

VALIDATION OF FIVE NEW SPECIES OF THAI POTAMID CRABS (CRUSTACEA: DECAPODA: BRACHYURA)

Phaibul Naiyanetr

ABSTRACT. - The names of five species of Thai potamid freshwater crabs - *Potamon kanchanaburiense*, *Potamon maesotense*, *Potamon phuphanense*, *Potamon erawanense* and *Potamon maehongsonense* are validated. These taxa had been named in 1978 and 1980 but proved to be *nomen nuda*. These names are here made available with the necessary diagnoses.

INTRODUCTION

The present paper serves to validate the names of five new species of Thai potamid freshwater crabs named by the author in 1978 and 1980 which inadvertently proved to be *nomen nuda*. The names however, have been used in several publications on the Thai freshwater crab fauna, and there is a need to validate them in accordance with the International Code of Zoological Nomenclature (ICZN, 1985). These five taxa are briefly diagnosed here, with type specimen designations, to make the names generally available. The affiliations and detailed taxonomy of these five species will be treated in a separate, more detailed paper on Thai freshwater crabs by the author and P. K. L. Ng at a later date.

Measurements are of the carapace width and length respectively. The measurements of the male first pleopod terminal and subterminal segments, and the male second pleopod basal segment are made along the longest longitudinal axis of each. The length of the second male pleopod is measured over curves. The Thai terms Changwat and Amphoe refer to the province and district respectively. Type specimens are contained in the Chulalongkorn University Natural History Museum (CUMZ), Department of Biology, Bangkok, Thailand; Zoological Reference Collection (ZRC), National University of Singapore; and Senckenbergischen Naturforschenden Gesellschaft (SMF), Frankfurt, Germany.

Phaibul Naiyanetr - Department of Biology, Chulalongkorn University, Bangkok, Thailand.

TAXONOMY

FAMILY POTAMIDAE ORTMANN, 1896

Potamon kanchanaburiense, new species

(Fig. 1A, B)

Ranguna kanchanaburiensis Naiyanetr, 1978a: 84 (*nomen nudum*)

Ranguna kanchanaburiensis Naiyanetr, 1978b: 7 (*nomen nudum*)

Ranguna kanchanaburiensis Naiyanetr, 1978c: 32 Fig. 3 (*nomen nudum*)

Ranguna kanchanaburiensis - Naiyanetr, 1980: 51 (*nomen nudum*)

Ranguna kanchanaburiensis - Naiyanetr, 1985: no page number (*nomen nudum*)

Ranguna kanchanaburiensis - Ng, 1988: 25 (*nomen nudum*)

Potamon kanchanaburiensis - Naiyanetr, 1988: 9, Pl. 6 fig. 5 (*nomen nudum*)

Material. - Holotype - Male (62.4 by 47.7 mm) (ZRC), Sai Yok Noi Waterfall, Amphoe Sai Yok, Changwat Kanchanaburi, coll. P.-Naiyanetr, 1976.

Paratypes - 1 female (ZRC), 1 female (CUMZ), same data as lectotype. — 3 males, 1 female (CUMZ), Sai Yok Noi Waterfall, Amphoe Sai Yok, Changwat Kanchanaburi, coll. P. Naiyanetr, 19.vii.1981. — 1 male, 1 female (SMF), Sai Yok Waterfall, Amphoe Sai Yok, Changwat Kanchanaburi, coll. Warin, 14.iv.1974.

Diagnosis. - Carapace transverse, flat; anterolateral region very rugose; regions behind epigastric and postorbital cristae rugose; anterolateral margin convex, cristate, serrated; epibranchial tooth distinct; external orbital angle with outer margin longer than inner margin; epigastric cristae distinct, rugose, forward of postorbital cristae, separated from epigastric cristae by distinct narrow groove; postorbital cristae rugose and very sharp. Third maxilliped with well developed flagellum. Male abdominal segment 7 longer than segment 6; lateral margins of segment 6 convex; lateral margins of segment 7 concave. Male first pleopod stout, gently sinuous, terminal segment stout, almost straight, groove for male second pleopod lateral, dorsal part appear swollen, subdistal part surrounded by short, stiff hairs, tip rounded. Male second pleopod with long distal segment.

