

Notes on a Freshwater Crab, *Donopotamon haii* Dang & Ho, 2005 (Crustacea, Decapoda, Brachyura, Potamidae) from Southern Laos

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Abstract Freshwater crabs of the family Potamidae, *Pilosamon palustre* (Rathbun, 1904) and *Pilosamon* sp. recorded by Takeda *et al.* (2011) from southern Laos, were the outcome of misidentification of *Donopotamon haii* Dang & Ho, 2005. Variations of the carapace armature and the male first gonopod are discussed, with photographs and figures.

Key words: Freshwater crab, Potamidae, *Donopotamon haii*, Laos, Vietnam.

Introduction

In the paper entitled “Records of some freshwater crabs from Laos and Cambodia,” Takeda *et al.* (2011) recorded two species of the genus *Pilosamon* Ng, 1996 from Laos, with comments that the identification as *P. palustre* (Rathbun, 1904) is rather tentative as for not only the species but also the genus. Another species was not identified to the species in spite of some seeming differences between the two species.

Recent re-examination of the specimens revealed that all the specimens from Champasak and Attapeu Provinces, southern Laos, should be referred to *Donopotamon haii* Dang & Ho, 2005, which is a monotypic representative of the genus reported from Champasak Province in Laos and Daclac Province in southern Vietnam. In the following lines, it is concluded that some seeming differences are probably due to the developmental and individual variations.

In the present paper, the breadth and length of the carapace are abbreviated as cb and cl, respectively, and the male first and second gonopods as G1 and G2, respectively. The specimens examined are preserved in the Tsukuba Research Departments, National Museum of Nature and Science, Tokyo (NSMT).

Family POTAMIDAE Ortmann, 1896
Genus *Donopotamon* Dang & Ho, 2005
Donopotamon haii Dang & Ho, 2005

(Figs. 1–3)

Donopotamon haii Dang and Ho, 2005, pp. 1, 6, fig. 1.

Pilosamon palustre (Rathbun): Takeda *et al.*, 2011, p. 207, figs. 2, 3D–E, pl. 1 fig. B. (Not of Rathbun, 1904)

Pilosamon sp.: Takeda *et al.*, 2011, p. 208, figs. 3F–H, 4, pl. 1 Fig. C.

Material examined. Benghoukam Vill., Samarkhyxay Dist., Attapeu Prov., Laos; 2 ♂♂ (NSMT–Cr 26317: cb 41.0 × cl 33.2 mm, cb 43.2 × cl 35.0 mm); 29-III-2006; S. Habe leg.

Lomsaktay Market, Lomsaktay Vill., Barchieng Dist., Champasak Prov., Laos; 1 ♂ (NSMT–Cr 26318: cb 34.3 × cl 29.0 mm), 2 ♂♂ (NSMT–Cr 26319: cb 30.7 × cl 24.2 mm, cb 29.3 × cl 23.5 mm); 17-II-2010; JWRC (M. Kubota) leg.

Of five males recorded above, two males (NSMT–Cr 26317) were wrongly identified as *Pilosamon palustre* (Rathbun, 1904), and one male (NSMT–Cr 26318) as *Pilosamon* sp. by Takeda *et al.* (2011). Additional two males (NSMT–Cr 26319) from Champasak Province were newly recorded in this paper.

Diagnosis. Carapace typically potamid-type (Fig. 1A); dorsal surface rather flattened as a

