

ON A COLLECTION OF CALAPPOID AND LEUCOSIROID CRABS  
(DECAPODA, BRACHYURA) FROM VANUATU, WITH DESCRIPTION  
OF A NEW SPECIES OF LEUCOSIIDAE

BY

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ABSTRACT

Thirty-eight species of crabs of Calappidae, Matutidae, Iphiculidae, and Leucosiidae were identified from material collected during the SANTO 2006 Expedition to Espiritu Santo Island, Vanuatu. Of these, 32 (14 calappids, one matutid, four iphiculids, and 13 leucosiids) are reported for the first time from Vanuatu. The leucosiid genus *Euclosia* Galil, 2003, is a junior homonym of *Euclosia* Mulsant, Verreaux & Verreaux, 1866 (Aves), and a new name, *Euclosiana*, is proposed. One new species, *Euclosiana guinotae* n. sp., is described as new. It differs from its closest congener, *E. rotundifrons* (Chopra, 1934), in its smooth rather than closely punctate dorsum, and the lack of a diagonal band of granules on the third thoracic sternite.

RÉSUMÉ

Trente huit espèces de crabes Calappidae, Matutidae, Iphiculidae et Leucosiidae ont été identifiées dans le matériel récolté lors de l'expédition SANTO 2006 à l'île Espiritu Santo, Vanuatu. Le genre leucosien *Euclosia* Galil, 2003, est un homonyme plus récent d'*Euclosia* Mulsant, Verreaux & Verreaux, 1866 (Aves), et un nouveau nom, *Euclosiana*, est donc proposé. Parmi les trente deux espèces signalées pour la première fois de ces îles : 14 callapides, un matutide, quatre iphiculides et 13 leucosides. L'une des espèces, *Euclosiana guinotae* n. sp. est décrite; elle diffère de l'espèce proche *E. rotundifrons* (Chopra, 1934) par sa surface lisse au lieu de finement ponctuée et l'absence de la bande diagonale de granules sur le troisième sternite thoracique.

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## INTRODUCTION

An expedition to the island of Espiritu Santo, Vanuatu (SANTO 2006) conducted in 2006 by the Muséum national d'Histoire naturelle, Paris, and the Institut de Recherche pour le Développement (IRD) obtained 38 species of calappid, matutid, iphiculid, and leucosiid crabs. Thirty-two species (14 calappids, one matutid, four iphiculids, 13 leucosiids) are reported herein for the first time from Vanuatu. One species of leucosiid is recognized as new, *Euclosiana guinotae* n. sp.

The leucosiid genus *Euclosia* Galil, 2003, is a junior homonym of *Euclosia* Mulsant, Verreaux & Verreaux, 1866 (type species by original designation *Trochilus flavicaudatus* Fraser, 1840), a hummingbird genus of the family Trochilidae. *Trochilus flavicaudatus* Fraser, 1840, however, is a junior subjective synonym of *Trochilus lafresnayi* Boissoneau, 1840, which is the type species of *Lafresnaya* Bonaparte, 1850, by monotypy. This makes *Euclosia* Mulsant, Verreaux & Verreaux, 1866, a junior synonym of *Lafresnaya* Bonaparte, 1850. Although *Euclosia* Mulsant, Verreaux & Verreaux, 1866, does not appear to have been used as a valid genus name for the bird since 1899, one of the requirements of Article 23.9.1.2 of the Code (which deals with reversal of precedence) nevertheless requires the junior name *Euclosia* Galil, 2003, to have been used for a period of not less than 10 years. As the genus was only named in 2003, Article 23.9 thus cannot be applied, and a replacement name needs to be established for *Euclosia* Galil, 2003. To this effect, we propose the new name *Euclosiana*. The gender is feminine, and the type species is *Leucosia obtusifrons* De Haan, 1841.

Specimens examined are deposited in the Muséum national d'Histoire naturelle (MNHN), Paris; and the Zoological Reference Collection (ZRC), Raffles Museum of Biodiversity Research, National University of Singapore. The abbreviation CL is used for the carapace length, measured along the vertical median line; while G1 and G2 are used for the male first and second gonopods, respectively. All localities listed are in Vanuatu.

