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TWO NEW SPECIES OF *SLOANEANA* CSIKI FROM SOUTHERN QUEENSLAND  
(COLEOPTERA, CARABIDAE, MERIZODINAE)

MARTIN BAEHR

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*Sloaneana lamingtonensis* sp. nov. and *S. similis* sp. nov. are described from Springbrook and Lamington Plateaus near the Queensland/New South Wales border. They are distinguished from the known species of *Sloaneana*, *S. tasmaniae* (Sloane), by pronotum with wide base, rectangular basal angles, and distinct latero-apical ridge, and by more ovoid, 3- or 4-punctate elytra. Both new species are mainly distinguished *inter se* by their different aedeagi, and by larger size, and deeper, more coarsely punctate elytra in *S. lamingtonensis*. The new records extend the range of Merizodinae in Australia into the subtropics. A new record of the Tasmanian merizodine *Pterocyrtus rubescens* (Sloane) from Mt. Field is also dealt with. Probably this is the second record of this species since description. □ *Coleoptera, Carabidae, Merizodinae, Queensland, new species.*

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The few Australian species of the carabid Merizodinae have a southern distribution with most species occurring in Tasmania and but two on the mainland where they were not yet recorded further north than the Australian Alps in eastern Victoria (*Pterocyrtus truncaticollis* Sloane) and southern NSW (*Sloaneana tasmaniae* Sloane = *victoriae* Sloane) (Moore et al., 1987). Hence, Merizodinae are typical representatives of the cold adapted Bassian faunal element and are believed to belong to the circumpolar so-called Gondwanan faunal element that today persists in SE Australia, New Zealand, and southernmost South America.

More surprising was discovery of additional species of *Sloaneana* Csiki (replacement name for *Brachydema* Sloane) as far north as Lamington Plateau in SE Queensland. There, in 1982 I collected a single specimen of an apparently new species which I was reluctant to describe, because it was a female. Recently, G. Monteith of the Queensland Museum informed me that he had collected a small series at different localities on Lamington Plateau during his ample program of pyrethrum fogging tree trunks and logs on mountain tops along eastern Queensland. Now altogether 7 specimens are at hand, and although they externally look quite similar, closer examination shows that they belong to two different species.

Although Lamington Plateau is within the subtropics, both new species apparently occur only above about 1000 m and hence, in the cool

temperate rain forest on the plateau where conditions are still fairly 'Bassian'. One specimen has been collected on *Nothofagus* which is evidence of preference for cool environments.

#### METHODS

After dissection the male genitalia were cleaned for a while in hot 4% KOH.

#### MEASUREMENTS

Measurements have been made under a stereo microscope by use of an ocular micrometer. Length has been measured from apex of labrum to apex of elytra. Length of pronotum was taken along midline. Measurements, therefore, may slightly differ from that of other authors.

#### MATERIAL

Types are in the Queensland Museum, Brisbane (QMB) except a paratype of each new species in the Zoologische Staatssammlung, München (CBM).

#### SYSTEMATICS

##### *Sloaneana tasmaniae* (Sloane) (Fig. 1)

Sloane, 1915: 452 (*Brachydema*); 1920: 130; Moore et al. 1987: 123

*Brachydema victoriae* Sloane, 1915: 452.

MATERIAL EXAMINED. 2 ♂♂, Hobart, Tasmania, J. J. Walker (BMNH); ♀, Lake St. Clair, Tas, 12.10.1972, M. Baehr (CBM); ♂, Tas. Mt Field, Lyrebird Walk,

