

## *Ihleus* gen. nov., a new leucosiid genus (Crustacea, Brachyura)\*.

by A.A. OVAERE

### Abstract

The new genus *Ihleus* is described with two species: *Ihleus lanatus* (ALCOCK, 1896) comb. nov. and *I. villosus* (CHEN, 1989) comb. nov. Both species were found in Papua New Guinea. The genus is tentatively placed in the subfamily Ebaliinae.

**Key-words:** Brachyura, Leucosiidae, taxonomy, *Ihleus*, Papua New Guinea.

### Résumé

Un nouveau genre, *Ihleus*, est décrit avec *Ihleus lanatus* (ALCOCK, 1896) comb. nov. et *I. villosus* (CHEN, 1989) comb. nov. comme espèces. Les deux espèces ont été trouvées en Papouasie Nouvelle-Guinée. Le genre est provisoirement placé dans la sous-famille des Ebaliinae.

**Mots-clés:** Brachyours, Leucosiidae, taxonomie, *Ihleus*, Papouasie Nouvelle-Guinée.

### Introduction\*\*

The species *Randallia lanata* ALCOCK, 1896 has always occupied a particular position within the genus *Randallia*. This was already obvious in ALCOCK's (1896) key to the genus. IHLE, 1918 (p. 90) and SAKAI, 1935 (p. 67), 1937 (p. 131) and 1976 (p. 96) listed the differences with the other *Randallia* species. SAKAI (1937, 1976) suggested that *R. lanata* was an intermediate between the genera *Pariphiculus* and *Randallia*. The recent discovery of a closely related species with the same particularities justifies the description of a new genus, *Ihleus*, with two species, *I. lanatus* (ALCOCK, 1896) and *I. villosus* (CHEN, 1989) comb. nov. Both species were found in northern Papua New Guinea (Hansa Bay, Madang Province).

\*) Leopold III Biological Station, Laing Island, Contribution n° 177.

\*\*) This article was already in press when the description of *Randallia villosa* by CHEN (1989) came out. My original manuscript included the description of a new species from Papua New Guinea, which appeared to be conspecific with CHEN's species. My manuscript has been withdrawn in order to avoid an obvious case of subjective synonyms. However, my proposal of a new genus for *Randallia lanata* and *R. villosa* stands and is even confirmed by the (re)-descriptions and excellent drawings of CHEN's contribution. (17th July 1989)

### Systematics

Family **Leucosiidae** SAMOUELLE, 1819  
Subfamily **EBALIINAE** STIMPSON, 1871  
Genus *Ihleus* gen. nov.

#### TYPE SPECIES

*Randallia lanata* ALCOCK, 1896 (hereby designated).

#### DERIVATION OF THE NAME

*Ihleus* (masculine) in honour of the late Prof. Dr. J.E.W. IHLE (1879-1956) in recognition of his signal contribution to our understanding of Leucosiidae.

#### GENUS DIAGNOSIS

Whole body and appendages covered with a dense light coloured pubescence, partly masking the tubercles and grooves of the carapace; carapace subglobular or globular; surface, beneath the translucent pubescence, with pustulous and/or blunt dentiform tubercles; all regions well defined; front moderately prominent and bilobated; chelipeds stout and less than twice the carapace length; anterior extremity of the buccal cavity produced beyond the level of the anterior boundaries of the pterygostomian regions; basal joint of the antennules forming an operculum to the antennular fossa; second segment of the antenna immovable, completely separating the antennular fossa from the orbit; first segment of the abdomen under the carapace in both sexes; male abdomen with all segments recognizable, segments 3-5 not independently movable; female abdomen with all segments independently movable.

*Ihleus lanatus* (ALCOCK, 1896) comb. nov.  
Fig. 1 a, 2 a, 3 a-b

#### SYNONYMY

*Randallia lanata* ALCOCK, 1896: p. 193. - ALCOCK,

1897: pl. 30, fig. 5. - IHLE, 1918: p. 248. - SAKAI, 1935: p. 67-68, text-fig 3; 1936: p. 55, pl. 9, fig. 1 (not seen); 1937: p. 131-132, text-fig. 21, pl. 14, fig. 4; 1976: p. 96, pl. 29, fig. 3.

