

ON THREE NEW GENERA OF THAI RICEFIELD CRABS
ALLIED TO *SOMANNIATHELPHUSA* BOTT, 1968
(CRUSTACEA: DECAPODA: BRACHYURA:
PARATHELPHUSIDAE)

Phaibul Naiyanetr

ABSTRACT. - The taxonomy of the ricefield crabs of the genus *Somanniathelphusa* Bott, 1968 (Parathelphusidae) is considered. Three new genera, *Sayamia*, *Esanthelephusa* and *Chulathelphusa* are described, and they are distinguished from *Somanniathelphusa* s. str. mainly on the basis of the shape of carapace, structure of the post-orbital crests and shape of the male first gonopods.

INTRODUCTION

Freshwater crabs of the genus *Somanniathelphusa* Bott, 1968 (family Parathelphusidae) are very common in Indo-China, and 11 species are now known from Thailand, viz. *S. dugasti* (Rathbun, 1902), *S. germaini* (Rathbun, 1902), *S. neisi* (Rathbun, 1902), *S. sexpunctata* (Lanchester, 1906), *S. brandti* Bott, 1968, *S. maehongsonensis* Naiyanetr, 1978, *S. bangkokensis* Naiyanetr, 1982, *S. denchaii* Naiyanetr, 1984, *S. nani* Naiyanetr, 1984, *S. Chiangmai* Ng & Naiyanetr, 1993, and *S. phetchaburi* Ng & Naiyanetr, 1993.

The last revision of the genus was done by Bott (1970), but many new species have since been described from Thailand, Indo-China and China (Dai *et al.*, 1975; Naiyanetr, 1978, 1982, 1984; Ng & Dudgeon, 1992; Ng & Naiyanetr, 1993). Aspects of the taxonomy of the genus *Somanniathelphusa* have also changed. *Parathelphusa* (*Parathelphusa*) *tetragonum* Rathbun, 1902, previously synonymised under *S. germaini* by Bott (1970), is not only a valid species, but was transferred to a new genus, *Mekhongthelphusa*, by Naiyanetr (1985). Because of the large number of newly described *Somanniathelphusa* species, the taxonomy of the genus was reappraised. The genus *Somanniathelphusa* can be separated into four genera on the basis of their carapace shapes, structure of the post-orbital crests and to a lesser degree, the shape of the male first gonopods. The present paper redefines *Somanniathelphusa* s. str. and provides diagnoses of three new genera, *Sayamia*, *Esanthelephusa* and *Chulathelphusa*.

TAXONOMY

PARATHELPHUSIDAE ALCOCK, 1910

***Somanniathelphusa* Bott, 1968, s. str.** (Fig. 1A-C)

Type species. - *Parathelphusa sinensis* H. Milne Edwards, 1853, by original designation.

Diagnosis. - Dorsal surface of carapace strongly convex, smooth. Post-orbital crests prominent, sharp, ending at beginning of cervical grooves. Male abdomen T-shaped, sixth segment with concave lateral margins. Basal part of male first gonopod expanded, distal part slender, curved outwards or gently hooked.

Remarks. - *Somanniathelphusa* s. str. is perhaps closest to *Sayamia*, new genus, but differs in having the post-orbital crests stopping at the start of the cervical grooves and the base of the male first gonopod is not expanded (see key).

The following species can be referred to *Somanniathelphusa* s. str.: *S. sinensis* (H. Milne Edwards, 1853) (China), *S. chongi* (Wu, 1935) (China), *S. brevipodum* Dai *et al.*, 1975 (China), *S. taiwanensis* Bott, 1968 (Taiwan), *S. falx* Ng & Dudgeon, 1992 (China), and *S. zanklon* Ng & Dudgeon, 1992 (Hong Kong). A revision of the Chinese fauna recognises a further 11 new species of *Somanniathelphusa* s. str. (P. Naiyanetr and A. Y. Dai, in preparation).

***Sayamia*, new genus** (Fig. 2A-C)

Type species. - *Somanniathelphusa bangkokensis* Naiyanetr, 1982, by present designation.

