

Discovery of Chlamydopsinae (Insecta, Coleoptera, Histeridae) in Vanuatu with the description of eight new species from Espiritu Santo Island

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ABSTRACT

The first species of the obligately myrmecophilous and termitophilous subfamily Chlamydopsinae (Coleoptera, Histeridae) from Vanuatu were discovered at the western slopes of Saratsi Range, Cumberland Peninsula, Espiritu Santo Island, during the SANTO 2006 biological survey. Eight new species in three genera were collected by flight intercept traps along the elevation transect from 100-900 m above sea level and are described herein: *Ceratohister vanuatu* n. sp., *Chlamydopsis caterinoi* n. sp., *Eucurtiopsis corbarai* n. sp., *E. degallieri* n. sp., *E. ibisca* n. sp., *E. kitchingi* n. sp., *E. pascali* n. sp. and *E. penaoru* n. sp. Nothing is known about their social insect hosts since limited search in colonies of some common ant species did not yield any beetles.

RÉSUMÉ

Découverte de Chlamydopsinae (Insecta, Coleoptera, Histeridae) au Vanuatu et description de huit espèces nouvelles de l'île d'Espiritu Santo.

Les premières espèces de la sous-famille des Chlamydopsinae (myrmécophiles et termitophiles obligés) du Vanuatu ont été découvertes sur les pentes ouest de la chaîne de Saratsi, péninsule de Cumberland, île d'Espiritu Santo durant l'expédition SANTO 2006. Huit espèces nouvelles de trois genres ont été récoltées par des pièges d'interception le long d'un transect entre 100 et 900 m d'altitude et sont décrites ici : *Ceratohister vanuatu* n. sp., *Chlamydopsis caterinoi* n. sp., *Eucurtiopsis corbarai* n. sp., *E. degallieri* n. sp., *E. ibisca* n. sp., *E. kitchingi* n. sp., *E. pascali* n. sp. et *E. penaoru* n. sp. On ne sait rien des insectes sociaux constituant leurs hôtes, des recherches limitées dans des colonies de quelques espèces connues de fourmis n'ont pas permis de découvrir de coléoptères.

KEY WORDS

Insecta,
Coleoptera,
Histeridae,
Chlamydopsinae,
Ceratohister,
Chlamydopsis,
Eucurtiopsis,
Vanuatu,
Espiritu Santo,
myrmecophily,
new species.

MOTS CLÉS

Insecta,
Coleoptera,
Histeridae,
Chlamydopsinae,
Ceratohister,
Chlamydopsis,
Eucurtiopsis,
Vanuatu,
Espiritu Santo,
myrmécophilie,
espèces nouvelles.

INTRODUCTION

The Chlamydopsinae, an obligately myrmecophilous and termitophilous subfamily of Histeridae, has been a subject of extensive taxonomic and systematic research during the past decade (review in Caterino & Dégallier 2007). As a result, its status has been changed from a minor group considered to be subendemics of Australia, with 47 species listed in the last world catalogue (Mazur 1997), to one of major components of histerid diversity in the Oriental Region, Australia and Oceania with 178 described species. However, the discovery of large and unique insular faunas have suggested the existence of many more undiscovered taxa across these regions (Caterino 2007; Caterino & Dégallier 2007; Tishechkin & Caterino 2007). One notable example was the case of the New Caledonian fauna, the description of which resulted in the near doubling in the size of a presumably well known local fauna of Histeridae (Caterino 2006).

The discovery of unsuspected New Caledonian fauna of Chlamydopsinae was mostly a result of two expeditions of Geoff Monteith (Queensland Museum), and his collecting by flight intercept traps in particular. Thus, it appeared that use of appropriate collecting techniques might reveal undiscovered diversity elsewhere in Melanesia. This conclusion seemed to me to be true in the fall of 2006, just a few months after the publication of Caterino's (2006) revision, when I took off for five-week long fieldwork in Espiritu Santo Island as a part of IBISCA-Santo Team. Geographic position of the Vanuatu Archipelago and relatively large size and complexity of Santo Island allowed to suspect the presence of chlamydopsines there. The current overall knowledge of the Histeridae in Vanuatu is minimal: the presence of only five species has been reported there to date (Mazur 1997) and none of them belongs to the Chlamydopsinae. My hope was to discover a local chlamydopsine fauna by extensive flight intercept trapping and so make another step in filling gaps in the knowledge of taxonomy and biography of the group and improving the understanding of evolutionary history of Chlamydopsinae and Melanesian fauna. The

results of this trip – the discovery of eight new species belonging to three genera – greatly exceeded my wildest expectations and are presented and discussed below.

MATERIAL AND METHODS

This study is based on material collected in November-December 2006 during the SANTO 2006 biological survey organized by the Muséum national d'Histoire naturelle, Paris (MNHN), the Institut de Recherche pour le Développement and ProNatura International. For a narrative of the expedition, see Bouchet *et al.* (2008), and for a review of the geography and natural history of Santo, we refer to Bouchet *et al.* (in press). Briefly, collecting was done east of Penaoru village, on western slopes of Saratsi Range, Cumberland Peninsula, Santo Island, along the altitudinal transect from 100-1200 m of altitude. Three flight intercept traps (1 × 3 m, with eight 31 cm-long pans placed under every trap) serviced daily (occasionally twice a day or once in two days) were run for five days at five study plots at different altitudes, 100, 300, 600, 900 and 1200 m. Extra trapping was also done at those plots and different sites along the transect. The transect ran primarily through non- or slightly disturbed rainforest, with a few minor clearings and patches of tall secondary forest, more widespread at lower elevations. This covered forests of the entire available range of elevations locally, as continuous forests are present there from about 100 m, 4 km from the coastline, to the local highest peak of the range at about 1300 m.

According to the original arrangement with the Government of Vanuatu, specimens (including all holotypes) are deposited in the collection of MNHN. Some paratype specimens are also deposited in Louisiana State Arthropod Museum, Baton Rouge, LA, USA (LSAM) and research collection of the author (coll. AKT). Methods of specimen dissection and illustration preparation follow Tishechkin (2007). Terminology and body part measurement conventions follow Caterino (2003, 2006). Measurements are presented at the

beginning of descriptions as averages of all specimens available (10 randomly selected specimens in case of series exceeding 10) and are abbreviated as follows.

ABBREVIATIONS

L dorsal length along midline (mm);
W width across humeri (mm);
E/PnL elytral length/pronotal length (ratio);

E/PnW elytral width/pronotal width (ratio);
Pn W/L pronotum width/length (ratio);
E L/W elytra length/width (ratio);
Pr/Py propygidium length/pygidium length (ratio);
Sterna – pro, meso, meta lengths along midline (mm);
Tibiae – pro, meso, meta straight line length from base to apex, ignoring curvature (mm).

KEY TO THE SPECIES OF VANUATUAN CHLAMYDOPSIINAE BICKHARDT, 1914

1. Elytra without trichomes *Ceratohister vanuatu* n. sp.
— Elytra with prominent humeral trichomes 2
2. Pronotum transverse, septagonal, its anterior and lateral margins raised and fringed with a row of long yellow setae *Chlamydopsis caterinoi* n. sp.
— Pronotum subquadrate or elongate, without raised margins and setose fringe 3
3. Entire surface of elytra, including part of trichome elevations and most of area between them, covered with dense large punctures; pronotum with the same type of punctuation throughout the entire surface, dorsal setae sparse, small and inconspicuous
..... *Eucurtiopsis penaoru* n. sp.
— Substantial area of elytral surfaces, including on and between trichome elevations, lack punctures, smooth and shiny 4
4. Dorsal surface with abundant conspicuous setae prominently arranged into clusters on pronotum and posterior parts of elytra 5
— Elytra and often pronotum without conspicuous setal clusters, setation absent or at best with minute background setation obvious under higher magnification 7
5. Most of elytral surface smooth and shiny, area of sparse punctuation present only in posterior third medially, along suture *Eucurtiopsis ibisca* n. sp.
— Most of elytral surface covered with dense large punctures, punctuation always reaching lateral margins of pronotum in posterior half and present at elytral bases between trichomes ... 6
6. Both trichome elevations and area between them with surfaces shiny, without punctures; parts of anterior elevations posterior to transverse ridges slightly convex
..... *Eucurtiopsis corbarai* n. sp.
— Basal parts of both trichome elevations and presutural parts of area between them with conspicuous dense punctures; parts of anterior elevations posterior to transverse ridges distinctly concave *Eucurtiopsis kitchingi* n. sp.
7. Elytra smooth and shiny, only with a few punctures in presutural area; pronotum with sparse punctures and numerous small tubercles bearing tufts of setae atop; trichomes small and narrow *Eucurtiopsis degallieri* n. sp.
— Elytra with large deep punctures variably covering most of posterior half and substantial areas near bases; pronotum with dense punctures and numerous small tubercles, without setae; trichomes large and wide, extending beyond trichome elevations on flat surface between them as narrow angular projections *Eucurtiopsis pascali* n. sp.

