

Linzer biol. Beitr.	40/1	303-309	10.7.2008
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## **A new genus and two species of apterous Mezirinae from Madagascar (Heteroptera, Aradidae)**

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**A b s t r a c t :** *Antsirabenus* nov.gen. with the type species *A. granulatus* nov.sp. and a second one *A. setigerous* nov.sp. are described and illustrated below, based on specimens collected in the rainforests near Antsirabe in Central- and Montagne d'Arbre in Northern Madagascar. Both species are apterous but show a distinctly developed scutellum.

**K e y w o r d s :** Heteroptera, Aradidae, Mezirinae, apterous, new genus, new species, Africa, Madagascar.

### **Introduction**

The presently known Madagascan fauna of apterous Mezirinae of the flat bug family Aradidae comprises 6 genera (*Paulianum* HOBERLANDT 1957, *Tananarivea* DRAKE 1957, *Chlonocoris* USINGER & MATSUDA 1959, *Cimicomanes* KIRITSHENKO 1959, *Robertiessa* HOBERLANDT 1963, *Classeyana* HOBERLANDT 1963) and 14 species, which certainly are not representing the true number of extant taxa.

Due to the wingless condition and limited distribution range, apterous Aradidae are generally rarely found in collections. Material upon which this study is based was collected in two rainforest localities in Central- and Northern Madagascar and contained several new taxa, of which a new genus and two new species are described below.

As all abovementioned genera are endemic to Madagascar, they are highly endangered by the widespread deforestation by burning the already considerably reduced rainforest areas for the shifting cultivation practiced by the increasing population. One can expect that numerous flat bug taxa will be eradicated before they could be found and described.

Measurements were taken with a micrometer eyepiece, 20 units equal 1 mm unless otherwise stated. The material is deposited in the special Aradid collection of the author (CEHI).

## Taxonomy

### *Antsirabenus* nov.gen.

Type species : *Antsirabenus granulatus* nov.sp.

**D i a g n o s i s :** Of apterous Mezirinae besides *Antsirabenus* nov.gen. only *Cimicomanes* and *Chlonocoris* share a distinct scutellum, however the new genus is distinguished by much smaller size, densely granulate surface and lacking the long tooth like or forked lateral expansions on pro- and metanotum.

**D e s c r i p t i o n :** Apterous, body oval; surface finely granular throughout, the granules bearing semierect yellowish setae apically, colouration reddish brown with lighter antennae.

**H e a d :** About as long as wide, genae projecting over clypeus, longer than antennal segment I; antenniferous lobes diverging anteriorly; eyes globular, postocular tubercles small and acute. Rostrum arising from a slit like atrium, as long as head.

**P r o n o t u m :** More than 2.5 × as wide as long, lateral margins with anterolateral expansions, disk with at least two ovate elevations medially flanked on their inner side by ovate smooth depressions; posterior margin slightly convex.

**S c u t e l l u m :** Well defined and at least 2.5 × as wide as long, lateral margins evenly semicircularly rounded; disk elevated at middle, depressed posterolaterally.

**M e t a n o t u m :** Formed by two sclerites laterad of scutellum with a longitudinal ridge at middle, posterolateral angles rounded and reflexed, posterior margin sinuate; the apex of the metathoracic scent gland canal is visible anterolaterally.

**A b d o m e n :** Tergal plate consisting of fused mediotergites (mtg) I-VI, lateral margins roundedly converging posteriorly; surface of mtg I is at the level of scutellum but higher than mtg II, the posterior margin therefore distinctly delimited by the depressed surface of mtg II; the latter has a inverted T-shaped elevation at middle, mtg IV and V are medially raised including the dorsal scent gland scars. Dorsal external laterotergites (deltg) II+III fused a thin suture marking the fusion line; tergite VII raised at middle in both sexes, in female with two blunt elevations medially, posterolateral angles triangularly expanded and projecting.

**V e n t e r :** Metathoracic scent gland canal long and increasingly gaping towards rounded apex, which is visible from above on either side of metanotal sclerites. Spiracles II-VII ventral, VIII lateral on paratergite VIII and visible from above; sternite VII of male with a distinct smooth and shiny tubercle at middle.

