

- Bahia Concha, Colombia; 11°18'N, 74°10'W; 18 m
Pseudocoutierea elegans Holthuis, 1951a:182, pl. 55
 0.5 mile [0.8 km] east of Long Point, Santa Catalina
 Island, southern California: 82–91 m
- PSEUDOPONTONIDES** Heard, 1986:479
 Type species: *Neopontonides principis*
Pseudopontonides principis (Criales, 1980)
Neopontonides principis Criales, 1980:75, figs.
 25–29
 Awa di Oostpunt, Curaçao; 18 m
- STEGOPONTONIA** Nobili, 1906a:258
 Type species: *Stegopontonia commensalis*
Stegopontonia commensalis Nobili, 1906a:258
 Lagoon at Hao, Tuamotu Archipelago; commensal
 with echinoid, *Echinothrix*
- TECTOPONTONIA** Bruce, 1973c:169
 Type species: *Tectopontonia maziwiae*
Tectopontonia maziwiae Bruce, 1973c:172, figs. 1–4
 Maziwi Island, off Pangani, Tanzania; 5°30.0'S,
 39°04.1'E; 4 m, on coral, *Acropora*
- *THAUMASTOCARIS** Kemp, 1922:244
 Type species: *Thaumastocaris streptopus*
- *173. *Thaumastocaris streptopus* Kemp, 1922:244, figs.
 78–80
 Nouméa, New Caledonia
- TRIDACNOCARIS** Nobili, 1899:235
 Replacement name for **ANCHISTUS**
- TULEARIOCARIS** Hipeau-Jacquotte, 1965:247
 Type species: *Tuleariocaris holthuisi*
Tuleariocaris holthuisi Hipeau-Jacquotte, 1965:248,
 pls. 1–5
 Tuléar, Madagascar; on echinoids, *Echinometra* and
Stomopneustes
- Tueariocaris neglecta* Chace, 1969:266, figs. 10, 11
 Bellairs Research Institute of McGill University, St.
 James, Barbados; on echinoid, *Diadema*
- Tuleariocaris zanzibarica* Bruce, 1967a:33, figs. 13–18
 Mtoni, Zanzibar; low tide, on echinoid, *Astropyga*
- TYPTON** O.G. Costa, 1844:288
 Type species: *Typton spongicola*
- PONTONELLA**
Typton anomalus (Bruce, 1979)
Oncocaris anomala Bruce, 1979b:69, figs. 1–4
 Between North and South Shell Islands, Darwin,
 Northern Australia; 6–13 m
- Typton australis* Bruce, 1973d:254, figs. 1–4
 Great Barrier Reef, Australia
- Typton bawii* Bruce, 1972d:243, figs. 1–5
 South of Bawi Island, Zanzibar; 6°9.7'S, 39°8.3'E;
 18–25 m, in sponge
- Typton Bouvieri*—See *Periclimenaeus bouvieri*
Typton carneus Holthuis, 1951a:162, pl. 51: figs. a,e,k,l
 Dry Tortugas, Florida
- Typton crosslandi* Bruce, 1978c:294, figs. 1–3
 Off Isla Onslow, near Isla Santa Maria, Galápagos
 Islands; 7 m
- Typton dentatus* Fujino and Miyake, 1969c:80, figs. 1, 2
 “Ukachi,” Yoron-jima, Ryukyu Islands; from sponge
- Typton dimorphus* Bruce, 1986f:278, figs. 1–4
 Ashmore Reef, Timor Sea; 12°15'S, 123°E; 5 m
- Typton distinctus* Chace, 1972b:49, figs. 13, 14
 Los Arroyos, Provincia de Pinar del Rio, Cuba
- Typton gnathophylloides* Holthuis, 1951a:159, pl. 50
 Dry Tortugas, Florida; 82 m
- Typton hephaestus* Holthuis, 1951a:159, pl. 49: figs.
 o–p
 Southern Gulf of California; 24°12'N, 109°55'W;
 18 m
- Typton nanus* Bruce, 1987d:49, figs. 1–5
 Australian North-West Shelf; 16°34'S, 121°27'E;
 40–46 m
- Typton prionurus* Holthuis, 1951a:165, pl. 52
 Dry Tortugas, Florida; 18 m
- Typton serratus* Holthuis, 1951a:167, pl. 53
 Tagus Cove, Isla Isabella, Galápagos Islands; in red
 sponge
- Typton spongicola* O.G. Costa, 1844:289
 Naples
Pontonia pulsatrix
Pontonella glabra
Typton spongiosus
 ?*Pontonia Vagans*
- Typton spongiosus* Bate, 1868b:119, pl. 11: fig. 1
 British
 = *Typton spongicola*
- Typton tortugae* McClendon, 1911:57, pl. 1: fig. 2
 Dry Tortugas, Florida
- Typton vulcanus* Holthuis, 1951a:157, pl. 1: figs. a–n
 South of Dry Tortugas, Florida
- Typton wasini* Bruce, 1977d:272, figs. 1–6
 Wasini Island Channel, Kenya; 4°39.4'S, 39°22.2'E;
 11 m, in sponge, *Reniera*
- UROCARIS** Stimpson, 1860:39
 Type species: *Urocaris longicaudata*
 = **PERICLIMENES**
- Urocaris de Mani* Balss, 1816:29, fig. 10
 Sette Cama, Gabon
 = *Periclimenes scriptus*
- Urocaris indica*—See *Periclimenes indicus*
Urocaris infraspinis—See *Periclimenes infraspinis*
Urocaris longicaudatus—See *Periclimenes longicauda-*
tus
- Urocaris longipes*—See *Periclimenes longipes*
Urocaris psamathe—See *Periclimenes psamathe*
- VELERONIA** Holthuis, 1951a:11, 195
 Type species: *Veleronia serratifrons*
Veleronia laevifrons Holthuis, 1951a:199, pl. 63:
 figs. f–m

- Bahia de Gardner, Isla Espanola, Galápagos Islands;
7 m
Veleronia serratifrons Holthuis, 1951a:196, pls. 62, 63:
figs. a-e
La Libertad, Ecuador; 7 m
VELERONIOPSIS Gore, 1981:145
Type species: *Veleroniopsis kimallynae*
Veleroniopsis kimallynae Gore, 1981:147, fig. 2
Elbow Reef, off Key Largo, Monroe County, Florida;
25°07.70'N, 80°15.90'W; 18.3 m, from relict coral,
Montastraea
VIR Holthuis, 1952c:4, 6, 29
Type species: *Palaemonella orientalis*
174. **Vir orientalis** (Dana, 1852)
Palaemonella orientalis Dana, 1852a:26
Sulu Sea
175. **Vir philippinensis** Bruce and Svoboda, 1984:87, figs.
1-4
Cebu, Philippines; associated with scleractinian coral,
Plerogyra sinuosa
WALDOLA Holthuis, 1951a:11, 185
Type species: *Waldola schmitti*
Waldola schmitti Holthuis, 1951a:186, pls. 58, 59:
figs. a-f
Isla Isabela, Nayarit, Mexico; 18-46 m
ZENOPONTONIA Bruce, 1975d:275
Type species: *Periclimenes (Periclimenes) noverca*
Zenopontonia noverca (Kemp, 1922)
Periclimenes (Periclimenes) noverca Kemp,
1922:162, figs. 28-30
New Caledonia

Key to Genera of Pontoniinae

1. Third maxilliped bearing exopod (reduced in *Metapontonia*, vestigial in *Balsisia* and *Tectopontonia*) 2
Third maxilliped without exopod 54
2. Carapace bearing hepatic spine (nearly postorbital in *Tuleariocaris*, minute in adult *Paranchistus armatus*) 3
Carapace without hepatic spine 14
3. Hepatic spine movable 4
Hepatic spine immovable 7
4. Rostrum dentate throughout length of dorsal margin 5
Rostrum unarmed on posterior 1/2 of dorsal margin 6
5. Rostrum armed with ventral tooth; protopod of uropod distolaterally blunt **Allopontonia**
(Kenya, Zanzibar, Great Barrier Reef of Australia, and Gulf of California)
Rostrum unarmed ventrally; protopod of uropod distolaterally acute **Zenopontonia**
(Zanzibar, Madagascar, Queensland, Australia, and New Caledonia; on oreasterid asteroids)
6. Rostrum unarmed anterodorsally; telson with dorsolateral spines robust; associated with ascidians ***Dasella**
Rostrum feebly to moderately armed anterodorsally; telson with dorsolateral spines slender; associated with mollusks **Paranchistus**
7. Lateral rostral carina forming broad supraocular eave 8
Lateral rostral carina not forming broad supraocular eave 9
8. Rostrum unarmed dorsally and ventrally; supraocular eave dentate; epistome bearing large paired submedian horn-like processes; 3rd pereopod composed of 7 segments, merus and ischium not fused **Parapontonia**
(Great Barrier Reef of Australia and New Caledonia; associated with crinoids)
Rostrum dentate dorsally; supraocular eave not dentate; epistome not bearing horn-like processes; 3rd pereopod composed of 6 segments, merus and ischium indistinguishably fused **Tuleariocaris**
(Western Indian Ocean, Hawaii, and West Indies; associated with echinoids)

9. Rostrum elongate, subequal to carapace length, dorsal teeth obsolescent; cornea of eye ogival ***Carinopontonia***
(Northwest Shelf of Australia; 83 m)
Rostrum generally shorter than carapace length, dorsally dentate; cornea generally globular (except occasionally in *Periclimenes* 10
10. Second pereopods very dissimilar; 3rd pereopod with conspicuous, hoof-shaped protuberance on dactyl ****Jocaste***
Second pereopods similar, even if unequal; 3rd pereopod without protuberance on dactyl unless concealed by flexion into propodal slot 11
11. Carapace either strongly depressed or with sinuous, lobate, or grossly dentate dorsal profile, especially in males 12
Carapace somewhat compressed laterally, dorsal profile not very uneven . . . 13
12. Rostrum unarmed ventrally; carapace not unusually depressed, dorsal profile sinuous, lobate, or dentate, especially in males; 3rd pereopod with dactyl neither twisted nor with carinate margins ***Dasycaris***
Rostrum dentate ventrally; carapace strongly depressed, faintly convex in dorsal profile; 3rd pereopod with dactyl twisted, with more or less carinate margins ****Harpiliopsis***
13. Fifth abdominal somite with pleura sharp-pointed; mandible with palp ****Palaemonella***
Fifth abdominal somite usually with pleura not sharp-pointed; mandible without palp ****Periclimenes***
14. Body strongly compressed; lateral branch of uropod without marginal distolateral tooth but with large, laterally curved spine at diaeresis ***Ischnopontonia***
Body not strongly compressed; lateral branch of uropod with marginal distolateral tooth, without hook-like spine at diaeresis 15
15. Lateral branch of uropod armed laterally with 5 or 6 strong, curved, hook-like teeth ***Anapontonia***
Lateral branch of uropod without series of hook-like teeth 16
16. Lateral branch of uropod with fixed tooth 17
Lateral branch of uropod usually armed only with mobile spines or unarmed 42
17. Third pereopod with hollowed, hoof-shaped protuberance on dactyl ****Coralliocaris***
Third pereopod without hoof-shaped protuberance on dactyl 18
18. Lateral carina of rostrum expanded into broad supraorbital or postorbital eave 19
Rostrum not broadly expanded into supraorbital or post-orbital eave 22
19. Rostrum dentate dorsally, supraorbital eave armed with 1 or 2 anterior teeth . 20
Rostrum not dentate in dorsal midline, supraorbital eave unarmed 21
20. Carapace unarmed in dorsal midline; abdomen with pleura of 5th somite rounded; 3rd maxilliped with well-developed exopod ***Araiopontonia***
(Ryukyu Islands, Great Barrier Reef of Australia, and Marshall Islands)
Carapace armed with 3 large teeth in dorsal midline; abdomen with pleura of 5th somite sharp-pointed; 3rd maxilliped with exopod vestigial ***Balssia***
(Mediterranean Sea and Guinea; 45–70 m, associated with Precious Coral)
21. Body robust, squat, strongly depressed; 2nd pereopods subequal, strongly compressed ***Notopontonia***
(South Australia; 80 m)
Body elongate, subcylindrical; 2nd pereopods markedly unequal, subcylindrical ***Stegopontonia***
(Kenya and Zanzibar to Tuamotu Archipelago; associated with echinoids)

22. Carapace bearing antennal spine 23
 Carapace without antennal spine 41
23. Antennal scale rudimentary *Typton*
 (Kenya, Zanzibar, La Reunion, Ryukyu Islands,
 Australia, Galapagos Islands, Gulf of California,
 western tropical Atlantic, Mediterranean Sea;
 associated with sponges)
 Antennal scale moderately to well developed 24
24. Rostrum dorsally dentate in male, non-dentate in female; 2nd to 5th pereopods with
 distinct ventrolateral flange on merus *Altopontonia*
 (New Caledonia; 350–525 m)
 Rostrum similar in male and female; 2nd to 5th pereopods without conspicuous
 ventrolateral flange on merus 25
25. Rostrum dorsally dentate 26
 Rostrum unarmed dorsally 39
26. First pereopod with carpus subdivided **Thaumastocaris*
 First pereopods with carpus entire, not subdivided 27
27. Third pereopod with dactyl long, slender, and simple, unlike short, stout, and
 biunguiculate dactyls of 4th and 5th pereopods *Onycocaridites*
 (Arafura Sea; 60 m, in sponge)
 Third pereopod with dactyl not very different from those of 4th and 5th pereopods
 28
28. Orbit with strong marginal spine at midlength of ventral margin . . . *Epipontonia*
 (Kenya and Australia; 12–18 m,
 associated with sponges)
 Orbit unarmed on ventral margin except occasionally at suborbital angle . . . 29
29. Telson with 4 pairs of dorsolateral spines *Plesiopontonia*
 Telson with 2 or 3 pairs of dorsolateral spines 30
30. Second pereopods dissimilar 31
 Second pereopods similar, not necessarily equal 35
31. Major chela with molar-like tooth on movable finger opposite socket in fixed finger
 **Periclimenaeus*
 Major chela without molar-like tooth on movable finger or socket in fixed finger
 32
32. Telson with both pairs of dorsolateral spines arising in anterior $\frac{1}{2}$ of length;
 antennal scale overreaching antennal peduncle by little, if at all; mandible with
 incisor process acuminate or bifid. 33
 Telson with posterior pair of dorsolateral spines arising in posterior $\frac{1}{2}$ of length;
 antennal scale far overreaching antennal peduncle; mandible with incisor process
 truncate, distal margin dentate 34
33. Antennal scale with distolateral tooth large, far overreaching distal margin of blade;
 mandible with incisor process acuminate; 2nd maxilla with endite much reduced;
 minor 2nd chela with movable finger swollen, overreaching fixed finger; 3rd
 pereopod with dactyl biunguiculate *Exopontonia*
 (Timor Sea; intertidal)
 Antennal scale with distolateral tooth small, not overreaching distal margin of blade
 by much, if at all; mandible with incisor process bifid; 2nd maxilla with endite
 elongate, bifid; minor 2nd chela with movable finger acuminate, not overreaching
 fixed finger by much; 3rd pereopod with dactyl simple *Periclimenoides*
 (Hong Kong, southern Japan, Australia; 15 m)
34. Major 2nd chela with movable finger unarmed, distinctly overreaching fixed finger;
 minor 2nd chela with fingers not densely tuberculate on most of lengths of
 opposable margins *Hamiger*
 (Off North Cape, New Zealand; 128 meters)

- Major 2nd chela with movable finger armed with subtriangular tooth on opposable margin, not distinctly overreaching fixed finger; minor 2nd chela with fingers densely tuberculate on opposable margins *Orthopontonia*
(Tanzania and Great Barrier Reef, Australia;
associated with sponge *Jaspis*)
35. Rostrum unarmed ventrally *Pliopontonia*
Rostrum with 1 or more ventral teeth, sometimes very small 36
36. Antennal scale with distolateral tooth not reaching level of distal margin of blade *Vir*
Antennal scale with distolateral tooth reaching to or beyond level of distal margin of blade 37
37. Third pereopod with dactyl armed with series of sharp teeth on flexor margin *Diapontonia*
(Bahamas, western Atlantic; 244–309 meters,
associated with echinoid)
- Third pereopod with dactyl simple, flexor margin unarmed 38
38. Mandible with small palp *Eupontonia*
(Seychelle Islands; reef flat)
- Mandible without palp **Philarius*
39. Second pereopods similar though unequal, chelae strongly compressed, borne in vertical plane with movable finger ventrad *Isopontonia*
(Chesterfield Islands; 15 m)
- Second pereopods dissimilar and unequal, chelae subcylindrical, not strongly compressed, borne in horizontal plane with movable finger laterad 40
40. Rostrum not T-shaped, lateral carina feebly developed; eyes small, slender, in obsolescent orbits; 3rd pereopod with flexor margin of dactyl multidentate *Amphipontonia*
(New Caledonia; 300 m, associated with
antipatharians and/or ascidians)
- Rostrum T-shaped in section, with broad lateral carina; eyes large, in deep orbits;
3rd pereopod with dactyl simply biunguiculate *Pontoniopsis*
41. First pereopod with fingers narrowly spatulate, about as long as palm; 2nd pereopod with fingers not spatulate, palm more than 1½ times as long as deep; 3rd pereopod with dactyl subconical and feebly armed *Onycocaridella*
- First pereopod with fingers not spatulate, less than ½ as long as palm; 2nd pereopod with fingers subspatulate, palm less than 1½ times as long as deep; 3rd pereopod with dactyl strongly compressed and elaborately denticulate *Onycocaris*
42. Lateral branch of uropod with several movable spines at diaeresis 43
- Lateral branch of uropod with single lateral movable spine 44
43. Second pereopods similar and subequal, without molar process or opposing socket on fingers *Apopontonia*
(Madagascar, Australia, New Caledonia)
- Second pereopods subequal but dissimilar, major chela with molar process on fixed finger opposing socket on dactyl *Paraclimnæus*
(Tanzania and Seychelle and Maldive islands;
36–91 m, associated with sponges)
44. Rostrum overreaching anteriorly extended eyes 45
- Rostrum not overreaching anteriorly extended eyes 50
45. Antennal scale with distolateral tooth far overreaching distal margin of blade; 3rd pereopod with large, compressed, angulate protuberance on flexor margin of dactyl 46
- Antennal scale with distolateral tooth not overreaching distal margin of blade; 3rd pereopod with flexor margin of dactyl slightly convex, at most spinose, in proximal ½ of length 47