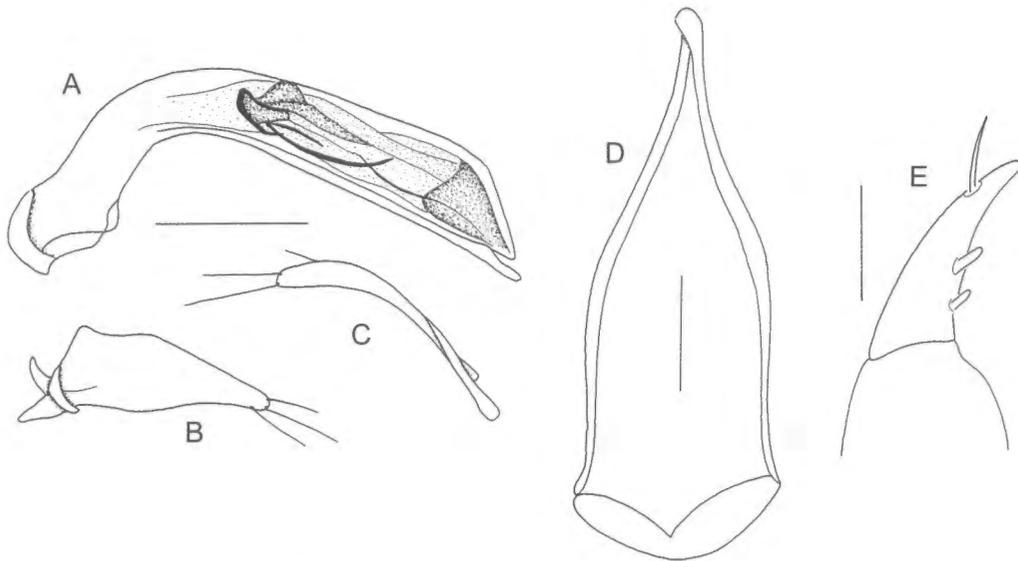


FIG. 1. *Sloaneana tasmaniae* (Sloane). Male A, aedeagus, B, C, parameres, and D, genital ring; scale bars = 0.25mm. E, female stylomere 2 and base of stylomere 1; scale bar = 0.1mm.

30.11.1998, leg. H. Pieper (CBM); ♀, Tas. Hartz Mt., 3.12.1998, leg. H. Pieper (CBM).

**DESCRIPTION OF MALE AND FEMALE GENITALIA.** *Male genitalia.* Genital ring narrow, elongate, almost symmetric, apex narrow, symmetric. Aedeagus narrow and elongate, sharply curved near base, lower surface straight, apex moderately short, straight. Orificium short. Internal sac rather complexly folded, with some narrow sclerites in basal part. Parameres large, very dissimilar, right paramere very narrow, elongate, left paramere large, rather triangular, moderately elongate. Left paramere with 3 elongate setae at apex, right paramere with 2 elongate setae and in one specimen with an additional shorter postapical seta.

*Female genitalia.* Apex of 1st stylomere asetose. 2nd stylomere elongate, narrow, with acute apex, with 2 rather small, widely spaced latero-ventral ensiform setae, with 2 elongate, attached, nematiform setae near apex that originate from an oblong pit, without dorso-median ensiform setae.

**NOTE.** For better discrimination between this and the following new species male and female genitalia of *B. tasmaniae* (Sloane) are figured for the first time, and some measurements and ratios are compared (Appendix 1).

***Sloaneana lamingtonensis* sp. nov.**  
(Figs 2, 3)

**MATERIAL EXAMINED.** HOLOTYPE: ♂, SEQ: 28°15'S; 153°16'E Springbrook Repeater, 21 Dec 1996. 1000 m G. B. Monteith Pyrethrum, dead trees (QMT93095). PARATYPES: 2 ♀♀, SEQ: 28° 15'S; 153°16'E Springbrook Repeater 6 Apr 1995 G. B. Monteith, Pyrethrum Tree trunks, 1000 m (CBM, QMT93096); ♂, SEQ: 28°15'S; 153°12'E Mt. Hobwee summit 2 Dec 1995, 1150 m G. B. Monteith Pyrethrum, trees (QMT93098); 1 ♀, Bithongabel Lamington N.P., Q. 8 Oct 1979 G. Monteith/ Pyrethrum on *Nothofagus* (QMT93097).

**DIAGNOSIS.** Comparatively large species with angulate basal pronotal angles, distinguished from closely related *S. similis* sp. nov. by larger size, quadripunctate elytra, deeper and more distinctly punctate elytral striae, and downcurved apex of aedeagus.

**DESCRIPTION.** Measurements. Length: 3.65-3.85mm; width: 1.65-1.80mm; ratio width/length of pronotum: 1.51-1.56; ratio base/apex of pronotum: 1.65-1.69; ratio width of pronotum/width of head: 1.72-1.76; ratio length/width of elytra: 1.34-1.38; ratio width of elytra/width of pronotum: 1.24-1.26.

