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# Contribution to the knowledge of Galerucinae of New Caledonia 2 (Coleoptera: Chrysomelidae)

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Abstract. As result of a study of New Caledonian Galerucinae twelve new species are described: *Malacotheria wanati* n. sp., *Metrioidea aurantiaca* n. sp., *M. ingeborgae* n. sp., *M. janbezdeki* n. sp., *M. hirtipennis* n. sp., *M. astridae* n. sp., *M. brunneipennis* n. sp., *M. monteithi* n. sp., *M. decorata* n. sp., *M. undulata* n. sp., *M. glabella* n. sp. and *M. pilifera* n. sp. New synonym proposed here: *Monolepta scutellata* Jacoby, 1886 as a junior synonym of *Candezea palustris* (Perroud & Montrouzier, 1864). Lectotype and paralectotype are designated for *Monolepta semiviolacea* Fauvel, 1862. The combinations *Candezea palustris* (Perroud & Montrouzier, 1864) and *Candezea semiviolacea* (Fauvel, 1862) are resurrected. The name *Aulacophora xavieri* nom. nov. is proposed as a replacement name for *A. montrouzieri* Beenen, 2008. Additional data on some other Galerucinae are presented.

Key words: entomology, taxonomy, new species, new synonymy, replacement name, lectotype designation, Coleoptera, Chrysomelidae, Galerucinae, New Caledonia.

## INTRODUCTION

In the first paper on New Caledonian Galerucinae (Beenen 2008) a second paper was announced with more new species in *Metrioidea* and some other genera. The subject of a third (final) paper should be a key to the genera and species of all New Caledonian Galerucinae. However, since my first paper more material became available. In the present paper a dozen new species are presented, but that number will increase once the newly acquired material is processed. Some ten new species in *Metrioidea* are to

be described and this will be done in a third contribution. A key will be published as soon as all New Caledonian specimens at my disposal are identified.

## MATERIAL AND METHODS

Information on labels is presented in a standardized order where countries and regions are listed with a uniform spelling. Also dates have been listed with months in a uniform way. Further label information is reproduced verbatim.

Some specimens prooved to be extremely fragile. This holds especially for *Metriodea* and therefore many specimens are incomplete. In some cases specimens are not sexed. That is for example in cases where the tip of the abdomen was not visible. To avoid damage the specimens where not separated from the cards they were glued on.

The studied material is curated in the following collections:

CIAC : Collection Institut Agronomique néo-Calédonien, La Foa, New Caledonia;
ISNB : Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium;
JBCB : Jan Bezděk collection, Brno, Czech Republic;
MDCV: Mauro Daccordi collection, Verona, Italy;
MNHN: Muséum National d'Histoire Naturelle, Paris, France;
MNHW: Museum of Natural History, Wroclaw, Poland;
MSCB: Matthias Schöller collection, Berlin, Germany;
QM: Queensland Museum, South Brisbane, Australia;
RBCN**:** Ron Beenen collection, Nieuwegein, The Netherlands;
RSCW: Rudolf Schuh collection, Wiener Neustadt, Austria;
ZMA: Zoological Museum, Amsterdam, The Netherlands.

## ERRATA TO THE PREVIOUS PAPER

The following replacement name is proposed: *Aulacophora xavieri* nom. nov. for *Aulacophora montrouzieri* Beenen, 2008: 70 which proved to be a junior homonym of *A. montrouzieri* Fairmaire, 1883. In the diagnosis of this species in Beenen (2008, page 71) the second line needs to be replaced by 'from this region. *A. austrocaledonica* differs from the new species in the presence of black'.

The paragraph 'Description' by *Aulacophora deplanchei* in Beenen (2008: 72-73) has to be removed. It has nothing to do with this species.

The name *Metrioidea* was proposed by Fairmaire (1881) for the monotypic genus containing *M. signatipennis* Fairmaire only. He did not specify the gender of this genus. From the species group name 'signatipennis' no gender can be assigned. According article 30.2.4 of the ICZN the name *Metrioidea* has to be regarded feminine because the name ends in –a. In my previous paper I erroneously treated *Metrioidea* as masculine. The following names have therefore to be changed:

*Metrioidea lateralimaculatus* Beenen - *Metrioidea lateralimaculata* Beenen

*Metrioidea bimaculatus* (Perroud & Montrouzier) - *Metrioidea bimaculata* (Perroud & Montrouzier)

The name *Metrioidea cornuphallus* Beenen, 1988: 79 stays unchanged because 'cornuphallus' is a compound noun.

## Genus *Malacotheria* Fairmaire, 1881

Fairmaire (1881) clearly stated *Malacotheria* to be characterized by closed front coxal cavities. The species described here clearly has open front coxal cavities. In the closely related genus *Menippus* Clark, 1864 species with open and closed front coxal cavities are also included (Reid & Nally 2008). *Malacotheria joliveti* Beenen, 2008 and the species described in this paper clearly belong to the same genus as *Malacotheria lateritia* Fairmaire, 1881 and *M. trigiscuta* Fairmaire, 1881 from Fiji of which specimens from ZMA have been studied. Fairmaire erected *Malacotheria*, in which he described four species (Fairmaire 1881, 1883) but he also knew the genus *Menippus* since he described a species in this genus too (Fairmaire 1889). However, it cannot be excluded that *Menippus* and *Malacotheria* are congeneric. A study of the type species of the genera *Malacotheria* (*M. funerea* Fairmaire, 1881) and *Menippus* (*M. cynicus* Clark, 1864) has not been part of this study of New Caledonian Galerucinae, but should be conducted in the near future to provide information on the relationship between these two genera.

### *Malacotheria wanati* n. sp.

(fig. 1)

Type material

**Holotype** ♂: NEW CALEDONIA (Province Nord): road Bonde-Mandjélia Mt 250m., niaouli forest, at light, 9 i 2007, 20°28.6'S 164°15.6'E, leg M.Wanat & R.Dobosz (MNHN).

**Paratypes**: NEW CALEDONIA (Province Nord): road Bonde-Mandjélia Mt, 250m., niaouli forest, at light, 9 i 2007, 20°28.6'S 164°15.6'E, leg M.Wanat & R.Dobosz (1♂, 1♀ MNHW). NEW CALEDONIA (Province Nord): Mandjélia (subsummit), 700-750m., at light, 11 i 2007, 20°23.9'S 164°32.0'E, leg M.Wanat & R.Dobosz (1♂, 1♀ RBCN, 2♀♀ MNHW). NEW CALEDONIA (Province Nord): Port Boisé (Gite Kanua), 0-40m., forest at sea shore, 14 ii 2004, 22°21'S 166°58'E, leg M.Wanat (1♂ MNHW); NEW CALEDONIA (Province Nord): Port Boise (Gite Kanua), 30 xi – 2 xii 2004, MV lamp, 10m., 22°21'S 166°58'E, QM Party (1♂, 2♀♀ QM). NEW CALEDONIA (Province Sud): Ile des Pins, Wéniime, 28 iii 1994, 22°40'S 167°27'E, leg M.Schöller (2♀♀ MSCB).

Description

Length: 5.8-7.00 mm. Greatest width across both elytra: 3.05-3.50 mm. Macropterous. General colour yellowish brown. Apex of tibiae black. Lateral margins of pronotum broadly black, a longitudinal prescutellar spot in the middle black. Antennal

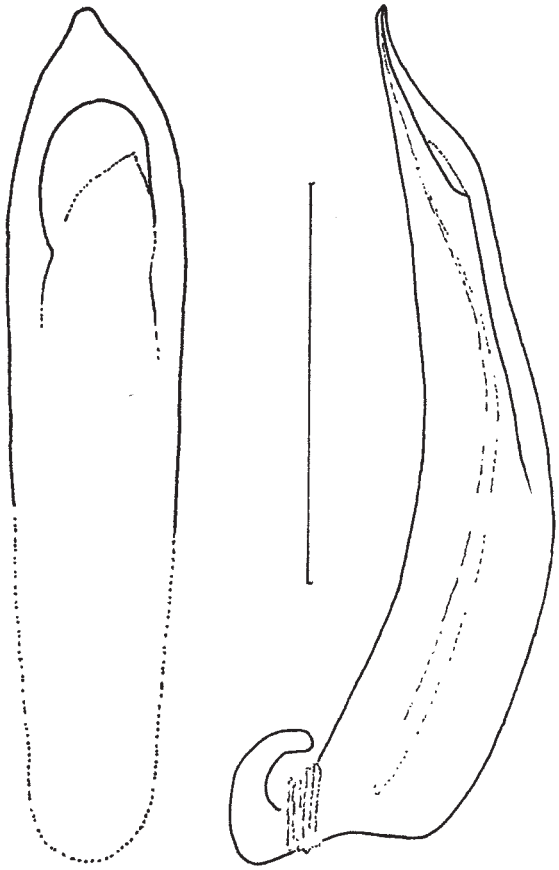
segments 4 and onwards black. First three antennal segments dorsally black. Scutellum dark brown to black and in most specimens with brown margin.

Head: maximal width of head across both eyes: 1.50-1.60 mm. Dorsal surface punctate, dull and pubescent. Frontal tubercles small, oblong. Labrum with a shallow emargination.

Pronotum: maximal width 2.10-2.35 mm. Greatest width behind middle. Length in middle: 1.00-1.05 mm. Sides evenly rounded. Front corners produced, hind corners obtuse. Anterior and posterior border completely margined. Upper surface punctuate, dull and pubescent. Impressed at both sides of middle in anterior third.

Scutellum: trapezoid; pubescent.

Elytra: at base broader than the pronotum; parallel, regularly rounded in posterior quarter; humerus prominent; surface closely punctured and covered with fine pubescence. Elytral epipleuron broad at base and distinctly abbreviated behind middle of elytron; pubescent.



1. Aedaeagus of *Malacotheria wanati* n. sp.: left: dorsal view; right: lateral view. Scale bar = 1.0 mm

Legs with first segment of front tarsus widened in male; tarsal claws bifid.

Ventral surface: yellowish brown. Procoxal cavities open posteriorly. Last abdominal sternite in male with triangular incision ("genital groove") reaching about half of the length of the segment.

Aedaeagus: fig. 1.

Diagnosis

Claw segment of tarsus short. Protruding part almost of the same length as the lobes of the third segment. In the very similar *M. joliveti* Beenen, 2008 the protruding part is double the length of the lobes of the third segment. The epipleura of *M. wanati* n. sp. are of the same colour as the concolorous elytra. In *M. joliveti* lateral margins of the elytra and epipleura are black. Furthermore *M. joliveti* has closed front coxal cavities. In *M. wanati* n. sp. the front coxal cavities are open. The aedaeagus of *M. wanati* n. sp. is apically pointed (fig. 1), whereas it is lobed in *M. joliveti*.

Etymology

This species is named in honour of Marek Wanat, who contributed much to our present knowledge of phytophagous beetles of New Caledonia.

Distribution

New Caledonia: Province Nord and Province Sud.

## Genus *Galerumaea* Hincks, 1949

The genus *Galerumaea* was named by Hincks (1949) as a replacement for *Eumaea* Baly, 1865, which was a junior homonym. It contains 12 species distributed in New Guinea, Indonesia and Sulu islands (Philippines) (Wilcox 1971-1975, Aslam 1972, Shute 1983). Some species have elytra costate and some not.

### *Galerumaea* spec.

A single specimen from New Caledonia in MNHW collected in New Caledonia belongs to this genus: Col d'Amieu (1 km W of), S 21°37' E 165°49', 400m., 10 ii 2004, leg M. Wanat. This specimen belongs to the group of species lacking costae. Although this specimen does not fit the description of any of the described species in *Galerumaea*, it will not be described here because it is a single and incomplete female specimen.

## Genus *Aulacophora* Chevrolat in Dejean, 1836

### *Aulacophora fauveli* Beenen, 2008

Beenen (2008) described this species from New Caledonia and Wallis and suggested a wide distribution. The species can now be listed from a new country: VANUATU

Santo, 21 x 2006, P. Jolivet (RBCN). Besides it now is also recorded from Futuna (WALLIS & FUTUNA), 25 xi 2011, C.Mille (1♂ CIAC, 1 ♂ RBCN) and 29 xi 2011 (1♂ CIAC).

## Genus *Metrioidea* Fairmaire, 1881

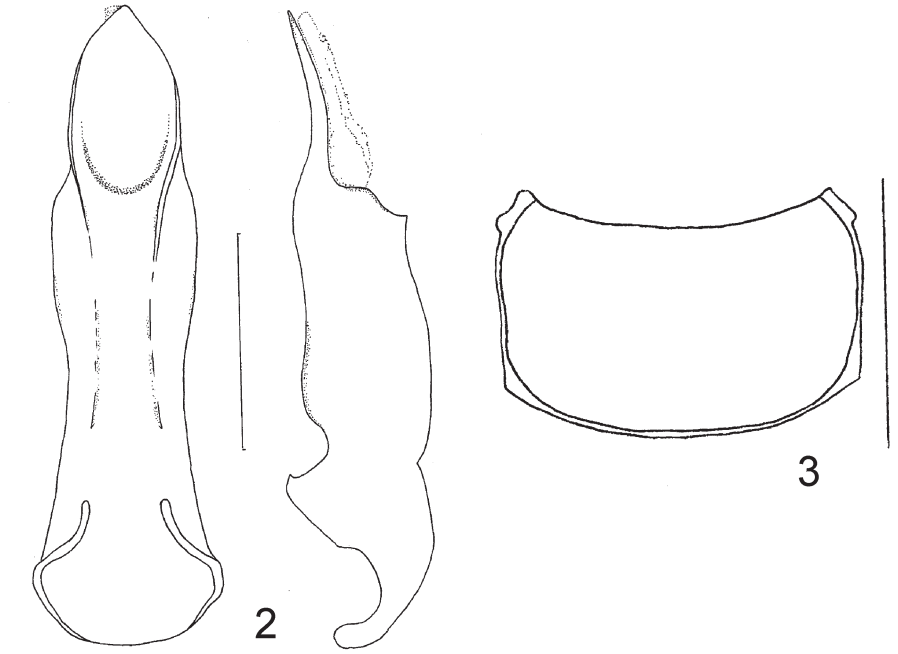
### *Metrioidea aurantiaca* n sp.

(figs. 2, 3)

Type material

**Holotype** ♂: NEW CALEDONIA (Province Sud): Rivière Bleue Parc, 21 xii 2006, 180m scient. refuge at light, 22°06.0'S 166°38.6'E, leg M.Wanat & R.Dobosz (MNHN).

**Paratypes**: NEW CALEDONIA (Province Sud): Rivière Bleue Parc, 21 xii 2006, 180m scient. refuge at light, 22°06.0'S 166°38.6'E, leg M.Wanat & R.Dobosz (MNHW: 2, RBCN: 1); NEW CALEDONIA (Province Sud): Rivière Bleue Parc, 19 xii 2006, 190m refuge at light, 22°05.9'S 166°38.3'E, leg M.Wanat & R.Dobosz (MNHW: 2); NEW CALEDONIA (Province Sud): Chute de la Madeleine, maquis, night coll. (lamp & beating), 240m., 24 xii 2006, 22°14,2'S 166°51,7'E, leg M.Wanat & R.Dobosz (MNHW: 12, RBCN: 10); NEW CALEDONIA (Province Sud): Pic du Pin, site 1, S




2, 3. *Metrioidea aurantiaca* n. sp.: 2 – Aedaeagus: left: ventral view; right lateral view. Scale bar = 0.5 mm; 3 – Pronotum. Scale bar = 1.0 mm

22°15' E 166°50', 280m., 22-23 xii 2004, MV lamp, rainforest. GB Monteith (QM: 2); NEW CALEDONIA (Province Sud): Pic du Pin, base, S 22°14,9' E 166°49,7', 280m., 25 xii 2006, Night coll. (lamp & beating), M.Wanat & R. Dobosz (MNHW: 3); NEW CALEDONIA (Province Sud): Col Tamanou, at Némin river SEE of Thio), S 21°39,4' E 166°19,3', 20m., 30 xii 2006, night collecting, M.Wanat & R. Dobosz (MNHW: 3); NEW CALEDONIA (Province Sud): Nyamié creek, at Comboui river, S 21°45,9' E 166°25,5', 30-50m., 31 xii 2006, night collecting, M.Wanat & R. Dobosz (MNHW : 2); NEW CALEDONIA (Province Sud): Col Tamanou, at Némin river SEE of Thio), S 21°39,4' E 166°19,3', 20m., 31 xii 2006, maquis, M.Wanat & R. Dobosz (MNHW: 1); NEW CALEDONIA (Province Sud): Lower Comboui river, S 21°45,9' E 166°25,5', 20m., 1 i 2007, forest, M.Wanat & R. Dobosz (MNHW: 1).