TYPE-LOCALITY

Andaman Sea (ALCOCK, 1896).

MATERIAL EXAMINED

Papua New Guinea, Mililat (11 km N. of Madang), Wongat (small reef), on sandy bottom with *Halimeda* sp. at -15 to -20 m, leg.: Mr. J. PIERRET, 9 March 1979, I.G. 26080/41: denuded carapace of an adult female, all legs missing, (B.C. 1152).

Papua New Guinea, Hansa Bay, Duangit Reef, at -45 m, leg.: team of Prof. J. BOUILLON, May 1977, I.G. 25715/9004: 1 adult male, (B.C. 1153).

Hansa Bay, Duangit Reef, leg.: team of Prof. J. BOUILLON, January 1977, I.G. 25715/9005: 1 juvenile and 1 adult male, (B.C. 1154).

Hansa Bay, S.E. Duangit Reef, handdredge at -50 m on muddy sand, leg.: Mr. J. PIERRET, 4 July 1979, I.G. 26086/9001: 1 adult male, (B.C. 1155).

Hansa Bay, Duangit Reef, on sand at -45 m, leg.: team of Prof. J. BOUILLON, 6 August 1976, I.G. 25715/9008: 1 adult male, (B.C. 1156).

Hansa Bay, S.E. Duangit Reef, on muddy sand with sponges and coral debris at -52 m., leg.: Mr. J. PIERRET, 10 September 1980, I.G. 26253/29: 2 ovig. females, (B.C. 1157).

Hansa Bay, S.E. Duangit Reef, on muddy sand at -50 m., leg.: Mr. J. PIERRET, 11 September 1980, I.G. 26253/30: 1 adult female, (B.C. 1158).

Hansa Bay, S. Wanginem Reef, in area with gorgonians and sponges, leg.: Mr. J. PIERRET, 21 October 1980, I.G. 26253/57: 1 adult male, (B.C. 1159).

Hansa Bay, Duangit Reef, leg.: team of Prof. J. BOUILLON, January 1977, I.G. 25715/9005: 2 adult males, 1 ovig. female, (B.C. 1160).

