


The third, brackish water-dwelling, species of the genus *Balssipotamon* (Decapoda: Potamidae) from Tre Island of Nhatrang Bay, Vietnam

Третий, солоноватоводный вид рода *Balssipotamon* (Decapoda: Potamidae) с острова Че в заливе Нячанг, Вьетнам

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Abstract. A third species of the genus *Balssipotamon* Đặng et Hò, 2008 (Brachyura: Decapoda: Potamidae), *B. tre* **sp. nov.**, is described from Tre Island located in Nhatrang Bay, Vietnam. The new species clearly differs from the congeners in morphology, as well as ecologically, inhabiting a coastal brackish pond, cohabited by the typical brackish-water crabs *Varuna litterata* (Fabricius, 1798) (Varunidae) and *Somanniathelphusa* cf. *sinensis* (H. Milne-Edwards, 1853) (Gecarcinucidae).

Резюме. Третий вид рода *Balssipotamon* Đặng et Hò, 2008 (Brachyura: Decapoda: Potamidae), *Balssipotamon tre* **sp. nov.**, описан с острова Че в заливе Нячанг, Вьетнам. Новый вид хорошо отличается от других представителей рода по ряду морфологических признаков, а также экологией, обитая в прибрежном солоноватоводном пруду, где совместно с ним обитают типичные солоноватоводные крабы *Varuna litterata* (Fabricius, 1798) (Varunidae) и *Somanniathelphusa* cf. *sinensis* (H. Milne-Edwards, 1853) (Gecarcinucidae).

Keywords: taxonomy, brackish water, Crustacea, Brachyura, Potamidae, Potamiscinae, *Balssipotamon*, new species

Ключевые слова: таксономия, солоноватые воды, Crustacea, Brachyura, Potamidae, Potamiscinae, *Balssipotamon*, новый вид

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Introduction

The diversity of potamid crabs (Crustacea: Decapoda: Potamidae) of Vietnam is very rich and presumably still very far from completely studied (e.g., Yeo & Ng, 2007; Đặng & Hò, 2008; Do, 2014; Ng, 2021). Usually, potamid crabs inhabit coastal areas of freshwater rivers, streams and other types of freshwaters, while only few species are known

from brackish waters and such records are very rare (e.g., Esser & Cumberlidge, 2011).

The genus *Balssipotamon* Đặng et Hò, 2008 (Potamidae: Potamiscinae) presently includes only two described species, namely *B. fruhstorferi* (Balss, 1914) (type species) and *B. unguatum* (Đặng et Hò, 2003). Both species are known from the freshwater habitats, being endemic to Vietnam: *B. fruhstorferi* is known from the moun-

tain forest of Thuathien-Hue to Quangnam (Hue Province) in central Vietnam and *B. unguatum* is known from Vinh Hy Bay of Ninh Thuận Province in southern Vietnam.

The third species of the genus, which was collected from a small pond located near the coastline of Tre Island in Nhatrang Bay (Khánh Hòa Province), is described here. The new species differs well from its congeners in several morphological features, as well as in the fact that the new species lives in brackish-water habitats (about 10‰), unlike other known crabs of the genus *Balssipotamon* and related genera of potamid crabs living in completely freshwater habitats remote from the sea.

Material and methods

Crabs were collected at nighttime from a brackish water pond by hand using a head light. The collected specimens were preserved in 90% ethanol. In laboratory, they were photographed using a Canon G16 digital camera. The morphological drawings were made with the help of a camera lucida attached to an Olympus SZX10 stereomicroscope. The carapace width was measured as the distance between the lateral widest margins of the carapace dorsally. The salinity of the water was measured by a RHS-10ATC refractometer.

The type material is deposited in the collections of the Zoological Museum of the Moscow State University (ZMMU) and the Laboratory of Ecology and Evolution of Marine Invertebrates (LEMMI) of the A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences (Moscow, Russia).

