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✓ **A New Species of the Genus *Gnorimosphaeroma* (Crustacea, Isopoda, Sphaeromatidae) from the Naktong River, with a Key to the Korean Species of the Genus**

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洛東江에서 採集된 *Gnorimosphaeroma* 屬(잔벌레科) 等脚類의  
1新種 및 이 屬의 韓國產 種에 대한 檢索表

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摘 要

낙동강 하구에서 채집된 등각류 1종을 *Gnorimosphaeroma naktongense* (국명 : 낙동잔벌레)로 명명하여 기재한다. 또 본 종을 포함한 한국산 *Gnorimosphaeroma*속 전 6 종에 대한 검색표를 제시한다.

Key words: Crustacea, Isopoda, Sphaeromatidae, *Gnorimosphaeroma*, taxonomy, Korea

Up to now, five species of *Gnorimosphaeroma* have been recorded from Korean waters: *G. chinense* (Tattersall, 1921); *G. ovatum* (Gurjanova, 1933); *G. latum* Nishimura, 1968; *G. rayi* Hoestlandti, 1969 and *G. hoestlandti* Kim and Kwon, 1985. Among these, true estuarine or brackish water component comprises a single species, *G. chinense*, while *G. ovatum* often penetrates the fresh- or brackish water (Kim and Kwon, 1985). Another new estuarine species of the genus was found in the estuary of the Naktong River. The species is here described as the one new to science.

The holotype is deposited in the Department of Zoology, Seoul national University and the paratypes in the Department of Biology, Inje College.

***Gnorimosphaeroma naktongense*, n. sp.** 낙동잔벌레 (신칭) (Figs. 1-3)

**Material examined:** Holotype—an adult male (IJB: I8701), Kup'o, Pusan (lower reach of the

Naktong River, April 27, 1983, H. S. Kim leg. Paratypes—38 males (IJB: I8702), 51 females (IJB: I8703), collection details as the holotype.

**Measurements:** Holotype male, body length 10.7 mm, body width 5.5 mm; paratypes—38♂ 7.0–11.0 mm, 4.0–5.0 mm; 51♀ 4.2–7.0 mm, 2.1–4.1 mm.

**Description:** Body ovate, about two times longer than wide; lateral margins subparallel, dorsal surface smooth with scattered chromatophores. Interorbital ridge distinct with a rostral process of cephalon which turns downwards; apex of the process truncate. Coxal plates obscure, only faintly discriminative on pereonites II-VII from dorsal view. Pereonite I produced anteriorly, covering the lateral margin of cephalon; lateral margins tapering to form a triangle together with a cephalon. Pleon two-segmented; pleonite 1 hidden under the pereonite VII, only visible when the body contracted; pleonite 2 with two pairs of incomplete suture lines, anterior one more approximating the midline.

First antenna with flagellum eleven-segmented, not reaching the hind margin of pereonite I. Second antenna with flagellum seventeen-segmented, exceeding a little beyond the hind margin of pereonite III.

Mandibular palp three segmented; segment 1 setose, segment 2 bearing thirteen plumose setae and segment 3 bearing fifteen plumose setae. First maxilla with endopod bearing four pectinated setae exopod bearing nine spines, six of which are dentate, and a simple setae along with an accessory setae. Second maxilla with endopod bearing nine plumose setae; bilobed exopod bearing ten curved spines on inner lobe and eleven curved spines on outer lobe. Maxilliped with two coupling hooks; palpal segment 1 bearing a seta at inner-distal angle; segments 2, 3, and 4 bearing two, four and three setae, respectively, at outerdistal angle of each segment; segment 4 bearing three setae on the outer margin.