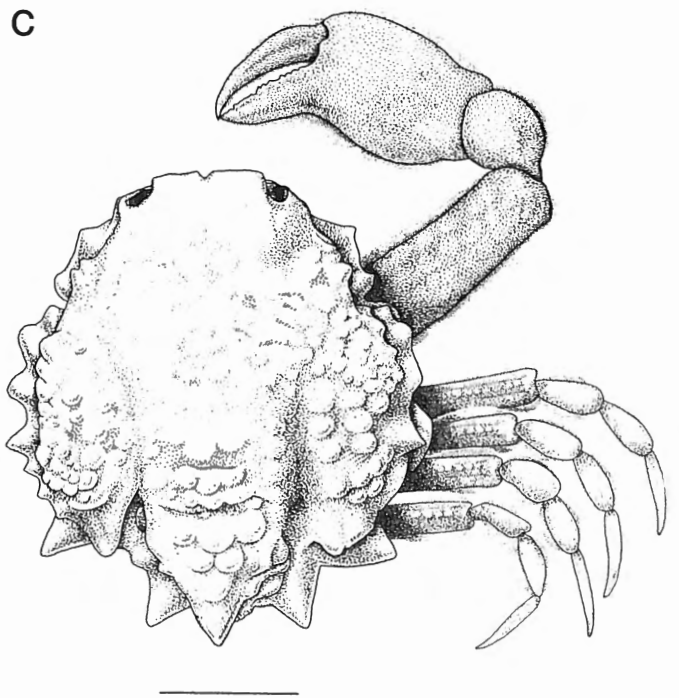
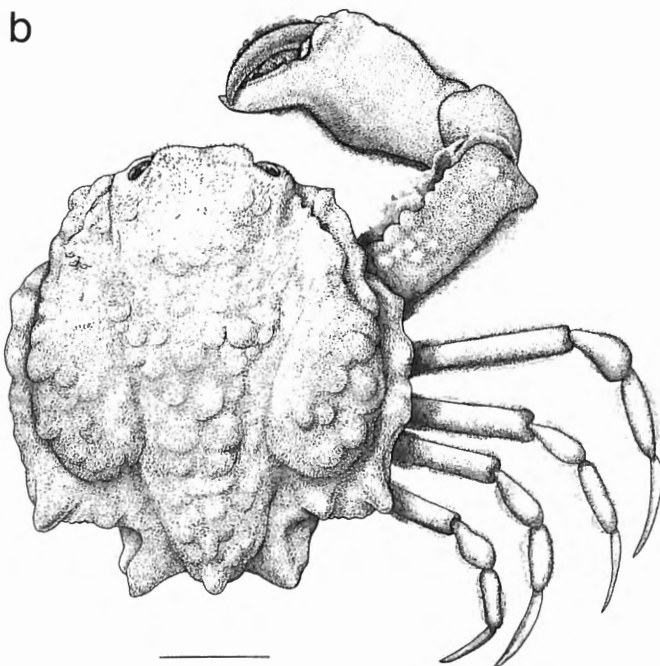
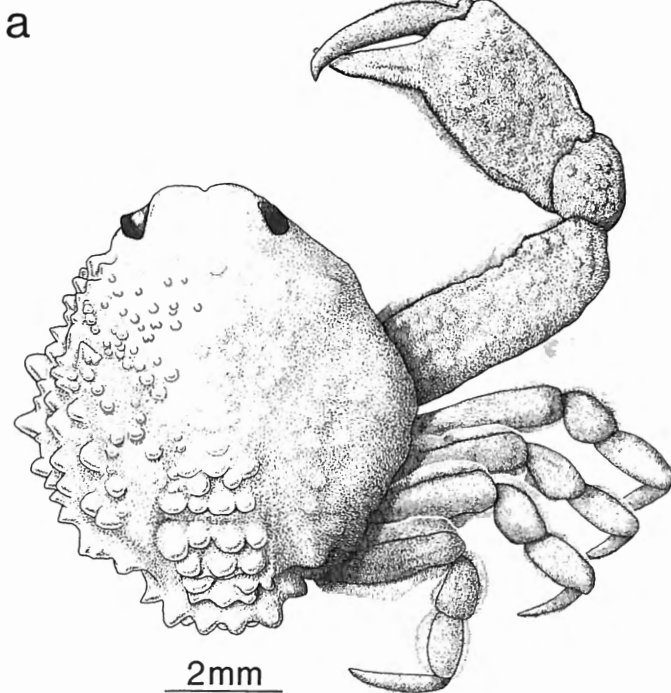


Fig. 1. a. *Ihleus lanatus*, male B.C. 1153 (7,9 x 7,0 mm), dorsal view, partly denuded; b. *Ihleus villosus*, female B.C. 1164 (8,2 x 7,5 mm), dorsal view; c. *I. villosus*, juvenile female B.C. 1166 (7,2 x 6,25 mm), dorsal view, left side denuded.

Hansa Bay, Duangit Reef, on sand at -45 m, leg.: team of Prof. J. BOUILLON, 6 August 1976, I.G. 25715/9008: 1 adult female, (B.C. 1161)

Hansa Bay, 100 m off Duangit Reef, leg.: team of Prof. J. BOUILLON, I.G. 25715/9009: 1 adult female, (B.C. 1162).

Hansa Bay, Duangit Reef, at -45 m, leg.: team of Prof. J. BOUILLON, September-October 1976, I.G. 25715/9006: 2 adult males, 1 adult female and 1 juvenile, (B.C. 1163).

Hansa Bay, Duangit Reef, leg.: team of Prof. J. BOUILLON, March 1977, I.G. 25715/9011: 1 ovig. female, (B.C. 1167).

