

**GNORIMOSPHAEROMA SALEBROSA SP. NOV. FROM THE COAST  
OF KII, JAPAN (ISOPODA : SPHAEROMATIDAE)<sup>1)</sup>**

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*With 5 Text-figures*

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In a previous paper (NISHIMURA 1968), the writer described a new species of the boreo-Pacific isopod genus *Gnorimosphaeroma* MENZIES, 1954 of the family Sphaeromatidae from the coast of Kii Peninsula, central Honshu, Japan. The present paper is intended to give the description of another new species of this genus recently found from the same district.

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*Gnorimosphaeroma salebrosa* NISHIMURA, sp. nov.

(Jap. name: *Yoroi-kotsubumushi*, nov.)

(Figs. 1-5)

MATERIAL EXAMINED: 1) 6 adult ♂ (1 holotype and 5 paratypes; 2.7-3.2 mm in body length), 3 immature ♂ (paratypes), 7 adult ♀ (all gravid; 1 allotype and 6 paratypes; 1.7-2.1 mm in body length), 1 juv. (paratype). Sakata, Sirahama, Kii Peninsula, Japan. Coll. S. NISHIMURA; Oct. 6, 1968. Deposited at the museum of the Seto Marine Biological Laboratory (SMBL-Type 229). 2) 1 immature ♂. Hataké-jima Islet in Tanabe Bay, Kii Peninsula. Coll. S. NISHIMURA; Oct. 3, 1968.

DIAGNOSIS: Body elliptical, dorsally convex, finely granular all over. Anterior pereonites each with a transverse ridge on the dorsal surface; this is particularly prominent on 1st pereonite. Epimera broad, subquadrangular to tongue-shaped, sutures indistinct, margins very finely haired. Last pleonite as wide as preceding ones, 3 pleonites forming the lateral margin of the "second" pleonal somite (in adult ♂, the lateral parts of pleon are covered by posteriorly-bent epimera of 7th pereonite and invisible from above); 1st incision not extending so far medially as 2nd incision. Pleotelson triangular ending in a round apex, with 1 distal median and 2 proximal

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submedian longitudinal ridges on the dorsal surface; no shelf along the ventrolateral margins. Each eye with ca. 20–25 ocelli. Basal segment of peduncle of 1st antenna (Fig. 2B) is stout but not markedly expanded into plate, its proximal inner margin separated from that of the partner on the midline by an intervention of rostrum; 2nd segment is also stout, one-half as long as basal segment; 3rd segment slender and shorter than 2nd. Maxilliped (Fig. 3D) with one coupling hook. Mandibular incisor (Figs. 2D, E) with a lacinioid seta instead of true lacinia mobilis. Penial rami (Fig. 3E) short, bluntly tipped, separated at base. Male stylus (Fig. 5C)

