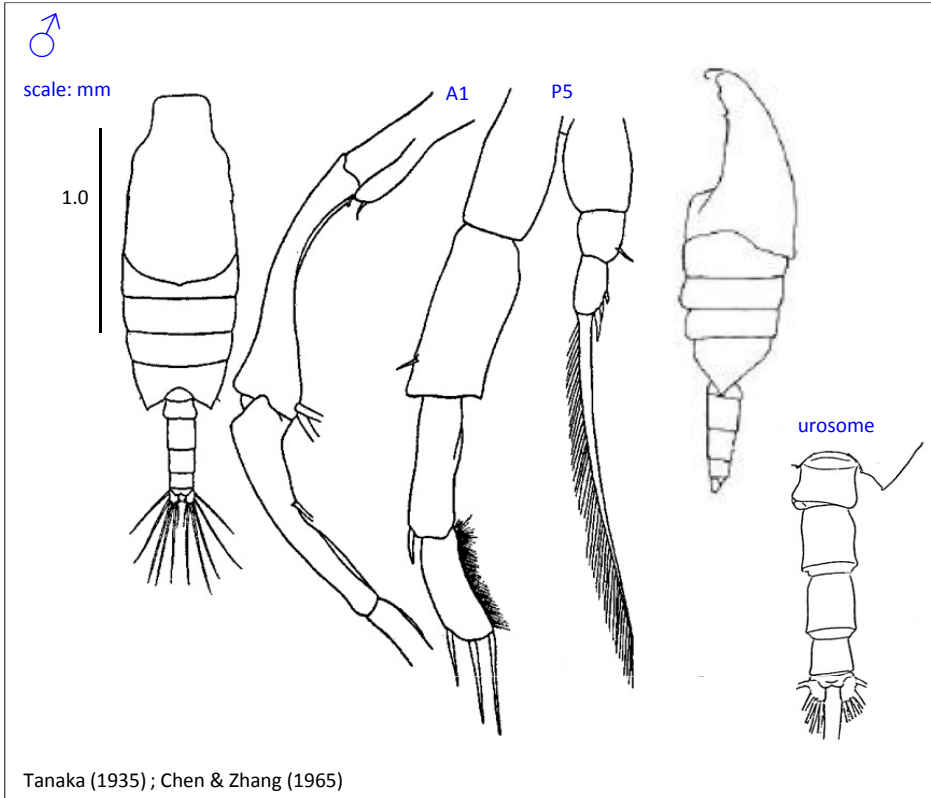


Candacia truncata

Dana, 1849

Phylum Arthropoda
Order Calanoida
Family Candaciidae



Size

Male: 1.87 – 2.11 mm

Male

- Geniculate right A1 has a series of stout proximal segments followed by a thin section, then a broad club section, beyond club section, segment 16 has a finger-like protrusion which is difficult to observe clearly; fused segments 17 and 18 are characteristically curved
- Last prosome somite symmetrical with sharp points
- P5 left segment 4 with 3 setae; right P5 not chelate and segment 3 terminates in long plumose setae
- Urosome and caudal rami symmetrical with no projections

Ecology

- Specialised predator, grasping prey with large and robust maxillae
- Larvaceans are major prey item

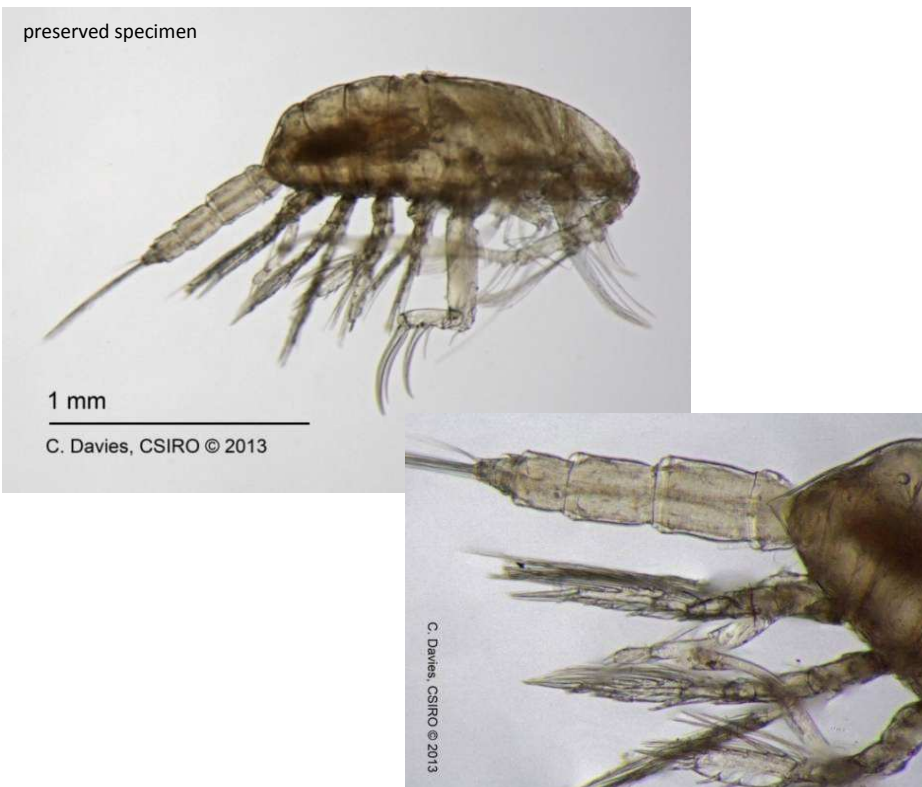
Source

Boxshall & Halsey (2004)
 Bradford-Grieve (1999)
 Chen and Zhang (1965)
 Conway (2003)
 Greenwood (1978)
 Razouls et al. (2010)
 Tanaka (1935)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Tanaka (1935); Chen & Zhang (1965)

preserved specimen



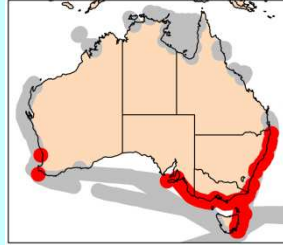
1 mm

C. Davies, CSIRO © 2013

C. Davies, CSIRO © 2013

Centropages australiensis

Fairbridge, 1944



Phylum Arthropoda
Order Calanoida
Family Centropagidae

Synonyms

None

Size

Female: 1.43 mm

Genus notes

- Small to medium size
- Cephalosome and pedigerous somite 1 are fused (fusion lines visible on sides)
- Single naupliar eye
- Lateral corners of posterior prosome often end in asymmetrical points
- Characteristic undulating edge on last prosomal somite between spine and urosome
- Female P5 biramous, exopod segment 2 with a strong, inner spine-like process
- Male P5 complex, right leg chelate
- Urosome usually 3-segmented, often with spines, without seminal receptacles

Female

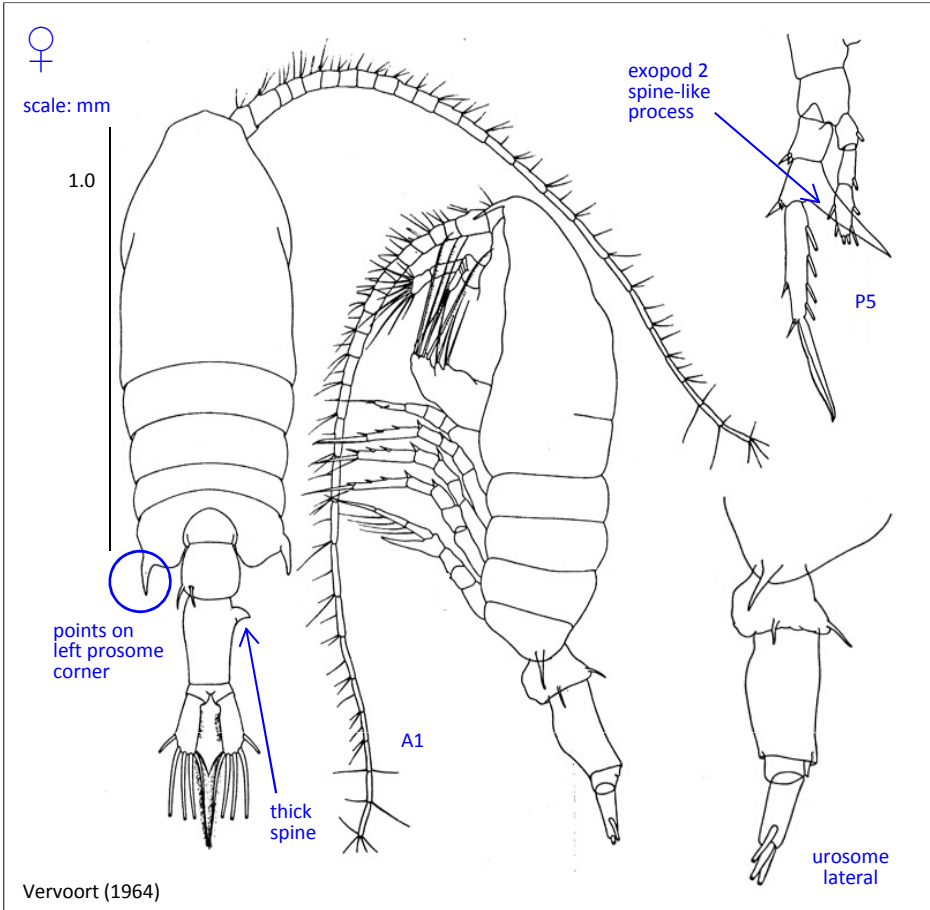
- A1 exceeds caudal rami by 2 segments
- Point on left prosome corner reaches to end of genital somite, point on right side reaches to middle of genital somite
- Genital somite almost symmetrical, with 2 small spines
- Urosomal somite 2 asymmetrical; left side slightly swollen, right side with thick spine
- Caudal rami symmetrical, twice as long as wide

Distribution

- Epipelagic
- Inshore coastal and coastal waters
- Southern Australian distribution, particularly along eastern seaboard

Ecology

- Produces distinctive spiny eggs
- Eggs can diapause in sediments to avoid unfavourable conditions
- Females often observed with 2 or more spermatophores attached
- Omnivorous



Vervoort (1964)



C. Davies, CSIRO © 2013



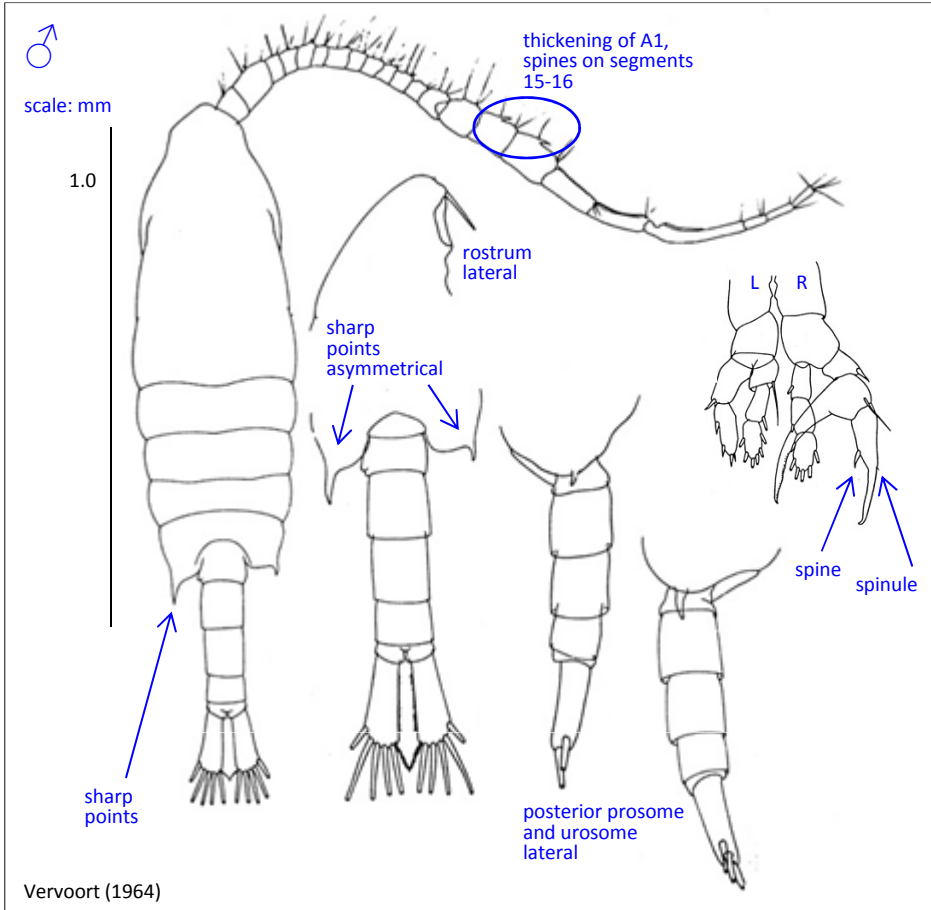
urosome, P5, genital somite

C. Davies, CSIRO © 2013

Centropages australiensis

Fairbridge, 1944

Phylum Arthropoda
Order Calanoida
Family Centropagidae



Size
 Male: 1.32 mm

Male

- One side of right A1 typically thickened along part of length; spines on segments 15-16 at thickening of A1
- Sharp points on posterior of prosome asymmetrical
- Right P5 with large, slightly curved spur forming a claw on inner margin of exopod segment 2, outer apical margin furrowed
- Right P5 exopod segment 3 is pointed with furrowed inner margin, distinct spine on inner margin and minute spinule on outer margin
- Caudal rami twice as long as wide

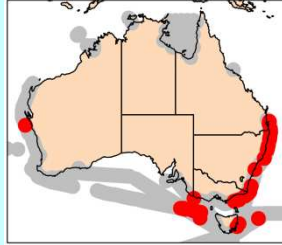
Source

Boxshall and Halsey (2004)
 Bradford-Grieve (1994)
 Conway et al. (2003)
 Vervoort (1964)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Centropages bradyi

Wheeler, 1900



Phylum
Order
Family

Arthropoda
Calanoida
Centropagidae

Synonyms
None

Size
Female: 1.91-2.50 mm

Genus notes

- Small to medium size
- Cephalosome and pedigerous somite 1 are fused (fusion lines visible on sides)
- Single naupliar eye
- Lateral corners of posterior prosome often end in asymmetrical points
- Characteristic undulating edge on last prosomal somite between spine and urosome
- Female P5 biramous, exopod segment 2 with a strong, inner spine-like process
- Male P5 complex, right leg chelate
- Urosome usually 3-segmented, often with spines, without seminal receptacles

Female

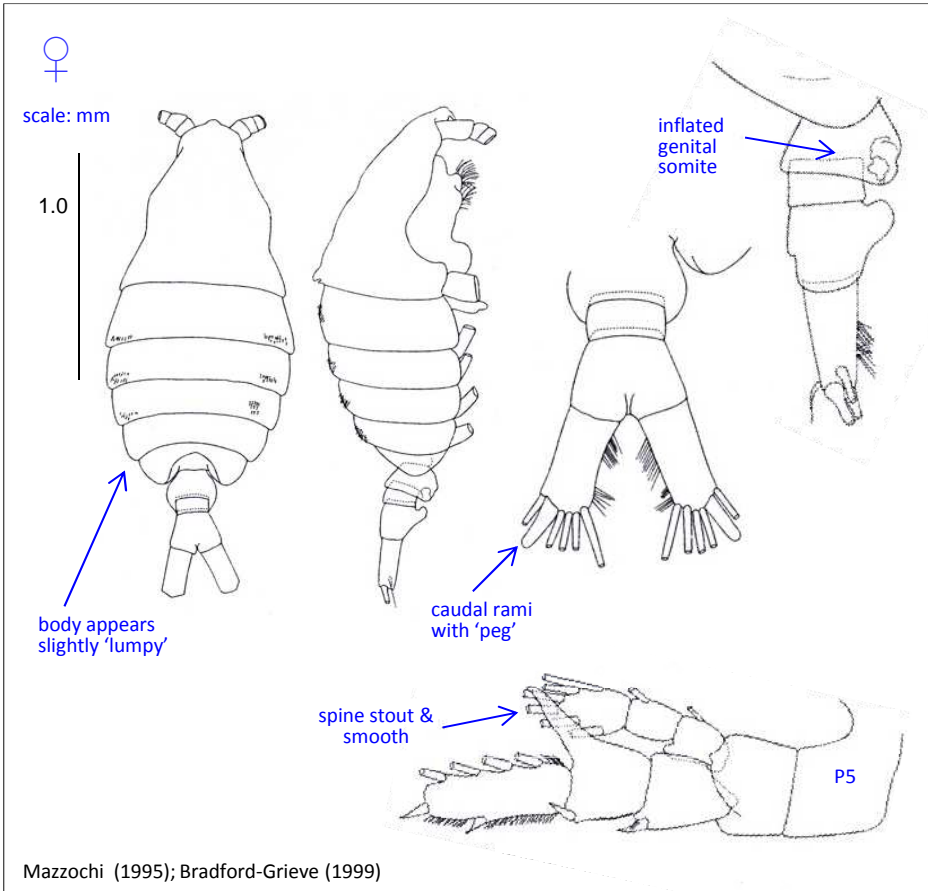
- A1 extends beyond caudal rami by 3-4 segments
- May have a blunt dorsal projection at bottom of cephalosome
- Body inflated, appears slightly 'lumpy', widest at pedigerous somites 1-2
- Posterior prosome corners rounded
- Genital somite inflated but without protrusions
- Caudal rami large, symmetrical with 'peg'-like projection between 2 outer terminal setae
- P5 exopodal segment 2 inner edge spine stout and smooth

Distribution

- Epi-, meso- and bathypelagic
- Cosmopolitan
- Generally found more abundantly in warm (> 25 °C) waters

Ecology

- Found further north in Northern Hemisphere during El Niño years, associated with warm water



Mazzochi (1995); Bradford-Grieve (1999)



CSIRO AusCPR

Centropages bradyi

Wheeler, 1900

Phylum
Order
Family

Arthropoda
Calanoida
Centropagidae

Size

Male: 1.90-2.40 mm

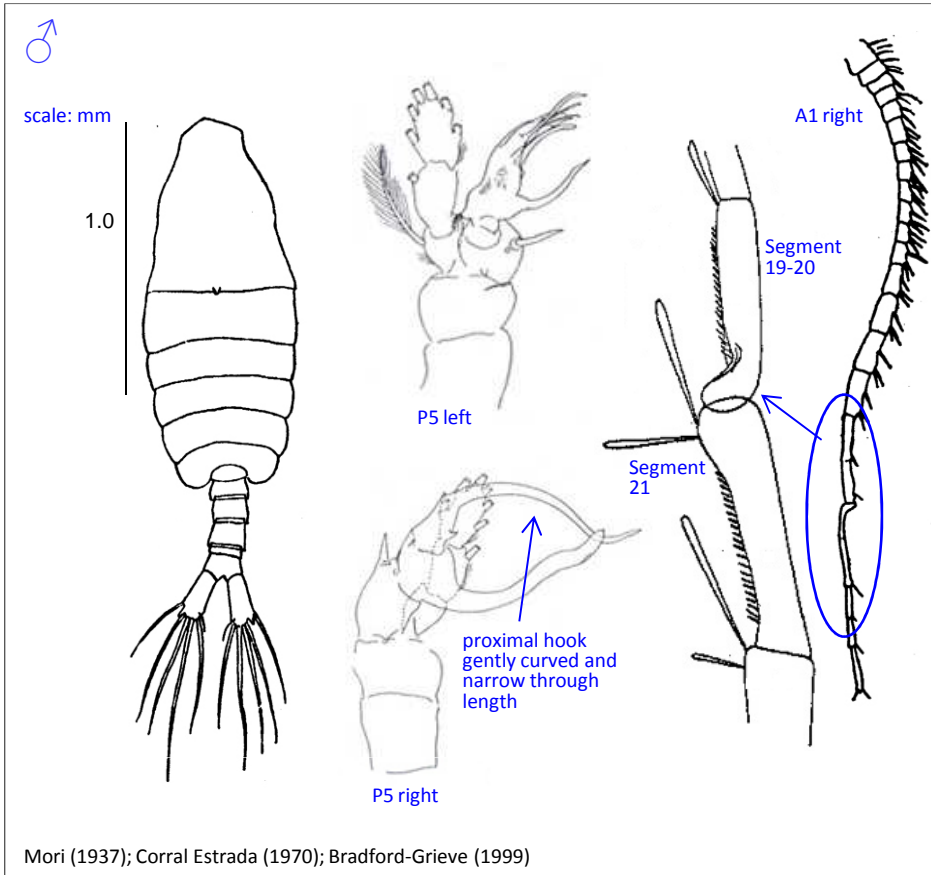
Male

- A1 extends beyond caudal rami by 3-4 segments, right A1 geniculate
- Caudal rami large, symmetrical with 'peg' like projection between 2 outer terminal setae
- P5 right; chela projections of almost equal length, the proximal projection gently curved and narrow through length
- P5 left: exopodal segments 2-3 tapering and with 4 long spines

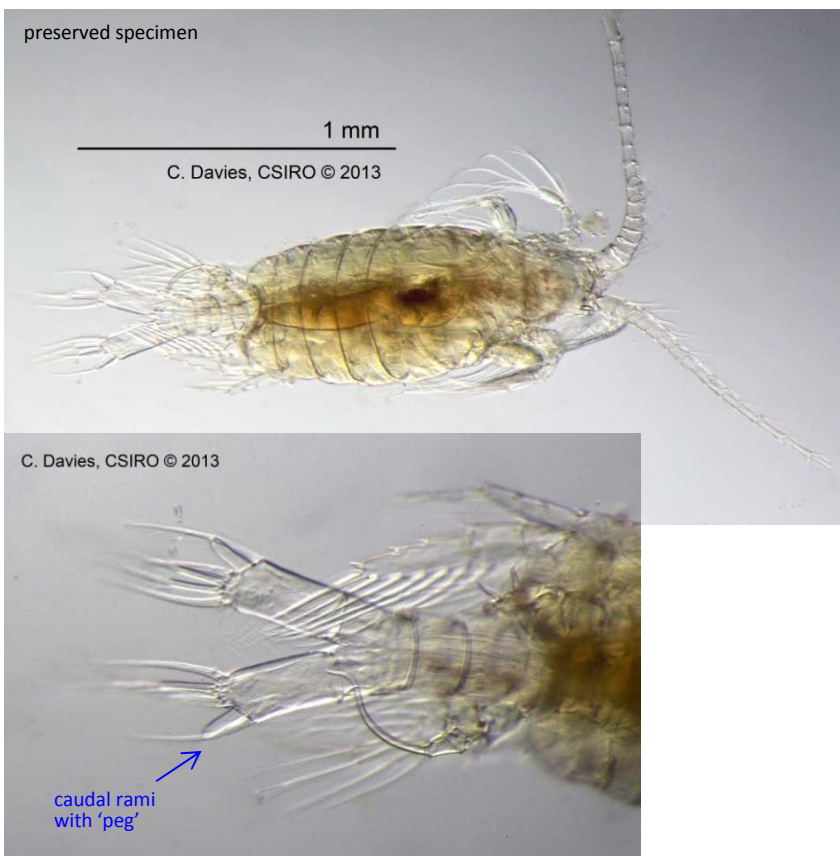
Source

Boxshall & Halsey (2004)
Bradford-Grieve (1999)
Conway (2003)
Corral Estrada (1970)
Keister et al. (2005)
Mazzochi (1995)
Mori (1937)
Razouls et al. (2012)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)



Mori (1937); Corral Estrada (1970); Bradford-Grieve (1999)



Centropages calaninus

(Dana, 1849)

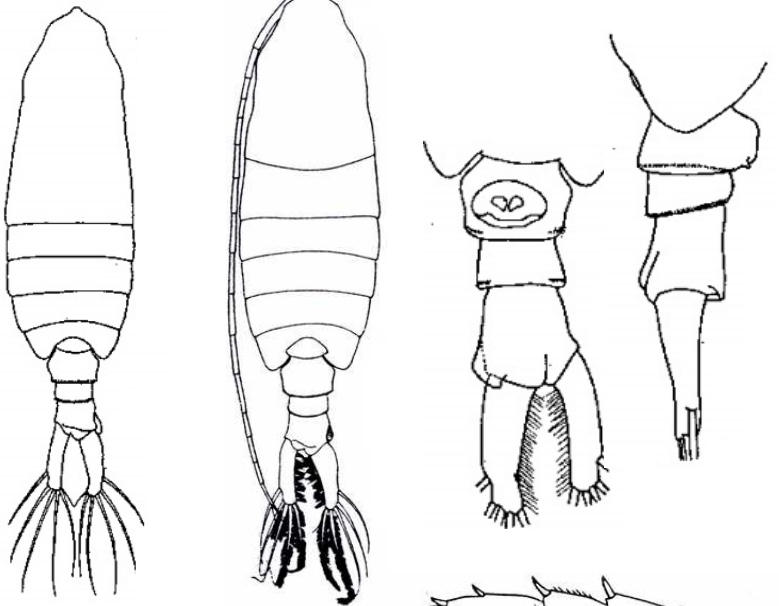


Phylum Arthropoda
Order Calanoida
Family Centropagidae



scale: mm

1.0



spine extends beyond exopodal segment 3, long and straight

notch

Giesbrecht (1892); Grice (1962); Mulyadi (1998); Chen & Zhang (1965)

Synonyms

Cyclopsina calanina Dana, 1849
Hemicalanus calaninus Dana, 1852
Hemicalanus tenuicornis Dana, 1849

Size

Female: 1.72 – 2.18 mm

Genus notes

- Small to medium size
- Cephalosoma and pedigerous somite 1 are fused (fusion lines visible on sides)
- Single naupliar eye
- Lateral corners of posterior prosome often end in asymmetrical points
- Characteristic undulating edge on last prosomal somite between spine and urosome
- Female P5 biramous, exopod segment 2 with a strong, inner spine-like process
- Male P5 complex, right leg chelate
- Urosome usually 3-segmented, often with spines, without seminal receptacles

Female

- Last prosome somite rounded in dorsal view
- Genital somite symmetrical with lateral swellings
- Anal somite almost 2x as long as urosome somite 2
- Caudal rami large and asymmetrical
- A1 extends beyond caudal rami by last 2 segments
- P5 exopodal segment 2 inner edge spine is straight and longer than exopodal segment 3
- Notch on the proximal inner margin of exopodal segment 1

Distribution

- Epipelagic, coastal
- Tropical, subtropical, cold temperate
- Indian and Pacific, Atlantic uncertain

Ecology

- Little is known about the ecology of this species

Centropages calaninus

(Dana, 1849)

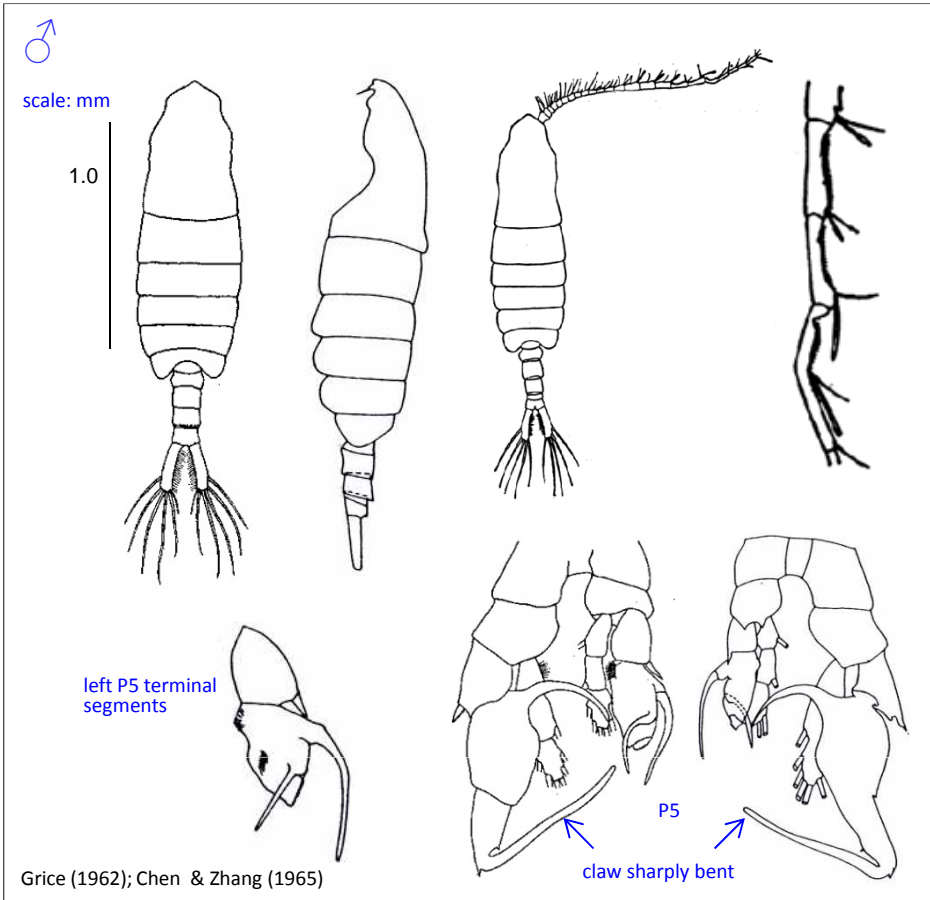
Phylum Arthropoda
Order Calanoida
Family Centropagidae

Size
 Male: 1.80 – 2.06 mm

- Male**
- Last prosome somite rounded
 - Right P5 exopodite segment 3 claw is longer than the inner extension of exopodite segment 2 and is sharply bent

Source
 Bradford-Grieve (1999)
 Chen & Zhang (1965)
 Conway (2003)
 Giesbrecht (1892)
 Grice (1962)
 Mulyadi (1998)
 Razouls et al. (2012)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)



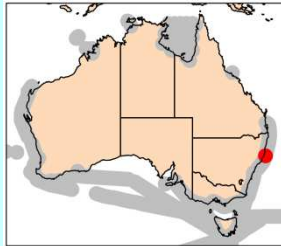
Grice (1962); Chen & Zhang (1965)



C. Davies, CSIRO © 2013

Centropages elegans

Giesbrecht 1895



Phylum Arthropoda
Order Calanoida
Family Centropagidae

Synonyms
 None

Size
 Female: 1.86 – 2.14 mm

Genus notes

- Small to medium size
- Cephalosome and pedigerous somite 1 are fused (fusion lines visible on sides)
- Single naupliar eye
- Lateral corners of posterior prosome often end in asymmetrical points
- Characteristic undulating edge on last prosomal somite between spine and urosome
- Female P5 biramous, exopod segment 2 with a strong, inner spine-like process
- Male P5 complex, right leg chelate
- Urosome usually 3-segmented, often with spines, without seminal receptacles

Female

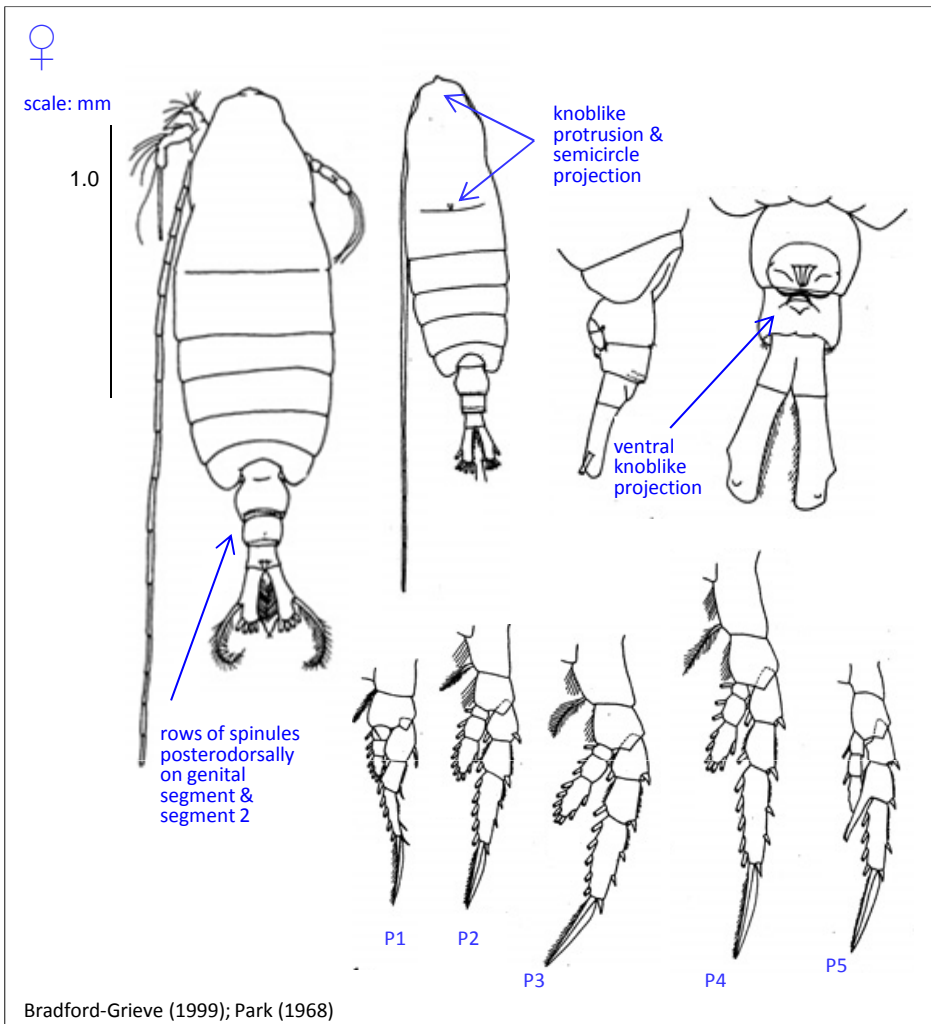
- Small semicircle projection on anterior cephalosome
- Knoblike protrusion at the posterodorsal margin
- Cephalosome and prosome somite 1 incompletely separated
- A1 extends beyond caudal rami by last 5 segments
- Posterior margins of prosome rounded
- P5 exopod segment 1 has a round projection on inner margin, exopod segment 2 with a strong spiniform projection directed distally, with distal inner margin hairs
- Genital somite symmetrical, wider than long with a posterodorsal row of spinules
- Urosome somite 2 has a ventral knoblike projection and 2 posterodorsal rows of spinules
- Caudal rami long and symmetrical

Distribution

- Epipelagic
- Coastal
- Tropical
- Pacific Ocean

Ecology

- Little is known about the ecology of this species

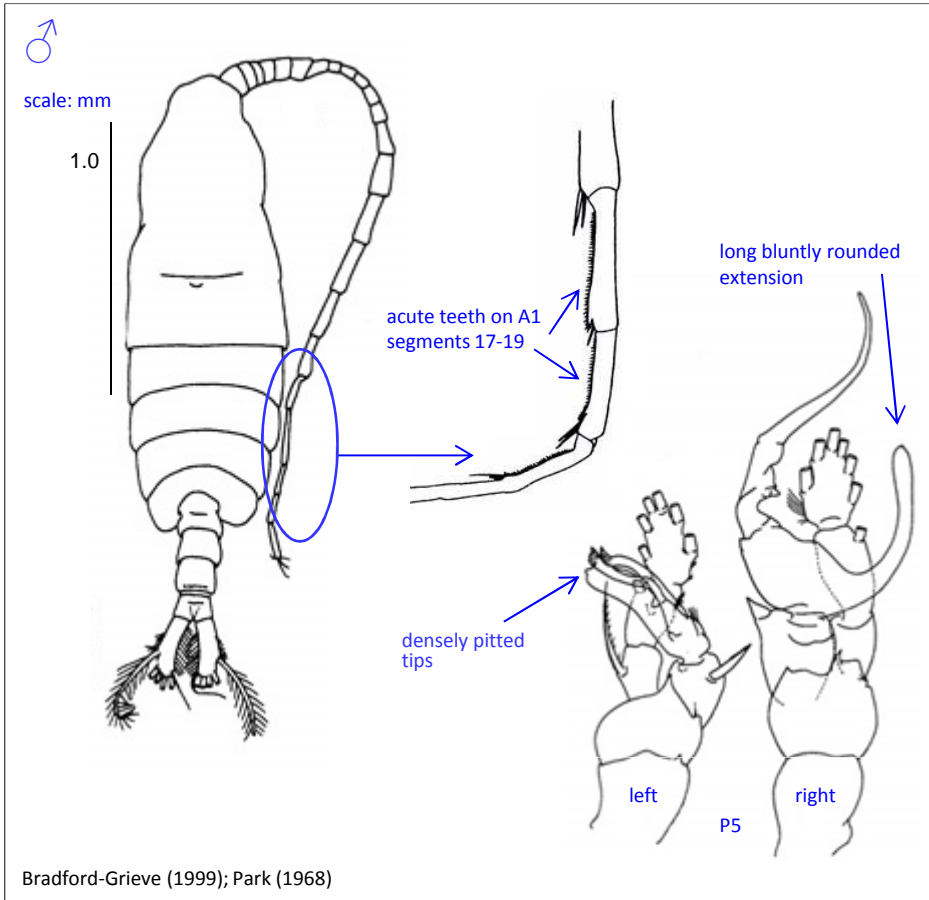


Bradford-Grieve (1999); Park (1968)

Centropages elegans

Giesbrecht 1895

Phylum Arthropoda
Order Calanoida
Family Centropagidae



Size

Male: 1.84 – 2.05 mm

Male

- Cephalosome and prosome somite 1 incompletely separated
- Left A1 extends past caudal rami by last 2 segments
- Right A1 geniculate at segments 18 & 19, acute teeth on segments 17 – 19
- P5 right exopod, segment 2 extends internally into a long bluntly rounded extension, exopod segment 3 in the form of a much longer tapering spine.
- P5 left exopod, 2 segmented, exopod segments 2 & 3 bearing 2 spines which do not taper much and densely pitted tips

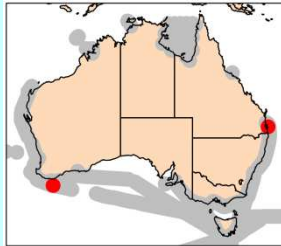
Source

Boxshall & Halsey (2004)
 Bradford-Grieve (1999)
 Conway (2003)
 Park (1968)
 Razouls et al. (2012)

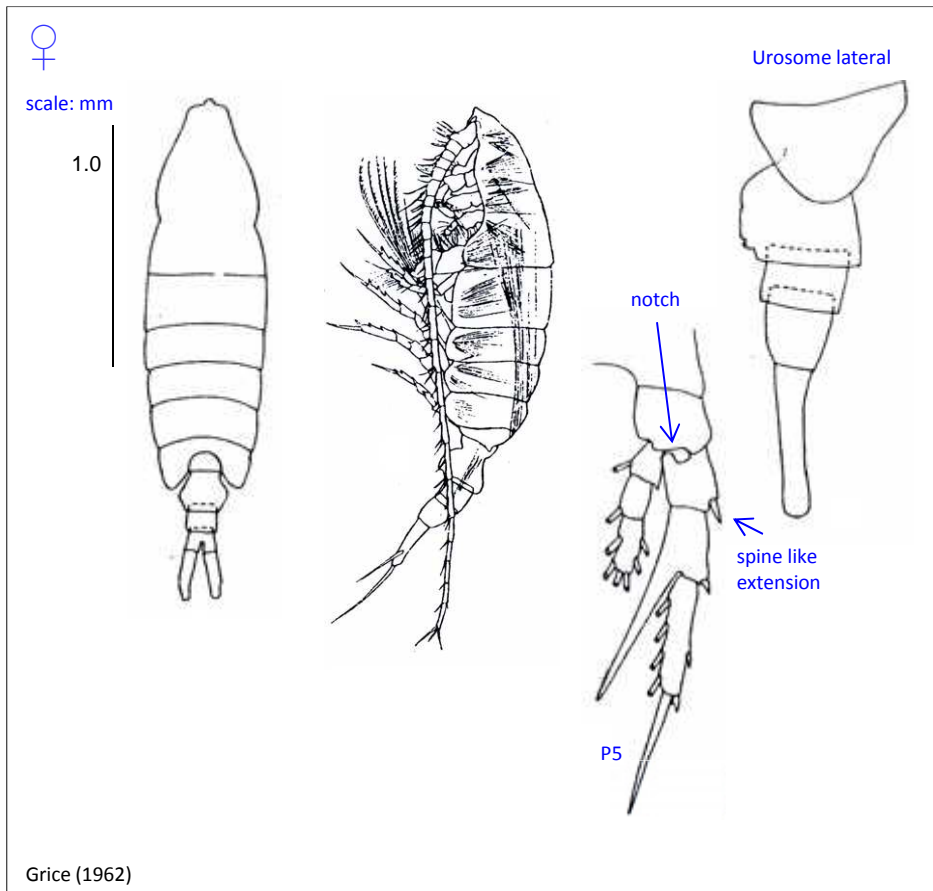
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Centropages elongatus

Giesbrecht, 1896



Phylum Arthropoda
Order Calanoida
Family Centropagidae



Synonyms

Centropages pacificus Chiba, 1956

Size

Female: 1.50 – 1.90 mm

Genus notes

- Small to medium size
- Cephalosome and pedigerous somite 1 are fused (fusion lines visible on sides)
- Single naupliar eye
- Lateral corners of posterior prosome often end in asymmetrical points
- Characteristic undulating edge on last prosomal somite between spine and urosome
- Female P5 biramous, exopod segment 2 with a strong, inner spine-like process
- Male P5 complex, right leg chelate
- Urosome usually 3-segmented, often with spines, without seminal receptacles

Female

- A1 passes the caudal rami by the last 2 segments
- Last prosome somite quite rounded
- Spine-like extension on exopodal segment 2 of P5 reaches or just exceeds the distal end of exopodal segment 3
- Notch in proximal internal part of exopodal segment 1 of P5
- No spines on urosome
- Genital somite almost symmetrical
- Caudal rami as long as 2 preceding somites

Distribution

- Epipelagic, coastal
- Indian and Pacific, not Atlantic
- Tropical, subtropical

Ecology

- Little is known about the ecology of this species

Grice (1962)



C. Davies, CSIRO © 2013

preserved specimen



1 mm

C. Davies, CSIRO © 2013

Centropages elongatus

Giesbrecht, 1896

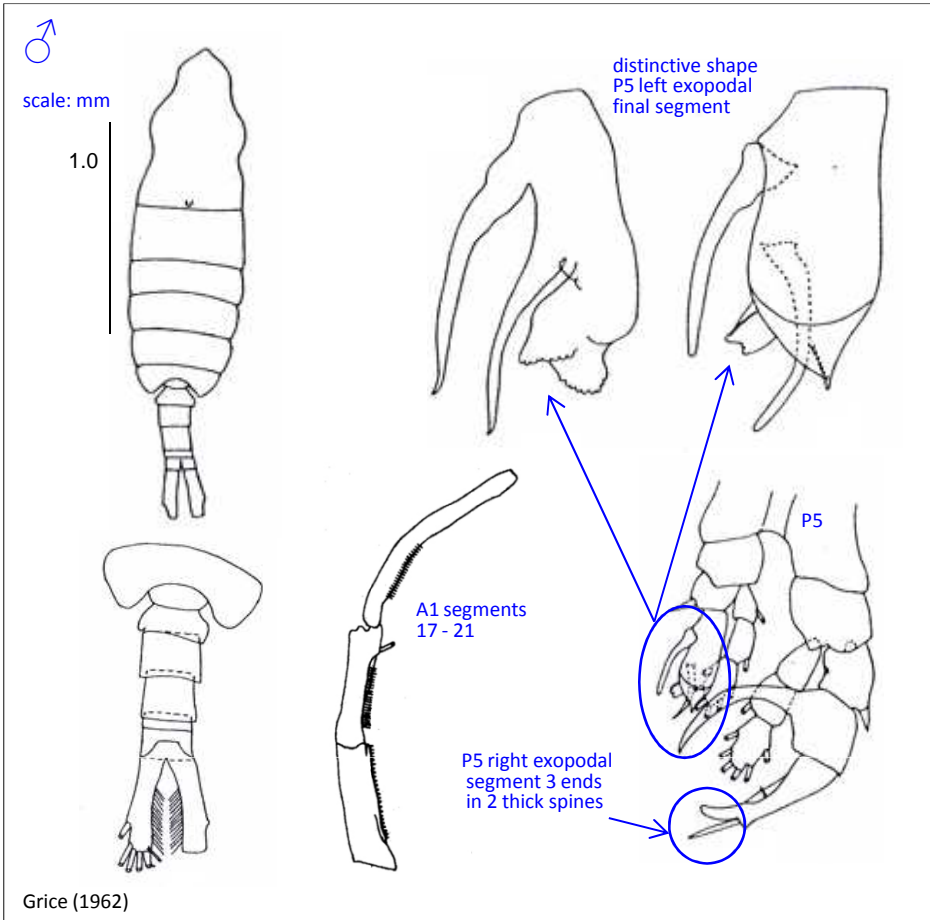
Phylum Arthropoda
Order Calanoida
Family Centropagidae

Size
 Male: 1.74 – 2.00 mm

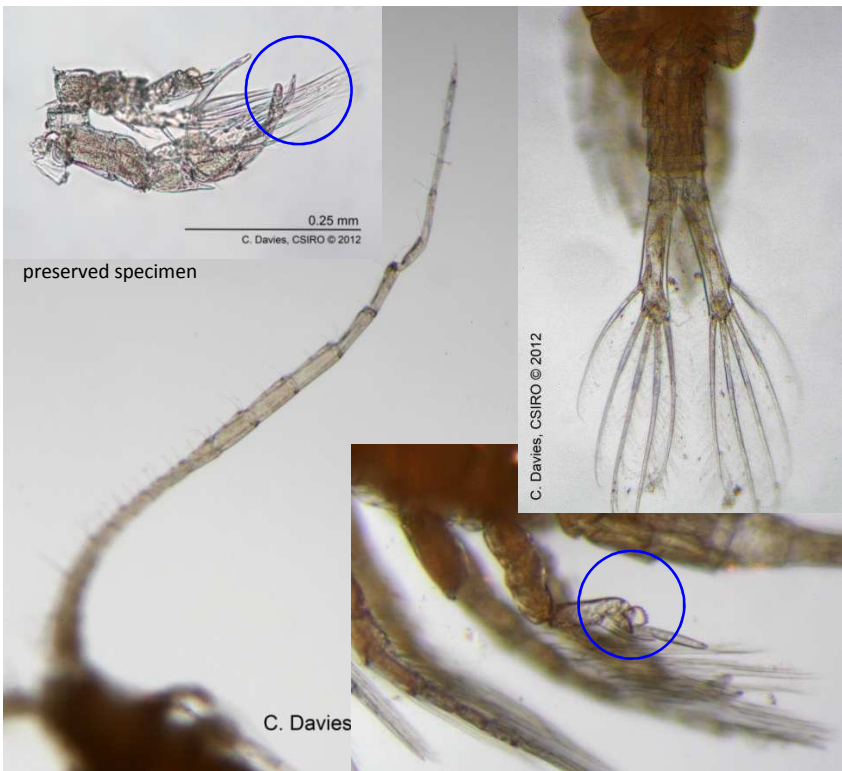
- Male**
- Last prosome somite quite rounded
 - Right P5 exopodal segment 3 terminated by 2 thick spine like extensions
 - Distinctive shape to end exopodal segment of left P5

