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ORIGINAL ARTICLE

On a new species of freshwater crab of the genus *Mekhongthelphusa* Naiyanetr, 1994 (Decapoda: Brachyura: Gecarcinucidae) from south Yunnan, China

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ZOOBANK: http://zoobank.org/urn:lsid:zoobank.org:pub:024A1971-5AE1-4828-8721-80882B5012F2

ABSTRACT

A new gecarcinucid freshwater crab, *Mekhongthelphusa menglongensis* sp. nov., is described from Menglong Town, Jinghong City, Xishuangbanna Dai Autonomous Prefecture, Yunnan Province, China. This is the first report of the mainly Indochinese genus *Mekhongthelphusa* Naiyanetr, 1994, in China. The new species can be distinguished morphologically from the other four nominal species in this genus by its carapace and male first gonopod. The mitochondrial 16S sequences of this new species are provided and the phylogenetic position of the genus is discussed.

KEYWORDS

16S rDNA, Indochina, morphology, taxonomy, Xishuangbanna

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INTRODUCTION

Mekhongthelphusa Naiyanetr, 1994, was initially described as a monotypic genus based on *Potamon* (*Parathelphusa*) *tetragonum* Rathbun, 1902. Naiyanetr and Ng (1995) described a second species, *Mekhongthelphusa kengsaphu* Naiyanetr and Ng, 1995. Subsequently, two more species were added when Ng *et al.* (2008) synonymised the genus *Chulathelphusa* Naiyanetr,

1994, which included *Chulathelphusa brandti* (Bott, 1968) and *Chulathelphusa neisi* (Rathbun, 1902), under *Mekhongthelphusa*, based on morphological (D.C.J. Yeo, unpublished data) and molecular (H.T. Shih, unpublished data) evidence. This genus therefore currently contains four species, *Mekhongthelphusa brandti* (Bott, 1968), *M. kengsaphu*, *M. neisi* and *Mekhongthelphusa tetragona* (Rathbun, 1902), distributed in Laos, Thailand, and Vietnam (Naiyanetr, 1994; Naiyanetr and Ng, 1995; D.C.J. Yeo, unpublished data).

During a survey in Yunnan, China, specimens of a freshwater crab were obtained from Menglong Town, Jinghong City, Xishuangbanna Dai Autonomous Prefecture. These specimens proved to belong to an undescribed species of *Mekhongthelphusa*, the first record of the genus in China. Here, we describe the new species, *Mekhongthelphusa menglongensis* sp. nov., and provide the first partial sequences of mitochondrial 16S rDNA of this species (and genus) for future phylogenetic inference.

The second author is revising *Mekhongthelphusa* with Thai colleagues, where the issue of the synonymy of *Mekhongthelphusa* and *Chulathelphusa* will be elaborated upon, with some new species from Indochina. While Ng *et al.* (2008) synonymized the two genera, no reasons were given and the inherent nomenclatural problems associated with the two names were not resolved. The current paper therefore just treats the present discovery of a new species from China, which will be included in the eventual revision of the genus.

Material and Methods

Specimens were collected through net-fishing and preserved in 95 % ethanol and deposited in the Jiangsu Key Laboratory for Biodiversity and Biotechnology, College of Life Sciences, Nanjing Normal University (NNU), Nanjing, China, and the Zoological Reference Collection of the Lee Kong Chian Natural History Museum, National University of Singapore (ZRC), Singapore. Comparative material examined are in the Muséum national d'Histoire naturelle, Paris, France (MNHN), Senckenbergischen Naturforschenden Gesellschaft, Frankfurt, Germany (SMF), National Museum of Natural History, Smithsonian Institution, Washington D. C., USA [formerly United States National Museum] (USNM), and ZRC. Morphological terminology used essentially follows Ng (1988) and Davie *et al.* (2015). The abbreviations G1 and G2 are for the male first and second gonopods, respectively. Specimens of the morphologically closest congeners to the new species (*i.e.*, *M. brandti* and *M. neisi*) are listed and illustrated within for comparative purposes; the detailed taxonomy of these and other nominal species are beyond the scope of the present study, and will be treated in an upcoming revision of the genus instead (D.C.J. Yeo., unpublished data).

Total genomic DNA were extracted from gill tissues using the Trelief™ Animal Genomic DNA kit (Tsingke). 16S gene fragments were amplified with the primers H16S (5′-GCCTGCTTATCAAAAACAT-3′) and L16S (5′-AAGAGATAGAAATCAACCTGG-3′) modified from Crandall and Fitzpatrick (1996). Raw sequences were assembled using SEQMAN II 5.05 (DNASTAR, Madison, WI, USA). Together with sequences downloaded from NCBI, the final dataset was aligned using MAFFT 7.3310 with 'G-INS-i' algorithm (Katoh and Standley, 2013). The best substitution model was selected using IQ-TREE 1.6.12 with the '-m TEST' option (Nguyen *et al.*, 2014). Maximum likelihood (ML) analysis was performed employing IQ-TREE (Nguyen *et al.*, 2014) using ultrafast bootstrapping approach (Minh *et al.*, 2013) with 1,000 replicates.

Systematics

Family Gecarcinucidae Rathbun, 1904

Genus *Mekhongthelphusa* Naiyanetr, 1994

Mekhongthelphusa menglongensis sp. nov.

(Figs. 1–3)

Zoobank: urn:lsid:zoobank.org:act:E87171F9-B10F-4301-BC5F-B0F6C87ABD25

Type material. Holotype: male (35.1 × 30.4 mm) (NNU 16C-MM01), Menglong Town, Jinghong City, Yunnan Province, China, 21°35'17"N 100°39'05"E, coll. Da Pan and Ruxiao Wang, 28 Sept. 2019.

