 3. <i>Stauropelta cruciata</i> , n. sp.,	× 400	859
Fig. 4. <i>Pantopelta icosaspis</i> , n. sp.,	× 400	855
Meridional section through the double shell.		
Fig. 5. <i>Octopelta scutella</i> , n. sp.,	× 400	856
Proximal part of two meeting spines, isolated.		
Fig. 6. <i>Orophaspis furcata</i> , n. sp.,	× 400	818
Fig. 7. <i>Porocapsa murrayana</i> , n. sp.,	× 300	800
The central capsule is filled up by spherical vacuoles and enclosed by the porous shell; in the centre radii of small granules (nuclei ?) occur.		
Fig. 8. <i>Cannocapsa stethoscopium</i> , n. sp.,	× 300	801
The shell alone.		
Fig. 9. <i>Astrocapsa coronata</i> , n. sp.,	× 400	799
Middle part of one spine with the four aspinal holes.		
Fig. 9a. Transverse section of a radial spine, with the four surrounding aspinal holes and the neighbouring part of the shell,	× 400	
Fig. 10. <i>Astrocapsa stellata</i> , n. sp.,	× 400	799
Part of one spine, with the aspinal holes and their four triangular teeth.		
Fig. 11. <i>Cenocapsa nirvana</i> , n. sp.,	× 200	802
The entire shell, with its pavement of small plates and the twenty cruciform perspinal holes.		
Fig. 11a. A group of small ovate plates which compose the shell; in each plate a dimple with a porule,	× 400	
Fig. 11b. A cruciform perspinal hole, seen from the face,	× 400	
Fig. 11c. A cruciform perspinal hole, with its four teeth, seen in profile,	× 400	



E. Haeckel and A. Giltsch del.

E. Giltsch Jena, Lithogr.

1-5. PHRACTOPELTA, 6. OROPHASPIS, 7. POROCAPSA, 8. CANNOCAPSA, 9. 10. ASTROCAPSA, 11. CENOCAPSA.

PLATE 134.

Legion ACANTHARIA.

Order SPHÆROPHRACTA.

Family DORATASPIDA.

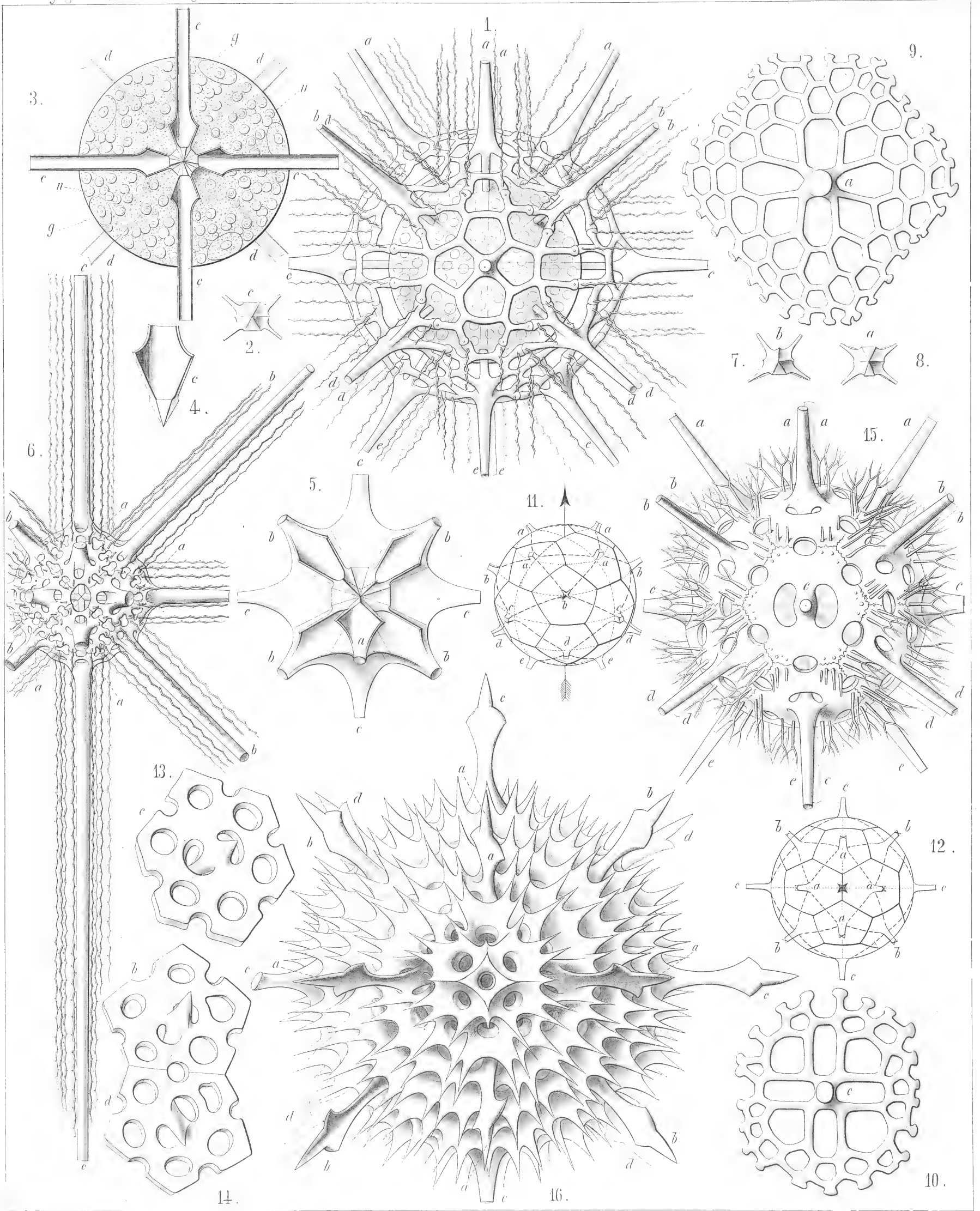
PLATE 134.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

- a.* Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

DORATASPIDA.

