



Key to the species of Augaptilidae Haloptilus occurring in the China Seas

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REVIEW-TAXONOMIC INDEX

Key to the Species of Augaptilidae *Haloptilus* Occurring in the China Seas

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Haloptilus acutifrons(4a/21a/f), *austini*(12a/f) (male unknown), *chierchiaie*(7a/18a/f), *fertilis*(22a/f) (female unknown), *fons*(7b/f) (male unknown), *longicirrus*(14a/f) (male unknown), *longicornis*(13a/16a/f), *mucronatus*(5a/15a/f), *ornatus*(9a/22b/f), *oxycephalus*(3a/22b/f), *paralongicirrus*(14b/18b/f), *plumosus*(11a/f) (male unknown), *spsiniceps*(5b/19a/f), *tenuis*(11b/22c/f) (**Haloptilus bulliceps* Is excluded from this key because only copepodid IV has been reported and illustrated (Farran, 1926; Rose, 1933; Saraladevi, 1977; Lian & Qian, 1984; Zhang, Zhao et al., 2010; Lian et al., 2018)).

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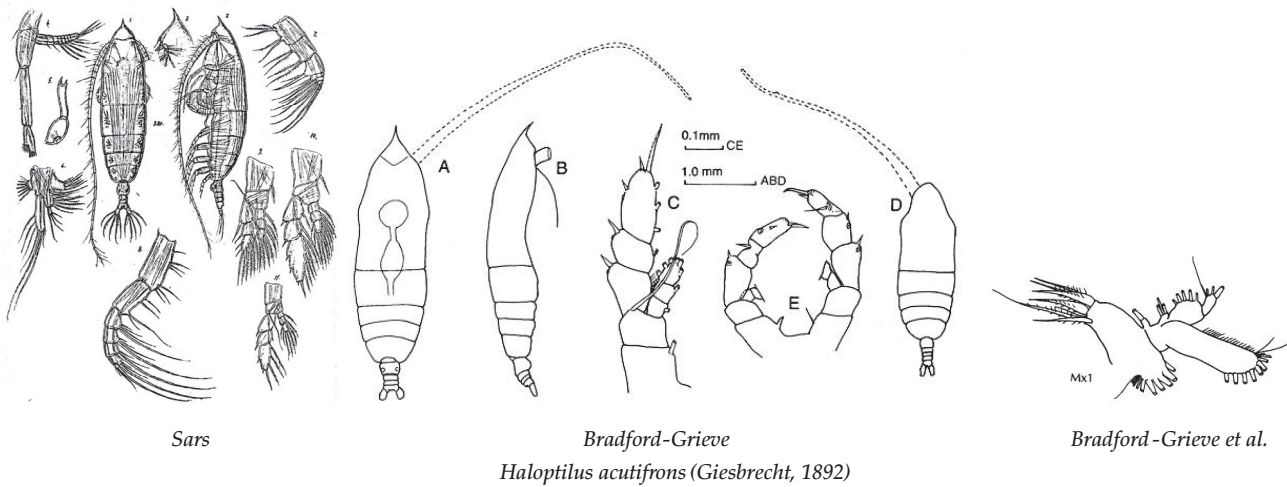
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E-mail address: ctshih@mail.ntou.edu.tw (C.-t. Shih).



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Haloptilus acutifrons (Giesbrecht, 1892) (Size: female, 2.50–4.66 mm; male, 2.00–3.19 mm)



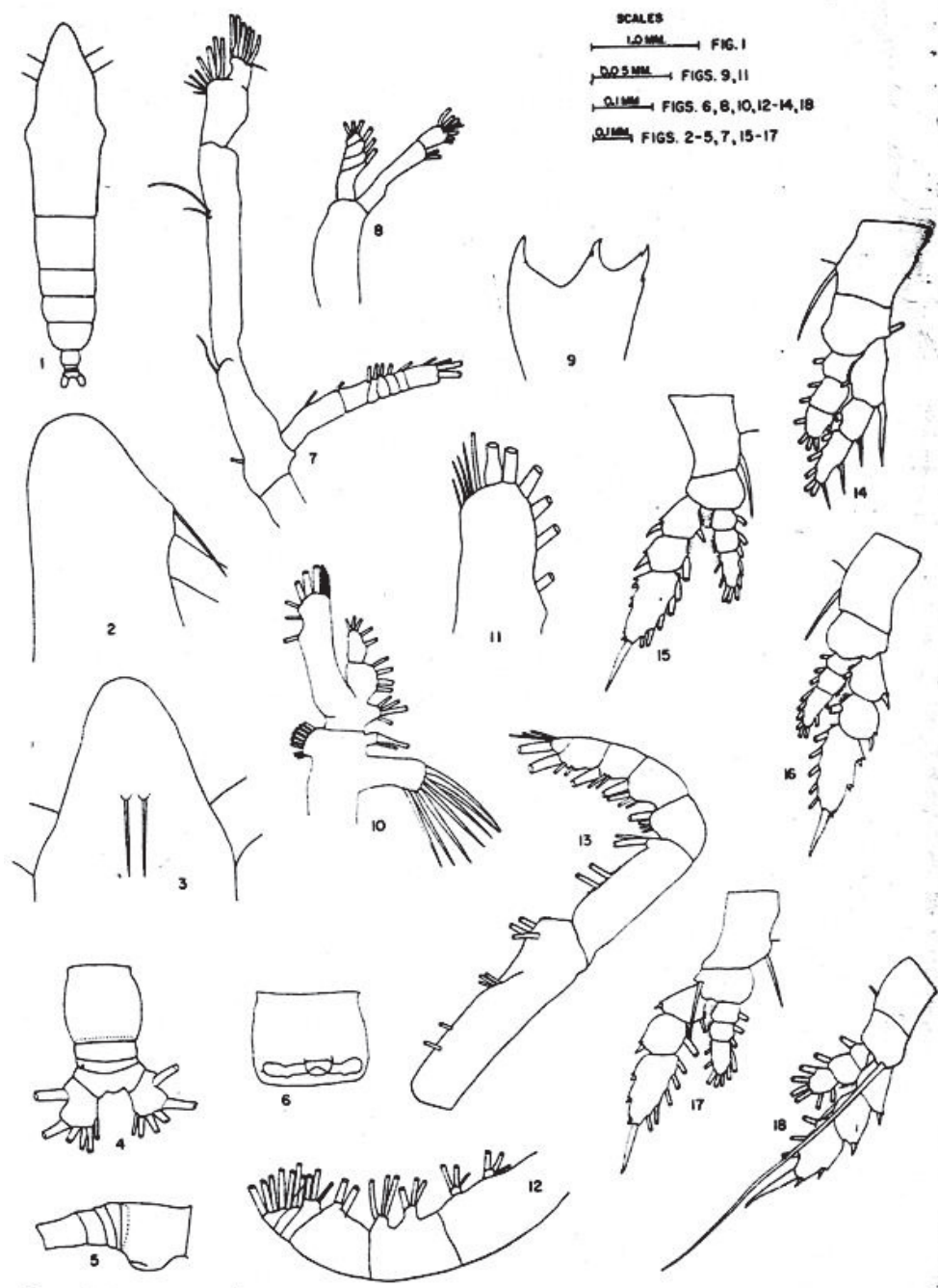
Sars, 1925: pl. 74. *Haloptilus acutifrons* (Giesbrecht, 1892), Female. 1/2. habitus (dorsal/lateral); 3. forehead (lateral); 4. antenna; 5. mandible; 6. maxillule; 7. maxilla; 8. maxilliped; 9. leg 1; 10. leg 3; 11. leg 5.