Source
 Conway (2003)
 Grice (1962)
 Razouls et al. (2012)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

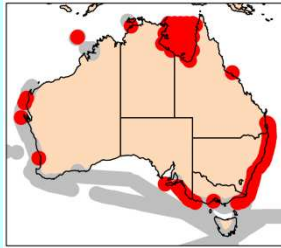


Grice (1962)



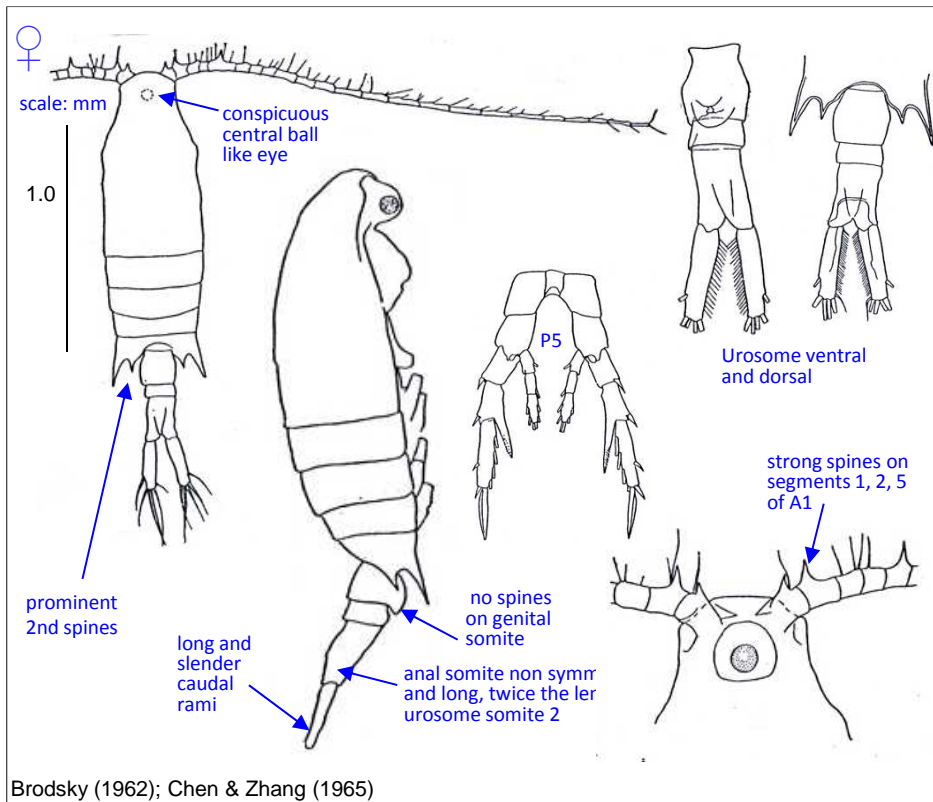
Centropages furcatus

(Dana, 1849)



Phylum
Order
Family

Arthropoda
Calanoida
Centropagidae



Brodsky (1962); Chen & Zhang (1965)

Synonyms

Catopia furcata Dana, 1849
Centropages lenuculari Oliveira, 1946

Size

Female: 1.38 – 1.90 mm

Genus notes

- Small to medium size
- Cephalosome and pedigerous somite 1 are fused (fusion lines visible on sides)
- Single naupliar eye
- Lateral corners of posterior prosome often end in asymmetrical points
- Characteristic undulating edge on last prosomal somite between spine and urosome
- Female P5 biramous, exopod segment 2 with a strong, inner spine-like process
- Male P5 complex, right leg chelate
- Urosome usually 3-segmented, often with spines, without seminal receptacles

Female

- Conspicuous central ball-like eye
- May be quite transparent
- Strong spines on segments 1, 2, 5 of A1
- Prominent second spines between the lateral spines on the last prosome somite and the urosome
- P5 exopodal segment 2 inner edge spine does not reach distal border of exopodal segment 3
- No spines on genital somite
- Anal somite asymmetrical and long, twice the length of urosome somite 2
- Long and slender caudal rami

Distribution

- Epipelagic, coastal, cosmopolitan
- Most widely distributed species within the genus
- As far south as subantarctic

Ecology

- Cannibalistic feeding has been observed
- Preys on nauplii of other coastal calanoids
- Spawns at night
- Produces resting eggs

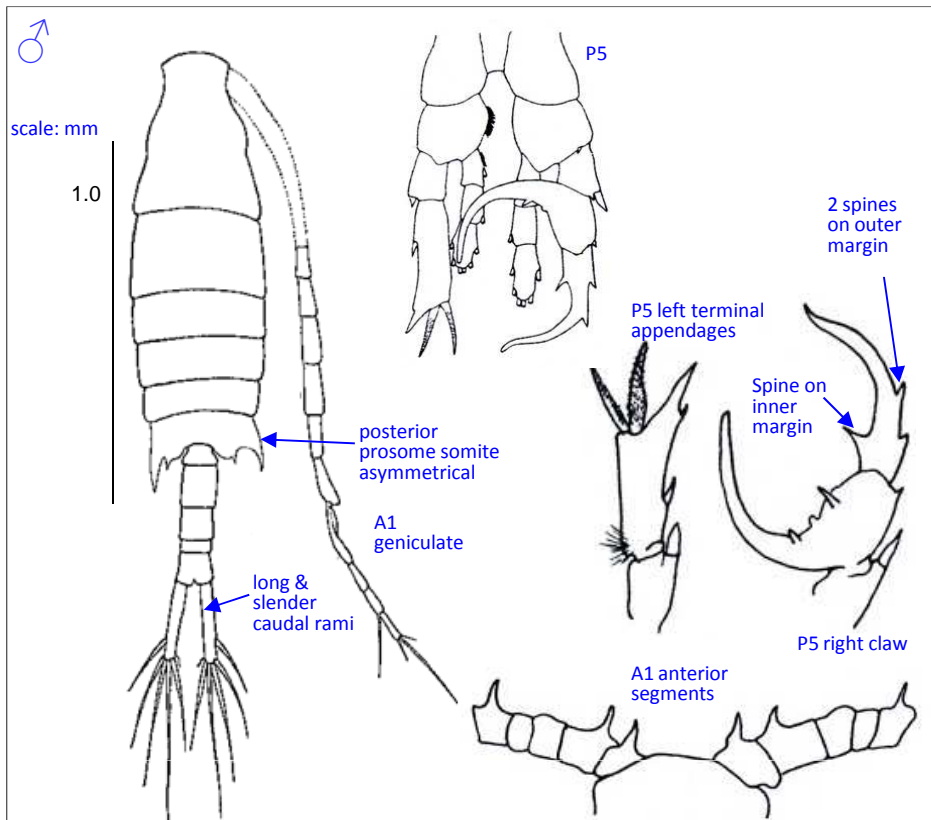


Centropages furcatus

(Dana, 1849)

Phylum
Order
Family

Arthropoda
Calanoida
Centropagidae



Size

Male: 1.40 – 1.75 mm

Male

- Right A1 geniculate
- May be quite transparent
- Posterior prosome somite slightly asymmetrical, left side protrudes further than right
- Prominent second spines between the lateral spines on the last prosome somite and the urosome
- Right P5 extension on exopodal segment 2 has a rounded protrusion on the proximal portion; exopodal segment 3 claw is stout and has a spine on the inner margin and 2 spines on outer margin
- Left P5 exopodal segments 2-3 with long terminal fixed appendages
- Long and slender caudal rami

Source

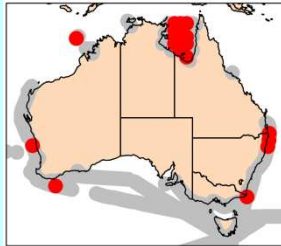
Al-Yamani & Prusova (2003)
Bradford Grieve (1999)
Brodsky (1962)
Checkley et al. (1992)
Chen & Zhang (1965)
Conway (2003)
Daan et al. (1988)
Marcus (1989)
Razouls et al. (2012)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Brodsky (1962), Al-Yamani & Prusova (2003), Chen & Zhang (1965)

Centropages gracilis

(Dana, 1849)



Phylum Arthropoda
Order Calanoida
Family Centropagidae

Synonym

Cyclopsina gracilis Dana, 1849

Hemicalanus gracilis Dana, 1852

Size

Female: 1.85 – 2.00 mm

Genus notes

- Small to medium size
- Cephalosome and pedigerous somite 1 are fused (fusion lines visible on sides)
- Single naupliar eye
- Lateral corners of posterior prosome often end in asymmetrical points
- Characteristic undulating edge on last prosomal somite between spine and urosome
- Female P5 biramous, exopod segment 2 with a strong, inner spine-like process
- Male P5 complex, right leg chelate
- Urosome usually 3-segmented, often with spines, without seminal receptacles

Female

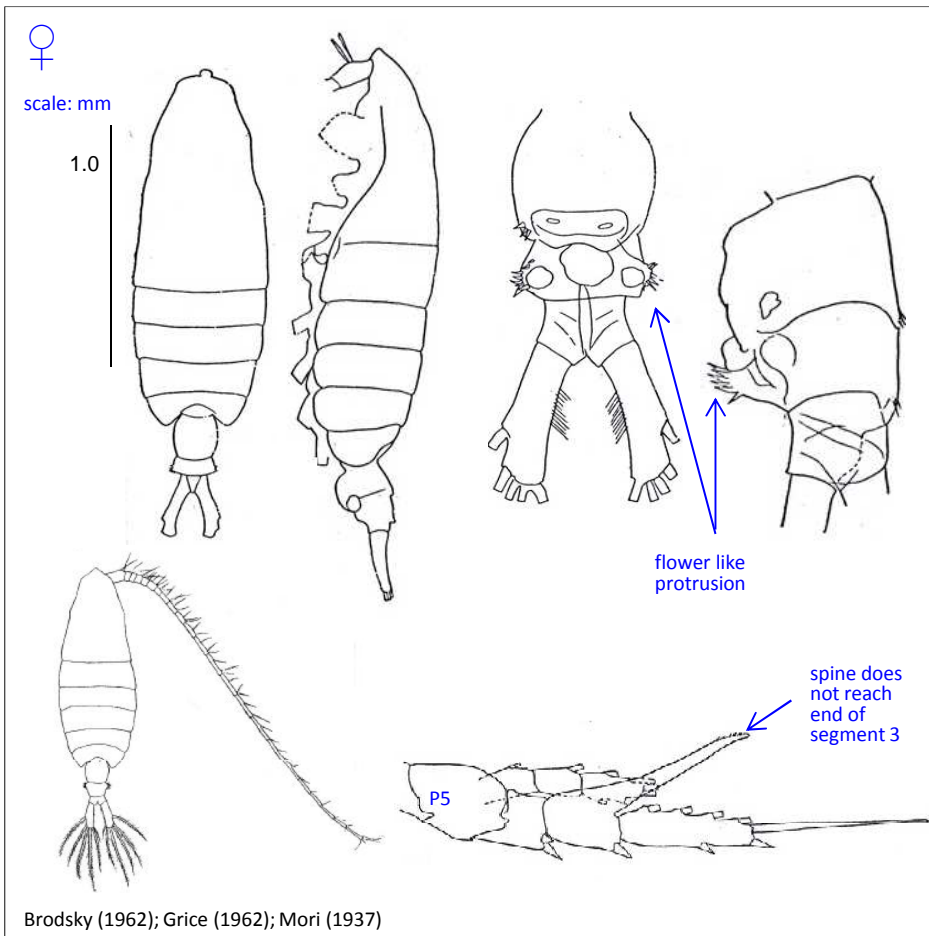
- Lateral angles of the last prosome somite are rounded
- A1 extends beyond caudal rami by last 5 segments
- Inner marginal spine on exopodite segment 2 of P5 does not reach the end of segment 3
- Genital somite with naked lateral borders
- Urosome somite 2 has lateral knobs covered in small spines (flower like)
- Caudal rami are symmetrical

Distribution

- Epipelagic
- Coastal and offshore
- Tropical
- Indian, Pacific and Atlantic

Ecology

- Little is known about the ecology of this species



Centropages gracilis

(Dana, 1849)

Phylum Arthropoda
Order Calanoida
Family Centropagidae

Size
 Male: 1.80 – 2.04 mm

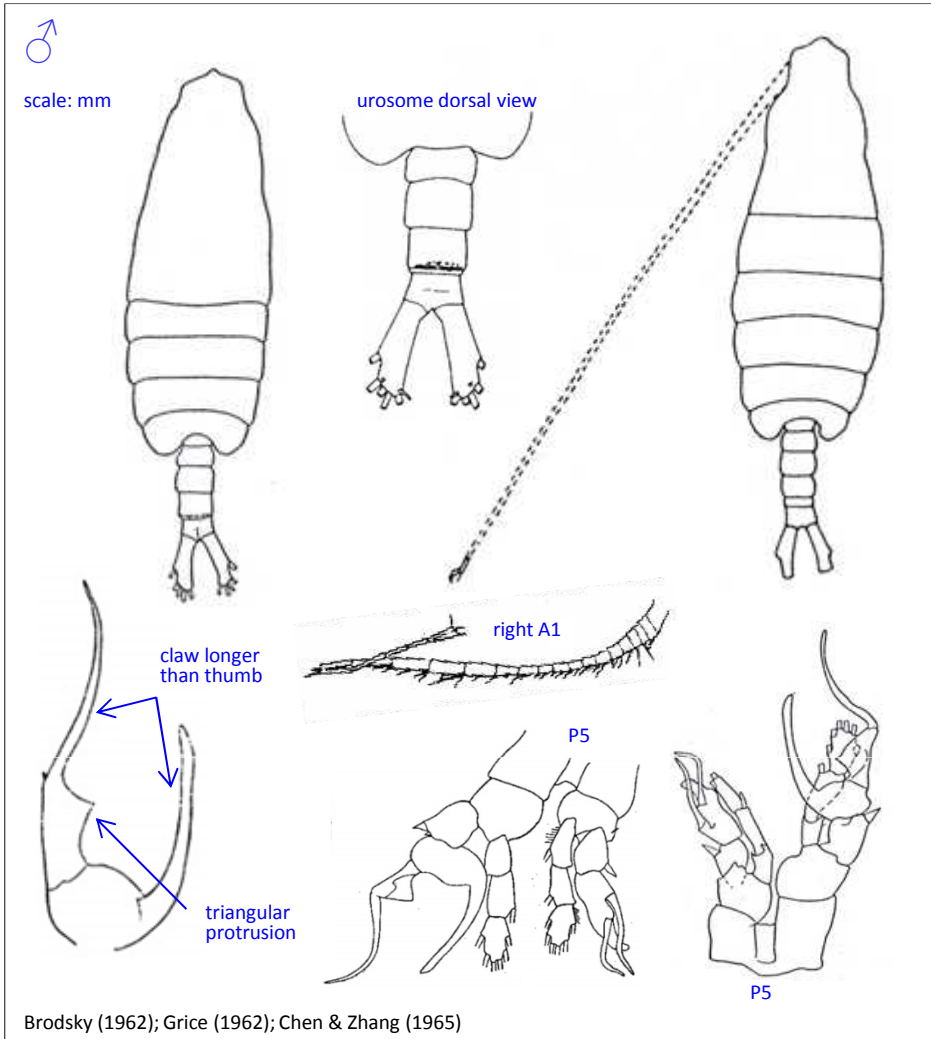
Male

- Posterior corners of prosome rounded
- Right P5 terminal claw is longer than the appendage on exopod 2 (thumb) and has a pronounced triangular protrusion, absent in other species in the genus

Source

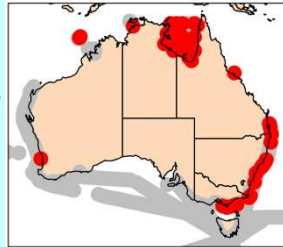
Bradford-Grieve & Markhaseva (1999)
 Boxshall & Halsey (2004)
 Brodsky (1962)
 Chen & Zhang (1965)
 Conway (2003)
 Grice (1962)
 Mori (1937)
 Razouls et al. (2012)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)



Centropages orsinii

Giesbrecht, 1889



Phylum
Order
Family

Arthropoda
Calanoida
Centropagidae

Synonyms
none

Size
Female: 1.40 - 1.60 mm

Genus notes

- Small to medium size
- Cephalosome and pedigerous somite 1 are fused (fusion lines visible on sides)
- Single naupliar eye
- Lateral corners of posterior prosome often end in asymmetrical points
- Characteristic undulating edge on last prosomal somite between spine and urosome
- Female P5 biramous, exopod segment 2 with a strong, inner spine-like process
- Male P5 complex, right leg chelate
- Urosome usually 3-segmented, often with spines, without seminal receptacles

Female

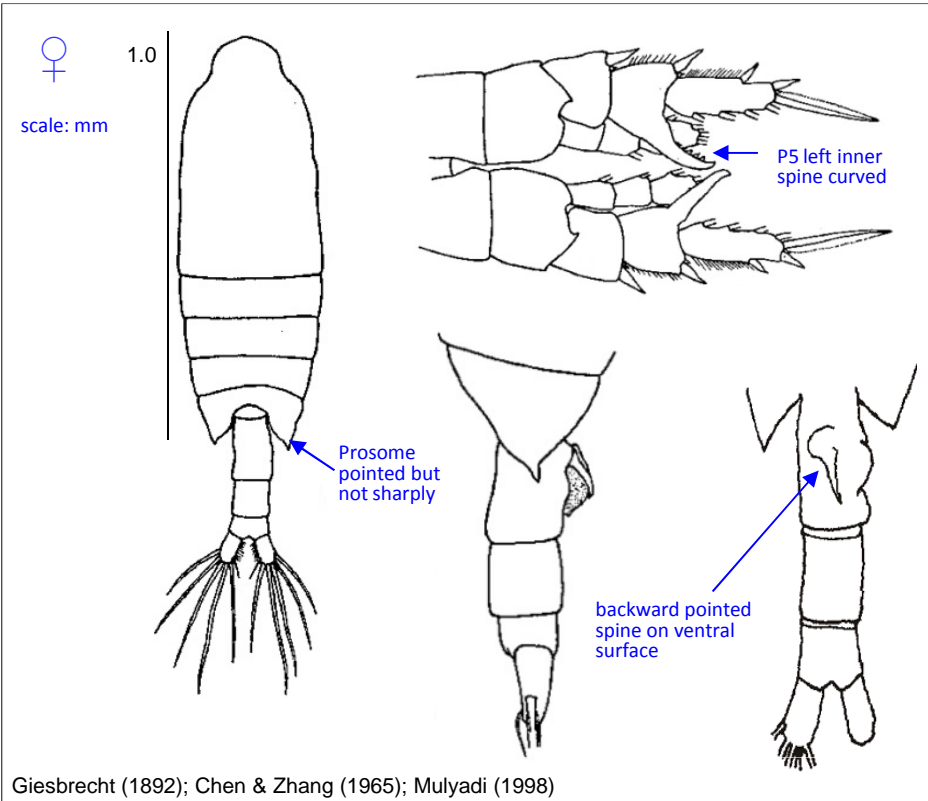
- A1 reaches to end of caudal rami, no spines on segments 1, 2, 5
- Posterior borders of prosome are weakly pointed
- P5 nearly symmetrical
- Left P5 exopodal segment 2 inner spine curved, usually bordered by small spines
- Genital somite symmetrical, offset, backward pointed spine on ventral surface
- Caudal rami are twice as long as wide

Distribution

- Epipelagic
- Coastal, oceanic
- Indian and Pacific, not Atlantic
- Tropical, subtropical

Ecology

- Forms swarms, sometimes as part of a multi-species assemblage
- Herbivorous, feeding on mixed phytoplankton species
- Little is known about the ecology of this species



Giesbrecht (1892); Chen & Zhang (1965); Mulyadi (1998)



C. Davies @ CSIRO 2012

C. Davies @ CSIRO 2012

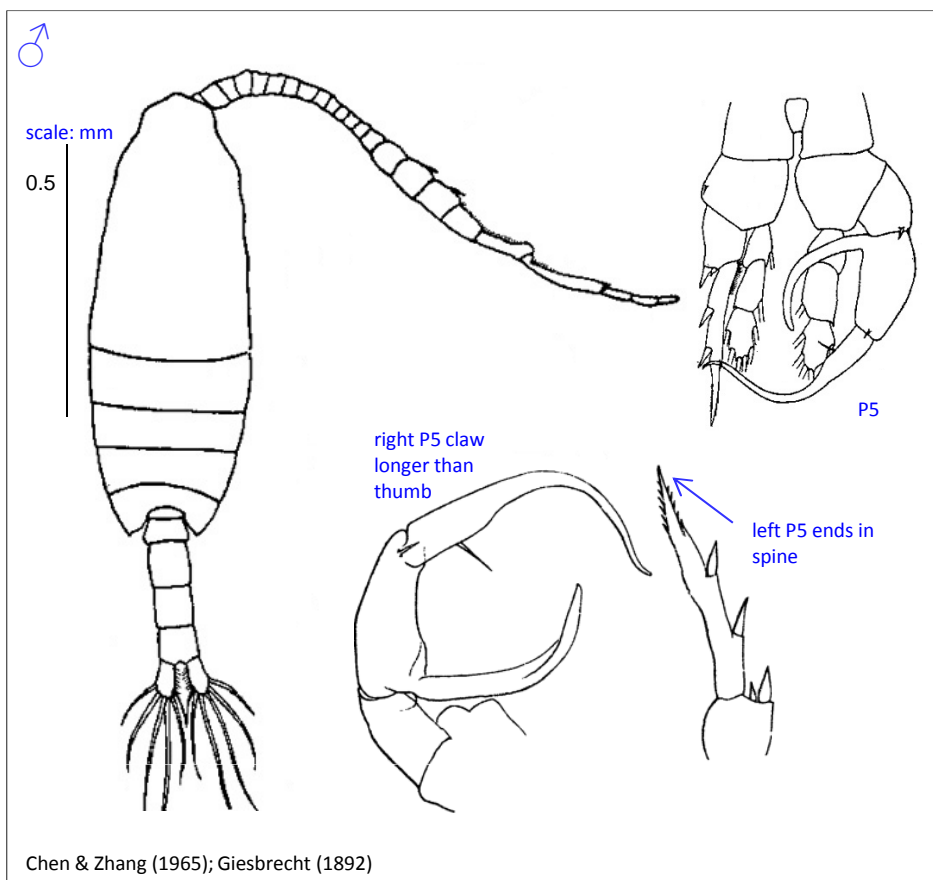


Centropages orsinii

Giesbrecht, 1889

Phylum
Order
Family

Arthropoda
Calanoida
Centropagidae



Size

Male: 1.25 - 1.30 mm

Male

- Posterior corners of prosome hardly pointed
- Terminal claw on right P5 longer than the appendage on exopodal segment 2 (thumb)
- Terminal exopodal segment of left P5 ends in a spine

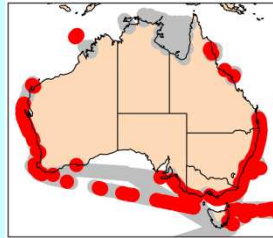
Source

Bradford-Grieve (1999)
Chen & Zhang (1965)
Giesbrecht (1892)
Mulyadi (1998)
Razouls et al. (2012)
Shek & Liu (2010)

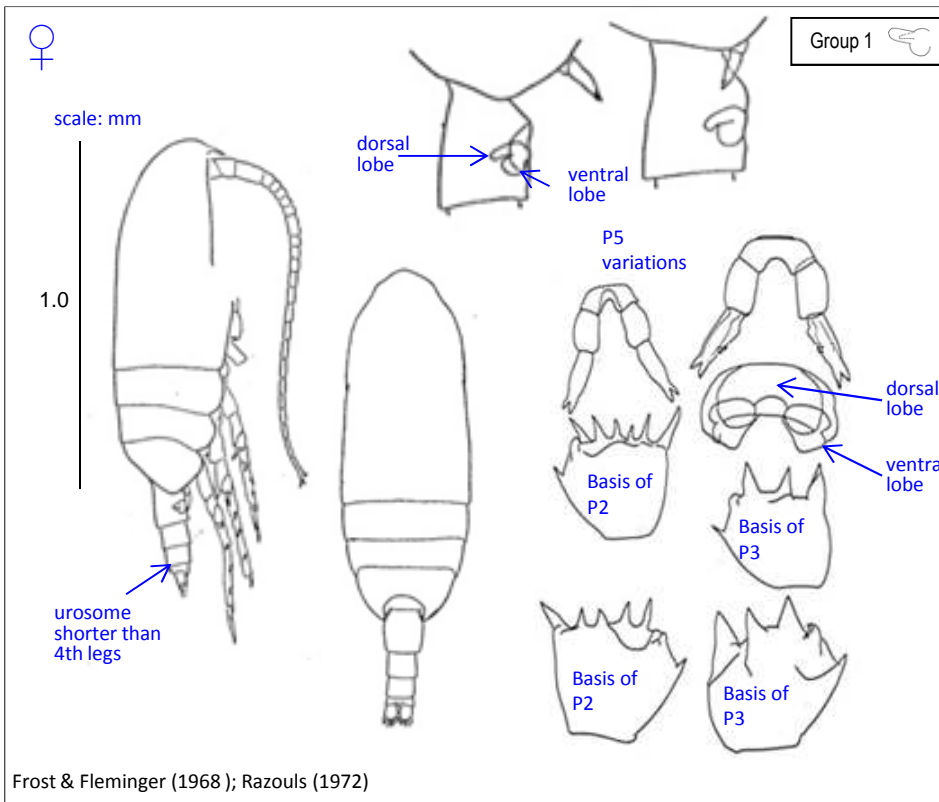
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Clausocalanus arcuicornis

(Dana, 1849)



Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Synonyms

Calanus arcuicornis Dana, 1849
Calanus mastigophorus Claus, 1863
Clausocalanus mastigophorus (Claus, 1863)
Eucalanus mastigophorus (Claus, 1866)

Size

Female: 1.15-1.62 mm

Genus notes

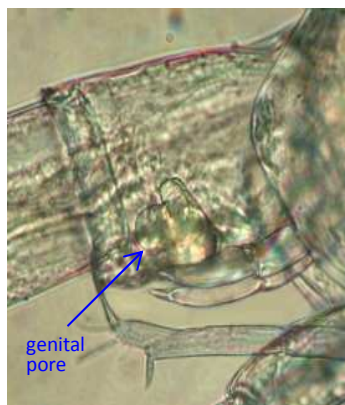
- Small to medium sized copepods
- Female rostrum bifurcated
- Male rostrum reduced to a knob
- Anterior cephalosome & posterior prosome segments are rounded
- Cephalosome fused to pedigerous somite 1
- Female P5 is uniramous, symmetrical and 3-segmented
- Male P5 uniramous, legs of unequal length, longer leg nearly always on left, 5-segmented with segment 5 short & attached sub-apically to the previous segment, shorter leg 3-segmented, less than half of the length of segment 1 of the other leg
- Female urosome 4-segmented
- Can be confused with *Paracalanus* but P5 is a different form

Female

- A1 as long or slightly longer than prosome
- Rostrum in lateral view is short, bifurcated, thick at base, usually straight or slightly curved and directed ventrally
- The 3rd segment of P5 as long as the preceding 2 segments together; segment 3 bifurcated, sometimes with tiny spinules on inner and outer margins
- Prosome : Urosome ratio 2.65-3.22:1
- Urosome shorter than 4th legs
- Genital somite in lateral view straight, or slightly concave, in region of seminal receptacle
- Genital somite 1.5 times as long as urosome somite 3
- Caudal rami about as long as broad

Distribution

- Epipelagic
- Inshore coastal, coastal and oceanic
- Australian distribution includes Tasmania, North West Cape, New South Wales and Great Barrier Reef
- World distribution: widespread in tropical and subtropical waters of the Pacific, Indian and Atlantic Oceans



CSIRO AusCPR

North Stradbroke Island Queensland

A. Slotwinski, CSIRO © 2012

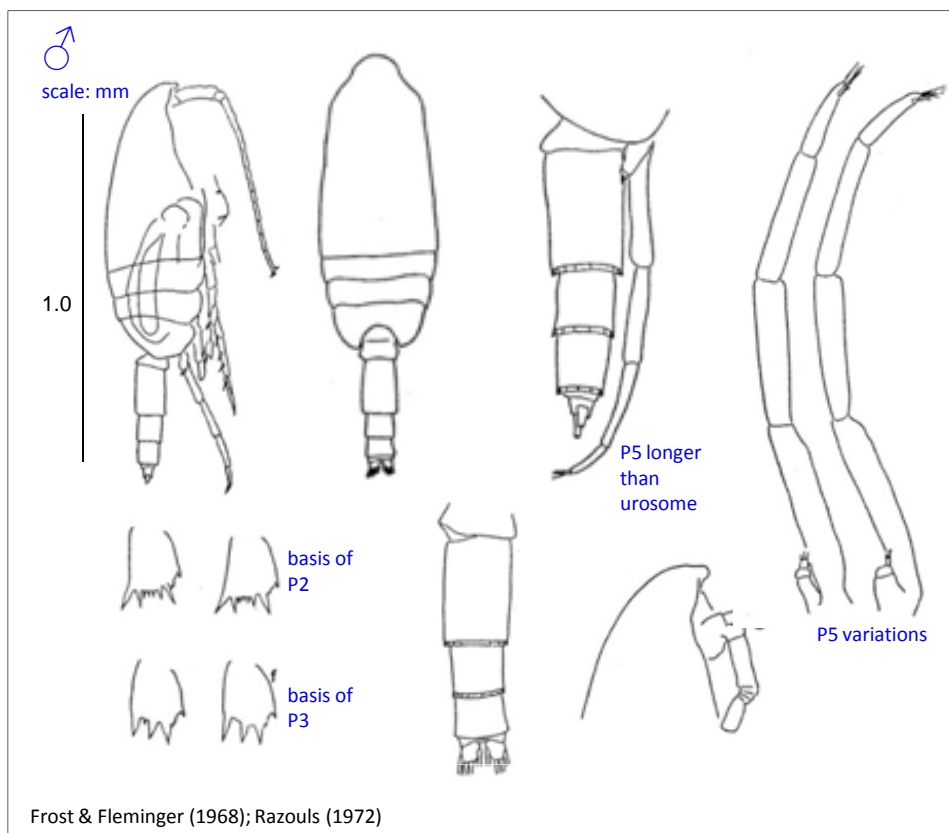
Compiled: C. H. Davies & A. S. Slotwinski 2011
 Verified: K. M. Swadling 2013



Clausocalanus arcuicornis

(Dana, 1849)

Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Size

Male: 0.97-1.17 mm

Male

- Rostrum in lateral view knoblike and protruding ventrally
- P5 right, short, 3 segmented
- P5 left leg is longer than urosome, robust, with long, slender, straight setae distally
- Prosome urosome ratio 1.9—2.51:1
- 2nd urosome somite as long as the following 2 somites together

Ecology

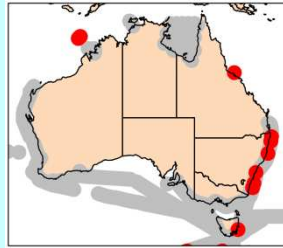
- Tropical-subtropical, circumglobal
- Can be transported into temperate regions with warm currents
- Most abundant off New South Wales during April and May; 17 – 19° sea surface temperatures
- Carries eggs in a single, fragile sac
- Herbivorous

Source

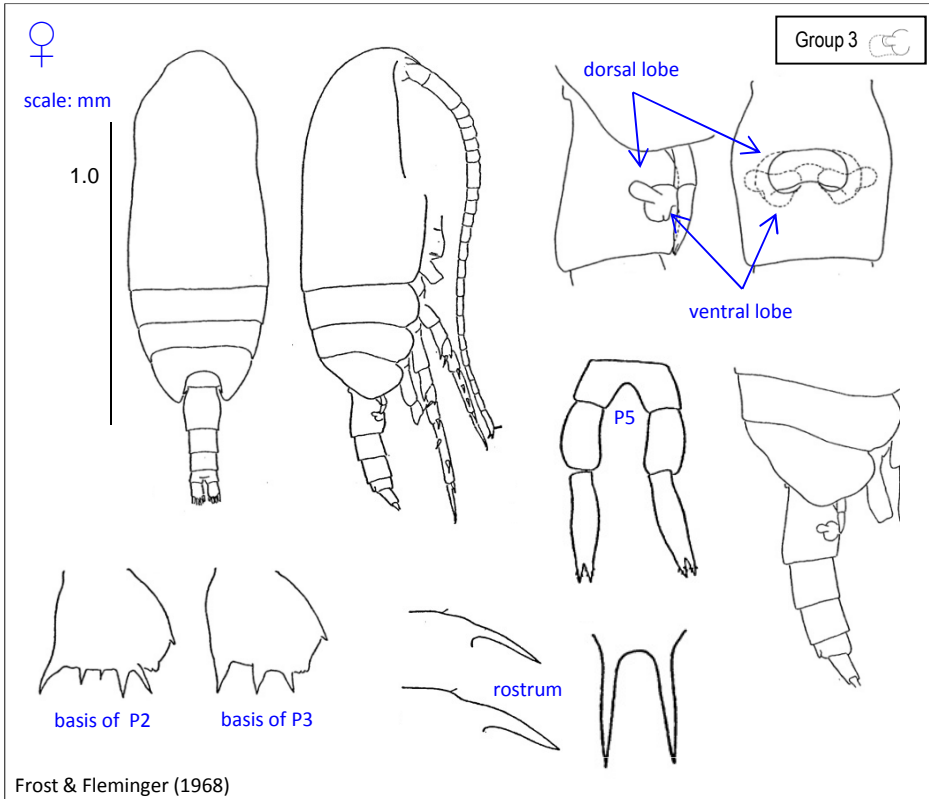
Boltovskoy (1999)
 Conway (2003)
 Dakin and Colefax (1940)
 Razouls et al (2010)
 Saiz & Calbert (1999)
 (Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Clausocalanus brevipes

Frost & Fleminger, 1968



Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Synonyms

None

Size

Female: 1.24 – 1.62 mm

Genus notes

- Small to medium sized copepods
- Female rostrum bifurcated
- Male rostrum reduced to a knob
- Anterior cephalosome & posterior prosome segments are rounded
- Cephalosome fused to pedigerous somite 1
- Female P5 is uniramous, symmetrical and 3-segmented
- Male P5 uniramous, legs of unequal length, longer leg nearly always on left, 5-segmented with segment 5 short & attached sub-apically to the previous segment, shorter leg 3-segmented, less than half of the length of segment 1 of the other leg
- Female urosome 4-segmented
- Can be confused with *Paracalanus* but P5 is a different form

Female

- Rostrum in lateral view slender or thick and curved ventroposteriad
- Posterior margin of prosome angular in lateral view
- Prosome:urosoma ratio 2.69-3.09:1
- P5 segment 3 more than 2x longer than P5 segment 1
- Caudal rami more than 1.61-1.83 times long as wide
- Genital somite more than 1.5 times as long as urosome somite 3
- Dorsal & ventral lobes of seminal receptacle conspicuous in ventral view
- Body similar to but larger than *C. pergens*
- Similar to *C. parapergens*, but distinguished by the length-width ratio of caudal ramus
- *C. brevipes* differs from *C. furcatus* in appearance of seminal receptacle in lateral view and relative lengths of urosome somites 1 and 3

Distribution

Ecology

- Generally herbivorous – omnivorous
- Feeding strategy is to rapidly explore small volumes of water

Clausocalanus brevipes

Frost & Fleminger, 1968

Phylum Arthropoda
Order Calanoida
Family Clausocalanidae

Size

Male: 1.12 – 1.27 mm

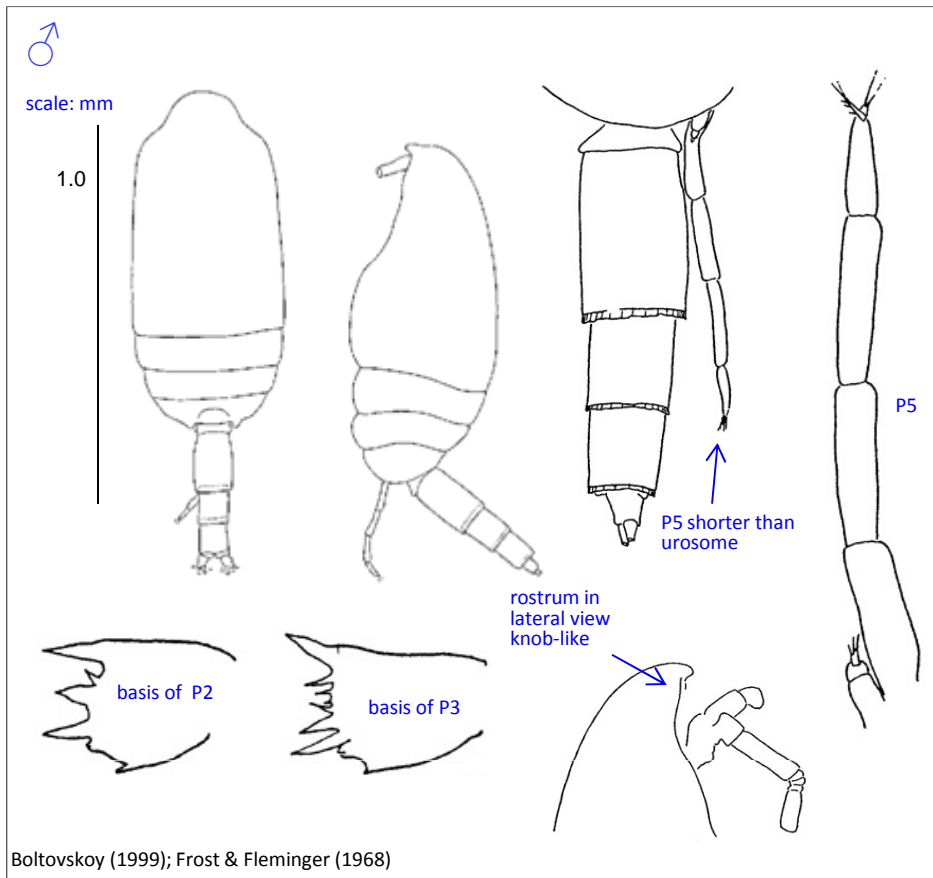
Male

- Rostrum in lateral view knob-like and protruding ventrally
- Longer ramus of P5 & genital pore on left side, left P5 much shorter than urosome
- Larger & more robust than *C.pergens*
- Distinguished from other *Clausocalanus* males by length of longer left ramus of P5 relative to the urosome

Source

Boltovskoy (1999)
 Frost and Fleminger (1968)

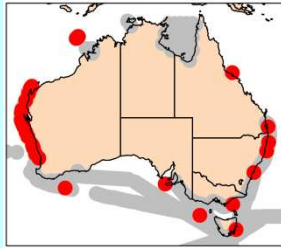
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)



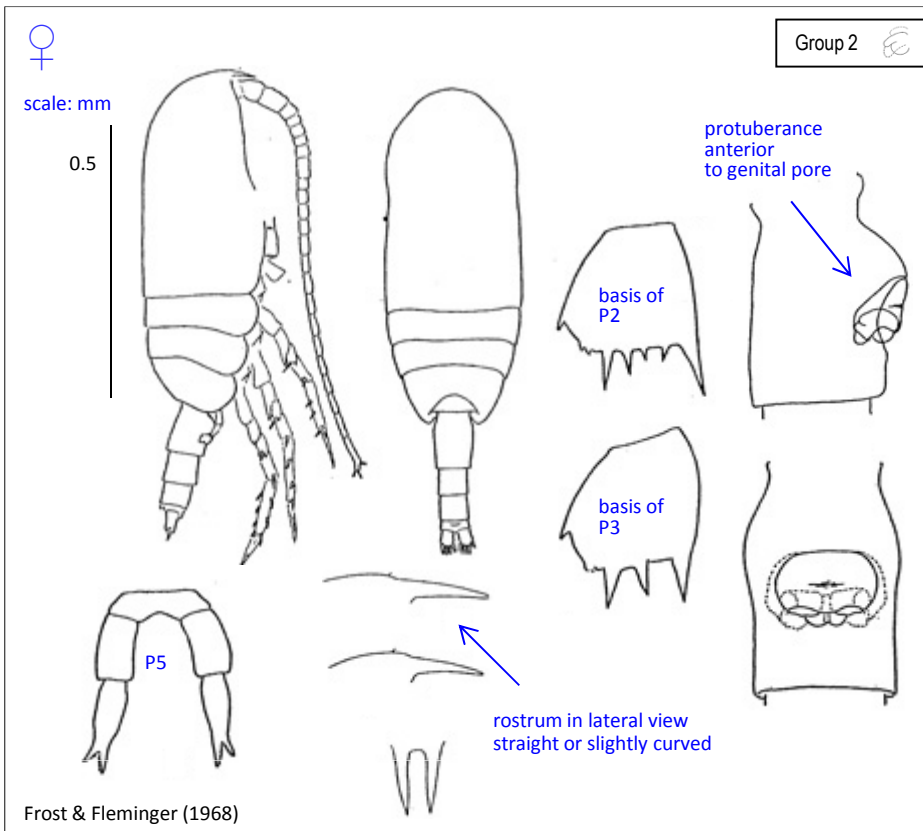
Boltovskoy (1999); Frost & Fleminger (1968)

Clausocalanus farrani

Sewell 1929



Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Synonyms
None

Size
Female: 0.87-1.22 mm

Genus notes

- Small to medium sized copepods
- Female rostrum bifurcated
- Male rostrum reduced to a knob
- Anterior cephalosome & posterior prosome segments are rounded
- Cephalosome fused to pedigerous somite 1
- Female P5 is uniramous, symmetrical and 3-segmented
- Male P5 uniramous, legs of unequal length, longer leg nearly always on left, 5-segmented with segment 5 short & attached sub-apically to the previous segment, shorter leg 3-segmented, less than half of the length of segment 1 of the other leg
- Female urosome 4-segmented
- Can be confused with *Paracalanus* but P5 is a different form

Female

- Rostrum in lateral view straight or slightly curved, short, thick and directed ventrad or slightly ventroposteriad
- Terminal points of P5 segment 3 divergent and always spinulose only in inner margins
- Prosome:Urosome ratio 2.3-2.64:1
- Ventral profile of genital somite in lateral view protuberant anterior to genital pores
- Separation of seminal receptacle dorsal and ventral lobes weak both in lateral and ventral view
- Genital somite more than 1.5x as long as urosome somite 3

Distribution

- Epipelagic, coastal
- Subtropical, tropical
- Indian and Pacific oceans

Ecology

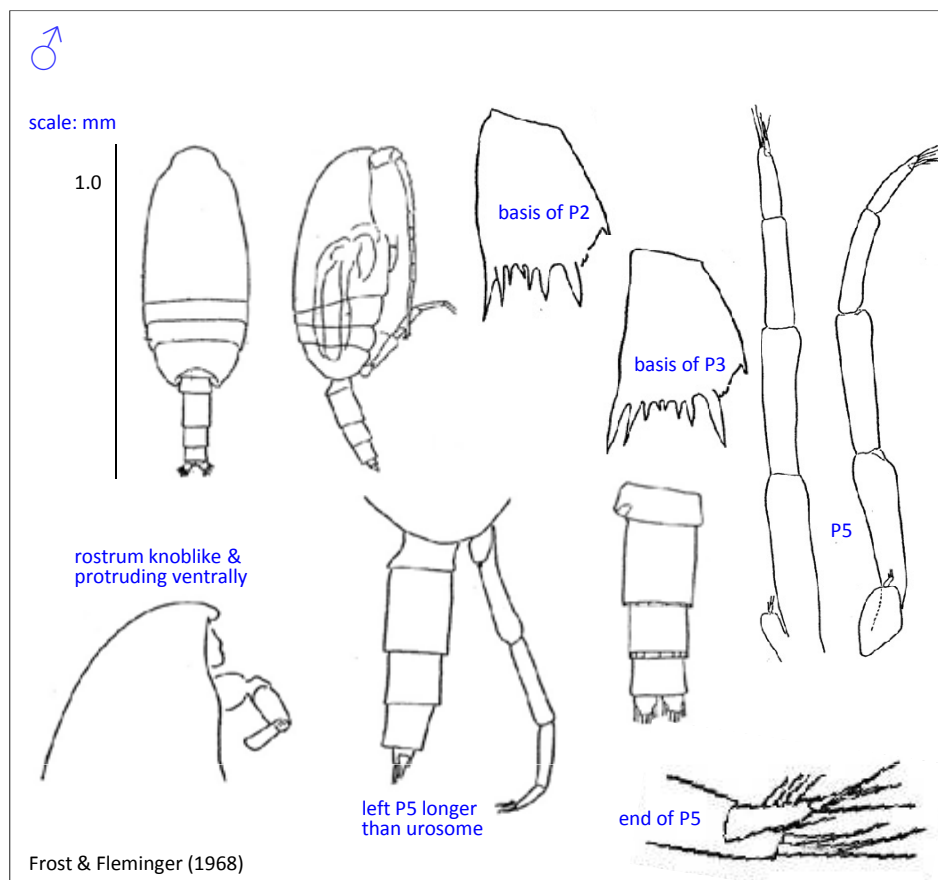
- Generally herbivorous – omnivorous
- Feeding strategy is to rapidly explore small volumes of water
- Carries egg sacs; produces up to 5 eggs per female per day
- Infection with endoparasites can impair the maturation of gonads and lead to intersexuality



Clausocalanus farrani

Sewell 1929

Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Size
 Male: 0.65 - 0.99 mm

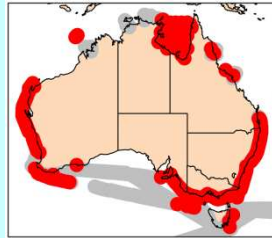
- Male**
- Body stouter than *C. arcuicornis*
 - Rostrum in lateral view knob-like and protruding ventrally
 - Longer ramus of P5 and genital pore on left side
 - Left P5 longer than urosome, 5th segment armed distally with slender, usually straight setae
 - Right P5 short, 2-segmented, segment 2 very small