Results

Superfamily **Potamoidea** Ortmann, 1896

Family **Potamidae** Ortmann, 1896

Subfamily **Potamiscinae** Bott, 1970
sensu Yeo & Ng, 2004

Genus ***Balssipotamon*** Đăng et Hồ, 2008

***Balssipotamon tre* sp. nov.**

(Figs 1–3)

Holotype. Male, **Vietnam**, *Khánh Hòa Prov.*, Nhatrang Bay, Tre I. (= Hòn Tre), in small brackish-water pond located about 10–15 m of sea shore, 12°11'50.1"N

109°17'28.0"E, night hand sampling, 3 May 2014, coll. I. Marin & S. Sinelnikov (ZMMU Ma-6229).

Paratypes. 2 males, with same data as for holotype (LEMMI).

Measurements. Carapace width: holotype, 30 mm; paratypes, 25 and 27 mm.

Description of male holotype. Carapace inflated, transversely ovate, appearing subtrapezoidal, wider than long, width to length ratio about 1.2 (Figs 1, 2A, B); dorsal surface gently convex (Fig. 2B), frontal and anterolateral regions generally smooth, branchial regions laterally covered with very low, short striae (Fig. 2A), other regions smooth (Fig. 2A–C). Frontal margin of carapace broad, appearing bilobed with shallow median concavity in dorsal view; postfrontal and postorbital cristae distinct, continuous, horizontally almost straight (Fig. 2A). Cervical grooves shallow, discontinuous; H-shaped grooves visible; external orbital angle triangular, with short outer margin; epibranchial teeth low (Fig. 2A). Anterolateral margins of carapace strongly convex, cristate, with distinct but low granules; posterolateral margin gently concave, converging towards gently convex posterior margin. Orbits ovate; eye filling most of orbital space; ocular peduncle relatively short; cornea large, ovate, pigmented; supraorbital margin sinuous, entire, smooth.

Antennae short, not reaching cornea of eyes. Antennules short. Maxilliped 3 (Fig. 3A) with subrectangular smooth ischium and with shallow medial oblique groove; merus subquadrate, markedly wider than long, smooth, with rounded anteroexternal angle; exopod slender, reaching almost half-length of merus, flagellum well-developed. Chelipeds unequal in size (Figs 1, 2D–G), with outer surfaces of chelae almost smooth; fingers stout, not forming gape when fingers closed, with cutting edges proximally armed with strong teeth; dactylus gently curved, slightly longer than upper margin of palm. Ambulatory legs (Figs 1, 2H, I) relatively slender, not elongated; merus almost smooth but slightly rugose on outer surface, dorsal margin subcristate, very weakly serrated, with low subdistal tooth; carpus smooth, outer surface with low submedial crista on second pair