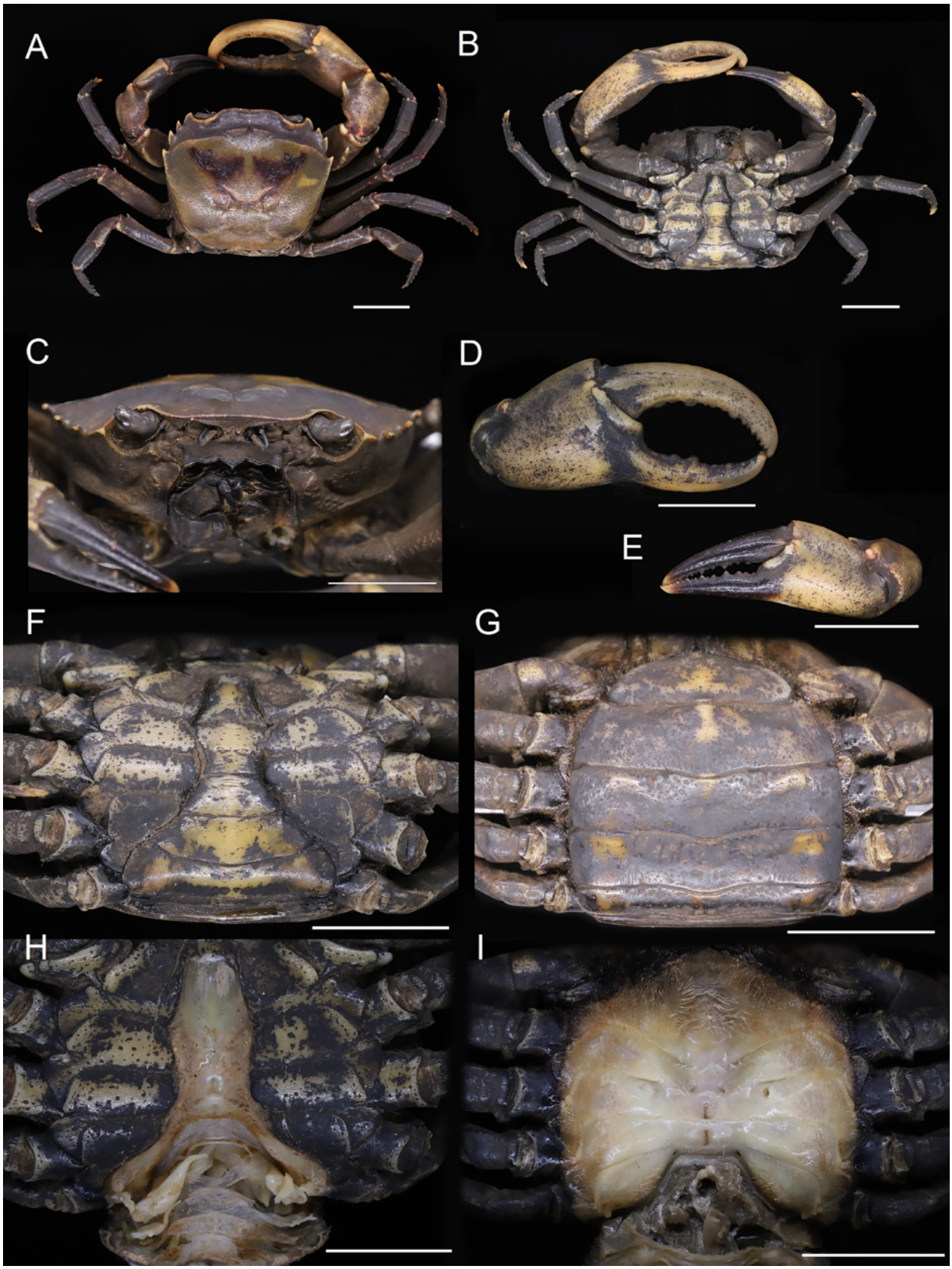

Figure 1. *Mekhongthelphusa menglongensis* sp. nov., holotype male (35.1 × 30.4 mm) (NNU 16C-MM01) (**A–F, H**); paratype female (34.7 × 28.9 mm) (NNU 16C-MM03), (**G, I**). **A**, Male dorsal view; **B**, male ventral view; **C**, male front view; **D**, male major cheliped; **E**, male minor cheliped; **F**, male pleon; **G**, female pleon; **H**, male sterno-pleonal cavity; **I**, female thoracic sternum and vulvae. Scale bars = 1 cm.