DIAGNOSIS

A globular *Ihleus* with all regions obvious, but only moderately projecting; tubercles on the carapace margins large but not transformed into strongly projecting teeth.

DESCRIPTION

*Measurements:*

Adult male (B.C. 1153): carapace length 10.0 mm, carapace breadth 9.0 mm, cheliped length 13.6 mm.

Adult female (B.C. 1161): c.l. 10.3 mm, c.b. 9.3 mm, chel.l. 14.6 mm.

*Carapace*

globular; a little longer than wide; all regions well defined by grooves; front prominent, slightly pointed upwards, finely granular and bilobed with a median depression; orbits emarginate, three sutures obvious; hepatic regions marked dorsally and posteriorly by shallow grooves, ventrally separated from the salient subhepatopterygostomial region by a deep groove; subhepatopterygostomial regions marking the border of the carapace, armed with large blunt dentiform tubercles; pleural suture - when visible - between the subhepatic part above and the pterygostomial part below of the region; branchial regions with rounded tubercles becoming larger and bluntly dentiform posteriorly and laterally where they form the margin of the carapace; gastric region with rounded granules becoming larger and more numerous posteriorly; cardiac region raised, defined by deep grooves, armed with large blunt dentiform tubercles; intestinal region projecting, armed with a double or triple row of dentiform tubercles, 5-6 tubercles of the second row marking the posterior margin of the carapace.

*Chelipeds:*

subequal in both sexes; entirely covered with the same translucent velvety pubescence as the carapace; 1.3 to 1.4 times the carapace length, merus with large rounded granules all around its surface; carpus short and smooth except for a small tubercle on its inner and outer margin; propodus smooth, broad and flattened; length of the dactylus equal to the dorsal margin of the

palm; cutting edges of the fingers finely denticulated.

*Walking legs:*

covered with the same translucent velvety pubescence as the carapace and chelipeds, somewhat compressed, merus with a double dorsal row of small granules.

*Third maxilliped:*

exopodite with some rounded distal and lateral granules; merus with a row of granules on its inner margin and a few granules scattered along the outer margin, a few granules on the ischium; length of the inner margin of the ischium only a little longer (1.10) than the inner margin of the merus (B.C. 1152).

*Female abdomen and sternites:*

first segment under the carapace; segments 2 to 7 free and independently movable; segments 2 to 6 with longitudinal row of tubercles on the midline and on the two lateral margins with submedian depressions in between; telson of a typical shape, as long as broad, with strongly concave lateral margins; sternites with the same rounded tubercles as on the abdomen (fig. 3 b)

*Male abdomen:*

first segment under the carapace; second segment free; segments 3 to 5 fused though still clearly discernible; sixth segment hexagonal; segments 2 to 6 ornamented with rounded tubercles (fig. 3 b); telson trigonal and smooth, 1.6 times longer than wide in B.C. 1153; sternites with the same rounded tubercles as on the abdomen.

*Male pleopod:*

as figured (fig. 2 a).

*Colour of specimens preserved in alcohol:*

translucent velvety pubescence ivory white, denuded carapace pearly white.

DISTRIBUTION

Andaman Sea (ALCOCK, 1896); Flores Sea and Banda Sea, Indonesia (IHLE, 1918); Tosa Bay and Sagami Bay, Japan (SAKAI, 1935, 1937, 1976); Papua New Guinea.

*Ihleus villosus* (CHEN, 1989) comb. nov.