**Colour.** Piceous-black to black, with more or less distinct metallic lustre. Lateral margins of pronotum and elytra narrowly reddish. Mandibles and palpi reddish, penultimate

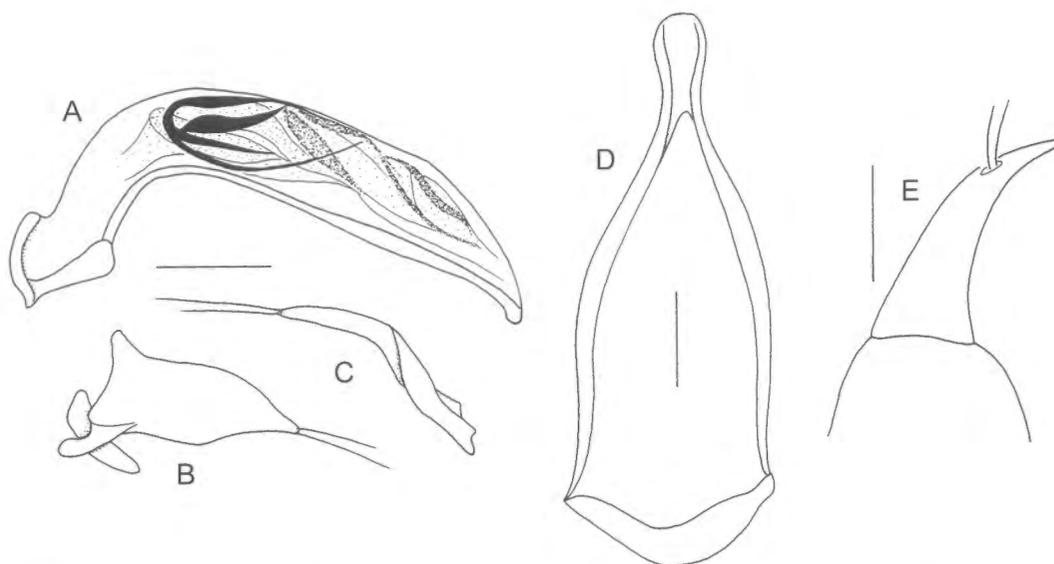


FIG. 2. *Sloaneana lamingtonensis* sp. nov. Male A, aedeagus, B, C, parameres, and D, genital ring; scale bars = 0.25mm. E, female stylomere 2 and base of stylomere 1; scale bar = 0.1mm.

palpomeres darker. Three basal antennomeres light reddish, rest piceous. Legs light reddish, femora in parts and external surface of tibiae slightly darker. Lower surface piceous, epipleurae reddish.

**Head.** Rather narrow in comparison with prothorax. Frons convex, with some shallow transverse furrows. Frontal furrows deep, semicircular, margins more or less crenulate according to depth of transverse furrows. Eyes large, moderately protruding, with small, obliquely convex orbits. Clypeo-frontal suture more or less distinct. Anterior margin of clypeus straight, bisetose. Labrum short and wide, apex straight, 6-setose. Mandibles moderate, acute. Terminal palpomeres elongate, acute, impilose. Mentum with obtuse, triangular tooth, bisetose. Gula quadrisetose. Glossa narrow, bisetose, paraglossae barely surpassing glossa. Antenna rather short, just surpassing base of pronotum, median antennomeres c. 1.5 x longer than wide, 3 basal antennomeres sparsely setose, densely setose from middle of 4<sup>th</sup> antennomere. Microreticulation distinct on labrum and apical half of clypeus, in some specimens also on vertex, rather superficial or almost wanting on frons, about isodiametric. Surface impunctate, impilose, rather glossy.