Etymology. - The species is named after the province it occurs in, Changwat Kanchanaburi.

Remarks. - The original citation (Naiyanetr, 1978a) does not constitute a valid publication of the name "*kanchanaburiensis*" as neither a description or figure was provided. Only the collection locality and date of collection of the new species was cited. In a subsequent paper (Naiyanetr, 1978c), a figure was appended, but as no description was provided, the name is still effectively a *nomen nudum* (ICZN Article 13e). Ng (1988) reported a small juvenile specimen of this species from the same waterfall as the type series (Sai Yok Waterfall) but without any description or morphological comparisons. The species was illustrated in Naiyanetr (1988), but again, without any descriptions. The name "*kanchanaburiensis*" thus remains a *nomen nudum*. The name is validated here with the necessary diagnosis.

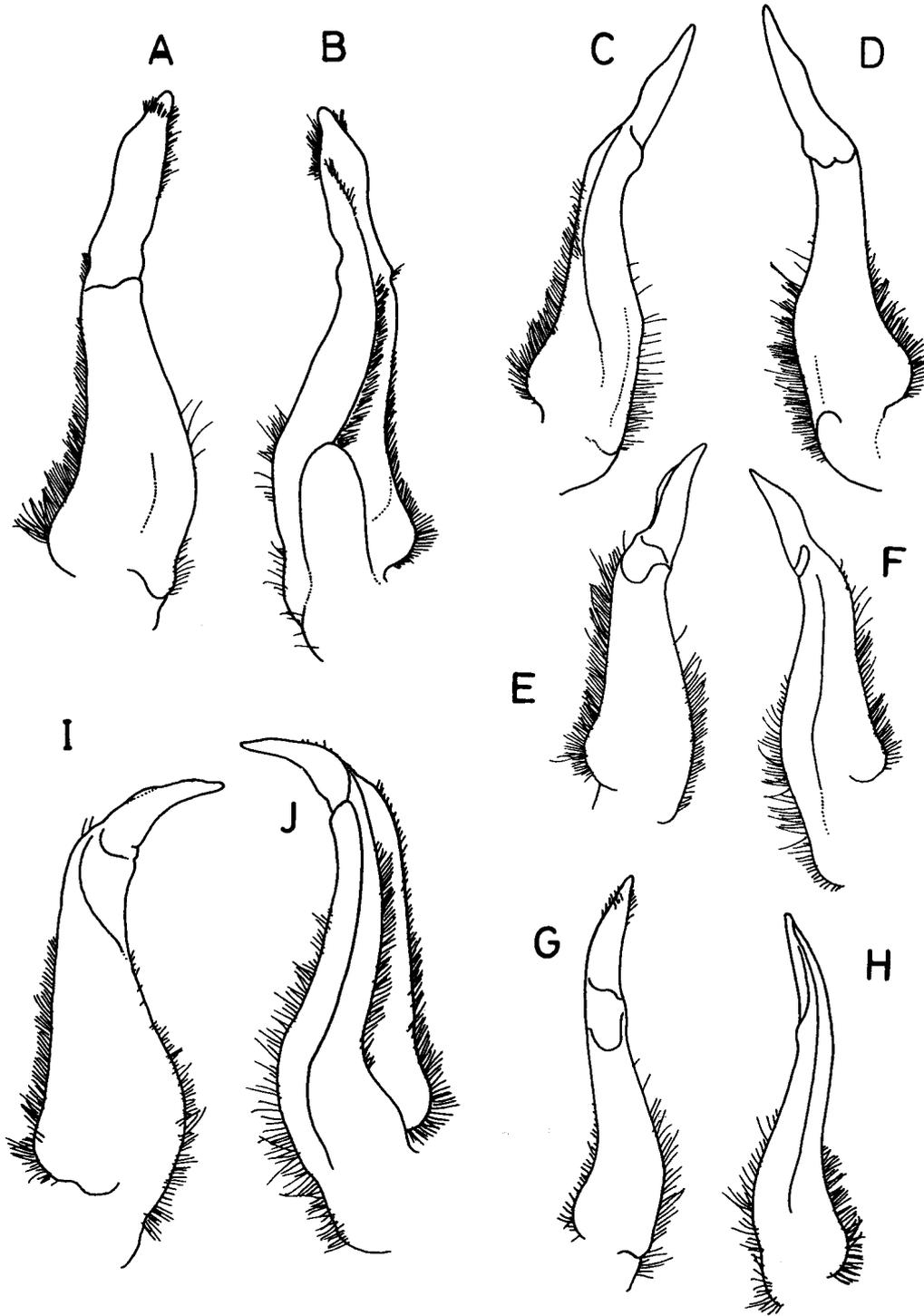


Fig. 1. A, B, E-J, right G1s; C, D, left G1. A, B, *Potamon kanchanaburiense*, new species; C, D, *Potamon maesotense*, new species; E, F, *Potamon phuphanense*, new species; G, H, *Potamon erawanense*, new species; I, J, *Potamon maehongsonense*, new species.

***Potamon maesotense*, new species**

(Fig. 1C, D)

Ranguna maesotensis Naiyanetr, 1978a: 84 (nomen nudum)

Ranguna maesotensis Naiyanetr, 1978b: 8 (nomen nudum)

Ranguna maesotensis Naiyanetr, 1978c: 35 (nomen nudum)

Ranguna maesotensis Naiyanetr, 1980: 51 (nomen nudum)

Ranguna maesotensis Naiyanetr, 1988: Pl. 8 fig. 6 (nomen nudum)

Material. - Holotype - Male (46.4 by 35.3 mm) (ZRC), Pa Dang, Amphoe Mae Sot, Changwat Tak, coll. Rung Sangsiri, 30.vi.1977.

Paratypes - 1 male, 1 female (ZRC), 1 male, 1 female (SMF), same data as holotype. — 6 males, 2 females (CUMZ), Pa Charoen, Amphoe Mae Sot, Changwat Tak, coll. P. Naiyanetr, 13.x.1989.