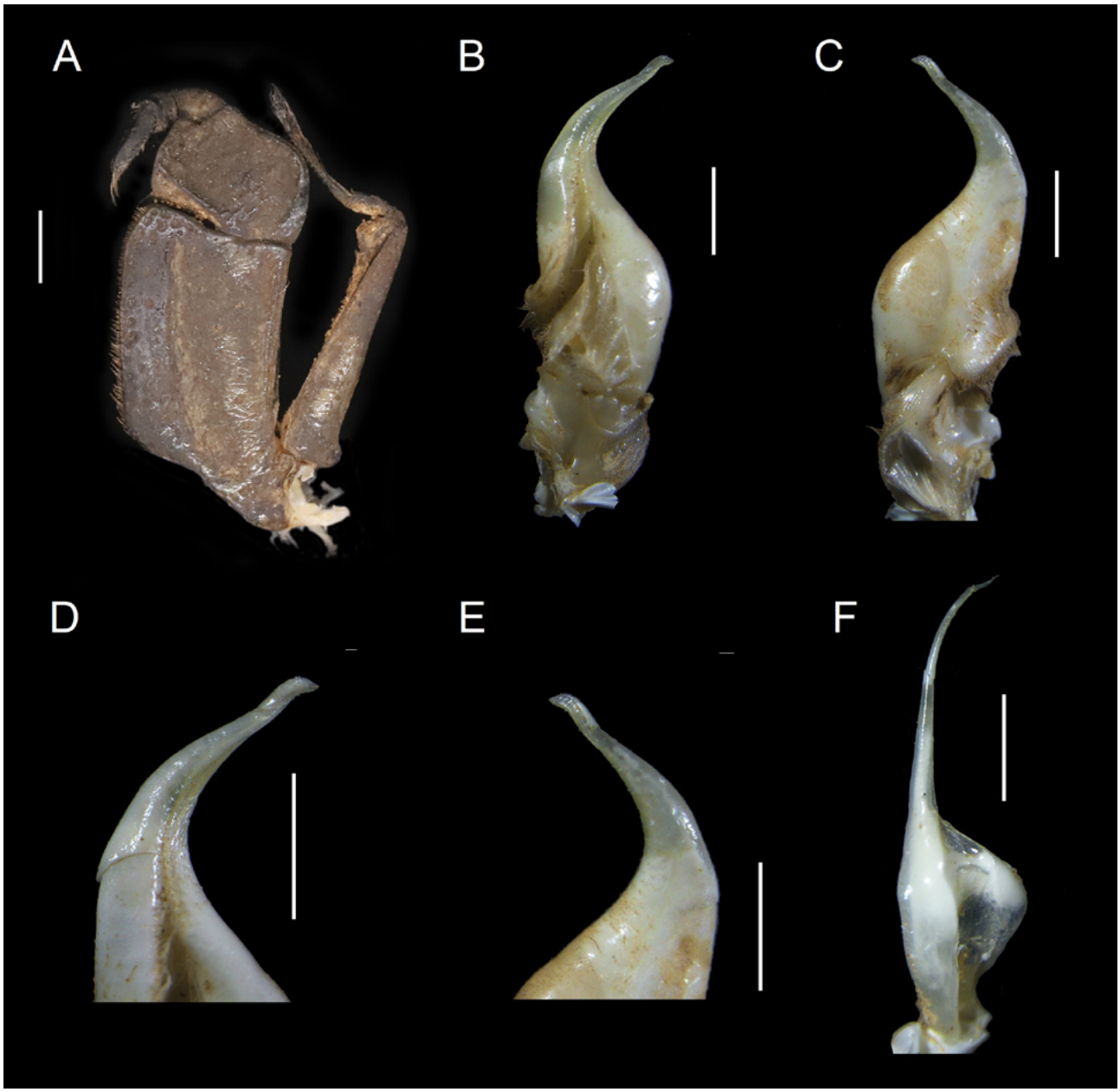

Figure 2. *Mekhongthelphusa menglongensis* sp. nov., holotype male (35.1 × 30.4 mm) (NNU 16C-MM01). **A**, Third maxilliped; **B**, G1 ventral view; **C**, G1 dorsal view; **D**, G1 terminal segment ventral view; **E**, G1 terminal segment dorsal view; **F**, G2. Scale bars = 1 mm.

Paratypes: 1 male (34.3 × 29.2 mm, NNU 16C-MM02), same data as holotype. 4 females (34.7 × 28.9 mm) (NNU 16C-MM03), (33.8 × 28.4 mm) (NNU 16C-MM04), (33.5 × 27.3 mm) (NNU 16C-MM05), (35.9 × 29.2 mm) (ZRC 2021.0531), same data as holotype.

Comparative material examined. The present new species was compared against literature as well as the specimens listed below:

Mekhongthelphusa brandti - Holotype, male (21.8 × 17.8 mm) (SMF 4405), Tad San Falls, 61 km from Loei to Dan Sai, Loei Province, Thailand, coll. R. Brandt, 18 Dec.1967.

Mekhongthelphusa kengsaphu - Holotype, male (33.7 × 26.5 mm) (ZRC 1995.286), under water plants, Mun River, Kengsaphu, Amphoe Phibun Mamgsahan, Ubon Ratchatani, Thailand, coll. Somluck Kuntarphrug, 27 Mar.1991.

