

Review of *Hebridea* Willemse, 1926, an endemic genus of grasshoppers from Vanuatu (Orthoptera, Caelifera) with the description of a new species from Malekula

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KEY WORDS

Orthoptera,
Caelifera,
Acrididae,
Catantopinae,
Cyrtacanthacridinae,
southwestern Pacific,
new species.

ABSTRACT

The grasshopper genus *Hebridea* Willemse, 1926 is redefined, the species *Hebridea rufotibialis* Willemse, 1926 from Espiritu Santo is redescribed and life history traits are given. *Hebridea amedegnatoae* n. sp. is described from Malekula Island. Examination of its morphology reveals that *Hebridea* belongs to Catantopinae Brunner von Wattenwyl, 1893 and not to Cyrtacanthacridinae Kirby, 1902. Relations of *Hebridea* with closely related Catantopinae genera are discussed.

RÉSUMÉ

Révision de *Hebridea* Willemse, 1926, un genre endémique de criquets du Vanuatu (Orthoptera, Caelifera), avec la description d'une nouvelle espèce originaire de Malekula.

Le genre de criquets *Hebridea* Willemse, 1926 est redéfini, l'espèce *Hebridea rufotibialis* Willemse, 1926 d'Espiritu Santo est redécrite et des caractéristiques de sa biologie sont données. L'espèce *Hebridea amedegnatoae* n. sp. est décrite de l'île de Malekula. L'examen de la morphologie de *Hebridea* révèle que ce genre appartient aux Catantopinae Brunner von Wattenwyl, 1893 et non aux Cyrtacanthacridinae Kirby, 1902. Les relations de *Hebridea* avec les genres proches de Catantopinae sont discutées.

MOTS CLÉS

Orthoptera,
Caelifera,
Acrididae,
Catantopinae,
Cyrtacanthacridinae,
sud-ouest du Pacifique,
espèce nouvelle.

INTRODUCTION

Caelifera Ander, 1936 from Vanuatu (formerly New Hebrides) were addressed by Willemse (1926).

In his work, Willemse (1926) erected the new genus *Hebridea* to include his new species *H. rufotibialis*. *Hebridea rufotibialis* was described on a single male collected in Espiritu Santo. During the SANTO 2006 expedition (for a narrative and background of the expedition, see Bouchet *et al.* [2011a], and for a review of the geography and natural history of Santo, see Bouchet *et al.* [2011b]), new *Hebridea* material was collected. In the present article, *Hebridea* is redefined, *H. rufotibialis* is redescribed after male and female specimens; the strong dimorphism of juveniles is described and life history traits of *Hebridea* are given. Specimens from Santo also allowed to identify old material from Malekula island as belonging to another *Hebridea* species, described here as *Hebridea amedegnatoae* n. sp.

The genus *Hebridea* was described by Willemse (1926) without explicit taxonomic position, and was considered as a Cyrtacanthacridinae Kirby, 1902 by Otte (1995). However, examination of its morphology clearly shows that *Hebridea* belongs to Catantopinae Brunner von Wattenwyl, 1893. Its relations within this subfamily are discussed.

MATERIAL AND METHODS

MATERIAL AND REPOSITORY

Extensive fieldwork was made in many localities in Espiritu Santo with Laure Desutter-Grandcolas and Tony Robillard, in the “module Forêt, Montagnes, Rivières”, in the course of the biological survey SANTO 2006 (Bouchet *et al.* 2009). Collected specimens are deposited in MNHN collections.

Specimens from Espiritu Santo were located during night and day hours by direct observation of the undergrowth vegetation.

Material from Malekula and Erromango was collected by Edgard Aubert de la Rüe in 1933 and is deposited in MNHN collections.

TERMINOLOGY AND MEASUREMENTS

Morphological and anatomical terminologies after Dirsh (1965).

The measurements correspond to the maximal length: of the forewing, from the basis to the apex; of the visible part of the head in dorsal view; of the pronotum in dorsal view; and to the maximal width of the hind femora in side view

ABBREVIATIONS

Morphology

FIII	hind femur;
FW	forewing;
HW	hindwing;
Prn	pronotum;
SGP	subgenital plate;

Male genitalia

An	anchorae;
Apd	apodeme;
Lo	lophi;
os	oval sclerite;
Zyg	zygoma.

Repository

MNHN	Muséum national d'Histoire naturelle, Paris;
NHM	Natural History Museum, London;
OUMNH	Oxford University Museum of Natural History, Oxford.

SYSTEMATICS

Superfamily ACRIDOIDEA MacLeay, 1821

Family ACRIDIDAE MacLeay, 1821

Subfamily CATANTOPINAE

Brunner von Wattenwyl, 1893

REMARK

The genus *Hebridea* was described by Willemse (1926) without explicit taxonomic position, and was considered as a Cyrtacanthacridinae by Otte (1995). However, examination of its morphology clearly shows that *Hebridea* belongs to Catantopinae. This point is discussed in the Discussion section.

