

Zooplankton

Sheet 119

ORDER: TINTINNIDA

Family: Codonellopsidae

Genera:

Stenosemella, Codonellopsis

Family: Dictyocystidae

Genera:

Dictyocysta, Luminella

(By S. M. MARSHALL)

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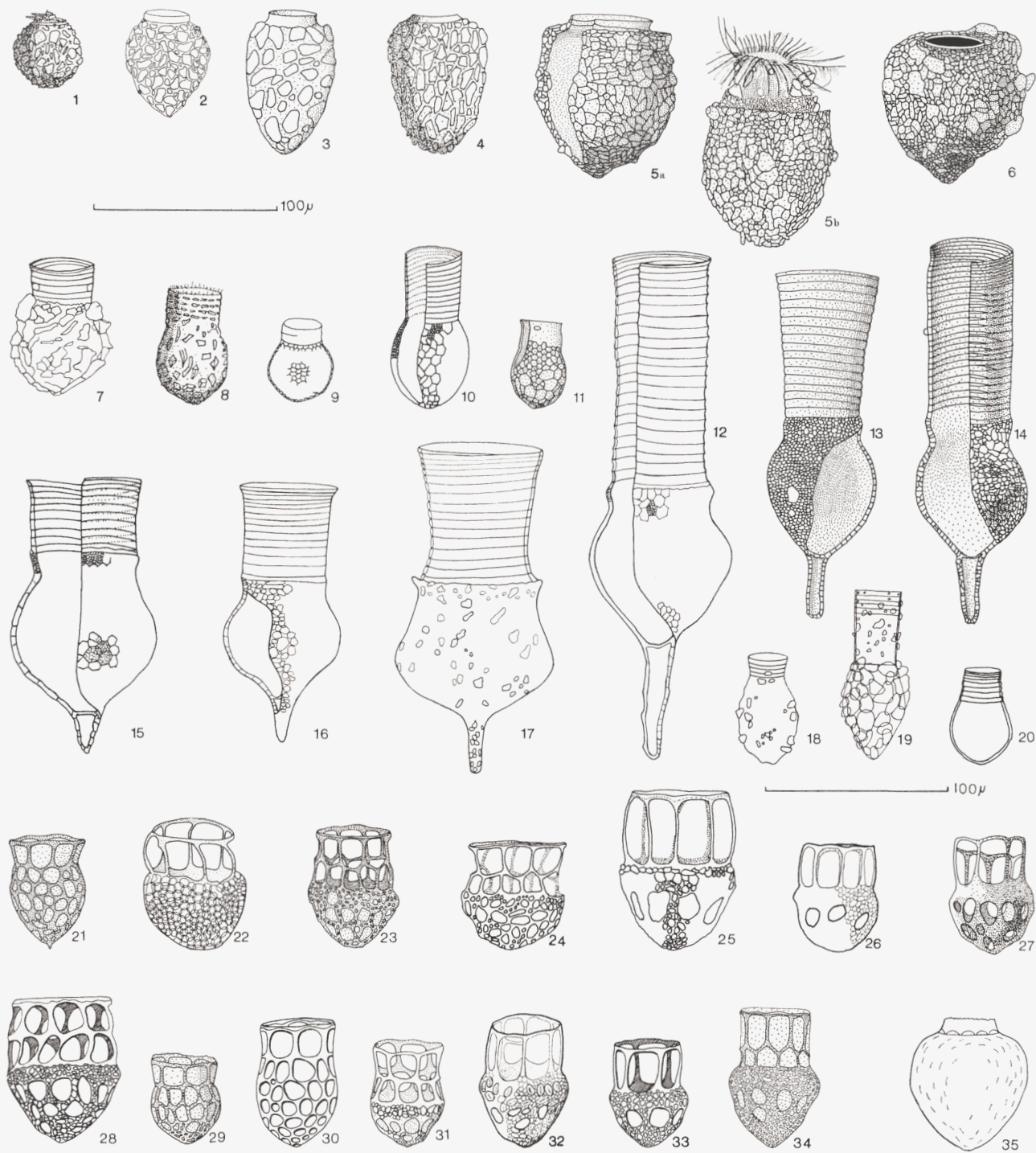


Plate IV.

