

The Caridean Shrimps (Crustacea:
Decapoda) of the *Albatross*
Philippine Expedition 1907–1910,
Part 6: Superfamily Palaemonoidea

FENNER A. CHACE, Jr.,
and
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ABSTRACT

Chace, Fenner A., Jr., and A.J. Bruce. The Caridean Shrimps (Crustacea: Decapoda) of the Albatross Philippine Expedition, 1907-1910, Part 6: Superfamily Palaemonoidea. *Smithsonian Contributions to Zoology*, number 543, 152 pages 23 figures, 1993.—World checklists are proposed for 194 presumably valid species and subspecies of the genus *Macrobrachium*, together with their synonyms and type localities, and for 70 recognized genera and 408 valid species and subspecies of the subfamily Pontoniinae, with their synonyms, type species, and type localities. Keys are offered to the families and subfamilies of the superfamily Palaemonoidea, to all recognized genera of the Pontoniinae, Gnathophyllidae, and the genera and species of the Hymenoceridae, to the Indo-Pacific genera of the Palaemoninae, to all species and subspecies of *Leander*, *Leandrites*, *Leptocarpus*, *Nematopalaemon*, *Urocaridella*, *Anchistus*, *Coralliocaris*, *Dasella*, *Dasycaris*, *Hamodactylus*, *Harpiliopsis*, *Jocaste*, *Onycocaris*, *Palaemonella*, *Paranchistus*, and *Gnathophyllum*, and to the Philippine-Indonesian species of *Macrobrachium*, *Periclimenaeus*, and *Periclimenes*. The following new species are described: *Urocaridella vestigialis* from Selat Butung, Celebes, Indonesia, in 68 meters; *Periclimenes albatrossae* from the South China Sea off western Luzon, Philippines, in 315 meters; and *Periclimenes calcaratus* from Albay Gulf, southeastern Luzon, Philippines, in about 267 meters. The specimen from Kepulauan Kai, Indonesia, identified by Holthuis (1952) as *Periclimenaeus truncatus* (Rathbun, 1906) proves to be distinct from that species and is designated as the holotype of the new species *Periclimenaeus truncoideus*.

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The Caridean Shrimps (Crustacea: Decapoda) of the *Albatross* Philippine Expedition, 1907–1910, Part 6: Superfamily Palaemonoidea

Fenner A. Chace, Jr., and A.J. Bruce

Introduction

General considerations about the *Albatross* Philippine Expedition and its collections have been presented in Part 1 of this series (Chace, 1983). Repeated below are those format particulars that are common to all of the parts.

The taxa numbered and itemized are those known from the Philippines and Indonesia, whether or not they are represented in the *Albatross* collections; those taken by that Expedition are indicated by an asterisk (*). The genera and species are arranged alphabetically, and the latter are numbered sequentially by order of appearance in the taxonomic portion of the report. The generic entries comprise at least the original reference, followed by designation of the type species and of the gender of the generic name, a diagnosis, and the geographic and, sometimes, bathymetric ranges of the genus. The original reference and range are given for each extraterritorial species and subspecies cited. There has been no attempt to list all references under the taxa headings in the text. Usually the species and subspecies entries are limited to (1) the original reference and type locality of both senior and junior synonyms mentioned; (2) a reference to a published illustration, if possible; (3) a diagnosis; and (4) the range of the taxon. Under "Material" of species and subspecies represented in the *Albatross* collections are listed the following particulars when known: (1) general locality; (2) station number; (3) latitude and longitude; (4) depth in meters (in brackets when estimated); (5) character of bottom; (6) bottom temperature in degrees Celsius; (7) date and astronomical time intervals (hours between midnight and midnight) that the gear operated at the indicated

depth; (8) gear used; and (9) the number and sex of the specimens, with minimum and maximum postorbital carapace lengths in millimeters, in brackets (the numbers and size ranges of ovigerous females are included in the female totals, as well as separately). Additional station data may be available in Anonymous (1910).

ACKNOWLEDGMENTS.—If this study had been conducted in one of the physical sciences, the names of at least five of our colleagues would certainly have been added to the by-line. Austin B. Williams, Raymond B. Manning, Brian Kensley, L.B. Holthuis, and Alain Crosnier have made major contributions (some of them covert) to whatever value this report may convey. To identify the respective nature of those offerings might falsely suggest specific critical negligence as a cause of inadvertent errors in the post-review draft of this treatise. The individual benefactors know what they contributed, as do we, and we take this opportunity to thank them to the best of our ability for their sacrifice of personal research time in a truly selfless attempt to improve the chances for significant progress in research on the palaemonoid shrimps. In addition to the assistance from the five colleagues mentioned above, we must note the special help received from the exchange of *Macrobrachium* checklists with Guido A. Pereira S. of the Instituto de Zoologia, Universidad Central de Venezuela, during his doctoral residency at the University of Maryland and the Smithsonian Institution.

*PALAEMONOIDEA Rafinesque, 1815

PALEMONIA Rafinesque, 1815:98.
PALAEMONIDAE Bruce, 1986a:469.

DIAGNOSIS.—Rostrum immovable; 2nd maxilliped with distal segments articulating serially, not side by side, on penultimate segment; 3rd maxilliped composed of no more than 6 segments; pereopods without exopods or arthrobranchs,

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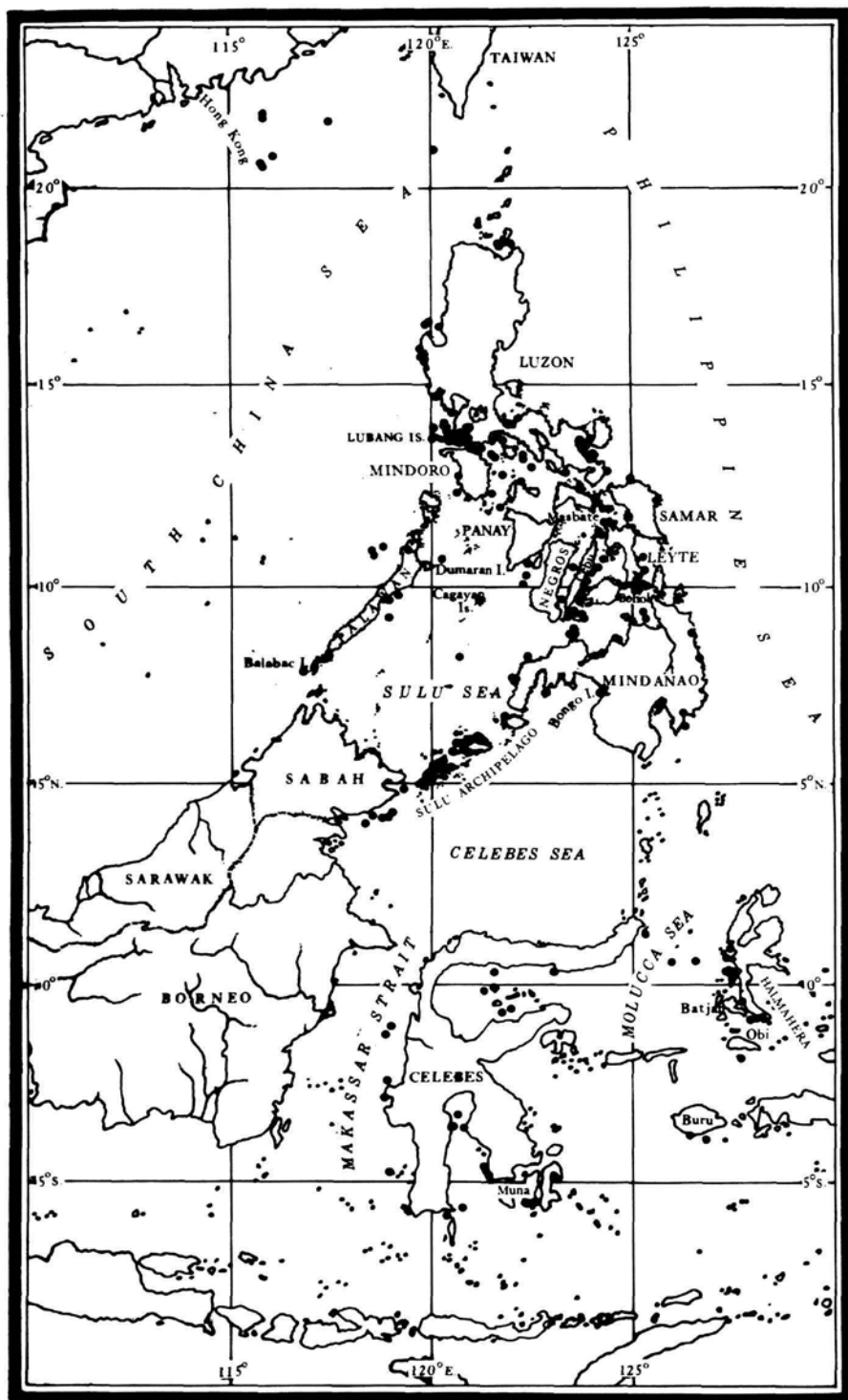


FIGURE 1.—The Philippines and central Indonesia, showing the positions of *Albatross* offshore stations at which caridean shrimps were obtained.

epipods, if present, not large, not extending dorsad into branchial chamber; 1st and 2nd pair of pereopods distinctly chelate, dactyl meeting opposing finger when flexed, not crossing, chelae not terminating in dense brushes of long setae; 1st pereopod not stouter than 2nd; 2nd pereopod with undivided carpus.

RANGE.—Cosmopolitan; freshwater and marine, to a depth of 1820 meters, also subterranean.

CLASSIFICATION.—The following key, modified from the one in Bruce (1986a:469), is still far from definitive. It reflects the belief that *Bathypalaemonella* Balss, 1914a, and *Campylonotus* Bate, 1888, which may or may not comprise the family Campylonotidae Sollaud, 1913, probably are not closely related to the genera here assigned to the superfamily Palaemonoidea. It also discloses our tentative conclusion that *Gnathophyllum*, *Gnathophylloides*, *Pycnocaris*, and *Levicaris*, because of their probably similar larval morphology, are related to the Pontoniinae but that they are distinguished sufficiently

from that palaemonid subfamily by their unique, although diverse, mouthparts to negate the possibility of synonymy, thereby preserving the familiar name of the subfamily. There seems to be little doubt that the similarly unique anterior appendages of *Hymenocera*—to a lesser extent *Phyllognathia*—are of familial importance. Likewise, although *Anchistioides* seems to differ little from some of the pontoniines, its larvae, as described by Gurney (1936), seem to us to support familial separation on the basis of seemingly minor adult morphological details. Finally, the virtually single characters that distinguish the Eurafrikan and South American freshwater genera *Desmocarid*, Sollaud, 1911, *Euryrhynchus*, Miers, 1877, and *Typhlocaris* Calman, 1909, may be important enough to justify familial recognition of each of those genera. On the other hand, the protean nature of the 70 pontoniine genera currently recognized is such as to overshadow the couple of seemingly evanescent differences that separate them from the other palaemonid genera.

Key to Families and Subfamilies of Palaemonoidea

1. Mandible usually with incisor process prominent, deeply separated from molar process; 1st maxilliped with caridean lobe of exopod distinctly overreaching endite; 3rd maxilliped slender, pereopod-like 2
 - Mandible with incisor process vestigial or absent; 1st maxilliped with caridean lobe of exopod not distinctly overreaching endite; 3rd maxilliped with antepenultimate segment broad, at least proximally, sometimes operculate 7
2. Mandible with molar process flared distally; 1st maxilliped with exopodal lash vestigial. (Telson typically with 1 pair of stout spines on posterior margin.) *ANCHISTIOIDIDAE
 - Mandible with molar process conventional, not flared, 1st maxilliped with exopodal lash fully developed 3
3. First maxilliped with palp broadly ovate; 2nd maxilliped with terminal segment broadly ovate, penultimate segment convexly produced mesiad, causing endopod to appear bilobate distally. (Carapace with supraorbital tooth; telson without dorsolateral spines; pleopods without appendix interna)
 - DESMOCARIDIDAE Borradaile, 1915
 - (Western and central Africa; fresh water)
 - First maxilliped with palp not unusually broad; 2nd maxilliped not markedly bilobate distally 4
4. First maxilliped with caridean lobe acutely produced distally
 - TYPHLOCARIDIDAE 5
 - First maxilliped with caridean lobe of exopod not acutely produced distally *PALAEMONIDAE 6
5. Carapace divided into 3 longitudinal parts by paired, complete postantennal suture; 3rd antennular flagellum partially fused with dorsal flagellum
 - TYPHLOCARIDINAE Annandale and Kemp, 1913
 - (Italy, Libya, and Israel; fresh or brackish water; usually subterranean)
 - Carapace without complete longitudinal suture; 3rd antennular flagellum entirely free from fusion with either of other 2 flagella
 - EURYRHYNCHINAE Holthuis, 1950
 - (Northeastern South America and western Africa; fresh water)

6. Telson usually with 2 pairs of posterior marginal spines ***PALAEMONINAE**
 Telson usually with 3 pairs of posterior marginal spines ***PONTONIINAE**
7. Third maxilliped with antepenultimate segment clearly articulated with and much wider than next proximal segment ***HYMENOCERIDAE**
 Third maxilliped with antepenultimate segment at least partially fused with and not much wider than next proximal segment **GNATHOPHYLLIDAE**

***PALAEMONIDAE Rafinesque, 1815**

PALAEMONIA Rafinesque, 1815:98.

PALAEMONIDAE.—Samouelle, 1819:96.

DIAGNOSIS.—Carapace without complete longitudinal suture; telson usually with 2 or 3 pairs of spines on posterior margin; antennule with 2 completely separate flagella, 1 with accessory branch; mandible usually with incisor process; 1st maxilla with mesial coxal lobe not unusually large, mesial basal lobe not reduced; 2nd maxilla with 0, 1, or 2 endites; 1st maxilliped with exopodal lash; 2nd maxilliped with marginal setae on distal segment not especially stout or dense; 3rd maxilliped with antepenultimate segment neither articulated with nor much wider than next proximal segment; 2nd pereopod with dactyl usually not distinctly serrate on extensor margin; 2nd pleopod with appendix masculina in male.

RANGE.—Cosmopolitan, freshwater and marine; littoral to 1285 meters.

***PALAEMONINAE Rafinesque, 1815**

DIAGNOSIS.—Telson usually armed with 2 pairs of posterior spines (usually 3 pairs in *Coutierella*) and 2 or more submedian setae; 3rd maxilliped usually with 2 arthrobranches.

RANGE.—Cosmopolitan, freshwater and marine; subterranean, littoral, and pelagic to 170 meters.

REMARKS.—The 11 palaemonine genera from the Indo-Pacific region recognized herein are incorporated in the following key.

The remaining genera assigned to this subfamily are confined to fresh water in the Americas or western Africa and are included in the comprehensive key in Holthuis (1955:43), except two genera from subterranean fresh water in Mexico: *Bithynops* Holthuis, 1974a:135, and *Neopalaemon* Hobbs, 1973a:25, both of which may be referred to in Hobbs, Hobbs, and Daniel (1977:46, 52).

Key to Indo-West Pacific Genera of Palaemoninae

1. Carapace with branchiostegal spine, sometimes arising posterior to margin 2
 Carapace without branchiostegal spine 9
2. Elevated dentate crest at base of rostrum 3
 No elevated crest at base of rostrum 5
3. Carapace with branchiostegal suture extending posteriorly from anterior margin at point dorsal to branchiostegal spine ***Exopalaemon***
 Carapace without branchiostegal suture 4
4. Branchiostegal spine arising from margin of carapace; 2 posterior pairs of pereopods with dactyl longer than combined length of propodus and carpus; 1st pleopod of male without appendix interna on endopod ***Nematopalaemon***
 Branchiostegal spine arising posterior to margin of carapace; 2 posterior pairs of pereopods with dactyl shorter than propodus; 1st pleopod of male with appendix interna on endopod ****Urocaridella***
5. Carapace with branchiostegal suture extending posteriorly from anterior margin at point dorsal to branchiostegal spine 6
 Carapace without branchiostegal suture 8
6. Mandible normally with palp ****Palaemon***
 Mandible without palp 7
7. Telson with 3 or more pairs of spines on posterior margin; 1st maxilla with distal endite broad, proximal endite rotated mesially; 2nd maxilla with basal endite deeply bilobate; 1st maxilliped with basal endite mesially ridged, separated from palp by U-shaped notch, coxal endite large, setose
 ***Coutierella*** Sollaud, 1914:318
 (Vietnam; Hong Kong)

- Telson with 2 pairs of spines on posterior margin; 1st and 2nd maxillae and 1st maxilliped of normal palaemonoid form
 *Palaemonetes* Heller, 1869:157, 161
 (Eastern Siberia, China, Australia, America, Europe,
 Near East, Northern and western Africa)
8. Mandible with palp **Leander*
 Mandible without palp *Leandrites*
9. Carapace without hepatic spine 10
 Carapace with hepatic spine 11
10. Rostrum with elevated basal crest; mandible with palp *Leptocarpus*
 Rostrum without elevated basal crest; mandible without palp
 *Troglindicus* Sankolli and Shenoy, 1979:84
 (Freshwater well at Ratnagiri,
 Maharashtra, western India)
11. Carapace without branchiostegal suture; 3 posterior pairs of pereopods with dactyl biunguiculate; 1st pleopod of male with appendix interna on endopod
 *Brachycarpus* Bate, 1888:781
 (Red Sea; Tanzania; Sri Lanka; Ponape, Caroline
 Islands; eastward to America; western
 and eastern Atlantic; Mediterranean)
- Carapace with branchiostegal suture extending posteriorly from anterior margin at point dorsal to branchiostegal spine; 3 posterior pairs of pereopods with dactyl simple; 1st pleopod of male without appendix on endopod
 **Macrobrachium*

Exopalaemon Holthuis, 1950

Exopalaemon Holthuis, 1950a:5,9,45 [type species, by original designation: *Palaemon styliferus* H. Milne Edwards, 1840:638; gender: masculine].