SYSTEMATICS

Family HISTERIDAE Gyllenhal, 1808
 Subfamily CHLAMYDOPSINAE Bickhardt, 1914
 Genus *Ceratohister* Reichensperger, 1924

Ceratohister vanuatu n. sp.
 (Fig. 1)

HOLOTYPE. — “VANUATU: Santo, Cumberland Peninsula, Saratsi Range at 14.9638°S 166.6362°E. 500 m Fl. intercpt. FL5A-2. 28-29 Nov 2006. A. K. Tishechkin AT805 / HOLOTYPE *Ceratohister vanuatu* sp. n. A. Tishechkin des. 2008”, ♀ point-mounted (MNHN).

PARATYPE. — Labeled as the holotype, but with the “Paratype” instead of “Holotype” designation label, also bears the following label “Caterino DNA Voucher Extraction: MSC-1212 Species: *Ceratohister* Extraction Date: I.26.2007”, 1 ♀ (MNHN).

ETYMOLOGY. — The specific epithet is a noun in apposition referring to the name of the country of species origin.

DESCRIPTION

L: 1.61 mm; W: 1.09 mm; E/Pn L: 1.82; E/Pn W: 1.17; Pn W/L: 1.22; E L/W: 1.04; Pr/Py: 0.81; sterna: 0.68, 0.07, 0.33; tibiae: 0.41, 0.41, 0.41. Body tear drop-shaped (Fig. 1A, C), dark rufescent brown, with elytra, antennae and legs slightly lighter. Frons (Fig. 1D) slightly longer than wide, with sides parallel, bordered by costate marginal striae, indented at antennal insertions, with large, deep punctures and fine alutaceous background microsculpture along edges, intervals between punctures with small scale-like setae; labrum short, transverse triangular, with the same type of microsculpture and setae and a few smaller punctures; mandibles strongly bent, with long narrow tips, with the same type of setae and small punctures on outer edges; maxillar palpi with three palpomeres, labial palpi with two palpomeres, mentum fused to submentum; antennal scape about half as broad as long, arcuate, widest at about midpoint, punctuation similar to that of frons, but punctures smaller and denser, microsculpture covers its entire surface; antennal funicle (of female) collectively slightly shorter than scape; antennal club (of female) elongate oval, as long as funicle, densely covered with setae.

Pronotum (Fig. 1A) subquadrate, with posterior margin almost straight, with weak obtuse projection

in the middle, sides widest at about midpoint, weakly convex; marginal striae visible from above only near base, then abruptly descending downwards to meet supracoxal striae, ascending again anteriorly towards antennal sockets; anterior margin weakly bisinuate, with a pair of weak inconspicuous elevations in the middle, margins of antennal sockets also slightly elevated; pronotal disk surface evenly weakly convex, smooth, completely covered with large, dense, deep punctures and short appressed scale-like setae; antennal cavities almost inconspicuous from above. Prosternum (Fig. 1B) long; prosternal leg depression margined by raised carina; prosternal disk punctate throughout with irregularly spaced deep large punctures, leaving only a narrow impunctate band along anterior margin; prosternal keel flat, long, its margins outlined by straight parallel low ridges, connected by a loop anteriorly; similar longitudinal ridge present along pronotal midline between carinal ridges; posterior margin of pronotum widely outwardly circular.

Scutellum (Fig. 1A) not visible. Elytra (Fig. 1A, C) without humeral trichomes; elytral disk evenly convex, its surface with background sculpture of low smooth ridges, more or less parallel in the median part of it and more irregular and anastomosing laterally, covered with similar, but slightly denser punctuation as pronotum; elytral surface with numerous short scale-like setae, situated mostly atop of microridges and so more or less longitudinally arranged; elytral marginal stria complete, running along elytral margin throughout; sutural stria absent, substituted by a row of regularly spaced dense large punctures; epipleuron narrow, smooth, shiny and asetose.

Mesoventrite (Fig. 1B) short, about eight times as wide as median length; circularly concave at middle, marginal stria inconspicuous; disc of mesoventrite flat, with two rows of small deep punctures; mesepimeron prominent, impunctate; mesometaventral suture thin, inconspicuous, continuous at side with complete raised lateral stria of metaventrite; disc of metaventrite with dense large punctures and raised intervals, forming wavy background pattern, covered with appressed short scale-like setae; median suture of metaventrite distinct, but thin, abbreviated near posterior margin; posterior margin without transverse stria; first abdominal ventrite similar in texture and setation to metaventrite, punctuation

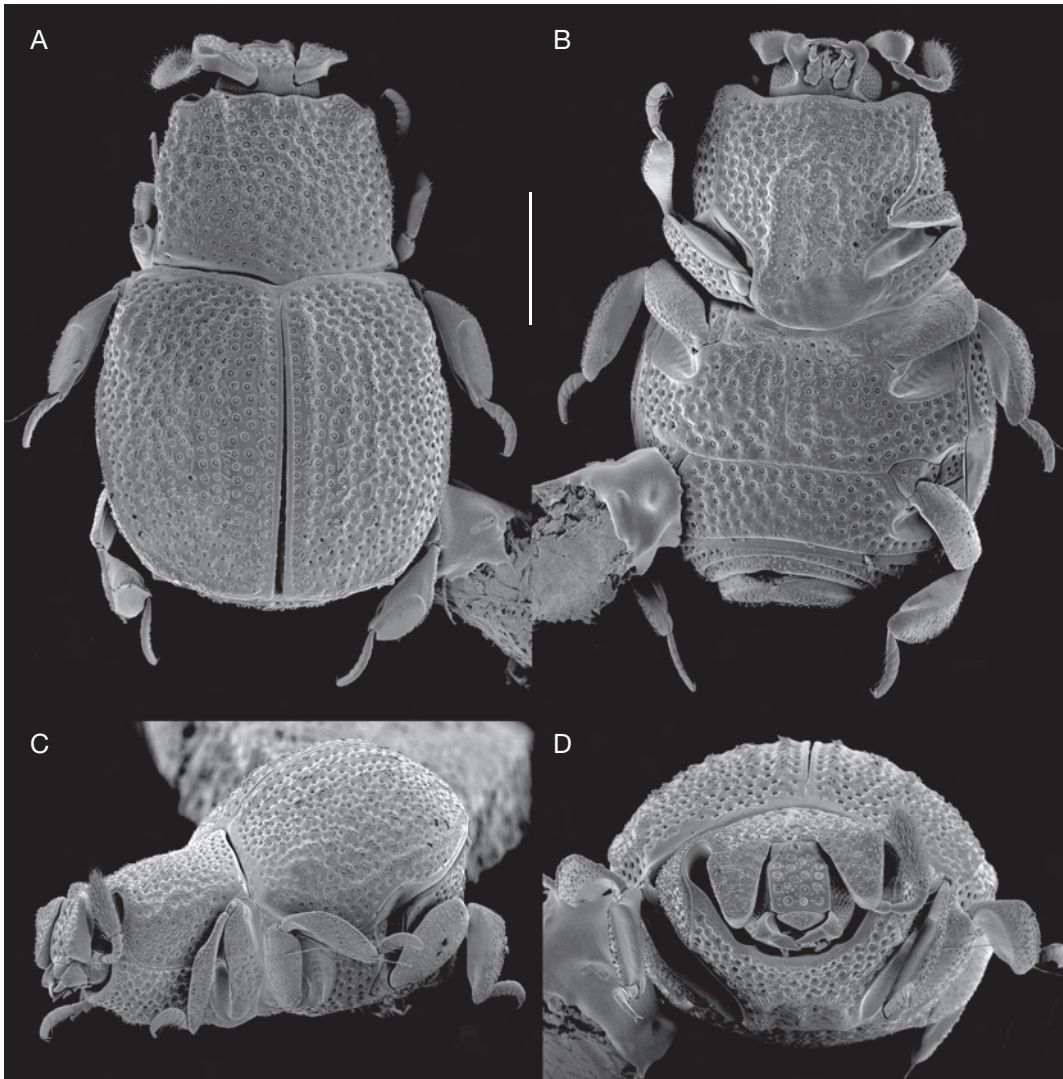


FIG. 1. — *Ceratohister vanuatu* n. sp., habitus: **A**, dorsal view; **B**, ventral view; **C**, lateral view; **D**, frontal view. Scale bar: A, B, 0.5 mm.

being sparser posteriorly, with raised stria delimiting depression for reception of metathoracic leg.