	Fig.	Length in μ	Oral diam. in μ (Max. width in brackets)	Approx. ratio L/oral diam.	Distribution	Notes on lorica
Family CODONELLOPSIDAE KOFOID & CAMPBELL, 1929						Divided into rounded bowl and hyaline collar, collar with spiral or annular structure. Oral edge smooth or, rarely, toothed. Bowl short, rounded or pointed or with pedicel. Aboral end closed except in <i>Laackmanniella</i> (Antarctic genus).
Sub-family Stenosemellinae CAMPBELL & MOORE, 1954						Wall in bowl with coarse secondary and on top of that, tertiary structure. Wall of collar with primary structure only, without fenestrae.
Genus <i>Stenosemella</i> JÖRGENSEN, 1924	Plate IV					Short, wide, mouth always narrower than bowl which never has spiral structure. Collar low, sometimes with 1 or 2 spiral turns, hyaline and usually without particles. No pedicel. Wall occasionally a coarse reticulum, usually densely covered with agglomerated particles, sometimes forming a wide shoulder below collar. Shape of individual variable. Collar may be missing but not in living specimens.
<i>S. avellana</i> (MEUNIER, 1919)	1	38–43	17–18 (33–34)	2.3	7, 10	Small, oval, with greatest width of bowl at or below middle. Low collar.
<i>S. nivalis</i> (MEUNIER, 1910)	2	32–58	16–21 (20–34)	1.5–3.4 (usually 1.8–1.9)	1, 4, 7, 10, 11, 12, 13, 14	Small bowl, widest in top half, low collar. Bowl with polygonal reticulation, also encrusting particles.
<i>S. oliva</i> (MEUNIER, 1910)	3	30–54	18–25 (28–30)	1.7–3	1, 10, 13	Bowl a long oval with upstanding collar nearly $\frac{1}{4}$ oral diameter in height. Widest near mouth or about middle. HOFKER thinks <i>S. avellana</i> and <i>S. oliva</i> are synonyms but KOFOID & CAMPBELL do not agree.
<i>S. producta</i> (MEUNIER, 1919)	4	77	27 (52–53)	2.9	7, 10	Bowl a long oval with greatest diameter just below collar. Collar narrows to mouth. In this and in greater length it differs from <i>S. oliva</i> .
<i>S. steini</i> (JÖRGENSEN, 1912)	5 a, b	50–95	30–59 (45–80)	1.6–1.9	5, 6	Bowl, bluntly pointed aborally, is widest in the middle and towards the mouth has a constriction and a slight flare just below collar. Well marked gutter between edge of bowl and upright, slightly flaring collar which may have one or two spiral turns (5 a). In one of BRANDT's figures (5 b) collar is not hyaline but covered with particles like the bowl. Larger than the first 3 spp. and wider than <i>S. producta</i> .
<i>S. ventricosa</i> (CLAPARÈDE and LACHMANN, 1858)	6	60–110	35–39 (62–80)	2.1–2.4 (3.0)	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	Rotund bowl, tapering below middle to rounded aboral end. Low hyaline collar set on wide shoulders but no gutter. Bowl heavily encrusted with particles. HOFKER unites this sp. and <i>S. steini</i> .
Sub-family Codonellopsinae CAMPBELL & MOORE, 1954						Collar much longer than in Stenosemellinae, with well marked spiral fenestrae and pedicel frequent.