Genus *Hebridea* Willemse, 1926

Hebridea Willemse, 1926: 528.

TYPE SPECIES. — *Hebridea rufotibialis* Willemse, 1926 by original monotypy.

OTHER SPECIES INCLUDED. — *Hebridea amedegnatoae* n. sp.

DISTRIBUTION. — Vanuatu: Espiritu Santo, Malekula, Erromango.

DIAGNOSIS. — Body cylindrical, elongated. Head sub conical; frons strongly oblique (Fig. 1C, H). Frontal sulcus shallow but distinct above antennae (Fig. 1B, G). Fastigium verticis angulose, almost pyramidal; with a weakly distinct median carinula (Fig. 1B, G). Antennae filiform, long; distal half flattened; with about 20 articles (Fig. 1A). Prn cylindrical; anterior and posterior margins rounded (Fig. 1B, G); median carina weakly distinct in the prozona and metazona; no lateral carinae in adults; lateral lobes posteroventral angle straight (Fig. 1C, H). Episternum large, sub triangular (Fig. 1C, H). Prosternal process strong, vertical, transverse, trilobate (Fig. 2A, B). Mesosternal interspace open, narrow; mesosternal lobes rounded, about as long as wide; metasternal interspace closed, triangular (Fig. 2A). Tympanum large. Hind knees about reaching abdomen apex. Hind femur (Fig. 1D, I) upper basal lobe longer than lower basal lobe; fishbone pattern distinct; carinae of hind femur obtuse, smooth; knee lobes rounded. Hind tibia distinctly shorter than hind femur; outer apical spine present, nine inner and outer spines (including the apical spines). Brachypterous. FW reaching the middle of the 3rd abdominal tergite; HW about as long as FW.

Male. Penultimate abdominal tergite (tergite 10) hind margin interrupted medially, leaving a median gap; with short distinct lobiform furculae (Fig. 1E, K). Supra-anal plate with a posterior median projection; with two anterior submedian carinae separated by a median furrow; with paired bulges on posterior shoulders (Fig. 1E, K). SGP short with obtuse apex. Cercus slender, outer margin straight, inner margin sinuate (Fig. 1E, K). Epiphallus (Fig. 3A, B, G, H) bridge-shaped; anchorae short and wide, sublateral; lophi wide, lobiform; without inner lophus; oval sclerites well distinct. Flexure distinct.

Female. Penultimate abdominal tergite hind margin excised medially, supra-anal plate with a distinct anterior median furrow. Hind margin tongue-shaped. Valves of ovipositor short, robust, with curved apices; without distinct serrulation (Fig. 3 E, F, K, L).

REDEFINITION OF *HEBRIDEA*

ON THE BASIS OF THE CHARACTERS SHARED

BY THE TWO SPECIES INCLUDED IN THIS GENUS

Body cylindrical, elongated. Integument shiny, dorsum of head sparsely pitted, Prn moderately pitted, face wrinkled. Head (Fig. 1B, D, G, H) subconical; frons strongly oblique, straight or with a weakly distinct concavity at the upper part of the frontal ridge (Fig. 1C, H). Frontal sulcus shallow but distinct above antennae (Fig. 1B, G). Fastigium verticis (Fig. 1B, G) angulose, almost pyramidal;

distinctly exceeding the antennal scape; without fastigial furrow; with a weakly distinct median carinula vanishing between the eyes; with obsolete lateral carinulae; foveolae absent. Interocular distance usually narrower than the greatest width of the fastigium verticis. Eyes ovoid-hemispherical, more or less prominent. Labrum distinctly notched. Antennae (Fig. 1A) filiform, about as long as head and Prn lengths; with about 20 articles, median articles about 3 times as long as wide; antennal distal half articles flattened.

Thorax

Prn cylindrical (Fig. 1B, G); anterior margin weakly rounded; posterior margin rounded, neither truncate nor concave; meso- and metasulci well distinct; median carina obsolete in the prozona and metazona; no lateral carinae in adults (present in juveniles); lateral lobes (Fig. 1C, H) longer than high; lateral lobes hind margin weakly and regularly concave; posteroventral angle straight; lateral lobes ventral margin angulose, anterior part oblique, posterior part parallel with discus. Episternum (Fig. 1C, H) large, sub triangular. Prosternal process (Fig. 2) strong, vertical, transverse, trilobate. Mesosternal interspace (Fig. 2A) open, narrow, neither rectangular nor trapezoidal; mesosternal lobes rounded, about as long as wide, interspace narrower than a lobe; metasternal interspace (Fig. 2A) closed, triangular. Tympanum distinct, large.