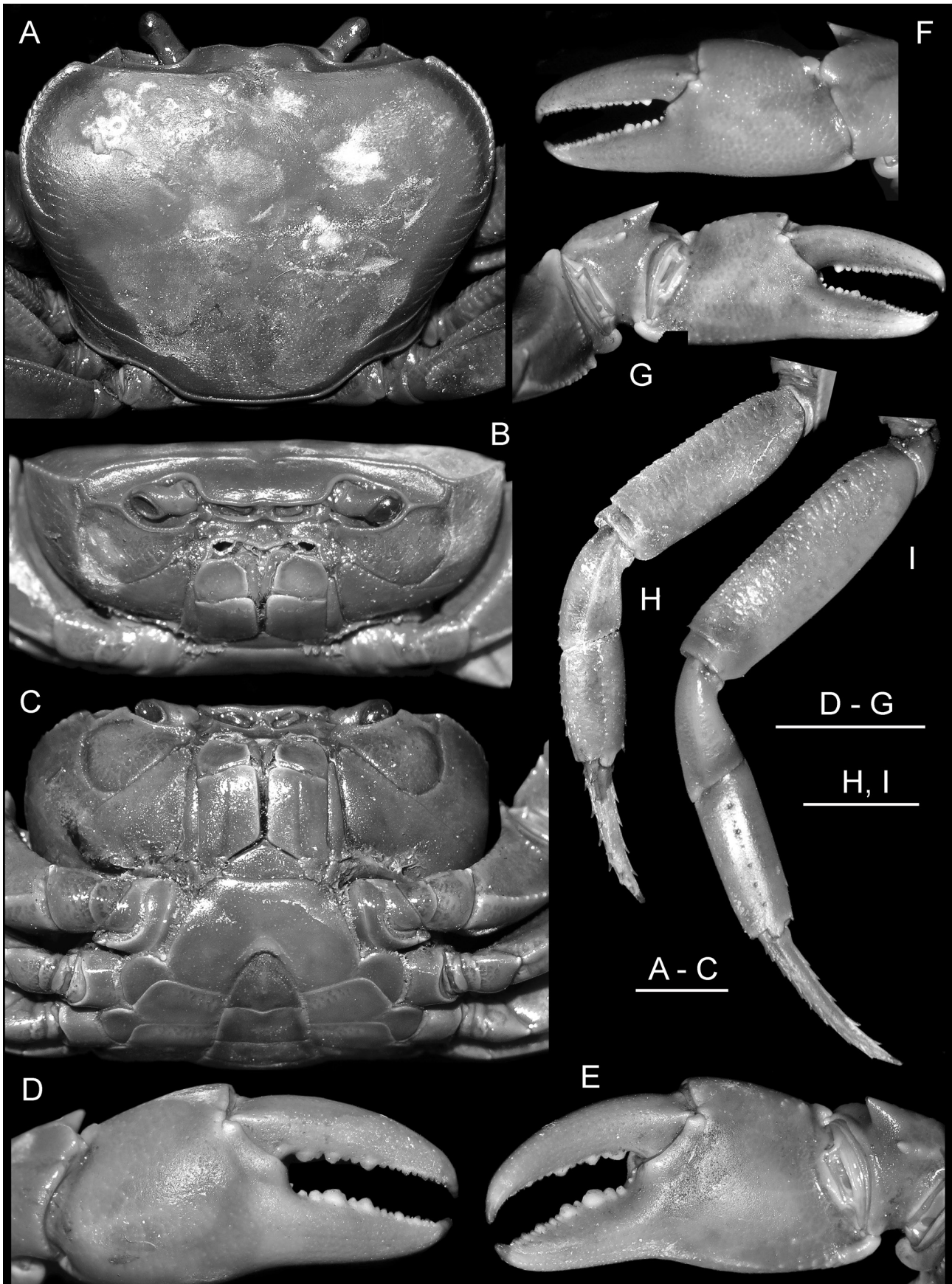


Fig. 1. *Balssipotamon tre* sp. nov., male (holotype). Dorsal and ventral views. Scale bar: 10 mm.

of legs (Fig. 2H) and smooth on third pair of legs (Fig. 2I); propodus (Fig. 2I) subrectangular; dactylus relatively slender, gently curved, margins with short, sharp corneous spines.

Thoracic sternum relatively wide, surface pitted (Fig. 2C); sternites 1 and 2 completely fused to form a broadly triangular plate; sternites 3 and 4 fused; remaining sternites separated by me-

dian longitudinal grooves; sternopleonal cavity reaching to median part of sternite 4 (Fig. 2C). Pleon with gently sinuous lateral margins; pleonal somites free, trapezoidal, gradually decreasing in width (Figs 1, 2C). Telson triangular with rounded tip (Figs 1, 2C). Gonopod 1 (Fig. 3B) with subterminal segment almost straight, with distal part gradually tapering; terminal segment