**L e g s :** Femora and tibiae straight, unarmed, claws with setiform parempodia and thin curved psuedopulvilli.

**E t y m o l o g y :** Named after the city of Antsirabe in which environments the type species was collected.

### *Antsirabenus granulatus* nov.sp. (Fig. 1, 3, 4, 6-10, photo 1, 2)

**M a t e r i a l e x a m i n e d :** Holotype male, Madagascar, env. Chutes de l' Onive NW Antsirabe, 15.IX.1995 G. Carlo leg. (CEHI); paratypes: two females collected with holotype.

**D i a g n o s i s :** Distinguished from the second new species of this genus *A. setulosus*

nov.sp. by much larger size, antennal segment II longer than III, different size and shape of anterolateral expansion of pronotum, less transverse scutellum and straight not sinuate lateral margins of deltg V-VII (Fig. 1, 2, 5, 6).

**D e s c r i p t i o n :** Male, apterous, body and appendages densely beset with setigerous round tubercles; colour reddish brown with lighter antennae.

**H e a d :** Slightly longer (from apex of genae to posterior margin of granulated vertex) than width across eyes (43/41); genae long and contiguous in front of clypeus, apices diverging anteriorly and reaching beyond antennal segment I; antenniferous lobes bent anterolaterally; antennae  $1.46 \times$  as long as width of head (60/41), antennal segments of subequal length, II slightly longer than III, relative length of I:II:III:IV = 15:15:14:16; eyes globular fully exposed; postocular lobe with a small acute laterally projecting tubercle, its apex not reaching outer margin of eyes, then strongly converging posteriorly; vertex dorsally rounded with an ovate smooth depression laterad on either side.

**P r o n o t u m :** Distinctly transverse and  $2.6 \times$  as wide as long (60/23); lateral margins with a large slightly reflexed widely rounded expansion along basal 1/2, the remaining margin straight and diverging posteriorly; disk transversely raised posteriorly, sloping toward collar with two larger ovate elevations medially and two smaller longer but lower ones sublaterally, surface depressed between median elevations with a median longitudinal groove flanked by a row of granules and a smooth ovate depression laterally, the latter delimited by the median elevations; posterior margin slightly convex.

**S c u t e l l u m :** Semicircular  $2.5 \times$  as wide as long (40/16); disk widely elevated at middle, depressed posterolaterally; lateral margins granulate and carinate.

**M e t a n o t u m :** Developed as trapezoidal sclerites laterally of scutellum, their posterior margins sinuate and not exceeding the scutellum; lateral margins converging anteriorly with a reflexed rounded lateral expansion, convex posterolaterally; disk with a longitudinal ridge at middle; lateral metathoracic scent gland canals long and curved, the cleft opening is anterolaterally visible from above (fig. 1, 3).

**A b d o m e n :** Tergal plate subrectangular consisting of fused mediotergites (mtg) I-VI; mtg I medially slightly depressed and less granulate, lateral margins with a longitudinal ridge; posterior margin laterad of median depression sinuate, its surface is distinctly higher than that of the adjacent depressed mtg II which has an inverted T-shaped flat elevation medially; posterior border between mtg II and III marked by a thin depressed line; mtg IV+V raised medially bearing the dorsal scent gland scars; deltg II+III fused, lateral margins of deltg II-VI straight, the posterolateral angles feebly produced; that of deltg VII basally straight then with a subtriangular posteriorly directed lobe (fig. 6). Ventral side with pro- meso- and metasternum fused; sternite VII of male with a conspicuous glabrous tubercle; spiracles II-VII ventral, VIII lateral on paratergite VIII and visible from above.

**G e n i t a l i c s t r u c t u r e s :** Pygophore subglobose, attenuated posteriorly; parameres hook like as fig. 7-10.

**F e m a l e :** Generally as male but of larger size, tergite VII raised medially with two distinct round granulate elevations, depressed laterad, ptg VIII with acute apex, shorter than tricuspidate tergite IX.

**M e a s u r e m e n t s :** Length 9.0 mm; width of pronotum (at expansion) 3.0 mm; width across metanotum 3.9 mm; width of abdomen 4.4 mm. Females : Length 10.5 and

10.8 mm; ratio length of antennae/width of head 1.46/1.42; width of pronotum 3.7/3.85 mm, ratio width/length 2.8/2.9; scutellum ratio width/length 2.6/2.6; width across metanotum 4.7/4.8 mm; width of abdomen 5.6/5.8 mm respectively.

