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## Two new species of *Jacobsaptera* Heiss, 2004 from Mauritius and La Réunion (Hemiptera, Heteroptera, Aradidae)

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### Abstract

The apterous Mezirinae genus *Jacobsaptera* HEISS, 2004 was described from the Mascarene island of Mauritius based on the type species *J. pilicornis*. Now a second species, *Jacobsaptera weiserti* sp.n., from Mauritius and a third one, *Jacobsaptera reunionica* sp.n., from the island of La Réunion are described and figured and a key for these species is given.

Key words: Hemiptera, Heteroptera, Aradidae, Mezirinae, apterous, new species, Africa, Mauritius, La Réunion.

### Zusammenfassung

Die Aradidenfauna der Mascarenen ist nach wie vor unzureichend erforscht. So sind bisher von Mauritius sechs Arten in fünf Gattungen und von La Réunion nur eine Art bekannt geworden (HOBERLANDT 1957, 1963, KORMILEV & FROESCHNER 1987, HEISS 2004). In vorliegender Arbeit werden zwei weitere neue Arten der endemischen apteren Mezirinae-Gattung *Jacobsaptera* HEISS 2004, *J. weiserti* sp.n. von Mauritius und *J. reunionica* sp.n. von der zum französischen Überseeterritorium gehörenden Insel La Réunion, beschrieben und abgebildet. Ein Bestimmungsschlüssel für *Jacobsaptera*-Arten ist beigelegt.

### Introduction

The knowledge of the flat bug fauna of the Mascarene islands of Mauritius and La Réunion is still very poor. HOBERLANDT (1963), who presented the last comprehensive study of Aradidae from Madagascar and adjacent islands, listed only three genera and four species for Mauritius and only one (*Aneurus angustus* BERGROTH, 1914) from La Réunion. HEISS (2004) described two new genera and species from Mauritius, raising the number of recorded taxa to six. While in La Réunion the indigenous forests – the habitat for Aradidae – are still widely preserved, they were nearly completely burnt and replaced by sugar cane and other cultivations in Mauritius, leaving only few patches of natural forests.

New material now available for study surprisingly contains two new species belonging to the apterous Mezirinae genus *Jacobsaptera*: *Jacobsaptera weiserti* sp.n. from Mauritius and *Jacobsaptera reunionica* sp.n. from La Réunion which represents the first apterous flat bug recorded from this island. They are described and illustrated below and additional data are given for *J. pilicornis* HEISS, 2004 and a key to species is provided.

## Material and Methods

The specimens are preserved in the collection of the author. No detailed information is known about the habitat where *J. weiserti* was collected in Mauritius. The single specimen from La Réunion was found when examining dead wood.

The waxy incrustation which usually obscures the body structures was removed for the study of the important fusion lines of the abdominal structures.

Photos were taken through an Olympus SZX 10 binocular microscope with Olympus E3 digital camera and processed with Helicon Focus 4.3 software and using Adobe Photoshop and Lightroom 2.3. Measurements were taken with a micrometer eyepiece, 40 units equals 1 mm.

When citing the text on the labels of a pin attached to the specimens / separates the lines and // different labels.

Abbreviations used: deltg = dorsal external laterotergite (connexivum), mtg = mediotergite, pe-angle = posteroexterior angle (of deltg).

## Taxonomy

***Jacobsaptera weiserti* sp.n.** (Figs. 1 - 4, 7, Photo 1 - 4)

Material examined: Holotype (♂): Mauritius NW, 700-770m / Le Puce Mt. 16-22 I / 20°11'48"S, 57°31'21"E / 2006. J. Janák lgt.// Holotype / *Jacobsaptera weiserti* sp.n. / des. E.Heiss 2011. Paratypes: 2 ♂, 1 ♀ from the same locality are labelled accordingly.

Diagnosis: This new species is of smaller size than the type species of the genus, *Jacobsaptera pilicornis*, and can be distinguished at once from the latter by the angular anterolateral projections of the pronotum.

Description: Male, apterous; body subparallel (♂) or slightly ovate (♀), surface shiny with dispersed yellowish pilosity; antennae, legs and lateral margins of head and pronotum are beset with longer setae. Colouration reddish brown.

