

New species of *Callispa* Baly, 1858 feeding on Calamoid palms in Malaysia (Coleoptera, Chrysomelidae, Hispinae)

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New species of *Callispa* Baly, 1858 feeding on Calamoid palms in Malaysia (Coleoptera, Chrysomelidae, Hispinae)

by Matthias Schöller

Abstract. Four new species of *Callispa* (s.str.) Baly, 1858 from Malaysia are described, namely *C. cruentomarginata*, *C. steineri*, *C. ianthorufa*, and *C. confertae* spp.nov. The latter was found on *Salacca conferta*, while the other three species were collected on rattan, *Calamus manan* and *C. caesius* (all Areaceae). Some previously unstudied new characters of the venter in *Callispa* spp., including the genitalia, are introduced, and the presence of a tooth-like projection on the fore-femur is shown in one species.

Key words. Callispini, *Callispa* s.str., Oriental, *Calamus*

Introduction

The genus *Callispa* Baly, 1858 comprises approximately 145 species in two subgenera, all species but four in the nominate subgenus in the Oriental region (WÜRMLI 1975). Most Hispinae feed on monocotyledons, especially palms, where they are located between newly-developing leaves (JOLIVET 1996); this is also true of the genus *Callispa* (KALSHOVEN 1957). The present study provides results from a field study of phytophagous insects on climbing palms, mostly on rattan, genus *Calamus*, conducted by Helmut Steiner in Malaysia between 1994 and 1997.

Materials and Methods

Included in this study are specimens located in the following collections:

DEI	Deutsches Entomologisches Institut, Müncheberg, Deutschland, Dr. Lothar Zerche
MESC	Matthias Schöller Privatsammlung, Berlin, Deutschland
NHMB	Naturhistorisches Museum Basel, Schweiz, Dr. Michel Brancucci
ZMHB	Museum für Naturkunde der Humboldt-Universität, Berlin, Deutschland, Dr. Manfred Uhlig and Dr. Johannes Frisch

Eye length and width were measured in lateral view, the interocular space in frontal view, total length from tip of interantennal expansion to apex of elytra.

T a x o n o m y

Callispa (Callispa) cruentomarginata sp.nov.

Type material. Holotype (♂, NHMB): Peninsular Malaysia, Kampong Bongsu, Pahang, by the road from Kuala Lumpur to Mentakap (ca. 10 km before Mentakap), 3°28'N 102°14', 50 m NN [white] / rubber-plantation, on *Calamus manan* (Arecaceae), 04.12.1996, leg. H. Steiner. [t275; E385/96] [white] / Holotypus *Callispa cruentomarginata*, des Matthias Schöller. [red].

7 paratypes: (1 ex. NHMB): Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN [E397/96; asliplot] [white] / in a hill dipterocarp forest clearing on *Calamus manan* (Arecaceae), 12.12.1996, leg. H. Steiner [white]; (1 ex. NHMB): Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN. [E426/96; asliplot] [white] / in a hill dipterocarp forest clearing on *Calamus manan* (Arecaceae), 14.01.1997, leg. H. Steiner [white]; (1♂, MESC): Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN [N243/95; asliplot] [white] / in a hill dipterocarp forest clearing on *Calamus manan* (Arecaceae), 17.03.1995, leg. H. Steiner [white]; (1 ex. ZMHB): Peninsular Malaysia, Kampong Bongsu, Pahang, by the road from Kuala Lumpur to Mentakap (ca. 10 km before Mentakap), 3°28'N 102°14', 50 m NN [white] / rubber-plantation, on *Calamus manan* (Arecaceae), 04.12.1996, leg. H. Steiner. [t275; E385/96] [white]; (1 ex. DEI): Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN [E398/96; asliplot] [white] / in a hill dipterocarp forest clearing on *Calamus manan* (Arecaceae), 12.12.1996, leg. H. Steiner [white]; (1 ex. NHMB): Peninsular Malaysia, Sungai Buloh, Selangor, about 15 km West of Kuala Lumpur, 03°11.783' N, 101°35.399' E, ca. 50 m NN [white] / on *Calamus caesius* (Arecaceae) in a plantation of this palm in secondary forest, 29.06.1995, leg. H. Steiner [sega plot; N273/95] [white]; (1♀ MESC): Peninsular Malaysia, Pasoh Forest Reserve, on *Daemonorops didymophylla* (Arecaceae), 25.05.1996, leg. H. Steiner [E142/96]; all with my label "Paratypus *Callispa cruentomarginata*, des Matthias Schöller." [red].