Bradford-Grieve, 1999: Fig. 30. Female. A/B. habitus (dorsal/lateral); C. leg 5. Male. D. habitus (dorsal); E. leg 5 (posterior, endopod incomplete).

Bradford-Grieve et al., 1999: Fig. 7.265. Female. maxillule.

Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. [Accessed May 23, 2021].

Haloptilus austini Grice, 1959 (Size: female, 3.06–3.33 mm; male, unknown)

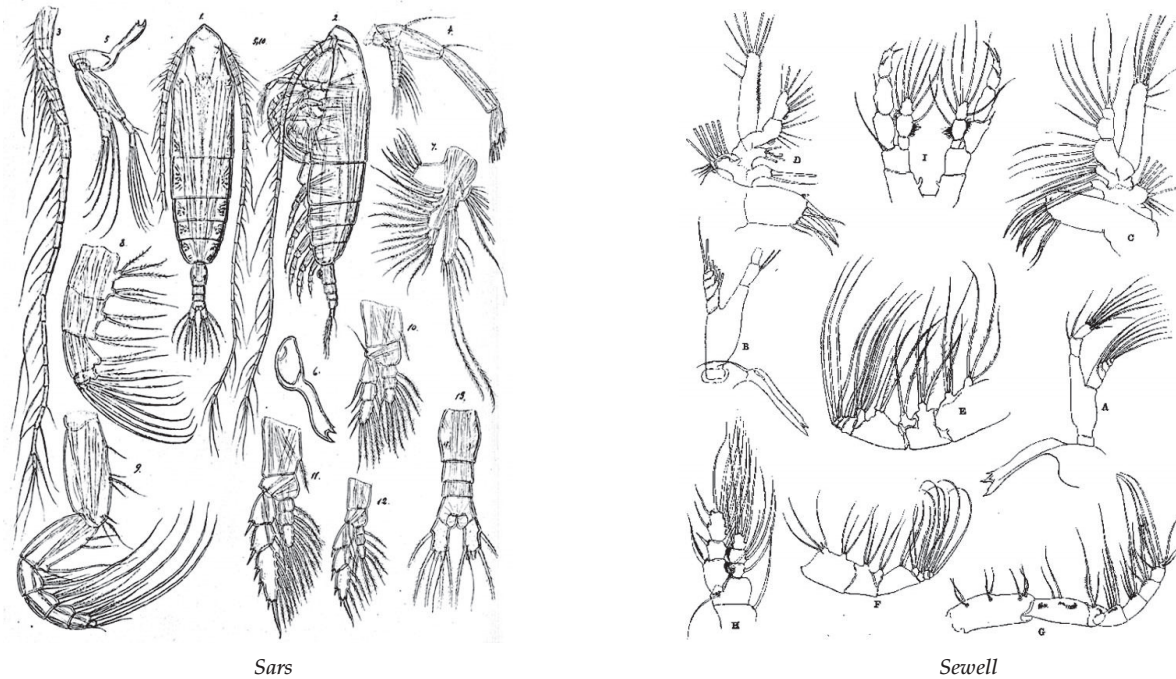


Haloptilus austini Grice, 1959

Grice, 1959: figs. 1–18. Female. 1. habitus (dorsal); 2/3. forehead (lateral/ventral); 4/5. urosome (dorsal/lateral); 6. genital double-somite (ventral); 7. antenna; 8. mandible; 9. biting edge of mandible; 10. maxillule; 11. maxillule exopod; 12. maxilla; 13. maxilliped; 14–18. Legs 1-5

Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. [Accessed May 23, 2021].