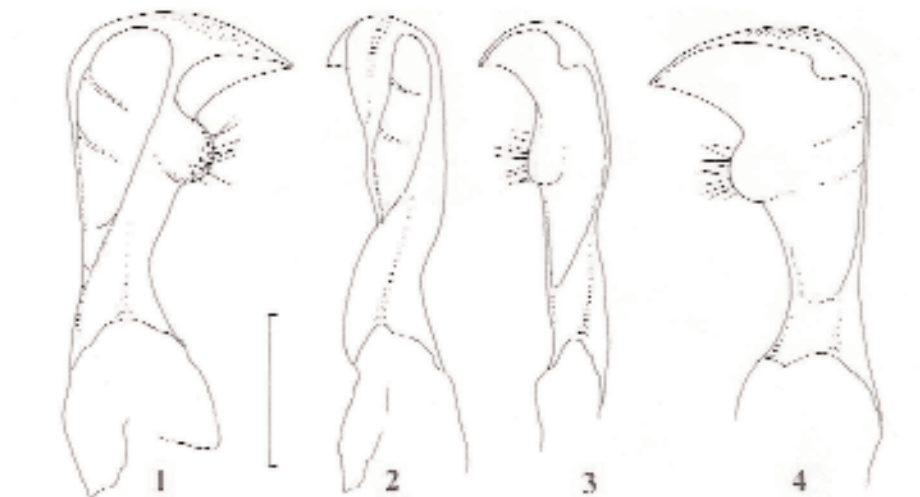
Head: About as wide as long; clypeus and adhering thin genae longer than antenniferous lobes; eyes oval, laterally protruding; postocular lobes rounded and posteriorly converging to cylindrical neck; antennae 1.73 times as long as width of head (51/29.5), segment I short and stout, II-III slender, III longest, IV fusiform; length of antennal segments I/II/III/IV = 14/10/17/10.

Pronotum: Wider than long with distinct ring-like collar; anterolateral angles with rounded lateral projections, lateral margins posteriorly sinuate; disk medially depressed flanked by 2 (1+1) ovate callosities; posterior margin distinctly carinate and convex medially.

Mesonotum: Scutellum-like structure triangular, with knob-like, rounded lobes (resembling reduced wing pads) laterally; lateral margins sinuate, apex subtruncate; disk raised posteriorly, with median sulcus anteriorly.

Metanotum: Consisting of 2 (1+1) rhomboid sclerites lateral of mesonotum, lateral margins anterolaterally with visible metathoracic scent-gland canal followed by a laterally projecting small rounded lobe, then straightly converging posteriorly to acute angle of the sclerite; disk roundly elevated.

Abdomen: Mtg I - VI fused into a continuous plate, only fusion line between mtg I and mtg II laterally marked by a sulcus; disk of tergal plate flat, but slightly elevated along midline; deltg I - III fused to a triangular plate reaching anteriorly to round anterolateral



Figs. 1 - 4: *Jacobsaptera weiserti* sp.n., paramere in different positions. Scale 0.1 mm.

projections of pronotum; lateral margins of deltg I - IV straight, of V - VII with rounded and slightly protruding pe-angles.

Venter: When cleaned from dirt and incrustation, pro-, meso- and metasternum show a peculiar fringe of dense yellowish pilosity (see Figs. 13, 14) which was not observed in *J. pilicornis*. Spiracles II - IV ventral, V - VII lateral and visible from above, VIII terminal.

Male genitalia: Pygophore conical posteriorly, dorsally with elevated ridge; paratergites VIII finger-like, shorter than pygophore; parameres as Figs. 1 - 4.

Female: Of slightly larger size and with more ovate abdomen than male; paratergites VIII short and rounded, reaching half of tricuspidate tergite IX.