46. Third maxillipeds operculiform with distal and penultimate segments reduced *Chernocaris*
 Third maxillipeds conventional, distal segments not unusually reduced **Conchodytes*
47. Telson curving ventrad posteriorly, posterior margin without movable spines, deeply incised and forming pair of fixed teeth separated by U-shaped sinus *Hamopontonia*
 Telson not curving ventrad, posterior margin bearing movable spines, not incised 48
48. Rostrum laterally compressed **Anchistus*
 Rostrum usually dorsoventrally compressed 49
49. Anterior margin of carapace nearly vertical, not produced anteriorly; 3rd pereopod with dactyl simple, not biunguiculate. *Neoanchistus*
 (Madagascar, Oman; associated with bivalve mollusks)
 Anterior margin of carapace produced moderately or strongly anteriorly as rounded branchiostegal or pterygostomial lobe; 3rd pereopod biunguiculate, subdistal tooth sometimes distalmost spine of series on flexor margin of dactyl **Pontonia*
50. Rostrum armed dorsally with 1 or more teeth 51
 Rostrum dorsally unarmed, flattened 53
51. Rostrum with single subrectangular dorsal tooth at base *Metapontonia*
 (Western Indian Ocean and Ryukyu Islands; associated with fungiid corals)
 Rostrum armed dorsally with 3-6 teeth 52
52. Carapace with several small suborbital spines; 3rd maxilliped with well-developed exopod; 2nd pereopod with chela longer than carpus, movable finger small but normal; telson with posterior spines straight *Fennera*
 (Kenya, Seychelles, La Réunion, Maldives, Sri Lanka, Great Barrier Reef of Australia, Hawaii, Galapagos, and Pacific coast of America from Mexico to Colombia; associated with stony corals)
 Carapace with large postorbital spine; 3rd maxilliped with rudimentary exopod; 2nd pereopod with chela shorter than carpus, movable finger semispherical; telson with median and submedian posterior spines curved ventrad *Tectopontonia*
 (Tanzania; associated with coral *Acropora*)
53. Carapace without antennal spine; telson with dorsal spines slender . . . *Platycaris*
 Carapace with prominent antennal spine; telson with dorsal spines robust *Platypontonia*
54. Frontal margin formed by transverse or convex anterior margins of supraorbital eaves; if transverse, margin armed with about dozen sharp teeth, median one enlarged to form rostrum-like spike; if convex, margin unarmed, not bearing rostral substitute 55
 Frontal margin not formed by supraorbital eaves 56
55. Carapace having 2 large, blunt, compressed teeth in dorsal midline and postorbital tubercle laterally, orbit open posteriorly *Chacella*
 (Gulf of California; 30 meters, associated with antipatharian)
 Carapace without large middorsal prominences or postorbital tubercle, orbit closed posteriorly *Veleronia*
 (Ecuador and Galapagos Islands; 4-27 meters)
56. Carapace bearing immovable hepatic or postorbital tooth or spine 57
 Carapace without hepatic or postorbital spine 64
57. Rostrum dentate in dorsal midline 58

- Rostrum unarmed in dorsal midline 62
58. Rostrum armed ventrally 59
- Rostrum unarmed ventrally 60
59. Carapace bearing antennal spine *Propontonia*
(Kenya, Zanzibar, Comoro Islands, Seychelles,
Great Barrier Reef of Australia;
associated with alcyonarians)
- Carapace without antennal spine *Mesopontonia*
60. Carapace without antennal spine *Waldola*
(Pacific coast of America
from Mexico to Colombia)
- Carapace with antennal spine 61
61. Second pereopods very unequal; 3rd pereopod with strong basal protuberance on
dactyl *Hamodactyloides*
(Red Sea, Kenya, Zanzibar, La Réunion, Ryukyu
Islands, Great Barrier Reef of Australia;
associated with hydroid *Millepora*)
- Second pereopods equal; 3rd pereopod with dactyl slender, without basal
protuberance *Hamodactylus*
62. Rostrum with lateral carina feebly expanded into unarmed supraorbital eave; 2nd
pereopods subequal and similar, merus and ischium dentate on flexor margins
. *Miopontonia*
(Off Western Australia; 40 m)
- Rostrum with lateral carina expanded into broad, anteriorly dentate supraorbital
eave; 2nd pereopods unequal, similar or not, merus and ischium unarmed on flexor
margins 63
63. Carapace and abdomen distinctly sculptured, former with deep branchiostegal sinus
anteroventrally; major 2nd pereopod without proximal tooth on flexor margin of
movable finger *Coutierea*
(West Indies; 148 or 165–172 m)
- Carapace and abdomen smooth, not sculptured, former without branchiostegal sinus
anteroventrally; major 2nd pereopod with large proximal tooth on flexor margin of
movable finger *Lipkebe*
(Eastern Gulf of Mexico and off Brazil;
119–150 m, associated with crinoids)
64. Carapace bearing antennal spine 65
- Carapace without antennal spine 68
65. Carapace with longitudinal branchiostegal suture; abdomen with pleuron of 5th
somite sharply acute posteriorly *Pseudocoutierea*
(Pacific America from southern California to
Galapagos Islands, Leeward Islands, and
Caribbean coast of Colombia; 13–91 m,
associated with gorgonians)
- Carapace without branchiostegal suture; abdomen with pleuron of 5th somite
rounded 66
66. Carapace with deep pterygostomian notch at anterolateral angle
. *Pseudopontonides*
(Northern Gulf of Mexico and Netherlands Antilles;
associated with antipatharians and alcyonarians)
- Carapace without notch at pterygostomian angle 67
67. Rostrum distinctly overreaching anteriorly extended eyes, lateral carina not broadly
expanded as supraorbital eave *Neopontonides*
(Pacific America from Gulf of California
to Ecuador; associated with gorgonians)

- Rostrum overreaching anteriorly extended eyes little if at all, lateral carina broadly expanded into supraorbital eave. **Pontonides*
68. Rostrum lacking; antennal scale small, without distolateral spine . . . *Paratypton*
(Red Sea, Tanzania, Kenya, La Réunion, Great Barrier Reef of Australia, and Marshall, Fiji, and Samoa islands; forming cysts in acroporid corals)
- Rostrum present; antennal scale well developed, with disto-lateral spine 69
69. Entire orbital margin spinose; lateral branch of uropod with movable spine mesial to fixed distal tooth *Ctenopontonia*
(Marshall Islands; 5–15 m, on faviid coral *Cyphastraea*)
- Orbital margin not spinose; lateral branch of uropod without movable spine mesial to fixed distal tooth *Veleroniopsis*
(Florida Keys; 18 meters, associated with relict stony coral)

Anapontonia Bruce, 1966

Anapontonia Bruce, 1966a:584, 595–597 [type species, by original designation: *Anapontonia denticauda* Bruce, 1966a:596; gender: feminine].

DIAGNOSIS.—Rostrum barely overreaching anteriorly extended eyes, compressed laterally, rostral formula 6–10 + 5–10/0, lateral carina not expanded into broad supraocular or postocular eave; carapace strongly compressed, dorsal profile convex and dentate on anterior $\frac{1}{2}$, variably concave and unarmed posteriorly, anterior margin partially produced as blunt lobe, partially deeply concave (notched), without longitudinal ridge parallel with ventral margin or longitudinal branchiostegal suture, unarmed except for acute suborbital angle, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite bluntly angulate, not sharp-pointed; telson not curved strongly ventrad, posterior margin not incised, posterior spines not curved ventrad, without dorso-lateral spines; epistome not bearing paired, horn-like processes; antennal scale well developed, distolateral spine unusually robust and overreaching blade by most of length; mandible without palp; 3rd maxilliped with rigid exopod; 4th thoracic sternite without slender median process; 1st pereopod with carpus entire, not subdivided; 2nd pereopods similar, not necessarily equal, chela much longer than carpus, not borne in vertical plane, movable finger not ventrad, fingers not provided with socket and plunger closure, movable finger normal, not semicircular, palm more than $1\frac{1}{2}$ times as long as high; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl unarmed on flexor margin, without hoof-shaped or triangular protuberances, merus unarmed on flexor margin; uropod with lateral branch bearing series of strong fixed teeth on distal $\frac{1}{2}$ of lateral margin; associated with oculinid corals of genus *Galaxea*.

RANGE.—Zanzibar, Comoro Islands, Singapore, and Great Barrier Reef of Australia.

REMARKS.—Only one species is known.

56. *Anapontonia denticauda* Bruce, 1966

Anapontonia denticauda Bruce, 1966a:595–597 [type locality: Pange Reef, Zanzibar]; 1967a:3, figs. 1–4.

DIAGNOSIS.—Characters of genus; maximum carapace length 3.2 mm.

RANGE.—Western Indian Ocean, Singapore, and Queensland, Australia; living at base of columns of coral *Galaxea* in shallow water.

**Anchistus* Borradaile, 1898

Anchistus Borradaile, 1898a:387 [type species, by original designation: *Harpilius Miersi* De Man, 1888a:274; gender: masculine].

Tridacnocris Nobili, 1899:235 [replacement name for *Anchistus* Borradaile, 1898; gender: feminine].

Marygrande Pesta, 1911:571 [type species, by monotypy: *Marygrande mirabilis* Pesta, 1911:571; gender: feminine].

Ensiger Borradaile, 1915:207 [type species, designated by Borradaile, 1917:376: *Anchistia aurantiaca* Dana, 1852a:25 (= *Cancer custos* Forskål, 1775:94); gender: masculine].

DIAGNOSIS.—Rostrum overreaching anteriorly extended eyes, compressed laterally, if armed dorsally, teeth confined to anterior $\frac{1}{2}$ of length, lateral carina not expanded into broad supraocular or postocular eave; carapace not compressed laterally, dorsal profile slightly convex, not dentate or lobate, anterior margin not partially produced as prominent rounded lobe, not partially deeply concave (notched), without longitudinal ridge parallel with ventral margin or longitudinal branchiostegal suture, with or without antennal spine, otherwise completely unarmed, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite rounded, not sharp-pointed; telson not curved ventrad, posterior margin not deeply incised, median and submedian pairs of posterior spines not curved ventrad, dorsolateral spines slender or minute, not robust; epistome not bearing paired, horn-like processes; antennal scale well developed, distolateral spine not reaching as far as level of distal margin of blade; mandible without palp;

3rd maxilliped with exopod; 4th thoracic sternite without slender median process; 1st pereopod with carpus entire, not subdivided; 2nd pereopods similar but not necessarily equal, chela much longer than carpus, not borne in vertical plane, movable finger not ventrad, fingers not provided with socket and plunger closure, movable finger normal, not semicircular, palm more than 1½ times as long as high; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl sometimes with flexor margin dentate, often with extensor surface densely microspinulate, sometimes biunguiculate, but never with massive hoof-shaped or triangular protuberance, merus unarmed on flexor margin; uropod with lateral branch bearing single movable lateral spine without distinct fixed tooth; living in mantle cavity of bivalve mollusks.

RANGE.—Red Sea and eastern Africa to Philippines and Indonesia and eastward through Pacific Ocean as far as Tuamotu Archipelago.

REMARKS.—Inasmuch as Bruce has modified the composition of the genus since he presented a key to the species (1967b:567) by transferring *Pontonia armata* to the genus *Paranchistus* (1975e:49) and by adding two previously undescribed species (1977a:50,56), it may be desirable to offer below a revision of the earlier key. *Marygrande mirabilis* Pesta, 1911, which Kemp (1922:252) postulated to be based on two forms of *Anchistus*, is still a species inquirenda not included among the eight species in the key. Apparently only two of the species are thus far known from the area covered in this report.

Key to Species of *Anchistus*

1. Carapace bearing distinct antennal spine 2
Carapace without antennal spine 5
2. Third pereopod with dactyl bearing accessory tooth on flexor margin
. *61. *A. miersi*
Third pereopod with dactyl simple, without accessory tooth on flexor margin . . 3
3. Rostrum apically acute, armed with 3 dorsal and 1 ventral teeth
. *A. gravieri* Kemp, 1922:252
Great Barrier Reef, Australia (in bivalve mollusk *Hippopus*), New Caledonia, and Santa Cruz Islands, South Pacific
Rostrum apically truncate or rounded 4
4. Rostrum bearing about 6 faint marginal elevations anterodorsally and apically; 3rd maxilliped with antepenultimate segment twice as wide as penultimate segment 58. *A. custoides*
Rostrum armed with 3 distinct teeth on truncate apical margin; 3rd maxilliped with antepenultimate segment little, if any, wider than penultimate segment
. *A. pectinis* Kemp, 1925:327
(Zanzibar, Nicobar Islands, Japan, Great Barrier Reef of Australia, and New Caledonia; in bivalve mollusk *Pecten*)
5. Rostrum unarmed; 3rd maxilliped with antepenultimate segment about twice as wide as penultimate segment; 1st pereopod with chela unusually curled to form open tube; 3rd pereopod with dactyl simple, not biunguiculate 59. *A. custos*
Rostrum armed with 2 to 5 anterodorsal teeth; 3rd maxilliped with antepenultimate segment little wider than penultimate segment; 1st pereopod with chela normal, not curled; 3rd pereopod with dactyl biunguiculate 6
6. Rostrum apically acute, armed with 4 or 5 anterodorsal and 1 ventral teeth
. 57. *A. australis*
Rostrum apically truncate, armed with 2 anterodorsal teeth 60. *A. demani*

57. *Anchistus australis* Bruce, 1977

Anchistus australis, forma typica Bruce, 1977a:56, figs. 7-9 [type locality: Capre Cay, Swain Reefs, Great Barrier Reef, Australia; in *Tridacna derasa*].
Anchistus australis.—Bruce, 1983c:892, fig. 10A.

DIAGNOSIS.—Rostrum apically acute, rostral formula 4-5/1; carapace without antennal spine below ventral orbital angle;

3rd maxilliped with antepenultimate segment little wider than penultimate segment; 1st pereopod with chela normal, not cannulate; 3rd pereopod with dactyl biunguiculate; maximum postorbital carapace length about 6 mm.

RANGE.—Indonesia, Great Barrier Reef of Australia, Marshall Islands, New Caledonia, and Fiji Islands; living in *Tridacna derasa*.

58. *Anchistus custoides* Bruce, 1977

Anchistus custoides Bruce, 1977a:50, figs. 4-6 [type locality: N.W. end Gillett Cay (Swain Reefs), Queensland, Australia; 21°43'S, 152°25'E; from *Atrina vexillum*, not "West Cay, Diamond Islets," as erroneously cited in Bruce (1977a:55)]; 1983c:892.

DIAGNOSIS.—Rostrum apically rounded, bearing 4-6 minute and obscure teeth on dorsal and anterior margins, unarmed ventrally; carapace with distinct antennal spine below ventral orbital angle; 3rd maxilliped with antepenultimate segment about twice as wide as penultimate segment; 1st pereopod with chela normal, not cannulate; 3rd pereopod with dactyl simple, not biunguiculate; maximum postorbital carapace length about 9 mm.

RANGE.—Palau Islands, Indonesia, and Great Barrier Reef of Australia; associated with bivalves, *Atrina* and *Pteria*.

59. *Anchistus custos* (Forskål, 1775)

Cancer custos Forskål, 1775: xxi, 94 [type locality: Al Luhayyah, Yemen].
Pontonia inflata H. Milne Edwards, 1840:633 [type locality: Sri Lanka and "Vanicoso" (= Vanikoro, Santa Cruz Islands)].
Anchistia aurantiaca Dana, 1852a:25 [type locality: Fiji Islands].
Harpilius inermis Miers, 1884:291, pl. 32: fig. B [type locality: Port Molle, Queensland, Australia; from coral reef in *Pinna*].
Pontonia pinnae Ortmann, 1894:16, pl. 1: fig. 3 [type locality: Dar es Salaam, Tanzania; in *Pinna*; not *Pontonia pinnae* Lockington, 1894:163].
Anchistus custos.—Holthuis, 1952b:105.

DIAGNOSIS.—Rostrum apically rounded, unarmed; carapace without antennal spine; 3rd maxilliped with antepenultimate segment about twice as wide as penultimate segment; 1st pereopod with chela unusually curled to form open tube; 3rd pereopod with dactyl simple, not biunguiculate; maximum postorbital carapace length about 9 mm.

RANGE.—Red Sea and eastern Africa to Philippines, southward to South Australia, and eastward to the Caroline and Fiji islands; living in bivalve mollusks of the genus *Pinna*.

60. *Anchistus demani* Kemp, 1922

Anchistus demani Kemp, 1922:256, figs. 86-88 [type locality: Aberdeen, Port Blair, Andaman Islands; from *Tridacna* at low tide].—Bruce, 1983c:892.

DIAGNOSIS.—Rostrum apically truncate, armed with 2 or 3 anterodorsal teeth, unarmed ventrally; carapace without antennal spine below ventral orbital angle; 3rd maxilliped with antepenultimate segment about twice as wide as penultimate segment; 1st pereopod with chela normal, palm non-cannulate; 3rd pereopod with dactyl obscurely biunguiculate; maximum postorbital carapace length about 3 mm.

RANGE.—Western Indian Ocean to Andaman Islands, Malaya, Indonesia, Great Barrier Reef of Australia, New Caledonia, and Marshall Islands; living in bivalve, *Tridacna*.

***61. *Anchistus miersi* (De Man, 1888)**

Harpilius Miersi De Man, 1888a:274, pl. 17: figs. 6-10 [type locality: Elphinstone Island, Mergui Archipelago, Burma].
Anchistus miersi.—Holthuis, 1952c:110, fig. 45.

DIAGNOSIS.—Rostrum usually apically acute, rostral formula 4-5/0-2; carapace with distinct antennal spine below ventral orbital angle; 3rd maxilliped with antepenultimate segment little wider than penultimate segment; 1st pereopod with chela normal, not cannulate; 3rd pereopod with dactyl biunguiculate; maximum postorbital carapace length at least 7 mm.

MATERIAL.—PHILIPPINES. Quinalasag Island, Masamat Bay, Luzon; [13°56'N, 123°38'E]; 3 m; sand, coral; 12 Jun 1909; dynamite: 1 male [3.2] 1 ovig female [5.5].

RANGE.—Red Sea and eastern Africa to the Philippines and eastward to the Gambier Islands, Tuamotu Archipelago; in bivalve mollusks of genera *Hippopus* and *Tridacna*, possibly also *Pinna* and *Meleagrina*.

***Chernocaris* Johnson, 1967**

Chernocaris Johnson, 1967:500 [type species, by monotypy: *Chernocaris placunae* Johnson, 1967:500; gender: feminine].

DIAGNOSIS.—Rostrum reaching about as far as ends of anteriorly extended eyes, depressed, especially posteriorly, unarmed, lateral carina slightly expanded posteriorly but not forming discrete supraocular or postocular eave; carapace markedly depressed dorsoventrally, dorsal profile nearly straight or slightly concave, not dentate or lobate, anterior margin produced as convex lobe, inflected portion with posteriorly incomplete longitudinal ridge, completely unarmed, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite broadly rounded; telson not curved ventrad, posterior margin not incised, median and submedian pairs of posterior spines not curved ventrad, dorsolateral spines short, not especially robust; epistome not bearing paired, horn-like processes; antennal scale reasonably well developed, distolateral spine overreaching distal margin of blade; mandible without palp; 3rd maxilliped with endopod operculate and with exopod; 4th thoracic sternite without slender median process; 1st pereopods with fingers slender, not spatulate, carpus entire, not subdivided; 2nd pereopods somewhat dissimilar and unequal, chelae not borne in vertical plane, movable finger not ventrad, fingers not provided with socket and plunger closure, movable finger normal, not semicircular, palm more than 1½ times as long as high; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl with large, compressed, biangular lobe proximal to sharp, recurved tooth on flexor margin, merus unarmed on flexor margin; uropod with lateral branch bearing single, minute, movable spine unaccompanied by fixed tooth; living in mantle cavity of bivalve mollusk, *Placuna*.