Femora (Fig. 1B, C) rather stout, edges of profemora almost straight, edges of meso- and metafemora arcuate, all margined along anterior and posterior sides, surfaces with punctures and scale-like setae, punctures much larger on profemora; protibia angulate about one-fourth from base, almost straight to narrow rounded apex; meso- and metatibia roundly

angulate about one-third from base, mesotibia narrower and less angulate than metatibia; tarsi slightly laterally compressed, about 0.6-0.7 times length of corresponding tibiae; tarsal claws simple, divergent, weakly arcuate, about 0.3 times length of corresponding apical tarsomere.

Propygidium with disc more or less flat, pygidium slightly convex; both textured and punctured similarly to pronotum.

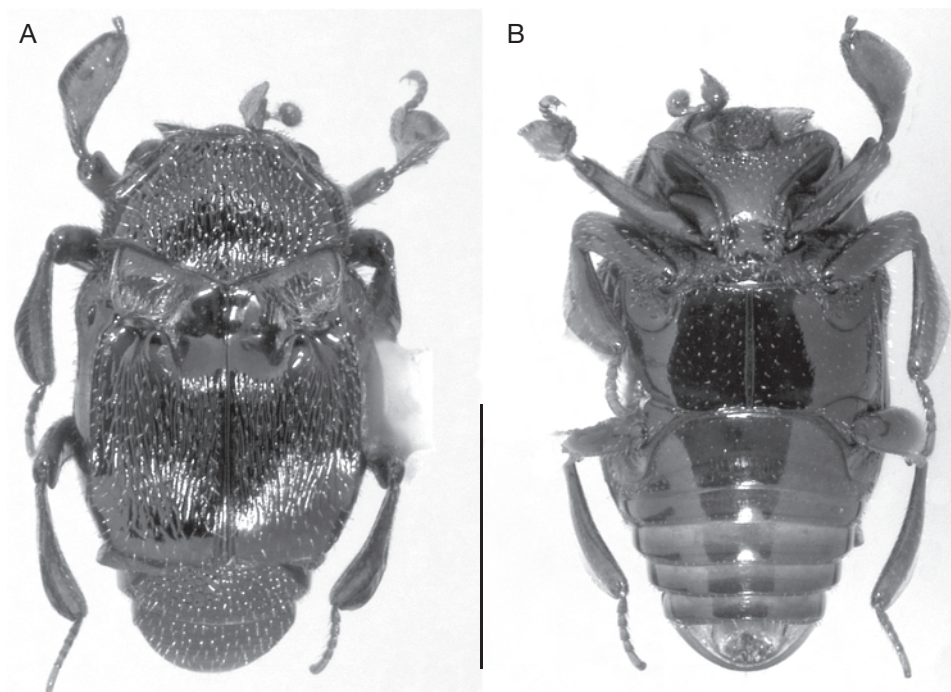


FIG. 2. — *Chlamydopsis caterinoi* n. sp., habitus: **A**, dorsal view; **B**, ventral view. Scale bar: 1 mm.

Genus *Chlamydopsis* Westwood, 1869

Chlamydopsis caterinoi n. sp.
(Figs 2-4)

HOLOTYPE. — “VANUATU: Santo I., Cumberland Peninsula, Saratsi Range at 14.9667°S 166.6560°E. 900m Flight intercept FL9C-13. 25-27 Nov 2006. A.K.Tishechkin AT791 / HOLOTYPE *Chlamydopsis caterinoi* sp. n. A.K.Tishechkin des. 2008”, ♂ point-mounted (MNHN).

PARATYPES (2). — Same locality as the holotype, “Caterino DNA Voucher Extraction: MSC-1214 Species: *Chlamydopsis* Extraction Date: i.26.2007”, flight intercept trap, 10-11.XI.2006, A. K. Tishechkin coll., 1 ♂ (coll. AKT). — Saratsi Range, 14.9641°S, 166.6479°E, 600 m, flight intercept trap, 10-11.XI.2006, A. K. Tishechkin coll., 1 ♀ (MNHN).

ETYMOLOGY. — The species is dedicated to my colleague and friend Mike Caterino of the Santa Barbara Museum of Natural History, in recognition of his great contributions to the taxonomy and systematics of Chlamydopsinae.

DESCRIPTION

L: 1.72; W: 1.22; E/Pn L: 2.06; E/Pn W: 1.24; Pn W/L: 1.62; E L/W: 1.02; Pr/Py: 0.80; sterna: 0.47, 0.09, 0.55; tibiae: 0.62, 0.65, 0.73. Body (Fig. 2A) elongate rectangular, dark rufescent brown, shining; most dorsal surfaces reticulostrigose, sparsely setose, setae faintly scale-like. Front of head (Fig. 3D), when retracted, slightly proclinate; frons with sides weakly rounded, about 1.2 times longer than wide, reticulately punctured, with sparse scattered scale-like setae; labrum about 2.3 times as wide as long, anterior margin obtusely triangular, disc shallowly reticulopunctate; mandibles strongly bent, with long narrow tips, with the same type of setae and smaller punctures on outer edges; maxillar palpi with four palpomeres, labial palpi with three palpomeres, mentum present as separate sclerite; antennal scape 2.2 times longer than wide, widest near basal third, disc faintly reticulate in proximal half, with scattered scale-like setae; antennal club of female about two-thirds, that of male almost equals, scape length.