Diagnosis. - Carapace transverse, high; anterolateral region granulose; regions behind epigastric and postorbital cristae smooth; anterolateral margin strongly convex, cristate, serrated; epibranchial tooth distinct; external orbital angle triangular, outer margin slightly longer than length of inner margin; epigastric cristae rugose but not sharp, forward of postorbital cristae; clearly separated from postorbital cristae by distinct groove; postorbital cristae sharp, ends at beginning of cervical groove. Third maxilliped with long flagellum. Ambulatory legs long, especially propodus. Male abdominal segment 7 subequal in length to segment 6; lateral margins of segment 6 convex; lateral margins of segment 7 concave. Male first pleopod gently sinuous, terminal segment slender, shorter than subterminal segment, very gently curving upwards, appears almost straight, upper fold broad but low, tip rounded. Male second pleopod with long distal segment.

Etymology. - The species is named after the district it occurs in, Amphoe Mae Sot.

Remarks. - The original citation (Naiyanetr, 1978a) does not constitute a valid publication of the name "*maesotensis*" as neither a description or figure was provided. Only the collection site of the new species and date of collection was cited. No depository was indicated. Naiyanetr (1988) used the name "*maesotensis*" with a colour photograph of the taxon, but as no descriptions were given, as per ICZN Article 13e, the name remains a nomen nudum. The name is validated here with the necessary diagnosis.

***Potamon phuphanense*, new species**

(Fig. 1E, F)

Ranguna phuphanensis Naiyanetr, 1978a: 84 (nomen nudum)

Ranguna phuphanensis Naiyanetr, 1978b: 7 (nomen nudum)

Ranguna phuphanensis Naiyanetr, 1978c: 32 (nomen nudum)

Ranguna phuphanensis Naiyanetr, 1980: 51 (nomen nudum)

Material. - Holotype - Male (32.6 by 26.5 mm) (ZRC), Tad Ton Waterfall, Amphoe Muang Sakon Nakhon, Changwat Sakon Nakhon, coll. Charal Ekavibhatha, 3.xi.1974.