Description

Elongate species. Orange with only the terminal antennal joint partly blackish. Length: 5.05-5.75 mm (total); 4.45-5.45 mm (from anterior border of eyes to tip of elytra). Greatest width across both elytra: 1.95-2.75 mm. Macropterous.

Head: maximal width of head across both eyes: 1.00-1.25 mm. Dorsal surface impunctate, velvetly shining due to fine reticulation. Frontal tubercles transverse; velvetly shining due to fine reticulation. Antennal formula: 12-5-7-11-11-11-11-11-11-9-10. Labrum square; with straight margin; with row of six setae bearing punctures, shining.

Pronotum: length in middle: 0.70-0.90 mm. Maximal width 1.17-1.45 mm. Sides sinuate with largest width in anterior third (fig.3). All corners with calli. Posterior border slightly rounded. Anterior border slightly immarginate; lateral borders and posterior border with fine margin. Upper surface impunctate. Velvetly shining due to fine reticulation.

Scutellum: triangular, with coarse reticulation.

Elytra: broader at base than the pronotum; slightly expanding posteriad, regularly rounded in posterior fifth; humerus prominent; surface with large punctures; some punctures merge; shining. Elytral epipleuron even, wider from base to anterior margin of metasternum, then gradually narrowing towards apex. Velvetly shining.

Legs: length of hind tibia about 4/5 of maximal width of both elytra. Tibiae with apical spine. Length of apical spine on metatibia 0.7 times the breadth of metatibia at apex. First segment of metatarsus as longer as remaining segments combined. Tarsal claws appendiculate.

Ventral surface: procoxal cavities open posteriorly.

Aedaeagus: figure 2.

Sexual dimorphism: there are no external characters that differ between the sexes.

Variability: in some specimens the head is a shade darker then pronotum and elytra.

Diagnosis

This species can be recognized by its orange colour. Among the species with first segment of metatarsus as long as or slightly longer than remaining segments it is the only unicolorous species with velvety shining pronotum. The aeadaeagus is rather simple without having a dorsal plate and only a small lateral dentation at the ostium (apical opening).

Etymology

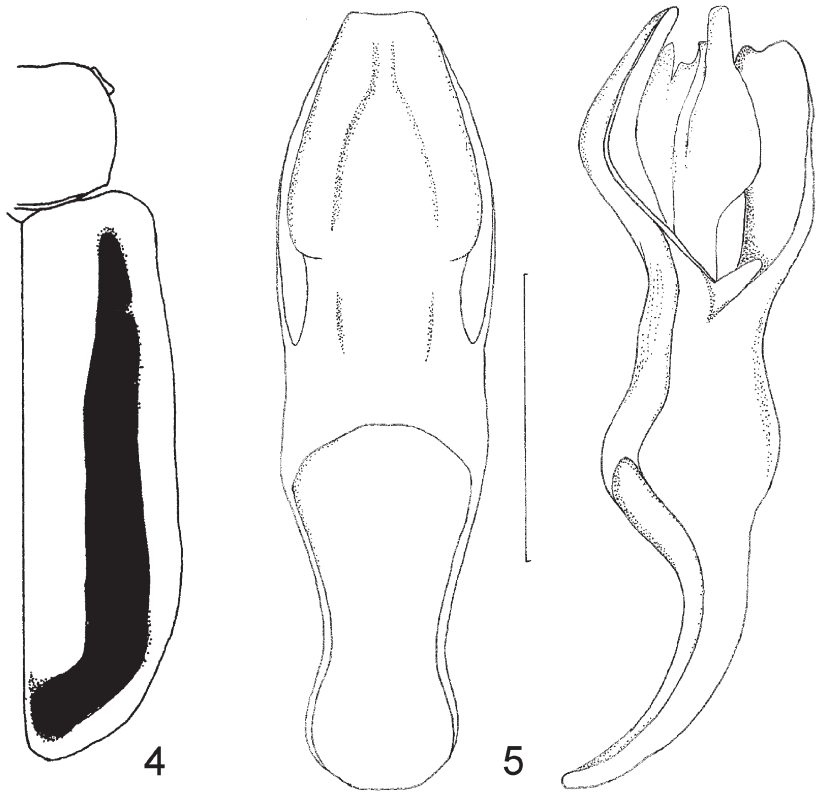
The name refers to the complete orange colour of this species.

### ***Metrioidea ingeborgae*** **n. sp.**

(figs. 4, 5)

Type material

**Holotype** ♂: NEW CALEDONIA (Province Sud): Rivière Bleue Parc, 21 i 2007, 180m scient. refuge at light, 22°06.0'S 166°38.6'E, leg M.Wanat & R.Dobosz (MNHN)




4, 5. *Metrioidea ingeborgae.* n. sp.: 4 – right elytron; 5 – aedaeagus: left: ventral view; right lateral view. Scale bar = 0.5 mm

**Paratypes**: NEW CALEDONIA (province Nord): Refuge de la Ouaième (crête), 2 xi 2010, M-56, COL /39/11 (1 ♀ CIAC); NEW CALEDONIA (Province Sud): Port Boisé (ca 5 km of), maquis, ad lucem, 80m., 14 ii 2004, 22°20'S 166°58'E, leg M.Wanat (1♀ MNHW); NEW CALEDONIA (Province Sud): Chute de la Madeleine, maquis, ad lucem, 270m., 13 ii 2004, 22°14'S 166°52'E, leg M.Wanat (1♀ MNHW, 1♀ RBCN); NEW CALEDONIA (Province Sud): Haute Rivière Bleue : La Tranchee-Sentier des Kaoris, humid forest, 26 i 2004, 280-330m., 22°05'S 166°38'E, leg M.Wanat (1♀ MNHW); NEW CALEDONIA (Province Sud): Rivière Bleue Parc, 20 xii 2006, 190m refuge night coll. (lamp & beating), 22°05.9'S 166°38.3'E, leg M.Wanat, NEW CALEDONIA (Province Sud): Haute Rivière Bleue : track to la Tranchée, 22-23 i 2004, 180-330m., 22°05'S 166°38.3'E, leg M.Wanat (1♀ MNHW); NEW CALEDONIA (Province Sud): Rivière Bleue Parc (N) 1 km o scientists refuge, ad lucem, 27 i 2004, 180m, 22°06'S 166°39'E, leg M.Wanat (1♀ MNHW); NEW CALEDONIA (Province Sud): Rivière Bleue Parc, 20 xii 2006, 190m refuge night coll. (lamp & beating), 22°05.9'S 166°38.3'E, leg M.Wanat & R.Dobosz (1 ♀ MNHW); NEW CALEDONIA (Province Sud): Rivière Bleue Parc, 21 xii 2006, 180m scient. refuge at light, 22°06.0'S 166°38.6'E, leg M.Wanat & R.Dobosz (1 ♀ MNHW); NEW CALEDONIA (Province Sud): Rivière Bleue Parc, 21 i 2007, 180m scient. refuge at light, 22°06.0'S 166°38.6'E, leg M.Wanat & R.Dobosz (2♀♀ RBCN). NEW CALEDONIA (Province Sud): Rivière Bleue Parc, 22 i 2007, 180m scient. refuge at light, 22°06.0'S 166°38.6'E, leg M.Wanat & R.Dobosz (1 ♀ MNHW); NEW CALEDONIA (Province Sud): parc provincial Rivière Bleue, env. Pont Germain, 160m., 26 xi 2009, Schuh (14C+D) (1 ♂ RSCW); NEW CALEDONIA (Province Sud): Yaté/Rivière bleue, collecté par battage et piège Ampoule à vapeur de mercure le 07 au 09/04/06 par P. et M. Jolivet (1 ♀ CIAC); NEW CALEDONIA (Province Sud): Bois du Sud, 160m., 23 xii 2006, maquis, night coll, (lamp & beating), 22°10.5'S 166°45,8'E, leg M.Wanat & R.Dobosz (1 ♀ MNHW); NEW CALEDONIA (Province Sud): Foret Nord, 480 m., 22 xii 2004 – 9 i 2005, malaise, rainforest, 22°19'S 166°55'E, leg Burwell, Wright (3 ♀♀ QM).

Description

Elongate. Length: 4.75-5.95 mm (total); 4.50-5.45 mm (from anterior border of eyes to tip of elytra). Greatest width across both elytra: 2.15 mm. Macropterous. General colour orange brown. A longitudinal stripe on elytra black. This stripe is curved towards the suture near the apex (fig. 4).

Head: maximal width of head across both eyes: 1.00 mm. Dorsal surface impunctate, with very fine reticulation of transverse cells. Frontal tubercles transverse; finely reticulate. Antennal formula: 9-3-4-7-7-7-7-7-7-8. Labrum square; with straight margin.

Pronotum: length in middle: 0.90 mm. Maximal width 1.20 mm. Greatest width just before middle. Sides rounded. Front corners with calli, hind corners obtuse. Anterior border immarginate; lateral borders and posterior border with fine margin. Upper surface with very fine and sparse punctation, shining.

Scutellum: triangular, impunctate and shining.

Elytra: broader at base than the pronotum; almost parallel, regularly rounded in posterior fifth; humerus prominent; surface with fine and scattered punctures; erect hairs sparsely distributed on elytral surface. Elytral epipleuron even, wider from base to anterior margin of metasternum, then gradually narrowing towards apex.

Legs: length of hind tibia about ¾ of maximal width of both elytra. Tibiae with apical spine. Length of apical spine on metatibia 0.4 times the breadth of metatibia at apex. First segment of metatarsus as long as remaining segments combined. Tarsal claws appendiculate.

Ventral surface: procoxal cavities open posteriorly.

Aedaeagus: fig. 5.

Sexual dimorphism: there are no external characters that differ between the sexes.

Diagnosis

Within the group of species with first segment of metatarsus as long as or slightly longer than remaining segments it is together with *M. janbezdeki* n. sp. the only species with elongate stripes on the elytral surface. In *M. ingeborgae* n. sp. there is a single clear stripe on each elytron; in *M. janbezdeki* n. sp. the vague stripes are partly merged. Besides *M. ingeborgae* n. sp. is much larger and the aeadaegus of these two species differ.

Etymology

This species is named after my daughter Ingeborg.

Distribution

New Caledonia: Province Nord et Province Sud.

### *Metrioidea janbezdeki* n. sp.

(figs. 6, 7)

Type material

**Holotype** ♂: NEW CALEDONIA (Province Nord): Gîte Forêt de Wewec (57), 10 xi 2010, COL/36/4 (MNHN).

**Paratypes**: NEW CALEDONIA (Province Nord): Gîte Forêt de Wewec (57), 10 xi 2010, COL/36/4 (1♂, 3 unsexed CIAC; 1 unsexed JBCB; 2 unsexed RBCN).

Description

Yellow species with brown lateral markings on the pronotum and faint brown elongate stripes on the elytra.

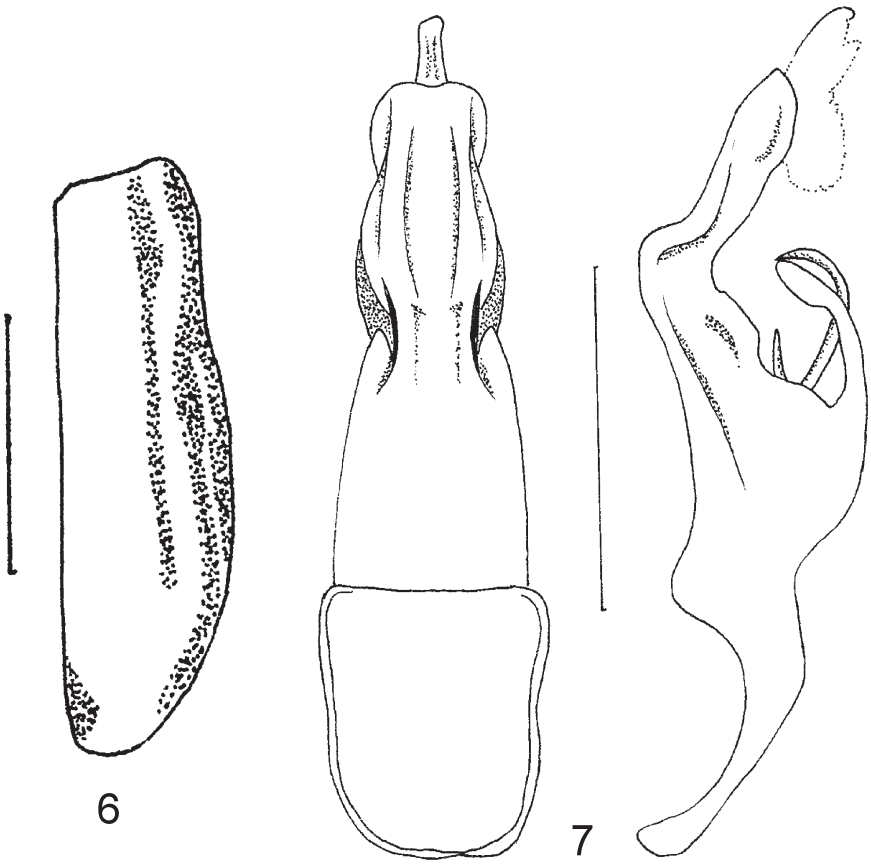
Elongate. Length: 3.27-3.40 mm (total); 2.85-3.00 mm (from anterior border of eyes to tip of elytra). Greatest width across both elytra: 1.25-1.45 mm. Macropterous. General colour yellow. Elongated brown stripes and a sutural apical marking on elytra (fig. 6). Sides of pronotum, scutellum, underside of thorax and head brown.

Head: maximal width of head across both eyes: 0.65-0.75 mm. Dorsal surface impunctate, shining. Frontal tubercles transverse; shining. Antennal formula: 12-4-6-8-8-7-8-7-8-8-10. Labrum square; with straight margin; impunctate, shining.

Pronotum: length in middle: 0.55-0.60 mm. Maximal width 0.73-0.80 mm. Sides diverging from base to about a quarter from the apical margin where it reaches its greatest width. Rounded in apical quarter. Front corners with calli, hind corners obtuse. Posterior border rounded near basal calli. Anterior border immarginate; lateral borders and posterior border with fine margin. Upper surface impunctate with two shallow lateral impressions, shining.

Scutellum: triangular, impunctate shining.

Elytra: broader at base than the pronotum; slightly expanding posteriad, regularly rounded in posterior fifth; humerus prominent; surface with shallow punctures; shining. Elytral epipleuron even, wider from base to anterior margin of metasternum, then gradually narrowing towards apex.




6, 7. *Metrioidea janbezdeki* n. sp.: 6 – Right elytron. Scale bar = 1 mm; 7 – Aedaeagus, left: ventral view; right lateral view. Scale bar = 0.5 mm

Legs: length of hind tibia about ¾ of maximal width of both elytra. Tibiae with apical spine. Length of apical spine on metatibia 0.6 times the breadth of metatibia at apex. First segment of metatarsus as long as remaining segments combined. Tarsal claws appendiculate.

Ventral surface: procoxal cavities open posteriorly.