## TAXONOMY

## Family CALAPPIDAE

***Calappa bicornis* Miers, 1884**

Material examined. — One ♂ (CL 48.1 mm) (ZRC 2009.0426), Second Channel, stn EP1, 15°32.5'S 167°09.0'E, 46-47 m, 10 Sept. 2006.

Distribution. — Madagascar to Japan (Ng, 2002), Vanuatu (new record).

**Calappa capellonis** Laurie, 1906

Material examined. — One ♂ (CL 36.3 mm) (ZRC 2009.0427), NW Malo Is., stn EP22, 15°37.3'S 167°05.8'E, 78-91 m, 21 Sep. 2006.

Distribution. — Madagascar to New Caledonia (Galil, 1997), Vanuatu (new record).

**Calappa clypeata** Borradaile, 1903

Material examined. — One ♂ (CL 16.9 mm), 1 ♀ (CL 16.1 mm) (ZRC 2009.0430), Turtle Bay, stn AT38, 15°21.4'S 167°12.8'E, 29-58 m, 27 Sep. 2006.

Distribution. — East Africa to New Caledonia (Galil, 1997), Vanuatu (new record).

**Calappa hepatica** (Linnaeus, 1758)

Material examined. — One ♂ (CL 43.4 mm) (ZRC 2009.0432), Santo Is., Rose Point, stn VM2, 15°34.9'S 167°02.4'E, intertidal, 10 Sep. 2006.

Distribution. — Red Sea to Hawaii (Balkis & Ceviker, 2003), Vanuatu (new record).

**Calappa japonica** Ortmann, 1892

Material examined. — One ♀ (CL 103.7 mm) (ZRC 2009.0436), W Malo Is., stn AT64, 15°39.6'S 167°01.9'E, 249-252 m, 4 Oct. 2006.

Distribution. — Red Sea to New Caledonia (Lai & Ng, 2006), Vanuatu (new record).

**Calappa liaoi** Ng, 2002

Material examined. — One ♀ (CL 21.0 mm) (ZRC 2009.0437), Segond Channel, stn EP1, 15°32.5'S 167°09.0'E, 46-47 m, 10 Sep. 2006.

Distribution. — Philippines (Galil & Ng, 2009), Vanuatu (new record).

**Calappa lophos** (Herbst, 1782)

Material examined. — One juv. (CL 8.7 mm) (MNHN), Segond Channel, stn ED5, 15°31.7'S 167°09.4'E, 9-13 m, 12 Sep. 2006.

Distribution. — Indian Ocean to Australia (Lai et al., 2006), Vanuatu (new record).

**Calappa ocularia** Ng, 2002

Material examined. — One ♂ (CL 13.4 mm) (ZRC 2009.0441), NW Malo Is., Bruat Channel, stn AT5, 15°39.9'S 167°03.8'E, 114-132 m, 15 Sep. 2006.

Distribution. — Philippines (Ng, 2002), Vanuatu (new record).

**Calappa philargius** (Linnaeus, 1758)

Material examined. — One juv. (CL 10.7 mm) (ZRC 2009.0446), Segond Channel, stn ED5, 15°31.7'S 167°09.4'E, 9-13 m, 12 Sep. 2006.

Distribution. — Japan to Samoa (Ng et al., 2002), Vanuatu (new record).

**Calappa pustulosa** Alcock, 1896

Material examined. — One ♀ (CL 13.1 mm) (ZRC 2009.0449), E Urélapa Is., stn AT30, 15°36.7'S 167°02.6'E, 83-120 m, 25 Sep. 2006.

Distribution. — Indian Ocean to Solomon Is. (Galil, 1997, 2007), Vanuatu (new record).

**Calappa undulata** Dai & Yang, 1991

Material examined. — One ♂ (CL 35.0 mm), 1 ♀ (CL 45.1 mm) (ZRC 2009.0450), NW Malo Is., stn EP19, 15°37.5'S 167°05.1'E, 80-94 m, 19 Sep. 2006.