	Diam.	Page
Fig. 1. <i>Dodecaspis tricincta</i> , n. sp., The enclosed central capsule contains numerous spherical nuclei.	× 400	834
Fig. 2. <i>Lychnaspis minima</i> , n. sp., Six-sided basal pyramid of an equatorial spine, with the leaf-cross, seen from the centre.	× 400	841
Fig. 3. <i>Zonaspis cingulata</i> , n. sp., Equatorial section through the central capsule. <i>n</i> , nuclei; <i>g</i> , yellow bodies (intracapsular xanthellæ).	× 400	834
Fig. 4. <i>Zonaspis cingulata</i> , n. sp., Central pyramidal base of an equatorial spine, with the leaf-cross.	× 800	834
Fig. 5. <i>Stauraspis cruciata</i> , n. sp., Central union of the radial spines, three polar spines being taken off.	× 400	831
Fig. 6. <i>Lychnaspis longissima</i> , n. sp.,	× 400	841
Fig. 7. <i>Lychnaspis minima</i> , n. sp., Five-sided basal pyramid of a tropical spine, with the leaf-cross, seen from the centre.	× 400	841
Fig. 8. <i>Lychnaspis minima</i> , n. sp., Six-sided basal pyramid of a polar spine, with the leaf-cross, seen from the centre.	× 400	841
Fig. 9. <i>Icosaspis elegans</i> , n. sp., An isolated polar plate.	× 400	844
Fig. 10. <i>Icosaspis cruciata</i> , n. sp., An isolated equatorial plate.	× 400	844
Figs. 11, 12. <i>Dorataspis</i> species, Diagram of the composition of the shell of twenty plates (and also of the central union of the basal leaf-cross). Fig. 11. Oblique equatorial aspect. Fig. 12. Accurate polar aspect (compare p. 804, 805).	× 100	
Fig. 13. <i>Coscinaspis isopora</i> , n. sp., An isolated equatorial plate (with two aspinal and six coronal pores).	× 400	828
Fig. 14. <i>Coscinaspis isopora</i> , n. sp., Two isolated tropical plates (<i>b</i> , northern; <i>d</i> , southern), each with two aspinal and five coronal pores).	× 400	828
Fig. 15. <i>Diporaspis nephropora</i> , n. sp.,	× 400	816
Fig. 16. <i>Acontaspis hastata</i> , n. sp.,	× 400	829



1-5. DODECASPIS, 6-8. LYCHNASPIS, 9, 10. ICOSASPIS, 11-14. COSCINASPIS,
 15. DIPORASPIS, 16. ACONTASPIS.

PLATE 135.

Legion ACANTHARIA.

Order SPHÆROPHRACTA.

Families SPHÆROCAPSIDA et DORATASPIDA.

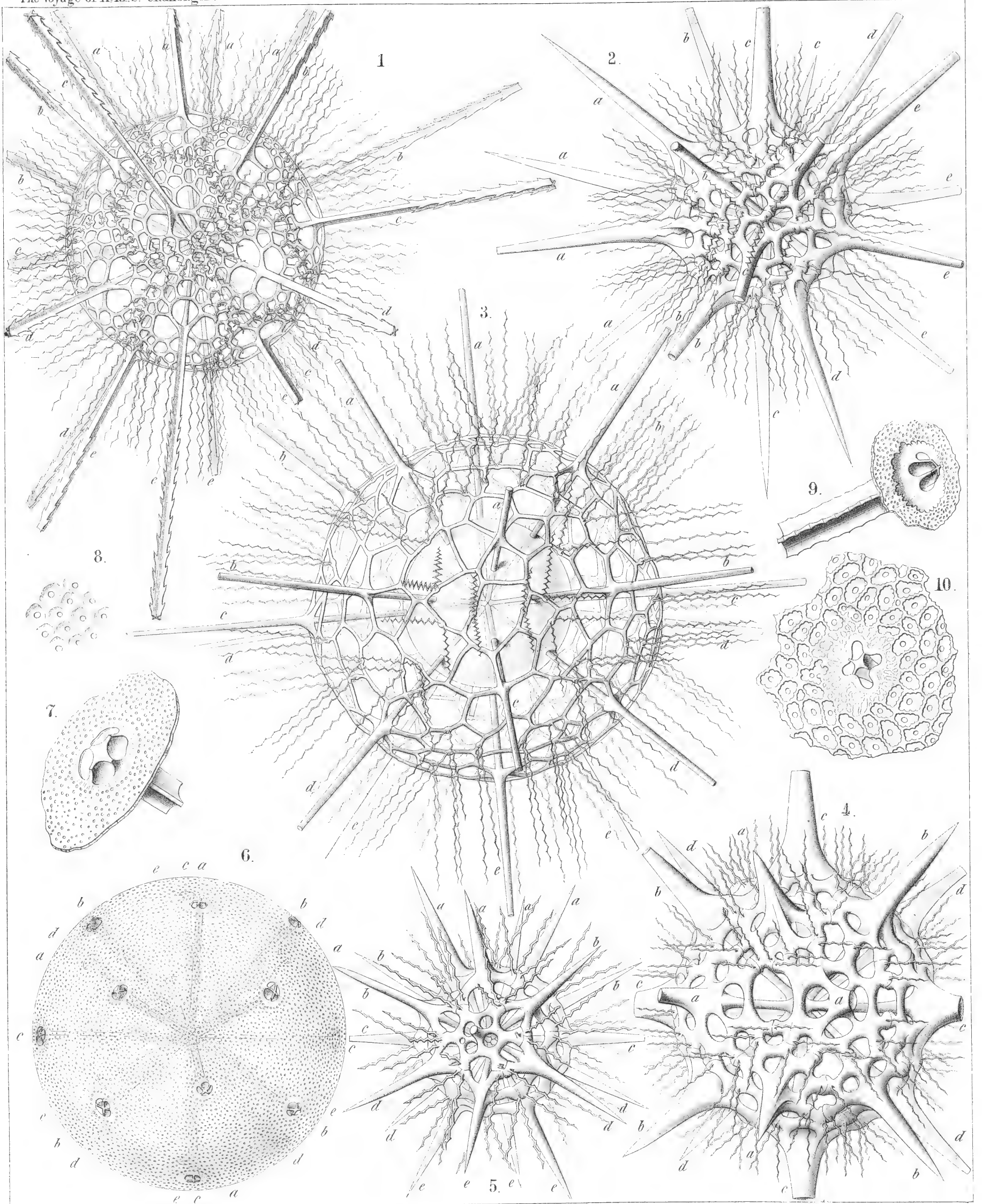
PLATE 135.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