Aedaeagus: fig.7.

Sexual dimorphism: last ventrite in male with an oval impression.

Condition of the specimens. The holotype fails the apical 4 segments of the left antenna and the apical 3 segments of the right antenna. In two of the paratypes the prothorax and head are missing.

Variability: in some specimens the sutural spot and the adjacent end of the elongate stripe merge.

Diagnosis

Within the group of species with first segment of metatarsus as long as or slightly longer than remaining segments it is together with *M. ingeborgae* n. sp. the only species with elongate stripes on the elytral surface. In *M. janbezdeki* n. sp. the vague stripes are partly merged; in *M. ingeborgae* n. sp. there is a single clear stripe on each elytron. Besides *M. janbezdeki* n. sp. is much smaller and the aeadaegus of these two species differ.

Etymology

This species is named in honour of my good friend Jan Bezděk who is a much respected specialist of galerucine leaf beetles.

Distribution

New Caledonia: Province Nord.

### *Metrioidea hirtipennis* n. sp.

(figs. 8, 9)

Type material

Holotype ♂: NEW CALEDONIA (Province Sud): River Pocquereux, 20m., 7 km SE La Foa, 30 xi 2009, Schuh (21) (MNHN).

Paratypes: NEW CALEDONIA (Province Sud): Refuge de Farino, ca 270m., 2 km NNE Farino, 21°38’55’’S 165°46’53’’E, at light, 28 xi – 3 xii 2009, Schuh (18a) (RSCW 5, RBCN: 4);

NEW CALEDONIA (Province Sud): River Pocquereux, 20m., 7 km SE La Foa, 30 xi 2009, Schuh (21) (RSCW 2 ex, RBCN 1 ♂.); NEW CALEDONIA (Province Sud): Farino-Refuge, 9 v 2007, Piège lumineux Amp. Vap. Mer. C. Mille (CIAC: 1).

Description

Yellow-brown species with lateral margins of the pronotum and ultimate antennal segment brown in apical two third. Elongate. Length: 3.05-3.80 mm (total); 2.80-3.25

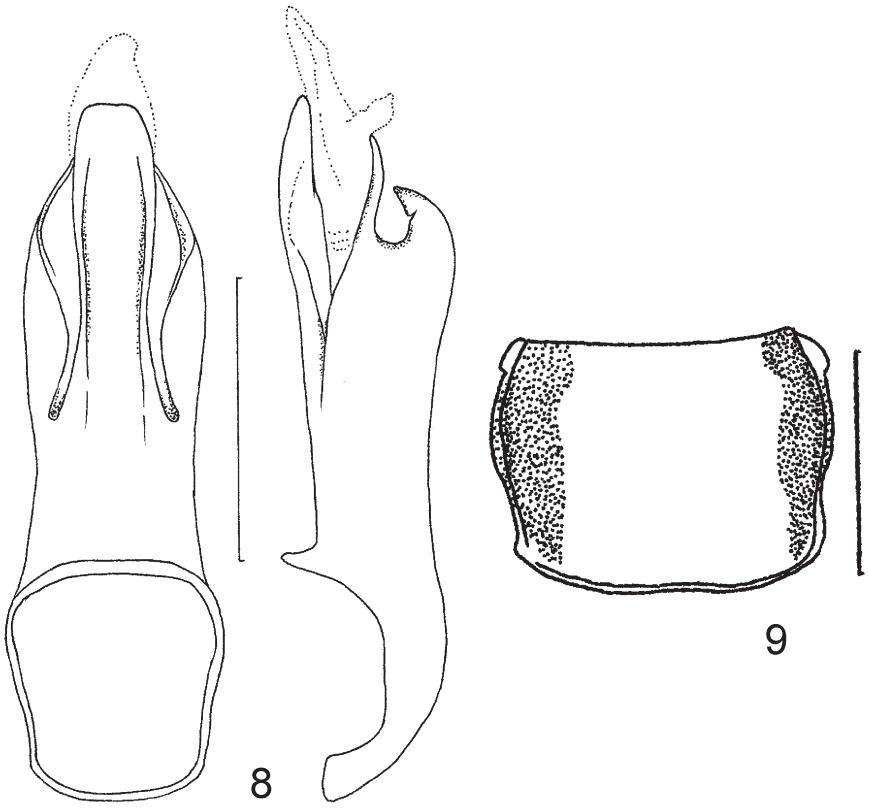
mm (from anterior border of eyes to tip of elytra). Greatest width across both elytra: 1.45-1.55 mm. Macropterous.

Head: maximal width of head across both eyes: 0.70-0.75 mm. Dorsal surface impunctate, shining. Frontal tubercles transverse; shining. Antennal formula: 8-3-3-6-6-5-5-5-6-5-6. Labrum square; with straight margin; impunctate, shining.

Pronotum: length in middle: 0.55-0.60 mm. Maximal width 0.75-0.80 mm. Sides sinuate with largest width in anterior third (fig. 9). All corners with calli. Posterior border rounded near basal calli. Anterior border slightly immarginate; lateral borders and posterior border with fine margin. Upper surface with shallow punctures and slight reticulation, shining.

Scutellum: triangular, impunctate shining.

Elytra: broader at base than the pronotum; slightly expanding posteriad, regularly rounded in posterior fifth; humerus prominent; surface with large punctures and erect hairs; shining. Elytral epipleuron even, wider from base to anterior margin of metasternum, then gradually narrowing towards apex.




8, 9. *Metrioidea hirtipennis* n. sp.: 8 – Aedaeagus: left ventral, right lateral. Scale bar = 0.5 mm; 9 – Pronotum. Scale bar = 0.5 mm

Legs: length of hind tibia about 2/3 of maximal width of both elytra. Tibiae with apical spine. Length of apical spine on metatibia 0.6 times the breadth of metatibia at apex. First segment of metatarsus only slightly longer than remaining segments combined. Tarsal claws appendiculate.

Ventral surface: procoxal cavities open posteriorly.

Aedaeagus: figure 8.

Sexual dimorphism: there are no external characters that differ between the sexes.

Variability: in some specimens the humerus has a brown spot and the metasternum is brown too.

Diagnosis

Among the species with first segment of metatarsus as long as or slightly longer than remaining segments it is the only species with erect hairs on the entire elytral surface. Besides it is the only species within this group that is unicolorous yellow-brown with only dark elongate markings at both sides of the pronotum.

Etymology

The name 'hirtipennis' refers to the elytra covered with erect hairs.

Distribution

New Caledonia: Province Sud.

Additional remarks

This species proved to be similar to one of two specimens from ISNB designated by Fauvel as *Luperus hirtellus*. The other specimen is glued upside down and certainly does not belong to *Metrioidea hirtipennis* n. sp. The name *Luperus hirtellus* Fauvel is to be regarded as a manuscript name and has no taxonomic meaning. These specimens are labelled: Coll. R. I. Sc. N. B., Nouvelle Calédonie, Nouméa à Bourail [h], ex coll. Fauvel. Coll. et det. A. Fauvel. *Luperus hirtellus* Fvl [h]. Syntype (ISNB).

### ***Metrioidea astridae*** **n. sp.**

(figs. 10-12)

Type material

Holotype ♂: NEW CALEDONIA (Province Sud): Col d'Amieu, 16 v – 20 vi 2008, malaise trap (MNHN).

Paratypes: NEW CALEDONIA (Province Nord): Mandjélia summit, 750m., 6-7 xi 2001, 20°24'S 164°32'E, C.Burwell & G. Monteith, Hand collect. (QM : 1 ♀); NEW CALEDONIA (Province Nord): Mandjélia summit, 750m., 29 xi 2003, 20°24'S 164°32'E, G. Monteith, pyrethrum, trees & logs (QM: 1♂); NEW CALEDONIA (Province Nord): Dawenia, 14 xi 2010, M-20 (CIAC: 1♀); NEW CALEDONIA (Province Nord): Aoupinié, top camp, 850m., 3-23 xi 2001, 21°11'S 165°18'E, C.Burwell & G. Monteith, malaise, RF (QM: 1♂); NEW CALEDONIA (Province Sud): Col d'Amieu,

28 ii – 13 iii 2006, malaise trap, COL/65/06 (RBCN: unsexed: 1); NEW CALEDONIA (Province Sud): Col d'Amieu, 8 viii – 18 x 2006, malaise trap, tube 1 (RBCN: 1 ♂); NEW CALEDONIA (Province Sud): Col d'Amieu - Sarraméa, 5 ii – 7 iii 2007, malaise trap (CIAC: 1♀ ; RBCN: 1♀); NEW CALEDONIA (Province Sud): Col d'Amieu - Sarraméa, 24 viii – 29 ix 2007, malaise trap (CIAC: 1♂, 2♀; RBCN : 1♂, 1♀) ; NEW CALEDONIA (Province Sud): Col d'Amieu, 16 v – 20 vi 2008, malaise trap (CIAC: unsexed: 1); NEW CALEDONIA (Province Sud): Col d'Amieu, 20 vi – 25 vii 2008, malaise trap: 8 ex. (CIAC: 3 ♀♀, 4 unsexed; RBCN: 1 unsexed); NEW CALEDONIA (Province Sud): Monts Koghis, 500-550m., ca 5 km N Nouméa, 5 xii 2009, Shuh [33B] (RSCW: 1♀); NEW CALEDONIA (Province Sud): Port Boise [G. Kanua], 20m., 18 xi 2002, 22°21'S 166°58'E, G. Monteith, pyrethrum, trees & logs (QM: 1♀); NEW CALEDONIA (Province Sud): Port Boise [G. Kanua], 27 ix 2004, 22°21'S 166°58'E, G. Monteith, pyrethrum, trees & logs (QM: 1♂); NEW CALEDONIA (Province Sud): Rivière Bleue Parc, Kaori géant, 160m., 22 i 2007, rainforest 22°05.9'S 166°40.7'E, leg M.Wanat (♀ MNHW).

10. *Metrioidea astridae* n. sp., Habitus. Photo: Christian Mille

Description

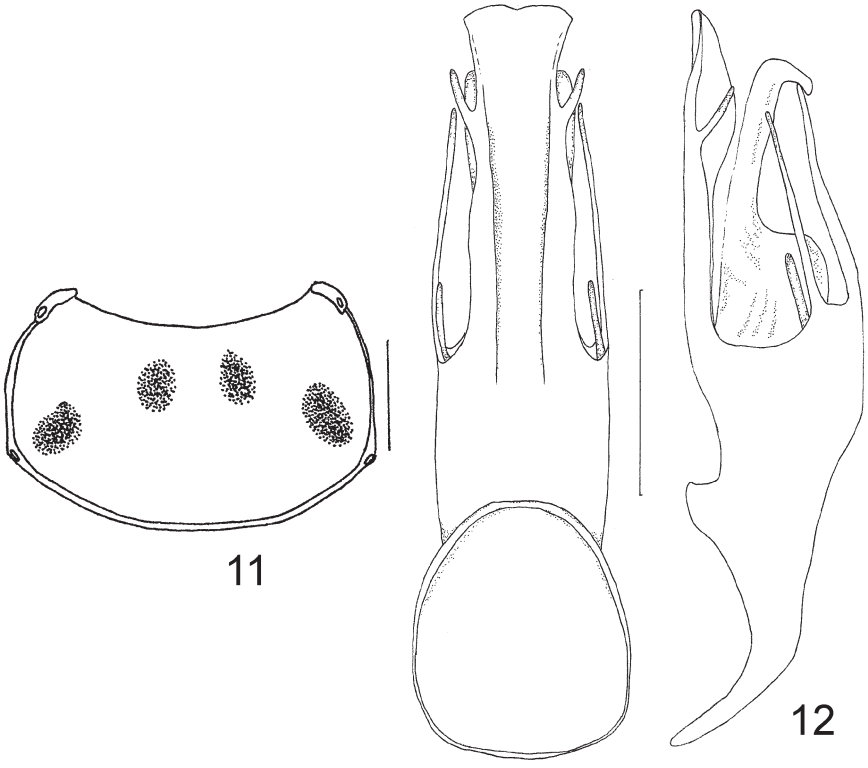
Elongate (Fig. 10). Length: 5.95-7.26 mm (total); 5.50-7.25 mm (from anterior border of eyes to tip of elytra). Greatest width across both elytra: 3.10-3.60 mm. Macropterous. General colour light brown. Four brown spots on pronotum (fig. 11) and in some specimens frontal tubercles brown.

Head: maximal width of head across both eyes: 1.15-1.35 mm. Dorsal surface impunctate, with very fine reticulation of transverse cells. Frontal tubercles triangular; finely reticulate. Antennal formula: 15-5-7-13-13-13-13-13-13-11-12. Labrum square; with straight margin; very finely reticulate: dull.

Pronotum: length in middle: 0.80-1.05 mm. Maximal width 1.55-1.90 mm. Sides almost parallel in basal two-third; rounded in apical third. Front corners with calli, hind corners obtuse. Anterior border immarginate; lateral borders and posterior border with fine margin. Upper surface with shallow punctuation on a reticulate underground, dull.

Scutellum: triangular, with fine reticulation and dull.

Elytra: broader at base than the pronotum; slightly expanding posteriad, regularly rounded in posterior fifth; humerus prominent; surface with fine reticulation and rather




11, 12. *Metrioidea astridae* n. sp.: 11 - Pronotum. Scale bar = 0.5 mm; 12 – Aedaeagus, left: ventral view; right: left lateral view. Scale bar = 0.5 mm

deep punctures; erect hairs sparsely distributed on elytral surface. Elytral epipleuron even, wider from base to anterior margin of metasternum, then gradually narrowing towards apex.

Legs: light brown with joint between tibia and tarsus brown to black. Length of hind tibia about 2/3 of maximal width of both elytra Tibiae with apical spine. Length of apical spine on metatibia 1.1 times the breadth of metatibia at apex. First segment of metatarsus 1.5 as long as remaining segments combined. Tarsal claws appendiculate.

Ventral surface: procoxal cavities open posteriorly.

Aedaeagus: fig. 12.

Sexual dimorphism: posterior margin of the males last ventrite almost straight in the middle, whereas regularly rounded in the female.

Variability: the paratypes from Aoupinié and Rivière Bleue Parc have the frontal tubercles dark brown. Some specimens from Col d'Amieu have in apical fifth of elytra near outer margin more erect hairs than in other specimens.

Diagnosis

Within the group of species with the first segment of metatarsus one and a half time as long as the remaining segments or longer it is unique in the combination of its body length and the light brown colour of its elytra. From *M. brunneipennis* n. sp. It differs by the spots on the pronotum; in *M. brunneipennis* n. sp. the pronotum is unicoloured brown. Besides the aeadaegus of these two species differ.

Etymology

This species is named after my daughter Astrid.

Distribution

New Caledonia: Province Nord and Province Sud.