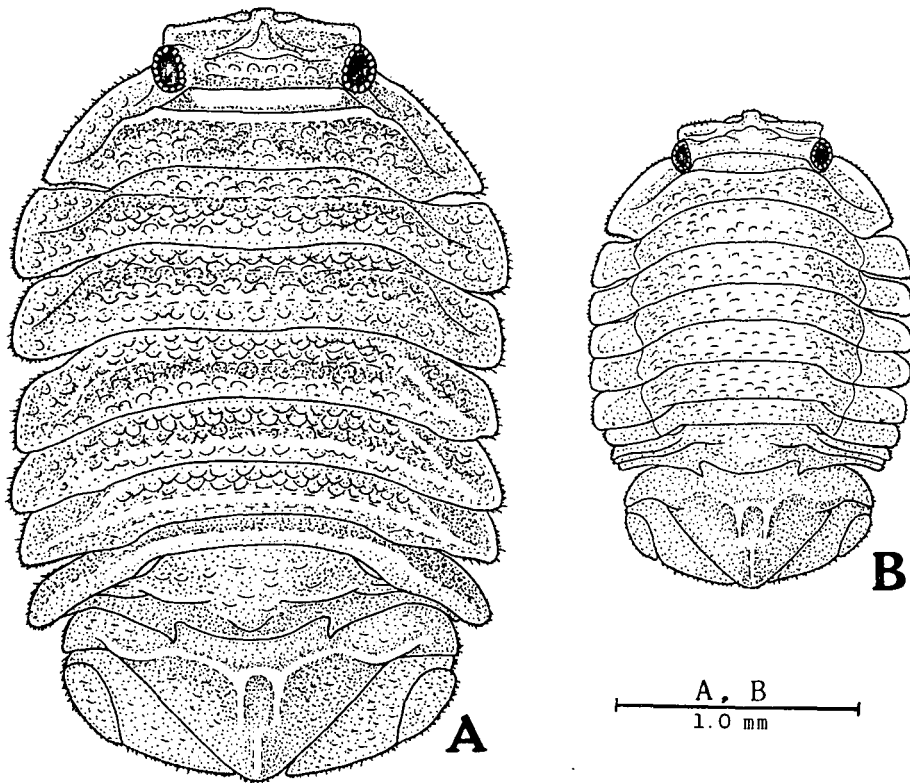


Fig. 1. *Gnorimosphaeroma salebroso*, sp. nov.  
A—Holotype male, dorsal view. B—Allotype female, dorsal view.

on 2nd pleopod broad throughout its length, with a rounded tip, and extending beyond the apex of endopod for slightly less than one-half of its own length. Exopods of 3rd and 4th pleopods (Figs. 5D, E) 2-segmented, exopod of 5th pleopod (Fig. 5F) not segmented but with a slight notch and weakly scale-bearing areas along the inner margin. Both rami of 1st to 3rd pleopods thin and transparent; exopod of 4th pleopod also thin and transparent, but endopod is slightly opaque and rather branchial though thin and without any respiratory plications; both rami of 5th pleopod assume the same appearance as endopod of 4th pleopod. Uropodal rami (Fig. 3F) broad and

lamellar, exopod smoothly rounded at the apex and two-fifths as long as endopod which is acute at the inner distal end.

