AMPHIPODA: GAMMARIDEA

25 January 2005

COROPHIIDAE - TA, TR – The taxonomy of *Corophium* genera and species (Chapman 88:368:fig3A, 1) relies on male and female characters. The peduncle of the second antennae of most species is enormous, telson fleshy and entire, outer lobes of lower lip entire, article 5 of pereopods 3-6 short and reniform, urosomites 1-3 fused or separate and similar in length, uropod 3 with 1 or two rami which bear multiple articulate setae or spines, gnathopod 2 article 5 is fused over broad suture to article 5 and lined posteriorly with long, plumose setae that form a basket used for filter feeding.

1. Urosomites separate (Chapman 88:368Fig3A&D, **2**) 2
- Urosomites fused (Shoe 47:55Fig6H, **3a**, Shoe34:357, Fig1q, **3b**) (test by gently cleaning dorsal urosome with fine needle or brush if unclear) 12
2. Posterior edge of gnathopod 2 dactyl smooth (Chapman & Cole 03:fig4B, **4**), excretory spout peduncle article 2 of antenna 2 more than half as long as article 1 (Chapman & Cole 03:fig3B, **5**) 3
- Posterior edge of gnathopod 2 dactyl toothed (Shoemaker 1949a:67Fig1h, **6a**, Shoemaker 1949a:73Fig4e, **6b**), excretory spout of peduncle article 2 of antenna 2 less than half as long as article 1(Shoe 49a:73Fig4J, **7**) 6
3. Male 4
- Female 5
4. Mature male antenna 2 article 4 with a single denticle on medial edge and variably pointed or truncated distal tooth (Chapman and Cole 03:fig3B&distal F, **8a & 8b**) inner edge of antenna 1 article 1 with medial tooth (Chapman and Cole 03:fig3A, **9a**,Chapman and Cole 03:fig2C, **9b**), ventral projections on pereonites 2-7 (Chapman&Cole 03Fig2A, **10**) . . . . . *Corophium heteroceratum*
- Mature male with multiple denticles lining ventral medial edges articles 4 & 5 of antenna 2 and always bearing a pointed distal tooth on article 4 (Chapman 1988:370Fig5A, **11**) inner edge of article 1 of antenna 1 without tooth (Chapman88:368Fig3B, **12**), without ventral projections on pereonites 2-7 . . . . . *Corophium alienense*
5. Mature female with a stout spine but not a stout distal tooth on distal medial edge of antenna 2 article 4 (Chapman&Cole 03:Fig3H, **13**) . . . . . *Corophium heteroceratum*
- Mature female with stout distal tooth on antenna 2 peduncle article 4 (Chapman 88Fig5B, **14**) . . . . . *Corophium alienense*
6. Males and females: rostrum broadly rounded or flat (Shoemaker 1949a:77FigA, **15a**, Barnard 1954:159,fig75g, **15b**); antenna 2 with a single prominent distal tooth on article 4 (Shoemaker 1949:77Fig 6D, **16**) . . . . . *Corophium spinicorne*
- Males and females: rostrum pointed or narrowly rounded (Shoemaker 1949a:67Fig1i, **17a**; Shoemaker 1949a:73Fig4A, **17b**); antenna 2 article 4 of males with one prominent and one accessory distal ventral tooth (Shoe49a:67fig1E, **18a & b**) and females antenna 2 article 4 with single distal spines but without distal teeth (Shoe 49a:67Fig1L, **19a**; Shoe 49a:73J, **19b**) 7
7. Mature male 8
- Mature female 10
8. Antenna 2 setose, peduncle article 3 half as long as wide (Shoemaker 1949a:73Fig4C, **20**). . . . . *Americorophium brevis*
- Antenna 2 not setose, article 3 longer than wide (Shoemaker 1949a:67Fig1E, **18a**, Shoemaker 1949a:69Fig2D, **21**) 9