RANGE.—Singapore and Arafura Sea.

REMARKS.—Only one species is known.

62. *Chernocaris placunae* Johnson, 1967

Chernocaris placunae Johnson, 1967:500, figs. 1-12 [type locality: Telok Paku, Singapore, in *Placuna sella* at low spring tide level].

DIAGNOSIS.—Characters of genus; maximum postorbital carapace length 7.2 mm.

RANGE.—Singapore and Arafura Sea; living in mantle cavity of bivalve mollusk, *Placuna* occurring from low spring tide level to 27 meters.

REMARKS.—The Arafura Sea specimens confirm that the proximal lobe on the flexor margin of the dactyl of the third pereopod of the species is compressed and not "hoof-like" as in *Coralliocaris* or *Jocaste*, as reported in the original description, and indicates a close relationship to *Conchodytes*.

**Conchodytes* Peters, 1852

Conchodytes Peters, 1852:588,591 [type species, selected by Hilgendorf, 1879:835: *Conchodytes tridacnae* Peters, 1852:594; gender: masculine].

DIAGNOSIS.—Rostrum overreaching anteriorly extended eyes, depressed, especially posteriorly, unarmed, lateral carina slightly expanded posteriorly but not forming discrete supraocular or postocular eave; carapace depressed dorsoventrally, dorsal profile slightly convex, not dentate or lobate, anterior margin partially produced as prominent rounded lobe, deeply concave (notched) dorsally thereto, without longitudinal ridge or suture, completely unarmed except for acute ventral orbital angle, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite rounded; telson not curved ventrad, posterior margin not incised, median and submedian pairs of posterior spines not curved ventrad, dorsolateral spines distinct; epistome not bearing paired, horn-like processes; antennal scale well developed, distolateral spine far overreaching distal margin of blade; mandible without palp; 3rd maxilliped with exopod, endopod not operculate; 4th thoracic sternite without slender median process; 1st pereopod with fingers slender, not spatulate, carpus entire, not subdivided; 2nd pereopods with chela not borne in vertical plane, movable finger not ventrad, fingers not provided with socket and plunger closure, movable finger normal, not semicircular, palm more than 1½ times as long as high; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl with large, compressed lobe proximally on flexor margin, merus unarmed on flexor margin; uropod with lateral branch bearing single, minute, movable spine unaccompanied by fixed tooth; living in mantle cavity of bivalve mollusks.

RANGE.—Red Sea and Madagascar to Japan, Philippines, Indonesia, Australia, and eastward to Hawaii and Tuamotu Archipelago.

REMARKS.—A key to the species of *Conchodytes* may be found in Bruce (1989b).

63. *Conchodytes kemp* Bruce, 1989

Conchodytes biunguiculatus.—Kemp, 1922:280, fig. 103.—Holthuis, 1952c:199 [not *Pontonia biunguiculata* Paulson, 1875].

Conchodytes kemp Bruce, 1989b:183, fig. 3b–e [type locality: Andaman Islands].

DIAGNOSIS.—Telson with 2 pairs of dorsolateral and 3 pairs of posterior spines; 1st pereopod with carpus and merus subequal in length; 3rd pereopod with dactyl armed with 2 strong, divergent, spine-like teeth, basal process well developed with small marginal tooth; maximum postorbital carapace length 9.2 mm.

RANGE.—Western Indian Ocean, Taiwan, Philippines, Indonesia, and Marshall Islands; in bivalve mollusks.

REMARKS.—The occurrence of this species in the Philippines must be considered tentative for the time being, because of the small size, the somewhat different dactyls of the ambulatory pereopods, and the unusual host (*Isognomon*) of the pair of specimens recorded by Bruce (1989b) from Cebu, the type material having been found in association with *Pinna*.

*64. *Conchodytes maculatus* Bruce, 1989

FIGURE 18

Conchodytes maculatus Bruce, 1989a:182, figs. 1–6 [type locality: West of Cape Leveque, Western Australia; 40 m, in pearl oyster, *Pinctada maxima*].

DIAGNOSIS.—Telson with 2 pairs of dorsolateral and 3 pairs of posterior spines; 1st pereopod with carpus slightly longer than or subequal to merus; 3rd pereopod with dactyl armed with 2 strong, divergent, spine-like teeth, basal process poorly developed, usually sinuous in outline, without marginal tooth; maximum postorbital carapace length 10.3 mm.

MATERIAL.—PHILIPPINES. Pakiputan Strait, off Davao, Mindanao; [7°07'N, 125°40'E]; 18 May 1908; from pearl oysters: 25 males [6.3–9.8] 24 females [6.8–10.2], 23 ovig [6.8–10.2].—Jolo, Jolo Island, Sulu Archipelago; [6°00'N, 121°00'E]; 11 Feb 1908; from pearl oysters: 9 males [6.8–8.9] 6 ovig females [7.8–10.3].

RANGE.—Known only from the type locality on the Australian Northwest Shelf and the two Philippine localities cited above; to a depth of 40 meters, in pearl oysters.

REMARKS.—This series of 64 specimens was originally identified tentatively as *C. meleagrinae* in disagreement with the conclusion by Bruce (1977a:73) that that species can always be distinguished from the closely related *C. tridacnae* by the fact that the carpus of the first pereopod is always distinctly shorter than the merus in the former species. In the *Albatross* series, the carpus-merus ratio varies from 0.91 to 1.18, with an average of 1.02. Most of the specimens in that series agree well with the description of *C. maculatus* in having the movable fingers of the second pereopods strongly carinate on the extensor margin and the basal protuberance on the dactyls of the ambulatory pereopods smoothly sinuous, but a few specimens have the movable fingers of the second pereopods less strongly carinate and the flexor margins of the ambulatory dactyls partially obscurely truncate (Figure 18i) rather than smoothly sinuous over the entire proximal part of the segment.

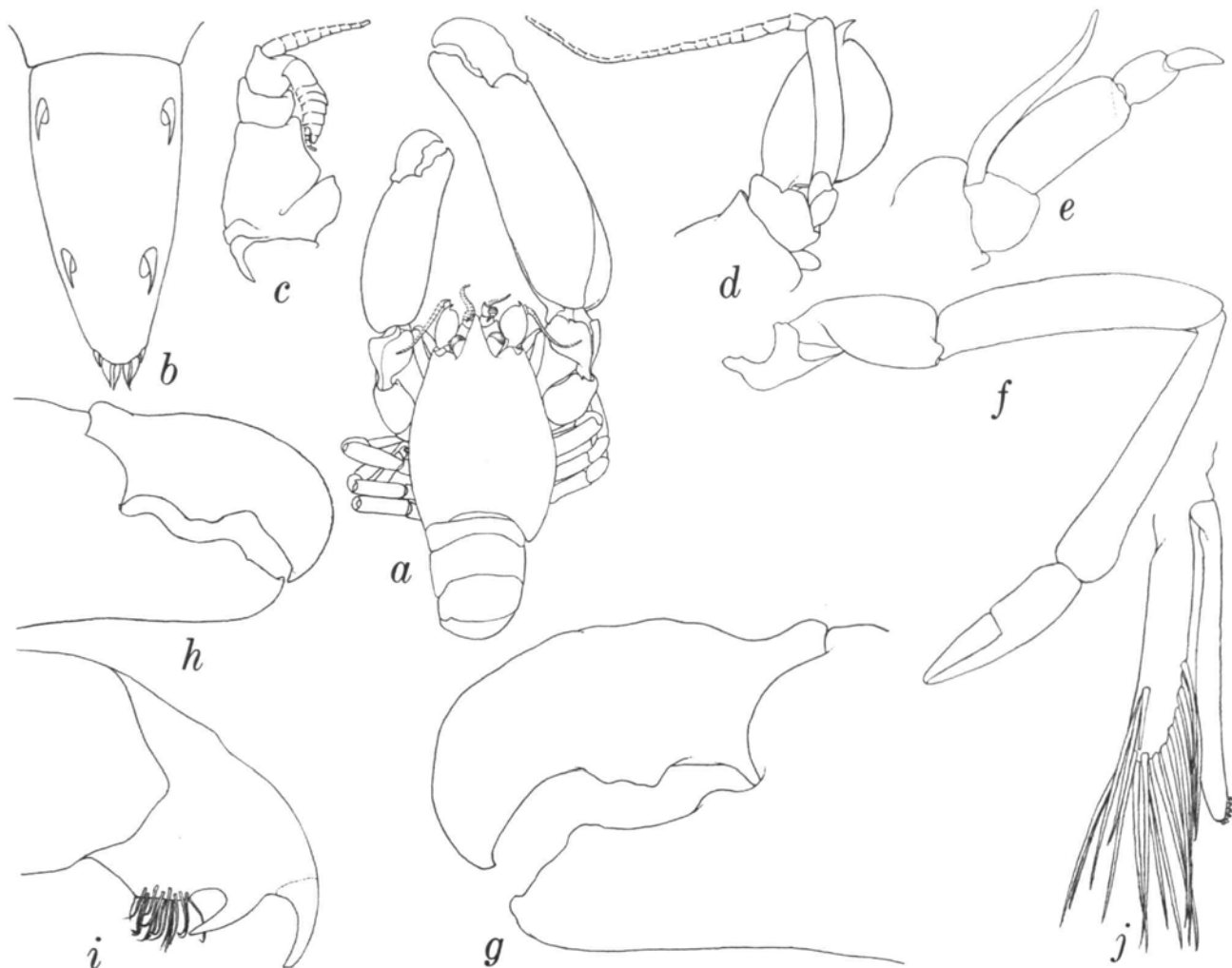


FIGURE 18.—*Conchodytes maculatus*, male from pearl oyster, Pakiputan Strait, Mindanao, carapace length 8.4 mm: a, dorsal aspect; b, telson, dorsal aspect; c, right antennule, dorsal aspect; d, right antenna, ventral aspect; e, right 3rd maxilliped; f, right 1st pereopod; g, right (major) chela, fingers, extensor-dorsolateral aspect; h, left (minor) chela, fingers, extensor-dorsolateral aspect; i, right 3rd pereopod, dactyl; j, right appendix masculina and appendix interna.

65. *Conchodytes meleagrinae* Peters, 1852

Conchodytes meleagrinae Peters, 1852:594 [type locality; Ibo, Cabo Delgado, eastern Africa].—Bruce, 1972e:225 [color photo]; 1973e:139; 1977a:73, fig. 14C,D.

DIAGNOSIS.—Telson with 2 pairs of dorsolateral and 3 pairs of posterior spines; 1st pereopod with carpus distinctly shorter than merus; 3rd pereopod with dactyl armed with 2 strong, divergent, spine-like teeth, basal process well developed but without marginal tooth; maximum postorbital carapace length at least 10 mm.

RANGE.—Red Sea and eastern Africa to Hawaii; usually in

pearl oysters of the genus *Pinctada*. Although there seem to be no Philippine or Indonesian records of this species by those who consider it distinct from *C. tridacnae*, it almost certainly occurs in both areas.

REMARKS.—In regard to the validity of the species, Bruce (1973e:139) noted that *C. meleagrinae* is "Closely similar to *C. tridacnae* but generally smaller and with the carpus of the first pereopod definitely much shorter than the merus and he added (1974d:201) that that proportion is "a character which appears to be quite reliable in separating *C. tridacnae* from the closely related *C. meleagrinae*," and (1977a:73) that "the relative lengths of these two segments appears to be the easiest way of distinguishing between these two species."

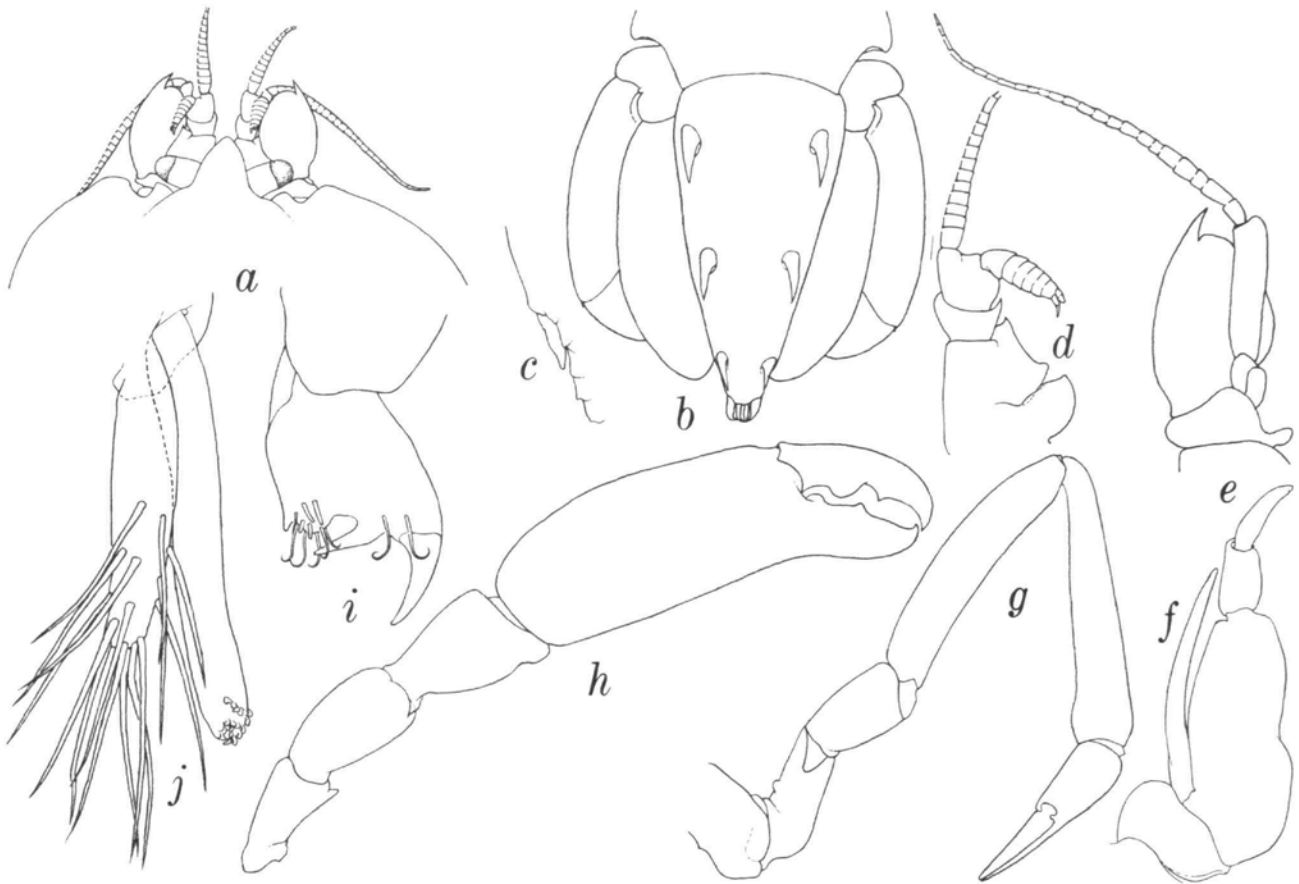


FIGURE 19.—*Conchodytes nipponensis*, male from Tilik, Lubang Island, carapace length 7.0 mm: *a*, anterior carapace and appendages, dorsal aspect; *b*, tail fan; *c*, distolateral angle of lateral branch of left uropod; *d*, right antennule, dorsal aspect; *e*, right antenna, ventral aspect; *f*, right 3rd maxilliped; *g*, right 1st pereopod; *h*, left 2nd pereopod, extensor aspect; *i*, right 3rd pereopod, dactyl; *j*, right appendix masculina and appendix interna.

66. *Conchodytes monodactylus* Holthuis, 1952

Conchodytes monodactylus Holthuis, 1952c:200, figs. 96–98 [type locality; the type series came from two localities: Kaohsiung, Taiwan, in *Pinna* sp., and Lesser Sunda Islands, Indonesia].

DIAGNOSIS.—Telson with 2 pairs of dorsolateral and 3 pairs of posterior spines; 1st pereopod with carpus and merus subequal in length; 3rd pereopod with dactyl bearing single distal spine and basal process well developed with minute marginal tooth; maximum postorbital carapace length about 13 mm.

RANGE.—Singapore, Hong Kong, Amakusa Island, Japan, Indonesia, and Australia; in pinnid bivalve mollusks.

*67. *Conchodytes nipponensis* (De Haan, 1844)

FIGURE 19

Hymenocera nipponensis De Haan, 1844: pl. 46: fig. 8 [corrected to *H. nipponensis* by plenary powers of the International Commission on

Zoological Nomenclature, 1956; type locality: Japan].

Pontonia nipponensis.—De Haan, 1849:180.

Conchodytes nipponensis.—Kemp, 1922:282, fig. 104.—Bruce, 1977e:97, fig. 1.

DIAGNOSIS.—Telson with 3 pairs of dorsolateral and 2 pairs of posterior spines; 1st pereopod with carpus averaging subequal to merus; 3rd pereopod with dactyl bearing 2 strong, divergent, spine-like teeth, basal process well developed with small marginal tooth; maximum postorbital carapace length perhaps as much as 15 mm.

MATERIAL.—PHILIPPINES. Tilik, Lubang Island; [13°49'N, 120°12'E]; 14 Jul 1908: 1 male [7.0] 1 ovig female [9.6].

RANGE.—Until reported by Bruce (1977e:97) from a single, possibly juvenile specimen from Keppel Bay, Queensland, Australia—on the mainland coast opposite Heron Island, from where Bruce (1981e) recorded no less than 100 other pontoniine species—*C. nipponensis* was known only from

Japan. It is here noted that it was collected in the Philippines more than 80 years ago. It has been taken in Japan from both pectinid and pinnid bivalve mollusks.

68. *Conchodytes tridacnae* Peters, 1852

Conchodytes tridacnae Peters, 1852:594 [type locality: Ibo, Cabo Delgado, eastern Africa].—Bruce, 1977a:71, fig. 14a,b; 1977f: 176, fig. 7.

DIAGNOSIS.—Telson with 2 pairs of dorsal and 3 pairs of posterior spines; 1st pereopod with carpus averaging longer than merus; 3rd pereopod with carpus averaging longer than merus; 3rd pereopod with dactyl bearing 2 strong, divergent, spine-like teeth, basal process well developed, without marginal tooth; maximum postorbital carapace length more than 10 mm.

RANGE.—Widespread throughout the Indo-Pacific region, from the Red Sea to Hawaii, in the mantle cavity of giant clams of the genus *Tridacna*; exact locality records incomplete because of past confusion between this species and *C. meleagrinae*.

