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REVISION OF THE WATERFALL CRABS OF THE GENUS *DEMANIETTA*
(DECAPODA: BRACHYURA: POTAMIDAE)

Darren C. J. Yeo, P. Naiyanetr, and Peter K. L. Ng

A B S T R A C T

The taxonomy of the Indochinese potamid waterfall crabs of the genus *Demanietta* from Thailand and Myanmar (=Burma) is revised, and the type species *D. manii* is redescribed. The genus now contains 10 species, 5 of which are new, namely, *D. huahin*, *D. khirikhan*, *D. lansak*, *D. nakhonsi*, and *D. suanphung*. A key to the species of *Demanietta* is provided.

The genus *Demanietta* Bott, 1966 (sensu Ng and Naiyanetr, 1993) contains four species, namely *D. manii* (Rathbun, 1904) [type species] [Thailand], *D. smalleyi* (Bott, 1966) [Thailand], *D. merguensis* (Bott, 1966) [Myanmar], and *D. trirungensis* (Naiyanetr, 1986) [Thailand] (Bott, 1966, 1970; Ng and Naiyanetr, 1993). Our study of a large series of specimens of *Demanietta* obtained from several localities in central to southern Thailand has shown that the genus is more diverse than presently understood and is in need of revision. To this end, the type specimens of the nominal species of *Demanietta*: *Potamon* (*Potamon*) *renongensis* Rathbun, 1904, and *Potamon* (*Potamon*) *thagatensis* Rathbun, 1904, were reexamined. Our studies show that both *P. (P.) renongensis* and *P. (P.) thagatensis* are valid species of *Demanietta*, with the former being a senior subjective synonym of *D. smalleyi*. Comparisons with the recently collected material also revealed consistent interspecific morphological differences primarily in the first pleopod of the male, and in chela and carapace characters. The genus *Demanietta* now has 10 species, including five which are described as new, namely *D. manii* (Rathbun, 1904), *D. renongensis* (Rathbun, 1904), *D. merguensis* (Bott, 1966), *D. thagatensis* (Rathbun, 1904), *D. trirungensis* (Naiyanetr, 1986), *D. huahin*, new species, *D. khirikhan*, new species, *D. lansak*, new species, *D. nakhonsi*, new species, and *D. suanphung*, new species.

The present paper revises the genus *Demanietta*, redescribes the type species *Demanietta manii* (Rathbun, 1904), and describes the five new species. An identification key to the species of *Demanietta* is also included.

MATERIALS AND METHODS

The following abbreviations are used: G1 for the male first pleopod, G2 for the male second pleopod. Measurements (in millimeters) are of carapace width (cw) and length (cl), respectively. Terminology used essentially follows Ng (1988) and Ng and Naiyanetr (1993, 1995). Specimens examined are deposited in the Natural History Museum (NHM) [formerly the British Museum of Natural History], London, United Kingdom; Chulalongkorn University Natural History Museum (CUMZ), Bangkok, Thailand; Museo Civico di Storia Naturale "Giacoma Doria" (MG), Genova, Italy; Muséum national d'Histoire naturelle (MNHN), Paris, France; Nationaal Natuurhistorische Museum [formerly Rijksmuseum van Natuurlijke Historie (RMNH)], Leiden, The Netherlands; Senckenbergischen Naturforschenden Gesellschaft (SMF), Frankfurt, Germany; National Museum of Natural History (USNM), Smithsonian Institution, Washington, D.C., U.S.A.; Instituut voor Systematiek en Populatiebiologie [formerly Zoölogisch Museum Amsterdam (ZMA)], Amsterdam, The Netherlands; Zoologisch Museum (ZMUC), Copenhagen, Denmark; and the Zoological Reference Collection (ZRC), Department of Biological Sciences, National University of Singapore, Republic of Singapore. A full description is given only for the type species, while diagnoses are given for the other species.

TAXONOMY

Family Potamidae Ortmann, 1896
Demanietta Bott, 1966

Potamiscus (*Demanietta*) Bott, 1966: 487 (part).
Ranguna (*Demanietta*)—Bott, 1970: 173 (part); Chuen-sri, 1973: 35 (part), 1974a: 32 (part), 1974b: 23, 26.
Demanietta—Naiyanetr, 1992a: 113; Ng and Naiyanetr, 1993: 31, 33.

Type Species.—*Potamon* (*Potamon*) *manii* Rathbun, 1904, by original designation.

Diagnosis.—Carapace distinctly broader than long, relatively low, dorsal surface never strongly inflated; epigastric cristae distinct, separated from postorbital cristae by distinct groove; postorbital cristae distinct, sharp, confluent with epibranchial tooth; external or-

bital angle separated from epibranchial tooth by small cleft; epibranchial tooth distinct; anterolateral margin strongly convex, cristate to minutely cristate; posterolateral margins convergent posteriorly. Exopod of third maxilliped reaching beyond upper edge of ischium, with well-developed flagellum, length subequal to width of merus. Male abdomen triangular; tip of telson reaching imaginary line joining median point of cheliped bases. Gonopod 1 (G1) sinuous; terminal segment slender, conical, with broad dorsal fold, sparsely setose; distal part of subterminal segment slender, necklike. G2 with distal segment subequal or slightly longer than half length of basal segment.

Habitat.—The crabs of the genus *Demanietta* are generally aquatic. With one exception, *D. khirikhan*, new species, which was collected from comparatively more slowly flowing waters, these crabs have mainly been found in fast-flowing to torrential mountain streams and cascades, hence their Thai vernacular name of “Pu Nam Tok,” meaning waterfall crabs (Naiyanetr, 1996). During the day, they take shelter under rocks and in crevices, venturing out at night to forage. Some specimens were collected outside water but in very moist areas adjacent to water bodies, such as under rocks in the splash zone of the stream bank or in crevices in vertical walls behind waterfalls and cascades. Little else is known about the ecology of these crabs.

Remarks.—Bott (1966) originally established *Demanietta* as a subgenus of *Potamiscus* Alcock, 1909, and subsequently transferred it to the genus *Ranguna* Bott, 1966 (see Bott, 1970). *Ranguna* has since been regarded as a junior subjective synonym of *Potamiscus*, and the former is believed to be a heterogeneous grouping (see Türkay and Naiyanetr, 1987, 1989; Holthuis, 1990; Ng, 1990; ICZN, 1991; Ng and Naiyanetr, 1993: 6, 31). One of these groups is *Demanietta*, which was defined by Bott as possessing a slender G1, with a long, tapering terminal segment bearing a broad dorsal fold, and a subterminal segment with a narrow, necklike distal part (Bott, 1966, 1970; Ng and Naiyanetr, 1993: 31). Naiyanetr (1992a), in describing a new species from Thailand, *D. sirikit*, recognized for the first time, the generic status of *Demanietta*. Subsequently, following a re-examination of the type species *Potamon*

(*Potamon*) *manii* Rathbun, 1904, Ng and Naiyanetr (1993) redefined the genus using additional carapace characters, and, in doing so, assigned its species to two genera, *Demanietta* sensu Ng and Naiyanetr, 1993, and *Thaiphusa* Ng and Naiyanetr, 1993. In the classification of Ng and Naiyanetr (1993), *Demanietta* included *D. smalleyi* (Bott, 1966), *D. merguensis* (Bott, 1966), and *D. trirungensis* (Naiyanetr, 1986), while *Thaiphusa* included *T. sirikit* (Naiyanetr, 1992a), *T. tenasserimensis* (Rathbun, 1898), and *T. chantaburiensis* (Chuensri, 1973).

Species of *Demanietta* and *Thaiphusa* resemble each other only in the general structure of the G1, and it was this which caused Bott (1966, 1970) to assign all of them to *Demanietta*. The G1 terminal segment fold, however, is relatively higher in *Demanietta* than in *Thaiphusa*. Species of *Demanietta* can, however, be immediately separated from species of *Thaiphusa* by the following features: (i) the relatively flat carapace with well-defined regions (versus an inflated rounded carapace with poorly defined regions); (ii) serrated and cristate anterolateral margins (versus very low, indistinctly cristate anterolateral margins); (iii) rugose or sharp epigastric cristae and postorbital cristae clearly separated from one another (versus rounded epigastric and postorbital cristae almost confluent with one another); (iv) a broad to acutely triangular epibranchial tooth (versus a low and rounded tooth); (v) rugose and striated branchial and metabranchial regions (versus regions smooth); and (vi) a third maxilliped exopod flagellum length subequal to, or greater than, merus width (versus half to two-thirds as long as merus width). Species of *Demanietta* are also generally aquatic as opposed to the terrestrial habits of species of *Thaiphusa* (Ng and Naiyanetr, 1993).

Species of *Demanietta* differ from *Potamon* sensu lato (Ng and Naiyanetr, 1993; Yeo and Ng, 1997) in their G1 having a slender, conical terminal segment, with broad dorsal fold, and a slender, necklike distal part of the subterminal segment; as well as a generally more transverse, flatter carapace; broader external orbital angles; and entire postorbital cristae which are confluent with the epibranchial tooth (versus breaking up into low granules laterally before reaching the epibranchial tooth). *Demanietta* also superficially resembles *Esanpotamon namsom* Naiyanetr and

Ng, 1997, a waterfall crab recently described from northeastern Thailand (Naiyanetr and Ng, 1997). These taxa are, however, easily separated by their G1 and carapace characters (see Naiyanetr and Ng, 1997).

Alcock (1910) reported *D. manii* from several localities along the Myanmarese side of the Tenasserim mountain range. These records are probably incorrect and may refer to undescribed species of *Demanietta* (present study). In addition, further collections may reveal more undescribed species from northwestern and western-central Thailand (unpublished data). Currently, however, the genus *Demanietta* contains 10 species, namely, *D. manii* (Rathbun, 1904), *D. renongensis* (Rathbun, 1904), *D. merguensis* (Bott, 1966), *D. thagatensis* (Rathbun, 1904), *D. tritrunensis* (Naiyanetr, 1986), *D. huahin*, new species, *D. khirikhan*, new species, *D. lansak*, new species, *D. nakhonsi*, new species, and *D. suanphung*, new species.

Distribution.—The genus *Demanietta*, is found on both sides of the Tenasserim Range that forms the border between Thailand and Myanmar (=Burma); from the central Thai provinces of Kamphaeng Phet, Uthai Thani, and Kanchanaburi, south to the Isthmus of Kra, and the Phuket and Khao Lung Ranges in the southeastern Thai provinces of Ranong to Trang. This genus is also found on the islands off the west coast of Myanmar and southern Thailand, in the Andaman Sea, such as Ko Chang and the Mergui Archipelago.

KEY TO SPECIES OF *DEMANIETTA*

1. Postorbital cristae gently sloping posterolaterally, gently sinuous; epigastric cristae sharp, smooth, level with postorbital cristae; external orbital angle acutely triangular; epibranchial tooth acute; frontal margin with distinct, acute, ventrally directed projections at both ends; anterolateral margin distinctly serrated; branchial region just posterior of epibranchial tooth with few weak, flattened, granules; terminal segment of G1 gently curving laterally, hooklike, with tip directed laterally (Figs. 3A–D, 6E, 8C) (Mergui Archipelago, Myanmar) *D. merguensis*
- Postorbital cristae convex or straight; epigastric cristae not sharp, rugose, slightly anterior to postorbital cristae; external orbital angle broadly triangular (e.g., Fig. 6A) to acutely triangular (Fig. 6F); epibranchial tooth low, broad; frontal margin lacking distinct projection at either end; anterolateral margin weakly serrated (e.g., Fig. 7F) or not serrated (e.g., Figs. 7C, 8D); branchial region with very faint rugae (e.g., Figs. 7C, 8D) or distinct rugae (e.g., Fig. 7B); terminal segment of G1 gently to distinctly sinuous, with tip directed upward 2
2. Dorsal surface of carapace distinctly convex longitudinally, smooth, with few and very faint branchial rugae and metabranchial striae; external orbital angle with outer margin subequal to inner margin, orbital region narrow; anterolateral margin minutely cristate, not serrated; H-shaped groove distinct but very weak, shallow; G1 very stocky; terminal segment stout; subterminal segment very broad (Figs. 4E–H, 7C, 8D) (south Thailand) *D. khirikhan*
- Dorsal surface of carapace relatively flat (e.g., Figs. 8A–C), with distinct to weak rugae and striae on branchial and metabranchial regions; external orbital angle with outer margin longer than inner margin, orbital region broad; anterolateral margin cristate, weakly serrated; H-shaped groove well developed; G1 sinuous, slender to stocky; terminal segment slender to very slender; subterminal segment slender to broad 3
3. Individuals smaller than 50-mm cw, fingers of chelae broad and laterally flattened, with straight, almost parallel cutting edges, with uniform small cutting-edge teeth, almost no gape; G1 sinuous; terminal segment very slender, sinuous; subterminal segment slender, sinuous, without shelf on outer margin, with distinctly concave inner margin (Figs. 5E–H, 10) (south-central Thailand) ... *D. suanphung*
- In individuals of all sizes, fingers of chelae slender (e.g., Fig. 9A–D), with curved movable finger, nonparallel cutting edges, with one or more slightly enlarged cutting-edge teeth and distinct gape; G1 slightly sinuous, slender to stocky; terminal segment slender, gently sinuous to almost straight; subterminal segment slender to broad, slightly sinuous, with shelf (e.g., Fig. 2G, H) or without shelf (e.g., Fig. 3I, J) on outer margin, slightly concave to almost straight inner margin 4
4. Postorbital cristae distinctly convex (e.g., Fig. 6F) 5
- Postorbital cristae straight (e.g., Fig. 6C) 7
5. External orbital angle acutely triangular; terminal segment of G1 strongly sinuous, tip broad, flared, dorsal flap extending along almost entire length of terminal segment, with broadly rounded apex in proximal portion (Figs. 3E–H, 6F) (Thagata, Myanmar) *D. thagatensis*
- External orbital angle broadly triangular; terminal segment of G1 gently sinuous, tip tapered, acute to rounded, dorsal flap extending along median third to half of terminal segment, with broadly rounded to bluntly angular apex in proximal to medial portion. 6
6. Terminal segment of G1 with acute tip, slightly curving upward, dorsal flap with distinct bluntly angular apex skewed toward proximal portion and distinct notch on proximal margin (Fig. 3I–L) (eastern Kanchanaburi) *D. tritrunensis*
- Terminal segment of G1 with rounded tip, straight, dorsal flap with rounded to broadly rounded apex in proximal to medial portion (Fig. 4I–L) (Uthai Thani; Kamphaeng Phet) *D. lansak*
7. G1 subterminal segment broad, with distinct, broad shelf on upper part of outer margin 8
- G1 subterminal segment slender to broad, with sloping outer margin, without distinct, broad shelf on outer margin 9

8. Carapace with regions behind epigastric and post-orbital cristae smooth, branchial region comparatively less rugose; G1 terminal segment dorsal flap with relatively high, bluntly angular to rounded apex usually medial in position, tip bluntly acute (Figs. 2G–N, 6C, D, 8B) (south Thailand)
..... *D. renongensis*
- Carapace with regions behind epigastric and post-orbital cristae weakly rugose, branchial region comparatively more rugose; G1 terminal segment dorsal flap with low, broadly rounded apex medial in position, tip rounded (Figs. 1C, 2A–F, 6A, 8A) (Thailand) *D. manii*
9. Carapace more transverse (cw/cl approximately 1.4); branchial region distinctly rugose; G1 terminal segment slightly sinuous, tip bluntly acute, distal part slightly more recurved upward, dorsal flap with bluntly angular apex skewed toward proximal portion, appearing more tapered toward distal part with weak notch on proximal margin; subterminal segment less broad (about 2.4–2.5 times longer than broad) (Figs. 4A–D, 7B) (south Thailand)
..... *D. huahin*
- Carapace less transverse (cw/cl ratio approximately 1.3); branchial region weakly rugose; G1 terminal segment almost straight, tip rounded, distal part slightly recurved upward, dorsal flap with broadly rounded apex medial in position, appearing equally tapered toward distal and proximal parts; subterminal segment broad (about 2.1–2.2 times longer than broad) (Figs. 5A–D, 7E) (south Thailand). ...
..... *D. nakhonsi*

Demanietta manii (Rathbun, 1904)

Figs. 1, 2A–F, 6A, B, 8A, 9A

Thelphusa larnaudii var. *brevimarginatum*—de Man, 1892: 294 (part) (not *Thelphusa larnaudii* var. *brevimarginatum* de Man, 1892).