DIAGNOSIS.—Rostrum with elevated dentate basal crest; carapace with branchiostegal spine and branchiostegal suture, without hepatic spine; 4th thoracic sternite without slender median process; mandible with palp; 3 posterior pairs of pereopods with dactyl simple, not biunguiculate, shorter than propodus; endopod of male 1st pleopod without appendix interna.

RANGE.—Indonesia, Vietnam, China, Korea, Japan; littoral, also brackish and fresh water.

REMARKS.—The characteristically crested rostrum seems sufficient to justify full generic status for the six or seven species originally assigned to the subgenus *Exopalaemon* by Holthuis (1950a). Only the type species has been recorded from the Philippine-Indonesian region.

1. *Exopalaemon styliferus* (H. Milne Edwards, 1840)

P[alaeon] longirostris H. Milne Edwards, 1837:394 [type locality: mouth of the Ganges; not *P. longirostris* H. Milne Edwards, 1837:392].

P[alaeon] styliferus H. Milne Edwards, 1840:638.

Leander styliferus.—Kemp, 1917:214, figs. 5, 6a, b, pl. 8: fig. 2.

Palaemon (Exopalaemon) styliferus.—Holthuis, 1950a:46, fig. 8.

DIAGNOSIS.—Rostrum armed with 5–7 teeth on basal crest, 1–3 dorsal subterminal teeth, and 6–10 ventral teeth; 4

posterior abdominal somites not sharply carinate in dorsal mid-line; antennular peduncle with distolateral spine on basal segment barely overreaching adjacent distal margin of segment, free part of shorter branch of dorsolateral flagellum several times as long as fused part; 2nd pereopod with carpus considerably shorter than chela; 3rd pereopod with dactyl no more than 1/2 as long as propodus; maximum carapace length nearly 20 mm.

RANGE.—India, Pakistan, Burma, Thailand, Borneo, and Java; shallow, salt, brackish, and fresh water.

**Leander* E. Desmarest, 1849

Leander E. Desmarest, 1849:92 [type species, by monotypy: *Leander erraticus* E. Desmarest, 1849:92 (= *Palaemon tenuicornis* Say, 1818:249); gender: masculine].

Cryptoleander Gurney, 1938:35 [this name was proposed as a unimomial collective-group name; Gurney and Lebour (1941:145, 159) referred *Leander tenuicornis* to the name, thereby according it true generic status].

DIAGNOSIS.—Rostrum without elevated basal crest; carapace with submarginal branchiostegal spine, without hepatic spine or branchiostegal suture; 4th thoracic sternite without slender median process; mandible with palp; 3 posterior pairs of pereopods with dactyl simple, not biunguiculate, shorter than propodus; endopod of male 1st pleopod with appendix interna.

RANGE.—Red Sea to Japan, Philippines, Indonesia, Australia, New Zealand, western Atlantic, eastern Atlantic, and Mediterranean; on floating weed in the open sea and among

attached plants in shallow water.

REMARKS.—It is suggested that *Urocaridella*, which was treated as a synonym of *Leander* by Holthuis (1950a:6 and

1955:45), be reestablished as a distinct genus. Only the three species covered in the following key are therefore recognized herein as belonging to this genus.

Key to Species of *Leander*

1. Rostrum sexually dimorphic, expanded vertically in female; basal antennular segment straight or concave distally lateral to 2nd segment; stylocerite distinctly overreaching midlength of basal antennular segment *3. *L. tenuicornis*
Rostrum not sexually dimorphic, not expanded vertically in either sex; basal antennular segment sinuous distally lateral to 2nd segment; stylocerite not extending beyond level of midlength of basal antennular segment 2
2. Fifth abdominal somite with pleuron rounded, not dentate, posteroventrally; basal antennular segment with convex distal lobe not reaching level of tip of distolateral spine; stylocerite not reaching level of midlength of basal antennular segment; 2nd pereopod without teeth on opposable margins of either finger 2. *L. kempi*
Fifth abdominal somite with pleuron dentate posteroventrally; basal antennular segment with convex distal lobe reaching level of tip of distolateral spine; stylocerite reaching about to level of midlength of basal antennular segment; 2nd pereopod with 1 or 2 teeth on opposable margin of each finger
. *L. paulensis* Ortmann, 1897:191
(Western Atlantic; littoral
[see Manning, 1961])

2. *Leander kempi* Holthuis, 1950

Leander kempi Holthuis, 1950a:31 [type locality: Manado anchorage, northeastern Celebes (55 meters) and Beo, Kepulauan Talaud].

DIAGNOSIS.—Rostrum not sexually dimorphic; 4th and 5th abdominal somites with pleuron rounded, unarmed; basal antennular segment with distal margin sinuous lateral to 2nd segment, stylocerite short, not reaching level of mid-length of basal segment of antennular peduncle; 2nd pereopod without teeth on opposable margin of either finger; maximum carapace length about 8 mm.

RANGE.—Known only from three specimens in the Indonesian type series.

*3. *Leander tenuicornis* (Say, 1818)

Astacus locusta J.C. Fabricius, 1781:513 [type locality: "in Oceano. Mus. Dom. Banks"; not *Astacus locusta* Pennant, 1777].

?*Penaes punctatissimus* Bosc, 1802:109, pl. 14: fig. 3 [type locality: North Atlantic "sur les fucus nageans"].

P[alaemon] tenuicornis Say, 1818:249 [type locality: Banks of Newfoundland].

?*Penaes adpersus* Tilesius, 1819:4, pl. 21a: fig. 1 [type locality: high seas].

P[alaemon] natator H. Milne Edwards, 1837:393 [type locality: Indian Ocean, "sur du fucus natans"].

Palaemon latirostris De Haan, 1833-1850:170, pl. 45: fig. 12 [type locality: Japan].

Leander erraticus E. Desmarest, 1849:92 [type locality: Guadeloupe].

P[alaemon] torensis Paulson, 1875:116, pl. 17: fig. 3 [type locality: Red Sea].

Leander tenuicornis.—Holthuis, 1950a:26, figs. 1, 2; 1952b:155, pls. 41, 42.—Manning, 1961:531-534, fig. 2d [n.b.], f.

DIAGNOSIS.—Rostrum sexually dimorphic, vertically ex-

panded in female; pleura of 4th and 5th abdominal somites dentate posteroventrally; basal antennular segment with distal margin straight or concave lateral to 2nd segment; stylocerite long, overreaching mid-length of basal segment of antennular peduncle; 2nd pereopod without teeth on opposable margin of fixed finger; maximum carapace length about 8 mm.

MATERIAL.—PHILIPPINES. Port Matalvi, western Luzon; [15°29'N, 119°56'E]; 23 Nov 1908; 130' seine: 1 female [6.4].—Cagmanaba Bay, southeastern Luzon; [13°03'N, 123°18'E]; mouth of small stream; 11 Mar 1909: 1 ovig female [6.1].—Port Busin, Burias Island; [13°08', 122°58'E]; tide pool; 8 Mar 1909 (0800); copper sulfate: 1 female [4.3].—South of Panay near sta 5184; surface under seaweed; 30(?) Mar 1908 [labeled "3/20/08"]: 1 juv [1.2].

RANGE.—Red Sea and South Africa to Japan, Philippines, Indonesia, Australia, New Zealand, and the Atlantic Ocean from Newfoundland to the Falkland Islands in the west and from the Mediterranean to the Tropic of Cancer in the east; associated with floating weed in the open sea and with attached vegetation in shallow water. The species is commonly believed to frequent all tropical and subtropical seas, except those off the Pacific coast of America, but the easternmost Pacific records in the literature seem to be those from New Zealand, and there are no identified specimens in the Smithsonian collections from the Pacific east of the Palau Islands.

REMARKS.—The juvenile specimen from south of Panay near *Albatross* station 5184 has the pleura of the fourth and fifth abdominal somites unarmed posteroventrally and a short stylocerite and short fingers of the second pereopod reminis-

cent of *L. kempii*, but the examination of series of western Atlantic specimens indicates that those characteristics are not atypical of juveniles of *L. tenuicornis*.

Leandrites Holthuis, 1950

Leandrites Holthuis, 1950a:4, 6, 30 [type species, by original designation: *Leander celebensis* De Man, 1881:141; gender: masculine].

DIAGNOSIS.—Rostrum without elevated basal crest; carapace with submarginal branchiostegal spine, without hepatic spine or branchiostegal suture; 4th thoracic sternite with

slender median process; mandible without palp; 3 posterior pairs of pereopods with dactyl simple, shorter than propodus; endopod of male 1st pleopod with appendix interna.

RANGE.—India, Singapore, and Indonesia; shallow, sometimes brackish water to 56 meters.

REMARKS.—With the proposed transfer of *Leandrites cyrtorhynchus* Fujino and Miyake, 1969a, to *Urocaridella*, only the four species covered in the following key are recognized herein. All four have been recorded from Indonesia or Singapore.

Key to Species of *Leandrites*

1. Rostrum nearly straight, overreaching antennal scale little if at all 2
Rostrum curved somewhat dorsad, distinctly overreaching antennal scale 3
2. Rostrum armed with 13–17 dorsal teeth, 3–7 ventral; 2nd pereopod overreaching antennal scale by length of chela and part of carpus 4. *L. celebensis*
Rostrum armed with 11 dorsal teeth, ventral margin unarmed except for 3 small subapical teeth; 2nd pereopod overreaching antennal scale by combined lengths of chela, carpus, and most of merus 7. *L. stenopus*
3. Rostrum armed with 10–12 dorsal and 4 or 5 ventral teeth; 2nd pereopod with carpus distinctly longer than chela 5. *L. deschampsi*
Rostrum armed with 13–16 dorsal and 8 or 9 ventral teeth; 2nd pereopod with carpus only slightly longer than chela 6. *L. indicus*

4. *Leandrites celebensis* (De Man, 1881)

Leander celebensis De Man, 1881:141 [type locality: Makasar, southwestern Celebes].

Palaemonetes hornelli Kemp, 1925:318, figs. 14, 15 [type locality: Silavathura Lagoon, southern India].

Leandrites celebensis.—Holthuis, 1950a:36, fig. 4.

DIAGNOSIS.—Rostrum nearly straight, reaching to or slightly beyond level of distal end of antennal scale, armed with 13–17 (usually 14 or 15) dorsal teeth, including 2 more widely separated on carapace posterior to level of posterior margin of orbit, and 4–7 (usually 4) teeth extending over major part of ventral margin; 2nd pereopods overreaching antennal scale by length of chela and fully 1/2 of carpus; maximum carapace length about 10 mm.

RANGE.—Southern India, Indonesia, and Northern Territory, Australia; shallow, often brackish water.

5. *Leandrites deschampsi* (Nobili, 1903)

Leander Deschampsii Nobili, 1903a:8 [type locality: Singapore].

Leandrites deschampsi.—Holthuis, 1952a:202, fig. 1.

DIAGNOSIS.—Rostrum curved dorsad, distinctly overreaching antennal scale, armed with 9 or 10 dorsal teeth, including 1 or 2 more widely separated on carapace posterior to level of posterior margin of orbit, and 4 or 5 teeth extending over major part of ventral margin; 2nd pereopods overreaching antennal scale by length of chela and part of carpus; maximum carapace length about 9 mm.

RANGE.—Singapore and China.

6. *Leandrites indicus* Holthuis, 1950

Leander indicus?.—De Man, 1881:139 [not *L. indicus* Heller, 1865].

Leandrites indicus Holthuis, 1950a:37, fig. 5 [type locality: off Makasar, southwestern Celebes].

DIAGNOSIS.—Rostrum curved dorsad, distinctly overreaching antennal scale, armed with 11–14 dorsal teeth, including 2 widely separated on carapace posterior to level of posterior margin of orbit, and 8 or 9 teeth extending over major part of ventral margin; 2nd pereopods overreaching antennal scale by length of chela and part of carpus; maximum carapace length about 8 mm.

RANGE.—Known only from the type series of two specimens from Makasar, Celebes.

7. *Leandrites stenopus* Holthuis, 1950

Leandrites stenopus Holthuis, 1950a:40, fig. 6 [type locality: Selat Madura, Indonesia; 7°25'S, 113°16'E; 56 meters].

DIAGNOSIS.—Rostrum straight, not overreaching antennal scale, armed with 11 dorsal teeth, including 2 widely separated on carapace posterior to level of posterior margin of orbit, ventral margin unarmed except for 3 small subapical teeth; 2nd pereopods overreaching antennal scale by combined lengths of chela, carpus, and nearly entire merus; carapace length about 7 mm.

RANGE.—Known only from the unique holotype from Selat Madura off northeastern Java; 56 meters.

REMARKS.—The virtually unarmed ventral margin of the

rostrum and the unusually long pereopods of the unique female representative of this species emphasize the desirability of determining the still unknown configuration of the endopod of the first pleopod of the male; the absence of an appendix interna on that appendage would suggest that *L. stenopus* might not be congeneric with the other three species assigned to the genus.

Leptocarpus Holthuis, 1950

Leptocarpus Holthuis, 1950a:5, 11, 95 [type species, by original designation: *Leander fluminicola* Kemp, 1917:223; gender: masculine].

Key to Species of *Leptocarpus*

- Rostrum overreaching antennal scale by no more than $\frac{1}{4}$ rostral length, armed ventrally with 3–5 teeth; 2nd pereopod with fingers rather deeply excavate longitudinally, about as long as palm; 5th pereopod overreaching antennal scale by little more than length of dactyl *L. fluminicola* (Kemp, 1917:223)
(India and Burma; fresh and slightly brackish water)
- Rostrum overreaching antennal scale by more than $\frac{1}{4}$ rostral length, armed ventrally with 6–10 teeth; 2nd pereopod with fingers obscurely excavate longitudinally, little more than $\frac{2}{3}$ as long as palm; 5th pereopod overreaching antennal scale by length of dactyl and at least $\frac{1}{2}$ of propodus 8. *L. potamiscus*

8. *Leptocarpus potamiscus* (Kemp, 1917)

Leander potamiscus Kemp, 1917:225, fig. 7 [type locality: Pattini River, below Pattini, Peninsular Thailand; fresh water under tidal influence].
Leptocarpus potamiscus.—Holthuis, 1950a:97.

DIAGNOSIS.—Rostrum overreaching antennal scale by more than $\frac{1}{4}$ rostral length, armed ventrally with 6–10 teeth; 2nd pereopod with fingers obscurely excavate longitudinally, little more than $\frac{2}{3}$ as long as palm; 5th pereopod overreaching antennal scale by length of dactyl and at least $\frac{1}{2}$ of propodus; maximum carapace length about 10 mm.

RANGE.—India, Andaman Islands, Thailand, Malaya, Sumatra, and Java; fresh and brackish water.

**Macrobrachium* Bate, 1868

Macrobrachium Bate, 1868a:363 [type species, selected by Fowler, 1912:558: *Macrobrachium americanum* Bate, 1868a:363; gender: neuter].
Eupalaemon Ortmann, 1891:696, 697 [type species, selected by Holthuis, 1955:53: *Palaemon acanthurus* Wiegmann, 1836:150; gender: masculine].
Parapalaemon Ortmann, 1891:696, 731 [type species, selected by Holthuis, 1955:53: *Palaemon dolichodactylus* Hilgendorf, 1879:840 (= *Palaemon scabriculum* Heller, 1862a:527); gender: masculine].
Macroterochair Stebbing, 1908:39 [type species, by monotypy; *Palaemon lepidactylus* Hilgendorf, 1879:838; gender: masculine].

DIAGNOSIS.—Rostrum rarely with elevated basal crest; carapace without branchiostegal spine, with hepatic spine, and branchiostegal suture; 4th thoracic sternite with median process; mandible with palp; 3 posterior pairs of pereopods with dactyl simple, shorter than propodus; endopod of male 1st

DIAGNOSIS.—Rostrum with elevated basal crest; carapace without branchiostegal or hepatic spines, with branchiostegal suture; 4th thoracic sternite with slender median process; mandible with palp; 3 posterior pairs of pereopods with dactyl simple, shorter than propodus; endopod of male 1st pleopod without appendix interna.

RANGE.—India to Indonesia; fresh and brackish water.

REMARKS.—The two closely related species that have been assigned to this species since its establishment may be distinguished by the following key.

pleopod without appendix interna.

RANGE.—Pantropical and subtropical, occasionally temperate, commonly fresh, sometimes brackish water, some species marine as juveniles.

REMARKS.—More than 175 valid species and subspecies of *Macrobrachium* are now generally recognized throughout the world. As there has been no attempt to compile a complete checklist of the genus since Holthuis (1950a:12–19) did so, we offer the following list of species described prior to 1990 for what it may be worth to our colleagues who have to cope with this difficult genus.