FURTHER DETAILS: *Male*.—Cephalon moderate, with a rostral process and

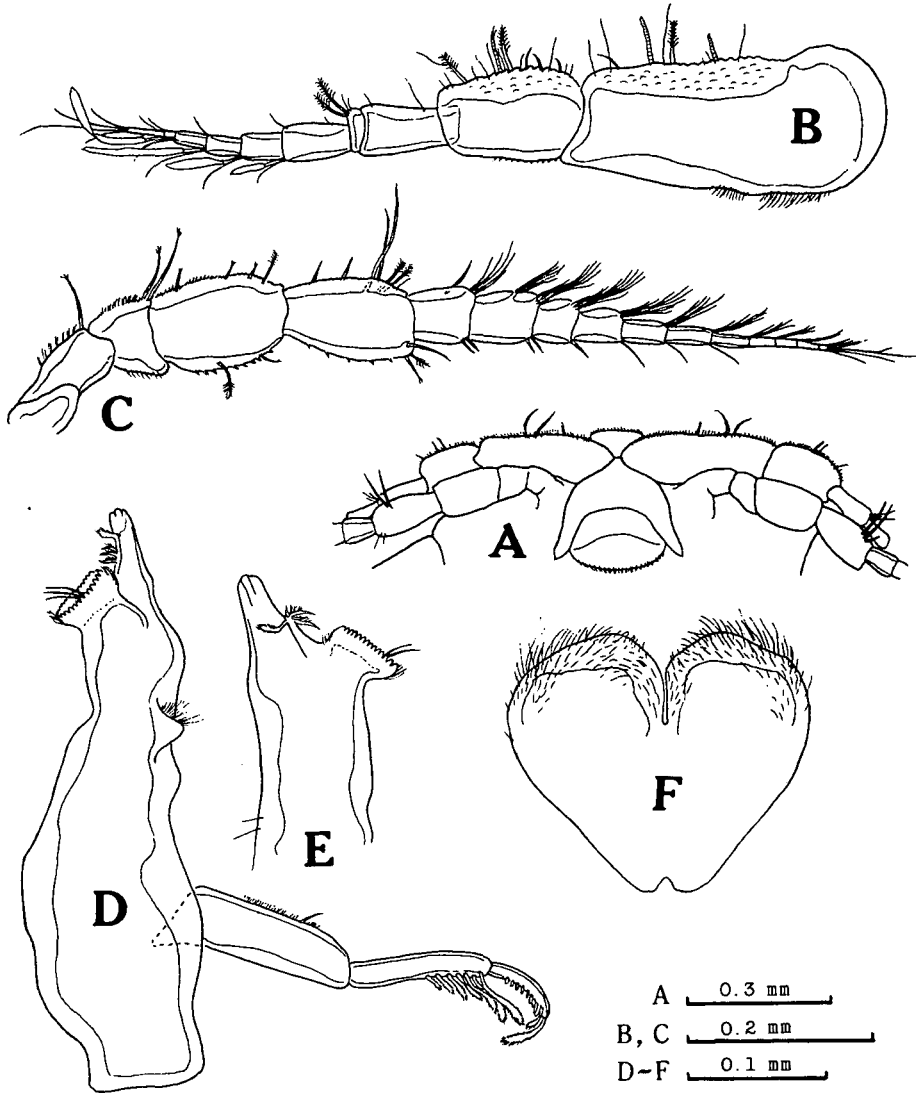


Fig. 2. *Gnorimosphaeroma salebrosa*, sp. nov., male.

A—Front of cephalon, ventral view. B—First antenna. C—Second antenna. D—Right mandible. E—Left mandible, distal part. F—Lower lip.

weakly sinuous raised frontal margins, the anterolateral corners angular and considerably extended forward. First antenna (Fig. 2B) reaching the middle of 1st pereonite; flagellum with 6 segments, as long as 2nd to 4th peduncular segments

together. Second antenna (Fig. 2C) short, reaching only the posterior end of 1st pereonite; flagellum with 10–11 segments, as long as peduncle.

Epistome (Fig. 2A) narrow proximally but rapidly widened distally, embracing the basal half of upper lip which is broader than long and with rounded distal margin.

Lower lip (Fig. 2F) heart-shaped, with lobes short, broad and apically rounded.

Right mandible (Fig. 2D), incisor with 3 teeth and a setal row consisting of a lacinioid pectinate setule and 3 or 4 basally pectinate setules. Left mandible (Fig. 2E), incisor also with 3 teeth and a setal row consisting of a lacinioid pectinate setule and 3 basally pectinate setules. Molar processes oblique and expanded. Mandibular palp (Fig. 3A) 3-segmented; 1st segment stout, as long as distal 2 segments together, 2nd and 3rd segments slender, the former twice as long as the latter; distal 2 segments bear each pectinate setules on the outer margin, ca. 8 on 2nd and ca. 10 on 3rd.

First maxilla (Fig. 3B), inner lobe with 3 hooked pectinate setules and 1 simple setule at the apex, outer lobe with ca. 3 teeth, 3 hooked spines and 1 simple setule at the apex.

Second maxilla (Fig. 3C), inner lobe with ca. 4 basally pectinate and 4 simple setules at the apex, inner lappet of outer lobe with 4 and outer lappet with 3 dentate spines at the apex.

Maxilliped (Fig. 3D), palp 5-segmented, middle 3 segments provided each with an inner distal lobe; endite extending slightly beyond the distal end of 3rd segment of palp, and 0.7 time as broad as palp at the maximum.

First pereopod (Fig. 4A), propodus swollen, with 1 dentate spine and 4 pectinate setules on the inner margin; carpus very short, with 1 simple spine at the inner apex; merus strongly produced and with 4 pectinate setules at the outer apex and 3 simple setules at the inner apex.

Second pereopod (Fig. 4B) longer and much slenderer than 1st; propodus not swollen, with 2 simple setules on the inner margin; carpus not very short, with 3 pectinate and several simple setules around the distal margin, 1 simple setule at the middle of inner margin; merus produced but not so much as in 1st pereopod and with 3 pectinate setules at the outer apex and 2 simple setules near the inner apex.

Third pereopod (Fig. 4C), propodus with several simple setules on the inner margin; carpus with 3 pectinate and a few simple setules around the distal margin, 1 simple setule at the middle of inner margin; merus with 3 pectinate setules at the outer apex and 2 simple setules at the inner apex.