Potamon (Potamon) manii Rathbun, 1904: 276, fig. 15, pl. 11, fig. 6; ? Alcock, 1910: 48, fig. 46.

Potamiscus (Demanietta) tenasserimensis manii—Bott, 1966: 489, fig. 24, pl. 19, fig. 7.

Ranguna (Demanietta) tenasserimensis manii—Bott, 1970: 174, pl. 39, fig. 48, pl. 49, fig. 44; Chuensri, 1973: 38, fig. 6A, 1974a: 34, fig. 6A, 1974b: 26.

Ranguna manii—Naiyanetr, 1980a: 51 (part), 1988: 7, pl. 4.
Demanietta manii—Naiyanetr, 1992b: 49 (part); Ng and Naiyanetr, 1993: 31, 45 (part); Naiyanetr, 1996: 354–356 (part).

Material Examined.—Holotype, ♂ (47.8 × 35.0 mm) (MNHN–B.5291), “Bangkok, Siam,” collected by Harmand, no date.

Description of Holotype.—Carapace low, broader than long; dorsal surface relatively flat, glabrous; regions distinct, cervical groove well developed, H-shaped groove well developed (Figs. 1C, 6A). Epigastric cristae not sharp, rugose, separated by distinct groove opening into inverted V-shape posteriorly, distinctly anterior of postorbital cristae; postorbital cristae distinct, straight, smooth, sharp, confluent with epibranchial teeth; re-

gions behind epigastric and postorbital cristae weakly rugose (Figs. 1C, 6A). Frontal margin sinuous, lacking distinct projection at either end; frontal region deflexed downward, weakly rugose; supra- and infraorbital margins weakly sinuous, weakly cristate; orbital region relatively broad; eyes normal; subhepatic and subbranchial regions striated (Fig. 8A). External orbital angle broadly triangular, with outer margin longer than inner margin, with shallow, gently concave cleft separating it from epibranchial tooth; epibranchial tooth distinct, low, broadly triangular; anterolateral margin weakly serrated, cristate, distinctly convex, confluent with posterolateral margin; posterolateral margin entire, straight, strongly converging posteriorly; branchial region distinctly rugose; metabranchial region striated (Figs. 1C, 6A, 8A). Epistome anterior margin with median triangle; posterior margin with median triangular tooth (Fig. 8A).

Ischium of third maxilliped broadly rectangular, approximately 1.7 times longer than broad, with well-developed longitudinal median sulcus; merus square, subequal to half of ischium length, with concave outer surface; palp normal; exopod long, exceeding upper edge of ischium but not reaching midpoint of merus, inner margin of distal part produced as blunt tooth, with well-developed flagellum longer than width of merus (Fig. 1H).

Chelipeds unequal, right side larger, outer surfaces of merus, carpus, and palm distinctly rugose; fingers gaping, shorter than palm, with one or more slightly enlarged cutting-edge teeth, tips hooked and overlapping, smooth, with several longitudinal rows of pits; carpus with robust, obliquely directed subdistal spine on inner margin; merus without subterminal spine (Figs. 1A, B, 9A).

Ambulatory legs glabrous; fourth ambulatory leg dactylus approximately 1.2 times as long as propodus, approximately 5.2 times longer than proximal width; propodus, carpus, and merus smooth (Fig. 1E).

Suture between sternites 2 and 3 complete, distinct, gently emarginate medially; suture between sternites 3 and 4 not discernible; male abdominal cavity reaching level of median points of cheliped bases (Figs. 1F, 6B). Male abdomen narrowly triangular; telson longer than sixth segment, lateral margins straight, tip rounded, proximal margin almost straight; segment 6 with median length about

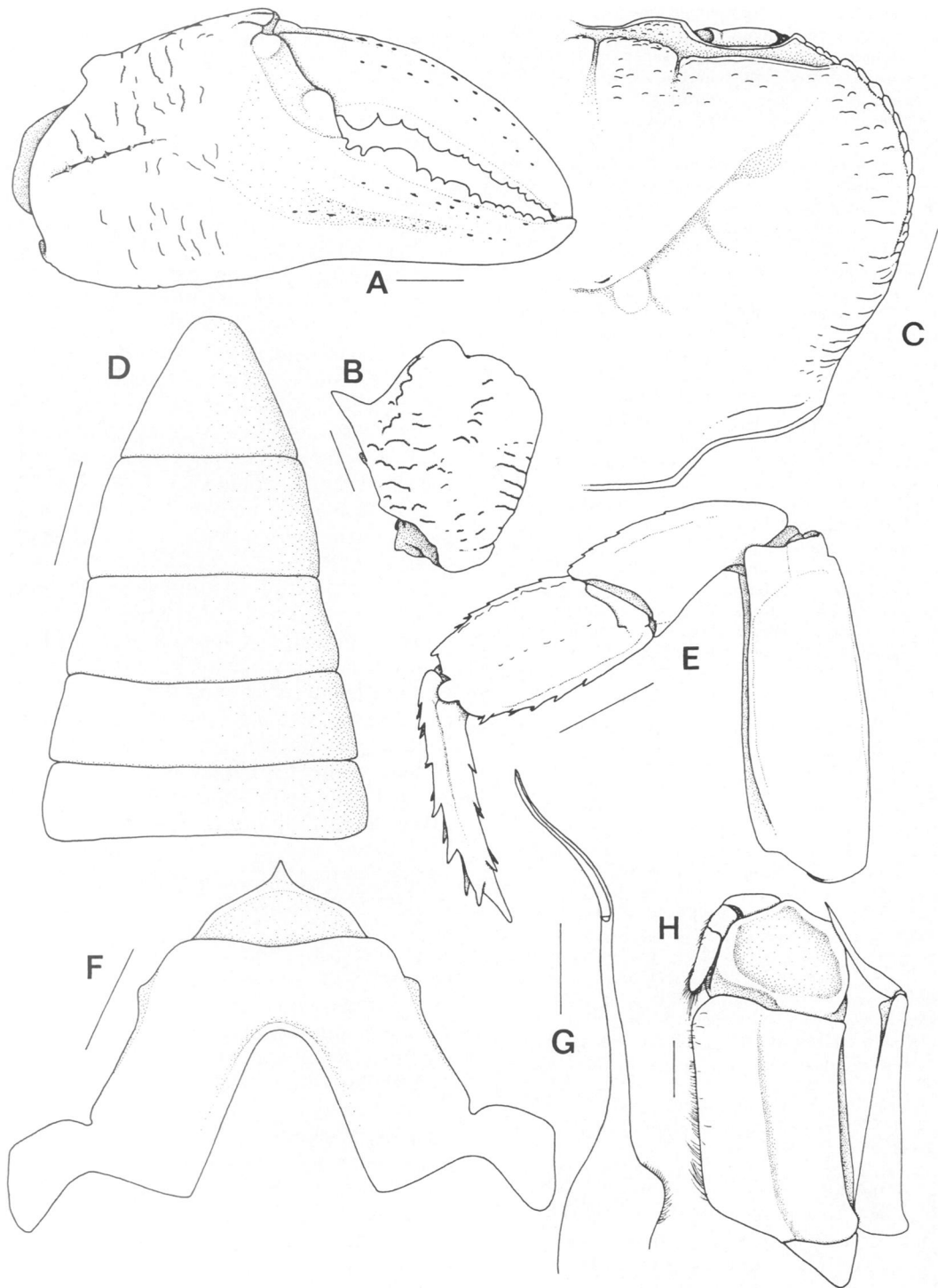


Fig. 1. *Demanietta manii*, holotype male (MNHN-B.5291). A, right chela; B, carpus of right cheliped; C, dorsal carapace; D, abdominal segments 3-7; E, fourth ambulatory leg; F, anterior thoracic sternum; G, right G2; H, left third maxilliped. Scales = 5.0 mm in A-F; 2.0 mm in G, H.

half of proximal margin length, proximal margin almost straight, lateral margins weakly convex; lateral margins of segments 3–5 almost straight (Figs. 1D, 6B).

G1 slightly sinuous, stocky, inner margin and groove for G2 lined with setae; terminal segment clearly separated from subterminal segment, relatively long, about 0.5 times length of subterminal segment, conical, slightly sinuous, tip rounded, dorsal flap extending along median third to half of terminal segment, with low, broadly rounded apex medial in position; subterminal segment broad, with distinct, broad shelf on upper part of outer margin (Fig. 2A–F). G2 with distal segment subequal to half of basal segment (Fig. 1G).

Remarks.—In describing *Thelphusa larnaudii* var. *brevimarginatum*, de Man (1892) included two specimens (one male and one female) from “Bangkok, Siam” in the type series. Rathbun (1904) subsequently reexamined the male specimen and described it as a new species, *Potamon (Potamon) manii*. The male specimen is the holotype, since it is the only specimen Rathbun examined. There are some discrepancies in the cw and cl measurements of the holotype. De Man (1892) recorded them as 45.8 × 35.0 mm; Rathbun (1904) recorded them as 48.1 × 35.3 mm; while our measurement is 47.8 × 35.0 mm. We are, however, sure that the present specimen is the holotype, since it matches Rathbun’s (1904: fig. 15, p. 11, fig. 6) photograph of the specimen; and G1 and abdomen drawings of *Potamon (Potamon) manii*. In addition, the present specimen has a detached right G1 which is the side drawn by Rathbun (1904). The variation in measurements is a common occurrence due mainly to slight differences in the measuring methods of different workers, and to a lesser extent, due to minute physical changes in the specimen, such as damage, shrinkage, etc.

Bott (1966) regarded *Demanietta manii* as a subspecies of *Potamiscus (Demanietta) tenasserimensis* (Rathbun, 1898), but Naiyanetr (1980a) listed it as “*Ranguna manii*.” However, Naiyanetr (1992a, b) later regarded it as a species of *Demanietta* after *Ranguna* was synonymized under *Potamiscus* (see *Remarks* under genus). In a redefinition of the genus *Demanietta*, *P. (D.) tenasserimensis* was transferred to *Thaiphusa*, and *D. manii* was retained in *Demanietta* (see Ng and Naiyanetr, 1993).

The holotype is not conspecific with any of the populations of *Demanietta* in the present study. It differs from all species except *D. renongensis* in its combination of a flat, rugose carapace bearing straight postorbital cristae with a G1 whose subterminal segment possesses a distinct, broad shelf on the upper part of the outer margin (Figs. 1C, 2A–C, 6A, 8A). *Demanietta manii* most closely resembles *D. renongensis*, but can be differentiated from it by the branchial regions of its carapace being comparatively more rugose, with weakly rugose regions behind the epigastric and postorbital cristae (versus branchial regions comparatively less rugose, with smooth regions behind the epigastric and postorbital cristae) (Figs. 1C, 6A, C, D, 8A, B); and the terminal segment of its G1 having a rounded tip and comparatively low dorsal flap, with a broadly rounded apex (versus a bluntly acute tip and comparatively high dorsal flap, with a bluntly angular to rounded apex) (Fig. 2A–N).

Demanietta manii has been reported recently from other parts of Thailand (Ng and Naiyanetr, 1993; Naiyanetr, 1980a, 1992b, 1996), as well as from parts of Myanmar along the Tenasserim mountain range (Alcock, 1910). The Thai material is certainly not solely *D. manii* sensu stricto as presently defined. It consists of a heterogeneous assemblage of undescribed and described species. Furthermore, it is highly improbable that Alcock’s (1910) specimens are *D. manii*, but since we have not been able to examine these specimens, we prefer to regard Alcock’s (1910) record as *incertae sedis* (see later).

Distribution.—Thailand. The actual distribution of this species is unknown. The locality data for the holotype of *Demanietta manii* simply reads “Bangkok, Siam” (de Man, 1892; Rathbun, 1904). However, it is possible that Harmand merely purchased or obtained it from another collector in Bangkok. It is interesting to note that all of Harmand’s fresh-water crab collections were made in northern to eastern Indochina (present day northern and northeastern Thailand, northern Laos, and Vietnam), with nothing being collected from southern Thailand, south of Bangkok (see Rathbun, 1904, 1905). As such, even if the holotype was collected by Harmand himself from the vicinity of Bangkok, it seems more likely that it would have been from north of Bangkok.

Demanietta renongensis (Rathbun, 1905)

Figs. 2G–N, 6C, D, 8B, 9B

Potamon (*Potamonautes*) *renongensis* Rathbun, 1905: 176.*Potamon* (*Potamon*) *larnaudii*—? Kemp, 1923: 12 (not *Thelphusa larnaudii* A. Milne-Edwards, 1869).*Potamiscus* (*Demanietta*) *tenasserimensis smalleyi* Bott, 1966: 490, fig. 25, pl. 19, fig. 8.*Ranguna* (*Demanietta*) *tenasserimensis smalleyi*—Bott, 1970: 175, pl. 39, fig. 49, pl. 50, fig. 45; Chuensri, 1973: 39, fig. 6B, 1974a: 34, fig. 6B, 1974b: 26.*Ranguna smalleyi*—Naiyanetr, 1978: 32, 1980a: 51 (part); 1980b: 24, 1988: 8, pl. 5.*Demanietta smalleyi*—Naiyanetr, 1992b: 49 (part).*Demanietta manii*—Ng and Naiyanetr, 1993: 31, 45 (part); Naiyanetr, 1996: 354–356 (part) (not *Potamon* (*Potamon*) *manii* Rathbun, 1904).**Material Examined.**—Holotype, ♀ (62.8 × 43.5 mm) (USNM 30584), Renong, Malay Peninsula, collected by W. L. Abbott, 7 December 1903.