Distribution. — Andaman Sea to South China Sea (Ng et al., 1999), Vanuatu (new record).

**Calappa gallus** (Herbst, 1803)

Material examined. — One ovigerous ♀ (CL 45.9 mm) (ZRC 2009.0561), E Aoré Is., off Aimbué Bay, stn EP34, 15°33.2/33.3'S 167°12.8/12.9'E, 40-60 m, 14 Oct. 2006.

Distribution. — Madagascar to Hawaii (Ng, 2000), Vanuatu (new record).

**Mursia diwata** Galil & Takeda, 2004

Material examined. — One ♂ (CL 14.2 mm) (ZRC 2009.0453), W Malo Is., stn AT8, 15°40.5'S 167°01.5'E, 366-389 m, 17 Sep. 2006.

Distribution. — Previously known only from the Philippines (Galil & Takeda, 2004), Vanuatu (new record).

**Paracyclois milneedwardsii** Miers, 1886

Material examined. — Three juvs. (CL 12.2-13.1 mm) (ZRC 2009.0458), W Malo Is., stn AT18, 15°41.3'S 167°02.6'E, 321-336 m, 21 Sep. 2006; 1 ♀ (CL 47.8 mm) (ZRC 2009.0459), Big Bay, stn AT98, 15°06.6'S 166°50.8'E, 347-394 m, 14 Oct. 2006; 1 juv. (MNHN), W Malo Is., stn AT121, 15°38.7'S 167°01.2'E, 275-290 m, 19 Oct. 2006.

Distribution. — Japan to Solomon Is. (Galil & Ng, 2009), Vanuatu (new record).

## Family MATUTIDAE

**Izanami curtispina** (Sakai, 1961)

Material examined. — One ♂ (CL 18.2 mm), 4 ♀♀ (CL 12.1-20.1 mm) (ZRC 2009.0460), 1 ♂ (CL 17.7 mm), 3 ♀♀ (MNHN), NW Malo Is., stn AT5, 15°39.9'S 167°03.8'E, 114-132 m, 15 Sep. 2006.

Distribution. — Madagascar to Solomon Is. (Galil, 2007), Vanuatu (new record).

## Family IPHICULIDAE

**Iphiculus convexus** Ihle, 1918

Material examined. — One ♀ (CL 25.4 mm) (ZRC 2009.0461), E Aoré Is., stn EP10, 15°34.5'S 167°05.1'E, 45-101 m, 15 Sep. 2006; 1 ♂ (CL 22.5 mm) (ZRC 2009.0462), 1 ♂ (CL 19.0 mm) (MNHN), S Urélapa Is., stn EN20, 15°37.2'S 167°01.9'E, 85 m, 19 Sep. 2006; 1 ♀ (CL 24.7 mm) (ZRC 2009.0463), N Malo Is., Bruat Channel, stn FP50, 15°36.8'S 167°08.7'E, 25 m, 4 Oct. 2006; 1 ♀ (CL 15.0 mm) (ZRC 2009.0464), NE Aoré Is., AT85, 15°32.6'S 167°15.7'E, 114-196 m, 12 Oct. 2006.

Distribution. — Philippines, Indonesia (Galil & Ng, 2009), Vanuatu (new record).

**Iphiculus spongiosus** Adams & White, 1848

Material examined. — Two ♂♂ (CL 11.5 mm, 11.9 mm), 2 juvs. (ZRC 2009.0465), SE Aésé Is., stn AT24, 15°27.0'S 167°16.1'E, 190-210 m, 23 Sep. 2006.

Distribution. — Red Sea to Solomon Is. (Galil, 2007), Vanuatu (new record).

**Pariphiculus agariciferus** Ihle, 1918

Material examined. — One ♂ (CL 9.2 mm), 1 ♀ (CL 12.9 mm) (ZRC 2009.0470), S Aésé Is., Palikulu Bay, stn AT13, 15°27.8'S 167°15.7'E, 146-153 m, 19 Sep. 2006.

Distribution. — Japan to Indonesia (Galil & Ng, 2007), Vanuatu (new record).