Legs

Hind knees about reaching abdomen apex. Hind femur (Fig. 1D, I) upper basal lobe longer than lower basal lobe; fishbone pattern distinct; hind femur carinae obtuse, smooth; knee lobes rounded, Brunner's organ present. Hind tibia distinctly shorter than hind femur; outer apical spine present, nine inner and outer spines (including apical spines). Hind tarsus pilose, about $\frac{2}{3}$ of tibial length, arolia very developed.

Wings

Brachypterous. FW (Fig. 1E, J) reaching the middle of the 3rd abdominal tergite, slightly lanceolate; slightly sclerotised; nervation and reticulation dense. HW about as long as FW; not exceeding FW.

TABLE 1. — Measurements of *Hebridea rufotibialis* Willemse, 1926. Males: 4 specimens; females: 6 specimens. Abbreviations: see Material and methods.

	Body	Head	Prn	FW	FIII length	FIII width
Holotype	20.0	—	9.0	6.5	10.0	—
Males average	20.2	3.6	5.2	6.1	10.4	2.1
Males min	18.0	3.5	4.0	5.5	9.5	2.0
Males max	23.0	3.7	9.0	6.8	11.3	2.2
Females average	27.2	4.7	6.2	9.1	14.4	3.1
Females min	26.0	4.4	5.8	8.8	13.9	3.0
Females max	28.0	5.3	7.0	9.6	16.5	3.5

Male

Penultimate abdominal tergite (tergite 10, Fig. 1F, K) hind margin interrupted medially, leaving a median gap; with more or less distinct short lobiform furculae. Epiproct (tergite 11, supra-anal plate, Fig. 1F, K) with a posterior median projection; with two anterior submedian carinae separated by a median furrow; with paired bulges on posterior shoulders. SGP short with obtuse apex. Cercus (Fig. 1F, K) slender, outer margin straight, inner margin sinuate, narrowing the cercus on the distal third.

Phallic complex (Fig. 3A-D, G-J). Epiphallus (Fig. 3A, B, G, H) bridge-shaped; anchorae short and wide (dorsal view), of sublateral position; lateral plates anterior ends projecting; lophi wide, lobiform; without inner lophus. Oval sclerites well distinct, oval. Cingulum with horseshoe-shaped apodemal structure; zygonia narrow, weakly sclerotised; latero apical sclerification of ectophallic membrane distinct. Dorsal and ventral valves rounded apically. Flexure distinct.

Female

Penultimate abdominal tergite hind margin excised medially; supra-anal plate with a distinct anterior median furrow. Hind margin tongue-shaped. Valves of ovipositor (Fig. 3E, F, K, L) short, robust, with curved apices; without distinct serrulation. SGP longer than wide.

Hebridea rufotibialis Willemse, 1926

(Figs 1A-F; 2; 3A-F; 4; Table 1)

TYPE MATERIAL. — [Vanuatu], N[ew] Hebrides, Espir[itu] Santo Isl., Hog Harbour, clearings, 4.I.1923, John R. Baker (OUMNH type ORTH. 907).

TYPE LOCALITY. — Vanuatu, Sanma Province, Espiritu Santo.

OTHER MATERIAL EXAMINED. — SANTO 2006, Vanuatu, Sanma Province, Espiritu Santo Isl., Funafus, 15°32'46.4"S, 167°00'46"E, jour, 30.X.2006, S. Hugel, 2 ♂♂ (MNHN SH-137, SH-138), 1 ♀ (MNHN SH-140); same data, but T. Robillard, 1 ♀ (MNHN SH-139); same data, but L. Desutter-Grandcolas, 1 juv. (MNHN SH-141). — Big Bay, Matantas, Vathé Conservation Area, 15°20'S, 166°95'E, 25.X.2006, 2 ♂♂ (MNHN SH-142, SH-143), 27.X.2006, S. Hugel, 2 ♀♀ (MNHN SH-144, SH-145). — Peavot, Mt Nouresororo, 14°59'26"S, 166°45'14"E, 636 m alt., forêt de brume, nuit, 22.X.2006, S. Hugel, 3 ♀♀ (MNHN SH-146, SH-147, SH-148), 2 juv. (MNHN SH-149, SH-150); same data, but L. Desutter-Grandcolas, 2 juv. (MNHN SH-151, SH-152). — Butmas, forêt sur plateau de Tankara, 15°21'56"S, 166°59'04"E, 600 m alt., 13.X.2006, L. Desutter-Grandcolas, 1 juv. (MNHN SH-153); same data, but 14.X.2006, 1 juv. (MNHN SH-154).

HABITAT AND LIFE HISTORY TRAITS. — *Hebridea rufotibialis* was found in both preserved and moderately degraded forested areas. This species occurs in undergrowth vegetation (20 cm-1 m), often in groups of few specimens. We observed this species on monocots (tall herbaceous plants, *Dracaena* sp., and also on small palm trees, *Pandanus* sp., etc.). Juveniles were seldom observed on ferns.