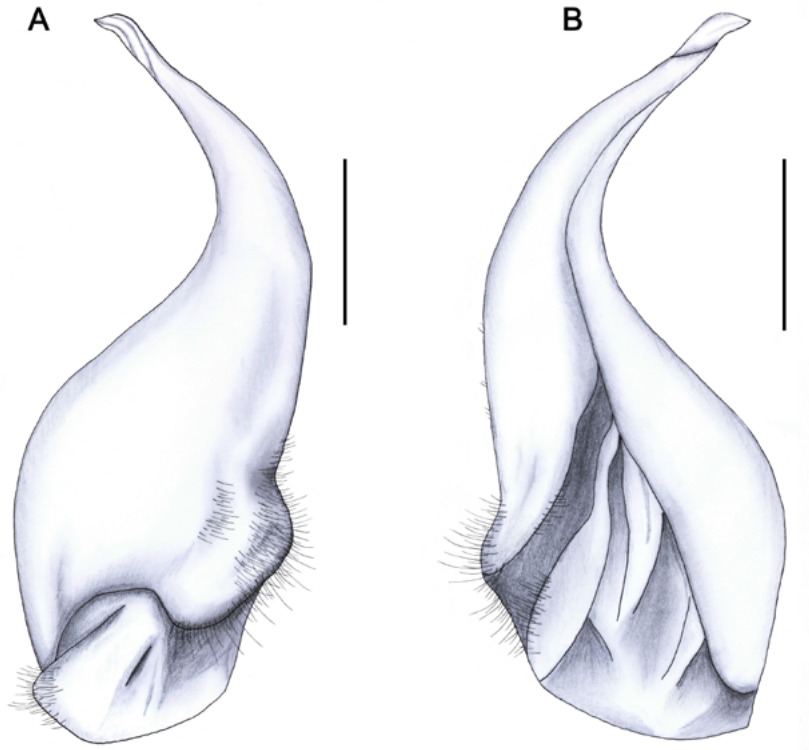

Figure 3. *Mekhongthelphusa menglongensis* sp. nov., holotype male (35.1 × 30.4 mm) (NNU 16C-MM01). **A**, G1 dorsal view; **B**, G1 ventral view. Scale bars = 1 mm.

Mekhongthelphusa neisi - Lectotype, male (22.6 × 18.5 mm) (MNHN-B 5311), Cochinchine, coll. Harmand, 1876. Paralectotypes: 1 male (28.4 × 23.0 mm), 1 female (MNHN-B 5311), same data as lectotype. The lectotype designation and status of these type specimens will be discussed in an upcoming revision of the genus (D.C.J. Yeo, unpublished data).

Mekhongthelphusa tetragona - Lectotype, female (24.9 × 21.1 mm) (MNHN-B 5318), no other data (unknown locality). Paralectotypes: 3 females (MNHN-B 5318), 2 females (larger 24.8 × 21.7 mm) (USNM 30018), same data as lectotype. Others: 1 male (24.5 × 21.0 mm), 2 females (larger 33.5 × 28.1 mm) (ZRC 1995.285), along bank, under stones, on muddy sand, Mekong River, Amphoe Maung, Changwat Mukdahan, northeastern Thailand, coll. P. Naiyanetr, 2 Dec. 1982.

Diagnosis. Carapace trapezoidal, slightly broader than long, dorsal surface smooth, slightly convex; posterolateral margins gently converging; H-shaped groove distinct; epigastric cristae distinctly anterior of postorbital cristae, outer edge slightly overlapping inner edge of postorbital cristae; postorbital cristae distinct, entire, sharp, very gently sinuous, curving obliquely posterolaterally, reaching but not confluent with base of third epibranchial teeth; anterolateral margin with 3 distinct epibranchial teeth. Third maxilliped ischium rectangular, pitted; exopod long, reaching beyond midpoint of merus, with long, well-developed flagellum. Male pleon T-shaped, somites 5 and 6 together constricted medially, with lateral margins concave. Male chelipeds strongly asymmetrical, cutting edge lined with small, rounded teeth, gap distinct when fingers closed. G1 strongly curved outwards, distal part slender, tip longitudinally twisted, slightly bent, distinctly hooked in appearance, basal part dilated up to least half length of G1, with broadest part approximately one-third length of G1.

Description. Carapace trapezoidal, slightly broader than long, dorsal surface smooth, slightly convex, regions defined (Fig. 1A); H-shaped groove distinct; frontal margin cristate, slightly sinuous, anterior of external orbital angle confluent with supraorbital margin (Fig. 1A), with distinct,

complete frontal median triangle, frontal region not deflexed downwards, broad, smooth; supraorbital margin sinuous, cristate; infraorbital margin curved, cristate; orbital region relatively broad; eyes normal; subhepatic and subbranchial regions with sparse low granules or rugae; epigastric cristae distinct, sharp, slightly oblique, separated by deep, distinct groove, distinctly anterior of postorbital cristae, separated from postorbital cristae by distinct groove, outer edge slightly overlapping inner edge of postorbital cristae (Fig. 1A, C); postorbital cristae distinct, entire, sharp, very gently sinuous, curving obliquely posterolaterally, reaching, but not confluent with, base of third epibranchial teeth; regions behind epigastric and postorbital cristae smooth; external orbital angle distinct, triangular, inner margin shorter than outer margin, outer margin convex, with small gap separating it from first epibranchial tooth (Fig. 1A); anterolateral margin short, with 3 distinct epibranchial teeth, epibranchial teeth relatively narrow, first and second teeth subequal in size, third tooth smallest, with distinct small gap between second and third teeth, confluent with posterolateral margin (Fig. 1A); posterolateral margins straight, slightly converging posteriorly, posterolateral region lined with oblique striae (Fig. 1A). Epistome posterior margin median tooth distinct, broadly triangular, outer parts not concave, sloping downwards, lateral parts gently sinuous; median endostomial ridge not clearly visible from frontal view (Fig. 1C).

Third maxilliped ischium rectangular, distinctively pitted, about 1.5 × longer than broad, with distinct longitudinal sulcus; merus subrectangular, shorter than half ischium length, with concave outer surface; exopod long, beyond midpoint of merus, with well-developed flagellum, longer than merus width (Fig. 2A).

Male thoracic sternum smooth, pitted, suture between thoracic sternites 2 and 3 complete, distinct, suture between thoracic sternites 3 and 4 indistinct, with groove at lateral edges (Fig. 1B); male sterno-pleonal cavity reaches an imaginary line joining anterior edges of bases of chelipeds (Fig. 1B, H); male pleon T-shaped (Fig. 1B, F); telson tongue-shaped, about 1.1 × broader than long, subequal in length to somite 6, tip broadly blunt, lateral margins slightly concave (Fig. 1B, F); somites 5 and 6 together constricted medially; somite 6 distal width about 1.1 × length, distal margin 1.2 × longer than proximal margin, lateral margins concave; somite 5 proximal width about 2.2 × length, proximal margin 1.6 × longer than distal margin, lateral margins concave (Fig. 1B, F). Female pleon broadly oval (Fig. 1G).