- a.* Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

SPHÆROCAPSIDA et DORATASPIDA.

	Diam.	Page
Fig. 1. <i>Hylaspis serrulata</i> , n. sp.,	× 300	846
Fig. 2. <i>Lychnaspis undulata</i> , n. sp.,	× 400	841
Fig. 3. <i>Lychnaspis giltschii</i> , n. sp.,	× 400	839
The spherical central capsule is enclosed in the shell.		
Fig. 4. <i>Lychnaspis rottenburgii</i> , n. sp.,	× 400	841
Fig. 5. <i>Zonaspis æquatorialis</i> , n. sp.,	× 300	834
Fig. 6. <i>Sphærocapsa cruciata</i> , n. sp.,	× 150	798
The entire shell, with its twenty cruciate perspinal holes.		
Fig. 7. <i>Sphærocapsa cruciata</i> , n. sp.,	× 800	798
Insertion of one spine in the cruciate perspinal hole of the shell.		
Fig. 8. <i>Sphærocapsa quadrata</i> , n. sp.,	× 800	798
A group of pores and dimples in the shell surface.		
Fig. 9. <i>Sphærocapsa dentata</i> , n. sp.,	× 800	798
Insertion of one spine in the cruciate perspinal hole of the shell.		
Fig. 10. <i>Sphærocapsa pavimentata</i> , n. sp.,	× 800	798
Insertion of one spine in the perspinal hole of the shell, which is composed of four cruciate aspinal holes and surrounded by a group of dimples and pores.		



E. Haeckel and A. Gültch, Dal.

E. Gültch, Jena, Lithogr.

1-5. LYCHNASPIS, 6-10. SPHAEROCAPSA.

PLATE 136.

Legion ACANTHARIA.

Orders SPHÆROPHRACTA ET PRUNOPHRACTA.

Families DORATASPIDA et BELONASPIDA.

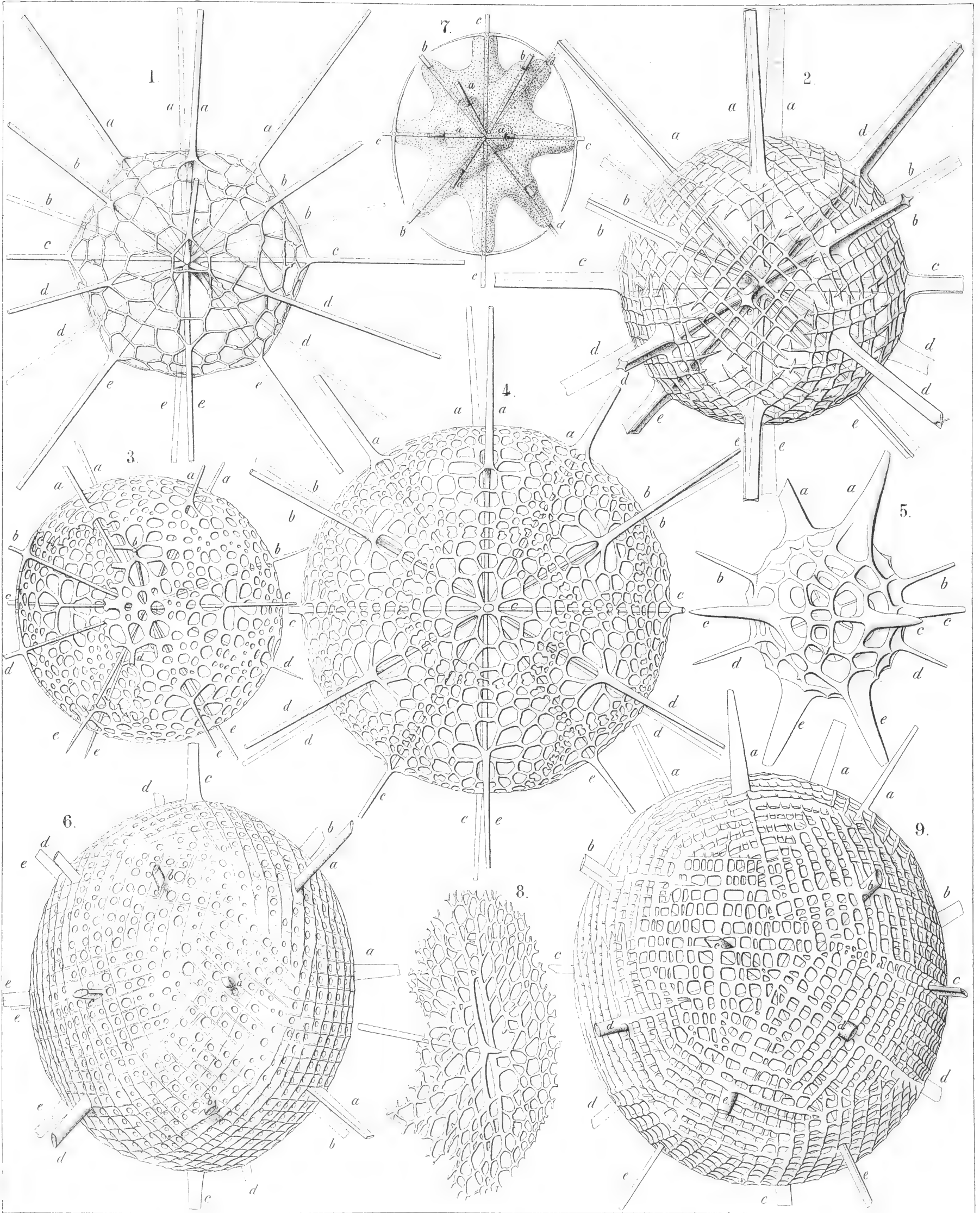
PLATE 136.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