DIAGNOSIS (EMENDED). — Hind femur upper carina with a weak concavity before the knee (Fig. 1D; N.B.: this non sexual character seems valid on the examined specimens, but should be used with caution).

Male. Penultimate abdominal tergite (tergite 10) with well-distinct rounded furculae (Fig. 1F). Supra-anal plate with lateral bulges (Fig. 1F, arrow). Supra-anal plate with long posterior median projection (Fig. 1F).

Epiphallus: interspace between lophi at least twice as wide as lophi width (Fig. 3A). Dorsal valves exceeding ventral valves (Fig. 3D).

In mature males, hind femora blue/green (inner and outer fields).

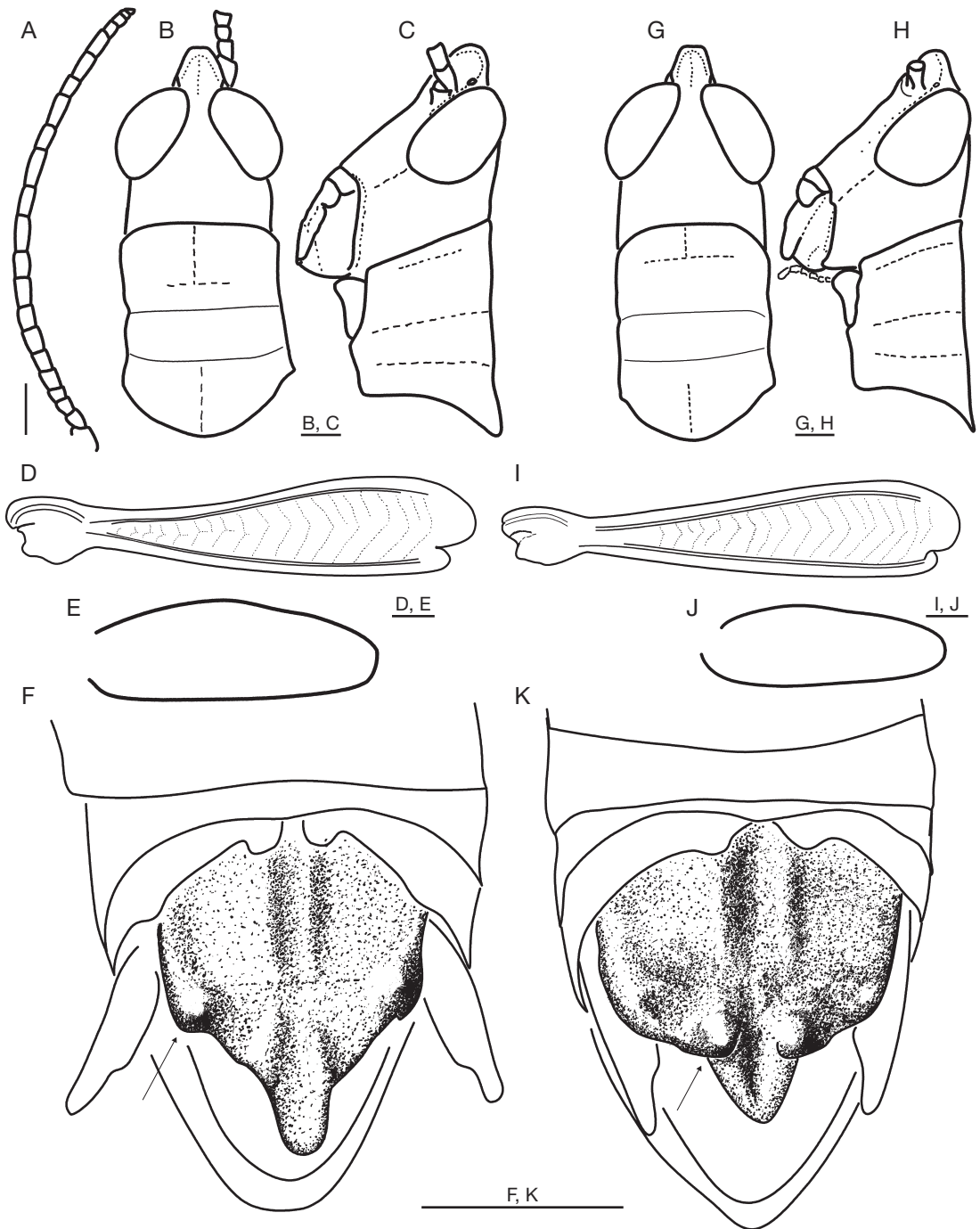


FIG. 1. — *Hebridea* Willemse, 1926: **A–F**, *H. rufotibialis* Willemse, 1926 male (not a type); **G–K**, *H. amedegnatoae* n. sp. male holotype (MNHN-CAELIF595); **A**, right antenna, dorsal view; **B**, **G**, head and pronotum, dorsal view; **C**, **H**, head and pronotum left side view; **D**, **I**, hind femur right side view; **E**, **J**, right forewing; **F**, **K**, male supra-anal plate, dorsal view, note the bulge (arrows). Scale bars: 1 mm.