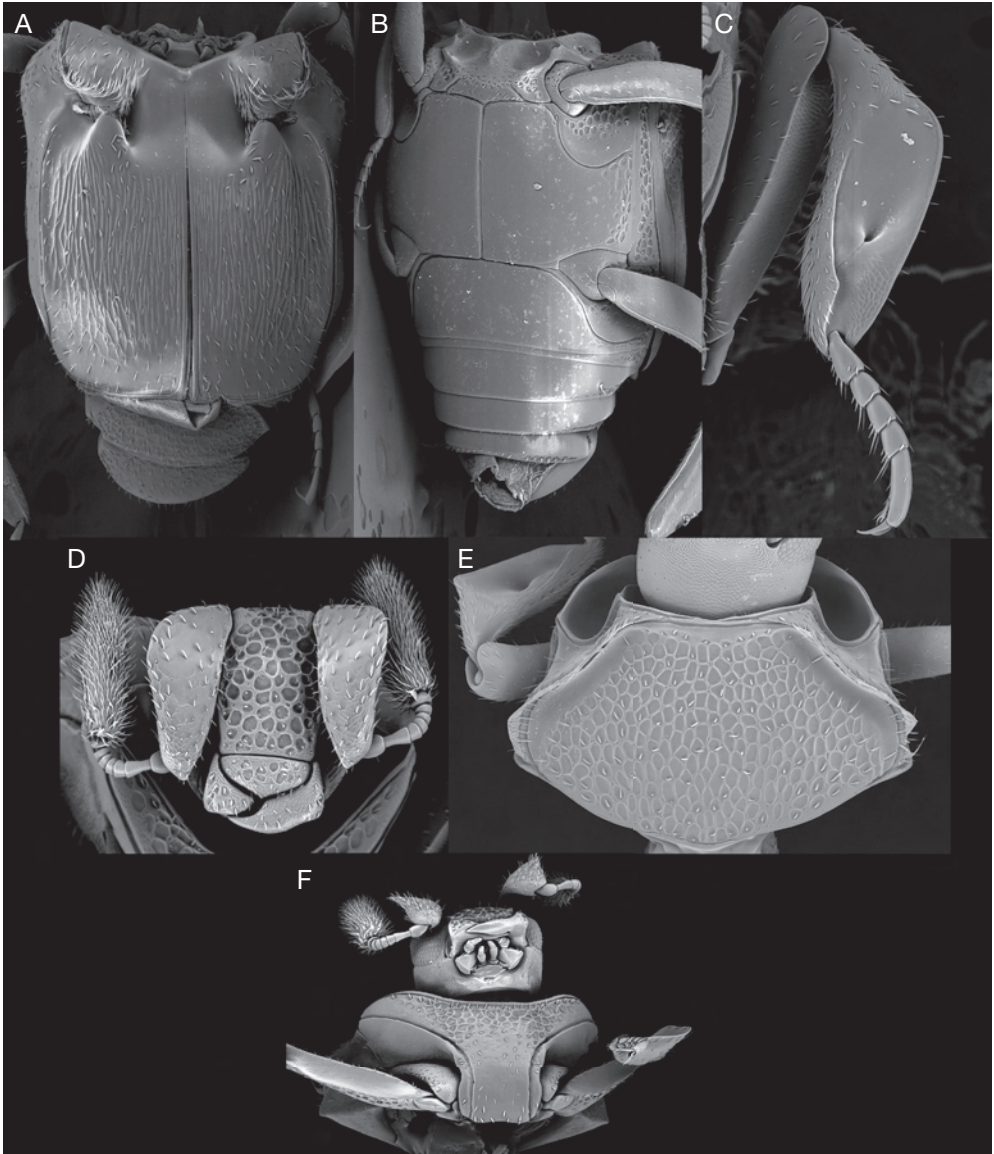


FIG. 3. — *Chlamydopsis caterinoi* n. sp.: **A**, elytra, dorsal view; **B**, sterna, ventral view; **C**, protibia, dorsal view; **D**, frontal view; **E**, pronotum; **F**, prosternum.

Pronotum (Figs 2A; 3E) with posterior margin obtusely angulate, its sides approximately parallel in basal half, converging apically to one-half basal width; lateral pronotal margin slightly elevated, with several short, scale-like setae (absent from anterior margin); lateral and anterior pronotal margins with

continuous, fine, deep groove just inside margin; pronotal disc moderately convex medially, flattened towards sides, entirely reticulostrigose, more elongately so posteromedially, except narrow smooth band along lateral elevation. Antennal cavities (Fig. 3E) broadly exposed from above, margined

posteriorly with fine, almost continuous marginal stria, briefly interrupted at the middle, just anterior of marginal groove of pronotal disc. Prosternum (Figs 2B; 3F) short, its anterior margin broadly, weakly emarginate, with fine marginal stria broadly interrupted in the middle; prosternal keel sharply rising in anterior two-thirds (reducing prosternal "depth" anteriorly), narrowed between procoxae, slightly emarginate posteriorly, bordered laterally by deeply impressed circumcoxal stria; anterior half of prosternal disc reticulostrigose, prosternal keel smooth.

Scutellum (Figs 2A; 3A) distinct, small, triangular. Elytra (Figs 2A; 3A) with prominent humeral trichomes in basal third, with single broad, more or less flat, setose anterior elevation bearing anterior superficial stria along its outer edge, with a fringe of longer and denser setae along apex; apical edges of anterior and posterior trichome elevations meeting near their apices, both with dense, golden setal fringe beneath meeting point; posterior trichome elevations much smaller than anterior ones, conical, with a tuft of dense setae on inner edge near apex corresponding to a similar, but denser and larger tuft on inner edge of anterior elevation; epipleuron separated from elytral dorsum by finely impressed stria extending from posterolateral corner anteriorly, curving into opening of trichome; most of elytral dorsum posterior of trichome elevation covered with dense longitudinal microsculpture consisting of short longitudinal ridges, sparsely setose, with reticulae more elongate across middle third of elytral dorsum; mediobasal depression and posterior sixth of elytral dorsum impunctate and glabrous; epipleuron mostly smooth, with reticulostrigose area confined to antero-dorsal corners; sutural striae continuous with marginal striae, abbreviated in basal third.

Mesoventrite (Figs 2B; 3B) rather narrow, weakly projecting at middle, and extending forward around inner edge of mesocoxa; marginal stria obsolete at middle, visible mainly as oblique lateral fragments well mesal of mesocoxa; disc with small shallow punctures; mesometasternal suture and median metasternal sutures finely but deeply impressed; disc of metaventrite impunctate, smooth, asetose, with a few small punctures at sides and within mesotibial depressions, with complete arched lateral stria of

metaventrite; first abdominal ventrite smooth, impunctate and asetose, with postcoxal stria deeply impressed, continuous across middle.

Femora (Figs 2B; 3B) slightly widened apically, outer surface of profemur with few punctures along anterior margin near base, otherwise exposed surfaces of all femora impunctate, with fine sparse setae; protibia (Fig. 3C) broadly rounded, somewhat thickened just beyond middle, tarsal groove expanded, with single fovea near its midpoint (about one-third from apex of tibia), outer margin sinuous; posterior surface of tibia sparsely setose; posterior tibiae with outer edges rounded, mesotibia widest near middle, metatibia widest about two-thirds from base; tarsi slightly laterally compressed, about 0.7-0.8 times length of corresponding tibiae; tarsal claws simple, divergent, weakly arcuate, about 0.5 times length of corresponding apical tarsomere.

Propygidium and pygidium (Fig. 3A) both weakly convex, both reticulopunctate, pygidium becoming smooth in apical half. Male genitalia as on Figure 4.

Genus *Eucurtiopsis* Silvestri, 1926

Eucurtiopsis corbarai n. sp.

(Fig. 5)

HOLOTYPE. — "VANUATU: Santo I., Cumberland Peninsula, Saratsi Range at 14.9626°S 166.6485°E. 600 m Flight intercept FL6B-5. 9-10 Nov 2006. A. K. Tishechkin AT648 / HOLOTYPE *Eucurtiopsis corbarai* sp. n. A. Tishechkin des. 2008", ♀ point-mounted (MNHN).

PARATYPES (3). — Same locality and date as the holotype, flight intercept trap, A. K. Tishechkin coll., 1 ♀ (coll. AKT). — Saratsi Range, 14.9657°S, 166.6521°E, 700 m, flight intercept trap, 30.XI-1.XII.2006, A. K. Tishechkin coll., 1 ♀ (MNHN). — Saratsi Range, 14.9667°S, 166.6560°E, 900 m, flight intercept trap, 16.XI.2006, A. K. Tishechkin coll., also bears the following label "DNA Extraction TAK-0003. May 2009 Baton Rouge", 1 ♀ (MNHN).

ETYMOLOGY. — The species honours Bruno Corbara of Université Blaise Pascal, Clermont-Ferrand, a true leader of the IBISCA Team, in appreciation of his inspiring enthusiasm for bringing people together to study poorly known tropical insect communities and great moments of joint fieldwork across the globe.

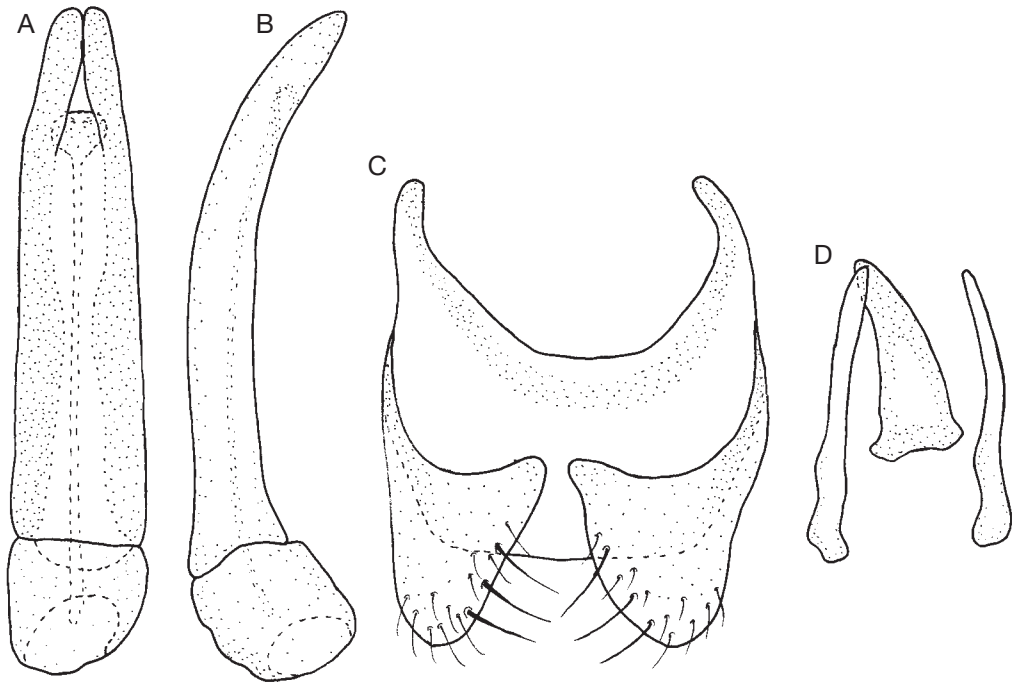


FIG. 4. — *Chlamydopsis caterinoi* n. sp., male genitalia: **A**, aedeagus, dorsal view; **B**, same, lateral view; **C**, eighth sternite-tergite complex; **D**, ninth sternite (spiculum gastrale) and tergite.