**Pariphiculus mariannae** (Herklots, 1852)

Material examined. — One juv. (MNHN), E Urélapa Is., stn AT41, 15°36.7'S 167°02.7'E, 88-118 m, 28 Sep. 2006.

Distribution. — Arabian Sea to Solomon Is. (Galil, 2007), Vanuatu (new record).

Family LEUCOSIIDAE

**Alox rugosum** (Stimpson, 1858)

Material examined. — One ♀ (CL 12.6 mm) (ZRC 2009.0476), Malparavu Is., stn LD6, 15°21.9'S 167°11.5'E, 2-5 m, 27 Sep. 2006.

Distribution. — Madagascar to New Caledonia (Tan, 1996), Vanuatu (new record).

**Arcania cornuta** (MacGilchrist, 1905)

Material examined. — One ♂ (CL 30.3 mm) (ZRC 2009.0477), Tutuba Is., stn EP6, 15°34.2'S 167°15.6'E, 52 m, 13 Sep. 2006.

Distribution. — Persian Gulf to Fiji (Galil, 2001a, 2007).

**Arcania elongata** Yokoya, 1933

Material examined. — One ♂ (CL 17.8 mm), 1 ♀ (CL 18.8 mm), 1 juv. (ZRC 2009.0480), S Tutuba Is., stn AT29, 15°35.9'S 167°01.3'E, 83-90 m, 25 Sep. 2006.

Distribution. — Japan to New Caledonia (Galil & Ng, 2007), Vanuatu (new record).

**Arcania gracilis** (Henderson, 1893)

Material examined. — One juv. (ZRC 2009.0483), NW Tutuba Is., stn AT2, 15°32.5'S 167°16.1'E, 160-175 m, 14 Sep. 2006.

Distribution. — Red Sea to Vanuatu (Galil, 2001a, 2007).

**Arcania septemspinosa** (Fabricius, 1787)

Material examined. — One ♀ (CL 20.9 mm) (ZRC 2009.0562), Segond Channel, stn AT53, 15°31.8'S 167°13.6'E, 62-71 m, 2 Oct. 2006.

Distribution. — Across Indo-West Pacific region (Galil & Ng, 2007), Vanuatu (new record).

***Euclosiana guinotae* n. sp. (figs. 1-3)**

Type material. — Holotype: ♂ (CL 28.5 mm) (MNHN), Tutuba Is., stn EP6, 15°34.2'S 167°15.6'E, 52 m, 13 Sep. 2006; paratypes: 1 ♂ (CL 29.4 mm) (ZRC 2009.0552), Scorff Passage, Santo Is., stn EP12, 15°31.9'S 167°15.1'E, 97 m, 16 Sep. 2006; 2 ♂♂ (CL 27.9 mm, 28.1 mm), 1 ovigerous ♀ (CL 29.9 mm) (ZRC 2009.0553), 1 ♂, 1 ovigerous ♀ (CL 29.8 mm) (MNHN), W Urélapa Is., stn EP24, 15°36.5'S 167°00.9'E, 108-121 m, 25 Sep. 2006.