### *Metrioidea brunneipennis* n. sp.

(figs. 13-15)

Type material

**Holotype** ♂: NEW CALEDONIA (Province Sud) Col d'Amieu, 24 viii – 29 ix 2007, malaise trap (MNHN).

**Paratypes**: NEW CALEDONIA (Province Nord): 11975, 20°58'S 165°17'E, 480m., Pic d'Amoa, north slope, 3 i 2005, rainforest, G. Monteith, beating (QM: 1 ex.); NEW CALEDONIA (Province Sud): Col d'Amieu, top, S 21°37' E 165°49', 450m., 12 xi 2001, C. Burwell, Pyrethrum, trees & logs, (QM: 1ex.); NEW CALEDONIA (Province Sud): Col d'Amieu, sawmill, S 21°35' E 165°48', 400m., 14 xi 2002, Monteith & Burwell, pyreth., trees & logs (QM: 1ex.); NEW CALEDONIA (Province Sud): Col d'Amieu, sawmill, S 21°35' E 165°48', 400m., 25 xi 2003, G. Monteith, pyreth., trees & logs (QM: 3ex., RBCN: 2 ex); NEW CALEDONIA (Province Sud): Col d'Amieu, sawmill, S 21°35' E 165°48', 400m., 25 xi 2003 – 27 i 2004, Monteith, malaise (QM: 1ex.); NEW CALEDONIA (Province Sud): Col d'Amieu, west slope, S 21°37' E

165°49', 480m., 30 xii 2004, G. Monteith, beating, cut sticks, RF (QM: 1ex.); NEW CALEDONIA (Province Sud): Sarra., Col d'Amieu, S 21°34,694' E 165°46,278', 489m., 8 viii 2006, S. Cazères, malaise alcool (CIAC: 1ex.); NEW CALEDONIA (Province Sud): Sarra., Col d'Amieu, S 21°34,694' E 165°46,278', 489m., 10 x 2006, J. P. Kataoui, par battage (RBCN: 1ex.); NEW CALEDONIA (Province Sud): Col d'Amieu, 24 viii – 29 ix 2007, malaise trap (CIAC: 2♂, 1♀, RBCN: 2♂, 1♀, 1 ex.); NEW CALEDONIA (Province Sud): Col d'Amieu, 28 ii – 13 iii 2008, malaise trap (CIAC: 1 ex); NEW CALEDONIA (Province Sud): Col d'Amieu, 20 vi – 25 vii 2008, malaise trap (CIAC: 1♂, 1ex., RBCN: 1 ex.); NEW CALEDONIA (Province Sud): Sarra., Col d'Amieu, S 21°34' E 165°46', 23 xi 2008, malaise trap (CIAC: 1ex.); NEW CALEDONIA (Province Sud): Sarra., Col d'Amieu, S 21°34' E 165°46', 10 x 2008, malaise trap (CIAC: 1ex. RBCN: 1 ex.); NEW CALEDONIA (Province Sud): Farino (refuge & circuit track), S 21°39,0' E 165°46,9', 220 – 300m., 3 i 2007, leg M Wanat & R. Dobosz (MNHW: 1); NEW CALEDONIA (Province Sud): Pic du Pin, site 2, S 22°14' E 166°50', 280m., 25-26 xi 2004, pyrethrum, C. J. Burwell, G. B. Monteith (QM: 1); NEW CALEDONIA (Province Sud): Pic du Pin, site 2, S 22°14' E 166°50', 280m., 25 xi – 23 xii 2004, sweeping, rainforest, S. G. Wright (QM: 1); NEW CALEDONIA (Province Sud): Pic du Pin, site 2, S 22°14' E 166°50', 280m., 23 xii 2004 – 12 i 2005, malaise, rainforest Burwell, Wright (QM: 1).

13. *Metrioidea brunneipennis* n. sp. - Habitus. Photograph: Sylvie Cazères

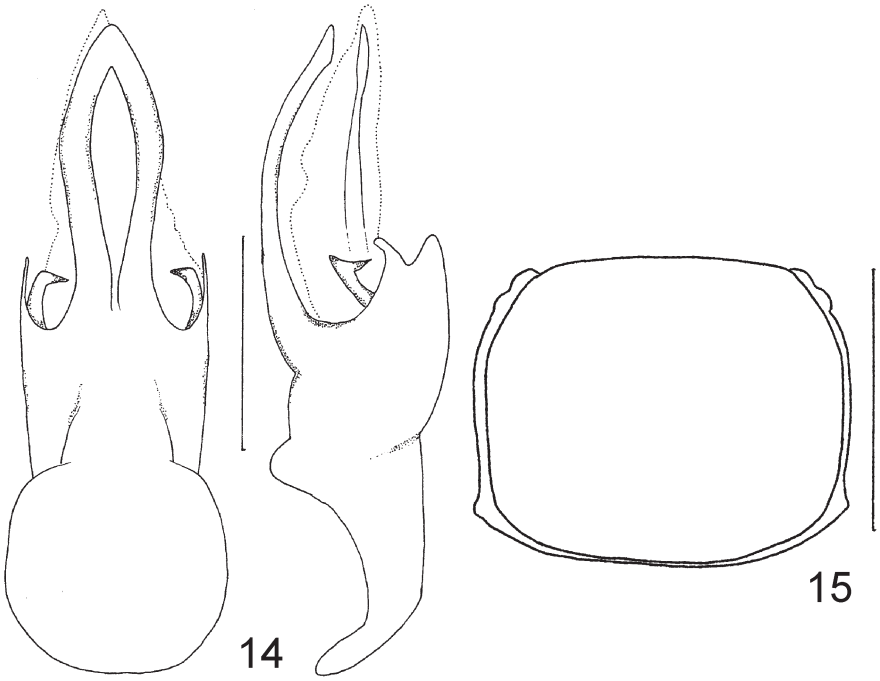
Description

Elongate brown to yellow-brown species (fig. 13). Length 6.15-7.90 mm (total); 5.30-6.65 mm (from the anterior border of the eyes to the tip of the elytra). Greatest width across both elytra: 2.40-3.10 mm.

Head: Greatest width across both eyes 0.90-1.15 mm. Brown to yellow-brown, always with frontal tubercles the darkest parts of the head. Frons and vertex impunctate, dull. Frontal tubercles triangular, dull. Antennal segments with large bristles. Antennal segment one yellow-brown in apical third slightly darkened; subsequent antennites yellow-brown with apical third brownish. Antennal formula: 10-2-4-6-6-6-7-7-7-6-6.

Pronotum (fig. 15): length in the middle 0.93-1.10 mm; maximal width 1.15-1.50 mm. Greatest width in anterior third. Surface of pronotum with large but shallow punctures and coarse microreticulation. Hence not dull but shining. Anterior border slightly emarginate and unmargined. Lateral borders widening towards anterior third; margined with small bead. Posterior border curved with fine margin. Anterolateral callosity large. Ground colour brown with some darker brown spots: An elongate in the center of the posterior half. A pair of round spots at both sides in the center and a pair of triangular spots in the center of the anterior half.

Scutellum: triangular. Yellow-brown. With microreticulation and dull.




14, 15. *Metrioidea brunneipennis* n. sp.: 14 – Aedaeagus, left: ventral view; right: lateral view. Scale bar = 0.5 mm; 15 – Pronotum.

Elytra: much broader at the base than the thorax with definite shoulders. Upper surface with deep punctures that partly merge showing some rugosity, without microreticulation and shining. Uniformly coloured, brown. Macropterous.

Legs: yellow-brown. Length of hind tibia about 2/3 of maximal width of both elytra; all tibiae with apical spine. Length of apical spine on metatibia 0.8 times the breadth of metatibia at apex. First segment of metatarsus 1.5 as long as remaining segments combined. All claws appendiculate.

Underside yellow-brown, except for the metathorax which is brown. Epipleural inner margin basally dark brown. Procoxal cavities open posteriorly.

Aedaeagus: fig. 14.

Sexual dimorphism: there are no external characters that differ between the sexes.

Variability: some specimens (probably teneral) in the type series are much lighter and are uniformly yellow.

Diagnosis

Within the group of species with the first segment of metatarsus one and a half time as long as the remaining segments or longer it is unique in the combination of its body length, the brown colour of its elytra and the shining pronotum. From *M. astridae* n. sp. It differs by the unicoloured brown pronotum; in *M. astridae* n. sp. the pronotum shows four dark brown spots. Besides the aeadaegus of these two species differ. Species near to *M. bimaculata* (Perroud & Montrouzier, 1864) but immediately recognizable by its uniform brown elytrae and the absence of any irregularities on the elytral surface.

Etymology

The name refers to the uniform brown elytrae.

Distribution

New Caledonia: Province Nord and Province Sud.

### *Metrioidea monteithi* n. sp.

(figs. 16)

Type material

**Holotype** ♂: NEW CALEDONIA (Province Sud): Pic du Grand Kaori, site 1, S 22°17' E 166°53', 250m., 22-24 xi 2004, pyrethrum, rainforest, Monteith Burwell (MNHN).

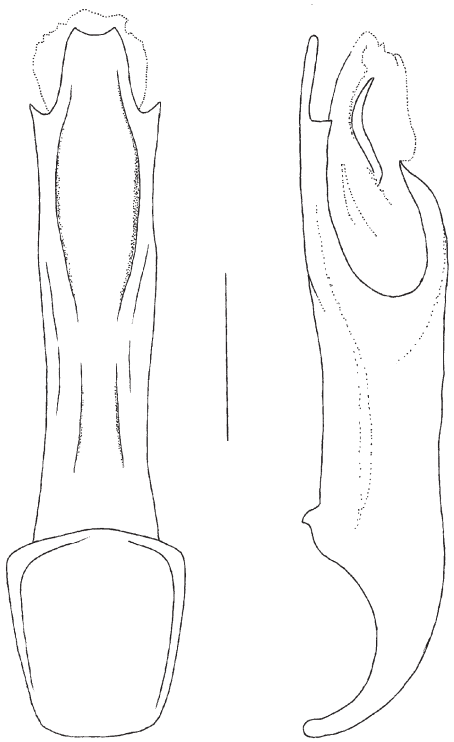
**Paratypes**: NEW CALEDONIA (Province Sud): Pic du Pin, site 1, S 22°15' E 166°49', 280m., 26 xi 2004, pyrethrum, rainforest, C. J. Burwell & G. B. Monteith (QM: 1♀, 1♂, RBCN: 1♂); NEW CALEDONIA (Province Sud): Pic du Pin, site 1, S 22°15' E 166°49', 280m., 25 xi – 23 xii 2004, malaise, rainforest Burwell, Wright (QM: 1♀); NEW CALEDONIA (Province Sud): Pic du Pin, site 1, S 22°15' E 166°50', 280m., 20 iv 2005, pyrethrum, Monteith (QM: 1♀); NEW CALEDONIA (Province Sud): Pic du Pin, site 2, S 22°14' E 166°50', 280m., 25 xi – 23 xii 2004, malaise, rainforest

Burwell, Wright (QM: 1♀); NEW CALEDONIA (Province Sud): Pic du Pin, base, S 22°14,9' E 166°49,7', 280m., 25 xii 2006, forest & plantation, M.Wanat & R. Dobosz (MNHW: 1 ♀); NEW CALEDONIA (Province Sud): Pic du Grand Kaori, site 2, S 22°17' E 166°53', 250m., 21 xii 2004, beating cut branch, PGK2/1, G. B. Monteith (QM: 1♀); NEW CALEDONIA (Province Sud): Pic du Grand Kaori, site 1, S 22°17' E 166°53', 250m., 22-24 xi 2004, pyrethrum, rainforest, Monteith Burwell (QM: 1♀, RBCN: 1♀); NEW CALEDONIA (Province Sud), Umg. Mont Dore, 2 iv 1994, M. Schöller (MSCB: 1♀); NEW CALEDONIA (Province Sud): Dzumac Mts (Mt Ouin road junction), 900m., 28 xii 2006, night collecting 22°01,9'S 166°28,0'E, leg M.Wanat & R. Dobosz (MNHW: 1 ♂); NEW CALEDONIA (Province Sud): Riv. Bleue, Kauri Track, S 22°05' E 166°37', 250m., 21 xi 2002, pyrethrum, trees, S. Wright (QM: 1).

Description

Dark brown elongate species with yellow-brown legs. Antennal segments yellow-brown with dark brown apex. Pronotum and scutellum in general the darkest parts of the body. Length 6.25-7.75 mm (total); 5.85-7.25 mm (from the anterior border of the eyes to the tip of the elytra). Greatest width across both elytra: 3.00-3.70 mm.

Head: greatest width across both eyes 1.20-1.30 mm. Dark brown with apparent ridge on frons. Frons impunctate and dull. Frontal tubercles triangular, dull. Vertex



16. *Metrioidea monteithi* n. sp. - Aedaeagus, left: ventral view; right: lateral view. Scale bar = 0.5 mm

impunctate, reticulate and dull. Antennal segments with large bristles. Antennal segment one and two brown with only base lighter, Subsequent segments yellow-brown and towards apex dark brown. Antennal segment 11 with constriction at one third from apex suggesting a 12th segment. Antennite 11 is yellow-brown at base and dark brown just before constriction, the last third is yellow-brown. Antennal formula: 18-4-8-14-14-13-14-14-14-11-12.

Pronotum: length in the middle 0.98-1.05 mm; maximal width 1.50-1.70 mm. Greatest width in anterior third. Surface of pronotum with very shallow punctures and microreticulation. Hence dull with satin sheen. Anterior border slightly emarginate and unmargined. Lateral borders widening towards anterior third; margined with small bead. Posterior border curved with fine margin. Anterolateral callosity large. Colour dark brown; only anterior and posterior calli a shade lighter.

Scutellum: triangular. Yellow-brown. With microreticulation and dull.

Elytra: much broader at the base than the thorax with definite shoulders. Upper surface with shallow punctures with microreticulation and dull. Uniformly coloured, brown. Macropterous.

Legs: brown with in most specimens apex of femur and base of tibia dark brown. Length of hind tibia about 1/2 of maximal width of both elytra; all tibiae with apical spine. Length of apical spine on metatibia 1.2 times the breadth of metatibia at apex. First segment of metatarsus 1.5 as long as remaining segments combined. All claws appendiculate.

Underside brown: meso-, meta-thorax and abdomen dark brown. Procoxal cavities open posteriorly.

Aedaeagus: fig. 16.

Sexual dimorphism: females have a small oblique groove at both sides of the suture at a quarter from the apex. The groove is bordered by oblong small calli.

### Diagnosis

Within the group of species with the first segment of metatarsus one and a half time as long as the remaining segments or longer it is unique in the combination of its body length, the brown colour of its elytra and the satin shining of the elytra. Females of *M. monteithi* n. sp. can be distinguished from *M. brunneipennis* n. sp. by the groove at both sides of the suture at a quarter from the apex. Besides the aeadaegus of these two species differ.

### Etymology

This species is named in honour of Geoff Monteith who collected most of the type specimens and many more interesting Galerucinae in New Caledonia.

### Distribution

New Caledonia: Province Nord and Province Sud.

### *Metrioidea decorata* n. sp.
(figs. 17, 18)

Type material

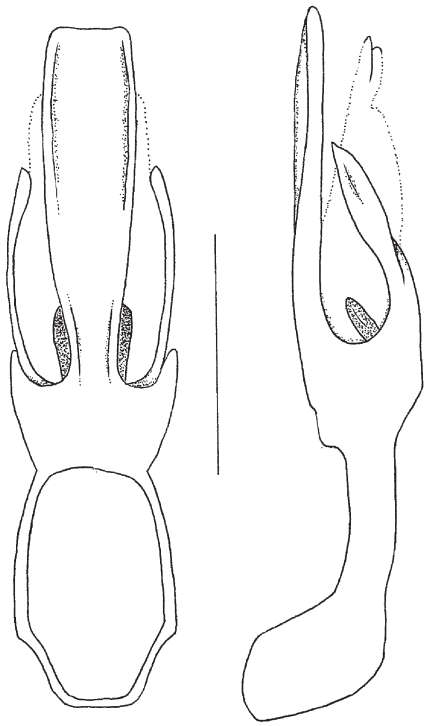
**Holotype** ♂: NEW CALEDONIA (Province Sud): Col d'Amieu, 24 viii – 29 ix 2007, malaise trap (MNHN).

