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A New Species of the Genus *Victoriopisa* (Crustacea: Amphipoda: Eriopisidae) from Kagoshima Prefecture, Southern Japan

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A new species of eriopisid amphipod, *Victoriopisa satsumaensis*, is described from Kagoshima Prefecture, southern Japan. The new species is distinguished from its congeners by the presence of eyes, the absence of a distodorsal tuft of long setae on peduncular article 2 of antenna 1, and the shape of the palmar margin and the dactylus of gnathopod 2. The new species is most similar to *V. nhatrangensis* Marin and Palatov, 2022, which was recently described from Vietnam, but differs in having (1) more numerous short setae along the palmar margin of gnathopod 1, (2) 2 projections on the palmar margin of gnathopod 2, (3) a shallower median excavation on the posterior margin of gnathopod 2 dactylus, (4) several robust setae on the anterior margin of pereopods 5 and 6 carpi, and (5) more numerous distal setae on article 2 of uropod 3 outer ramus. Additionally, partial sequences of mitochondrial cytochrome *c* oxidase subunit I and histone H3 were determined from the type specimens of *V. satsumaensis* for DNA barcoding and future taxonomic studies.

Key Words: Amphipoda, Eriopisidae, *Victoriopisa*, Kagoshima, DNA barcoding, new species, taxonomy.

Introduction

The genus *Victoriopisa* Karaman and Barnard, 1979 belongs to the family Eriopisidae and is composed of species that inhabit a variety of coastal environments (Joseph et al. 2018). Currently, the genus contains 18 species and one subspecies (Marin et al. 2025; Horton et al. 2026). They are known to be distributed throughout temperate to tropical regions of the Indo-West Pacific Ocean with the exception of three species, viz., *V. atlantica* Stock and Platvoet, 1981, *V. epistomata* (Griffiths, 1974) and *V. guanarocana* (Ortiz and Lalana, 1989), known from the Atlantic Ocean (Griffiths 1974; Stock and Platvoet 1981; Ortiz and Lalana 1989). Despite the recent successive discoveries of new species, the genus has not yet been thoroughly studied, and genetic tools are considered essential for further elucidation of its diversity (Marin and Palatov 2022; Marin et al. 2025).

In Japanese waters, two species of *Victoriopisa* have been hitherto recorded: *V. ryukyuensis* Morino, 1991 from Awase, Okinawa Island and *V. wadai* Ariyama, 2015 from the Seto Inland Sea (Morino 1991; Ariyama 2015). However, no comprehensive surveys of the genus have been conducted in Japanese waters, and its diversity has not yet been fully studied.

During our recent field survey of the benthic fauna along the coast of Kagoshima Prefecture, southern Japan, an amphipod species attributed to Eriopisidae was collected. After our careful examination, it was determined to be an undescribed species of *Victoriopisa*. We herein describe this species as *V. satsumaensis* sp. nov. Partial DNA sequences of the mitochondrial cytochrome *c* oxidase subunit I (COI) and histone H3 (H3) were determined from its type specimens for DNA barcoding and future taxonomic studies.

Materials and Methods

Field sampling and morphological examination. Fifteen specimens of amphipods were collected from beneath cobbles and from bottom sediment in intertidal estuarine areas in Kagoshima Prefecture, Kyushu, Japan (Fig. 1). All collected specimens were preserved in 99% ethanol. Several specimens were photographed using a digital camera (D780, Nikon) before preserved.

The morphological examination was performed following our recent amphipod taxonomic studies (e.g., Kodama et al. 2024a, b). Measurements for the dorsal length were given as the length from the tip of the head along the dor-

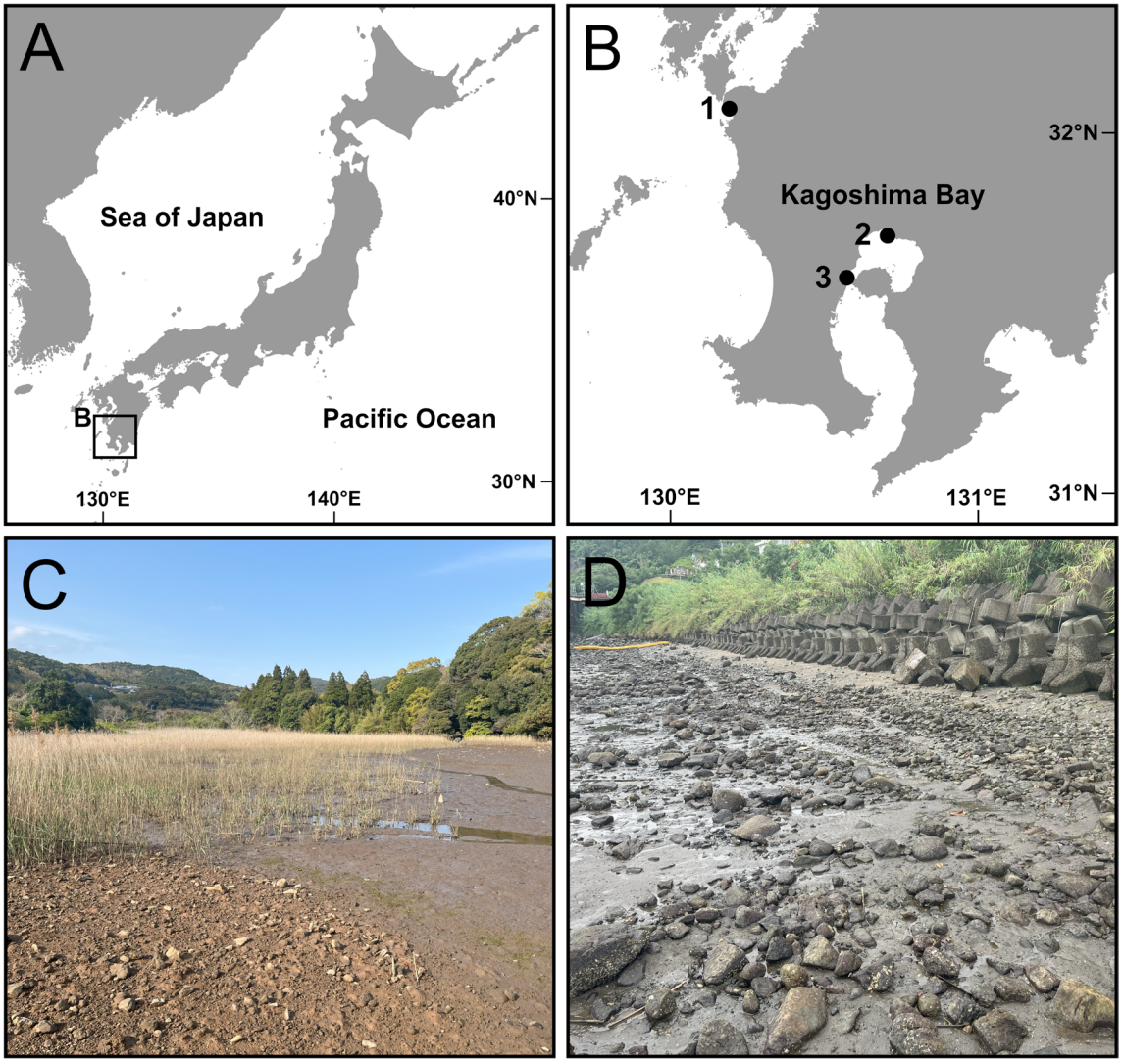

Fig. 1. Map showing the collecting localities of *Victoriopisa satsumaensis* sp. nov. A, Japan; B, the mainland of Kagoshima Prefecture; C, reed bed in the estuary of Kashino-ura River, where the paratype specimens were collected; D, cobble habitat in the estuary of Shimizu River, where the holotype specimen and the paratype specimens were collected. 1, Kashino-ura River, Akune, 2, Shimizu River, Kirishima (type locality), 3, Inari River, Kagoshima.

sal marginal curve to the posterior end of the telson. The specimens were dissected under a binocular stereomicroscope (SMZ1500, Nikon). The appendages were mounted in Euparal on glass slides using HS-slide method (Shirayama et al. 1993), enabling better microscopic observation of appendages on both sides. A portion of the pleopods on the right side from several specimens were stored in 99% ethanol for subsequent molecular analysis. The observations and line drawings were made using light microscopes (Eclipse E200 and Eclipse E600, Nikon) with the aid of drawing tube (Y-IDT, Nikon). All the specimens examined in this study are deposited in the National Museum of Nature and Science, Tokyo (NSMT).

DNA extraction, PCR, and sequencing. DNA extraction, PCR, and DNA sequencing were performed according to the procedure described in Kodama et al. (2022, 2024a) with minor modifications. Genomic DNA of amphipods was extracted from a part of appendages on the right side of seven specimens including the holotype by using DNeasy Blood and Tissue Kit (Qiagen, Hilden, Germany). DNA sequences were amplified using primer pairs LCO1490 and HCO2198 (Folmer et al. 1994) for COI, and H3aF and H3aR (Colgan et al. 1998) for H3. For COI, PCR was performed in a 15 µL volume containing 6.91 µL of nuclease free water, 7.5 µL of TaKaRa Ex Premier DNA Polymerase (Takara, Shiga, Japan), 0.045 µL of each 1 mM primer, and 0.5 µL of DNA template. For H3, PCR was performed in a 15 µL volume containing 6.85 µL of nuclease free water, 7.5 µL of TaKaRa Ex Premier DNA Polymerase, 0.075 µL of each 200 µM primer, and 0.5 µL of DNA template. Thermal cycling conditions for PCR were as follows: the first step (denature, 94°C, 1 min), 35 cycles of the second step (denature, 98°C, 10 sec.; annealing, 50°C, 15 sec.; extension, 68°C, 50 sec.). PCR products were purified using Exo-SAP-IT (Amersham Biosciences, Little Chalfont, UK). For the purified products, both forward and reverse strands were sequenced by a Sanger sequencer at Eurofins Genomics (Tokyo, Japan). All the sequences obtained in this study

were deposited into the International Nucleotide Sequence Database Collaboration (INSDC), through DNA Data Bank of Japan (DDBJ).

The COI sequences obtained from the new species were compared with those of other species of the genus available in INSDC (Table 1). Pairwise Kimura 2-parameter (K2P) genetic distances (Kimura 1980) and *p*-distances were calculated based on 500 bp of COI using MEGA 12 (Kumar et al. 2024) with pairwise deletion of gaps and missing data.