Fig. 1 b-c, 2 b

SYNONYMY

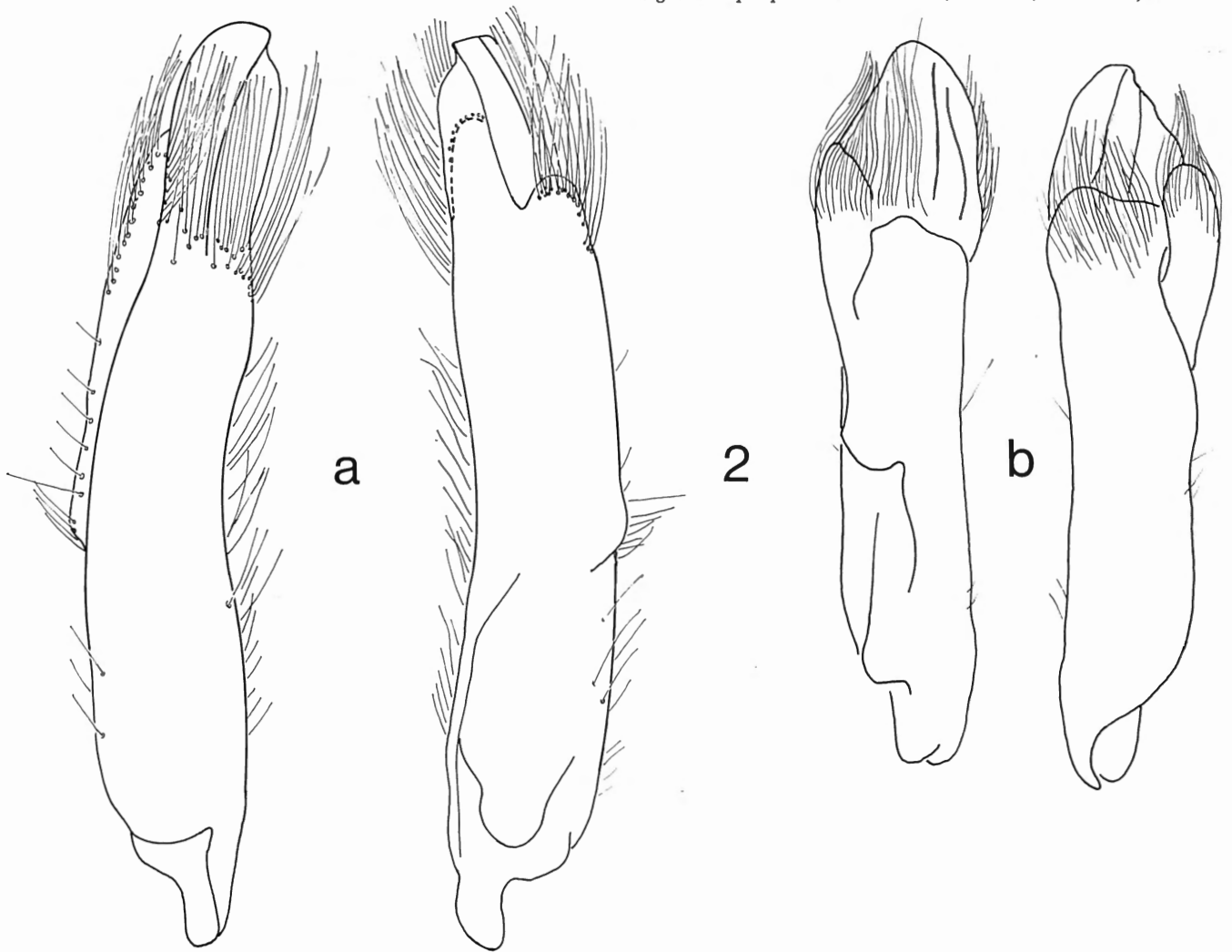
*Randallia villosa* CHEN, 1989: p. 211-212, fig. 11, pl. I 5-6.

TYPE-LOCALITY

Philippines (CHEN, 1989).

MATERIAL EXAMINED

Papua New Guinea, Hansa Bay, in front of Laing Island pass, on mud at -35 m, leg. Mr. J. PIERRET, 15

Fig. 2. Male pleopods: a. *Ihleus lanatus*, B.C. 1153; b. *I. villosus*, B.C. 1165.

October 1980, I.G. 26253/20: a totally intact adult female (B.C. 1164).

Hansa Bay, leg.: team of Prof. J. BOUILLON, October 1976, I.G. 25715/9010: male (B.C. 1165).