Others: [SOUTH THAILAND] 1 ♂ [holotype of *Potamiscus* (*Demanietta*) *tenasserimensis smalleyi* Bott, 1966] (37.6 × 27.2 mm) (SMF 2808), 1 ♀ [paratype of *Potamiscus* (*Demanietta*) *tenasserimensis smalleyi* Bott, 1966] (41.8 × 30.6 mm) (SMF 2808a), Ko Chang, Malay Peninsula (Tapli, Pakehan, Peninsular Siam), collected by H. C. Robinson, 1919; 1 ♀ (33.7 × 24.5 mm) (ZRC 1984.7033), Tapi Pakeham, collected by H. C. Robinson, no date; Trang Province: 1 ♂ (33.1 × 22.6 mm) (ZRC 1998.140), Kao Chong waterfall, collected by P. Naiyanetr, 21 May 1976; 1 ♂ (32.0 × 23.6 mm) (ZRC 1998.134), 1 ♂ (36.2 × 22.1 mm) (CUMZ), Sai Rung waterfall, Yan Ta Kao District, collected by P. Naiyanetr, 29 October 1988; Krabi Province: 2 ♂♂, 1 ♀ (larger ♂ 39.8 × 28.8 mm) (ZRC 1998.143), 1 ♂, 4 ♀♀ (♂ 25.4 × 17.2 mm) (CUMZ), Tan Bo Kalanee waterfall, Muang Krabi District, collected by P. Naiyanetr, 18 May 1976; 9 ♀♀, 3 juveniles (largest 41.9 × 31.0 mm) (CUMZ), Huai To waterfall, Muang Krabi District, collected by P. Naiyanetr, 28 October 1986; Surat Thani Province: 3 ♂♂, 1 ♀ (largest male 37.8 × 27.9 mm) (ZRC 1998.144), 1 ♂, 4 ♀♀ (♂ 35.6 × 26.8 mm) (CUMZ), Wang Hin, Ko Phangan, collected by P. Naiyanetr, 3 March 1985; 2 ♂♂ (larger 44.7 × 32.6 mm) (ZRC 1998.223), Khao Sok waterfall, Phanom District, collected by P. Naiyanetr, 30 March 1990; 4 ♂♂ (largest 39.6 × 28.6 mm) (CUMZ), Klong Sang Sanctuary, collected by Somsak, 28 August 1995; 3 ♂♂, 1 ♀ (largest male 45.7 × 33.0 mm) (ZRC 1998.139), 1 ♂ (36.2 × 22.1 mm) (CUMZ), Ko Sak Pak waterfall, Phanom District, collected by Puusin, 13 August 1988; 1 ♂, 1 ♀ (male 39.1 × 28.8 mm) (ZRC 1998.142), Ko Samui, Ko Samui District, collected by P. Naiyanetr, 16 October 1982; Phuket Province: 2 ♂♂, 1 ♀, 2 juveniles (larger male 42.6 × 29.4 mm) (ZRC 1998.137), 3 ♂♂, 3 ♀♀, 1 juvenile female (largest ♂ 36.0 × 25.3 mm) (CUMZ), Ton Sai waterfall, Thalang District, collected by Kalayane, 11 May 1986; 8 ♂♂, 6 ♀♀ (largest ♂ 44.3 × 31.4 mm) (CUMZ), same locality as above, collected by P. Naiyanetr, 16 July 1974; 2 ♂♂, 3 ♀♀ (larger ♂ 45.7 × 33.0 mm) (CUMZ), same locality as above, collected by P. Naiyanetr, 5 August 1979; 1 ♀, 2 juveniles (RMNH D 35886), same locality as above, collected by P. Naiyanetr, 9 June 1983; 1 ♂ (47.1 × 32.4 mm) (SMF 699), same locality as above, collected by P. Naiyanetr, 8 May 1976; 1 ♂ (47.8 × 33.2 mm) (ZRC 1985.2185), same locality as above, collected by S. S.

C. Chong, March–April 1985; 3 ♂♂, 1 ♀ (largest male 35.4 × 25.3 mm) (ZRC 1998.129), 1 ♂, 1 ♀ (RMNH), 8 ♂♂, 1 ♀ (largest 45.7 × 33.0 mm) (CUMZ), Bang Pae waterfall, Thalang District, collected by Kalayane, 10 December 1987; 1 ♂ (34.1 × 24.1 mm) (ZRC 1998.130), 1 ♀ (28.0 × 20.6 mm) (CUMZ), Kathu waterfall, Kathu District, collected by P. Naiyanetr, 17 July 1974; 4 juvenile ♀♀ (CUMZ), same locality as above, collected by Kalayane, 21 June 1986; Phangnga Province: 5 ♂♂, 2 ♀♀, 6 juveniles (largest ♂ 49.9 × 36.0 mm) (CUMZ), Lumpee waterfall, collected by Kalayane, 10 December 1992; 1 ♂, 1 ♀, 1 juvenile ♂ (♂ 43.1 × 30.7 mm) (ZRC 1998.141), 2 juvenile ♂♂, 2 juvenile ♀♀ (CUMZ), Lumru waterfall, Kapong District, collected by Kalayane, 8 December 1987; 5 ♂♂, 5 ♀♀ (largest ♂ 35.0 × 25.7 mm) (CUMZ), Ramun waterfall, Muang Phangnga District, collected by Kalayane, 9 December 1987; 3 ♂♂ (42.0 × 30.8 mm) (CUMZ), same locality and collector as above, 29 March 1987; 1 ♂, 1 ♀ (♂ 31.0 × 23.2 mm) (CUMZ), same locality as above, collected by P. Naiyanetr and Chulakasem, 16 March 1982; 5 ♂♂, 2 ♀♀ (largest ♂ 32.8 × 23.8 mm) (CUMZ), Sa Nang Manora waterfall, Muang Phangnga District, collected by Kalayane, 8 December 1987; 9 ♂♂, 6 ♀♀ (largest ♂ 53.5 × 38.0 mm) (CUMZ), same locality and collector as above, 25 August 1987; 4 ♂♂, 1 ♀ (largest ♂ 43.3 × 31.8 mm) (CUMZ), Tung Ka Kok, collected by Kalayane, 25 August 1986; 12 ♂♂, 3 ♀♀, 2 juveniles (largest ♂ 39.9 × 29.3 mm) (CUMZ), Ton Na Nua waterfall, collected by Kalayane, 25 October 1987; 4 ♂♂, 5 juveniles (largest ♂ 38.4 × 27.5 mm) (CUMZ), same locality and collector as above, 29 August 1987; 1 ♂, 1 ♀ (male 47.2 × 34.8 mm) (ZRC 1998.135), 1 ♂, 2 ♀♀ (♂ 39.9 × 28.7 mm) (CUMZ), Bang Prik waterfall, Kapong District, collected by Kalayane, 9 May 1987; 2 ♂♂, 1 ♀ (larger ♂ 32.1 × 23.9 mm) (CUMZ), same locality and collector as above, 8 December 1987; 1 ♂ (32.8 × 24.4 mm) (CUMZ), Tao Thong waterfall, collected by P. Naiyanetr, 20 March 1982; 1 ♀, 3 juvenile ♂♂, 2 juvenile ♀♀ (♀ 32.4 × 23.3 mm) (CUMZ), same locality as above, collected by Kalayane, 27 March 1987; 2 ♂♂ (larger ♂ 55.6 × 40.7 mm) (ZRC 1998.131), 1 ♂, 1 ♀ (SMF), 8 ♀♀, 1 juvenile ♂ (largest female 43.1 × 31.9 mm) (CUMZ), Klong Bang Prik, Muang Phangnga District, collected by Kalayane, 13 May 1986, 1 juvenile ♂, 1 juvenile ♀ (CUMZ), Kansim waterfall, collected by Kalayane, 9 December 1987; Ranong Province: 1 ♂, 2 ♀♀ (37.7 × 28.2 mm) (CUMZ), Ngao waterfall, Muang Ranong District, collected by park rangers, 7 December 1987; 4 ♂♂ (largest ♂ 52.1 × 37.4 mm) (ZRC 1998.138), 1 ♂, 1 ♀ (ZMUC), 3 ♀♀, 2 juvenile ♂♂, 2 juvenile ♀♀ (largest ♀ 39.5 × 29.2 mm) (CUMZ), Kao Na Rai waterfall, Kapoe District, collected by Tawin, 7 December 1987; 1 ♂ (30.0 × 22.0 mm) (CUMZ), Bun Ya Ban waterfall, collected by Tawin, 6 December 1987; 1 ♂ (32.2 × 23.7 mm) (ZRC 1985.2171), 1 ♂ (42.2 × 31.7 mm) (ZRC 1985.2172), same locality as above, collected by P. K. L. Ng and H. P. Ng, December 1984; 3 ♂♂, 1 ♀ (largest ♂ 34.9 × 24.5 mm) (ZRC 1998.133), 3 ♂♂ (largest ♂ 33.6 × 24.5 mm) (CUMZ), Su Wan Kiri waterfall, Kra Buri District, collected by P. Naiyanetr, 24 January 1981; 1 ♂, 1 ♀ (36.0 × 27.1 mm, larger than ♂) (ZRC 1985.2173–2174), 2 ♂♂, 2 ♀♀, 6 juveniles (largest ♂ 24.7 × 18.5 mm, larger than either ♀♀ or juveniles) (ZRC 1985.1984–1993), same locality as above, collected by P. K. L. Ng, December 1984; 1 ♂ (37.1 × 27.4 mm) (ZRC 1998.136), Houw waterfall, collected by P. K. L. Ng, December 1984; 2 ♂♂, 1 ♀ (larger ♂ 29.9 × 23.0 mm) (ZRC 1998.145), Ton Koi waterfall,

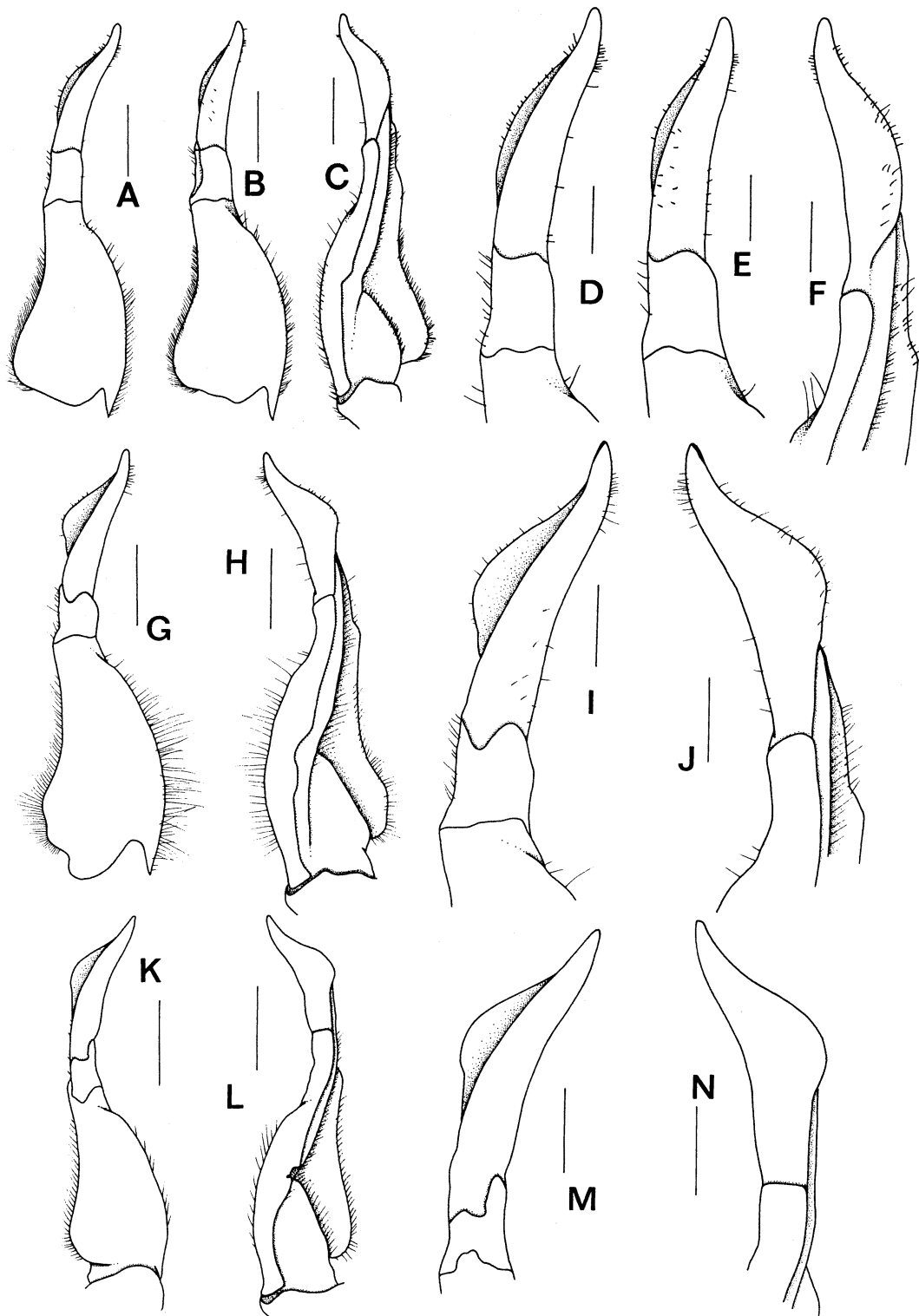


Fig. 2. Right G1 of species of *Demanietta*. A–F, *D. manii*, holotype (MNHN–B.5291); G–J, *D. renongensis*, topotype (ZRC 1985.2172); K–N, *D. renongensis*, [holotype of *Potamiscus (Demanietta) tenasserimensis smalleyi* (SMF 2808)]. A, G, K, overall dorsal view; B, overall dorsolateral view; C, H, L, overall ventral view; D, I, M, dorsal view of terminal segment; E, dorsolateral view of terminal segment; F, J, N, ventral view of terminal segment. Scales = 2.0 mm in A–C, G, H, K, L; 1.0 mm in D–F, I, J, M, N.

9°20'14.6"N, 98°27'18.9"E, Suk Sam Lan subdistrict, collected by D. C. J. Yeo *et al.*, 11 August 1997; 3 ♂♂, 1 juvenile (♂ 40.2 × 29.5 mm) (ZRC 1998.146), stream below bridge on Highway 4 between Ranong and Chumphon, 10°2'6.1"N, 98°39'48.3"E, Muang Ranong District, collected by D. C. J. Yeo *et al.*, 12 August 1997; Chumphon Province: 3 ♂♂, 2 ♀♀ (largest ♂ 40.4 × 28.8 mm) (ZRC 1998.132), 1 ♂, 3 ♀♀ (♂ 33.3 × 24.4 mm) (CUMZ), Ka Po waterfall, collected by P. Naiyanetr, 23 July 1975.

