Artificial Key to the Lysianassoidea Reported from the Southern California Bight, SCAMIT, Edition 14
Dean Pasko, Rev 6Oct2023
(Modified from D.Cadien 14 February 2007)

INFRAORDER LYSIANASSIDA

SUPERFAMILY LYSIANASSOIDEA

FAMILY LYSIANASSIDAE
Subfamily Lysianassinae
Aruga holmesi JL Barnard 1955
Aruga oculata Holmes 1908
Dissiminassa dissimilis (Stout 1913)
Macronassa macromera (Shoemaker 1916)
Macronassa pariter (JL Barnard 1969)
Shoemakerella cubensis (Stebbing 1897)
Socarnes hartmani Hurley 1963
Socarnoides illudens Hurley 1963

FAMILY OPISIDAE
Opisa tridentata Hurley 1963

FAMILY URISTIDAE
Abyssorchomene sp
Anonyx lilljeborgi Boeck 1871
Thrombasia tracalero JL Barnard 1966

FAMILY TRYPHOSIDAE
Hippomedon coecus (Holmes 1908)
Hippomedon columbianus Jarrett & Bousfield 1982
Hippomedon subrobustus Hurley 1963
Hippomedon tenax JL Barnard 1966
Hippomedon zetesimus Hurley 1963
Hippomedon sp A Diener 1990 §
Lepidepecreum garthi Hurley 1963
Lepidepecreum gurjanovae Hurley 1963
Lepidepecreum magdalenensis (Shoemaker 1942)

Lepidepecreum serraculum Dalkey 1998
Orchomene anaquelus JL Barnard 1964
Orchomene limodes Meador & Present 1985
Orchomene obtusa (GO Sars 1891)
Orchomenella decipiens Hurley 1963
Orchomenella holmesi (Hurley 1963)
Orchomenella pacifica Gurjanova 1938
Orchomenella pinguis (Boeck 1861)
Rimakoroga rima (JL Barnard 1964)
Schisturella cocula JL Barnard 1966
Schisturella dorotheae (Hurley 1963)
Tryphosinae incertae sedis entalladurus (J. L. Barnard 1963)

SUPERFAMILY ARISTIOIDEA

FAMILY ACIDOSTOMATIDAE
Acidostoma hancocki Hurley 1963

FAMILY ARISTIIDAE
Aristias sp A SCAMIT 1985 §

FAMILY CONICOSTOMATIDAE
Ocosingo borlus J. L. Barnard 1964

FAMILY PACHYNIDAE
Pachychelium fucaensis Lowry and Stoddart 2012
Pachynus barnardi Hurley 1963
Prachynella epa Lowry and Stoddart 2012
Prachynella lodo JL Barnard 1964
Prachynella oculata Lowry and Stoddart 2012

Bolded taxa not listed in SCAMIT Ed 14

Characteristics of Lysianassoids: Thickened Ant 1; Gn2 with mitten-shaped articles 6-7 and elongated ischium (article 3)