**E t y m o l o g y** : Referring to the conspicuous granulation of the body.

**D i s t r i b u t i o n** : Only known to date from the type locality in Central Madagascar near Antsirabe and is most probably endemic.

***Antsirabenus setigerous* nov.sp. (Fig. 2, 5, photo 3, 4)**

**M a t e r i a l e x a m i n e d** : Holotype male, Madagascar, S Diego Suarez (Antseranana), Montagne d' Arbre 26-29.X.1995 E. Heiss leg. (CEHI); paratypes: 5 females collected with holotype.

**D i a g n o s i s** : The new species shares all essential characters of *A. granulatus*, however it is distinguished by smaller size (6.5-7.2/9.0-10.8 mm), antennal segment II shorter than III (longer in *A. granulatus*), different size and shape of anterolateral expansion of pronotum, more transverse scutellum and sinuate lateral margins of deltg V-VII (fig. 1, 2, 5, 6).

**D e s c r i p t i o n** : General shape, granulation of abdomen and appendages and colouration as in *A. granulatus*, therefore mostly the distinguishing characters are described.

**H e a d** : Slightly longer than wide (33/31.5); genae produced anteriorly over clypeus, longer than antennal segment I, apices diverging; antennae 1.55 × as long as width of head, all segments of subequal length but II slightly shorter than III, relative length of I:II:III:IV = 13:11:12:13; postocular tubercle small and acute.

**P r o n o t u m** : 2.9 × as wide as long (47/16); anterolateral expansion smaller than in *granulatus* and more rounded; median elevations of disk distinctive, sublateral ones not developed.

**S c u t e l l u m** : 2.7 × as wide as long (30/11), structure as of *A. granulatus*.

**A b d o m e n** : Basic structures as in the type species, however the inverted T-shaped structure on mtg III is triangularly elevated at posterior margin, lateral margins of fused deltg II+III and IV straight and posterolateral angles slightly produced, those of deltg V-VII sinuate with posterolateral angles rounded and distinctly produced (fig. 5); posterior margins of deltg II-VI are more raised than in *A. granulatus*. Venter with lateral metathoracic scent gland canals long and straight, the cleft opening is anterolaterally visible from above. Spiracles II-VII ventral, VIII lateral and visible from above.

**G e n i t a l i c s t r u c t u r e s** : The single male available was not dissected.

**F e m a l e** : Generally as male but of larger size, structures of terminal segments as of *A. granulatus*.

**M e a s u r e m e n t s** : Length 6.5 mm; width of pronotum 2.35 mm; width across metanotum 3.0 mm; width of abdomen 3.0 mm. Females: Length 7.2-7.8 mm; ratio length of antennae/width of head 1.44-1.48; width of pronotum 2.45-2.60 mm; ratio width/length of scutellum 3.08-3.18; width across metanotum 3.6-3.8 mm; width of abdomen 3.9-4.25 mm.

**E t y m o l o g y** : Referring to the setigerous granulation covering body, legs and antennae.

**D i s t r i b u t i o n a n d e c o l o g y** : To date only known from the rainforest of

Montagne d' Arbre, where it was found feeding on decaying logs of a leaf tree laying on the forest floor. Is most probably also an endemic species.

### Acknowledgments

I thank very much Fritz Gusenleitner and Karin Traxler of the ambitious editorial team of the Biologiezentrum Linz for their continuous efforts and assistance to publish my entomological papers within short time in the "Linzer biologische Beiträge".