Haloptilus chierchiaie (Giesbrecht, 1889) (Size: female, 4.05–5.28 mm; male, 3.65–3.95 mm)



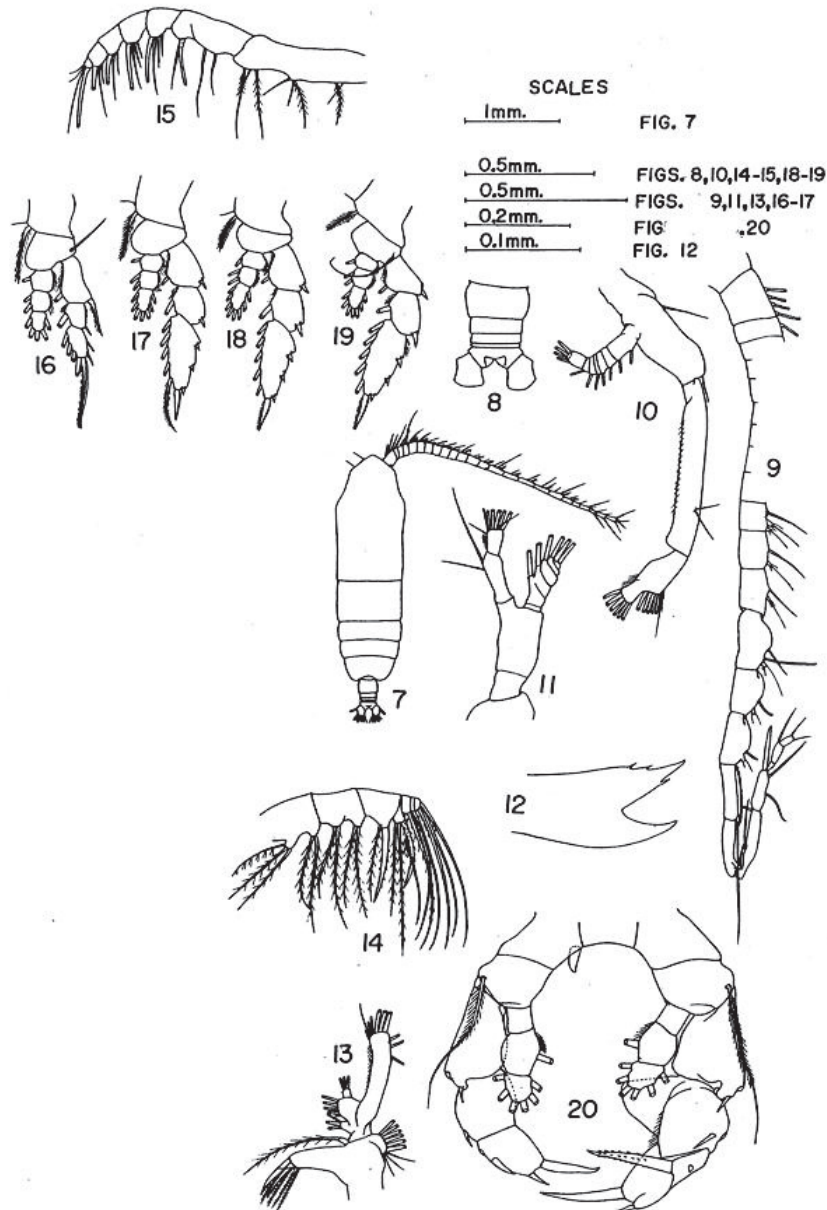
Haloptilus chierchiaie (Giesbrecht, 1889)

Sars, 1925: pl. 70. Female. 1/2. habitus (dorsal/lateral); 3. antennule; 4. antenna; 5/6. mandible & gnathobase; 7. maxillule; 8. maxilla; 9. maxilliped; 10. leg 1; 11. leg 3; 12. leg 5; 13. urosome (dorsal).

Sewell, 1947: Fig. 49. Female. A. mandible; C. maxillule; E. maxilla; H. leg 1. Male. B. mandible; D. maxillule; F. maxilla; G. maxilliped; I. leg 5 (posterior).

Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. [Accessed May 23, 2021].

Haloptilus fertilis (Giesbrecht, 1892) (Size: female, unknown; male, 2.47–3.20 mm)

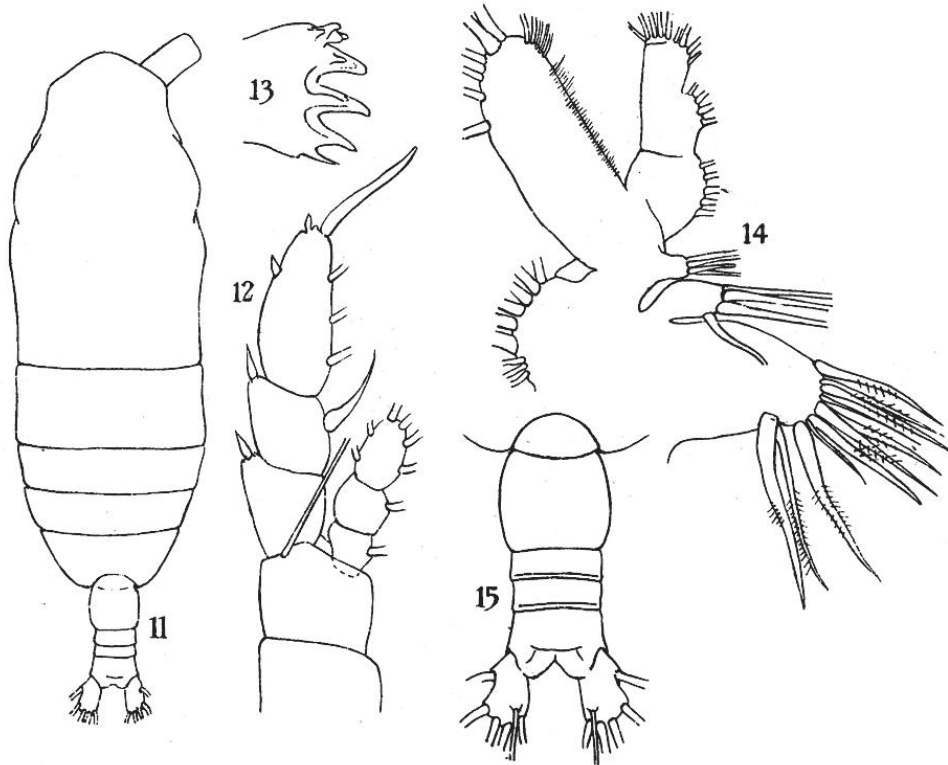


Haloptilus fertilis (Giesbrecht, 1892)

Park, 1968: pl. 11. Male. 7. habitus (dorsal); 8. urosome (dorsal); 9. left antennule; 10. antenna; 11 & 12. mandible & cutting edge; 13. maxillule; 14. maxilla; 15. maxilliped; 16–19. leg 1–4; 20. leg 5 (posterior).

Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. [Accessed May 23, 2021].

Haloptilus fons Farron, 1908 (Size: female, 4.80–6.60 mm; male, unknown)

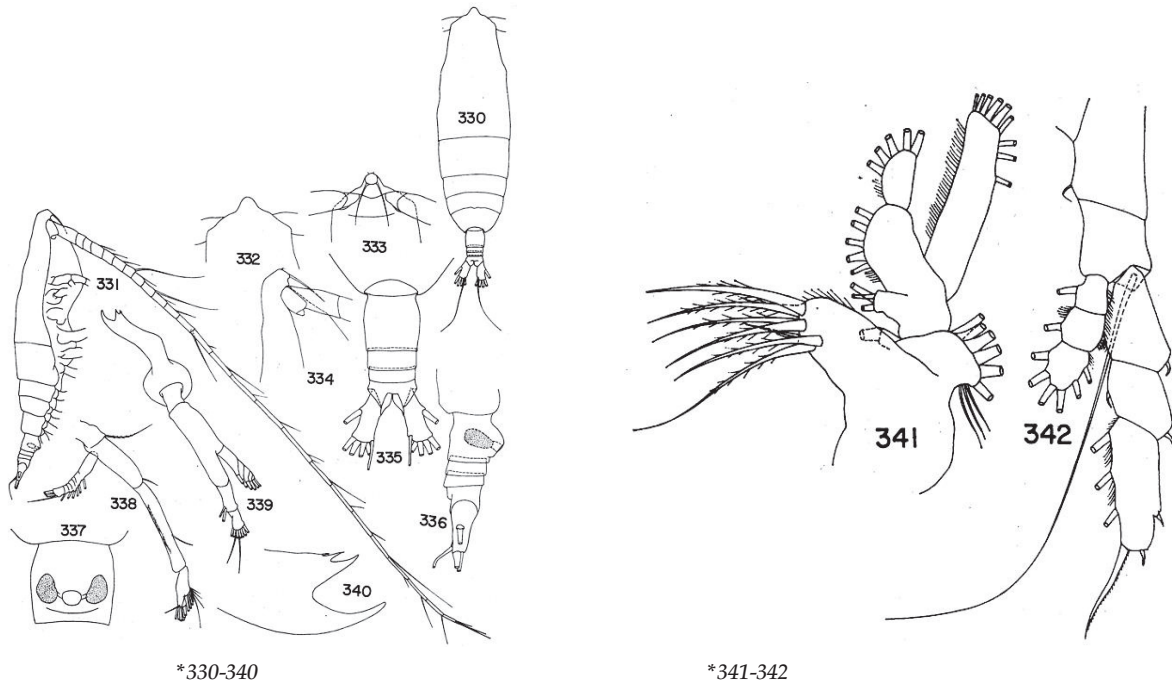


Haloptilus fons Farron, 1908

Farron, 1908: pl. 7. Female. 11. habitus (dorsal); 12. leg 5; 13. mandible cutting edge; 14. maxillule; 15. urosome (dorsal).

Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. [Accessed May 14, 2021].

Haloptilus longicirrus Brodsky, 1950 (Size: female, 2.00–3.77; male, unknown)

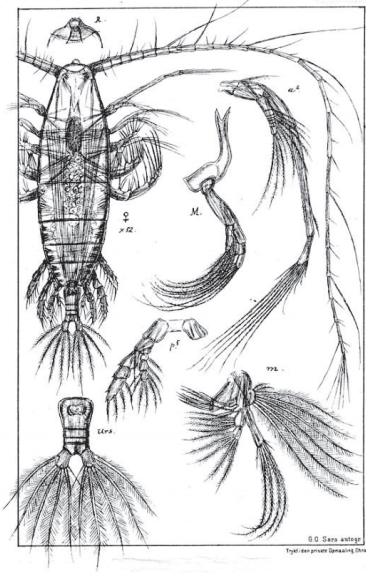


Haloptilus longicirrus Brodsky, 1950

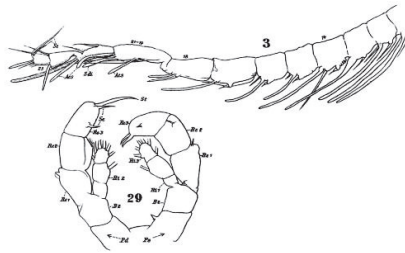
Park, 1970. Female. *330–340: 330/331. habitus (dorsal/lateral); 332/333/334. forehead (dorsal/lateral/ventral); 335/336. urosome (dorsal/lateral); 337. genital double-somite (ventral); 338. antenna; 339/340. mandible/cutting edge; *341–342: 341. maxillule; 342. leg 5 (anterior).

Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. Accessed May 23, 2021].