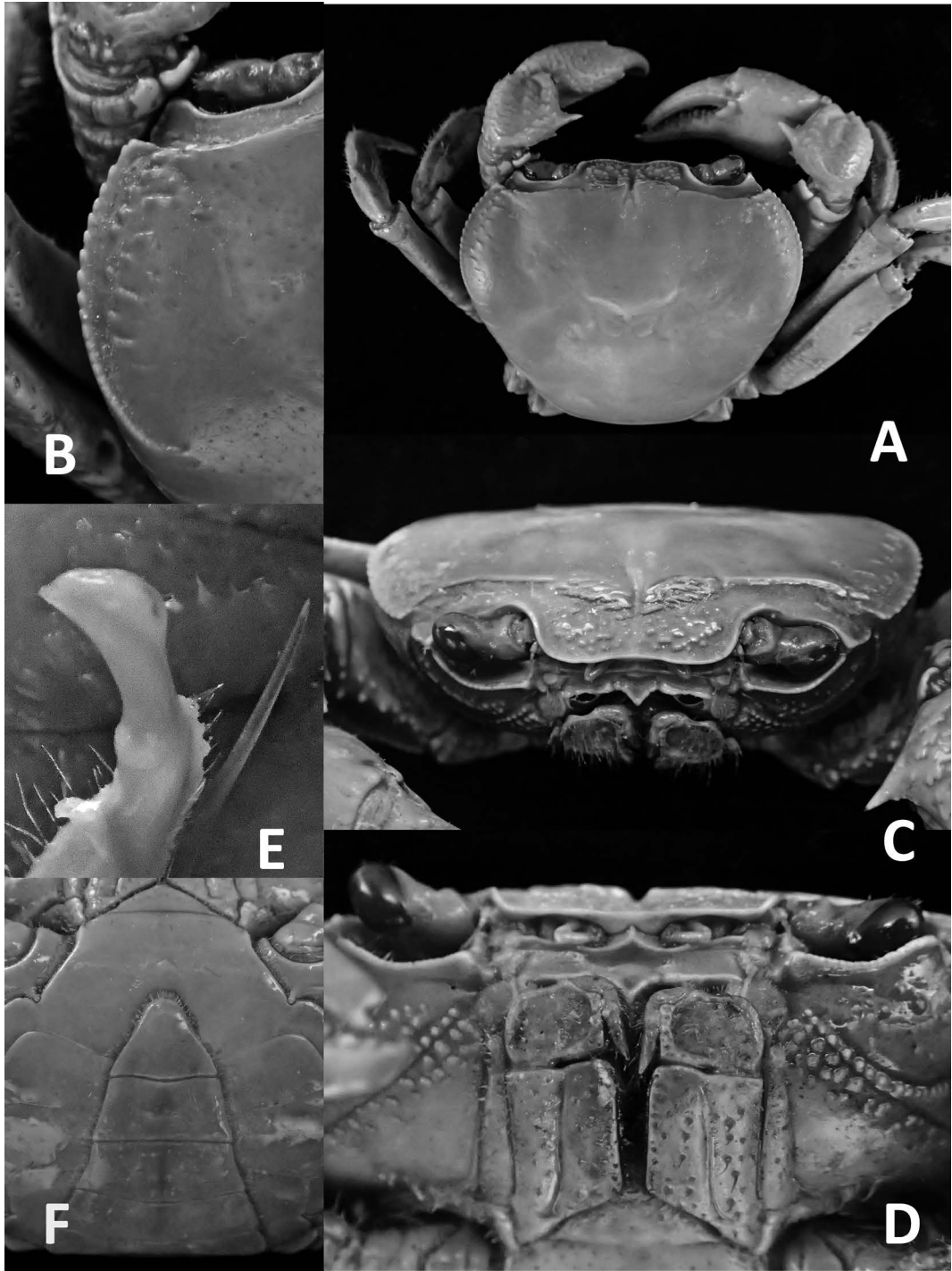


Fig. 1. *Donopotamon haii* Dang & Ho, 2005. Male (NSMT-Cr 26317; cb 43.2 × cl 35.0 mm) from Attapeu Province. A, C: Carapace in dorsal and frontal views. B: Left anterolateral margin of carapace. D: Third maxilliped. E: Distal parts of right G1 and G2 *in situ*. F: Abdomen.

