

CONSEIL INTERNATIONAL POUR L'EXPLORATION DE LA MER

Zooplankton

Sheet 116

(To replace Sheet No. 6)

OSTRACODA II – MYODOCOPA

SUB-ORDER: HALOCYPRIFORMES

Families: Thaumatoocypridae, Halocypridae

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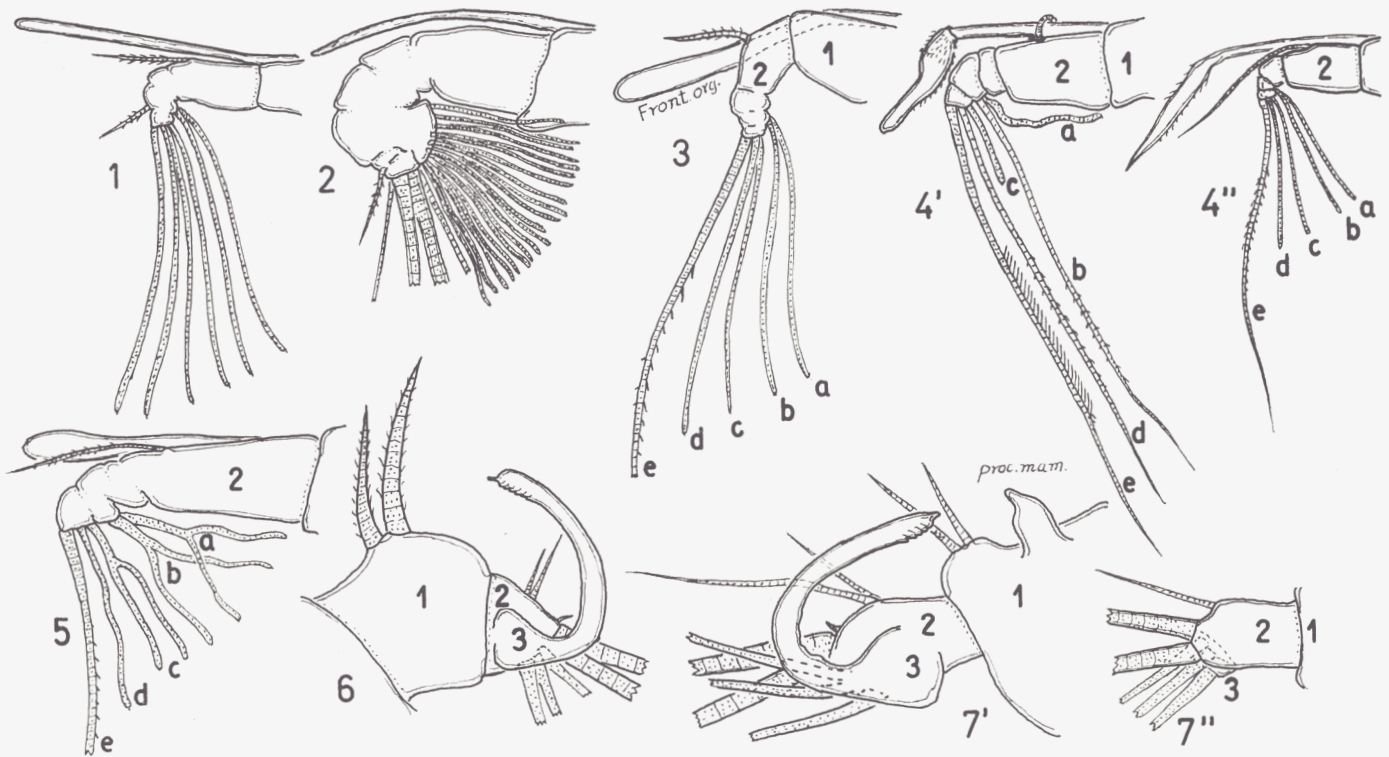


Figure A. Contour drawings (not to the same scale) of 1st antenna with frontal organ (1-5) and endopodite of 2nd antenna (6-7) to show characters used for identification. 1 - *Archiconchoecia cucullata* ♀. 2 - *Euconchoecia chierchiai* ♂. 3 - *Fellia bicornis* ♂. 4' - *Conchoecia rhynchena* ♂. 4'' - *C. lophiura* ♀. 5 - *C. curta* ♀. 6 - *Fellia bicornis* ♂. 7' - *C. bispinosa* ♂. 7'' - same ♀.