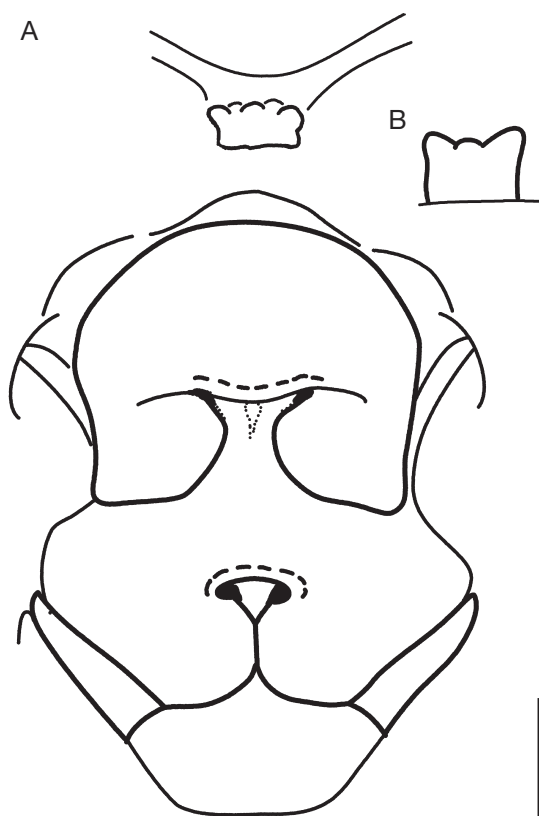


FIG. 2. — *Hebridea rufotibialis* Willemse, 1926 male (not a type): **A**, sternum in ventral view; **B**, detail of the prosternal process in frontal view (upside down). Scale bar: 1 mm.

REDESCRIPTION

In addition to generic characters: hind femur upper carina with a weak concavity before the knee (Fig. 1D).

Male

Penultimate abdominal tergite (tergite 10) with well-distinct rounded furculae (Fig. 1F). Supra-anal plate with lateral bulges (Fig. 1F, arrow), with long posterior median projection (Fig. 1F).

Epiphallus (Fig. 3A, B): interspace between lophi at least twice as wide as lophi width. Dorsal valves exceeding ventral valves (Fig. 3D).

Females

It is not clear whether the females display useful characters at the species level. Terminalia are illustrated Figure 3E, F.

General colouration of adults green (more or less yellowish; badly preserved specimens are darker such as the holotype; Fig. 4); hind tibia red or purple, tibial spines with black apex; hind knees dorsally yellowish. In mature males, fore and mid femora green with sometimes the middle reddish; hind femur blue/green (inner and outer fields); hind tibia proximally darker. In females, middle of fore and mid femora sometimes reddish; inner field of hind femur sometimes purple. Non adult specimens entirely lack green, blue and red colour; these are brown on the sides with a cream band on the dorsum (from fastigium to Prn and often to abdomen apex); Prn lateral carinae light cream; outer median field of FIII with some dark pattern.

REMARK

Two male specimens from Espiritu Santo identified as *Hebridea* sp. by David Hollis are in NHM collections. The supra-anal plate of these specimens is very similar to that of *Hebridea rufotibialis* illustrated in the present article (Judith Marshall, *in litt.*).

For the distinctive characters between *Hebridea rufotibialis* and *H. amedegnatoae* n. sp. see Table 3.

Hebridea amedegnatoae n. sp. (Figs 1G-K; 3G-L; Table 2)

TYPE MATERIAL. — Holotype: Nouvelles-Hébrides [Vanuatu], I. [Isl.] Malekula, ♂, 1934, E. Aubert de la Rüe (MNHN-CAELIF595).

Allotype: Nouvelles-Hébrides [Vanuatu], I. [Isl.] Malekula, vallée de la Pangkumu, ♀, 1935-1936, E. Aubert de la Rüe, “*Hebridea rufotibialis* Wilh.” (manuscript), L. Chopard det. (MNHN-CAELIF596).

Paratype: same data as holotype, ♀ (MNHN-CAELIF597).

TYPE LOCALITY. — Vanuatu, Malampa Province, Malekula Island.

ETYMOLOGY. — After Christiane Amedegnato, acridologist in MNHN. Christiane suddenly deceased before being able to describe this species that she identified as new.

DIAGNOSIS. — Hind femur upper carina straight (Fig. 1I; N.B.: this non sexual character seems valid on the examined specimens, but should be used with caution).