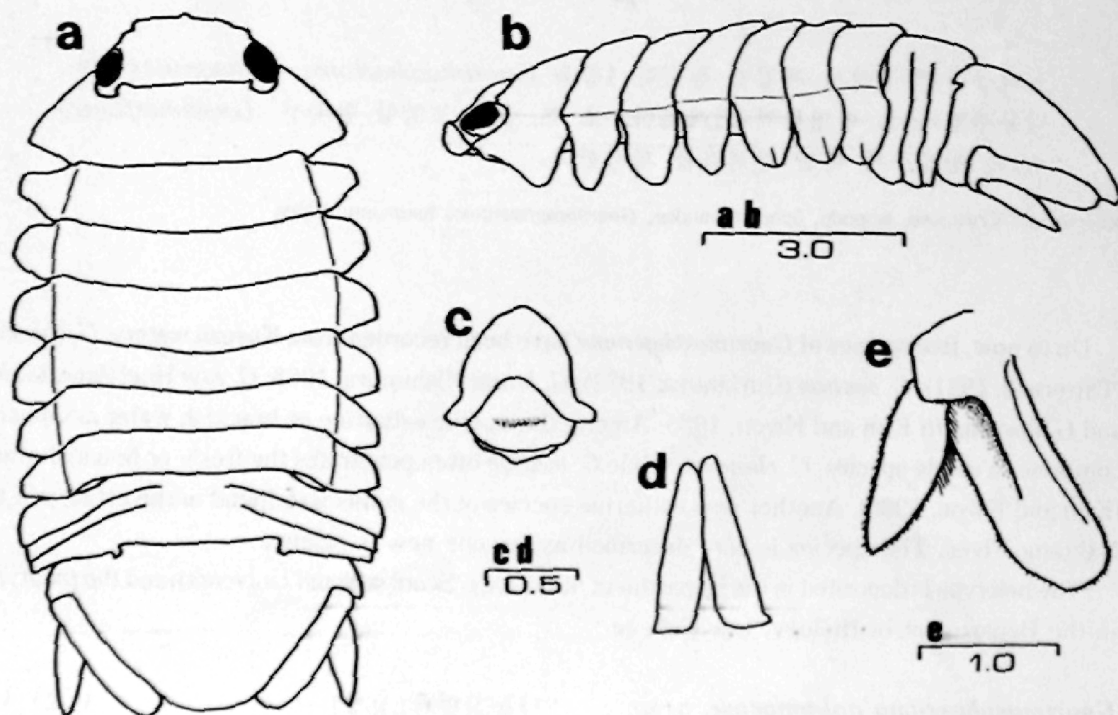
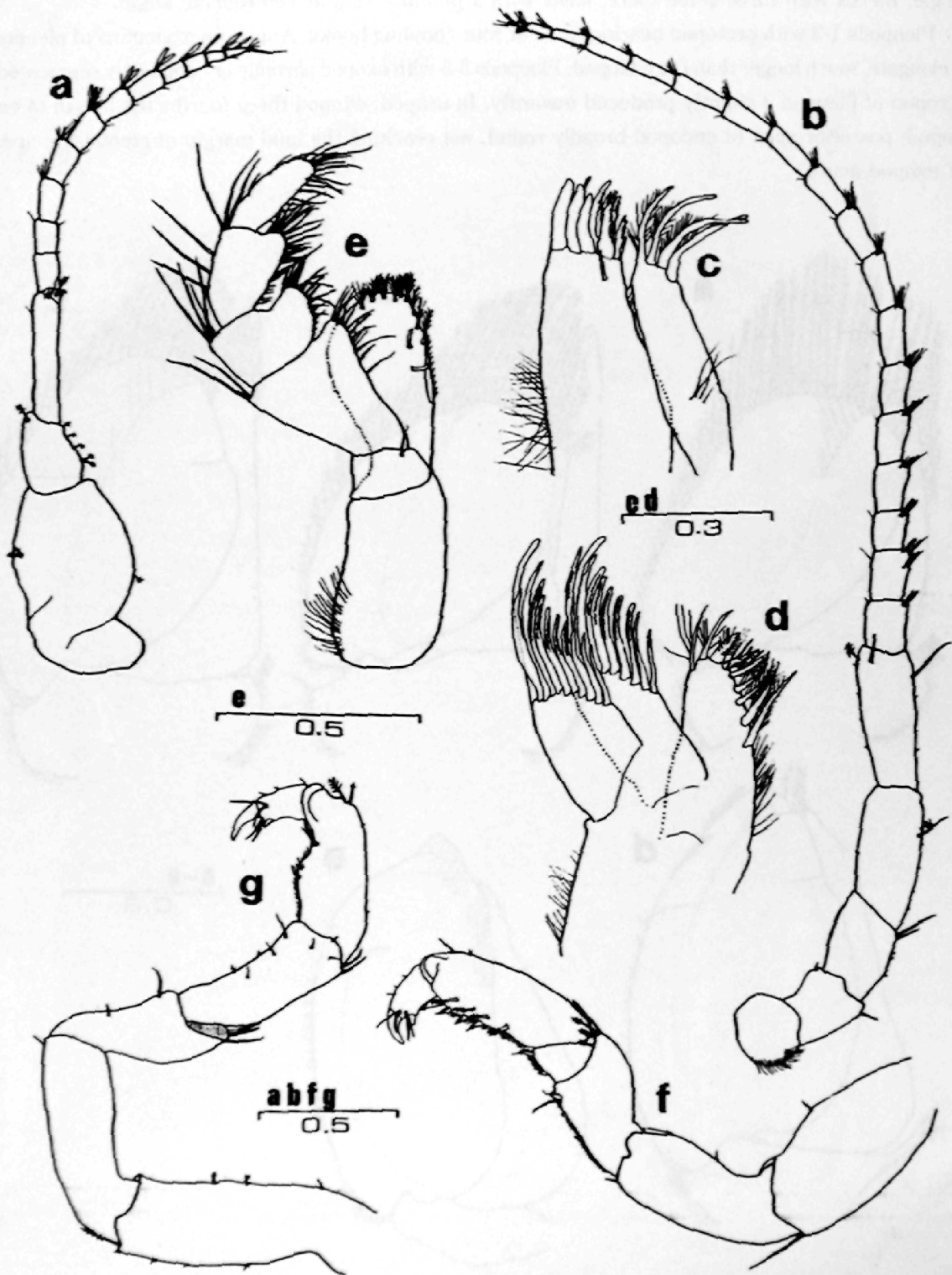