REMARKS.—See "Remarks" under *C. meleagrinae*.

**Coralliocaris* Stimpson, 1860

OEdipus Dana, 1852a:17 [type species, selected by Kingsley, 1880:423; *OEdipus superbus* Dana, 1852a:25; gender: masculine. Invalid junior homonym of *OEdipus* Berthold, 1827 (Orthoptera), *OEdipus* Tschudi, 1838 (Amphibia), and *OEdipus* Lesson, 1840 (Mammalia)].

Coralliocaris Stimpson, 1860:38 [replacement name for *OEdipus* Dana, 1852; gender: feminine].

DIAGNOSIS.—Rostrum overreaching anteriorly extended eyes, compressed laterally anteriorly, lateral carina expanded posterolaterally into partial, unarmed postocular eave; carapace depressed, dorsal longitudinal profile slightly convex, not dentate or lobate, anterior margin not partially produced as prominent rounded lobe, not partially deeply concave (notched), without longitudinal ridge or longitudinal branchios-tegal suture parallel with ventral margin, with antennal spine, without hepatic or any other spines, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite

rounded, not sharp-pointed; telson not curved ventrad, posterior margin not deeply incised, median and submedian pairs of posterior spines not curved ventrad, dorsolateral spines slender, not robust; epistome not bearing paired, horn-like processes; antennal scale well developed, distolateral spine not reaching as far as level of distal margin of blade; mandible without palp; 3rd maxilliped with exopod; 4th thoracic sternite without slender median process; 1st pereopod with fingers not subspatulate, carpus entire, not subdivided; 2nd pereopods similar, usually subequal, chela much longer than carpus, not borne in vertical plane, movable finger not ventrad; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl with massive, hoof-shaped or triangular protuberance on flexor margin, merus unarmed on flexor margin; uropod with lateral branch bearing single movable spine mesial to strong lateral tooth; associated with scleractinian corals.

RANGE.—Red Sea and Indian Ocean to Indonesia and eastward to the Line Islands.

REMARKS.—The identity of some of the species currently assigned to *Coralliocaris* is uncertain. There would seem to be little doubt that *C. taiwanensis* Fujino and Miyake, 1972, is a junior synonym (by one month) of *C. pavonae* Bruce, 1972. Bruce (1977g:205) suggested the possibility that *C. graminea* may be a junior synonym of *C. macropthalma*, but those two species are treated as distinct in the key offered below. Bruce (1974a:222) proposed the name *C. viridis* for a species previously confused with but differing in color pattern, as well as in minor morphological rostral characters, from *C. graminea*. Later (1983d:201), however, he recognized only as "forms" two distinct color varieties of *C. venusta*, perhaps because not even suggestions of accompanying morphological differences could be found to help determine which form was typical of the species. The two forms of *C. venusta* behave like sibling species and will probably prove to be "good species" even though, once preserved, they cannot yet be separated.

Four of the eight species recognized herein have been recorded previously from Indonesia, and two of the four are represented by Philippine material in the *Albatross* collections.

Key to Species of *Coralliocaris*

1. Rostrum unarmed, not overreaching anteriorly extended eyes 2
 Rostrum usually armed with at least 1 dorsal tooth, normally overreaching anteriorly
 extended eyes 3
2. Second pereopod with extensor margin of movable finger regularly convex
 *C. brevisrostris* Borradaile, 1898:386
 (Willis Islets (Coral Sea) and Marshall
 and Ellice islands; associated with
 scleractinian corals of genus *Acropora*)
- Second pereopod with extensor margin of movable finger smoothly sinuous
 *C. nudirostris* (Heller, 1861:27)
 (Red Sea, Indian Ocean, Japan, Kiribati
 (Gilbert Islands), and Marshall and Society
 islands; associated with scleractinian
 corals of genus *Acropora*)

- 3. Rostrum armed dorsally with 1 or 2 teeth 4
 Rostrum armed dorsally with 3-6 teeth 5
- 4. Second pereopod with extensor margin of movable finger regularly convex, opposable margin with socket, fixed finger with plunger on opposable margin *C. macrophthalma* (H. Milne Edwards, 1837:359)
 (Red Sea and western Indian Ocean, possibly Great Barrier Reef of Australia)
 Second pereopod with extensor margin of movable finger smoothly sinuous, opposable margin without socket, fixed finger without plunger on opposable margin 71. *C. venusta*
- 5. Second pereopod with extensor margin of movable finger evenly convex and fixed finger with plunger on opposable margin 6
 Second pereopod with extensor margin of movable finger abruptly elevated in proximal 1/2 and fixed finger without plunger on opposable margin 7
- 6. Rostrum with dorsal and ventral carinae deep and armed with outstanding teeth, especially in adults; color pattern composed of black, white, and red chromatophores in alternating fine longitudinal stripes *69. *C. graminea*
 Rostrum with dorsal and ventral carinae shallow and armed with low teeth; color pattern composed of uniformly scattered mixture of black and yellowish white chromatophores 72. *C. viridis*
- 7. Antennal scale more than 3 times as long as wide; 3rd maxilliped with penultimate segment more than twice as long as wide; 2nd pereopod with socket on both movable and fixed fingers *C. pavonae* Bruce, 1972b:77, figs. 8-11
 (Taiwan and Fiji Islands; associated with scleractinian corals of genus *Pavona*)
 Antennal scale less than 3 times as long as wide; 3rd maxilliped with penultimate segment less than twice as long as wide; 2nd pereopod without socket in either finger *70. *C. superba*

***69. *Coralliocaris graminea* (Dana, 1852)**

OEdipus gramineus Dana, 1852a:25 [type locality: Fiji Islands]; 1855:12, pl. 37: fig. 3 [color].

Coralliocaris graminea.—Bruce, 1974a:222, fig. 1C,D; 1977h:72 [color illustration]; 1984b:163.

DIAGNOSIS.—Rostrum overreaching anteriorly extended eyes, rostral formula 3-6/0-2, dorsal and ventral carinae deep and armed with outstanding teeth, in adults; antennal scale about 2³/₄ times as long as wide; 3rd maxilliped with penultimate segment less than twice as long as wide; 2nd pereopod with movable finger regularly convex on extensor margin, opposable margin with socket into which fits plunger on fixed finger; color bright green, pattern composed of black, white, and red chromatophores confined to alternating fine, longitudinal lines; maximum postorbital carapace length about 7 mm.

MATERIAL.—PHILIPPINES. Marungas Island (south side), Sulu Archipelago; [6°06'N, 120°58'E]; 1¹/₄-2¹/₂ m; scattered coral and sand; 10 Feb 1908 (1330-1500); diving, coral heads taken ashore: 1 male [3.6] 3 females [2.9-3.0], 2 ovig [2.9, 3.0].

RANGE.—Exact locality records uncertain because of past confusion of *C. viridis* with this species, but Bruce (1984b:163) indicated that both species occur from the Red Sea to Indonesia and eastward to one or more of the island groups east of the

Samoa Islands; associated with scleractinian corals of the genus *Acropora*.

***70. *Coralliocaris superba* (Dana, 1852)**

OEdipus superbus Dana, 1852a:25 [type locality: Tongatapu Island, Tonga Islands]; 1855:12, pl. 37: fig. 2 [color].

Coralliocaris superba.—Kemp, 1922:272, figs. 98, 99.—Holthuis, 1952c:189, fig. 92.

DIAGNOSIS.—Rostrum overreaching anteriorly extended eyes, rostral formula 4-5/2, dorsal and ventral carinae deep; antennal scale about 2³/₄ times as long as wide; 3rd maxilliped with penultimate segment less than twice as long as wide; 2nd pereopod with movable finger abruptly wider on extensor margin in proximal than distal 1/2, without socket or plunger on opposable margin of either finger; color, carapace and anterior abdomen white, posterior abdomen and appendages translucent yellow with brown dots, posterior margin of tail fan purple; maximum postorbital carapace length less than 7 mm.

MATERIAL.—PHILIPPINES. Marungas Island (south side), Sulu Archipelago; [6°06'N, 120°58'E]; 1¹/₄-2¹/₂ m; scattered coral and sand; 10 Feb 1908 (1330-1500); diving, coral heads taken ashore: 2 females [2.8, 5.0], 1 ovig [5.0].

RANGE.—Red Sea to Indonesia and eastward to the Society Islands; associated with scleractinian corals of the genus *Acropora*.

71. *Coralliocaris venusta* Kemp, 1922

Coralliocaris venusta Kemp, 1922:274, figs. 100, 101 [type locality: "N.E. Tholayiram Paar," Gulf of Mannar, India; on madrepora coral].—Holthuis, 1952c:191, fig. 93.—Bruce, 1976d:32, fig. 12; 1977h:73 [color illustration]; 1978a:282, fig. 42; 1979f:240; 1983d:201.

DIAGNOSIS.—Rostrum overreaching anteriorly extended eyes, rostral formula 0-4/0-2, dorsal and ventral carinae not very deep; antennal scale about $2\frac{3}{4}$ times as long as wide; 3rd maxilliped with penultimate segment less than twice as long as wide; 2nd pereopod with movable finger smoothly sinuous on extensor margin, fingers dentate on opposable margins, without socket or plunger; color translucent with linear speckling of dark red or black, two color forms, with and without conspicuous white patches; maximum postorbital carapace length about 3 mm.

RANGE.—Red Sea to Indonesia, Great Barrier Reef, and Samoa Islands; associated with scleractinian corals of the genus *Acropora*.

REMARKS.—This taxon is represented by two color forms which appear to represent good species. At present neither can be specifically associated with the type material described by Kemp (1922).

72. *Coralliocaris viridis* Bruce, 1974

Coralliocaris viridis Bruce, 1974a:222, fig. 1A,B [type locality: seaward reefs of Mombasa Island, Kenya]; 1984b:163.

DIAGNOSIS.—Rostrum overreaching anteriorly extended eyes, rostral formula 3-5/1, dorsal and ventral carinae shallow and armed with rather inconspicuous teeth; antennal scale about $2\frac{3}{4}$ times as long as wide; 3rd maxilliped with penultimate segment less than twice as long as wide; 2nd pereopod with movable finger angularly convex on extensor margin, opposable margin with socket into which fits plunger on fixed finger; color bright green, pattern composed of uniformly scattered mixture of black and yellowish white chromatophores; maximum postorbital carapace length about 5 mm.

Key to Species of *Dasella*

1. Dactyl of ambulatory pereopod with basal process bearing small acute tooth *D. ansoni* Bruce, 1983a:22, figs. 1-5
(Arafura Sea; 27 m)
- Dactyl of ambulatory pereopod with basal process lacking acute tooth 2
2. Ambulatory propodus with small club-shaped distal and flexor spines *73. *D. herdmaniae*
- Ambulatory propodus with distal and flexor spines acute, not club-shaped *D. brucei* Berggren, 1990:558
(Great Barrier Reef of Australia)

***73. *Dasella herdmaniae* (Lebour, 1939)**

Dasia herdmaniae Lebour, 1939:650, pl. 1 [type locality: Tuticorin, Gulf of Mannar, Madras, India, associated with ascidian *Herdmania pallida* (= *H. momus*)].

DIAGNOSIS.—First pereopod with opposable margins of fingers entire, not minutely pectinate; 3rd pereopod with

RANGE.—Eastern Africa to Indonesia and southern Great Barrier Reef, Australia; associated with scleractinian corals of the genus *Acropora*.

****Dasella* Lebour, 1945**

Dasia Lebour, 1939:650 [type species, by monotypy: *Dasia herdmaniae* Lebour, 1939:650; gender: feminine. Invalid junior homonym of *Dasia* Gray, 1839 (Reptilia) and *Dasia* Van der Goot, 1918 (Hemiptera)].
Dasella Lebour, 1945:297 [replacement name for *Dasia* Lebour, 1939].

DIAGNOSIS.—Rostrum distinctly overreaching anteriorly extended eyes, compressed laterally, unarmed dorsally, lateral carina indistinct, not expanded into broad supraocular or postocular cave; carapace about as wide as high, dorsal profile slightly convex, not dentate or lobate, without longitudinal ridge or suture, with antennal and movable hepatic spines, otherwise unarmed, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite rounded; telson not curved ventrad, posterior margin not incised, median and submedian pairs of posterior spines not curved ventrad, dorsolateral spines strong; epistome not bearing paired, horn-like processes; antennal scale well developed, distolateral spine not overreaching distal margin of blade; mandible without palp; 3rd maxilliped bearing exopod; 4th thoracic sternite without slender median process; 1st pereopod with fingers subspatulate, carpus entire, not subdivided; 2nd pereopods similar but unequal, chela much longer than carpus, not borne in vertical plane, movable finger not ventrad, fingers not provided with socket or plunger, movable finger normal, not semicircular, palm about $2\frac{3}{4}$ times as long as high; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl with large, compressed lobe on flexor margin, merus unarmed on flexor margin; uropod with lateral branch bearing minute single lateral tooth with movable spine mesial thereto; associated with ascidians.

RANGE.—Mozambique, southern India, Sulu Archipelago, Arafura Sea, and Great Barrier Reef of Australia.

REMARKS.—Only the three species noted in the following key are known.

lobe on flexor margin of dactyl bluntly rounded, without terminal tooth; maximum postorbital carapace length little more than 3 mm.

MATERIAL.—PHILIPPINES. Near Siasi, Sulu Archipelago; sta 5147; 5°41'40"N, 120°47'10"E; 38 m; coral sand, shells; 16 Feb 1908 (11:27-11:47); 12' Agassiz beam trawl, mud bag; 1

ovig female [3.0].

RANGE.—Moçambique, southern India, and Philippines; associated with ascidians.

REMARKS.—The single Philippine specimen agrees with the type series, as described by Berggren (1990), in lacking any suggestion of a ventral denticle on the rostrum, having the anterolateral margin of the carapace only slightly concave, having a minute hepatic spine, lacking an acute tooth on the flexor process of the dactyl of the third pereopod, and displaying two club-shaped spines on the propodus of that pereopod. Those spines are “a little more elongated than those found on specimens from Moçambique,” as noted by Berggren (1990:558) about the syntypes of *D. herdmaniae*. It may be significant that Van Name (1928:79) recorded three specimens of the ascidian *Pyura pallida* (= *Herdmania momus*, the host of the type series of the species) from *Albatross* station 5147.

***Dasycaris* Kemp, 1922**

Dasycaris Kemp, 1922:240 [type species, by monotypy: *Dasycaris symbiotes* Kemp, 1922:240; gender: feminine].—Bruce, 1973a:257.
Dasygius Balss, 1924:48 [erroneous name for *Dasycaris*].

DIAGNOSIS.—Rostrum overreaching anteriorly extended eyes, subcylindrically tapering, unarmed ventrally, without lateral carina or supraocular or postocular eave; carapace rather subcylindrical, dorsal profile dentate or lobate, without

longitudinal ridge or suture, not produced anteroventrally, armed laterally only with antennal and immovable hepatic spine, orbital margin not interrupted posteriorly; telson not curving ventrad, posterior margin not incised, median and submedian pairs of posterior spines not curving ventrad, dorsolateral spines not robust; epistome not bearing horn-like processes; antennal scale well developed; mandible without palp; 3rd maxilliped with exopod; 4th thoracic sternite without slender median process; 1st pereopod with fingers not subspatulate, carpus entire, not subdivided; 2nd pereopods similar but unequal, chela much longer than carpus, not borne in vertical plane, movable finger not ventrad, fingers not provided with socket or plunger, movable finger normal, not semicircular, palm more than 3 times as long as high; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl simple, not biunguiculate, merus unarmed on flexor margin; uropod with lateral branch bearing movable spine, with or without fixed tooth lateral thereto; associated with alcyonarians and antipatharians.

RANGE.—Zanzibar, India, Mergui Archipelago, Japan, Indonesia, Great Barrier Reef of Australia, and New Caledonia.

REMARKS.—The brief and somewhat inadequate description of *D. doederleini* by Balss (1924:49) complicates the task of constructing a key to the four known species of *Dasycaris*, only one of which has thus far been recorded from the Philippine-Indonesian region. The following key is modified from the one offered by Bruce (1973a:258).

Key to Species of *Dasycaris*

1. Rostrum, proper, completely unarmed; carapace with dorsal profile variably sinuous, prominences usually rounded, sometimes denticulate; adult female usually with broadly rounded pleura on all abdominal somites, those of 4th and 5th somites sometimes with small, acute tooth at posteroventral angle
 *D. zanzibarica* Bruce, 1973a:247, figs. 1–6
 (Zanzibar (4–22 m, associated with antipatharian),
 Great Barrier Reef of Australia, and New Caledonia)
- Rostrum, proper, armed with 1 or more dorsal teeth; carapace with dentate dorsal profile, teeth broadly acute; adult female with pleura of at least 3rd to 5th abdominal somites produced into prominent, acute projections 2
2. Rostrum with 1 or 2 dorsal teeth in anterior 1/2 of length; adult female with pleura acutely produced on all abdominal somites
 *D. doederleini* (Balss, 1924:49, fig. 2)
 (Sagami Nada; 130 meters)
- Rostrum unarmed in anterior 1/2 of length; adult female with pleuron of 1st and usually 2nd abdominal somites broadly rounded 3
3. Second, 3rd, and 4th of 5 teeth in dorsal midline of rostrum and carapace broadly compressed and forming basal rostral crest; eye with cornea bearing conical projection; uropod with lateral branch bearing only lateral movable spine, without fixed tooth lateral thereto 74. *D. ceratops*
- None of 6 teeth in dorsal midline of rostrum and carapace broadly compressed, no real basal rostral crest on carapace; eye with cornea hemispherical, without conical projection; uropod with lateral branch bearing strong fixed tooth lateral to movable spine *D. symbiotes* Kemp, 1922:240, text-figs. 76, 77, pl. 9
 (Madras coast of India, Mergui Archipelago, and New Caledonia; associated with sea pen *Pteroeides*)

74. *Dasycaris ceratops* Holthuis, 1952

Dasycaris ceratops Holthuis, 1952c:176, figs. 87, 88 [type locality: Bomeo Bank, Makassar Strait, Indonesia; 2°25'S, 117°43'E; 50–40 m; fine coral sand].

DIAGNOSIS.—Rostrum unarmed over anterior $\frac{2}{3}$ of length; 5 teeth in dorsal mid-line of rostrum and carapace, 2nd, 3rd, and 4th teeth broadly compressed, acute, forming basal rostral crest; adult female with pleura of 3rd to 5th abdominal somites produced into prominent acute projections; eye with cornea bearing conical prominence; uropod with lateral branch bearing only lateral movable spine unaccompanied by fixed lateral tooth; postorbital carapace length 3 mm.

RANGE.—Zanzibar Harbour (on *Pteroeides*, *Scleroblemonn*, and *Virgularia*) and Makassar Strait, Indonesia; about 50 m.

Hamodactylus Holthuis, 1952

Hamodactylus Holthuis, 1952c:6, 18, 208 [type species, by original designation: *Hamodactylus boschmai* Holthuis, 1952c:209; gender: masculine].