Checklist of Species of *Macrobrachium*

Valid species-group names (boldface italics)

Synonyms and species inquirendae (italics)

Type localities (roman)

- Macrobrachium acanthochirus*** Villalobos, 1967:168
Rio Valdeflores, Valdeflores de Tonameca, Pochutla, Estado de Oaxaca, Mexico
P[alaemon] (Eupalaemon) acanthosoma Nobili, 1899:242
"Katau" [= Binaturi River, near Fly River], Papua New Guinea
= ***Macrobrachium equidens***

- Macrobrachium acanthurus** (Wiegmann, 1836)
Palaemon acanthurus Wiegmann, 1836:150
 "Brazilian coast"
Palaemon forceps
Palaemon Swainsonii
Palaemon mexicanus
Macrobrachium longidigitum
Palaemon dasydactylus
Palaemon sexdentatus
Palaemon Potiete
Macrobrachium acanthurus panamensis—See **Macrobrachium panamense**
- Macrobrachium acherontium** Holthuis, 1977:188
 Grutas del Cocona, near Teapa, Tabasco, Mexico
Macrobrachium coconaensis
- Macrobrachium acutirostris** Dana, 1852a:26
 Hawaii
 = **Macrobrachium grandimanus**
- Macrobrachium adscitum adscitum** Riek, 1951:363
 Queensland, Australia
- Macrobrachium aemulum** (Nobili, 1906)
Palaemon (Parapalaemon) aemulus Nobili, 1906a:258
 Gatawake, Gambier Islands, Tuamotu Archipelago
Palaemon aequatorialis—See *P. appuni* var. *aequatorialis*
- Macrobrachium africanum** Bate, 1868a:366
 "Tambo River" [Peru]
 = **Cryphiops caementarius** (Molina, 1782)
- Macrobrachium africanus** Kingsley, 1882:107
 West coast of Africa
 = **Macrobrachium macrobrachion**
- Macrobrachium africanus** Bouvier—See *P. jamaicensis* var. *africanus*
- Macrobrachium ahkowi** Chong and Koo, 1987b:561
 Replacement name for *M. johnsoni* Chong and Koo, 1987a (not *M. johnsoni* Ravindranath, 1979)
- Macrobrachium Alcocki** Nobili, 1903b:9, fig. 5
 Pondicherry, southeastern India
 = **Macrobrachium rude**
- Macrobrachium alphonsonianus** Hoffmann, 1874:33, pl. 9: figs. 63–65
 La Réunion
 = **Macrobrachium australe**
- Macrobrachium altifrons altifrons** (Henderson, 1893)
Palaemon altifrons Henderson, 1893:444, pl. 40: figs. 4–6
 Northern India
- Macrobrachium altifrons ranjhai** Tiwari, 1964:237
 Kabul River at Nowshera, Peshawar District, Pakistan
- Macrobrachium amazonicum** (Heller, 1862)
P[alaemon] amazonicus Heller, 1862b:418
 Amazon River
Palaemon ensiculus
Palaemon Dieperinkii
- Macrobrachium americanum** Bate, 1868a:363
 Lake Amatitlan, Guatemala
- Macrobrachium andamanicum** (Tiwari, 1952)
Palaemon andamanicum Tiwari, 1952:30
 Andaman Islands
- Macrobrachium angolensis**—See *P. (Macrobrachium) jamaicensis*, var. *angolensis*
- Macrobrachium Appuni** Von Martens, 1869:31, pl. 2: fig. 5
 Puerto Cabello, Venezuela
 = **Macrobrachium heterochirus**
- Macrobrachium appuni** var. *aequatorialis* Ortmann, 1891:723, pl. 47: fig. 6
 Ecuador
 = **Macrobrachium brasiliense**
- Macrobrachium aracamuni** Rodriguez, 1982:379, fig. 2
 Cerro Aracamuni, a tepuy or flat-top mountain, Territorio Federal Amazonas, Venezuela, 680 m above sea level
- Macrobrachium armatus**—See *P. (Parapalaemon) trompi armatus*
- Macrobrachium asper** Stimpson, 1860:41 [not Latreille, 1818]
 Chinese rivers and streams near Kuangchou
 = **Macrobrachium nipponense**
- Macrobrachium asperulum** (Von Martens, 1868)
Palaemon asperulus Von Martens, 1868: pl. 1: fig. 5
 Shanghai fish market ?
Palaemon asperulus var. *brevirostris*
- Macrobrachium asperulus** var. *brevirostris* Yu, 1931:287, fig. 4
 China
 ?= **Macrobrachium asperulum**
- Macrobrachium assamense assamense** (Tiwari, 1958)
Palaemon assamensis Tiwari, 1958:297
 Someswari River, near Siju, Garo Hills, Assam, India
- Macrobrachium assamense peninsulare** (Tiwari, 1958)
Palaemon assamensis peninsularis Tiwari, 1958:298
 Nerbudda River at Khetgaon, Mandla District, Madhya Pradesh, India
- Macrobrachium atabapense** Pereira, 1986:202, figs. 4, 5, 6A
 Atabapo River, Sta. Cruz, Territorio Federal Amazonas, Venezuela; 3°20'N, 67°29'W
- Macrobrachium atactum atactum** Riek, 1951:364, fig. 5
 Conondale, Mary River, Queensland, Australia
- Macrobrachium atactum ischnomorphum** Riek, 1951:364, fig. 6
 Elimbah, Elimbah Creek, Queensland, Australia
- Macrobrachium atactum sobrinum** Riek, 1951:364, fig. 7
 Muttaborra, Queensland, Australia
- *9. **Macrobrachium australe** (Guérin-Méneville, 1838)
Palaemon australis Guérin-Méneville, 1838:37
 Tahiti
Palaemon sundaicus

- Palaemon dispar*
Palaemon alphonsianus
Palaemon parvus
Palaemon Malliardi
Palaemon (Eupalaemon) ustulatus
Leander lepidus
- Macrobrachium australiense australiense** Holthuis, 1950a:13, 174
 Gayndah, Rockhampton, and Peak Downs (Homestead), eastern Queensland, Australia
- Macrobrachium australiense crassum** Riek, 1951:366, fig. 11
 Cairns, Queensland, Australia
- Macrobrachium australiense cristatum** Riek, 1951:366, fig. 9
 Pallal, Horton River, near Bingara, New South Wales
- Macrobrachium australiense eupharum** Riek, 1951:365, fig. 8
 Burdekin River, Macrossan, Queensland, Australia
- Palaemon australis* Guérin-Méneville, 1838—See **Macrobrachium australe**
- Palaemon australis* Ortmann, 1891 (not Guérin-Méneville, 1838)
 = **Macrobrachium australiense**
- Palaemon aztecus* De Saussure, 1857:504
 Vera Cruz, Mexico
 = **Macrobrachium carcinus**
- Macrobrachium banjare** (Tiwari, 1958)
Palaemon banjarae Tiwari, 1958:299
 Banjar River off Aonrai Forest Village, Baihar Tehsil (Dist. Balaghat, M.P.), India
- Palaemon baramensis*—See *P. (Eupalaemon) sundaicus* var. *baramensis*
- *10. **Macrobrachium bariense** (De Man, 1892)
Palaemon (Macrobrachium) bariensis De Man, 1892:496, pl. 29: fig. 50
 Berit, western Flores, Indonesia
- Palaemon bataviana*—See *P. sundaicus* var. *bataviana*
- Macrobrachium birai** Lobao, Melo, and Fernandes, 1986:50
 Rio Branca, Brazil; 24°54'44"S 47°58'30"W
- Palaemon birmanicus*—See *P. spinipes* Var. *birmanicus*
- Palaemon boninensis* Stimpson, 1860:41
 Bonin Islands, in mountain streams
 = **Macrobrachium japonicum**
- Macrobrachium borellii** (Nobili, 1896)
Palaemon Borellii Nobili, 1896:2
 San Lorenzo (Provincia de Jujuy) and Provincia de San Luis, Argentina
- Urocaridella borradailei* Stebbing, 1923:8, pl. 14
 Mhlatuze River, Natal
 = **Macrobrachium equidens**
- Palaemon brachydactyla* Nobili—See *P. (Eupalaemon) sundaicus* var. *brachydactyla*
- Palaemon brachydactylus* Wiegmann, 1836:148
 East coast of Mexico
 = **Macrobrachium carcinus**
- Macrobrachium brasiliense** (Heller, 1862)
P[alaemon] brasiliensis Heller, 1862b:419, pl. 2: fig. 46
 Brazil
Palaemon appuni var. *aequatorialis*
- Palaemon brevicarpus* De Haan, 1849:172
 Purportedly but in all probability not "Japan"
 = **Macrobrachium carcinus**
- Palaemon brevicarpus* var. *heterochirus* Yu, 1936:305, figs. 1, 2 [not *P. heterochirus* Wiegmann, 1836]
 Ning-Erh, Yunnan, China
 = **Macrobrachium yui**
- Palaemon brevidigitus*—See *P. (Parapalaemon) horsti brevidigitus*
- Palaemon brevimanus*—See *P. (Parapalaemon) modestus brevimanus*
- Palaemon brevirostris*—See *P. asperulus* var. *brevirostris*
- Macrobrachium bullatum** Fincham, 1987:351, fig. 1
 Northern Territory, Australia
- Palaemon cacharensis*—See *P. hendersoni cacharensis*
- Macrobrachium caledonicum** (J. Roux, 1926)
Palaemon (Macrobrachium) caledonicus J. Roux, 1926:224, figs. 52–54
 New Caledonia
11. **Macrobrachium callirrhoe** (De Man, 1898)
Palaemon (Macrobrachium) callirrhoe De Man, 1898:152, pl. 8
 Kapuas Basin, Central Borneo
- Macrobrachium canarae** (Tiwari, 1958)
Palaemon canarae Tiwari, 1958:298
 Sitanadi River near Ghata, South Kanara, Madras State, India
- Macrobrachium carcinus** (Linnaeus, 1758)
Cancer Carcinus Linnaeus, 1758:631
 "Americae fluviiis"
Cancer (Astacus) Jamaicensis
Palaemon brachydactylus
Palaemon punctatus
Palaemon brevicarpus
Palaemon aztecus
 ?*Palaemon Montezumae*
Palaemon laminatus
Palaemon ornatus Torralbas
- Macrobrachium cavernicola** (Kemp, 1924)
Palaemon cavernicola Kemp, 1924:42, pl. 3: figs. 1–4
 Siju Cave, Garo Hills, Assam, India
- Macrobrachium chevalieri** (J. Roux, 1935)
Palaemon chevalieri (Macrobrachium) J. Roux, 1935a:193, figs. 1, 2
 Paul, Ilha de Sao Antao, Cape Verde Islands
- Macrobrachium choprai** (Tiwari, 1949)
Palaemon choprai Tiwari, 1949a:333, figs. 1, 2

- Varanasi fish market, caught near Dufferin Bridge close to Varanasi, Uttar Pradesh, northeastern India
Palaemon choprai choprai
Macrobrachium malcolmsonii choprai
12. *Macrobrachium clymene* (De Man, 1902)
Palaemon (Macrobrachium) clymene De Man, 1902:794, pl. 25: fig. 50
 Batang Baram, Sarawak, Borneo
Macrobrachium cocoense Abele and Kim, 1984:951, figs. 1, 2
 Stream on east side of Wafer Bay, Isla del Coco, Costa Rica
Macrobrachium coconaensis Guzman, Cabrera, and Kessler, 1977:208—Nomen nudum
 = *Macrobrachium acherontium*
Palaemon (Eupalaemon) cognatus—Species inquirenda
Palaemon congoensis—See *P. (Eupalaemon) dux* var. *congoensis*
Palaemon consobrinus De Saussure, 1857:504
 Veracruz, Mexico
 = *Macrobrachium olfersii*
Macrobrachium cortezi Rodriguez, 1982:383, fig. 3
 Tobogan, near Puerto Ayacucho, Rio Orinoco, Venezuela
13. *Macrobrachium cowlesi* Holthuis, 1950a:13, 257
 Manila water supply, Luzon, Philippines
Macrobrachium crassum—See *Macrobrachium australiense crassum*
Macrobrachium crebrum Abele and Kim, 1989:6, fig. 2
 Miraflores Third Locks Lake, Panama Canal
Macrobrachium crenulatum Holthuis, 1950b:95
 Rio Peje Bobo, Panama
Macrobrachium cristatum—See *Macrobrachium australiense cristatum*
Macrobrachium crybelum Chace, 1975:30, figs. 1–4
 Cave at Ciudad del Caribe (18°58'N, 70°23'W), Santo Domingo, D.N., Dominican Republic
 = *Macrobrachium faustinum lucifugum*
Palaemon cubanus (Guérin-Méneville ms.) Sharp, 1893:123
 Cuba
 = *Macrobrachium faustinum faustinum*
Palaemon d'Acqueti Sunier, 1925:cxvii
 Ambon [?]
 = *Macrobrachium rosenbergii*
Macrobrachium danae (Heller, 1865)
Palaemon Danae Heller, 1865:120, pl. 11: fig. 3
 Sydney, Australia
Palaemon dasydactylus Streets, 1871:225, pl. 2: fig. 3
 Rio Coatzacoalcos, Isthmus of Tehuantepec, Mexico
 = *Macrobrachium acanthurus*
Macrobrachium dayanum (Henderson, 1893)
Palaemon Dayanus Henderson, 1893:443, pl. 40: figs. 7–13
 India
Palaemon delagoae Stebbing, 1915:74, pl. 16
 Delagoa Bay, Mozambique
 = *Macrobrachium equidens*
Palaemon De Mani—See *P. sudaicus* var. *De Mani*
P[alaemon] Desausuri Heller, 1862b:420, pl. 2: fig. 47
 Colombia
 = *Macrobrachium olfersii*
Palaemon Dieperinkii (De Haan ms.) De Man, 1879:167
 Surinam
 = *Macrobrachium amazonicum*
Macrobrachium dierythrum Pereira, 1986:204, figs. 7–9, 12c
 Aguaro River, Paso Garzerito, Edo, Guarico, Venezuela; 8°10'N, 66°W
Macrobrachium digitum Abele and Kim, 1989:8, figs. 3, 4
 Miraflores Locks, Panama Canal
Macrobrachium digueti (Bouvier, 1895)
Palaemon Diguetei Bouvier, 1895:159, figs. 1, 2
 Mulege River, Baja California, Mexico
Leander dionyx Nobili, 1905a:482, Pl. 12: fig. 2
 Bogadjim [= Stephansort], Papua New Guinea
 = *Macrobrachium lar*
Palaemon dispar Von Martens, 1868:41
 Pulau Adonara, east of Flores, Indonesia
 = *Macrobrachium australe*
Palaemon (s.s.) *dolichodactylus* Hilgendorf, 1879:840 pl. 4: fig. 18
 Tete, Mozambique
 = *Macrobrachium scabriculum*
P[alaemon] dubius Henderson and Matthai, 1910:300, pl. 18: fig. 9
 Chingleput District, southeastern India
 = *Macrobrachium scabriculum*
Palaemon dulcis Thallwitz, 1891:99
 Northern Celebes
 = *Macrobrachium esculentum*
Macrobrachium dux (Lenz, 1910)
Palaemon (Eupalaemon) dux Lenz, 1910:129, pl. 3: figs. 2–5
 Ituri River at Avakubi, Zaire
Palaemon (Eupalaemon) Lenzii
Palaemon (Eupalaemon) dux var. *congoensis*
Palaemon (Eupalaemon) dux var. *tenuicarpus*
Palaemon (Eupalaemon) dux var. *congoensis* De Man, 1912a:416
 Kole River, tributary of the Aruwimi, Uppere Zaire
 = *Macrobrachium dux*
Palaemon (Eupalaemon) dux var. *tenuicarpus* De Man, 1925:47, fig. 12k (part)
 “Kikada,” Zaire
 = *Macrobrachium dux*
Macrobrachium edentatum Liang and Yan, 1986:109,

- figs. 1-4
Sichuan, China
Palaemon (Eupalaemon) elegans De Man, 1892:440, pl. 26: fig. 36 [not *P. elegans* Rathke, 1837]
Bogor and "Sinagar," Java, Indonesia
= *Macrobrachium sintangense*
Palaemon (Eupalaemon) endehensis De Man, 1892:465, pl. 27: fig. 42
Flores, Indonesia
= *Macrobrachium latidactylus*
Palaemon ensiculus Smith, 1869a:26, 40, pl. 1: fig. 2
Para, Brazil
= *Macrobrachium amazonicum*
- *14. *Macrobrachium equidens* (Dana, 1852)
Palaemon equidens Dana, 1852a:26
Singapore
Palaemon sundaicus var. *bataviana*
P[alaemon] (Eupalaemon) sundaicus var. *brachydactyla*
P[alaemon] sundaicus var. *De Mani*
P[alaemon] (Eupalaemon) acanthosoma
Palaemon (Eupalaemon) sundaicus var. *baramensis*
Palaemon (Eupalaemon) nasutus
Palaemon sulcatus
Palaemon delagoae
Urocaridella borradilei
Macrobrachium eriocheirum Dai, 1984:247, 251, figs. 13-17
Jungsan, Xishuangbanna Dai Aut. Pref., Yunnan Province, China
15. *Macrobrachium esculentum* (Thallwitz, 1891)
Palaemon esculentus Thallwitz, 1891:98
Northern Celebes, Indonesia
Palaemon dulcis
Macrobrachium eupharum—See *Macrobrachium australiense eupharum*
Palaemon euryrhynchus Ortmann, 1891:738, pl. 47; Fig. 12
Fiji Islands
= *Macrobrachium latimanus*
Macrobrachium faustinum faustinum (De Saussure, 1857)
Palaemon Faustinus De Saussure, 1857:505
Near Jacmel, Haiti
Palaemon cubanus
Palaemon spinimanus H. Milne Edwards, 1837 [not Latreille, 1818]
Macrobrachium faustinum lucifugum Holthuis, 1974b:233, figs. 2, 3
Cueva del Agua de Yara, "barrio" Yara, east of Baracoa, Oriente Province, Cuba
Macrobrachium crybelum
Macrobrachium felicinum Holthuis, 1949a:183
Catumbela near Benguela, Angola
- Macrobrachium ferreirai* Kensley and Walker, 1982:4, figs. 5, 6, 12b
Igarappe near Castanhai, Aripuana, Mato Grosso, Brazil
Macrobrachium fluviale (Streets, 1871)
Palaemon fluvialis Streets, 1871:227, pl. 2: fig. 5
Tributary to Coatzacoalcos River, Isthmus of Tehuantepec, Mexico (Atlantic drainage)
Macrobrachium foai (Coutière, 1902)
P[alaemon] (Eupalaemon) Foai Coutière, 1902:517
Upper Congo
Palaemon forceps H. Milne Edwards, 1837:397
Rio de Janeiro, Brazil
= *Macrobrachium acanthurus*
Macrobrachium formosense Bate, 1868a:364, pl. 31: fig. 1
Tansui River, northern Taiwan
Palaemon longipes
Macrobrachium fukienense Liang and Yan, 1980:30
Fujian Province, China
Macrobrachium gallus Holthuis, 1952b:67, fig. 1
Rio Peripa, Ecuador
Macrobrachium gangeticum Bate, 1868a:365—Species inquirenda
"Patna, a distance of 250 miles from Calcutta"
Macrobrachium georgii—See *Macrobrachium idella georgii*
Macrobrachium geron Holthuis, 1950a:258, fig. 52
Bangka, east of southern Sumatra, Indonesia
= *Macrobrachium malayanum*
Macrobrachium glypticum Riek, 1951:363, fig. 4
Coen, northern Queensland, Australia
P[alaemon] gracilimanus Randall, 1840:143
Hawaii
= *Macrobrachium grandimanus*
- *16. *Macrobrachium gracilirostre* (Miers, 1875)
Palaemon gracilirostris Miers, 1875:343
Upolu, Samoa Islands
Palaemon (Parapalaemon) modestus
Palaemon (Parapalaemon) modestus brevimanus
Macrobrachium sophronicum
Macrobrachium grandimanus (Randall, 1840)
P[alaemon] grandimanus Randall, 1840:142
Hawaii
P[alaemon] gracilimanus
Palaemon acutirostris
17. *Macrobrachium gua* Chong, 1989:32, figs. 1, 2
Stream issuing from Gomantong Hill, about 5°N, 118°E, Sabah, Borneo
Macrobrachium guangxiense Liang and Yan, 1981 ?
Guangxi Province, China ?
18. *Macrobrachium hainanense* (Parisi, 1919)
Palaemon (Parapalaemon) hainanense Parisi, 1919:87, pl. 3: fig. 1, pl. 6: figs. 1, 7
Keng-kong River, Hainan