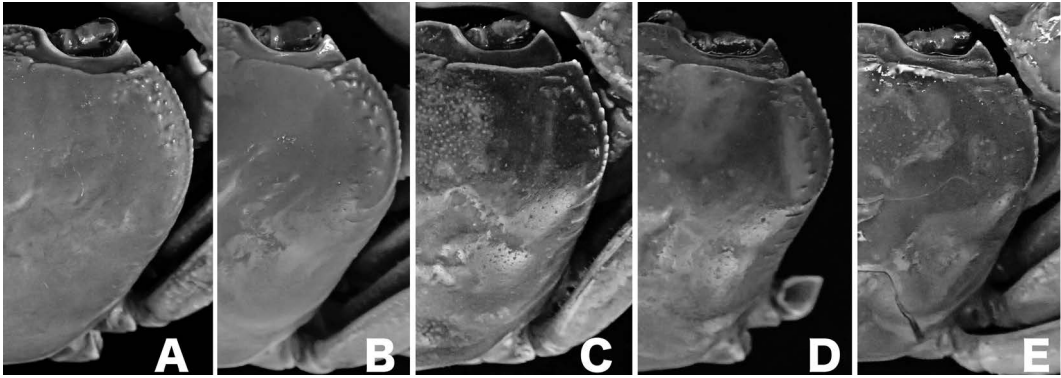


Fig. 2. *Donopotamon haii* Dang & Ho 2005. A–E: Right half of carapace, showing variation of anterolateral marginal granulation. A, B: Males, NSMT-Cr 26317 (A: cb 43.2 × cl 35.0 mm, B: cb 41.0 × cl 33.2 mm) from Attapeu Province. C–E: Males, NSMT-Cr 26318, 26319 (C: cb 34.3 × cl 29.0 mm, D: cb 30.7 × cl 24.2 mm, E: cb 29.3 × cl 23.5 mm) from Champasak Province.

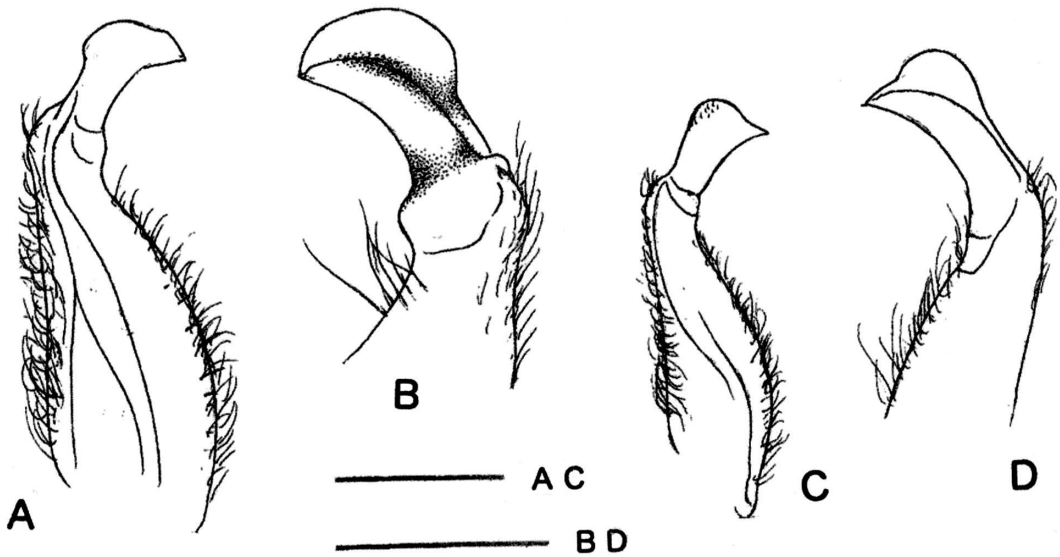


Fig. 3. *Donopotamon haii* Dang & Ho, 2005, reproduced from Takeda *et al.* (2011, fig. 3D–G, as *Pilosamon palustre* (Rathbun) and *Pilosamon* sp.). A, B: G1 of male (NSMT-Cr 26317; cb 43.2 × cl 35.0 mm) from Attapeu Province, in abdominal (A) and sternal views (B). C, D: G1 of male (NSMT-Cr 26318; cb 34.3 × cl 29.0 mm) from Champasak Province, in abdominal (C) and sternal views (D). Scale bar: AC = 4 mm, BD = 2 mm.

whole, smooth except for frontal and branchial regions; frontal, gastric, cardiac and branchial regions traceable, with shallow interregional depressions; epigastric and postorbital ridges sharp in dorsal view, with a small incision between them; epigastric ridge slightly narrower than half of frontal margin, rugose in frontal

view (Fig. 1C); postorbital ridge changed direction toward epibranchial tooth at median part, but not directly connected with epibranchial tooth. Front-orbital margin (Fig. 1C) narrowly but distinctly edged throughout length; frontal margin shallowly concave both in dorsal and frontal views; frontal region roughened with crowded

worn out granules. External orbital angle triangular, directed forward. Anterolateral margin of carapace (Figs. 1B, 2) behind epibranchial tooth convex outward, narrowly edged with a line of 10–15 minute, closely-set granules.