	Fig.	Length in μ	Oral diam. in μ (Max. width in brackets)	Approx. ratio L/oral diam.	Distribution	Notes on lorica
Genus <i>Codonellopsis</i> , JÖRGENSEN, 1924						Lorica sharply divided into collar and bowl. Collar narrower, often longer than bowl, hyaline, fine primary structure only, always with spiral or annular structure of one to many turns. Bowl round or ovoid with or without aboral point or pedicel, with primary secondary and tertiary structure, sometimes with agglomerated particles or coccoliths. Fenestrae may be present in collar or bowl. Pedicel hollow cut off from the cavity of the bowl by a cross wall. Mainly a warm water genus.
<i>C. americana</i> KOFOID & CAMPBELL, 1929	7	76-112	35-52 (48-54)	2.2-3.4	13	Collar shorter or longer than bowl, with fenestrae. Bowl round or ovoid, widest at or below middle, thickly encrusted.
<i>C. bulbulus</i> (MEUNIER, 1919)	8	52-64	30 (38-40)	1.7-2.1	10	Collar ill-defined, shorter than bowl. Bowl round to ovoid with rounded or bluntly pointed aboral end. A brackish water species.
<i>C. contracta</i> KOFOID & CAMPBELL, 1929	9	37-49	16-21 (30-31)	1.6-2.8	4, 10, 12, 13	Small, collar shorter than bowl with 4-12 spiral turns, widening towards bowl. Bowl round or ovoid. Secondary reticulations sometimes covered with coccoliths. Variable in form.
<i>C. ecaudata</i> (BRANDT, 1906)	10	95-110	35-47 (47-55)	2.8-3.1	7, 8	Collar slightly longer than bowl, cylindrical with 11-13 spiral turns and sometimes 1 or 2 fenestrae. Bowl ovate, blunt aborally. thick walled, sometimes with fenestrae.
<i>C. inornata</i> (BRANDT, 1906)	11	47-49	21 (27-28)	2.2-2.4	2, 14	Collar hyaline, no visible spiral structure, merges with ovoid bowl. Bowl with secondary reticulations.
<i>C. longa</i> KOFOID & CAMPBELL, 1929	12	235-294	55-62 (73-80)	4.3-5.1	13	Collar slightly flaring orally, longer than bowl with many spiral turns. Bowl with neck and slight contraction below collar, then pear-shaped narrowing below middle to stout pedicel, as long or longer than oral diameter. Secondary and tertiary structure well marked in bowl. Fenestrae and coccoliths may be present.
<i>C. lusitanica</i> JÖRGENSEN, 1924	19	94	23 (34)	4.1	11	Collar a little longer than bowl with a few spiral turns at oral end. Bowl narrow, bluntly pointed aborally. Particles scattered thickly on bowl, thinly on collar.
<i>C. minor</i> (BRANDT, 1906)	15	122-207	53-59 (67-80)	2.4-2.8	13	Collar a little shorter or longer than bowl, cylindrical or widening towards mouth, spiral visible throughout. Bowl with a short neck, slight nuchal constriction, then rounded, ending aborally in short, blunt, pedicel. Bowl reticulate, no particles.