- Palaemon similis*
Macrobrachium hancocki Holthuis, 1950b:96
 Esparta, Rio Barranca, Costa Rica
- Palaemon (Macrobrachium) handschini* J. Roux, 1933:345
 Katherine River, Northern Territory, Australia
 Species inquirenda
- Macrobrachium hendersodayanum** (Tiwari, 1952)
Palaemon henderso-dayanus Tiwari, 1952:29
 Western Ghats (Satara District to Mysore State), India
- Macrobrachium hendersoni hendersoni** (De Man, 1906)
Palaemon (Parapalaemon?) Hendersoni De Man, 1906:405 Darjeeling, western Bengal, India
Palaemon yunnanensis
- Macrobrachium hendersoni cacharensis** (Tiwari, 1952)
Palaemon hendersoni cacharensis Tiwari, 1952:32
 Assam, India
- Macrobrachium hendersoni platyrostre** (Tiwari, 1952)
Palaemon hendersoni platyrostris Tiwari, 1952:32
 Darjeeling, western Bengal, India
- Palaemon Herklotsii*—See *P. (Macrobrachium) jamaicensis*, var. *Herklotsii*
- Macrobrachium heterochirus** (Wiegmann, 1836)
Palaemon heterochirus Wiegmann, 1836:149
 East Coast of Mexico
Palaemon Appuni
- Palaemon heterochirus* Yu, 1936—See *P. brevicarpus* var. *heterochirus*
- Macrobrachium hildebrandti** (Hilgendorf, 1893)
Bithynis? hildebrandti Hilgendorf, 1893a:244
 Central Madagascar
- Palaemon (Macrobrachium) Hilgendorfi* Coutière, 1899:382
 Eastern Madagascar
 = **Macrobrachium lepidactylus**
- Macrobrachium hirsutimanus** (Tiwari, 1952)
Palaemon hirsutimanus Tiwari, 1952:31
 Doi Chaung, Thailand
- Macrobrachium hirtimanus** (Olivier, 1811)
Palaemon hirtimanus Olivier, 1811:663
 Indian Ocean
- Macrobrachium hobbsi** Nates and Villalobos, 1990:7, fig. 3
 Rio El Naranjo, about 8 km NE of Pijijiapan (Carretera Tonalá-Pijijiapan), Chiapas, Mexico
- Macrobrachium holthuisi** Genofre and Lobao, 1978:273, fig. 1
 Guaeca River, Sao Sebastiao, Sao Paulo, Brazil
19. **Macrobrachium horstii** (De Man, 1892)
Palaemon (Parapalaemon) Horstii De Man, 1892:460, pl. 27: fig. 39
 Palopo, central Celebes
Palaemon (Parapalaemon) horsti brevidigitus
Palaemon (Parapalaemon) horsti brevidigitus J. Roux, 1930:358
 Bali, Indonesia
 = **Macrobrachium horstii**
- *20. **Macrobrachium idae** (Heller, 1862)
P[alaeomon] Idae Heller, 1862b:416, pl. 2: fig. 40, 41
 Borneo, Indonesia
Palaemon (Eupalaemon) ritsemæ
Palaemon (Eupalaemon) Idae, var. *subinermis*
Palaemon (Eupalaemon) Mariae
Palaemon (Eupalaemon) robustus
Palaemon (Eupalaemon) idae, var. *idella*—See **Macrobrachium idella**
- Palaemon idae* var. *mammilloactylus*—See **Macrobrachium mammilloactylus**
- P[alaeomon] (Eupalaemon) Idae*, var. *subinermis* Nobili, 1899:237
 San Guiseppe River near Innawi, Meheo District, Papua New Guinea
 = **Macrobrachium idae**
- Macrobrachium idella idella** (Hilgendorf, 1898)
Palaemon (Eupalaemon) idae, var. *idella* Hilgendorf, 1898:29, fig. A
 Tanzania
Palaemon (Eupalaemon) multidentis
- Macrobrachium idella georgii** Jayachandran and Joseph, 1985a:130, fig. 1
 Southwestern India
- Macrobrachium iheringi** (Ortmann, 1897)
Palaemon iheringi Ortmann, 1897:211, pl. 1: fig. 7, 8
 São Paulo State, Brazil
- Macrobrachium inca** Holthuis, 1950b:93
 Rio Moche near Salaverry, Peru
- Macrobrachium indicum** Jayachandran and Joseph, 1986:217, figs. 1–4
 Vellayani Lake, southern India; 8°24'09"–8°6'30"N, 76°59'08"–76°59'47"E
- Palaemon inermis*—See *P. Idae*, var. *inermis*
- Macrobrachium inflatum** Liang and Yan, 1985:254, 258
 China
- Macrobrachium inpa** Kensley and Walker, 1982:6, figs. 7–9, 12c
 Igarape da Cachoeira, Amazonas, Brazil
- Macrobrachium insulare** (Parisi, 1919)
Palaemon (Parapalaemon) insularis Parisi, 1919:85, pl. 3: figs. 2, 3, pl. 6: fig. 12
 Taiwan
- Macrobrachium intermedium** (Stimpson, 1860)
Leander intermedius Stimpson, 1860:41
 Port Jackson, Australia (marine); 2 fathoms
- Macrobrachium ischnomorphum**—See *M. atactum ischnomorphum*
21. **Macrobrachium jacobsoni** Holthuis, 1950a:227, fig. 47
 Pulau Simeulue, off northwestern Sumatra, Indonesia
Cancer (Astacus) Jamaicensis Herbst, 1792:57, pl. 27: fig. 2

- “Jamaica in Flussen”
 = *Macrobrachium carcinus*
Palaemon jamaicensis var. *africanus* Bouvier, 1895:160
 Assini, Ivory Coast
 = *Macrobrachium vollenhovenii*
Palaemon (Macrobrachium) jamaicensis, var. *angolensis*
 De Man, 1904:314, pl. 19: figs. 39–45, pl. 20: figs. 46, 48–53
 Catumbela, Angola
 = *Macrobrachium vollenhovenii*
Palaemon (Macrobrachium) jamaicensis, var. *Herklotsii*
 De Man, 1912b:239
 “Mayumba” [Mayumbe, near Isiro ?], Zaire
 = *Macrobrachium vollenhovenii*
Macrobrachium japonicum (De Haan, 1849)
Palaemon japonicum De Haan, 1849:172
 Japan
Palaemon boninensis
- *22. *Macrobrachium jaroense* (Cowles, 1914)
Palaemon jaroensis Cowles, 1914:385, pl. 3: fig. 8
 Hibucawan River near Jaro, Leyte, Philippines
23. *Macrobrachium javanicum* (Heller, 1862)
P[alaemon] javanicus Heller, 1862b:421, pl. 2: fig. 48
 Java
Palaemon (Eupalaemon) neglectus
Macrobrachium jelskii (Miers, 1877)
Palaemon jelskii Miers, 1877:661, pl. 67: fig. 1
 Oyapock, French Guiana
Macrobrachium jiangxiense Liang and Yan, 1985:256,
 258
 China
Macrobrachium johnsoni Ravindranath, 1979:184, figs.
 1, 2
 Fish market, Guntur, Andhra Pradesh State, India
Macrobrachium johnsoni Chong and Khoo, 1987a:360,
 figs. 1–3 [not Ravindranath, 1979]
 Gunong Palai, peninsular Malaysia
 = *Macrobrachium ahkowi*
24. *Macrobrachium joppae* Holthuis, 1950a:233, fig. 48
 Pulau Nias, west of Sumatra, Indonesia
Macrobrachium kempfi (Tiwari, 1949)
Palaemon kempfi Tiwari, 1949b:330
 Small stream between Chittagong and Sultan Bagu
 Bastan, Bangladesh
Macrobrachium kistnense (Tiwari, 1952)
Palaemon kistnensis Tiwari, 1952:28
 India and Sri Lanka
Macrobrachium kiukianense (Yu, 1931)
Palaemon kiukianensis Yu, 1931:279, fig. 1
 Kiukiang, Kiangsi Province, China
Macrobrachium kotreeanum—See *Macrobrachium mal-*
colmsonii kotreeanum
Macrobrachium lamarrei lamarrei (H. Milne Edwards,
 1837)
- P[alaemon] lamarrei* H. Milne Edwards, 1837:397
 “cotes du Bengale”
Macrobrachium lamarrei lamarroides (Tiwari, 1952)
Palaemon lamarrei lamarroides Tiwari, 1952:28
 Logtak Lake, Manipur, Assam, India
Palaemon lamarroides—See *Macrobrachium lamarrei*
lamarroides
P[alaemon] laminatus (Gollmer manuscript) Von Mar-
 tens, 1869:24
 Caracas, Venezuela
 = *Macrobrachium carcinus*
Palaemon (Macrobrachium) lampropus De Man,
 1892:493, pl. 29: fig. 49
 Celebes and Timor, Indonesia
 = *Macrobrachium latidactylus*
- *25. *Macrobrachium lanceifrons* (Dana, 1852)
Palaemon lanceifrons Dana, 1852a:26
 Manila, Luzon, Philippines
Palaemon lanceifrons var. *montalbanensis*
Palaemon lanceifrons var. *montalbanensis* Cowles,
 1914:371, pl. 2, fig. 6
 Montalban, near Manila, Luzon, Philippines
 = *Macrobrachium lanceifrons*
Macrobrachium lanchesteri (De Man, 1911)
Palaemon paucidens Lanchester, 1901 [not De Haan,
 1841, or Hilgendorf, 1898]
Pal[aeon] (Eupalaemon) Lanchesteri De Man,
 1911a:264
 Songkhla, Peninsular Thailand
Palaemon Lar Weber, 1795:94—Nomen nudum
 = *Macrobrachium lar*
- *26. *Macrobrachium lar* (Fabricius, 1798)
Palaemon Lar Fabricius, 1798:402
 “in India Dom. Daldorff”
Palaemon longimanus
Palaemon ornatus
Palaemon tridens
Palaemon vagus
Palaemon spectabilis
Palaemon ruber
Palaemon mayottensis
Palaemon reunionnensis
Palaemon madagascariensis
Leander dionyx
Cancer teatae
- *27. *Macrobrachium latidactylus* (Thallwitz, 1891)
Palaemon latidactylus Thallwitz, 1891:97
 Northern Celebes, Indonesia
Palaemon (Eupalaemon) endehensis
Palaemon (Macrobrachium) lampropus
Palaemon (Macrobrachium) latidactylus minor (J. Roux
 manuscript) Woltereck, 1941:153—Nomen nudum
- *28. *Macrobrachium latimanus* (Von Martens, 1868)
Pal[aeon] latimanus Von Martens, 1868:44

- Loquilocon, Samar, Philippines
Palaemon euryrhynchus
Palaemon (Macrobrachium) singalangensis
Palaemon (Eupalaemon) Lenzii De Man, 1911b:225
 Congo River, probably near Boma
 = *Macrobrachium dux*
- *29. *Macrobrachium lepidactyloides* (De Man, 1892)
Palaemon (Macrobrachium) lepidactyloides De Man, 1892:497, pl. 29: fig. 51
 River above waterfall at "Mbawa," Flores ("Rakambaha, W. Flores," according to Holthuis, 1950a:251), Indonesia
 ?= *Macrobrachium placidum*
- Macrobrachium lepidactylus* (Hilgendorf, 1879)
Palaemon (s.s.) *lepidactylus* Hilgendorf, 1879:838, pl. 4: figs. 14-16
 Mozambique
Palaemon (Macrobrachium) Hilgendorfi
Leander lepidus De Man, 1915:410, pl. 28: fig. 6
 Mouths of small streams at "Oinake," east of Teluk Jos Sudrso, West New Guinea, Indonesia
 = *Macrobrachium australe*
- Palaemon leptodactylus*—See *P. pilimanus* var. *leptodactylus*
Macrobrachium longidigitum Bate, 1868:365, pl. 31: fig. 2
 Type locality unknown
 = *Macrobrachium acanthurus*
- Macrobrachium longidigitum* Dai, 1984:248, 251, figs. 18-22 [not *M. longidigitum* Bate, 1868a]
 Ganlanba, Lancang River, Yunnan Province, China
Palaemon longimanus Weber, 1795:94—Nomen nudum
 = *P. longimanus* Fabricius
- Palaemon longimanus* Fabricius, 1798:402
 "in India orientali Dom. Daldorff"
 = *Macrobrachium lar*
- Palaemon longipes* De Haan, 1849:171 [not *Palaemon longipes* Olivier, 1811]
 Japan
 = *Macrobrachium formosense*
- Palaemon longipes* Lockington, 1878:161 [not *P. longipes* Olivier, 1811]
 Mulege River, Baja California, Mexico
 = *Macrobrachium tenellum*
30. *Macrobrachium lorentzi* (J. Roux, 1921)
Palaemon (Parapalaemon) lorentzi J. Roux, 1921:596, pl. 16: figs. 1-3
 Sungai Lorentz Basin, southwestern New Guinea (Irian Jaya), Indonesia
Macrobrachium lucifugum—See *Macrobrachium faustinum lucifugum*
- Macrobrachium lujae* (De Man, 1912)
Palaemon (Eupalaemon) Lujae De Man, 1912a:415
 Sankuru River at Kondue near Lusambo, Kasai District, Zaire
- Macrobrachium macrobrachion* (Herklots, 1851)
Palaemon macrobrachion Herklots, 1851:25
 Butri, near Dixcove, Ghana
Palaemon africanus Kingsley, 1882
- Macrobrachium maculatum* Liang and Yan, 1980:31 (fig'd.)
 Fujian Province, China
Palaemon madagascariensis Hoffmann, 1874:35, pl. 7: fig. 58
 "l'île de Nossy-Faly" = "Nosy Fali, NW. Madagascar," acc. to Holthuis (1950a:188)
 = *Macrobrachium lar*
31. *Macrobrachium malayanum* (J. Roux, 1935)
Palaemon (Macrobrachium) pilimanus malayanus J. Roux, 1935b:32
 "Lasah, Plus Valley, East Perak," peninsular Malaysia
Macrobrachium geron
Macrobrachium malcolmsonii malcolmsonii (H. Milne Edwards, 1844)
Palaemon Malcolmsonii H. Milne Edwards, 1844:8
 Nagpur, central India
Palaemon spinipes Var. *birmanicus*
Macrobrachium malcolmsonii chopra Johnson, 1973:274, 279—See *Macrobrachium choprai*
- Macrobrachium malcolmsonii kotreeanum* Johnson, 1973:274, 279
 Kotree, Indus River, Pakistan
Palaemon Malliardi Richters, 1880:166, pl. 18: figs. 1-3
 Mauritius
 = *Macrobrachium australe*
32. *Macrobrachium mamillodactylus* (Thallwitz, 1892)
Palaemon idae var. *mamillodactylus* Thallwitz, 1892:15
 Luzon, Philippines, and northern Celebes, Indonesia (acc. to Holthuis, 1950a:150)
Palaemon (Eupalaemon) Wolterstorffi
Palaemon philippinensis
 ?*Palaemon talaverae*
- Macrobrachium manipurensis* (Tiwari, 1952)
Palaemon manipurensis Tiwari, 1952:30
 Manipur Assam States, India
Palaemon (Eupalaemon) Mariae Coutière, 1900:1266
 Madagascar
 = *Macrobrachium idae*
- Palaemon mayottensis* Hoffmann, 1874:32, pl. 9: figs. 61, 62
 Ile de Mayotte, Comoro Islands, and "l'île Nossy-Faly," Madagascar
 = *Macrobrachium lar*
- Macrobrachium meridionalis* Liang and Yan, 1983:213, 214
 Hainan Island, China