DIAGNOSIS.—Rostrum reaching nearly to or beyond end of anteriorly extended eyes, compressed laterally, armed dorsally with 4–6 distinct teeth, ventrally with none, lateral carina not strong, forming indistinct, unarmed, and shallow eave postocularly; carapace about as wide as high, dorsal profile very slightly convex or sinuous, without longitudinal ridge or suture, armed with antennal, immovable hepatic, and sometimes supraorbital spines, orbital margin not interrupted

posteriorly; telson not curving ventrad, posterior margin not incised, posterior spines not curved ventrad, dorsolateral spines very small; antennal scale well developed, distolateral spine not nearly reaching level of distal margin of blade; mandible without palp; 3rd maxilliped without exopod; 4th thoracic sternite without slender median process; 1st pereopod with carpus entire, not subdivided; 2nd pereopods similar, sometimes unequal, fingers not provided with socket or plunger, movable finger not semicircular; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl simple, not biunguiculate, merus unarmed on flexor margin; uropod with lateral branch bearing movable spine, without fixed tooth lateral thereto; associated with alcyonarians.

RANGE.—Red Sea, Kenya, Tanzania, Madagascar, Hong Kong, Singapore, Indonesia, Australia, and New Caledonia; 4–27 m.

REMARKS.—Two of the three species currently recognized in the genus *Hamodactylus* have been found in Indonesia. The following key is offered as an emendation of the one published by Bruce (1970a:544), which included *H. incompletus* before that species was transferred to *Hamodactyloides* and, naturally, did not include the subsequently described *Hamodactylus aqabai*. Most of the characters used in this key are ones that have been accorded generic importance under other circumstances. That observation serves both as a suggestion that *Hamodactyloides* may have been ill-conceived or as counter-evidence against the charge that students of the pontoniines habitually are incorrigible "splitters."

Key to Species of *Hamodactylus*

1. Carapace bearing supraorbital spine; antennular peduncle with single distolateral tooth on basal segment 75. *H. boschmai*
Carapace without supraorbital spine; antennular peduncle with more than 1 distolateral spine on basal segment 2
2. First pereopod with fingers little more than $\frac{1}{4}$ as long as palm, each with distinct tooth on distal $\frac{1}{2}$ of opposable margin; 2nd pereopod appearing nonchelate because of nearly complete reduction of fixed finger
. *H. aqabai* Bruce and Svoboda, 1983:26, figs. 10–14
(Gulf of Aqaba, Red Sea, and Queensland, Australia; associated with alcyonarians)
- First pereopod with fingers more than $\frac{1}{2}$ as long as palm, without tooth on opposable margins; 2nd pereopod with normal chela, fingers subequal in length
. 76. *H. noumeae*

75. *Hamodactylus boschmai* Holthuis, 1952

Hamodactylus boschmai Holthuis, 1952c:18, 209, figs. 102–104 [type locality: Ternate, off Halmahera (2–4 m) and Djedan, Kepulauan Aru (13 m), Indonesia].—Bruce, 1982e:272, figs. 25, 26.

DIAGNOSIS.—Carapace with supraorbital spine; antennular peduncle with single distolateral spine on basal segment; 1st pereopod with fingers distinctly more than $\frac{1}{2}$ as long as palm,

without subdistal tooth on opposable margin of each; 2nd pereopod with fixed finger about $\frac{1}{2}$ as long as movable one.

RANGE.—Kenya, Zanzibar, Madagascar, Indonesia, and New Caledonia; associated with gorgonians.

76. *Hamodactylus noumeae* Bruce, 1970

Hamodactylus boschmai nov. var.? Holthuis, 1952c:212, fig. 105.

Hamodactylus noumeae Bruce, 1970a:539, fig. 2 [type locality; between Ile aux Canards and Ilot Maître, near Nouméa, New Caledonia; 25 m, associated with gorgonian *Mopsella*].

DIAGNOSIS.—Carapace without supraorbital spine; antennular peduncle with 2 or 3 distolateral spines on basal segment; 1st pereopod with fingers more than 1/2 as long as palm, without teeth on opposable margins; 2nd pereopod with normal chela, fingers subequal in length.

RANGE.—Kenya, Tanzania, Indonesia, Australia, and New Caledonia; 4–27 m, associated with gorgonians.

***Hamopontonia* Bruce, 1970**

Hamopontonia Bruce, 1970b:37 [type species, by original designation: *Hamopontonia corallicola* Bruce, 1970b:41; gender: feminine].

DIAGNOSIS.—Rostrum slightly overreaching anteriorly extended eyes, compressed laterally, armed dorsally with 5–7 distinct teeth, ventrally unarmed, lateral carina not expanded into broad supraocular or postocular eave; carapace subcylindrical, dorsal profile faintly convex, without longitudinal ridge or suture, armed with antennal spine only, without supraorbital

or hepatic spines, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite rather broadly rounded; telson curving ventrad posteriorly, posterior margin deeply incised, without posterior spines, dorsolateral spines not robust; epistome unarmed; antennal scale well developed, distolateral spine not nearly overreaching distal margin of blade; mandible without palp; 3rd maxilliped with exopod; 4th thoracic sternite without slender median process; 1st pereopod with fingers feebly subspatulate, carpus entire, not subdivided; 2nd pereopods similar but unequal, chela much longer than carpus, fingers not provided with socket and plunger closure, movable finger normal, not semicircular, palm nearly 3 times as long as high; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl simple, not biunguiculate, merus unarmed on flexor margin; uropod with lateral branch bearing single, movable, lateral spine.

RANGE.—Hong Kong, Japan, Indonesia, and Northern Territory and Great Barrier Reef, Australia; associated with poritid coral of genus *Goniopora*.

REMARKS.—Known from only two closely related species.

Key to Species of *Hamopontonia*

- Posterior notch of telson uniformly concave 77. *H. corallicola*
- Posterior notch of telson with small blunt median process
- *H. essingtoni* Bruce, 1986d:158, figs. 1c, 11–14, 15d–g
(Port Essington, Australia)

77. *Hamopontonia corallicola* Bruce, 1970

Hamopontonia corallicola Bruce, 1970b:41, figs. 1–4 [type locality: "Kat O Chau, Mirs Bay," New Territories, Hong Kong; 22°32.1'N, 114°17.95'E; about 1 m, on massive coral *Goniopora*]; 1983c:896, fig. 10G.

DIAGNOSIS.—Deeply incised posterior notch of telson without small median process; maximum postorbital carapace length 7.0 mm.

RANGE.—Hong Kong, Japan, Indonesia, and Great Barrier Reef of Australia; associated with poritid coral of genus *Goniopora*.

****Harpiliopsis* Borradaile, 1917**

Harpiliopsis Borradaile, 1917:324, 329–334, 336–338, 341–343, 347–351, 379, 395 [type species, by original designation: *Palaemon Beaupresii* Audouin, 1826:91; gender: feminine].—Holthuis, 1952c:90, 180.

DIAGNOSIS.—Rostrum far overreaching anteriorly extended eyes, compressed laterally, armed dorsally with 4–7 distinct teeth, ventrally with 2–5, lateral carina not expanded into broad supraocular or postocular eave; carapace somewhat depressed dorsoventrally, dorsal profile faintly convex, without longitudinal ridge or suture, armed with antennal and immovable hepatic

spines only, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite sharp-pointed; telson not curving ventrad, posterior margin not incised, median and submedian pairs of posterior spines not curved ventrad, dorsolateral spines not robust; epistome not bearing paired, horn-like processes; antennal scale well developed, distolateral spine not overreaching distal margin of blade; mandible without palp; 3rd maxilliped with exopod; 4th thoracic sternite without slender median process; 1st pereopod with fingers not subspatulate, carpus entire, not subdivided; 2nd pereopods similar and subequal, chela much longer than carpus, fingers not provided with socket and plunger closure, movable finger normal, not semicircular, palm 3 to 4³/₄ times as long as high; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl simple, with unique lateral twist, not biunguiculate, merus unarmed on flexor margin; uropod with lateral branch bearing single fixed lateral tooth and movable spine mesial thereto; associated with stony corals.

RANGE.—Red Sea to Pacific coast of America.

REMARKS.—All three of the species of *Harpiliopsis* recognized in the following key have been recorded previously from Indonesia and all three were collected in the Sulu Archipelago by the *Albatross* Expedition.

Key to Species of *Harpiliopsis*

(Adapted from Kemp, 1922:228)

1. Carapace with antennal spine arising considerably ventral to orbital angle, on same level as hepatic spine; 3rd maxilliped with antepenultimate segment about 3 times as long as wide; 2nd pereopod with movable finger armed with 1 tooth on opposable margin and fixed finger with 2, ischium with 1 distal spine on extensor margin and 2 on flexor margin *78. *H. beaupresii*
Carapace with antennal spine arising only slightly below orbital angle, on level considerably dorsad to that of hepatic spine; 3rd maxilliped with antepenultimate segment about 6 times as long as wide; 2nd pereopod with movable finger armed with 2 teeth on opposable margin and fixed finger with 3 teeth, ischium without distal spine on extensor margin, 1 on flexor margin 2
2. Telson with posterior pair of dorsolateral spines arising much nearer to anterior pair than to posterior end; 2nd pereopod with palm and merus each about 3 times as long as wide *79. *H. depressa*
Telson with posterior pair of dorsolateral spines arising about midway between anterior pair and posterior end; 2nd pereopod with palm and merus each about 5 times as long as wide *80. *H. spinigera*

78. *Harpiliopsis beaupresii* (Audouin, 1826)Palaemon Beaupresii* Audouin, 1826:91 [type locality: Egypt].*Pontonia (Harpilius) dentata* Richters, 1880:165, pl. 17: figs. 36–38 [type locality: Ile aux Fouquets, Mauritius].*Harpilius beaupresii*.—Kemp, 1922:229, figs. 67, 68.*Harpiliopsis beaupresii*.—Holthuis, 1952c:181, fig. 89.—Bruce, 1977i:8.*Harpiliopsis beaupresii*.—Bruce, 1976c:124, figs. 21, 22.

DIAGNOSIS.—Carapace with antennal spine arising considerably ventrad of orbital angle, on same level as hepatic spine; telson with posterior pair of dorsolateral spines arising about midway between anterior pair and posterior end; 3rd maxilliped with antepenultimate segment about 3 times as long as wide; 2nd pereopod with movable finger armed with 1 tooth on opposable margin and fixed finger with 2, palm about 9 times as long as wide, merus about 3½ times as long as wide, ischium with 1 distal spine on extensor margin, 2 on flexor margin.

MATERIAL.—PHILIPPINES. Marungas Island (south side), Sulu Archipelago; [6°06'N, 120°58'E]; 1¼ to 2½ m; scattered coral and sand; 10 Feb 1908 (1330–1500); diving, coralheads taken ashore: 1 male [2.8] 1 female [3.1] (both with paired abdominal bopyrid parasites).

RANGE.—Red Sea to Philippines and Indonesia and eastward to Hawaii and Easter Island; associated with numerous scleractinian corals, mainly of the family Pocilloporidae.

***79. *Harpiliopsis depressa* (Stimpson, 1860)**? *Anchistia gracilis* Dana, 1852a:25 [see *Periclimenes gracilis*].*Harpilius depressus* Stimpson, 1860:38 [type locality: Hawaii, among madreporarians].—Kemp, 1922:231, figs. 69, 70.*Periclimenes pusillus* Rathbun, 1906:921, fig. 71, pl. 24: fig. 7 [type locality: Off Honolulu, Hawaii (Diamond Head Light, S62°, E 3.9°; surface over 24 m depth)].*Harpiliopsis depressus*.—Holthuis, 1951a:70, pls. 21, 22: figs. a–f; 1952c:182, fig. 90.—Bruce, 1976c:127; 1977h:72 [color illustration]; 1977i:91.*Harpiliopsis depressa*.—Wicksten, 1983:15.

DIAGNOSIS.—Carapace with antennal spine arising just below orbital angle, on level considerably dorsad to that of hepatic spine; telson with posterior pair of dorsolateral spines arising much nearer to anterior pair than to posterior end; 3rd maxilliped with antepenultimate segment about 6 times as long as wide; 2nd pereopod with movable finger armed with 2 teeth on opposable margin and fixed finger with 3 teeth, palm and merus each about 3 times as long as wide, ischium without distal spine on extensor margin, 1 on flexor margin.

MATERIAL.—PHILIPPINES. Marungas Island (south side), Sulu Archipelago; [6°06'N, 120°58'E]; 1¼ to 2½ m; scattered coral and sand; 10 Feb 1908 (1330–1500); diving, coral heads taken ashore: 2 males [2.6–3.8].—Jolo, Jolo Island; [6°00'N, 121°00'E]; 6 Mar 1908; shore: 1 ovig female [4.2].

RANGE.—Red Sea to Philippines and Indonesia and eastward to Pacific coast of America from Gulf of California to Colombia; associated with scleractinian corals, mainly of the family Pocilloporidae.

REMARKS.—See "Remarks" under *Periclimenes gracilis*.***80. *Harpiliopsis spinigera* (Ortmann, 1890)***Anchistia spinigera* Ortmann, 1890:511, pl. 36: fig. 23 [type locality: Samoa].
Harpilius depressus var. *gracilis* Kemp, 1922:234, fig. 71 [type locality: Andaman Islands].*Harpiliopsis depressus* var. *spinigerus*.—Holthuis, 1952c:184.*Harpiliopsis spinigerus*.—Bruce, 1976c:127; 1977i:9.*Harpiliopsis spinigera*.—Bruce, 1977h:72 [color illustration].

DIAGNOSIS.—Carapace with antennal spine arising just below orbital angle, on level considerably dorsad to that of hepatic spine; telson with posterior pair of dorsolateral spines arising about midway between anterior pair and posterior end, 3rd maxilliped with antepenultimate segment about 6 times as

long as wide; 2nd pereopod with movable finger armed with 2 teeth on opposable margin and fixed finger with 3 teeth, palm and merus each about 5 times as long as wide, ischium without distal spine on extensor margin, 1 on flexor margin.

MATERIAL.—PHILIPPINES. Marungas Island (south side), Sulu Archipelago; [6°06'N, 120°58'E]; 1¹/₄ to 2¹/₂ m; scattered coral and sand; 10 Feb 1908 (1330–1500); diving, coral heads taken ashore: 1 male [3.4] 3 females [2.7–3.2], 1 ovig [3.2].

RANGE.—Possibly as widespread through the Indo-Pacific region as *H. depressa*, with which species it has often been confused; associated with several scleractinian corals, mainly of the family Pocilloporidae.

Ischnopontonia Bruce, 1966

Ischnopontonia Bruce, 1966a:584 [type species, by original designation: *Philarius lophos* Barnard, 1962; gender: feminine].

DIAGNOSIS.—Rostrum reaching about as far as distal end of anteriorly extended eyes, compressed laterally, armed dorsally with about 1/2 of series of 7–14 teeth extending posteriorly nearly to mid-length of carapace, ventrally unarmed, not expanded laterally into supraocular or postocular eaves; carapace extremely compressed laterally, dorsal profile convex, armed over most of anterior 1/2 of dorsal mid-line with posterior extension of rostral teeth, unarmed laterally except for acute suborbital angle, without longitudinal ridge or suture, subangularly produced anteroventrally, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite bluntly triangular posteriorly; telson not curving ventrad, posterior margin not incised, armed posterolaterally with 4 pairs of long marginal spines and 1 mesial pair of setae; antennal scale well developed, distolateral spine overreaching distal margin of blade; mandible without palp; 3rd maxilliped with well-developed exopod; 1st pereopod with fingers not spatulate, carpus entire, not subdivided; 2nd pereopods similar and subequal, chelae usually borne in vertical plane with movable finger ventrad, chela longer than carpus, fingers not spatulate, not provided with socket and plunger closure, movable finger normal, not semicircular, palm about twice as long as maximum height; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl simple, strongly curved, not biunguiculate, unarmed, with bluntly triangular prominence proximally on flexor margin, merus unarmed on flexor margin; uropod with lateral branch bearing unusual, single, hooked, fixed, lateral tooth; associated with oculinid coral *Galaxea fascicularis*.

RANGE.—Western Indian Ocean to Ryukyu and Fijian Islands.

REMARKS.—Only one species is known.

81. *Ischnopontonia lophos* (Barnard, 1962)

Philarius lophos Barnard, 1962:242, fig. 2 [type locality: Ilha da Inhaca, Baía de Lourenço Marques, Mozambique].

Ischnopontonia lophos.—Bruce, 1966a:584, figs. 1–5; 1977i:72 [color illustration].

DIAGNOSIS.—Characters of the genus; maximum postorbital carapace length slightly more than 3 mm.

RANGE.—Western Indian Ocean, Ryukyu Islands, eastern Malaya, Singapore, Darwin, Northern Territory and Great Barrier Reef, Australia, and Fijian Islands; to a depth of 15 m, always associated with the oculinid coral *Galaxea fascicularis*.

**Jocaste* Holthuis, 1952

Jocaste Holthuis, 1952c:17, 192 [type species, by monotypy: *Coralliocaris lucina* Nobili, 1901c:5; gender: feminine].

Cavicheles Holthuis, 1952c:6, 17, 204 [type species, by monotypy: *Cavicheles kempii* Holthuis, 1952c:205; gender: feminine].

DIAGNOSIS.—Rostrum overreaching anteriorly extended eyes, compressed laterally, armed dorsally with 3–7 teeth, ventrally with 1–4, lateral carina not expanded into broad supraocular eave; carapace depressed dorsoventrally, dorsal profile somewhat convex, not strongly produced anteroventrally, without longitudinal ridge or suture, armed with antennal and immovable hepatic spines only, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite rounded; telson not curving ventrad, posterior margin not incised, median and submedian pairs of posterior spines not curved ventrad, dorsolateral spines not robust; epistome not bearing paired, horn-like processes, antennal scale well developed, distolateral spine not overreaching distal margin of blade; mandible without palp; 3rd maxilliped with well-developed exopod; 4th thoracic sternite without slender median process; 1st pereopod with fingers subspatulate; 2nd pereopods dissimilar and unequal, major chela borne in vertical plane with movable finger ventrad, chela much longer than carpus, fingers of major chela not provided with true socket and plunger closure, movable finger not semicircular, palm about 2²/₃ times as long as high; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl of adult with massive, hollowed, hoof-shaped protuberance on flexor margin; uropod with lateral branch bearing single fixed lateral tooth and movable spine mesial thereto; associated with scleractinian corals of genus *Acropora*.

RANGE.—Red Sea to Society Islands.

REMARKS.—The second author has collected a vast number of both recognized species of *Jocaste* from a wide range of Indo-West Pacific localities. In many instances, the populations have spanned the whole size range from postlarvae on. The smallest specimens have always been identifiable as *Cavicheles* and they blend gradually into the morphology of the adult *Jocaste*. Excepting the unlikely possibility that neither adult *Cavicheles* nor juvenile *Jocaste* have been represented in any of these numerous collections, it seems apparent that the two genera are synonymous, as suggested by Bruce (1977i:10), even though it has not yet been possible to assign the small specimens positively to either of the closely related species of *Jocaste*. Adults of those species may be identified from the following key adapted from the table offered by Patton (1966:279).