Paralectotypes - 2 males, 1 female (ZRC), 16 males, 14 females (CUMZ), same data as holotype. — 1 male, 1 female (SMF), Huai Duak, Amphoe Muang Sakon Nakhon, Changwat Sakon Nakhon, coll. Phairoj, 17.viii.1973.

Diagnosis. - Carapace squarish, anterolateral regions rugose; anterolateral margin convex, slightly cristate, lined by small rounded granules; epibranchial tooth low but distinct; external orbital angle broadly triangular, outer margin longer but less than twice length of inner margin; epigastric cristae rugose but not sharp, slightly forward of postorbital cristae, separated by deep Y-shaped groove; epigastric and postorbital cristae confluent, not separated by grooves. Third maxilliped with long flagellum. Male abdomen triangular, segment 7 longer than segment 6, lateral margins gently convex, lateral margins of segment 6 very gently convex or straight. Male first pleopod gently sinuous, terminal segment slender, half length of subterminal segment, gently curving outwards, tip sharp. Male second pleopod with long distal segment.

Etymology. - The name is derived from the name of the Phu Phan Mountains where the species is found.

Remarks. - The original citation (Naiyanetr, 1978a) does not constitute a valid publication of the name "*phuphanensis*" as neither a description or figure was provided. Only the collecting site and date of collection of the new species was cited. No depository was indicated. The species name is here validated with the necessary diagnosis.

***Potamon erawanense*, new species**

(Fig. 1G, H)

Ranguna erawanensis Naiyanetr, 1980: 51 (nomen nudum)

Ranguna erawanensis Naiyanetr, 1985: 260 (nomen nudum)

Potamon erawanensis Naiyanetr, 1988: 9, Pl. 6 fig. 3 (nomen nudum)

Material. - Male (34.0 by 25.3 mm) (ZRC), Erawan Waterfall, Changwat Kanchanaburi, coll. P. Naiyanetr, 25.v.1975.

Paratypes - 1 male, 2 females (ZRC), 1 male, 1 female (SMF), same data as holotype. — 3 males, 1 female (CUMZ), Erawan Waterfall, Changwat Kanchanaburi, coll. P. Naiyanetr, 25.xi.1990.

Diagnosis. - Carapace broader than long, epigastric, postorbital, frontal, supraorbital and anterolateral regions rugose; anterolateral margin distinctly convex, cristate, gently serrated, clearly demarcated from posterolateral margin; epibranchial tooth distinct; external orbital angle distinct, broadly triangular, outer margin twice length of inner margin, separated from anterolateral margin by small but distinct cleft; epigastric cristae distinct but not sharp, rugose, forward of postorbital cristae, separated by distinct Y-shaped groove; separated from sharp postorbital cristae by narrow groove. Third maxilliped exopod with long flagellum. Male abdomen distinctly triangular, segment 7 equal in length to segment 6, lateral margins gently concave, lateral margins of segment 6 gently convex. Male first pleopod gently sinuous, terminal segment curved very slightly outwards, about half length of subterminal segment, groove for male second pleopod on ventral surface, distal part strongly setose. Male second pleopod with long distal segment.

Naiyanetr : Five new Thai Potamids

Etymology. - The species name is derived from its type locality, the Erawan Waterfall.

Remarks. - The species was stated (Naiyanetr, 1980, 1985, 1988) as being described in 1978, but none of his three papers that year (Naiyanetr, 1978a, b, c, d) mention this species at all. The name first appeared in 1980, but was not accompanied by any description or figures, and is thus a nomen nudum. Naiyanetr (1988) used the name “*erawanensis*” with a colour photograph of the taxon, but as no descriptions at all were given, the name is still a nomen nudum (ICZN Article 13e). The name is validated here with the necessary diagnosis.