- Palaemon mexicanus* De Saussure, 1857:504
Cuba and Mexico
= *Macrobrachium acanthurus*
Macrobrachium michoacanus Guzman, Cabrera, and Kensler, 1977
Nomen nudum
Macrobrachium michoacanus Nates and Villalobos, 1990:2, fig. 2
Rio Mexcalhuacan, about 40 km NE of Playa Azul (Carretera Azul-Caleta de Campos), Michoacan, Mexico
Macrobrachium microps Holthuis, 1978:210, figs. 1, 2
Danmin Cave, near Konogusgus, New Ireland
Macrobrachium mieni Dang, 1975:68
Vietnam
33. *Macrobrachium minutum* (J. Roux, 1917)
Palaemon minutus J. Roux, 1917:599, pl. 27: figs. 1-3
Sentani Lake, northeastern Irian Jaya (West New Guinea), Indonesia
34. *Macrobrachium mirabile* (Kemp, 1917)
Palaemon mirabilis Kemp, 1917:227, pl. 10
Rangoon, Burma
Palaemon (Parapalaemon) modestus De Man, 1892:469, pl. 27: fig. 43 [not *P. modestus* Heller, 1862]
River at "Wukur," not far from Sika, southeastern Flores, Indonesia
= *Macrobrachium gracilirostre*
Palaemon (Parapalaemon) modestus brevimanus J. Roux, 1934a:228, figs. 9, 10
Bimun, New Ireland
= *Macrobrachium gracilirostre*
Palaemon montalbanensis—See *P. lanceifrons* var. *montalbanensis*
Palaemon Montezumae De Saussure, 1857:504
Veracruz, Mexico
?= *Macrobrachium carcinus*
Macrobrachium moorei (Calman, 1899)
Palaemon moorei Calman, 1899:709, pl. 40: figs. 20-24
Lake Tanganyika, 15 meters
Palaemon (s.s.) *Mossambicus* Hilgendorf, 1879:839, pl. 4: fig. 17
= *Macrobrachium rude*
Palaemon (Eupalaemon) multidentis Coutière, 1900:1266
Branch of Onilahy River, western Madagascar
= *Macrobrachium idella*
Macrobrachium naso (Kemp, 1918)
Palaemon naso Kemp, 1918:91, pl. 25: figs. 1-5
Inle Lake region, Burma
Palaemon (Eupalaemon) nasutus Nobili, 1903a:9, 1 fig. Singapore
= *Macrobrachium equidens*
Macrobrachium nattereri (Heller, 1862)
P[alaemon] Nattereri Heller, 1862b:414, pl. 2: figs. 36, 37
Rio Negro, Brazil
35. *Macrobrachium natulorum* Holthuis, 1984a:164, figs. 2, 3
Jawej River near Tigi Lake, Irian Jaya, Indonesia
Palaemon (Eupalaemon) neglectus De Man, 1905:201, pl. 15: fig. 6
Mergui Archipelago and northeastern Sumatra
= *Macrobrachium javanicum*
Macrobrachium nepalense Kamita, 1974:10
Nepal
Macrobrachium niloticum (P. Roux, 1833)
Palaemon Niloticus P. Roux, 1833:73, pl. 7: fig. 2
Nile River
Macrobrachium niphae Shokita and Takeda, 1989:148, figs. 1, 2, pl. 1
Nang Rong waterfall stream, Thailand
Macrobrachium nipponense (De Haan, 1849)
Palaemon nipponensis De Haan, 1849:171
Japan
Palaemon asper Stimpson, 1860 [not Latreille, 1818]
Palaemon sinensis
Macrobrachium nobilii (Henderson and Matthai, 1910)
Palaemon nobilii Henderson and Matthai, 1910:295, pl. 17: fig. 6
Walajabad, Chingleput district, India
Macrobrachium novaehollandiae (De Man, 1908)
Pal[aeon] (Eupalaemon) novae-hollandiae De Man, 1908:370, pl. 16
Sydney, Australia
Macrobrachium obtusifrons Dai, 1984:246, 251, figs. 6-12
Guanting Reservoir, Miyun County, Beijing, China
Macrobrachium occidentale Holthuis, 1950a:95
Rio de los Esclavos, Guatemala
36. *Macrobrachium oenone* (De man, 1902)
Palaemon (Macrobrachium) oenone De Man, 1902:784, pl. 25: fig. 49
Northern Halmahera, Indonesia
Palaemon (Macrobrachium) oenone papuana
Palaemon (Macrobrachium) oenone papuana J. Roux, 1927:324, fig. 2
Mamberamo River, northern Irian Jaya, Indonesia
= *Macrobrachium oenone*
Macrobrachium ohione (Smith, 1874)
Palaemon Ohionis Smith, 1874:640
Ohio River at Cannelton, Ohio
Palaemon sallei
Macrobrachium olfersii (Wiegmann, 1836)
Palaemon Olfersii Wiegmann, 1836:150
"Brazilian Coast"
Palaemon spinimanus
Palaemon consobrinus
Palaemon Desausuri

- Palaemon Potiporanga*
Palaemon ornatus Olivier, 1811:660
 East Indies
 = *Macrobrachium lar*
Palaemon ornatus (Forns manuscript) Torralbas, 1917:616, figs. 56, 57 [not Olivier, 1811]
 Cuba
 = *Macrobrachium carcinus*
37. *Macrobrachium palaemonoides* Holthuis, 1950a:136, fig. 31
 Lake Tawar, northern Simaloer, off west coast of Sumatra, Indonesia, at 2°50'N, 95°50'E
Macrobrachium palawanensis Johnson, 1962a:307, fig. 1
 Palawan, Philippines
 ?= *Macrobrachium idae*
Macrobrachium panamense Rathbun, 1912
Macrobrachium acanthurus panamense Rathbun, 1912:13
 Rio Calobre [not "Rio Calabre"], Panama
Palaemon papuana—See *P.(Macrobrachium) oenone papuana*
Palaemon parvus Hoffmann, 1874:35, pl. 7: fig. 59
 "Nosy Faly," Madagascar
 ?= *Macrobrachium australe*
Macrobrachium patsa (Coutière, 1899)
Palaemon (Parapalaemon) Patsa Coutière, 1899:382
 Madagascar
Palaemon (Eupalaemon?) paucidens Hilgendorf, 1893b:155 [not *P. paucidens* De Haan, 1841]
 Adeli, near Bismarckbourg, Togo
 = *Macrobrachium raridens*
Palaemon paucidens Lanchester, 1901:568, pl. 33: fig. 4 [not *P. paucidens* De Haan, 1841]
 Songkhla, peninsular Thailand
 = *Macrobrachium lanchesteri*
Macrobrachium pectinatum Pereira, 1986:200, figs. 2, 3, 6B
 Atabapo River, Sta. Cruz, Territorio Federal Amazonas, Venezuela; 3°20'N, 67°29'W
Macrobrachium peguense (Tiwari, 1952)
Palaemon peguensis Tiwari, 1952:27
 Burma
Palaemon peninsularis—See *Macrobrachium as-samense peninsulare*
Macrobrachium petersii (Hilgendorf, 1879)
Palaemon (s.s.) *Petersii* Hilgendorf, 1879:841, pl. 4: fig. 19
 Tete, Mozambique
Macrobrachium petiti (J. Roux, 1934)
Palaemon (Macrobrachium) Petiti J. Roux, 1934b:537, figs. 1-3
 Vatamandry, eastern Madagascar
Macrobrachium petronioi Melo, Lobao, and Fernandes, 1986:51
 Rio Branco, Brazil
Palaemon philippinensis Cowles, 1914:340, pl. 2: fig. 2
 San Juan and Pasig rivers, near Manila, Philippines
 = *Macrobrachium mammilodactylus*
38. *Macrobrachium pilimanus* (De Man, 1879)
Palaemon pilimanus De Man, 1879:181
 Muaralabuh, near Padang, western Sumatra, Indonesia
Palaemon pilimanus, var. *leptodactylus*
Palaemon (Macrobrachium) pygmaeus
Palaemon pilimanus, var. *leptodactylus* De Man, 1892:476, pl. 28: fig. 44i-l
 Bogor, Java, Indonesia
 = *Macrobrachium pilimanus*
Palaemon (Macrobrachium) pilimanus malayanus—See *Macrobrachium malayanum*
Macrobrachium pinguis Dai, 1984:245, 250, figs. 1-5
 Longhai County, Fujian Province, China
- *39. *Macrobrachium placidulum* (De Man, 1892)
Palaemon (Macrobrachium) placidulus De Man, 1892:489, pl. 28: fig. 48
 Indonesia
 ?= *Palaemon spinimanus* Latreille, 1818
40. *Macrobrachium placidum* (De Man, 1892)
Palaemon (Macrobrachium) placidus De Man, 1892:483, pl. 28: fig. 46
 Kajutanam, north of Padang, western Sumatra, Indonesia
 ?= *Palaemon (Macrobrachium) lepidactyloides*
Palaemon platyrostris—See *Macrobrachium hendersoni platyrostre*
41. *Macrobrachium poeti* Holthuis, 1984b:143, fig. 1
 Luwang Jurangjero, south central Java, Indonesia (8°S, 111°E), about 100 m below entrance
Palaemon Potiete Muller, 1892:184, 188, 190
 Type locality not indicated
 = *Macrobrachium acanthurus*, according to Holthuis (1952b:46)
Palaemon Potiporanga Muller, 1880:152
 Brazil?
 = *Macrobrachium olfersii*, according to Holthuis (1952b:96)
Macrobrachium potiuna (Muller, 1880)
Palaemon Potiuna Muller, 1880:152
 Itajahy River near Blumenau, Santa Catarina state, Brazil
Macrobrachium praecox (J. Roux, 1928)
Palaemon (Eupalaemon) praecox J. Roux, 1928a:43
 Venezuela and Colombia
Macrobrachium pumilum Pereira, 1986:208, figs. 11, 12b
 Aguaro River, Cachimbo Pass, Edo. Guarico, Venezuela; 8°10'N, 66°35'W
P[alemon] punctatus Randall, 1840:146

- “East Indies?” and/or West Indies
 = *Macrobrachium carcinus*
Palaemon (Macrobrachium) pygmaeus J. Roux, 1928b:222, figs. 1–4
 “Kastobo” Lake, Pulau Bawean, Java Sea, Indonesia
 = *Macrobrachium pilimanus*
Macrobrachium quelchi (De Man, 1900)
Palaemon (Macrobrachium) Quelchi De Man, 1900:57, pl. 6: figs. 1–8
 Upper Mazaruni River, Guyana
Macrobrachium ranjhahi—See *Macrobrachium altifrons ranjhahi*
Macrobrachium ravidens (Hilgendorf, 1893)
Palaemon (Eupalaemon) ravidens Hilgendorf, 1893c:181
 Adeli, near Bismarckbourg, Togo
Palaemon (Eupalaemon?) paucidens Hilgendorf, 1893
Macrobrachium rathbunae Holthuis, 1950b:94
 Hog Creek Valley, San Jose Island, Archipelago de las Perlas, Gulf of Panama
Palaemon reunionnensis Hoffmann, 1874:33, pl. 9: figs. 66, 67
 La Réunion
 = *Macrobrachium lar*
Macrobrachium reyesi Pereira, 1986:198, figs. 1, 6C
 Quebrada Corral de Piedra, El Limon, Maracay, Edo. Aragua, Venezuela; 10°15'N, 67°35'W
Palaemon (Eupalaemon) ritsemiae De Man, 1897:774
 Atjeh, northwestern Sumatra, Indonesia
 = *Macrobrachium idae*
Palaemon riukuensis Kubo, 1940a:21, figs. 12, 13
 RyuKyu Islands—Species inquirenda
Palaemon (Eupalaemon) robustus De Man, 1902:771, pl. 24: fig. 48
 Halmahera, Indonesia
 = *Macrobrachium idae*
Macrobrachium rodriguezi Pereira, 1986:206, figs. 10, 12a
 Caris River, El Tigre, Edo. Anzoategui, Venezuela; 8°45'N, 64°50'W
Macrobrachium rogersi (Tiwari, 1952)
Palaemon rogersi Tiwari, 1952:31
 Burma
Palaemon rosalesi Rodriguez de la Cruz R., 1965:100, pl. 7
 Ciudad del Carmen, Campeche, Mexico—Species inquirenda
 (probably juvenile *Macrobrachium*)
 *42. *Macrobrachium rosenbergii rosenbergii* (De Man, 1879)
Palaemon Rosenbergii De Man, 1879:167
 Andai, northwestern Irian Jaya, Indonesia
P[alaemon] whitei
Palaemon spinipes Schenkel, 1902
Palaemon d'Acqueti
Macrobrachium rosenbergii schenkeli Johnson, 1973:274, 277
 Tavoy, Burma
Palaemon ruber Hess, 1865:165, pl. 7: fig. 20
 Fiji Islands
 = *Macrobrachium lar*
Macrobrachium rude (Heller, 1862)
Palaemon rudis Heller, 1862a:527
 Sri Lanka
Palaemon (s.s.) *Mossambicus*
Palaemon (Eupalaemon) Alcocki
P[alaemon] sallei (Guérin-Méneville ms) Kingsley, 1882:108
 Mississippi
 = *Macrobrachium ohione*
Macrobrachium sankollii Jalihal and Shenoy, 1988:11 (illus.)
 Karnataka, India
 43. *Macrobrachium scabriculum* (Heller, 1862)
Palaemon scabriculus Heller, 1862b:527
 Sri Lanka
Palaemon (s.s.) *dolichodactylus*
Palaemon dubius
Macrobrachium schenkeli—See *Macrobrachium rosenbergii schenkeli*
Macrobrachium scortecii Maccagno, 1961:336
 “Cal Galloan,” Somalia
Palaemon sexdentatus Streets, 1871:226, pl. 2: fig. 5
 Tidewater of Rio Coatzacoalcos, Veracruz state, Mexico
 = *Macrobrachium acanthurus*
Macrobrachium shokitai Fujino and Baba, 1973:101, figs. 1–4
 River head, Urauchi River, Iriomote Island, Ryukyu Islands
Palaemon similis Yu, 1931:281, fig. 2
 Amoy, China
 = *Macrobrachium hainanense*
Palaemon sinensis Heller, 1862a:528
 Shanghai, China
 = *Macrobrachium nipponense*
Palaemon (Macrobrachium) singalangensis Nobili, 1900a:487
 “Aier Mantcior, presso il Monte Singalang,” Sumatra, Indonesia
 = *Macrobrachium latimanus*
 44. *Macrobrachium sintangense* (De Man, 1898)
Palaemon (Eupalaemon) sintangensis De Man, 1898:138, pl. 6
 Sintang, Kapuas River, Borneo
Palaemon (Eupalaemon) elegans De Man, 1892
Macrobrachium siwalikense (Tiwari, 1952)
Palaemon siwalikensis Tiwari, 1952:28
 Base of Simla Hills, Punjab, India
Macrobrachium sobrinum—See *Macrobrachium atac-*

- tum sobrinum*
Macrobrachium sollaudii (De Man, 1912)
Palaemon (*Eupalaemon*) *Sollaudii* De Man, 1912a:413
 Near Mobayi-Mbongo, Zaire
Macrobrachium sophronicum Holthuis, 1950a:198, fig. 40
 "Wukur River," Sika, southeastern Flores, Indonesia
 = **Macrobrachium gracilirostre**
Palaemon spectabilis Heller, 1862a:527
 Tahiti
 = **Macrobrachium lar**
Palaemon spinimanus Latreille, 1818:5, pl. 319; fig. 1
 Type locality ?
 ?= Senior synonym of **Macrobrachium placidulum**
Palaemon spinimanus H. Milne Edwards, 1837:399 [not
Palaemon spinimanus Latreille, 1818]
 Antilles and coasts of Brazil
 = **Macrobrachium faustinum** and *M. olfersii*
Palaemon spinipes Schenkel, 1902:501, pl. 9: fig. 7 [not
P. spinipes Desmarest, 1817]
 Kema, Minahasa, northeastern Celebes, Indonesia
 = **Macrobrachium rosenbergii**
Palaemon spinipes Var. *birmanicus* Schenkel, 1902:503
 pl. 9: fig. 8
 Burma
 = **Macrobrachium malcolmsonii**
Macrobrachium srilankense H.H. Costa, 1979:60, fig. 6,
 pl. 1: fig. D
 Sri Lanka
Palaemon (*Parapalaemon*) *stresemanni* J. Roux,
 1918:113, figs. 1, 2—Species inquirenda
 Pulau Tjelukanbawang, Bali, Indonesia
Palaemon subinermis—See *P. (Eupalaemon) Idae*, var.
subinermis
Palaemon sulcatus Henderson and Matthai, 1910:289, pl.
 16: fig. 4
 Cochin, southern India
 = **Macrobrachium equidens**
45. **Macrobrachium sulcaripale** Holthuis, 1950a:220, fig. 45
 Bangkalan River, Pulau Salajar, Indonesia
P[alaemon] sundaicus Heller, 1862b:415, pl. 2: figs.
 38, 39
 Java, Indonesia
 = **Macrobrachium australe**
Palaemon (*Eupalaemon*) *sundaicus* var. *baramensis* De
 Man, 1902:770
 Baram River, Sarawak, Borneo
 = **Macrobrachium equidens**
Palaemon sundaicus var. *bataviana* De Man, 1897:784
 Djakarta, Java, Indonesia
 = **Macrobrachium equidens**
P[alaemon] (Eupalaemon) sundaicus var. *brachydactyla*
 Nobili, 1899:238
 Ambon
 = **Macrobrachium equidens**
P[alaemon] sundaicus var. *De Mani* Nobili, 1899:239
 Atjeh
 = **Macrobrachium equidens**
Macrobrachium superbum (Heller, 1862)
Palaemon superbum Heller, 1862a:528
 Shanghai, China
Macrobrachium surinamicum Holthuis, 1948:1112
 Plantation "Geyersvlijt," Paramaribo, Surinam
Pal[aeon] Swainsonii (Leach ms) White, 1847:78
 Type locality ?
 = **Macrobrachium acanthurus**
Palaemon talaverae Blanco, 1939a:168, pl. 2
 Lake Sampaloc, San Pablo, Laguna Province, Luzon,
 Philippines
 ?= **Macrobrachium mammillodactylus**
Cancer teatae Curtiss, 1938:162
 Tahiti
 = **Macrobrachium lar**
Macrobrachium tenellum (Smith, 1871)
Palaemon tenellus Smith, 1871:98
 Polvon, western Nicaragua
Palaemon longipes Lockington, 1878
Palaemon tenuicarpus—See *P. (Eupalaemon) dux* var.
tenuicarpus
Macrobrachium therezieni Holthuis, 1965:281, fig. 1
 Maningory River, Fenerive district, Tamatave province,
 eastern Madagascar
Palaemon (*Parapalaemon*) *thienemanni* J. Roux,
 1932:570, figs. a, b
 Sungai Musinear Muarakelingi, southern Sumatra, In-
 donesia
 = **Macrobrachium trompii**
Macrobrachium thysi Powell, 1980:318, figs. 1–3
 Banco National Park, near Abidjan, Ivory Coast
Macrobrachium tiwarii Jaliha, Shenoy, and Sankolli,
 1988:27
 Karnataka, India
Macrobrachium tolmerum Riek, 1951:362, fig. 1
 Black River, Macrossan, Queensland, Australia
Macrobrachium transandicum Holthuis, 1950b:94
 Rio Telembi, tributary of Rio Patia, near San Lorenzo,
 southwestern Colombia
Pal[aeon] tridens (Leach ms) White, 1847:78
 Mauritius ?
 = **Macrobrachium lar**
46. **Macrobrachium trompii** (De Man, 1898)
Palaemon (*Parapalaemon*) *Trompii* De Man, 1898:144,
 pl. 7
 "Kapuas Basin," central Borneo, Indonesia
Palaemon (*Parapalaemon*) *thienemanni*
Palaemon (*Parapalaemon*) *trompi armatus*
Palaemon (*Parapalaemon*) *trompi armatus* J. Roux,
 1936:30