	Fig.	Length in μ	Oral diam. in μ (Max. width in brackets)	Approx. ratio L/oral diam.	Distribution	Notes on lorica
<i>C. orthoceros</i> (HAECKEL, 1873)	13	167–250	54–62 (62–75)	2.9–3.3	5, 11, 13, 14, 15	Collar varies much in length, widens to mouth. Bowl ovoid or globular with neck below collar and stout pedicel of variable length. Bowl often covered with coccoliths.
<i>C. ovata</i> JÖRGENSEN, 1924	18	46–68	15 (35)	3.0	4	Small ovoid. Collar short with few spiral turns. Bowl widest below middle, covered with particles.
<i>C. parva</i> KOFOID & CAMPBELL, 1929	16	145–187	56–76 (74–88)	2.7–3.1	13	Collar rather shorter than bowl, mouth slightly everted. Bowl with short neck below collar, globose, tapering below to short stout pedicel.
<i>C. pusilla</i> (CLEVE, 1900)	20	48–59	15–19 (33–34)	2.6–3.2	1, 7, 10, 12, 13, 14	Small. Collar shorter than bowl with 5–13 spiral turns. Bowl ovoid, rounded or pointed aborally with regular hexagonal reticulation. Occasional fenestrae.
<i>C. silvae</i> n. sp. (SILVA, 1950)	17	207	71 (85)	2.8	11	Collar about $\frac{1}{2}$ total length, narrowed towards lower end. Bowl almost pentagonal, very short neck and nuchal constriction, greatest width aborally, then narrowing sharply to short pedicel. Described from one specimen (SILVA, 1950). Resembles <i>C. gaussi</i> except for the latter's, longer collar and lack of nuchal constriction.
<i>C. tessellata</i> (BRANDT, 1906)	14	215–315	55–75 (63–77)	3.9–4.5	15	Collar long, sometimes narrowest in middle, mouth often slightly everted. Bowl ovoid with or without nuchal constriction. Short neck and stout pedicel. Collar longer than in <i>C. orthoceros</i> .
Family DICTYOCYSTIDAE HAECKEL, 1873						This family is sometimes considered to be close to the Tintinnidae. Lorica divided into collar and bowl. Bowl cup-shaped or ovoid, rounded or pointed aborally. Collar cylindrical, usually with one or more sets of vertical beams enclosing oval or squarish windows, open, or closed by hyaline pane. Distinction between open and closed windows not specific. Collar may have small semi-circular windows (<i>Luminella</i>). Collar hyaline, bowl reticulated, with or without fenestrae, often with coccoliths.
Genus <i>Dictyocysta</i> EHRENBERG, 1854						Collar cylindrical with beams surrounding large windows in one to several rows. Bowl cup-shaped or conical, aboral end rounded or pointed. Wall with primary, secondary and tertiary reticulation, sometimes with included coccoliths, often with fenestrae.
<i>D. dilatata</i> BRANDT, 1906	21	58–70	41–50	1.4–1.7	10, 11, 12, 13, 14	Collar slightly flaring about $\frac{1}{4}$ total length with 8 squarish windows. Bowl a truncated oval, ending aborally in small point, covered with fenestrae in 7 rows, decreasing in size aborally.

	Fig.	Length in μ	Oral diam. in μ (Max. width in brackets)	Approx. ratio L/oral diam.	Distribution	Notes on lorica
<i>D. duplex</i> BRANDT, 1906	22	53-75	32-42	1.6-2.3	10, 11, 13, 15	Collar $\frac{1}{3}$ - $\frac{1}{2}$ total length, 7-9 tall rectangular windows, beams sometimes bowed outwards. Bowl short, almost globose, contracting to collar. Wall with peculiar duplex structure of overlapping rings, probably caused by coccoliths. Fenestrae sometimes present, variable in pattern.
<i>D. elegans</i> EHRENBURG, 1854	23	63-72	40-50	1.5-1.8	3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14	Collar tall, more than $\frac{1}{2}$ total length, with 2 rows of windows, upper 8 larger than lower 10, squarish to pentagonal. Bowl short, contracting to collar, rounded aborally with 3 rings of fenestrae.
<i>D. fundlandica</i> EHRENBURG, 1854	24	56-60	40-53	1.1-1.4	14	Collar as long as bowl, with two rows of windows, 7 squarish above and 9 polygonal below. Bowl hemispherical without shoulder, with one row of fenestrae about middle and irregular rows above and below.
<i>D. grandis</i> BRANDT, 1906	25	88-95	53-58	1.6-1.7	8	Collar as long or longer than bowl, with 8 windows longer than broad, sometimes with cross beams. Bowl wider than long with 1, sometimes 2 rows of fenestrae round middle. Surface reticulated.
<i>D. lata</i> KOFOID & CAMPBELL, 1929	26	57-73	38-54	1.2-1.6	11	Collar less than $\frac{1}{2}$ total length with 8 tall rectangular windows. Vertical beams and oral rim delicate and hyaline. Bowl more or less hemispherical with bulge below collar, 1 ring of 6-9 large fenestrae and a few smaller scattered in reticulation of bowl.
<i>D. lepida</i> EHRENBURG, 1854	27	52-71	39-45	1.3-1.8	7, 8, 11, 12, 14	Collar less than $\frac{1}{2}$ total length, with 5-8 tall rectangular windows. Oral margin undulating. Bowl short, almost globose, bluntly pointed aborally. Equatorial ring of large fenestrae and one or more rings of small below. Surface of bowl reticulated.
<i>D. magna</i> KOFOID & CAMPBELL, 1929	28	75-95	47-88	1.4-1.7	13, 15	Collar less than $\frac{1}{2}$ total length, contracting slightly to mouth which has a distinct hyaline rim and 2 rows of windows, upper 7-8 rounded quadrangular, lower 8-9 similar but smaller. Bowl a wide convex cone, bluntly pointed aborally. Wall has 12 large equatorial fenestrae and 2 or more rows of smaller below.
<i>D. minor</i> JÖRGENSEN, 1924	29	45-53	30-35	1.4-1.7	7, 11, 12, 13	Collar slightly flaring with 6-8 squarish windows, often broader than high. Oral margin undulating often with short spines. Bowl rather globose, bluntly pointed aborally. Fenestrae covering whole bowl, large and fairly regular in upper rows, small and irregular aborally.