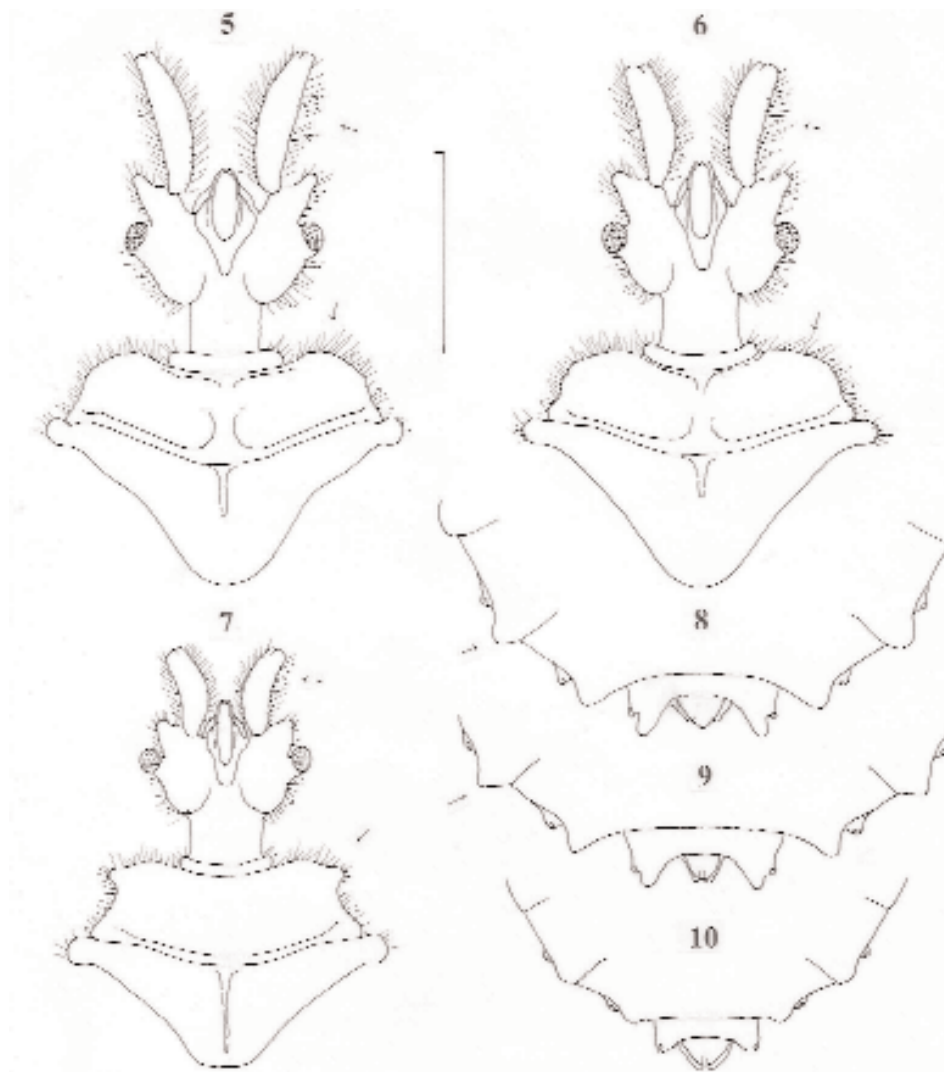
Measurements: Holotype ♂: Length 3.65 mm; head length / width 29/29.5; pronotum length / width 18/44 (anterior part) / 50 (widest posteriorly); mesonotum length / width 19/61; width of abdomen across tergite IV 64, ratio length of antennal segment I / width of head 0.48.

Paratype ♀: Length 4.2 mm, head length / width 32/32; pronotum length / width 18/42/46; mesonotum length / width 19/65; length of antennal segments I/II/III/IV = 16/11/19/11; ratio length of antennae / width of head 1.78; ratio antennal segment I / width of head 0.5.

Etymology: It is a pleasure to dedicate this interesting new species to my friend Fritz Weisert (Vienna) in occasion of his 75th birthday earlier this year. He is a well known Lepidopterist, whose enthusiasm and ability as an editor of the present journal of the Austrian Entomologists' Association and his continuous efforts to publish it regularly are highly recognized and appreciated.

#### ***Jacobsaptera reunionica* sp.n. (Figs. 6, 8, Photo 8)**

Material examined: Holotype ♀: France, La Réunion / St.Louis, Les Makes / 0334295 E, 7654804 S / 4 V 2005 J.Poussereau // 5.54/050504.097 // Holotype / *Jacobsaptera reunionica* sp.n. / des. E. Heiss 2011.



Figs. 5 - 10: *Jacobsaptera* spp. (5, 6, 7) head, pronotum and mesonotum; (8, 9, 10) terminal segments of ♀; (5, 9) *J. pilicornis*; (6, 8) *J. reunionica* sp.n.; (7, 10) *J. weiserti* sp.n. The arrows point to the discriminative structures. Scale 1 mm.