Hansa Bay, on mud at -35 m, leg.: Mr. J. PIERRET, June 1977, I.G. 25930/9009: juvenile female (B.C. 1166), left side denuded.

#### DIAGNOSIS

An *Ihleus* with all regions strongly projecting; tubercles on the margins of the carapace strongly projecting and determining the outline of the carapace, even before removal of the translucent velvety pubescence.

#### DESCRIPTION

##### Measurements:

female (B.C. 1164): c.l. 8.2 mm, c.b. 7.5 mm, chel.l. 9.45 mm (= 1.15 times c.l.)

male (B.C. 1165): c.l. 6.4 mm, c.b. 5.75 mm, chel.l. 8.3 mm (= 1.3 times c.l.)

juv. female (B.C. 1166): c.l. 7.2 mm, c.b. 6.25 mm, chel.l. 8.4 mm (= 1.16 times c.l.).

##### Carapace

subglobular; longer than wide; all regions well defined by grooves, projecting; front prominent, pointed upwards, bilobed with a median depression and smooth except for some granules on the anterior margin; orbits emarginate, three sutures obvious; hepatic regions strongly projecting, tuberculated on their summits, one tubercle being large and dentiform; subhepatopterygostomial regions strongly projecting, marking the anterolateral margin of the carapace with two dentiform lobules, pleural suture - when visible - between the subhepatic part above and the pterygostomial part below the region; branchial regions strongly projecting, especially posteriorly and armed with large pustulous tubercles in its central parts, laterally with large projecting dentiform tubercles marking the lateral margins of the carapace (some of the anterior tubercles are partly fused, forming a petaloid projection similar to the projection on the subhepatopterygostomial regions), posterior dentiform tubercle extremely long and marking the general outline of the carapace; gastric region smooth anteriorly, armed with rounded granules becoming larger and more numerous posteriorly; cardiac region strongly projecting posteriorly, armed