	Fig.	Length in μ	Oral diam. in μ (Max. width in brackets)	Approx. ratio L/oral diam.	Distribution	Notes on lorica
<i>D. mitra</i> HAECKEL, 1873	30	62-68	36-39	1.3-2.0	8, 12, 13, 15	Collar cylindrical or slightly flaring with 1 row of 6-7 squarish rounded windows. Oral margin has a hyaline rim. Little distinction between collar and bowl. Bowl a truncated ovoid, pointed aborally, wholly covered by rings of fenestrae, large and most regular in ring next collar, decreasing in size aborally.
<i>D. mülleri</i> IMHOF, 1886	31	52-61	34-40	1.5-1.7	11, 13	Collar longer than bowl with slight constriction between 2 rows of windows, 6 squarish in upper and 8-10 smaller more rounded in lower row. Bowl more or less hemispherical, bluntly pointed aborally. One sub-equatorial ring of 9-12 large fenestrae, sometimes 1 or more rings of smaller above this, and a row or scattered fenestrae aborally. Bowl reticulated.
<i>D. nidulus</i> KOFOID & CAMPBELL, 1929	32	66-75	39-45	1.6-1.7	10, 11, 12, 15	Collar cylindrical, less than $\frac{1}{2}$ total length, one row of tall rectangular windows, sometimes with cross bar. Bowl short, conical, contracting to collar, bluntly pointed aborally, with irregular ring of coccoliths about middle, zone of 10-12 fenestrae below.
<i>D. reticulata</i> KOFOID & CAMPBELL, 1929	33	55-80	36-46	1.3-1.6	10, 11, 12, 13	Collar cylindrical nearly $\frac{1}{2}$ total length, 1 row 6-7 tall rectangular windows. Bowl convex-conical, contracting to collar, bluntly pointed aborally. One sub-equatorial ring 6-7 large fenestrae, otherwise bowl reticulated often with included coccoliths.
<i>D. speciosa</i> KOFOID & CAMPBELL, 1929	34	66-80	41-51	1.3-1.8	3, 5, 7, 10, 11, 12, 13, 14	Collar cylindrical, about $\frac{1}{2}$ total length, with 2 rows of windows, 8 more or less rectangular in upper, 9 pentagonal or irregular in lower row. Bowl contracting to collar, otherwise convex-conical, bluntly pointed aborally, with 1 zone of 8 large fenestrae about middle and another of smaller below. Bowl very uniformly reticulated.
Genus <i>Luminella</i> KOFOID & CAMPBELL, 1939						Collar very short, hyaline, with no beams, but with small semi-circular windows at base. Bowl globose or cup-shaped, contracting to collar, bluntly pointed or hemispherical aborally. Surface covered with particles.
<i>L. punctata</i> (WAILES, 1925)	35	60-75	29-32 (55-61)	2.6	11	Collar low, hyaline, with 12 semi-circular windows at base. Bowl globose strongly contracting to collar and bluntly pointed aborally. Bowl with fine concentric striae.

(For introduction to Plankton Sheets 117-127, Key to numbers used in the tables for distribution, and Sources of illustrations, please refer to Sheet No. 117, pp. 2 and 11-12).