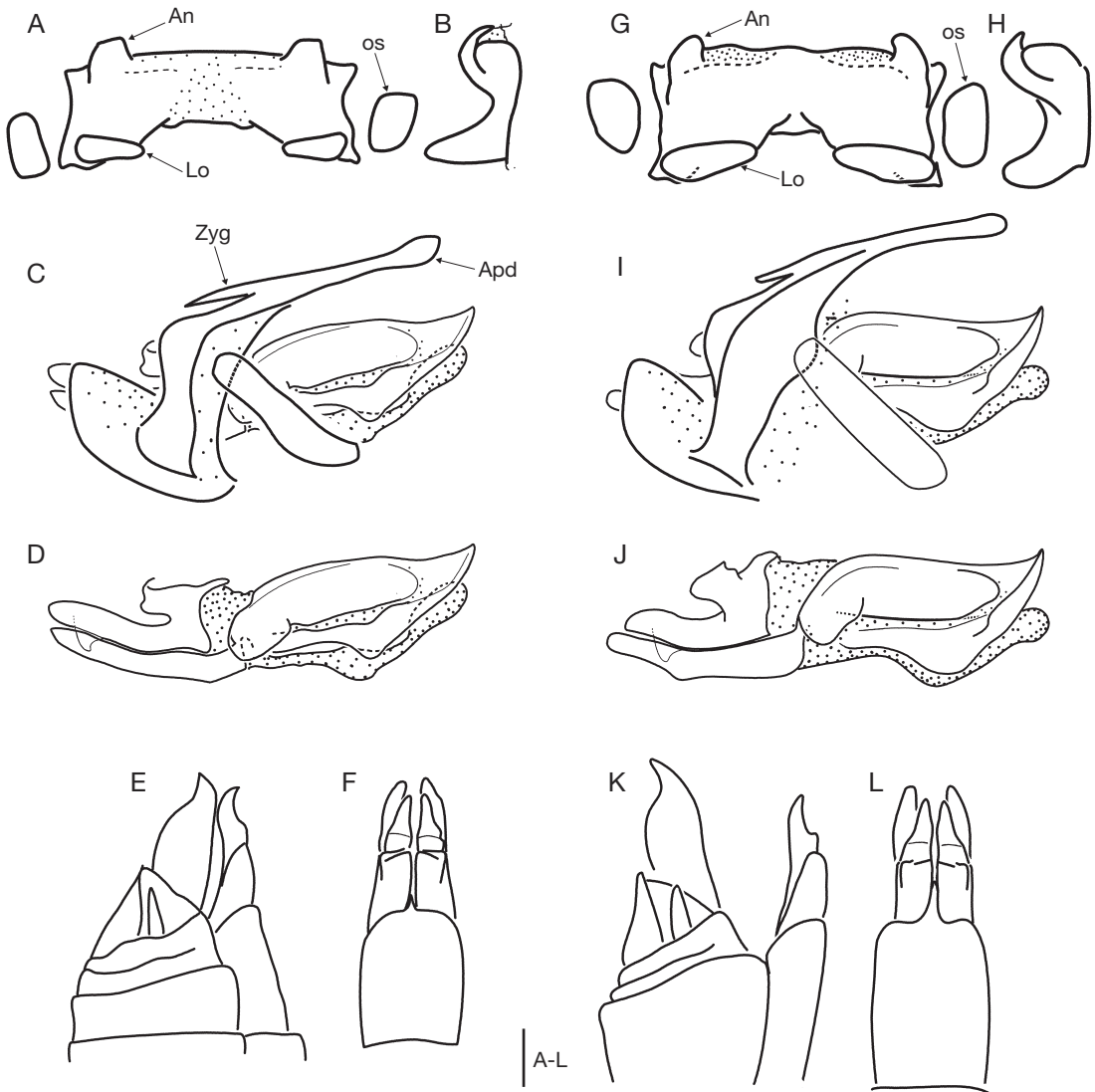


FIG. 3. — *Hebridea* Willemse, 1926: **A-D, G-J**, male genitalia: **A-F, H**, *H. rufotibialis* Willemse, 1926 (non type specimens); **G-L**, *H. amedeagnatae* n. sp.; **A, G**, epiphallus, dorsal view; **B, H**, epiphallus, side view; **C, I**, phallic complex, right side view; **D, J**, endophallus, right side view; **E, K**, female terminalia, left side view; **F, L**, female terminalia, ventral view. Scale bar: A-D, G-J, 0.2 mm; E, F, K, L, 1 mm.

Male. Penultimate abdominal tergite (tergite 10) with indistinct rounded furculae (Fig. 1K). Supra-anal plate with postero median bulges (Fig. 1K, arrow). Supra-anal plate with short projection (Fig. 1K).

Epiphallus: interspace between lophi narrower than lophi width (Fig. 3G). Ventral valves exceeding dorsal valves (Fig. 3J).

In mature males, hind femur light green (inner and outer fields).

DESCRIPTION

Holotype

In addition to generic characters: Hind femur upper carina straight before the knee (Fig. 1I).