Diagnosis.—Carapace relatively flat, broader than long; epigastric cristae rugose, not sharp, distinctly anterior to postorbital cristae, postorbital cristae straight; regions behind epigastric and postorbital cristae smooth; external orbital angle broadly triangular, with outer margin longer than inner margin, with shallow, gently concave cleft separating it from epibranchial tooth; epibranchial tooth low, broad; frontal margin lacking distinct projection at either end; anterolateral margin weakly serrated, cristate; posterolateral margins strongly convergent posteriorly; branchial region with distinct rugae; metabranchial region with distinct, short striae; cervical groove distinct; H-shaped groove well developed. G1 slightly sinuous, stocky; terminal segment slightly sinuous, tip bluntly acute, dorsal flap extending along median third to half of terminal segment, with bluntly angular to rounded apex usually medial in position; subterminal segment broad, with distinct, broad shelf on upper part of outer margin. G2 with distal segment subequal to half of basal segment.

Remarks.—The sole type specimen of *Demanietta renongensis* (Rathbun, 1904), which is by default the holotype for the species, is a large female (62.8 × 43.5 mm) (USNM 30584) collected by W. L. Abbott obtained from "Renong, Malay Peninsula," which undoubtedly refers to present day Ranong, in peninsular southern Thailand (R. B. Manning, personal communication). This is further supported by the fact that W. L. Abbott's Malayan collections were from peninsular southern Thailand (see Rathbun, 1898; Ng, 1986).

The holotype of *D. renongensis* appears to be conspecific with our recent collections of species of *Demanietta* from Ranong Province. Furthermore, from the present series of recent collections, only one species of *Demanietta* occurs in Trang, Krabi, Surat Thani, Phuket, Phangnga, Ranong, and Chumphon provinces. There is little doubt that this species should be referred to *D. renongensis*. It

is important to note, however, that the holotype is a little unusual in that it has a slightly more swollen epigastric region and more concave face than characteristic for the area, but these features are easily explained. The median posterior part of the epigastric region is flattened anteriorly, resulting in a distinctly unnatural compression at the base of the groove separating the epigastric cristae, the "sunken in" appearance of the epigastric cristae themselves and swelling of the epigastric region. This is akin to conditions seen in freshly molted crabs that have suffered from postmolt damage due to pressure applied to the anterior carapace, resulting in buckling of the carapace before it becomes fully calcified and hardened. The concave face is a feature of very large fresh-water crabs, as noted in the Bornean potamid *Iso-lapotamon naidis* (see Ng and Tan, 1998: 74).

Demanietta smalleyi (Bott, 1966) was described from a male and a female from Ko Chang, an island in the Andaman Sea, just off the west coast of Ranong, Thailand. In the carapace structure and other external aspects, the holotype of *Demanietta smalleyi* is clearly conspecific with populations of *Demanietta* from the provinces mentioned in the previous paragraph. The G1 of the holotype of *D. smalleyi* (Fig. 2L–O) differs very slightly from that of a normal *D. renongensis* G1 (Fig. 2H–K) in having a more slender "neck" (distal part of subterminal segment). This is because the angle at which the former was placed while being drawn was slightly different from that of the latter. Furthermore, the weak crenulation in the "neck" of the holotype G1 of *D. smalleyi* indicates possible compression or damage, resulting in deformation. Despite this, the G1 of the holotype of *D. smalleyi* is still identifiable as that of a *D. renongensis*, especially in the broad subterminal segment with its distinct, broad shelf on the upper part of the outer margin, and the terminal segment dorsal flap extending along the median third, with a bluntly angular medial apex. On comparing the holotype of *D. smalleyi* with the holotype of *D. renongensis*, no significant differences were found and we believe they are conspecific. Therefore, *D. smalleyi* is here regarded as a junior subjective synonym of *D. renongensis*. Like the previous species, Bott (1966) regarded *D. smalleyi* as a subspecies of *Potamiscus* (*Demanietta*) *tenasserimensis* (Rathbun, 1898),

and Naiyanetr (1980a) listed it as "*Ranguna smalleyi*." It was elevated to its present species status when Naiyanetr (1992b) listed it as *Demanietta manii*.

Kemp (1923: 12) reported two specimens of *Potamon (Potamon) larnaudii* (A. Milne-Edwards, 1869) from ". . . Koh Chang (island) in the Gulf of Siam. . . ." This was probably why Kemp (1923) was cited in the synonymy for *Demanietta smalleyi* by Bott (1970). However, we cannot be certain of this record, since we have not been able to examine the said specimens (which are probably in the Indian Museum). There is also no indication that Bott (1970) examined these specimens. Another potential problem lies in the fact that there are two Thai islands, both of which are known by the name of "Ko Chang" or "Koh Chang." As mentioned earlier, there is a Ko Chang in the Andaman Sea, just off the west coast of Ranong, Thailand, from which the holotype of *D. smalleyi* was obtained. The other island known as Ko Chang lies in the Gulf of Thailand, off the coast of Trat Province, close to the Thai-Cambodian border. Kemp (1923) may have mistaken the Andaman Sea Ko Chang for the Gulf of Thailand Ko Chang, in which case, there is a high chance that the specimens really belong to *D. renongensis*. However, in the more likely event that Kemp (1923) was correctly referring to the Gulf of Thailand island, then the specimens would almost certainly not be *D. renongensis*, since the genus has never been found from east Thailand, and the only potamid known from that island is *Potamiscus* cf. *hafniensis* Bott, 1966 (unpublished data).

Like *D. manii*, *D. renongensis* has also been previously listed from Thailand (as *Ranguna smalleyi* and *D. manii*) (see Naiyanetr, 1980a, b, 1992b, 1996; Ng and Naiyanetr, 1993). Adults of *D. renongensis* are morphologically closest to *D. manii* but can be separated from that species by differences in the carapace and G1 structure (see *Remarks* under *Demanietta manii*). Juvenile and subadult males of *D. renongensis*, *D. nakhonsi*, new species, and *D. huahin*, new species, cannot be differentiated by their G1 structures. *Demanietta renongensis* can, however, be immediately distinguished from both *D. nakhonsi* and *D. huahin* by the presence of a distinct broad shelf on the outer margin of its G1 subterminal segment (versus shelf

absent) (Figs. 2G, H, 4A, B, 5A, B). In addition, *D. renongensis* also differs from *D. nakhonsi* in having a distinctly more transverse carapace (Figs. 6C, D, 7E); and in its G1 terminal segment having a bluntly acute tip and a dorsal flap with a bluntly angular to rounded apex (versus rounded tip and a dorsal flap with a broadly rounded apex) (Figs. 2I, J, 5C, D). The medially positioned apex of the G1 terminal segment dorsal flap in *D. renongensis* also differentiates it further from *D. huahin*, which has a dorsal flap with a weak notch on the proximal margin and an apex skewed toward the proximal portion (Figs. 2I, J, 4C, D).

Distribution.—Trang, Krabi, Surat Thani, Phuket, Phangnga, Ranong, and Chumphon Provinces in south Thailand.

Demanietta merguensis (Bott, 1966)
Figs. 3A–D, 6E, 8C

Telphusa stoliczkana—de Man, 1888: 94 (not *Telphusa stoliczkana* Wood-Mason, 1871).

Potamon (Potamon) stoliczkana—de Man, 1898: 425 (part), pl. 6, fig. 10b, c (not *Telphusa stoliczkana* Wood-Mason, 1871).

Potamon (Potamon) thagatensis Rathbun, 1904: 296 (part).

Potamon (Potamon) thagatense—Alcock, 1910: 54, fig. 47; Kemp, 1923: 16 (not *Potamon (Potamon) thagatensis* Rathbun, 1904).

Potamon thagatensis—Balss, 1937: 167, fig. 30; Pretzmann, 1963: 367, pl. 9, fig. 10 (not *Potamon (Potamon) thagatensis* Rathbun, 1904).

Potamiscus (Demanietta) tenasserimensis merguensis—Bott, 1966: 488, fig. 23, pl. 18, fig. 6.

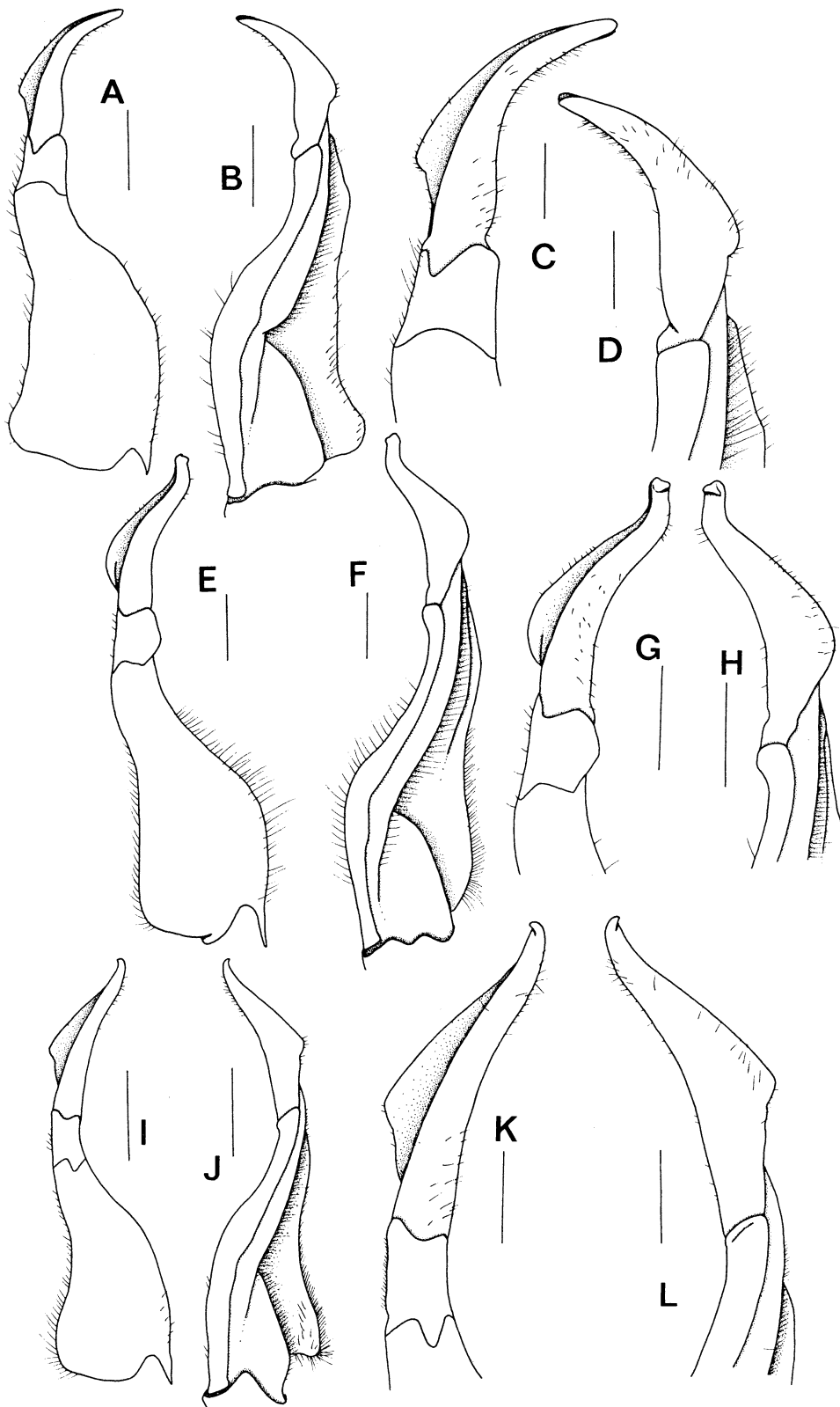
Ranguna (Demanietta) tenasserimensis merguensis—Bott, 1970: 174, p. 39, fig. 47, pl. 49, fig. 43; Chuen-sri, 1974b: 26.

Demanietta merguensis—Ng and Naiyanetr, 1993: 31.

Material Examined.—Holotype, ♂ (49.5 × 35.6 mm) (RMNH D 1555), Mergui Archipelago, Myanmar, collected by J. Anderson, 1886.

Others: [MYANMAR] 1 ♂ (44.0 × 32.0 mm) (ZMA), same locality and collector as holotype, 1888; 2 ♂♂, 2 ♀♀ (larger ♂ 47.5 × 34.9 mm) (NHM 1886.52), Mergui, collected by J. Anderson, no date.

Diagnosis.—Carapace relatively flat, broader than long; epigastric cristae sharp, smooth, in line with postorbital cristae, postorbital cristae gently sloping backward posterolaterally, gently sinuous; regions behind epigastric and postorbital cristae smooth; external orbital angle acutely triangular, with outer margin not much longer than inner margin, strongly developed, with deep, concave cleft separating it from epibranchial tooth; epi-



branchial tooth low, acute; frontal margin with distinct, acute, ventrally directed projections at both ends; anterolateral margin distinctly serrated, strongly cristate; posterolateral margins strongly convergent posteriorly; branchial region just posterior of epibranchial tooth with few weak, flattened, granules; metabranchial region weakly striated; cervical groove distinct; H-shaped groove well developed. G1 with terminal segment curved obliquely in middle, distal part straight, tip rounded, dorsal flap extending along almost entire length of terminal segment, with bluntly angular apex skewed toward proximal portion and distinct notch on proximal margin; subterminal segment very broad, with distinct, bluntly angular shelf on about median part of outer margin. G2 with distal segment subequal to half of basal segment.

Remarks.—*Potamiscus (Demanietta) tenasserimensis merguensis* was the third subspecies described by Bott (1966). *Demanietta merguensis* is one of the most distinctive members of the genus, with a unique combination of carapace and G1 characters not found in other species of *Demanietta* (see next paragraph). Future studies may show that *D. merguensis* should be referred to a separate genus.