Key to the SCB Lysianassoidea

1. Gnathopod 1 chelate or subchelate ................................................................. 2  
   - Gnathopod 1 simple, or dactyl vestigial ....................................................... 33  
2. Gnathopod 1 propod attached ventrally to carpus, closure of dactyl-to-palm gaping.................. 8  
   - Gnathopod 1 propod attached dorsally or terminally to carpus, dactyl closure not gaping ..... 3  
   - Gnathopod 1 propod attached dorsally to carpus ........................................... 4  
   - Gnathopod 1 propod attached terminally to carpus ....................................... 8  
4. Gnathopod 1 subchelate, palm nearly transverse, posterodistal corner anteriorly produced ...... 8  
   - Gnathopod 1 chelate ...................................................................................... 5  
5. Gnathopod 1 with fixed finger linear, curved up at tip ................................. Pachynus barnardi  
   - Gnathopod 1 with fixed finger curved downward distally ....................... Prachynella epa  
6. Gnathopod 2 palm large, transverse, dactyl located anterodistally on palm; gnathopod 1 palm strongly downturned, nearly 90° relative to hind margin............................ Prachynella oculata  
   - Gnathopod 2 palm small, obtuse, dactyl located mid-palm; gnathopod 1 palm gently downturned at obtuse angle relative to hind margin........................................ 7  
7. Pereonite 5 with acutely produced posterodorsal margin; gnathopod 1 with stout fixed finger (length:breadth = 1.2) .................................................. Prachynella lodo  
   - Pereonite 5 with rounded projection along posterodorsal margin; gnathopod 1 with more slender fixed finger (length:breadth = 1.8)................................. Prachynella oculata  
8. Coxa 1 reduced (~50% of coxa 2) or vestigial, partially or completely covered by coxa 2...... 9  
   - Coxa 1 not reduced, subequal and roughly parallel to coxa 2, sides parallel or distally expanded............................................................. 11  
9. Coxa 1 wider than basis, and shortened and rounded; epimeron 3 quadrate........... Aristias sp A  
   - Coxa 1 tapering distally; epimeron 3 with tooth or hook.................................. 10  
10. Flagella of antennae 1 and 2 with >15 articles; uropod 3, article 2 ≤1/4 of article 1 ........... Schisturella cocula  
   - Flagella of antennae 1 and 2 with ≤10 articles; uropod 3, article 2 ≥1/3 of article 1 .......... Schisturella dorotheae  
11. Urosomite 1 with a single dorsally directed tooth...... Tryphosinae incertae sedis entalladurus  
   - Urosomite 1 without dorsally directed tooth ................................................... 12  
12. Eyelobe bluntly mammiliform (distally rounded, dorsal and ventral margins convex); pereonites 1–7 and pleonites 1–2 with a slight but distinct distodorsal hump on each segment ........................................................................................................... Abyssorchomene sp i  
   - These characters not combined: eyelobe obtusely to acutely produced (dorsal and/or ventral margin(s) slightly to moderately concave); pereonites and pleonites smoothly rounded, without dorsoposterior hump........................................................................... 13  
13. [Note triplet] Epimeron 3 rounded ................................................................. Orchomene obtusa  
   - Epimeron 3 with posterodistal tooth .................................................................. 14  
   - Epimeron subquadrate .................................................................................... 25
Key to the SCB Lysianassoidea