**Paratypes**: NEW CALEDONIA (Province Nord): Mt Panié, S 20°33' E 164°46', 500-1000m., E track, humid forest, 3 ii 2004, M. Wanat (MNHW: 2 ex.); NEW CALEDONIA (Province Nord): Pic d'Amoa, N slope, S 20°58' E 165°17', 500m., 27 xi 2003-30 i 2004, malaise, G. Monteith (QM: 1); NEW CALEDONIA (Province Nord): Mandjélia (summit), 750-780m., night coll. (lamp & beating), 10 i 2007, 20°23.9'S 164°31.9'E, leg M.Wanat & R.Dobosz (MNHW: 1); NEW CALEDONIA (Province Nord): Aoupinié (Goipin road junction), 730m., night coll. (lamp & beating), 17 i 2007, 21°10,8'S 165°18,1'E, leg M.Wanat & R.Dobosz (MNHW: 2, RBCN 2); NEW CALEDONIA (Province Nord): Aoupinié, 650-800m., forest, 19 i 2007, 21°11,0'S 165°17,6'E, leg M.Wanat (MNHW: 1); NEW CALEDONIA (Province Sud): Aoupinié summit, S 21°11' E 165°16', 1000m., 2 x 2004, pyrethrum, trees & logs, G. Monteith (QM: 2 RBCN: 1); NEW CALEDONIA (Province Sud): Mt Taom site 1, S 20°47' E

17. *Metrioidea decorata* - Habitus. Photograph: Sylvie Cazères

164°35', 970m., 7-8 xii 2004, dung trap, rainforest, G. Monteith (QM: 2 RBCN: 1); NEW CALEDONIA (Province Nord), Ponérihouen / Aoupinié, alt. 945m., S 165.1707 E 21.1038, 11 x 2006, battage, C. Mille (CIAC: 1); NEW CALEDONIA (Province Nord): Aoupinié, camp at road, ad lucem, 820m., S 165.17 E 21.11, 8 ii 2004, leg M. Wanat (MNHW: 1); NEW CALEDONIA (Province Nord): Aoupinié, meteo st. – summit, 950-1000m., 8 ii 2004, leg M. Wanat (MNHW: 1); NEW CALEDONIA (Province Nord): Aoupinié, road to summit, 780-820m., 8 ii 2004, leg M. Wanat (RBCN: 1); NEW CALEDONIA (Province Nord): Aoupinié, 4 iv 2008, Mille (RBCN: 1); NEW CALEDONIA (Province Nord): Poro, 4 km SE, S 21°19' E 165°459', 1 x 2004, pyrethrum, trees & logs, G. Monteith (QM: 1); NEW CALEDONIA (Province Sud): Mont Me Maoya nr summit, S 21°22' E 165°20', 12 xi 2002, Burwell, Monteith & Wright (QM: 1); NEW CALEDONIA (Province Sud) : Col d'Amieu, 7 xi 2004, par battage, C. Mille (CIAC: 1); NEW CALEDONIA (Province Sud): Sarraméa, Col d'Amieu, 2- 25 xi 2005, par battage, Cazères, Mille & Kataoui (CIAC: 2, RBCN : 1); NEW CALEDONIA (Province Sud): Sarraméa, Col d'Amieu, 2- 23 xii 2005, par battage, Cazères, Mille & Kataoui (CIAC: 1); NEW CALEDONIA (Province Sud): Sarraméa, Col d'Amieu, 28 xii 2005, par battage, S. Cazères, R. M. M'boueri, (CIAC: 1); NEW CALEDONIA (Province Sud): Col d'Amieu, 27 iii – 7 v 2006, malaise trap (CIAC: 2, RBCN: 1); NEW CALEDONIA (Province Sud) :Sarraméa, Col d'Amieu, 29 iii 2006, par battage, C. Mille, (CIAC: 1); NEW CALEDONIA (Province Sud) Sarra, Col d'Amieu, 489m., 4 x 2006, par battage, S. Cazères, (CIAC: 1 ex., RBCN : 1 ex.); NEW CALEDONIA (Province Sud): Sarra, Col d'Amieu, 609m., S 21°34,914 E 165°46,376, 4 x 2006, par battage, J. P. Kataoul, (CIAC: 2, RBCN : 2); NEW CALEDONIA (Province Sud): Col d'Amieu, 24 viii – 29 ix 2007, malaise trap (CIAC: 2♀♀); NEW CALEDONIA (Province Sud): Sarra, Col d'Amieu, 489m., 15 xi 2008, par battage, C. Mille (CIAC: 1); NEW CALEDONIA (Province Sud): Col d'Amieu (3 km from gate), loc 2, 500m., 21°35,1'S 165°47,8'E, 6 i 2007, leg. M. Wanat (MNHW: 2, RBCN: 1); NEW CALEDONIA (Province Sud) Col d'Amieu, ca 490m., 10 km NNW La Foa, 28 xi 2009, leg Schuh (16) (RSCW: 6, RBCN: 4); NEW CALEDONIA (Province Sud): Farino, Petite Cascade, 270-340m., 3 km N Farino, 29 xi 2009, leg Schuh (18) (RSCW: 1); NEW CALEDONIA (Province Sud): Mont Do summit, 21°45'14''S 166°48'02''E 950-1025m., 3 xii 2009, Schuh (RSCW: 4); NEW CALEDONIA (Province Sud): Boulouparis, Mt Do, alt 1029m., S 21.75394 E 161.99994, 13 iv 2006, par battage, C. Mille (CIAC: 1); NEW CALEDONIA (Province Sud): Ningua Res. nr summit, S 21°45' E 166°09', 1300m., 13 xi 2001, pyreth. trees & logs, C. Burwell & G. Monteith (QM: 2, RBCN: 1); NEW CALEDONIA (Province Sud): Thio, Réserve du Pic Ningua (Camps des sapons), 3 x 2008, battage de Carpolepis, Mille (CIAC : 1 ex, RBCN : 1 ex.); NEW CALEDONIA (Province Sud) Thio County, Khum tribe, 13 i – 20 i 2007, par battage, R. M. M'boueri & C. Mille (CIAC: 2); NEW CALEDONIA (Province Sud): M. Humboldt for. Mouss'e, 1330m, 15 ii 2006, P. M. Giachino (MDCV: 2); NEW CALEDONIA (Province Sud): Dzumac rd., jcn, 9 xi 2002, S 22°02' E 166°28', 950m., pyrethrum, trees & logs, Burwell & Monteith (QM: 2); NEW CALEDONIA (Province Sud): Dzumac Mts (Mt Ouin road junction), 900m., 28 xii 2006, night collecting 22°01,9'S 166°28,0'E, leg M.Wanat & R. Dobosz (MNHW: 2); NEW CALEDONIA (Province

Sud): Pic du Grand Kaori, site 1, S 22°17' E 166°53', 250m., 22-24 xi 2004, pyrethrum, rainforest, Monteith Burwell (QM: 2); NEW CALEDONIA (Province Sud): Pic du Pin, site 2, S 22°14' E 166°50', 280m., 25 xi 2004, sweeping, rainforest, SG Wright (QM: 1); NEW CALEDONIA (Province Sud): Pic du Pin, site 1, S 22°15' E 166°49', 280m., 25 xi – 23 xii 2004, malaise, rainforest Burwell, Wright (QM: 2); NEW CALEDONIA (Province Sud): Pic du Pin, site 2, S 22°14' E 166°50', 280m., 25 xi 2004 – 12 I 2005, intercepts, rainforest, Monteith, Grimbacher (QM: 1, RBCN: 1); NEW CALEDONIA (Province Sud): Pic du Pin, site 2, S 22°14' E 166°50', 280m., 25-26 xi 2004, pyrethrum, rainforest, CJ Burwell & GB Monteith (QM: 1); NEW CALEDONIA (Province Sud): Pic du Pin, site 1, S 22°15' E 166°49', 280m., 25 xi 2004, pyrethrum, rainforest, CJ Burwell & GB Monteith (QM: 2, RBCN: 1); NEW CALEDONIA (Province Sud): Pic du Pin, site 2, S 22°14' E 166°50', 280m., 25 xi 2004, beating vegetation, rainforest, P. Grimbacher (QM: 1); NEW CALEDONIA (Province Sud): Pic du Pin, site 1, S 22°15' E 166°49', 280m., 4 xii 2004, beating cut branch, GB Monteith (QM: 1); NEW CALEDONIA (Province Sud): Pic du Pin, site 1, S 22°15' E 166°50', 280m., 22-23 xii 2004, MV lamp, rainforest. GB Monteith (QM: 1); NEW CALEDONIA (Province Sud): Pic du Pin, site 1, S 22°15' E 166°49', 280m., 23 xii 2004, beating cut branch, GB Monteith (QM: 1); NEW CALEDONIA (Province Sud):



18. *Metrioidea decorata* n.sp.- Aedaeagus, left: ventral view; right: lateral view. Scale bar = 0.5 mm

Pic du Pin, site 1, S 22°15' E 166°49', 280m., 23 xii 2004 – 12 i 2005, malaise, rainforest, Burwell, Wright (QM: 1, RBCN: 1); NEW CALEDONIA (Province Sud): Chute Madeleine, S 22°14' E 166°52', 230m., 18 xi 2002, pyrethrum, trees & logs, G. Monteith (QM: 1); NEW CALEDONIA (Province Sud): Forêt Nord, site 2, S 22°19' E 166°55', 200m., 2 xii 2004, night hand collecting, rainforest, QM Party (QM: 1); NEW CALEDONIA (Province Sud): Forêt Nord, site 2, S 22°19' E 166°55', 200m., 2 xii 2004, sweeping, rainforest, SG Wright (QM: 1); NEW CALEDONIA (Province Sud): Bois du Sud, S 22°10' E 166°46', 180m., 25 i 2004, pyrethrum, trees & logs, G. Monteith (QM: 2 RBCN: 1); NEW CALEDONIA (Province Sud): Bois du Sud, 160m., 23 xii 2006, maquis, night coll, (lamp & beating), 22°10.5'S 166°45,8'E, leg M.Wanat & R.Dobosz (MNHW: 2); NEW CALEDONIA (Province Sud): Haute Rivière Bleue: start of track to La Tranchée, night beating, 22 i 2007, 200m., 22°05'S 166°38'E, leg M.Wanat (MNHW: 2 ex. RBCN: 1); NEW CALEDONIA (Province Sud): Haute Rivière Bleue : La Tranchée-Sentier des Kaoris, humid forest, 24 i 2004, 280-330m., 22°05'S 166°38'E, leg M.Wanat (MNHW: 1 ex.); NEW CALEDONIA (Province Sud): Rivière Bleue Parc (N) : Grand Kaori, 160m., 25 i 2004, humid forest 22°06'S 166°41'E, leg M.Wanat (MNHW: 1 ex.); NEW CALEDONIA (Province Sud): Rivière Bleue Parc, refuge, night coll (lamp & beating), 190m., 20 xii 2006, 22°05,9'S 166°38,3'E, leg M.Wanat & R. Dobosz (MNHW: 1 ex.); NEW CALEDONIA (Province Sud): Rivière Bleue Parc, Kaori géant, 160m., 22 xii 2006, rainforest 22°05.9'S 166°40.7'E, leg M.Wanat & R. Dobosz (MNHW: 2); NEW CALEDONIA (Province Sud): Rivière Bleue, Pont Germain to Kaori géant (left river side), 160-180m., 22 i 2007, rainforest 22°06.0'S 166°39,3'E, leg M.Wanat (MNHW: 3, RBCN: 1); NEW CALEDONIA (Province Sud): Rivière Bleue Parc, scient. Refuge at light, 180m., 21 i 2007, rainforest 22°06,0'S 166°38,6'E, leg M.Wanat & R. Dobosz (MNHW: 3 RBCN: 2); NEW CALEDONIA (Province Sud): Rivière Bleue Parc, Kaori géant, 160m., 22 i 2007, rainforest 22°05.9'S 166°40.7'E, leg M.Wanat (MNHW: 1); NEW CALEDONIA (Province Sud): parc provincial Rivière Bleue, Pont Germain, beating, 160m., 27 xi 2009, Schuh (14G) (RSCW : 1 ♀, RBCN: 1); NEW CALEDONIA (Province Sud): Pic du Grand Kaori, 240m., 27 xii 2006, 22°16,8'S 166°53,5'E, leg M.Wanat & R. Dobosz (MNHW: 1 ex.).

Description

Yellow brown species with brown pattern on pronotum and elytra (fig. 17). Parts of the head brown too. Length 3.10-5.10 mm (total); 2.85-3.90 mm (from the anterior border of the eyes to the tip of the elytra). Greatest width across both elytra: 1.55-2.15 mm.

Head: Greatest width across both eyes 0.68-0.85 mm. Yellow-brown. Frontal ridge and margins of frontal tubercles brown. Frons and vertex impunctate, with fine reticulation. Frontal tubercles transverse very finely reticulate. Antennal segments with large bristles. Antennal segment one and two yellow-brown, three yellow and subsequent antennites yellow with apex brownish. Antennal formula: 10-3-4-8-8-7-8-7-7-7-7.

Pronotum: length in the middle 0.50-0.60 mm; maximal width 0.80-1.05 mm. Greatest width in anterior third. At each side with a shallow diagonal groove from the

front corners in the direction of the scutellum not reaching beyond the middle of the pronotum. The basal half of the pronotum with confluent rough punctuation on reticulate underground. Apical half impunctate and reticulate. Upper surface hence dull with satin sheen. Anterior border straight and unmargined. Lateral borders widening towards anterior third; margined with small bead. Anterolateral callosity large. Posterior border curved with fine margin. Ground colour yellow-brown. Lateral parts of the pronotum dark brown enclosing a yellow-brown patch in the anterior third.

Scutellum: yellow with brown margins, triangular, with fine reticulation and dull.

Elytra: much broader at the base than the thorax with definite shoulders. Upper surface with large punctures, partly confluent; shining. Greatest width in apical third. Elytral epipleura even, wide at base, expanding a bit until base of metasternum, consequently gradually narrowing. Visible to the elytral apex. Yellow with brown pattern of stripes and dots (fig. 17). Erect hairs over total surface of elytra. In some specimens partly or completely absent (rubbed off ?). Macropterous.

Legs: length of hind tibia about 2/3 of maximal width of both elytra; all tibiae with apical spine. Length of apical spine on metatibia 1.0 times the breadth of metatibia at apex. First segment of metatarsus 1.4 as long as remaining segments combined. All claws appendiculate.

Underside of thorax and abdomen yellow-brown; base of epipleural inner margin and metepisternum brown. Procoxal cavities open posteriorly.

Aedaeagus: fig. 18.

Sexual dimorphism: there are no external characters that differ between the sexes.

Variability: specimens differ in the dark pronotal and elytral markings. In some specimens the dark markings on elytra are partly absent.

### Diagnosis

Within the group of species with the first segment of metatarsus one and a half time as long as the remaining segments or longer it is unique in the combination of its length (smaller than 4 mm) and the pattern of dark stripes and dots on the elytron. A more or less similar pattern occurs in *M. glabella* n. sp., but this species is larger and has elytral punctuation shallow giving the elytra a smooth appearance. In *M. decorata* n. sp. the punctures on the elytra are strongly impressed.

### Etymology

The word ‘decorata’ is from the Latin ‘decorus’, meaning elegant or decorative and in this case referring to the elytral pattern of this *Metrioidea* species.