- Gunong Pulau Estate, Johore, Malaysia
 = *Macrobrachium trompii*
Macrobrachium unikarnatakae Jalihal, Shenoy, and Sankolli, 1988:21
 Karnatak, India
P[alaemon] (Eupalaemon) ustulatus Nobili, 1899:241
 Rigo, southeastern Papua
 = *Macrobrachium australe*
P[alaemon] vagus Heller, 1862b:417, pl. 2: figs. 42, 43
 Ambon, Indonesia
 = *Macrobrachium lar*
Macrobrachium veliense Jayachandran and Joseph, 1985b:185, figs. 1, 2
 Veli Lake, near Trivandrum, southwestern India
Macrobrachium venustum (Parisi, 1919)
Palaemon (Eupalaemon) venustus Parisi, 1919:92, 93, pl. 4: fig. 1, pl. 6: figs. 5, 13
 Hainan, South China
Macrobrachium villalobosi Hobbs, 1973b:77, fig. 3
 Cueva del Nacimiento del Rio San Antonio, 10 km SSW Acatlan, Oaxaca, Mexico
Macrobrachium villosimanus (Tiwari, 1949)
Palaemon villosimanus Tiwari, 1949b:329
 Pulta Waterworks, Calcutta, India
Macrobrachium vollenhovenii (Herklots, 1857)
Palaemon Vollenhovenii Herklots, 1857:96
 Ghana
Palaemon jamaicensis var. *africanus* Bouvier, 1895
Palaemon jamaicensis, var. *angolensis*
Palaemon (Macrobrachium) jamaicensis, var. *Herklotsii*
 47. **Macrobrachium weberi** (De Man, 1892)
Palaemon (Eupalaemon) Weberi De Man, 1892:421, pl. 25: fig. 33
 Southwestern Celebes, Indonesia
P[alaemon] whitei (Guérin-Méneville ms) Sharp, 1893:122
 Bombay
 = *Macrobrachium rosenbergii schenkeli*
Palaemon (Eupalaemon) Wolterstorffi Nobili, 1900b:1
 Surabaya, eastern Java, Indonesia
 = *Macrobrachium mammillodactylus*
Macrobrachium yeti Dang Ngoc Thanh, 1975:67 (illustr.)
 Vietnam
Macrobrachium yui Holthuis, 1950a:211
 Ning-Erh, Yunnan, southern China
Palaemon brevicarpus var. *heterochirus* Yu, 1936
Palaemon yunnanensis Yu, 1936a:308, figs. 3, 4
 Mann-Tchi-Pan, Yunnan, China
 = *Macrobrachium hendersoni*
Macrobrachium zariquieyi Holthuis, 1949a:178, figs. 1, 2
 Bioko, equatorial Guinea

Of these species, 39 seem to have been recorded from the Philippine-Indonesian region, a count that will certainly increase as current surveys of the freshwater fauna of that area are pursued. Rather than attempt to match the excellence of the key to all of the recognized species prepared by Holthuis (1950a:105-111), we have restricted our attention to the Philippine and Indonesian species, and even those have been embarrassingly equivocal. Because only full-grown males of many of the species can be reliably identified from preserved material and because several of the names currently available were based on females or younger than full-grown males, final determinations of many of the taxa must await new collections from the type localities and, especially, the study of fresh or frozen specimens that may display diagnostic color patterns.

Key to Full-grown Males of Philippine-Indonesian Species of *Macrobrachium*

1. Major 2nd pereopod with soft, dense pubescence on part of palm or on 1 or both fingers 2
 Major 2nd pereopod with chela completely naked or bearing only scattered setae not concealing surface 21
2. Major 2nd pereopod with some soft, dense pubescence on palm 3
 Major 2nd pereopod with soft, dense pubescence limited to at most partial presence on one or both fingers 13
3. Major 2nd pereopod usually with soft, dense pubescence extending at least partially onto fingers 4
 Major 2nd pereopod without soft, dense pubescence on fingers. 10
4. Major 2nd pereopod with fingers completely covered by pubescence 5
 Major 2nd pereopod with fingers naked distally 9
5. Major 2nd cheliped with fingers and entire palm nearly or quite concealed by dense velvety pubescence 6
 Major 2nd cheliped with only fingers and distal portion of palm clothed in dense pubescence 8
6. Minor 2nd pereopod without dense pubescence; lateral branch of uropod with movable spine overreaching fixed lateral tooth 31. *M. malayanum*

- Minor 2nd pereopod with velvety, pubescence-like major one; lateral branch of uropod with movable spine weak, indistinct, shorter than fixed lateral tooth . . . 7
7. No more than 4 teeth of dorsal rostral series situated on carapace posterior to orbital margin; 2nd pereopods with opposable margins of fingers armed with distinctly unequal teeth 17. *M. gua*
Five or more teeth of dorsal rostral series situated on carapace posterior to orbital margin; 2nd pereopods with opposable margins of fingers armed with teeth of uniform size 38. *M. pilimanus*
8. Rostrum not nearly reaching distal end of antennal scale, armed ventrally with 2 or 3 teeth; 1st pereopod with chela $\frac{2}{3}$ as long as carpus 35. *M. natulorum*
Rostrum reaching as far as or slightly beyond distal end of antennal scale, armed ventrally with 4–6 teeth; 1st pereopod with chela less than $\frac{1}{2}$ as long as carpus 46. *M. trompii*
9. Major 2nd pereopod without longitudinal grooves on carpus 43. *M. scabriculum*
Major 2nd pereopod with 2 deep longitudinal grooves on carpus 45. *M. sulcicarpale*
10. Rostrum armed with 2 teeth on ventral margin 11
Rostrum with 3–5 teeth on ventral margin 12
11. Major 2nd pereopod with pubescence on palm restricted to 2 large proximal patches 13. *M. cowlesi*
Major 2nd pereopod with entire palm covered with woolly hairs 15. *M. esculentum*
12. Antennal scale with lateral margin straight or slightly convex; 2nd pereopods rather similar in shape, unequal in length, palm compressed 21. *M. jacobsoni*
Antennal scale with lateral margin slightly concave; 2nd pereopods distinctly unequal in length and shape, palm subcylindrical 24. *M. joppae*
13. Rostrum armed with 8–14 teeth on ventral margin; telson with posterior apex overreaching posterolateral spines; maximum postorbital carapace length about 100 mm *42. *M. rosenbergii*
Rostrum armed with 2–7 ventral teeth; telson with posterior apex not overreaching posterolateral spines; maximum postorbital carapace length about 30 mm 14
14. Three posterior pairs of pereopods with spines or scales prevalent on propodus 15
Three posterior pairs of pereopods without numerous spines or scales on propodus 18
15. Rostrum with dorsal teeth subequally spaced, except posteriormost sometimes slightly more remote 16
Rostrum with dorsal teeth unequally spaced 17
16. Rostrum dorsally convex; 2nd pereopods similar and subequal, fingers $\frac{2}{3}$ as long as palm 18. *M. hainanense*
Rostrum dorsally sinuous; 2nd pereopods similar but unequal, fingers longer than palm 30. *M. lorentzi*
17. Four to 6 teeth of dorsal rostral series situated on carapace posterior to orbital margin; major 2nd pereopod with chela compressed *22. *M. jaroense*
One or 2 teeth of dorsal rostral series situated on carapace posterior to orbital margin; major 2nd pereopod with chela subcylindrical 47. *M. weberi*
18. Second pereopod with chela shorter than carpus *20. *M. idae*
Second pereopod with chela longer than carpus 19
19. Second pereopod without denticles on opposable margin of movable finger *14. *M. equidens*
Major 2nd pereopod with double row of denticles on opposable margin of movable finger 20

20. Second pereopods similar but unequal; major 2nd pereopod with pubescence on movable finger reaching nearly to tip *25. *M. lanceifrons*
 Second pereopods subequal; distal $\frac{1}{3}$ of movable finger naked 44. *M. sintangense*
21. Major 2nd pereopod with chela less than $\frac{3}{4}$ as long as carpus 22
 Major 2nd pereopod with chela nearly as long as to much longer than carpus 23
22. Rostrum with dorsal teeth subequally spaced, 4 ventral teeth; branchiostegal suture not extending posteroventrally past hepatic spine; 2nd pereopod with fingers shorter than palm; 3rd pereopod overreaching antennal scale by length of dactyl and $\frac{1}{2}$ of propodus 33. *M. minutum*
 Rostrum with dorsal teeth unequally spaced, 6-9 ventral teeth; branchiostegal suture extending posteroventrally past hepatic spine; 2nd pereopod with fingers longer than palm; 3rd pereopod barely overreaching antennal scale 37. *M. palaemonoides*
23. Second pereopods dissimilar 24
 Second pereopods similar (not necessarily equal) 31
24. Major 2nd pereopod with chela less than $2\frac{1}{2}$ times as long as carpus 25
 Major 2nd pereopod with chela more than $2\frac{1}{2}$ times as long as carpus 30
25. Third pereopod with propodus bare except for groups of long setae and sometimes slight pubescence or minute spinules 26
 Third pereopod with propodus bearing numerous appressed scales or spines over most of surface 28
26. Major 2nd pereopod with chela subcylindrical, little longer than carpus; minor 2nd pereopod with palm partially furred *9. *M. australe*
 Major 2nd pereopod with chela somewhat compressed, more than $1\frac{1}{2}$ times as long as carpus; minor 2nd pereopod without fur on palm 27
27. Major 2nd pereopod with carpus shorter than merus, fingers not gaping *10. *M. bariense*
 Major 2nd pereopod with carpus longer than merus, fingers strongly bowed, gaping *27. *M. latidactylus*
28. Minor 2nd pereopod with fingers $1-2\frac{1}{2}$ times as long as palm; 3rd pereopod overreaching antennal scale by length of dactyl and $\frac{1}{3}-\frac{1}{2}$ of propodus *29. *M. lepidactyloides*
 Minor 2nd pereopod with fingers little if at all longer than palm; 3rd pereopod overreaching antennal scale by little more than length of dactyl 29
29. Major 2nd pereopod with fingers seldom more than $\frac{2}{3}$ as long as palm, carpus shorter than merus *39. *M. placidulum*
 Major 2nd pereopod with fingers about as long as palm or longer, carpus longer than merus 40. *M. placidum*
30. Two or 3 teeth of dorsal rostral series situated on carapace posterior to orbital margin; major 2nd pereopod with fingers about $\frac{2}{3}$ as long as palm 12. *M. clymene*
 Six or 7 teeth of dorsal rostral series situated on carapace posterior to orbital margin; major 2nd pereopod with fingers $1-1\frac{3}{4}$ times as long as palm 36. *M. oenone*
31. Major 2nd pereopod with palm somewhat compressed 32
 Major 2nd pereopod with palm subcylindrical 35
32. Major 2nd pereopod with chela nearly or quite 3 times as long as carpus 33
 Major 2nd pereopod with chela about twice as long as carpus 34
33. Three or 4 teeth of dorsal rostral series situated on carapace posterior to orbital margin; 3rd pereopod with propodus bare except for groups of long setae and sometimes slight pubescence or minute spinules; maximum carapace length less than 10 mm 11. *M. callirrhoe*

- One or 2 teeth of dorsal rostral series situated on carapace posterior to orbital margin; 3rd pereopod with propodus bearing numerous appressed scales or spines over most of surface; maximum carapace length more than 30 mm *28. *M. latimanus*
34. Major 2nd pereopod with each finger bearing row of tubercles (in mature males only) on either side of distal 1/2 of opposable margin 19. *M. horstii*
Major 2nd pereopod without row of tubercles (even in mature males) either side of distal 1/2 of opposable margin 23. *M. javanicum*
35. Major 2nd pereopod with chela less than twice as long as carpus, palm no longer than carpus 36
Major 2nd pereopod with chela at least 3 times as long as carpus, palm longer than carpus 38
36. Two or 3 teeth of dorsal rostral series situated on carapace posterior to orbital margin 32. *M. mammillodactylus*
Four to 6 teeth of dorsal rostral series situated on carapace posterior to orbital margin 37
37. Rostrum without dorsal crest; major 2nd pereopod with fingers shorter than palm; 3rd pereopod overreaching antennal scale by length of dactyl and 1/2 of propodus, latter bearing numerous appressed scales or spines over most of surface *16. *M. gracilirostre*
Rostrum with dorsal crest; major 2nd pereopod with fingers longer than palm; 3rd pereopod overreaching antennal scale by length of dactyl only; propodus bare except for groups of long setae and sometimes light pubescence or minute spinules 34. *M. mirabile*
38. Rostrum with 2-4 ventral teeth; major 2nd pereopod with fingers shorter than palm; maximum carapace length more than 55 mm *26. *M. lar*
Rostrum with 1 ventral tooth; major 2nd pereopod with fingers longer than palm; maximum carapace length about 15 mm 41. *M. poeti*

In an attempt to minimize the danger of recording misidentifications of material collected by the *Albatross* Expedition, only those lots containing full-grown males with second pereopods (amounting to 40 lots and 382 specimens) are recorded below. Not included are 8 lots, 52 specimens tentatively identified as *M. australe*; 1 specimen as *M. equidens*; 1 lot, 3 specimens as *M. idae*; 1 lot, 3 specimens as *M. lanceifrons*; 9 lots, 24 specimens as *M. latidactylus*; and 37 lots, 632 specimens determined only to the genus *Macrobrachium*.

Illustrations of the anterior carapace and third pereopod of the species presumably represented in the *Albatross* collections are offered in support or contradiction of our identifications.

***9. *Macrobrachium australe* (Guérin-Méneville, 1838)**

FIGURE 2

- Palaemon australis* Guérin-Méneville, 1838:37 [type locality: Tahiti].
P[alaeomon] sundaicus Heller, 1862b:415, pl. 2: figs. 38, 39 [type locality: Java].
Palaemon dispar Von Martens, 1868:41 [type locality: Pulau Adonara, east of Flores].
Palaemon alphonsonianus Hoffmann, 1874:33, pl. 9: figs. 63-65 [type locality: La Réunion].
Palaemon parvus Hoffmann, 1874:35, pl. 7: fig. 59 [type locality: "Nosy Faly," Madagascar].

Palaemon Malliardi Richters, 1880:166, pl. 18: figs. 1-3 [type locality: Mauritius].

P[alaeomon] (Eupalaemon) ustulatus Nobili, 1899:241 [type locality: Rigo, southeastern Papua].

Leander lepidus De Man, 1915:410, pl. 28, fig. 6 [type locality: mouths of small streams at "Oinake," east of Teluk Jos Sudarso, West New Guinea].

DIAGNOSIS.—Rostrum reaching nearly as far as or beyond

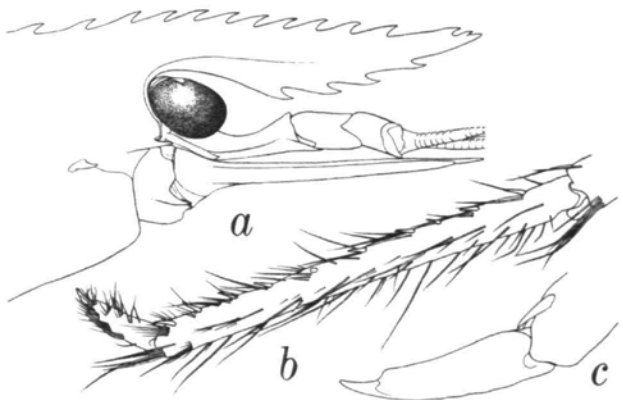


FIGURE 2.—*Macrobrachium australe* from Malaga River, Hinunangan Bay, Leyte, Philippines: a, anterior carapace and appendages, lateral aspect, of male with carapace length of 20.0 mm; b, right 3rd pereopod, dactyl, and propodus, of male with carapace length of 20.2 mm; c, same, dactyl, denuded.

level of distal end of antennal scale, dorsal margin faintly sinuous, rostral formula: 2-4 + 7-10/2-8, usually with gap near anterior end of dorsal series; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex not overreaching posterolateral spines; antennal scale with lateral margin straight or slightly convex; 1st pereopod with chela less than $\frac{1}{2}$ as long as carpus; 2nd pereopods unequal in length and dissimilar in form; major 2nd pereopod with palm subcylindrical, fingers and palm not concealed by dense pubescence, fingers dentate on opposable margins, not gaping, less than $\frac{2}{5}$ as long as palm, chela slightly longer than carpus, palm about $\frac{3}{4}$ as long as carpus, carpus less than twice as long as merus, without longitudinal grooves; minor pereopod with fingers less than $\frac{1}{2}$ as long as palm; 3rd pereopod overreaching antennal scale by less than length of dactyl, propodus not covered with spines or scales; maximum postorbital carapace length more than 27 mm.