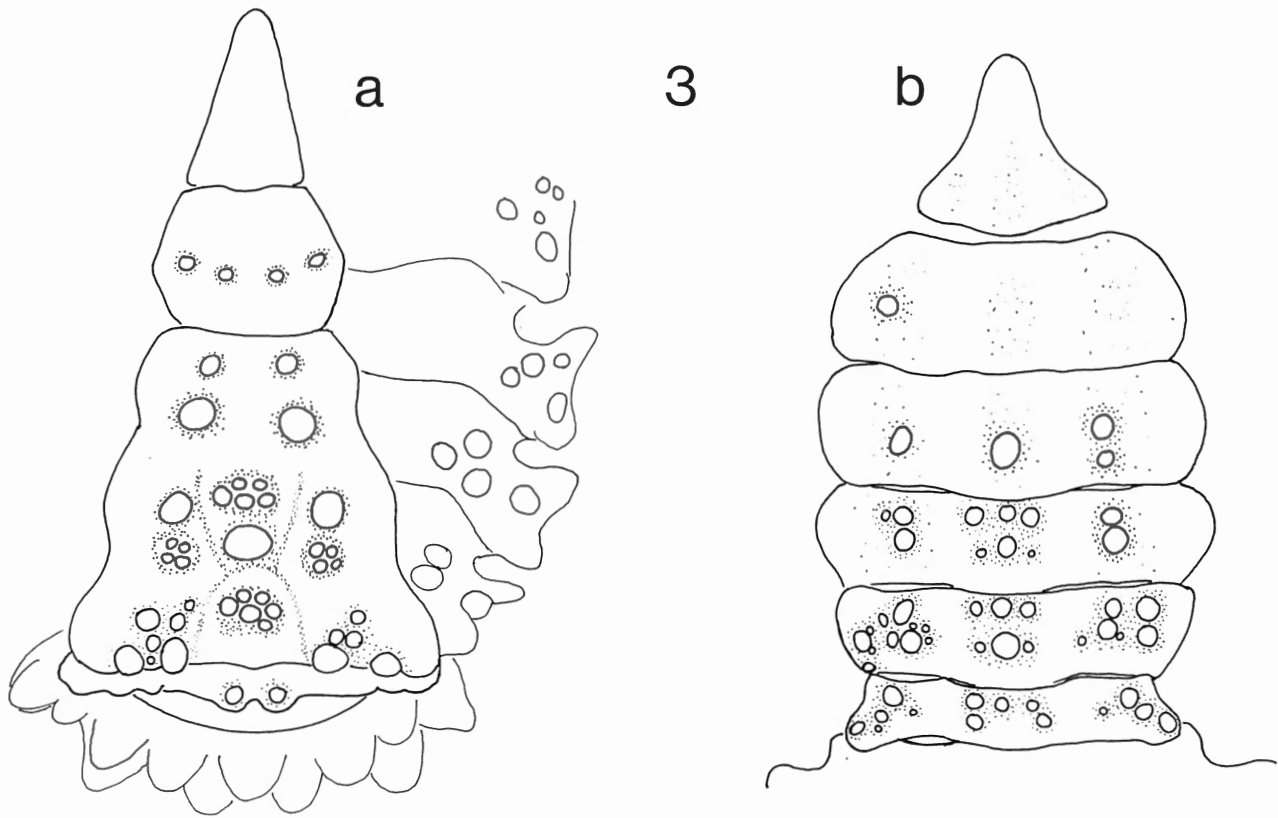


Fig. 3. *Ihleus lanatus*: a. abdomen of the male B.C. 1153; b. abdomen of the female B.C. 1152.

with tubercles; tubercles on the midline large and dentiform, posterior tubercle forming a projecting tooth, marking the general outline of the carapace; intestinal region with 4 to 6 large tubercles, the outermost very large and obliquely projecting.

*Chelipeds:*

subequal in both sexes; covered with the same translucent velvety pubescence as the carapace; 1.1 tot 1.3 times the carapace length; merus with rounded tubercles mostly confined to the anterior margin; carpus short and smooth except for a small tubercle on its inner and outer margin; propodus smooth, broad and flattened; dactylus shorter than dorsal margin of the palm; cutting edges of the fingers finely denticulated.

*Walking legs:*

covered with the same translucent velvety pubescence as the carapace and chelipeds, somewhat compressed, merus with a double dorsal row of small granules.

*Third maxilliped:*

exopodite with some rounded distal and lateral granules; ischium with a row of small sharp granules along the outer margin; length of the inner margin of the ischium approximately one fourth longer than the inner margin of the merus.

*Female abdomen and sternites:*

first segment under the carapace; segments 2 to 7 free

and independently movable; segments 2 to 6 with longitudinal row of tubercles on the midline and on the lateral margins with submedian depressions in between; telson of a typical shape, broader than long, with strongly concave lateral margins; telson deeply sunck between strong elevations of the fourth sternite; sternites with the same rounded tubercles as on the abdomen.

*Male abdomen:*

first segment under the carapace; second segment free; segments 3 to 5 fused though still clearly discernible; sixth segment hexagonal; segments 2 to 6 ornamented with rounded tubercles; telson trigonal, vaulted, 1,4 times longer than wide in B.C. 1165, smooth; telson deeply sunck between strong elevations of the fourth sternite; sternites with the same rounded tubercles as on the abdomen.

*Male pleopod:*

as figured (fig. 2 b)

*Colour of specimens preserved in alcohol:*

translucent velvety pubescence ivory white, denuded carapace pearly white.

DISTRIBUTION:

The species is only known from one locality in Papua New Guinea and from the type-locality (Philippines).