**Etymology.** — Named in honour of Prof. Danièle Guinot, for her seminal work on brachyuran crab systematics.

**Description.** — Carapace subpentagonal, globose; regions of carapace indistinct. Dorsal surface of carapace glabrous, shiny, smooth, sparsely punctate. Frontal region produced, upcurved, laterally concave. Frontal margin medially dentate. Antennular fossa sealed by basal antennular segment. Antennae short, inserted between antennular fossa, orbit. Orbit small, rounded, outer orbital margin unsutured, anterior margin of efferent branchial channel forms part of lower orbital margin. Eyes retractable. External maxillipeds concealing trapezoid buccal opening; endopod of merus triangular, as long as ischium; female endopod with setose, lengthwise fringe. Anterolateral margin of carapace weakly convex along hepatic region. Lateral angle of carapace rounded, overhanging thoracic sinus, margin prominently beaded. Thoracic sternites smooth. Margin of thoracic loop barely visible in dorsal view. Pterygostomian region smooth. Sinuous anterior margin of thoracic sinus bearing coalescent granules; row of perliform granules above cheliped basis, median granules largest. Posterolateral margins of carapace rounded, granular, granules smaller, further apart posteriorly. Posterior margin sinuous in male, rounded in female. Chelipeds subequal, robust, long; longer in adult male than in female. Cheliped merus tubular, bearing prominent perliform tubercles on anterior, posterior margins, upper surface bearing coalesced cluster of 6-8 granules proximally, followed by 2 diverging rows of tubercles, distally smooth; lower surface coarsely tuberculate anteriorly, pitted proximally. Carpus inflated, bearing row of granules on inner margin. Propodus smooth except granular lower surface, beaded line along inner lower margin; upper margin carinate. Fingers as long as propodus, inner margins serrate. Pereiopods slender, short. Pereiopodal meri with obsolescent rows of granules on dorsal, ventral surfaces; last pereiopod propodi keeled dorsally, ventrally. Dactyli longer than propodi, lanceolate. Male abdominal sulcus deep, elongated, nearly reaching buccal cavity; lateral margin with distinct ridge fitting into suture between abdominal somites. Male abdomen with horizontally narrow first somite, second somite spindle-shaped, minute; third to fifth somites fused, vertically furrowed proximally; sixth

somite with rounded longitudinal ridge bearing median denticle; telson triangular, one-third as long as sixth somite. Female abdomen with first and second somites narrow, arched; third to fifth somites fused, greatly enlarged, shield-like, telson lacinated. G1 elongated, shaft stout, sinuous, tightly coiled 3 times on itself, bearing ruff of preapical setae, cornute apical process, slender, arrow-shaped, bent at angle to rest of shaft. G2 short, curved, scoop-like apex.

Colour in life. — Dorsum pale pinkish brown, paler posteriorly; gastric region with three pale circles, median circle largest; large bright orange spots on either side of the intestinal region; three orange-coloured marks on lateral margins (fig. 1). Carapace ivory coloured ventrally. Chelipeds pale pinkish brown, paler distally. Periliform tubercles on upper surface of cheliped merus pale, ringed with orange, tubercles on lower surface ivory coloured; fingers proximally pale orange, distally white. Pereiopods white, meri subdistally orange; carpi, propodi, dactyli proximally ringed with orange.

Remarks. — *Euclosiana guinotae* n. sp. shares with *E. rotundifrons* (Chopra, 1934), its closest congener, a slender, arrow-shaped apical process of the G1 (fig. 3; Galil, 2003b, figs. 4B, 6F), but *E. guinotae* is readily distinguished by its smooth, rather than closely punctuate dorsum (figs. 1, 2A) and the lack of a diagonal band of granules on the third thoracic sternite (fig. 2B). The species is so far known only from Vanuatu.

### **Heterolithadia fallax** (Henderson, 1893)

Material examined. — One ♂ (CL 9.4 mm) (ZRC 2009.0511), Mavéa Is., stn EP37, 15°23.4'S 167°13.1'E, 50-61 m, 16 Oct. 2006.

Distribution. — India to Philippines (Tan, 1996), Vanuatu (new record).

### **Myra curtimana** Galil, 2001

Material examined. — One ♀ (CL 14.7 mm), 3 juvs. (MNHN), NW Malo Is., Bruat Channel, stn AT5, 15°39.9'S 167°03.8'E, 114-132 m, 15 Sep. 2006.

Distribution. — Philippines to Fiji (Galil & Ng, 2009), Vanuatu (new record).

### **Myra tumidospina** Galil, 2001

Material examined. — Three ♂♂ (CL 29.6-33.7 mm), 2 ♀♀ (CL 33.6 mm, 33.7 mm) (ZRC 2009.0515), Tutuba Is., stn EP6, 15°34.2'S 167°15.6'E, 52 m, 13 Sep. 2006.

Distribution. — Philippines to Fiji (Galil & Ng, 2007).