Sixth pereopod (Fig. 4D), propodus with several simple setules on the inner margin; carpus with 4 pectinate and a few simple setules around the distal margin, 1 pectinate setule at the middle of inner margin; merus with 2 pectinate setules at the outer apex and 2 simple setules at the inner apex.

Seventh pereopod (Fig. 4E) alike to 6th pereopod except for the distal margin of carpus which is armed with 10 pectinate setules instead of 4.

In all pereopods, propodus provided each with 1 plumose setule and a few simple

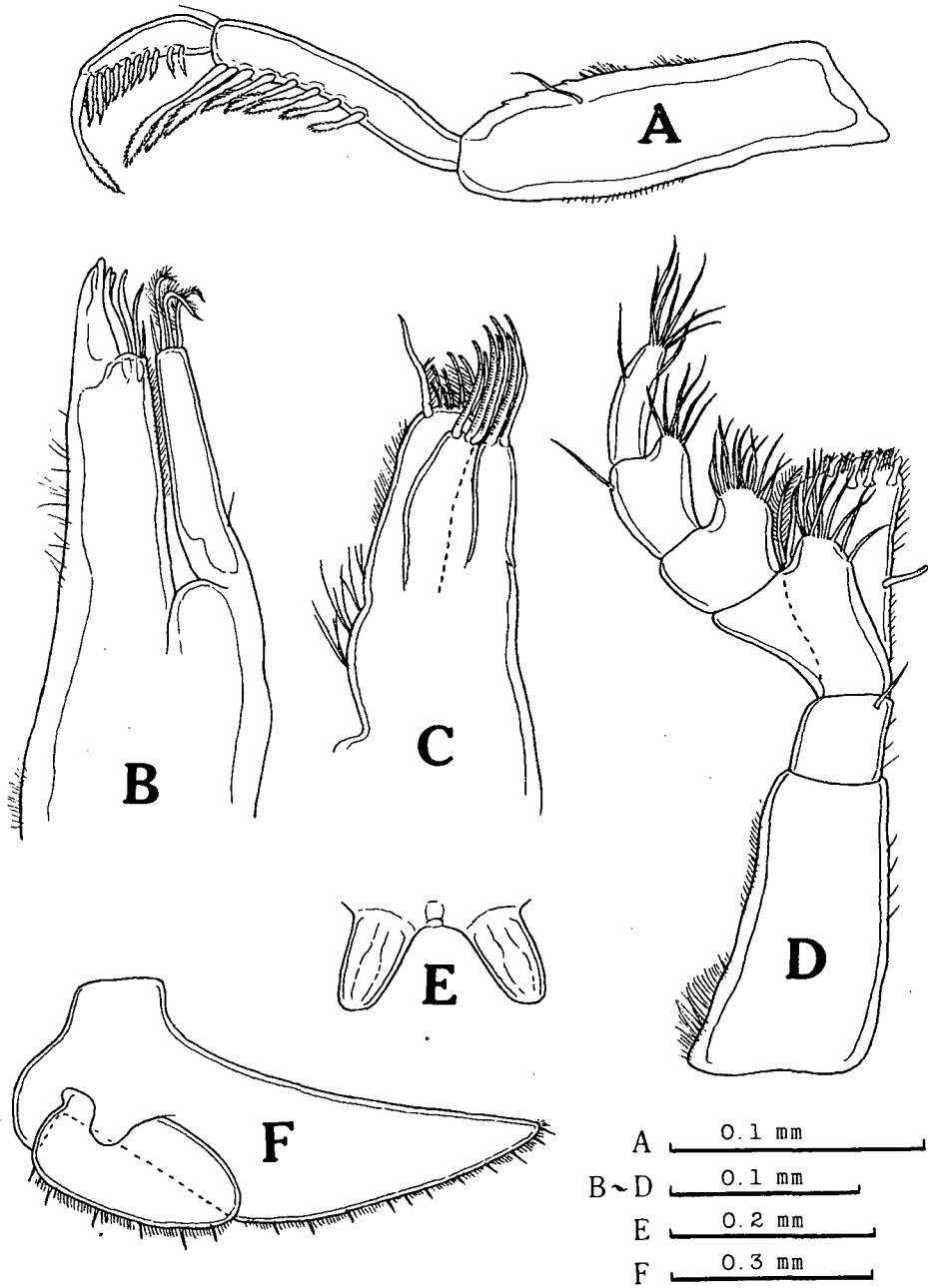


Fig. 3. *Gnrimosphaeroma salebrosa*, sp. nov., male.