Fig. 1. *Gnorimosphaeroma naktongense*, n. sp., holotype ♂. a, dorsal view; b, lateral view; c, epistome and upper lip; d, pence; e, ventral view of uropod. Scale bars in mm.

Pereopods slender. Pereopod I densely pubescent along the ventral margins of the propodus, carpus and merus; propodus bearing four serrated spines and four plumose setae on its ventral margin;



**Fig. 2.** *Gnorimosphaeroma naktongense*, n. sp., holotype ♂. a, first antenna; b, second antenna; c, first maxilla; d, second maxilla; e, maxilliped; f, pereopod I; g, pereopod II. Scale bars in mm.

carpus and merus bearing a serrated spine at ventrodistal angle; dorsal corner of merus with four plumose setae; ventrodistal corner of basis with a long seta. Pereopod II with propodus swollen and densely pubescent, bearing three spines on its ventral margin; carpus with two setae at dorsodistal angle; merus with three setae there; basis with a plumose seta at ventrodistal angle.

Pleopods 1-3 with protopod bearing three or four coupling hooks. Appendix masculina of pleopod 2 elongate, much longer than the endopod. Pleopods 3-5 with exopod partially or completely segmented. Exopod of pleopod 3 slightly produced inwardly. In uropod, exopod three fourths the length of endopod; posterior apex of endopod broadly round, not reaching the hind margin of pleotelson; apex of exopod acute.