DESCRIPTION

L: 1.36; W: 0.90; E/Pn L: 1.93; E/Pn W: 1.56; Pn W/L: 1.18; E L/W: 1.05; Pr/Py: 0.89; Sterna: 0.42, 0.08, 0.37; Tibiae: 0.36, 0.42, 0.46. Body (Fig. 5A) elongate, rufescent brown, with antennae and legs somewhat paler, prothorax substantially narrower than elytra. Frons (Fig. 5D) 1.5 times longer than wide, sides weakly arcuate, incised at antennal bases, narrowed anteriorly, covered with deep, dense, mostly elongate punctures, with two parallel, longitudinal rows consisting of four irregular blunt tubercles arranged into indistinct ridges, each tubercle with a cluster of long branched setae; labrum weakly convex, semicircular, with few setae, punctation similar to that on frons; mandibles strongly bent, with long narrow tips, with few setae and small punctures on smooth outer edges; maxillar palpi with three palpomeres, labial palpi with two palpomeres, mentum apparently present as separate sclerite, separating suture present at least in laterobasal areas; antennal scape elongate

triangular, 1.4 times longer than wide, with inner edge weakly inwardly arcuate, its surface more or less flat, with apical angle bluntly rounded, disc densely punctate throughout with oval punctures, with conspicuous long branched setae; antennal funicle and club (of female) about one-half, and three-quarters length of scape, respectively.

Pronotum (Fig. 5A, C) with posterior margin shallowly obtusely angular, with sides unmargined, straight, faintly narrowed anteriorly; antennal cavities partially visible from above, with pronotal margin not elevated above; medial portion of pronotal margin unelevated, weakly arcuate; marginal striae visible from above only near base, then abruptly descend downwards to meet supracoxal striae, ascend again anteriorly towards antennal sockets; pronotal dorsum strongly convex, densely and deeply punctate throughout, with eight parallel, longitudinal rows of blunt tubercles arranged into indistinct ridges, two outer ridges on each side much less regularly linearly arranged than discal ridges, each

ridge consisting of four or five tubercles, clumps of elongate branched setae present on every tubercle, several single setae present along lateral sides of pronotum. Prosternum (Fig. 5B) with anterior margin broadly concave, marginal stria represented by series of elongate wrinkles; prosternal disc evenly convex, keel elevated between procoxae, flattened, slightly expanded posteriorly, emarginate at apex, disc densely punctate throughout, punctures primarily elongate, short branched setae scattered throughout the prothorax surface.

Scutellum (Fig. 5A) tiny, sunk below the elytral-pronotal plane, very poorly visible. Elytra (Fig. 5A, C) with sides weakly arcuate, widest around anterior trichome process; humeral trichome prominent, elevated, longitudinally oriented, anterior process rising almost vertically at base till transverse ridge, weakly obliquely rising thereafter, surface of its anterior part weakly convex with slight transverse concavity in the middle; posterior process less robust, evenly rising towards anterior one, its surface evenly convex; trichome with setae only along apical edges of processes, shallowly excavate beneath setose fringe, width of the fringe more than one-third of elytral width, trichome gap wide, about one-seventh of elytra length, fringe setae long and densely packed; dorsum of elytral disc with punctation occupying most of posterior half (although only few punctures present at lateral margins near posterior one-fourth) and a small cluster of punctures around scutellum with a single row of punctures extending to the middle of anterior elytral margin, no punctation present on and between trichome elevations except of mentioned prescutellar cluster; punctures deep and elongate, sparsely spaced, branched setae present throughout, being larger and clustered into separate clumps or looser groups in punctated areas and smaller and evenly distributed across smooth surfaces; sutural stria thin, but distinct, abbreviate in posterior one-third; epipleuron smooth and glabrous, with sparsely scattered short branched setae; marginal epipleural stria distinct, elevated above metafemur, continuous with complete marginal elytral stria; no traces of accessory epipleural stria present.

Mesoventrite (Fig. 5B) wide, short, weakly convex, bluntly projecting at middle, no traces of marginal stria present, surface with dense, deep, elongate

punctures; mesometaventral suture and median suture of metaventrite finely impressed, complete, but inconspicuous, lateral stiae of metaventrite present, elevated, enclosing largely impunctate depression for mesotibiae in repose; disc of metaventrite punctate throughout, primarily with circular punctures, with larger, denser and more elongate along anterior and lateral margins; first abdominal ventrite similarly punctate, punctures being on average larger and denser than on disc of metaventrite, with post-metacoxal line originating at metacoxa, extended directly posteriorly close to edge of sternite, curving laterad, terminating freely just before reaching epipleuron; surfaces of meso- and metaventrite and first abdominal ventrite with scattered short inconspicuous branched setae. Profemora (Fig. 5B, C) with dense punctures in basal two-thirds, becoming impunctate toward apex, with posterior margins obtusely angular in basal third, meso- and metafemora impunctate, their margins arcuate, metafemora much more robust than mesofemora; protibia with prominent angle at basal one-third of outer margins, meso- and metatibiae with outer margins more bluntly angulate, around midpoint; all tibiae longitudinally convex, meso- and metatibia with longitudinal sulci along inner edge; tarsi weakly compressed laterally about 0.6-0.7 times length of corresponding tibiae; tarsal claws simple, divergent, almost straight, about 0.4 times length of corresponding apical tarsomere.

Propygidium twice as wide as midline length, weakly convex; pygidium nearly as long as wide, weakly convex; both with punctures and setae as on the posterior half of elytral disc.

Eucurtiopsis degallieri n. sp.

(Figs 6; 7)

HOLOTYPE. — "VANUATU: Santo I., Cumberland Peninsula, Saratsi Range at 14.9667°S 166.6560°E. 900 m Flight intercept FL9C-7. 16-17 Nov 2006. A. K. Tishechkin AT717 / DNA Extraction TAK-0003. May 2009 Baton Rouge / HOLOTYPE *Eucurtiopsis degallieri* sp. n. A. Tishechkin des. 2008", ♂ point-mounted (MNHN).

PARATYPE. — Saratsi Range, 14.9641°S, 166.6479°E, 600 m, flight intercept trap, 20-21.XI.2006, A. K. Tishechkin coll., 1 ♂ (MNHN).