- a.* Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

DORATASPIDA et BELONASPIDA.

	Diam.	Page
Fig. 1. <i>Tessaraspis arachnoides</i> , n. sp.,	× 300	836
Fig. 2. <i>Icosaspis tabulata</i> , n. sp.,	× 200	843
Fig. 3. <i>Icosaspis icosastaura</i> , n. sp.,	× 400	846
Fig. 4. <i>Icosaspis elegans</i> , n. sp.,	× 300	844
Fig. 5. <i>Tessaraspis concreta</i> , n. sp.,	× 400	838
Fig. 6. <i>Phatnaspis cristata</i> , n. sp.,	× 400	869
Fig. 7. <i>Phatnaspis haliommidium</i> , n. sp.,	× 200	871
Central capsule within the shell—outline.		
Fig. 8. <i>Coscinaspis polypora</i> , n. sp.,	× 300	827
A single lattice-plate of the shell.		
Fig. 9. <i>Phatnaspis lacunaria</i> , n. sp.,	× 400	869



1-5. TESSARASPIS, 6-9. PHATNASPIS.

PLATE 137.

Legion ACANTHARIA.

Order SPHÆROPHRACTA.

Family DORATASPIDA.

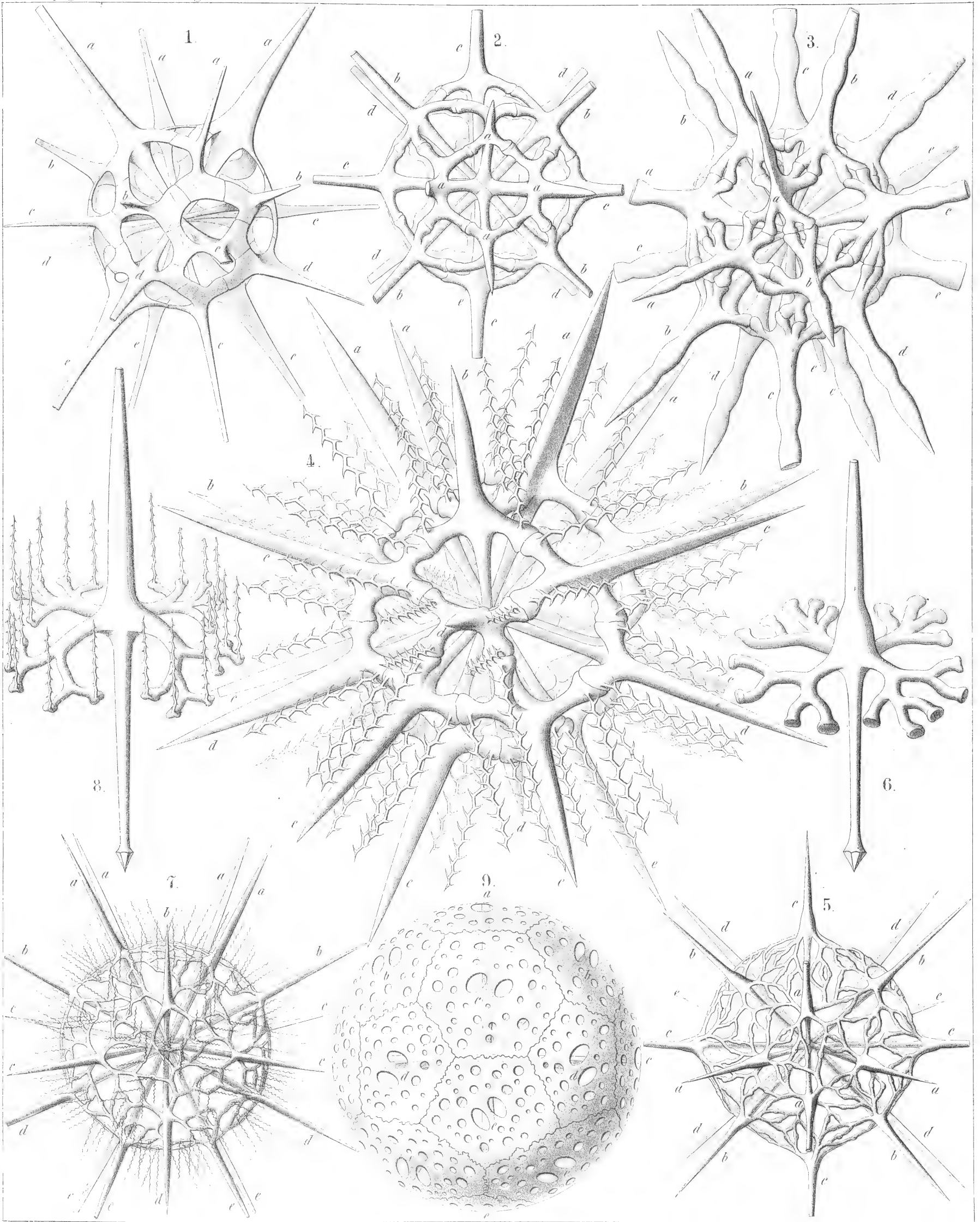
PLATE 137.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