Results

Family **Eriopisidae** Lowry and Myers, 2013
[Japanese name: Sendo-yokoebi-ka]
Genus ***Victoriopisa*** Karaman and Barnard, 1979
[Japanese name: Hosoʾo-yokoebi-zoku]
Victoriopisa satsumaensis sp. nov.
[New Japanese name: Satsuma-hosoʾo]
(Figs 2–13)

Victoriopisa ryukyuensis non Morino, 1991: Tomikawa et al. 2022: fig. 16, table S1; Tomikawa et al. 2024: fig. 7, table 1.

Material examined. *Holotype*: NSMT-Cr 33318, male, 9.7 mm, estuary of the Shimizu River, Kirishima, Kagoshima, Japan, 31°43′40.7″N, 130°42′56.0″E, coll. Reo Koreeda, beneath a cobble buried about 30 cm in the middle intertidal sandy shore with seepage of spring water, 30 November 2023.

Paratypes: NSMT-Cr 33319, female, 10.5 mm, NSMT-Cr 33320, female, 9.8 mm, NSMT-Cr 33321, female, 8.7 mm, NSMT-Cr 33322, juvenile, 5.6 mm, collected together with the holotype; NSMT-Cr 33323, male, 9.8 mm, NSMT-Cr 33324, male, 10.6 mm, NSMT-Cr 33325, female, 10.8 mm, Kashino-ura River, Akune, Kagoshima, Japan, 32°05′09.6″N, 130°11′20.7″E, coll. Hiroto Watabe, middle intertidal zone, in the soft mud of the reed bed, 16 July 2023; NSMT-Cr 33326, female, 10.1 mm, Kashino-ura River, 32°05′09.6″N, 130°11′20.7″E, coll. Hiroto Watabe, middle intertidal zone, in the soft mud of the reed bed, 3 April 2025; NSMT-Cr 33327, juvenile, 6.7 mm, NSMT-Cr 33328, female, 8.5 mm, NSMT-Cr 33329, male, 8.4 mm, NSMT-Cr 33330, female, 8.2 mm, NSMT-Cr 33331, male, 9.7 mm, NSMT-Cr 33332, ovigerous female, 10.1 mm, Inari River, Kagoshima, Japan, 31°36′17.8″N, 130°34′15.3″E, coll. Taiyo Musa, Hiroto Watabe and Masafumi Kodama, middle intertidal zone, in the sandy mud, 28 September 2025.

Diagnosis. Head with white eyes and lateral cephalic lobe. Antenna 1 peduncular article 2 without distodorsal tuft of long setae. Gnathopod 1 merus covered with fine setae facially; palm transverse, palmar margin with 2–3 short lateral setae and 16–24 short medial setae (fewer in juveniles), ventral ones of which curved upward. Gnathopod 2 palmar margin with 2 subdistal projections (indistinct in juveniles), dactylus with median excavation. Epimeral plate 1 posteroventral corner with minute acute tooth, epimeral plate 3 posterior margin convex. Uropod 3, article 2 of outer ramus about 4 times as long as wide, with distal tuft of 24–29 setae (fewer in juveniles). Telson cleft nearly to basal margin, each lobe with subdistal robust seta.

Description of males. Based on holotype male (NSMT-Cr 33318, 9.7 mm), except for proportion of gnathopod 2 propodus based on paratype male (NSMT-Cr 33331, 9.7 mm).

Table 1. Information and INSDC accession numbers of molecular data used in the present study.

Species	Voucher/isolate	INSDC accession		Reference
		COI	H3	
V. cangio	CanGio_1	PX258060	—	Marin et al. (2025)
V. cangio	CanGio_2	PX258061	—	Marin et al. (2025)
V. cangio	CaMau_1	PX258062	—	Marin et al. (2025)
V. cangio	CaMau_2	PX258063	—	Marin et al. (2025)
V. chilkensis	VC1	MK526893	—	—
V. chilkensis	VC2	MK526894	—	—
V. chilkensis	AB21	MT184233	—	Prasannakumar et al. (unpublished)*
V. mekongensis	ZMMU Mb-1309	PX258064	—	Marin et al. (2025)
V. mekongensis	ZMMU Mb-1310	PX258065	—	Marin et al. (2025)
V. nhatrangensis	A	OM002615	—	Marin and Palatov (2022)
V. nhatrangensis	B	OM002616	—	Marin and Palatov (2022)
"*V. ryukyuensis*"**	G1802	LC637614	LC637978	Tomikawa et al. (2022)
"*V. ryukyuensis*"**	G1803	LC637615	LC637979	Tomikawa et al. (2022)
V. satsumaensis sp. nov.	NSMT-Cr 33319	LC921216	—	This study
V. satsumaensis sp. nov.	NSMT-Cr 33318	LC921217	LC921223	This study
V. satsumaensis sp. nov.	NSMT-Cr 33320	LC921218	—	This study
V. satsumaensis sp. nov.	NSMT-Cr 33321	LC921219	—	This study
V. satsumaensis sp. nov.	NSMT-Cr 33322	LC921220	—	This study
V. satsumaensis sp. nov.	NSMT-Cr 33326	LC921221	—	This study
V. satsumaensis sp. nov.	NSMT-Cr 33331	LC921222	—	This study

* From C. Prasannakumar et al., unpublished preprint; available at https://doi.org/10.1101/2020.08.26.268896.
** Sensu Tomikawa et al. (2022).

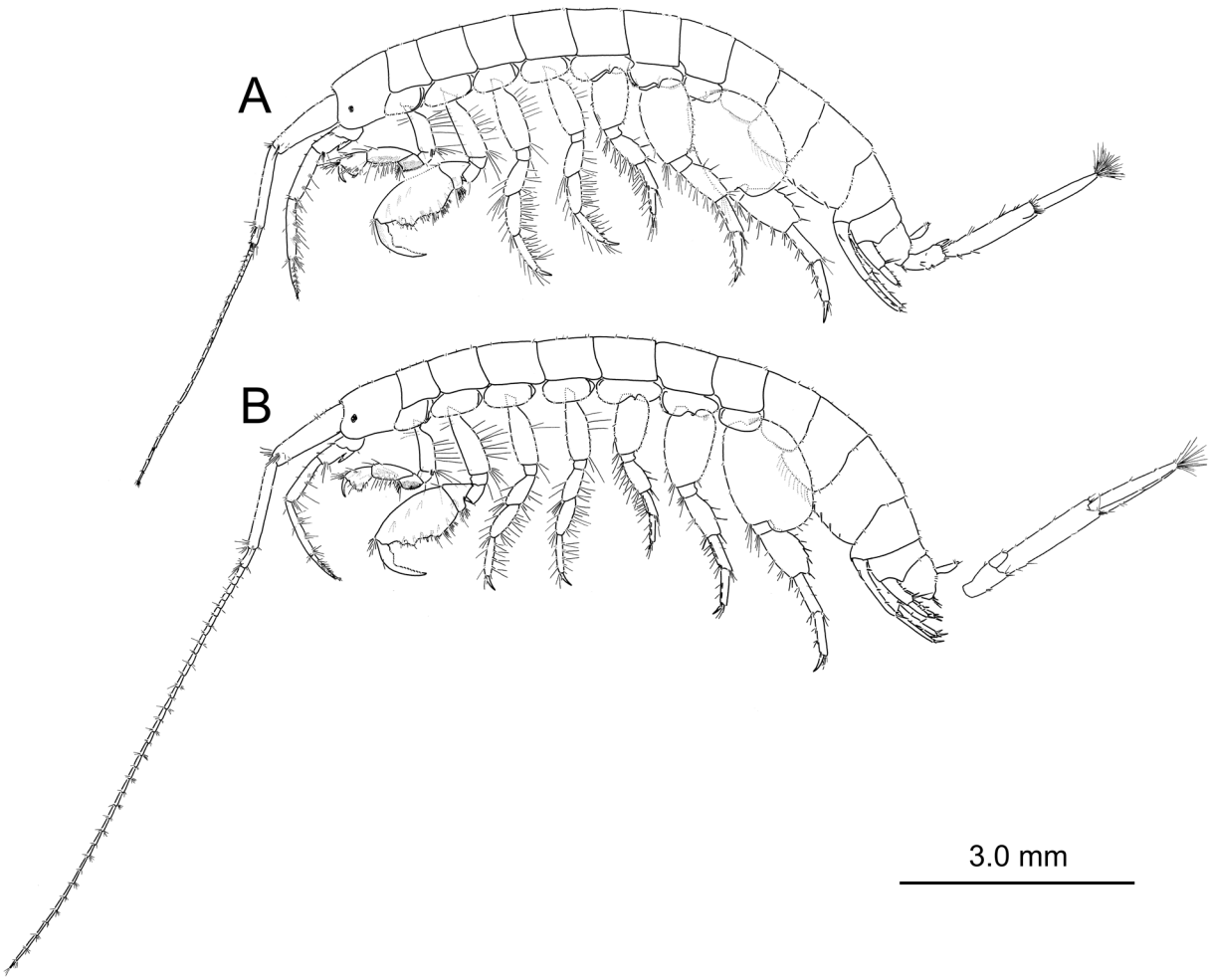

Fig. 2. *Victoriopisa satsumaensis* sp. nov., habitus, lateral view. A, Holotype, male, 9.7 mm, NSMT-Cr 33318, setae partly omitted, coxal gills and pleopods omitted; B, paratype, female, 9.8 mm, NSMT-Cr 33320, setae partly omitted, coxal gills, pleopods, and oostegites omitted.

Body (Fig. 2A) slender, compressed laterally, with fine sparse setae on dorsal and lateral surfaces.

Head (Fig. 3A) about 2.0 times as long as pereonite 1, rostrum reduced; lateral cephalic lobe rounded, anteroventral sinus absent; eyes present, small, oval.

Antenna 1 (Fig. 3B) setose, length ratio of peduncular articles 1–3 about 1.0: 0.9: 0.2 (left) or 1.0 : 1.0 : 0.2 (right); article 1 with long robust seta on subproximal area of medial surface and short robust seta on distoventral corner of medial surface, proximoventral corner with fine setae and 25 small ridges (Fig. 3C); article 2 without distal tuft of long setae on dorsal margin; accessory flagellum (Fig. 3D) composed of 2 articles, about 0.4 times as long as peduncular article 3, slightly exceeding distal margin of primary flagellar article 1; article 2 short, about 0.14 times as long as article 1, distal margin with 3 simple setae; primary flagellum composed of 29 (left) and 34 (right) articles, aesthetascs (Fig. 3E) present on medio-subdistal area of articles 6–27 (left) or 5–33 (right).