Demanietta merguensis (Bott, 1966) is perhaps closest to *D. thagatensis* (Rathbun, 1904) [type locality Tenasserim: Thagata], both morphologically as well as geographically, and had previously been referred to the latter taxon (Rathbun, 1904; Alcock, 1910; Kemp, 1923; Balss, 1937; Pretzmann, 1963). While noting the distinctiveness of the specimens reported by de Man (1888) as *Telphusa stoliczkana* from the Mergui Archipelago, Rathbun (1904) nevertheless tentatively included them under her material for *Potamon (Potamon) thagatensis* Rathbun, 1904. These are, however, two very distinct species, with *D. merguensis* immediately distinguishable from *D. thagatensis* by the following characters: (i) sharp, smooth epigastric cristae level with the postorbital cristae (versus blunt, slightly rugose epigastric cristae distinctly an-

terior to the postorbital cristae) (Figs. 6E, F, 8C); (ii) gently sinuous postorbital cristae gently sloping posterolaterally (versus distinct but gently convex postorbital cristae) (Fig. 6E, F); (iii) an acute epibranchial tooth (versus broad) (Fig. 6E, F); (iv) frontal margin with ventrally directed projections at both ends (versus frontal margin lacking such projections) (Fig. 8C); (v) anterolateral margins distinctly serrated (versus weakly serrated) (Fig. 6E, F); (vi) branchial regions with weak, flattened granules (versus branchial regions weakly rugose) (Fig. 6E, F); (vii) G1 terminal segment gently curving laterally, hook-like, with rounded tip directed laterally, with bluntly angular dorsal flap apex (versus strongly sinuous, with broad and flared tip directed upward, with broadly rounded dorsal flap apex) (Fig. 3C, D, G, H); and (viii) G1 subterminal segment with bluntly angular shelf on median part of outer margin (versus broadly rounded shelf on median part of outer margin) (Fig. 3A, B, E, F). De Man (1898) and Kemp (1923) also noted the first two differences listed above between specimens from the Mergui Archipelago and Thagata, without making any inferences from them. Specimens of *P. (P.) thagatensis* which were previously reported from the Mergui Archipelago were referred to *D. merguensis* by Bott (1966), an action that we agree with and follow herein.

Distribution.—Mergui Archipelago, Andaman Sea, off southern Myanmar.

Demanietta thagatensis (Rathbun, 1904)
Figs. 3E–H, 6F, 9C

Potamon (Potamonautes) stoliczkana—de Man, 1898: 425 (part), pl. 5, fig. 10a, pl. 6, fig. 10. (not *Telphusa stoliczkana* Wood-Mason, 1871).

Potamon (Potamon) thagatensis Rathbun, 1904: 296 (part).

Material Examined.—Lectotype, ♂ (59.7 × 42.4 mm) (MG III 269), Thagata, Mount Mooleyit, a. 500–600 m, Tenasserim, Myanmar, collected by L. Fea, no date.

Paralectotype: [MYANMAR] 1 ♀ (42.0 × 30.6 mm) (MG III 268), same data as lectotype.

Others: [MYANMAR] 1 ♂, 1 ♀ (♂ 56.5 × 41.2 mm) (USNM 42770), Upper Tenasserim, gift/exchange from Indian Museum.

←

Fig. 3. Right G1 of species of *Demanietta*. A–D, *D. merguensis*, holotype (RMNH D 1555); E–H, *D. thagatensis*, lectotype (MG III 269); I–L, *D. tritrunensis*, paratype (ZRC 1991.1857). A, E, I, overall dorsal view; B, F, J, overall ventral view; C, G, K, dorsal view of terminal segment; D, H, L, ventral view of terminal segment. Scales = 2.0 mm in A, B, E–H, I, J; 1.0 mm in C, D, K, L.

Diagnosis.—Carapace relatively flat, broader than long; epigastric cristae not sharp, slightly rugose, distinctly anterior to postorbital cristae, postorbital cristae distinctly but gently convex; regions behind epigastric and postorbital cristae smooth; external orbital angle acutely triangular, with outer margin not much longer than inner margin, strongly developed, with deep, concave cleft separating it from epibranchial tooth; epibranchial tooth low, broadly triangular; frontal margin lacking distinct projection at either end; anterolateral margin weakly serrated, cristate; posterolateral margins strongly convergent posteriorly; branchial region weakly rugose; metabranchial region striated; cervical groove strongly developed; H-shaped groove well developed. G1 sinuous, with terminal segment strongly sinuous, tip broad, flared, dorsal flap extending along almost entire length of terminal segment, with broadly rounded apex skewed toward proximal portion; subterminal segment broad, with broadly rounded shelf on about median part of outer margin. G2 with distal segment slightly longer than half of basal segment.

Remarks.—There has been some confusion regarding the taxonomy of *Demanietta thagatensis* (Rathbun, 1904). In naming the species, no holotype was assigned by Rathbun (1904), although two different localities for the material that was attributed to this species were clearly stated: “Tenasserim: Thagata, sur le mont Mooleyit . . . (localité typique)” and “Archipel Mergui: Thaïng et Yimiki, les deux en l’île King (de Man).” However, the suggestion of a type locality has no nomenclatural significance. We have examined type material from both Mergui and Thagata, and found it to represent two separate species. Specimens from the Mergui Archipelago belong to *D. merguensis* (Bott, 1966) (see earlier), while those reported on by de Man (1898) and Rathbun (1904) from Thagata are a distinct taxon. For these specimens, the name *Potamon thagatense* is available, and we hereby fix the identity of this species by designating the male specimen (59.7 × 42.4 mm) (MG III 269), collected by Fea from “Thagata, sur le mont Mooleyit, a. 500–600 m, Tenasserim, Birmania” as the lectotype for *D. thagatensis* (Rathbun, 1904). Bott (1966) synonymized Rathbun’s (1904) Mergui material of *Potamon* (*Potamon*) *thagatensis*

Rathbun, 1904, under *D. merguensis*. We support this synonymy (see earlier). Bott (1966) also assigned the Thagata material to *Potamiscus* (*Demanietta*) *tenasserimensis tenasserimensis* (de Man, 1898). We have compared type material of *Potamon* (*Potamonautes*) *tenasserimensis* de Man, 1898, with the lectotype material of *D. thagatensis* and found that they are not congeneric, with the former species belonging to *Thaiphusa* (see Ng and Naiyanetr, 1993; earlier *Remarks* under genus).

Demanietta thagatensis is morphologically closest to *D. merguensis*, but can be distinguished by several carapace and G1 characters. These have already been discussed in the *Remarks* section under *D. merguensis*.

Distribution.—Thagata, Myanmar.

Demanietta tritrungensis (Naiyanetr, 1986)
Figs. 3I–L, 7A

Ranguna tritrungensis Naiyanetr, 1986: 11–1, fig. 1, 1987: 80, 1988: 8, pl. 5, fig. 5.

Demanietta tritrungensis—Ng and Naiyanetr, 1993: 33, figs. 23, 58.

Material Examined.—Holotype, ♂ (54.2 × 40.1 mm) (CUMZ), Tritrung waterfall, Tham Tharn Lod National Park, Bo Phloi District, Kancharaburi Province, central Thailand, collected by P. Naiyanetr and Warin, 9 September 1973.

Paratypes: [CENTRAL THAILAND] Kancharaburi Province: 4 ♂♂, 4 ♀♀ (largest ♂ 41.1 × 29.4 mm) (CUMZ), same locality as holotype, collected by P. Naiyanetr, 9 September 1994; 1 ♂ (37.7 × 28.0 mm) (ZRC 1991.1857), 1 ♂, 1 ♀ (♂ 36.1 × 25.7 mm) (RMNH D 41622), same locality as holotype, collected by P. Naiyanetr, 21 May 1977.

Others: [CENTRAL THAILAND] 1 ♀ (43.3 × 31.4 mm) (ZRC 1991.1858), same data as above; 1 ♂ (35.5 × 26.1 mm) (ZRC 1998.167), same locality as above, collected by P. Naiyanetr, 8 September 1996.

Diagnosis.—Carapace including epigastric, mesogastric, and branchial regions relatively flat, broader than long; epigastric cristae rugose, not sharp, distinctly anterior to postorbital cristae, postorbital cristae distinctly but gently convex; regions behind epigastric and postorbital cristae weakly rugose; external orbital angle broadly triangular, with outer margin longer than inner margin, with shallow, gently concave cleft separating it from epibranchial tooth; epibranchial tooth low, broad; frontal margin lacking distinct projection at either end; anterolateral margin weakly serrated, cristate; posterolateral margins strongly convergent posteriorly; branchial re-

gion weakly rugose; metabranchial region weakly striated; cervical groove distinct; H-shaped groove well developed, G1 slightly sinuous, slender; terminal segment gently sinuous, tip acute, slightly curving upward, dorsal flap extending along median third to half of terminal segment, with distinct bluntly angular apex skewed toward proximal portion and distinct notch on proximal margin; subterminal segment broad, without shelf on outer margin. G2 with distal segment subequal to half of basal segment.

Remarks.—This species was described and figured by Naiyanetr (1986) and Ng and Naiyanetr (1993). *Demanietta tritrungensis* superficially resembles *D. lansak* in external morphology, especially in the gently concave postorbital cristae. *Demanietta tritrungensis* can be differentiated from *D. lansak* primarily by its slightly upwardly curving G1 terminal segment having an acute tip, and a dorsal flap which has a bluntly angular apex and is notched on the proximal margin (versus straight G1 terminal segment having a rounded tip, and a dorsal flap which has a broadly rounded apex and an entire proximal margin) (Figs. 3K, L, 4K, L).

Distribution.—Central Kanchanaburi Province, central Thailand.

Demanietta huahin, new species

Figs. 4A–D, 7B

Material Examined.—Holotype, ♂ (40.7 × 29.4 mm) (ZRC 1998.151), Pala Ou waterfall, Hua Hin District, Prachuap Khiri Khan Province, south Thailand, collected by P. Naiyanetr, 12 August 1995.

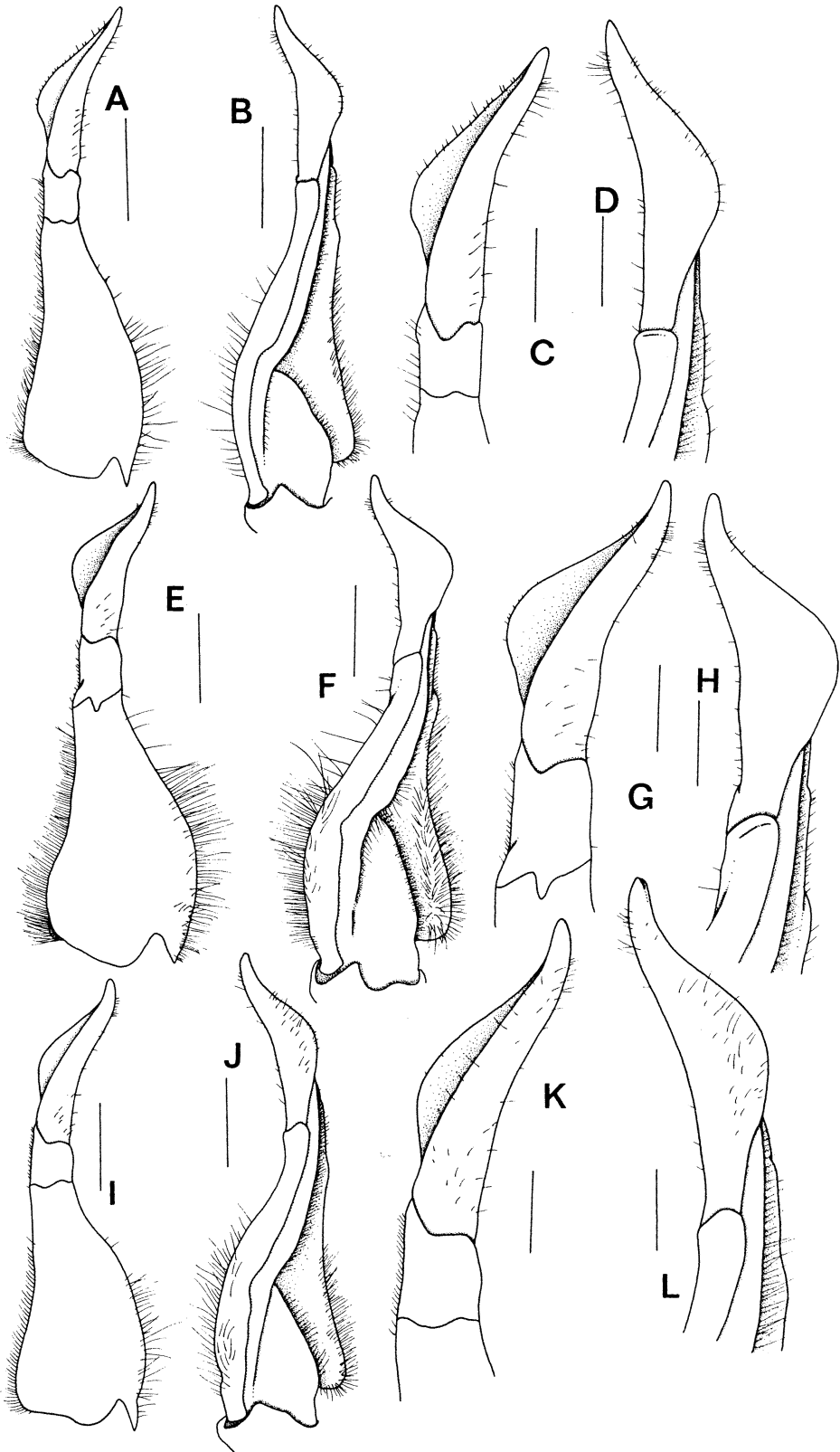
Paratypes: [SOUTH THAILAND] Prachuap Khiri Khan Province: 1 juvenile ♀ (ZRC 1998.152), same data as holotype; 1 ♂ (48.2 × 34.3 mm) (ZRC 1998.153), Kui Buri forest, Kui Buri District, collected by Thitirat Klinmalal, 9 October 1995; 1 ♂ (35.0 × 25.9 mm) (ZMUC), same locality as above, collected by Charal Ekavibhathai, October 1995; 1 ♂, 1 ♀ (♂ 49.5 × 35.7 mm) (RMNH), 1 ♀, 1 juvenile ♂ (♀ 54.2 × 39.0 mm) (SMF), 4 ♀♀ (largest ♀ 48.1 × 34.6 mm) (CUMZ), Huai Yang waterfall, Thap Sakae District, collected by Kumphol, 23 July 1961; 1 ♀ (50.8 × 38.0 mm) (CUMZ), Huai Sad Yai, Hua Hin District, collected by Colonel Prasart Imthip, 9 August 1997; 1 ♀ (39.0 × 29.0 mm) (ZRC 1998.154), same locality and collector as above, 16 August 1996; 8 ♂♂, 6 ♀♀ (largest ♀ 49.8 × 36.1 mm) (ZRC 1998.224–238), Pala Ou waterfall, 12°32'11.2"N, 99°28'51.9"E, Hua Hin District, collected by D. C. J. Yeo *et al.*, 13 August 1997; Phetchaburi Province: 1 ♂ (40.0 × 29.7 mm) (CUMZ), Kaeng Krachang, Tha Yang District, collected by P. Naiyanetr, no date.