Diagnosis. A medium-sized brownish-red species with elytra black with feeble blue metallic lustre, pronotum vaulted and puncturation of elytra in regular rows, in apical third of elytra 11 rows of punctures plus lateral row, and apex of aedeagus with a narrow, rounded extension in dorsal view.

Description (holotype male). Habitus: Body elongate oval, brownish-red with elytra black with feeble blue metallic lustre and antennae black (Fig. 10); size [mm]: length (from anterior margin of head to apex of elytra) 4.30, length pronotum 1.1, width pronotum 1.7, width of elytra at shoulders 2.0, maximum width of elytra 2.1, length of elytra 3.1.

Head: Head not vaulted between eyes, interantennal expansion rounded in frontal view, not acute; puncturation of head dense, punctures round, shallow, interstices dull; eye moderately convex, eye length in lateral view 1.8 times maximum eye width and 1.3 times interocular space, width of pronotum in frontal view 2.0 times width of head in frontal view; antennae stout, 1.6 mm long, all segments black except for reddish segments one and two, with short, white, adpressed setae, apex of segments one and two significantly wider than base of following segment, following segments contiguous, third segment longest, symmetrical and 1.6 times longer than wide, width of fourth antennomere 0.9 times length in dorsal view, and following antennomeres as long as wide, except for 11th which is 1.6 times longer than 10th, puncturation of all antennal segments very dense.

Thorax: Pronotum strongly vaulted, ratio height : width 1.0 : 2.9, lateral margin sloping gradually from disc, length : width ratio 1 : 1.5, lateral margins broad, with large, round coarse primary punctures, puncturation on centre of disc more sparse and

punctures smaller, all interstices dull, lateral carina feebly undulating, hind edges with a tooth, tooth short, not reaching width of lateral margin; disc before base without transverse impression; prosternal process of prothorax with apical margin broadly rounded, almost straight; scutellum pentagonal, transverse, width 1.7 times length, with micropunctures, dull; legs with fore-femora entire at apex in frontal view, i.e. tibiae without lateral angulation, and lacking a longitudinal groove, external edge of tibia broadly and deeply excavate, excavation with fringe of strong setae; elytra black with feeble blue metallic lustre except for the brownish-red basal and lateral margin and area around the scutellum, surface of elytra dull, puncturation of elytra regular, punctures fine, in basal quarter 8 rows plus scutellar and lateral row, the latter with very small punctures, scutellar row with 9 punctures, in apical third of elytra 11 rows of punctures plus lateral row, 10th row not fusing with lateral row at very apex, punctures of elytra becoming finer towards apex, but rows distinct to apex, punctures of first row replaced in apical half by a narrow groove, interstices with micropunctures, dull, flat, lateral margin carinate, not explanate, regularly vaulted towards suture.

Abdomen: Sternites with micro-wrinkles and small punctures, first sternite with a broad impression on each side, second sternite with shallow transverse impressions on each side, apical margin of pygidium with long setae; length of aedeagus 1.2 mm, apex with a broad longitudinal window ventrally, apical part of aedeagus slender in lateral view, apex straight (Fig. 1), apex of aedeagus with a narrow, rounded extension in dorsal view (Fig. 2).

Variability: The colour of the pronotum and venter may be lighter, more yellowish-red.

Distribution. Peninsular Malaysia.

Derivatio nominis. The name refers to the colour of the basal and lateral margins of the elytra, Latin *cruentare* to stain with blood and *marginata*, margined.

Biology. Collected as adult on *Calamus manan* and in one case on *Daemonorops didymophylla* and one on *Calamus caesius* (all Arecaceae). The type locality was a rubber-plantation; rattan (*Calamus manan*) was planted between the rows of rubber trees.

Differential diagnosis. *Callispa delauneyi* Fleutiaux, 1887 another species feeding on *Calamus*, is very similar to *C. cruentomarginata* sp.nov. but differs in the pronotum being oblate, the hind edges bearing a tooth as wide as the lateral margin of the pronotum, the scutellum being less transverse, width 1.3 times length, and the puncturation of the elytra being less dense and becoming very shallow at apex.

Callispa (Callispa) steineri sp.nov.