***Potamon maehongsonense*, new species**

(Fig. 1I, J)

Potamon maehongsonensis Naiyanetr, 1980: 50 (nomen nudum)

Material. - Holotype - Male (39.0 by 30.2 mm) (ZRC), Haui Sang Fa, Amphoe Muang Mae Hong Son, Changwat Mae Hong Son, coll. 26.iv.1975

Paratypes - 1 male, 1 female (ZRC), 5 males, 2 females (CUMZ), same data as holotype. — 16 males, 12 females (CUMZ), Huai Krung, Amphoe Pai, Changwat Mae Hong Son, coll. P. Naiyanetr & Charal Ekavibhatha, 7.x.1980.

Diagnosis. - Carapace transverse, flat; anterolateral regions covered with striae and flattened granules; regions behind epigastric and postorbital cristate rugose; anterolateral margin convex, cristate, gently serrated; epibranchial tooth low but visible; outer margin of external orbital angle longer than length of inner margin; epigastric cristae rugose, forward of postorbital cristae; separated from postorbital cristae by distinct groove; postorbital cristae rugose to slightly sharp. Third maxilliped with distinct flagellum. Male abdominal segment 7 longer than segment 6; lateral margins of segment 6 convex; lateral margins of segment 7 concave. Male first pleopod gently sinuous, terminal segment slender, distinctly bent outwards sharply, about one third length of subterminal segment, tip sharp. Male second pleopod with long distal segment.

Etymology. - The species name is derived from its type locality, Changwat Mae Hong Son.

Remarks. - This species was listed as new in Naiyanetr's (1980) catalogue of the Thai decapod and stomatopod crustacean fauna, but the name was not accompanied by a description, and is thus a nomen nudum. The species is validated here with the necessary diagnosis.

Acknowledgements. - The author is grateful to Dr. Peter K. L. Ng for helping him prepare the manuscript. Prof. Dr. Lipke B. Holthuis kindly provided advice on nomenclatural aspects and read through the paper.

LITERATURE CITED

- International Commission of Zoological Nomenclature, 1985. International Code of Zoological Nomenclature, 1985. Third Edition. Adopted by the XX General Assembly of the International Union of Biological Sciences. International Trust for Zoological Nomenclature, in association with the British Museum (Natural History), London, 338pp.
- Naiyanetr, P., 1978a. Six new species of freshwater crabs of Thailand. *Abstr. Natn. Confer. Agri. Biol. Sci. Kasetsart Univ.*, Bangkok, p. 84
- Naiyanetr, P., 1978b. *Freshwater crabs as the intermediate host of Paragonimus and their distribution in Thailand*. Dept. Biol., Chulalongkorn Univ., Bangkok, Thailand, pp. 1-16
- Naiyanetr, P., 1978c. The geographic distribution of freshwater crabs in Thailand. *Geog. J., Geog. Ass. Thailand*, Bangkok, 3(3): 24-43.
- Naiyanetr, P., 1978d. The use of waterfall crabs as the evidence to indicate the relationship between the mountains of Thailand. *Abstr. Natn. Conf. Agric. Biol. Sci., Animal Sci. Sec.*, Kasetsart Univ., Bangkok, 1 pg.
- Naiyanetr, P., 1980. *Crustacean Fauna of Thailand (Decapoda and Stomatopoda)*. Dept. Biol., Fac. Sci., Chulalongkorn Univ. Bangkok, 73 pp. (mimeographed).
- Naiyanetr, P., 1985. Crabs of Tenasserim. *Seminar on Wildlife of Thailand, Fac. Forest.*, Kasetsart Univ., Bangkok, 6: 260.
- 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., 1988. Freshwater crabs (Crustacea, Decapoda, Brachyura) from Thailand and Sulawesi. In: *Expéditions de l'APS [Association Pyrénéenne de Spéléologie] en Asie du Sud-est travaux scientifiques*, Toulouse, France, 1: 23-27, Figs. 1-3.