**Pronotum.** Wide, somewhat triangular. Apex considerably wider than base, barely to very

feebly concave, anterior angles broadly rounded, barely produced. Sides almost evenly rounded, widest shortly in front of base. Basal angles angulate, though about 100°. Base almost straight. Apex more or less distinctly bordered, lateral margins markedly bordered, border widened in apical half. Base laterally thickly bordered, border in middle highly superficial. Lateral channel rather narrow throughout. Disk evenly convex. Median line distinct, fairly impressed, complete. Anterior transverse sulcus very shallow, prebasal sulcus laterally close to basal margin, in middle convex, fairly deep. Basal grooves wide fairly deep, oblique, separated from lateral margin by a wide, conspicuous, convex hump. Anterior marginal seta situated in anterior 2/5, posterior marginal seta situated near basal angle. Both setae slightly removed from margin. Microreticulation more or less superficial, apparently less distinct in males, irregularly transverse. Surface almost impunctate, impilose, smooth, fairly glossy.

**Elytra.** Moderately short and wide, about oviform, widest about at middle, moderately convex. Humeri angulate, though not dentate, sides moderately, almost evenly convex, apex convex, without any sinuation. Marginal channel narrow throughout. In apical 1/4 with an externally careniform internal plica. Epipleurae distinctly crossed near apex. All striae visible,

though only sutural stria well impressed, other striae not or barely impressed, visible as rows of faint punctures. Sutural stria distinctly punctate, almost crenulate. Scutellary pore present, scutellary stria indistinct, consisting of few widely spaced, shallow punctures. Behind scutellum with a shallow, oblique groove. 3rd interval with four discal punctures, all situated near 3rd stria. Marginal series consisting of 8-9 setiferous punctures, series widely separated in middle. Also with a setiferous puncture inside apical plica at end of 5th stria, and another puncture near apex at end of 3rd stria. Microreticulation more or less distinct, in males more superficial than in females, fairly transverse. Surface impunctate, moderately to fairly glossy. Posterior wings slightly shorter than elytra.

*Lower surface.* Prosternum impilose. Lower surface impilose. Metepisternum about as long a wide at apex. Terminal abdominal sternum in male bisetose, in female quadrisetose.

*Legs.* Fairly elongate, especially tarsi rather slender and elongate. Two basal tarsomeres of male protarsus slightly widened and biserially squamose.

*Male genitalia.* Genital ring narrow, elongate, almost symmetric, apex wide, somewhat spoon-shaped. Aedeagus narrow and elongate, sharply curved near base, lower surface almost straight, apex short, distinctly bent down. Orificium short. Internal sac rather complexly folded, with some narrow sclerites in basal part. Parameres large, very dissimilar, right paramere very narrow, elongate, left paramere large, rather triangular, comparatively short. Both parameres with two elongate setae at apex.

*Female genitalia.* Apex of 1st stylomere asetose. 2nd stylomere elongate, narrow, with acute apex, without latero-ventral and dorso-median ensiform setae, with two elongate, nematiform setae near apex that originate from an oblong pit.

*Variation.* Some variation noted in relative shape of pronotum and in microreticulation of surface. With respect to the small number of available specimens it is so far unknown, to what extent this is due to sexual variation.

**DISTRIBUTION.** Lamington Plateau near Queensland/New South Wales border, southeastern Queensland. Known only from that range.

**HABITS.** This species lives on tree trunks in montane rain forest above about 1000m. One

specimen was sampled from *Nothofagus* which is evidence that the species also occurs in temperate (*Nothofagus*) rain forest that covers the highest tops of Lamington Plateau.

**ETYMOLOGY.** Refers to the species range.

***Sloaneana similis* sp. nov.**  
(Fig. 3)

**MATERIAL EXAMINED.** HOLOTYPE: ♂, SEQ: 28°15'S; 153°16'E Springbrook Repeater, 21 Dec 1996. 1000m G.B. Monteith Pyrethrum, dead trees (QMT93094). PARATYPE: ♀, Lamington NP, O'Reillys, 1000m, 1.2.1982 M. Baehr (CBM).

**DIAGNOSIS.** Small species with angulate basal pronotal angles, distinguished from closely related *S. lamingtonensis* sp. nov. by smaller size, tripunctate elytra, shallower and almost impunctate elytral striae, and straight apex of aedeagus.

**DESCRIPTION.** *Measurements.* Length: 3.05-3.25mm; width: 1.4-1.5mm; ratio width/length of pronotum: 1.49-1.53; ratio base/apex of pronotum: 1.65-1.68; ratio width of pronotum/width of head: 1.65-1.70; ratio length/width of elytra: 1.36-1.39; ratio width of elytra/width of pronotum: 1.26-1.28.