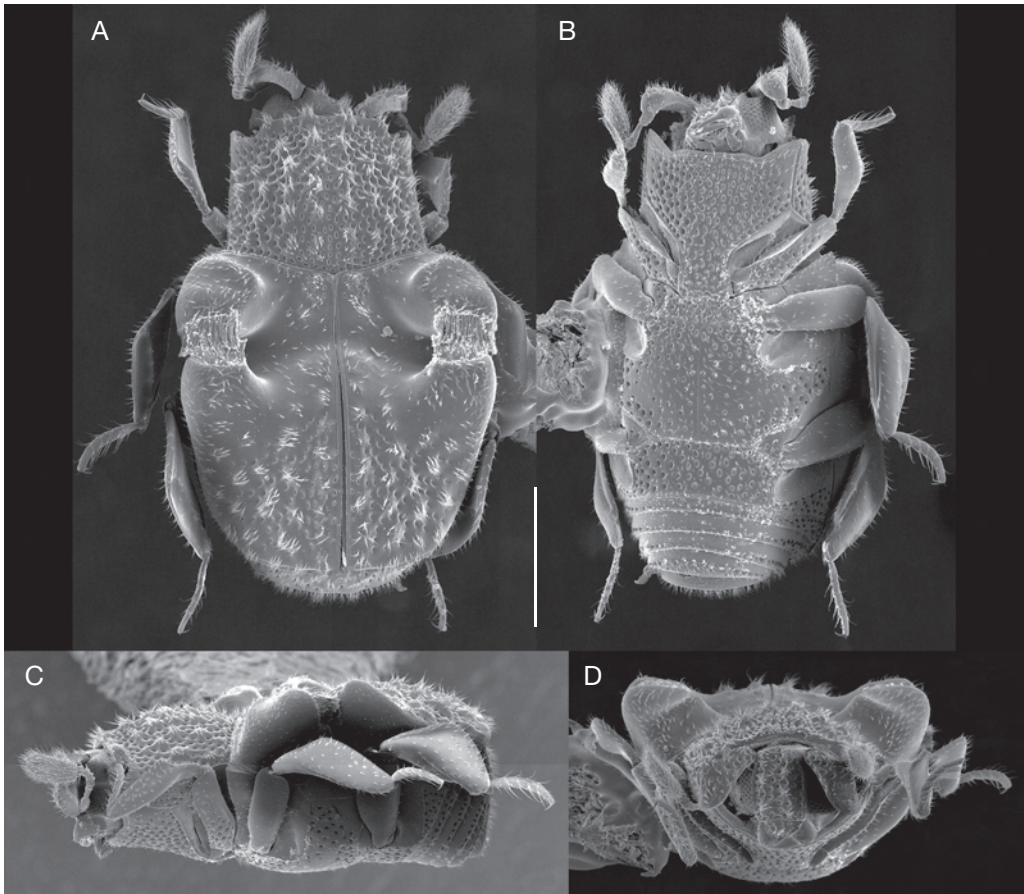


FIG. 5. — *Eucurtiopsis corbarai* n. sp., habitus: **A**, dorsal view; **B**, ventral view; **C**, lateral view; **D**, frontal view. Scale bar: A, B, 0.5 mm.

ETYMOLOGY. — The species is named after my colleague and friend Nicolas Dégallier of Institut de Recherche pour le Développement, in recognition of his contributions to the taxonomy of myrmecophilous and termitophilous Histeridae and Chlamydopsinae in particular.

DESCRIPTION

L: 1.64; W: 1.11; E/Pn L: 1.83; E/Pn W: 1.41; Pn W/L: 1.24; E L/W: 1.04; Pr/Py: 0.99; sterna: 0.47, 0.10, 0.41; tibiae: 0.41, 0.47, 0.49. Body (Fig. 6A) oval, rufescent brown, with antennae and legs somewhat paler, prothorax substantially narrower than elytra. Frons (Fig. 6D) 1.4 times longer than wide, sides weakly arcuate, incised at antennal bases, narrowed anteriorly, covered with shallow, sparse, circular punctures, with two parallel, longitudinal

rows consisting of four irregular blunt tubercles arranged into indistinct ridges, each tubercle with a cluster of long branched setae; labrum weakly convex, semicircular, with few setae near tip, punctation similar to that on frons; mandibles strongly bent, with long narrow tips, with few setae and large shallow punctures on smooth outer edges; maxillar palpi with three palpomeres, labial palpi with two palpomeres, mentum apparently fused with submentum, with deep notches at laterobasal areas, separating suture not apparent; antennal scape elongate triangular, twice longer than wide, with inner edge weakly inwardly arcuate, its surface more or less flat, with apical angle bluntly rounded, disc smooth, with a row of sparse shallow punctures along inner edge,

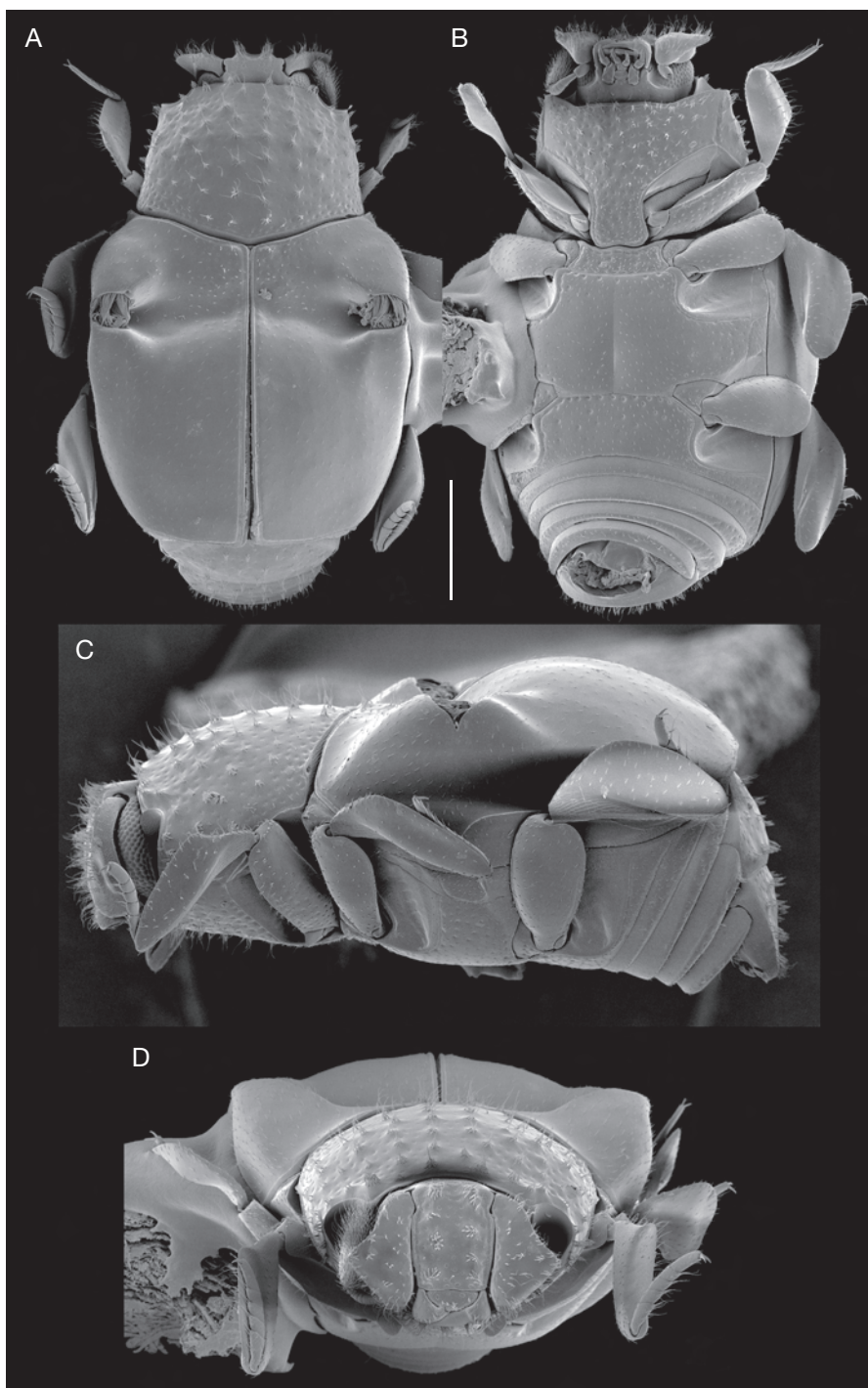


FIG. 6. — *Eucurtiopsis degallieri* n. sp., habitus: **A**, dorsal view; **B**, ventral view; **C**, lateral view; **D**, frontal view. Scale bar: A, B, 0.5 mm.