9 Article 1 of antenna 1 dorsally less than half as wide as long (Shoemaker 1949a:69Fig2B, **22**) and with ventral tooth (Shoemaker 1949a:69Fig2C, **23**) . . *Americorophium stimpsoni*

\- Antenna 1 peduncle article 1 broadly expanded laterally (Shoemaker 1949a:67Fig1C, **24**) and without ventral tooth (Shoemaker 1949a:67Fig1D, **25**) . . *Americorophium salmonis*

10 Antenna 2, setose, peduncle article 3 with three ventral spines and article 4 with two pairs of ventral spines (Shoemaker 1949a:73Fig4J, **7**). . . . . *Americorophium brevis*

\- Antenna 2 not setose, peduncle articles 3 and 4 each with two ventral spines (Shoemaker 1949a:67Fig1L, **19a,** Shoemaker 1949a69I, **19b**) (females of these two species may be indistinguishable) 11

11. Posterior edge of mature female pereopod 5, article 2 faintly concave posteriorly and with sharp posterolateral edge (Chapman 2002a, **26**) . . . . . *Americorophium salmonis*

\- Posterior edge of mature female pereopod 5, article 2 straight or slightly convex posteriorly and with rounded posterolateral edge (Chapman 2002b, **27**) . . . . . *Americorophium stimpsoni*

12. First uropods inserted ventrally and urosome with dorsal lateral ridge (Shoemaker 1934c:fig1q, **3b**, Hoover&Bousfield 1997:122fig33 whole body urosome only, **28**) . . . 13

\- First uropods inserted laterally and urosome without dorsal lateral ridge (Shoemaker 1947:55Fig6h, **3a**) 14

13. Male and female antenna 2 peduncle article 4 with one large and two small distal medial teeth (Shoemaker 1934c359Fig2d, **29**) and lined on ventral medial edge with 4-5 stout spines (Shoemaker 1934c359Fig2a, **30**); uropod 2 approximately 1.5 times the length of uropod 3 (Hoover&Bousfield 1997:122,fig33 dorsal urosome, **28**); gnathopod 2 dactyl with three teeth (Shoemaker 1934c359Fig2g, **31**) . . . . . *Monocorophium californianum*

\- Male antenna 2 peduncle article 4 with two large distal medial teeth and two or less ventromedial spines (Shoemaker 1934c357,Fig1d, **32**); gnathopod 2 dactyl with two teeth (Shoemaker 1934c:357,fig1n, **33**) and female peduncle antenna 2 without spines on inner ventral edge of article 5 or a distal medial tooth on article 4 (Shoemaker 1934c:357,fig1i, **34**); uropods 2 and 3 lengths equal (Shoemaker 934c359Fig2qg, **3b**) . . . . . *Laticorophium baconi*

Tooth is not

14. Male, with large distal tooth on peduncle article 4 of antenna 2 (Shoemaker 1947:56fig7A, **35**) or female with large distal tooth on antenna 2 peduncle article 2.(Shoemaker 1949a:81, fig 8d, **36**) 17

Female, peduncle article 4 of antenna 2 without ~~large distal tooth and with stout ventral~~ spines (Stephensen 1932:495fig3A2, **37**, Shoemaker 1947:51fig3D, **38**, & Shoemaker 1947:55fig6K **39**) 15

15. Antenna 2 peduncle article 4 lined ventrally with single stout spines in tandem (Stephensen 1932:495fig3A2, **37**) . . . . . *Monocorophium uenoi*

\- Antenna 2 peduncle article 4 lined ventrally with pairs of stout spines (Shoemaker 1947:51fig3D, **38**, & Shoemaker 1947:55fig6K **39**) 16

16. Antenna 2 peduncle article 4 with three ventral pairs of stout setae and article 5 with two single spines (Shoemaker 1947:51fig3D, **38**) . . . . . *Monocorophium acherusicum & Crassicorophium bonelli*