Third maxilliped (Fig. 1D) provided with sparse tufts of bristles; exopod long, reaching to median part of merus, flagellum as long as breadth of merus. Terminal segment of male abdomen (Fig. 1F) weakly concave at median part of lateral margin. The G1 terminal segment (Figs. 1E, 3) comparatively long, ca. one third as long as segment; upper margin of terminal segment expanded along distal half in full grown male (Fig. 3A–B); in smaller specimens (Fig. 3C–D), distal half of terminal segment not expanded along whole length, leaving a sharp tip somewhat like beak of bird. G2 (Fig. 1E) straight, sharp at tip, not much longer than G1.

Male chelipeds (Fig. 1A) heavy, unequal in size, subequal in shape; upper margin of merus furnished with several short, transverse mills; distal margin of merus thickened, with submarginal deep, narrow furrow; upper surface of carpus weakly scaly, flattened or rather concave; inner upper angle of carpus armed with a markedly long, sharp tubercle; palm inflated, especially in larger chela; fingers as long as palm, strongly toothed throughout length in both fingers, with sharp tips. Ambulatory legs (Fig. 1A) stout, compressed; upper surfaces of carpi and propodi shallowly depressed.

Remarks. The proportion of the carapace in the original photograph (Dang and Ho, 2005: Fig. 1A) seems to be deformed probably due to the process during printing, and thus the proportion of the carapace is somewhat different from those of the present specimens. However, the photographs and figures of G1 (Dang and Ho, 2005: Fig. 1E–F) agree exactly with the figures given by Takeda *et al.* (2011: Fig. 3F–G) as *Pilosamon* sp. and reproduced in this paper (Fig. 3C–D). The G1 terminal segment of the male (NSMT-Cr 26318; cb 34.3 × cl 29.0 mm) is sharply pointed at the tip, and the dorsal margin of the terminal segment is strongly developed as

a fold for distal half. G1s of two additional males newly recorded as *Donopotamon haii* in this paper (NSMT-Cr 26319: cb 30.7 × cl 24.2 mm, cb 29.3 × cl 23.54 mm) are also quite identical with the figures of Dang and Ho (2005) and Takeda *et al.* (2011). In these three Champasak males, G1 seems to be developed to the adult form, but their chelipeds may be not always fully developed, comparing with the photographs of the type specimen (Dang and Ho, 2005: Figs. 1A–B). In the larger males (NSMT-Cr 26317: cb 41.0 × cl 33.2 mm, cb 43.2 × cl 35.0 mm) wrongly identified as *Pilosamon palustre* (Rathbun) by Takeda *et al.* (2011), the G1 terminal segment is strongly expanded dorsally along distal two thirds, without a distinct tip. In the present study, this seeming difference was referred to developmental variation, but the type specimens having the sharp distal tip are larger than all the specimens examined in this study. There are no additional specimens, but it was concluded at present that the seeming difference of the G1 terminal segment is due to not only the developmental variation but also individual variation.

According to Takeda *et al.* (2011) who considered the specimens from Champasak and Attapeu Provinces belong to the different species, one more important difference is that the anterolateral margin of the carapace is seemingly stouter and beaded with ca. 10 granules in a Champasak male contrary to the narrower margin with ca. 20 granules in two Attapeu males. In examining the additional specimens, this character may also be exposed to the developmental and individual variations (Fig. 2). In the smaller specimens, the beaded granules on the margin are, usually but not always, smaller and compact at the posterior part curving dorsally on the branchial region. The seeming difference in size and number of granules is not specific.

In the related genera such as *Thaipotamon* Ng & Naiyanetr, 1993, *Pudaengon* Ng & Naiyanetr, 1995, *Rathbunomon* Ng, 1996, and *Pilosamon* Ng, 1996, the G1 structure is basically close to each other, with a flap at the basal part of the dorsal margin of the G1 terminal segment. However,

in the genus *Donopotamon* Dang & Ho, 2005, as correctly remarked in the original definition, the G1 terminal segment is inflated along distal half of the dorsal margin instead of the basal part in the other genera. Although there may be some variations shown in this paper, the genus *Donopotamon* is monotypically represented by *D. haii* Dang & Ho, 2005, differentiating from the related genera along the Mekong River running through Indochina in the G1 structure.