A—Mandibular palp. B—First maxilla. C—Second maxilla. D—Maxilliped. E—Penial rami. F—Uropod, ventral view.

setules at the outer apex, and basis with a few to several plumose setules and numerous hairs or spinules on the outer margin.

First to 4th pleopods respectively with 4, 3, 3, 2 pectinate setules at the inner apex of peduncle.

First pleopod (Fig. 5A), exopod with ca. 19 plumose setae on the distal to outer margin and 1 hooked seta near the outer basal corner, endopod with ca. 12 plumose setae on the distal margin.

Second pleopod (Fig. 5B), exopod with ca. 21 plumose setae on the distal to outer

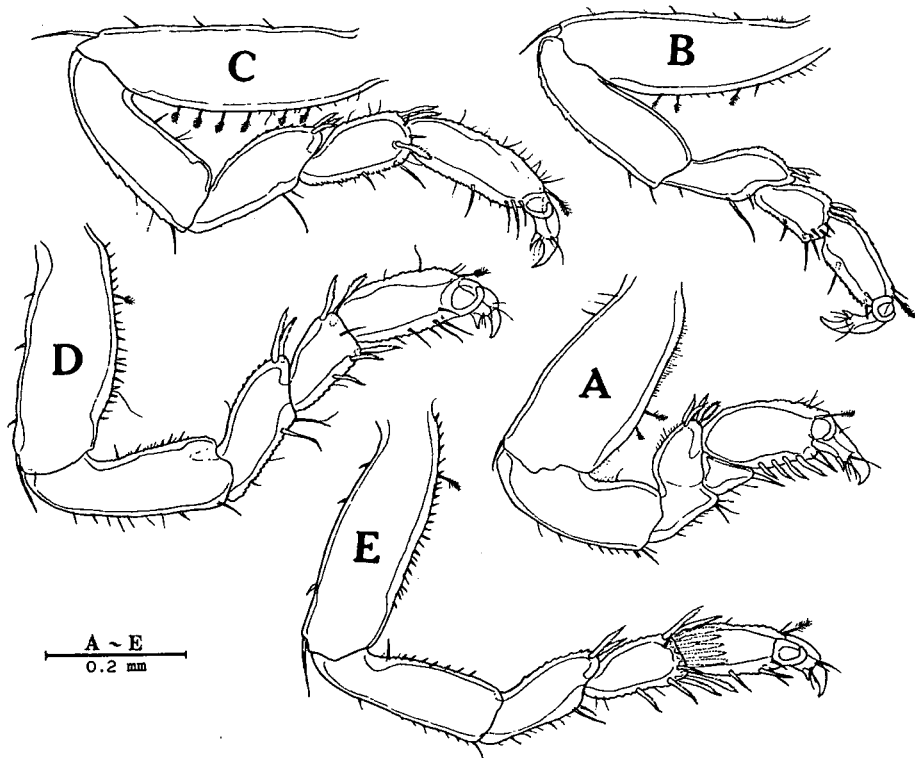


Fig. 4. *Gnorimosphaeroma salebroso*, sp. nov., male.

A—First pereopod. B—Second pereopod. C—Third pereopod. D—Sixth pereopod. E—Seventh pereopod.

margin, endopod with ca. 11 plumose setae on the distal margin.

Third pleopod (Fig. 5D), exopod with ca. 22 plumose setae on the distal to outer margin, endopod with ca. 11 plumose setae on the distal margin.

Fourth pleopod (Fig. 5E), exopod with ca. 6 plumose setae on the distal margin and several simple setules and numerous minute hairs on the outer margin, endopod without any setae or setules.

Fifth pleopod (Fig. 5F), both rami quite devoid of setae or setules.