Male chelipeds strongly asymmetrical, right cheliped larger in holotype; manus of major chela surface smooth, fingers longer than palm, moveable finger strongly curved downward, immovable finger gently curved upward, cutting edges lined with small, rounded teeth; gap distinct when fingers closed, tips slightly overlapping (Fig. 1A, D, E); fingers of minor chela slightly gaping when closed (Fig. 1D); carpus smooth, with distinct, obliquely directed subdistal spine on inner margin; merus with low subterminal spine (Fig. 1A, D, E). Female chelipeds slightly asymmetrical.

Ambulatory legs glabrous, smooth; second ambulatory legs longest, merus about 1.4 × as long as dactylus, with distinct dorsal subdistal spine, propodus with small spines on both margins, dactylus slender, with short chitinous spines (Fig. 1A).

G1 strongly curving outwards, terminal and subterminal segments not clearly demarcated, tapering distally; distal part slender, smoothly and strongly curving outwards (Figs. 2B, C, 3A, B), tip longitudinally twisted, slightly bent, distinctly hooked in appearance (Figs. 2D, E, 3A, B); basal part dilated, up to at least half length of G1, gently tapering distally, with broadest part approximately one-third length of G1 (Figs. 2D, E, 3A, B); G2 subterminal segment basal part inflated, terminal segment slender, distinctly shorter than half of subterminal segment (Fig. 2F). Female vulvae round, with operculum, located slightly below suture of sternite 5/6 (Fig. 1I).

Remarks. This new species is assigned to *Mekhongthelphusa s. l.* (Ng *et al.*, 2008; D.C.J. Yeo *et al.*, unpublished data) based on the following characters: carapace slightly broader than long; epigastric cristae distinctly anterior of postorbital cristae, with outer edge slightly overlapping inner edge of postorbital cristae; postorbital cristae curving obliquely posterolaterally, reaching but not confluent with base of third epibranchial teeth; male pleon T-shaped; and G1 curved outwards, with dilated

basal part, and tip distinctly longitudinally twisted, superficially resembling a very short "terminal segment" (Naiyanetr, 1994; Naiyanetr and Ng, 1995; D.C.J. Yeo, unpublished data).

Mekhongthelphusa menglongensis can be easily distinguished externally from *M. tetragona* and *M. kengsaphu* by its relatively more transverse carapace being distinctly broader (Fig. 1A) (*vs.* carapace more squarish, cf. Naiyanetr and Ng, 1995: figs. 1, 4, 6B) and slightly convex carapace dorsal surface (Fig. 1A, C) (*vs.* carapace dorsal surface comparatively flat, cf. Naiyanetr and Ng, 1995: figs. 1, 2A, 4, 5A, 6A, B), as well as by its relatively more slender and more strongly curved G1 (Figs. 2B–E, 3A, B) (*vs.* G1 relatively broader and more gently curved, cf. Naiyanetr and Ng, 1995: figs. 3B–E, 5D–G, 6D, E).

Mekhongthelphusa menglongensis is superficially most similar to *M. brandti* and *M. neisi* in carapace morphology. *Mekhongthelphusa menglongensis*, however, can be distinguished externally from *M. neisi* by its relatively narrower external orbital angle and epibranchial teeth (Fig. 1A) (*vs.* external orbital angle and epibranchial teeth relatively broader, Fig. 4B; cf. Rathbun, 1905: fig. 61, pl. XI fig. 5), and furthermore by its stouter and more strongly curved G1 with tip appearing distinctly hooked (Figs. 2B–E, 3A, B) (*vs.* G1 distinctly more slender and gently curved, with tip weakly hooked in appearance, Fig. 4E, F).