Penultimate abdominal tergite (tergite 10) with indistinct rounded furculae (Fig. 1K). Supra-anal plate with median bulges (Fig. 1K, arrow), with short posterior median projection (Fig. 1K).

TABLE 2. — Measurements of *Hebridea amedegnatoae* n. sp. Abbreviations: see Material and methods.

	Body	Head	Prn	FW	FIII length	FIII width
Male holotype	20.0	3.5	4.2	5.8	11.0	2.4
Female allotype	28.0	4.5	6.2	8.5	14.2	3.0
Female paratype	26.0	5.2	6.2	8.5	14.9	3.0

Epiphallus (Fig. 3G, H): interspace between lophi narrower than lophi width. Ventral valves exceeding dorsal valves (Fig. 3D). General colouration yellowish (was probably more green in living specimens); hind tibia light red, spines with black apex; hind femur green; hind knees dorsally yellowish.

Females allotype and paratype

Non sexual characters as in male holotype. It is not clear whether the females display useful characters at the species level. Terminalia are illustrated in Figure 3K, L.

REMARKS

The male holotype of *Hebridea amedegnatoae* n. sp. differs from *H. rufotibialis* by: the condition of furculae on the penultimate abdominal tergite; the localisation of the bulges on the supra-anal plate; the length of the median projection of the supra-anal plate; the interspace between lophi on male epiphallus; the colouration of hind femur. For the distinctive characters between *Hebridea amedegnatoae* n. sp. and *H. rufotibialis* see Table 3.

DISCUSSION

TAXONOMIC POSITION OF *HEBRIDEA*

In his original description, Willemse (1926) stated that *Hebridea* was related but distinct from the Catantopinae genus *Peitharchicus* Brunner von Wattenwyl, 1898 and the Hemiactridinae genus *Leptacris* Walker, 1870, leaving doubts on the taxonomic position of *Hebridea*. Otte (1995) considered *Hebridea* as a Cyrtacanthacridinae, without any justification.

In Cyrtacanthacridinae, the prosternal process is cylindrical, usually not flattened as in *Hebridea*; the mesosternal interspace is rectangular or trapezoidal whereas it is narrowed in the middle in *Hebridea*; the inner angles of metasternal lobes are straight or acute, never rounded as in *Hebridea*; the poste-

rior tibiae are without outer apical spine, whereas the spine is present in *Hebridea*. For these reasons, *Hebridea* cannot belong to Cyrtacanthacridinae.

Although Catantopinae are very variable, and possibly paraphyletic, the following characters of *Hebridea* attest its position within Catantopinae in its current definition: lack of fastigial furrow; lack of temporal foveolae; lack of lateral carinae of Prn; presence and shape of the prosternal process; mesosternal interspace neither rectangular nor trapezoidal; dorsal basal lobe of the hind femur longer than the ventral one; hind femur medial area with fishbone-pattern on the outside; infero external lobe of posterior knee not spiniform; presence of outer apical spine on hind tibia; male epiphallus bridge shaped; genitalia with a distinct flexure in the valves of endophallus.

For these reasons, *Hebridea* is considered here as a Catantopinae.

AFFINITIES WITH OTHER CATANTOPINAE

As pointed by Willemse (1926), *Hebridea* is morphologically close to *Peitharchicus* but also to *Opiptacris* Walker, 1870. In *Peitharchicus*: FWs exceed the middle of hind femur (FWs only reach the middle of the 3rd abdominal tergite in *Hebridea*); hind tibiae are rounded; the supra-anal plate is broadly triangular, without paired bulges (with posterior median projection and with paired bulges in *Hebridea*); the male cerci are more slender, incurved internally (more stout and straight in *Hebridea*).

Interestingly, the type species of the genus *Opiptacris*, *O. hilaris* Walker, 1870 was described from Vanuatu (without precise locality). For Willemse (1975), *Opiptacris* differs from *Hebridea* by: the vestigial FWs not reaching the abdomen (reaching the 3rd abdominal tergite in *Hebridea*); the posterior margin of Prn discus truncate or concave (broadly rounded in *Hebridea*); the tympanum not distinct, indicated as a narrow, weak furrow