Key to Species of *Jocaste*

- Rostrum typically armed with 4 dorsal and 1 ventral teeth, lateral rostral carina gradually expanded into convex supraocular eave; major 2nd pereopod with 1 tooth on opposable margin of movable finger, palm with distinct clusters of red spots in life 82. *J. japonica*
- Rostrum typically with 5 dorsal and 2 or 3 ventral teeth, lateral rostral carina rather abruptly expanded posteriorly into bluntly subrectangular supraorbital eave; major 2nd pereopod with 2 or 3 teeth on opposable margin of movable finger, palm colorless in life *83. *J. lucina*

82. *Jocaste japonica* (Ortmann, 1890)

Coralliocaris superba var. *japonica* Ortmann, 1890:509, pl. 22 [type locality: Kagoshima, Japan].

Jocaste lucina Holthuis, 1952c:17, 193, fig. 94 [part].

?*Cavicheles kemp* Holthuis, 1952c:17, 205, figs. 99–101.—Bruce, 1966b:266, fig. 1; 1977i:10.

Jocaste japonica.—Patton, 1966:279, fig. 36.—Fransen, 1989:146.

DIAGNOSIS.—Rostrum typically armed with 4 dorsal and 1 ventral teeth, lateral rostral carina gradually expanding posteriorly into convex supraocular eave; major 2nd pereopod with 1 tooth on opposable margin of movable finger, palm with distinct clusters of red spots in life.

RANGE.—Western Indian Ocean to Japan and Indonesia and eastward to the Marshall Islands.

*83. *Jocaste lucina* (Nobili, 1901)

Coralliocaris lucina Nobili, 1901c:5 [type locality: Eritrea].

Jocaste lucina.—Holthuis, 1952c:17, 193, fig. 94 [part].—Patton, 1966:278, fig. 3a.

DIAGNOSIS.—Rostrum typically with 5 dorsal and 2 or 3 ventral teeth, lateral rostral carina gradually expanding posteriorly into bluntly subrectangular supraocular eave; major 2nd pereopod with 2 or 3 teeth on opposable margin of movable finger, palm colorless in life.

MATERIAL.—PHILIPPINES. Marungas Island (south side), Sulu Archipelago; [6°06'N, 120°58'E]; 1¼ to 2½ m; scattered coral and sand; 10 Feb 1908 (1330–1500); diving, coral heads taken ashore; 2 males [2.1, 2.4] 3 females [2.4–2.9], 2 ovig [2.6, 2.9].

RANGE.—Widespread throughout the Indo-Pacific region from the Red Sea to the Society Islands, but not Hawaii.

Mesopontonia Bruce, 1967

Mesopontonia Bruce, 1967a:13 [type species, by original designation: *Mesopontonia gorgoniophila* Bruce, 1967a:13; gender: feminine].

DIAGNOSIS.—Rostrum well developed, overreaching anteriorly extended eyes, compressed laterally, armed dorsally with 7–10 teeth, ventrally with 1–3, lateral carina not expanded into broad supraocular eave; carapace not very depressed dorsoventrally, dorsal profile nearly straight, not strongly produced anteroventrally, without longitudinal ridge or suture, armed with hepatic spine only, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite rounded; telson not curving ventrad, posterior margin not incised, median and submedian pairs of posterior spines not curving ventrad, dorsolateral spines not particularly robust; antennal scale well developed, distolateral spine not overreaching distal margin of blade; mandible without palp; 3rd maxilliped without exopod; 4th thoracic sternite without slender median process; 1st pereopod with fingers not spatulate; 2nd pereopods markedly asymmetrical, major chela not borne in vertical plane, movable finger not ventrad, chela much longer than carpus, fingers of major chela not provided with socket and plunger closure, movable finger not semicircular, palm about 3 times as long as fingers; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl biunguiculate but without protuberance on flexor margin; uropod with lateral branch bearing single fixed lateral tooth and movable spine mesial thereto; associated with gorgonians.

RANGE.—South China Sea, Philippines, eastern Australia, and New Caledonia; 117–400 m.

REMARKS.—The three described species may be identifiable from the following key.

Key to Species of *Mesopontonia*

1. Third pereopod simple, not biunguiculate
 *M. monodactylus* Bruce, 1991b:392, figs. 65–69
 (Loyalty Islands; 460 m)
- Third pereopod biunguiculate 2
2. Second pereopods moderately unequal; minor 2nd pereopod with carpus about 0.75 of palm length, 0.45 of chela length, much shorter than merus
 84. *M. gorgoniophila*

Second pereopods very markedly unequal; minor second pereopod with carpus about 2.5 times palm length, subequal to merus
 *M. gracilicarpus* Bruce, 1990a:202, figs. 34–37
 (New Caledonia; 398–410 m)

84. *Mesopontonia gorgoniophila* Bruce, 1967

Mesopontonia gorgoniophila Bruce, 1967a:13, figs. 5–9 [type locality: ESE of Hong Kong; 21°47.7'N, 116°28.5'E; 117–132 m; on gorgonian]; 1985b:248, fig. 12.

DIAGNOSIS.—Major 2nd pereopod with oblique carina on extensor margin of movable finger; minor 2nd pereopod with carpus less than 1/2 as long as chela; maximum postorbital carapace length 3.5 mm.

RANGE.—South China Sea, Philippines, and Coral Sea; 117–270 meters, associated with gorgonians.

Onycocaridella Bruce, 1981

Onycocaridella Bruce, 1981b:241 [type species, by original designation: *Onycocaridella prima* Bruce, 1981b:243; gender: feminine].

DIAGNOSIS.—Rostrum reduced, not overreaching anteriorly extended eyes, compressed laterally, unarmed or bearing single dorsal apical tooth, lateral rostral carina not expanded into broad supraocular or postocular eave; carapace neither noticeably depressed nor compressed, dorsal profile faintly convex, anterior margin not greatly produced anteriorad, without longitudinal ridge or suture, without antennal, hepatic, or any other spines; abdomen with pleuron of 5th somite rounded; telson not curving ventrad, posterior margin not incised, none of posterior spines curved ventrad, dorsolateral spines relatively small; epistome not bearing paired, horn-like processes; antennal scale well developed with distolateral spine overreaching blade; mandible without palp; 3rd maxilliped with exopod; 1st pereopod with fingers spatulate, carpus entire, not subdivided; 2nd pereopods similar, not necessarily subequal, chelae not borne in vertical plane, chela longer than carpus, fingers not subspatulate, not provided with socket and plunger closure, movable finger not semicircular, palm more than 1 1/2 times as long as high; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl subcylindrical, minutely biunguiculate, without protuberance on flexor margin, merus unarmed on flexor margin, uropod with single fixed lateral spine with movable spine mesial thereto; associated with sponges.

RANGE.—Western Indian Ocean; Ryukyu Islands; Sulu Archipelago, Philippines; Great Barrier Reef, Australia; Marshall and Fiji Islands; associated with sponges.

REMARKS.—A key to the three known species of *Onycocaridella* has been furnished by Bruce (1981b:249).

85. *Onycocaridella stenolepis* (Holthuis, 1952)

Onycocaridella stenolepis Holthuis, 1952c:148, figs. 66–68 [type locality: Pearl Bank, southern Sulu Sea, Philippines; 15 m].

Onycocaridella stenolepis.—Bruce, 1981b:249.

DIAGNOSIS.—Rostrum not nearly reaching as far as distal end of anteriorly extended eyes, unarmed; ventral orbital angle acute; 2nd pereopod with fingers dentate on opposable margins.

RANGE.—Sulu Archipelago, Philippines; Viti Levu, Fiji Islands; and Armo Atoll, Marshall Islands.

Onycocaris Nobili, 1904

Onycocaris Nobili, 1904:232 [type species, selected by Holthuis, 1952c:14: *Coralliocaris (Onycocaris) aualitica* Nobili, 1904:232; gender: feminine].

DIAGNOSIS.—Rostrum with lateral carina not expanded into broad supraocular or postocular eave; carapace neither noticeably depressed nor compressed, dorsal profile faintly convex, anterior margin not greatly produced anteriorad, without longitudinal ridge or suture, without antennal, hepatic, or any other spines (except for possible antennal spine in *O. longirostris*); abdomen with pleuron of 5th somite rounded; telson not curving ventrad, posterior margin not incised, none of posterior spines curving ventrad, dorsolateral spines not large; epistome not bearing paired, horn-like processes; antennal scale well developed, with distolateral spine usually overreaching blade; mandible without palp; 3rd maxilliped with exopod; 4th thoracic sternite without slender median process; 1st pereopod with fingers simple or subspatulate, carpus entire, not subdivided; 2nd pereopods similar, not necessarily equal, chelae usually borne in vertical plane, chela longer than carpus, strongly compressed, fingers large, subspatulate, usually ornately dentate, often with distal lateral flange on fixed finger; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl strongly compressed, elaborately dentate on flexor margin; associated with sponges.

RANGE.—Djibouti, eastern Africa, and Madagascar to Hong Kong, Japan, Philippines, Australia, New Caledonia, Wake Island, and Marshall and Fiji islands to Hawaii; 0–84 m, in sponges.

REMARKS.—It may be apparent from the following key to the 12 currently recognized species of *Onycocaris* that they may be subdivided into three or four groups. Perhaps the most distinct one, and therefore the one most deserving of eventual generic status, is represented by *O. longirostris* and *O. zanzibarica*, which are distinguished by the strongly dentate rostrum and the ventral angle of the orbit armed with what simulates a strong antennal spine; also assignable to this group, if it is specifically distinct, are the pair of specimens from Zanzibar mentioned and illustrated by Bruce (1971c:298, fig. 1F,G). Three other species with dentate rostra, albeit with less prominent dorsal teeth, are *O. furculata*, *O. profunda*, and *O. seychellensis*, which are otherwise differentiated by having

the fixed finger of the second pereopod deeply bifurcate for the reception of the movable finger. Of the species without any rostral teeth, three apparently close relatives—*O. amakusensis*,

O. callyspongiae, and *O. quadratophthalma*—have the cornea of the eye clearly subconical, rather than hemispherical, as in all other species of *Onycocaris*.

Key to Species of *Onycocaris*

1. Rostrum armed with sharp dorsal teeth on anterior $\frac{1}{2}$; ventral angle of orbit armed with elongate spine 2
 Rostrum unarmed or bearing rather inconspicuous dorsal teeth; ventral angle of orbit rounded or, at most, acutely triangular, not spinose 3
2. Rostrum reaching nearly to level of end of antennular peduncle; 2nd pereopod with acute tooth on extensor surface of carpus and broad distal tooth on flexor margin of merus *O. longirostris* Bruce, 1980a:15
 (New Caledonia; 20 m)
 Rostrum not overreaching basal segment of antennular peduncle; 2nd pereopod with carpus and merus unarmed *O. zanzibarica* Bruce, 1971c:293, figs. 1, 2
 (Kenya and Zanzibar; 7–18 m)
3. Rostrum bearing 2–4 somewhat indistinct dorsal teeth; 2nd pereopod with fixed finger distinctly and subequally bifid for reception of movable finger 4
 Rostrum unarmed; 2nd pereopod with fixed finger at most indistinctly and unequally bifid at distal end 6
4. Ventral orbital angle blunt or rounded; 3rd pereopod with penultimate tooth of dactyl deeply incised, forked *O. furculata* Bruce, 1979c:324, figs. 1–4
 (La Réunion, Indian Ocean; 20 m)
 Ventral orbital angle sharply acute; 3rd pereopod with penultimate tooth of dactyl truncate 5
5. Antennal scale with distolateral spine slender, far overreaching distal margin of blade; 3rd pereopod with penultimate tooth of dactyl transversely truncate 86. *O. profunda*
 Antennal scale with distolateral spine stout, barely reaching level of distal margin of blade; 3rd pereopod with penultimate tooth of dactyl obliquely truncate
 *O. seychellensis* Bruce, 1971b:208, figs. 1–6
 (Kenya, Seychelles, Japan, and Fiji Islands; less than 1 m)
6. Second pereopod with distal tooth on flexor margins of merus and ischium; 3rd pereopod with unguis of dactyl bearing 4–8 denticles on flexor margin 7
 Second pereopod without distal tooth on flexor margins of merus and ischium; 3rd pereopod with unguis of dactyl not denticulate on flexor margin 10
7. Cornea of eye subconical. 8
 Cornea of eye hemispherical 9
8. Second pereopod with fingers not excavate on opposable surfaces, therefore not bimarginal, not marginally serrate in distal $\frac{1}{2}$, without row of acute teeth on mesial surfaces
 *O. amakusensis* Fujino and Miyake, 1969b:413, figs. 6, 8a–c, 9a–c
 (Zanzibar, Japan, Australia; shallow water)
 Second pereopod with fingers distinctly excavate, bimarginal, lateral margin serrate in distal $\frac{1}{2}$, mesial margin armed with row of acute teeth
 *O. callyspongiae* Fujino and Miyake, 1969b:422, figs. 10–12
 (Tanzania and Japan)
9. Third pereopod with dactyl bearing 5 acute spinules on flexor margin of unguis
 *O. aualitica* (Nobili, 1904:233)
 (Djibouti and La Réunion)
 Third pereopod with dactyl bearing few blunt denticles on flexor margin of unguis
 *O. oligodentata* Fujino and Miyake, 1969b:415, figs. 7, 8d–f, 9d–f
 (Hong Kong, Japan, Australia; 17–35 m)

- 10. Ventral orbital angle sharply acute; antennal scale more than 2 1/2 times as long as wide; 2nd pereopod with fingers excavate, spatulate, both margins dentate *O. trullata* Bruce, 1978a:269, figs. 36-41 (Madagascar; 28 m)
- Ventral orbital angle rounded; antennal scale no more than twice as long as wide; 2nd pereopod with fingers not excavate or spatulate 11
- 11. Cornea of eye subconical; 2nd pereopod with merus unarmed on flexor margin; 3rd pereopod with subdistal tooth of dactyl not deeply incised *O. quadratophthalma* (Balss, 1921b:15) (Western Australia and Hong Kong)
- Cornea of eye hemispherical; 2nd pereopod with merus bearing 2 or more teeth on flexor margin; 3rd pereopod with subdistal tooth on dactyl deeply incised, bifid *O. spinosa* Fujino and Miyake, 1969b:429, figs. 13-15 (Ryukyu Islands; 1 m)

86. *Onycocaris profunda* Bruce, 1985

Onycocaris profunda Bruce, 1985b:241, figs. 8-11 [type locality: Mompog Pass, northeast of Marinduque, Philippines; 81-84 meters].

DIAGNOSIS.—Rostrum slightly overreaching ventral orbital angle, armed dorsally with 3 inconspicuous teeth; carapace armed with short, acute tooth at ventral orbital angle; cornea of eye hemispherical; antennal scale slightly more than twice as long as wide, not including distolateral spine, latter slender, elongate, far exceeding distal margin of blade; 2nd pereopod with fingers deeply grooved on opposable surfaces, hence bimarginal, margins denticulate throughout, fixed finger subequally and sharply bifid for reception of movable finger, carpus unarmed, merus and ischium feebly tuberculate but without distal tooth on flexor margin; ambulatory pereopod with unguis of dactyl without denticles on flexor margin, penultimate tooth transversely truncate, not deeply incised; postorbital carapace length 4 mm.

RANGE.—Known only from the type locality in Mompog Pass, Philippines, in 81-84 meters.

****Palaemonella* Dana, 1852**

Palaemonella Dana 1852a:17 [type species, selected by Kingsley, 1880:425: *Palaemonella tenuipes* Dana, 1852a; gender: feminine].

DIAGNOSIS.—Rostrum overreaching anteriorly extended eyes, compressed laterally, armed dorsally and ventrally, lateral carina not expanded into broad supraocular or postocular eave;

carapace neither noticeably depressed nor compressed, dorsal profile nearly horizontal, dorsal series of rostral teeth continued onto anterior part of carapace, anterior margin not produced anteriorly or deeply concave (notched), without longitudinal branchiostegal suture, with antennal and immovable hepatic spines, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite sharp-pointed; telson not curved ventrad, posterior margin not incised, median and submedian pairs of posterior spines not curved ventrad dorsolateral spines slender, not robust; antennal scale well developed; mandible with palp; 3rd maxilliped with exopod; 4th thoracic sternite with slender median process; 1st pereopod not subspatulate, carpus entire, not subdivided; 2nd pereopods similar, sometimes unequal, chela longer than carpus, fingers not provided with socket and plunger closure, movable finger normal, not semicircular; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl not biunguiculate, not provided with massive protuberance on flexor margin, merus unarmed on flexor margin.

RANGE.—Red Sea and southern Africa to Pacific coast of America, eastern Atlantic, and eastern Mediterranean; littoral to 128 meters, usually free-living, one species commensal with crinoids.

REMARKS.—Only four of the 13 currently recognized species of *Palaemonella*, included in the following key, are known from the Philippine-Indonesian area, and only the most commonly collected species is represented in the *Albatross* Philippine Expedition collections.