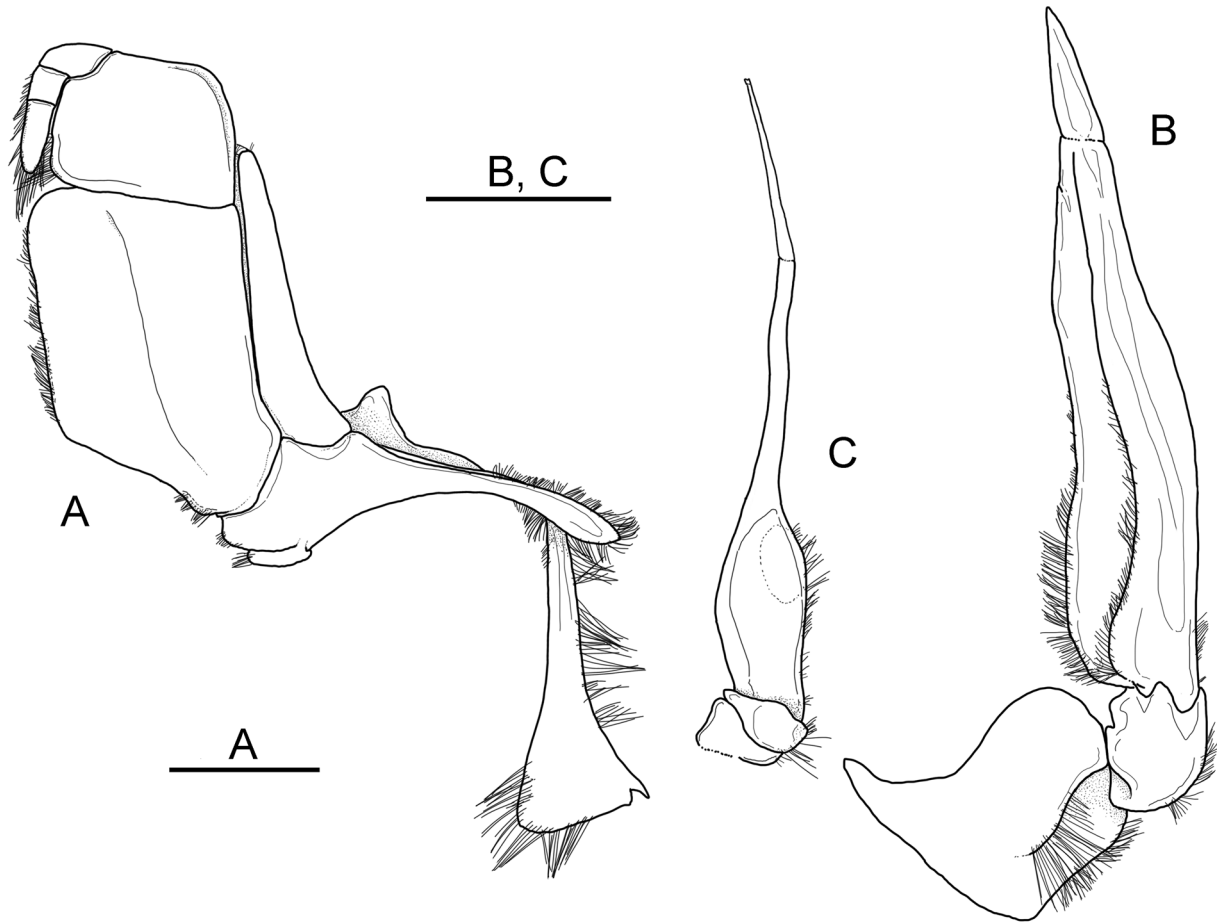


Fig. 3. *Balssipotamon tre* sp. nov., male (holotype). **A**, maxilliped 3 (outer view); **B**, gonopod 1; **C**, gonopod 2. Scale bars: 3 mm.

short, unguiform, straight, about one-fourth of length of subterminal segment, tip acute, groove for gonopod 2 in submarginal position. Gonopod 2 (Fig. 3C) slightly shorter than gonopod 1, with slender and long distal segment, about half as long as basal one.