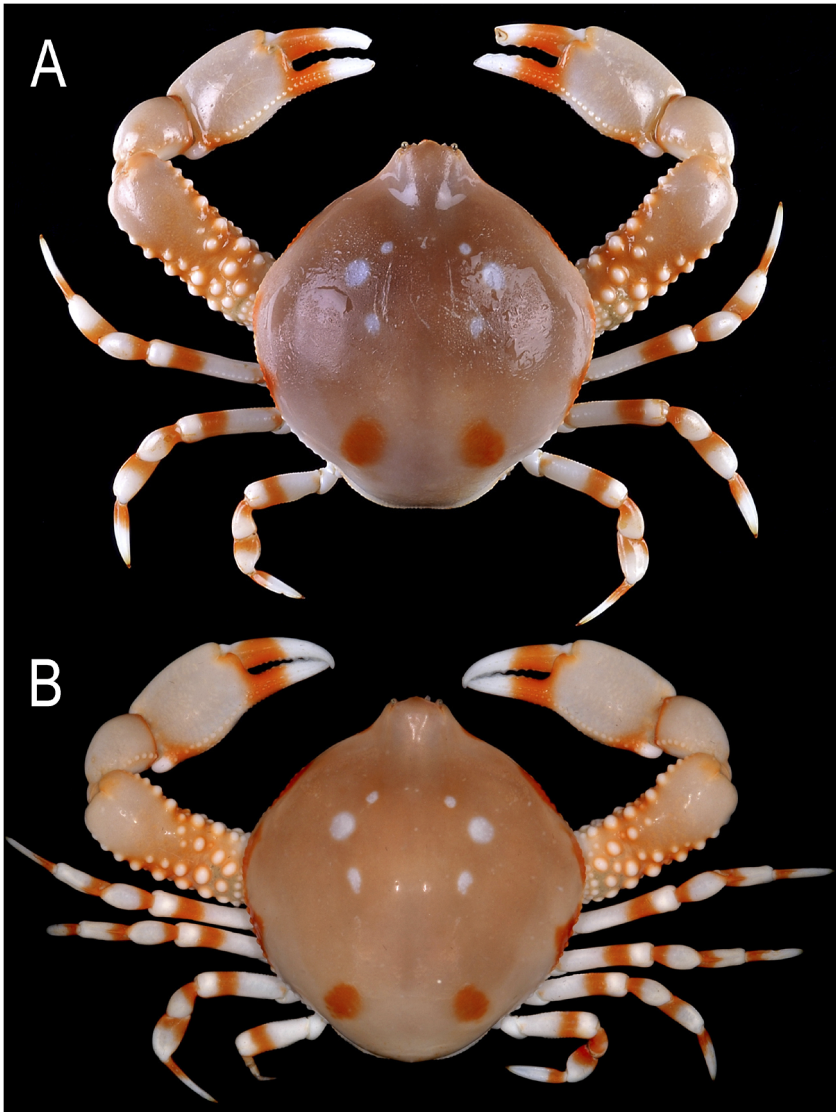


Fig. 1. *Euclosiana guinotae* n. sp. Colour in life. A, holotype ♂ (CL 28.5 mm) (MNHN), Tutuba Is.; B, paratype ♂ (CL 29.4 mm) (ZRC 2009.0553), Scorff Passage, Santo Is.

### ***Nursilia dentata* Bell, 1855**

Material examined. — One ♂ (CL 4.5 mm), 1 ♀ (CL 5.5 mm) (ZRC 2009.0535), NW Malo Is., stn AT76, 15°38.7'S 167°03.6'E, 105-135 m, 10 Oct. 2006.

Distribution. — Red Sea to Fiji (Tan, 1996), Vanuatu (new record).