\- Antenna 2 article 4 with two ventral pairs of stout setae and article 5 with a single spine (Shoemaker 1947:55fig6K **39**) . . . . . *Monocorophium insidiosum*

17. Antenna 2 article four lined with ventral triads or pairs of spines and with distal medial tooth (Shoemaker 1949a:81fig8D, **36**) . . . . . *Monocorophium (oaklandense) insidiosum*

\- Antenna 2 peduncle article 4 without ventral spines (Shoemaker 1947:56,FIG7A, **35**) . 18

18. Rostrum short, not extending past ocular lobes (Shoemaker 1947:50fig2B, **40**) . . . . . *Monocorophium acherusicum*

\- Rostrum long, extending past ocular lobes (Shoemaker 1947:55fig6A, **41**) 19

19. Antenna 1 peduncle article 1 with medial protrusion (Shoemaker 1947:56fig7E, **42**) .... *Monocorophium insidiosum*

\- Medial side of article 1 of antenna 1 without protrusion (Stephensen 1932:495 Fig3A1male, **43**) ..... *Monocorophium uenoi*

Americorophium brevis (Shoemaker, 1949), Prince William Sound, Alaska to San Francisco Bay, California, subtidal to 35 m.

Americorophium salmonis (Stimpson, 1857), South Alaska to Humboldt Bay, California, on muddy bottoms, in high salinity estuaries to freshwater.

Americorophium spinicorne (Stimpson, 1857), Vancouver: Oceanic side of Vancouver Island to Port Simpson, British Columbia, San Francisco Bay, estuary and freshwater, intertidal to 20 m. (Introduced to upper Putah Creek, California and upper Columbia River (Lester & Clark 2002. Western N. American Naturalist 62(2):230-233.)

Americorophium stimpsoni (Shoemaker, 1941), Historically, Mendocino County, California, south to Santa Cruz Island, estuary and freshwater, intertidal –10 m. (Occurrence outside of San Francisco Bay not established in recent decades.)

Corophium alienense Chapman 1988, San Francsico Bay, Tomales Bay, Los Angles Harbor, introduced from Asia, probably China, intertidal-3 m.

Corophium heteroceratum Yu, 1938, San Francsico Bay, and Los Angles Harbor, CA, introduced from Yellow Sea, estuarine and freshwater to 10 m.

* *Crassicorophium bonelli* (Milne Edwards 1830), Cosmopolitan marine, transferred by humans, Pacific, Arctic, North Atlantic, 0-18 m, (*Monocorophium* and *C. bonelli* and *M. acherusicum* distinguished by variable, unreliable G2 dactyl tooth counts, distinctions between *C. bonelli* and *M. acherusicum* are unclear.)

Laticorophium baconi (Shoemaker, 1934), Bering Sea to Peru, on benthos off coastal shelf in California, 0-55 m.

Monocorophium acherusicum (Costa 1857), Cosmopolitan marine, transferred by humans, Pacific - Alaska to California, Arctic to Atlantic - Chesapeake Bay, Gulf of Mexico - Florida, 0 m.

Monocorophium californianum (Shoemaker, 1934), Southern British Columbia to Monterey Bay, central California, marine rocky and sandy bottoms to 100m. (Extremely rare.)