- a.* Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

DORATASPIDA.

					Diam.	Page
Fig. 1.	<i>Phractaspis complanata</i> , n. sp.,	.	.	.	× 400	809
Fig. 2.	<i>Phractaspis prototypus</i> , n. sp.,	.	.	.	× 400	809
Fig. 3.	<i>Phractaspis constricta</i> , n. sp.,	.	.	.	× 400	810
Fig. 4.	<i>Pleuraspis horrida</i> , n. sp.,	.	.	.	× 400	811
Fig. 5.	<i>Stauraspis stauracantha</i> , n. sp.,	.	.	.	× 300	832
Fig. 6.	<i>Stauraspis stauracantha</i> , n. sp.,	.	.	.	× 600	832
	A single spine.					
Fig. 7.	<i>Echinaspis echinoides</i> , n. sp.,	.	.	.	× 300	833
Fig. 8.	<i>Echinaspis echinoides</i> , n. sp.,	.	.	.	× 800	833
	A single spine.					
Fig. 9.	<i>Coscinaspis parmipora</i> , n. sp.,	.	.	.	× 400	827



1-3. PHRACTASPIS, 4. PLEURASPIS, 5.6. STAURASPIS.
7.8. ECHINASPIS, 9. DORATASPIS.

PLATE 138.

Legion ACANTHARIA.

Order SPHÆROPHRACTA.

Family DORATASPIDA.

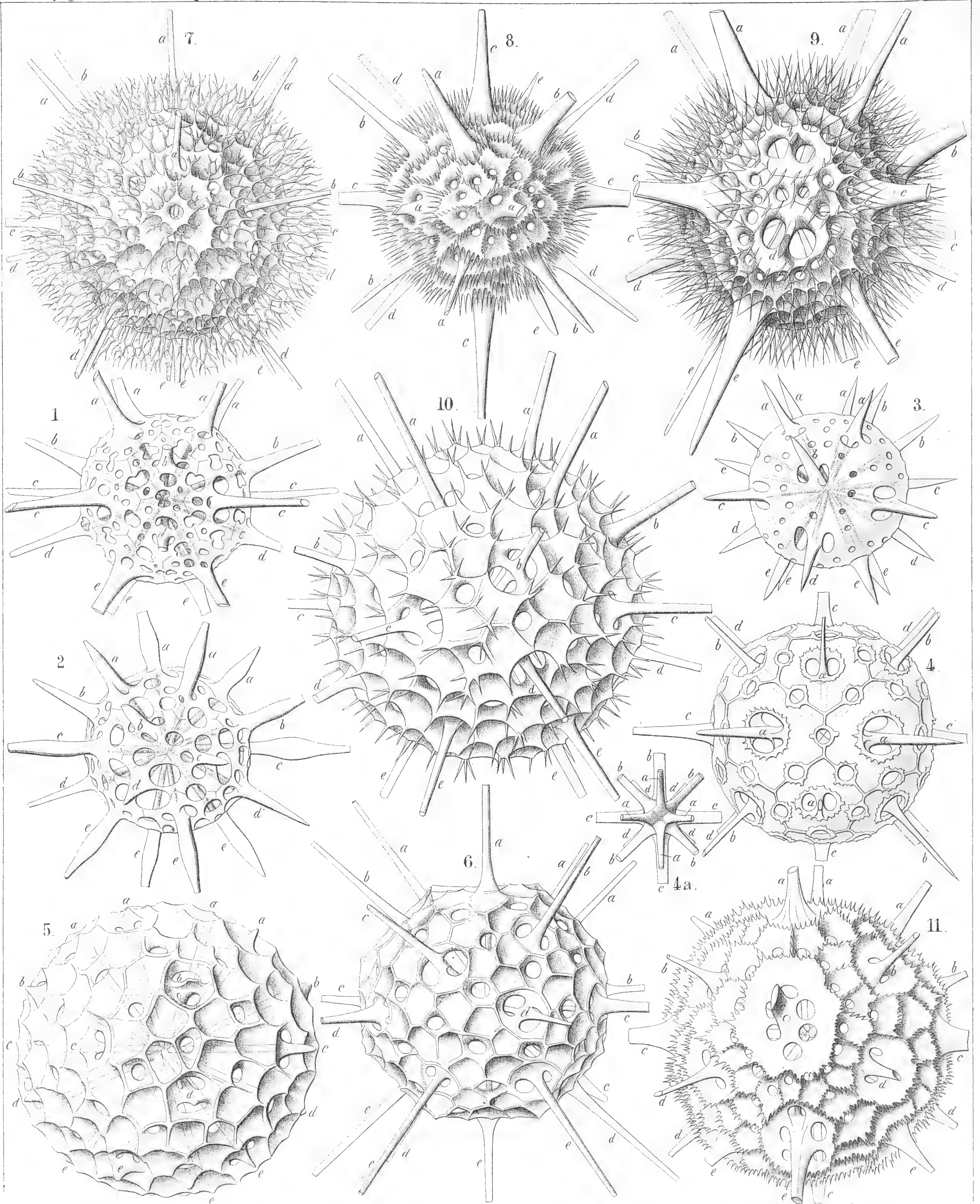
PLATE 138.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

- a.* Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

DORATASPIDA.