Type material. Holotype (♂, NHMB): Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN. [E396/96; asliplot] [white] / on a dipterocarp hill forest clearing on *Calamus caesius* (Arecaceae), 12.12.1996, leg. H. Steiner [white] / Holotypus *Callispa steineri*, des Matthias Schöller. [red]. (The locality is situated around the Ulu Gombak Field Studies Centre of the University of Malaysia, 30 km north of Kuala Lumpur on the road to Bentong and to the Genting Highlands.)

2 paratypes: (1 ex. ZMHB, 1♂ MESC): same labelling as holotype, all with my label "Paratypus *Callispa steineri*, des Matthias Schöller." [red].

Diagnosis. A small, dark orange species with apical 3/4 of elytra black with purple metallic lustre, pronotum not vaulted and puncturation of elytra in regular rows except for explanate lateral margin, and apex of aedeagus extended into a rounded tooth in dorsal view.

Description (holotype male). Habitus: Body oval, orange with apical 3/4 of elytra black with purple metallic lustre and antennae black (Fig. 11); size [mm]: length (from anterior margin of head to apex of elytra) 3.90, length pronotum 1.0, width pronotum 1.9, width of elytra at shoulders 2.2, maximum width of elytra 2.4, length of elytra 2.9.

Head: Head not vaulted between eyes, even or slightly longitudinally depressed, interantennal expansion long, rounded, in frontal view not acute, ventrally with a keel; puncturation of head fine and dense, eye length in lateral view 1.8 times maximum eye width and 1.6 times interocular space, width of pronotum in frontal view 2.2 times width of head in frontal view; antennae stout, 1.7 mm long, black with short, white adpressed setae, segments one to three and apex of segment 11 reddish-brown, apex of segments one to four significantly wider than base of following segment, other segments contiguous, third segment strongly asymmetrical and 2.4 times longer than wide, fourth antennomere 2 times longer than wide in dorsal view, fourth segment longer than fifth and following antennomeres progressively shortening, except for 11th which is 1.7 times longer than 10th, puncturation of all antennal segments very dense.

Thorax: Pronotum not vaulted, lateral margin separated from disk by only a feeble longitudinal impression, ratio height : width 1.0 : 5.8, ratio length : width 1.0 : 1.9, lateral margins broad, with very large, round but shallow primary punctures and interstices shagreened, dull, puncturation on centre of disc more sparse and interstices glabrous, lustrous, lateral carina feebly sinuate hind edges extended into a tooth, disc before base without transverse impression; prothorax with prosternal process of prothorax with apical margin convex, broadly rounded; scutellum pentagonal, transverse, width 2.2 times length, with micropunctures, dull; legs with fore-femora excavate at apex in frontal view, i.e. tibiae with distinct lateral angulation (Fig. 9), and a lateral longitudinal groove, external edge of tibia broadly excavate, excavation with fringe of strong setae; elytra dark orange, same colour as pronotum, surface of elytra lustrous, puncturation of elytra regular except for lateral margin, punctures coarse, in basal fourth 8 rows plus scutellar and lateral row, in apical third of elytra 10 rows of punctures plus lateral row, 10th row not fusing with lateral row at very apex, punctures of elytra becoming finer towards suture and towards apex, but rows distinct to apex, interstices with micropunctures, slightly elevated at dark part of elytra, lateral margin carinate, between lateral carina and 10th row elytra explanate, not regularly vaulted towards suture; apical 3/4 of elytra black with metallic purple sheen, with some irregular metallic blue spots laterally, coloration not reaching lateral margin, basal margin of coloration blurred.

Abdomen: First sternite laterally with a transverse impression each, apical margin of pygidium with long setae; length of aedeagus 1.2 mm, apex ventrally regularly vaulted, apical part of aedeagus slender in lateral view, apex bent up (Fig. 3), apex extended into a rounded tooth in dorsal view (Fig. 4).

Distribution. Peninsular Malaysia.

Derivatio nominis. Dedicated to Helmut Steiner, its collector.

Biology. Collected as adult on *Calamus caesius* (Arecaceae). The palms were planted in a dipterocarp hill forest clearing close to an *orang asli* village among bananas and fruit trees.

Differential diagnosis. *Callispa sundara* Maulik, 1919 is similar to *C. steineri* sp.nov. but differs in size, i.e. being smaller and more elongate, and having the apical 1/2 of elytra black with a metallic sheen.