Uropodal endopod long but never extending beyond the apex of pleotelson (Fig. 1A).

Epimera of 7th pereonite bent backward, covering the lateral parts of pleonal somites. Fourth pleonite with a median conical wart on the dorsal surface.

*Female*.—Considerably smaller than male. Body somewhat broader, transverse ridge is formed only on 1st pereonite, epimera of 7th pereonite never bent backward

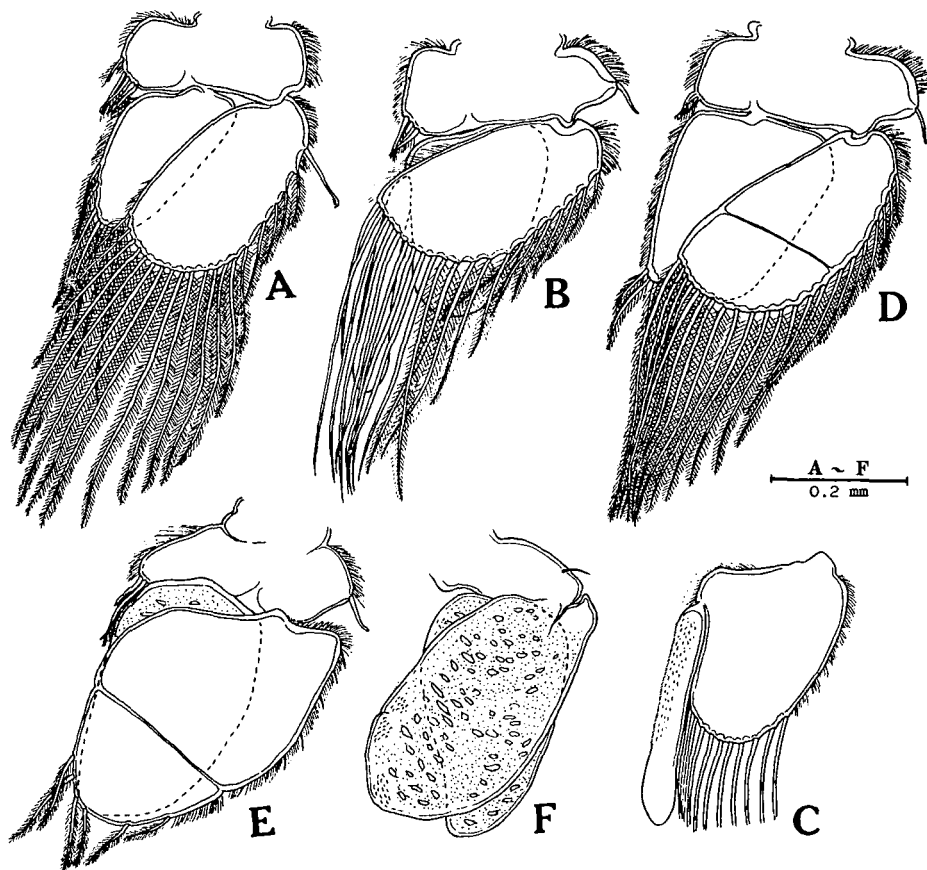


Fig. 5. *Gnrimosphaeroma salebrosa*, sp. nov., male.

A—First pleopod. B—Second pleopod. C—The same, endopod. D—Third pleopod. E—Fourth pleopod. F—Fifth pleopod. Marginal setae on endopod are wholly or partly omitted in A, B and D; hairs also omitted on some or all marginal setae in B and C.

so that the lateral margins of 2nd to 4th pleonites are exposed, 4th pleonite without any conspicuous wart on the median part of dorsal surface. First antenna reaching the posterior end of 1st pereonite, peduncle somewhat slenderer than in male, flagellum with 6 segments. Second antenna long, reaching the posterior end of 2nd pereonite, peduncle much slenderer than in male, flagellum with 6 segments. Mouth not me-

tamorphosed. Pectinate setules on maxillipedal palp fewer than in male, ca. 4 on 2nd and ca. 7 on 3rd. Pectinate setules on pereopods also fewer than in male. In other characters, roughly similar to male.