OSTRACODA II – MYODOCOPA

SUB-ORDER HALOCYPRIFORMES

Description: Shell more or less ovoid, dorsal margin straight or slightly concave, ventral arched or straight, rarely slightly concave, posterior margin arched or straight. Rostrum and incisure usually well developed, but in a few species weak or almost missing. Shell surface smooth, striated or reticulate. A shoulder-vault often present on either side of the antero-dorsal shell fusion. Frontal organ short or elongate. Lateral eyes missing. 1st antenna with long bristles and sensory filaments on distal part; stem and bristles more developed in ♂ than in ♀. 2nd antenna a powerful swimming organ. 5th and 6th limbs with an epipodial, respiratory part with about 15 thin plumose bristles, and a backwards pointing, elongate exopodite. 7th limb small, finger-shaped with 2 long, terminal bristles. Male copulatory limb unpaired. Furcal lamellae each with 6-9 pairs of claws. Size 0.5-7.0 mm. Planktonic in the surface or in deeper waters. All oceans.

KEY TO FAMILIES AND SUB-FAMILIES

1. 1st antenna long, straight; furcal lamellae each with 2 long claws followed by about 7 short, spine-like claws; shell without larger glands *Thaumatoocypridae*
(only one genus, with one species (♀ only) known, East Indian region).
1. 1st antenna downwards bent distally; furcal lamellae each with one long, slender distal claw and 6-7 smaller claws decreasing gradually in size; shell with conspicuous compound marginal glands *Halocypridae*
 - a. 1st antenna distally with only 5 long or medium-long bristles (Figure A, 3 and 4) b
 - aa. 1st antenna distally with 6 or more (up to 250) long median bristles or filaments c
 - b. 1st joint of endopodite of 2nd antenna with a conical process, processus mamillaris (Figure A, 7) *Conchoecinae*
 - bb. This joint without processus mamillaris (Figure A, 6) *Halocyprinae*
 - c. 1st antenna disto-ventrally with 6 equally long, tube-shaped, sensory bristles (Figure A, 1) *Archiconchoecinae*
 - cc. 1st antenna disto-ventrally with about 20-250 long, tube-shaped, sensory bristles or filaments (Figure A, 2) *Euconchoecinae*

Family HALOCYPRIDAE

Shell with 2 or more compound glands along the margins; these glands are a pair of unsymmetrical glands in different places on the two valves or/and symmetrical glands, in the same place on both valves, the former open always laterally; the latter laterally on, or near to the postero-ventral shell corner, or medially. Distal part of 1st antenna ventrally bent, 2nd joint with one dorsal bristle (rarely missing), distal joints with from 5 to about 250 downwards pointing longer bristles or filaments. Endopodite of male 2nd antenna with a hook-shaped clasping organ (Figure A, 6 and 7,1). Mandible with a large triangular process anteriorly on the coxale endite. Male copulatory limb unpaired. First pair of claws on the furcal lamellae long and slender and placed a little way up on the anterior margin, the others along the ventero-posterior margin. Sexual dimorphism common in shell, 1st and 2nd antenna and 6th limb.

Sub-family ARCHICONCHOECINAE

Shell elongate. First antenna similar in both sexes, with 6 equally long, sensory bristles disto-ventrally. First joint of endopodite of 2nd antenna without processus mamillaris. 6th limb similar in both sexes. Frontal organ long and slender. The unsymmetrical glands open on both valves a little below the dorso-posterior corner. Only one genus, *Archiconchoecia*. One species *A. cucullata* (G. S. Brady), with a well-developed dorso-posterior spine on right valve, distinct oblique shell striation, a serrate posterior margin, and unsymmetric glands opening on two pegs (Figure B, 1). Size 1.8–2.7 mm. Atlantic to 55° N; bathypelagic (500–2500 m).

Sub-family EUCONCHOECINAE

Shell elongate with or without dorso-posterior spine; both unsymmetrical glands open a little below the dorso-posterior corners. 1st antenna either similar in both sexes or in the male with longer distal bristles; disto-ventrally in both sexes with 20–250 long sensory filaments. 2nd antenna endopodite without processus mamillaris.