Source
 Cornils et al. (2007)
 Frost & Fleminger (1968)
 Razouls et al. (2012)

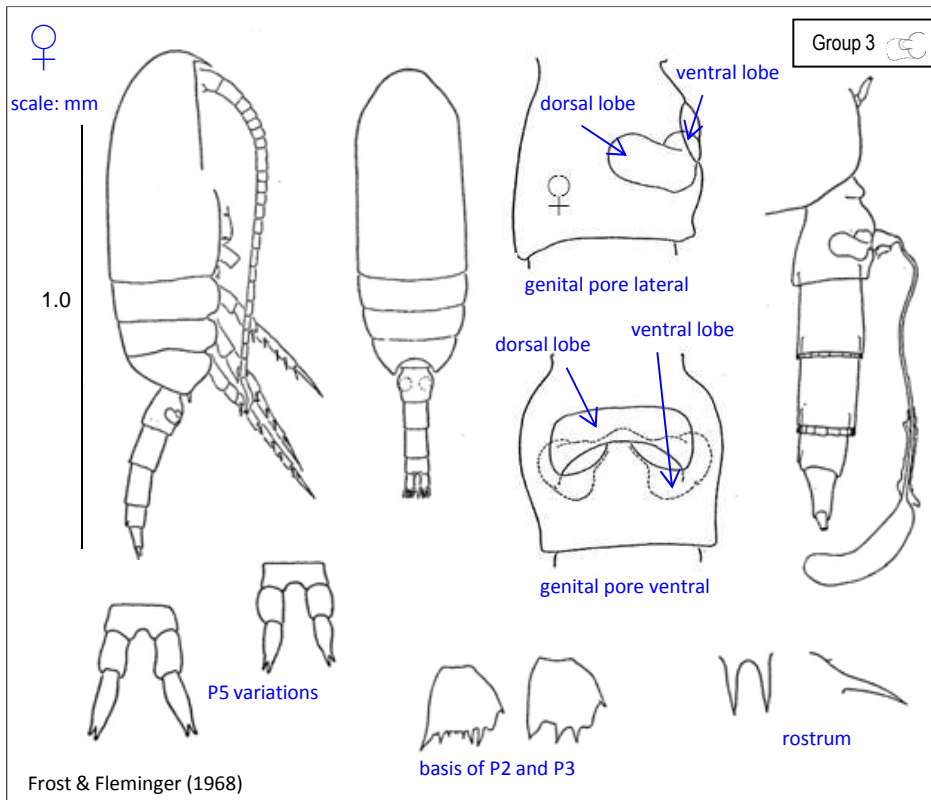
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Clausocalanus furcatus

(Brady, 1883)



Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Synonyms

Drepanopus furcatus Brady, 1883

Size

Female: 0.94-1.31 mm

Genus notes

- Small to medium sized copepods
- Female rostrum bifurcated
- Male rostrum reduced to a knob
- Anterior cephalosome & posterior prosome segments are rounded
- Cephalosome fused to pedigerous somite 1
- Female P5 is uniramous, symmetrical and 3-segmented
- Male P5 uniramous, legs of unequal length, longer leg nearly always on left, 5-segmented with segment 5 short & attached sub-apically to the previous segment, shorter leg 3-segmented, less than half of the length of segment 1 of the other leg
- Female urosome 4-segmented
- Can be confused with *Paracalanus* but P5 is a different form

Female

- Rostrum in lateral view is thick, short and slightly curve, bifurcated at tip
- P5 coxa very short
- Prosome:Urosome ratio 2.24-2.50:1
- Urosome longer than 4th legs
- Genital somite shorter than next two segments
- Genital somite profile in lateral view rather uneven
- Seminal receptacle is large and bulbous
- Caudal rami twice as long as wide

Distribution

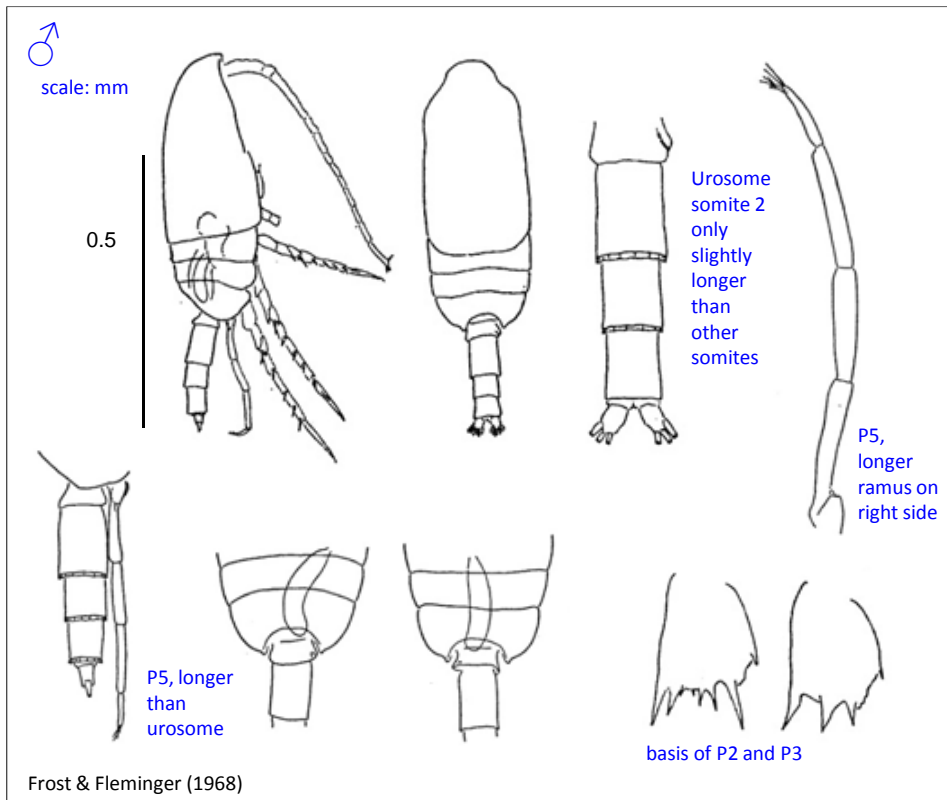
- Epipelagic
- Coastal and oceanic
- Australian distribution includes Tasmania, New South Wales, Great Barrier Reef and the oceanic waters off Shark Bay, Western Australia
- World distribution: widespread in all tropical and sub-tropical waters

Frost & Fleminger (1968)

Clausocalanus furcatus

(Brady, 1883)

Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Frost & Fleminger (1968)

Size

Male: 0.7-0.92 mm

Male

- Rostrum not well developed and not protruding ventrally
- Longer P5 and genital pore usually on right side (sometimes left). This is different to most other *Clausocalanus* males
- Longer leg of P5 longer than urosome; shorter leg of P5 usually bimerous, distal segment small
- Prosome:Urosome ratio 2.24-2.50:1
- Urosome somite 2 a little longer than other urosome somites

Ecology

- Tropical-subtropical, circumglobal
- Can be found in temperate regions with warm water movement
- Found in Tasmania from February – July, most abundant between March and May, coinciding with the extension of the East Australian Current
- *C. furcatus* females carry their eggs in a cylindrical mass wrapping the abdomen
- *C. furcatus* feeds, reproduces and develops at low phytoplankton concentrations, ideal for open ocean environments
- Development times for *C. furcatus* from hatching to adulthood is 13 - 21 days at 20°C
- Herbivorous filter feeder

Source

Frost & Fleminger (1968)

Kimmerer et al (1985)

Mazzocchi & Paffenhöfer (1998)

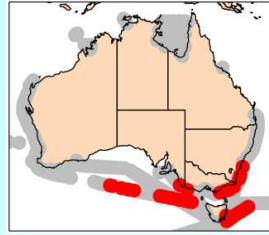
Razouls et al (2010)

(Full reference available at

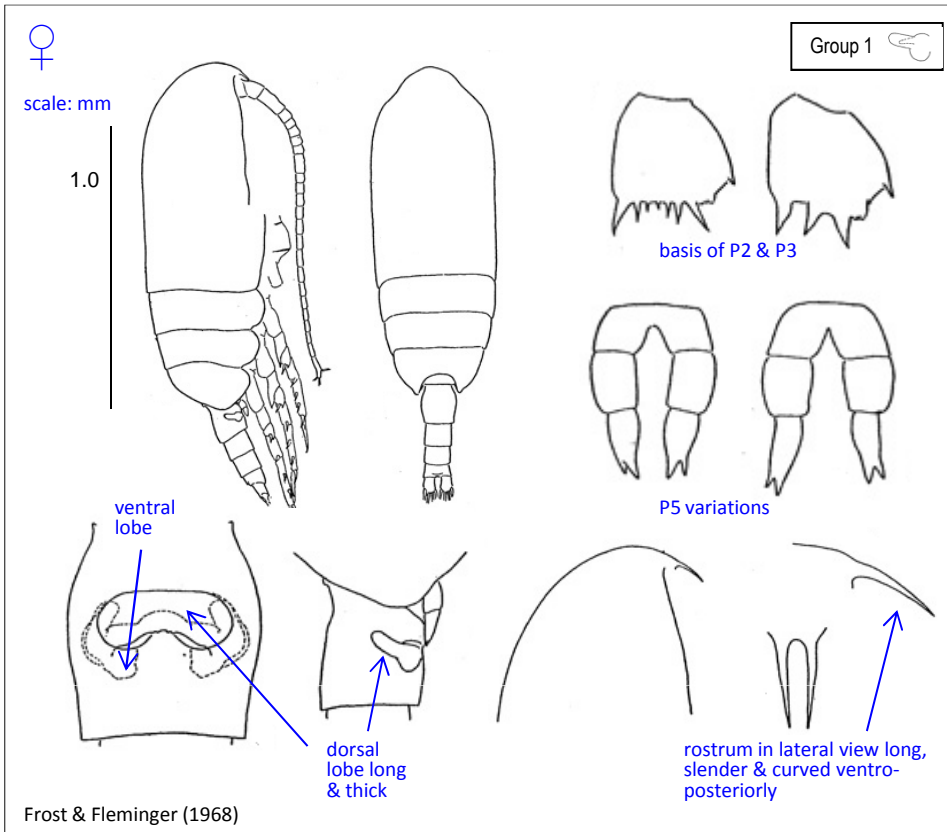
<http://www.imas.utas.edu.au/zooplankton/references>)

Clausocalanus ingens

Frost & Fleminger, 1968



Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Synonym
None

Size
Female: 1.44-1.90 mm

Genus notes

- Small to medium sized copepods
- Female rostrum bifurcated
- Male rostrum reduced to a knob
- Anterior cephalosome & posterior prosome segments are rounded
- Cephalosome fused to pedigerous somite 1
- Female P5 is uniramous, symmetrical and 3-segmented
- Male P5 uniramous, legs of unequal length, longer leg nearly always on left, 5-segmented with segment 5 short & attached sub-apically to the previous segment, shorter leg 3-segmented, less than half of the length of segment 1 of the other leg
- Female urosome 4-segmented
- Can be confused with *Paracalanus* but P5 is a different form

Female

- Rostrum in lateral view long, slender and curved ventro-posteriorly
- Genital segment more than 1.5x as long as urosome segment 3
- Ventral lobe of seminal receptacle small in lateral view, dorsal lobe long and thick
- Ventral profile of genital segment non protruberant in lateral view
- Females can be identified from other *Clausocalanus* females by the form of the seminal receptacle in lateral view and the shape of the forehead

Distribution

- Epipelagic
- Coastal and oceanic
- Warm temperate waters to subantarctic
- Southern Hemisphere, circumglobal

Ecology

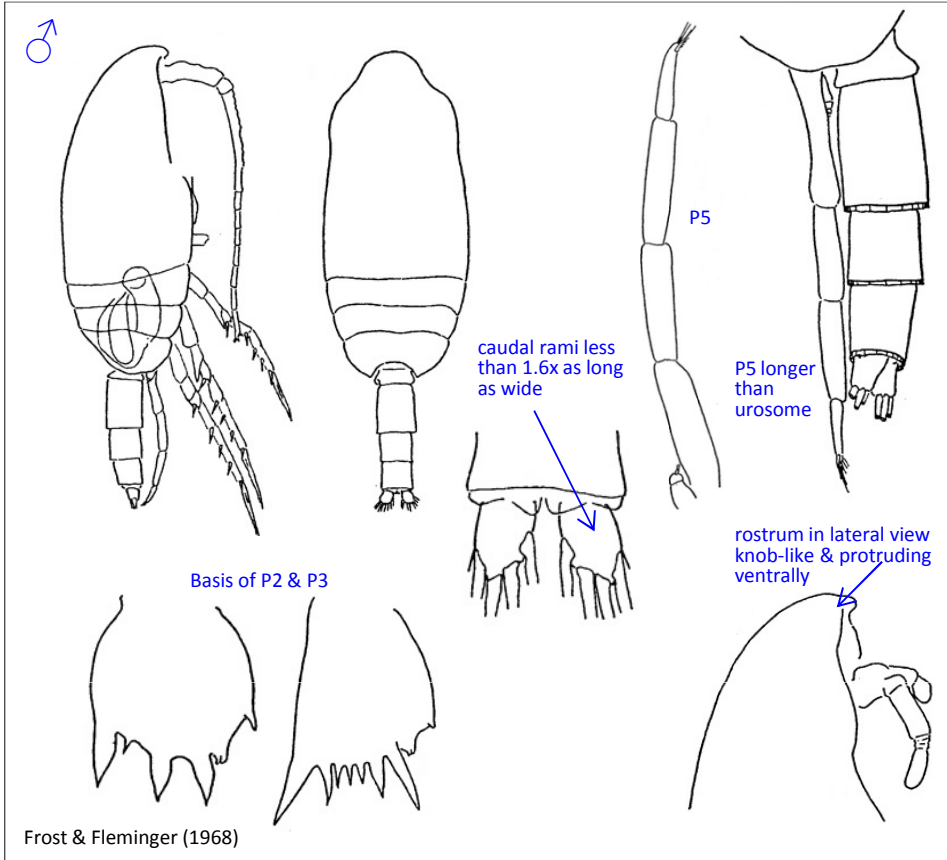
- Can often be recognised by the blue tint on the cuticle edge of the prosome and swimming legs
- Although it is often very abundant in plankton samples little is known about the ecology of this species



Clausocalanus ingens

Frost & Fleminger, 1968

Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Size
 Male 0.99 – 1.08 mm

Male

- Rostrum in lateral view knob-like and protruding ventrally
- Caudal rami less than 1.6x as long as wide
- P5 uniramous and of unequal length, longer P5 nearly always on left, 5-segmented with segment 5 short & attached sub-apically to previous segment
- Shorter P5, 3-segmented, less than half length of segment 1 of opposite P5

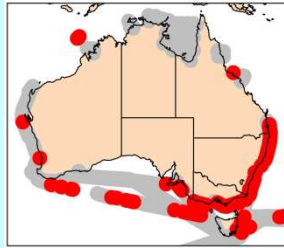
Source

Frost & Fleminger (1968)

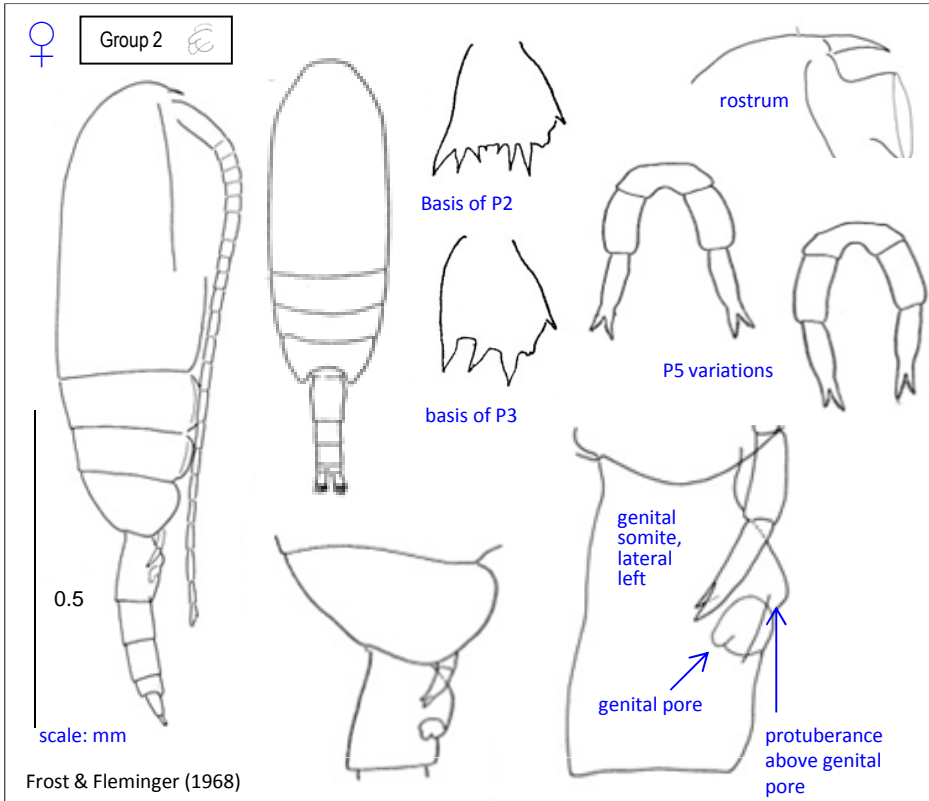
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Clausocalanus jobei

Frost & Fleminger, 1968



Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Synonyms

None

Size

Female: 1.01-1.56 mm

Genus notes

- Small to medium sized copepods
- Female rostrum bifurcated
- Male rostrum reduced to a knob
- Anterior cephalosome & posterior prosome segments are rounded
- Cephalosome fused to pedigerous somite 1
- Female P5 is uniramous, symmetrical and 3-segmented
- Male P5 uniramous, legs of unequal length, longer leg nearly always on left, 5-segmented with segment 5 short & attached sub-apically to the previous segment, shorter leg 3-segmented, less than half of the length of segment 1 of the other leg
- Female urosome 4-segmented
- Can be confused with *Paracalanus* but P5 is a different form

Female

- Body similar to *C. farrani* except forehead slightly more rounded in lateral view
- Rostrum long, slender and curved in lateral view
- Posterior margin of female prosome rounded in lateral view
- Prosome:Urosome ratio 2.32-2.92:1
- Genital somite more than 1.5 times as long as urosome somite 3
- Female *C. jobei* is distinct from all other *Clausocalanus* spp. (except *farrani*) in having a ventral protuberance of genital somite anterior to genital pores
- *C. jobei* and *C. farrani* differ in form of rostrum in lateral view

Distribution

- Tropical or sub-tropical distribution, circumglobal
- Broadly neritic distribution throughout its range
- Distribution distinct from *C. farrani* in the Indian & Pacific Oceans, areas of slight overlap found in western part of the eastern tropical Pacific Ocean

Ecology

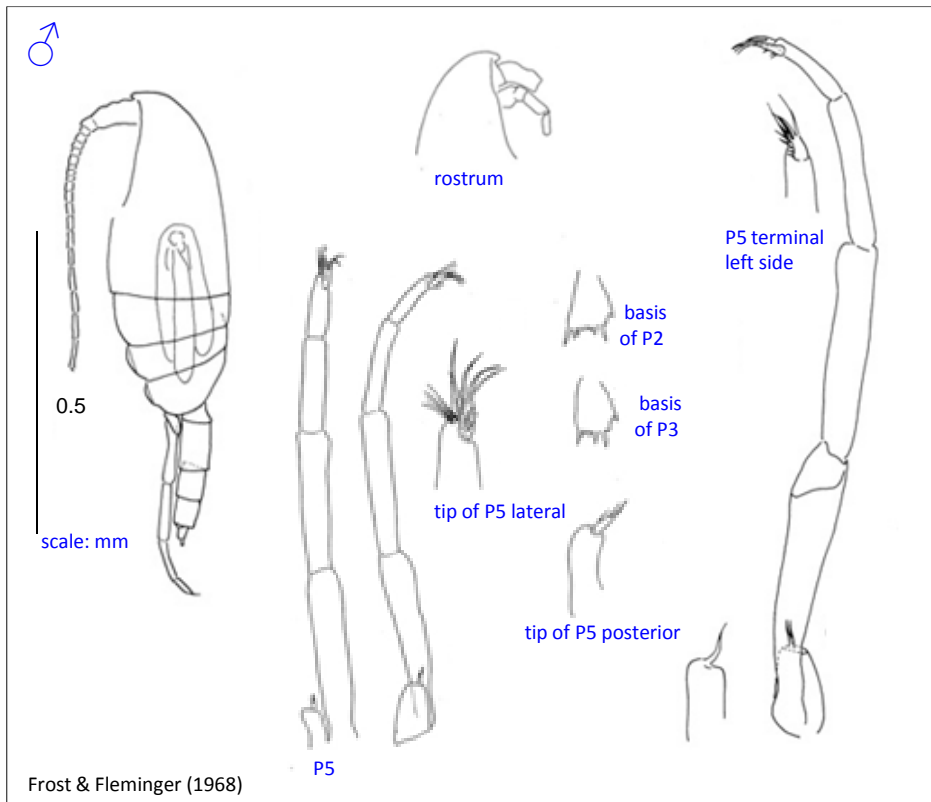
- Carries eggs in a single, fragile sac
- Herbivorous filter feeder

Frost & Fleminger (1968)

Clausocalanus jobei

Frost & Fleming, 1968

Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Size

Male: 0.87-1.07 mm

Male

- Rostrum knoblike and protrudes ventrally
- Prosome:Urosome ratio 2.29-2.60:1
- Longer ramus of P5 on left side, left P5 longer than urosome, left P5 armed distally with 2 thick curved spiniform setae
- Right P5 short, 2 segmented, 2nd segment very small

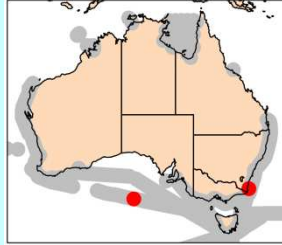
Source

Boltovskoy (1999)
 Dakin & Colefax (1940)
 Frost & Fleming (1968)
 Taw (1978)
 Saiz and Calbert (1999)

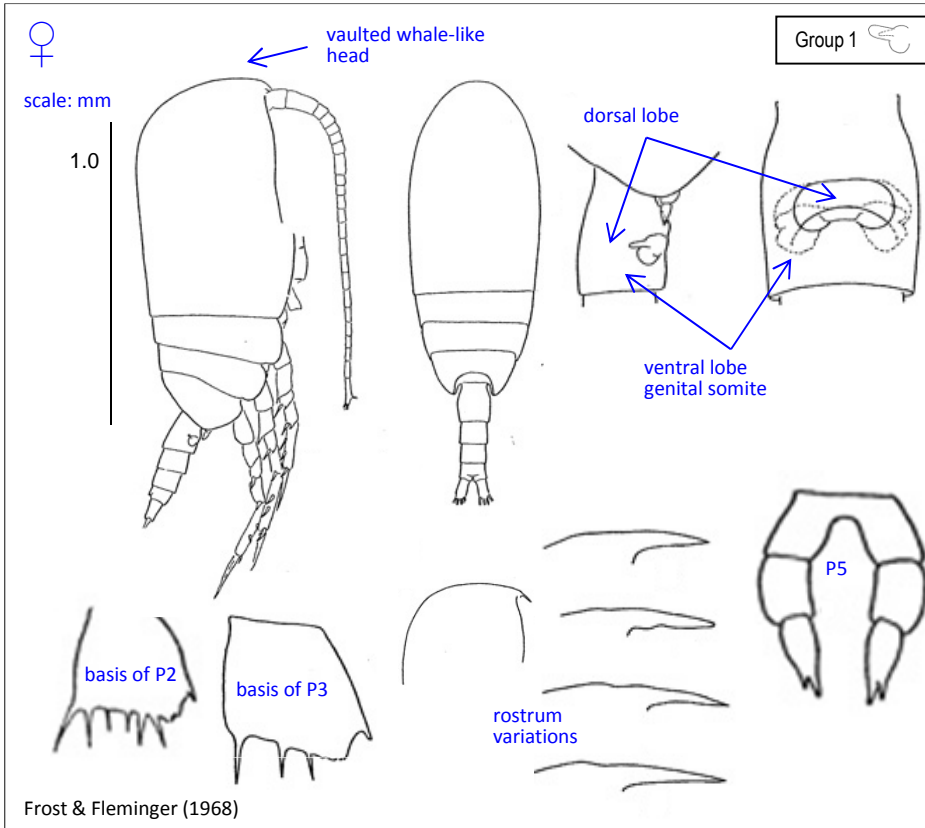
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Clausocalanus laticeps

Farran, 1929



Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Synonyms

None

Size

Female: 1.25 -1.67mm

Genus notes

- Small to medium sized copepods
- Female rostrum bifurcated
- Male rostrum reduced to a knob
- Anterior cephalosome & posterior prosome segments are rounded
- Cephalosome fused to pedigerous somite 1
- Female P5 is uniramous, symmetrical and 3-segmented
- Male P5 uniramous, legs of unequal length, longer leg nearly always on left, 5-segmented with segment 5 short & attached sub-apically to the previous segment, shorter leg 3-segmented, less than half of the length of segment 1 of the other leg
- Female urosome 4-segmented
- Can be confused with *Paracalanus* but P5 is a different form

Female

- Large vaulted 'whale-like' head in lateral view, rounded in dorsal view
- Rostrum in lateral view short, usually straight, directed ventroposteriad
- Terminal points of P5 segment 3 not spinulate
- Prosome:urosome ratio 2.51-2.97:1
- Ventral view of genital somite non protruberant
- Genital somite greater than 1.5x as long as somite 3
- Ventral lobe of seminal receptacle large in lateral view, seminal receptacle dorsal lobe slender, finger like and directed dorsally or ventrodorsally
- Dorsal and ventral lobes visible in ventral view

Distribution

Ecology

- Generally herbivorous – omnivorous
- Feeding strategy is to rapidly explore small volumes of water

Clausocalanus laticeps

Farran, 1929

Phylum	Arthropoda
Order	Calanoida
Family	Clausocalanidae

Size

Male: 1.01 – 1.10 mm

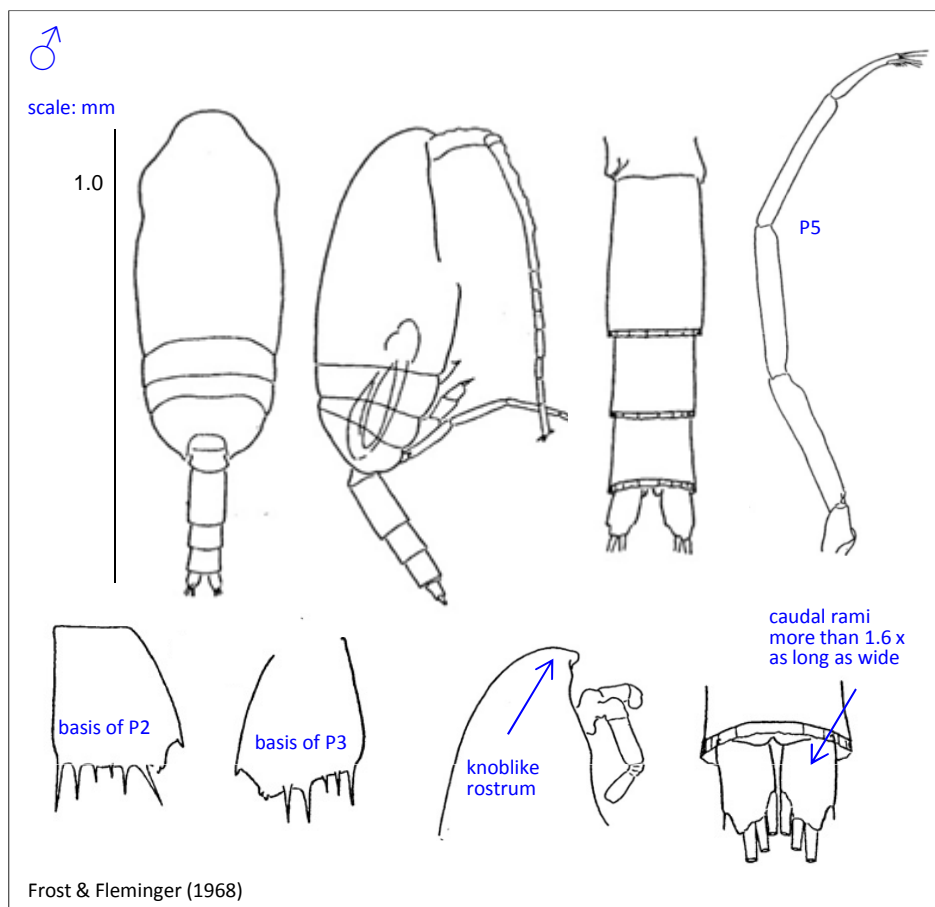
Male

- Rostrum in lateral view knob like and protruding ventrally
- P5 longer and genital pore on left
- P5 left longer than urosome
- Right P5 3 segmented
- Caudal rami more than 1.60x as long as wide

Source

Frost & Fleminger (1968)

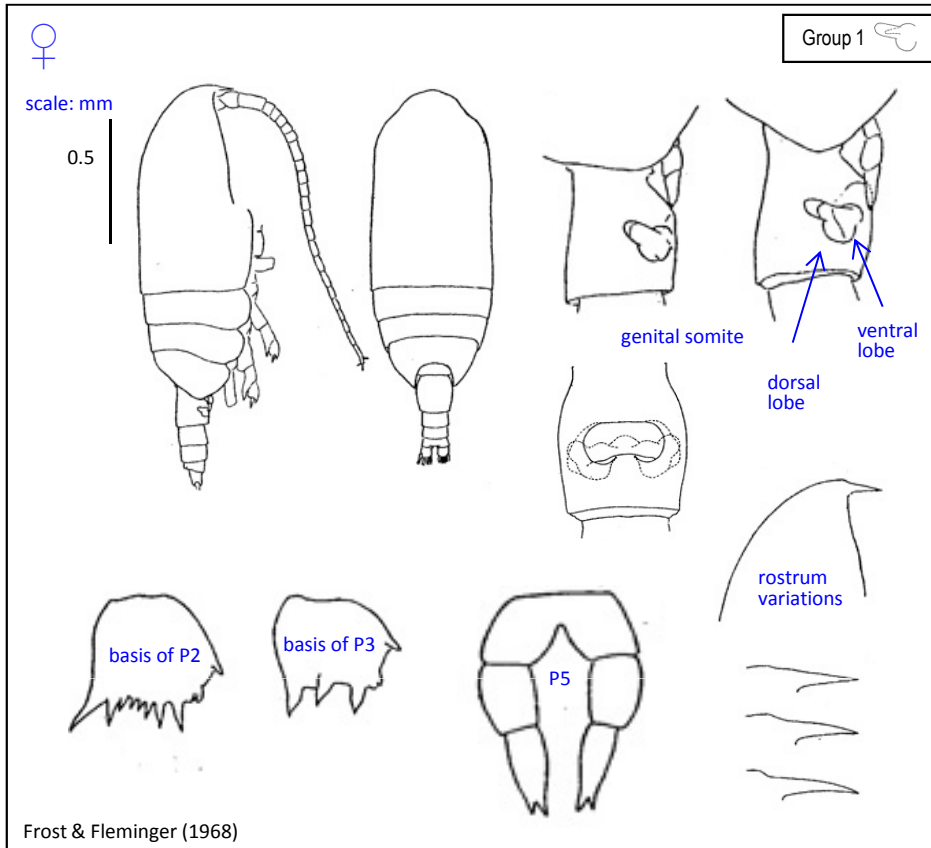
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)



Clausocalanus lividus

Frost & Fleminger, 1968

Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Synonyms
 None

Size
 Female: 1.26-1.98 mm

Genus notes

- Small to medium sized copepods
- Female rostrum bifurcated
- Male rostrum reduced to a knob
- Anterior cephalosome & posterior prosome segments are rounded
- Cephalosome fused to pedigerous somite 1
- Female P5 is uniramous, symmetrical and 3-segmented
- Male P5 uniramous, legs of unequal length, longer leg nearly always on left, 5-segmented with segment 5 short & attached sub-apically to the previous segment, shorter leg 3-segmented, less than half of the length of segment 1 of the other leg
- Female urosome 4-segmented
- Can be confused with *Paracalanus* but P5 is a different form

Female

- Rostrum in lateral view long and thick, usually straight and tapered uniformly
- Rostrum uniformly tapered in anterior view
- Terminal points of P5 segment 3 not spinulose
- Prosome: urosome ratio 2.68-3.28:1
- Ventral profile of genital somite nonprotruberant
- Genital somite more than 1.5x as long as urosome somite 3
- Ventral lobe large in lateral view, seminal receptacle dorsal lobe usually thick, directed dorsally or dorsoanterioriad
- Ventral lobe of seminal receptacle conspicuous in ventral view

Distribution

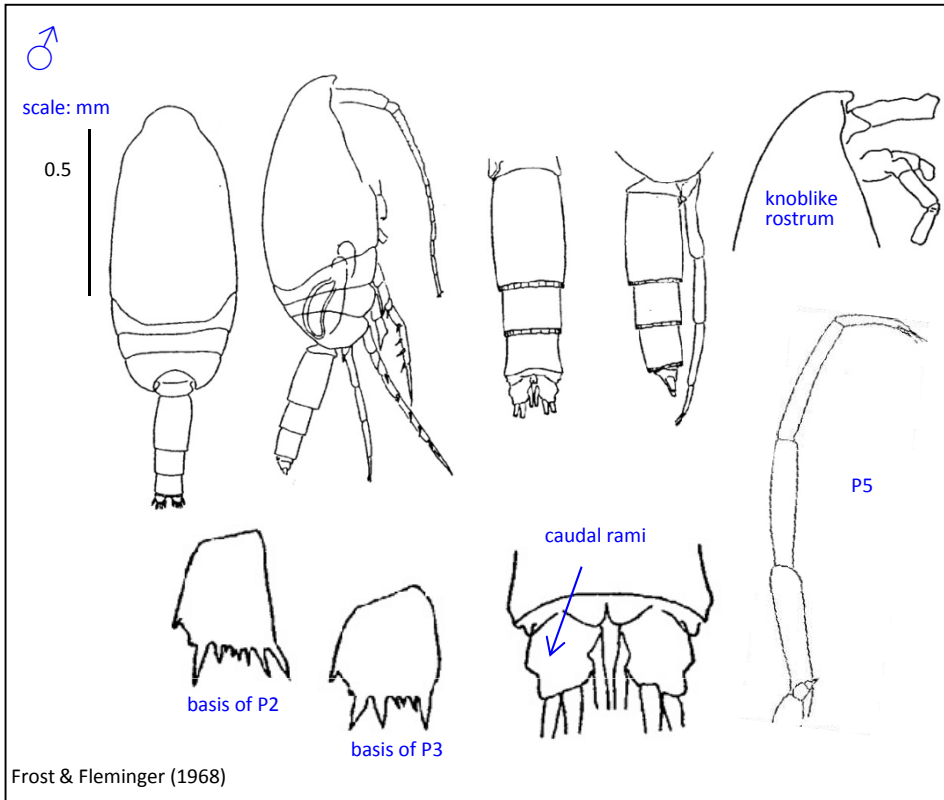
Ecology

- Generally herbivorous – omnivorous
- Feeding strategy is to rapidly explore small volumes of water

Clausocalanus lividus

Frost & Fleminger 1968

Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Frost & Fleminger (1968)

Size
 Male: 1.13-1.45 mm

Male

- Rostrum in lateral view knoblike and protruding ventrally
- Border of cephalosome and 1st pedigerous segment not straight
- Left P5 longer than urosome, right P5 trimerous
- Genital pore on left
- Caudal ramus less than 1.6x as long as wide

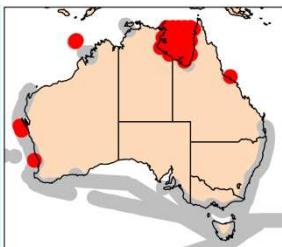
Source

Frost & Fleminger (1968)

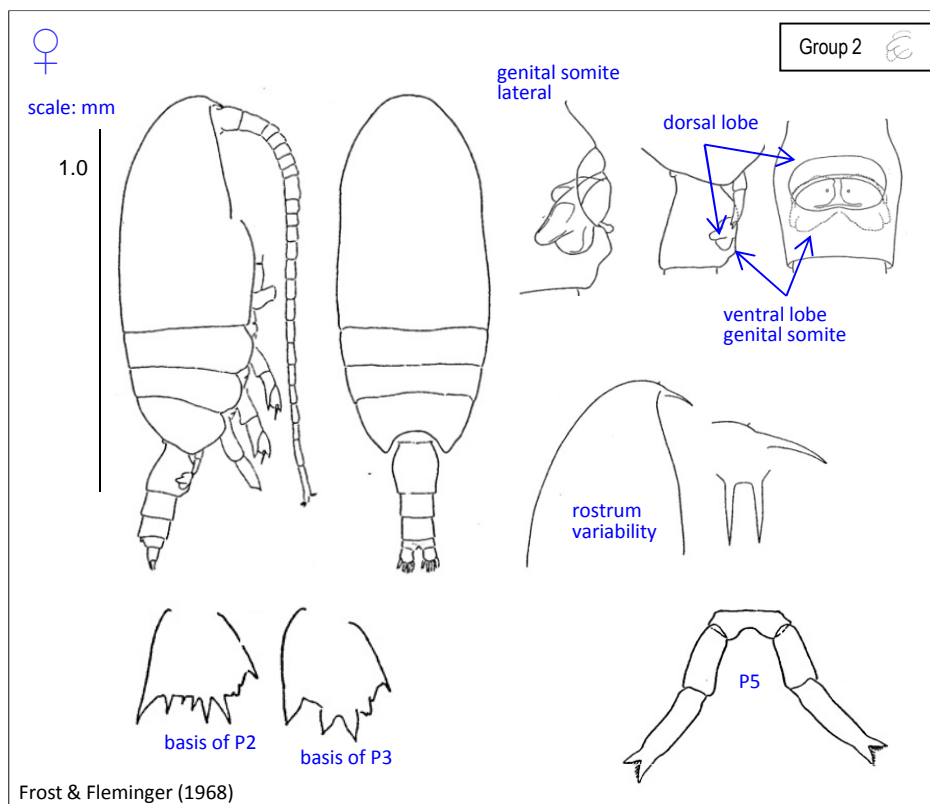
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Clausocalanus minor

Sewell, 1929



Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Synonyms
None

Size
Female: 1.08-1.26 mm

Genus notes

- Small to medium sized copepods
- Female rostrum bifurcated
- Male rostrum reduced to a knob
- Anterior cephalosome & posterior prosome segments are rounded
- Cephalosome fused to pedigerous somite 1
- Female P5 is uniramous, symmetrical and 3-segmented
- Male P5 uniramous, legs of unequal length, longer leg nearly always on left, 5-segmented with segment 5 short & attached sub-apically to the previous segment, shorter leg 3-segmented, less than half of the length of segment 1 of the other leg
- Female urosome 4-segmented
- Can be confused with *Paracalanus* but P5 is a different form

Female

- Rostrum slender and curved ventroposteriad
- Ventral profile of genital somite stepped posterior to genital pore
- Terminal points of P5 segment 3 divergent and always spinulose on inner margins
- Prosome:urosome ratio 2.64-3.07:1
- Genital somite more than 1.5x as long as urosome somite 3
- Dorsal lobe of seminal receptacle in lateral view conspicuous; a second lobe present anterior and medial to the dorsal lobe
- Dorsal lobe of seminal receptacle in ventral view conspicuous and directed obliquely posteriad
- Caudal rami as long as wide

Distribution

- Epipelagic, oceanic waters
- Tropical
- Confined to Indian and Pacific oceans

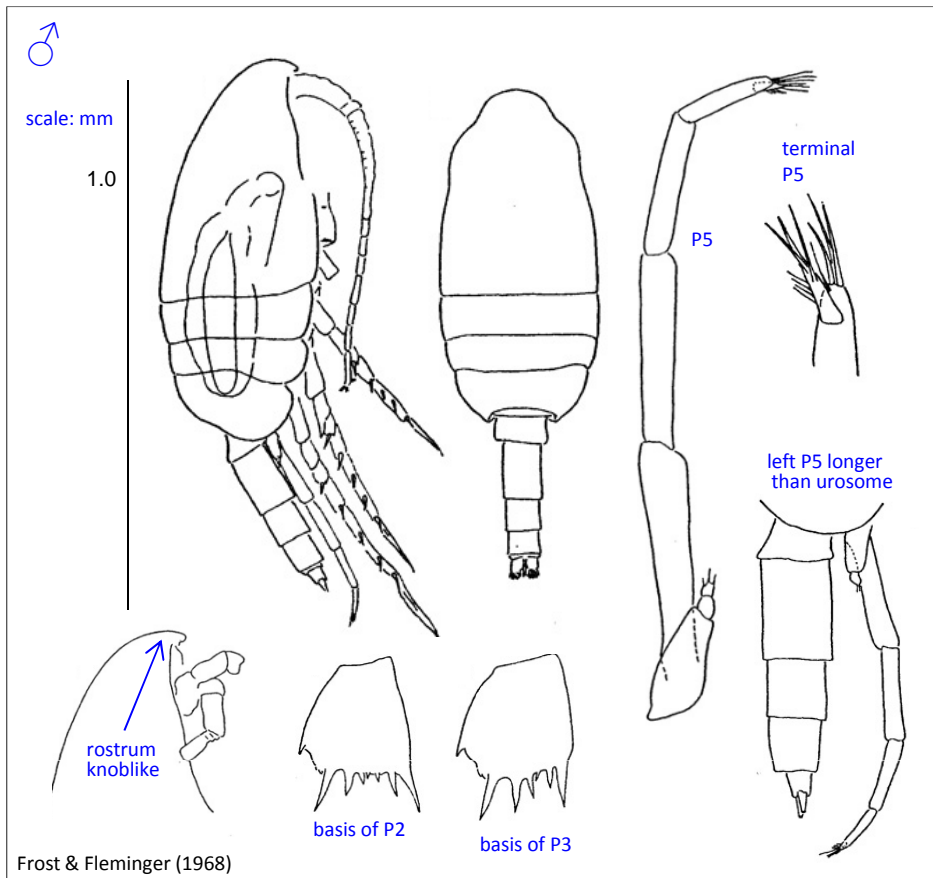
Ecology

- Generally herbivorous – omnivorous
- Feeding strategy is to rapidly explore small volumes of water
- Little known about ecology of this species

Clausocalanus minor

Sewell, 1929

Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Size

Male: 0.79-1.04 mm

Male

- Longer ramus of P5 and genital pore on left side
- Left P5 longer than urosome, armed distally with slender, straight setae
- Right P5 2 or 3-segmented, distal segments usually large
- Body and rostrum in lateral view similar to *C. Farrani*

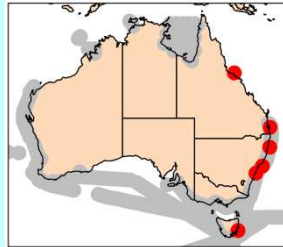
Source

Boxshall & Halsey (2004)
 Bradford-Grieve (1994)
 Frost & Fleminger (1968)
 Razouls et al. (2012)

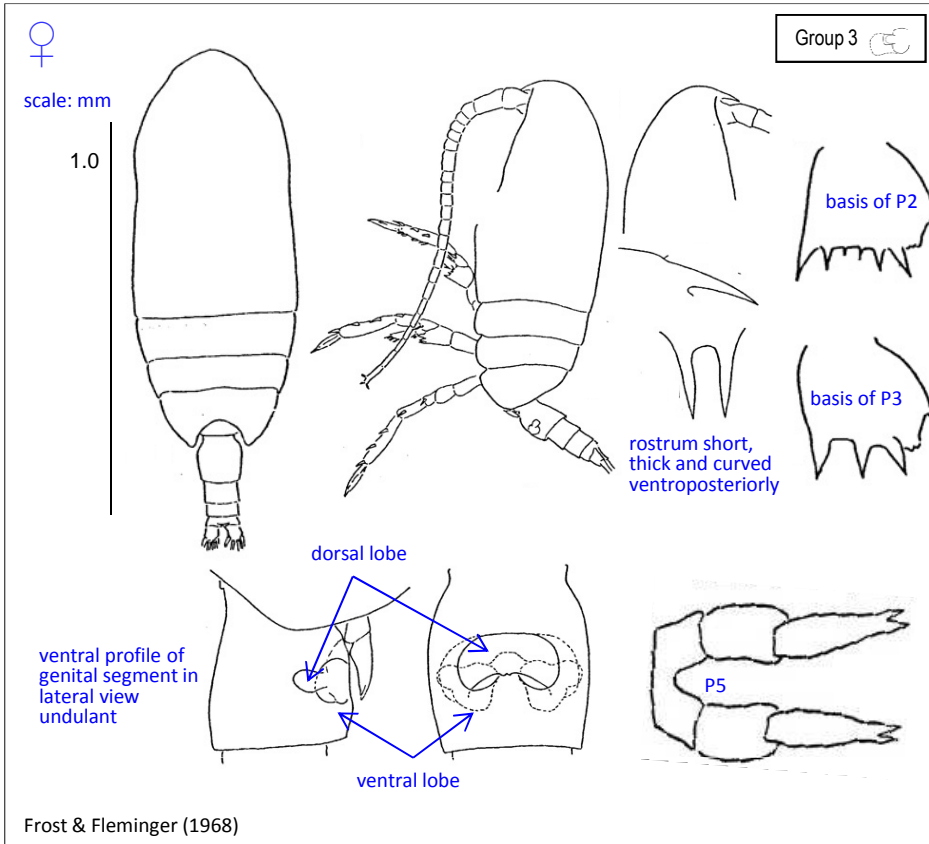
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Clausocalanus parapergens

Frost & Fleminger, 1968



Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Synonyms

None

Size

Female: 0.97-1.38 mm

Genus notes

- Small to medium sized copepods
- Female rostrum bifurcated
- Male rostrum reduced to a knob
- Anterior cephalosome & posterior prosome segments are rounded
- Cephalosome fused to pedigerous somite 1
- Female P5 is uniramous, symmetrical and 3-segmented
- Male P5 uniramous, legs of unequal length, longer leg nearly always on left, 5-segmented with segment 5 short & attached sub-apically to the previous segment, shorter leg 3-segmented, less than half of the length of segment 1 of the other leg
- Female urosome 4-segmented
- Can be confused with *Paracalanus* but P5 is a different form