**COLOR:** Specimens preserved in alcohol are yellowish brown all over in adult ♂, while cream white in adult ♀, immature ♂ and juveniles. A few melanophores dispersed on the median parts of 1st to 4th and 7th pereonites, pleon, and pleotelson; 5th and 6th pereonites usually lack such melanophores. Eyes black.

**MEASUREMENTS OF TYPES:**

	Holotype ♂	Allotype ♀
Body length (BL) .....	3.1 mm	2.0 mm
Body width (BW).....	2.0 mm	1.4 mm
	(on 3rd pereonite)	(on 3rd pereonite)
Pleotelson length .....	0.6 mm	0.5 mm
Pleotelson width .....	1.6 mm	1.0 mm
BL/BW .....	1.5	1.4

**ECOLOGICAL NOTES:** The present new species lives under stones in the middle intertidal zone of the rocky shore. On the shore at Sakata, Sirahama, the type locality, the animals were found under stones at the foot of a hanging rock shelf, while an individual was collected from under a stone at a slightly protected place on the exposed rocky shore of Hataké-jima. The species seems to be rather rare in the vicinity of Sirahama. When disturbed, the animals fold the body as usually do broad and flat sphaeromatids.

All of the six adult males collected were found each embracing a female in the ventral hollow. All of the seven adult females collected were gravid. The fecundity is seemingly very low; the four females examined, 1.8, 1.9, 2.0 and 2.0 mm in body length, held respectively only 5, 6, 6 and 6 eggs in the incubatory chamber. The eggs are ovoid, measuring 0.30–0.35 mm × 0.20–0.25 mm.

**REMARKS:** The present new species resembles most closely *Gnorimosphaeroma noblei* MENZIES and *G. lata* NISHIMURA among the seven already known species of the genus (DANA 1852–1853, 1855; TATTERSALL 1921; GURJANOWA 1933; VAN NAME 1940; MENZIES 1954; RIEGEL 1959a, 1959b; NISHIMURA 1968). The three species share the following characters: 1) first incision does not extend so far medially as 2nd incision on the "second" pleonal somite; 2) pleotelson is triangular or subtriangular with truncated or rounded apex; 3) uropodal endopod is acute at the inner distal end and more than twice as long as exopod; etc.

The present new species differs, however, from both *noblei* and *lata* in the following points: 1) the body surface is not smooth but rough, being finely granular all over, and provided with a transverse ridge on each of anterior pereonites and longitudinal ridges on pleotelson; 2) first and 2nd segments of peduncle of 1st antenna are never markedly expanded; 3) proximal inner margin of 1st segment of peduncle of 1st antenna not



meeting that of the partner on the midline; 4) exopod of 5th pleopod is provided with scale-bearing areas along the inner distal margin. Further it is separated from *noblei* by the following characters: 5) larger number of pectinate setules on 2nd segment of mandibular palp (ca. 8 versus ca. 5 in male); 6) male maxillipedal endite extending beyond the distal end of 3rd segment of palp not so markedly as in *noblei*; 7) larger numbers of plumose marginal setae on 1st and 2nd pleopods, though similar numbers of them on 3rd and 4th pleopods; 8) second segment longer than 3rd in peduncle of 1st antenna; 9) relatively shorter male stylus on 2nd pleopod; 10) epimera broad and subquadrangular to tongue-shaped rather than small and subtriangular; 11) pleotelsonal apex not so much broadly truncated; etc. From *lata*, the new species is distinguishable by the following characters in addition: 5) fewer pectinate setules on 2nd segment of mandibular palp (ca. 8 versus ca. 13 in male); 6) male maxillipedal endite really extending beyond the distal end of 3rd segment of palp though slightly; 7) somewhat fewer plumose marginal setae on 1st to 3rd pleopods; 8) exopods of 3rd and 4th pleopods segmented completely, not incompletely as in *lata*; 9) last pleonite as wide as preceding ones to reach the lateral border of the "second" pleonal somite; etc. In all, besides its unique characters the present new species shows certain features intermediate between *G. noblei* and *G. lata*, although it is seemingly related more closely to *lata* rather than to *noblei*.

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