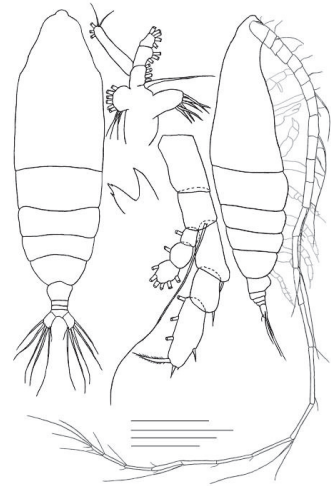
Haloptilus longicornis (Claus, 1863) (Size: female: 1.72–2.63 mm; male, 1.16–1.37 mm)



Sars



Giesbrecht



Original

Haloptilus longicornis (Claus, 1863)

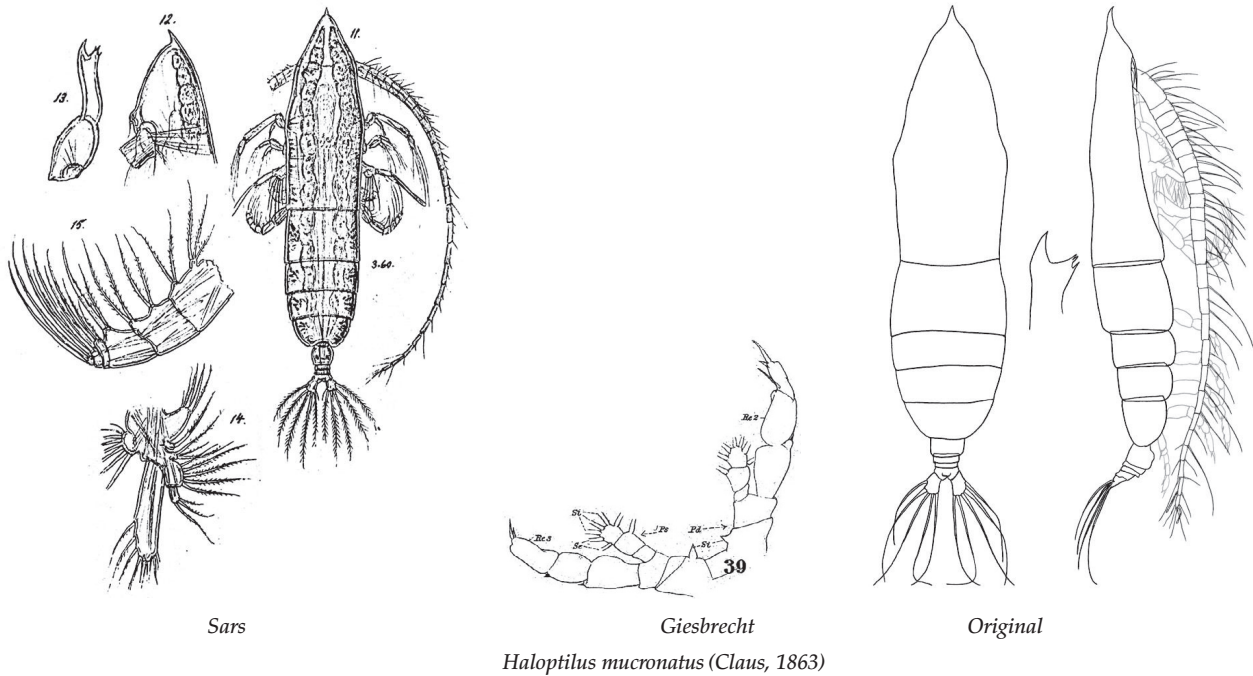
Sars, 1925: pl. 82. Female. habitus (dorsal); a². Antenna; M. mandible; m. maxillule; p5. Leg 5; R. rostrum (ventral); Urs. Urosome (dorsal).

Giesbrecht, 1892: pl. 27. Male. 3. Distal portion of antennule; 29. Leg 5 (posterior).

Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. [Accessed May 23, 2021].

Original. *Haloptilus longicornis* (Claus, 1863), Female, 2.06 mm, East China Sea (25°17'N, 121°35'E): a/b. habitus (dorsal/lateral); c. mandible, tip of gnathobase; d. right maxillule, posterior; e. right leg 5, posterior. Scales: a, b = 0.5 mm; c = 0.2 mm; d = 0.2 mm; e = 0.2 mm.

Haloptilus mucronatus (Claus, 1863) (Size: female, 3.00–3.60 mm; male, 2.17–2.68 mm)