1. *Bathyconchoecia* G. B. Deevey

Shell thick, scaly, rounded rectangular to boat-shaped, no dorso-posterior shell spine; frontal organ short, bud-shaped; 1st antenna with 50–250 filaments, the bristles of about the same lengths in both sexes; male clasping organ on both 2nd antennae. 6th limb similar in both sexes. One species *B. darcythompsoni* (Th. Scott) Figure B, 2 reported from NW of Scotland; both branches of rostrum bifid, dorso-posterior right shell corner forms a pointed process. Size 4–5 mm.

2. *Euconchoecia* G. W. Müller

Shell thin, smooth, boat-shaped with dorso-posterior spine; frontal organ long; 1st antenna with only 20–25 filaments, in the male two of the terminal bristles are very long; male 2nd antenna with hook-shaped clasping organ only on right limb. Male 6th limb with 3 long, plumose bristles, in ♀ with shorter, slender claws. One species *E. chierchiae* G. W. Müller (Figure B, 3) with the frontal organ not overreaching the tip of 1st antenna. Atlantic to 40–45° N, in the surface. Size 1.1–1.4 mm.

Sub-family HALOCYPRINAE

Shell short, height 2/3–4/5 of length, more elongate in ♂ than in ♀; dorso-posterior shell corners without spine. 1st antenna similar in both sexes, distally with 4 longer sensory bristles (a–d) and one long, stronger e-bristle (Figure A, 3). 2nd antenna endopodite without processus mamillaris. Basale of mandible very short. Frontal organ long, stout, bent downwards.

KEY TO THE THREE GENERA

- | | |
|--|--------------------|
| 1. Valves of shell with dorso-lateral spines | <i>Fellia</i> |
| 1. Valves of shell without lateral spines | 2 |
| 2. Rostrum small, only a low bulge | <i>Halocypris</i> |
| 2. Rostrum well-developed | <i>Halocyprina</i> |

1. *Halocyprina* C. Claus

Shell ovoid in ♂, almost circular in ♀ (except for the nearly straight dorsal margin), valves without spines or processes; ♂ rostrum large, broad, forwards directed, ♀ small, pointed, downwards bent. The 2 bristles on 1st endopodite joint of 2nd antenna short and weak. Exopodite on 5th and 6th limbs rather short and stout. Only one species *H. globosa* C. Claus (Figure B, 4). Size 2–3 mm. Atlantic to 62° N, from surface down to 3000 m.