Diagnosis.—Carapace relatively flat, broader than long; epigastric cristae rugose, not sharp,

distinctly anterior to postorbital cristae, postorbital cristae straight; regions behind epigastric and postorbital cristae smooth; external orbital angle broadly triangular, with outer margin longer than inner margin, with shallow, gently concave cleft separating it from epibranchial tooth; epibranchial tooth low, broad; frontal margin lacking distinct projection at either end; anterolateral margin weakly serrated, cristate; posterolateral margins strongly convergent posteriorly; branchial region distinctly rugose; metabranchial region striated; cervical groove distinct; H-shaped groove well developed. G1 slightly sinuous, slender; terminal segment slightly sinuous, tip bluntly acute, distal part slightly recurved upward, dorsal flap extending along median third to half of terminal segment, with bluntly angular apex skewed toward proximal portion, appearing more tapered toward distal part with weak notch on proximal margin; subterminal segment less broad, with no shelf on outer margin. G2 with distal segment subequal to half of basal segment.

Etymology.—The species is named after Hua Hin District in Prachuap Khiri Khan Province, south Thailand, where the holotype and most of the type series were obtained. The species name is a noun in apposition.

Remarks.—Subadult males of *Demanietta huahin*, new species, *D. renongensis*, and *D. nakhonsi*, new species, cannot be differentiated by their G1 structures. The differences in G1 structure become more apparent in adult specimens, as do differences in carapace shape and structure. The differences between *D. huahin* and *D. renongensis* have been discussed earlier (see *Remarks* under *Demanietta renongensis*). *Demanietta huahin* is distinguished from *D. nakhonsi* by the following characters: (i) carapace more transverse, with cw/cl approximately 1.4 (versus more square, with cw/cl approximately 1.3) (Fig. 7B, E); (ii) branchial regions more rugose (versus comparatively less rugose) (Fig. 7B, E); and (iii) slightly sinuous G1 terminal segment with bluntly acute tip, and dorsal flap with a bluntly angular apex which is skewed toward the proximal portion and has a weak notch on the proximal margin (versus almost straight G1 terminal segment with rounded tip, and dorsal flap with a broadly rounded apex which is medial in position and has no



notch on the proximal margin) (Figs. 4A–D, 5A–D).

Distribution.—Prachuap Khiri Khan and southern Phetchaburi Provinces, south Thailand.

***Demanietta khirikhan*, new species**

Figs. 4E–H, 7C, 8D

Material Examined.—Holotype, ♂ (47.3 × 33.9 mm) (ZRC 1998.173), Huai Sad Yai, Hua Hin District, Prachuap Khiri Khan Province, south Thailand, collected by Colonel Prasart Imthip, 9 August 1997.

Paratypes: [SOUTH THAILAND] Prachuap Khiri Khan Province: 1 ♀ (49.8 × 35.3 mm) (ZRC 1998.174), 3 ♀♀, 4 juveniles (largest ♀ 47.7 × 33.6 mm, larger than juveniles) (CUMZ), same data as holotype; 1 ♀, 1 juvenile ♂ (♀ larger, 44.0 × 32.4 mm) (ZRC 1998.175–176), 2 ♀♀ (larger ♀ 53.2 × 37.9 mm) (CUMZ), same locality and collector as above, 16 August 1996; Phetchaburi Province: 1 ♀ (56.3 × 38.7 mm) (ZRC 1998.177), Kaeng Krachang, Tha Yang District, collected by Somsak, December 1995.

Others: 1 ♂ (49.6 × 34.2 mm) (ZRC 1998.179), 1 ♂ (40.4 × 28.4 mm) (ZRC 1998.180), 1 ♂, 1 ♀ (♂ 45.4 × 32.1 mm) (ZRC 1998.178), aquarium trade, supposedly from Thailand.

Diagnosis.—Carapace distinctly convex longitudinally, broader than long; epigastric cristae rugose, not sharp, distinctly anterior to postorbital cristae, postorbital cristae straight; regions behind epigastric and postorbital cristae smooth; external orbital angle triangular, with outer margin subequal to inner margin, with shallow, gently concave cleft separating it from epibranchial tooth; epibranchial tooth low; frontal margin relatively short, lacking distinct projection at either end; anterolateral margin not serrated, minutely cristate; posterolateral margins strongly convergent posteriorly; branchial region with few, very faint rugae; metabranchial region very faintly striated; cervical groove distinct; H-shaped groove distinct but very weak, shallow. G1 very stocky; terminal segment stout, tip bluntly acute, dorsal flap relatively high, extending along median third to half of terminal segment, with rounded apex usually medial in position; subterminal segment very broad, with broad, rounded shelf on upper to

median part of outer margin. G2 with distal segment subequal to half of basal segment.

Etymology.—The species is named after the southern Thai province of Prachuap Khiri Khan, where the holotype and most of the type series were obtained. The species name is a noun in apposition.

Remarks.—*Demanietta khirikhan* is the only member of the genus to have a convex dorsal carapace, giving it a distinctly swollen appearance (Figs. 7C, 8D). However, it is still much less swollen-looking than the strongly inflated carapace of species of *Thaiphusa* (Ng and Naiyanetr, 1993). In addition, *D. khirikhan* differs from all its congeners in one or more of the following aspects: (i) anterolateral margin not serrated, with minute cristae (Figs. 7C, 8D) (versus weakly to distinctly serrated, with comparatively larger cristae); (ii) branchial regions very faintly rugose and metabranchial regions faintly striated (Figs. 7C, 8D) (versus branchial regions weakly to distinctly rugose and metabranchial regions weakly to distinctly striated); (iii) external orbital angle with outer margin subequal to inner margin (Fig. 7C) (versus outer margin longer than inner margin); (iv) H-shaped groove shallow and weakly developed (Figs. 7C, 8D) (versus H-shaped groove deep and well developed); and (v) G1 stocky, with relatively high dorsal flap (Fig. 4E–H) (versus G1 less stocky, with comparatively lower dorsal flap).

It is interesting to note the distinctive live colors of *D. khirikhan*, which differ from the usually conservative coloration of other species of *Demanietta*. The frontal, orbital, and anterolateral margins, external orbital angle, epibranchial tooth, through to the postorbital and epigastric cristae edges, are all bright yellow to orange in *D. khirikhan* (versus usually dull yellow to grey); the outer surface of the chelipeds are yellow (versus usually dark grey blue) and the ambulatory legs are bright blue with yellow bases and joints (versus usually dark grey blue, including bases and joints). *Demanietta khirikhan* has a dif-

←

Fig. 4. Right G1 of species of *Demanietta*. A–D, *D. huahin*, holotype (ZRC 1998.151); E–H, *D. khirikhan*, holotype (ZRC 1998.173); I–L, *D. lansak*, holotype (ZRC 1998.168). A, E, I, overall dorsal view; B, F, J, overall ventral view; C, G, K, dorsal view of terminal segment; D, H, L, ventral view of terminal segment. Scales = 2.0 mm in A, B, E, F, I, J; 1.0 mm in C, D, G, H, K, L.

ferent habitat preference from its congeners, being collected from mountain streams and creeks, rather than from waterfalls and cascades.

Distribution.—Northern Prachuap Khiri Khan and Phetchaburi Provinces, south Thailand.

***Demanietta lansak*, new species**

Figs. 4I-L, 7D

Ranguna manii—Naiyanetr, 1978: 32 (not *Potamon* (*Potamon*) *manii* Rathbun, 1904).

Material Examined.—Holotype, ♂ (44.8 × 32.4 mm) (ZRC 1998.168), Huai Ai Yo, Lan Sak District, Uthai Thani Province, central Thailand, collected by P. Naiyanetr, 20–25 April 1983.

Paratypes: [CENTRAL THAILAND] Uthai Thani Province: 1 ♂, 1 ♀ (♂ 46.9 × 33.1 mm) (SMF), 1 ♂ (RMNH), 1 ♀ (29.3 × 21.4 mm) (CUMZ), same data as holotype; 1 ♂ (39.2 × 28.4 mm) (ZRC 1998.169), same locality as holotype, collected by Wichai, 20 March 1983; 1 ♂, 1 juvenile ♀ (male 31.8 × 23.1 mm) (ZRC 1998.170–171), 1 juvenile ♀ (CUMZ), same locality as holotype, collected by P. Naiyanetr, 29–30 January 1982; 2 ♂♂ (larger ♂ 34.7 × 25.5 mm) (CUMZ), Huai Chang Tai, Ban Rai District, collected by Wichai, 20 March 1974; 1 ♂ (59.1 × 41.8 mm) (CUMZ), same locality as above, collected by Peter, 26 May 1995; 1 ♂ (37.5 × 27.8 mm) (CUMZ), same locality as above, collected by Bunchalo, 2 April 1989; Kamphaeng Phet Province: 1 ♂ (35.5 × 25.6 mm) (ZRC 1998.172), 2 juvenile ♂♂, 2 juvenile ♀♀ (CUMZ), Klong Lan waterfall, collected by P. Naiyanetr, 21 February 1976.

Diagnosis.—Carapace relatively flat, with slightly swollen epigastric, mesogastric, and branchial regions, broader than long; epigastric cristae rugose, not sharp, distinctly anterior to postorbital cristae, postorbital cristae distinctly but gently convex; regions behind epigastric and postorbital cristae weakly rugose; external orbital angle broadly triangular, with outer margin longer than inner margin, with shallow, gently concave cleft separating it from epibranchial tooth; epibranchial tooth low, broad; frontal margin lacking distinct projection at either end; anterolateral margin weakly serrated, cristate; posterolateral margins strongly convergent posteriorly; branchial region weakly rugose; metabranchial region weakly striated; cervical groove distinct; H-shaped groove well developed. G1 slightly sinuous, slender; terminal segment gently sinuous, tip rounded, straight, dorsal flap extending along median third to half of terminal segment, with rounded to broadly rounded apex in proximal to medial portion; subterminal segment broad, without shelf on

outer margin. G2 with distal segment subequal to half of basal segment.

Etymology.—The species is named after Lan Sak District in Uthai Thani Province, central Thailand, where the holotype and most of the type series were obtained. The specific name is a noun in apposition.

Remarks.—*Demanietta lansak* can be easily separated from most other species of *Demanietta* by its gently convex postorbital cristae (versus straight). This character, however, closely allies it to *D. tritrungensis* that occurs just south of the distribution of the present species. The difference between *D. lansak* and *D. tritrungensis* is mainly in the G1 morphology (see *Remarks* under *D. tritrungensis*). In addition, a more subtle character which may be useful in separating the two species is the slightly swollen or inflated epigastric, mesogastric, and branchial regions of *D. lansak* (versus flat epigastric, mesogastric, and branchial regions in *D. tritrungensis*) (Fig. 7A, D).

Distribution.—Uthai Thani and Kamphaeng Phet Provinces, central Thailand.

***Demanietta nakhonsi*, new species**

Figs. 5A–D, 7E, 9D

Material Examined.—Holotype, ♂ (43.0 × 31.7 mm) (ZRC 1998.147), Yong waterfall, Thung Song District, Nakhon Si Thammarat Province, south Thailand, collected by Poonsuk, October 1986.

Paratypes: [SOUTH THAILAND] Nakhon Si Thammarat Province: 1 ♂, 1 ♀ (♂ 42.0 × 30.8 mm) (ZRC 1998.148–149), 1 ♂, 1 ♀ (RMNH), 1 ♂, 1 ♀ (SMF), 1 ♂ (ZMUC), 3 ♂♂, 1 juvenile (CUMZ), same locality and collector as holotype, 4 April 1989; 1 ♂ (broken carapace) (ZRC 1998.150), Krung Chin waterfall park, Ta Sala District, collected by P. Naiyanetr, 30 October 1988; 4 juvenile ♂♂, 5 juvenile ♀♀ (CUMZ), Krarom waterfall, Lan Saka District, Nakhon Si Thammarat Province, south Thailand, collected by P. Naiyanetr, 19 May 1976.

Diagnosis.—Carapace relatively flat, broader than long; epigastric cristae rugose, not sharp, distinctly anterior to postorbital cristae, postorbital cristae straight; regions behind epigastric and postorbital cristae smooth; external orbital angle broadly triangular, with outer margin longer than inner margin, with shallow, gently concave cleft separating it from epibranchial tooth; epibranchial tooth low, broad; frontal margin lacking distinct projection at either end; anterolateral margin weakly serrated cristate; posterolateral margins not

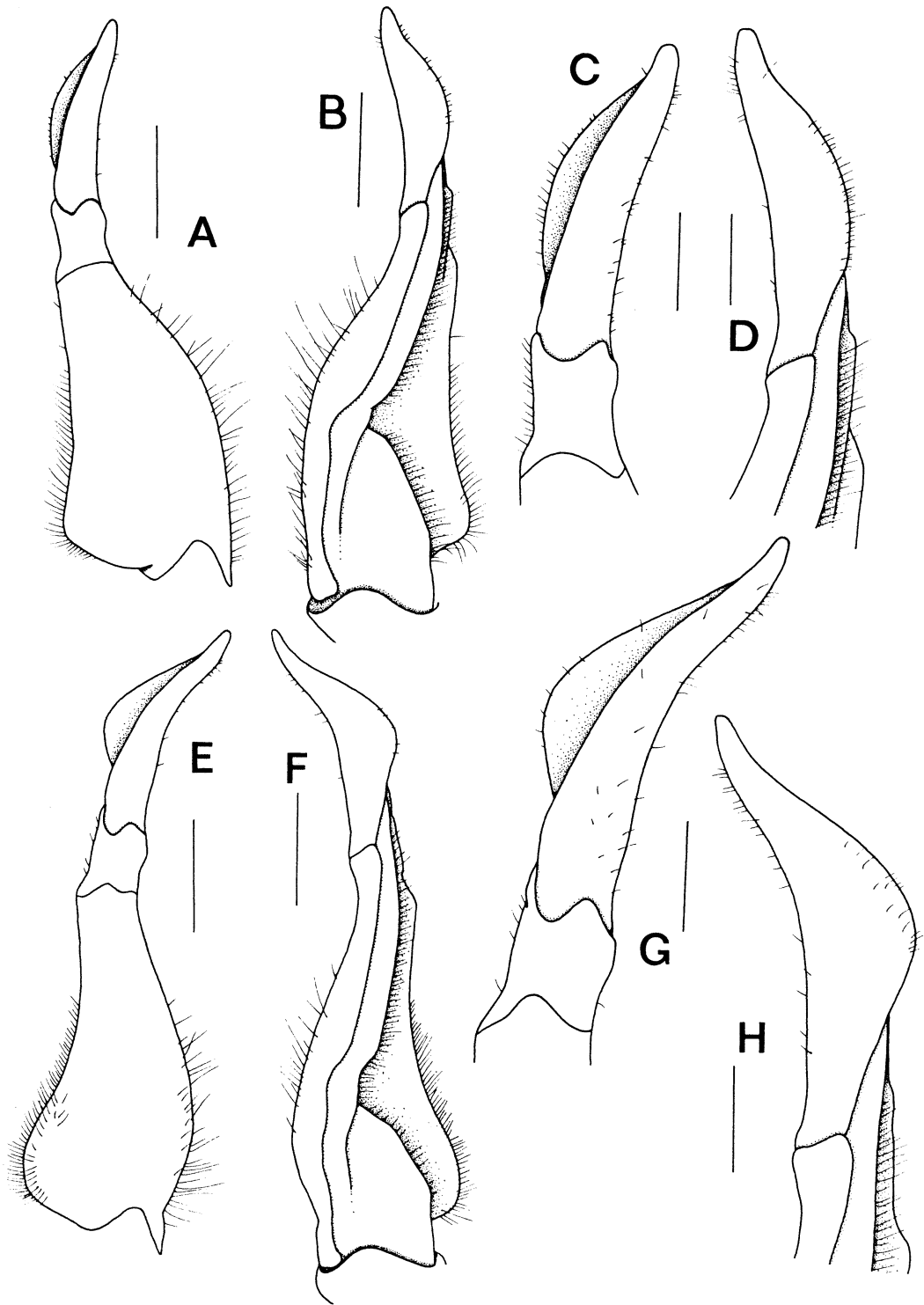


Fig. 5. Right G1 of species of *Demanietta*. A–D, *D. nakhonsi*, holotype (ZRC 1998.147); E–H, *D. suanphung*, holotype (ZRC 1998.155). A, E, overall dorsal view; B, F, overall ventral view; C, G, dorsal view of terminal segment; D, H, ventral view of terminal segment. Scales = 2.0 mm in A, B, E, F; 1.0 mm in C, D, G, H.