***Callispa (Callispa) ianthorufa* sp.nov.**

Type material. Holotype (♂, NHMB): Peninsular Malaysia, Sungai Buloh, Selangor, about 15 km West of Kuala Lumpur, 03°11.783' N, 101°35.399' E, ca. 50 m NN [white] / on *Calamus manan* (Arecaceae) in a plantation of this palm in a timber plantation, 16.12.1994, leg. H. Steiner [Manau plot; N164/94] [white] / Holotypus *Callispa ianthorufa* des Matthias Schöller. [red].

6 paratypes: (1 ex. NHMB): Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN. [E199/96; asliplot] [white] / in a dipterocarp hill forest clearing on *Calamus manan* (Arecaceae), 12.07.1996, leg. H. Steiner [white]; (1 ex. NHMB): Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN. [E032/96; asliplot] [white] / in a dipterocarp hill forest clearing on *Calamus caesius* (Arecaceae), 28.02.1996, leg. H. Steiner [white]; (1 ex. NHMB): Peninsular Malaysia, Kampong Bongsu, Pahang, on the road from Kuala Lumpur to Mentakap (ca. 10 km before Mentakap), 3°28'N 102°14', 50 m NN [white] / rubber-plantation, on *Calamus manan* (Arecaceae), 05.02.1997, leg. H. Steiner. [t333; E447/96] [white]; (1 ex. ZMHB): Peninsular Malaysia, Sungai Buloh, Selangor, about 15 km West of Kuala Lumpur, 03°11.783' N, 101°35.399' E, ca. 50 m NN [white] / on *Calamus caesius* (Arecaceae) in a plantation of this palm in secondary forest, 17.10.1996, leg. H. Steiner [sega plot; E355/96] [white]; (1♀ MESC): Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN. [E433/96; asliplot] [white] / in a hill dipterocarp forest clearing on *Calamus manan* (Arecaceae), 14.01.1997, leg. H. Steiner [white]; (1♂ MESC): Peninsular Malaysia, Sungai Buloh, Selangor, about 15 km West of Kuala Lumpur, 03°11.783' N, 101°35.399' E, ca. 50 m NN [white] / on *Calamus manan* (Arecaceae) in a plantation of this palm in a timber plantation, 29.11.1994, leg. H. Steiner [Manau plot; N141/94] [white]; all with my label "Paratypus *Callispa ianthorufa*, des Matthias Schöller." [red].

Diagnosis. A medium-sized, dark orange species with elytra black with violet-blue metallic lustre, pronotum regularly oblate and puncturation of elytra in regular rows except for explanate lateral margin, and apex of aedeagus with a rectangular transverse extension in dorsal view.

Description (holotype male). Habitus: Body oval, dark orange with elytra black with violet-blue metallic lustre and antennae black; size [mm]: length (from anterior margin of head to apex of elytra) 4.40, length pronotum 1.0, width pronotum 2.0, width of elytra at shoulders 2.3, maximum width of elytra 2.5 mm.

Head: Head moderately vaulted between eyes, interantennal expansion narrow, acute in frontal view; head reticulated, dull, eye length in lateral view 2.4 times maximum eye width and 1.7 times interocular space, width of pronotum in frontal view 2.2 times width of head in frontal view; antennae stout, 1.6 mm long, all segments black with short, white, adpressed setae, apex of segment one significantly wider than base of segment 2, following segments contiguous, third segment symmetrical and 1.4 times longer than wide, fourth antennomere as long as wide in dorsal view, and following antennomeres progressively shortening except for 11th which is 1.6 times longer than 10th, puncturation of all antennal segments very dense.

Thorax: Pronotum vaulted, lateral margin sloping gradually from disc, ratio height : width 1.0 : 4.5, ratio length : width 1 : 2, lateral margins broad, with large, oval coarse