Female

- Body is similar to *C. brevipes* but urosome relatively shorter
- A1 segment 2 less than 1.4x as long as segment 4
- Rostrum short, thick and curved ventroposteriorly (lateral view)
- Posterior margin of female prosome angular in lateral view
- P5 segment 3 more than 2x as long as segment 1
- 3rd segment of P5 more than 2x as long as 1st segment of P5
- Prosome: urosome ratio 3.10-3.61:1
- Ventral profile of genital somite in lateral view somewhat undulant
- Genital somite more than 1.5x as long as urosome somite 3
- Ventral lobe of seminal receptacle larger in lateral view, visible anterior to base of dorsal lobe
- Seminal receptacle dorsal lobe bulb-shaped, constricted in attachment to ventral lobe
- Structure of seminal receptacle in lateral and ventral views as in *C. brevipes*

Distribution

- Epipelagic
- Coastal, offshore
- Tropical, subtropical
- Circumglobal, with spasmodic occurrence in Pacific

Ecology

- Generally herbivorous – omnivorous
- Feeding strategy is to rapidly explore small volumes of water
- Little known about ecology

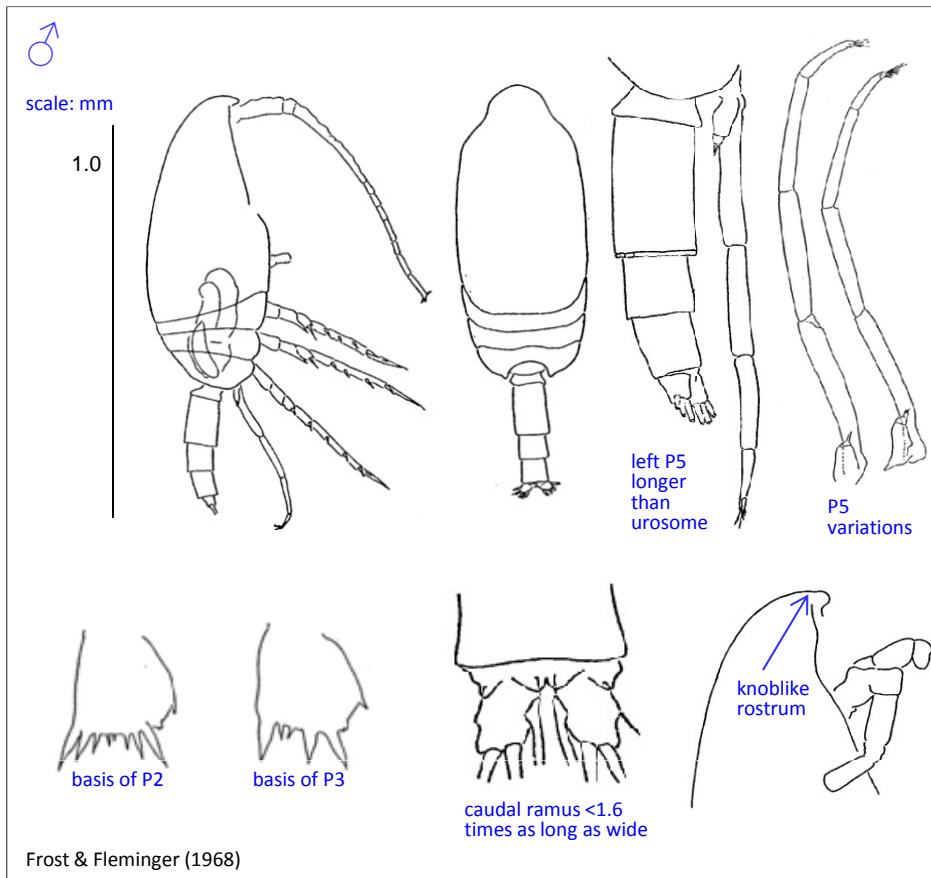
Compiled: C. H. Davies & A. S. Slotwinski 2012
 Verified: K. M. Swadling 2013



Clausocalanus parapergens

Frost & Fleminger, 1968

Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Size
 Male: 0.97-1.15 mm

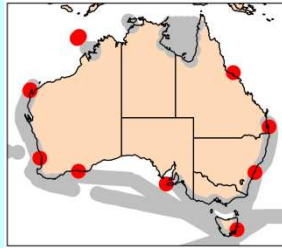
- Male**
- Body similar to *C. arcuicornis*
 - Rostrum knob-like, protrudes ventrally (lateral view)
 - Longer ramus of P5 and genital pore on left side
 - Left P5 longer than urosome, often slender in lateral view
 - Right P5 2-3 segmented, distal segments reduced in size
 - Caudal rami <1.6x as long as wide

Source
 Bradford-Grieve (1994)
 Frost & Fleminger (1968)
 Razouls et al. (2012)

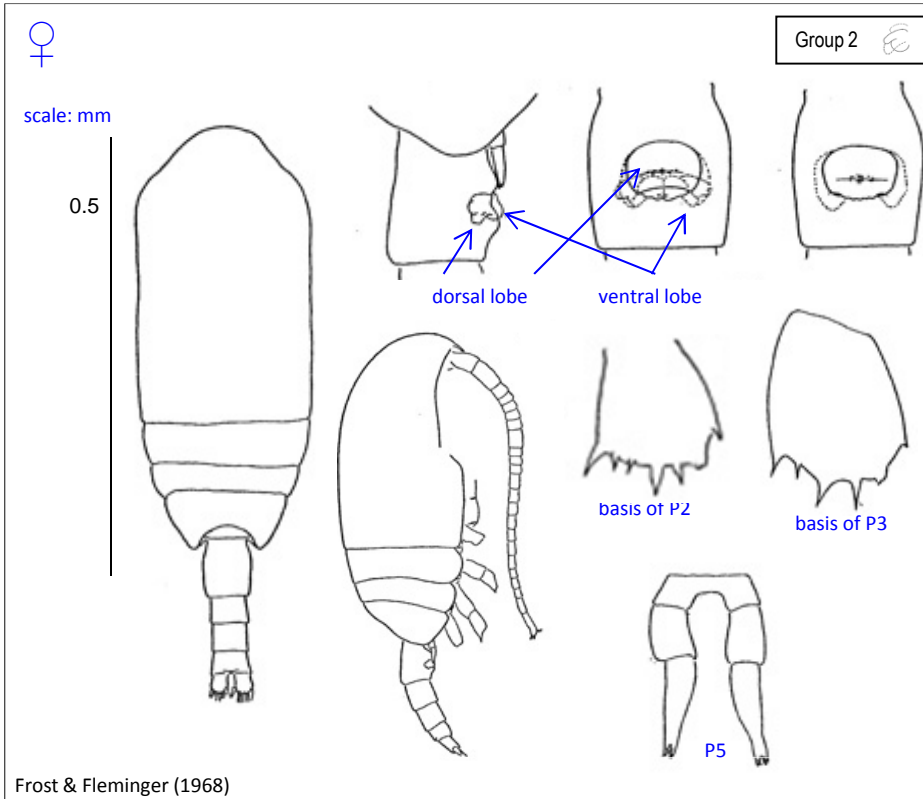
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Clausocalanus paululus

Farran, 1926



Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Synonyms
None

Size
Female: 0.65-0.80 mm

Genus notes

- Small to medium sized copepods
- Female rostrum bifurcated
- Male rostrum reduced to a knob
- Anterior cephalosome & posterior prosome segments are rounded
- Cephalosome fused to pedigerous somite 1
- Female P5 is uniramous, symmetrical and 3-segmented
- Male P5 uniramous, legs of unequal length, longer leg nearly always on left, 5-segmented with segment 5 short & attached sub-apically to the previous segment, shorter leg 3-segmented, less than half of the length of segment 1 of the other leg
- Female urosome 4-segmented
- Can be confused with *Paracalanus* but P5 is a different form

Female

- Body robust
- Rostrum in lateral view slender curved ventroposteriad
- Terminal points of P5 segment 3 not divergent and may have spinules on inner and outer margins
- Prosome: urosome ratio 2.59-3.00:1
- Ventral profile of genital somite in lateral view with a step posterior to the genital pores
- Genital somite more than 1.5x as long as urosome somite 3
- Seminal receptacle often inconspicuous in lateral or ventral view
- Dorsal lobe of seminal receptacle not well separated from ventral lobe in lateral view, but well demarcated in ventral view

Distribution

- Epipelagic
- Subtropical, circumglobal
- Coastal, offshore

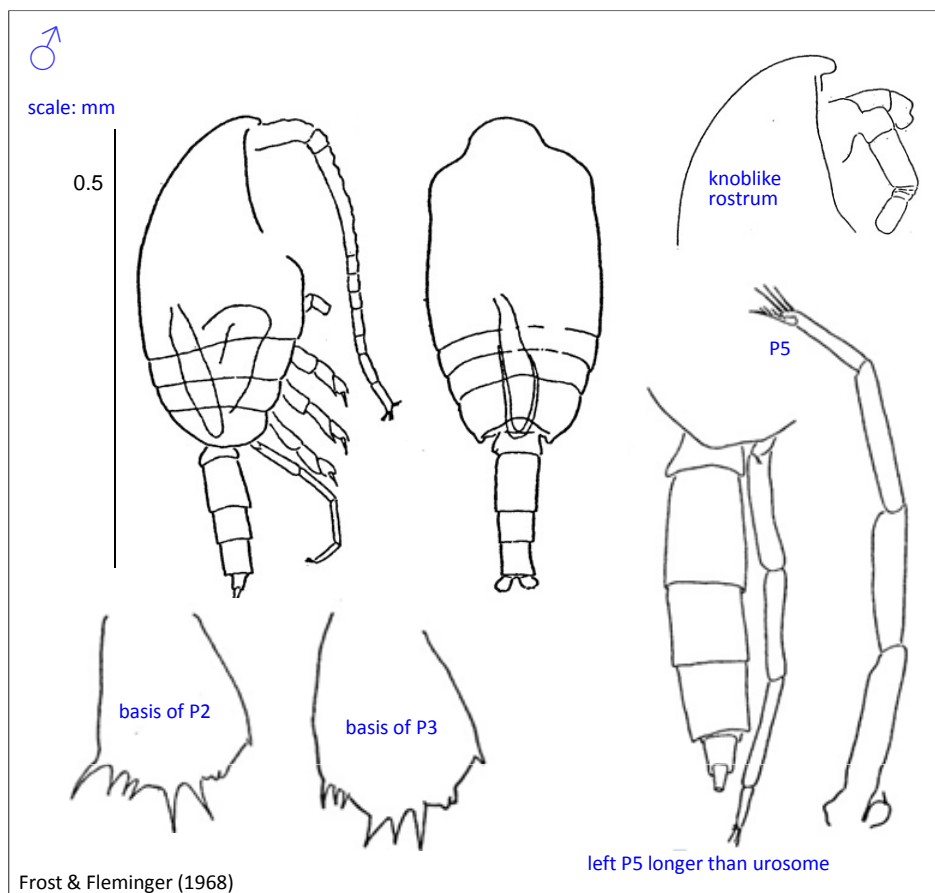
Ecology

- Generally herbivorous – omnivorous
- Feeding strategy is to rapidly explore small volumes of water
- Female can carry 2 spermatophores
- Multiple generations (up to 5) per year

Clausocalanus paululus

Farran, 1926

Phylum	Arthropoda
Order	Calanoida
Family	Clausocalanidae



Size

Male: 0.47-0.56 mm

Male

- Body short and stocky
- Rostrum in lateral view knob-like and protruding ventrally
- Longer ramus of P5 and genital pore on left side
- Left P5 longer than urosome, right P5 2 segmented, distal segment small

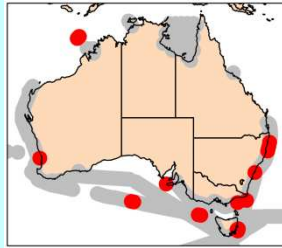
Source

Bradford-Grieve (1994)
 Frost & Fleminger (1968)
 Razouls et al. (2012)
 Shmeleva & Kovalev (1974)

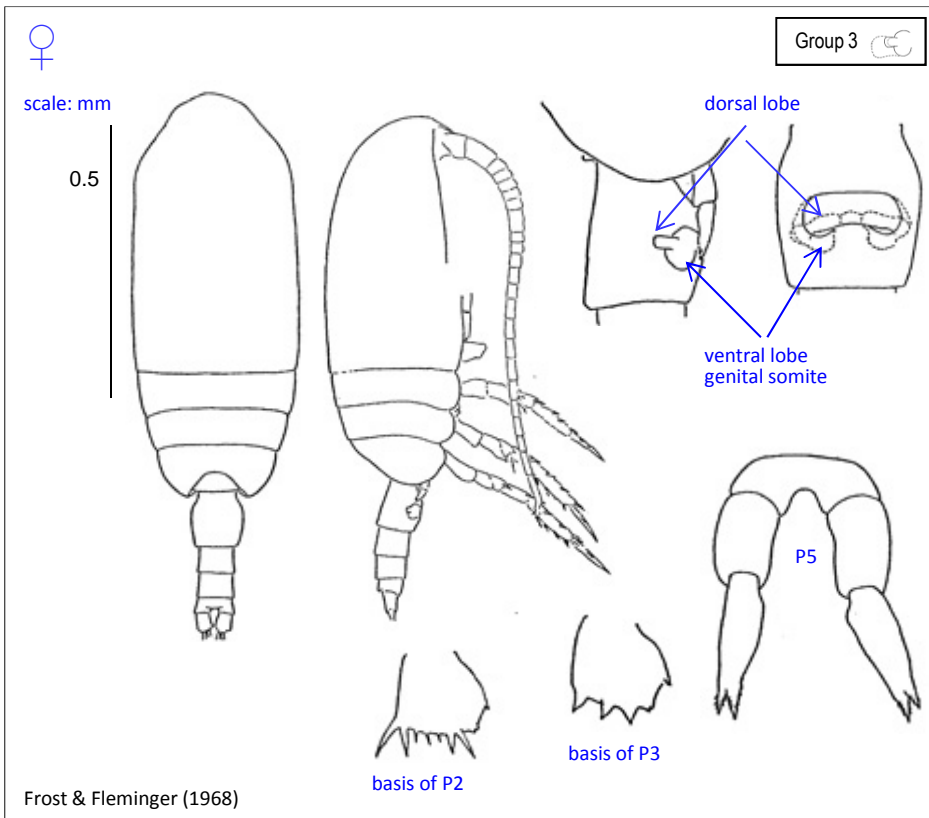
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Clausocalanus pergens

Farran, 1926



Phylum Arthropoda
Order Calanoida
Family Clausocalanidae



Synonyms
 None

Size
 Female: 0.70-1.22 mm

Genus notes

- Small to medium sized copepods
- Female rostrum bifurcated
- Male rostrum reduced to a knob
- Anterior cephalosome & posterior prosome segments are rounded
- Cephalosome fused to pedigerous somite 1
- Female P5 is uniramous, symmetrical and 3-segmented
- Male P5 uniramous, legs of unequal length, longer leg nearly always on left, 5-segmented with segment 5 short & attached sub-apically to the previous segment, shorter leg 3-segmented, less than half of the length of segment 1 of the other leg
- Female urosome 4-segmented
- Can be confused with *Paracalanus* but P5 is a different form

Female

- Rostrum in lateral view slender and curved ventroposteriad
- P5 segment 3 more than twice as long as segment 1
- Prosome:urosoma ratio 2.57-3.00:1
- Ventral profile of genital segment in lateral view somewhat convex, but without a definite step
- Genital somite more than 1.5x as long as urosome somite 3
- Ventral lobe of seminal receptacle in lateral view large and visible anterior to base of seminal receptacle dorsal lobe
- Dorsal lobe short and finger-like
- Dorsal and ventral lobes visible in ventral view
- Similar to females of *C. brevipes* & *C. Parapergens*

Distribution

- Epi-, meso- and bathypelagic
- Circumglobal, coastal
- Warm temperate, cool temperate, subtropical

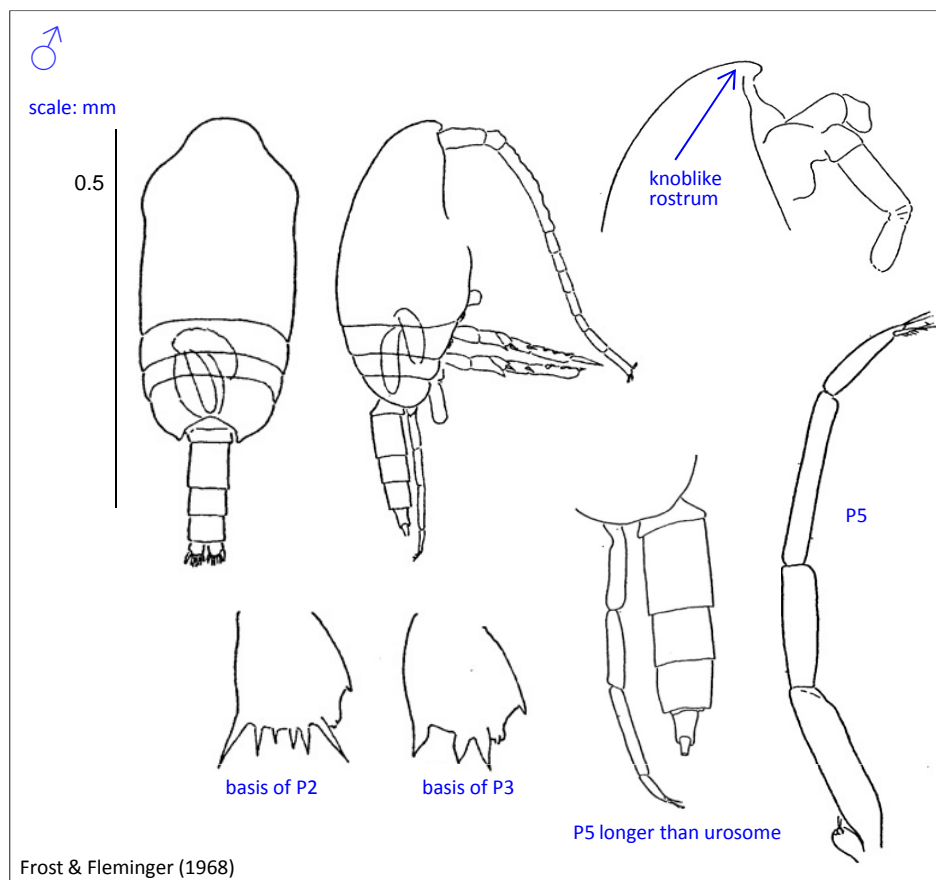
Ecology

- Generally herbivorous – omnivorous
- Feeding strategy is to rapidly explore small volumes of water
- Tends to avoid the upper mixed layer

Clausocalanus pergens

Farran, 1926

Phylum	Arthropoda
Order	Calanoida
Family	Clausocalanidae



Size

Male 0.52 – 0.67 mm

Male

- Rostrum in lateral view knoblike and protruding ventrally
- Longer ramus of P5 and genital pore on left side
- Left P5 longer than urosome, right P5 2-segmented, distal segment small
- Similar to *C. paululus* but more slender and longer and prosome is less tapered

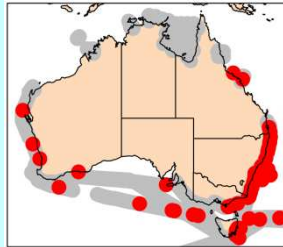
Source

Boxshall & Halsey (2004)
Fragopoulou & Lykakis (1990)
Frost & Fleminger (1968)
Paffenhofer & Mazzocchi (2003)
Razouls et al. (2012)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Ctenocalanus vanus

Giesbrecht, 1888



Phylum Arthropoda
Order Calanoida
Family Clausocalanidae

Synonym
 none

Size
 Female: 0.92-1.16mm

Genus notes

- P3 P4 exopod outer margin with comb like serration along inner margin
- P5 asymmetrical, single leg present in female
- Male right P5 absent or short stump

Female

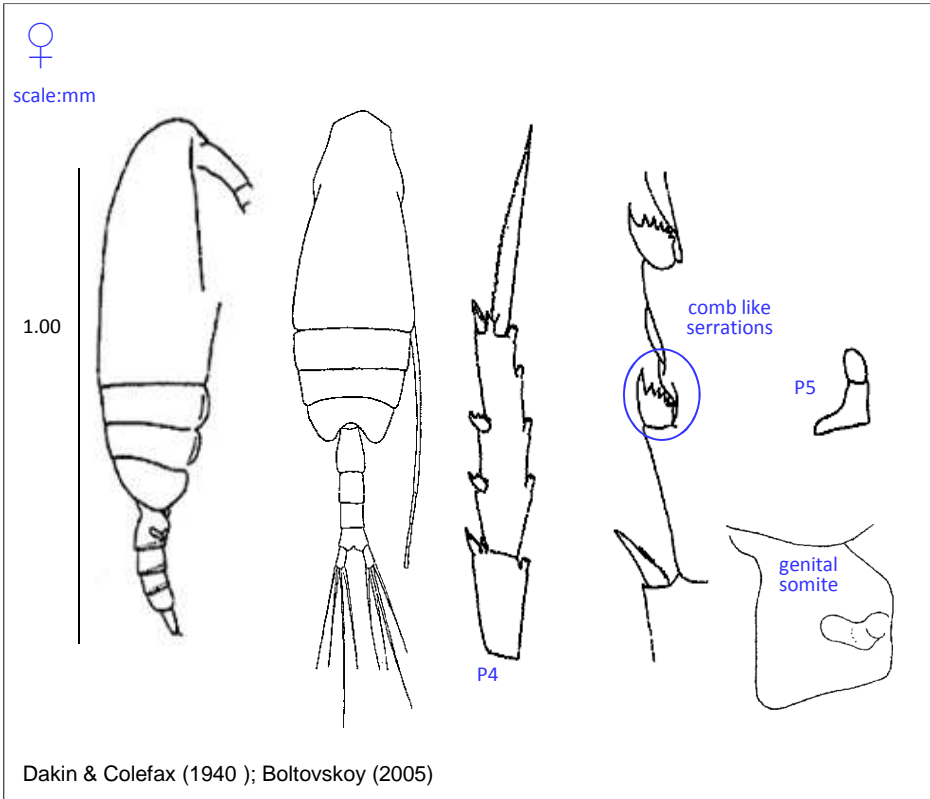
- A1 exceeds caudal rami by several segments
- P4 outer spines robust, expanded at base

Distribution

- Epipelagic-bathypelagic
- Inshore coastal, coastal and oceanic
- Australian distribution includes Great Barrier Reef, New South Wales, Melbourne and Tasmania
- World distribution: widespread in tropical and subtropical regions of all oceans
- Possibly found in sub-Arctic and sub-Antarctic waters, absent from polar regions

Ecology

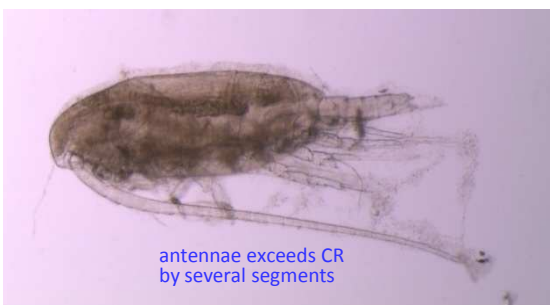
- Found in Tasmanian coastal and oceanic waters between March to December, absent January and February
- Unselective herbivorous filter feeder
- Broadcast spawners
- Spawning is triggered by temperature, not by phytoplankton concentration



Dakin & Colefax (1940); Boltovskoy (2005)



CSIRO AusCPR



antennae exceeds CR by several segments



P4

Ctenocalanus vanus

Giesbrecht, 1888

Phylum Arthropoda
Order Calanoida
Family Clausocalanidae

Size
Male: 1.20-1.26mm

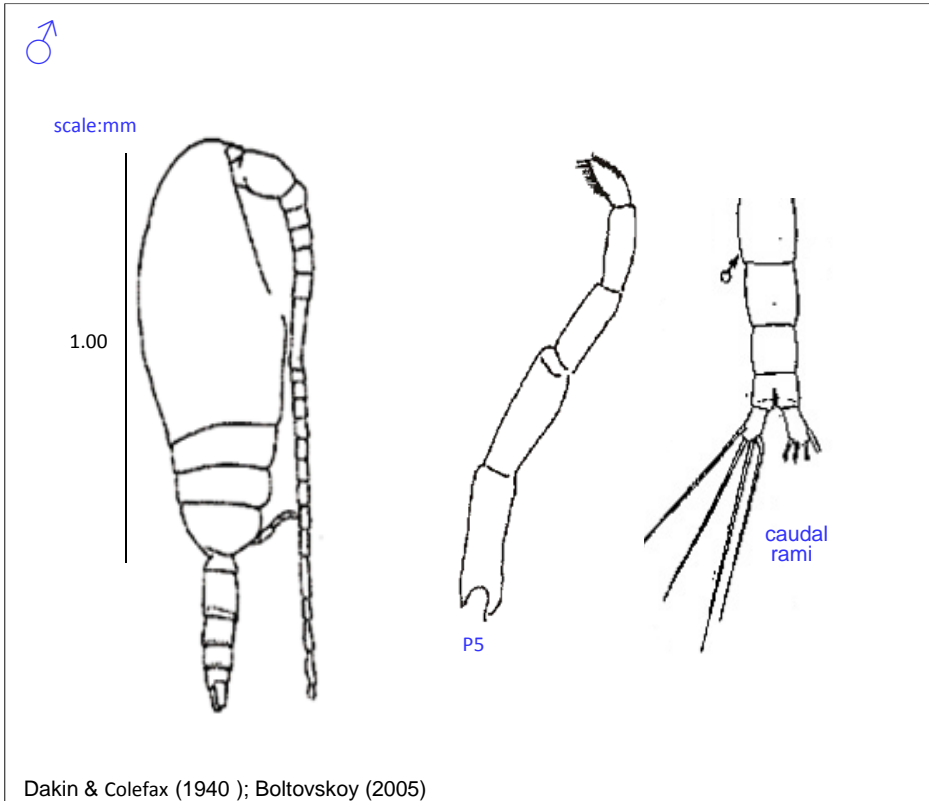
Male

- A1 21 segmented
- Right P5 absent
- Left P5 long, segment 5 attached to segment 4 apically

Source

Boltovskoy (1999)
Niehoff (2007)
Razouls et al (2010)
Taw & Ritz (1979)

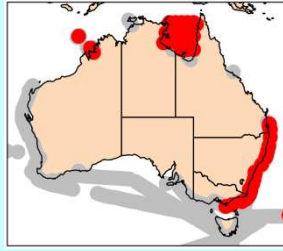
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)



Dakin & Colefax (1940); Boltovskoy (2005)

Subeucalanus crassus

(Giesbrecht, 1888)



Phylum Arthropoda
Order Calanoida
Family Eucalanidae

Synonyms

Eucalanus crassus Giesbrecht, 1888

Size

Female: 2.46-3.70 mm

Genus notes

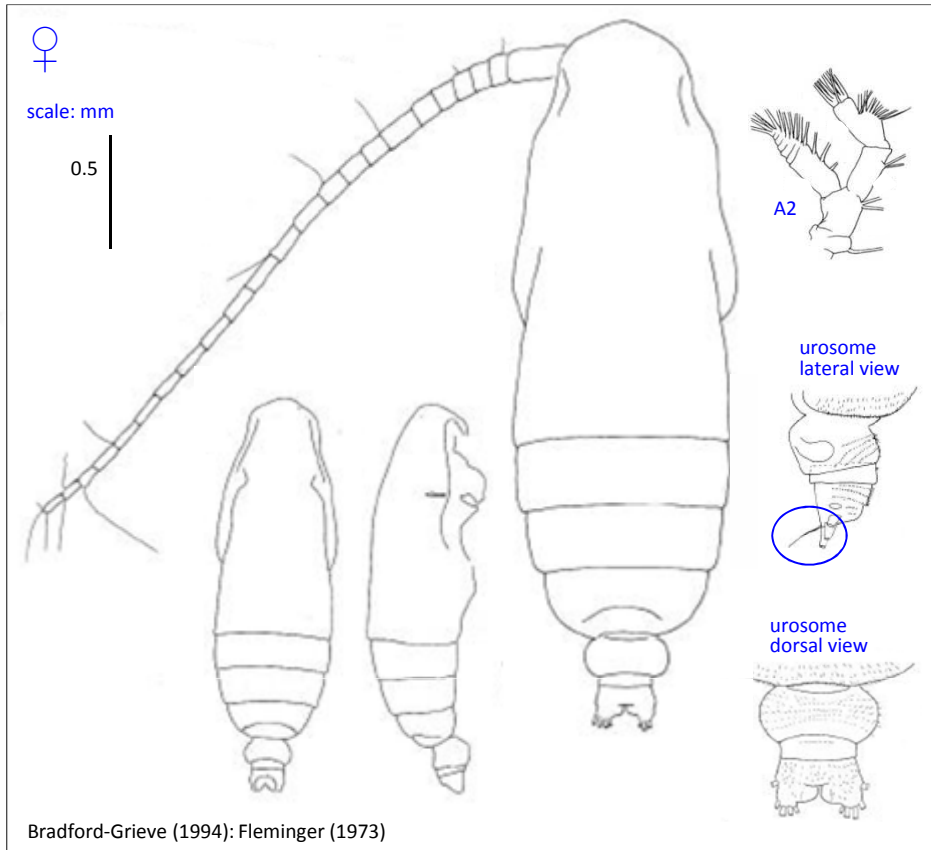
- Body elongate especially anterior to antenna 2
- More or less transparent
- Often with triangular head
- Cephalosome and pedigerous somite 1 fused
- Pedigerous somites 4 and 5 partially fused
- Rostrum with two long filaments
- Female urosome 3-segmented
- Posterior borders of pedigerous somites 2-4 without spine
- Urosome somite 1 without spines
- Integumental organs located at the maxilliped site are in 2 pairs
- P5 absent in female
- Males of the genus poorly known and morphology highly variable
- P5 uniramous in male with right leg absent

Female

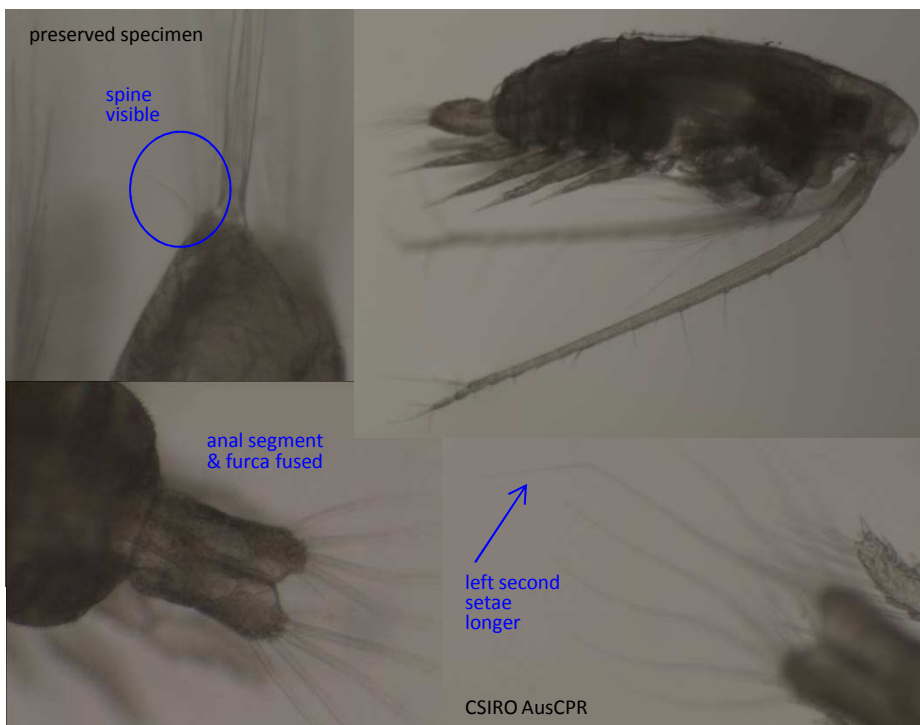
- Anterior cephalosome rounded and short
- A1 reaches just beyond caudal rami
- A2 endopod segment 1 shorter than endopod segment 2 and about 2 times as long as wide
- Basis of mandibular palp with 3 setae, endopod reaches the distal boarder of basis, endopod segment 1 with 2 setae, endopod segment 2 with 4 setae
- Maxilla 1 inner lobe 3 with 4 setae, basis with 5 setae
- Maxilliped endopod segments 1 and 2 with 4 setae each
- Genital somite wider than long and 'onion' shaped
- Caudal rami slightly asymmetrical
- Anal somite fused with furca
- Left second caudal rami setae longer than right

Distribution

Ecology



Bradford-Grieve (1994): Fleminger (1973)



CSIRO AusCPR

Compiled: C. H. Davies & A. S. Slotwinski 2012
 Verified:



Subeucalanus crassus

(Giesbrecht, 1888)

Phylum Arthropoda
Order Calanoida
Family Eucalanidae

Size

Male: 2.40-3.10 mm

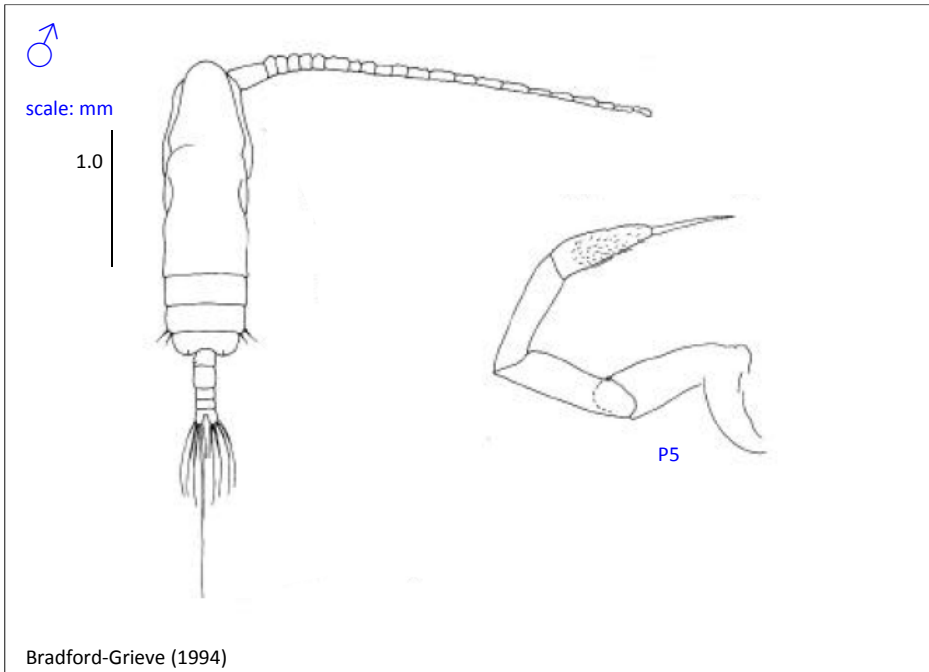
Male

- Does not have distinct secondary sexual features
- P5 right absent
- P5 left uniramous, 4 segmented with terminal spine
- A1 reaches to end of caudal rami

Source

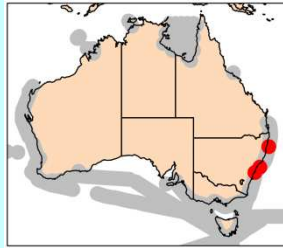
Bradford-Grieve (1994)
Conway (2003)

(Full reference available at
<http://www.imas.utas.edu.au/zooplankton/references>)

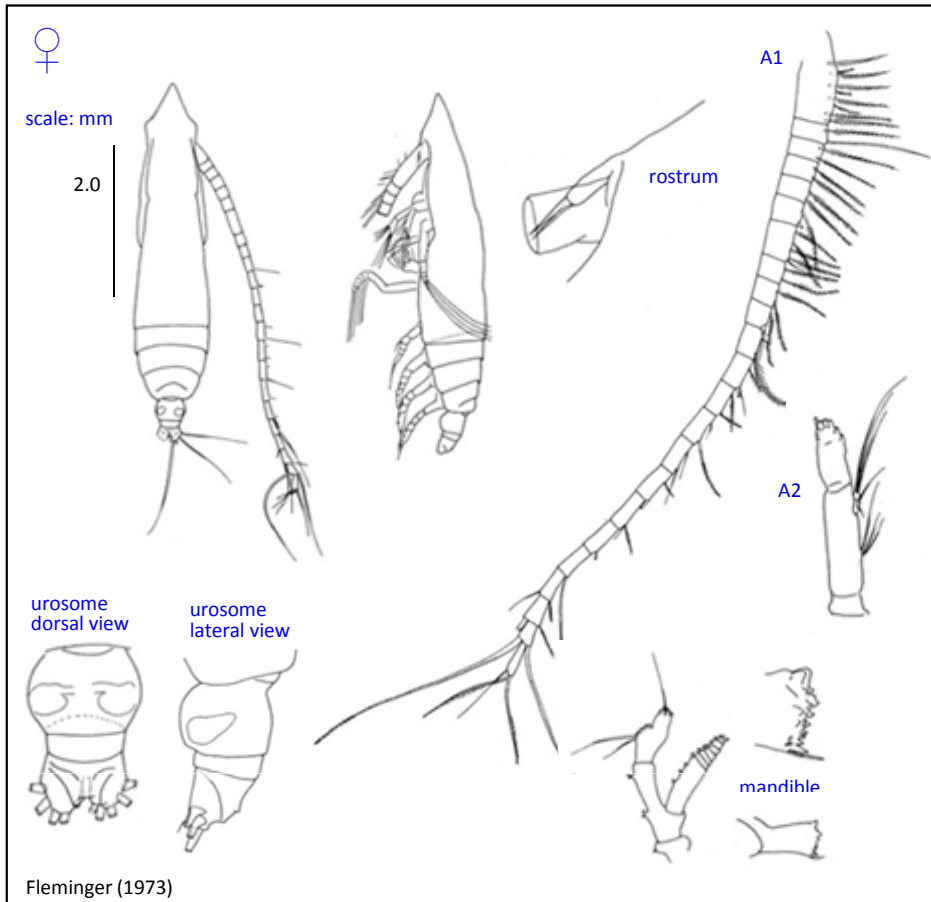


Subeucalanus longiceps

(Matthews, 1925)



Phylum Arthropoda
Order Calanoida
Family Eucalanidae



Synonyms

Eucalanus longiceps Matthews, 1925

Size

Female: 4.20-4.90 mm

Genus notes

- Body elongate especially anterior to antenna 2
- More or less transparent
- Often with triangular head
- Cephalosome and pedigerous somite 1 fused
- Pedigerous somites 4 and 5 partially fused
- Rostrum with two long filaments
- Female urosome 3-segmented
- Posterior borders of pedigerous somites 2-4 without spine
- Urosome somite 1 without spines
- Integumental organs located at the maxilliped site are in 2 pairs
- P5 absent in female
- Males of the genus poorly known and morphology highly variable
- P5 uniramous in male with right leg absent

Female

- Anterior head triangulated and elongated
- A2 endopod segment 1 shorter than endopod segment 2 and about 2 times as long as wide
- Basis of mandibular palp with 3 setae, endopod does not reach the distal border of basis, endopod segment 1 with 2 setae, endopod segment 2 with 3 setae
- Maxillule basal endite 2 with 5 setae
- Genital segment slightly wider than longer
- Caudal rami slightly asymmetrical

Distribution

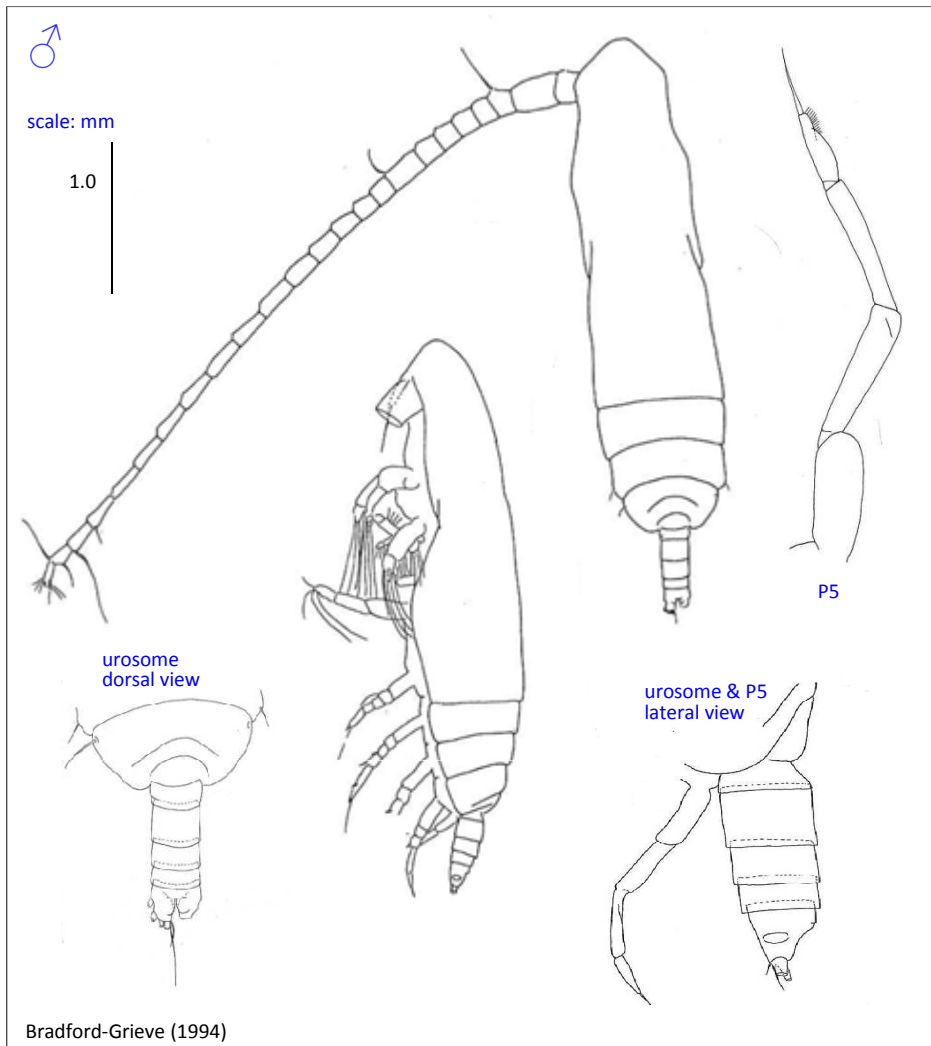
- Boreal-temperate
- Circumglobal
- Southern hemisphere West wind drift system
- Mostly epipelagic

Ecology

Subeucalanus longiceps

(Matthews, 1925)

Phylum Arthropoda
Order Calanoida
Family Eucalanidae



Size

Male: 3.20-8.80 mm

Male

- Secondary sexual characters not distinct
- Males of the genus poorly known and morphology highly variable
- Anterior head rounded
- Left leg 3 extends to the posterior border of the urosome
- Terminal seta about the same length as the terminal segment

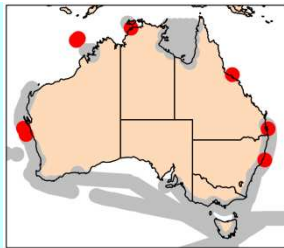
Source

Bradford-Grieve (1994)
Boltovskoy (1999)

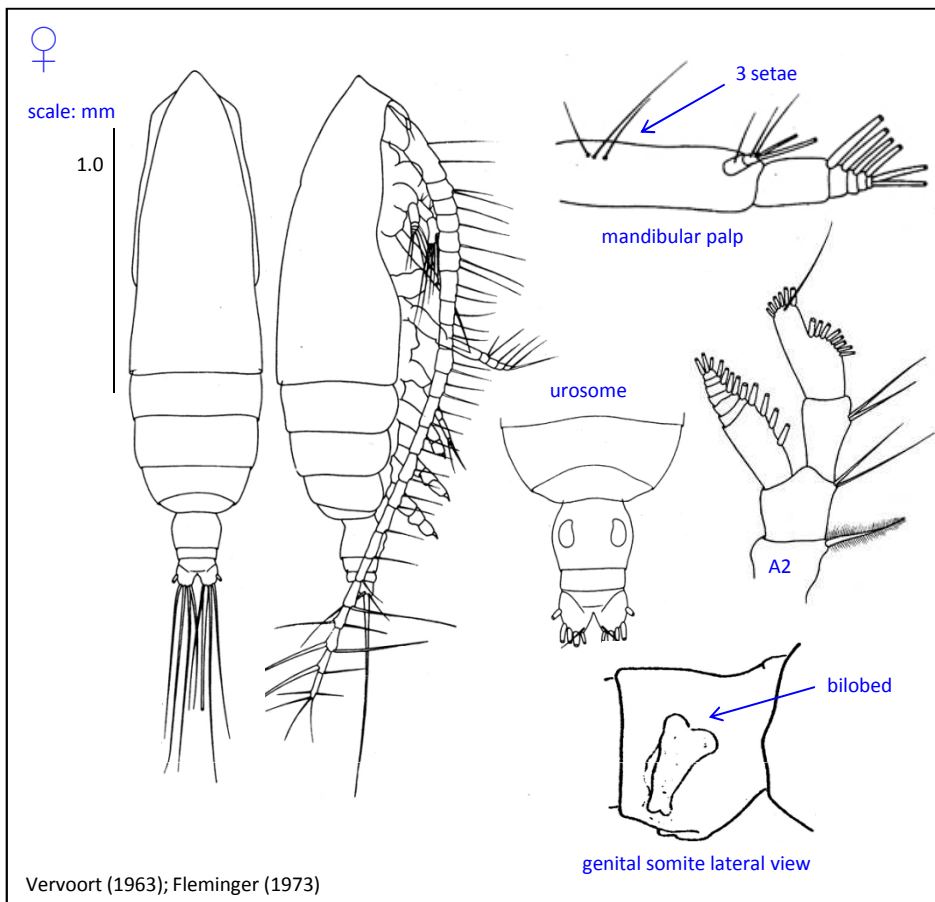
Full reference available at
<http://www.imas.utas.edu.au/zooplankton/references>

Subeucalanus pileatus

(Giesbrecht, 1888)



Phylum Arthropoda
Order Calanoida
Family Eucalanidae



Vervoort (1963); Fleminger (1973)