*Colour.* Piceous-black to black, with more or less distinct metallic lustre. Lateral margins of pronotum and elytra narrowly reddish. Mandibles and palpi reddish, penultimate palpomeres darker. Three basal antennomeres light reddish, rest piceous. Legs light reddish, femora in parts and basal half of external surface of tibiae slightly darker. Lower surface piceous, epipleurae reddish.

*Head.* Rather narrow in comparison with prothorax. Frons convex, with some extremely shallow transverse furrows. Frontal furrows deep, semicircular, margins barely crenulate. Eyes large, moderately protruding, with small, obliquely convex orbits. Clypeo-frontal suture rather distinct. Anterior margin of clypeus straight, bisetose. Labrum short and wide, apex straight, 6-setose. Mandibles moderate, acute. Terminal palpomeres elongate, acute, impilose. Mentum with obtuse, triangular tooth, bisetose. Gula quadrisetose. Glossa narrow, bisetose, paraglossae slightly surpassing glossa. Antenna rather short, just surpassing base of pronotum, median antennomeres c. 1.5 x longer than wide, three basal antennomeres sparsely setose, densely setose from middle of 4th antennomere. Microreticulation distinct on labrum and apical half of clypeus, very superficial or almost

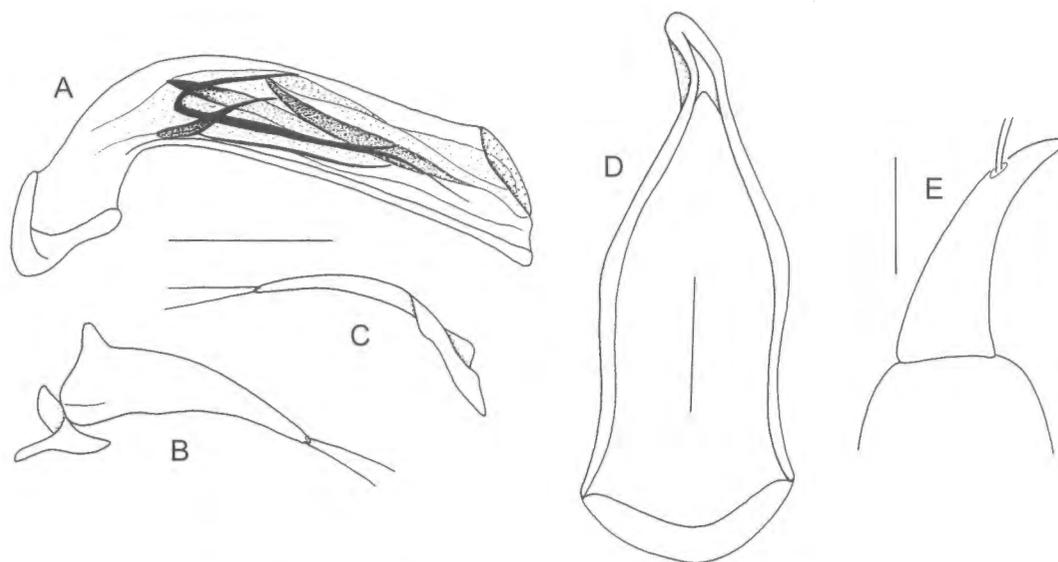


FIG. 3. *Sloaneana similis* sp. nov. Male A, aedeagus, B, C, parameres, and D, genital ring; scale bars = 0.25mm. E, female stylomere 2 and base of stylomere 1; scale bar = 0.1mm.

wanting on frons, about isodiametric. Surface impunctate, impilose, rather glossy.

**Pronotum.** Wide, somewhat triangular. Apex considerably wider than base, barely concave, anterior angles broadly rounded, barely produced. Sides almost evenly rounded, widest shortly in front of base. Basal angles angulate, though about  $100^\circ$ . Base almost straight. Apex rather distinctly bordered, lateral margins markedly bordered, border widened in apical half. Base laterally thickly bordered, border in middle highly superficial. Lateral channel rather narrow throughout. Disk evenly convex. Median line distinct, fairly impressed, complete. Anterior transverse sulcus very shallow, prebasal sulcus laterally close to basal margin, in middle convex, fairly deep. Basal grooves wide fairly deep, oblique, separated from lateral margin by a wide, conspicuous, convex hump. Anterior marginal seta situated at anterior  $2/5$ , posterior marginal seta situated near basal angle. Both setae slightly removed from margin. Microreticulation absent, surface almost impunctate, impilose, smooth, glossy.