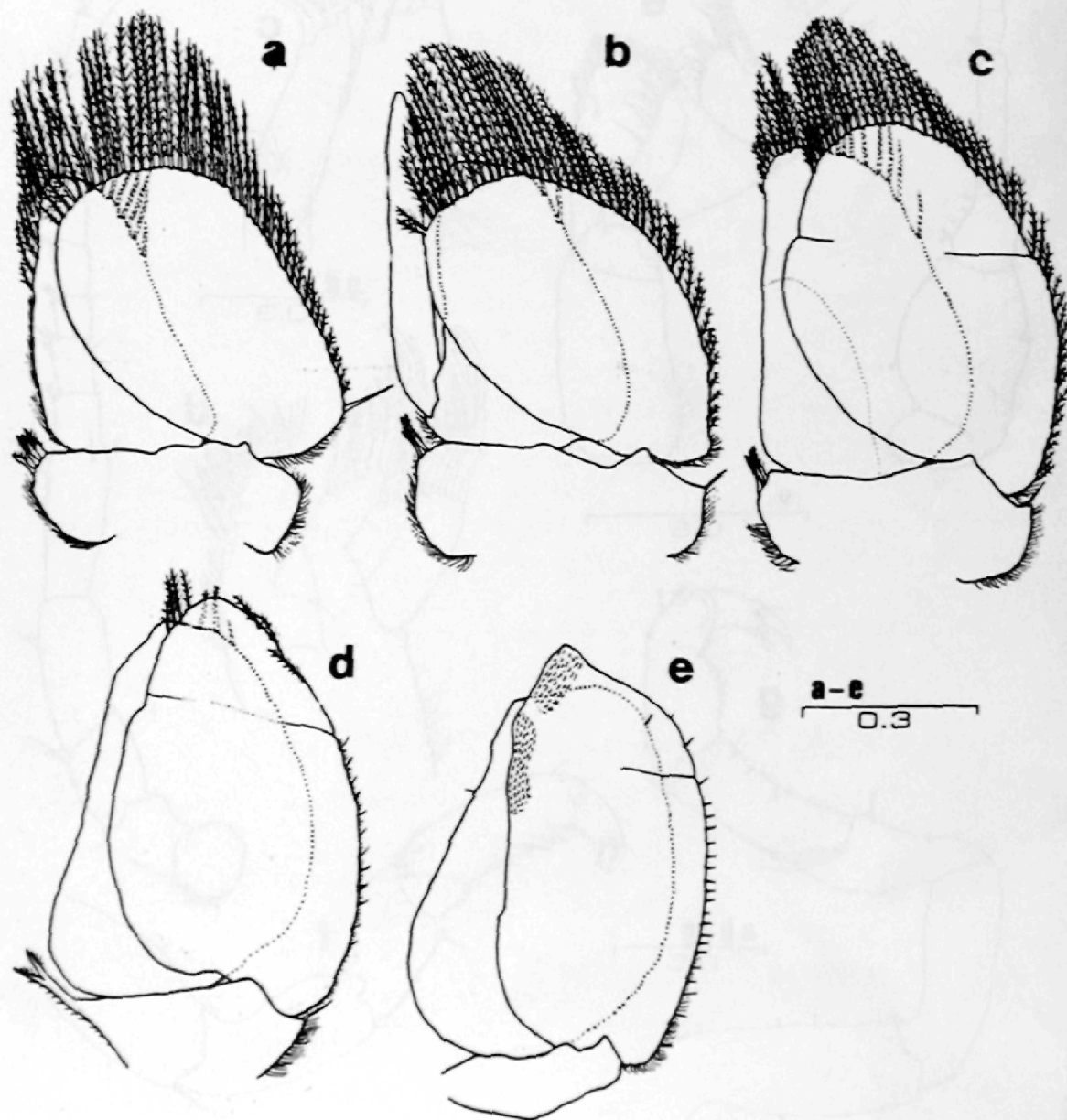


Fig. 3. *Gnorimosphaeroma nakdongense*, n. sp., holotype ♂. a, pleopod 1; b, pleopod 2; c, pleopod 3; d, pleopod 4; e, pleopod 5. Scale bars in mm.

**Remarks:** The genus *Gnorimosphaeroma* ranges in the cold and warm temperate zones of the North Pacific and includes eight valid species. Menzies (1954) separated *Gnorimosphaeroma* as a new genus from *Exosphaeroma* on the basis of the number of pleonites reaching lateral margin of pleon, two or three in the former, whilst one in the latter; and absence of respiratory folds on plepods 3 and 4 present in the latter. He included four species which had been assigned to *Exosphaeroma* to the new genus: *G. oregonense* (Dana), *G. insulare* (Van Name), *G. chinense* (Tattersall) and *G. ovatum* (Gurjanova). Further, he described a new species, *G. noblei*, from Tomales Bay, California and differentiated two subspecies of *G. oregonense*, which subsequently raised to the rank of species (Hoestlandt, 1968), *G. oregonense* s. str. and *G. luteum*. Later, Hoestlandt (1977) considered *G. luteum* as a junior synonym with *G. insulare*.

Nishimura (1968, 1969) described two new species, *G. latum* and *G. salebrosum* from Japan. Hoestlandt (1969) described a new species, *G. rayi* from Tomales Bay and later he recorded additional localities of the species from Eastern Siberia, Hawaii and several localities in Japan (Hoestlandt, 1975).

Recently Kim and Kwon (1985) described an eighth species, *G. hoestlandti*, from Korea and recognized Group II of *G. rayi* (for localities, see Hoestlandt, 1975) as a synonym with their new species as well as *G. kurilense* Kussakin, 1974 with *G. chinense*.

In many respects the present new species closely resembles *G. ovatum* (Gurjanova, 1933). The new species is distinguished from the latter by the larger body size, narrower body shape and pereonite I tapering laterally. It also resembles *G. hoestlandti* in the body shape, but readily distinguished by the less convex body and exopod of uropod whose apex is acute.

**Habitat:** Under pebbles on the fine sandy mud flat, primarily from subtidal zone. Salinity of the type locality ranges nearly freshwater to about 15‰. The present new species was not found from nearby inland sea where *G. ovatum* was a prevailing counterpart.