### Distribution

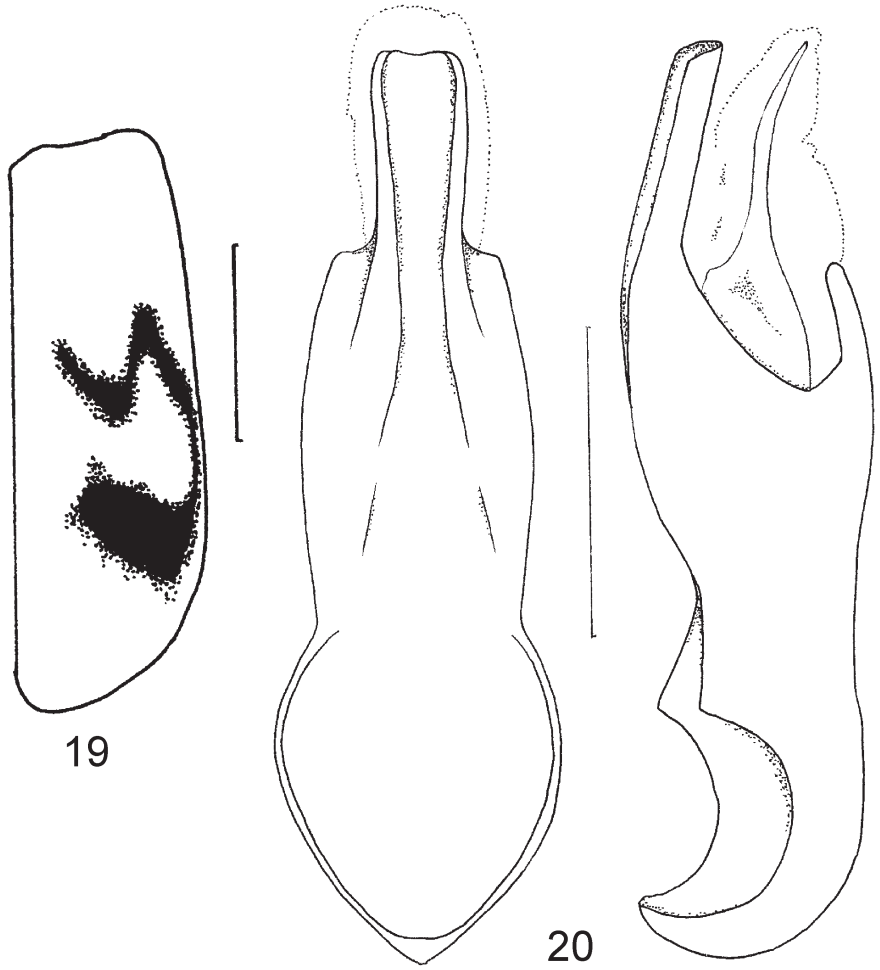
New Caledonia: Province Nord and Province Sud.

### *Metrioidea undulata* n. sp.
(figs. 19, 20)

Type material

**Holotype** ♂: NEW CALEDONIA (Province Sud): Col d'Amieu, 20 vi – 25 vii 2008, malaise trap (MNHN)

**Paratypes**: NEW CALEDONIA (Province Nord): 11666, S 20°58' E 165°17', Pic d'Amoa, N slopes, 500m., 30 x 2004, pyrethrum, trees & logs, G. Monteith (QM: 2, RBCN: 1); NEW CALEDONIA (Province Sud): 12003, S 21°35' E 165°51', Mt Rembai, top junction, 780m., 19 xii 2004, beating, rainforest, G. Monteith (QM: 1); NEW CALEDONIA (Province Sud): Col d'Amieu, 27 iii – 17 v 2006, malaise trap




19, 20. *Metrioidea undulata* n. sp. 19 – Right elytron. Scale bar = 1 mm; 20 – Aedaeagus, left: ventral view; right left lateral view. Scale bar = 0.5 mm

(CIAC: 2); NEW CALEDONIA (Province Sud): Col d'Amieu, 5 ii – 7 iii 2007, malaise trap (CIAC: 2); NEW CALEDONIA (Province Sud): Col d'Amieu, 24 viii – 29 ix 2007, malaise trap (CIAC: 10, RBCN: 8); NEW CALEDONIA (Province Sud): Col d'Amieu, ca 490m., 10 km NNW La Foa, 28 xi 2009, leg Schuh, (RSCW: 1); NEW CALEDONIA (Province Sud): Farino (refuge & circuit track), S 21°39,0' E 165°46,9', 220 – 300m., 3 i 2007, leg M Wanat & R. Dobosz (MNHW: 7); NEW CALEDONIA (Province Sud): Koghi Mts, humid forest, S 22°11' E 166°30', 500-550m., 21 i 2004, leg M Wanat (MNHW: 2).

Description

Yellow brown species with brown pattern on pronotum and elytra. Parts of the head brown too. Length 4.10-4.85 mm (total); 3.51-4.15 mm (from the anterior border of the eyes to the tip of the elytra). Greatest width across both elytra: 2.15-2.45 mm.

Head: greatest width across both eyes 0.80-0.90 mm. Yellow-brown. Frons and frontal tubercles brown and labrum and mandibular tips brown. Frons reticulate, dull; vertex impunctate, reticulate. Frontal tubercles transverse very finely reticulate. Antennal segments with large bristles. Antennal segment one yellow-brown, subsequent antennites yellow with apex brownish. Antennal formula: 13-5-6-11-11-11-12-12-11-11-13.

Pronotum: length in the middle 0.60-0.75 mm; maximal width 1.00-1.15 mm;. Greatest width in anterior third. Upper surface with shallow punctures and fine reticulation; satin sheen. Anterior border straight and unmargined. Lateral borders almost straight, widening a little towards head; margined with small bead. Posterior border curved with fine margin. Ground colour yellow-brown. A pair of brown spots near the anterior border at both sides of centre. Laterally at both sides a large brown spot with a yellow centre.

Scutellum: triangular. Brown. With fine reticulation and dull.

Elytra: much broader at the base than the thorax with definite shoulders. Upper surface punctuate, with very fine reticulation; shining. Greatest width in apical quarter. Elytral epipleura even, wide at base, expanding a bit until base of metasternum, consequently gradually narrowing. Visible to the elytral apex. Yellow with brown pattern (fig. 19) which can vary from dark brown to almost absent. The darkest specimens also have a brown elytral base. Macropterous.

Legs: length of hind tibia about 3/4 of maximal width of both elytra; all tibiae with apical spine. Length of apical spine on metatibia 1.0 times the breadth of metatibia at apex Yellow. First segment of metatarsus 1.4 as long as remaining segments combined. All claws appendiculate.

Underside of thorax and abdomen yellow-brown. Procoxal cavities open posteriorly.

Aedaeagus: fig. 20.

Sexual dimorphism: female last abdominal sternite with straight margin and last abdominal tergite bilobed.

Variability: specimens differ in the dark pronotal and elytral markings. In some specimens the dark markings on elytra are absent in others they are very prominent.

Furthermore specimens vary in the presence or absence of a slight tooth at both sides of the ventral projection of the aedaeagus.

Diagnosis

Within the group of species with the first segment of metatarsus one and a half time as long as the remaining segments or longer it is unique in the combination of its length (smaller than 4 mm) and the undulate marking on the elytron. In light specimens the elytral markings can be absent but the peculiar dark lateral spot on the pronotum is always visible and is unique among *Metrioidea*. Finally the morphology of the aedaeagus differs from all previously described species. *Metrioidea undulata* n. sp. shows similarities with *Monolepta typographica* Weise, 1923, (replacement name for *M. hieroglyphica* Jacoby, 1904 from New Guinea, homonym of *Monolepta hieroglyphica* (Motschulsky, 1858)). *Monolepta typographica* has a dark elytral suture and dark band differently shaped: a transverse row of elongate spots. Besides, the antennal segments of this species are not yellow with apex brownish, but basal segments yellow, subsequently gradually darkening and apical segments completely brownish to black. Study of the aedaeagus of *Monolepta typographica* is necessary to judge the proper classification of this species. It is likely that this species belongs to *Metrioidea* too.

Etymology

The name refers to the undulated band on the elytron.

Distribution

New Caledonia: Province Nord and Province Sud.

### *Metrioidea glabella* n. sp.

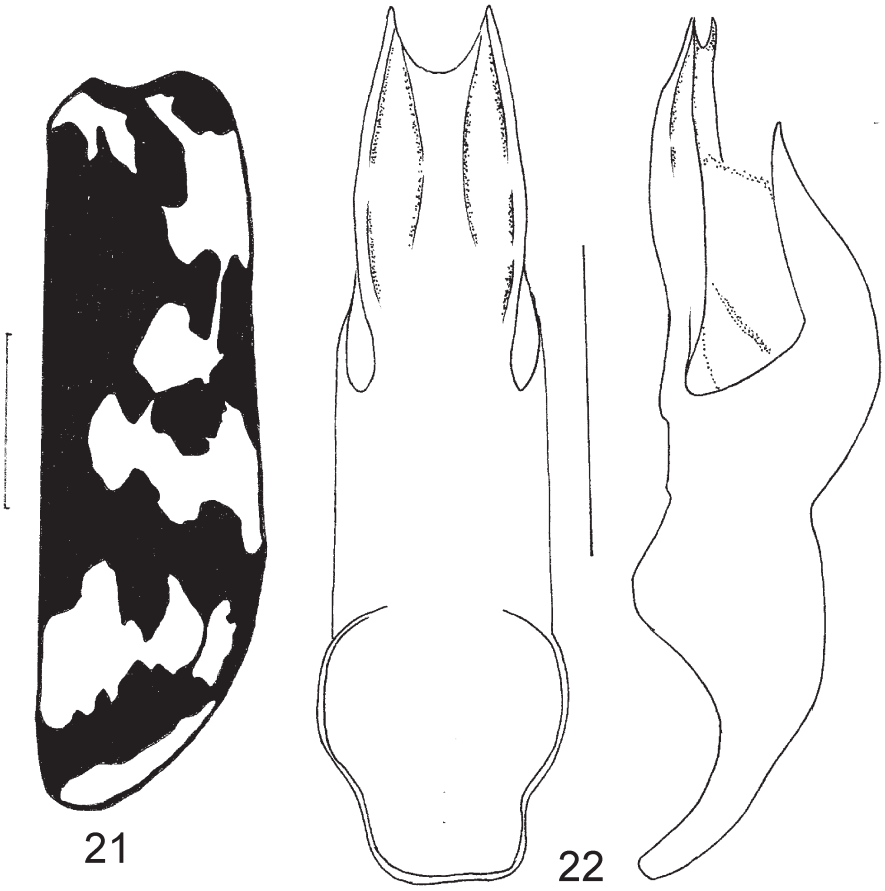
(figs. 21, 22)

Type material

**Holotype** ♂: NEW CALEDONIA (Province Sud): Col d'Amieu, 8 viii 2006, malaise trap (MNHN).

**Paratypes**: NEW CALEDONIA (Province Nord): Col d'Amoss, Picnic area, 20°19'S 164°26'E, 29 xi 2003, G. Monteith, pyr., trees & logs, rainfor. (QM: 1♀); NEW CALEDONIA (Province Nord): Cascade de Tao, 20°33'S 164°48'E, humid forest along stream, 20-50m., 1 ii 2004, leg. M.Wanat (MNHW: 1♀); NEW CALEDONIA (Province Sud): Col d'Amieu, 8 viii 2006, malaise trap (CIAC : 1 ♀); NEW CALEDONIA (Province Sud): Col d'Amieu, 27 iii – 17 v 2006, malaise trap (RBCN: 1 ♀); NEW CALEDONIA (Province Sud): Col d'Amieu, 8 viii – 18 x 2006, malaise trap, tube 1 (CIAC : 1 ♀); NEW CALEDONIA (Province Sud): Col d'Amieu, ca 490m., 10 km NNW La Foa, 28 xi 2009, leg Schuh (16) (RSCW: 1 ♂, 1 unsexed, RBCN: 1 ♂); NEW CALEDONIA (Province Sud): Farino 6 / Barbou L., S 21.63337 E 165.72280, alt 181m., 27 x 2004, S. Cazères, collected on Ralia (*Schefflera gabriellae* Baillon, Araliaceae) (CIAC 1♂); NEW CALEDONIA (Province Sud): Farino, Petite Cascade, 270-340m., 3 km N Farino, 29 xi 2009, leg Schuh (18) (RSCW: 1, RBCN: 1♀); NEW

CALEDONIA (Province Sud): Farino (refuge & circuit track), 21°39,0' S 165°46,9' E, 220-300m., 3 i 2007, leg. M.Wanat & R.Dobosz (MNHW: 2♂♂, 1♀, RBCN: 1♀); NEW CALEDONIA (Province Sud): 2 km NE Sarraméa, 260m., La Cuve, 30 xi 2009, 21°38'13''S /165°51'53''E, leg Schuh (22) (RSCW: 1 ♀); NEW CALEDONIA (Province Sud): Mt Mou base, 350m, 22°05'S 166°22'E, 350m., 4 ii 2004, G. Monteith, pyrethrum, trees & logs (QM: 1); NEW CALEDONIA (Province Sud): Riv Bleue Kaori Geant, 22°06'S 166°39'E, 160m, 19 xi 2002, G. Monteith, pyrethrum, trees & logs (QM: 1♀); NEW CALEDONIA (Province Sud): Rivière Bleue Parc, 21 xii 2006, 180m scient. refuge at light, 22°06.0'S 166°38.6'E, leg M.Wanat & R.Dobosz (MNHW: 1); NEW CALEDONIA (Province Sud): Rivière Bleue Parc, 21 i 2007, 180m scient. refuge at light, 22°06.0'S 166°38.6'E, leg M.Wanat & R.Dobosz (MNHW: 8, RBCN: 4): NEW CALEDONIA (Province Sud): Haute Rivière Bleue: start of track to La




21, 22. *Metrioidea glabella* n. sp.21 – Right elytron. Scale bar = 1 mm. The black pattern in the figure symbolizes the brown elytral pattern of this species; 22 – Aedaeagus, left: ventral view; right: lateral view. Scale bar = 0.5 mm

Tranchée, night beating, 22 i 2007, 200m., 22°05'S 166°38'E, leg M.Wanat (MNHW: 1); NEW CALEDONIA (Province Sud), Port Boisé (G. Kanua), 22°21'S 166°58'E, 20m., 18 xi 2002, G. Monteith (QM: 1).

Description

Yellow brown species with brown pattern on pronotum and elytra. Parts of the head brown too. Length 4.25-5.70 mm (total); 4.45-5.35 mm (from the anterior border of the eyes to the tip of the elytra). Greatest width across both elytra: 2.20-3.00 mm.

Head: greatest width across both eyes 0.85-1.05 mm. Yellow-brown. Margins of frontal tubercles brown. Frons and vertex impunctate, dull. Frontal tubercles triangular, dull. Antennal segments with large bristles. Antennal segment one brownish; all subsequent antennites yellow with apical half brownish. Antennal formula: 11-3-6-10-10-10-10-9-9-9-10.

Pronotum: length in the middle 0.63-0.75 mm; maximal width 1.10-1.35 mm. Greatest width in anterior third. At each side with a shallow impression. Surface of pronotum with very shallow punctures and microreticulation. Hence dull with satin sheen. Anterior border slightly emarginate and unmargined. Lateral borders widening towards anterior third; margined with small bead. Posterior border curved with fine margin. Anterolateral callosity large. Ground colour yellow-brown. Lateral parts of the pronotum dark brown enclosing a yellow-brown patch in the anterior third. In central part a dark brown spot more or less mushroom shaped. This spot is near the anterior and posterior border merging with the lateral dark brown patern. As a consequence all margin are brown except the anterolateral callosity and the hind corners, which are yellow.

Scutellum: triangular. Dark brown. With microreticulation and dull.

Elytra: much broader at the base than the thorax with definite shoulders. Upper surface with shallow punctures, microreticulations and dull. Greatest width in apical third. Elytral epipleura even, wide at base, expanding a bit until base of metasternum, consequently gradually narrowing. Visible to the elytral apex. Yellow with brown pattern (fig. 21). Sparse erect hairs on elytra. Macropterous.

Legs: yellow with apex of femora dark brown and a dark brown band half way the tibiae. Length of hind tibia about 2/3 of maximal width of both elytra; all tibiae with apical spine. Length of apical spine on metatibia 1.2 times the breadth of metatibia at apex. First segment of metatarsus 1.5 as long as remaining segments combined. All claws appendiculate.

Underside of thorax and abdomen yellow; epipleural margins dark brown. Epipleural surface partly dark brown apical part lighter. Procoxal cavities open posteriorly.

Aedaeagus: fig. 22.

Sexual dimorphism: female has pygidium emarginate.

Variability: specimens differ in the dark pronotal and elytral markings. In some specimens the dark markings on elytra are partly absent. In the lightest specimens also the scutellum is yellow.

Diagnosis

Within the group of species with the first segment of metatarsus one and a half time as long as the remaining segments or longer it is unique in the combination of its length, the dark pattern of the elytra and the absence of long erect hairs in the apical half of its elytra.