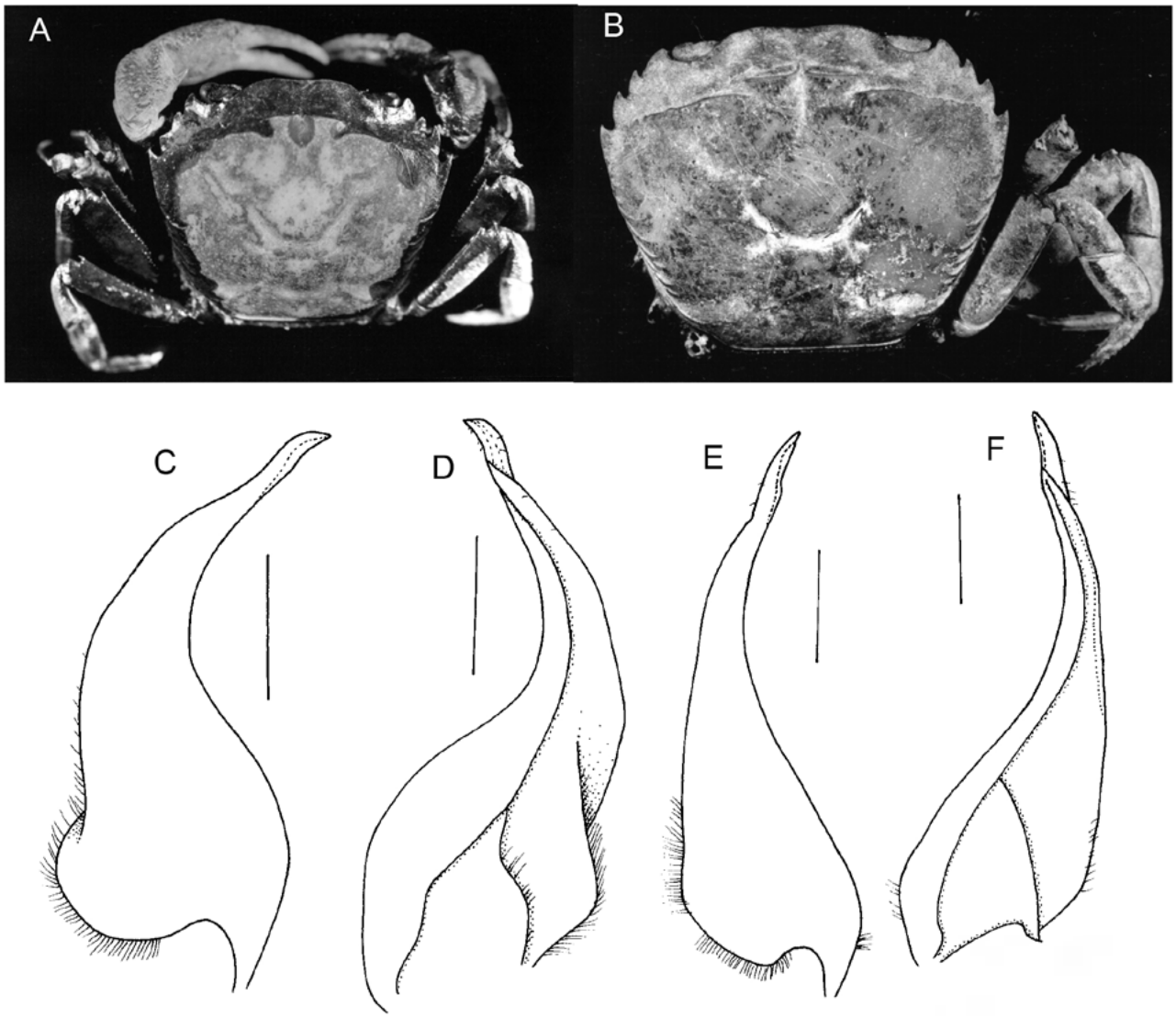

Figure 4. *Mekhongthelphusa brandti* (Bott, 1968), holotype male (21.8 × 17.8 mm) (SMF 4405) (**A, C, D**); *Mekhongthelphusa neisi* (Rathbun, 1902), lectotype male (22.6 × 18.5 mm) (MNHN-B 5311) (**B, E, F**). **A, B**, Dorsal view; **C, E**, G1 dorsal view; **D, F**, G1 ventral view. Scale bars = 1 mm.

Mekhongthelphusa menglongensis closely resembles *M. brandti* in its G1 being strongly curved, with a distinctly hooked tip. The new species can nevertheless be separated from *M. brandti* by the relatively more strongly curved G1 (Figs. 2B–E, 3A, B) (*vs.* G1 less strongly curved, Fig. 4C, D; cf. Naiyanetr, 1994: fig. 4C), and basal part being dilated up to at least half length of G1, with broadest part at approximately one-third length of G1 (Figs. 2B, C, 3A, B) (*vs.* basal part being dilated up to less than half length of G1, with broadest part at less than one-third length of G1, Fig. 4C, D; cf. Naiyanetr, 1994: fig. 4C).

In China, species of *Somanniathelphusa* Bott, 1968, also have a T-shaped male pleon (Dai, 1999). However, *M. menglongensis* sp. nov. can be easily distinguished morphologically from *Somanniathelphusa* species by its low and relatively squarish carapace, with relatively flat dorsal surface, gently converging posterolateral margins, and long postorbital cristae, extending beyond cervical grooves to reach anterolateral margin (*vs.* carapace high, distinctly broader than long, with strongly convex dorsal surface, distinctly converging posterolateral margins, and short postorbital cristae, not exceeding cervical grooves or reaching anterolateral margins); proportionately broader male pleon, with somites 5 and 6 having gently concave lateral margins (*vs.* male pleon narrower, with somites 5 and 6 having more distinctly concave lateral margins); and distally gradually tapered G1, from an expanded basal part into a narrower distal part, with a longitudinally twisted tip of G1 (*vs.* G1 abruptly narrowing, from expanded basal part into narrow distal part, and lacking longitudinally twisted tip) (Figs. 1A–C, 2B–E; cf. Naiyanetr, 1994: figs. 1, 4, 5).

Etymology. The species name is derived from the type locality, Menglong Town, Jinghong City, Xishuangbanna Dai Autonomous Prefecture, Yunnan Province, China.

Color in life. The dorsal surface of carapace is light-brownish with dark-brown patches at progastric regions bordered posterolaterally by the cervical grooves. The ambulatory legs are dark-brown all over.

Habitat. Specimens were found in a small gravel-bed river, slightly turbid, slow flowing, about 5 m in width. The crabs were collected from the middle of the river.

Distribution. The species is so far only known from Menglong Town, Jinghong City, Xishuangbanna Dai Autonomous Prefecture, Yunnan Province, China.

Molecular results

A total of 37 sequences were included in our study (Tab. 1). *Mekhongthelphusa* clustered with *Sayamia*, *Siamthelphusa* Bott, 1968, and *Somanniathelphusa*, with strong support (BS = 100) (Fig. 5). Our phylogenetic tree confirms their differentiation from the above mentioned genera, and suggests that *Mekhongthelphusa* represents the sister group of the other three genera. Unpublished genetic data by the second author corroborates our result. This is the first sequence of *Mekhongthelphusa* to be published and can serve as a valuable resource for future molecular studies on the Gecarcinucidae.