MATERIAL.—PHILIPPINES. Naujan River, Mindoro; [13°16'N, 121°19'E]; 5 Jun 1908; 18 males [7.5-18.5] 4 females [10.2-22.2], 2 ovig [10.5-22.2].—Malaga River, Hinunangan Bay, Leyte; [10°24'N, 125°12'E]; 30 Jul 1909; 8 males [15.9-27.6] 6 females [11.7-15.3], 3 ovig [13.2-15.2].—Mananga River, Cebu; [10°14'N, 123°50'E]; 25 Aug 1909: 15 males [5.2-22.2] 15 females [5.9-16.3], 4 ovig [11.3-15.3], 3 juv [5.1-5.2].

INDONESIA. Sungai Gorontalo, Celebes; [0°30'N, 123°03'E]; 15 Nov 1909; 25' seine; 30 males [6.2-20.2] 11 females [4.9-15.5], 2 ovig [9.2, 9.2].

RANGE.—Previously known from Madagascar and the Seychelles through the Indian Ocean to Taiwan, Philippines, Indonesia, and the Pacific islands as far as the Marshall Islands in the North Pacific and the Marquesas Islands in the South Pacific.

*10. *Macrobrachium bariense* (De Man, 1892)

FIGURE 3

Palaemon (*Macrobrachium*) *bariensis* De Man, 1892:496, pl. 29: fig. 50 [type locality: Berit, western Flores, Indonesia].
Macrobrachium bariense.—Holthuis, 1950a:236, fig. 49.

DIAGNOSIS.—Rostrum reaching nearly to level of distal end of antennal scale, dorsal margin nearly straight, faintly convex, rostral formula: 4-6 + 8/2-4, teeth subequally spaced; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex not overreaching posterolateral spines; antennal scale with lateral margin straight or slightly convex; 1st pereopod with chela more than $\frac{1}{2}$ as long as carpus; 2nd pereopods unequal in length and dissimilar in form; major 2nd pereopod with palm compressed, forming carinate flange on flexor margin, fingers and palm not concealed by dense pubescence, fingers sparsely dentate on opposable margins, not gaping, about as long as or shorter than palm, chela about twice as long as carpus, palm about $\frac{1}{4}$ times as long as carpus, carpus somewhat shorter than merus, without

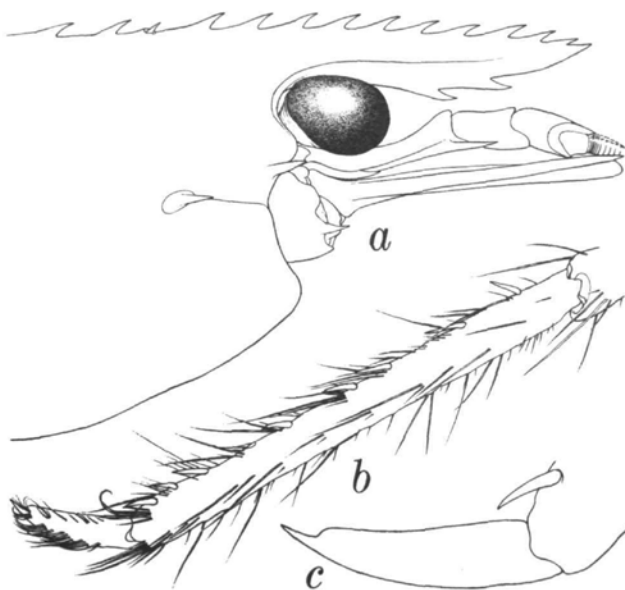


FIGURE 3.—*Macrobrachium bariense* from Malabang River, Mindanao, Philippines: a, anterior carapace and appendages, lateral aspect, of male with carapace length of 12.9 mm; b, right 3rd pereopod, dactyl, and propodus, of male with carapace length of 13.0 mm; c, same, dactyl, denuded.

longitudinal grooves; minor 2nd pereopod with fingers gaping, $\frac{1}{2}$ to less than twice as long as palm; 3rd pereopod overreaching antennal scale by about length of dactyl, propodus not covered with spines or scales; maximum postorbital carapace length little more than 15 mm.

MATERIAL.—PHILIPPINES. Malabang River, Mindanao; [7°36'N, 124°04'E]; $\frac{1}{2}$ m; 21 May 1908 (1500); 130' seine: 3 males [10.2-13.0].

RANGE.—Previously known from five Indonesian localities; also, there are specimens in the Smithsonian collections from the Palau Islands. Apparently the species has not been reported previously from the Philippines.

11. *Macrobrachium callirrhoe* (De Man, 1898)

Palaemon (*Macrobrachium*) *callirrhoe* De Man, 1898:152, pl. 8 [type locality: Sungai Mandai and Sungai Ketungau, central Borneo].

DIAGNOSIS.—Rostrum reaching level of distal end of antennal scale, dorsal margin nearly straight, faintly convex, rostral formula: 3-4 + 6-7/2-3, dorsal teeth subequally spaced; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex not overreaching posterolateral spines; antennal scale with lateral margin slightly convex; 1st pereopod with chela $\frac{1}{2}$ as long as carpus; 2nd pereopods somewhat unequal in length, similar in form; major 2nd pereopod with palm slightly compressed, fingers and palm not concealed by dense pubescence, fingers dentate on opposable margins, slightly gaping, shorter than palm, chela

less than 3 times as long as carpus, palm less than $1\frac{2}{3}$ times as long as carpus, carpus shorter than merus, without longitudinal grooves; minor 2nd pereopod with fingers about as long as palm; 3rd pereopod with propodus not covered with spines or scales; maximum postorbital carapace length less than 10 mm.

RANGE.—Known only from the type series from two rivers in central Borneo.

ETYMOLOGY.—The specific name of this species was undoubtedly transliterated from the name assigned to any of three different women in Greek mythology or to a famous spring in Athens. Whatever the connotation, the apparently commonest spelling of the name was the one used by DeMan and repeated here: Callirrhoe.

12. *Macrobrachium clymene* (De Man, 1902)

Palaemon (*Macrobrachium*) *clymene* De Man, 1902:794, pl. 25: fig. 50 [type locality: Batang Baram, Sarawak].

DIAGNOSIS.—Rostrum reaching at most to level of distal end of antennal scale, dorsal margin nearly straight, faintly sinuous, rostral formula: 2-3 + 5-7/2-4, dorsal teeth subequally spaced; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex reaching about to level of tips of longer posterolateral spines; antennal scale with lateral margin faintly convex; 1st pereopod with chela less than $\frac{2}{3}$ as long as carpus; 2nd pereopods unequal in length and dissimilar in form; major 2nd pereopod with palm compressed, fingers and palm not concealed by dense pubescence, fingers dentate on opposable margins, gaping, $\frac{2}{3}$ as long as palm, chela 4 times as long as carpus, palm $2\frac{1}{2}$ times as long as carpus, carpus $\frac{1}{3}$ as long as merus, without deep longitudinal grooves; minor 2nd pereopod with fingers more than $\frac{3}{4}$ as long as palm; 3rd pereopod not overreaching antennal scale; maximum postorbital carapace length about 15 mm.

RANGE.—Known only from the river in Sarawak representing the type locality.

13. *Macrobrachium cowlesi* Holthuis, 1950

Palaemon sp. Cowles, 1914:397, pl. 3: fig. 11.

Macrobrachium cowlesi Holthuis, 1950a:257 [type locality: Manila water supply, Luzon, Philippines].

DIAGNOSIS.—Rostrum not reaching level of distal end of antennular peduncle and falling far short of that of distal extremity of antennal scale, dorsal margin slightly convex, rostral formula: 6-7 + 8/2, dorsal teeth subequally spaced; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex not overreaching posterolateral spines; 2nd pereopods unequal in length and dissimilar in form; major 2nd pereopod with palm compressed, fingers not concealed by dense pubescence, bearing teeth and tubercles on opposable surface, gaping, subequal to palm in length, palm bearing dense patches of pubescence at extreme proximal end, chela 3 times as long as carpus, palm $1\frac{3}{4}$ times as long as

carpus, carpus shorter than merus, without longitudinal grooves; minor 2nd pereopod with fingers less than $1\frac{1}{2}$ times as long as palm; 3rd pereopod overreaching antennal scale by length of dactyl and $\frac{1}{5}$ of propodus, latter not covered with spines or scales, maximum postorbital carapace length 20 mm.

RANGE.—Known only from two syntypes from the Manila water supply, Philippines, and from seven specimens recorded from Sumba in the Lesser Sunda Islands of Indonesia by Holthuis (1978b).

*14. *Macrobrachium equidens* (Dana, 1852)

FIGURE 4

Palaemon equidens Dana, 1852a:26 [type locality: Singapore].

Palaemon sondaicus var. *batavia* De Man, 1897:784 [type locality: Djakarta, Java].

P[alaemon] (*Eupalaemon*) *sondaicus* var. *brachydactyla* Nobili, 1899:238 [type locality: Ambon].

P[alaemon] (*Eupalaemon*) *acanthosoma* Nobili, 1899:242 [type locality: "Katau" (?= Binaturi River, near Fly River), Papua New Guinea].

Palaemon (*Eupalaemon*) *sondaicus* var. *baramensis* De Man, 1902:770 [type locality: Baram River, Sarawak].

Palaemon (*Eupalaemon*) *nasutus* Nobili, 1903a:9, 1 fig. [type locality: Singapore].

Palaemon sulcatus Henderson and Matthai, 1910:289, pl. 16: fig. 4 [type locality: Cochin, southern India].

Palaemon sondaicus.—Cowles, 1914:355, pl. 2: fig. 3 [not *P. sondaicus* Heller, 1862].

Palaemon delagoae Stebbing, 1915:74, pl. 16 [type locality: Delagoa Bay, Mozambique].

Urocaridella borrailei Stebbing, 1923:8, pl. 14 [type locality: Mhlathuze River, Natal].

Macrobrachium equidens.—Holthuis, 1950a:162, fig. 36.—Johnson, 1973:283.

DIAGNOSIS.—Rostrum reaching nearly as far as or beyond level of distal end of antennal scale, dorsal margin convex or slightly sinuous, rostral formula: 2-4 + 7-9/4-7, dorsal teeth unequally spaced, usually with wider gaps near posterior and anterior ends of series; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex not overreaching posterolateral spines; antennal scale with lateral margin straight or convex; 1st pereopod with chela $\frac{1}{2}$ as long as carpus; 2nd pereopods subequal in length, similar in form, palm subcylindrical, fingers covered with soft, dense pubescence, not dentate on opposable margins, not gaping (in full-grown males), about $\frac{3}{4}$ as long as palm, latter completely naked, without pubescence, chela longer than carpus, palm $\frac{2}{3}$ - $\frac{3}{4}$ as long as carpus, carpus $1\frac{2}{3}$ - $1\frac{3}{4}$ as long as merus, without longitudinal grooves; 3rd pereopod overreaching antennal scale by length of dactyl, propodus partially pubescent, not covered with spines or scales; maximum postorbital carapace length about 30 mm.

MATERIAL.—INDONESIA. Pulau Sebatik, Borneo; [4°10'N, 117°45'E]; 1 Oct 1909: 3 males [12.8-21.2].

RANGE.—South Africa, southern India to Fukien Province, China, Philippines, Indonesia, and Palau Islands eastward to New Britain, the Solomon Islands, and Nigeria [possibly

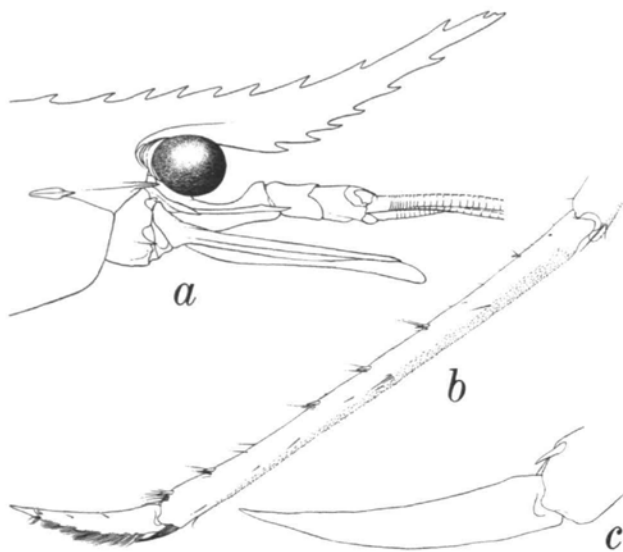


FIGURE 4.—*Macrobrachium equidens* from Pulau Sebatik, Borneo: *a*, anterior carapace and appendages, lateral aspect, of male with carapace length of 16.6 mm; *b*, right 3rd pereopod, dactyl, and propodus, of male with carapace length of 21.2 mm; *c*, same, dactyl, denuded.

introduced]; high salinity brackish and salt water, rarely in pure fresh water.

REMARKS.—That Holthuis (1950a) was justified in assigning Dana's name to this species is borne out by the description of its habitat by Johnson (1973:285): "*M. equidens* is pre-eminently an inhabitant of high-salinity brackish water. It is also found in shallow, inshore, marine waters, where it very probably is capable of breeding. It rarely enters pure freshwater." In the original description, Dana (1852a) noted that the type specimen of *M. equidens* was found "in mare prope portum 'Singapore'."

The differences between *M. equidens* and *M. mammillodactylus* are not always apparent, especially in females and subadult males or in the absence of the second chelipeds, but there is little doubt that the two species are distinct. Cowles (1914) noted that *M. equidens* lacks the conspicuous T-shaped pigment mark present on the lateral surface of the carapace in fresh material of *M. mammillodactylus*, but the second chelipeds of *M. equidens* are marbled like tortoise shell, whereas they are longitudinally striped in *M. mammillodactylus*.

The antennal scale in the specimens from Borneo is little more than three times as long as wide, in contradistinction to the proportions of 3.5 to 4 indicated by Holthuis (1950a:165). In the illustration furnished by that author (Figure 36a), however, the scale is barely three times as long as wide.

15. *Macrobrachium esculentum* (Thallwitz, 1891)

Palaemon esculentus Thallwitz, 1891:98 [type locality: northern Celebes].
Palaemon dulcis Thallwitz, 1891:99 [type locality: northern Celebes].

Macrobrachium esculentum.—Holthuis, 1950a:257.

DIAGNOSIS.—Rostrum not reaching level of distal end of antennal scale, rostral formula: 5–6 + 7–8/2; 1st pereopod with chela more than $\frac{1}{2}$ as long as carpus; 2nd pereopods unequal in length and dissimilar in form; major 2nd pereopod with palm compressed, fingers not covered with dense pubescence, dentate on opposable margins, gaping, longer or shorter than palm, latter entirely covered with woolly hairs, chela longer than carpus, palm longer than carpus, carpus shorter than merus, without longitudinal grooves; minor 2nd pereopod with fingers longer than palm; maximum postorbital carapace length less than 25 mm.

RANGE.—Known with certainty only from northern Celebes; reported from Thailand and the Philippines.

*16. *Macrobrachium gracilirostre* (Miers, 1875)

FIGURE 5

Palaemon gracilirostris Miers, 1875:343 [type locality: Upolu, Samoa Islands].

Palaemon (*Parapalaemon*) *modestus* De Man, 1892:469, pl. 27: fig. 43 [type locality: River at "Wukur," not far from Sika, southeastern Flores, Indonesia; not *P. modestus* Heller, 1862a].

Palaemon (*Parapalaemon*) *modestus brevis* J. Roux, 1934a:228, figs. 9, 10 [type locality: Bimun, New Ireland].

Macrobrachium sophronicum Holthuis, 1950a:198, fig. 40 [type locality: "Wukur River," Sika, southeastern Flores, Indonesia].

Macrobrachium gracilirostre.—Holthuis, 1959:199.

DIAGNOSIS.—Rostrum not reaching level of distal end of antennal scale, dorsal margin nearly straight, faintly convex or

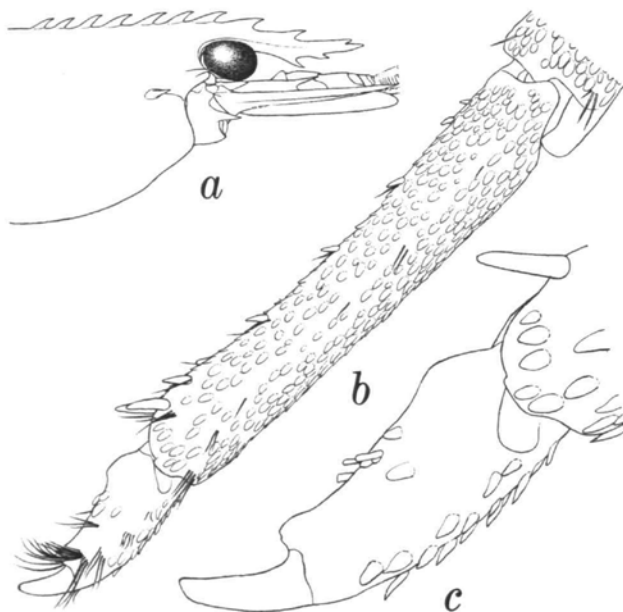


FIGURE 5.—*Macrobrachium gracilirostre*, male from Malaga River, Leyte, Philippines, carapace length 15.2 mm: *a*, anterior carapace and appendages, lateral aspect; *b*, right 3rd pereopod, dactyl, and propodus; *c*, same, dactyl, denuded.

sinuous, rostral formula: 5-6 + 3-4/2, dorsal teeth more widely spaced anteriorly; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex not overreaching posterolateral spines; antennal scale with lateral margin straight; 1st pereopod with chela less than $\frac{2}{3}$ as long as carpus; 2nd pereopods subequal in length and similar in form, with fingers naked except for scattered setae, opposable margins dentate, not gaping noticeably, $\frac{3}{4}$ as long as palm, palm without dense pubescence, chela about $1\frac{1}{2}$ times as long as carpus, palm subequal to carpus in length, carpus longer than merus, without longitudinal grooves; 3rd pereopod overreaching antennal scale by length of dactyl and $\frac{1}{2}$ of propodus, latter covered with appressed scales; maximum carapace length about 25 mm.