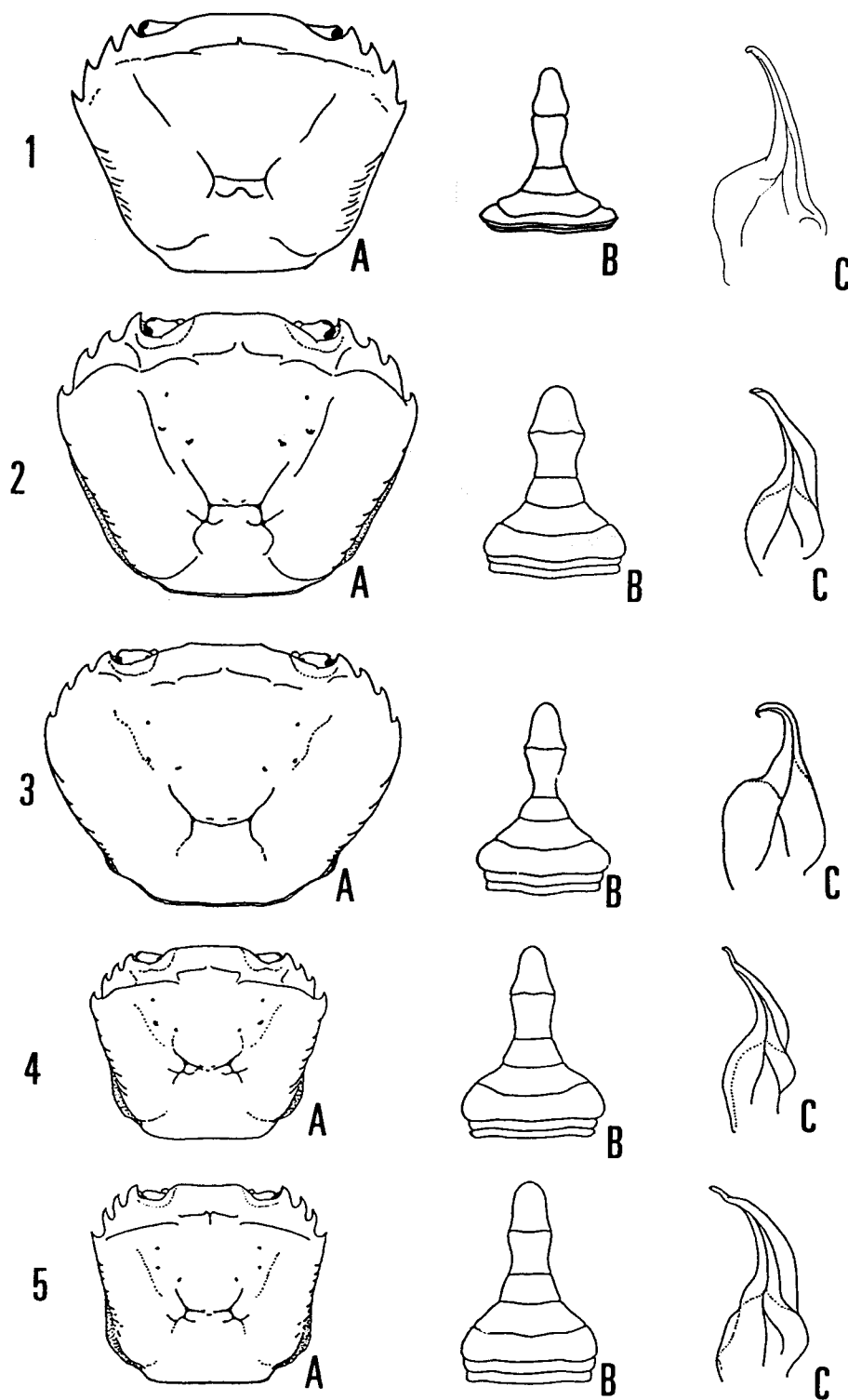
Diagnosis. - Dorsal surface of carapace strongly convex, smooth. Post-orbital crests prominent, sharp, curving posteriorly, reaching antero-lateral borders at bases of epibranchial teeth. Male abdomen T-shaped, sixth segment with concave lateral margins. Basal part of male first gonopod not expanded, distal part slender, straight or gently curved outwards.

Etymology. - The name is derived from the alternative spelling for Thailand. Gender feminine.

Remarks. - This genus contains four Thai-Malayan species: *S. germaini* (Rathbun, 1902) (Thailand), *S. sexpunctata* (Lanchester, 1906) (Thailand, Malaysia), *S. maehongsonensis* Naiyanetr, 1978 (Thailand), and *S. bangkokensis* Naiyanetr, 1982 (Thailand).

***Esanthelphusa*, new genus** (Fig. 3A-C)

Type species. - *Potamon (Parathelphusa) dugasti* Rathbun, 1902, by present designation.