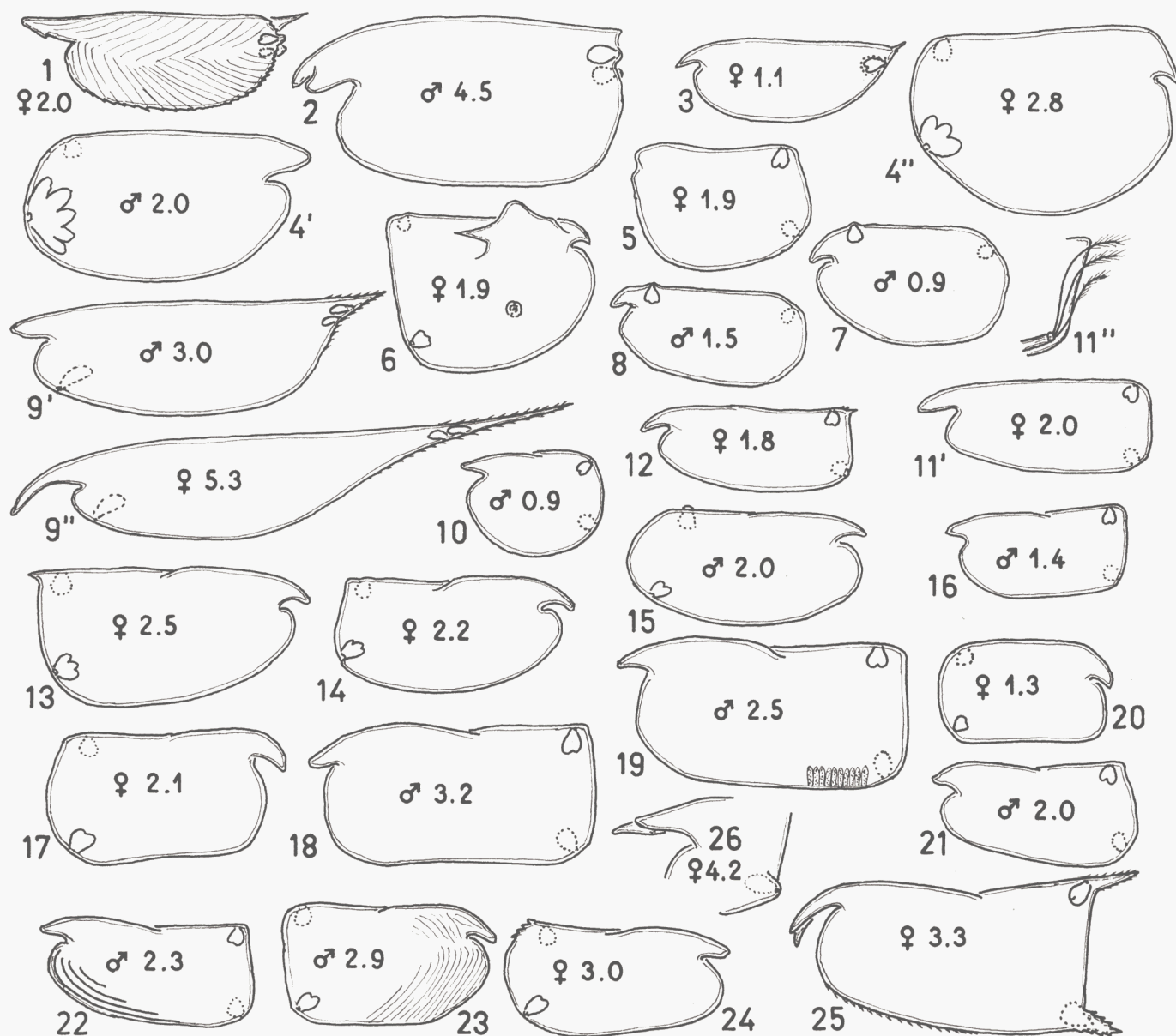


Figure B. Countour drawings of shells, only approximately to the same size-scale, mean adult length in mm and sex inserted. The surface pattern of the shell only indicated for species where it is especially characteristic, and only in part. The place of the unsymmetric glands shown, that on the valve opposite to the one figured indicated by a dotted line. The Arabic figures 1–26 refer to the serial numbers after the species name in the key.

2. *Halocypris* J. D. Dana

Shell ovoid, more elongate in ♂ than in ♀; rostrum and incisure only present as a low bulging of the anterior margin; other main characters as in *Halocyprina*. Only one species, *H. brevirostris* (J. D. Dana), Figure B, 5. Size 1–2 mm. In the Atlantic north to 60° N (Vavra), W Atlantic, and to 50° NE Atlantic; from surface down to 3000 m.

3. *Fellia* Erik M. Poulsen

Shell short and high; shoulder-vault well-developed with a large, backwards pointing spine; dorsal and posterior margins straight, ventral margin strongly arched; rostrum small, pointed, bent downwards. The 2 bristles on 1st endopodite joint of 2nd antenna long and stout. Exopodite on 5th and 6th limbs rather long and slender. Two species. One, *F. bicornis* (G. W. Müller), Figure B, 6, in the N Atlantic; shoulder-vault very prominent with a dorsal rounded process anteriorly of the backwards pointing spine; a rounded verruca ventrally on the valves. Size 1.5–2.0 mm. Atlantic to 45° N, 500–3000 m.