Etymology

The word 'glabella' is from the Latin glabellus, meaning smooth and bald in this case referring to the rather shallow punctated and almost hairless elytra of this *Metrioidea* species.

Distribution

New Caledonia: Province Nord and Province Sud.

### *Metrioidea pilifera* n. sp.

(figs. 23-25)

Type material

**Holotype** ♂: NEW CALEDONIA (Province Sud): Pic du Pin, site 2, 11790, 22°14'S 166°50'E, 280m., 25 xi 2004, S. G. Wright, sweeping, rainforest (MNHN).

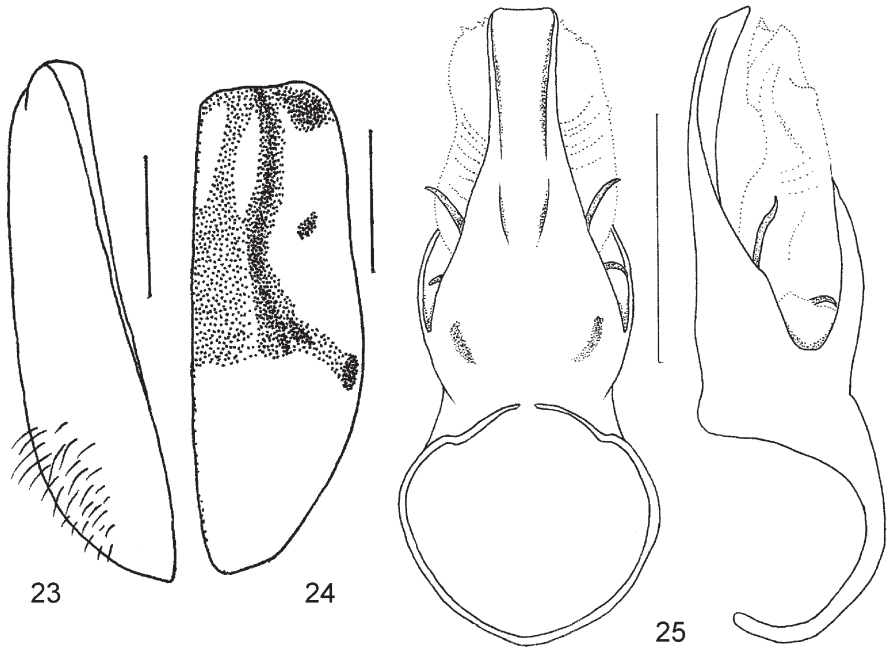
**Paratypes**: NEW CALEDONIA (Province Nord): Mandjélia, lower creek, 550m., 29 xi 2003 – 31 i 2004, 20°24'S 164°31'E, G. Monteith, Malaise (QM : 1); NEW CALEDONIA (Province Nord): La Guen (battage forêt bord rivière), 20 xi 2010, J-P Kataoui, M-17, COL/33/11 (CIAC: 1♀) ; NEW CALEDONIA (Province Nord): La Guen (gps 114/115), battage (JPK), 21 xi 2010, M-17, COL/33/11 (RBCN: 1♀) ; NEW CALEDONIA (Province Nord): 11482, 20°58'S 165°17'E, 500m., Pic d'Amoa, N slopes, 27 xi 2003 – 30 I 2004, flight int. trap, G. Monteith (QM: 1♀); NEW CALEDONIA (Province Nord): Dawenia (75), 12 xi 2010, M-17, COL/33/11 (CIAC 1♀); NEW CALEDONIA (Province Sud): Mt Rembai, 650m., 9 v 1984, leg G. Monteith (QM: 1♀); NEW CALEDONIA (Province Sud): Aoupinie, lower east road, S 21°09' E 165°19', 500m., 17 xii 2004, beating, rainforest, G. Monteith (QM: 1); NEW CALEDONIA (Province Sud): Col d'Amieu, W slope, upper, 26 iv 2005, S 21°37' E 165° 49',480m, beating, G. B. Monteith (QM: 1); NEW CALEDONIA (Province Sud): Col d'Amieu, 028 ii – 13 iii 2006, malaise trap (CIAC: 2♀♀, RBCN: 1 ♀); NEW CALEDONIA (Province Sud): Col d'Amieu, 08 viii – 18 x 2006, malaise trap, tube 1 (CIAC: 2♀, RBCN: 1 ♀) ; NEW CALEDONIA (Province Sud) Col d'Amieu, 8 viii 2006, malaise trap, (CIAC: 4♀♀, RBCN: 3♀♀) ; NEW CALEDONIA (Province Sud): Col d'Amieu – Sarraméa, 05 ii – 07 iii 2007, malaise trap (CIAC: 4♀♀, RBCN: 3♀♀) ; NEW CALEDONIA (Province Sud) Col d'Amieu, 20 vi – 25 vii 2008, malaise trap, (CIAC: 1♀); NEW CALEDONIA (Province Sud) Sarra. / Col d'Amieu, S 21°34' E 185° 46', 630m., 10 x 2008, malaise trap, (CIAC: 2♀♀); NEW CALEDONIA (Province Sud) : 11477, 21°35'S 165°48'E, 400m., Col d'Amieu, sawmill, 25 xi 2003 – 27 i 2004, malaise, G. Monteith (QM: 1♀, RBCN: 1♀); NEW CALEDONIA (Province Sud): Forêt Nord, site 1, 480m., 1-22 xii 2004, malaise, rainforest, 22°19'S 166°55'E, Burwell, Wright (QM:

1); NEW CALEDONIA (Province Sud): Forêt Nord, site 2, 200 m., 22 xi 2004 – 12 i 2005, pitfall traps, rainforest, 22°17'S 166°53'E, Monteith, Grimbacher (QM: 1); NEW CALEDONIA (Province Sud), Pic du Grand Kaori, site 1, S 22°17' E 166°53', 250m., 22 xii 2004 – 12 i 2005, Burwell, Wright, malaise, RF (QM: 2); NEW CALEDONIA (Province Sud): Forêt Nord, site 2, 200 m., 2-22 xii 2004, malaise, rainforest, 22°19'S 166°55'E, leg Burwell, Wright (QM: 1, RBCN: 1♂); NEW CALEDONIA (Province Sud): Forêt Nord, site 2, 200 m., 2 xii 2004, rainforest, 22°19'S 166°55'E, QM party, hand collecting (QM: 1).

Description

Yellow species with head and elytra with brown pattern. Length 4.45-4.90 mm (total); 4.30-4.75 mm (from the anterior border of the eyes to the tip of the elytra). Greatest width across both elytra: 2.50-2.70 mm.

Head: greatest width across both eyes 0.95-1.00 mm. Yellow with brown elongate stripe on vertex and two brown post ocular spots. Frons and frontal tubercles brownish yellow and labrum and mandibular tips brown. Upper surface impunctate; vertex reticulate. Frontal tubercles transverse very finely reticulate. Antennal segments with large bristles. Antennal segments one yellow, subsequent antennites yellow with apex brownish. Antennal formula: 10-3-4-9-9-9-9-9-9-8-8.




23-25. *Metrioidea pilifera* n. sp.: 23 – Right elytron. Lateral view showing situation of long hairs. Scale bar = 1 mm; 24 – Right elytron. Dorsal view showing colour pattern. Scale bar = 1 mm; 25 – Aedaeagus, left: ventral view; right: left lateral view. Scale bar = 0.5 mm

Pronotum: length in the middle 0.75-0.85 mm, maximal width 1.20-1.30 mm. Greatest width in anterior third. Sides rounded. Upper surface coarsely reticulate. Anterior border unmargined. Lateral borders margined with small bead. Posterior border with fine margin.

Scutellum: triangular. Yellow.

Elytra: much broader at the base than the thorax with definite shoulders. Upper surface rugosely punctate. With long erect hairs in apical part (fig. 23). Greatest width in apical quarter. Elytral epipleura even, wide at base, expanding a bit until base of metasternum, consequently gradually narrowing, visible to the elytral apex. Yellow with brown pattern (fig. 24) which can vary from dark brown to almost absent. Macropterous.

Legs: yellow with joint between tibia and tarsus brown to black. Length of hind tibia about 2/3 of maximal width of both elytra. All tibiae with apical spine. Length of apical spine on metatibia 0.6 times the breadth of metatibia at apex. Yellow. First segment of metatarsus 1.7 times as long as remaining segments combined. All claws appendiculate.

Underside of thorax and abdomen yellow. Procoxal cavities open posteriorly.

Aedaeagus: fig. 25.

Sexual dimorphism: there are no external characters that differ between the sexes.

Diagnosis

Within the group of species with the first segment of metatarsus one and a half time as long as the remaining segments or longer it is unique in the combination of its length, the dark pattern of the elytra and the presence of long erect hairs in the apical half of its elytra. In addition, the aedaeagus differs from all previous described species.

Etymology

The name refers to the long hairs at the apex of the elytra.

Distribution

New Caledonia: Province Nord and Province Sud.

## *Candezea* Chapuis, 1879

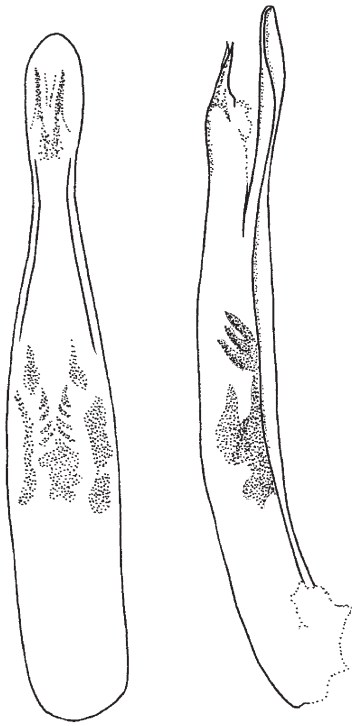
The genus *Candezea* was supposed to be distributed in Africa, Madagascar, the Oriental region and the Australasian region (Wilcox 1971-1975). Recently this genus was redefined in a revision of Afrotropical species (Wagner & Kurtscheid 2005). The type species of *Candezea* is the African *Monolepta occipitalis* Reiche. *Candezea* species are at present known to be distributed in the eastern, central and southern Africa (Wagner 2003). Species hitherto attributed to *Candezea* from other regions need confirmation.

### *Candezea semiviolacea* (Fauvel, 1862)
(fig. 26, 27)

*Monolepta semiviolacea* Fauvel, 1862: 169.

The morphological characters of the type specimens of *Monolepta semiviolacea* Fauvel perfectly fit the diagnostic characters of *Candezea* presented by Wagner & Kurtscheid (2005). Although this species was included in the subgenus *Candezea* by Weise (1924) and in the genus *Candezea* by Jolivet (1959), Wilcox (1971-1975) again listed it in *Monolepta*. *Monolepta semiviolacea* is now again transferred to *Candezea*. The apically incised tectum of the penis and the large body size are, according to Wagner (2004), apomorphic characters in *Candezea*. Although the number and type of endophallic spiculae in *C. semiviolacea* (fig.26) differ from African species of *Candezea*, among these African species differences occur too (Wagner & Kurtscheid, 2005). Perhaps future studies of the morphology of the endophalic spiculae in Indo-Australian *Candezea* will give support for the erection of subgenera in this genus.

*Candezea semiviolacea* is rather variable in colouration and morphology of the heart-shaped sutural depression beyond the scutellum. The last are situated in a more or less circular swollen sutural area. It seems that this area is sclerotized in a different



26. *Candezea semiviolacea* (Fauvel, 1862). - Aedaeagus, left: dorsal view; right: right lateral view

way as the remaining parts of the elytra and show some deformation (artefact) after the specimens are dried. Besides there is definitely variation in the form of the depression. Variation in colouration can roughly be described in four major types that may occur in the same locality:

1. Head, pronotum, antennae and legs orange-yellow. Elytra yellow. Underside brown, except the ventral parts of the prothorax which are orange-yellow. Labrum, mandibulae and maxillary palps black. Last tarsal segment dark brown.
2. Head, pronotum, antennites 1-3 and 10-11 orange. Antennites 4-8, labrum, mandibulae and maxillary palps black. Elytra yellow-brown with sutural depression dark brown. Femora yellow-brown. Tibiae and tarsi brown-black. Scutellum dark brown. Underside black, except the ventral parts of the prothorax which are orange.
3. As in 1. Antennites 5-9 dark brown and femora and tarsi brown.
4. As in 1. Antennites 4-8 dark brown and tarsi brown.

Male specimens of all four types have the same aedaeagal form. Consequently they will be treated as conspecific.

Material examined

Type specimens:

Lectotype, by present designation (♂ ISNB): N'elle Caledonie [hand written label glued to a pink label: Coll. R. I. Sci. N. B. Nouvelle Calédonie, ex coll. Fauvel, rec.


27. *Candezea semiviolacea* (Fauvel, 1862) - Living adult. Photograph: Sylvie Cazères

Deplanche], Coll. et det. A. Fauvel, *Monolepta semiviolacea* Fvl. Syntype. LECTOTYPUS *Monolepta semiviolacea* Fauvel, R. Beenen des. 2007.

Paralectotype, by present designation (♀ ISNB): same data. With additional label: PARALECTOTYPUS *Monolepta semiviolacea* Fauvel, R. Beenen des. 2007.