**Diagnosis:** *Jacobsaptera reunionica* sp.n. is closely related to *J. pilicornis* from Mauritius, it represents however a different taxon as expected due to biogeographical considerations for wingless insects on separated islands. It differs by a set of characters as given in the key.

**Description:** Female, apterous; body surface mat with dense yellowish pilosity which is longer on antennae, legs and lateral margins of head and pronotum. Colouration dark brown. As it shares the basic characters of *J. pilicornis*, the description refers primarily to those differing from the latter.

Head: Slightly longer than wide (20/19.5); clypeus longer than antenniferous lobes; antennae 2.08 times as long as width of head (40.5/19.5), segment I thickest and longest, II - III slender and cylindrical, IV shortest and fusiform; length of antennal segments I/II/III/IV = 25/17/24/15; eyes subglobose laterally protruding; postocular lobes rounded and converging posteriorly to cylindrical neck.

Pronotum: 3 times as wide as long (30/10); ring-like collar distinct; anterolateral margin evenly rounded and not protruding as far as anterior margin of collar; disk as in *J. pilicornis*.

Mesonotum: 2.7 times as wide as long (35/13); lateral margins sinuate, disk roundly elevated at middle; apex rounded.

Metanotum and abdomen: Structure of rhomboidal metanotal sclerites and fused tergal plate consisting of mtg I - VI as in *J. pilicornis*; pe-angles of deltg VI more rounded not angular.

Venter: As in *J. pilicornis* the conspicuous pilose fringe on pro-, meso- and metasternum is reduced to small patches on medial sides of coxae.

Measurements: Length 5.2 mm; width of abdomen across tergite IV 51.5; ratio length of antennal segment I / width of head 0.64.

Etymology: Named after the island La Réunion where this species was discovered.

#### ***Jacobsaptera pilicornis* HEISS, 2004** (Figs. 5, 9, Photo 5, 6, 7)

In addition to the two localities of the type series there are new records to be reported: 2 ♂♂, 5 ♀♀, Mauritius NW, 700-770m / Le Puce Mt. 16-22 I / 20°11'48"S, 57°31'21"E / 2006. J. Janák lgt. (surprisingly collected from the same habitat as *J. weiserti* sp.n.); 1 ♀, Mauritius SW, 100-250m / Femey valley 15 I / 20°20'00" S, 57°41'03" E / 2006, J. Janák lgt.

Remarks: When examining carefully cleaned specimens of the type series for comparison with the new taxa, I noted that the body surface is rather glabrous and shiny beneath the thin incrustation not mat as stated in the description. The yellowish pilosity on pro-, meso- and metasternum, as present in *J. weiserti* sp.n., is very reduced – but still discernible – to small patches on the inner side of the coxae. This was also not mentioned in the description.

#### Key to species of *Jacobsaptera*

- 1(2) Anterolateral angles of pronotum angularly projecting; antennae shorter 1.73 - 1.80 times as long as width of head, segment I shorter than III; of smaller body size, 3.55 - 4.2 mm. (Mauritius) (Fig. 7) . . . . . *J. weiserti* sp.n.
- 2(1) Anterolateral margins of pronotum evenly rounded; antennae longer 2.08-2.20x as long as width of head, segment I longer than III, of larger body size 4.45 - 6.1 mm (Figs. 5, 6) . . . . . 3
- 3(4) Body surface glabrous; antennal segment I longer, about 0.75 times as long as width of head; anterolateral angles of pronotum produced anteriorly, collar less inserted in disk of pronotum; pe-angles of deltg VI of ♀ angular (Mauritius) (Figs. 5, 9) . . . . . *J. pilicornis*
- 4 (3) Body surface mat, pilose; antennal segment I distinctly shorter, 0.64 times as long as width of head; anterolateral angles of pronotum more flatish and not produced anteriorly, collar inserted in disk of pronotum; pe-angles of deltg VI of ♀ rounded (La Réunion) (Figs. 6, 8) . . . *J. reunionica* sp.n.



Photo 1 - 4: *Jacobsaptera weiserti* sp.n.: (1) male, dorsal view; (2) female, dorsal view; (3) male, ventral view; (4) female, ventral view.





5



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7



8

Photo 5 - 8: (5) *Jacobsaptera pilicornis*, male, dorsal view; (6) *J. pilicornis*, female, dorsal view; (7) *pilicornis*, male, ventral view; (8) *J. reunionica* sp.n., female holotype, dorsal view.

### Acknowledgements

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