Figs. 1-5. Carapace, abdomens and male first gonopods. A, dorsal view of carapace; B, male abdomen; C, male first gonopods (ventral views). 1, *Somanniathelphusa sinensis* (China); 2, *Sayamia bangkokensis* (Bangkok, Thailand); 3, *Esanathelphusa dugasti* (Nakhon Panom, Thailand); 4, *Chulathelphusa brandtii* (Loei, Thailand); 5, *Mekhongthelphusa tetragonum* (Mekhong, Thailand).

Diagnosis. - Dorsal surface of carapace strongly convex, smooth. Cervical grooves shallow. Post-orbital crests low, short, ending before beginning of cervical grooves. Male abdomen T-shaped, proximal part of sixth segment very narrow, neck-like. Basal part of male first gonopod expanded, distal part slender, distinctly hook-shaped.

Etymology. - The name is derived from “Esan”, the name of the north-eastern part of Thailand, the type locality of the type species; together with the generic name “Thelphusa”. Gender feminine.

Remarks. - This new genus contains eleven species, of which five are here described as new. The species are: *E. dugasti* (Rathbun, 1902) (Thailand), *E. grayi* (Alcock, 1909) (Burma), *E. nani* (Naiyanetr, 1984) (Thailand), *E. denchaii* (Naiyanetr, 1984) (Thailand), *E. phetchaburi* (Ng & Naiyanetr, 1992) (Thailand), and *E. Chiangmai* (Ng & Naiyanetr, 1992) (Thailand). In addition, over 12 new Thai species of *Esantheiphusa* are now being described (P. Naiyanetr and P. K. L. Ng, in preparation), and a new species was recently reported from Vietnam (Ng & Kosuge, in press). All these species have a very swollen carapace, the crests being so low and weak that the entire dorsal surface of the carapace appears very smooth and rounded. Most of the species also have strongly hooked male first gonopods.

***Chulathelphusa*, new genus**

(Fig. 4A-C)

Type species. - *Somanniathelphusa brandti* Bott, 1968, by present designation.

Diagnosis. - Dorsal surface of carapace slightly convex, smooth, appears almost flat from frontal view. Epigastric crests low and anterior of post-orbital crests, post-orbital crests prominent, sharp, curving obliquely towards epibranchial teeth. Male abdomen T-shaped, lateral margins of fifth and sixth segments slightly concave. Distal part of male first gonopod straight or gently curved outwards, horn-shaped, apex setose.

Etymology. - The name is derived from “Chula”, for Chulalongkorn University, the centre for freshwater crab studies in Thailand, together with the generic name “Thelphusa”. Gender feminine.

Remarks. - This genus contains two known species: *C. brandti* (Bott, 1968) (Thailand), and *C. neisi* (Rathbun, 1902) (Thailand). In addition, three new Thai species are now being described (P. Naiyanetr and P. K. L. Ng, in preparation). The relatively flatter carapace is very diagnostic for members of this genus, as is the structure of the male first gonopod. In the general form of the carapace and gonopods, *Chulathelphusa* resembles *Mekhongthelphusa* Naiyanetr, 1985, but the carapace of *Mekhongthelphusa* is much more squarish and its male first gonopod is also stouter (Fig. 5A-C; Naiyanetr, in preparation).

KEY TO SOMANNIATHELPHUSA AND ALLIED GENERA

1. Carapace oval to rectangular; dorsal surface of carapace distinctly convex transversely and longitudinally; posterolateral margins distinctly converging 2
- Carapace squarish; dorsal surface of carapace gently convex to flat; posterolateral margins subparallel *Mekhongthelphusa*

2. Carapace oval; dorsal surface of carapace strongly convex, appears highly domed from frontal view3
Carapace rectangular to oval; dorsal surface of carapace convex, not highly domed from frontal view4
3. Post-orbital crests relatively weak, short, outer part ending well before beginning of cervical grooves*Esanthelephusa*
Post-orbital crests strong, long, reaching bases of epibranchial teeth*Sayamia*
4. Carapace oval; epigastric crests distinctly anterior of post-orbital crests; posterolateral margins gently converging*Chulathelphusa*
Carapace rectangular; epigastric crests not distinctly anterior of post-orbital crests; posterolateral margins distinctly converging *Somanniathelphusa*

ACKNOWLEDGEMENTS

The author thanks Dr. Peter Ng for his suggestions and help with the manuscript as well as for preparing figure 1, Prof. Dr. L. B. Holthuis for his comments, and Mr. Priyawut Vatcharanond for figures 2-5.