Sub-family CONCHOECINAE

Shell highly varying; rostrum and incisure well-developed. First antenna with 5 distal bristles (Figure A, 4): ♀ 4 bare sensory bristles (a–d) and one longer bristle (e) with hairs or spines, ♂ 2 bare sensory bristles (a and c), and 3 longer bristles (b, d and e) with spines or hairs (best developed on the e-bristle); the 2nd joint in the ♂ with a ring-shaped, short bristle, which encircles the long, slender frontal organ linking it to the stem, in the ♀ this bristle is simple, longer or shorter, in a few species missing. The frontal organ in most species subdivided by sutures into 2 or 3 joints, more distinctly in ♂ than in ♀; the distal joint, the capitulum, in most species, wider than the proximal part and as a rule provided with short hairs or spines. 1st joint of 2nd antenna with processus mamillaris (Figure A, 7'). The 3 terminal bristles of the 6th limb in the ♂ very long, curved, overreaching the dorso-posterior shell margin, and provided distally with long hairs (Figure B, 11''), in the ♀ much shorter, like slender claws. Each furcal lamella with 8 claws; the dorso-posterior fusion of the lamellae, in many species, with an unpaired short bristle. Pelagic or bathypelagic. About 80–90 species known; 20 are noted from the N Atlantic.

KEY TO THE SPECIES OF *CONCHOECIA* FROM THE NORTH ATLANTIC

(The Arabic bold figures refer to Figure B)

1. One or 3 of the sensory bristles of 1st antenna deeply furcate	<i>C. curta</i>	10
1. All bristles simple		2
2. Right unsymmetric gland opens on the antero-ventral shell margin	<i>C. daphnoides</i>	9
2. This gland opens on or near the postero-ventral curve of the shell		3
3. Left unsymmetric gland opens in the anterior third of the dorsal margin		4
3. This gland opens near the dorso-posterior corner		5
4. Shell high, height 58–60 % of length	<i>C. teretivalvata</i>	7
4. Shell lower, height 49–50 % of length	<i>C. skogsbergi</i>	8
5. Shell surface strongly reticulated, left dorso-posterior corner with a longer, right with a shorter spine		6
5. These two characters not combined		7
6. Rostrum long, slender, bent downwards	<i>C. imbricata</i>	25
6. Rostrum shorter, more straight	<i>C. ametra</i>	26
7. No lateral corner glands		8
7. With lateral corner glands		15
8. 2nd joint of endopodite of 2nd antenna with in ♂ one long and one short bristle, in ♀ only the short		9
8. This joint without lateral bristles in ♀, in ♂ with 2 short bristles		10
9. Both shell valves with a short dorso-posterior spine	<i>C. bispinosa</i>	13
9. With shell valves without spine	<i>C. haddoni</i>	14
10. Dorso-posterior shell corner with spine(s)	<i>C. elegans</i>	12
10. No spine on dorso-posterior shell corners		11
11. Posterior margin very strongly arched	<i>C. obtusata</i>	15
11. Posterior margin straight or only slightly arched		12
12. Shell elongate, height less than half length		13
12. Shell higher, height more than half length		14
13. Shell tapering anteriorly	<i>C. inermis</i>	11
13. Shell height the same anteriorly and posteriorly	<i>C. spinirostris</i>	16
14. Length 1.4–2.2 mm, mandible with epipodial bristle	<i>C. magna</i>	17
14. Length 3–4 mm, mandible without epipodial bristle	<i>C. macrocheira</i>	18
15. Left postero-ventral shell margin with a dense row of high, narrow gland cells	<i>C. lophura</i>	19
15. This row of glands missing		16
16. Postero-dorsal corner of shell with 3–4 teeth	<i>C. borealis</i>	24
16. Postero-dorsal corner of shell smooth		17
17. Greatest height posteriorly		18
17. Same height posteriorly and anteriorly		19
18. Shell with strong striation along antero-ventral margin	<i>C. rhynchena</i>	22
18. Shell with weak oblique striation anteriorly	<i>C. loricata</i>	21
19. Length 1.5–1.8 mm, weak concentric striation on shell	<i>C. hyalophyllum</i>	20
19. Length 2.7–3.0 mm, distinct oblique striation antero-ventrally	<i>G. mollis</i>	23

LIST OF SPECIES OF CONCHOECIA

(Characters used in the Key or shown in Figure B as a rule not repeated)