Discussion

Naiyanetr (1985) first established the genus "*Mekhongthelphusa*" in a brief one-page abstract in which he described the characters of the taxon, but made no mention of any type species or of which species were included. The International Code of Zoological Nomenclature (ICZN) (Ride *et al.*, 1999) requires that all generic names must be "accompanied by a description or definition that states in words characters that are purported to differentiate the taxon" (ICZN Article 13.1.1); and that to "be available, every new genus-group name published after 1930 (except those proposed for collective groups or ichnotaxa) must, in addition to satisfying the provisions of Article 13.1, be accompanied by the fixation of a type species in the original publication" (ICZN Article 13.3). Naiyanetr (1985) therefore did not fulfill the second article and as such, the generic name *Mekhongthelphusa* is not available from this work. Naiyanetr (1988: 6, pl. 3) next used, for the first time, the name "*Mekhongthelphusa tetragonum*", providing a figure of the species in a book chapter, but no discussion on how the genus was different from other genera; as such, the name is also unavailable from

Table 1. 16S rRNA gene sequences used in phylogenetic analysis.

Species	Accession No.	Voucher No.	Reference
Arachnothelphusa rhadamanthysi	FM180121	–	Klaus *et al.*, 2009
Austrothelphusa transversa	FM180122	–	Klaus *et al.*, 2009
Currothelphusa asserpes	FM180128	–	Klaus *et al.*, 2009
Deckenia mitis	FM180118	–	Klaus *et al.*, 2009
Holthuisana biroi	FM180132	–	Klaus *et al.*, 2009
Irmengardia johnsoni	AM234640	–	Klaus *et al.*, 2006
Lepidothelphusa cognetti	FM180134	–	Klaus *et al.*, 2009
Liotelphusa gageii	FM180135	–	Klaus *et al.*, 2009
Maydelliathelphusa lugubris	FM180137	–	Klaus *et al.*, 2009
Mekhongthelphusa menglongensis sp. nov.	MZ063775	NNU 16C-MM01	Present study
	MZ063776	NNU 16C-MM02	Present study
Niasathelphusa wirzi	FM180138	–	Klaus *et al.*, 2009
Oziothelphusa ceylonensis	FM180139	–	Klaus *et al.*, 2009
Parathelphusa oxygona	HE794189	–	Klaus *et al.*, 2013
Parathelphusa pantherina	KJ132618	–	Tsang *et al.*, 2014
Perithelphusa lehi	FM180147	–	Klaus *et al.*, 2009
Phricotelphusa limula	AB428516	–	Shih *et al.*, 2009
Phricotelphusa sirindhorn	FM180152	–	Klaus *et al.*, 2009
Platythelphusa armata	KJ132603	–	Tsang *et al.*, 2014
Potamon persicum	HG321385	–	Keikhosravi and Schubart, 2014
Sartoriana blandfordi	FM180154	–	Klaus *et al.*, 2009
Sayamia sexpunctata	AB601848	–	Shih *et al.*, 2011
Sendleria gloriosa	FM180157	–	Klaus *et al.*, 2009
Siamthelphusa improvisa	AB601852	–	Shih *et al.*, 2011
Somanniathelphusa amoyensis	AB265236	–	Shih *et al.*, 2007
Somanniathelphusa bawangensis	AB265235	–	Shih *et al.*, 2007
Somanniathelphusa boyangensis	NC032044	–	Jia *et al.*, 2018
Somanniathelphusa qiongshanensis	AB265236	–	Shih *et al.*, 2007
Somanniathelphusa sinensis	DQ062739	–	Direct submission
Somanniathelphusa taiwanensis	AB265229	–	Shih *et al.*, 2007
Somanniathelphusa zanklon	AB265235	–	Shih *et al.*, 2007
Somanniathelphusa zhangpuensis	AB265231	–	Shih *et al.*, 2007
Sundathelphusa hades	FM180164	–	Klaus *et al.*, 2009
Sundathelphusa rubra	FM180167	–	Klaus *et al.*, 2009
Thaksinthelphusa yongchindaratae	FM180173	–	Klaus *et al.*, 2009
Thelphusula sabana	FM180176	–	Klaus *et al.*, 2009
Vanni malabarica	FM180180	–	Klaus *et al.*, 2009

this work. Ng and Naiyanetr (1993: 46) subsequently listed "*Mekhongthelphusa* Naiyanetr, 1985" with only one species, *M. tetragona*, but without any comments, so the name similarly remains unavailable. Finally, in describing three new genera (*Chulathelphusa* Naiyanetr, 1994, *Esanthelphusa* Naiyanetr, 1994, and *Sayamia* Naiyanetr, 1994), Naiyanetr (1994: 695, 697–698, fig. 5) discussed "*Mekhongthelphusa* Naiyanetr, 1985", providing figures and a key (Naiyanetr, 1994: 698) to separate it from these allied genera. He also commented that "*Parathelphusa* (*Parathelphusa*) *tetragonum* Rathbun, 1902, previously synonymized under *S. germaini* by Bott (1970), is not only a valid species, but was transferred to a new genus, *Mekhongthelphusa*, by Naiyanetr (1985)" (Naiyanetr, 1994: 695). These statements by Naiyanetr (1994) validate the name *Mekhongthelphusa*, with *Potamon* (*Parathelphusa*) *tetragonum* Rathbun, 1902,