Antenna 2 (Fig. 3F) setose, about 1.1 times as long as antenna 1 peduncle; length ratio of peduncular articles 3–5 about 1.0 : 1.9 : 2.1; article 3 and 4 each with 2 medial robust setae on dorsal margin; flagellum (Fig. 3G) composed of 2 long fused articles and 3 short articles.

Upper lip (Fig. 4A) rounded, wider than deep, ventral margin finely setose.

Mandibles (Fig. 4B, C), left and right incisors 5- and 4-dentate, respectively; each lacinia mobilis 4-dentate; left and right accessory setal row composed of 8 and 7 setae, respectively, each row with several fine plumose setae; molar well-developed, with seta in right mandible (maybe lost in left mandible); palp composed of 3 articles with length ratio about 1.0 : 3.3 : 3.6 (left) and 1.0 : 3.0 : 3.2 (right), article 1 bare, article 2 with 3 (left) or 2 (right) setae, article 3 with 7 (left) or 6 (right) median setae and 11 long distal setae.

Lower lip (Fig. 4D), inner lobes well-developed, distomedial margin finely setose; outer lobes broad, distally with long fine setae, medial margin finely setose, mandibular process weakly developed.

Maxilla 1 (Fig. 5A–C), inner plate with 17 (14 plumose and 3 simple) setae on distal margin; outer plate longer than inner plate, with 9 (6 multicuspidate and 3 simple) robust setae distally; palp 2-articulated, article 1 bare, article 2 about 2.7 times as long as article 1, weakly expanded distally, distolateral margin with long seta, distal margin with 4 moderate robust setae (left) or 2 short and 2 moderate robust setae (right), subdistal area of ventral surface with 7 long setae.

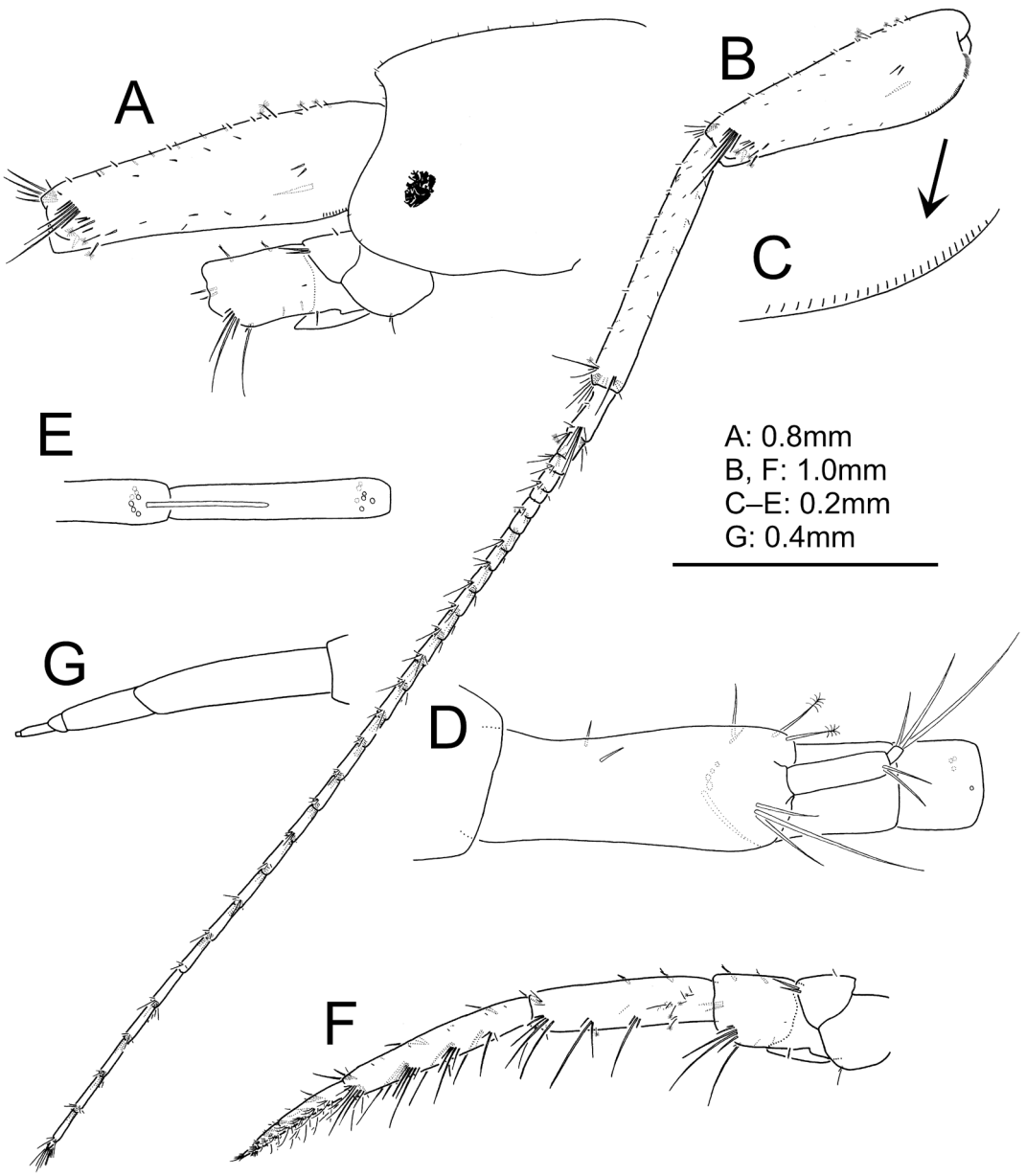

Fig. 3. *Victoriopisa satsumaensis* sp. nov., holotype, male, 9.7 mm, NSMT-Cr 33318. A, Head, lateral view; B, left antenna 1, lateral view; C, posteroventral corner of article 1 of left antenna 1, lateral view, showing small ridges; D, accessory flagellum of left antenna 1, medial view; E, aesthetasc on 25th flagellar article of left antenna 1, medial view; F, left antenna 2, lateral view; G, flagellum of left antenna 2 (setae omitted), lateral view.

Maxilla 2 (Fig. 5D), outer plate as long as inner plate, distal margin with dense simple setae; inner plate, dorsal surface with oblique row of 15 setae, medial and distal margin with sparse and dense simple setae, respectively.

Maxilliped (Fig. 5E, F), inner plate rectangular, distomedial corner weakly produced, dorsal surface with several plumose setae on distal part of medial margin to distal margin, distomedial area of dorsal surface with 3 (left) or 4 (right) stout robust setae, ventral surface distal margin with long robust seta and stout robust seta on medial area; outer plate convex laterally, almost straight medially, medioventral surface with 2 rows of simple setae and 5 short distal robust setae, distal margin with several setae; palp composed of 4 articles, article 1 trapezoidal, lateral margin bare; article 2 elongate, lateral margin bare, medial margin slightly convex with dense simple setae; article 3 subovate, setose, dorsal surface covered with fine setae on distal half, distolateral and distomedial area with group of dense setae; article 4 claw-like, distal two thirds of medial margin with 5 short setae, joint of nail, subproximal area of lateral margin, and subproximal area of dorsal surface each with seta, dorsal surface covered with fine setae on proximal two thirds; nail present.

Gnathopod 1 (Fig. 6A–C) subchelate; coxa parallelogrammatic, anterior margin concave, anteroventral corner and posterior margin slightly produced, anteroventral to ventral margin with 7 short setae; basis long, expanded in distal two thirds, anterior and posterior margins with 2 and 5 long simple setae, respectively, anterodistal corner with 2 medial setae, posterodistal corner with group of simple setae;

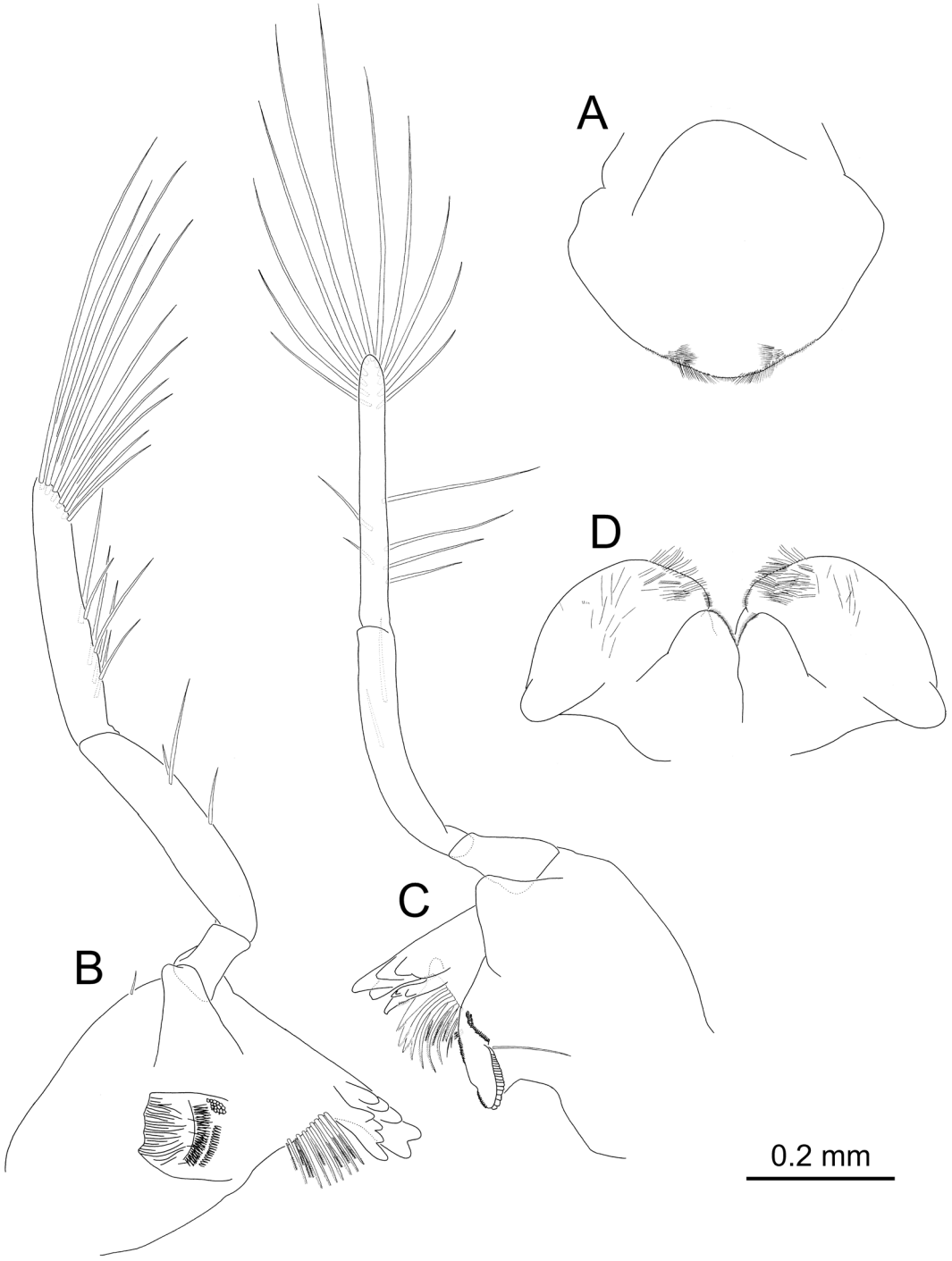

Fig. 4. *Victoriopisa satsumaensis* sp. nov., holotype, male, 9.7 mm, NSMT-Cr 33318. A, Upper lip, anterior view; B, left mandible, medial view; C, right mandible, medial view; D, lower lip, ventral view.