MATERIAL.—PHILIPPINES. Malaga River, Hinunangan Bay, Leyte; [10°24'N, 125°12'E]; 30 Jul 1909: 3 males [14.0-18.0].

RANGE.—Previously known from the Ryukyu Islands, Taiwan, the Moluccas, Lesser Sunda Islands, New Ireland, and Fiji and Samoa islands. Apparently the species has not been recorded before from the Philippines.

17. *Macrobrachium gua* Chong, 1989

Macrobrachium gua Chong, 1989:32, figs. 1, 2 [type locality: stream at resurgence from Gomantong Hill, about 5°33'N, 118°06'E, Sabah, Borneo].

DIAGNOSIS.—Rostrum not quite overreaching antennal scale, dorsal margin faintly convex, rostral formula: 3-4 + 6-9/2-3, dorsal teeth subequally spaced; telson with posterior apex not overreaching longer posterolateral spines; antennal scale with lateral margin nearly straight; 2nd pereopods subequal in length and similar in form, palm of major member of pair slightly compressed, fingers with surfaces more or less concealed by tufts of moderately long, velvety hairs, also on distal $\frac{1}{2}$ to $\frac{2}{3}$ of chela, fingers dentate on opposable margins, not appreciably gaping, nearly or fully as long as palm, chela about 4 times as long as carpus, carpus about $\frac{2}{3}$ as long as merus; maximum postorbital carapace length about 20 mm.

RANGE.—Known only from the type locality at the effluent of an underground stream in Sabah.

18. *Macrobrachium hainanense* (Parisi, 1919)

Palaemon (*Parapalaemon*) *hainanense* Parisi, 1919:87, pl. 3: fig. 1; pl. 6: figs. 1, 7 [type locality: Keng-kong River, Hainan].

Palaemon similis Yu, 1931:281, fig. 2 [type locality: Amoy, China].

Macrobrachium hainanense.—Holthuis, 1950a:158, fig. 35.

DIAGNOSIS.—Rostrum falling considerably short of level of distal end of antennal scale, dorsal margin nearly straight or faintly sinuous, rostral formula: 3-4 + 6-11/3, dorsal teeth subequally spaced, except posteriormost often remote from 2nd; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex not overreaching posterolateral spines; antennal scale with lateral margin straight; 1st pereopod with chela $\frac{1}{2}$ as long as carpus; 2nd

pereopods subequal in length and similar in form, palm subcylindrical, fingers with narrow longitudinal band of pubescence in basal part either side of opposable margin, latter dentate, fingers not noticeably gaping, $\frac{2}{3}$ as long as palm, latter spinulose but not pubescent, chela $1\frac{1}{2}$ times as long as carpus, palm about as long as carpus, carpus $1\frac{1}{2}$ times as long as merus, without longitudinal grooves; 3rd pereopod overreaching antennal scale little, if at all, propodus covered with spinules; maximum carapace length about 25 mm.

RANGE.—Southeastern China and Java, Indonesia.

19. *Macrobrachium horstii* (De Man, 1892)

Palaemon (*Parapalaemon*) *horstii* De Man, 1892:460, pl. 27: fig. 39 [type locality: River at Polopo, central Celebes].

Palaemon (*Parapalaemon*) *horstii brevidigitus* J. Roux, 1930:358 [type locality: Bali].

Macrobrachium horstii.—Holthuis, 1950a:203, fig. 42.

DIAGNOSIS.—Rostrum not reaching level of distal margin of antennal scale, dorsal margin moderately convex, rostral formula: 4 + 8/2-3, dorsal teeth subequally spaced; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex not overreaching posterolateral spines; antennal scale with lateral margin straight; 1st pereopod with chela more than $\frac{1}{2}$ as long as carpus; 2nd pereopods subequal in length, similar in form, palm somewhat compressed, fingers and palm spinulose, not pubescent, fingers with teeth on opposable margins, not broadly gaping, $\frac{1}{2}$ - $\frac{3}{4}$ as long as palm, chela less than twice as long as carpus, palm $1\frac{1}{4}$ times as long as carpus, carpus slightly longer than merus, without longitudinal grooves; 3rd pereopod overreaching antennal scale by about length of dactyl; maximum carapace length about 20 mm.

RANGE.—Taiwan and Celebes, Bali, and Lombok, Indonesia.

*20. *Macrobrachium idae* (Heller, 1862)

FIGURE 6

P[alaemon] Idae Heller, 1862b:416, pl. 2: figs. 40, 41 [type locality: Borneo].

Palaemon (*Eupalaemon*) *ritsemae* De Man, 1897:774 [type locality: Atjeh, northwestern Sumatra].

P[alaemon] (Eupalaemon) Idae, var. *subinermis* Nobili, 1899:237 [type locality: San Guiseppa River near Innawi, Meheo District, Papua].

Palaemon (*Eupalaemon*) *Mariae* Coutière, 1900:1266 [type locality: Madagascar].

Palaemon (*Eupalaemon*) *robustus* De Man, 1902:771, pl. 24: fig. 48 [type locality: Halmahera].

Macrobrachium idae.—Holthuis, 1950a:142, fig. 33.

?*Macrobrachium palawanensis* Johnson, 1962a:307, fig. 1 [type locality: Palawan, Philippines].

?*Macrobrachium palawanense*.—Johnson, 1973:274, 282.

DIAGNOSIS.—Rostrum reaching nearly as far as or slightly beyond level of distal end of antennal scale, dorsal margin straight or faintly sinuous, rostral formula: 2-3 + 6-9/3-4, dorsal teeth rather subequally spaced; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with

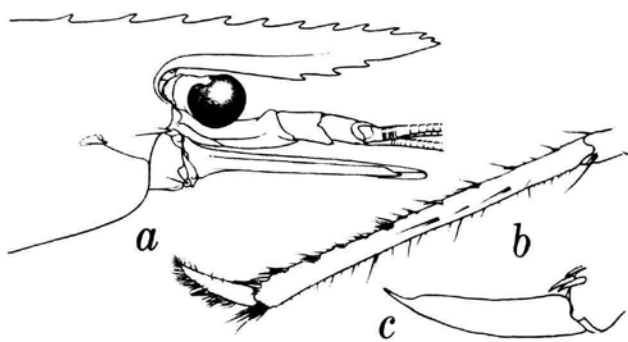


FIGURE 6.—*Macrobrachium idae*, male from Naujan River, Mindoro, Philippines, carapace length 16.7 mm: *a*, anterior carapace and appendages, lateral aspect; *b*, right 3rd pereopod, dactyl, and propodus; *c*, same, dactyl, denuded.

posterior apex not overreaching posterolateral spines; antennal scale with lateral margin slightly convex; 1st pereopod with chela less than 3 times as long as carpus; 2nd pereopods similar in form but not usually equal in length, palm subcylindrical, fingers pubescent, especially either side of proximal part of opposable margins, latter dentate proximally, fingers not noticeably gaping, $\frac{1}{2}$ as long as palm, latter naked, chela shorter than carpus, palm more than $\frac{1}{2}$ as long as carpus, carpus more than twice as long as merus, without longitudinal grooves; 3rd pereopod overreaching antennal scale by more than length of dactyl, propodus not covered with spines or scales; maximum postorbital carapace length about 20 mm.

MATERIAL.—PHILIPPINES. Naujan River, Mindoro; [13°16'N, 121°19'E]; 5 Jun 1908: 1 male [16.9].

RANGE.—Madagascar to southern India, Philippines, Indonesia, and eastward as far as the Admiralty Islands.

REMARKS.—The identity of the specimen assigned to this species (Figure 6) is somewhat tentative, but it agrees almost exactly with the illustrations by De Man (1902) of *M. robustus*, which Holthuis (1950a:145) noted "undoubtedly belongs to *M. idae*."

Macrobrachium palawanense may be a valid species, but we have been unable to distinguish it from *M. idae* on the basis of the descriptions and illustrations published by Johnson (1962a, 1973). That author convincingly separated the species from *M. weberi* but mentioned no characters that do not apply as well to our concept of *M. idae*.

21. *Macrobrachium jacobsoni* Holthuis, 1950

Macrobrachium jacobsoni Holthuis, 1950a:227, fig. 47 [type locality: Sinabang, Pulau Simeulue, off northwestern Sumatra].

DIAGNOSIS.—Rostrum reaching nearly or quite as far as level of distal end of antennal scale, dorsal margin nearly straight, faintly convex or sinuous, rostral formula: 5-6 + 7-9/3-4, dorsal teeth subequally spaced; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with

posterior apex not overreaching posterolateral spines; antennal scale with lateral margin nearly straight; 1st pereopod with chela about $\frac{1}{2}$ as long as carpus; 2nd pereopods distinctly unequal in length but rather similar in form; major 2nd pereopod with palm somewhat compressed, fingers without dense pubescence, dentate on opposable margins, not gaping, about as long as palm, latter partially covered with dense pubescence, chela $3\frac{1}{2}$ times as long as carpus, palm $1\frac{3}{4}$ times as long as carpus, carpus more than $\frac{4}{5}$ as long as merus, without longitudinal grooves; 3rd pereopod overreaching antennal scale by length of dactyl or less, propodus not covered with spines or scales; maximum postorbital carapace length less than 25 mm.

RANGE.—Known only from the Sinabang area of Pulau Simeulue off the Indian Ocean coast of northwestern Sumatra, Indonesia, and from Mindanao, Philippines.

*22. *Macrobrachium jaroense* (Cowles, 1914)

FIGURE 7

Palaemon jaroensis Cowles, 1914:385, pl. 3: fig. 8 [type locality: Hibucawan River near Jaro, Leyte, Philippines].

Macrobrachium jaroense.—Holthuis, 1950a:205.

DIAGNOSIS.—Rostrum not reaching level of distal end of antennal scale, dorsal margin sinuous but without distinct dorsal crest, rostral formula: 4-6 + 5-7/2(3), dorsal teeth unequally spaced, more widely separated posteriorly; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex not overreaching posterolateral spines; antennal scale with lateral margin straight; 1st pereopod with chela more than $\frac{2}{3}$ as long as carpus; 2nd pereopods unequal in length but similar in form; major 2nd pereopod with palm compressed; fingers dentate on opposable margins but teeth concealed by dense pubescence on either

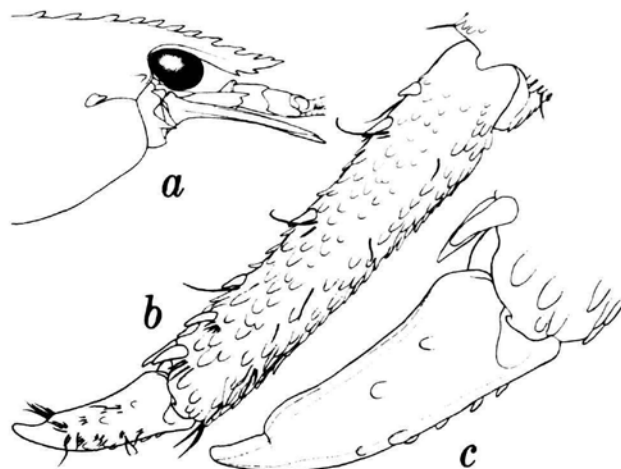


FIGURE 7.—*Macrobrachium jaroense* from Mananga River, Cebu, Philippines: *a*, anterior carapace and appendages, lateral aspect, of male with carapace length of 16.0 mm; *b*, right 3rd pereopod, dactyl, and propodus, of male with carapace length of 16.5 mm; *c*, same, dactyl, denuded.

side, fingers slightly gaping, $\frac{3}{4}$ – $1\frac{3}{4}$ times as long as palm, latter without dense pubescence, chela less than twice as long as palm, latter without dense pubescence, less than twice as long as carpus, palm about as long as carpus, carpus longer than merus, with distinct but shallow longitudinal groove on carpus; minor 2nd pereopod with fingers $1\frac{1}{4}$ times as long as palm; 3rd pereopod overreaching antennal scale by length of dactyl and $\frac{1}{3}$ of propodus, latter covered with appressed scales; maximum postorbital carapace length less than 20 mm.

MATERIAL.—PHILIPPINES. Mananga River, Cebu; [10°14', 123°50'E]; 25 Aug 1909: 24 males [8.2–17.8] 24 females [8.3–13.8], 19 ovig [9.4–13.81].

RANGE.—Known previously only from Taiwan and the 23 specimens in the type series from Leyte, Philippines.

23. *Macrobrachium javanicum* (Heller, 1862)

[*Palaemon*] *javanicus* Heller, 1862b:421, pl. 2: fig. 48 [type locality: Java].
Palaemon (*Eupalaemon*) *neglectus* De Man, 1905:201, pl. 15: fig. 6 [type locality: Mergui Archipelago and northeastern Sumatra].
Macrobrachium javanicum.—Holthuis, 1950a:190, fig. 38.

DIAGNOSIS.—Rostrum not reaching level of distal end of antennal scale, dorsal margin somewhat sinuous, rostral formula: 3 + 8–10/3–5, dorsal teeth subequally spaced, except posteriormost tooth often more remote; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex not overreaching posterolateral spines; antennal scale with lateral margin nearly straight; 1st pereopod with chela $\frac{1}{2}$ as long as carpus; 2nd pereopods subequal in length and rather similar in form, palm somewhat compressed, fingers without dense pubescence, dentate on opposable margins, not widely gaping, $\frac{1}{2}$ – $\frac{3}{4}$ as long as palm, latter not densely pubescent, even in part, chela twice as long as carpus, palm 1– $1\frac{1}{2}$ times as long as carpus, carpus longer than merus, without longitudinal grooves; 3rd pereopod overreaching antennal scale by less than length of dactyl, propodus not covered with spines or scales; maximum postorbital carapace length about 32 mm.

RANGE.—Mergui Archipelago, Malaya, Thailand, and Indonesia.

24. *Macrobrachium joppae* Holthuis, 1950

Macrobrachium joppae Holthuis, 1950a:233, fig. 48 [type locality: Pulau Nias, off northwestern coast of Sumatra].

DIAGNOSIS.—Rostrum not quite reaching level of distal end of antennal scale, dorsal margin nearly straight, rostral formula: 4–5 + 9–10/4–5, dorsal teeth subequally spaced; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex not overreaching posterolateral spines; antennal scale with lateral margin concave; 1st pereopod with chela longer than $\frac{1}{2}$ of carpus; 2nd pereopods unequal in length, dissimilar in form; major 2nd pereopod with palm subcylindrical, fingers without dense pubescence, dentate on opposable margins, partially gaping, $\frac{3}{4}$ – $1\frac{1}{3}$ times as long

as palm, latter with single dense patch of long, soft hair, chela $\frac{3}{4}$ times as long as carpus, palm $1\frac{1}{3}$ – $1\frac{3}{4}$ times as long as carpus, carpus as long as or slightly longer than merus, without longitudinal grooves; minor 2nd pereopod with fingers fully $1\frac{1}{2}$ times as long as palm; 3rd pereopod overreaching antennal scale little if at all, propodus not covered with spines or scales; maximum postorbital carapace length less than 20 mm.

RANGE.—Known only from nine syntypes from Pulau Nias of the Indian Ocean coast of northwestern Sumatra, Indonesia.

*25. *Macrobrachium lanceifrons* (Dana, 1852)

FIGURE 8

Palaemon lanceifrons Dana, 1852a:26 [type locality: Manila, Luzon, Philippines].—Cowles, 1914:364, pl. 2: fig. 4.

Palaemon lanceifrons var. *montalbanensis* Cowles, 1914:371, pl. 2: fig. 6 [type locality: Montalban, near Manila, Luzon, Philippines].

Macrobrachium lanceifrons var. *lanceifrons*.—Holthuis, 1950a:154.

Macrobrachium lanceifrons var. *montalbanense*.—Holthuis, 1950a:154.

DIAGNOSIS.—Rostrum reaching nearly as far as to slightly beyond level of distal end of antennal scale, dorsal margin sinuous, sometimes simply convex, rostral formula: 1–2 + 7–11/2–4, dorsal teeth subequally spaced or more widely spaced in anterior part; branchiostegal suture not extending posteriorly beyond hepatic spine; telson with posterior apex not overreaching posterolateral spines; antennal scale with lateral margin nearly straight; 1st pereopod with chela about $\frac{1}{2}$ as long as carpus; 2nd pereopods somewhat unequal in length, similar in form; palm subcylindrical, fingers covered with dense pubescence, dentate on opposable margins, not noticeably gaping, $\frac{1}{2}$ – $1\frac{1}{2}$ times as long as palm, palm naked, chela slightly longer than carpus to slightly more than $1\frac{1}{2}$ times as long, palm $\frac{1}{2}$ – $\frac{3}{4}$ as long as carpus, carpus $1\frac{1}{4}$ – $1\frac{3}{4}$ times as long as merus, without longitudinal grooves; 3rd pereopod barely overreaching antennal scale, if at all, propodus not covered with spines or scales; maximum postorbital carapace length about 20 mm.

MATERIAL.—PHILIPPINES. Santa Cruz, Laguna de Bay, Luzon; [14°17'N, 121°25'E]; 17 Dec 1907: 15 males [5.4–

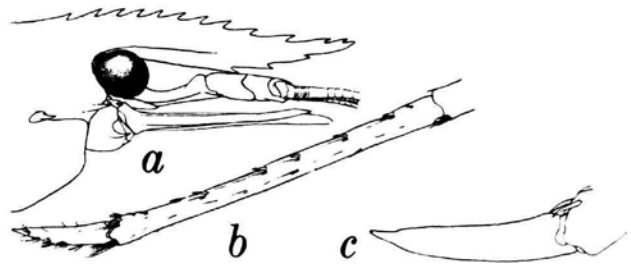


FIGURE 8.—*Macrobrachium lanceifrons* from Santa Cruz, Laguna de Bay, Luzon, Philippines: a, anterior carapace and appendages, lateral aspect, of male with carapace length of 14.5 mm; b, right 3rd pereopod, dactyl, and propodus, of male with carapace length of 16.3 mm; c, same, dactyl, denuded.