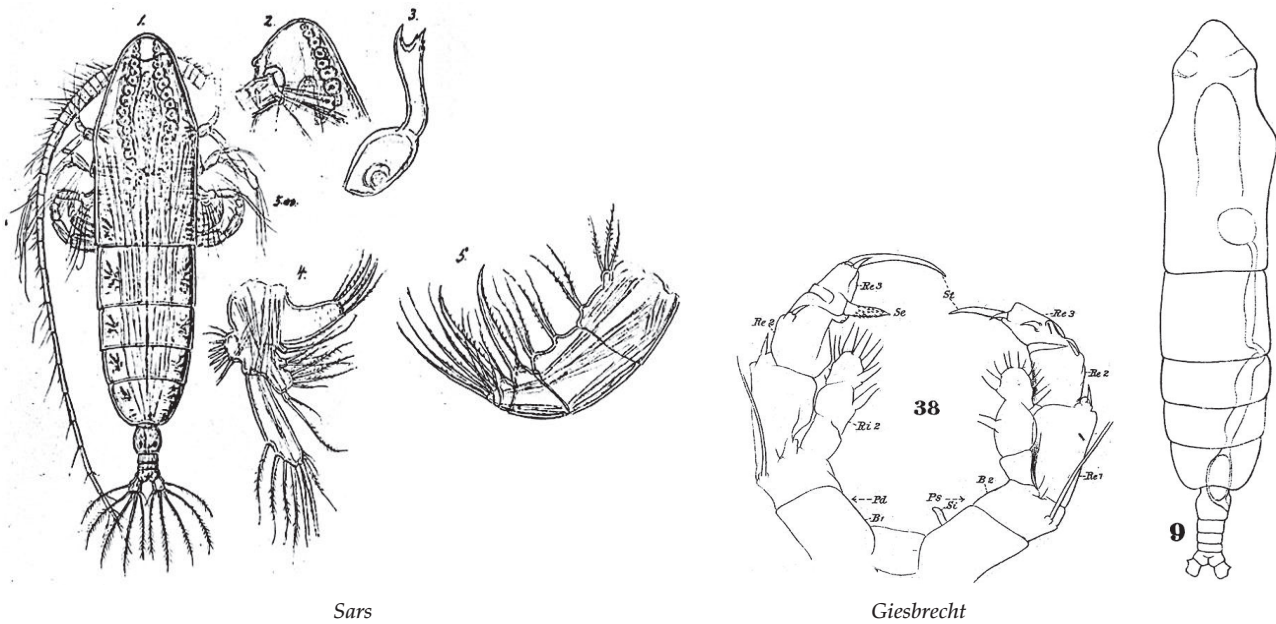


Sars, 1925: pl. 73. Female. 11. habitus (dorsal); 12. forehead (lateral); 13. mandible; 14. maxillule; 15. maxilla. Giesbrecht, 1892: pl. 27. Male. 39. leg 5 (anterior).

Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. [Accessed May 23, 2021].

Original. *Haloptilus mucronatus* (Claus, 1863), Female, 2.06 mm, East China Sea (25°17'N, 121°35'E): a. habitus, dorsal; b. habitus, lateral; c. mandible, tip of gnathobase.

Haloptilus ornatus (Giesbrecht, 1892) (Size: female, 3.00–5.33 mm; male, 2.75–3.05 mm).

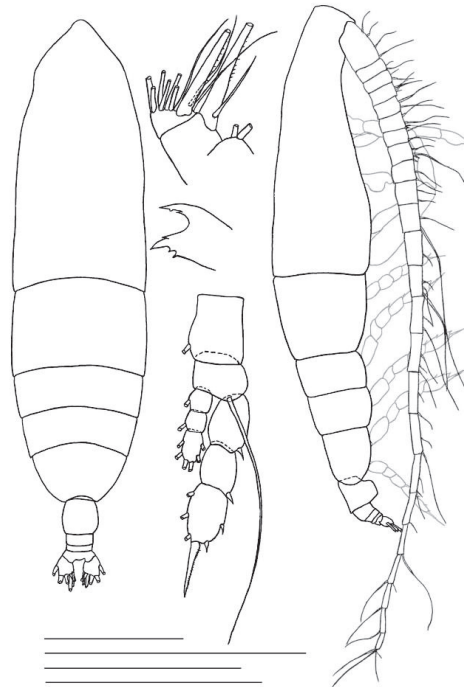


Haloptilus ornatus (Giesbrecht, 1892)

Sars, 1925: pl. 73. Female. 1. habitus (dorsal); 2. forehead (Lateral); 3. mandible gnathobase; 4. maxillule; 5. maxilla.

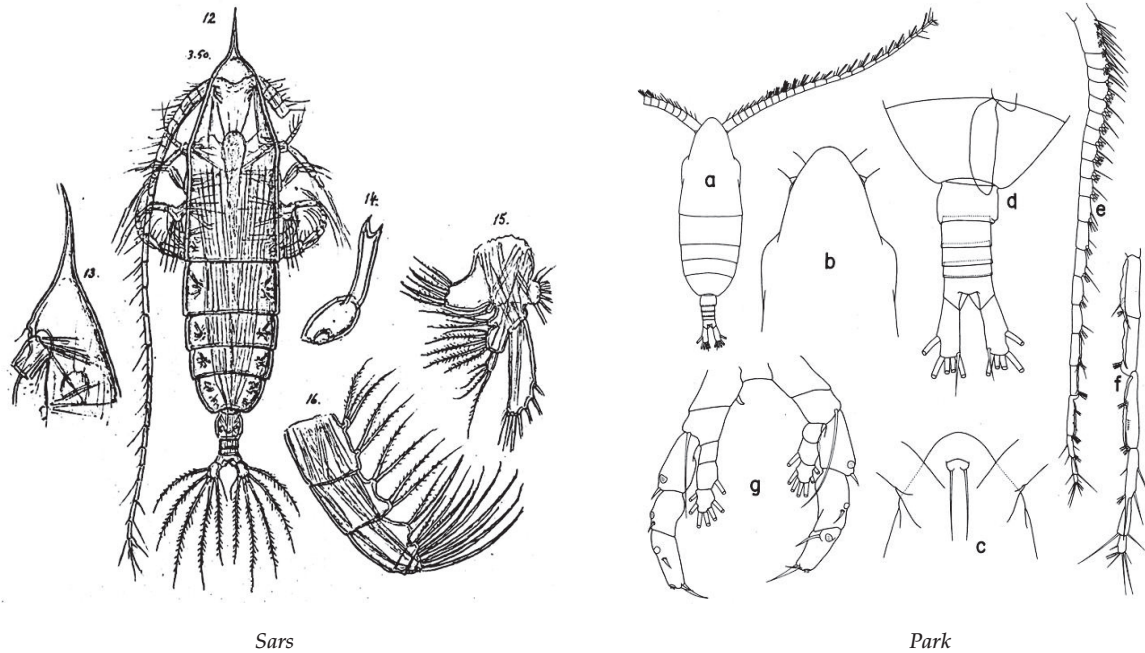
Giesbrecht, 1892. Male. pl. 27, Fig. 38. leg 5 (posterior); pl. 42, Fig. 9. habitus (dorsal).

Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en> [Accessed May 17, 2021].

Haloptilus ornatus (Giesbrecht, 1892)*Haloptilus ornatus* (Giesbrecht, 1892)

Original. Female, 3.98 mm, east of Taiwan (22°50'N, 121°55'E). a/b. habitus (dorsal/lateral); c. right mandible, gnathobase; d. right maxilla, distal end of endopod; e. leg 5.