	Diam.	Page
Fig. 1. <i>Coscinaspis peripora</i> (vel <i>Dorataspis peripora</i>), n. sp.,	× 300	826
Fig. 2. <i>Dorataspis fusigera</i> , n. sp.,	× 400	813
Fig. 3. <i>Dorataspis micropora</i> , n. sp.,	× 300	815
Fig. 4. <i>Dorataspis typica</i> , n. sp.,	× 300	815
Fig. 4 <i>a.</i> Polar view of the central union of the twenty spines,	× 300	815
Fig. 5. <i>Ceriaspis inermis</i> , n. sp.,	× 400	821
Fig. 6. <i>Ceriaspis favosa</i> , n. sp.,	× 400	821
Fig. 7. <i>Hystrichaspis fruticata</i> , n. sp.,	× 300	825
Fig. 8. <i>Hystrichapsis pectinata</i> , n. sp.,	× 300	822
Fig. 9. <i>Hystrichaspis furcata</i> , n. sp.,	× 400	822
Fig. 10. <i>Hystrichaspis dorsata</i> , n. sp.,	× 300	823
Fig. 11. <i>Hystrichaspis cristata</i> (vel <i>Siphonaspis cristata</i> , n. sp.),	× 400	823



1-4. DORATASPIS, 5.6. CERIASPIS, 7-11. HYSTRICHASPIS.

PLATE 139.

Legion ACANTHARIA.

Order PRUNOPHRACTA.

Families BELONASPIDA et HEXALASPIDA.

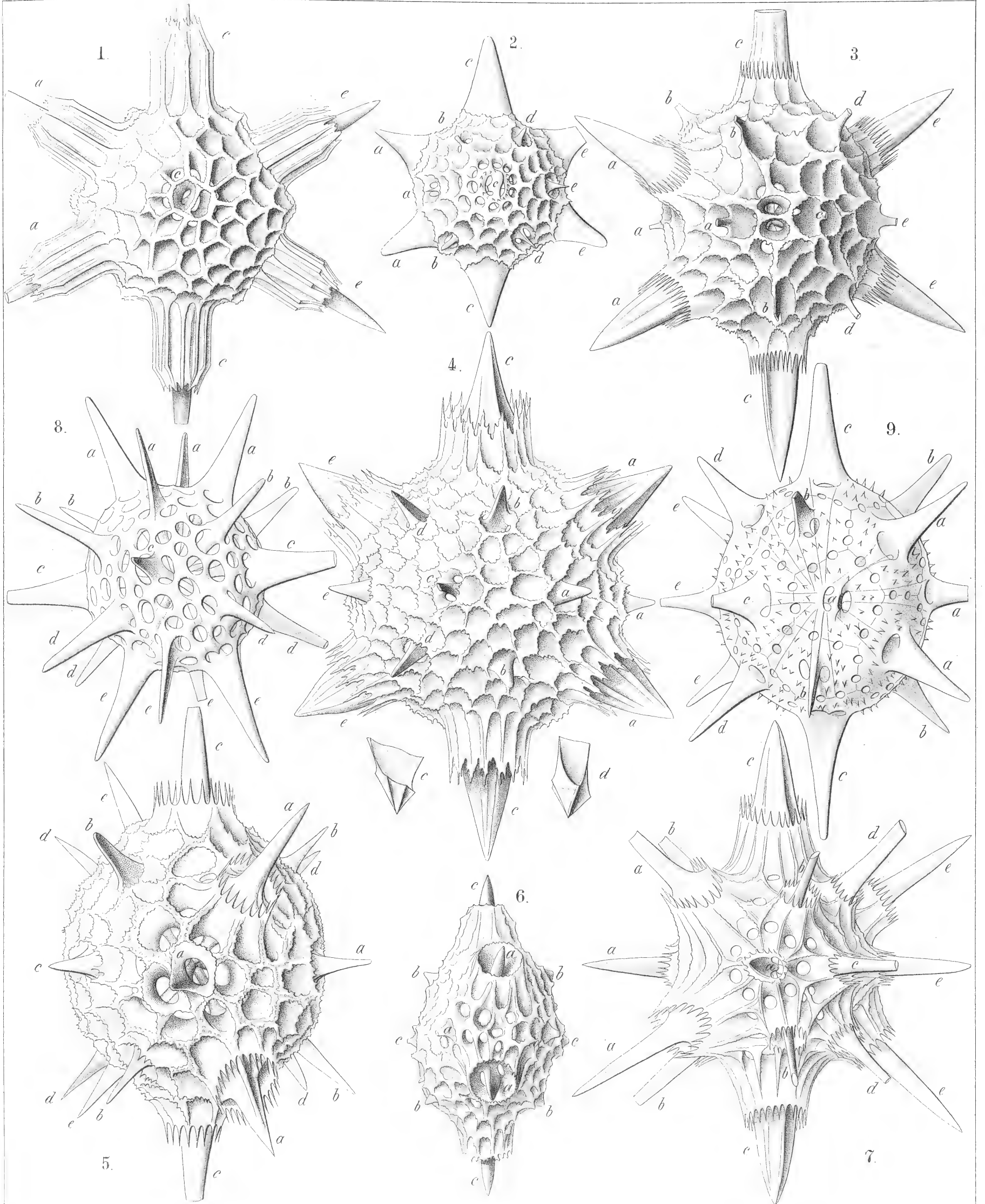
PLATE 139.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

- a.* Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

BELONASPIDA et HEXALASPIDA.