merus posterolateral and medial surfaces covered with fine setae, posterodistal margin with 8 long medial setae; carpus long, posterior margin and medial surface each with 5 groups of long setae; propodus shorter than carpus, subtrapezoidal, expanded distally, setose, distal part of posterior margin minutely serrated; palm (Fig. 6B, C) transverse, convex, distoventral corner with 4 medial stout robust setae and 4 lateral setae, palmar margin minutely serrated, lateral side with 3 short setae, medial side with 24 short setae, ventral ones of which curved upward; dactylus curved, anterior margin with medial simple seta, posterior margin with 10 short setae.

Gnathopod 2 (Fig. 6D–F) about 1.3 times larger than gnathopod 1, subchelate; coxa oval, anteroventral corner and posterior margin roundly produced, anteroventral to ventral margin with 6 short setae; basis long, expanded in distal two thirds, anterior and posterior margins with 2 and 8 long simple setae, respectively, anterodistal corner with 3 simple setae, posterodistal corner with group of simple setae; carpus lobate, posterior margin with 4 transverse

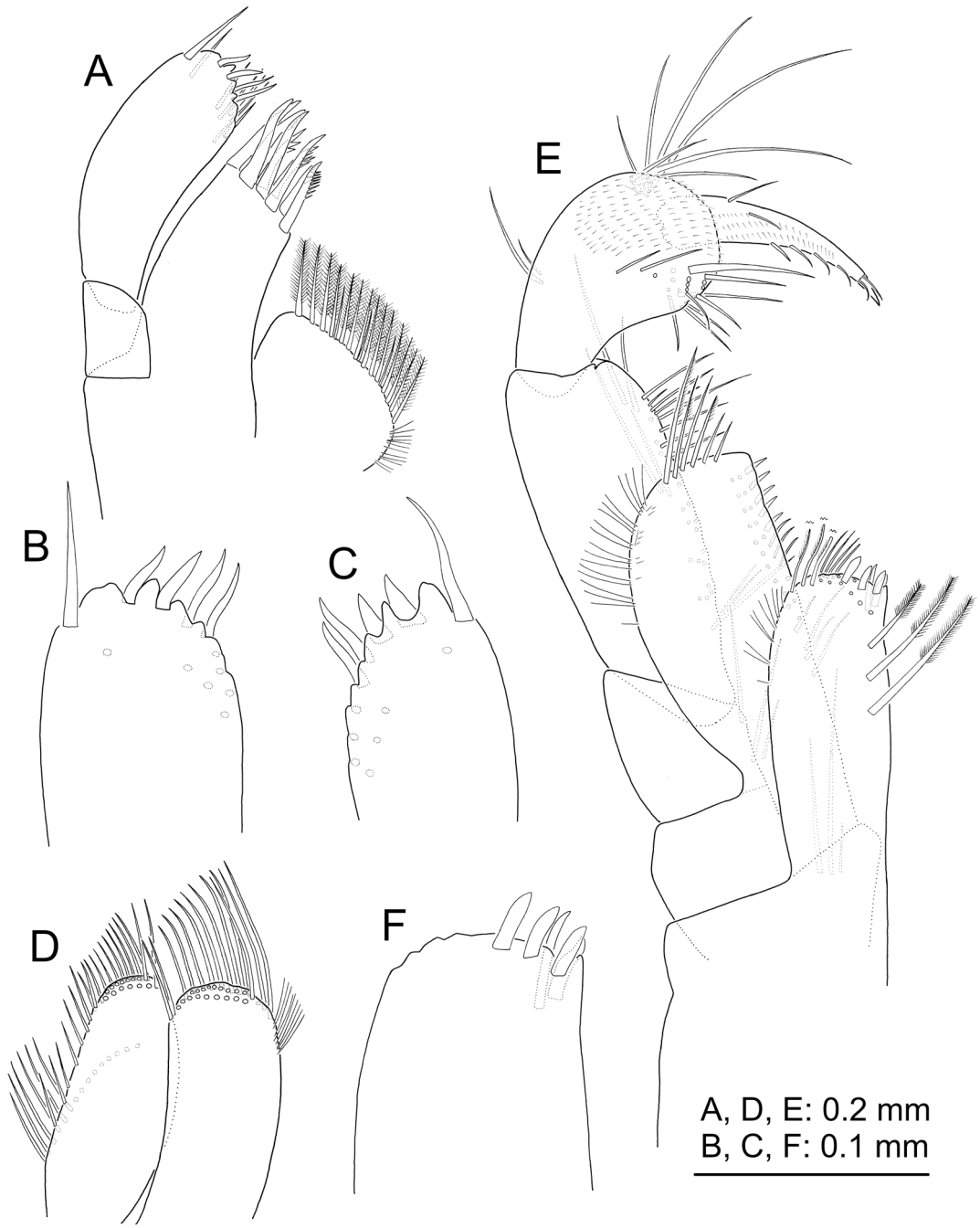

Fig. 5. *Victoriopisa satsumaensis* sp. nov., holotype, male, 9.7 mm, NSMT-Cr 33318. A, Left maxilla 1, dorsal view; B, distal part of left maxilla 1 palp article 2, dorsal view; C, distal part of right maxilla 1 palp article 2, dorsal view; D, left maxilla 2, ventral view; E, left maxilliped (facial fine setae on palp article 3 and 4 simplified), dorsal view; F, distal part of left maxilliped inner plate, dorsal view (simple setae omitted).

rows of simple setae; propodus (anterior margin of holotype shrunken) setose, ovoid, in paratype male (NSMT-Cr 33331) about 1.7 times as long as wide; palm (Fig. 6E) oblique, palmar margin with 2 subcontinuous projections on subdistal area, large medial robust seta on each of subproximal and proximal areas, dense short robust setae on subdistal projections and sparse short robust setae on subproximal area; dactylus curved, anterior margin with medial seta, posterior margin with 15 short setae, distinct median excavation and indistinct proximal projection.

Pereopod 3 (Fig. 7A), coxa ovoid, anteroventral corner slightly more produced than that of coxa 4, posterior margin produced, anteroventral to ventral margin with 9 short simple setae; basis long, expanded in distal two thirds, anterior and posterior margins with 6 short and 8 long simple setae, respectively, anterodistal corner with 1 short seta, posterodistal corner with group of simple setae; merus expanded distally, anterodistal corner produced, anterior and posterior margins each with sparse long simple setae, anterodistal corner with group of long simple setae; carpus about 1.1 times as long as merus, anterior margin slightly convex with sparse setae, anterodistal corner with group of simple setae; propodus rectangular, posterior margin with 4 robust setae each accompanied by several long simple setae, posterodis-