Key to Species of *Palaemonella*

- 1. Carapace with supraorbital spine (small in *P. holmesi*) 2
- Carapace without supraorbital spine (tubercle usually present in *P. rotumana*) 7
- 2. Second pereopod with merus unarmed on flexor margin 3
- Second pereopod with merus armed with distal tooth on flexor margin 4

3. Second pereopods unequal, major chela with movable finger crested on distal part of extensor margin; 3rd pereopod with dactyl $\frac{1}{5}$ as long as propodus
 *P. asymmetrica* Holthuis, 1951a:19, pl. 5
 (Galapagos Islands; littoral)
 Second pereopods subequal, movable finger without crest on extensor margin; 3rd pereopod with dactyl about $\frac{1}{2}$ as long as propodus
 *P. holmesi* (Nobili, 1907:5)
 (Eastern Pacific from southern California to Ecuador and Galapagos Islands; littoral to 128 m)
4. Second pereopod with ischium distoventrally unarmed
 *P. spinulata* Yokoya, 1936:135, fig. 4
 (Kenya, Tanzania, La Réunion, southwestern Japan, Queensland, Australia)
 Second pereopods with ischium bearing distal tooth on extensor margin 5
5. Third pereopod with dactyl about $\frac{1}{3}$ of propodal length, slender, about 12 times longer than proximal depth
 *P. dolichodactylus* Bruce, 1991a:232, figs. 6f-1, 7
 (New Caledonia)
 Third pereopod with dactyl about $\frac{1}{5}$ of propodal length (or less), 5-6 times longer than proximal depth 6
6. Rostral formula: $\frac{8}{3}$ *P. crosnieri* Bruce, 1978a:260, figs. 2-4
 (Kenya and Mozambique Channel; 20 m)
 Rostral formula: $\frac{6-7}{2}$ *P. disalvoi* Fransen, 1987:511, figs. 7-12
 (Easter Island)
7. Second pereopod with merus armed with sharp distal tooth on flexor margin . . . 8
 Second pereopod with merus unarmed 11
8. Second pereopod with carpus armed distally with apparently submarginal sharp tooth 9
 Second pereopod with carpus armed distally with 1 or 2 marginal teeth 10
9. Antennal scale about 3 times as long as wide; mandible vestigial, with unsegmented palp; 2nd pereopods unequal *P. atlantica* Holthuis, 1951b:152, fig. 31
 (Cape Verde Islands; 40 m)
 Antennal scale about 4 times as long as wide; mandible bearing 2-segmented palp; 2nd pereopods subequal 90. *P. tenuipes*
10. Carapace without supraorbital tubercle; 3rd pereopod with flexor margin of dactyl sinuous, distoventral propodal spines short 88. *P. pottsi*
 Carapace usually with supraorbital tubercle; 3rd pereopod with flexor margin of dactyl regularly concave, not sinuous, distoventral propodal spines long
 *89. *P. rotumana*
11. Rostrum not reaching as far as terminal segment of antennular peduncle, armed with 6 dorsal and 1 ventral teeth; mandibular palp vestigial, unsegmented
 *P. pusilla* Bruce, 1975b:169, figs. 1-5
 (Kenya; littoral)
 Rostrum overreaching antennular peduncle, armed with 8 dorsal and 2 or 3 ventral teeth; mandibular palp composed of 2 segments 12
12. Cornea wider than eyestalk; antennal scale with distolateral tooth not reaching as far as distal margin of blade; 2nd pereopod without acute distal teeth on carpus; 3rd pereopod with dactyl less than $\frac{1}{4}$ as long as propodus
 *P. burnsi* Holthuis, 1973:24, figs. 8, 9
 (Hawaii; in anchialine pools)
 Eyestalk wider than cornea; antennal scale with distolateral tooth overreaching blade; 2nd pereopod with 2 acute teeth on distal margin of carpus; 3rd pereopod with dactyl about $\frac{1}{3}$ as long as propodus 87. *P. lata*

87. *Palaemonella lata* Kemp, 1922

Palaemonella lata Kemp, 1922:127, figs. 3-6 [type locality: Aberdeen, Port Blair, Andaman Islands; rock pool at low tide].—Bruce, 1970d:274, 284, fig. 1.

DIAGNOSIS.—Rostrum overreaching antennular peduncle, rostral formula 2 + 6/3; carapace devoid of supraorbital spine; cornea narrower than eyestalk; antennal scale about 3 times as long as wide, distolateral tooth slightly overreaching blade; mandibular palp composed of 2 segments; 2nd pereopods subequal, movable finger not crested on extensor margin, carpus armed with acute marginal spines, without subterminal spine, merus and ischium unarmed on flexor margins; 3rd pereopod with flexor margin of dactyl regularly concave, not sinuous, about $\frac{1}{3}$ as long as propodus; maximum postorbital carapace length 3 mm.

RANGE.—Zanzibar, La Réunion, Andaman Islands, Indonesia, and Hawaii; littoral, possibly associated with sponges.

88. *Palaemonella pottsi* (Borradaile, 1915)

Periclimenes (Falciger) pottsi Borradaile, 1915:212 [type locality: Torres Strait; on *Comanthus*].

Palaemonella pottsi.—Bruce, 1970d:274, 279, figs. 1, 3-7.

DIAGNOSIS.—Rostrum overreaching antennular peduncle, rostral formula 2 + 5-6/2; carapace devoid of supraorbital spine; cornea slightly wider than eyestalk; antennal scale $3\frac{1}{3}$ to 4 times as long as wide, anterolateral tooth overreaching blade; mandibular palp composed of 2 segments; 2nd pereopods subequal, movable finger not crested on extensor margin, carpus armed with 2 small, acute marginal spines, without subterminal spine, merus armed with sharp distal tooth on flexor margin, ischium unarmed; 3rd pereopod with flexor margin of dactyl slightly sinuous, less than $\frac{1}{5}$ as long as propodus, disto-ventral propodal spines short; maximum postorbital carapace length 6.6 mm.

RANGE.—Zanzibar; Japan; Singapore; Philippines; Queensland, Australia; New Caledonia; and Marshall Islands; associated with crinoids. Kemp (1922:131) notes that Zehntner's specimen of *P. tenuipes* from Ambon was entirely black, making it virtually certain that it was a specimen of *P. pottsi*, which is very commonly an intense deep blue-red, as near black as does not matter, when on such hosts as *Tropiometra afra*.

*89. *Palaemonella rotumana* (Borradaile, 1898)

Periclimenes rotumana Borradaile, 1898:383 [type locality: Rotuma, Fiji Islands].

Palaemonella vestigialis Kemp, 1922:123, figs. 1, 2; pl. 3: fig. 2 [type locality: Port Blair, Andaman Islands].—Holthuis, 1952c:24, figs. 2a,b, 3.

Palaemonella rotumana.—Bruce, 1970d:276, fig. 2; 1975b:182, fig. 6H.

DIAGNOSIS.—Rostrum overreaching antennular peduncle, rostral formula 2 + 4-6/1-3; carapace with tubercle in lieu of supraorbital spine; cornea wider than eyestalk; antennal scale $3\frac{1}{3}$ to 4 times as long as wide, distolateral tooth overreaching

blade; mandibular palp composed of 2 segments; 2nd pereopods subequal, movable finger not crested on extensor margin, carpus armed with 2 small, acute marginal spines, without subterminal spine, merus armed with sharp distal tooth on flexor margin; ischium unarmed; 3rd pereopod with flexor margin of dactyl slightly sinuous, $\frac{1}{3}$ to $\frac{1}{2}$ as long as propodus, distoventral propodal spines long; maximum postorbital carapace length 4.3 mm.

MATERIAL.—PHILIPPINES. Davao Gulf, Mindanao: sta 5249; 7°06'08"N, 125°40'08"E; 42 m; coral, sand; 18 May 1908 (1102-1109); 9' Johnston oyster dredge: 1 male [2.7]; sta 5253; 7°04'48"N, 125°39'38"E; 51 m; coral; 18 May 1908 (1347-1358); 6' Johnston oyster dredge: 1 male [2.8].—Near Siasi, Sulu Archipelago; sta 5147; 5°41'40"E; 38 m; coral sand, shells; 16 Feb 1908 (1127-1147); 12' Agassiz beam trawl. mud bag: 3 males [2.6-4.3] 3 ovig females [2.7-3.9].

RANGE.—Eastern Mediterranean; Red Sea; and eastern Africa to Philippines and Indonesia; and eastward to Hawaii; associated with dead coral on muddy bottom, to depth of 126-128 m.

90. *Palaemonella tenuipes* Dana, 1852

Palaemonella tenuipes Dana, 1852a:25 [type locality: Sulu Sea, Philippines].—Holthuis, 1952c:27.—Bruce, 1970d:274, fig. 1.

DIAGNOSIS.—Rostrum overreaching antennular peduncle, rostral formula 2 + 4-5/2-3; carapace without supraorbital spine; cornea slightly wider than eyestalk; antennal scale about 4 times as long as wide; mandibular palp composed of 2 segments; 2nd pereopods subequal, movable finger not crested on extensor margin, carpus unarmed distally but with strong, acute subterminal spine, merus with distal tooth on flexor margin, ischium unarmed; 3rd pereopod with flexor margin of dactyl regularly concave, not sinuous, $\frac{1}{3}$ as long as propodus; maximum postorbital carapace length 3.6 mm.

RANGE.—Red Sea and western Indian Ocean to Philippines and eastward to International Date Line; littoral, apparently free living, not associated with other animals.

Paranchistus Holthuis, 1952

Paranchistus Holthuis, 1952c:5, 13, 91 [type species, by original designation: *Anchistus biunguiculatus* Borradaile, 1898:387 (= *Pontonia armata* H. Milne Edwards, 1837:359); gender: masculine].

DIAGNOSIS.—Rostrum overreaching anteriorly extended eyes, compressed laterally, armed in anterior $\frac{1}{2}$ of dorsal margin and distoventrally, lateral carina not expanded into broad supraocular or postocular eave; carapace neither noticeably depressed nor compressed, dorsal profile faintly sinuous, unarmed, anterior margin not strongly produced anteroventrally or deeply concave (notched), without longitudinal ridge or suture, with antennal and movable hepatic spines, without supraorbital, orbital or suborbital spines, orbital margin not interrupted posteriorly; abdomen with pleuron of 5th somite

usually broadly rounded, at most obscurely quadrate; telson not curving ventrad, posterior margin not incised, median and submedian pairs of posterior spines not curved ventrad, dorsolateral spines small; antennal scale well developed, distolateral spine distinct; mandible without palp; 3rd maxilliped with well-developed exopod; 4th thoracic sternite without slender median process; 1st pereopod with carpus entire, not subdivided; 2nd pereopods similar, subequal, chela much longer than carpus, fingers not provided with socket and plunger closure, movable finger normal, not semicircular; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl without massive protuberance on flexor margin, merus unarmed on flexor margin; uropod with lateral branch bearing lateral movable spine but without fixed lateral tooth.

RANGE.—Mozambique, Madagascar, Comoro Islands, and Persian Gulf to Japan, Palau Islands, Indonesia, New Guinea, New Ireland, and Australia to Gilbert and Marshall islands; living in bivalve mollusks.

REMARKS.—The presence of an hepatic spine—the sole character by which *Paranchistus* is distinguished from *Anchistus*—is usually a valid generic character in the carideans, but the fact that it very nearly disappears in large specimens of *P. armatus* indicates how closely related the two genera are, as pointed out by Bruce (1975:54).

Also, the questionable distinctions that are supposed to separate three of the six species currently assigned to *Paranchistus* (*P. pycnodontae*, *P. serenei*, and *P. spondylis*) have made the construction of the following key less than satisfactory.

Key to Species of *Paranchistus*

1. Rostrum tapering toward apex in lateral aspect, directed somewhat ventrad . . . 2
Rostrum with margins subparallel or diverging in anterior 1/2 in lateral aspect, nearly horizontal 3
2. Second pereopod with movable finger considerably overreaching fixed finger; 3rd pereopod with dactyl biunguiculate; maximum carapace length more than 15 mm; living in *Tridacna* 91. *P. armatus*
Second pereopod with movable finger overreaching fixed finger little, if at all; 3rd pereopod with dactyl simple, not biunguiculate; maximum carapace length about 5 mm; living in *Atrina* *P. ornatus* Holthuis, 1952c:97, figs. 39, 40
(Zanzibar, Kenya, Madagascar, Comoro Islands, Mozambique)
3. First pereopod with fingers subspatulate and denticulate on opposable margins *P. pycnodontae* Bruce, 1978b:233, figs. 1-5, pl. 39
(Heron Island, Capricorn Group, Queensland, Australia; 3 m)
First pereopod with fingers not subspatulate or denticulate on opposable margins 4
4. Second pereopod with movable finger no longer than fixed finger; 3rd pereopod with dactyl not flattened on extensor margin; living in *Spondylus*
. *P. spondylis* Suzuki, 1971:15, figs. 8, 9
(Sagami Wan, Honshu, Japan)
Second pereopod with movable finger longer than fixed finger; 3rd pereopod with dactyl flattened on extensor margin 5
5. Third pereopod with accessory tooth on flexor margin of dactyl not covered with spinules distally 92. *P. nobilii*
Third pereopod with accessory tooth on flexor margin of dactyl covered with minute spinules distally 93. *P. serenei*

91. *Paranchistus armatus* (H. Milne Edwards, 1837)

P[ontonia] armata H. Milne Edwards, 1837:359 [type locality: New Ireland, Papua New Guinea].

Anchistus biunguiculatus Borradaile, 1898:387 [type locality: Tubetube, Engineer Group, Papua; in *Tridacna*].

Anchistus oshimai Kubo, 1949:26, figs. 1, 2 [type locality: Palau Islands].

Paranchistus biunguiculatus.—Holthuis, 1952c:93, figs. 36-38.

Paranchistus armatus.—Bruce, 1975e:49, figs. 1-3.

DIAGNOSIS.—Rostrum tapering toward apex in lateral aspect, directed somewhat ventrad; 1st pereopod with fingers subspatulate and pectinate on opposable margins; 2nd pereopod with movable finger longer than fixed finger, hooked distally; 3rd pereopod with dactyl biunguiculate, not flattened on extensor margin, not partially covered with spines or horny tubercles; maximum postorbital carapace length 15.3 mm.

RANGE.—Indonesia; New Guinea; Papua; Palau Islands;

Queensland, Australia; New Ireland; and Gilbert and Marshall islands; in *Tridacna*.

REMARKS.—An ovigerous female of *P. armatus* in the Smithsonian collections from Bikini Atoll, Marshall Islands, has a postorbital carapace length of 15.3 mm.

92. *Paranchistus nobilii* Holthuis, 1952

Anchistus Miersi.—Nobili, 1906b:48 [not *Harpilius Miersi* De Man, 1888].
Paranchistus nobilii Holthuis, 1952c:13,100, figs. 41, 42 [type locality: Arzanah Island, Ruqq Az Zaqqum bank, Persian Gulf coast of United Arab Emirates; from *Spondylus gaederopus*].—Bruce, 1983c:890, figs. 6E, 8I, J.

DIAGNOSIS.—Rostrum widening slightly toward apex, nearly horizontal or directed slightly ventrad; 2nd pereopod with movable finger longer than fixed finger, hooked distally; 3rd pereopod with dactyl biunguiculate, flattened and minutely tuberculate on extensor margin; maximum postorbital carapace length little more than 5 mm.

RANGE.—Persian Gulf, Indonesia, and Kiribati (Gilbert Islands); living in *Spondylus*, *Pinna*, and *Tridacna*.

93. *Paranchistus serenei* Bruce, 1983

Paranchistus serenei Bruce, 1983c:890, figs. 7H, I, 9 [type locality: Teluk Sawai, Ceram, Indonesia; in *Ostrea cristagalli*].

DIAGNOSIS.—Rostrum widening slightly toward apex, nearly horizontal or directed slightly ventrad; 2nd pereopod with movable finger slightly longer than fixed finger, hooked distally; 3rd pereopod with dactyl biunguiculate, flattened on extensor margin, latter and accessory tooth on flexor margin bearing minute spinules; maximum postorbital carapace length less than 4 mm.

RANGE.—Known only from the type locality on Ceram, Indonesia, living in *Ostrea*.

Paratypton Balss, 1914

Paratypton Balss, 1914a:83 [type species, by monotypy: *Paratypton siebenrocki* Balss, 1914b:84; gender: masculine].

DIAGNOSIS.—Rostrum lacking, represented by transverse straight or concave lamina crossing posterior portion of ophthalmic somite; carapace globular, without antennal, hepatic, suborbital, or supraorbital spines; abdomen with pleura of all somites rounded; telson not curving ventrad, margin ovoid, not incised posteriorly, without dorsolateral spines, posterior spines small to minute; antennal scale small, about twice as long as wide, broadly rounded distally without distolateral spine; maxilliped without exopod; 4th thoracic sternite without median process; 1st pereopod with carpus entire, not subdivided; 2nd pereopods similar, subequal, chela much longer than carpus, fingers not provided with socket and plunger closure, movable finger not semicircular; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl

without protuberance on flexor margin, merus unarmed on flexor margin; uropod without fixed tooth or movable spine on lateral margin of lateral branch.

RANGE.—Red Sea and eastern Africa to Indonesia and the Great Barrier Reef of Australia and the Marshall, Fiji, and Samoa islands; living in barely detectable cysts in *Acropora* corals.

REMARKS.—Only one species is recognized.

94. *Paratypton siebenrocki* Balss, 1914

Paratypton siebenrocki Balss, 1914a:84, fig. 1 [type locality: "Senafir," "Koseir," and "Sherm Sheikh," Red Sea; Jaluit, Marshall Islands; and Samoa].—Bruce, 1969d:172, figs. 1-5, pl. 1; 1983c:897.

DIAGNOSIS.—Characters of genus; maximum postorbital carapace length 4.1 mm.

RANGE.—See "Range" of the genus.

**Periclimenaeus* Borradaile, 1915

Periclimenaeus Borradaile, 1915:207 [type species, selected by Borradaile, 1917:378: *Periclimenaeus robustus* Borradaile, 1915:213; gender: masculine].

DIAGNOSIS.—Rostrum well developed, usually overreaching anteriorly extended eyes, compressed laterally, armed at least dorsally throughout length, lateral carina not expanded into broad supraocular or postocular eave; carapace slightly compressed, dorsal profile straight or slightly convex, with or without 1 or more teeth of dorsal rostral series continuing onto gastric region, anterior margin not produced anteroventrally as prominent convex lobe and not deeply concave (notched), without longitudinal branchiostegal suture, with antennal spine, without hepatic spine, orbital margin often interrupted posteriorly; telson not curving ventrad, posterior margin not incised, median and submedian pairs of posterior spines not curving ventrad, dorsolateral spines not particularly robust; antennal scale well developed; mandible without palp; 3rd maxilliped with exopod; 4th thoracic sternite without slender median process; 1st pereopod with carpus entire, not subdivided; 2nd pereopods dissimilar and unequal, fingers of major chela with socket and plunger closure; 3rd pereopod composed of 7 or 8 segments, merus and ischium not fused; uropod with at least one fixed lateral tooth on lateral branch, accompanied by at least one movable spine mesial thereto.

RANGE.—Red Sea and South Africa to Japan, Indonesia, and Australia, and eastward to Hawaii and Pacific coast of America from Costa Rica to Colombia and western Atlantic from North Carolina and Bermuda to Panama and Trinidad; associated with sponges, alcyonarians, and ascidians, from shallow water to 370+ meters.

REMARKS.—Only eight of the 55 currently recognized species of *Periclimenaeus* are known from the Philippines or Indonesia; a key to those eight species is offered below.

Key to Philippine-Indonesian Species of *Periclimenaeus*

1. Third pereopod with dactyl bearing acute tooth at extreme proximal end of flexor margin between distal spines on flexor margin of propodus 2
Third pereopod with dactyl unarmed at extreme proximal end of flexor margin 3
2. Third pereopod with dactyl distally simple, not biunguiculate . . . 100. *P. storchi*
Third pereopod with dactyl distally biunguiculate 101. *P. tridentatus*
3. Carapace with supraorbital spines, sometimes minute 4
Carapace without supraorbital spines 6
4. Supraorbital spines large, sharp; 1st pereopod with fingers longer than palm 102. *P. truncoideus*, new species
Supraorbital spines minute, inconspicuous; 1st pereopod with fingers no more than $\frac{1}{2}$ as long as palm 5
5. Rostral formula 0 + 5/0; antennal scale with distolateral tooth far overreaching distal margin of blade; 3rd pereopod with dactyl simple, composed of 2 distinct segments 95. *P. arthrodactylus*
Rostral formula 1 + 6/1; antennal scale with blade overreaching distolateral tooth; 3rd pereopod with dactyl biunguiculate, not segmented 97. *P. holthuisi*
6. Third pereopod with dactyl simple, not biunguiculate 96. *P. hecate*
Third pereopod with dactyl biunguiculate 7
7. Major 2nd pereopod with merus dentate on flexor margin *98. *P. minutus*
Major 2nd pereopod with merus unarmed on flexor margin 99. *P. spongicola*

95. *Periclimenaeus arthrodactylus* Holthuis, 1952

Periclimenaeus arthrodactylus Holthuis, 1952c:122, figs. 51-53 [type locality: Pulau Sailus-kejil, Kepulauan Tengah, Indonesia].