## DISCUSSION

*Ihleus* is probably not as closely related to the genus *Randallia* STIMPSON, 1857 as could be derived from the former status of *Ihleus lanatus* (ALCOCK, 1896). In my opinion the subdivision of the Leucosiidae in Eballiinae, Philyrinae, Leucosiinae and Cryptocneminae has many shortcomings and should perhaps partly be revised. The subfamilies Eballiinae STIMPSON, 1857 and Philyrinae RATHBUN, 1937 are not clearly separated as some characters overlap. Furthermore many species were erroneously assigned to a genus of one of the two subfamilies. Nevertheless *Ihleus* is tentatively placed in the Eballiinae. It meets all the characteristics of the Eballiinae except for the abdominal formula. In *Ihleus* all the abdominal segments of the female are freely movable and the incubation pouch is poorly developed. Both features are considered here as plesiomorph characteristics. In the Eballiinae the rounded anterior margin of the mouth is produced beyond the level of the anterior margins of the pterygostomian regions. This feature was already observed by IHLE (1918) for *I. lanatus*. Moreover I compared the buccal area of *I. lanatus* with Atlantic *Ebalia* species (*E. tuberosa* (PENNANT, 1777), *E. tumefacta* (MONTAGU, 1808), *E. tuberculata* MIERS, 1881, *E. affinis* (MIERS, 1881) and a Mediterranean species, *E. edwardsi* COSTA, 1838. The same relative position of the anterior margins of the mouth and the pterygostomian regions is found in both genera and the notch in the anterolateral margin of the pterygostomian region is likewise present. *Ihleus* is characterized by the operculum to the antennular fossa formed by the basal segment of the antennula. In the *Ebalia* species different types of opercula are observed, though never reaching the perfect closure of the antennular fossa as in *Ihleus*. In the *Ebalia* species the operculum is best developed in *E. tuberosa*. An imperfect operculum was also observed in *Iphiculus spongiosus* ADAMS & WHITE, 1848, which belongs to the Philyrinae. I therefore think that the formation of an operculum is probably an adaptation to a muddy environment. In *Ihleus* the second segment of the antenna has reached the septum antennulo-orbitale, separating the antennular fossa from the orbit.

I hesitate to pronounce on the systematic position of the remaining species of the genus *Randallia*, generally placed in the subfamily Philyrinae. On the basis of the poor descriptions in literature and of my observations on *Randallia glans* ALCOCK, 1896\*) the genus appears to be rather heterogenous. E.g. a preliminar study of *Randallia mirabilis* ZARENKOV, 1969 from Papua New

Guinea reveals that this species should belong to the genus *Arcania* LEACH, 1817.

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## Literature cited

- ALCOCK, A., 1896. Materials for a Carcinological Fauna of India. No. 2. Brachyura Oxystomata. *Journal of the Asiatic Society of Bengal*, 65 (2): 134-296, pl. 6-8.
- ALCOCK, A. 1897. Illustrations of the Zoology of the royal Indien marine surveying steamer Investigator. Crustacea. Calcutta.
- CHEN, H., 1989. Leucosiidae (Crustacea, Brachyura). In: J. FOREST (ed.), Résultats des Campagnes MUSORSTOM, Volume 5. *Mémoires du Muséum national d'Histoire naturelle*, (A), 144: 181-263.
- IHLE, J.E.W., 1918. Die Decapoda Brachyura der Siboga-Expedition. III. Oxystomata: Calappidae, Leucosiidae, Raninidae. *Siboga-Expedition Monographies*, 39b2: 159-322.
- SAKAI, T., 1935. New and rare species of Brachyura, collected by the "Misango" during the zoological survey around the Izu-peninsula. *Science Reports of the Tokyo Bunrika Daigaku*, section B, 32: 63-88.
- SAKAI, T., 1936. Crabs of Japan. 1-239, i-xxvii, 1 colour-frontispiece, pls. 1-66. Sanseido, Tokyo. (in Japanese)
- SAKAI, T., 1937. Studies on the Crabs of Japan. II. Oxystomata. *Science Reports of the Tokyo Bunrika Daigaku*, section B, 3 (suppl. 2): 67-192, pl. 10-19.
- SAKAI, T., 1976. Crabs of Japan and Adjacent Seas. Kodansha Ltd., Tokyo, 3 vols.: xxix + 773 pp. (in English); 446 pp; (in Japanese); 251 pls..

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\*) Meanwhile *Randallia glans* has been transferred to the genus *Ebalia* by CHEN (1989, p. 1987).