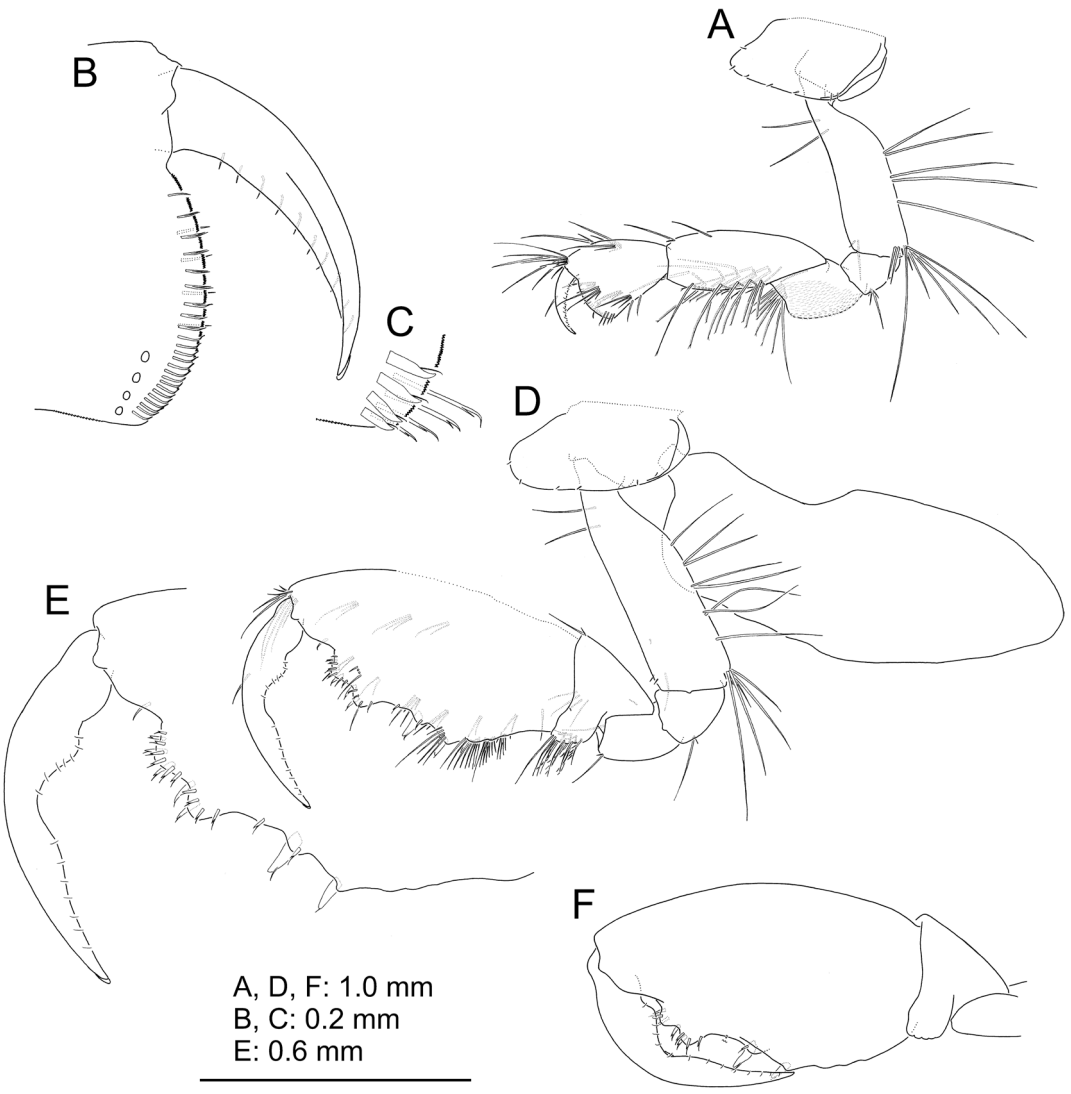

Fig. 6. *Victoriopisa satsumaensis* sp. nov., holotype, male, 9.7 mm, NSMT-Cr 33318 (A–E), and paratype, male, 9.7 mm, NSMT-Cr 33331 (F). A, Left gnathopod 1 (facial fine setae on merus simplified), lateral view; B, propodus palm and dactylus of left gnathopod 1 (setae partly omitted), medial view; C, distoventral corner of left gnathopod 1 propodus, showing robust setae, medial view; D, left gnathopod 2 (anteroproximal margin of propodus shrunken), lateral view; E, propodus palm and dactylus of gnathopod 2 (setae partly omitted), lateral view; F, carpus, propodus and dactylus of left gnathopod 2, lateral view (setae partly omitted).

tal corner with robust seta; dactylus slender, about 5 times as long as maximal width, tapering distally, with anteroproximal penicillate seta.

Pereopod 4 (Fig. 7B) similar to pereopod 3; coxa ovoid, anterior margin almost straight; basis long, expanded in distal three fourths.

Pereopod 5 (Fig. 8A) short; coxa bilobate, anterior lobe deeper than posterior lobe, anterior and posterior lobes with 6 and 1 short marginal setae, respectively; basis oblong, anterior margin with 6 setae, anterodistal corner with group of short to long simple setae, posterior margin with 9 short simple setae, posterodistal corner with 3 short simple setae; merus about 2.1 times as long as wide, posterior margin convex with 2 long robust setae, posterodistal corner with long robust seta and several short simple setae; carpus rectangular, shorter than merus, anterior margin with 5 robust and several long simple setae, anterodistal corner with 2 robust and 3 long simple setae, posterior margin almost bare, posterodistal corner produced with 5 short to long robust setae and 2 simple setae; propodus rectangular, anterior margin with 2 robust and 2 long simple setae on distal half, anterodistal corner with robust seta, posterior margin bare, posterodistal corner produced, posterodistal corner to distal margin with 2 short to long robust setae and several long simple setae; dactylus about 5 times as long as maximal width, tapering distally, with short seta near tip (right; not observed in left), with posteroproximal penicillate seta medially.

Pereopod 6 (Fig. 8B) longer than pereopod 5; coxa bilobate, anterior lobe slightly deeper than posterior lobe, anterior and posterior lobes with 2 and 1 short simple setae, respectively; basis oblong, anterior and posterior margins with 7 and 14 simple setae, respectively, anterodistal corner with group of simple setae, posterodistal corner with robust seta and several short simple setae; merus about 2.3 times as long as wide, anterodistal corner with several simple and

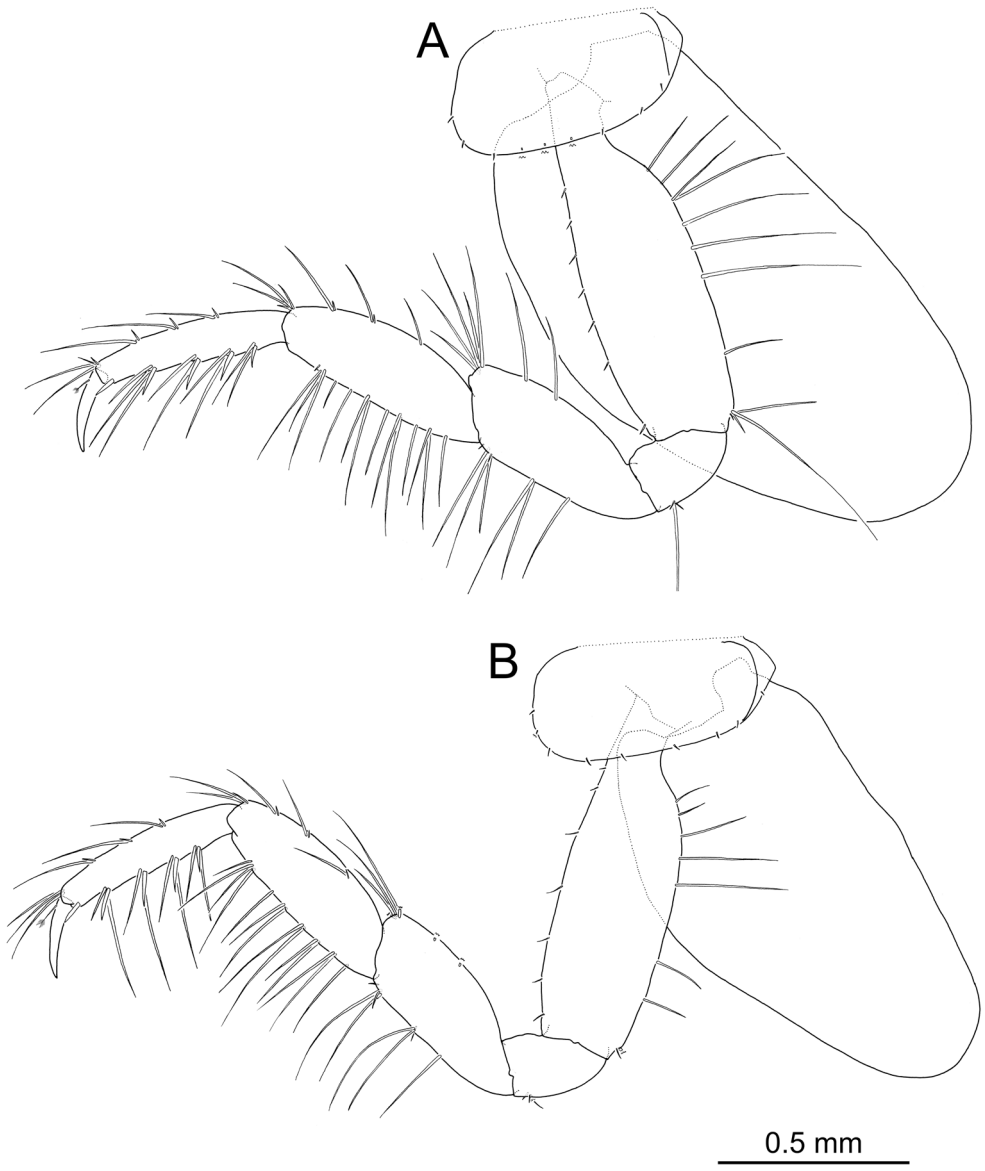

Fig. 7. *Victoriopisa satsumaensis* sp. nov., holotype, male, 9.7 mm, NSMT-Cr 33318. A, B, Left pereopods 3 and 4, lateral views.

robust setae, posterior margin convex with 3 long robust setae, posterodistal corner with long robust seta and several simple setae; carpus rectangular, shorter than merus, anterior margin with 3 robust setae and 2 groups of 2 long robust setae, anterodistal corner with 5 robust setae, posterodistal corner produced with 5 short to long robust setae; propodus rectangular, anterior margin with 2 groups of 2 robust setae, anterodistal corner with 2 robust setae, posterior margin bare, posterodistal corner produced, posterodistal corner to distal margin with 4 robust setae and simple seta; dactylus about 5 times as long as maximal width, tapering distally, with short seta near tip (right; not observed in left), with posteroproximal penicillate seta medially.

Pereopod 7 (Fig. 8C) coxa oval, anterior margin produced, posterior margin with 4 short simple setae; basis oval, about 1.4 times as long as wide, anterior margin slightly convex with 6 short simple setae, anterodistal corner with group of simple setae, posterior margin broadly expanded with 15 short simple setae, posterodistal corner roundly produced; merus about 1.6 times as long as wide, anterodistal corner with several simple and robust setae, posterior margin expanded with 4 long robust setae, posterodistal corner slightly produced with long robust seta; carpus rectangular, shorter than merus, anterior margin with 2 groups of 3 robust setae, anterodistal corner with 5 robust setae, posterior margin almost bare, posterodistal corner produced with long robust seta and several simple setae; propodus rectangular, anterior margin with 2 groups of 1 simple and 2 robust setae, anterodistal corner with 2 robust setae, posterior margin bare, posterodistal corner to distal margin with 3 robust setae and several simple setae; dactylus slender, about 7 times as long as wide, tapering distally, with short seta near tip, with posteroproximal penicillate seta medially.