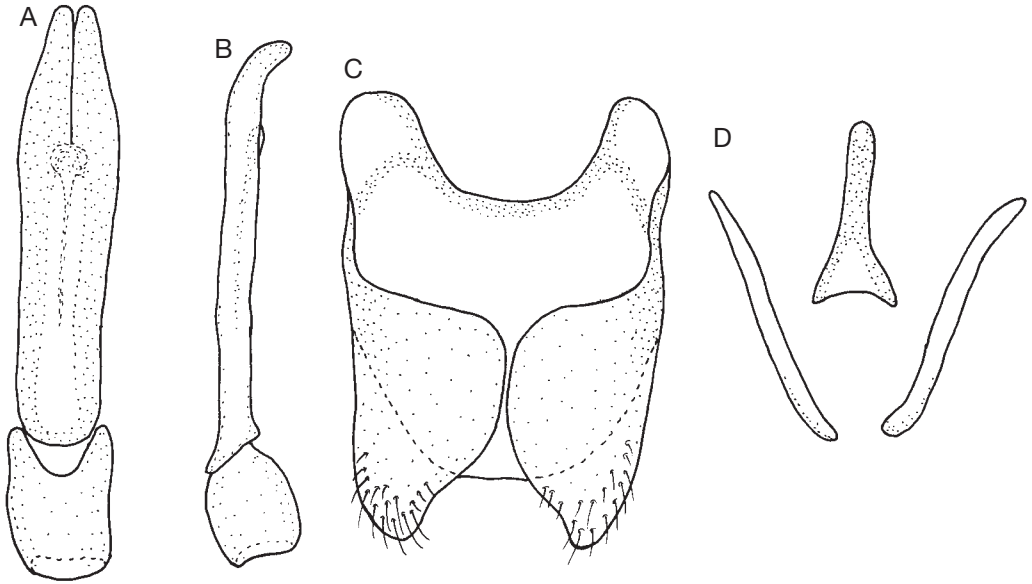


FIG. 7. — *Eucurtiopsis degallieri* n. sp., male genitalia: **A**, aedeagus, dorsal view; **B**, same, lateral view; **C**, eighth sternite-tergite complex; **D**, ninth sternite (spiculum gastrale) and tergite.

with scattered long branched setae; antennal funicle and club (of male) about 0.6 times and three-quarters length of scape, respectively.

Pronotum (Fig. 6A, C) with posterior margin shallowly obtusely angular, with sides unmarginated, straight, faintly narrowed anteriorly; antennal cavities partially visible from above, with pronotal margin not elevated above; medial portion of pronotal margin unelevated, weakly arcuate; marginal striae visible from above in basal one-fourth, then abruptly descend downwards to meet supracoxal striae, ascend again anteriorly towards antennal sockets; pronotal dorsum strongly convex, punctation consists of shallow sparse punctures being larger and somewhat denser along margins, especially lateral ones, mediobasal part of disc free of punctures; pronotal disc with 10 parallel, longitudinal rows of blunt separate tubercles, three outer rows on each side much less regularly linearly arranged than discal ridges, each ridge consisting of 5-8 tubercles, clumps of elongate branched setae present on every tubercle, no other seta present on pronotal dorsum. Prosternum with anterior margin broadly concave, marginal stria present medially, indistinct near antelateral angles;

prosternal disc evenly convex, keel elevated between procoxae, flattened, slightly expanded posteriorly, emarginate at apex, disc sparsely punctate throughout with shallow circular punctures, clusters of long branched setae scattered sparsely throughout the prothorax surface, replaced by single shorter setae on prosternal keel.

Scutellum (Fig. 6A) tiny, sunk below the elytral-pronotal plane, poorly visible. Elytra (Fig. 6A, C) with sides arcuate in general outline, nearly parallel in median third, widest just posteriad of trichomes; humeral trichome prominent, moderately elevated, longitudinally oriented, anterior process rising obliquely, unmodified, its surface flat; posterior process of similar size and structure, somewhat shorter; trichome with setae only along apical edges of processes, shallowly excavate beneath setose fringe, width of the fringe about one-fourth of elytral width, trichome gap is rather narrow, about one-tenth of elytra length, fringe setae long and densely packed; dorsum of elytral disc strongly evenly convex, free of punctation except of few shallow sparse circular punctures in mediobasal corners; thin, inconspicuous, mostly unbranched setae sparsely cover most

of elytra, being somewhat denser and longer in prescutellar area, where few branched setae occur; sutural stria thin, but distinct, complete; epipleuron smooth and glabrous, with sparsely scattered short unbranched setae; marginal epipleural stria distinct, elevated above metafemur, continuous with complete marginal elytral stria; no traces of accessory epipleural stria present.

Mesoventrite (Fig. 6B) wide, short, flat, bluntly projecting at middle, marginal stria complete, surface with few shallow sparse circular punctures on disc and rows of elongate punctures along anterior and posterior margins; mesometaventral suture and median suture of metaventrite finely impressed, former one complete, latter abbreviated in anterior fourth, lateral striae of metaventrite present, elevated, enclosing largely impunctate depression for mesotibiae in repose; disc of metaventrite smooth, only few shallow, sparse, circular punctures present along anterior and lateral margins, shallow longitudinal impression present (in males) along longitudinal suture in posterior half; first abdominal ventrite similarly punctate, punctures being on average larger and denser than on disc of metaventrite, covering anterior half, postmetacoxal line originating at metacoxa, extended directly posteriorly close to edge of sternite, curving laterad, terminating freely just before reaching epipleuron; surfaces of meso- and metaventrite and first abdominal ventrite with scattered short, appressed, inconspicuous branched setae. Profemora (Fig. 6B, C) with dense punctures in basal two-thirds, becoming impunctate toward apex, with posterior margins obtusely angular in basal one-third, meso- and metafemora impunctate, their margins arcuate, metafemora much more robust than mesofemora; protibia with obtuse angle around midpoint of outer margins, meso- and metatibiae with outer margins more bluntly angulate, around basal one third in meso-, around midpoint in metatibia; all tibiae longitudinally convex, meso- and metatibia with longitudinal sulci along inner edge; tarsi weakly compressed laterally, about 0.6-0.7 times length of corresponding tibiae; tarsal claws simple, divergent, almost straight, about 0.4 times length of corresponding apical tarsomere.

Propygidium twice as wide as midline length, weakly convex; pygidium nearly as long as wide,

weakly convex; both with punctures and setae as on the posterior half of elytral disc. Male genitalia as on Figure 7.

Eucurtiopsis ibisca n. sp.
(Figs 8; 9)

HOLOTYPE. — “VANUATU: Espiritu Santo I., Cumberland Peninsula, Saratsi Range at 14.9626°S 166.6485°E. 300 m Flight intercept FL3A-1. 8-9 Nov 2006. A. K. Tishechkin AT634 / HOLOTYPE *Eucurtiopsis ibisca* sp. n. A. Tishechkin des. 2008”, ♂ point-mounted (MNHN).

PARATYPE. — Saratsi Range, 14.9667°S, 166.6560°E, 900 m, flight intercept trap, 6-7.XI.2006, A.K. Tishechkin, also bears the following label “DNA Extraction TAK-0004. May 2009 Baton Rouge”, 1 ♀ (damaged specimen, missing both elytra) (MNHN).

ETYMOLOGY. — The specific epithet is a noun in apposition referring to IBISCA (Investigating Biodiversity from Soil to CAnopy, http://www.natuurwetenschappen.be/cb/ants/projects/ibisca_main.htm) program and team, an international group of researchers, which has been conducting insect inventory at Penaoru transect, in recognition of its great team spirit shaped during several expeditions and contributions to the knowledge of tropical insect diversity.

DESCRIPTION

L: 1.23; W: 0.83; E/Pn L: 1.79; E/Pn W: 1.63; Pn W/L: 1.08; E L/W: 1.01; Pr/Py: 0.89; sterna: 0.42, 0.08, 0.34; tibiae: 0.33, 0.42, 0.44. Body (Fig. 8A) elongate, pale rufescent brown, with funicle and antennae scape pale yellowish, body surface glabrous and shiny, prothorax substantially narrower than elytra. Frons 1.7 times longer than wide, sides weakly arcuate, incised at antennal bases, narrowed anteriorly, covered with deep, dense, mostly elongate punctures, with two parallel, longitudinal rows consisting of three irregular blunt tubercles arranged into indistinct ridges, each tubercle with a cluster of long branched setae; labrum weakly convex, semicircular, with few setae and punctures similar to that on frons; mandibles strongly bent, with long narrow tips, with few setae and no punctures on smooth outer edges; maxillar palpi with three palpomeres, labial palpi with two palpomeres, mentum apparently present as separate sclerite; antennal scape elongate triangular, 1.5 times longer than wide, with inner