DIAGNOSIS.—Rostral formula 0 + 5/0; carapace with small supraorbital spine; telson with posterior pair of dorsolateral spines arising posterior to mid-length; antennal scale with distolateral tooth far overreaching distal margin of blade; 1st pereopod with fingers less than $\frac{1}{2}$ as long as palm; major 2nd pereopod with merus rugose but not granulous or dentate on flexor margin; 3rd pereopod with dactyl simple, not biunguiculate, but distinctly 2-segmented, without acute tooth at proximal end of flexor margin; postorbital carapace length less than 3 mm.

RANGE.—Known only from the unique ovigerous female holotype from Kepulauan Tengah, Indonesia.

96. *Periclimenaeus hecate* (Nobili, 1904)

Coralliocaris hecate Nobili, 1904:232 [type locality: Djibouti]; 1906:58, pl. 3: fig. 2.

Periclimenaeus hecate.—Bruce, 1974c:1574, figs. 11, 12, 13E; 1976d:22, figs. 8-11.

DIAGNOSIS.—Rostral formula 0 + 4-5/0; carapace without supraorbital spine; telson with posterior pair of dorsolateral spines arising posterior to mid-length; antennal scale with distolateral tooth not overreaching distal margin of blade; 1st pereopod with fingers subequal to palm in length; major 2nd pereopod with merus not granulous or dentate on flexor margin; 3rd pereopod with dactyl simple, not biunguiculate, not segmented, without acute tooth at proximal end of flexor

margin; postorbital carapace length less than 4 mm.

RANGE.—Western Indian Ocean to Indonesia and Great Barrier Reef of Australia; associated with ascidians.

97. *Periclimenaeus holthuisi* Bruce, 1969

Periclimenaeus rhodope.—Holthuis, 1952c:125, figs. 54, 55bis [not *Coralliocaris (Onycocaris) rhodope* Nobili, 1904].

Periclimenaeus holthuisi Bruce, 1969a:159 [type locality: Banda, Moluccas, Indonesia; 17 m].

DIAGNOSIS.—Rostral formula 1 + 6/1; carapace with small supraorbital spine; telson with posterior pair of dorsolateral spines arising posterior to mid-length; antennal scale with distolateral tooth not overreaching distal margin of blade; 1st pereopod with fingers about $\frac{1}{2}$ as long as palm; major 2nd pereopod with merus granulous on flexor margin; 3rd pereopod with dactyl biunguiculate, not segmented, without acute tooth at proximal end of flexor margin; postorbital carapace length slightly more than 5 mm.

RANGE.—Indonesia.

***98. *Periclimenaeus minutus* Holthuis, 1952**

Periclimenaeus minutus Holthuis, 1952c:134, figs. 57-59 [type locality: Kepulauan Banda, Indonesia; 18-36 m].—Bruce, 1978d:121.

DIAGNOSIS.—Rostral formula 0 + 5/0; carapace without supraorbital spine; telson with posterior pair of dorsolateral spines arising posterior to mid-length; antennal scale with distolateral spine not overreaching distal margin of blade; 1st pereopod with fingers not quite as long as palm; major 2nd pereopod with merus dentate on flexor margin; 3rd pereopod

with dactyl simple, not biunguiculate, not segmented, without acute tooth at proximal end of flexor margin; postorbital carapace length about 2 mm or more.

MATERIAL.—PHILIPPINES. Off Jolo Island, Sulu Archipelago; sta 5174; 6°03'45"N, 120°57'E; 37 m; coarse sand; 5 Mar 1908 (1551–1557): 9' Johnston oyster dredge: 1 male [2.2].

RANGE.—Off Somali Republic, Tanzania, Philippines, and Indonesia; 18–80 m, associated with sponges.

REMARKS.—The specimen from off Jolo Island agrees with the original description of *P. minutus* in most particulars, but the rostrum is armed with six rather than five dorsal teeth, the first pereopod appears to be more slender than in the illustration given by Holthuis (1952c, fig. 58a), and the palm of the minor second pereopod is distinctly compressed rather than cylindrical.

99. *Periclimenaeus spongicola* Holthuis, 1952

Periclimenaeus spongicola Holthuis, 1952c:137, figs. 60–62 [type locality: Java Sea; 4°41'S, 113°02'E; 28–32 m, in sponge].

DIAGNOSIS.—Rostral formula 0 + 5/0; carapace without supraorbital spine; telson with posterior pair of dorsolateral spines arising posterior to mid-length; antennal scale with distolateral tooth not overreaching distal margin of blade; 1st pereopod with fingers about as long as palm; major 2nd pereopod with merus devoid of granules or spines on flexor margin; 3rd pereopod with dactyl biunguiculate, not segmented, without acute tooth at proximal end of flexor margin; postorbital carapace length nearly 3½ mm.

RANGE.—Known only from the type locality in the Java Sea.

100. *Periclimenaeus storchi* Bruce, 1989

Periclimenaeus storchi Bruce, 1989b:181, fig. 5 [type locality: Cuaming Island, Bohol Strait, Philippines].

DIAGNOSIS.—Rostral formula 0 + 3/0; carapace without supraorbital spines or tubercles; telson with posterior pair of dorsolateral spines arising posterior to mid-length; antennal scale with distolateral tooth not overreaching distal margin of blade; 1st pereopod with fingers slightly shorter than palm; major 2nd pereopod with merus devoid of tubercles or spines; 3rd pereopod with dactyl simple, not biunguiculate, not composed of 2 segments, but with acute tooth at proximal end of flexor margin; postorbital carapace length 2.25 mm.

RANGE.—Known only from the pair of specimens from the type locality between Cebu and Bohol, Philippines, associated with an unidentified tunicate.

101. *Periclimenaeus tridentatus* (Miers, 1884)

Coralliocaris ?tridentata Miers, 1884:294, pl. 32: fig. C [type locality: Thursday Island, Torres Strait].

Periclimenaeus tridentatus.—Holthuis, 1952c:140, figs. 63–65 [part, specimens from *Siboga* station 99 only].—Bruce, 1974c:1576, fig. 150; 1979f:235; 1983d:206.

DIAGNOSIS.—Rostral formula 0 + 3–4/0; carapace without supraorbital spine, occasionally represented by obscure tubercle; telson with posterior pair of dorsolateral spines arising posterior to mid-length; antennal scale with distolateral tooth not overreaching distal margin of blade; 1st pereopod with fingers fully as long as palm; major 2nd pereopod with merus devoid of granules or teeth on flexor margin; 3rd pereopod with dactyl biunguiculate, not segmented, with acute tooth at proximal end of flexor margin; maximum postorbital carapace length about 6 mm.

RANGE.—Known with certainty from Singapore; Sulu Archipelago, Philippines; Torres Strait; and northern and eastern Australia; associated with the ascidian *Diplosoma*.

REMARKS.—The real *P. tridentatus* may be distinguished from other currently known Philippine-Indonesian species by the presence of an acute, proximal tooth on the flexor margin of the dactyls of the three posterior pairs of pereopods.

102. *Periclimenaeus truncoideus*, new species

Periclimenaeus truncatus Holthuis, 1952c:117, figs. 48–50.—Bruce, 1981c:211, figs. 16, 17d. [Not *Coralliocaris truncata* Rathbun, 1906.]

DIAGNOSIS.—Rostral formula 0 + 7–8/0; carapace with strong supraorbital spine reaching proximal margin of cornea of anteriorly extended eyes; telson with posterior pair of dorsolateral spines arising posterior to mid-length; antennal scale with distolateral tooth overreaching distal margin of blade; 1st pereopod with fingers slightly longer than palm; major 2nd pereopod with merus unarmed; 3rd pereopod with dactyl biunguiculate, not segmented, with 4–6 spine-like teeth on flexor margin but none at extreme proximal end of that margin; maximum postorbital carapace length about 2½ mm.

TYPE LOCALITY.—*Siboga* Station 260; 2.3 miles (3.7 km) N, 63°W from north point of Kai Besar, Kepulauan Kai, Indonesia; 5°36.5'S, 132°55.2'E; 90 m. Holotype in Zoological Museum, University of Amsterdam, The Netherlands.

RANGE.—Zanzibar, Philippines, and Indonesia; 70–90 m.

REMARKS.—Comparison of the female holotype of *Coralliocaris truncata* Rathbun, 1906:920, fig. 70, pl. 24: fig. 2, which has a postorbital carapace length of 2.0 mm, with the description and illustrations of the adult specimen assigned to that species by Holthuis (1952c) and Bruce (1981c) reveals that the Indonesian and Philippine specimens are not conspecific with the Hawaiian example. The latter is distinguished by having the rostrum armed with eight teeth, the three anterior-most forming a vertical row, the eighth being ventral and shorter than the sixth and seventh, as illustrated by Rathbun (Figure 70), rather than having the rostrum terminating in a sharp point, with all of the rostral teeth dorsal and posterior thereto. The supraorbital tooth is larger and not quite as long as in the Philippine-Indonesian specimens, not reaching as far as the anteriorly extended cornea of the eye. The antennal spine is large and submarginal. The telson is missing from the holotype. The dorsolateral branch of the antennular flagellum is fused for

slightly more than two segments, rather than four segments, as described by Holthuis. The antennal scale most closely resembles the left one illustrated by Holthuis (Figure 48b). The third maxilliped is like that illustrated by Bruce (1981c, fig. 16b), as is the first pereopod (Bruce, fig. 16c). The second pereopods are more or less covered with subacute granules in the holotype of *C. truncata*; the right (major) chela has the margin proximal to that of the fixed finger nearly straight, without a bulge, the movable finger with two subtriangular teeth on the proximal half of the opposable margin, the fixed finger with a small, blunt proximal tooth closing between the two on the movable finger and a convex, distally rectangular lobe occupying most of the distal half of the opposable margin, extensor margin notched to form two blunt distal lobes, hardly "two small teeth" (Rathbun, 1906:921); minor, left chela with fingers regularly tapering, crossing distally, one and one-fourth times as long as the palm, unarmed on the opposable margins, the merus with a slightly angular distal lobe on the flexor margin, the extensor margin with a rectangular lobe resulting from a gap similar to the one on the major cheliped. The third pereopod has the dactyl stout, little more than twice as long as wide, strongly convex on both margins, the terminal teeth strongly curved, the penultimate one subperpendicular to the flexor margin, the latter bearing four spine-like teeth, the proximal one and the distal one at the base of the penultimate terminal tooth distinctly smaller than the others. The uropod has the lateral margin curving onto the diaeresis, the curve being armed with a row of seven marginal spines, the three on the lateral margin being the smallest, the fourth broken, and the remaining three (on the diaeresis) being much longer. Perhaps the most important character for distinguishing *P. truncoides* from *P. truncatus* is the dactyl of the third pereopod, in which the terminal teeth curve less strongly from the axis of the segment and the flexor margin is nearly straight rather than distinctly convex.

ETYMOLOGY.—The Latin adjectival suffix "-oides," denoting "like" or "resembling," is combined with the root of the specific name "*truncatus*."

**Periclimenes* O.G. Costa, 1844

Pelias P. Roux, 1831:25 [type species, selected by Holthuis, 1955:57: *Alpheus amethystea* Risso, 1827:77; gender: masculine. Invalid junior homonym of *Pelias* Merrem, 1820 (Reptilia)].

Periclimenes O.G. Costa, 1844:290 [type species, by monotypy: *Periclimenes insignis* O.G. Costa, 1844:291 (= *Alpheus amethystea* Risso, 1827:77); gender: masculine].

Anchistia Dana, 1852a:17 [type species, selected by Kingsley, 1880:424: *Anchistia gracilis* Dana, 1852a:25; gender: feminine].

Harpilius Dana, 1852a:17 [type species, by monotypy: *Harpilius lutescens* Dana, 1852a:25; gender: masculine].

Urocaris Stimpson, 1860:39 [type species, by original designation: *Urocaris longicaudata* Stimpson, 1860:39; gender: feminine].

Dennisia Norman, 1861:278 [type species, by monotypy: *Dennisia sagittifera* Norman, 1861:278; gender: feminine].

Ancylocaris Schenkel, 1902:563 [type species, by monotypy: *Ancylocaris brevicarpalis* Schenkel, 1902:563].

Corniger Borradaile, 1915:207 [type species, selected by Borradaile, 1917:365:

Periclimenes (*Corniger*) *ceratophthalmus* Borradaile, 1915:211; gender: masculine. Invalid junior homonym of *Corniger* Agassiz, 1831 (*Pisces*) and *Corniger* Boehm, 1879 (*Pycnogonida*)].

Cristiger Borradaile, 1915:207 [type species, selected by Holthuis, 1955:61: *Periclimenes* (*Cristiger*) *commensalis* Borradaile, 1915:211; gender: masculine. Invalid junior homonym of *Cristiger* Gistel, 1848 (*Hymenoptera*)].

Falciger Borradaile, 1915:207 [type species, selected by Holthuis, 1955:61: *Periclimenes* (*Falciger*) *nilandensis* Borradaile, 1915:211; gender: masculine. Invalid junior homonym of *Falciger* Say, 1824 (*Coleoptera*), *Falciger* Bucholz, 1869 (*Arachnoidea*), and *Falciger* Trouessart and Megnin, 1883 (*Arachnoidea*)].

Laomenes Clark, 1919:199 [replacement name for *Corniger*; gender: masculine].

Cuapetes Clark, 1919:199 [replacement name for *Corniger*; gender: masculine].

DIAGNOSIS.—Rostrum well developed, usually overreaching anteriorly extended eyes, compressed laterally; carapace moderately compressed, dorsal profile straight or slightly convex, with or without 1 or more teeth of dorsal rostral series continuing onto gastric region, anterior margin not produced anteroventrally as prominent convex lobe and not deeply concave (notched), without longitudinal branchiostegal suture, with antennal and immovable hepatic spines, orbital margin usually not interrupted posteriorly; telson not curving ventrad, posterior margin not incised, median and submedian pairs of posterior spines not curving ventrad, dorsolateral spines not particularly robust; epistome not bearing paired, horn-like processes; antennal scale well developed; mandible without palp; 3rd maxilliped with exopod; 4th thoracic sternite with or without slender median process; 1st pereopod with carpus entire, not subdivided; 2nd pereopods similar, chelae not borne in vertical plane, movable finger not ventrad, fingers not provided with socket and plunger closure, movable finger normal, not semicircular; 3rd pereopod composed of 7 segments, merus and ischium not fused, dactyl not bearing hoof-shaped protuberance; uropod with lateral branch bearing at least 1 movable lateral spine.

RANGE.—All tropical and most subtropical seas; littoral to 1820 meters, usually but not always associated with other marine invertebrates.

REMARKS.—Of the 164 valid species of *Periclimenes* recognized herein, the 57 covered in the following key are here considered to occur in the Philippines or Indonesia. The *Siboga* specimens identified by Holthuis (1952c:64) as *Periclimenes* (*Harpilius*) ? *calmani* are not included in this key because they probably represent a distinct species. They are not now sufficiently intact, however, to permit determination of their exact status (Bruce, 1987c:124). Also, the *Siboga* specimen identified as *Periclimenes* (*Periclimenes*) *parvus* by Holthuis (1952c:40) is omitted from the Philippine-Indonesian list because it may be distinct from Borradaile's species.

Key to Philippine-Indonesian Species of *Periclimenes*

1. Carapace with supraorbital or postorbital tooth 2
 Carapace without supraorbital or postorbital tooth, at most with obscure tubercle
 13
2. One or 2 teeth of dorsal rostral series situated on carapace posterior to orbital margin
 3
 All dorsal rostral teeth situated on rostrum, proper, anterior to posterior orbital
 margin 10
3. Second pereopod with distal tooth on flexor margin of merus 4
 Second pereopod without distal tooth on flexor margin of merus 9
4. Second pereopod with carpus armed distally with 1–3 teeth 5
 Second pereopod with carpus unarmed distally 8
5. Fifth pereopod reaching as far as or beyond end of antennal scale 6
 Fifth pereopod not reaching as far as end of antennal scale 7
6. Posteriormost tooth of dorsal rostral series situated posterior to level of hepatic
 spine; 2nd pereopod without sound-producing fossae on opposable margins of
 both fingers 108. *P. andamanensis*
 Posteriormost tooth of dorsal rostral series situated in line with or anterior to level
 of hepatic spine; 2nd pereopod with sound-producing fossae on opposable
 margins of both fingers 154. *P. spiniferus*
7. Second pereopod with carpus armed with 2 distal spines *122. *P. elegans*
 Second pereopod with carpus armed with 1 distal spine 128. *P. grandis*
8. Second pereopod with carpus about 5 times as long as distal width; uropod
 overreaching extended telson 123. *P. ensifrons*
 Second pereopod with carpus 7–8 times as long as distal width; uropod not
 overreaching extended telson 140. *P. longirostris*
9. Posteriormost tooth of dorsal rostral series isolated from rest of series; antennal
 scale with distolateral tooth far overreaching distal margin of blade
 *107. *P. amygone*
 Posteriormost tooth of dorsal rostral series not isolated from rest of series; antennal
 scale with distolateral tooth reaching to or slightly beyond level of distal margin
 of blade 143. *P. nilandensis*
10. Eye with cornea more or less produced distally, ogival; basal antennular segment
 armed with 1 distolateral spine 11
 Eye with cornea nearly hemispherical, not ogival; basal antennular segment armed
 with 2 or 3 distolateral spines 12
11. Rostrum with 1 ventral tooth; telson without discernible spines anterior to posterior
 margin 106. *P. amboinensis*
 Rostrum unarmed ventrally; telson with 2 pairs of distinct lateral spines anterior to
 posterior margin 114. *P. ceratophthalmus*
12. Rostrum with 1–3 ventral teeth; basal antennular segment armed with 2 distolateral
 spines; 2nd pereopod with fingers about as long as palm
 115. *P. commensalis*
 Rostrum unarmed ventrally; basal antennular segment armed with 3 distolateral
 spines; 2nd pereopod with fingers no more than 1/2 as long as palm
 118. *P. cristimanus*
13. Posteriormost tooth of dorsal rostral series arising from carapace anterior to level of
 hepatic spine 14
 Posteriormost tooth of dorsal rostral series arising from carapace at or posterior to
 level of hepatic spine 31
14. Second pereopod with distal tooth on flexor margin of merus 15
 Second pereopod without distal tooth on flexor margin of merus 19