Epimeral plates (Fig. 9A), plate 1 posteroventral corner with minute acute tooth, posterior part of ventral margin with fine setae, posterior margin convex with 3 short setae; plate 2 about as wide as plate 1, posteroventral corner

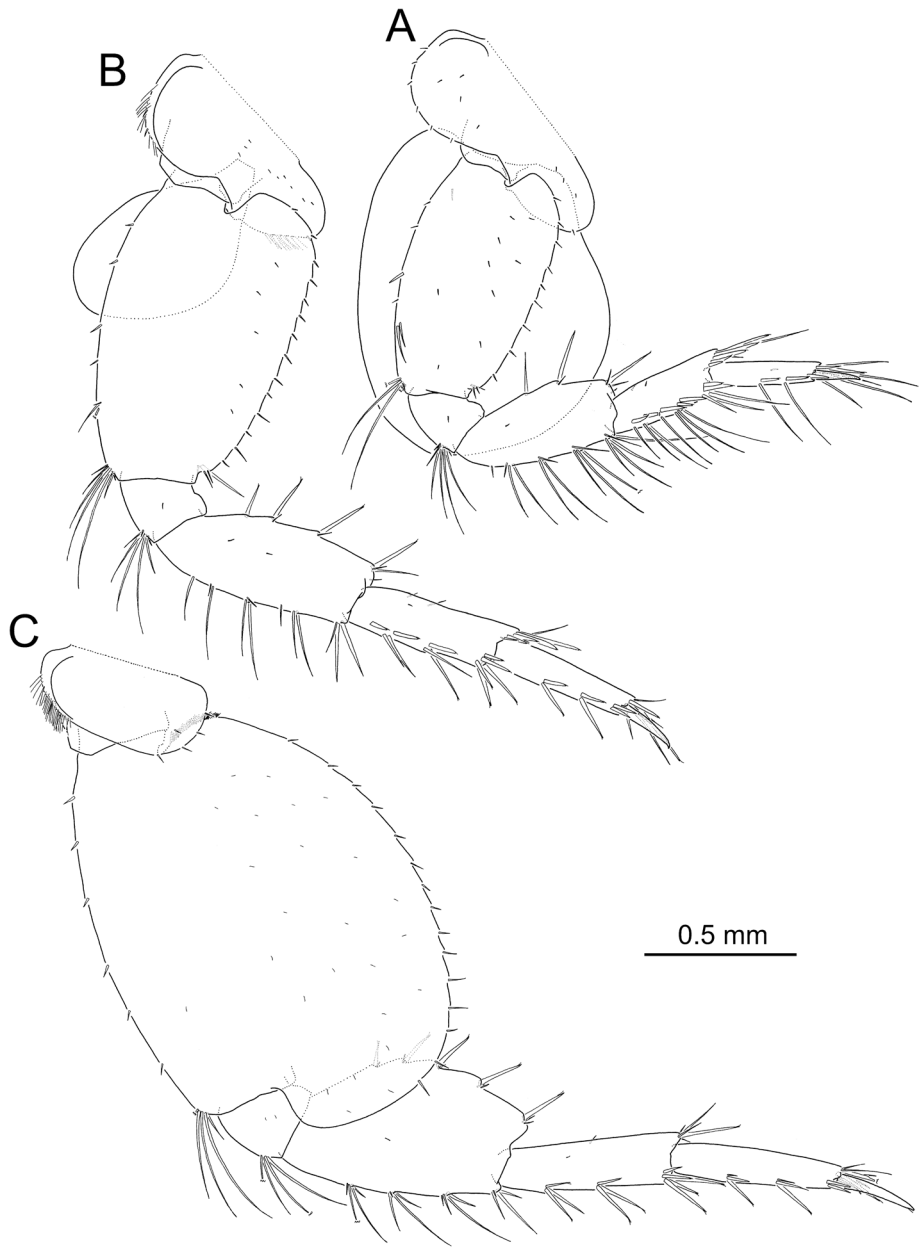

Fig. 8. *Victoriopisa satsumaensis* sp. nov., holotype, male, 9.7 mm, NSMT-Cr 33318. A–C, Left pereopods 5–7, lateral views.

rounded, ventral margin with fine setae and 8 long plumose setae, posterior margin convex with 4 short setae; plate 3 wider than plate 1 and 2, posteroventral corner with minute acute tooth, anteroventral margin with fine setae, ventral margin with 4 robust setae, posterior margin convex with 5 short setae.

Pleopods 1–3 (Fig. 9B, D, F), each peduncle with 2 coupling hooks (Fig. 9C, E, G) on medial margin, inner and outer ramus each composed of 18 and 24 articles in pleopod 1, 17 and 22 articles in pleopod 2, and 18 and 23 articles in pleopod 3, respectively; pleopods 1 and 2 peduncles each with several plumose setae and distal fine setae on lateral margin; pleopod 3 with distal fine setae but without plumose setae on lateral margin.

Urosomite 3 (Fig. 10A), posterodorsal margin with several short simple setae, posteroventral margin with 5 short to long robust setae on both left and right side.

Uropod 1 (Fig. 10B), peduncle lateral and medial margins with 4 and 3 robust setae, respectively, distolateral and distomedial corner each with moderate robust seta and large robust seta, ventral surface with large basofacial robust seta; outer ramus about 0.7 times as long as peduncle, medial margin with 3 robust setae, distal margin with 4 short to moderate robust setae; inner ramus about as long as outer ramus, lateral margin roundly convex in proximal area, with 2 robust setae on distal half, ventral surface with simple seta on proximal area, medial margin with 2 robust setae, distal margin with 4 short to moderate robust setae; uropod 2 (Fig. 10C) short, about 0.6 times as long as uropod 1, peduncle lateral margin with 2 robust setae, distolateral corner with moderate robust seta and long robust seta, distomedial corner with 2 robust setae; outer ramus about

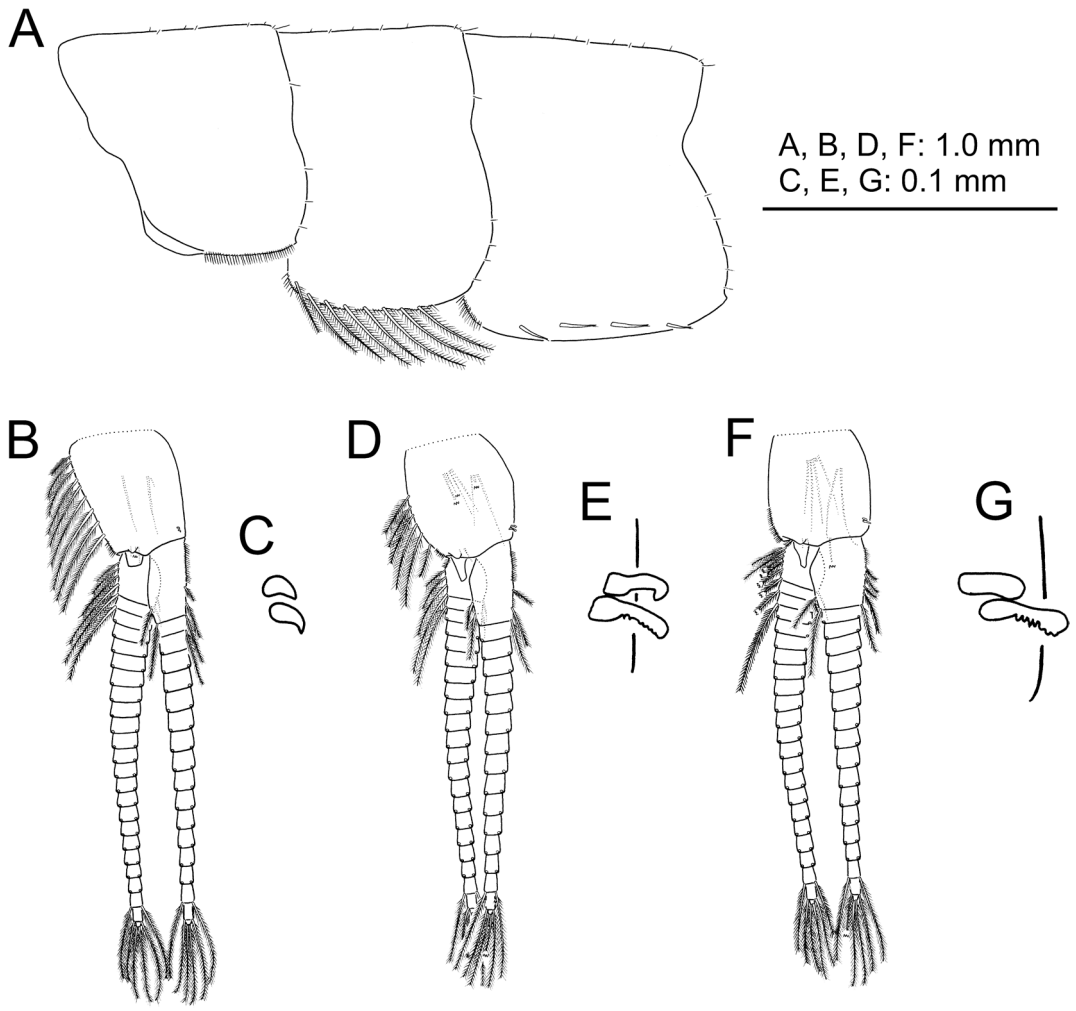

Fig. 9. *Victoriopisa satsumaensis* sp. nov., holotype, male, 9.7 mm, NSMT-Cr 33318. A, Epimeral plates, lateral view; B, left pleopod 1, posterior view; C, coupling hooks of pleopod 1, posterior view; D, left pleopod 2, posterior view; E, coupling hooks of pleopod 2, posterior view; F, left pleopod 3, posterior view; G, coupling hooks of pleopod 3, posterior view.

0.6 times as long as peduncle, lateral and medial margins with 2 and 1 robust setae, respectively, distal margin with 5 short to moderate robust setae; inner ramus about 0.8 times as long as peduncle, lateral and medial margins each with 2 robust setae, distal margin with 5 short to moderate robust setae; uropod 3 (Fig. 10A) significantly long, about 2.0 times as long as uropod 1, peduncle short, about 1.8 times as long as wide, ventral surface with 9 robust setae, lateral margin with robust seta, dorsal surface with robust seta near base of inner ramus, distoventral margin with several robust and simple setae; inner ramus scale-like, rounded triangular, about 0.1 times as long as outer ramus, with several simple setae on dorsal surface and distal margin; outer ramus extremely long, composed of 2 articles; article 1 slightly expanded distally, ventral surface with medial longitudinal keel, lateral and medial margins each with several groups of simple or robust setae, ventral surface with 2 groups of robust setae on subproximal area, distolateral and distomedial corner each with many simple and robust setae; article 2 depressed, elongate oval, narrower than article 1, about 0.7 times as long as article 1, about 4.1 times as long as wide, lateral and medial margins each with several groups of simple setae, distal margin with tuft of 25 short to long simple setae.

Telson (Fig. 10D) about 0.9 times as long as wide, cleft nearly to basal margin, each lobe oval, medial margin slightly concave proximally, lateral margin convex with 3 short simple setae, subdistal area of lateral margin with small excavation accompanied by robust seta, dorsal surface with 2 subdistal penicillate setae and several short simple setae.