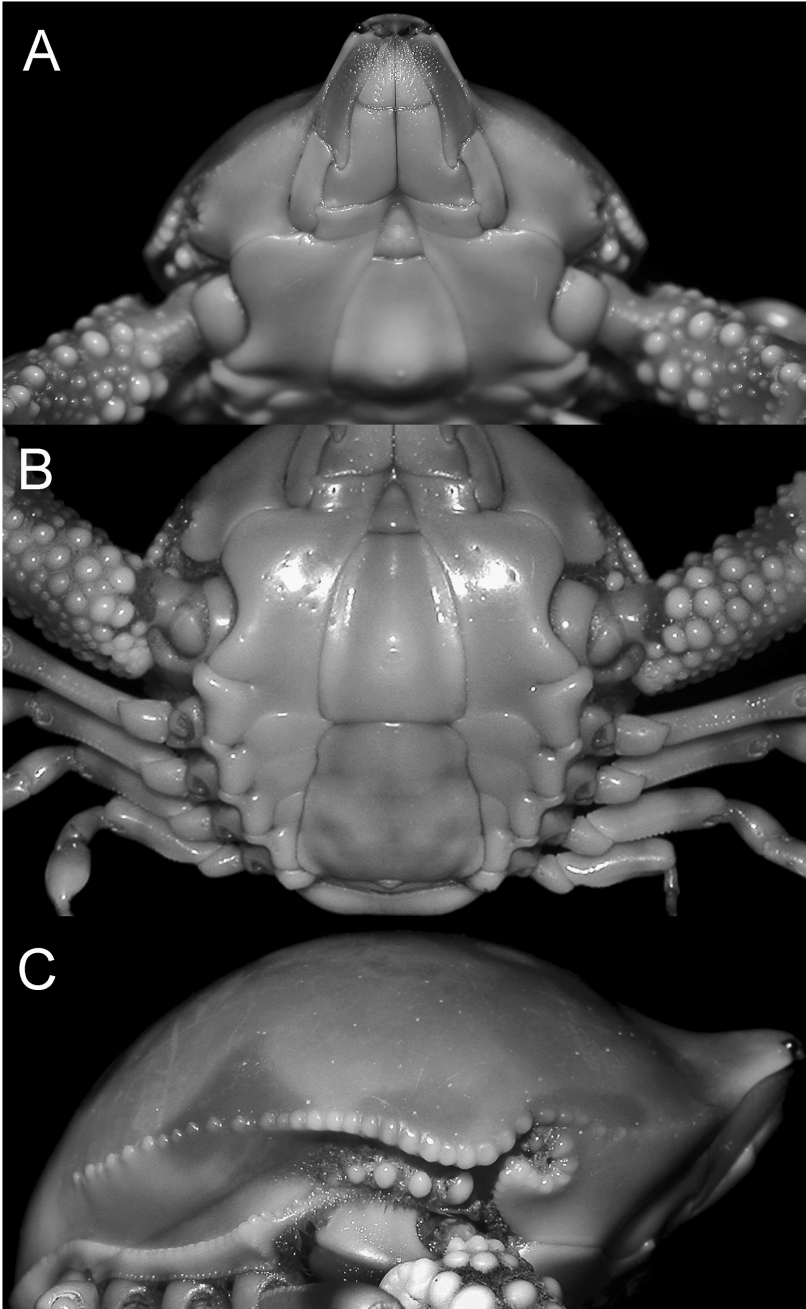


Fig. 2. *Euclosiana guinotae* n. sp. Paratype ♂ (CL 29.4 mm) (ZRC 2009.0553), Scorff Passage, Santo Is. A, frontal view showing third maxillipeds; B, ventral view showing thoracic sternum and abdomen; C, lateral view showing thoracic sinus.