Synonyms

Eucalanus pileatus Giesbrecht, 1888

Size

Female: 1.95-2.50 mm

Genus notes

- Body elongate especially anterior to antenna 2
- More or less transparent
- Often with triangular head
- Cephalosome and pedigerous somite 1 fused
- Pedigerous somites 4 and 5 partially fused
- Rostrum with two long filaments
- Female urosome 3-segmented
- Posterior borders of pedigerous somites 2-4 without spine
- Urosome somite 1 without spines
- Integumental organs located at the maxilliped site are in 2 pairs
- P5 absent in female
- Males of the genus poorly known and morphology highly variable
- P5 uniramous in male with right leg absent

Female

- Anterior cephalosome triangular overall but rounded anteriorly
- There is apparently considerable variation in the shape of the head in the female
- A2 endopod segment 1 shorter than endopod segment 2 and hardly 2.5 times as long as wide
- Basis of mandibular palp with 3 setae, endopod reaches the distal border of basis, endopod segment 1 with 2 setae, endopod segment 2 with 4 setae
- Maxilla 1 inner lobe 3 with 4 setae, basis with 5 setae
- Maxilliped endopod segment 1 and 2 with 4 setae
- Genital somite with widest part in dorsal view at midlength as long as wide; in lateral view distal part of seminal receptacles bilobed
- Caudal rami asymmetrical

Distribution

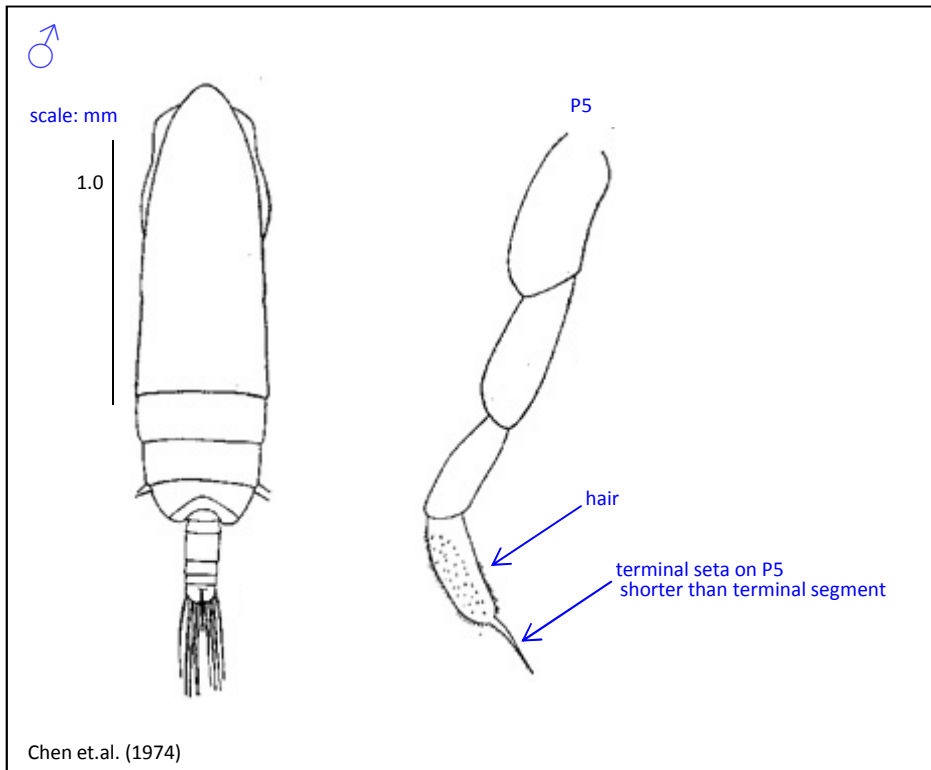
- Epipelagic
- Tropical; subtropical, circumglobal
- Coastal; neritic

Ecology

Subeucalanus pileatus

(Giesbrecht, 1888)

Phylum Arthropoda
Order Calanoida
Family Eucalanidae



Size

Male: 1.80-2.25 mm

Male

- Very similar to *S. crassus* but much smaller
- Terminal seta on left P5 is shorter than the terminal segment
- Hairy terminal segment on left P5

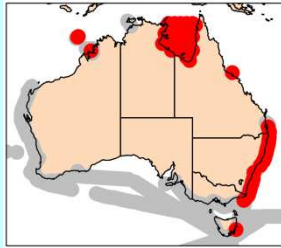
Source

Bradford-Grieve (1994)
Boltovskoy (1999)

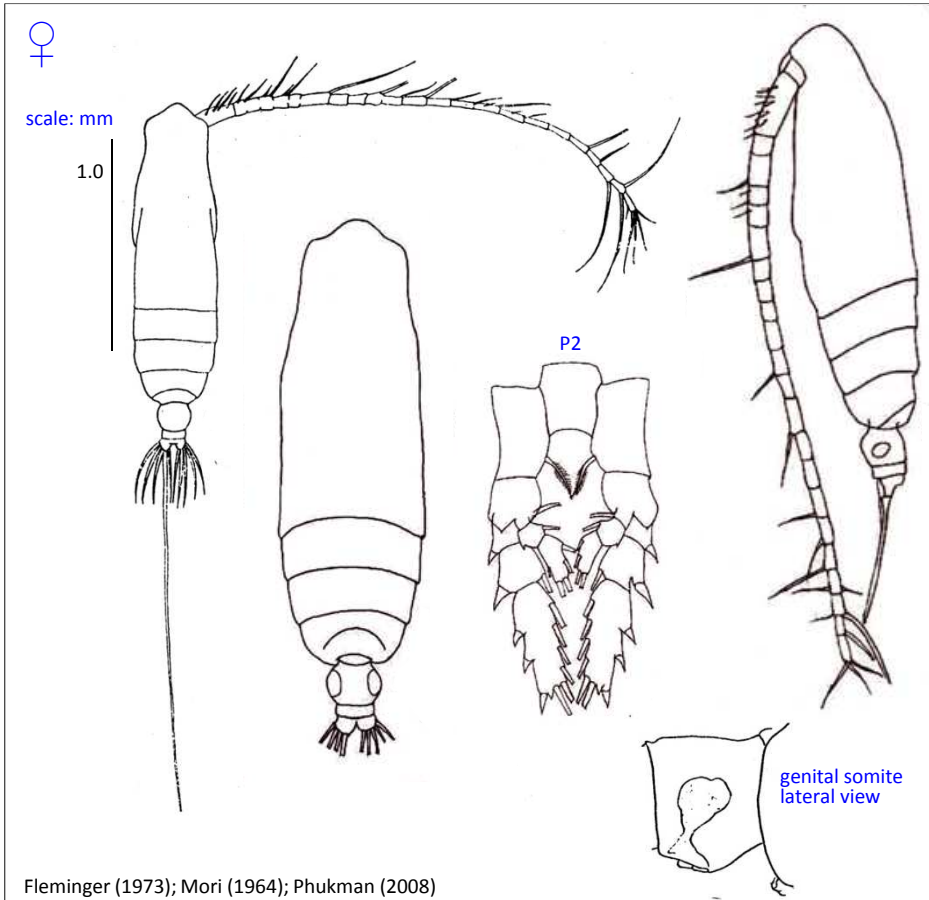
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Subeucalanus subcrassus

(Giesbrecht, 1888)



Phylum Arthropoda
Order Calanoida
Family Eucalanidae



Fleminger (1973); Mori (1964); Phukman (2008)

Synonyms

Eucalanus subcrassus Giesbrecht, 1888

Size

Female: 2.35-2.68 mm

Genus notes

- Body elongate especially anterior to antenna 2
- More or less transparent
- Often with triangular head
- Cephalosome and pedigerous somite 1 fused
- Pedigerous somites 4 and 5 partially fused
- Rostrum with two long filaments
- Female urosome 3-segmented
- Posterior borders of pedigerous somites 2-4 without spine
- Urosome somite 1 without spines
- Integumental organs located at the maxilliped site are in 2 pairs
- P5 absent in female
- Males of the genus poorly known and morphology highly variable
- P5 uniramous in male with right leg absent

Female

- Cephalosome rounded anteriorly
- A2 endopod segment 1 shorter than endopod segment 2 and less than 3 times as long as wide
- Basis of mandibular palp with 3 setae, endopod reaches the distal boarder of basis, endopod segment 1 with 2 setae, endopod segment 2 with 4 setae
- Maxilla 1 inner lobe 3 with 4 setae, basis with 5 setae
- Maxilliped endopod segments 1 and 2 with 4 setae each
- Genital somite broader than long with widest part in dorsal view on the posterior half of the segment
- Caudal rami assymetrical
- This species has often been confused with *S. piletaus* and *S. monachus*

Distribution

- Epiplanktonic
- Broadly neritic
- Tropical Indo-West Pacific

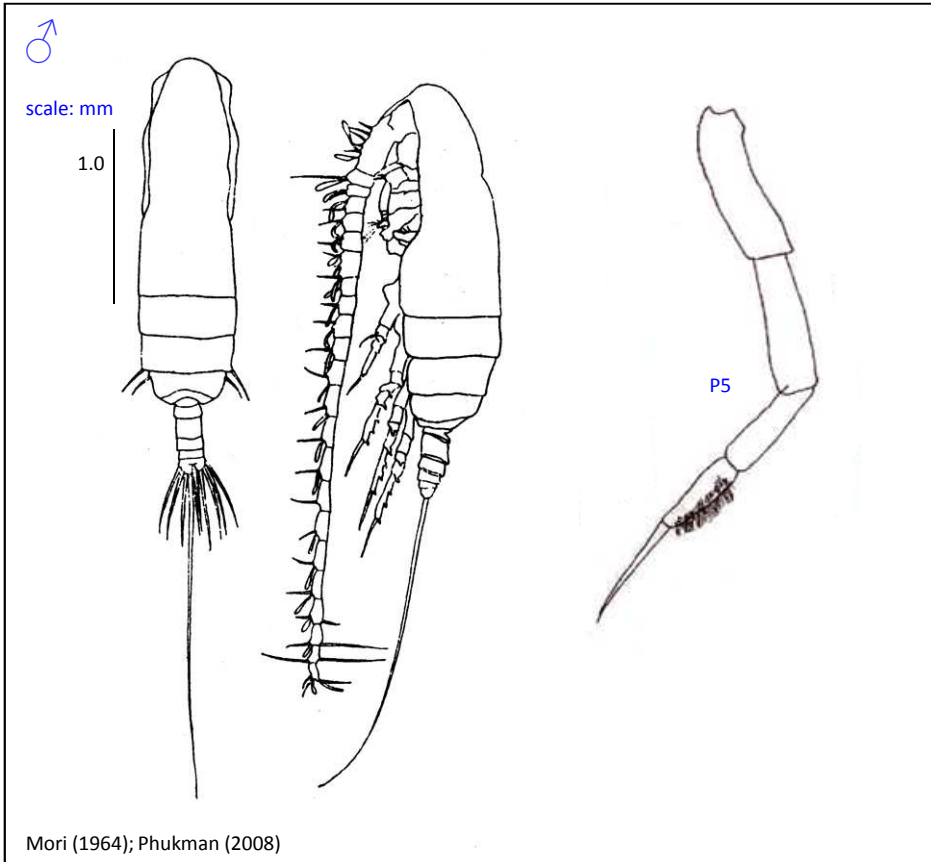
Ecology

Subeucalanus subcrassus

Giesbrecht, 1888

Phylum
Order
Family

Arthropoda
Calanoida
Eucalanidae



Size
Male: 2.4 mm

Male

- Terminal seta on left P5 longer than the terminal segment
- Second terminal setae of caudal rami are asymmetrical, as in the female

Source

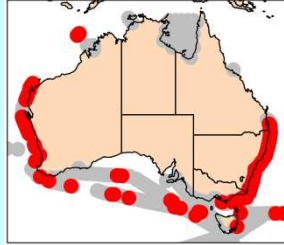
Bradford-Grieve (1994)
Boltovskoy (1999)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

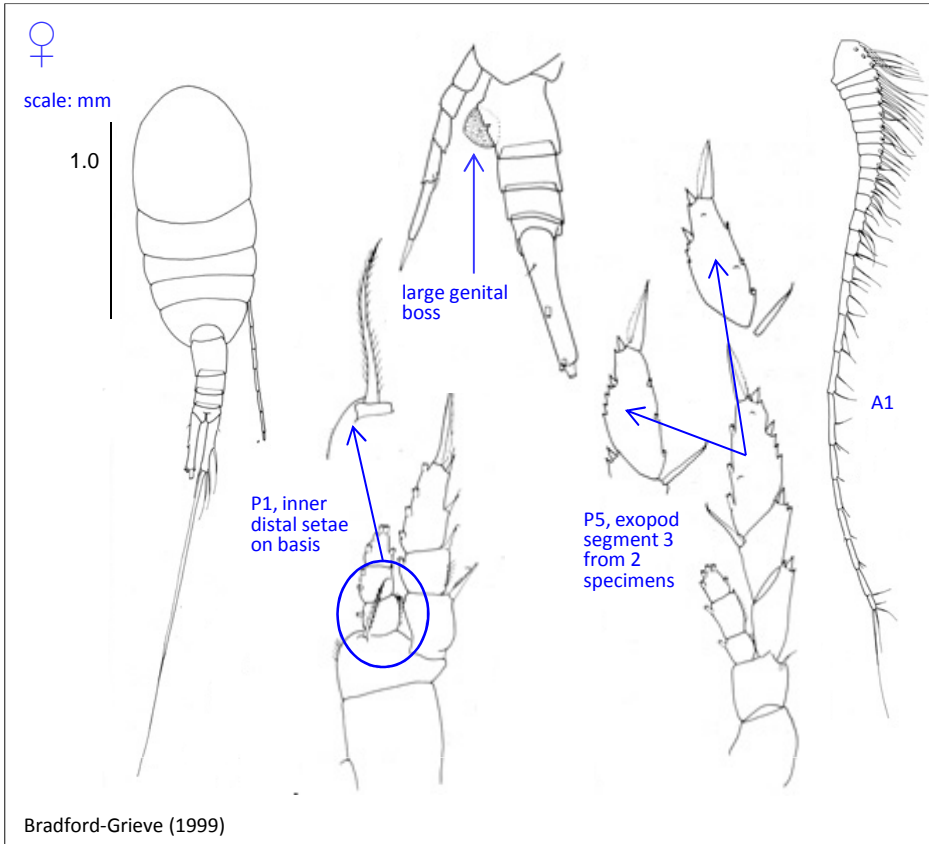
Mori (1964); Phukman (2008)

Lucicutia flavicornis

(Claus, 1863)



Phylum Arthropoda
Order Calanoida
Family Lucicutidae



Synonyms

Leuckartia flavicornis Claus, 1863
Lucicutia flavicomis (lapsus calami)
Rudolfia flavicornis (Claus, 1863)

Size

Female: 1.75 - 2.0 mm

Genus notes

- Body slender, prosome oval
- Cephalosome and pedigerous somite 1 separate, somites 4-5 fused, posterior prosome corners rounded
- Left male A1 geniculate
- P1-4 3-segmented, endopods P1, P5 2-3 segmented
- Female P5 natatory, symmetrical, similar to other swimming legs, the inner edge seta on exopod segment 2 is modified into a long slender spine articulated with its segment
- Male P5 left basis modified with one or more inner extensions which may bear spines
- Male P5 right, last exopod section recurved, coxa may have extensions
- Urosomes long, female 4-segmented, male 5-segmented
- Caudal rami long and symmetrical

Female

- Cephalosome without lateral protrusions
- A1 reaches middle of caudal rami
- P5 endopodite with 3 segments; inner spine on exopodite segment 2 is long and straight, except for a slight bend at tip, reaching beyond base of first inner seta on exopodite segment 3; terminal segment on exopodite 3 less than half length of the segment, outer margin of exopodite segment 3 with several teeth
- Large genital boss, placed centrally on ventral segment, genital somite symmetrical in dorsal view
- Anal somite as long as urosome somite 3
- Caudal rami slightly more than 5x long as wide, innermost terminal seta small and slender

Distribution

- Epi-, meso- and bathypelagic
- Widespread in tropical, subtropical and temperate waters
- Indian, Pacific and Atlantic

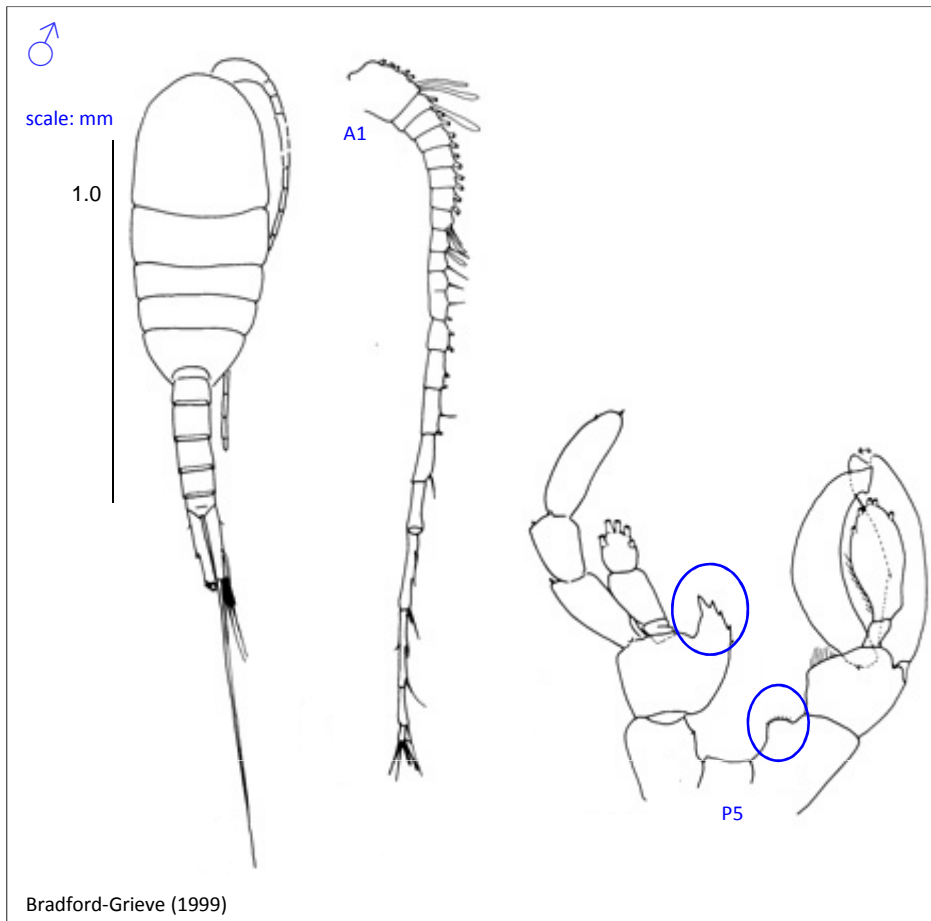
Ecology

- Bioluminescent glands
- Up to 4 generations per year
- Can be strongly associated with upwelling regions

Lucicutia flavicornis

(Claus, 1863)

Phylum Arthropoda
Order Calanoida
Family Lucicutidae



Size

Male: 1.55 -1.70 mm

Male

- Cephalosome without lateral protrusions
- A1 reaches middle of caudal rami
- P1 endopod 3-segmented
- P5 right coxa inner margin with a conspicuous rounded protrusion, right basis with a triangular inner border bearing hairs distally, left coxa with a ridge on inner margin, left basis inner distal corner protruding and ending in a point and with 3-5 extra teeth and sometimes a proximal spinule, inner margins of both basis without pointed projections
- Anal somite almost as long as urosome somite 4
- Caudal rami slightly more than 5x as long as wide; innermost seta small and slender

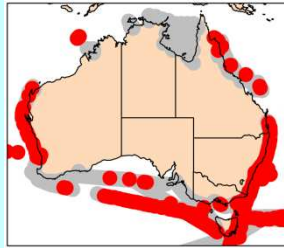
Source

Boxshall & Halsey (2004)
 Boyd et al. (1980)
 Bradford Grieve (1999)
 Conway (2003)
 Razouls et al. (2012)
 Shmeleva & Kovalev (1974)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Mecynocera clausi

I.C. Thomson, 1888



Phylum Arthropoda
Order Calanoida
Family Mecynoceridae

Synonyms

Leptocalanus filicornis Giesbrecht, 1888
Mecynocera clausii Thompson, 1888
Mecynocera filicornis (Giesbrecht, 1888)

Size:

Female: 0.92-1.21 mm

Genus notes

- Small copepods
- Cephalosome and pedigerous somite 1 and somites 4-5 separate, prosome therefore 6 segmented
- Rostrum with 2 long filaments
- Female urosome 3 segmented; male 4 segmented; both with articulated caudal rami
- Monospecific genus

Female

- A1 twice as long as body with elongate setae on many of the segments
- P1 has a 3 segmented exopod and 1 segmented endopod
- P2-4 almost identical, exopods and endopods 3 segmented
- P5 uniramous, symmetrical, 5 segmented
- Spermathecae nearly spherical

Distribution

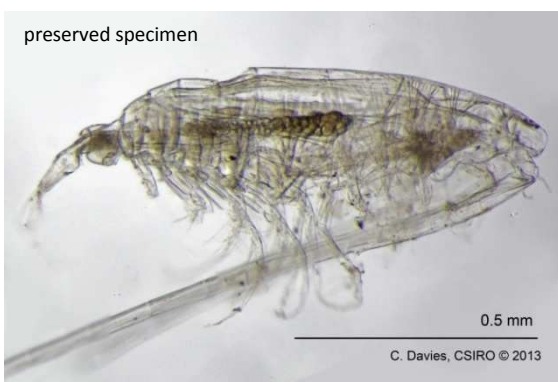
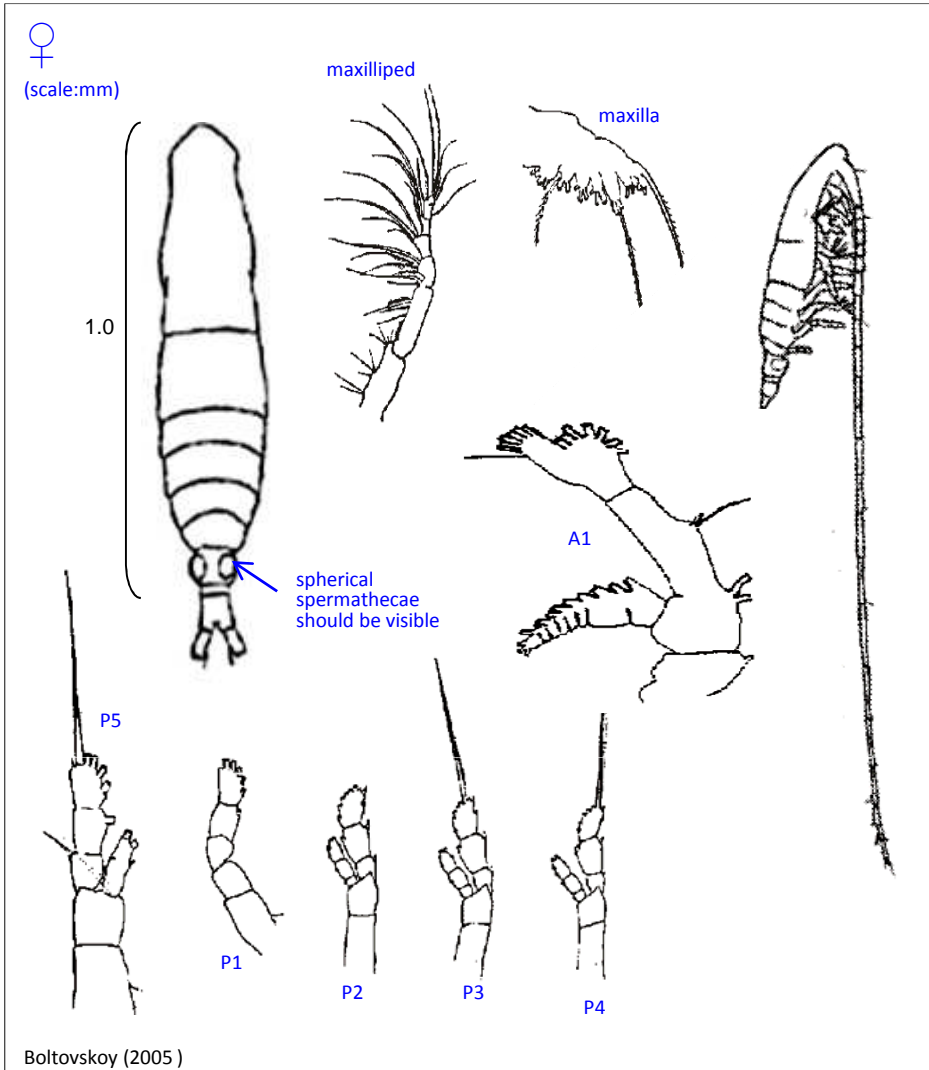
- Epipelagic
- Predominantly oceanic, can occur in estuarine and coastal areas
- Australian distribution includes Western Australia, Great Barrier Reef, North West Cape and Tasmania
- World distribution: widespread in tropical, subtropical and temperate waters of all oceans
- Also found in sub-Antarctic waters

Ecology

- More abundant on Great Barrier Reef during winter (August) than summer (January – March)
- Found in Tasmania throughout the year
- Herbivorous

Source

Boltovskoy (2005)
 Boxshall & Halsey (2004)
 Bradford-Grieve (1994)
 McKinnon (2005)
 Razouls et al (2010)
 Taw & Ritz (1978)



Mecynocera clausi

I.C. Thomson, 1888

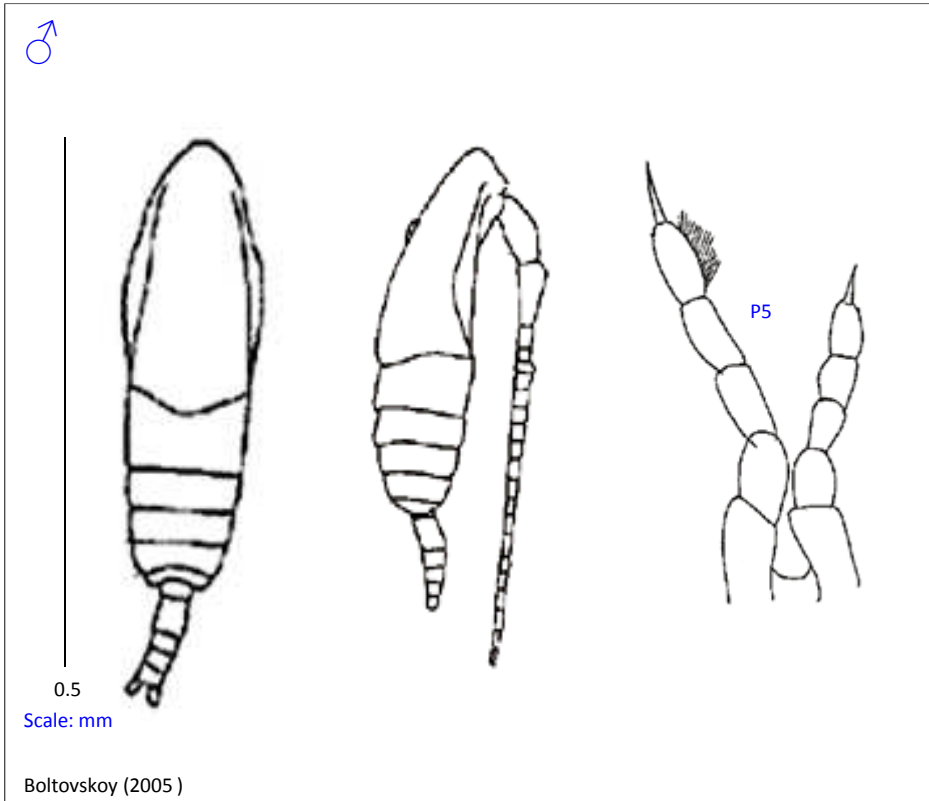
Phylum Arthropoda
Order Calanoida
Family Mecynoceridae

Size

Male: 0.94-1.12 mm

Male

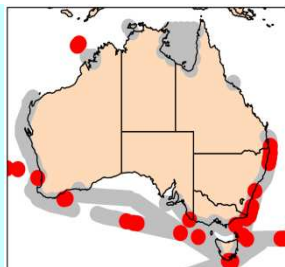
- A1 extends beyond caudal rami by 1-2 segments and is not geniculate
- Dorsal cephalic hump present
- P1 Enp 1 segmented
- P1-P4 segmentation as for female
- P5 uniramous, 5 segmented, asymmetrical, right leg is longer
- Right P5 inner border hairy, terminal segments on both sides with a stout terminal spine and short disto lateral spinule
- Genital pore on right side



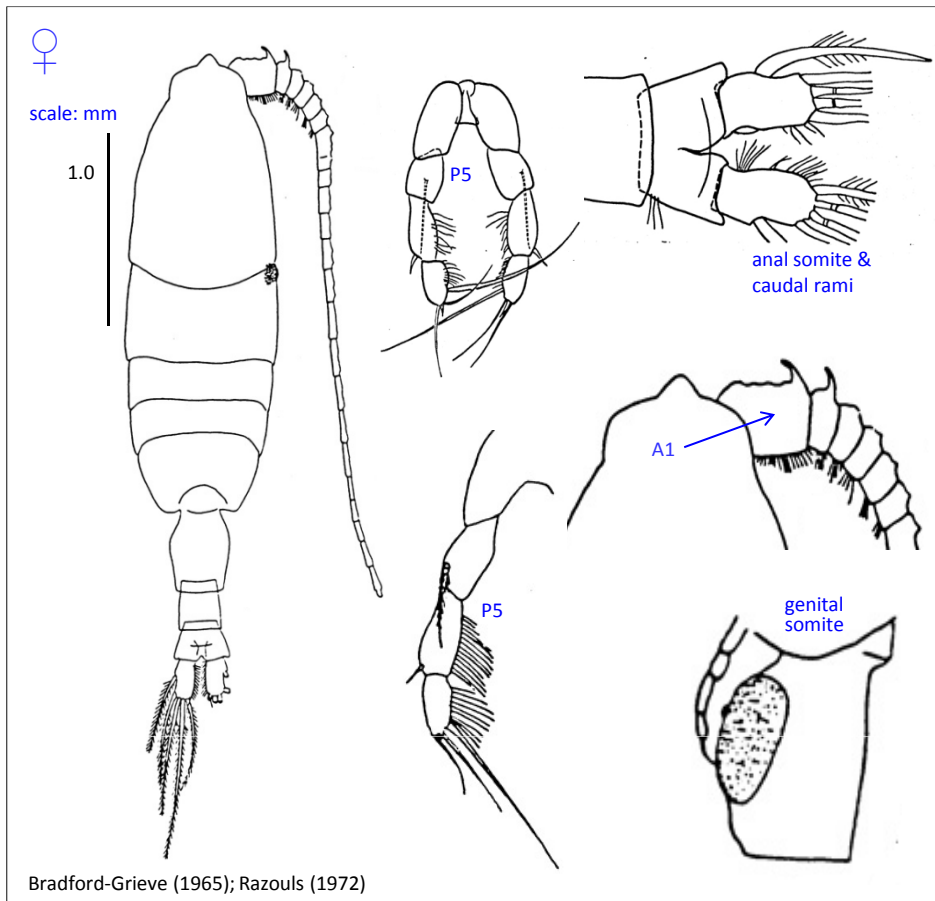
Boltovskoy (2005)

Pleuromamma abdominalis

(Lubbock, 1856)



Phylum Arthropoda
Order Calanoida
Family Metridinidae



Synonyms

Diaptomus abdominalis Lubbock, 1856
Pleuromma abdominale (Claus, 1863)

Size

Female: 2.40 - 4.36 mm

Genus notes

- Cephalosome with short, acute apical process
- Rostrum massive with 2 hairy filaments
- Typically have red/brown pigment spot on the side of body around the junction of first body somite - depending on species can be on left or right side
- Female P5 with 3 free segments and 3 long setae or with 1 free segment and 3 short spines on distal segment
- Male P5 right, terminal segment strongly curved, round; preceding segment with long curved inner spine
- Male urosome often asymmetrical with curved somites and setal bundles

Female

- Brown pigment spot usually on left, rarely on right
- Anterior cephalosome without pointed process
- First 2 segments of A1 bear 2 strong spines of varying size and appearance, one on first segment stronger and usually more curved than that on second segment
- P5 with 3 free segments, terminating in 3 unequal spines, innermost is the longest
- Genital swelling centrally placed on segment, genital pore region has dark protruding cap

Distribution

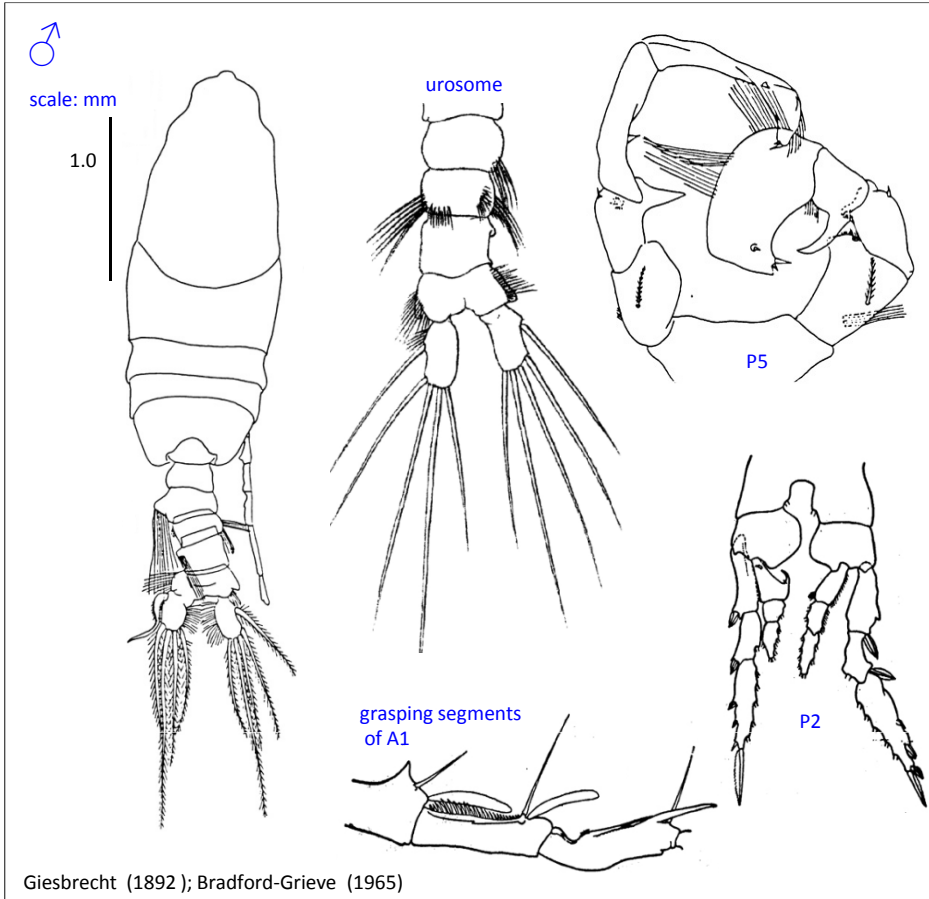
Ecology



Pleuromamma abdominalis

(Lubbock, 1856)

Phylum	Arthropoda
Order	Calanoida
Family	Metridinidae



Size
Male: 2.68 - 4.30 mm

Male

- Brown button on left side
- Only small spines at base of A1
- Right A1 geniculate, proximal segments denticulate
- Denticles on inner margin of P2 endopod segment 1 on left
- P5 left with a wide terminal segment
- Urosome is very asymmetric with long, thick tufts of hairs

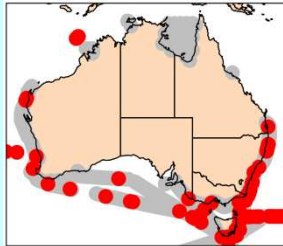
Source

Bradford-Grieve (1999)
Conway (2003)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Pleuromamma borealis

Dahl F., 1893



Phylum Arthropoda
Order Calanioda
Family Metridinidae

Synonym

Pleuromamma boreale Dahl F., 1893
Pleuromamma gracilis esterlyi Scott T., 1912

Size

Female: 1.67 – 2.46 mm

Genus notes

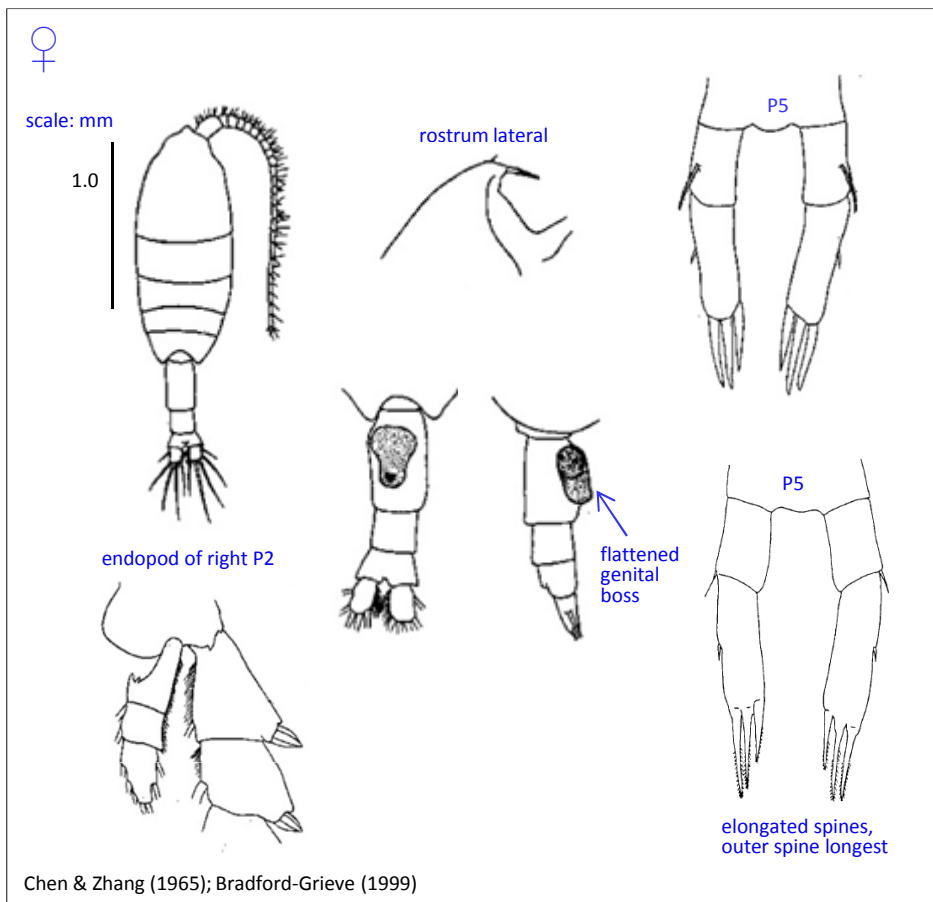
- Cephalosome with short, acute apical process
- Rostrum massive with 2 hairy filaments
- Typically have red/brown pigment spot on the side of body around the junction of first body somite - depending on species can be on left or right side
- Female P5 with 3 free segments and 3 long setae or with 1 free segment and 3 short spines on distal segment
- Male P5 right, terminal segment strongly curved, round; preceding segment with long curved inner spine
- Male urosome often asymmetrical with curved somites and setal bundles

Female

- Pigment spot on right side
- P5 with 2 segments, terminating in 3 long spines, elongated in comparison to *P. gracilis* and *P. pieski*. The outer spine is the longest
- Genital boss is flattened in lateral view

Distribution

Ecology



Chen & Zhang (1965); Bradford-Grieve (1999)



Pleuromamma borealis

Dahl, 1893

Phylum Arthropoda
Order Calanioda
Family Metridinidae

Size

Male: 1.47 – 2.13 mm

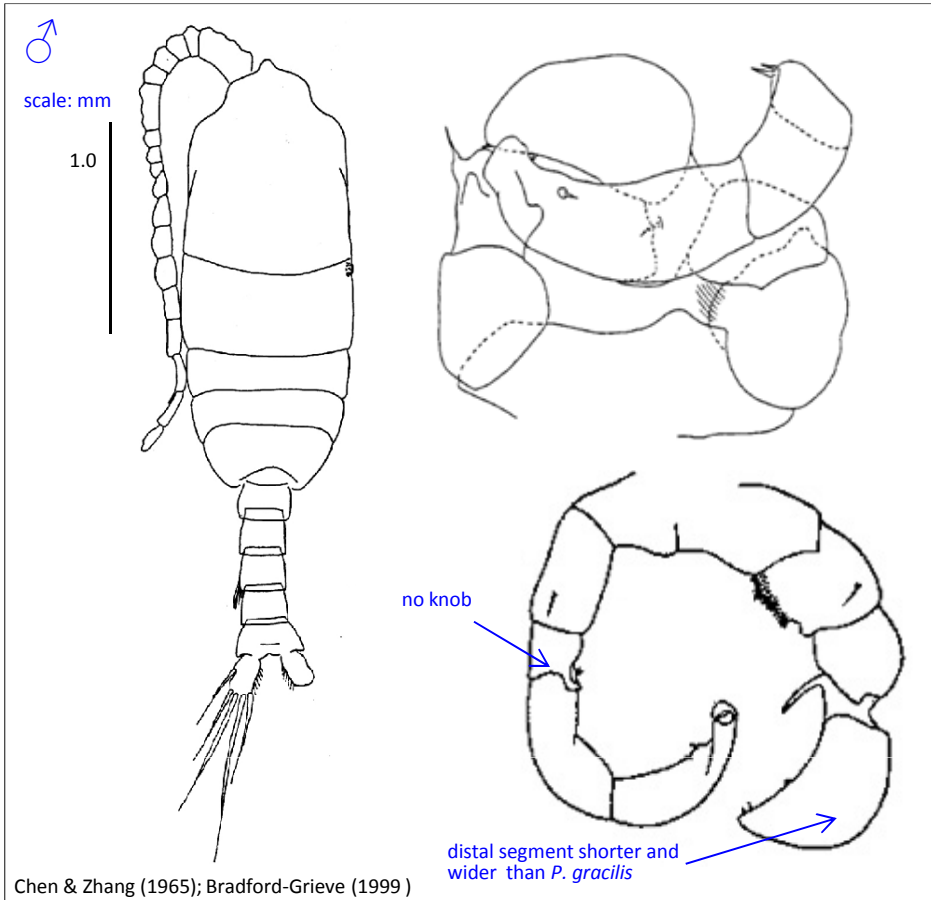
Male

- Pigment spot on right side
- Differs from *P. gracilis* as the exopod segment 1 of the left P5 has a shorter appendage and no knob and the distal segment of the right P5 is shorter and wider

Source

Bradford-Grieve (1999)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)



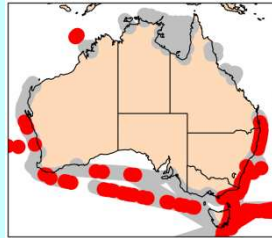
Chen & Zhang (1965); Bradford-Grieve (1999)



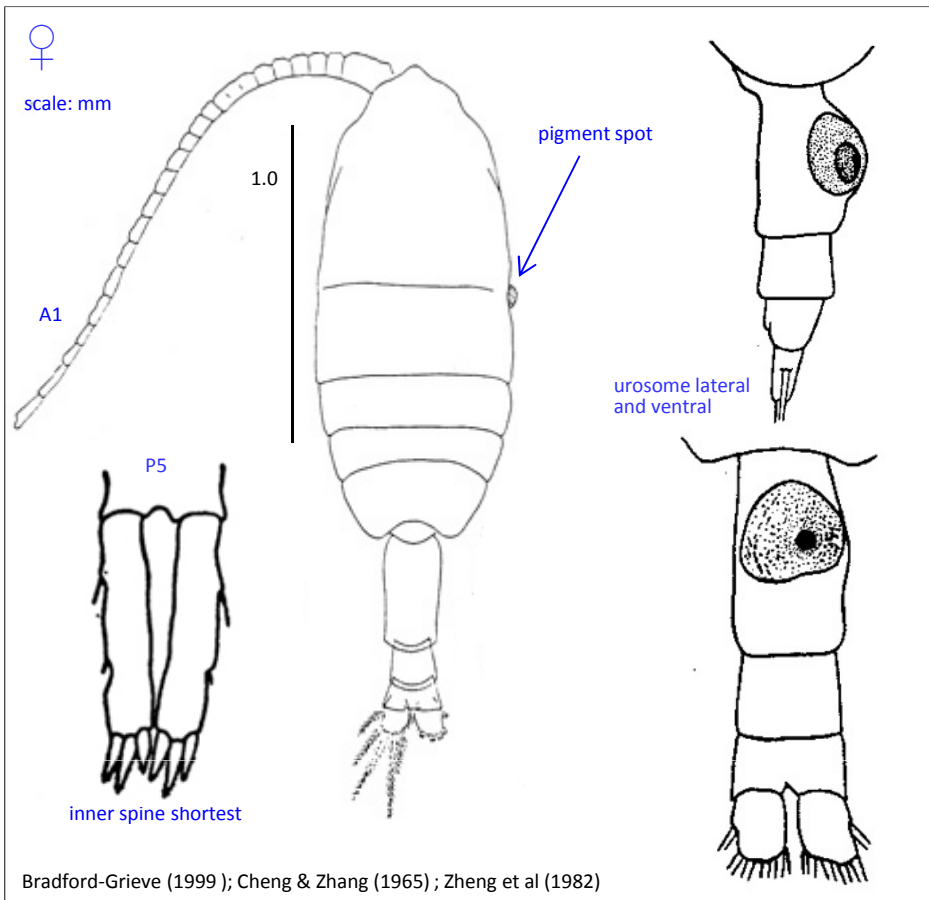
C. Davies @ CSIRO 2012

Pleuromamma gracilis

Claus, 1863



Phylum Arthropoda
Order Calanoida
Family Metridinidae



Synonyms

- Pleuromamma gracile* (Claus, 1863)
- Pleuromamma gracilis maxima* (Steuer, 1932)
- Pleuromamma gracilis minima* (Steuer, 1932)

Size

Female: 1.60 – 2.55 mm

Genus notes

- Cephalosome with short, acute apical process
- Rostrum massive with 2 hairy filaments
- Typically have red/brown pigment spot on the side of body around the junction of first body somite - depending on species can be on left or right side
- Female P5 with 3 free segments and 3 long setae on distal joint or 1 free segment and 3 short spines on distal segment
- Male right P5, terminal segment strongly curved, round; preceding segment with long curved inner spine
- Male urosome often asymmetrical with curved somites and setal bundles