primary punctures, puncturation on centre of disc more sparse and punctures smaller, all interstices shagreened, dull, lateral carina feebly serrate, hind edges rounded, without tooth, disc before base with narrow transverse impression; prothorax with prosternal process of prothorax with apical margin convex, broadly rounded; scutellum pentagonal, transverse, width 2.3 times length, with micropunctures, dull; legs with fore-femora entire at apex in frontal view, i.e. tibiae without lateral angulation, lacking a longitudinal groove, external edge of tibia broadly excavate, excavation with fringe of strong setae; elytra black with violet-blue metallic lustre, surface of elytra lustrous, puncturation of elytra regular except for lateral margin, punctures fine, in basal quarter 8 rows plus scutellar and lateral row, the latter with very small punctures partly disturbed, in apical third of elytra 10 rows of punctures plus lateral row, 10th row not fusing with lateral row at very apex, punctures of elytra becoming finer towards suture and towards apex, but rows distinct to apex except for very tip of elytra, which also shows other metallic colours (green, yellow), punctures of first row replaced in apical half by a narrow groove, interstices very finely shagreened, elevated, lateral margin carinate, between lateral carina and 10th row elytra irregularly punctured and explanate but regularly vaulted towards suture.

Abdomen: Sternites reticulated, first sternite with a broad impression on each side, second and third sternites with narrow transverse impressions on each side, apical margin of pygidium with long setae; length of aedeagus 1.3 mm, apex ventrally regularly vaulted, apical part of aedeagus slender in lateral view, apex straight (Fig. 5), apex with a rectangular transverse extension in dorsal view (Fig. 6).

Female: Spermatheca as in Fig. 7, 6×4 mm.

Distribution. Peninsular Malaysia.

Derivatio nominis. The name refers to the colour of the elytra and pronotum, *ianthina* derives from the Greek for violet-coloured, *rufa* derives from the Latin *rufus*, red.

Biology. Collected as adult on *Calamus manan* (Arecaceae). The habitat was a plantation of rattan, *C. manan* in between the rows of a timber plantation.

Differential diagnosis. *Callispa brevicornis* Baly, 1869 another species feeding on *Calamus*, is similar to *C. ianthorufa* sp.nov. but differs in the head, pronotum and scutellum being black with metallic lustre, the scutellum being less transverse, width 1.4 times length, and the interstices on the elytra being flat.

***Callispa (Callispa) confertae* sp.nov.**

Type material. Holotype (♀, NHMB): Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN [N147/94] [white] / on *Salacca conferta* (Arecaceae), 15.12.1994, leg. H. Steiner [white] / Holotypus *Callispa confertae*, des Matthias Schöller. [red]. (The locality is situated around the Ulu Gombak Field Studies Centre of the University of Malaysia, 30 km north of Kuala Lumpur on the road to Bentong and to the Genting Highlands.)

5 paratypes: (1♀ NHMB): Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN, [nat.; E391/96] [white] / on *Salacca conferta* (Arecaceae), 02.12.1996, leg. Helmut Steiner [white]; (1♀ NHMB): Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN, [nat.; E001/96] [white] / on *Salacca conferta* (Arecaceae), 29.01.1996, leg. Helmut Steiner [white]; (1♀ MESC): Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN [N147/94] [white] / on *Salacca conferta*

(Arecaceae), 15.12.1994, leg. H. Steiner [white]; (1♀ NHMB, 1♀ ZMHB): E410/96: Peninsular Malaysia, Ulu Gombak, 03°19.468' N, 101°44.966' E, ca. 250 m NN. [nat.; E410/96] [white] / on *Salacca conferta* (Arecaceae), 11.01.1997, leg. H. Steiner [white]; all with my label "Paratypus *Callispa confertae*, des Matthias Schöller." [red].

Diagnosis. A medium-sized, yellowish-orange species with apical 3/7 of elytra black, black marking not reaching lateral margin, pronotum feebly vaulted with angular hind edges, punctuation of elytra in regular rows vanishing in apical third.

Description (holotype female). Habitus: Body longitudinal oval, orange with apical 3/7 of elytra black and antennae black; size [mm]: length (from anterior margin of head to apex of elytra) 4.50, length pronotum 1.1, width pronotum 1.6, width of elytra at shoulders 2.2, maximum width of elytra 2.4, length of elytra 3.2.

Head: Head moderately vaulted between eyes, interantennal expansion narrow, acute, punctuation of head fine and sparse, barely visible, head lustrous, eye length in lateral view 1.6 times maximum eye width and 1.3 times interocular space, width of pronotum in frontal view 2.2 times width of head in frontal view; antennae filiform, 2.0 mm long, black except for orange segment one and dark fulvous segment two, all segments with short, white, adpressed setae, apex of segments one to four significantly wider than base of following segment, other segments contiguous, third segment symmetrical and 1.6 times longer than wide, fourth antennomere 1.3 times longer than wide, fourth segment longer than fifth and following antennomeres of similar size except for 11th which is almost 2 times longer than 10th, punctuation of all antennal segments very dense.