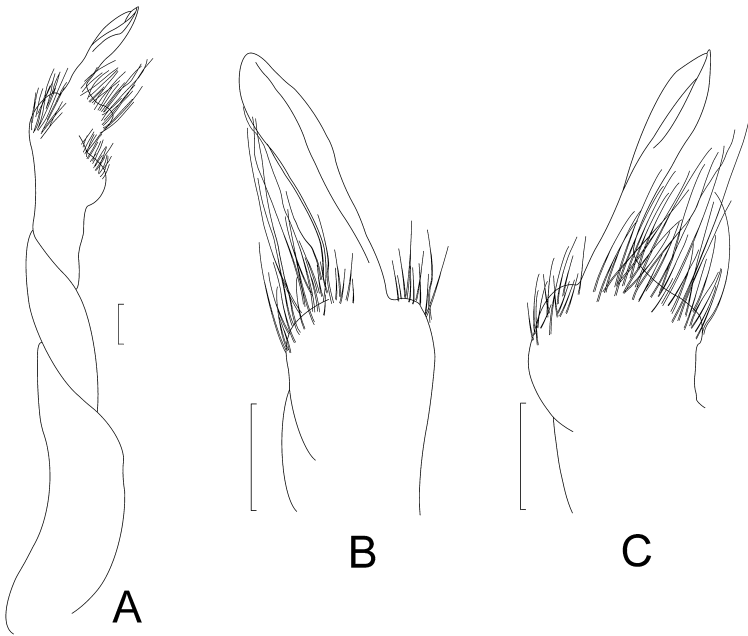


Fig. 3. *Euclosiana guinotae* n. sp., holotype ♂ (CL 28.5 mm) (MNHN), Tutuba Is. A, G1; B, C, distal part of G1. Scale bars: 1.0 mm.

### **Oreophorus reticulatus** Adams & White, 1849

Material examined. — One ♀ (CL 14.7 mm) (ZRC 2009.0536), Bruat Channel, stn AT74, 15°37.0'S 167°09.7'E, 50-64 m, 10 Oct. 2006.

Distribution. — Persian Gulf to Australia (Hewitt, 2004), Vanuatu (new record).

### **Raylilia coniculifera** Galil, 2001

Material examined. — One ♂ (CL 9.2 mm) (ZRC 2009.0537), Vaucluse Passage, stn AG12, 15°22.5'S 167°12.3'E, 74 m, 18 Sep. 2006.

Distribution. — Indonesia, New Caledonia (Galil, 2001b), Vanuatu (new record).

### **Raylilia uenoi** (Takeda, 1995)

Material examined. — One ♂ (CL 10.2 mm) (ZRC 2009.0538), Second Channel, NW Aoré Is., stn ZR4, 15°33.1'S 167°09.6'E, 0-45 m, 17 Sep. 2006.

Distribution. — Madagascar to New Caledonia (Galil, 2001b), Vanuatu (new record).

**Soceulia alainia** Galil, 2006

Material examined. — One ♂ (CL 35.2 mm) (ZRC 2009.0554), Aoré Is., Aimbuel Bay, stn EP23, 15°32.8'S 167°12.1'E, 74-88 m, 22 Sep. 2006.

Distribution. — Indonesia, New Caledonia (Galil, 2006), Vanuatu (new record).

**Tokoyo cirrata** Galil, 2003

Material examined. — One juv. (ZRC 2009.0540), NW Tutuba Is., stn AT2, 15°32.5'S 167°16.1'E, 160-175 m, 14 Sep. 2006.

Distribution. — Australia, Solomon Is., Vanuatu (Galil, 2007).

**Toru pilus** (Tan, 1996)

Material examined. — Two ♂♂ (CL 10.3 mm, 10.9 mm) (MNHN), W Malo Is., stn AT8, 15°40.5'S 167°01.5'E, 366-389 m, 17 Sep. 2006.

Distribution. — Philippines to Fiji (Galil, 2007).

**Toru septimus** Galil, 2003

Material examined. — Two juvs. (ZRC 2009.0548), NW Tutuba Is., stn AT1, 15°32.4'S 167°16.4'E, 167-367 m, 14 Sep. 2006.

Distribution. — Solomon Is. to Tonga (Galil, 2007).

**Urnalana insularis** (Takeda & Kurata, 1976)

Material examined. — One ♂ (CL 8.8 mm) (ZRC 2009.0558), Second Channel, N Aoré Is., stn NB12, 15°33.1'S 167°09.6'E, 20 m, 19 Sep. 2006.

Distribution. — Japan to Fiji (Galil, 2005), Vanuatu (new record).

**Urnalana pulchella** (Bell, 1855)

Material examined. — One ovigerous ♀ (CL 9.0 mm) (ZRC 2009.0559), NNW Mavéa Is., stn AT39, 15°22.4'S 167°12.6'E, 57-81 m, 27 Sep. 2006.

Distribution. — Red Sea to Fiji (Galil & Ng, 2007), Vanuatu (new record).

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