**Ethymology:** Specific name of this species is based upon the Naktong River where the type specimens were collected.

#### Key to the Korean species of the genus *Gnorimosphaeroma*

1. Body somewhat flattened; lateral margins of pereon and pleon, and posterior margin of pleotelson densely pubescent; uropod with exopod not exceeding a half of endopod, both rami densely pubescent on outer margin ..... *latum*
- Body convex; lateral margins of pereon and pleon, and posterior margin of pleotelson not pubescent; uropod with exopod exceeding a half of endopod ..... 2
2. Basal segments of peduncles of first antennae approximating each other on the midline; pleonal suture lines with posterior one much longer than the anterior one ..... *chinense*
- Basal segments of peduncles of first antennae separated by the rostral process of cephalon; pleonal suture lines with the anterior one not shorter than the posterior one ..... 3
3. Pereopod I with basis bearing six to eight long setae at ventral angle ..... *rayi*
- Pereopod I with basis bearing one or two setae at ventral angle ..... 4
4. Pereopod I with merus bearing about eight setae at dorsal angle ..... *hoestlandti*
- Pereopod I with merus bearing less than four setae at dorsal angle ..... 5
5. Pereopod I with merus bearing two setae at dorsal corner; maxilliped with palpal segment 2 bearing one seta at outer angle ..... *ovatum*

- Pereopod I with merus bearing about four setae at dorsal angle; maxilliped with palpal segment 2 bearing two setae at outer angle ..... *naktongense*, n. sp.

### ABSTRACT

A new species of sphaeromatid isopod from the estuary of the Naktong River, Korea, is described and figured under the name of *Gnorimosphaeroma naktongense*. A key to the six Korean species of *Gnorimosphaeroma* is presented.

### REFERENCES

- Gurjanova, E., 1933. Contribution to the Isopoda fauna of the Pacific Ocean. I. New species of Valvifera and Flabellifera. Expl. Mers d'U.R.S.S., 17: 87-106. (in Russian with English summary)
- Hoestlandt, H., 1968. Caractéristique morphologiques d'une espèce nouvelle de la côte pacifique américaine (*Gnorimosphaeroma lutea*). C. R. Acad. Sci. Paris, (Sci. Nat.), 267: 1600-1601.
- Hoestlandt, H., 1969. Sur un Sphérome nouveau de la côte pacifique américaines, *Gnorimosphaeroma rayi*, n. sp. (Isopode Flabellifère). C. R. Acad. Sci. Paris, (Sci. Nat.), 268: 325-327.
- Hoestlandt, H., 1975. Occurrences of the Isopoda Flabellifera *Gnorimosphaeroma rayi* Hoestlandt on the coast of Japan, Eastern Siberia and Hawaii, with a brief note on its genetic polychromatism. Publ. Seto Mar. Biol. Lab., 22, 1/4: 31-46.
- Hoestlandt, H., 1977. Description complémentaire de l'Isopode Flabellifère *Gnorimosphaeroma insulare* Van Name et Synonymie de *G. luteum* Menzies avec cette espèce. Crustaceana, 32, 1:45-54.
- Kim, H. S. and D. H. Kwon, 1985. The systematic study of the family Sphaeromatidae (Crustacea, Isopoda, Flabellifera) from Korea. Inje Journal, 1, 2: 143-165.
- Kussakin, O. G., 1974. Fauna and ecology of Isopoda (Crustacea) from the intertidal zone of the Kurile Islands. Novosibirsk, Nauka, pp. 227-275. (in Russian with English summary)
- Menzies, R. J., 1954. A review of the systematics and ecology of the genus "*Exosphaeroma*", with the description of a new genus, a new species, and a new subspecies (Crustacea, Isopoda, Sphaeromatidae). Am. Mus. Nov., 1683: 1-24.
- Nishimura, S., 1968. *Gnorimosphaeroma lata* n. sp., a new marine isopod from Kii, Japan. Publ. Seto Mar. Biol. Lab., 16, 4: 273-280.
- Nishimura, S., 1969. *Gnorimosphaeroma salebrosa* sp. nov. from the coast of Kii, Japan (Isopoda: Sphaeromatidae). Publ. Seto Mar. Biol. Lab., 16, 6: 385-393.
- Tattersall, W. M., 1921. Zoological results of a tour in the Far East. Mysidacea, Tanaidacea and Isopoda. Mem. Asiat. Soc. Bengal, 6, 7: 403-433, pls. 15-16.
- Thielemann, M., 1910. Beiträge zur Kenntnis der Isopodenfauna Ostasiens. Beiträge zur Naturgeschichte Ostasiens herausgegeben von Dr. F. Doflein. Abh. Bayer. Akad. Wiss., math.-phys. Kl. K., Suppl., 2, 3: 1-109, pls., 1-2.

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