According to Do (2014), *Donopotamon haii* is assessed as Least Concern (LC) in the IUCN Red List 2011, as one of 9 LC species (20%) among 44 Vietnamese freshwater crab species known at that time. Including eight new species later described by Naruse *et al.* (2011), Shih and Do (2014), Do Nguyen and Le (2016), Do, Shih and Huang (2016) and Do, Nguyen and Dang (2017), the known Vietnamese freshwater crabs are 52 species, 47 of which are endemic to Vietnam.

Distribution. The original description of *Donopotamon haii* was based on a pair of specimens collected from the stream at Jokdon (Daclac Province), southern Vietnam, and three males obtained at the Pakse market (Champasak Province), southern Laos. The specimens recorded in this paper were obtained at the markets in the Champasak and Attepeu Provinces, southern Laos. These localities are in the basin of the Mekong River of southern Laos and Vietnam.

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References

- Dang, N. T. and T. H. Ho 2005. One new genus and two new species of potamid freshwater crabs from the southern part of Vietnam. *Journal of Biology, Vietnamese Academy of Science and Technology*, 27: 1–7. (In Vietnamese and English)
- Do, V. T. 2014. Freshwater crabs of Vietnam: diversity and conservation. *Journal of Vietnamese Environment*, 6: 109–114. (In English with Vietnamese summary)
- Do, V. T., T. C. Nguyen and V. D. Dang 2017. Two new species of freshwater crabs of the genus *Tiwaripotamon* Bott, 1970 (Crustacea, Decapoda, Brachyura, Potamidae) from northern Vietnam. *Raffles Bulletin of Zoology*, 65: 455–465.
- Do, V. T., T. C. Nguyen and H. A. Le 2016. A new species of the genus *Indochinamon* Yeo & Ng, 2007 (Crustacea: Brachyura: Potamoidea: Potamidae) from northern Vietnam. *Raffles Bulletin of Zoology*, 64: 187–193.
- Do, V. T., H.-T. Shih and C. Huang 2016. A new species of freshwater crab of the genus *Tiwaripotamon* Bott, 1970 (Crustacea, Brachyura, Potamidae) from northern Vietnam and southern China. *Raffles Bulletin of Zoology*, 64: 213–219.
- Naruse, T., X. Q. Nguyen and D. C. J. Yeo 2011. Three new species of *Indochinamon* Yeo & Ng, 2007 (Crustacea: Brachyura: Potamoidea: Potamidae) from Vietnam, with a redescription of *Ranguna (Ranguna) kimboiensis* Dang, 1975. *Zootaxa*, 2732: 33–48.
- Ng, P. K. L. 1996. Establishment of two new genera for *Potamon lacunifer* Rathbun, 1904, and *Potamon laosensis* Rathbun, 1904 (Decapoda, Brachyura, Potamidae) from Laos. *Crustaceana*, 69: 898–906.
- Ng, P. K. L. and P. Naiyanetr 1993. New and recently described freshwater crabs (Crustacea: Decapoda: Brachyura: Potamidae, Gecarcinucidae and Parathelphusidae) from Thailand. *Zoologische Verhandelingen*, 284: 1–117.
- Ng, P. K. L. and P. Naiyanetr 1995. *Pudaengon*, a new genus of terrestrial crabs (Crustacea: Decapoda: Brachyura: Potamidae) from Thailand and Laos, with descriptions of seven new species. *The Raffles Bulletin of Zoology*, 43: 355–376.
- Rathbun, M. J. 1904. Les crabes d'eau douce (Potamidae). *Nouvelles Archives du Muséum d'Histoire Naturelle, Paris*, (4), 6: 225–311, pls. 9–18.
- Shih, H.-T. and V. T. Do 2014. A new species of *Tiwaripotamon* Bott, 1970, from northern Vietnam, with notes on *T. vietnamicum* (Dang & Ho, 2002) and *T. edostilus* Ng & Yeo, 2001 (Crustacea, Brachyura, Potamidae). *Zootaxa*, 3764: 26–38.
- Takeda, M., S. Habe and M. Kubota 2011. Records of some freshwater crabs from Laos and Cambodia. *Journal of Teikyo Heisei University*, 22: 205–226. (In English with Japanese abstract)