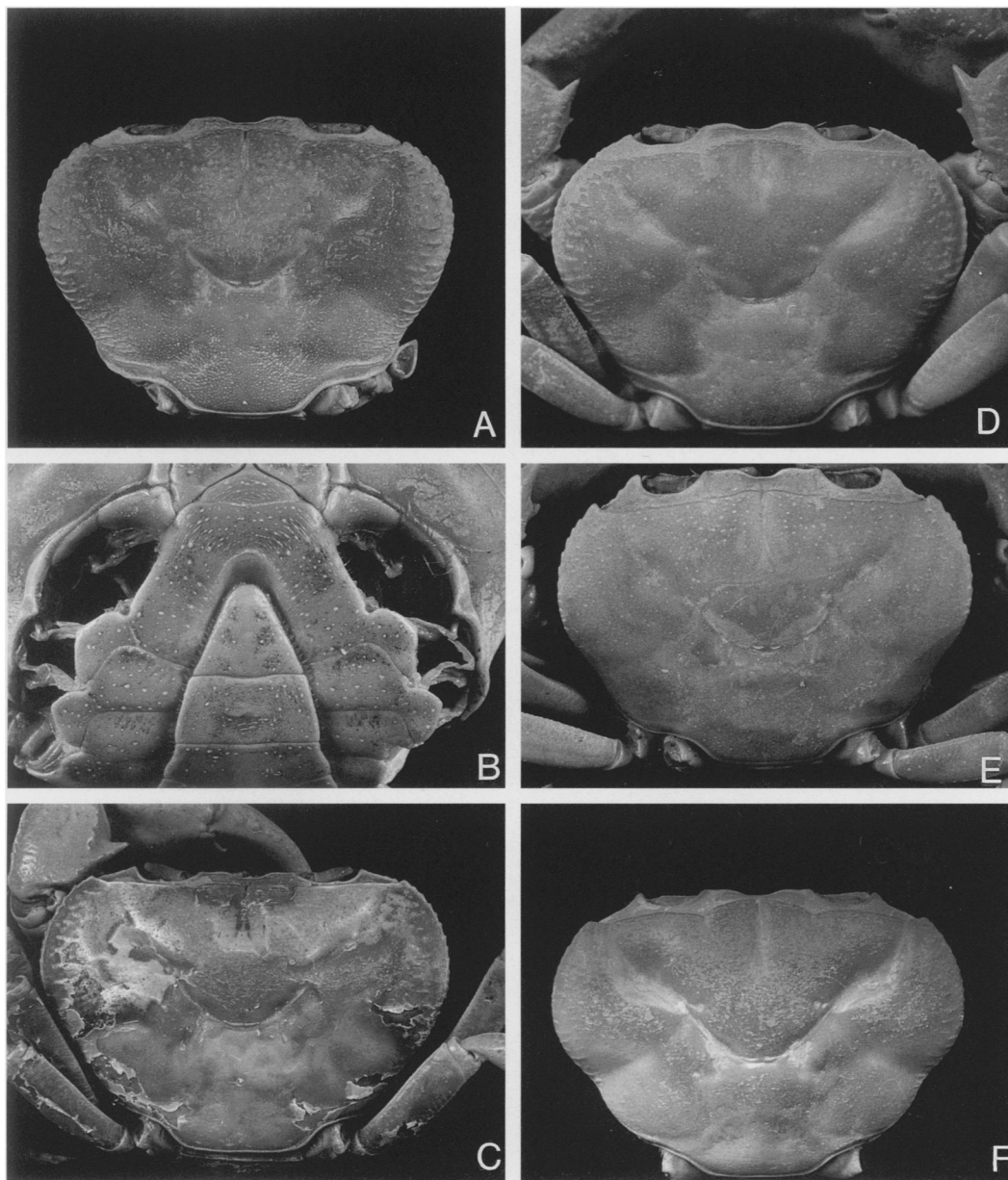


Fig. 6. Species of *Demanietta*. A, B, *D. manii*, holotype (MNHN-B.5291): A, dorsal view, B, ventral view. C, D, *D. renongensis*: C, holotype (USNM 30584), D, topotype (ZRC 1985.2172); E, *D. merguensis*, holotype (RMNH D 1555), F, *D. thagatensis*, lectotype (MG III 269).

strongly convergent posteriorly; branchial region weakly rugose; metabranchial region with weak, short striae; cervical groove distinct; H-shaped groove well developed. G1 slightly sinuous, slender; terminal segment almost straight, tip rounded, distal part slightly recurved upward, dorsal flap extending along median third to half of terminal segment, with

broadly rounded apex medial in position, appearing equally tapered toward distal and proximal parts; subterminal segment broad, with no shelf on outer margin. G2 with distal segment subequal to half of basal segment.

Remarks.—Juvenile and subadult males of *Demanietta nakhonsi*, *D. renongensis*, and *D.*

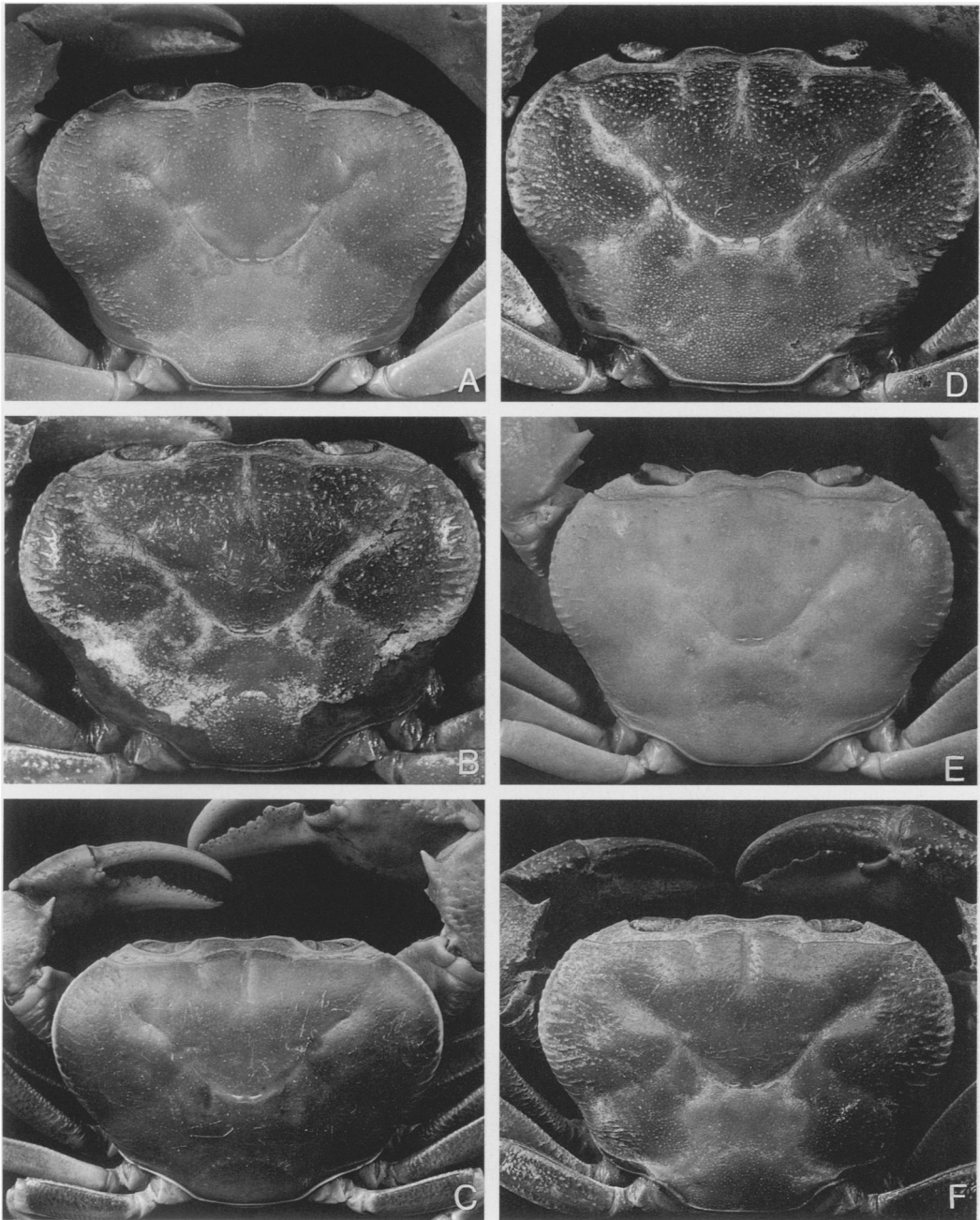


Fig. 7. Species of *Demanietta*. A, *D. trirungensis*, paratype (ZRC 1991.1857); B, *D. huahin*, holotype (ZRC 1998.151); C, *D. khirikhan*, holotype (ZRC 1998.173); D, *D. lansak*, holotype (ZRC 1998.168); E, *D. nakhonsi*, holotype (ZRC 1998.147); F, *D. suanphung*, holotype (ZRC 1998.155).

huahin have a very similar G1 structure. However, the more square, less rugose carapace of *D. nakhonsi* immediately distinguishes it from the other two species (Figs. 6C, D, 7B,

E). Other characters which differentiate *D. nakhonsi* from these two species have been discussed separately under *Remarks* for *D. renongensis* and *D. huahin* (see earlier).

Etymology.—The species is named after Nakhon Si Thammarat Province, south Thailand, where the species occurs. The species name is a noun in apposition.

Distribution.—Nakhon Si Thammarat Province, south Thailand.

***Demanietta suanphung*, new species**
Figs. 5E–H, 7F, 10

Potamon (Potamon) manii?—? Alcock, 1910: 48, fig. 46 (part) (not *Potamon (Potamon) manii* Rathbun, 1904).

Material Examined.—Holotype, ♂ (44.9 × 32.8 mm) (ZRC 1998.155), Pong Krathing waterfall, Suan Phung District, Ratchaburi Province, central Thailand, collected by border police camp 137, 20 July 1996.

Paratypes: [CENTRAL THAILAND] Ratchaburi Province: 1 ♀ (45.5 × 36.0 mm) (ZRC 1998.156) 1 juvenile ♂, 3 ♀♀ (largest ♀ 47.9 × 35.6 mm) (CUMZ), 2 ♀♀ (larger ♀ 48.4 × 35.2 mm) (CUMZ), same data as holotype; 1 ♂, 1 juvenile ♂ (64.0 × 44.5 mm) (ZRC 1998.157–158), 1 ♂, 1 ♀ (♂ 42.5 × 30.4 mm) (SMF), Kao Chon waterfall, Suan Phung District, collected by border police camp 137, 20 July 1996; 1 ♂, 4 juvenile ♂♂ (largest ♂ 43.4 × 31.9 mm) (ZRC 1998.161–165), Suan Phung waterfall, 13°31'12.6"N, 99°14'19.9"E, Suan Phung District, collected by D. C. J. Yeo *et al.*, 15 August 1997; Kanchanaburi Province: 1 ♂ (54.4 × 40.3 mm) (ZRC 1998.160), Huai Bong Ti, Sai Yok District, collected by Bunchalo, 25 May 1985; 1 ♂ (61.3 × 45.2 mm) (ZRC 1998.159), Sai Yok District, collected by P. Naiyanetr, 1996; 2 ♀♀, 2 juvenile ♂♂ (larger ♀ 33.9 × 24.8 mm, larger than juveniles) (CUMZ), Lin Tin, Thong Pha Phum District, collected by Bunchalo, 5 May 1985.

Others: [MYANMAR] 1 ♂ (50.5 × 36.5 mm) (ZRC 1998.166), Tenasserim River, "at same latitude as Ratchaburi, Thailand," collected by C. Vidthayanon, December 1994; 1 ♂ (45.0 × 33.6 mm) (NHM 1909.9.2.4), "Burma Hills," presented by Indian Museum.