	Diam.	Page
Fig. 1. <i>Hexacolpus nivalis</i> , n. sp.,	× 300	880
Fig. 2. <i>Hexalaspis heliodiscus</i> , n. sp.,	× 300	875
Fig. 3. <i>Hexaconus ciliatus</i> , n. sp.,	× 300	876
Fig. 4. <i>Hexaconus serratus</i> , n. sp.,	× 300	877
<i>c</i> , Central base of an equatorial spine; <i>d</i> , central base of a tropical spine.		
Fig. 5. <i>Hexaconus coronatus</i> , n. sp.,	× 300	877
Fig. 6. <i>Hexaconus velatus</i> , n. sp.,	× 300	877
Marginal view of the shell.		
Fig. 7. <i>Hexaconus vaginatus</i> , n. sp.,	× 300	877
Fig. 8. <i>Thoracaspis bipennis</i> , n. sp.,	× 300	862
Fig. 9. <i>Belonaspis datura</i> , n. sp.,	× 400	863



1-7. HEXALASPIS, 8. THORACASPIS, 9. BELONASPIS.

PLATE 140.

Legion ACANTHARIA.

Order PRUNOPHRACTA.

Families BELONASPIDA, HEXALASPIDA et DIPLOCONIDA.

PLATE 140.

N.B.—The signification of the characters is the same in all the figures (compare p. 718).

- a.* Northern polar spines.
b. Northern tropical spines.
c. Equatorial spines.
d. Southern tropical spines.
e. Southern polar spines.

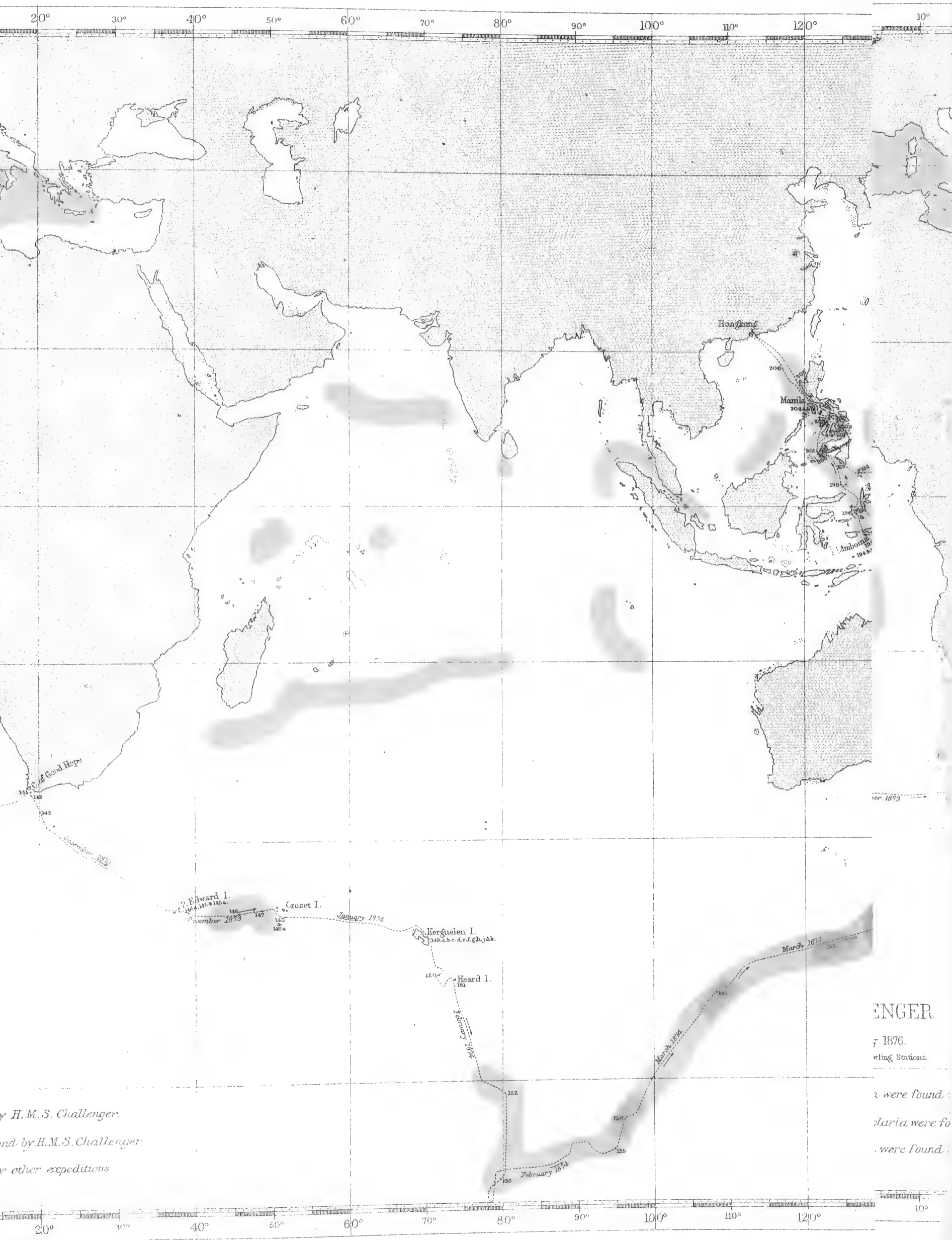
BELONASPIDA, HEXALASPIDA et DIPLOCONIDA.