Description of females. Based on paratype female (NSMT-Cr 33319, 10.5 mm; NSMT-Cr 33320, 9.8 mm). Generally similar to males (Figs 2B, 11A–E). Oostegites (Fig. 11F) present on gnathopod 2 and pereopods 3–5.

Variations. In antenna 1, the relative length of peduncular article 2 to article 1 varies from 0.9 to 1.1. The accessory flagellum of antenna 1 sometimes does not reach the distal margin of primary flagellar article 1. The number of flagellar articles in antenna 1 ranges from 28 to 49. In antenna 2, the proximal robust seta on peduncular article 3 is sometimes absent. Maxilla 1 inner plate bears 16–19 setae on the distal margin. The distoventral corner of epimeral plate 2 is often with minute acute tooth. Gnathopod 1 propodus palm bears 2–3 short lateral setae and 16–24 short

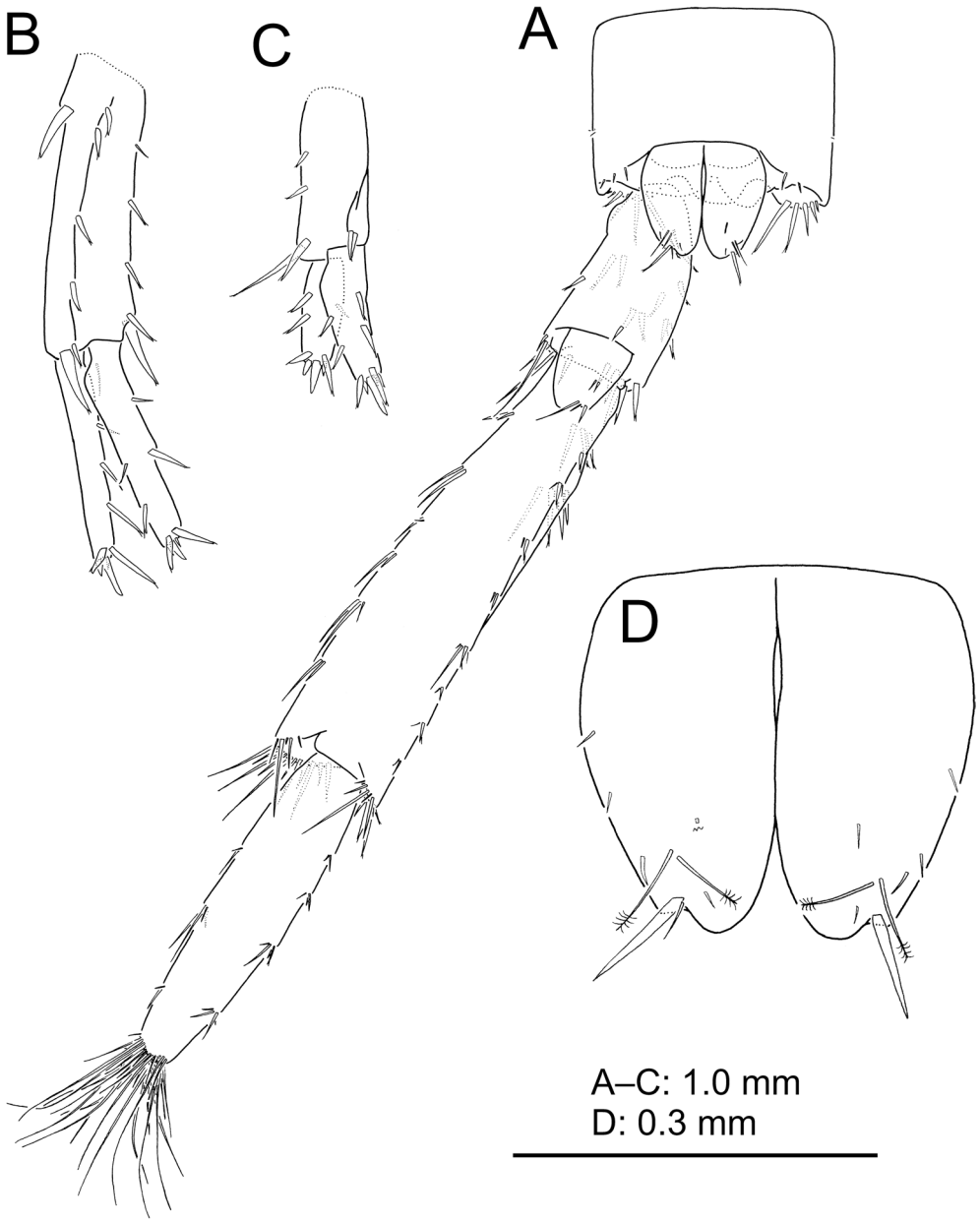

Fig. 10. *Victoriopisa satsumaensis* sp. nov., holotype, male, 9.7 mm, NSMT-Cr 33318. A, Urosomite 3, telson and uropod 3, dorsal view; B, left uropod 1, dorsolateral view; C, left uropod 2, dorsomedial view; D, telson, dorsal view.

medial setae along the palmar margin. In uropod 3, the number and arrangement of robust setae are variable. The distal tuft of setae on uropod 3 outer ramus is composed of 24–29 simple setae.

In a juvenile specimen (NSMT-Cr 33322, 5.6 mm), gnathopod 1 palm bears 2 short lateral setae and 12 short medial setae along the palmar margin and 3 medial robust setae on the distoventral corner (Fig. 12A, B). Gnathopod 2 palmar margin possesses a bumpy lobe, which is not developed into 2 projections (Fig. 12C). Article 2 of uropod 3 outer ramus is furnished with a distal tuft of 15 (right) and 22 (left) simple setae.

Coloration in life. Body wholly semitransparent pale yellow (Fig. 13). Eyes white.

Molecular data. Sequences of COI were determined from seven specimens including the holotype (Table 1). Sequences of H3 were determined from the holotype.

Comparison of the present COI sequences with those of congeneric species available in INSDC revealed clear differentiation (Tables 2, 3; K2P > 17.4%, *p*-distances > 15.2%). These genetic distance values are higher than the interspecific distance threshold (9.5%) suggested by Marin et al. (2025), indicating that they exceed the range of intraspecific variation. However, the sequences were found to be almost identical to the COI sequences (INSDC accession numbers LC637614 and LC637615) reported as "*Victoriopisa ryukyuensis*" by Tomikawa et al. (2022). There were only 1–2 base substitutions between our sequences and the sequences in the precedence study. According to Tomikawa et al. (2022: table S1), these sequences were obtained from the specimens of "*V. ryukyuensis*" collected from Lake Manko, Okinawa Island, Japan. Given the near-complete match of

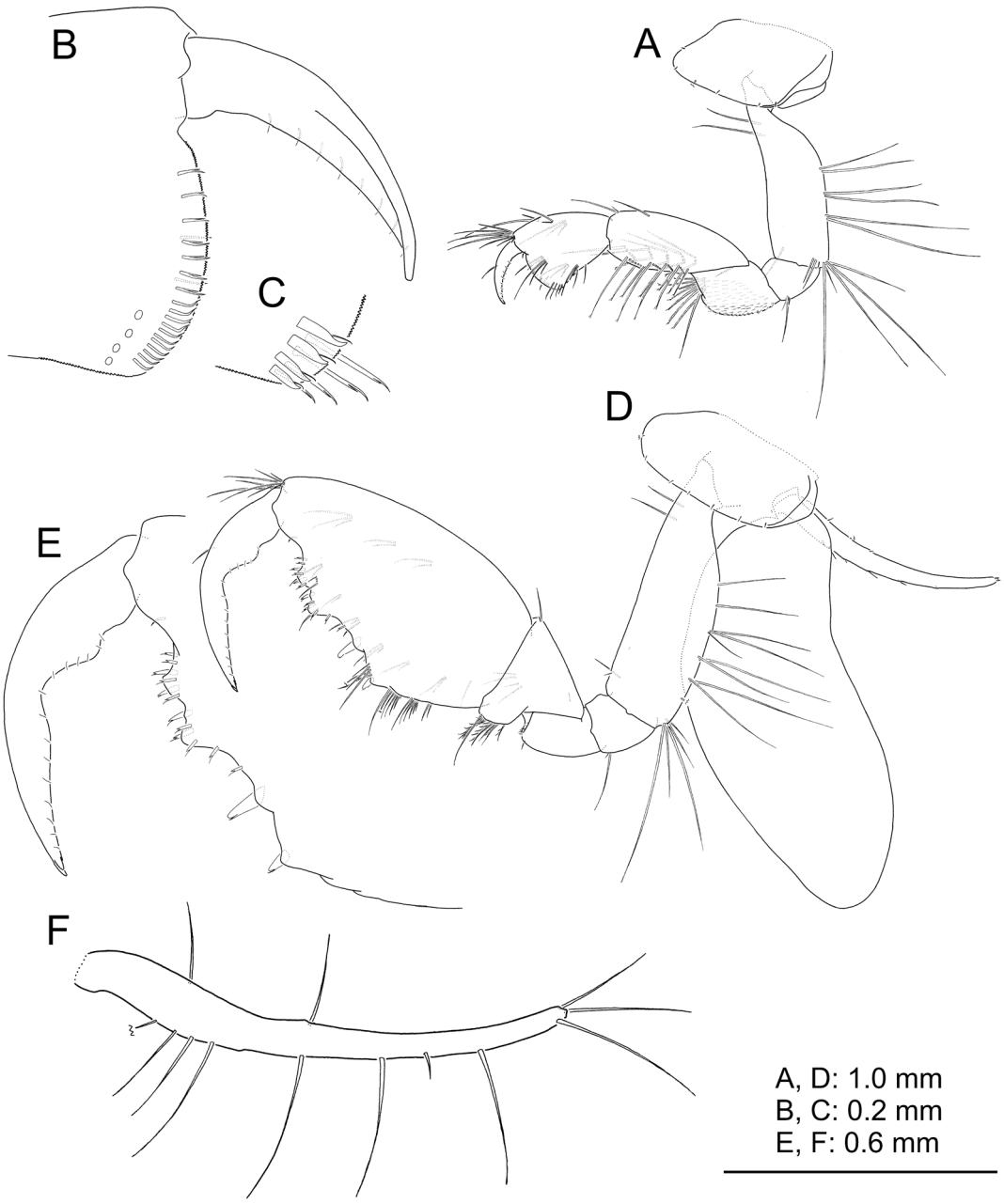

Fig. 11. *Victoriopisa satsumaensis* sp. nov., paratype, female, 9.8 mm, NSMT-Cr 33320 (A–E), and paratype, female, 10.5 mm, NSMT-Cr 33319 (F). A, Left gnathopod 1 (facial fine setae on merus simplified), lateral view; B, propodus palm and dactylus of left gnathopod 1 (setae partly omitted), medial view; C, distoventral corner of left gnathopod 1 propodus, showing robust setae, medial view; D, left gnathopod 2, lateral view; E, propodus palm and dactylus of gnathopod 2 (setae partly omitted), lateral view; F, oostegite on right gnathopod 2, dorsal view.

the COI sequences, our specimens from Kagoshima and their specimens from Okinawa Island are considered to belong to the same taxon, although there is no information about the morphology of their specimens. Nevertheless, as discussed in the Remarks, our Kagoshima specimens are clearly not *V. ryukyuensis*. Thus, we concluded the specimens reported as "*V. ryukyuensis*" by Tomikawa et al. (2022) are in fact considered to represent *V. satsumaensis* sp. nov. The present findings indicate that this new species is distributed at least in the mainland of Kagoshima (Kyushu) and Okinawa Island, Ryukyu Islands, Japan.