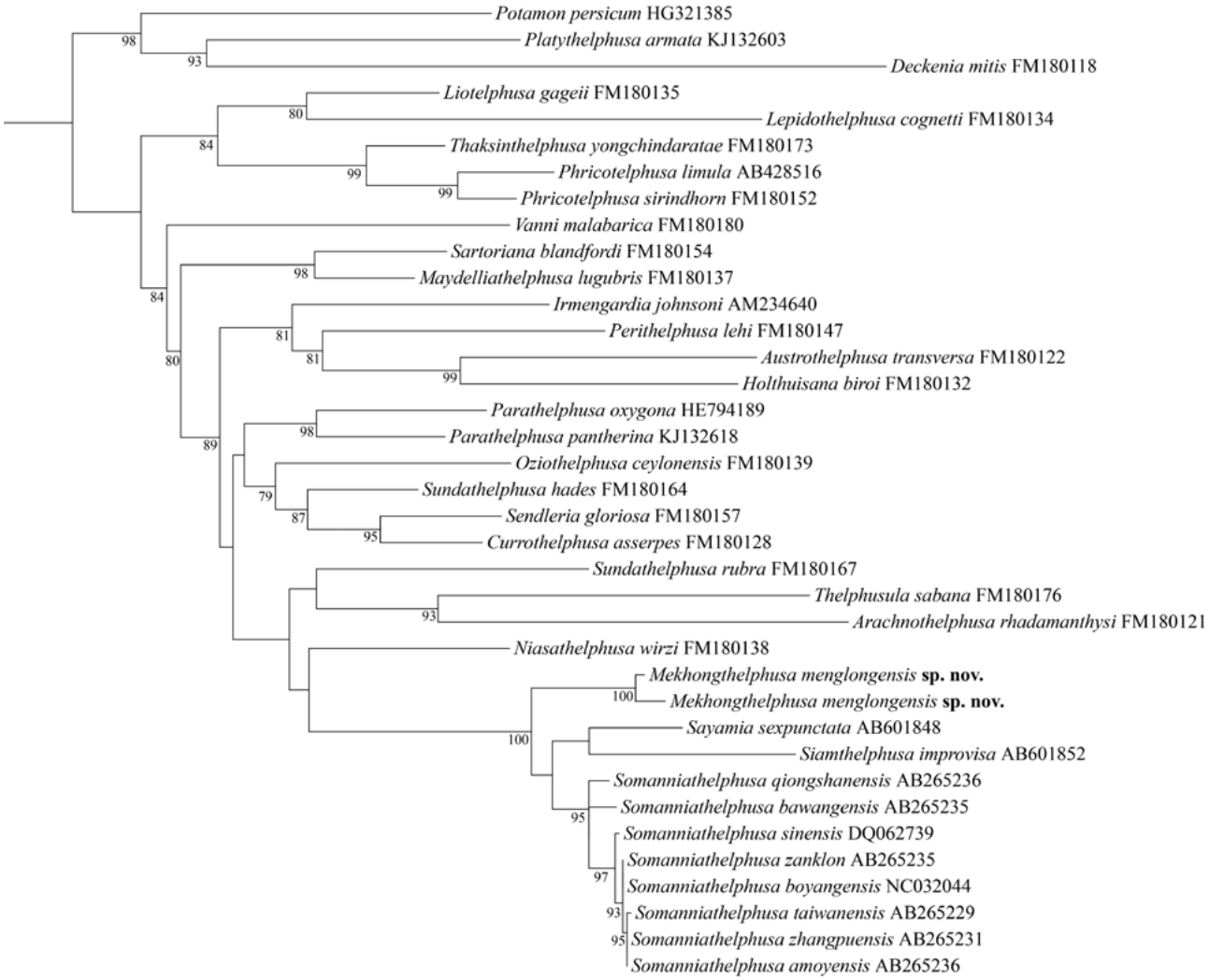

Figure 5. Maximum likelihood tree based on mitochondrial 16S sequences. The values on nodes are bootstrap support values (BS). Only BS above 70 are shown.

the type species by monotypy. More recently, Ng *et al.* (2008: 70) synonymized *Chulathelphusa* Naiyanetr, 1994, under "*Mekhongthelphusa* Naiyanetr, 1985" without comment; they were, however, following the unpublished thesis by D.C.J. Yeo (Yeo, 2000), who argued there were no clear characters separating the two genera (P.K.L. Ng, pers. comm.). In the present context, *Mekhongthelphusa* was validated only by Naiyanetr in 1994 (not 1985) and must be regarded therefore as simultaneously published with *Chulathelphusa* Naiyanetr, 1994. In the current situation, with both genera treated as synonyms, priority is determined by the First Reviser (ICZN Article 24). To follow the classification in Ng *et al.* (2008), and to maintain stability, we select *Mekhongthelphusa* Naiyanetr, 1994, to have priority over *Chulathelphusa* Naiyanetr, 1994, whenever the two are treated as synonyms.

Mekhongthelphusa is distributed along the Mekong River (Lancang Jiang). So far, this genus has been reported from the upper reaches (China and northeastern Thailand) and lower reaches (southern Vietnam) of the river drainage. Based on additional Indochinese species that are being described in an ongoing revision, the genus is also distributed in the middle reaches of the Mekong (including in Laos and Cambodia) (D.C.J. Yeo, unpublished data).

The rich Chinese freshwater crab fauna is dominated by potamid crabs (Cumberlidge *et al.*, 2011; Chu *et al.*, 2018). For a long time, *Somanniathelphusa* was the only gecarcinucid genus found in China (Dai, 1999; Chu *et al.*, 2018). In recent years, several

other gecarcinucid genera have been discovered in Yunnan (D. Pan, unpublished data). Given the high species richness of gecarcinucid crabs in the adjacent Indochinese region (Yeo *et al.*, 2008; Cumberlidge *et al.*, 2012), the diversity of gecarcinucid crabs in southern China is actually perhaps unsurprisingly higher than previously reported. To fully understand the biodiversity of freshwater crabs in China, further collections will be needed.

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