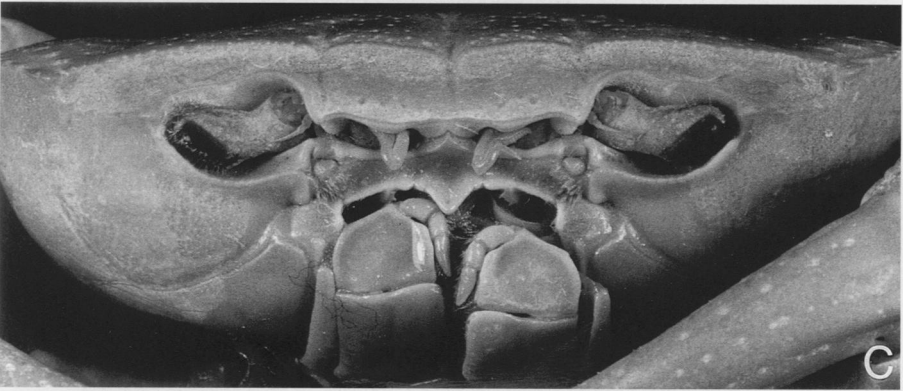
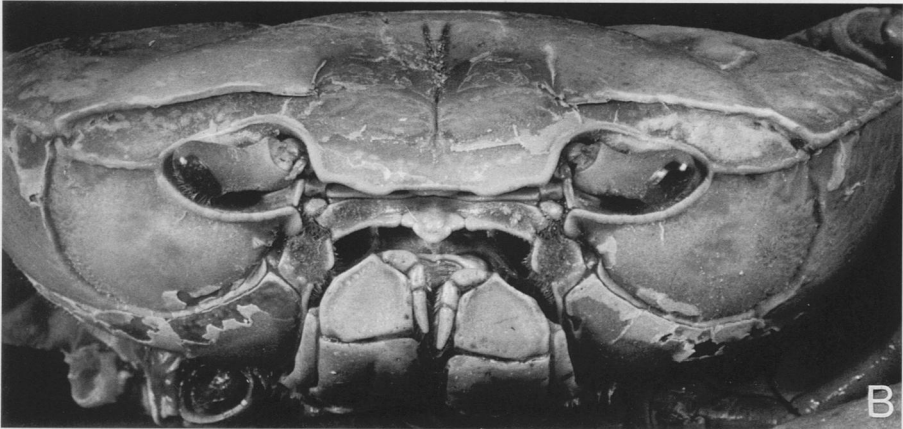
Diagnosis.—Carapace relatively flat, broader than long; epigastric cristae rugose, not sharp, distinctly anterior to postorbital cristae, postorbital cristae straight; regions behind epigastric and postorbital cristae smooth; external orbital angle broadly triangular, with outer margin longer than inner margin, with shallow, gently concave cleft separating it from epibranchial tooth; epibranchial tooth low, broad, frontal margin lacking distinct projection at either end; anterolateral margin weakly serrated, cristate; posterolateral margins strongly convergent posteriorly; branchial region with distinct rugae; metabranchial region with distinct, short striae; cervical groove dis-

tinct; H-shaped groove well developed. Fingers of chelae usually broad and laterally flattened, with straight, almost parallel cutting edges, with scarcely any gape. G1 sinuous; terminal segment sinuous, very slender, dorsal flap extending along median third to half of terminal segment, with broadly rounded apex usually medial in position; subterminal segment slender, sometimes posteriorly broad in larger specimens, sinuous, without shelf on outer margin, with distinctly concave inner margin. G2 with distal segment slightly longer than half of basal segment.

Etymology.—The species is named after Suan Phung District in Ratchaburi Province, central Thailand, where the holotype and part of the type series were obtained. The species name is a noun in apposition.

Remarks.—Small to medium-sized individuals (up to cw 50 mm) of *Demanietta suanphung* are usually distinguishable from other members of the genus by the broad and flat fingers of their chelae that have almost no gape, with almost parallel cutting edges and small, relatively uniform cutting-edge teeth. However, larger individuals (cw >50 mm), especially adult males, like the holotype, have chelae similar to other species of *Demanietta*, with long, slender fingers and a distinct gape (Figs. 9, 10). This species can also be easily differentiated from other species of *Demanietta* by the terminal segment of its G1 being very slender and sinuous (Fig. 5G, H) (versus terminal segment slender and gently sinuous or almost straight); and by the subterminal segment having a distinctly concave inner margin (Fig. 5E, F) (versus subterminal segment with slightly concave to almost concave inner margin). The shape of the abdomen of the holotype is narrower than that of other species of *Demanietta*. However, in males of varying age and size, the shape of the abdomen varied, being broader in some and narrower in others, with no apparent correlation with size. Subsequent examination of other species of *Demanietta* confirmed that the shape of the abdomen of the male is too variable to be used reliably as a specific diagnostic character.

Fig. 8. Frontal view of species of *Demanietta*. A, *D. manii*, holotype (MNHN-B.5291), "Bangkok, Siam"; B, *D. renongensis*, holotype (USNM 30584); C, *D. merguensis*, holotype (RMNH D 1555); D, *D. khirikhan*, holotype (ZRC 1998.173).



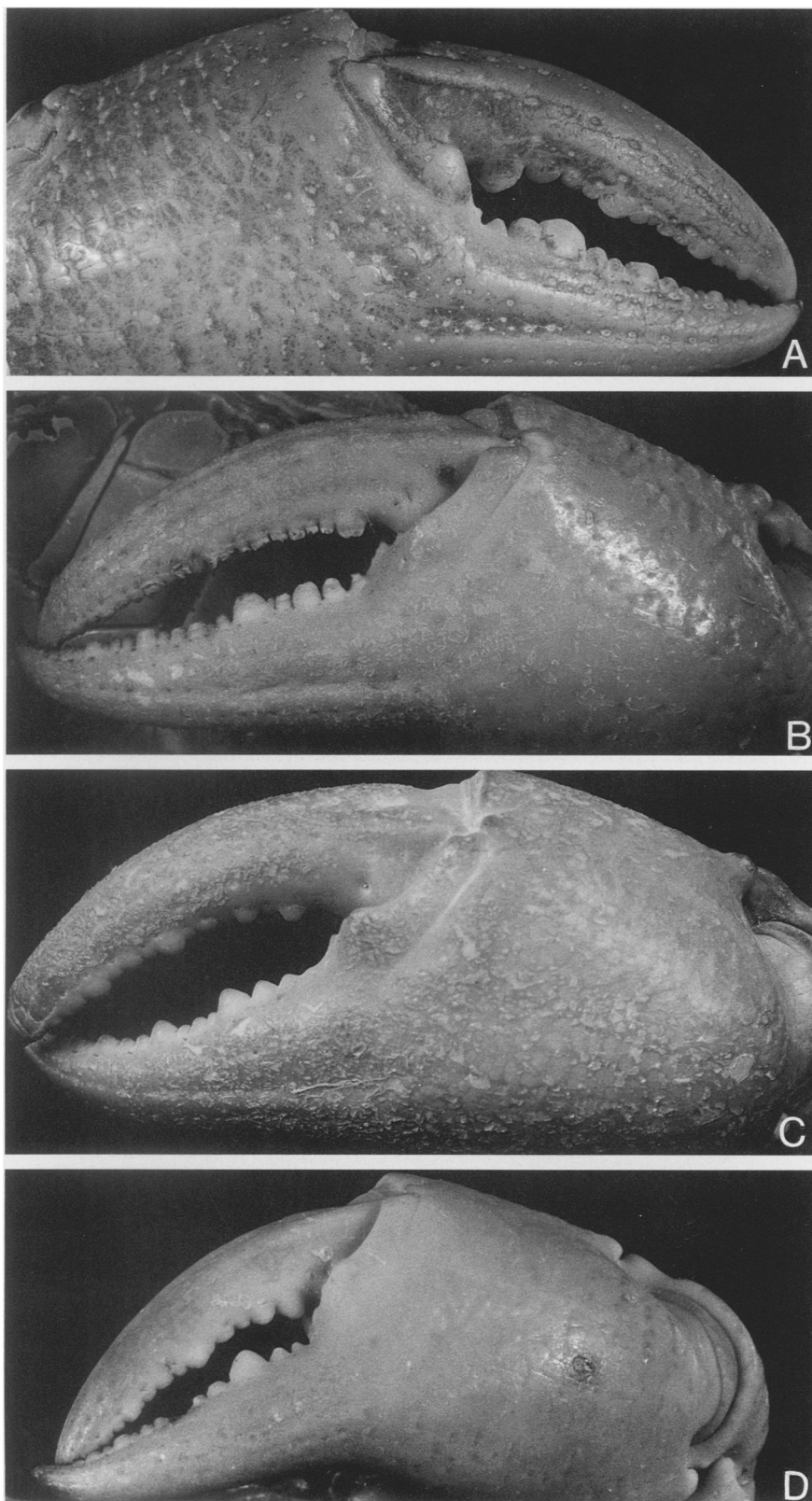


Fig. 9. Major chela of species of *Demanietta*. A, *D. manii*, holotype (MNHN-B.5291); B, *D. renongensis*, holotype (USNM 30584); C, *D. thagatensis*, lectotype (MG III 269); D, *D. nakhonsi*, holotype (ZRC 1998.147). A, right chela; B-D, left chela.

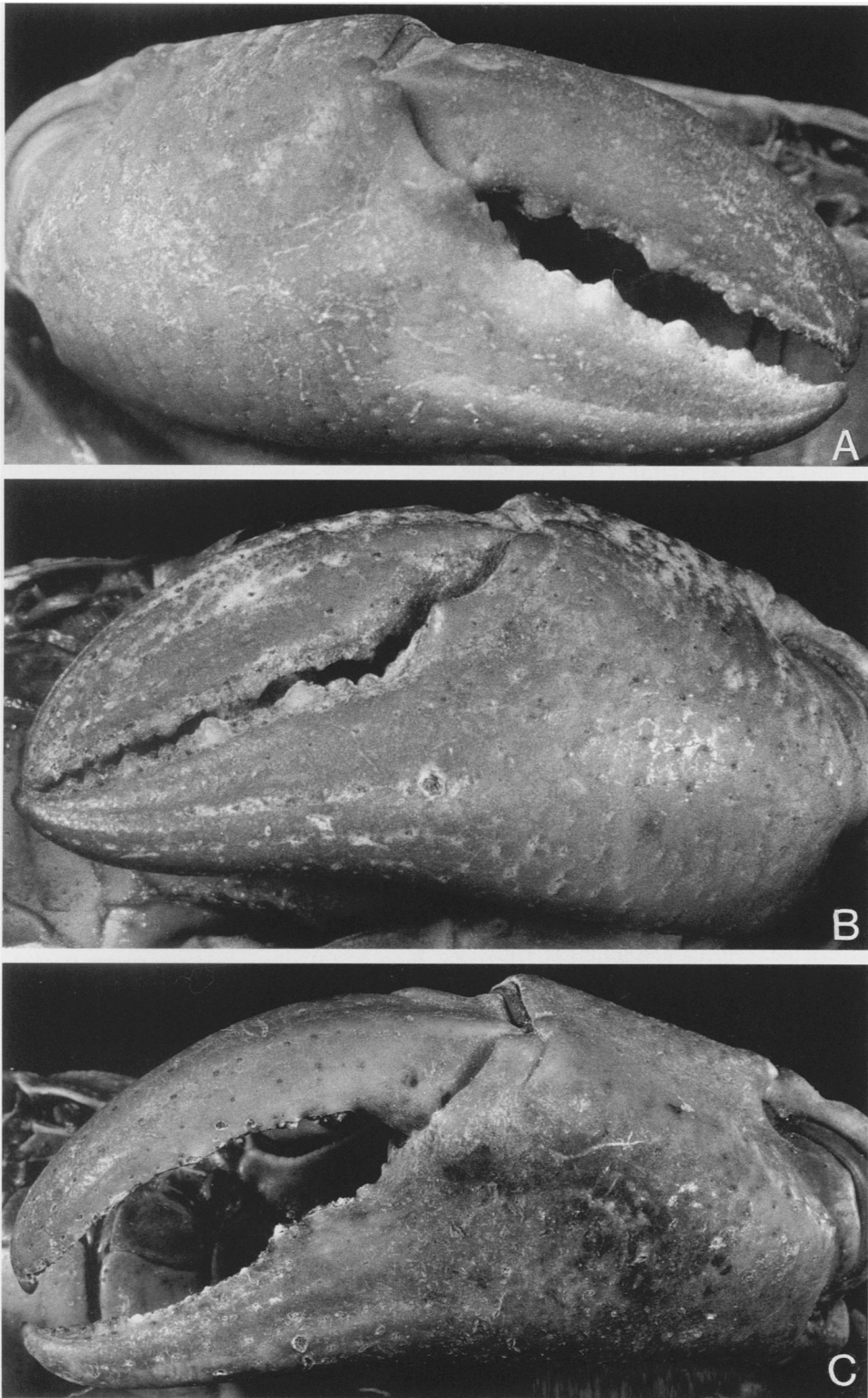


Fig. 10. Major chela of *Demanietta suanphung*. A, holotype (44.9 × 32.8 mm) (ZRC 1998.155); B, paratype (42.5 × 30.4 mm) (SMF); C, paratype (64.0 × 44.5 mm) (ZRC 1998.157). A, right chela; B, C, left chela.

The single male specimen (NHM 1909.9.2.4) from "Burma Hills," which was presented to NHM by the Indian Museum, does not have other data indicating its collector, date of collection, or former Indian Museum catalog number. It is, possible, however, that this might be one of the specimens reported by Alcock (1910: 48) as *Potamon* (*Potamon*) *manii* Rathbun, 1904, even though "Burma Hills" was not specifically listed as one of the collection localities (see also *Remarks* under genus *Demanietta*, *D. manii* and *D. sp.*).

Distribution.—Ratchaburi and Kanchanaburi Provinces, central Thailand.

Demanietta sp.

Material Examined.—[CENTRAL THAILAND] Phitsanulok Province: 1 ♀ (33.7 × 24.4 mm) (ZRC 1996.1898), Mekong Basin: 16°15'13.1"N, 100°36'36.5"E, highlands west of Wang Thong, highway 12, collected by Daimlong, 21 March 1996; [NORTH THAILAND] Tak Province: 3 ♀♀ (largest ♀ 50.8 × 35.9 mm) (ZRC 1996.1899), Salween Basin: 15°17'25.3"N, 98°42'20.45"E, Walle Thai, near Phop Phra, collected by S. H. Tan *et al.*, 19 March 1996; Mae Hong Son Province: 2 ♀♀ (largest ♀ 40.1 × 29.2 mm) (ZRC 1996.1900), Salween Basin: 17°34'23.0"N, 97°57'12.0"E, Pha Pha Valley, collected by S. H. Tan *et al.*, 20 March 1996; [MAYANMAR] 1 ♀ (57.1 × 42.7 mm) (ZRC 1993.447), Maw Ta Thu Kloh, mountain stream tributary of Mingaw Kloh, Tenasserim Basin, collected by T. R. Roberts, 23 April 1992.

Remarks.—The above specimens from Thailand appear to be closest to *Demanietta tritrungensis* (Naiyanetr, 1986) and to *D. lansak* in having two large teeth on the fixed finger of the chela, and slightly convex post-orbital cristae. Closer examination showed that the postorbital cristae have a broadly obtuse median bump or angle, instead of the broadly rounded cristae, seen in *D. tritrungensis* and *D. lansak*. This appears to be a unique feature of these specimens and may prove to be of specific significance. Unfortunately, no adult males were obtained from these populations, and until males are available for detailed study of the taxonomically important G1 structures, we prefer to take the more conservative approach in referring the present specimens to *Demanietta* sp.

Also regarded as incertae sedis is a large female specimen (57.1 × 42.7 mm) (ZRC 1993.447) collected from a mountain stream tributary of the Mingaw Kloh, on the Myanmarese side of the Tenasserim Range. This locality is roughly adjacent to the range of *Demanietta suanphung* on the Thai side. The carapace features of the female specimen are

almost identical to *D. suanphung*, although its chelae do not bear the broad, flat fingers characteristic of this species. There is, however, an equal likelihood that these taxa are not conspecific, since the Tenasserim Range would pose a considerable barrier to genetic flow between the two populations. Alcock's (1910) specimens of "*D. manii*" are also partly referred to *Demanietta* sp. (see *Remarks* under genus *Demanietta*, *D. manii* and *D. suanphung*).

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