Thorax: Pronotum feebly vaulted, ratio height : width 1.0 : 4.2, ratio length : width 1.0 : 1.5, lateral margins broad, with very large, round to oval, coarse primary punctures and interstices lustrous, punctuation on centre of disc similar except for impunctate anterior margin, lustrous, lateral carina broadly sinuate, hind edges angular, disc before base without transverse impression; apical margin of prosternal process of prothorax almost straight; scutellum pentagonal, as long as wide, with micro-wrinkles, lustrous; legs with fore-femora entire at apex in frontal view, i.e. tibiae without lateral angulation, and lacking a lateral longitudinal groove, but femur with a feeble, shallow longitudinal impression, external edge of tibia broadly excavate, excavation with fringe of strong setae; elytra yellowish orange, same colour as pronotum, surface of elytra lustrous, punctuation of elytra regular, punctures coarse, in basal quarter 8 rows plus scutellar and lateral row, in apical third of elytra 10 rows of punctures plus lateral row, 10th row not fusing with lateral row at very apex because it is disappearing, punctures of elytra disappear in apical 2/7, punctures of row one small and replaced in apical half by a narrow groove, interstices with very few micropunctures, lustrous, not elevated, lateral margin carinate, interstice between lateral carina and 10th row not wider than other interstices, elytra not explanate, regularly vaulted towards suture; apical 3/7 of elytra black, black marking not reaching lateral margin, basal margin of coloration distinct.

Abdomen: Sternites punctured and with micro-wrinkles, but lustrous, first sternite with a short oval impression on each side, second and third sternites smooth, pygidium densely setose, especially apical margin of pygidium with long setae; spermatheca as in Fig. 8, 2.5×2 mm.

Distribution. Peninsular Malaysia.

Derivatio nominis. The name refers to the host plant *Salacca conferta*.

Biology. Collected in January and February as adult on *Salacca conferta* (= *Eleiodoxa conferta*) (Arecaceae, Calamoideae). The palms were situated in a dipterocarp hill forest.

Differential diagnosis. *Callispa apicalis* Pic, 1924 is similar to *C. confertae* sp.nov. but differs in size, i.e. it is larger, and having 12 rows of punctures at middle of elytron instead of 10 in *C. confertae* sp.nov.

Discussion

The characters used to date to discriminate between species of *Callispa* have been coloration, shape of antennae and interantennal expansion, shape and surface structure of pronotum, and shape and puncturation of elytra (e.g. UHMANN 1931, WÜRMLI 1975). In this study, some characters have been described that have not been previously considered in this genus. The external characters of the aedeagus were found to be useful in all species described here. Both the structure of the apex and the shape in lateral view allows unambiguous differentiation between species, and aedeagus characters may facilitate understanding of the variability of other morphological characters in the future. The endophallic sclerites show potential as distinguishing characters as well. In one species, an excavation of the fore-femora resulting in a tooth-like projection was noticed. That this character state has not been described in *Callispa* to date is remarkable, because the presence of a toothed fore-femur was thought to be restricted to the Botryonopini and Aproidini (WÜRMLI 1975). However, the presence of a seta on the hind edges of the each pronotum still allows the separation of the Callispini from the two mentioned tribes with reduced clypeus.

Three more characters of the venter have introduced. Laterally, the sternites may show impressions that differ in shape, as well as in the number of sternites affected; the apical margin of the prosternal process of the prothorax was found to be either almost straight or convex, but the variability of this character needs further study, as does the shape of the spermatheca. In *C. confertae* sp.nov. the tip of the spermatheca is more rounded, the base wider compared to *C. ianthorufa* sp.nov., and it is only half its size.

The hosts of the species studied belong to the Lepidocaryoid line of palms, a group that includes almost all climbing-palms. All species described here except for *C. confertae* sp.nov. feed on rattan palms planted for furniture timber. These *Callispa* species are therefore of potential economic significance. *Callispa confertae* sp.nov. may be monophagous on *Salacca conferta*, at least in the region under study. A key to the species of *Callispa* of Malaysia will be presented in a further publication (SCHÖLLER in prep.).