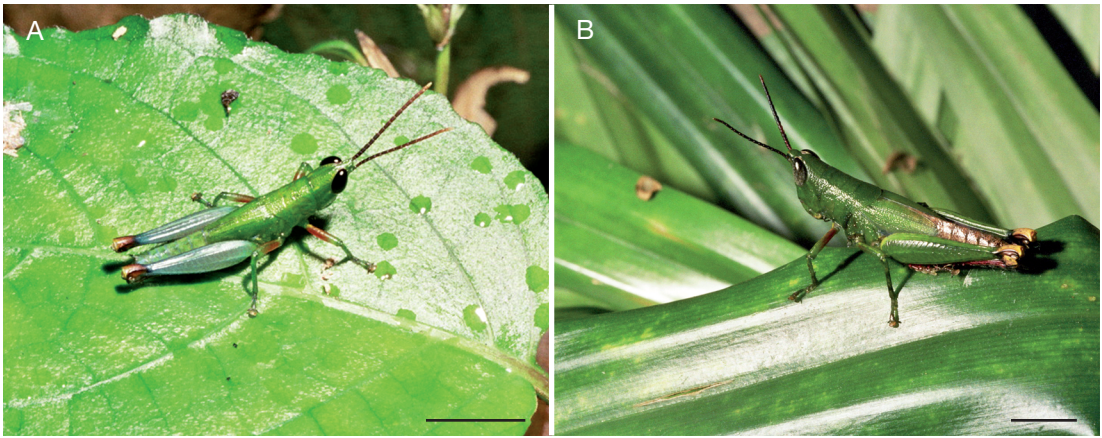


FIG. 4. — *Hebridea rufotibialis* Willemse, 1926: **A**, adult male (MNHN SH-137) in the field; **B**, adult female (MNHN SH-146), studio. Scale bars: 10 mm. Photographs: S. Hugel.

(tympanum fully developed and distinct in *Hebridea*); the epiphallus bridge relatively narrow with distinct inner lophus (larger and without inner lophus in *Hebridea*). Nevertheless, *O. hilaris* and *H. rufotibialis*, both type species of their respective genera, are close from each other. Willemse (1975) pointed out *Opiptacris hilaris* was geographically and morphologically distinct from other *Opiptacris*, and deplored that it was “unfortunately the type-species” of the genus. The epiphallus of *O. hilaris* illustrated by Dirsh (1956) is likely to be from the type (as after Willemse [1975], the genitalia of the type were missing and this species does not occur in MNHN collections). The epiphallus of *O. hilaris* is similar to that of other *Opiptacris* illustrated by Willemse (1975), and clearly differs from the epiphallus of both *Hebridea* species. This suggests that although *Hebridea* and *Opiptacris* are close, type species of both genera are clearly distinct.

DIFFERENCE BETWEEN ADULTS AND JUVENILES

It is worth mentioning that important characters at the generic level differ between adults and non adults of *Hebridea rufotibialis*. Antennae are short, stout and flattened in juveniles whereas these are elongated and flattened in their distal half in adults. The presence of distinct lateral carinae in juveniles (even subadults) that lack in adults is particularly

shocking. In addition, as in many Orthoptera, the colouration is distinct between non adults and adults. Non adults are generally brown with a lighter sagittal line from the fastigium to abdominal apex; this pattern fully disappears in adults.

FOOD PLANTS OF *HEBRIDEA RUFOTIBIALIS*

We found *H. rufotibialis* on monocots: tall herbaceous plants, *Dracaena* sp., but also small palm trees and *Pandanus* sp. Few were also observed feeding on ferns. The stomach content of *Hebridea amedeagnatoae* n. sp. suggests similar food habits for this species. As in other palmicolous species, the labrum of *Hebridea* is notched in the middle, which might constitute an adaptation for this kind of food.

CONCLUSION

As for other tropical islands, the endemic fauna of Orthoptera of Espiritu Santo consists mainly in Ensifera, particularly in crickets (Desutter-Grandcolas 2009, 2012; Hugel 2009; Robillard 2009). The presence of two distinct congeneric endemic grasshoppers on two very close islands (Espiritu Santo and Malekula are distant by no more than 30 km) might appear surprising. Nevertheless, this is not unique to *Hebridea* as Espiritu Santo and Malekula harbor close but distinct *Lebinthus* Stål,

TABLE 3. — Differences between males of *Hebridea rufotibialis* Willemse, 1926 and *Hebridea amedegnatoae* n. sp.

	<i>H. rufotibialis</i>	<i>H. amedegnatoae</i> n. sp.
Furculae on the penultimate abdominal tergite	Distinct (Fig. 1F)	Indistinct (Fig. 1K)
Localisation of the bulges on the supra-anal plate	Lateral (Fig. 1F)	Postero median (Fig. 1K)
Length of the median projection of the supra-anal plate	Long (Fig. 1F)	Short (Fig. 1K)
Interspace between lophi on male epiphallus	At least twice as wide as lophi width (Fig. 3A)	narrower than lophi width (Fig. 3G)
Colour of hind femur (inner and outer fields)	Blue/green (Fig. 4A)	Light green

1877 crickets (Robillard 2009), and damselflies (Ober & Staniczek 2009). This suggests that other *Hebridea* might be expected on other islands of the archipelago. Indeed, one female from Unapang on the island of Erromango, collected by Aubert de la Rüe in 1935-1936 is deposited in MNHN collections. Unfortunately, as females do not seem to provide obvious diagnostic characters, additional material from this island would be needed to define whether Erromango harbors a distinct *Hebridea* species.

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