14. Gnathopod 1, dactyl long (≥1/2 of propodus), propod not rectangular in shape, typically oblique .................................................................................................................................................. (Hippomedon)…18
   – Gnathopod 1, dactyl short (≤1/3 of propodus), propod often rectangular in shape, typically transverse or very nearly so .................................................................................................................................15
15. Pereopods 3 & 4 with tone or two hickened, hooked spines along posterodistal margin of propodus (near base of dactyl) .................................................................................................................................16
   – Pereopods 3 & 4 without thickened, hooked spines ...........................................................................................................................................................................................................17
16. Pereopods 3 & 4 with single, thickened, hooked spine along propodus posterodistal margin near base of dactyl ........................................................................................................................................... Anonyx lilljeborgiaii
   – Pereopods 3 & 4 with two (one large and one small) thickened, hooked spines along propodus posterodistal margin ........................................................................................................................................... Orchomenella pacifica
17. Eyes present; uropod 2 inner ramus lacking dorsal incision; uropod 3 inner ramus shorter than outer, falling short of or reaching only to distal end of article 1 of outer ramus ........................................................................................................................................... Orchomenella decipiens
   – Blind; uropod 2 inner ramus incised dorsally, incision bearing long spine; uropod 3 inner ramus reaching to or beyond distal end of first article of outer ramus .......................................................... Thrombasia tracalero
18. Epimeron 3 with basal notch ..........................................................................................................................................................................................................................................................19
   – Epimeron 3 without basal notch .......................................................................................................................................................................................................................................................21
19. Gnathopod 2 palm long, concave, dactyl much shorter than palm, inserted anterodistally on propodus ........................................................................................................................................... Hippomedon colombianusiii
   – Gnathopod 2 palm short, dactyl about equal to palm, dactyl inserted at mid-point of propod terminus ........................................................................................................................................... Hippomedon tenax
   – Gnathopod 2 palm short, dactyl about equal to palm, dactyl inserted at mid-point of propod terminus ........................................................................................................................................... Hippomedon zetesimus
20. Gnathopod 1, palm short, quadrate, nearly transverse ................................................................. Hippomedon coecus
   – Gnathopod 1, palm distinctly oblique ......................................................................................... Hippomedon sp A
21. Gnathopod 2, palm long, dactyl much shorter than palm, inserted anterodistally on propodus ........................................................................................................................................... Hippomedon tenax
   – Gnathopod 2, palm short, dactyl about equal to palm, dactyl inserted at mid-point of propod terminus ........................................................................................................................................... Hippomedon zetesimus
22. Gnathopod 1, palm almost transverse; accessory flagellum with first article 3x longer than distal article(s) ...................................................................................................................................................... Hippomedon coecus
   – Gnathopod 1, palm distinctly oblique; accessory flagellum with all articles subequal .......... 23
23. Uropod 2, peduncle with one apical spine and rami naked or with at most one spine ................................................................................................................................................................................23
   – Uropod 2, peduncle and rami spinose ............................................................................................24
24. Pereopod 4, article 5, with posterior margin with 3 strong spines .......................................................... Hippomedon subrobustus
   – Pereopod 4, article 5, with posterior margin without strong spines ........................................................................................................................................................................................................................................................24
25. Epimeron 3 posterior margin minutely serrate ..................................................................................26
   – Epimeron 3 posterior margin smooth .......................................................................................27
26. Gnathopod 1 transverse; coxae 5 & 6 bearing posteroventral lobe; telson split cleft less than 50% ......................................................................................................................................................... Orchomenella pinguis
   – Gnathopod 1 oblique (weakly so in female; moderately in subadult male, strongly so in adult male); coxae 5 & 6 lacking posteroventral lobes; telson cleft ≥50% ........................................ Rimakoroga rimaiv
27. Urosomite 1 carinate .......................................................................................................................28
   – Urosomite 1 bearing at most a low rounded hump ........................................................................32
28. Telson cleft to less than 50% of total length; antenna 1 not carinate. *Orchomenella holmesi*
   - Telson cleft to beyond 50%; antenna 1 carinate. *(Lepidepecreum)*...29
29. Pigmented eyes absent; coxa 3 with distinct transverse shelf; all pereonites dorsally keeled
   ……………………………………………………………………………………………………... *Lepidepecreum garthi*
   - Pigmented eyes present; coxa 3 without distinct shelf; pereonites and urosomites variously
datailedly incised; telson with one pair of dorsal spines
   …………………………………………………………………………………………………... *Lepidepecreum magdalenensis*
30. Gnathopod 2 subchelate; only urosomite 1 dorsally keeled; pleonite 3 subrectangular,
   posterodistal corner squared. *(Lepidepecreum gurjanovae)*
   - Gnathopod 2 chelate. ……………………………………………………………………… *Lepidepecreum serraculum*
31. Pleonite 1 produced into posterodorsal tooth; telson with multiple pairs of dorsal spines
   ……………………………………………………………………………………………………… *Rimakoroga rima* iv
   - Pleonite 1 not produced into posterodorsal tooth; telson with one pair of dorsal spines
   ………………………………………………………………………………………………………...
32. [Note triplet] Gnathopod 1 propodus small, rectangular, transverse; carpus of pereopods 6 &
   7 elongated (longer than merus, slightly shorter than propodus); flagellum of antennae 1 & 2
   with 11–14 articles. *Orchomene limodes*
   - Gnathopod 1 propodus small, rectangular, transverse; carpus of pereopods 6 & 7 short
     (subequal to merus, ½ to 2/3 the length of propodus); flagellum of antenna 1 with less than 11
     articles, antenna 2 with 6 articles. *Orchomene anaquelus*
   - Gnathopod 1 propodus large, strongly oblique in male or robust and weakly oblique in female
     and immature male; carpus of pereopods 6 & 7 short (subequal to merus, ½ to 2/3 the length
     of propodus); flagellum of antenna 1 with less than 11 articles, antenna 2 with 8+ articles
     ………………………………………………………………………………………………………... *Rimakoroga rima* iv
33. Mouthparts formed into a conical bundle…………………………………………………….34
   - Mouthparts formed into a quadrate bundle …………………………………………………36
34 Telson cleft at least 40%; body smooth……………………………………………………35
   - Telson entire; urosomites strongly produced dorsally. *Ocosingo borlus*
35. Uropod 2 inner ramus incised; epimeron 3 rounded. *Socarnoides illudens*
   - Uropod 2 inner ramus not incised; epimeron 3 with distal tooth. *Acidostoma hancocki*
36. Telson cleft more than 50% of length; each subacute lobe bearing single terminal spine
   ……………………………………………………………………………………………………………... *Socarnes hartmani*
   - Telson entire or emarginate……………………………………………………………………37
37. Uropod 3 outer ramus uniarticulate. ………………………………………………………..38
   - Uropod 3 outer ramus biarticulate at tip……………………………………………………40
38. Eyelobe truncate, slightly crenulate; basis of pereopods 5–7 with serrated hind margin;
   epimeron 3 rounded. *Macronasssa macromera*
   - Eyelobe obtuse, margin smooth; basis of pereopods 5–6 with smooth hind margin, peropod 7
     basis weakly crenulate; epimeron 3 lower posterior margin quadrate ………………………39
39. Gnathopod 2 chelate (dactyl closing against distally produced propodus); inner plate of
   maxilliped with 5+ long, strong distal spines. *Macronasssa pariter*
   - Gnathopod 2 subchelate, palm transverse; inner plate of maxilliped with 3 short, stout distal
     spines among several short setae ……………………………………………………………... *Shoemakerella cubensis*
40. Article 3 of mandibular palp short, approximately one-half or less than article 2; epistome produced, bulbous, extending to or beyond upper lip .................. *Dissiminas* dissimilis
   – Article 3 of mandibular palp long, subequal to article 2; epistome produced, not bulbous, projecting above upper lip due to concave base just above upper lip .......... *(Aruga)* ......41
41. Epimeron 3 proximally excavate, lower posterior margin quadrate .................. *Aruga oculata*
   – Epimeron 3 lower posterior margin rounded .................................. *Aruga holmesi*