Female

- Pigment spot on right side
- Proximal segments of A1 with small low denticles
- P5 with 1 free segment with 3 terminal spines and 2 thin outer spines
- Very similar to *P. borealis* and *P. piseki*, look at form of P5 and size

Distribution

- Mesopelagic - epipelagic
- Oceanic
- Widespread in all oceans
- Found throughout Australian oceanic waters

Ecology

- Produces 3 – 4 generations year-1
- Forms large swarms, up to 100 m in length
- Produces bioluminescence that is stronger at night; luminescent glands are present on prosome, the bases of the swimming legs and antennules
- Undergoes diel vertical migration over hundreds of metres
- Display negative phototaxis
- Suspension feeders

Bradford-Grieve (1999); Cheng & Zhang (1965); Zheng et al (1982)



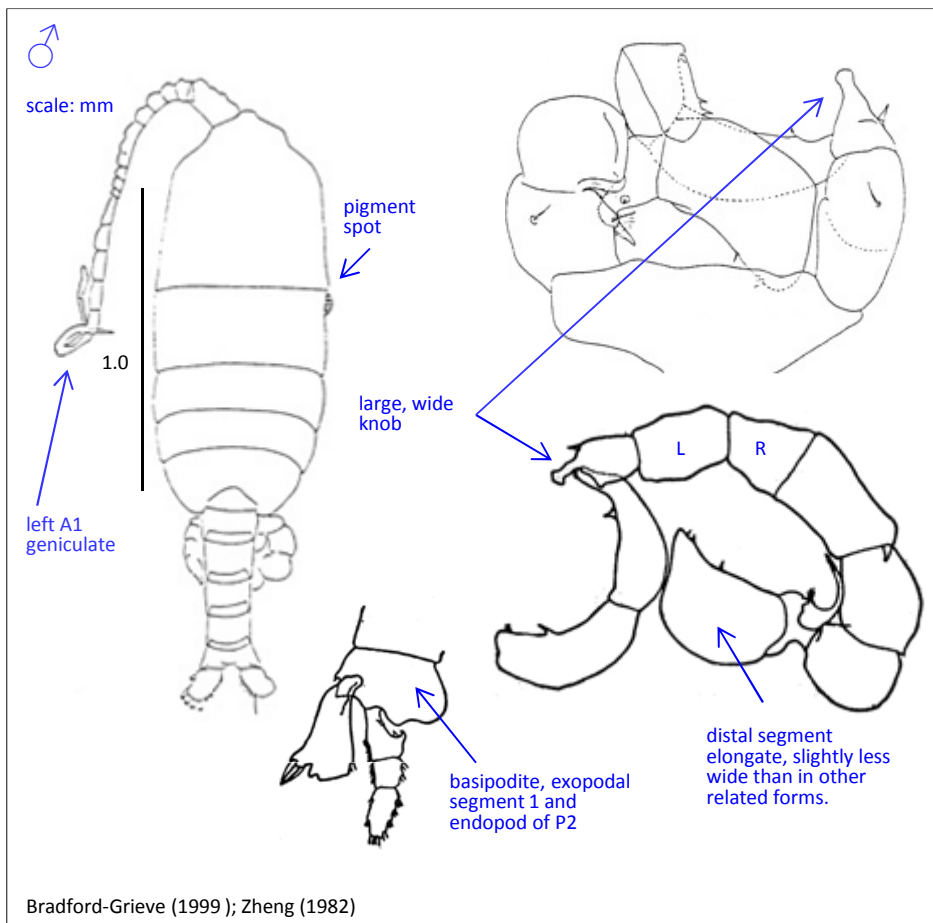
shortest spine on the inside cf. *P. borealis* below and *P. piseki* above

C. Davies @ CSIRO 2012

Pleuromamma gracilis

Claus, 1863

Phylum	Arthropoda
Order	Calanioda
Family	Metridinidae



Size

Male: 1.51 – 2.25 mm

Male

- Pigment spot on right side
- Left A1 geniculate, toothed ridges on segments 17, 18, 19-21, serrations variable
- P2 endopod segment 1 with denticles on right side only
- Distal segment of right P5 elongate, slightly less wide than other *Pleuromamma* species, penultimate segment has a curved process with a double row of blunt tubercles, left P5 with large, wide knob

Source

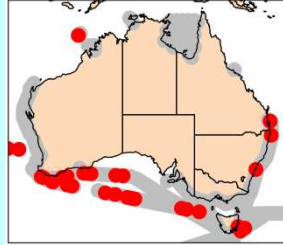
Bradford-Grieve (1999)
Buskey *et al.* (1989)
Shmeleva & Kovalev (1974)
Wiebe (1970)
Zheng (1982)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)



Pleuromamma piseki

Farran, 1929



Phylum Arthropoda
Order Calanioda
Family Metridinidae

Synonym

Pleuromamma gracilis piseki Farran, 1929

Size

Female: 1.70 – 2.02 mm

Genus notes

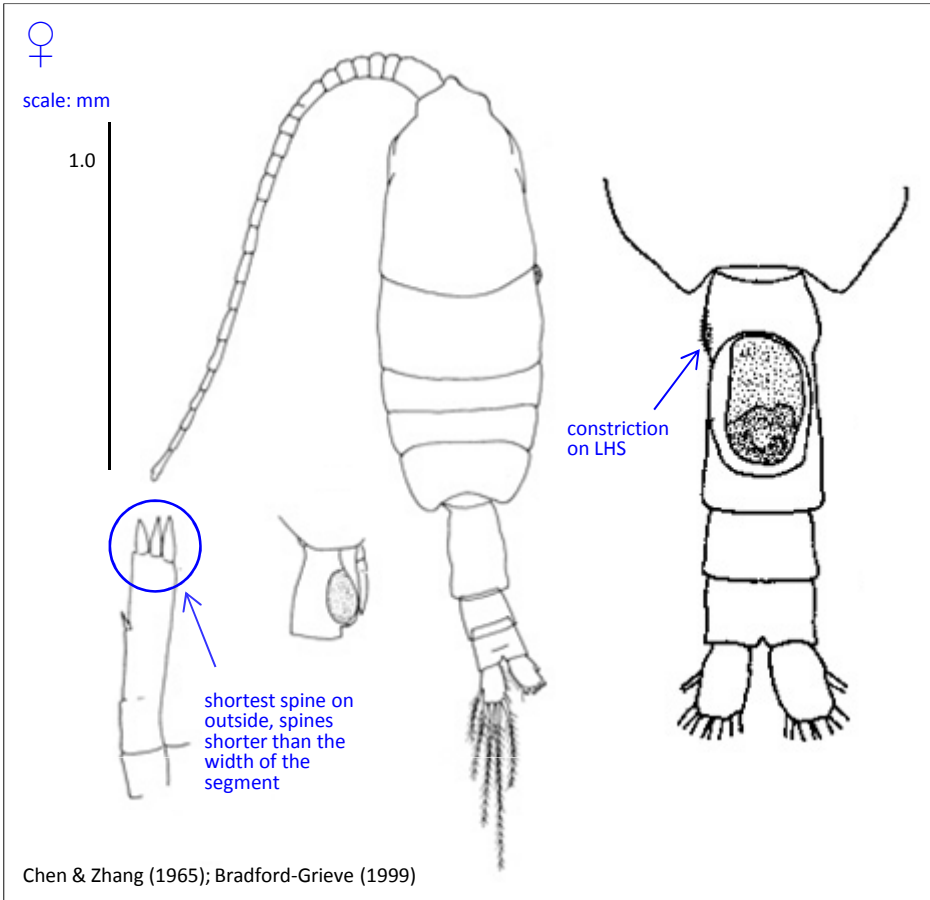
- Cephalosome with short, acute apical process
- Rostrum massive with 2 hairy filaments
- Typically have red/brown pigment spot on the side of body around the junction of first body somite - depending on species can be on left or right side
- Female P5 with 3 free segments and 3 long setae or with 1 free segment and 3 short spines on distal segment
- Male P5 right, terminal segment strongly curved, round; preceding segment with long curved inner spine
- Male urosome often asymmetrical with curved somites and setal bundles

Female

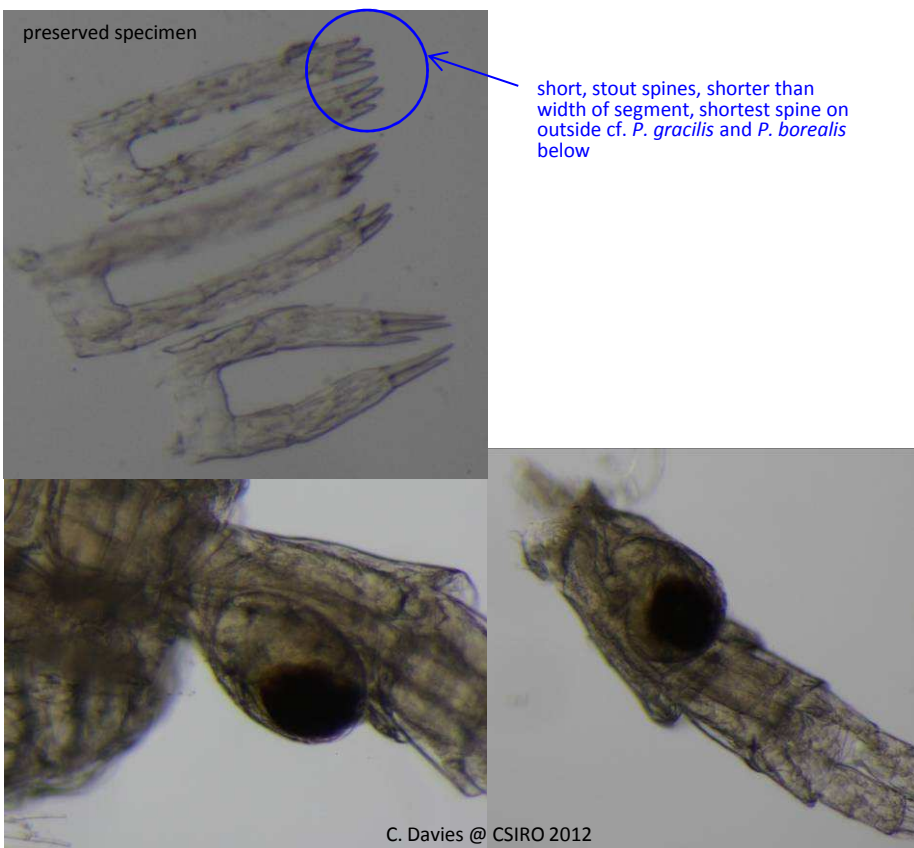
- Pigment spot on right side
- P5 imperfectly segmented, 4.5 – 5 times as long as wide, 3 short, stout spines, shorter than the width of the segment
- The genital somite has a marked groove or constriction on the left side parallel to, and close to, the posterior margin of the somite and a large, black pigmented area around the pore.
- Anal somite has parallel lateral margins
- Very similar to *P. borealis* and *P. gracilis*, look at form of P5 and size

Distribution

Ecology



Chen & Zhang (1965); Bradford-Grieve (1999)



C. Davies @ CSIRO 2012

Pleuromamma piseki

Farran, 1929

Phylum Arthropoda
Order Calanioda
Family Metridinidae

Size
Male: 1.70 – 1.96 mm

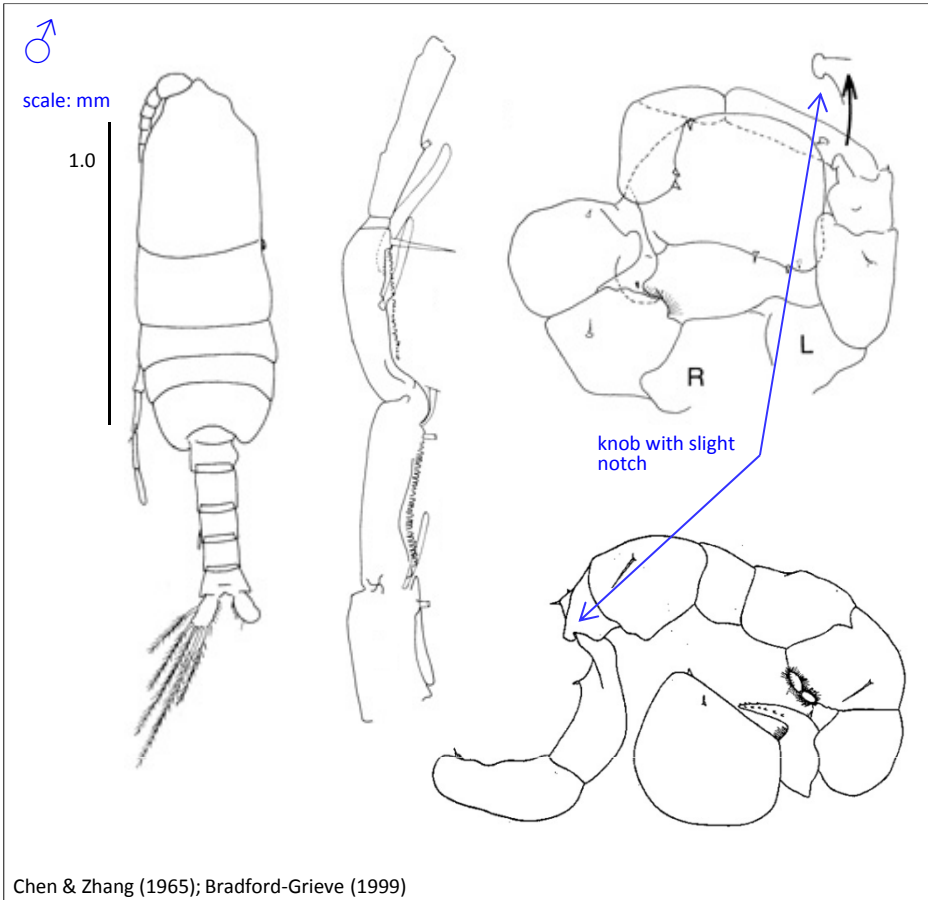
Male

- Pigment spot on right side
- Geniculate antennae 1 with a double toothed row on segment 18 and on proximal parts of 19-21, segment 17 naked
- Left P5 segment 3 with knob separated from process with a slight notch

Source

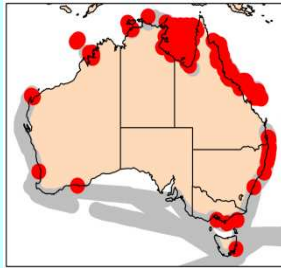
Bradford-Grieve (1999)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

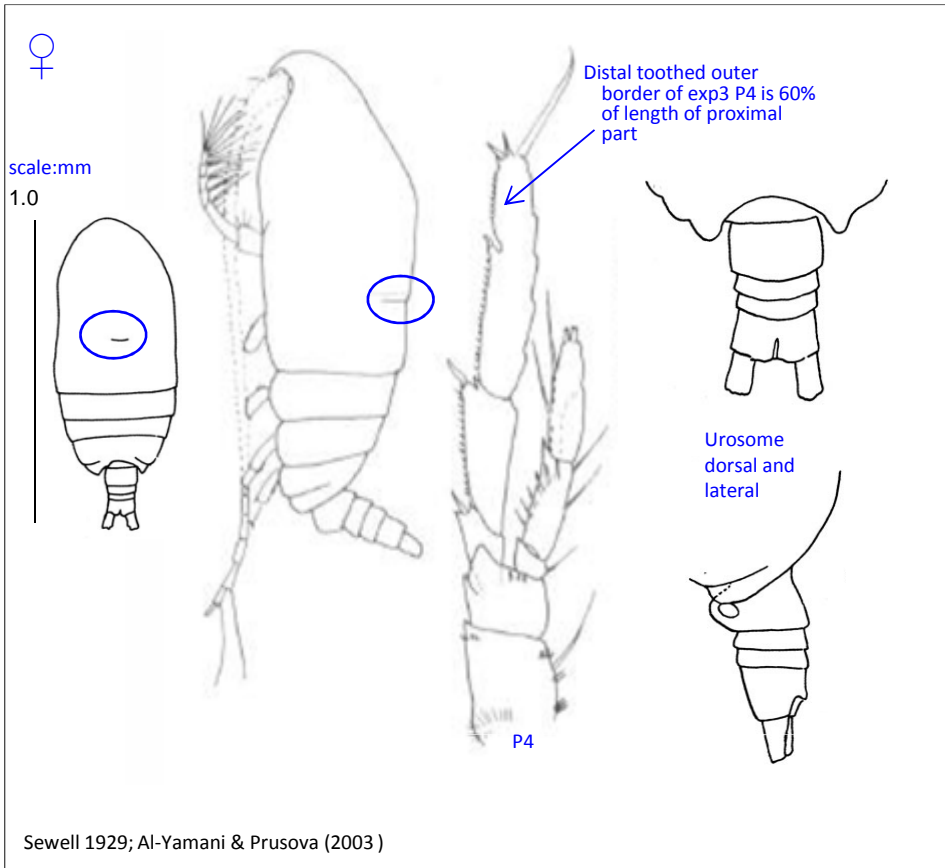


Acrocalanus gibber

Giesbrecht, 1888



Phylum Arthropoda
Order Calanoida
Family Paracalanidae



Synonyms

None

Size

Female: 0.93-1.13 mm

Genus notes

- A1 long
- Rostrum with long, slender filaments
- Pedigerous somites 4 & 5 incompletely separated
- Basis 2 of P1 with inner edge seta
- Obvious small spines on outer edge of exopodite segments of P2-4
- Female P5 is rudimentary
- Male P5 only present on left
- Females with short urosome
- Males of different species difficult to tell apart

Female

- Deep body in lateral view, pronounced hump on cephalosome
- A1 exceeds caudal rami by 2 terminal segments
- Distinct though partial line of separation of cephalosome and 1st pedigerous somite visible
- Distal teeth on P4 are strong when compared to *A. longicornis*
- Distal toothed outer border of exp3 P4 is 60% of length of proximal part
- Genital somite longest, with prominent ventral swelling
- Females can be confused with *Paracalanus*, but in *Acrocalanus* P5 is absent

Ecology

- Generally found in tropical regions but can be transported into temperate regions with warm currents
- Generally more abundant in inshore waters
- Abundances in the Great Barrier Reef peak between January to April
- When present, *A. gibber* is highly abundant
- Herbivorous filter feeder
- Broadcast spawners

Source

Conway et al (2003)
 Dakin & Colefax (1940)
 Boltovskoy (1999)
 Bradford-Grieve (1994)
 McKinnon & Thorrold (1993)
 Razouls et al (2005)



Acrocalanus gibber

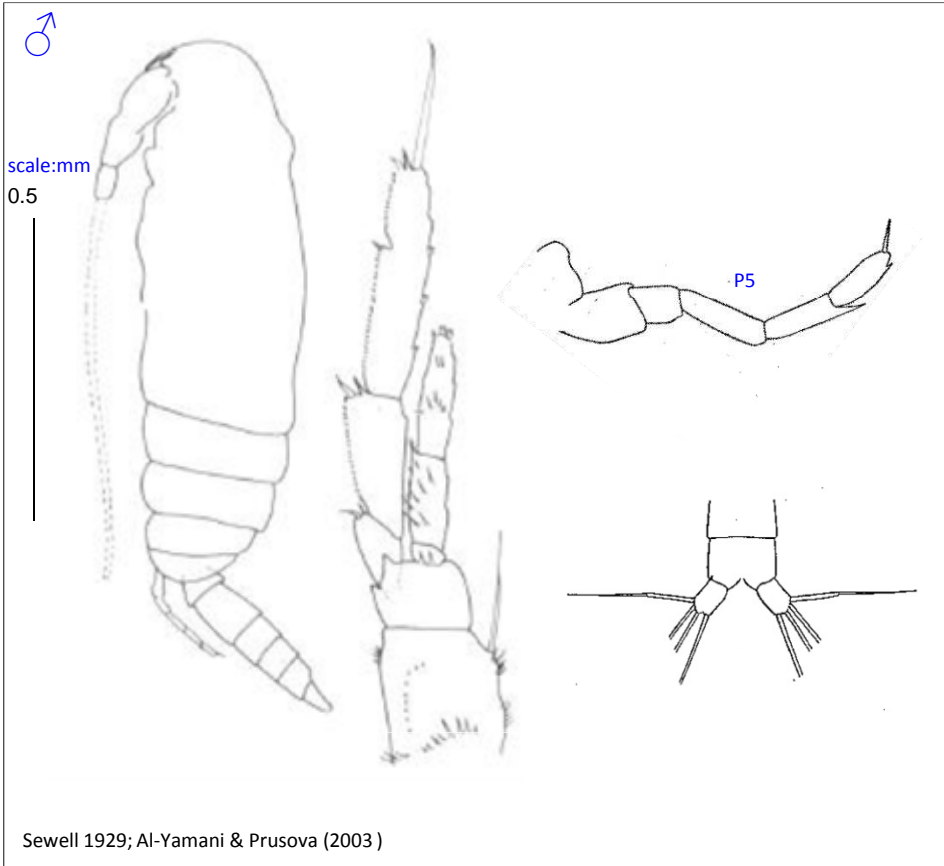
Giesbrecht, 1888

Phylum	Arthropoda
Order	Calanoida
Family	Paracalanidae

Size
Male: 0.94-1.24 mm

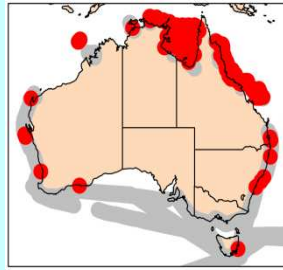
Male

- Prominent hump on dorsal cephalosome
- P5 only visible on left and extends to end of urosome somite 3 or start of 4
- Left P5 very simple, 5 segmented with 2 tiny spines on end of last segment
- Males can be confused with male *Paracalanus* due to small transparent swelling on dorsal profile, differs from male *Paracalanus*, as male *A. gibber* has longer 2nd urosome somite, and P5 right is absent

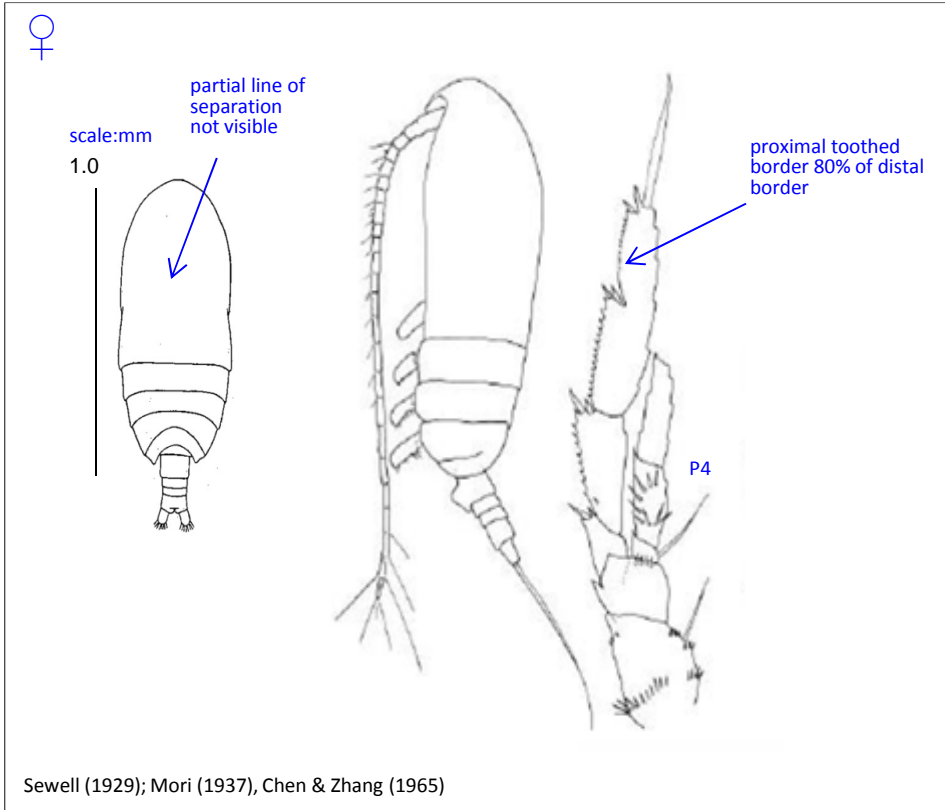


Acrocalanus gracilis

Giesbrecht, 1888



Phylum Arthropoda
Order Calanoida
Family Paracalanidae



Synonyms

None

Size

Female: 1.2-1.32 mm

Genus notes

- A1 long
- Rostrum with long, slender filaments
- Pedigerous somites 4 & 5 incompletely separated
- Basis 2 of P1 with inner edge seta
- Obvious small spines on outer edge of exopodite segments of P2-4
- Female P5 is rudimentary
- Male P5 only present on left
- Females with short urosome
- Males of different species difficult to tell apart

Female

- Cephalosome evenly rounded in lateral view
- A1 exceeds end of caudal rami by 3-4 segments
- Line between cephalosome and first pedigerous somite is rarely visible
- Distal toothed outer border of exp3 P4 is 80% of length of proximal part

Distribution

- Epipelagic, sometimes deeper
- Coastal and oceanic
- Distribution in Australia includes Great Barrier Reef, Moreton Bay, North West Cape and New South Wales
- World distribution: recorded from tropical regions of all oceans

Ecology

- Can be transported into temperate regions via warm water currents
- More abundant offshore on the Great Barrier Reef
- Herbivorous filter feeder

Source

- Boltovskoy (1999)
- Bradford-Grieve (1994)
- Conway (2003)
- Dakin and Colefax (1940)
- McKinnon & Thorrold (1993)
- Razouls et al (2010)

Sewell (1929); Mori (1937), Chen & Zhang (1965)

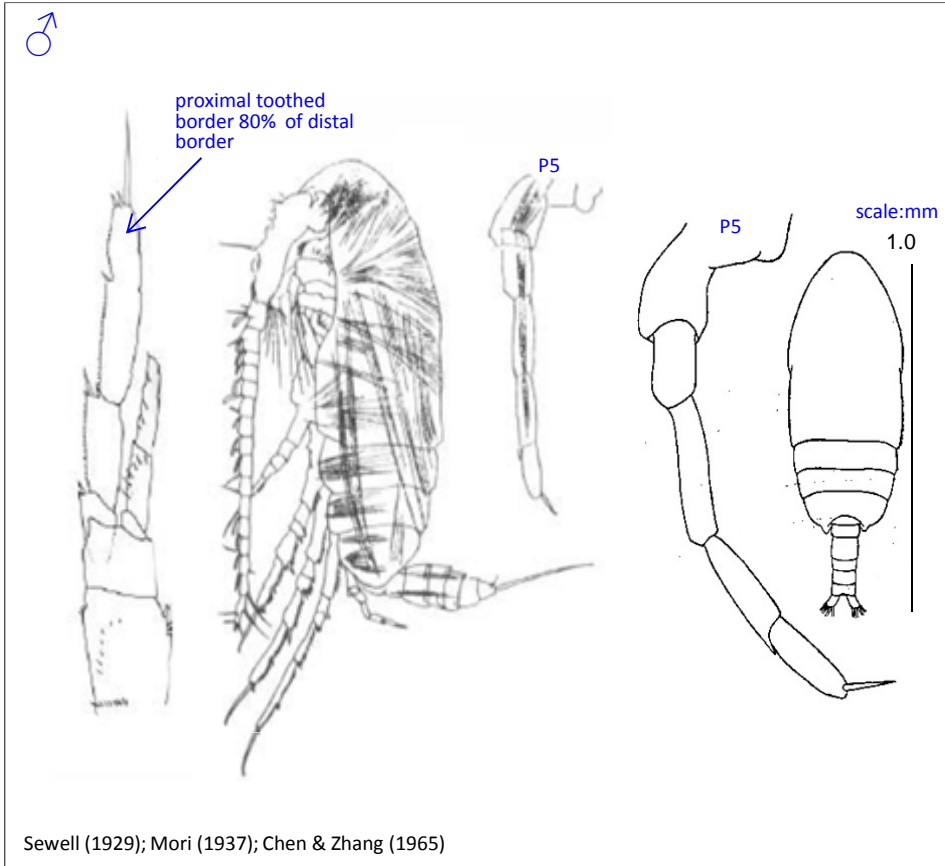


CSIRO AusCPR

Acrocalanus gracilis

Giesbrecht, 1888

Phylum Arthropoda
Order Calanoida
Family Paracalanidae



Size

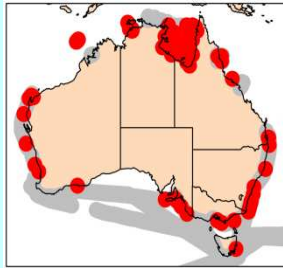
Male: 0.88-1.00 mm

Male

- A1 reaches just beyond caudal rami
- No hump on cephalosome
- P5 left 5 segmented and reaches to end of urosome somite 2
- P5 right is vestigial or absent

Bestiolina similis

(Sewell, 1914)

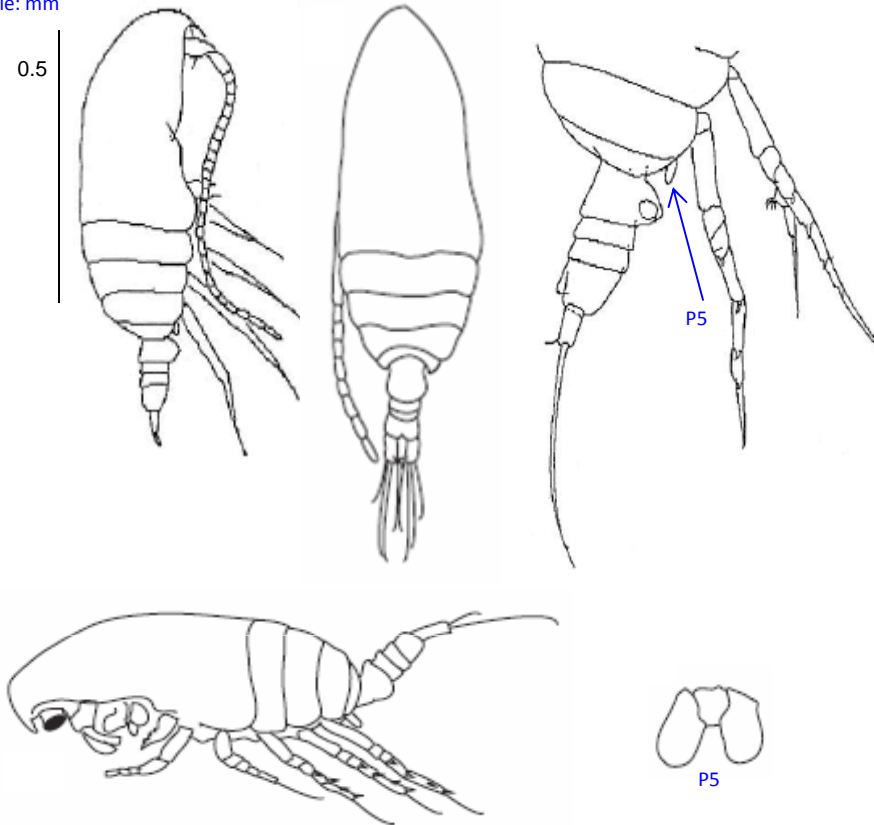


Phylum Arthropoda
Order Calanoida
Family Paracalanidae



scale: mm

0.5



Bradford-Grieve (1994); McKinnon et al. (2003)

Synonym

Bestiola similis (Sewell 1914)
Acrocalanus similis Sewell, 1914

Size

Female: 0.72-0.81 mm

Genus notes

- Rostrum shortened
- Small and bullet-shaped
- Basis of P2 with an inner edge seta
- Endopod segment 3 of P3-4 with 6 setae
- No teeth on exopod segments 2-3 on P2-4
- Female P5 rudimentary and knob-like
- Male with dorsal cephalic hump
- Male P5 rudimentary on right and elongate on left

Female

- Rostral filaments long and slender
- A1 extends as far as caudal rami, terminal segments elongate, no transverse row of spinules on segments 1-7
- Pedigerous segment 5 without spinules

Distribution

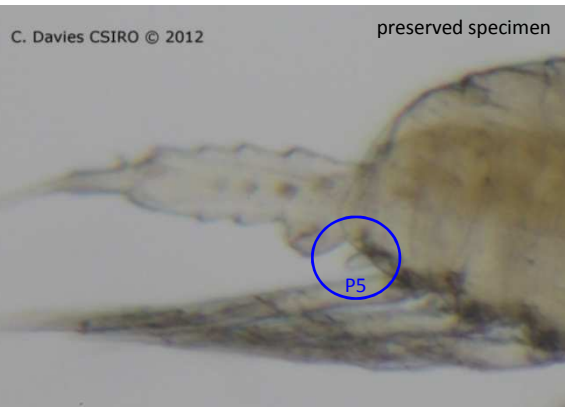
- Epipelagic
- Common in inshore waters and estuaries of the tropics
- Pacific and Indian Oceans, not the Atlantic

Ecology

- Can produce up to 50 eggs female-1 day-1
- Eggs released directly into water
- Naupliar development complete in < 4 days
- Important prey for larval fish
- Easily maintained in culture



CSIRO AusCPR



C. Davies CSIRO © 2012

preserved specimen

Bestiolina similis

(Sewell, 1914)

Phylum Arthropoda
Order Calanoida
Family Paracalanidae

Size

Male: 0.80 mm

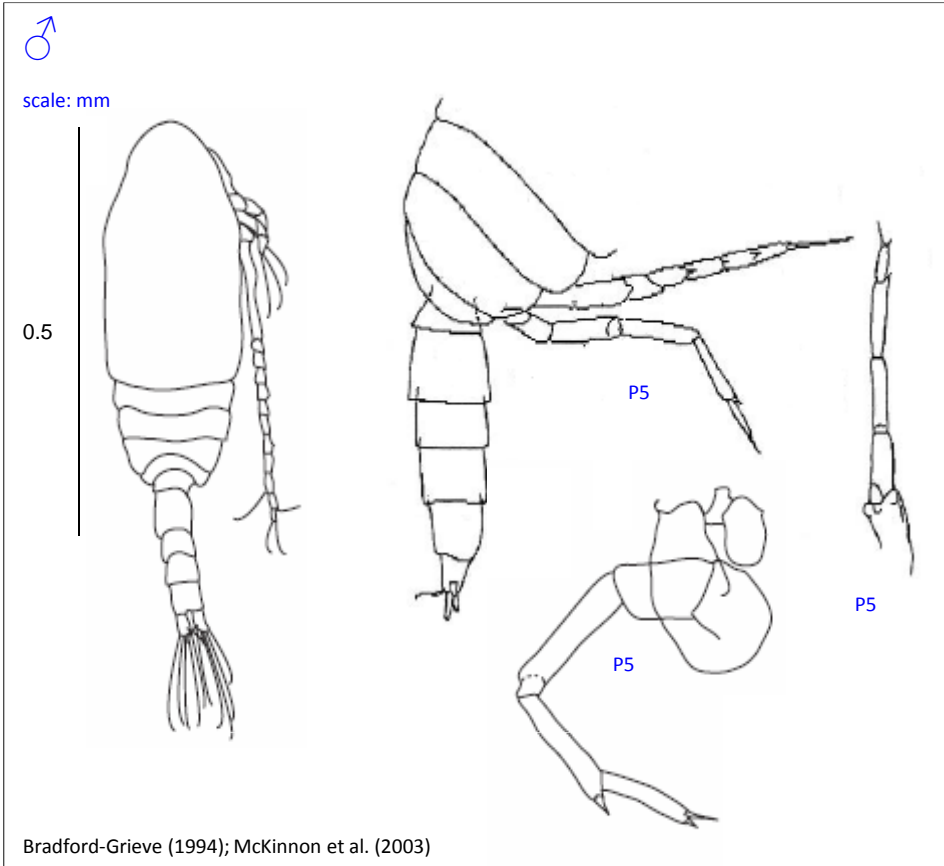
Male

- Swimming legs as for female
- P5 has swollen basal segment, and 4 more segments.
- Terminal P5 segment has 2 unequal spines, penultimate segment with laterodistal spine

Source

Boxshall & Halsey (2004)
Bradford-Grieve (1994)
McKinnon & Klumpp (1998)
McKinnon et al. (2003)
Razouls et al. (2010)

(Full reference available at
<http://www.imas.utas.edu.au/zooplankton/references>)

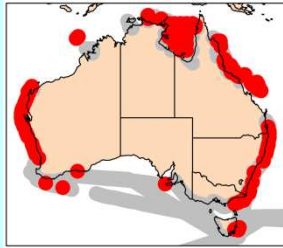


Bradford-Grieve (1994); McKinnon et al. (2003)

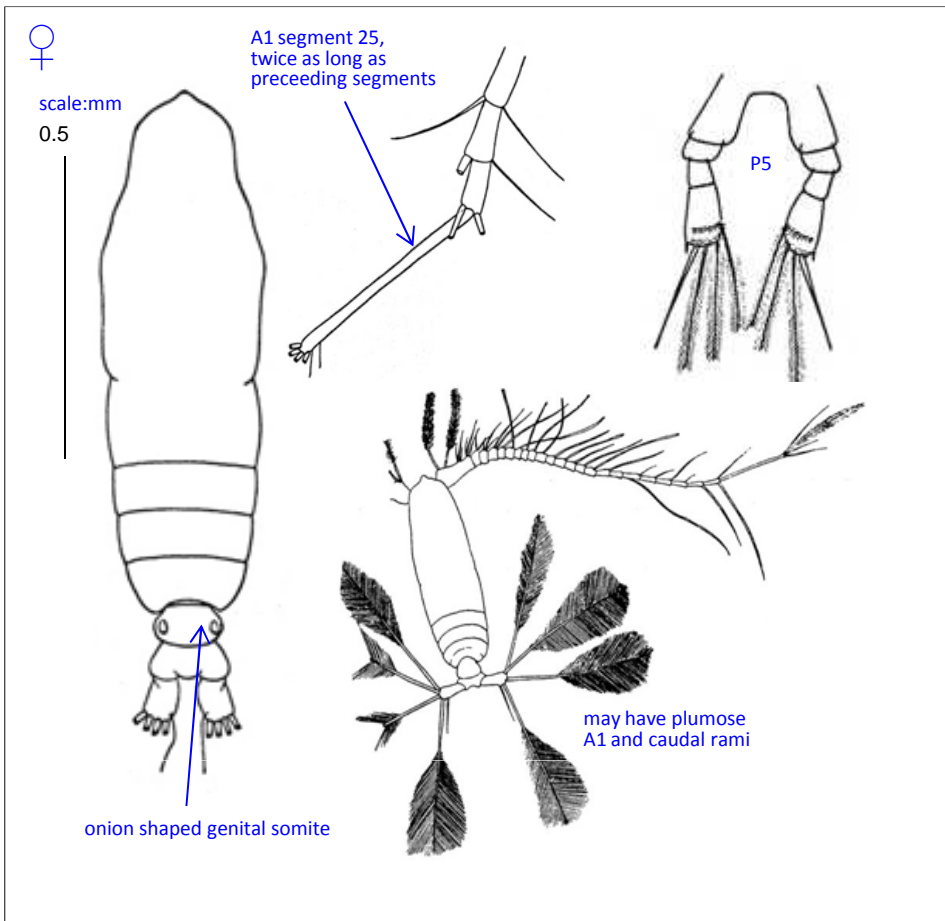


Calocalanus pavo

(Dana, 1852)



Phylum Arthropoda
Order Calanoida
Family Paracalanidae



Synonyms

Calanus pavo Dana, 1852

Size

Female: 0.88-1.2 mm

Genus notes

- Very small copepods
- A1 often much longer than body, segment 25 often long, being twice as long as preceding segments
- Basis of P1 without a seta
- Outer borders of swimming legs distal exopods not toothed
- P5 is uniramous and symmetrical, 3-4 segmented with varying number of setae on the end of the terminal segment
- Male P5 asymmetrical, uniramous, 4-segmented on the right and 5 on the left
- Female urosome short, with 2-4 somites
- Females with broad bulbous genital somite when viewed from above
- Often 2 setae on the caudal rami much thicker than the others
- Caudal rami often asymmetrical

Female

- Small transparent species
- Cephalosome and pedigerous somite 1 fused, pedigerous somites 4-5 separated
- May have plumose A1 and caudal rami
- Stout, prosome 3x as long as wide
- P5 4 segmented, terminal segment with 5 plumose setae and 1 spine on outer distal border and 2 rows of tiny spinnules, extends to basipod of P4
- Urosome 2 segmented, onion shaped genital somite
- Caudal rami symmetrical, elongate and generally divergent, may be at right angles to urosome

Distribution

- Epipelagic and bathypelagic
- Inshore coastal, coastal and oceanic
- Australian distribution includes Great Barrier Reef, North West Cape and Tasmania
- Widespread in tropical, subtropical and temperate waters of all oceans

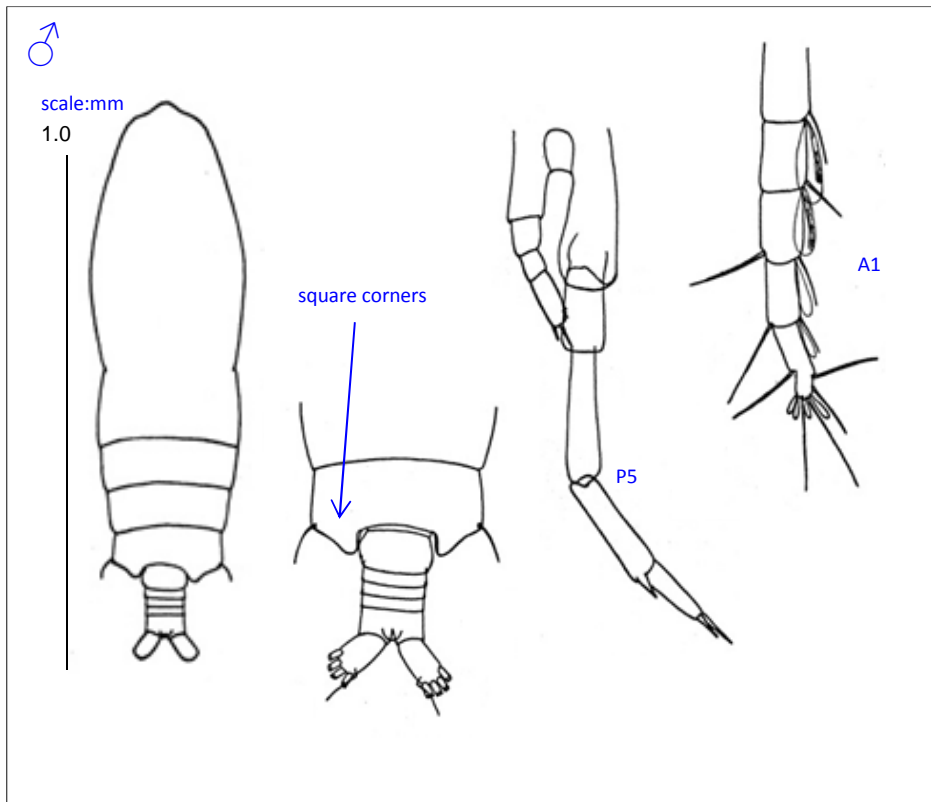
Ecology

- In the Mediterranean *C. pavo* found in warmer, less saline waters
- Herbivorous filter feeder
- Found mainly in the upper water column

Calocalanus pavo

(Dana, 1852)

Phylum Arthropoda
Order Calanoida
Family Paracalanidae



Size

Male: 1.04 mm

Male

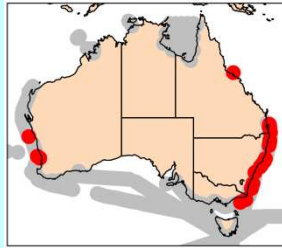
- Body quite different from female
- May have plumose A1 and caudal rami
- Cephalosome and pedigerous somite 1 separate, pedigerous somites 4-5 fused
- Posterior prosome extending laterally square corners
- P5 uniramous and asymmetrical, limbs of unequal length, both legs end in 2 small subequal spines, right leg does not extend as far as distal border of second segment of left leg
- Urosome 5 segmented
- Caudal rami longer than wide, not divergent

Source

Bradford-Grieve (1994)
 Boltovskoy (1999)
 Conway (2003)
 Fernández de Puelles et al (2009)
 Nyan Taw (1975)
 Razouls et al 2010

Delibus nudus

(Sewell, 1929)



Phylum Arthropoda
Order Calanoida
Family Paracalanidae

Synonyms

Paracalanus nudus Sewell, 1929
Delius nudus (Sewell, 1929)
Acrocalanus indicus Tanaka, 1960
Andronovius nudus (Sewell, 1929)

Size

Female: 0.4-0.7 mm

Genus

- Very small, less than 1 mm
- Cephalosome and pedigerous somite 1 are fused; somites 4 and 5 also fused
- A1 extends to posterior border of prosome
- Rostrum bifurcate, branches short and wide
- Female basis of P1 with inner edge setae
- P2-4, outer edge of exopod segments 2-3 are not serrated
- Right P5 is reduced, only left P5 present, 2 segments in female, 5 in male
- Female urosome 4-segmented, male 5-segmented

Female

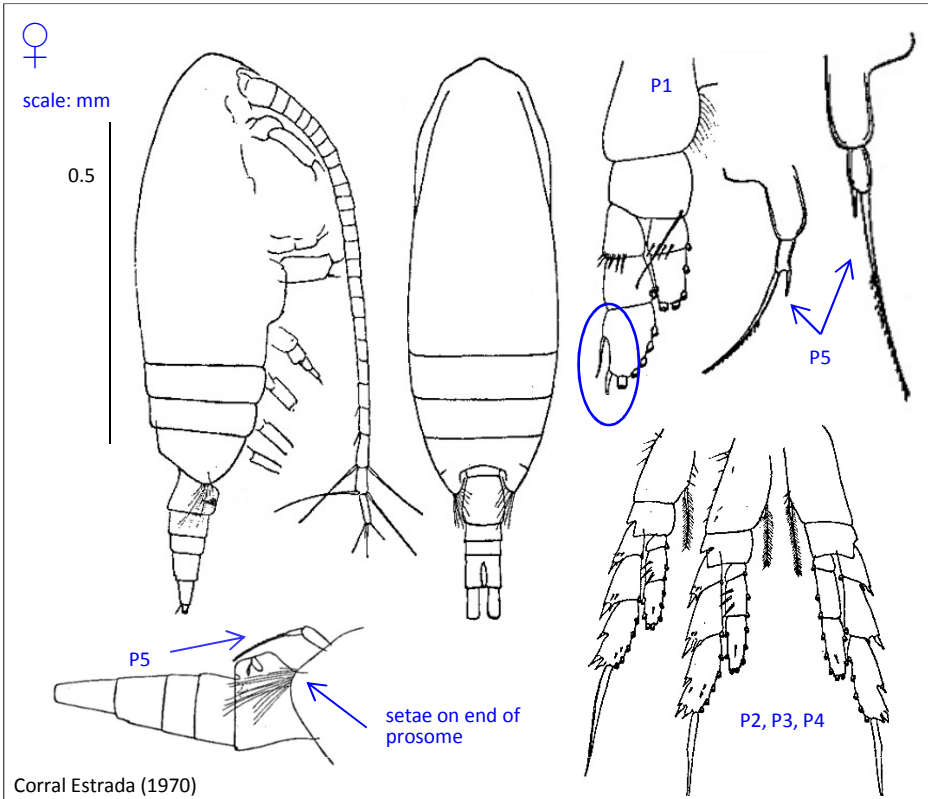
- P1 exopod 3 with 2 outer spines
- Left P5 short and 'dagger' like, right P5 absent
- Tuft of setae on end of prosome