**Elytra.** Moderately short and wide, about oviform, widest about at middle, moderately convex. Humeri angulate, though not dentate, sides moderately, almost evenly convex, apex convex, without any sinuation. Marginal channel narrow throughout. In apical  $1/4$  with an

externally careniform internal plica. Epipleurae distinctly crossed near apex. All striae visible, though only sutural stria slightly impressed, other striae not impressed, visible as extremely superficial rows of faint punctures. Sutural stria barely punctate, not crenulate. Scutellary pore present, scutellary stria absent. Behind scutellum with a shallow, oblique groove. 3rd interval with three discal punctures, all situated near 3rd stria. Marginal series consisting of 8-9 setiferous punctures, series widely separated in middle. Also with a setiferous puncture inside apical plica at end of 5th stria, and another puncture near apex at end of 3rd stria. Microreticulation absent in both sexes. Surface impunctate, glossy. Posterior wings slightly shorter than elytra.

**Lower surface.** Prosternum impilose. Lower surface impilose. Metepisternum slightly shorter than wide at apex. Terminal abdominal sternum in male bisetose, in female quadrisetose.

**Legs.** Fairly elongate, especially tarsi rather slender and elongate. Two basal tarsomeres of male protarsus slightly widened and biserially squamose.

**Male genitalia.** Genital ring narrow, elongate, rather symmetric, laterally distinctly incurved, apex rather narrow, slightly asymmetric. Aedeagus rather narrow and elongate, sharply curved near base, lower surface straight, apex very short, straight. Orificium short. Internal sac

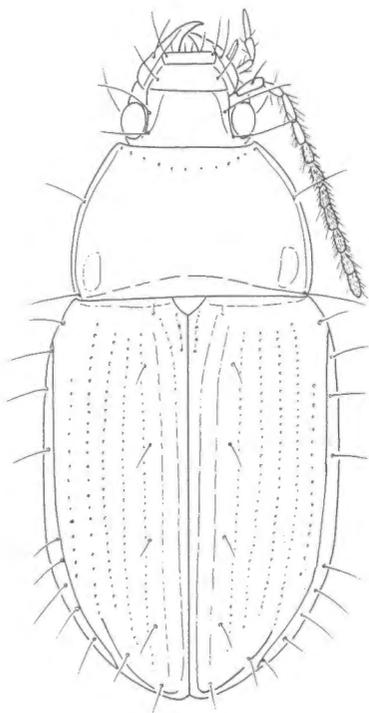


FIG. 7. *Sloaneana lamingtonensis* sp. nov. Habitus. Length: 3.65mm.

rather complexly folded, with some narrow sclerites in basal part. Parameres large, elongate, very dissimilar, right paramere extremely narrow, left paramere large, rather triangular, comparatively elongate. Both parameres with two elongate setae at apex.

*Female genitalia.* Apex of 1st stylomere asetose. 2nd stylomere elongate, narrow, with acute apex, without latero-ventral and dorso-median ensiform setae, with two elongate, nematiform setae near apex that originate from an oblong pit.

*Variation.* Very little variation noted. In the female paratype external striae of elytra even less distinct than in male holotype.

**DISTRIBUTION.** Lamington and Springbrook Plateaus near the Queensland/NSW border, SE Queensland.

**HABITS.** This species lives on tree trunks in montane rain forest above about 1000m. The paratype was collected in subtropical montane rain forest; the holotype might have been collected either in rain forest or in *Nothofagus* forest.