Remarks. Both paratypes are generally similar to holotype, smaller in size. Carapace generally similar to that of holotype, inflated, width to length ratio about 1.1. Chelipeds also unequal in size, with outer surfaces of chelae almost smooth. Telson, gonopods 1 and 2 similar to those of holotype, with characters as described for holotype.

Comparison. The new species can be separated from *B. fruhstorferi* (after Đặng & Hồ, 2008: Fig. 3; Yeo & Ng, 2007: fig. 15) by the narrower carapace, which is about 1.2 times as wide as long (vs. 1.4 times in *B. fruhstorferi*), with developed anterolateral margins (strong granules vs. low granules) and less marked shallow frontal suture between frontal lobes on carapace, and by more convex dorsal surface of carapace. From *B. unguatum* (after Đặng & Hồ, 2003: Fig. 3; Yeo & Ng, 2007: Fig. 19), the new species can be separated also by the narrower carapace (1.2 times as wide as long vs. about 1.4 times), with devel-

Fig. 2. *Balssipotamon tre* sp. nov., male (holotype). **A**, carapace (dorsal view); **B**, anterior part of carapace (frontal view); **C**, carapace, sternites and telson (ventral view); **D**, **E**, major cheliped (outer and inner views, respectively); **F**, **G**, major cheliped (outer and inner views, respectively); **H**, second pereopod; **I**, third pereopod. Scale bars: 10 mm.

oped anterolateral margins (strong granules vs. low granules) and less marked shallow frontal suture between the frontal lobes on carapace, but the dorsal surface of carapace is less convex in the new species than in *B. unguatum*. Gonopod 1 is more straight with stouter terminal segment (about 2.5 times as long as wide vs. 3.5–4.0 times) in the new species (see Fig. 3b) than in both *B. fruhstorferi* (see Đặng & Hồ, 2008: fig. 3D) and *B. unguatum* (see Đặng & Hồ, 2003: fig. 4; Yeo & Ng, 2007: fig. 19D). Moreover, the known species of the genus *Balssipotamon* are well isolated geographically, living in the river basins that are significantly remote from each other (*B. fruhstorferi* – *B. tre* **sp. nov.** for more than 500 km, while *B. unguatum* – *B. tre* **sp. nov.** for about 80 km).

The genus *Balssipotamon* is probably related to the genus *Villopotamon* Đặng et Hồ, 2003, which currently includes three species known from Thailand and Vietnam, namely *V. klossianum* (Kemp, 1923), *V. sphaeridium* (Kemp, 1923) and *V. thaii* Đặng et Hồ, 2003 (type species) (e.g., Yeo & Ng, 2007; Đặng & Hồ, 2008). The new species can be easily separated from the species of *Villapotamon* by the non-pubescent carapace on posterolateral region (vs. pubescent), almost straight subterminal segment (vs. strongly sinuous) and the short, unguiform terminal segment (vs. long and slender) of the gonopod 1.

Etymology. The scientific name of the new species is derived from the type locality, Tre Island (Hòn Tre) located in Nhatrang Bay of Vietnam, where it was collected. The species name is used as a noun in apposition.

Habitat. Unlike most of the known potamid crabs, which live mainly in freshwaters, *Balssipotamon tre* **sp. nov.** was found in a small coastal pond with brackish water (about 10%) located near the seashore. Two species of typical brackish-water crabs, *Varuna litterata* (Fabricius, 1798) (Varunidae) and *Somanniathelphusa* cf. *sinensis* (H. Milne-Edwards, 1853) (Gecarcinucidae), have also been found living together with the new

species in the same pond. No larvae of insects or other animals characteristic for freshwater habitats were found in the pond.

Distribution. The new species is presently known only from the type locality on the Tre Island (Nhatrang Bay, Vietnam). Currently, the island is separated from the mainland by a 2.5-km deep-sea strait. Representatives of this species were not found on the mainland coast, which is currently highly urbanized, although a special work was carried out to find them.

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