	Diam.	Page
Fig. 1. <i>Diploconus amalla</i> , n. sp.,	× 300	885
Fig. 2. <i>Diploconus hexaphyllus</i> , n. sp.,	× 300	886
Fig. 3. <i>Diploconus cyathiscus</i> , n. sp.,	× 300	886
Fig. 4. <i>Diploconus cotyliscus</i> , n. sp.,	× 400	886
Polar view.		
Fig. 5. <i>Diplocolpus serratus</i> , n. sp.,	× 300	888
Fig. 6. <i>Diplocolpus cristatus</i> , n. sp.,	× 400	887
Fig. 7. <i>Diplocolpus costatus</i> , n. sp.,	× 400	887
Fig. 8. <i>Diplocolpus sulcatus</i> , n. sp.,	× 300	888
Fig. 9. <i>Diplocolpus dentatus</i> , n. sp.,	× 300	888
Meridional section through the centre of the shell.		
Fig. 10. <i>Hexacolpus infundibulum</i> , n. sp.,	× 300	881
Fig. 11. <i>Hexacolpus trypanon</i> , n. sp.,	× 300	881
Fig. 12. <i>Hexaconus echinatus</i> , n. sp.,	× 300	878
Fig. 13. <i>Coleaspis vaginata</i> , n. sp.,	× 300	866
Meridional section through the shell.		
Fig. 14. <i>Coleaspis hydrotomica</i> , n. sp.,	× 400	867
Fig. 15. <i>Hexonaspis hexapleura</i> , n. sp.,	× 400	879
A single spine with its thick apophyses.		
Fig. 16. <i>Hexonaspis hastata</i> , n. sp.,	× 400	879



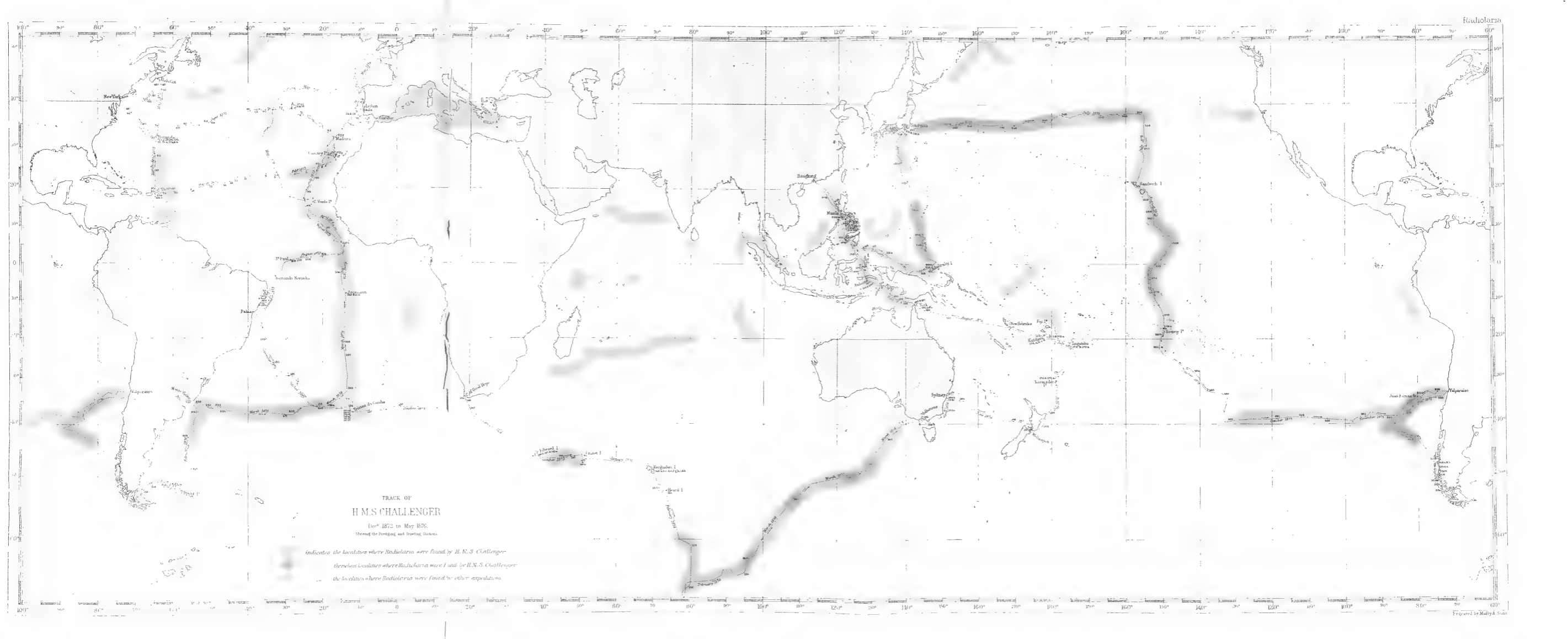
1-3. DIPLOCONUS, 4-8. DIPLOCOLPUS, 9-12. HEXACONUS,
 13. 14. COLEASPIS, 15. 16. HEXONASPIS.

Eschsch. Jena. Lithogr.



by H.M.S. Challenger.
 and by H.M.S. Challenger
 by other expeditions

CHALLENGER.
 1873-1876.
 Sounding Stations.
 where were found
 where malaria were found
 where were found



TRACK OF
H.M.S. CHALLENGER

Dec^r 1872 to May 1876.
Shaded the Porting and Towing Stages.

indicates the localities where Radiolaria were found by H.M.S. Challenger
the localities where Radiolaria were found by H.M.S. Challenger
the localities where Radiolaria were found by other expeditions

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12

901

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