Distribution

- Epipelagic
- Oceanic, widespread in Atlantic, Indian and Pacific Oceans

Ecology

- Nothing appears to be known about the ecology of this species



Corral Estrada (1970)



preserved specimen

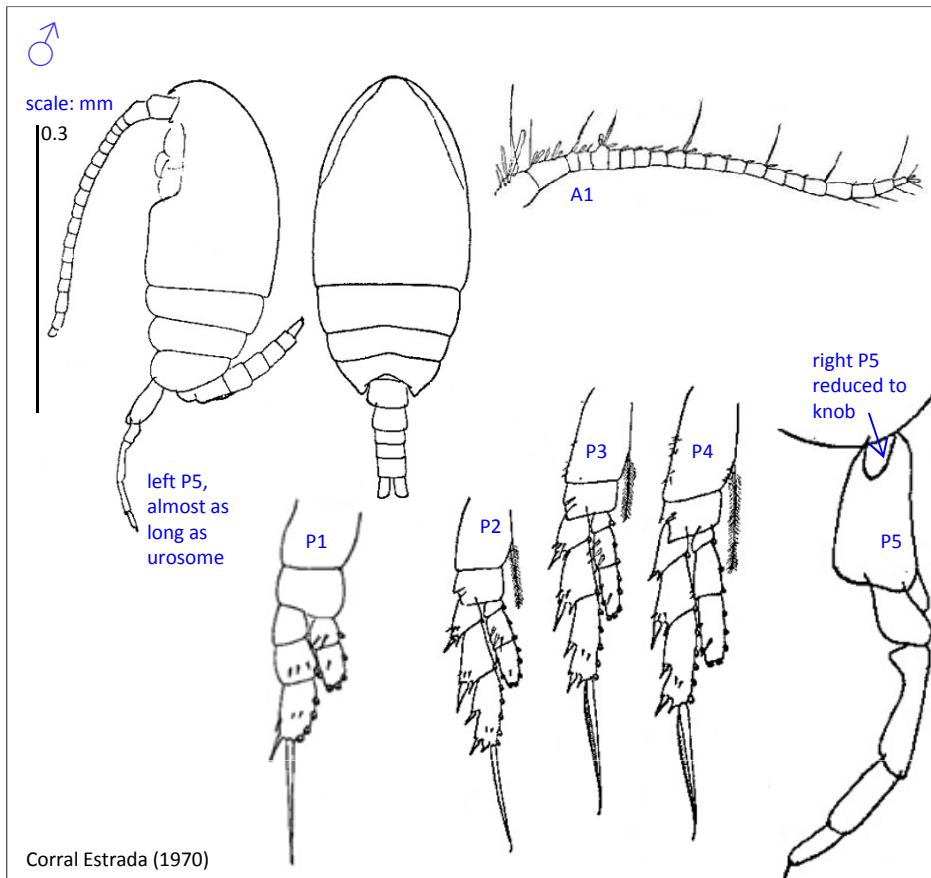


CSIRO AusCPR

Delibus nudus

(Sewell, 1929)

Phylum Arthropoda
Order Calanoida
Family Paracalanidae



Size

Male: 0.42-0.52 mm

Male

- P5 long, almost reaches to end of urosome
- Right P5 reduced to knob

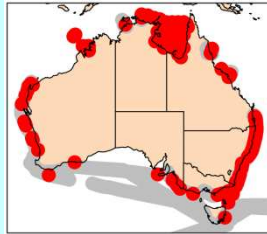
Source

Bradford Grieve (1994)
Corral Estrada (1970)
Razouls (2012)

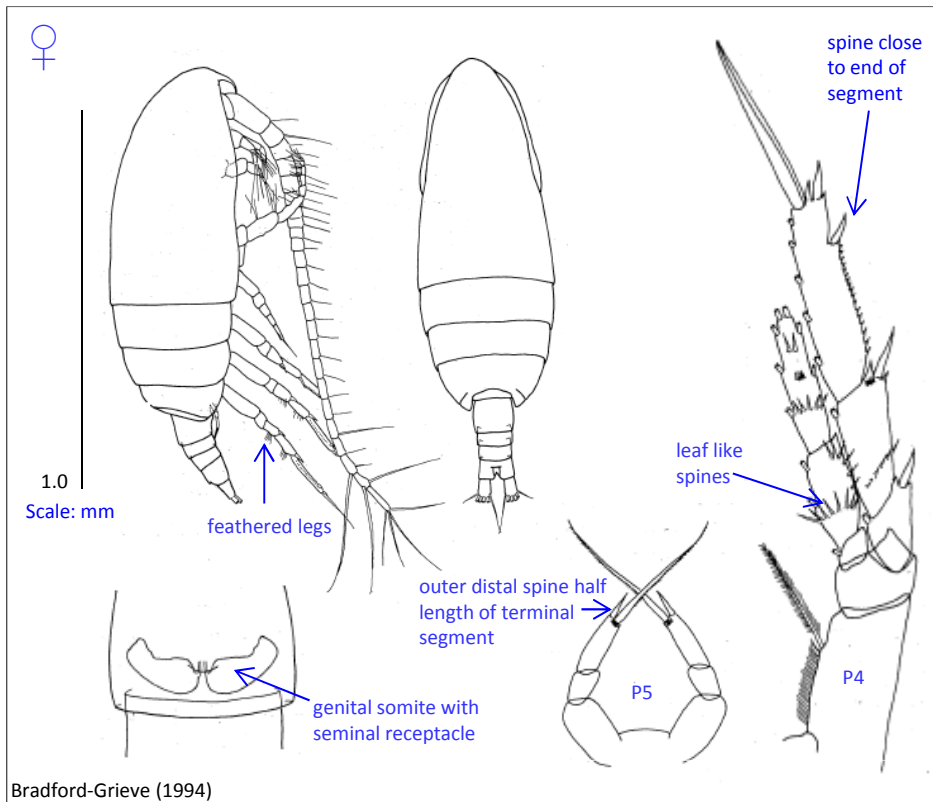
(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Paracalanus aculeatus

Giesbrecht, 1888



Phylum Arthropoda
Order Calanoida
Family Paracalanidae



Bradford-Grieve (1994)

Synonyms

None

Size

Female: 0.80-1.36 mm

Genus notes

- Small oval copepods
- Cephalosome fused with first pedigerous somite
- A1 extends beyond prosome
- Rostrum composed of 2 fine filaments
- Posterior prosome segments rounded
- Exopodites of P3 and P4 with serrated outside margin
- P4 exopod segment 3 with a spine which is closer to the end of the segment than the start
- Female P5 is slender, short, uniramous, symmetrical and 2-segmented
- Male P5 uniramous, asymmetrical, with 5 segments on left and 2 on right.
- Female urosome 4-segmented, male 5 segmented
- Genital somite and caudal rami symmetrical

Female

- A1 extends beyond caudal rami
- Surface of B1 of swimming legs naked (inner edge may be feathered)
- P4 Exp2 has leaf like spines
- P5 distal segment cylindrical, terminal spine longer than previous segment, outer distal spine short, about 1/2 length of terminal segment
- Difficult to distinguish from *P. campaneri* and *P. denudatus*. Look at the shape of the seminal receptacle
- More robust and bigger than *P. indicus*

Distribution

- Epipelagic
- Coastal and oceanic
- Australian distribution includes North West Cape, Gulf of Carpentaria, Great Barrier Reef, Moreton Bay, Shark Bay and South East Australia including Tasmania
- World distribution: cosmopolitan except for the Arctic and Antarctic oceans

Ecology

- Mean generation time from egg to adult 19.5 days at 28 °C
- Growth rates and egg production appear to be food limited
- Broadcast spawners
- Slow, continuous swimmer that generates a feeding current to entrain potential food particles
- Perceives food at a distance by chemoreception
- Herbivorous filter feeder



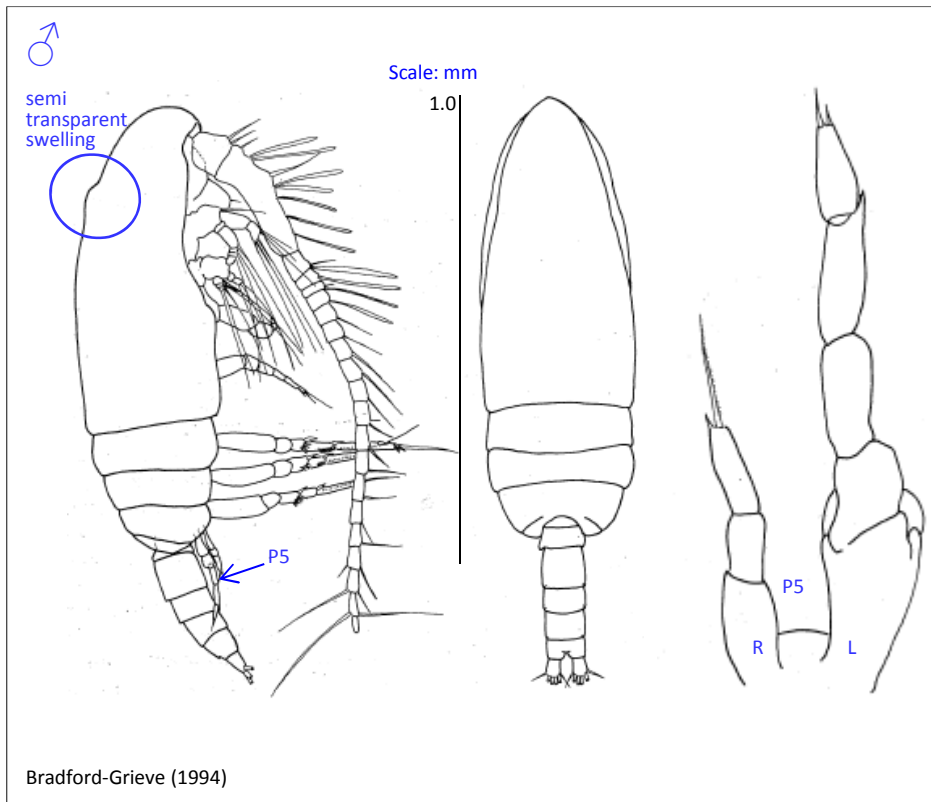
swimming legs may be feathered on inner edge

C. Davies, CSIRO © 2012

Paracalanus aculeatus

Giesbrecht, 1888

Phylum	Arthropoda
Order	Calanoida
Family	Paracalanidae



Size

Male: 0.92-1.36 mm

Male

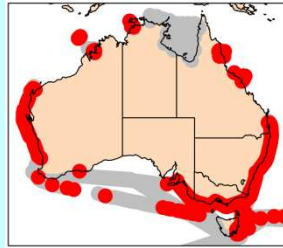
- Can be confused with *Acrocalanus* due to small transparent swelling on the dorsal profile
- A1 extends almost as far as caudal rami
- P5 extends beyond posterior border of urosome somite 3. Right P5 extending as far as proximal third of left leg segment 3.
- Caudal rami as long as wide

Source

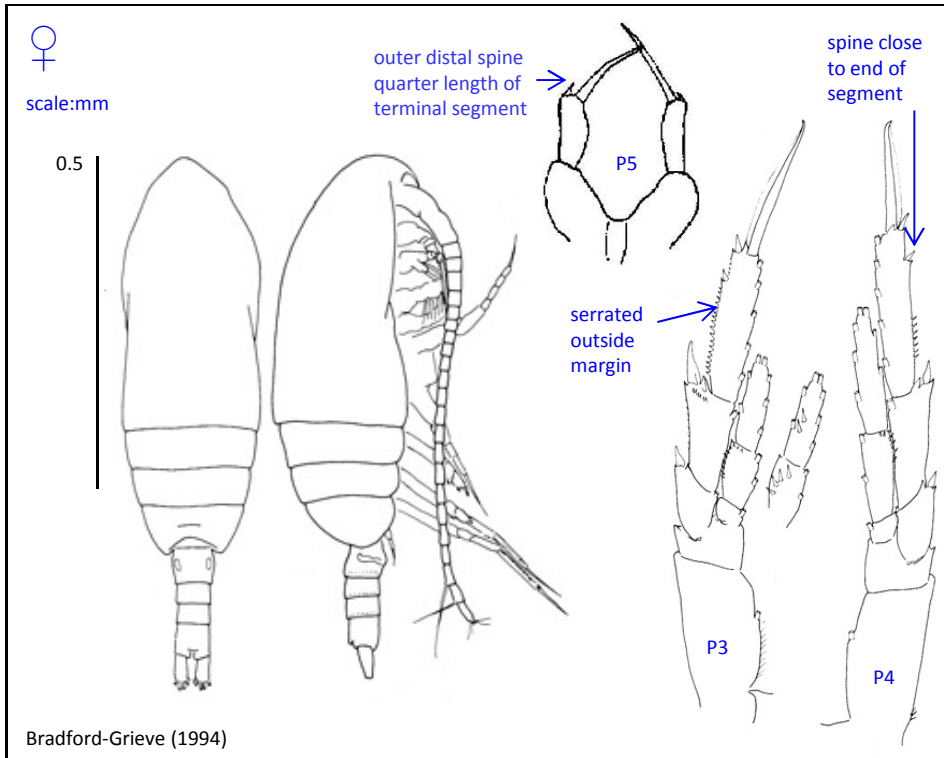
Bradford & Grieve (1994)
 Chisholm & Roff (1990)
 Dakin & Colefax (1940)
 Razouls et al (2010)
 Wiggert et al (2008)

Paracalanus indicus

Wolfenden, 1905



Phylum Arthropoda
Order Calanoida
Family Paracalanidae



Synonyms
 none

Size
 Female: 0.85-0.95 mm

Genus notes

- Small oval copepods
- Cephalosome fused with first pedigerous somite
- A1 extends beyond prosome
- Rostrum composed of 2 fine filaments
- Posterior prosome segments rounded
- Exopodites of P3 and P4 with serrated outside margin
- P4 exopod segment 3 with a spine which is closer to the end of the segment than the start
- Female P5 is slender, short, uniramous, symmetrical and 2-segmented
- Male P5 uniramous, asymmetrical, with 5 segments on left and 2 on right.
- Female urosome 4-segmented, male 5 segmented
- Genital somite and caudal rami symmetrical

Female

- A1 extends just beyond the anal somite
- P5 distal segment cylindrical, terminal spine longer than previous segment, outer distal spine short, about ¼ length of terminal segment
- Short genital somite
- Genital somite widest anteriorly in dorsal view
- Caudal rami 2x as long as wide with short inner seta

Distribution

- Epipelagic
- Coastal
- Widespread in tropical and subtropical waters of the Atlantic, Pacific and Indian Oceans, also found in subantarctic waters
- Common in coastal waters around Australia including Tasmania

Ecology

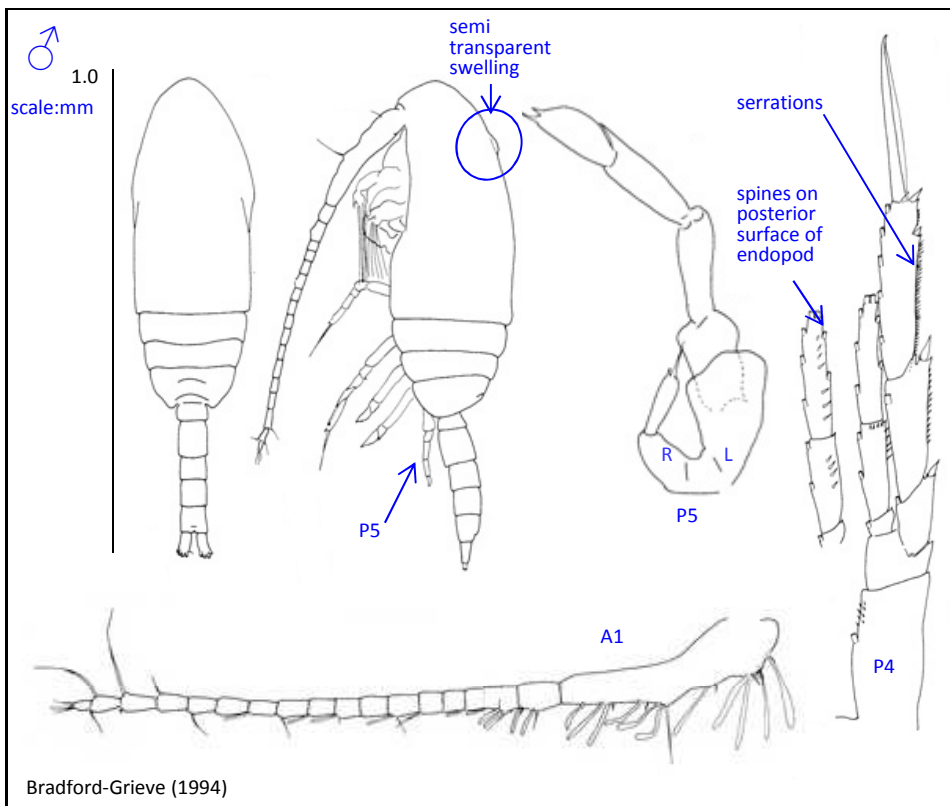
- Suspension feeders
- Common prey for planktivorous fish in shallow estuaries
- Not tolerant of high particulate loads found in shallow estuaries
- One of several neritic species that are commonly parasitized by protists



Paracalanus indicus

Wolfenden, 1905

Phylum Arthropoda
Order Calanoida
Family Paracalanidae



Size
 Male: 0.85-1.02 mm

Male

- A1 extends to about the distal border of urosome somite 2
- Semi-transparent swelling on dorsal cephalosome
- Distal border of exopod segment 3 on P4 serrated, endopod segments 2-3 of P4 with posterior surface spines
- P5 extends beyond posterior border of urosome somite 2, right leg extends beyond distal border of left leg segment 1
- Anal somite longer than urosome somite 4
- Caudal rami 2x as long as wide

Source

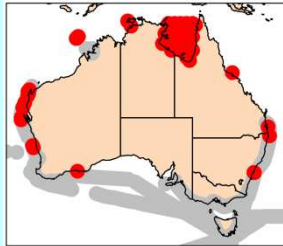
Bradford-Grieve (1994)
 Conway *et al.* (2003)
 Kimmerer and McKinnon (1990)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)



Parvocalanus crassirostris

(Dahl, F., 1894)



Phylum Arthropoda
Order Calanidae
Family Paracalanidae

Synonyms

Paracalanus crassirostris Dahl F., 1894
Paracalanus crassirostris cochinensis Wellershaus, 1969
Paracalanus crassirostris nudus Davis, 1944
Paracalanus crassirostris typica Früchtl, 1924

Size

Female 0.47 – 0.55 mm

Genus notes

- Rostrum bifurcated, short and solid
- Cephalic dorsal hump absent in males
- Female urosome 4 segmented, male
- Female P5, symmetrical, 2 segmented with 2 short terminal spines
- Male P5 asymmetrical, left 5 segmented, right 2-3 segmented

Female

- Body bulges and is 'pear' shaped
- A1 as long as body
- P1 with 2 segmented endopod
- Outer distal border of exopod segment 3 and external border of exopod segment 2 of P2-4 smooth
- P5 terminal segment just under 0.5x as wide as long with 2 sub equal strong terminal spines
- Innermost caudal setae about twice as long as rami

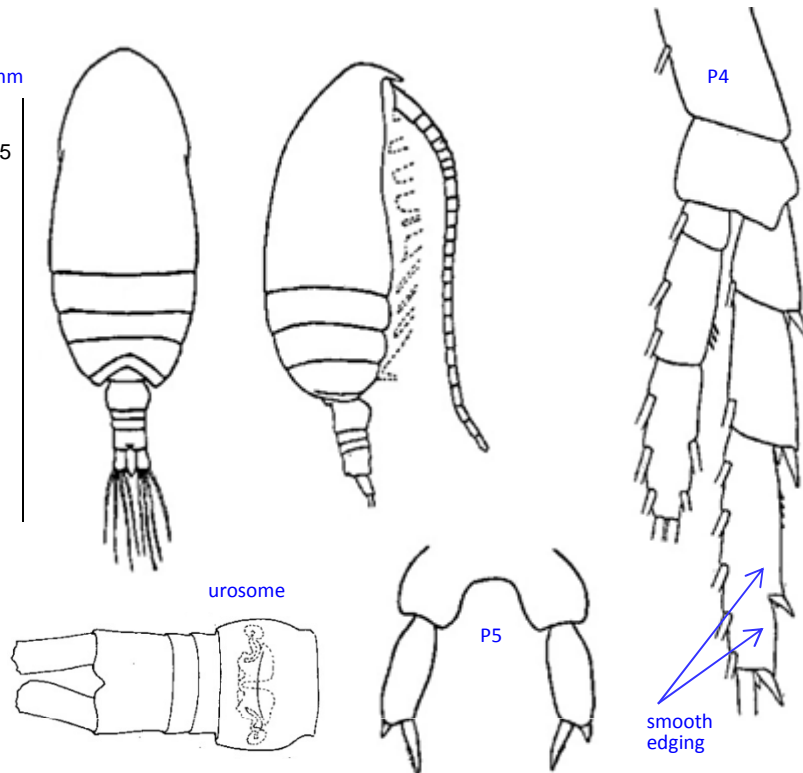
Distribution

Ecology



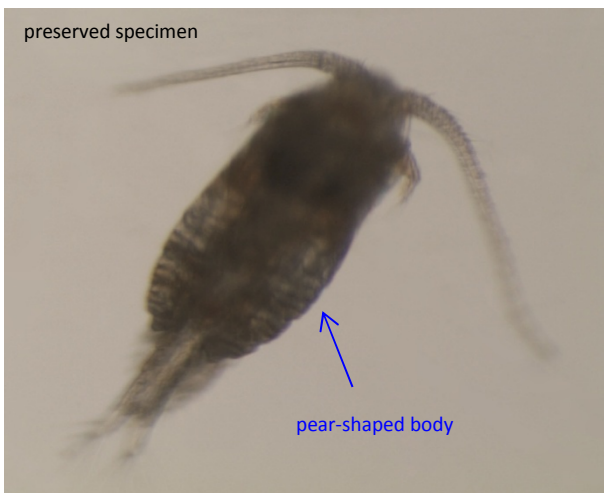
scale: mm

0.5



Chen & Zhang (1965); Greenwood (1978)

preserved specimen



pear-shaped body



Parvocalanus crassirostris

(Dahl, F., 1894)

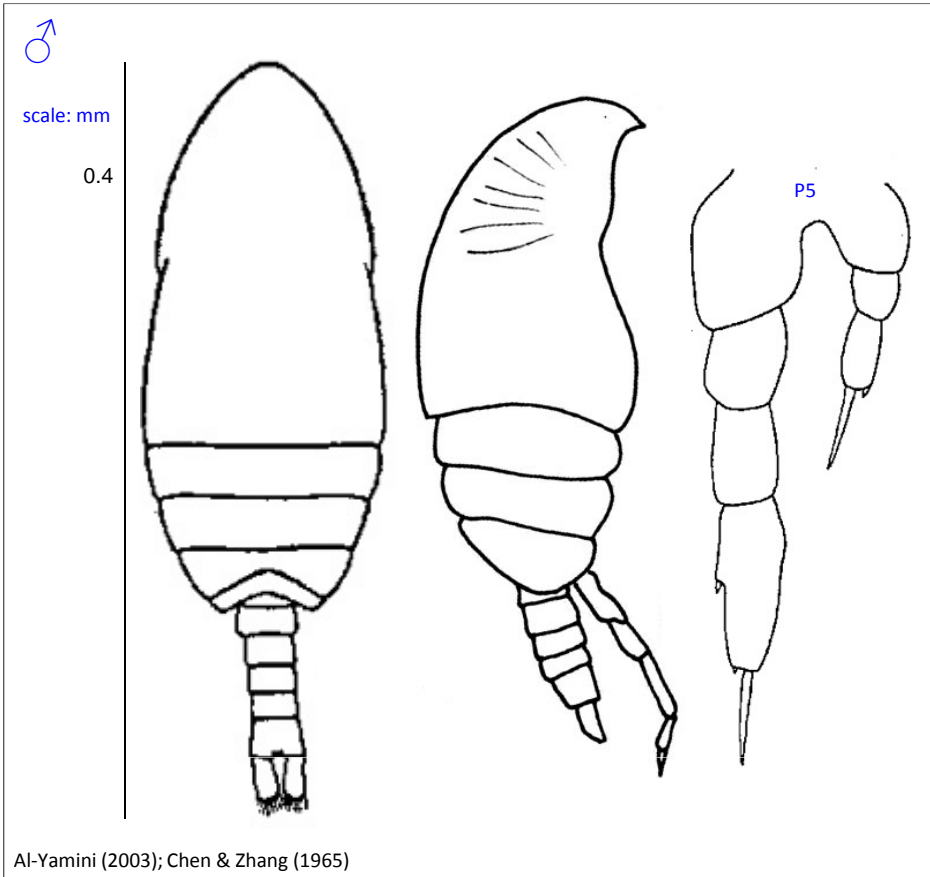
Phylum Arthropoda
Order Calanidae
Family Paracalanidae

Size
 Male 0.35 – 0.39 mm

- Male**
- A1 just reaches end of prosome
 - Right P5 does not extend to distal border of segment 1 on left P5, terminal setae short and stout

Source
 Bradford-Grieve (1994)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

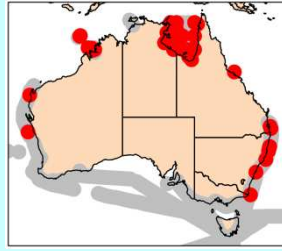


Al-Yamini (2003); Chen & Zhang (1965)

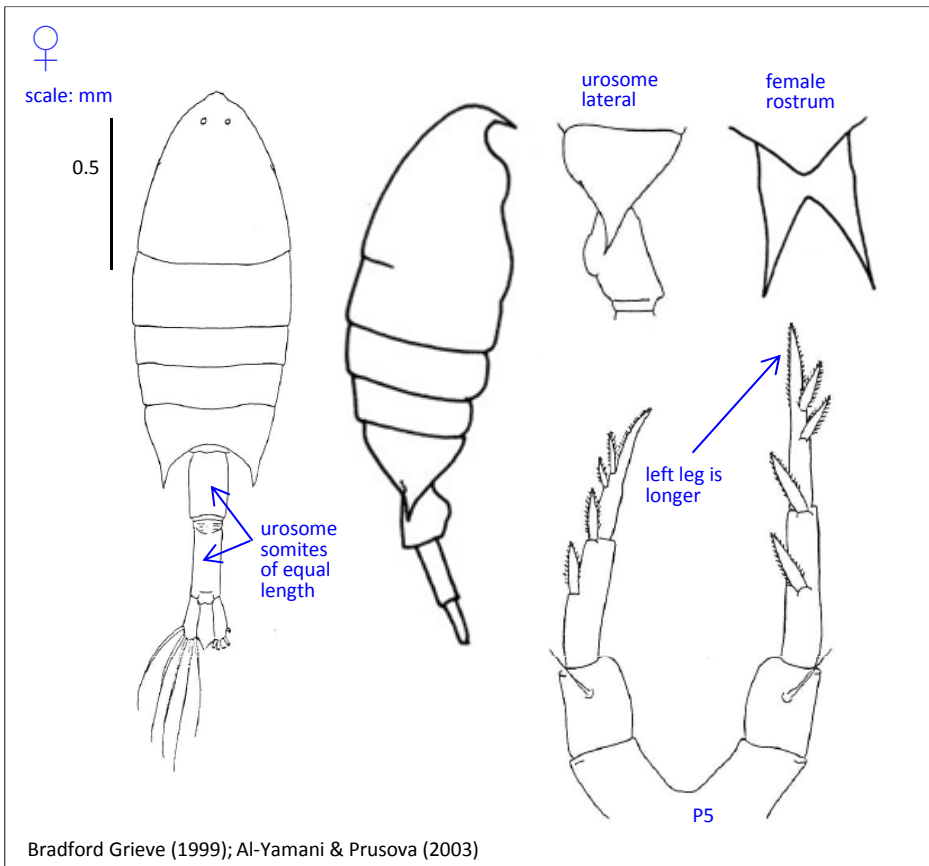


Calanopia elliptica

(Dana, 1849)



Phylum Arthropoda
Order Calanoida
Family Pontellidae



Bradford Grieve (1999); Al-Yamani & Prusova (2003)

Synonym

Pontella elliptica Dana, 1849

Size

Female: 1.70 – 2.00 mm

Genus notes

- Cephalosome may have lateral hooks
- Cephalosome and pedigerous somite 1 separate; pedigerous somites 4-5 fused
- Cephalosome without dorsal cuticular lenses
- Male right A1 geniculate with 4-segmented terminal section
- A2 exopod longer than half the endopod
- P1 endopod 2-segmented
- Female P5 symmetrical or slightly asymmetrical, 3-4 segmented, endopod absent
- Male P5 4-segmented on both sides, 2 distal segments of right leg form stout chela
- Female urosome 2-segmented; male 5-segmented

Female

- Maxilliped with apical part 5-segmented
- Prosome nearly twice as long as the urosome
- Prosome points long
- P5 asymmetrical, left leg longer; each limb uniramous of 4 segments
- Urosome somite twice as long as genital somite
- Caudal rami nearly 3x as long as broad

Distribution

- Epipelagic, mesopelagic
- Coastal and oceanic; subtropical and tropical
- Indian and Pacific Oceans; confirmed for Atlantic off Georgia, USA

Ecology

- This copepod has been reported as part of several plankton communities, but little is known about its ecology

Calanopia elliptica

(Dana, 1849)

Phylum Arthropoda
Order Calanoida
Family Pontellidae

Size

Male: 1.80 – 1.90 mm

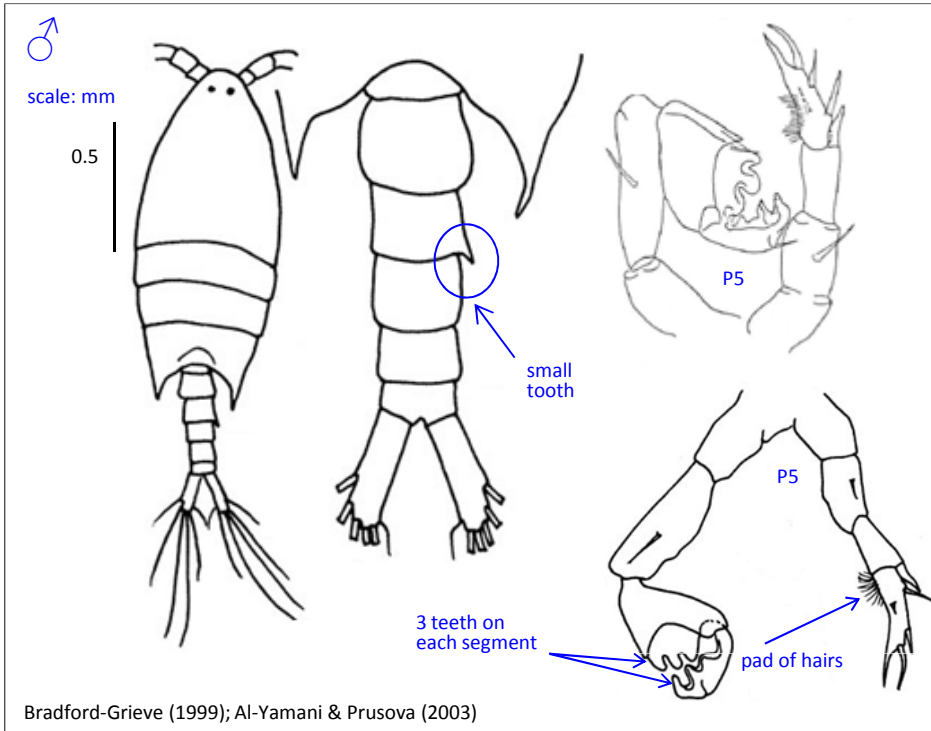
Male

- Maxilliped with apical part 5-segmented
- P5 terminal segment of left exopod with a pad of fine hairs, pointed at distal end with 3 setae on the outer margin & one seta on the posterior side
- Flattened margin of P5 right exopod segment 1 produced into 3 strong, blunt teeth, while the claw-like second segment has 3 small pointed teeth
- Urosome somite 2 right side distal border with well defined tooth

Source

Al-Yamani & Prusova (2003)
 Bradford-Grieve (1999)
 Razouls et al. (2010)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)



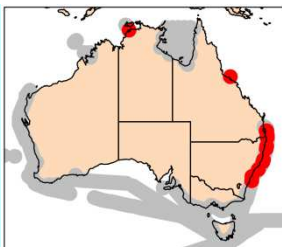
Bradford-Grieve (1999); Al-Yamani & Prusova (2003)



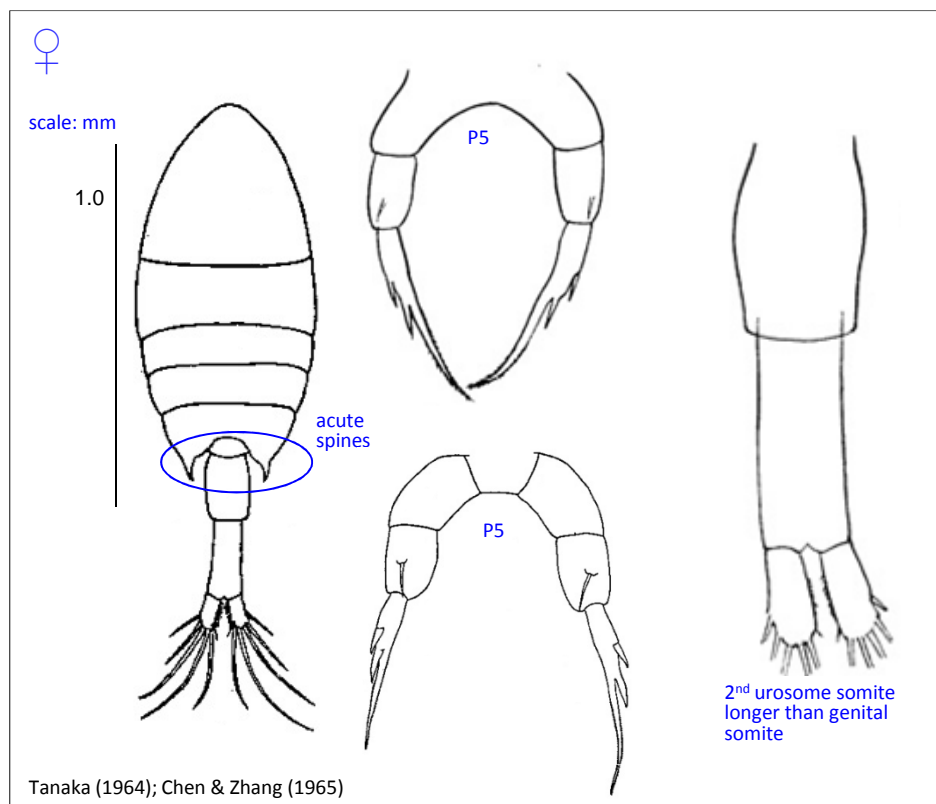
C. Davies, CSIRO © 2012

Calanopia minor

A. Scott, 1902



Phylum Arthropoda
Order Calanoida
Family Pontellidae



Synonyms

None

Size

Female: 1.24 – 1.40 mm

Genus notes

- Cephalosome may have lateral hooks
- Cephalosome and pedigerous somite 1 separate; pedigerous somites 4-5 fused
- Cephalosome without dorsal cuticular lenses
- Male right A1 geniculate with 4-segmented terminal section
- A2 exopod longer than half the endopod
- P1 endopod 2-segmented
- Female P5 symmetrical or slightly asymmetrical, 3-4 segmented, endopod absent
- Male P5 4-segmented on both sides, 2 distal segments of right leg form stout chela
- Female urosome 2-segmented; male 5-segmented
- Caudal rami 2-3x as long as wide

Female

- Rostrum pointed
- Last prosome somite produced on each side into acute spine
- P5 is quite symmetrical, with 4 segments, distal segment terminates in long spine and 1 short spine, with a further spine on outer mid segment
- Urosome 2nd somite longer than the genital somite

Distribution

- Coastal, oceanic
- Subtropical and tropical
- Indian and Pacific Oceans

Ecology

- Sometimes found living in the neustonic layer
- This copepod has been reported as part of several plankton communities, but little is known about its ecology

Calanopia minor

A. Scott, 1902

Phylum Arthropoda
Order Calanoida
Family Pontellidae

Size

Male: 1.11 – 1.18 mm

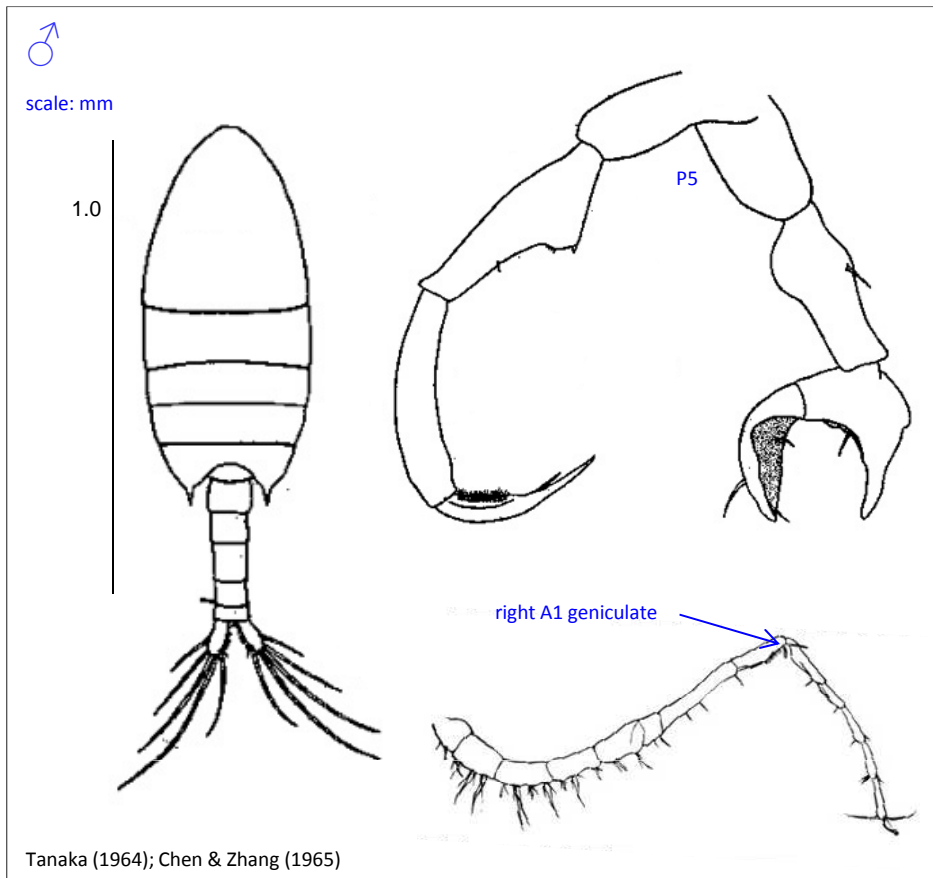
Male

- A1 extends to end of 3rd pedigerous somite
- Right A1 geniculate
- Basis of left P5 is swollen towards proximal end of inner margin, swollen part produced into a small tooth-like spine
- Basis of right P5 exopodite is also swollen
- Flattened joint of P5 1st exopodite segment, with one seta on inner margin, outer thumb short and naked
- Claw-like P5 2nd segment is spoon-shaped and without any teeth, but with 2 inner marginal setae
- Urosome somite 2 has no spiny process

Source

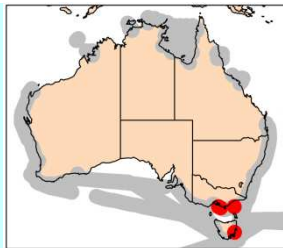
Bradford-Grieve (1999)
 Chen & Zhang (1965)
 Conway (2003)
 Razouls et al. (2010)
 Tanaka (1964)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

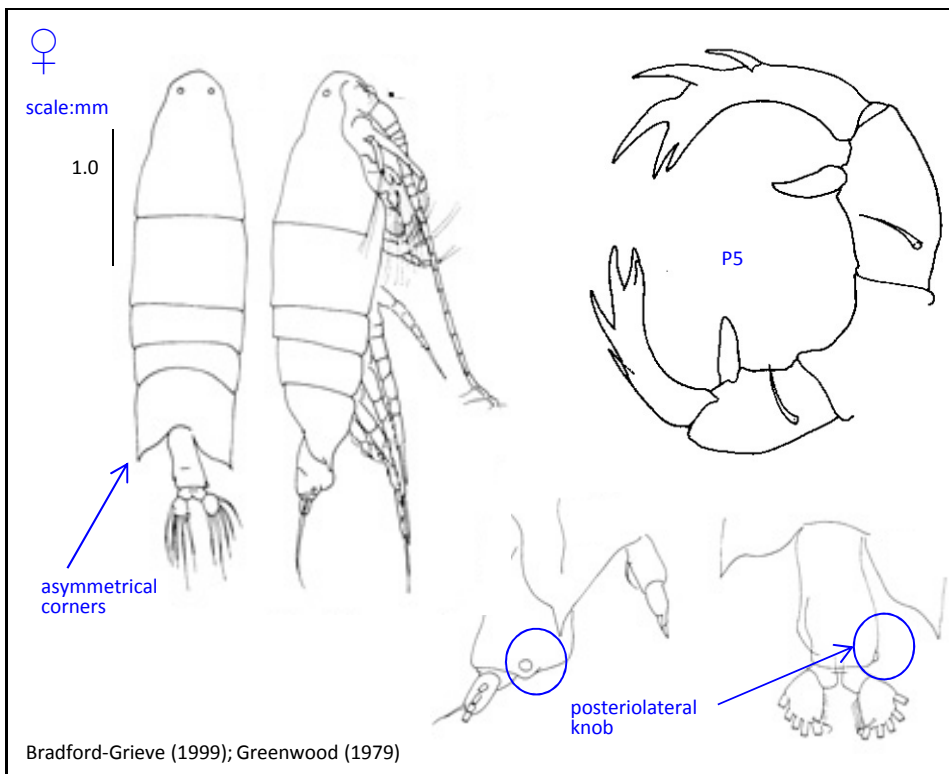


Labidocera cervi

Krämer, 1895



Phylum Arthropoda
Order Calanoida
Family Pontellidae



Synonyms

None

Size

Female: 2.80-3.48 mm

Genus notes

- Cephalosome and 1st pedigerous somite separate
- Right A1 geniculate in male
- Ventral eye extends anteroventrally between deeply bifurcate rostrum
- Cephalosome with or without anterolateral hooks
- 1 pair of cuticular lenses
- Posterior of prosome with a large pointed processes
- Female urosome with 2–3 somites; male 4–5 somites
- Genital somite and caudal rami may be asymmetric in female, symmetric in male
- Female P5 biramous, each rami 1-segmented
- Male right P5 uniramous with a chela, left P5 may have a rudimentary endopod

Female

- Posterior prosome with asymmetrical corners, larger on the right side
- Urosome asymmetrical
- Genital somite swollen ventrally, more than 2x as long as wide
- Posteriolateral knob on right side of genital somite
- P5 has 3 small terminal spines and 2 outer edge spines on the exopod; endopod spiniform

Distribution

- Epipelagic
- Restricted distribution: south eastern Australia and New Zealand

Ecology

- Bright blue in colour when alive
- Occupies surface layers during the day when colouration protects it from predators
- Possibly neustonic
- Broadcast spawner
- Eggs can undergo diapause during unfavourable conditions
- Predator; feeding primarily on small copepods