**Endnotes**

i *Abyssorchomene* is a deepwater genus, generally occurring at depths >500m. Two specimens of *Abyssorchomene* were collected during Bight’18 samples (both >750m) but neither could be assigned to species. In his review of the NEP lysianssoids (Cadien 2015), Don listed three species as reportedly occurring in the area: *A. abyssorum* (Stebbing 1888), *A. distinctus* (Birstein and Vinogradov 1960) and *A. gerulicorbis* (Shulenberger and J. L. Barnard 1976), in addition to several other unspeciated forms reported by France (1974) from San Clemente Basin. More recently, Hendrycks and De Broyer 2022 redescribe *A. abyssorum* and provide detailed descriptions of several other species, but make no reference to the France (1974) material. Consequently, there remains uncertainty as to how to differentiate the roughly 5+- species possible in the SCB until additional material is collected and reviewed.

ii There may be some confusion in SCB identifications surrounding *A. lilljeborgi* and *L. carinatus*, and SCAMIT has synonomized the two with Edition 14. The original description *A. carinatus* (Holmes 1908) is brief and may not have adequately distinguished that species from *A. lilljeborgi* Boeck 1871, which has an even more brief description. Even more confusing, a portion of Holmes’ 1908 description of *A. abyssorum* and provide detailed descriptions of several other species, but make no reference to the France (1974) material. Consequently, there remains uncertainty as to how to differentiate the roughly 5+- species possible in the SCB until additional material is collected and reviewed.