Additional material: NEW CALEDONIA - **province Nord**: Ile d'Art [hand written label glued to a pink label: Coll. R. I. Sci. N. B. Nouvelle Calédonie, ex coll. Fauvel], Coll. et det. A. Fauvel, *Monolepta semiviolacea* Fvl. (♀ ISNB); Tiea Reserve, 30m., malaise, 26 xi 2001-31 i 2002, Burwel, Monteith, (2♂♂, 1♀ QM); Tiéa Forest (GIE Fab Nicoli), sclerophylous forest, 30m., 30 i 2004 (2♂♂, 2♀♀ MNHW); Tiendanite, 50m., ad lucem, 4 ii 2004 (3♂♂, 4♀♀ MNHW) ; Koumac, presso la grotta, 21 ii 2006, M. Daccordi leg. (4♂♂ MDCV); Gavatch near Tiendanite, stream valley, 150m., 4 ii 2004 (3♂♂, 6♀♀ MNHW, 1♂, 1♀ RBCN); Pouebo [hand written label glued to a pink label: Coll. R. I. Sci. N. B. Nouvelle Calédonie, ex coll. Fauvel], Coll. et det. A. Fauvel, *Monolepta semiviolacea* Fvl. (♀ ISNB); Pouebo [hand written on a pink label with printing: Coll. R. I. Sci. N. B. Nouvelle Calédonie, ex coll. Fauvel], Coll. et det. A. Fauvel, *Monolepta semiviolacea* Fvl. (♂ and 3♀♀ ISNB); Koné [hand written label glued to a pink label: Coll. R. I. Sci. N. B. Nouvelle Calédonie, ex coll. Fauvel], Coll. et det. A. Fauvel, *Monolepta semiviolacea* Fvl. (♀ ISNB); Houailou [hand written label glued to a pink label: Coll. R. I. Sci. N. B. Nouvelle Calédonie, ex coll. Fauvel], Coll. et det. A. Fauvel, *Monolepta semiviolacea* Fvl. (♀ ISNB); Foret Thy Reserve, 21 v 1984, 150m., G. Monteith & D. Cook (1♂ QM); Aoupinié, 20 km NE Poya, 600m., Niaouli, 18-19 v 1984, G. Monteith & D. Cook (1♀ QM); Aoupinié, gate meteo st., 900-950m., 8 ii 2004 (1♀ MNHW); Cascade de Tao, humid forest along stream, 20-50m., 1 ii 2004, (1♂, 1♀ MNHW); Mt Panié, humid forest, night beating near refuge hut, 1300m., 2 ii 2004 (1♀ MNHW); Mt Panié, 31 vii – 5 ix 2007 (1♂ CIAC); Poya, Goapin, 130m., 17 ii 2006, P. M. Giachino leg. (1♀ MDCV); Nakety, 2,5 km ESE, beating, 26 iv 2005, G.B. Monteith (1♀ QM); - **province Sud**: Sarraméa, malaise trap, 23 xi 2008 (2♀♀ CIAC); Bourail/La Roche percée, 23 iv 2006, Barry & Shane (2♂♂, 1♀ CIAC); Col d'Amieu, 6 km NNE, 300m., at MV light, 11 xi 2001, G. Monteith (2♀♀ QM); Col d'Amieu, top of hill, ad lucem, 450m., 9 ii 2004 (1♂, 1♀ MNHW); Col d'Amieu, west slope, MV light, rain forest, 480m., 7 i 2005, G.B. Monteith (2♂♂, 1♀ QM); Col d'Amieu, 8 ii – 13 iii 2006, malaise trap, COL 64/06 (1♂, 1♀ CIAC ; 1♂ RBCN); Col d'Amieu, malaise trap, 8 viii 2006 (1♂, 7♀♀ CIAC); Col d'Amieu, malaise trap, 8 viii – 18 x 2006 (CIAC: 11 ♂♂, 3 ♀♀, RBCN: 3 ♂♂); Col d'Amieu, 19 ix 2005, from unknown plant, COL 171/05 (1♀ CIAC); La Foa, Col d'Amieu, 20 ii 2006, 500m., M. Daccordi leg. (2♂♂, 1♀ MDCV); Col d'Amieu – Sarraméa 5 ii – 7 iii 2007, malaise trap (CIAC: 6 ♂♂, 14 ♀♀); Col d'Amieu, malaise trap, 8 viii 2008(1♀ CIAC); Sarraméa / Col d'Amieu, par battage, 2-23 xii 2005, Cazères, Mille & Kataoui (1♂ CIAC); Sarra. / Col d'Amieu, 630m., malaise trap, 23 xi 2008 (4♂♂, 3♀♀ CIAC); La Foa, 25 iii 2008, sur *Hibiscus sinensis*, P. Jolivet (1♀ CIAC); Sarraméa, Sequestre Japonais, 22 ii 1977, réc. J. Chazeau (2♂♂, CIAC); Farino refuge, 300m., 13-17 xi 2002, S.Wright (2♀♀ QM); Farino refuge, 300m., Pyrethrum, tree & logs, 9 ii 2002, C. Darling (4♂♂ QM); Refuge de Farino, ca. 270m., 28 xi – 3 xii 2009, Schuh, at light (3♀♀ RSCW); Pocquereux, 2 xi 1999, Sylvie Cazères réc. (3♀♀ CIAC); La

Foa, Pocquereux, 7 ii 2006, 50m., M. Daccordi leg. (1♀ MDCV); Pocquereux, 19 xi 1999 (1♀ CIAC); Pocquereux, 4 x 2000, Sylvie Cazères (1♀ CIAC); Mont Do summit, 950-1025m., 3 xii 2009, Schuh (1♀ RSCW); Doungoué [hand written label glued to a pink label: Coll. R. I. Sci. N. B. Nouvelle Calédonie, ex coll. Fauvel], Coll. et det. A. Fauvel, *Monolepta semiviolacea* Fvl. (♀ ISNB); Paita [hand written label glued to a pink label: Coll. R. I. Sci. N. B. Nouvelle Calédonie, ex coll. Fauvel], Coll. et det. A. Fauvel, *Monolepta semiviolacea* Fvl. (♂ ISNB); Païta, Gärtnerei, 10 iii 1994, leg M.Schöller (MSCB: 1♂); Yahoué River, upper, 100m., 7 v 2005, G.B. Monteith (1♂, 1♀ QM); River Dumbéa, 10m., ca 8 km NNW Nouméa, 28 xi 2009, leg Schuh (1♀ RSCW); Pic aux Chèvres, Koutio, 25 i 2004, secondary forest, G.B. Monteith (2♀♀ QM); Kochi Mts, humid forest, night collecting, 500m., 20 i 2004 (1♀ MNHW); Mt Koghis, track entrance, MV light, 500m., 6 v 2005, G.B. Monteith (1♂ QM); Noumea [hand written label glued to a pink label: Coll. R. I. Sci. N. B. Nouvelle Calédonie, ex coll. Fauvel], Coll. et det. A. Fauvel, *Monolepta semiviolacea* Fvl. (♂ ISNB); Yaté /Rivière bleue, 9 iv 2006, P. & M. Jolivet (1♂ CIAC). - **province des iles Loyauté**: Lifu [hand written label glued to a pink label: Coll. R. I. Sci. N. B. Nouvelle Calédonie, ex coll. Fauvel], Coll. et det. A. Fauvel, *Monolepta semiviolacea* Fvl. (♀ ISNB); Lifou, 27 vii 2002, Mille Christian rec. (1♂, 4♀♀ CIAC ; 1♂, 1♀ RBCN);

Distribution

New Caledonia (Iles Belep, Grande Terre and Iles de Loyauté) and Vanuatu (Espíritu Santo, Malakula, Erromango and Tanna) (Bryant 1936). Kimoto *et al*. (1984) listed this species from Papua New Guinea too but the description they give matches *Candezea palustris*.

Additional remarks

It could be concluded that both *Galleruca argyrogaster* Montrouzier, 1861 and *Galleruca artensis* Montrouzier, 1861 (classified in *Rhaphidopalpa* (= *Aulacophora*) by Weise (1924)) belong to *Candezea*. The description of the depression at the suture of the elytra in *G. argyrogaster* is much like *Candezea semiviolacea* and the bright golden yellow spot behind the scutellum which is more brilliant than the remaining surface of the elytra in *G. artensis* is very much like the colour in living *Candezea semiviolacea* (fig. 27). However, the transverse depression ("sillon") in the pronotum of *G. argyrogaster* and the measurements of *G. argyrogaster* and *G. artensis* (9 mm) are unlike *Candezea semiviolacea*. Since most type specimens of Montrouzier are lost (Jolivet 2004), the mystery surrounding *G. argyrogaster* and *G. artensis* is not likely to be definitely solved.

### *Candezea palustris* (Perroud & Montrouzier, 1864)

(fig. 28, 29)

*Rhaphidopalpa palustris* Perroud & Montrouzier, 1864: 212.
*Monolepta scutellata* Jacoby, 1886: 93 (**new synonym**).

The morphological characters of all specimens of this species perfectly fit the diagnostic characters of *Candezea* presented by Wagner & Kurtscheid (2005). *Aulacophora*

*palustris* was transferred to *Monolepta* by Baly (1889). Weise (1924) included it in the subgenus *Candezea* but Wilcox (1971-1975) again listed it in *Monolepta*. Now it is again transferred to *Candezea*.

*Candezea palustris* differs from *C. semiviolacea* by its completely black legs (fig. 28). The aedaeagus is in comparison to *C. semiviolacea* more slender (fig. 29).

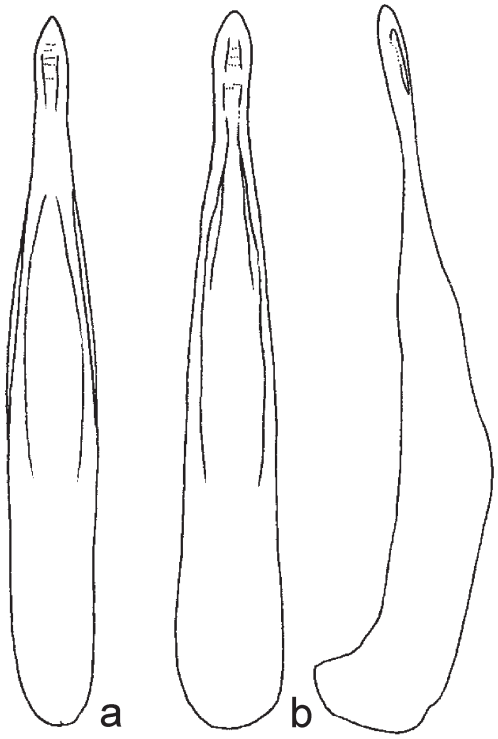
*Candezea palustris* shows a very wide distribution. The study of the aedaeagal morphology from different parts of its realm shows no differences. *Monolepta scutellata*, described from New Guinea and recorded from Australia by Weise (1923), is to be regarded a junior synonym of *Candezea palustris*.

Material examined

PAPUA NEW GUINEA Morobe Provinz, 10-150m., x 1993, leg. Jan Breithaupt. An *Zea mays* und *Ipomoea batata* (2 specimens RBCN); IRIAN JAYA (PAPUA) Etna Baai, 1904-05, Dr Koch (2 specimens ZMA, 1 specimen RBCN); NEW CALEDONIA - **Province Nord**: Nordküste, Bâ, 16 iii 1994, leg. M. Schöller (12♂♂, 7 ♀♀ MSCB, 4♂♂, 4♀♀ RBCN); Tiendanite, 50m., ad lucem, 4 ii 2004, leg M. Wanat (1♀ MNHW); Tiéa Forest (GIE Fab Nicoli), 30m., 30 i 2004, leg M. Wanat (2♂♂ MNHW);

28. *Candezea palustris* (Perroud & Montrouzier, 1864). - Habitus. Photograph: Sylvie Cazères

Aoupinié, N logging track up of sawmill, 600-700m., 6 ii 2004, leg M. Wanat (1♂ MNHW); Aoupinié, 420-530m., road to sawmill, 7 ii 2004, leg M. Wanat (1♂ MNHW); Aoupinié, meteo st. – summit, 950-1000m., 8 ii 2004, leg M. Wanat (1♂ MNHW); Poya, Goapin, 130m., 17 ii 2006, P. M. Giachino leg. (1♂ MDCV); - **Province Sud**: Col des Rousettes, PK 15, ancienne scierie, alt. 580, 23 xi 2002, A. Mantilleri & E. A. Leguin leg. (1♂ CIAC); 2km NE Sarraméa, 260m., La Cuve, 30 xi 2009, leg. Schuh (5♂♂, 1♀ RSCW); La Foa, 10 ii 2004 (1♂ CIAC); La Foa SRFP, 32m., 9 et 11 iii 2007, N. Dégallier, (2♂♂ CIAC); La Foa SRFP, 32m., 17 ii 2007, A. Renevier-Faure (1♂, 1♀ CIAC); La Foa, Pocquereux, 24 ii 2006, 50m., M. Daccordi leg. (1♂ MDCV); Pocquereux, 16 xi 1997 (1♂, 1♀ CIAC); Pocquereux, 19 xi 1997 (1♂, 1♀ CIAC); Mt Do, 1029m., 13 iv 2006, C.Mille (1♂ CIAC); Mt Do, 13 iv 2006, collected by beating, COL/68/06 (27♂♂ CIAC, 3♂♂ RBCN); Mont Do summit, 950-1025m., 3 xii 2009, Schuh (2♂♂ RSCW); Col d'Amieu (top of hill), 450m., ad lucem, 9 ii 2004, leg. M. Wanat (3♂♂ MNHW); Col d'Amieu, 8 ii – 13 iii 2006, malaise trap, COL/64/06 (6♂♂ CIAC, 2♂♂ RBCN); Col d'Amieu – Sarraméa 5 ii – 7 iii 2007, malaise trap (CIAC: 1♂); Col d'Amieu, ca 490m., 28 xi 2009, leg Schuh (1♂ RSCW); Tonghoué, 08 iv 1999, Sylvie Cazères rèc. (2♂♂ CIAC); River Dumbéa, 10m., ca 8 km NNW Nouméa,




29. *Candezea palustris* (Perroud & Montrouzier, 1864). - Aedaeagus. Left specimen from new Caledonia; right specimen from Irian Jaya

28 xi 2009, leg Schuh (2♂♂, 1♀ RSCW); Jardin Calédonien, 20 ii 2007, sur tomates, P. Caplong (1♂ CIAC); Mont Koghi, 08 iv 1999, Sylvie Cazères rèc. (4♂♂ CIAC); Koghi Mts, 450-600m., 12 ii 2004, leg M. Wanat (4♂♂ MNHW, 2♂♂ RBCN); Mt Koghis, hand collecting, 500m., 27 i 2002, G.B. Monteith (1♂ QM); Mt Koghis, track entrance, MV light, 500m., 6 v 2005, G.B. Monteith (3♂♂ QM); Mont Koghis, 500-700m., 25 xi 2009, leg Schuh (1♂ RSCW); S. P. Parc. Nat. Rivière Bleue, 31 iii - 3 iv 1999, S. Bílý leg. (1♂ MDCV).

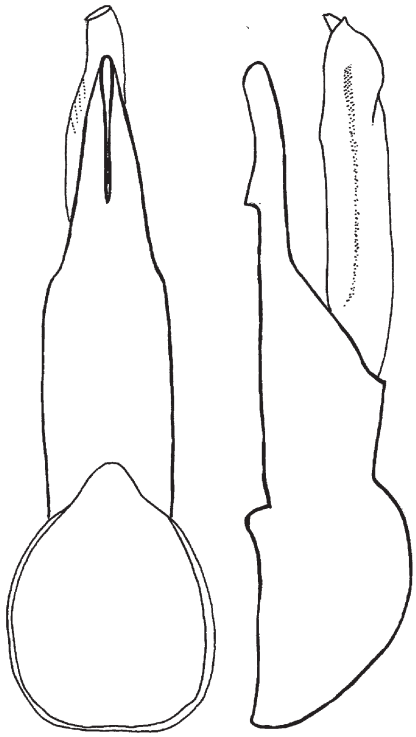
VANUATU Santo, Butmas, Forêt, UV, 21 x 2006, P. Jolivet, (RBCN) (1 specimen).

DISTRIBUTION

Papua New Guinea, Irian Jaya, Australia, New Caledonia and Vanuatu.

## CONCLUDING REMARKS

Although the type species of *Metrioidea*, *M. signatipennis* FAIRMAIRE 1881*,* is from Fiji and congeneric species are known from Fiji and New Caledonia only (see remark on North American and Southeast Asian species in BEENEN 2008) it cannot be excluded



30. *Metrioidea signatipennis* FAIRMAIRE, 1881. - Aedaeagus, left: ventral view; right: lateral view

that species from this genus occur in Australasia too. In fact, based on interpretation of original descriptions or photographs of type specimens, the following species are likely to belong to *Metrioidea*: *Candezea hirsuta* Jacoby, 1894 (New Guinea), *Candezea loriae* Jacoby, 1904 (New Guinea), *Candezea minuta* Jacoby, 1894 (New Guinea), *Monolepta obscuromaculata* Jacoby, 1894 (New Guinea), *Luperus papuanus* Jacoby, 1904 (New Guinea), *Monolepta fumida* Bryant, 1955 (New Guinea), *Monolepta hieroglyphica* Jacoby, 1904 (New Guinea, Australia), *Monolepta dimidiata* Jacoby, 1886 (Australia). None of these species are conspecific with any of the described *Metrioidea* from New Caledonia or Fiji. A revision of Australasian *Monoleptites* is needed to know the distribution of this genus before biogeographical interpretations of affinities of New Caledonian Galerucinae will be possible. Besides information on the distribution of the genus *Metrioidea* which is very rich in species in New Caledonia, information on the distribution of other genera is needed for the same purpose (see for example the notes on *Malacotheria* in this paper).

The great variety in body morphology of *Metrioidea* suggests a recent radiation. This variation might reflect adaptations to different niches, but since we know almost nothing about the life history of *Metrioidea* this remains highly speculative. The variation in morphology of the aedaeagus seems to reflect variations on a general plan, which might in its basic form resemble the simple aedaeagus of *Metrioidea signatipennis*: a tube with an oblique ostium (apical opening) where the internal sac is partially exposed (fig. 30). In the more complicated aedaeagi in *Metrioidea* the internal sac can be covered by a dorsal plate and additional lateral thorns.

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