**ETYMOLOGY.** Similar to *S. lamingtonensis* sp. nov.

**REMARKS.** The occurrence of two species of the southern genus *Sloaneana* in SE Queensland indicates a considerable range extension of the genus and generally of the subfamily Merizodinae to the north through the whole of New South Wales. The occurrence of so-called Antarctic or Bassian faunal elements in subtropical or even tropical latitudes is not too unusual, provided the environments are of 'Bassian' type. See for example the existence of an – undescribed – migadopine species in North Queensland (G. Monteith, pers. inform.). Why should Bassian faunal elements not exist in Bassian *Nothofagus* forests on the top of Lamington Plateau?

However, it is extraordinary that this limited area is the home of two very similar, sympatric and most probably even syntopic species, whereas the whole of Tasmania, SE Victoria and southernmost NSW is inhabited by only one species of *Sloaneana*. As both new species are externally very similar, colonization of Lamington plateau by two different stocks of *Sloaneana* is very unlikely. Hence, the species probably have evolved by sympatric evolution within their present range.

This hypothesis may be tested in future, perhaps through further discovery of *Sloaneana* in NSW.

#### KEY TO THE SPECIES OF *SLOANEANA* CSIKI

1. Pronotum markedly curved inwards towards basal angle, basal angle obtuse, posterior lateral seta slightly removed from lateral margin; pronotum without conspicuous boss in basal angle, transverse basal sulcus indistinct, not sharply impressed; elytra bipunctate; apex of aedeagus narrow, straight (Fig. 1), neither short and compact (Fig. 3), nor downcurved (Fig. 2); female stylomere 2 with two ventro-lateral ensiform setae (Fig. 1). Tasmania, E Victoria, adjacent SE NSW  
 . . . . . *tasmaniae* (Sloane)  
 Pronotum not much curved inwards towards basal angle, basal angle angulate, posterior lateral seta at lateral margin; pronotum with conspicuous fold in basal angle, transverse basal sulcus distinct, sharply impressed (Fig. 3); elytra tripunctate or quadripunctate; apex of aedeagus either short and compact (Fig. 3), or downcurved (Fig. 2); female stylomere 2 without ventro-lateral ensiform setae (Figs 5, 6). Lamington and Springbrook Plateaus, SE Queensland . . . . . 2
2. Larger species, body length >3.6mm; elytra quadripunctate, striae more deeply impressed, distinctly punctate; apex of aedeagus downcurved, both parameres shorter and wider (Fig. 2) . . . . .  
 . . . . . *lamingtonensis* sp. nov.  
 Smaller species, body length <3.3mm; elytra tripunctate, striae barely impressed, almost impunctate; apex of

aedeagus short and straight, both parameres longer and narrower (Fig. 3) . . . . . *similis* sp. nov.

## ACKNOWLEDGEMENTS

My sincere thanks are due to Dr G.B. Monteith, Brisbane, for stimulating work on the new species and for loan of most of the examined material, and to Dr H. Pieper, Kiel, for providing Tasmanian specimens, collected by him in 1998.

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## APPENDIX 1

For better comparison of the new species with *S. tasmaniae* (Sloane) the measurements and ratios of the three species are compiled in Table 1. From *S. tasmaniae* five specimens from Tasmania were at hand.

## APPENDIX 2

A new record of the Tasmanian merizodine *Pterocyrtus rubescens* Sloane is now available. A single specimen was collected by H. Pieper (Kiel) at Mount Field in southwestern Tasmania (Mt Field, Lyrebird Walk, 20.11.1998). According to Moore et al. (1987) this species had been known only from the holotype. Hence, this is the second (published) record of this species since description (Sloane, 1920). The type locality is Waratah in northwestern Tasmania. *Pterocyrtus rubescens*, therefore, seems to be distributed more extensively in western Tasmania.

TABLE 1.

	N	Body length(mm)	Ratio width/length pronotum	Ratio width base/apex pronotum	Ratio width pronotum/head	Ratio length/width elytra	Ratio width elytra/pronotum
<i>tasmaniae</i>	5	4.1-4.4	1.45-1.48	1.67-1.73	1.87-1.91	1.36-1.39	1.16-1.18
<i>lamingtonensis</i>	5	3.65-3.85	1.51-1.56	1.65-1.69	1.72-1.76	1.34-1.38	1.24-1.26
<i>similis</i>	2	3.05-3.25	1.49-1.53	1.65-1.68	1.65-1.70	1.36-1.39	1.26-1.28