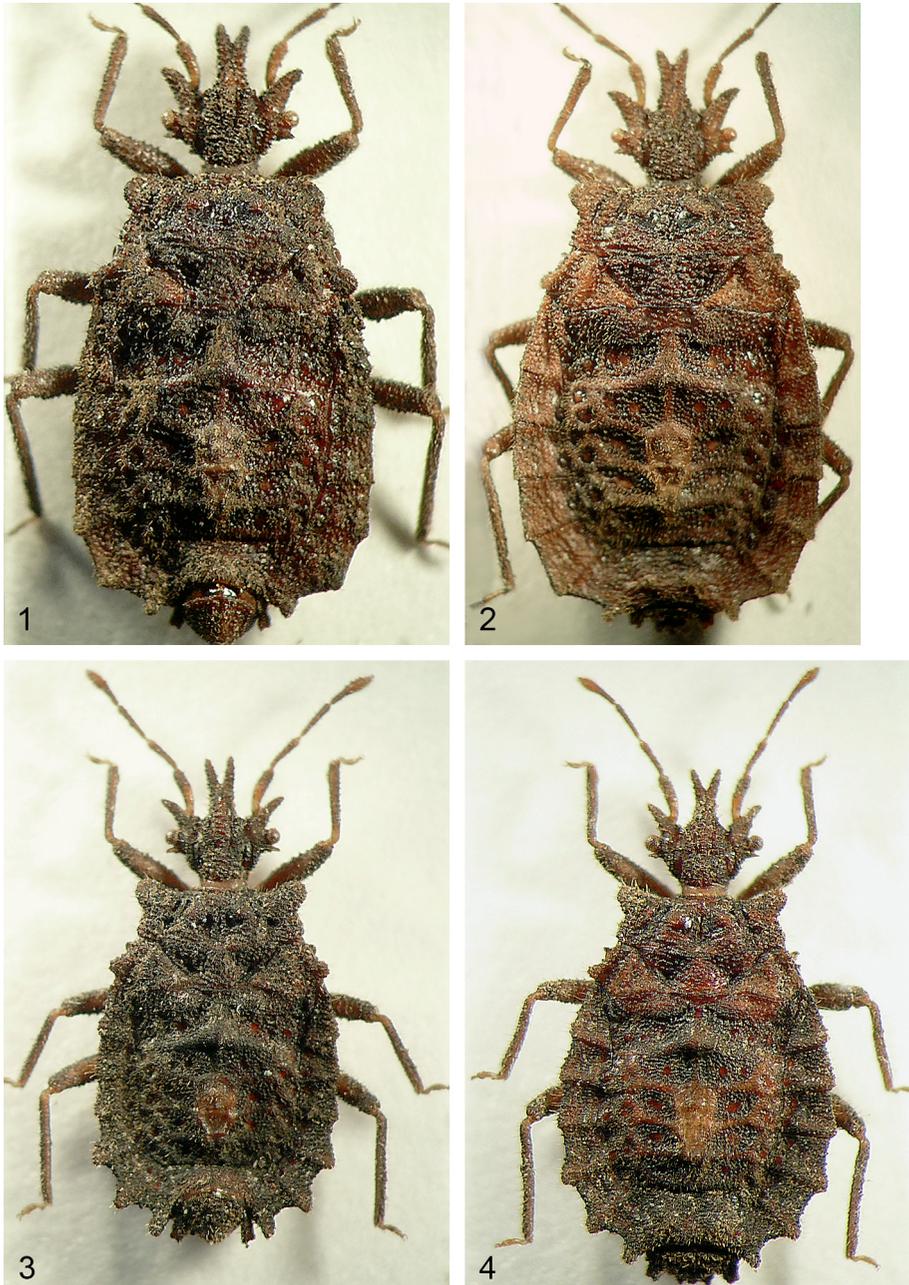
### Zusammenfassung

Anhand von Belegen aus zwei Regenwaldstandorten in der Umgebung von Antsirabe und Montagne d' Arbre wird die Mezirinae-Gattung *Antsirabenus* nov.gen. und den beiden Arten *A. granulatus* nov.sp. und *A. setulosus* nov.sp. beschrieben und deren charakteristische Strukturen abgebildet. Beide Arten sind apter, haben jedoch ein normal ausgebildetes Scutellum.