LITERATURE CITED

- Alcock, A., 1909. Diagnoses of new species and varieties of freshwater crabs. Nos. 1-4. *Rec. Ind. Mus.*, Calcutta, 3: 243-252, 375-381.
- Alcock, A., 1910. On the classification of the Potamonidae (Telphusidae). *Rec. Ind. Mus.*, Calcutta, 5: 252-261.
- Bott, R., 1968. Parathelphusiden aus Hinterindien (Crustacea, Decapoda, Parathelphusidae). *Senckenbergiana biol.*, Frankfurt am Main, 49(5): 403-422.
- Bott, R., 1970. Die Süßwasserkrabben von Europa, Asien, Australien und ihre Stammesgeschichte. Eine Revision der Potamoidea und Parathelphusoidea (Crustacea, Decapoda). *Abhand. Sencken. Naturf. Ges.*, Frankfurt am Main, 526: 1-338, Pls. 1-58.
- Dai, A.-Y., Y.-Z. Song, L.-Y. He, W.-J. Cao, Z.-B. Xu & W.-L. Zhong, 1975. Description of several new species of freshwater crabs belonging to the intermediate hosts of lung flukes. *Acta Zool. Sinica*, Beijing, 21(3): 257-264, Pls. 1-3.
- Lanchester, W. F., 1906. Report on the Crustacea. In: *Fasciculi Malayensis*, Part 3: 127-134, 1 Pl.
- Milne-Edwards, H., 1853. Mémoire sur la Famille des Ocypodiens. *Ann. Sci. Nat., Zool.*, Paris, (3)20: 163-228, Pls. 6-11.
- Naiyanetr, P., 1975. Genus *Somanniathelphusa*. Distribution of freshwater crabs genus *Somanniathelphusa* in Thailand. *Abstr. Crust., Dept. Biol., Fac. Sci., Chulalongkorn Univ., Bangkok*, pp. 23-24.
- Naiyanetr, P., 1978. Six new species of freshwater crabs of Thailand. *Abstr. Natn. Confer. Agri. Biol. Sci. Kasetsart Univ.*, Bangkok, p. 84
- Naiyanetr, P., 1982. Three new species of freshwater crabs of Thailand. *Abstr. 20th Conf. Fish. Sec., Kasetsart Univ.*, Bangkok, p. 3.

Naiyanetr: Thai ricefield crabs

- Naiyanetr, P., 1984. Two new species of Pu Na of Thailand. *Abst. 22nd Conf. Fish. Sec., Kasetsart Univ.*, Bangkok, p. 14.
- Naiyanetr, P., 1985. *Mekhongthelphusa*, a new genus of freshwater crab (Decapoda, Parathelphusidae). *Proc. 23rd Conf. Fish. Sec., Kasetsart Univ.*, Bangkok, Abstr. 2, 1 pg.
- Naiyanetr, P., 1988. *Freshwater crabs in Thailand*. In: Book published in memory of the Royal Cremation of Associate Professor Dr. Praphun Chitachumnong, Chulalongkorn University, Phaisalsilpa Press, Bangkok, 15pp., 8 colour plates.
- Ng, P. K. L. & D. Dudgeon, 1992. The Potamidae and Parathelphusidae (Crustacea: Decapoda: Brachyura) of Hong Kong. *Invert. Tax.*, Melbourne, 6: 741-768.
- Ng, P. K. L. & T. Kosuge, in press. On a new *Somanniathelphusa* Bott, 1968, from Vietnam (Crustacea: Decapoda: Brachyura: Parathelphusidae). *Proc. Biol. Soc. Wash.*
- Ng, P. K. L. & P. Naiyanetr, 1993. New and recently described freshwater crabs (Crustacea: Decapoda: Brachyura: Potamidae, Gecarcinucidae and Parathelphusidae) from Thailand. *Zool. Verh.*, Leiden, 284: 1-117, figs. 1-68.
- Rathbun, M. J., 1902. Description des nouvelles especes de *Parathelphusa* appartenant au Museum de Paris. *Bull. Mus. natn. Hist. Nat.*, Paris, 1902 (3): 184-187.
- Wu, H. W., 1934. Enumeration of the river-crabs (Potamonidae) of China with descriptions of three new species. *Sinensia*, 4(11): 338-352.