- C. teretivalvata* E. J. Iles. Shell with weak striation. Capitulum of ♂ frontal organ abruptly dorsally bent, with spines only ventrally. Furcal dorsal bristle present. Size 0.8–0.9 mm. Atlantic north to 45° N.
- C. skogsbergi* E. J. Iles. Similar to *C. teretivalvata*, but shell more elongate. Capitulum of ♂ smoothly dorsally bent, with spines both ventrally and dorsally. Furcal dorsal bristle present. Size 1.1–1.2 mm. Atlantic north to 45° N.
- C. daphnoides* (C. Claus). Shell surface diagonally striated or reticulated. Furca without dorsal bristle. Size 3–6 mm. Atlantic north to about 60° N.
- C. curta* Lubbock. Shell surface with concentric reticulation. 1st antenna ♀ with the a-, b- and c-bristle furcate, ♂ only the a-bristle. Furca without dorsal bristle. Size 0.8–1.0 mm. Atlantic north to 44° N.
- C. inermis* (C. Claus). Shell longitudinally striated along ventral margin. ♀ capitulum short, broad distally pointed. ♂ e-bristle of 1st antenna with a posterior row of long, thin spines. ♀ e-bristle proximally and anteriorly with a row of long, thin, curly hairs. Furca without dorsal bristle. Size 2–2.3 mm. Atlantic north to 43° N.
- C. elegans* G. O. Sars. Stem of ♀ 1st antenna only 1/3 of length of frontal organ, no dorsal bristle on 2nd joint; e-bristle of ♂ 1st antenna with an oblong plate of coalesced hairs; ♀ e-bristle without curly hairs. Furca without dorsal bristle. Size 1.6–2.3 mm. Widely distributed, common in N Atlantic to 80° N.
- C. bispinosa* Claus. The left dorso-posterior spine smaller than the right. Furca without dorsal bristle. Size 2–3 mm. All oceans, in the Atlantic to 47° N.
- C. haddoni* Brady & Norman. Posterior shell margin slightly S-shaped. Furca without dorsal bristle. Size 2.5–3.0 mm. Atlantic to 60° N.
- C. obtusata* G. O. Sars. Shell with a weak concentric striation. Furca with dorsal bristle. Size 1.2–1.8 mm. Mainly the boreal and sub-Arctic Atlantic.
- C. spinirostris* C. Claus. The e-bristle of the ♂ 1st antenna with a distal series of short, broad teeth and proximally rather slender spines. ♀ capitulum finely pointed, often its tip with 1–2 fine spines. Female 1st antenna without dorsal bristle on 2nd joint. Furca without dorsal bristle. Size 1.1–1.2 mm. All oceans, in Atlantic to 46° N.
- C. magna* C. Claus. Shell with more or less distinct concentric striation. ♀ frontal organ long, slender, bent, with a pointed capitulum, in the the capitulum broad with a rounded tip. Longer bristle of 1st endopodite joint of ♂ 2nd antenna with 3–4 long hairs. Furca with dorsal bristle. Size 1.5–2.2 mm. All oceans, in Atlantic to 46° N.
- C. macrocheira* G. W. Müller. 3–4 conspicuous larger gland cells in shell below incisure. Longer bristle of 1st endopodite joint of 2nd antenna almost as long as the width of the joint, richly provided with hairs, long in ♂, short in ♀. Furca with dorsal bristle. Size 3–4 mm. All oceans, in Atlantic to 46° N.
- C. hyalophyllum* C. Claus. Shell with weak striation and only anteriorly. Lateral corner glands small, often hardly discernible. Size 1.5–1.8 mm. All oceans, in Atlantic to 46° N.
- C. loricata*. Right lateral corner gland placed on, not dorsally of right unsymmetrical gland. Antero-ventral part of shell with a backwards sloping partly reticulate striation. Furca with dorsal bristle. Size 1.7–2.0 mm. Widely distributed, in Atlantic to 45° N.
- C. rhynchena* G. W. Müller. The striation along the antero-ventral margin consists of a few, 3–4, strong ridges of which the most ventral reaches almost the postero-ventral corner. Dorso-posterior part of shell with weak, oblique, partly cross-wise striation. Tip of capitulum in both sexes bent upwards. Furca with dorsal bristle. Size 2.3–2.8 mm. Warmer seas, in Atlantic to 45° N.
- C. mollis* G. W. Müller. Shell thin. Capitulum of frontal organ long and slender in both sexes. Furca without dorsal bristle. Size 3–3.5 mm. Warmer seas, in Atlantic to 46° N.

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