Bradford-Grieve (1999); Greenwood (1979)

live specimen
ventral view



lateral view



Labidocera cervi

Krämer, 1895

Phylum Arthropoda
Order Calanoida
Family Pontellidae

Size
Male: 2.75-3.15 mm

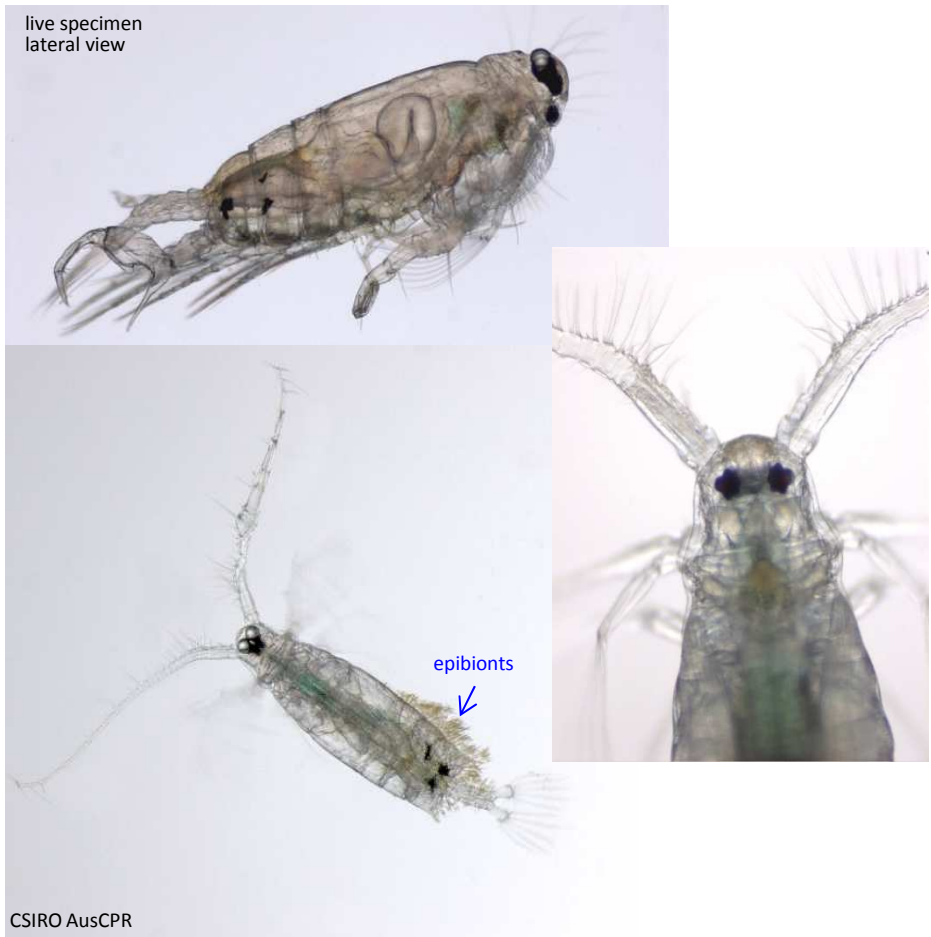
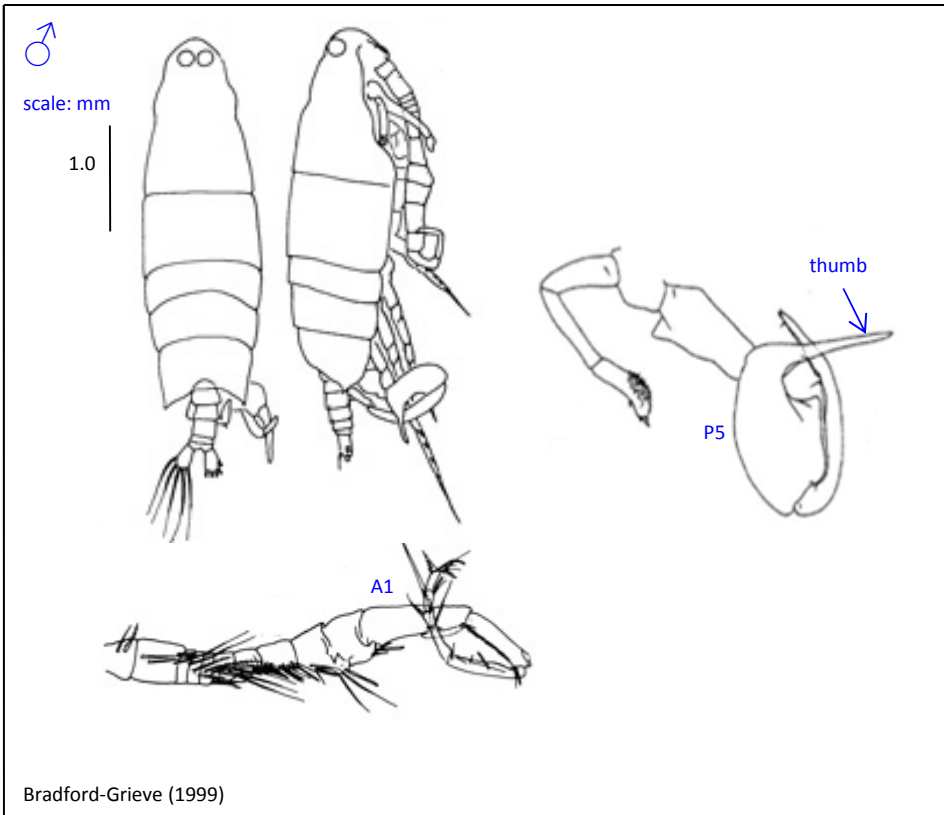
Male

- Anterior cephalosome rounded
- Right A1 geniculate
- Posterior prosome symmetrical
- Right P5 with a long 'thumb' on the chela, which is set at an obtuse angle to the rest of the segment
- Urosome with 4 somites

Source

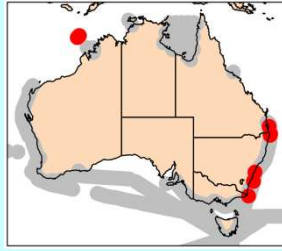
Bradford-Grieve (1999)
Greenwood (1979)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

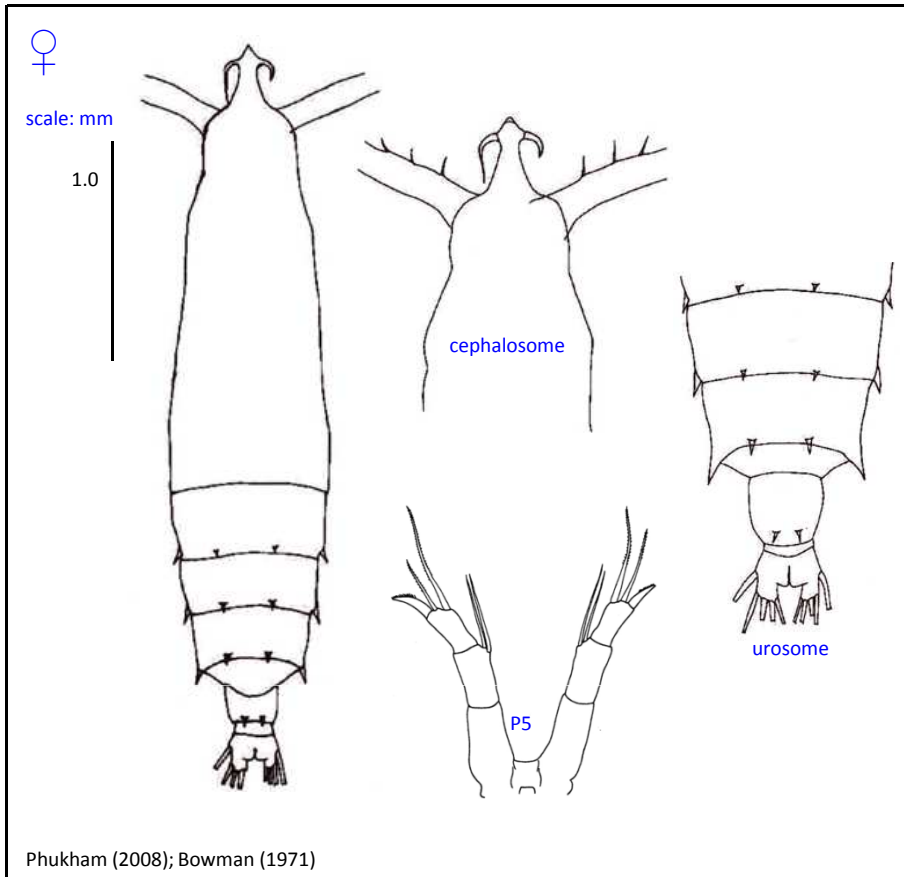


Rhincalanus cornutus

(Dana, 1849)



Phylum Arthropoda
Order Calanoida
Family Rhincalanidae



Synonym

Calanus cornutus Dana, 1849

Size

Female: 2.90-3.80 mm

Genus notes

- Long slim body shape & anterior Cephalosome extended into conical process
- Rostrum with 2 long filaments
- Cephalosome and Pedigerous somite1 fused, pedigerous somites 4-5 partially fused
- A1 longer than whole body
- Posterior borders of pedigerous somites 2-4 and urosome somite 1 with dorsal spines
- P1 2-segmented exopod and endopod
- Female urosome short, 3-segmented; male 5 segmented; the anal somite fused with the caudal rami
- Female P5 uniramous, 3-segmented & simple
- Male P5 also simple, biramous on left, uniramous on right

Female

- Distinct elongated forehead in shape of arrow with rostral filaments visible dorsally
- P5 with no setae on segment 1 and 1 seta on segment 2

Distribution

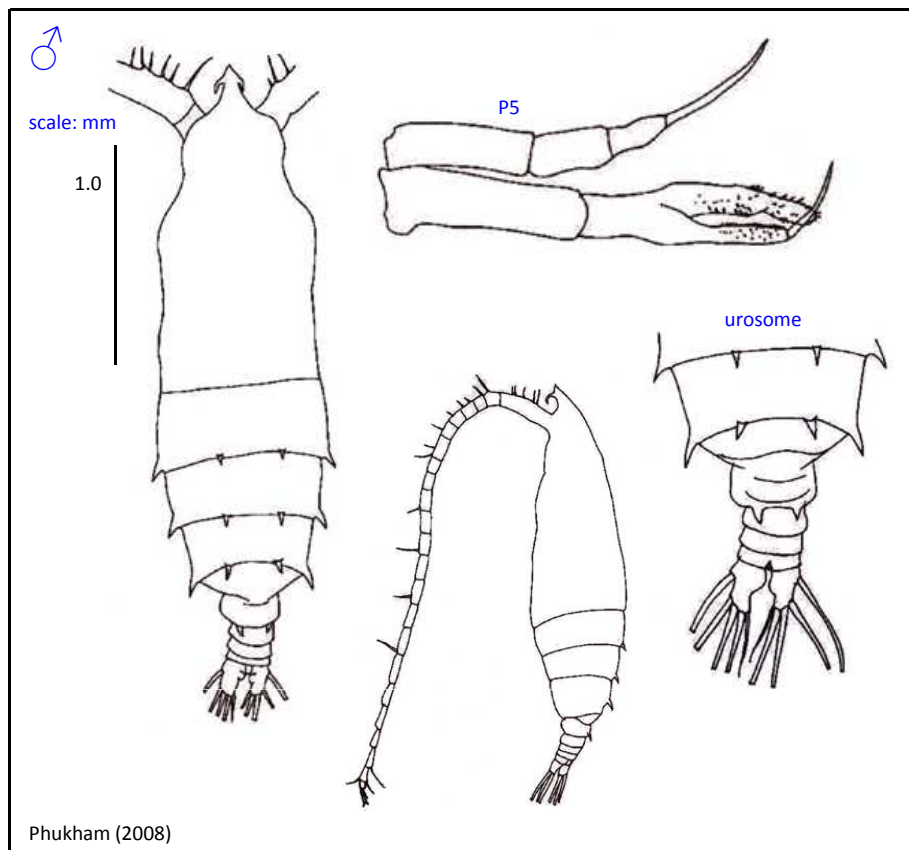
Ecology

Phukham (2008); Bowman (1971)

Rhincalanus cornutus

(Dana, 1849)

Phylum Arthropoda
Order Calanoida
Family Rhincalanidae



Size

Male: 2.40 – 3.60 mm

Male

- Not well described
- P5 with more or less straight end bristle

Source

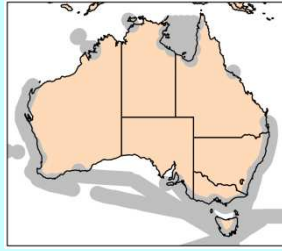
Dakin & Colefax (1940)
Bradford-Grieve (1994)
Boltovskoy (1999)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

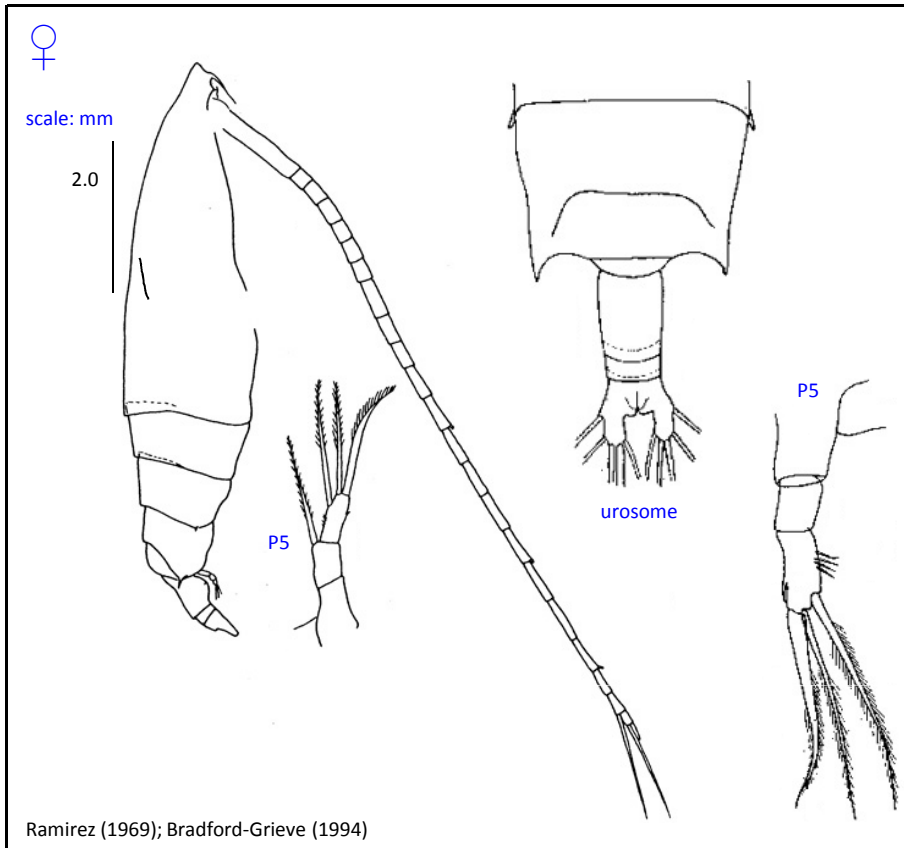
Phukham (2008)

Rhincalanus gigas

Brady, 1883



Phylum Arthropoda
Order Calanoida
Family Rhincalanidae



Synonyms
None

Size
Female: 6.46-9.30 mm

- Genus notes**
- Long slim body shape & anterior Cephalosome extended into conical process
 - Rostrum with 2 long filaments
 - Cephalosome and Pedigerous somite 1 fused, pedigerous somites 4-5 partially fused
 - A1 longer than whole body
 - Posterior borders of pedigerous somites 2-4 and urosome somite 1 with dorsal spines
 - P1 2-segmented exopod and endopod
 - Female urosome short, 3-segmented; male 5 segmented; the anal segment fused with the caudal rami
 - Female P5 uniramous, 3-segmented & simple
 - Male P5 also simple, biramous on left, uniramous on right

- Female**
- Very large, distinct body and head shape
 - Pointed cephalosome bearing bifid rostrum
 - A1 at least 1.5x length of body
 - 5th thoracic somite, and sometimes somite 3, with dorsal spines on posterior margins
 - 4th and usually 3rd thoracic somites with no spines
 - Urosome only short (~15% of body length)

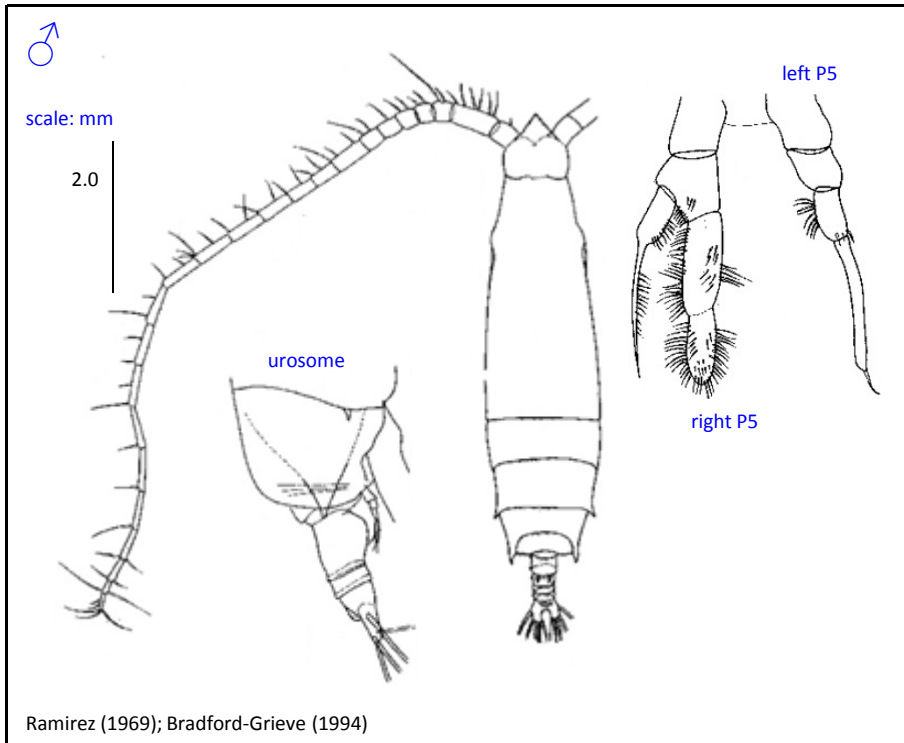
Distribution

Ecology

Rhincalanus gigas

Brady, 1883

Phylum Arthropoda
Order Calanoida
Family Rhincalanidae



Size

Male: 6.90-7.20 mm

Male

- Right P5 terminal exopod spine extends almost as far as distal end of endopod, both rami with many spinules.
- Left P5 terminal spine extends almost as far as right leg, segment 2 with inner border of spinules and outer distal spines
- Size is diagnostic
- Very few males have been found, P5 very similar to *R. nasutus*, check for spines on left P5 segment 2

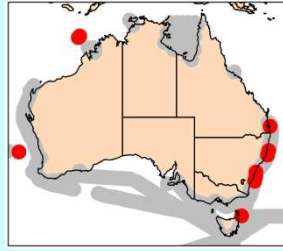
Source

Bradford-Grieve (1994)
Guglielmo and Ianora (1995)
Boltovskoy (1999)

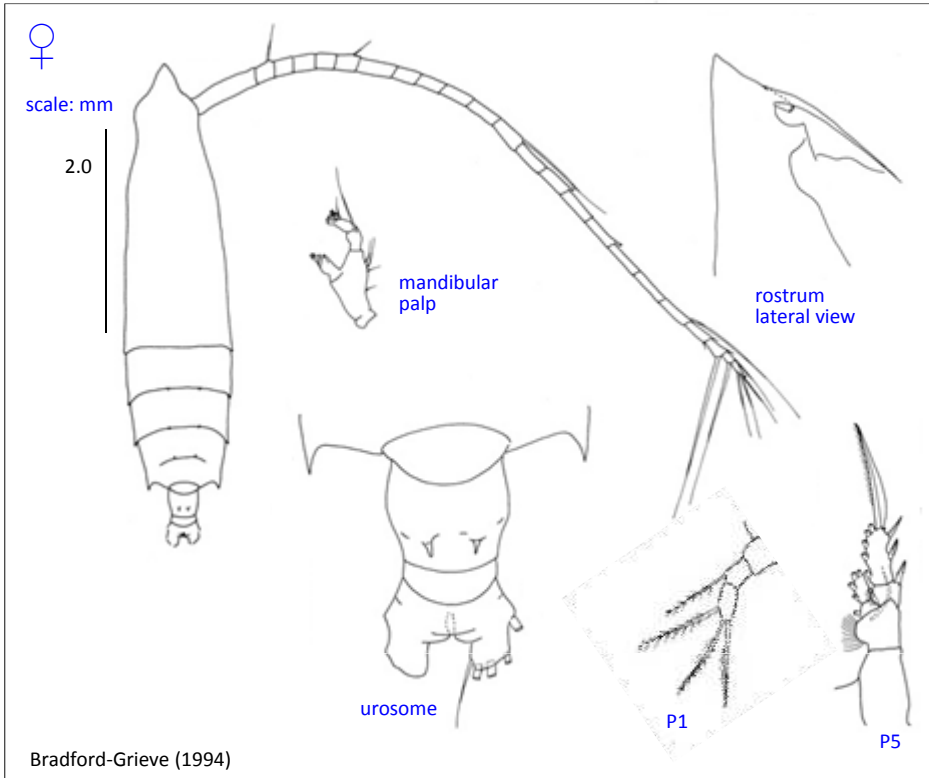
(Full reference available at
<http://www.imas.utas.edu.au/zooplankton/references>)

Rhincalanus nasutus

Giesbrecht, 1888



Phylum Arthropoda
Order Calanoida
Family Rhincalanidae



Synonyms

Rhincalanus nassatus Geisbrecht, 1888

Size

Female: 3.90-5.30 mm

Genus notes

- Long slim body shape & anterior cephalosome extended into conical process
- Cephalosome and Pedigerous somite 1 fused
- A1 longer than whole body
- Prosome somites with lateral and dorsal spines
- Urosome short, 3-segmented, the distal somite fused with caudal rami
- Female P5 uniramous, 3-segmented & simple
- Male P5 also simple, biramous on one side

Species notes

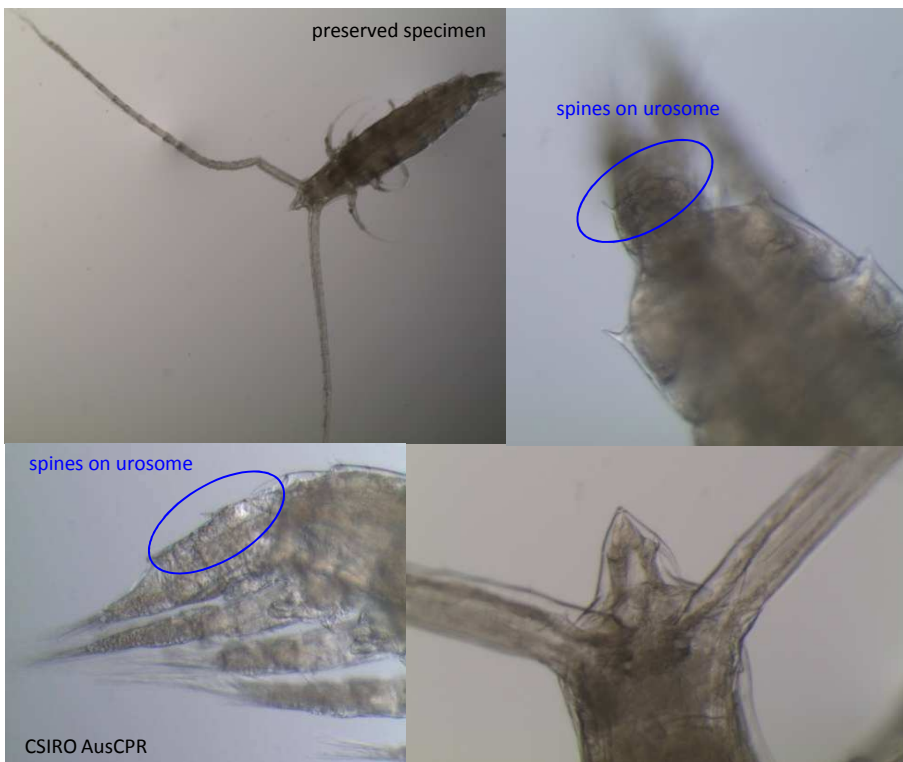
- Conical forehead
- Rostral filaments not visible dorsally

Female

- A1 1.5 x length of body
- P5 with 1 seta on 2nd segment and 3 on the 3rd
- Small pair of spines on dorsal surface of genital somite

Distribution

Ecology



Rhincalanus nasutus

Giesbrecht, 1888

Phylum Arthropoda
Order Calanoida
Family Rhincalanidae

Size

Male: 2.70-4.30 mm

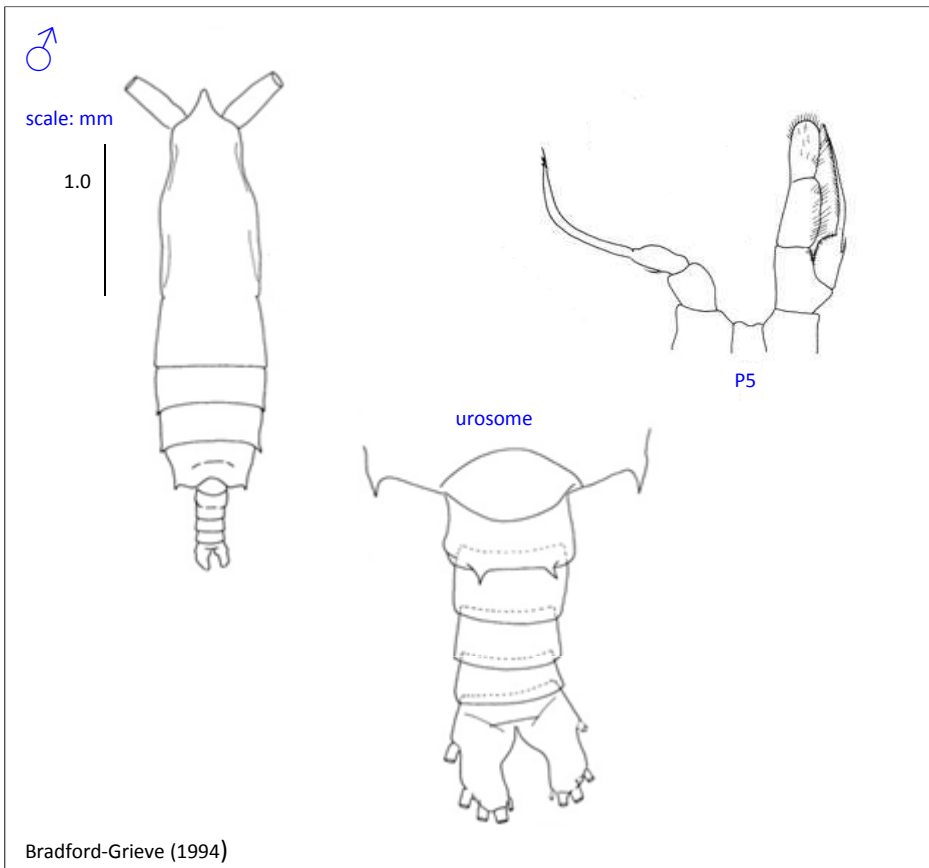
Male

- P5 strongly curved end bristle on the right side
- Small pair of spines on dorsal surface of genital somite

Source

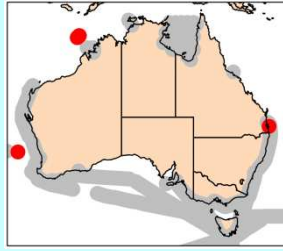
Dakin & Colefax (1940)
Boltovskoy (1999)
Conway (2003)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

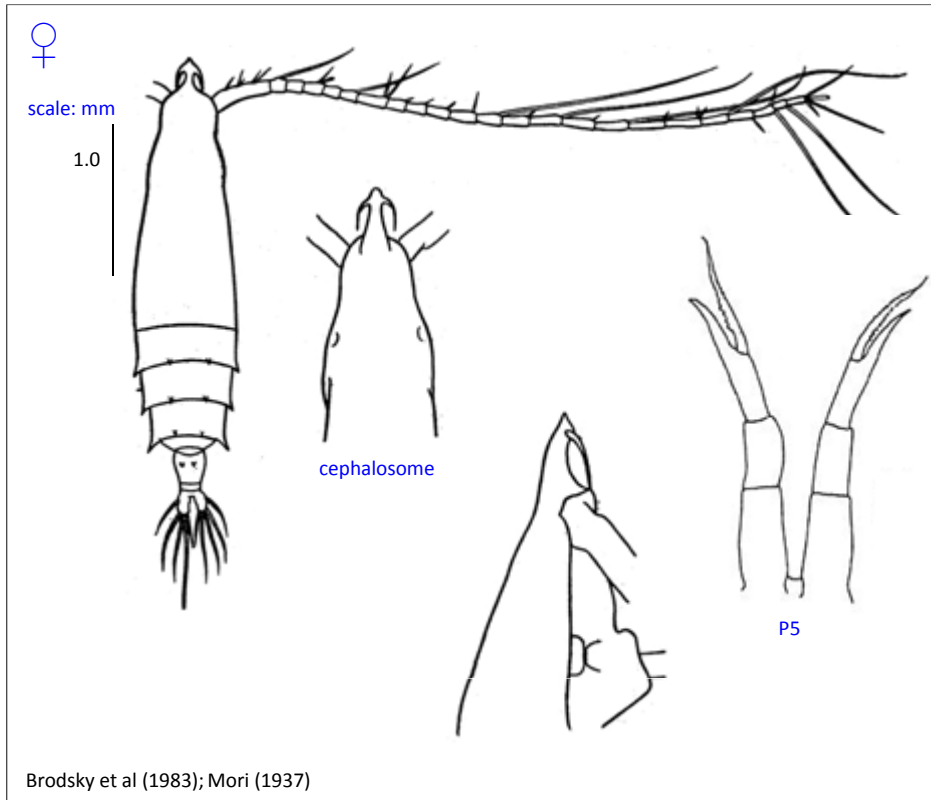


Rhincalanus rostrifrons

(Dana, 1849)



Phylum Arthropoda
Order Calanoida
Family Rhincalanidae



Synonyms

Calanus rostrifrons Dana, 1849

Size

Female: 2.79-3.80 mm

Genus notes

- Long slim body shape & anterior cephalosome extended into conical process
- Cephalosome and Pedigerous somite 1 fused
- A1 longer than whole body
- Prosome segments with lateral and dorsal spines
- Urosome short, 3-segmented, the distal segment fused with the caudal rami
- Female P5 uniramous, 3-segmented & simple
- Male P5 also simple, biramous on one side

Female

- Extremely extended point on anterior Cephalosome, with prominent rostral filaments which protrude laterally, visible in dorsal view
- A1 around 1.5x as long as body
- P5 3-segmented, without seta on 2nd segment, the terminal segment extended into a stout curved point, with an internal toothed spine

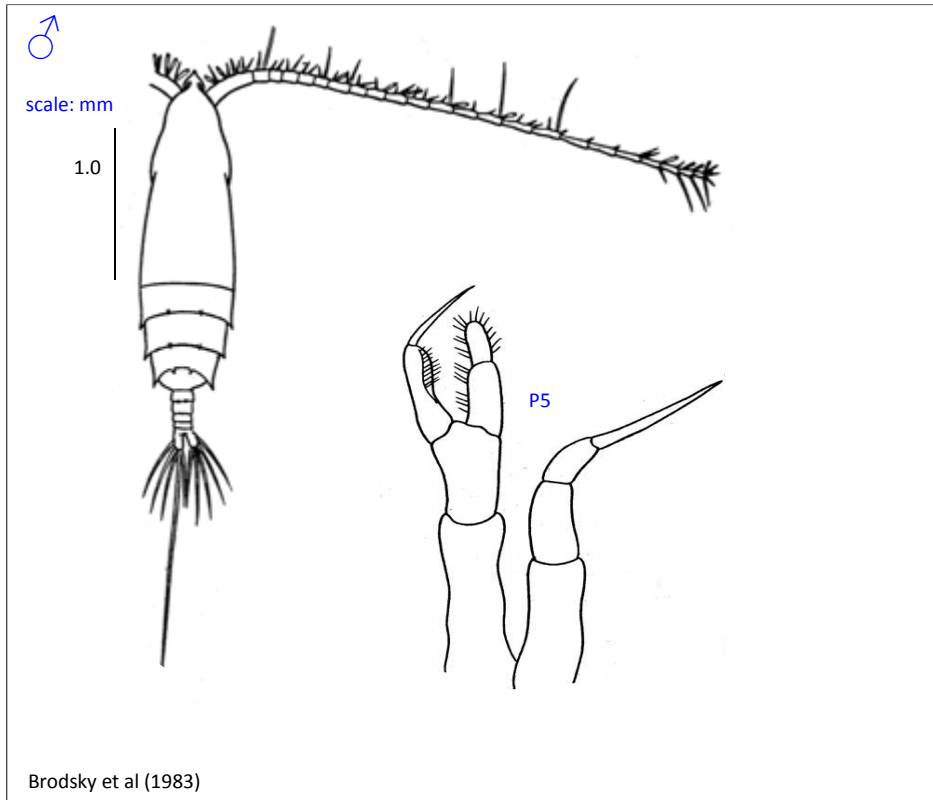
Distribution

Ecology

Rhincalanus rostrifrons

(Dana, 1849)

Phylum Arthropoda
Order Calanoida
Family Rhincalanidae



Size

Male: 2.41-2.95 mm

Male

- Right P5 uniramous, 3-segmented with the terminal segment extended into a curved spine
- Left P5 biramous with a 1-segmented exopodite bearing a curved terminal spine, a 2-segmented endopodite, the 1st segment longer than the 2nd, the endopodite around the same length as the exopodite

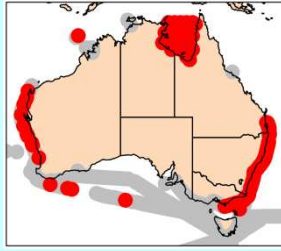
Source

Conway 2003 (from Mori 1937)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Temora discaudata

Giesbrecht, 1889



Phylum Arthropoda
Order Calanoida
Family Temoridae

Synonyms

Calanus scutellatus Dana, 1849

Size

Female: 1.69 - 2.00 mm

Genus notes

- Cephalosome is typically widest and deepest part of the prosome, vaulted
- 2 slender rostral filaments
- Pedigerous somites 4-5 fused
- P5 of female small, uniramous, 3-segmented; last segment dentated
- P5 male asymmetrical, left leg larger and 4-segmented, segment 2 produced on inner edge into a long curved thumb-like process, right P5 3-segmented, terminal segment curved inwards, claw-like
- Female urosome short, hardly protrudes ventrally
- Very long caudal rami, may be asymmetrical

Female

- Quite a large robust species
- Posterior prosome somite produced into spines
- Inner spine of P5 segment 3 longer than the 2 terminal spines, which are almost equal in length
- Anal somite and long slender caudal rami are asymmetrical
- Females bear some resemblance to *T. stylifera*, *T. discaudata* immature specimens have an extension of the cephalosome laterally over the prosome somites, which is similar to the segment arrangement found in adult *T. stylifera*, however in adult *T. discaudata* the cephalosome extension is not present

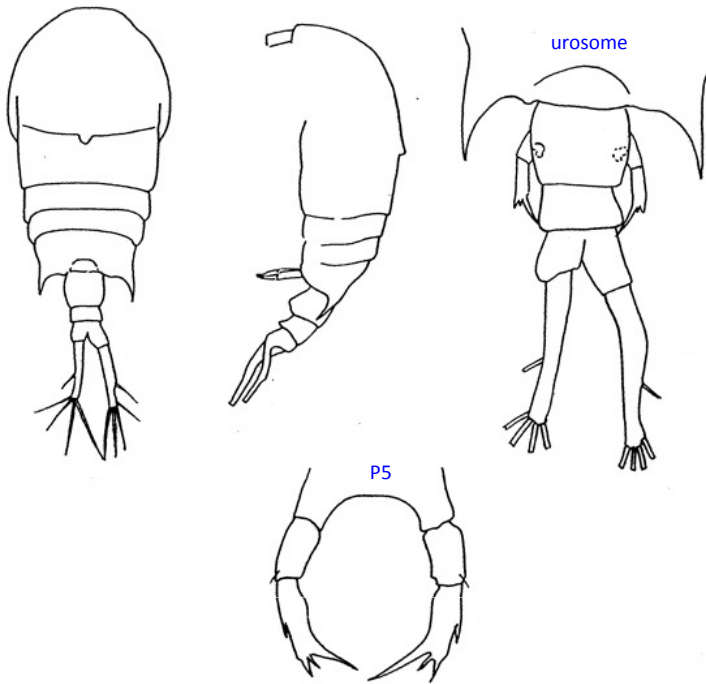
Distribution

Ecology



scale: mm

1.0

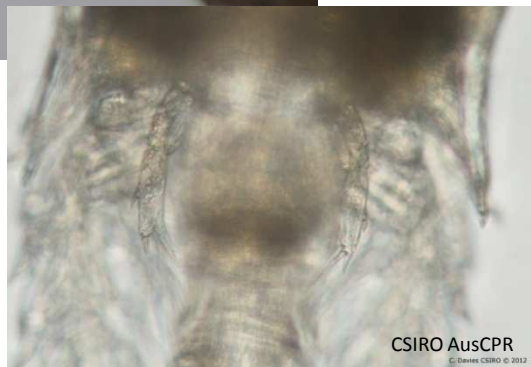


Al-Yamani & Prusova (2003)

preserved specimen



C. Davies CSIRO © 2012



CSIRO AusCPR
 C. Davies CSIRO © 2012

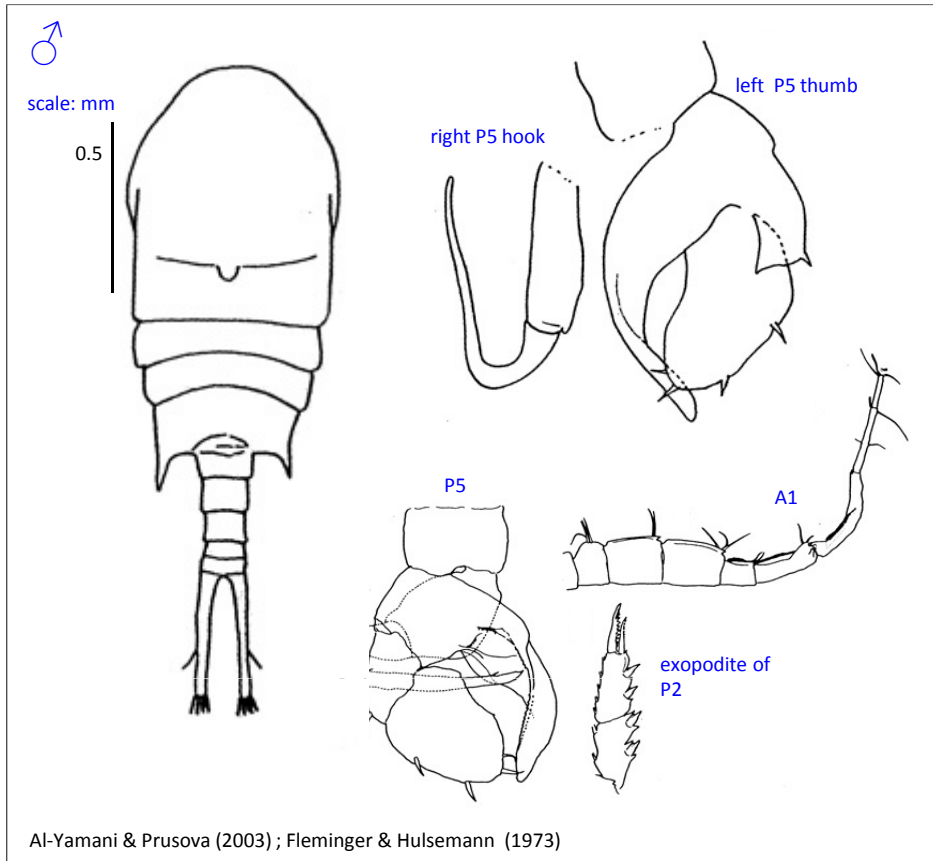
Compiled: C. H. Davies & A. S. Slotwinski 2012
 Verified:



Temora discaudata

Giesbrecht, 1889

Phylum Arthropoda
Order Calanoida
Family Temoridae



Size

Male: 1.70 - 1.97 mm

Male

- Right A1 geniculate
- Last prosome somite pointed and slightly symmetrical
- Thumb-like process on basis of left P5 is wide, the terminal segment is flattened and has 4 marginal spines
- Terminal segment of right P5 is hook-like and sharply bent backwards
- Urosome almost symmetrical, with long slender caudal rami

Source

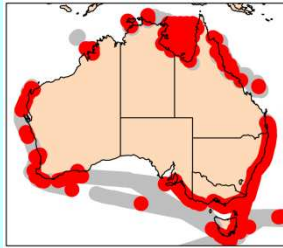
Bradford-Grieve (1999)
 Conway (2003)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)

Al-Yamani & Prusova (2003); Fleminger & Hulsemann (1973)

Temora turbinata

(Dana, 1849)



Phylum Arthropoda
Order Calanoida
Family Temoridae

Synonyms

Calanus turbinatus Dana, 1849

Size

Female: 1.05-1.61 mm

Genus notes

- Cephalosome is typically widest and deepest part of the prosome, vaulted
- 2 slender rostral filaments
- Pedigerous somites 4-5 fused
- P5 of female small, uniramous, 3-segmented; last segment dentate
- P5 male asymmetrical, left leg larger and 4-segmented, segment 2 produced on inner edge into a long curved thumb-like process, right P5 3-segmented, terminal segment curved inwards, claw-like
- Female urosome short
- Very long caudal rami, may be asymmetrical

Female

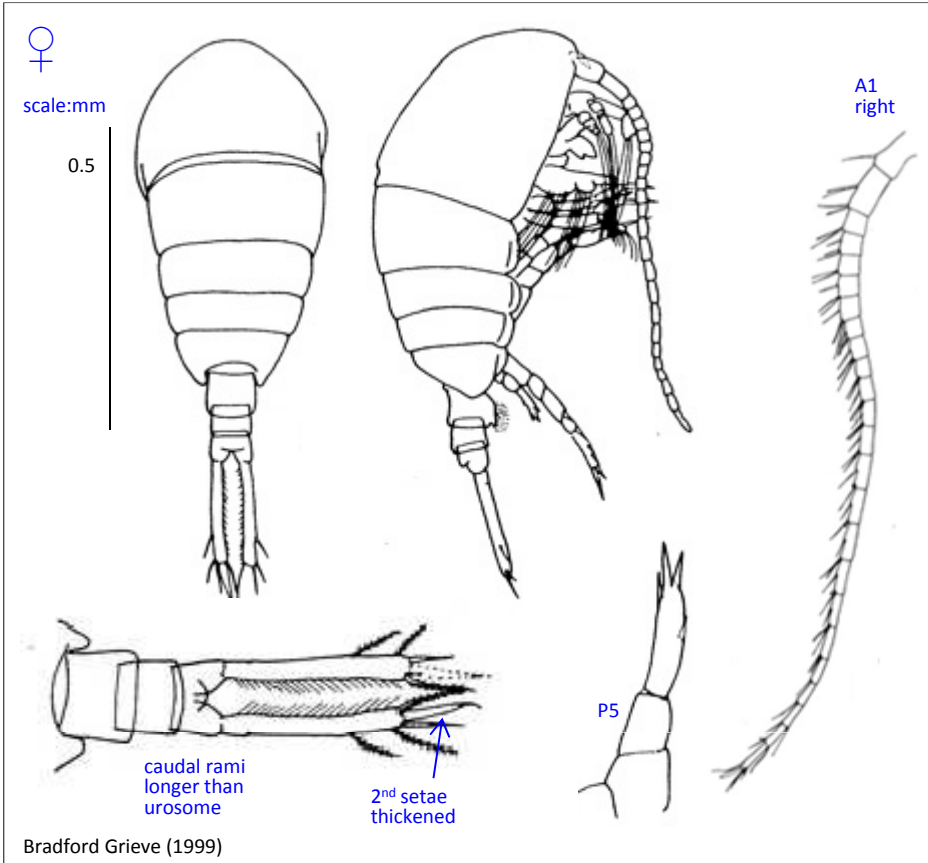
- 'Teardrop' shaped cephalosome
- Swimming legs compact
- P5 with the inner spine on the terminal segment considerably shorter and thinner than the 2 terminal spines
- Caudal rami are longer than urosome
- Terminal seta 2 of the caudal rami is thick and asymmetrical

Distribution

- Epipelagic-mesopelagic
- Widely distributed in the tropical, subtropical and temperate parts of the Indian Ocean and the Indo-Westpacific area
- In the Indian and Pacific Oceans it goes about as far south as 35°S; in the Pacific Ocean it goes as far north as 40°N. In the Atlantic the distribution is more or less erratic
- Widespread and common in Australian waters

Ecology

- Undergo diel vertical migration
- Isochronal development
- Omnivorous, but primarily opportunistic herbivores



preserved specimen



Temora turbinata

(Dana, 1849)

Phylum Arthropoda
Order Calanoida
Family Temoridae

Size

Male: 0.93-1.56 mm

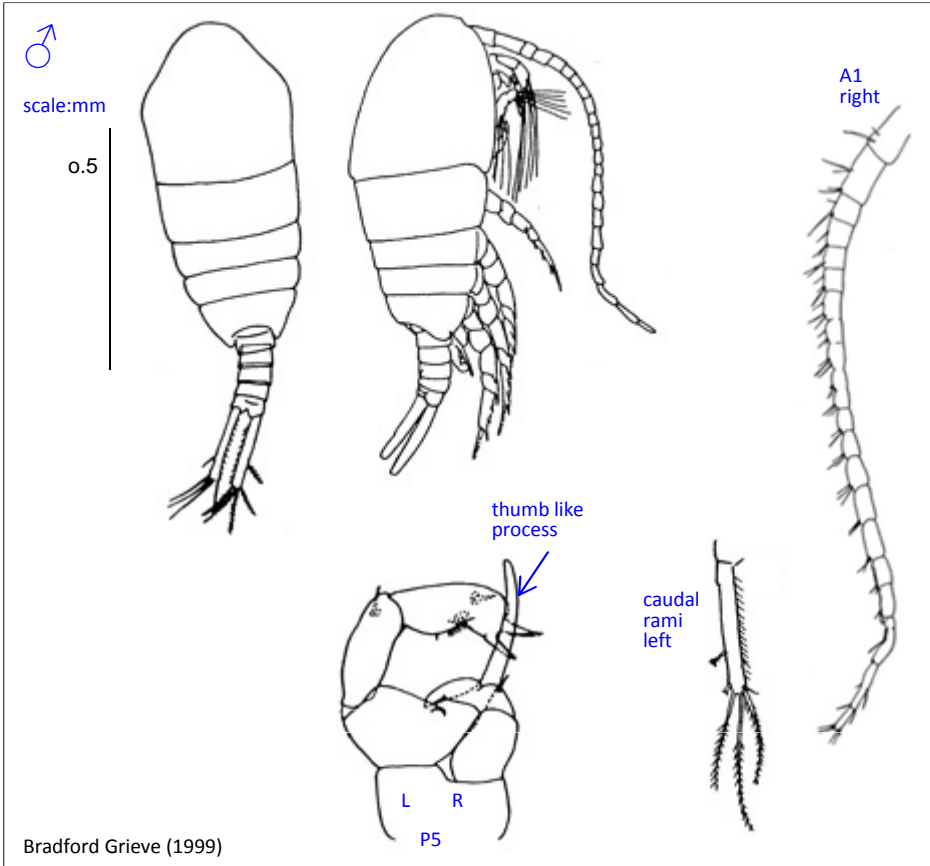
Male

- 'Teardrop' shaped cephalosome
- A1 geniculate on right
- P5 left terminal segment relatively long and broad
- Urosome somite 4 is longer than the anal somite
- Caudal rami are longer than urosome

Source

Boltovskoy (1999)
 Bradford Grieve (1999)
 Mauchline (1998)
 Razouls et al. (2012)
 Turner (1984)

(Full reference available at <http://www.imas.utas.edu.au/zooplankton/references>)



Bradford Grieve (1999)