Haloptilus oxycephalus (Giesbrecht, 1889) (Size: female, 3.00–5.20 mm; male, 2.40–2.85 mm)



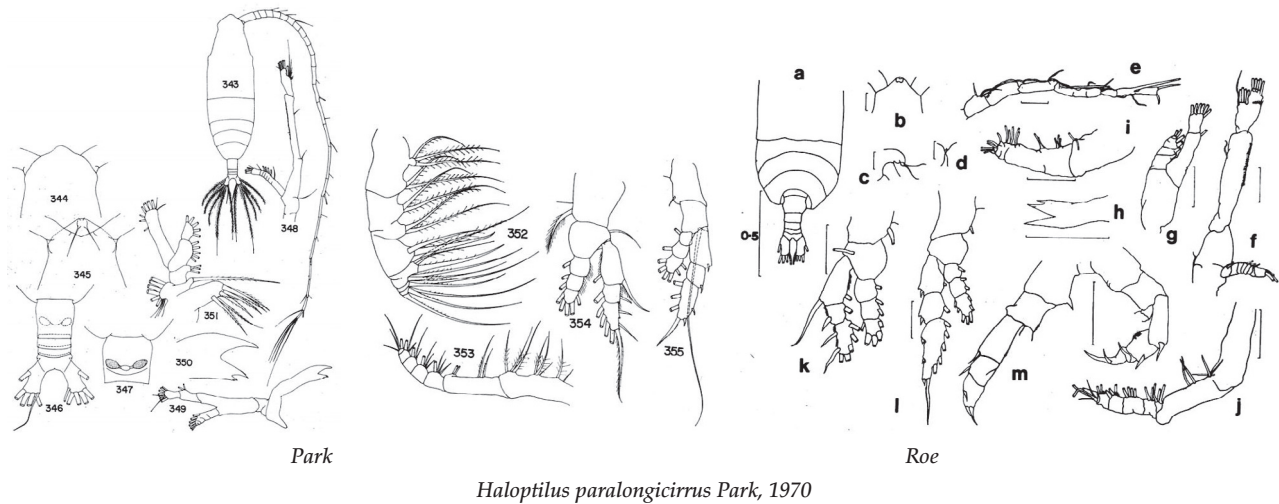
Haloptilus oxycephalus (Giesbrecht, 1889)

Sars, 1925: pl. 74. Female. 12. habitus (dorsal); 13. forehead (lateral); 14. mandible; 15. maxillule; 16. maxilliped.

Park, 1988: Fig. 6. Male. a. habitus (dorsal); b/c. forehead (dorsal/ventral); d. pediger 5 & urosome (dorsal); e. left antennule; f. distal segments of left antennule; g. leg 5 (posterior).

Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. [Accessed May 23, 2021].

Haloptilus paralongicirrus Park, 1970 (Size: female, 2.31–2.70 mm; male, 1.67–2.20 mm)

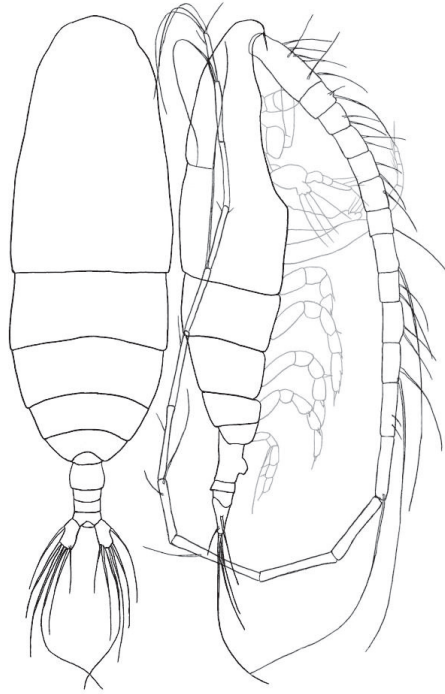


Park, 1970: figs. 343–355. Female. 343. habitus (dorsal); 344/345. forehead (dorsal/ventral); 346. urosome (dorsal); 347. genital double-somite (ventral); 348. antenna; 349/350. mandible & biting edge; 351. maxillule; 352. maxilla; 353. maxilliped; 354. leg 1; 355. leg 5.

Roe, 1975: Fig. 24. Male. a. posterior prosome & urosome (dorsal); b. forehead (dorsal); c. rostrum (lateral); e. antennule seg. 15–20; f. antenna; g/h. mandible/cutting edge; i. maxilla; j. maxilliped; k/l. legs 1/2; m. leg 5, endopods omitted (posterior).

Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. [Accessed May 23, 2021].

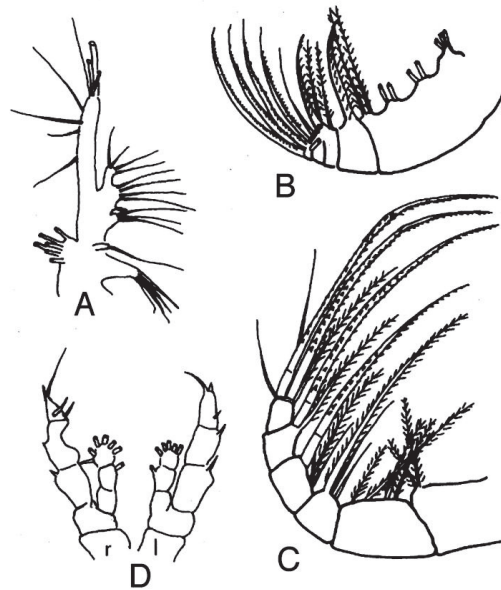
Haloptilus paralongicirrus Park, 1970



Haloptilus paralongicirrus Park, 1970

Original. Female, 2.42 mm, South China Sea, 9°29'N, 114°42'E, 2438 m a/b halibus (dorsal/lateral).