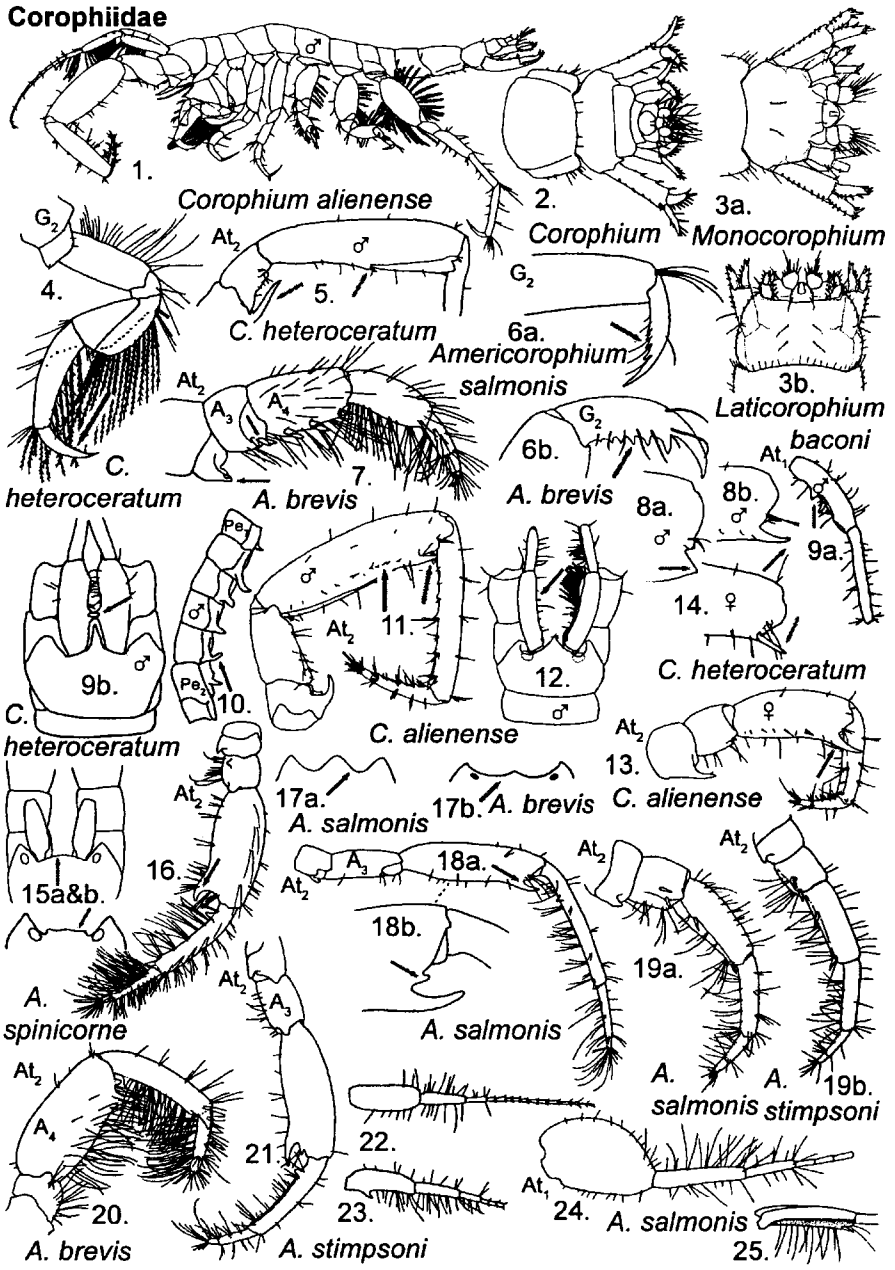
* *Monocorophium carlottensis* Bousfield & Hoover, 1997, Prince William Sound and southeastern Alaska to the Queen Charlotte Islands and the north-central mainland coast of British Columbia, low intertidal to 10 m.

Monocorophium insidiosum (Crawford, 1937), Cosmopolitan marine, transferred by humans, Pacific - British Columbia to California, Atlantic - St. Lawrence Gulf and Virginian, Florida?, 0 m.

Monocorophium oaklandense (Shoemaker, 1949), Mendocino: Eureka, California, south to at least San Diego Bay, (*M. oaklandense* occasionally show up in lab cultures of M. insidiosum. They are possible triploid intersexes and an almost certain synonym of *M. insidiosum*.)

Monocorophium uenoi (Stephensen, 1932), Sea of Japan, South China Sea, transferred by humans to California, intertidal to 24 m.

Corophiidae Plate 1



Corophiidae Plate 2