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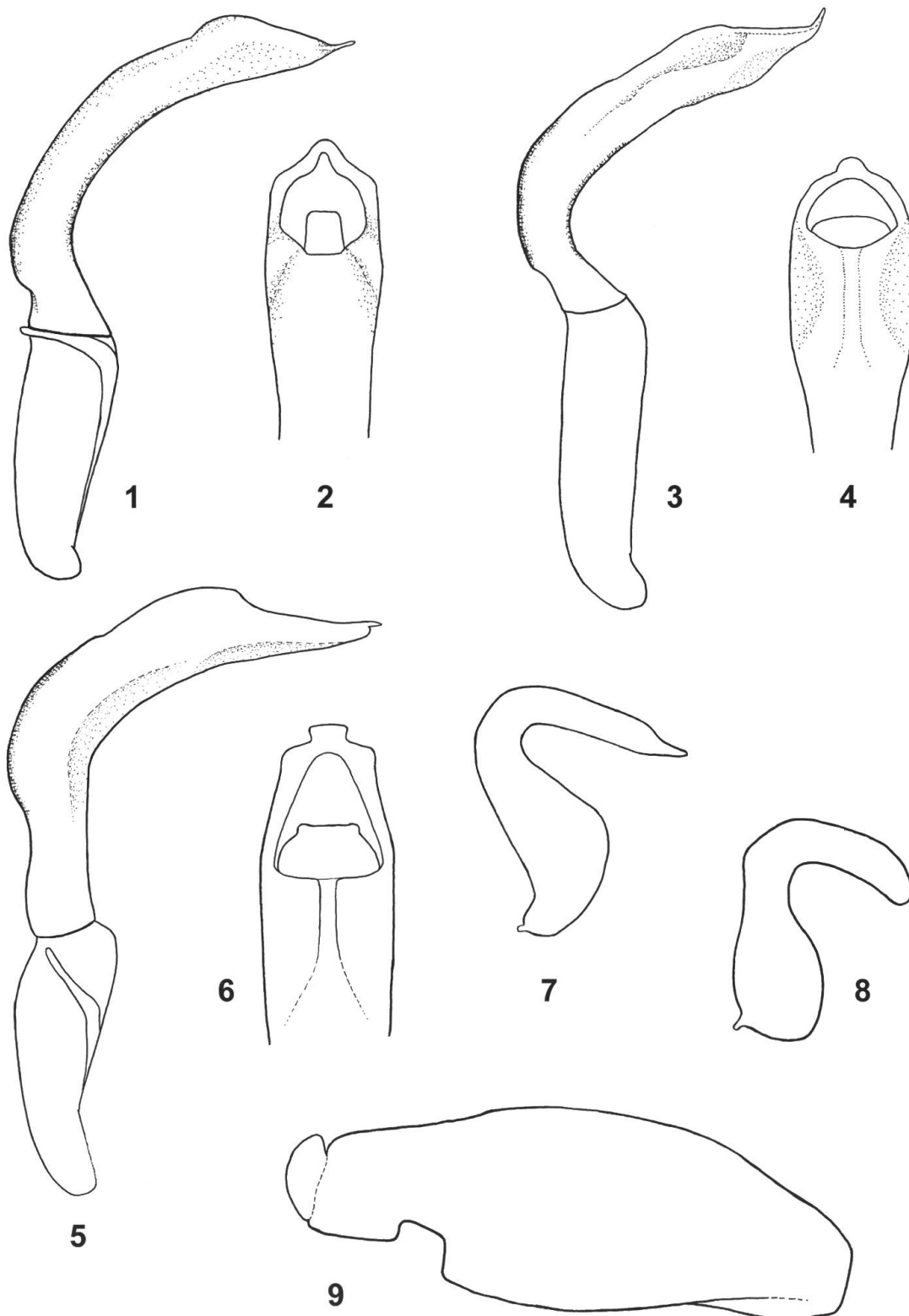
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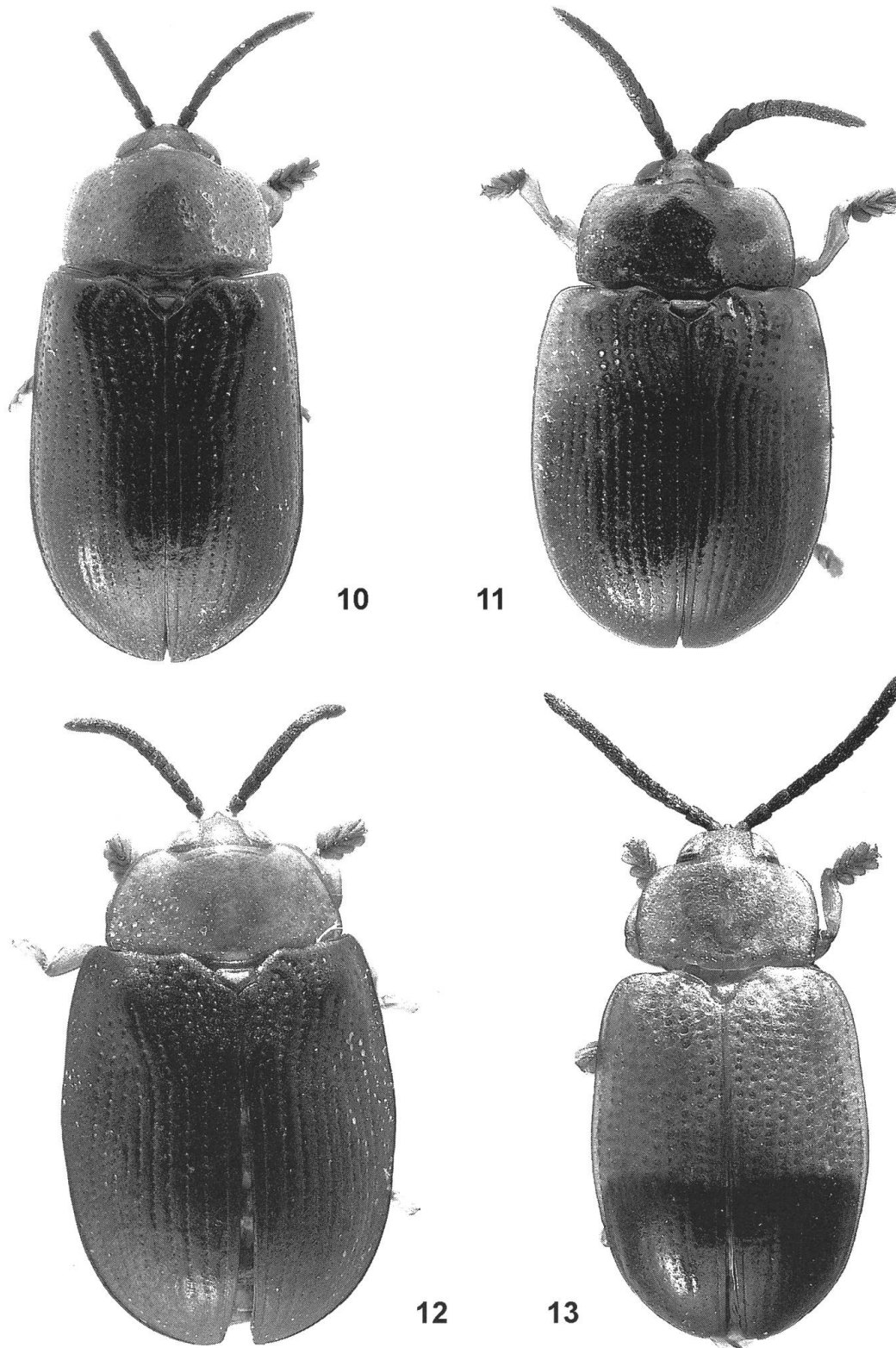
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Figs 1–8. 1–2, *Callispa cruentomarginata* sp.nov.: 1, aedeagus, lateral; 2, apex of aedeagus, dorsal. 3–4, *Callispa steineri* sp.nov.: 3, aedeagus, lateral; 4, apex of aedeagus, dorsal. 5–7, *Callispa ianthorufa* sp.nov.: 5, aedeagus, lateral; 6, apex of aedeagus, dorsal; 7, spermatheca. 8, *Callispa confertae* sp.nov.: spermatheca. 9, *Callispa steineri* sp.nov.: femur, frontal.



Figs 10–13. 10, *Callispa cruentomarginata* sp.nov.; 11, *Callispa steineri* sp.nov.; 12, *Callispa ianthorufa* sp.nov.; 13, *Callispa confertae* sp.nov.