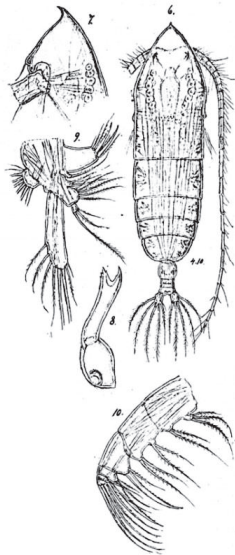
Haloptilus plumosus (Claus, 1863) (Size: female, 4.15–4.20 mm; male, unknown)



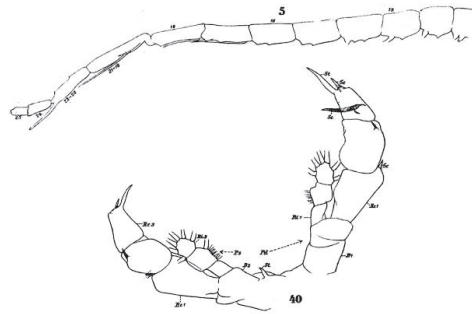
Haloptilus plumosus (Claus, 1863)

Bradford-Grieve et al., 1999: Fig. 7.278. Female. A. maxillule; B. maxilla; C. maxilliped. Male. D. leg 5. Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. [Accessed May 23, 2021].

Haloptilus spiniceps (Giesbrecht, 1892) (Size: female, 3.20–5.45 mm; male, 2.55–2.81 mm)

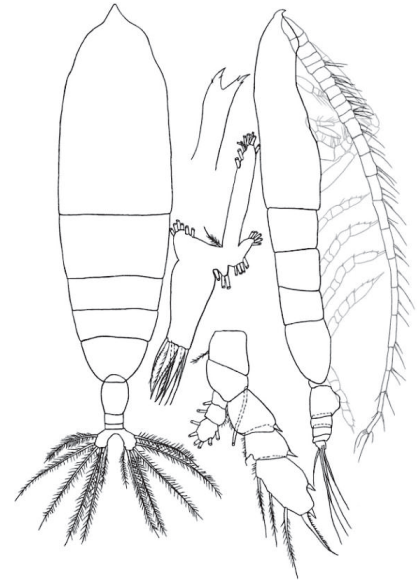


Sars



Giesbrecht

Haloptilus spiniceps (Giesbrecht, 1892)



Original

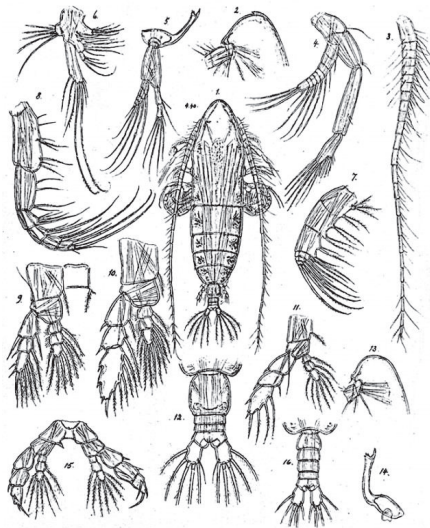
Sars, 1925: pl. 73. Female. 6. habitus (dorsal); 7. forehead (lateral); 8. mandible; 9. maxillule; 10. maxilla.

Giesbrecht, 1892: pl. 27. Male. 5. distal portion of antennule; 40. leg 5 (anterior).

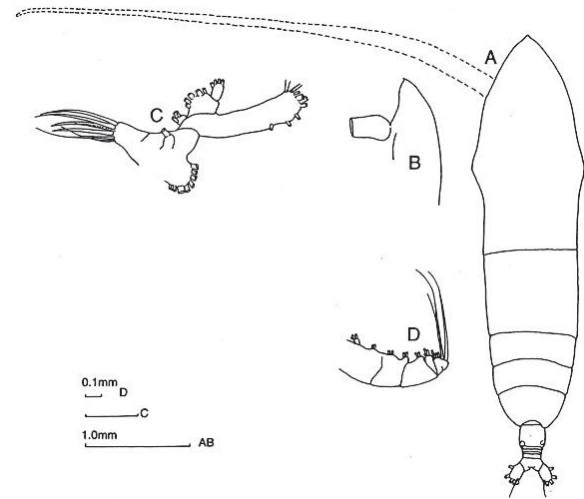
Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. [Accessed May 23, 2021].

Original. *Haloptilus spiniceps* (Giesbrecht, 1892), Female, 4.00 mm: a/b; habitus (dorsal/lateral); c. right mandible, gnathobase (posterior); d. right maxillule (anterior); e. right leg 5 (posterior). Scales: a, b = 1.00 mm; c = 0.50 mm; d = 0.50 mm; e = 0.50 mm.

Haloptilus tenuis Farron, 1908 (Size: female, 4.40–4.62 mm; male, 3.50 mm)



Sars



Bradford-Grieve

Haloptilus tenuis Farron, 1908

G.O. Sars in Résult. Camp. Scient. Prince Albert I, 69, pls.1-127 (1924). Pl.LXIX, figs.1-15. **Female:** 1, habitus (dorsal); 2, forehead (lateral); 3, Antennule; 4, Antenna; 5, mandible; 6, maxillule; 7, maxilla; 8, maxilliped; 9, leg 1; 10, leg 3; 11, leg 5; 12, urosome. **Male:** 13, forehead (lateral); 14, mandible (without palp: broken); 15, leg 5.

J.M. Bradford-Grieve, 1999. Fig.37. **Female:** A, habitus (dorsal); B, anterior head (lateral left side); C, maxillule; D, maxilla.

Adapted from Razouls C., de Bovée F., Kouwenberg J. and Desreumaux N., 2005–2020. Diversity and Geographic Distribution of Marine Planktonic Copepods. Sorbonne University, CNRS. Available at <http://copepodes.obs-banyuls.fr/en>. [Accessed May 24, 2021].