iii The key character for *H. coecus* has been changed from the keys in Jarrett and Bousfield (1982) and Dierer (1990), both of which include this species in the group of *Hippomedon* with a notch (or sinus) above the tooth on epimeron 3. The original designation Holmes 1908 (as *Tryphosa coeca*) clearly shows the third epimeron without a notch (or sinus) above the distal tooth, and no notch is mentioned in the description. The absence of a sinus was carried forward by Hurley (1963). However, Jarrett and Bousfield 1982 (repeated by Dierer 1990) suggest that a notch is present, just “rudimentary”. Clearly there is some discrepancy as to what is the accurate description and the species is distinguished twice herein. Additionally, although Holmes describes gnathopod 1 as oblique, the illustration shows a relatively short, weakly oblique, and distally quadrate palm.

iv *Rimakoraga rima* is described as having the third pleonal epimeron as “minutely serrate” (JL Barnard 1964, Page 95); however, in my personal experience the third epimeron of a large male specimen was smooth, even under a compound microscope. Consequently, I have added a second instance of *R. rima* in the key to account for specimens with a smooth epimeron 3.

v The differences in the epistome character are shown in the following figures and Chapman (2007), Plate 286O vs. R.
**Example Lysanassoids**

Dissiminassa (left) vs Aruga (right) mandibular palp & epistome (modified from Lowry and Stoddart 1997).

**Acidostoma hancocki** (from Hurley 1963)

**Tryphosinae incertae sedis entalladurus** (from JL Barnard 1963)

**Prachynella lodo** (from Lowry & Stoddart 2012)

**Lepidepecreum gurjanovae** (from Hurley 1963)

**Aruga holmesi** (from Lowry & Stoddart 1997)

**Opisa tridentata** (from Bousfield 1987)

**Lepidepecreum magdalenensis** (from JL Barnard 1964)

**Pachychelium fucaensis** (from Lowry & Stoddart 2012)
Fig. 92. Lysianassidae, gnathopod 1. A, Koroga megalops; B, Paracentromedon crenulatus; C, Schisturella abyssi; D, Orchomene batei; F, Valettiopsis dentatus; G, Opisa eschrichtii; H, Trischizostoma nicaense; I, Euonyx chelatus; J, Paracallinopsis beljaevi; K, Ichnopus spinicornis; L, Sophrosyne robertsoni; M, Gainella chelata; N, Ambastioopsis tunicornis; O, Kerguelenia borealis; P, Eucallisoma glandulosa; Q, Pachychelium davidis; R, Tryphosella sarsi; S, Valettiopsis cohere; T, Cheirimidon latimanus; U, Menigrates obtusifrons; V, Scopelochirus crenatus; W, Nannonyx goesi; X, Aristias neglectus; Y, Uristes umbonatus; Z, Pseudorchomene coati.
Examples of Uropods, Pereopods, and Telsons

Fig.93. Lysianassidae. A, Eurythenes gryllus; B, Hirondellea brevicaudata; C, Trischizostoma nicaense; D, Gainella chelata; E, Lepiodecreum longicorn; F, Scopelocheiris crenatus; G, Ocosing borlus; H, Hippomedon denticulatus; I, Anonyx debruyinii; J, Lysianassa plumosa; K, Tryphosites longipes.

Fig.95. Lysianassidae. A, Tryphosites longipes; B, Gronella groenlandica; C, Lysianopsis alba; D, Hippomedon denticulatus; E, Lysianassa plumosa; F, Nannonyx goesi; G, Acontiostoma marionis; H, Glycerina tenuicornis; I, Aristias timidus; J, Lepiodecreella ctenophora; K, Stionacontion pepini; L, Danaella mimonectes; M, Paratryphosites abyssis; N, Boekosimus edwardsi; O, Opisa eschrichti; P, Ichnopus spinicornis; Q, Eurythenes gryllus; R, Arugella heterodonta; S, Acidostoma obesus; T, Boekosimus norani; U, Trischizostoma nicaense; V, Orchomene batei.