Distribution. Japan: mainland of Kagoshima (Shimizu River, type locality; Kashino-ura River; Inari River) (this study); Okinawa Island (Lake Manko) (Tomikawa et al. 2022).

Etymology. The specific name and the Japanese name are derived from "Satsuma-Han", a feudal domain which formerly encompassed present-day Kagoshima Prefecture, where the type specimens were collected.

Habitat. Found in the middle intertidal zone of estuaries. In the soft mud at the base of reeds (Fig. 1C), in the sandy mud, and beneath cobbles on sandy mud (Fig. 1D).

Remarks. The present new species is distinguished from all its congeners by the following combination of mor-

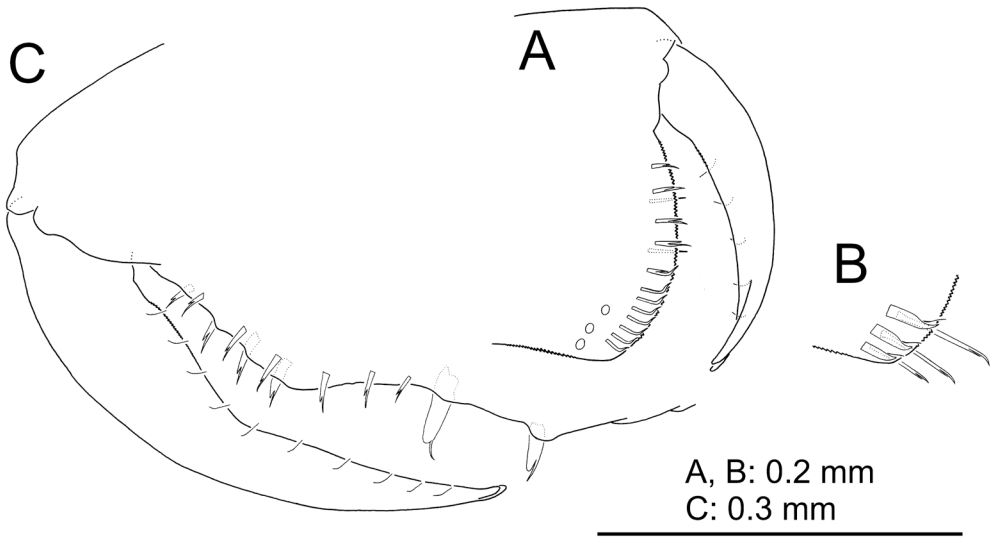

Fig. 12. *Victoriopisa satsumaensis* sp. nov., paratype, juvenile, 5.6 mm, NSMT-Cr 33322. A, Propodus palm and dactylus of left gnathopod 1 (setae partly omitted), medial view; B, distoventral corner of left gnathopod 1 propodus, showing robust setae, medial view; C, propodus palm and dactylus of left gnathopod 2 (setae partly omitted), lateral view.

Fig. 13. *Victoriopisa satsumaensis* sp. nov., paratype, female, 9.8 mm, NSMT-Cr 33320, live specimen. A, Dorsal view; B, lateral view.

phological characters: the eyes present, the antenna 1 without a distodorsal tuft of long setae on article 2, the palmar margin of gnathopod 2 with 2 projections, and the dactylus of gnathopod 2 with a shallow median excavation on the posterior margin. Within the genus *Victoriopisa*, the following nine species and one subspecies have been hitherto documented as possessing eyes: *V. bruneiensis* Hossain and Hughes, 2016, *V. cangio* Marin and Palatov, 2022, *V. chilkensis* (Chilton, 1921), *V. ch. griffithsi* Karaman, 1984, *V. cusatensis* Joseph, Nandan, and Jayachandran, 2018, *V. mekongensis* Marin, Palatov, and Nguyễn, 2025, *V. nhatrangensis* Marin and Palatov, 2022, *V. papiae* Asari, 1983, *V.*

Table 2. K2P genetic distances between *Victoriopisa* species based on 500 bp of COI.

	V. cangio	*V. chilkensis*	*V. mekongensis*	*V. nhatrangensis*	"*V. ryukyuensis*"*	*V. satsumaensis* sp. nov.
V. cangio	0.015 ± 0.007					
V. chilkensis	0.218 ± 0.008	0.001 ± 0.001				
V. mekongensis	0.188 ± 0.005	0.231 ± 0.003	0.024			
V. nhatrangensis	0.211 ± 0.007	0.231	0.162 ± 0.003	0.000		
"*V. ryukyuensis*"*	0.195 ± 0.006	0.241 ± 0.002	0.181 ± 0.003	0.176 ± 0.002	0.002	
V. satsumaensis sp. nov.	0.194 ± 0.008	0.241 ± 0.002	0.184 ± 0.003	0.176 ± 0.002	0.002 ± 0.002	0.002 ± 0.002

* Sensu Tomikawa et al. (2022).

Table 3. Uncorrected *p*-distances between *Victoriopisa* species based on 500 bp of COI.

	V. cangio	*V. chilkensis*	*V. mekongensis*	*V. nhatrangensis*	"*V. ryukyuensis*"*	*V. satsumaensis* sp. nov.
V. cangio	0.015 ± 0.007					
V. chilkensis	0.188 ± 0.006	0.001 ± 0.001				
V. mekongensis	0.164 ± 0.004	0.198 ± 0.002	0.024			
V. nhatrangensis	0.181 ± 0.005	0.198	0.144 ± 0.002	0.000		
"*V. ryukyuensis*"*	0.169 ± 0.005	0.205 ± 0.001	0.158 ± 0.002	0.153 ± 0.001	0.002	
V. satsumaensis sp. nov.	0.168 ± 0.006	0.205 ± 0.001	0.160 ± 0.002	0.153 ± 0.001	0.002 ± 0.002	0.002 ± 0.002

* Sensu Tomikawa et al. (2022).

ryukyuensis and *V. tinggiensis* Lim, Azman, and Othman, 2010. Among these species and subspecies, *V. nhatrangensis* and *V. papiae* are relatively close to *V. satsumaensis* sp. nov. in lacking a distodorsal tuft of long setae on peduncular article 2 of antenna 1 and having an excavation on the posterior margin of gnathopod 2 dactylus.

The present new species is morphologically most similar to *V. nhatrangensis*, described solely on the basis of female specimens from Vietnam. These two species share a median excavation on the posterior margin of gnathopod 2 dactylus and the convex posterior margin of epimeral plate 3. However, the new species differs from *V. nhatrangensis* in the following characters (characters of the latter species in parentheses): (1) gnathopod 1 with 2–3 short lateral setae and 16–24 short medial setae along the palmar margin (6 short setae); (2) palmar margin of gnathopod 2 with 2 projections (with 1 projection); (3) gnathopod 2 dactylus with a shallower median excavation on the posterior margin (deeper excavation); (4) pereopods 5 and 6 carpi with several robust setae on the anterior margin (no robust setae); and (5) uropod 3 with 24–29 distal setae on article 2 of outer ramus (4 distal setae). Additionally, they differ genetically in COI (Tables 2, 3; K2P > 17.4%, *p*-distances > 15.2%).

The new species also differs from *V. papiae* in the following characters (characters of the latter species in parentheses): (1) maxilla 1 inner plate with 16–19 setae on the distal margin (7 setae); (2) palmar margin of gnathopod 2 with 2 large proximal robust setae and 2 subdistal projections (with 3 projections, proximal 2 of which with large robust setae); (3) gnathopod 2 dactylus with a median excavation on the posterior margin (with median projection).

Victoriopisa ryukyuensis, known from Okinawa Island, southern Japan, is also similar to *V. satsumaensis* sp. nov., but the new species is clearly different from *V. ryukyuensis* in the following points (characters of the latter species in parentheses): (1) antenna 1 without a distodorsal tuft of long setae on peduncular article 2 (with a tuft); (2) palmar margin of gnathopod 2 with 2 projections (with 1 projection); (3) gnathopod 2 dactylus with a proximal projection and a median excavation on the posterior margin (with a proximal excavation followed by a projection); (4) epimeral plates 1 and 3 (and often 2) with minute acute teeth on posteroventral corners (without teeth).

Another Japanese species, *V. wadai*, known from the Seto Inland Sea is distinguished from *V. satsumaensis* sp. nov. by the following characters (characters of the former species in parentheses): (1) eyes present (absent); (2) palmar margin of gnathopod 2 with 2 projections (with 3 projections and 2 excavations in male and 2 projections and 1 excavation in female); (3) gnathopod 2 dactylus with a median excavation on the posterior margin (without excavation); (4) telson each lobe without robust setae on the lateral margin (with 2 robust setae).

Data Availability Statement

All data supporting the findings of this study are included in the published article. The sequences used in this study have been deposited in DDBJ/GenBank/ENA under the accession numbers referred to in the text.

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Author Contributions

Hiroto Watabe: Conceptualization; Investigation; Formal Analysis; Visualization; Writing – original draft. Reo Koreeda: Investigation; Writing – review & editing. Yukiko Mukaida: Investigation; Methodology; Writing – review & editing. Masafumi Kodama: Conceptualization; Supervision; Project administration; Writing – original draft.

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Declarations

Competing interest. The authors declare no conflicts of interest.

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