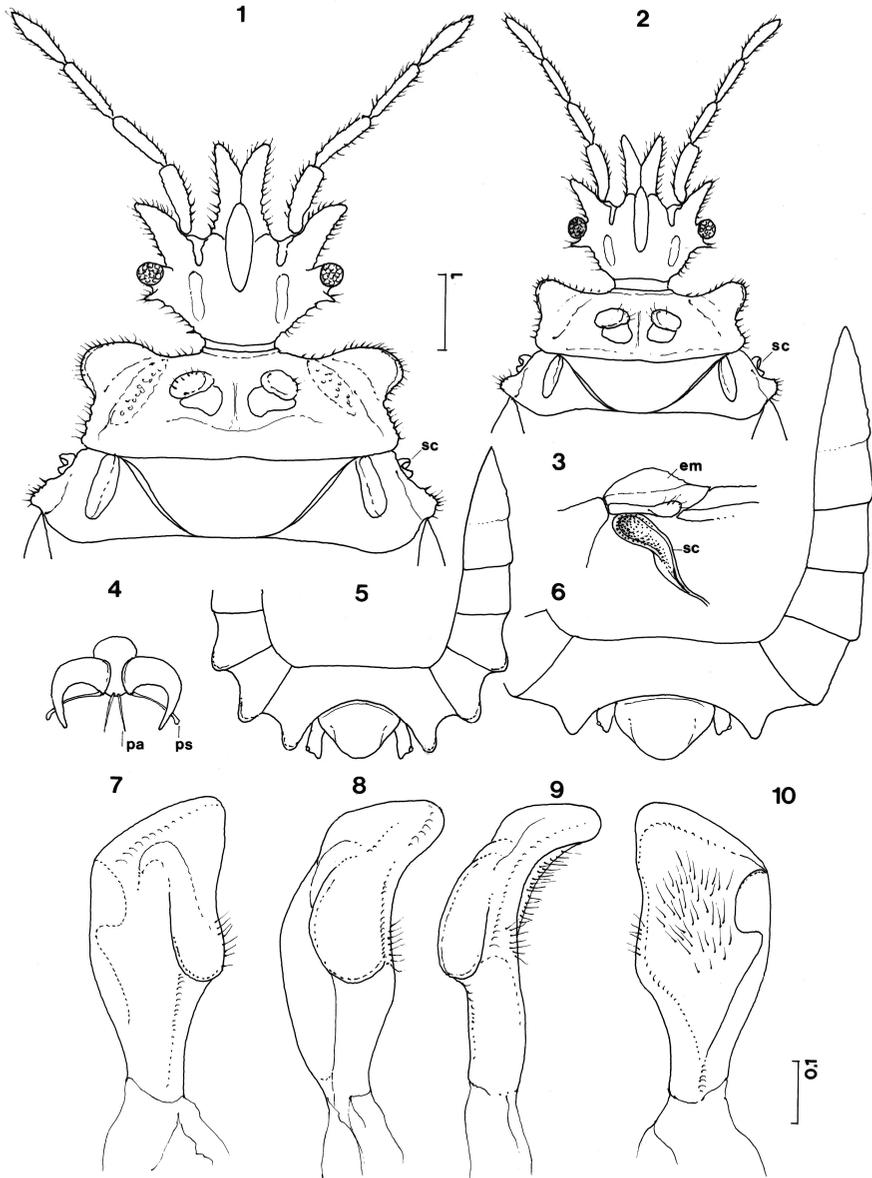
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**Photo 1-4:** *Antsirabenus* nov.gen., dorsal view; (1) *A. granulatus* nov.sp. holotype male, (2) ditto, paratype female; (3) *A. setulosus* nov.sp. holotype male; (4) ditto paratype female.



**Fig. 1-10:** *Antsirabenus* nov. gen. 1, 3, 4, 6-10 *A. granulatus* nov. sp.; 2, 5 *A. setulosus* nov. sp.; (1, 2) paratypes female, dorsal view; (3) metathoracic scent gland canal, lateral view; (4) claw; (5, 6) outline of abdomen of males; (7-10) right paramer in different positions (10 = ventral side). Abbreviations: (em) median elevation of metanotum; (pa) setiform parempodia; (ps) pseudopulvilli; (sc) metathoracic scent gland canal. Scale: Fig. 1-3, 5, 6 = 1 mm; fig. 7-10 = 0.1 mm.

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Jahr/Year: 2008

Band/Volume: [0040\\_1](#)

Autor(en)/Author(s): Heiss Ernst

Artikel/Article: [A new genus and two species of apterous Mezirinae from Madagascar \(Heteroptera, Aradidae\) 303-309](#)