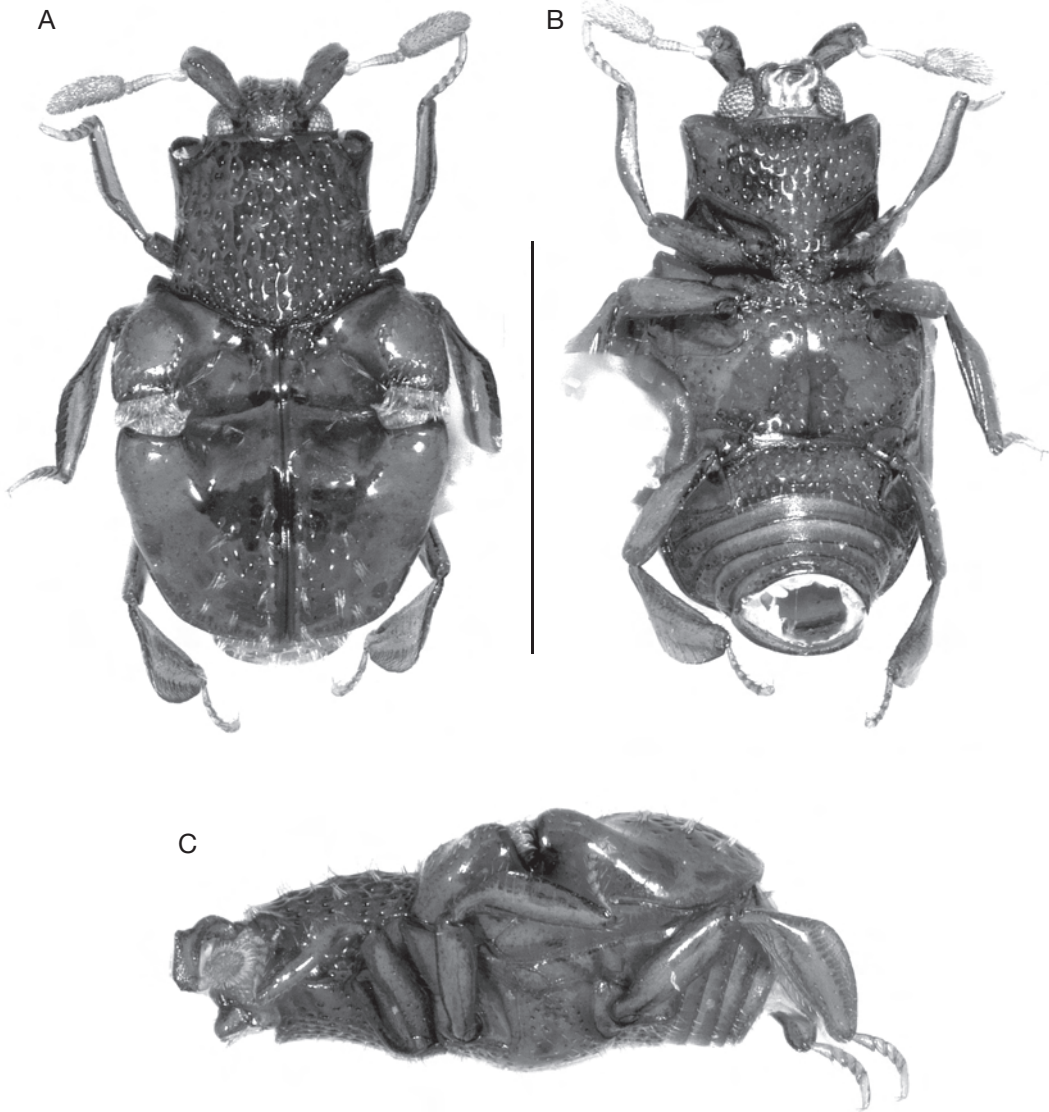


FIG. 8. — *Eucurtiopsis ibisca* n. sp., habitus: **A**, dorsal view; **B**, ventral view; **C**, lateral view. Scale bar: 1 mm.

edge weakly inwardly arcuate, its surface more or less flat, with apical angle bluntly rounded, disc with few punctures and branched setae; antennal funicle and club about 0.6 and 0.7 times length of scape, respectively, no sexual dimorphism in size and shape of antennae is apparent.

Pronotum (Fig. 8A, C) with posterior margin shallowly arcuate, with sides unmarginated, shallowly

concave, not narrowed anteriorly; antennal cavities partially visible from above, with pronotal margin not elevated above; medial portion of pronotal margin unelevated, weakly arcuate; marginal striae visible from above in basal fourth, then abruptly descending downwards to meet supracoaxal striae, ascending again anteriorly towards antennal sockets; pronotal dorsum strongly convex, densely and

deeply punctate throughout with deep elongate punctures, with eight parallel, longitudinal rows of blunt tubercles arranged into indistinct ridges, two outer ridges on each side much less regularly linearly arranged than discal ridges, each ridge consisting of 4-6 tubercles, clumps of elongate branched setae present on every tubercle. Prosternum (Fig. 8B) with anterior margin shallowly bisinuate, marginal stria thin, but distinct; prosternal disc evenly convex, keel elevated between procoxae, flattened, slightly expanded posteriorly, emarginate at apex, disc densely punctate throughout, areas in anterolateral angles free of punctuation, punctures primarily elongate, short branched setae scattered throughout the prosternum surface.

Scutellum (Fig. 8A) tiny, sunk below the elytral-pronotal plane, poorly visible. Elytra (Fig. 8A, C) with sides arcuate, widest around anterior trichome process; humeral trichome prominent, elevated, longitudinally oriented, anterior process rising almost vertically at base till weak transverse ridge, weakly obliquely rising thereafter, surface of its posterior part slightly concave; posterior process less robust, evenly rising towards anterior one, its surface evenly convex; trichome with setae only along apical edges of processes, shallowly excavate beneath setose fringe, width of the fringe more than one-third of elytral width, trichome gap wide, about one-seventh of elytra length, fringe setae long and densely packed; dorsum of elytral disc strongly convex, with punctuation limited to middle of posterior half; punctures deep and elongate, sparsely spaced, branched setae present in clusters along suture (pair of clusters near scutellum, four pairs in posterior half), between trichomes (two pairs of clusters) and on disc in posterior half (two longitudinal rows of two and three clusters parallel to suture), posterior halves of anterior trichome elevation with scattered, appressed, short branched setae; sutural stria thin, but distinct, abbreviate in anterior half; epipleuron smooth and glabrous, with sparsely scattered, short branched setae; marginal epipleural stria distinct, elevated above metafemur, continuous with complete marginal elytral stria; traces of accessory epipleural stria present above mesofemur.

Mesoventrite (Fig. 8B) wide, short, weakly convex, bluntly projecting at middle, no traces of marginal

stria present, surface with few deep, large, circular punctures in male and no punctation in female; mesometaventral suture and median suture of metaventrite finely impressed, complete, lateral striae of metaventrite present, elevated, enclosing largely impunctate depression for mesotibiae in repose; disc of metaventrite with some large, deep, circular punctures along anterior and lateral margins in males and no punctation in females; first abdominal ventrite similarly punctate throughout in males, impunctate in females, with postmetacoxal line originating at metacoxa, extended directly posteriorly close to edge of sternite, curving laterad, terminating freely just before reaching epipleuron; surfaces of meso- and metaventrite and first abdominal ventrite with scattered, short, inconspicuous branched setae. Profemora (Fig. 8B, C) with few punctures in basal two-thirds, with posterior margins obtusely angular in basal third, meso- and metafemora impunctate, their margins arcuate, metafemora much more robust than mesofemora; protibia with prominent angle at basal third of outer margins, meso- and metatibiae with outer margins more bluntly angulate, around midpoint; all tibiae longitudinally convex, meso- and metatibia with longitudinal sulci along inner edge; tarsi weakly compressed laterally about 0.5-0.6 times length of corresponding tibiae; tarsal claws simple, divergent, almost straight, about 0.3 times length of corresponding apical tarsomere.

Propygidium twice as wide as midline length, weakly convex; pygidium nearly as long as wide, weakly convex; both impunctate and with scattered clusters of branched long setae. Male genitalia as on Figure 9.

Eucurtiopsis kitchingi n. sp.
(Figs 10; 11)

HOLOTYPE. — “VANUATU: Espiritu Santo I., Cumberland Peninsula, Saratsi Range at 14.9657°S 166.6521°E. 700 m. Flight intercept FL7A-4. 30.xi.-1.xii.2006. A. K. Tishechkin AT827 / HOLOTYPE *Eucurtiopsis kitchingi* sp. n. A. Tishechkin des. 2008”, ♂ point-mounted (MNHN).

PARATYPES (32). — Same locality as the holotype, flight intercept trap, 29.XI-1.XII.2006, A. K. Tishechkin, 1 (MNHN), 1 (coll. AKT). — Saratsi Range, 14.9641°S,

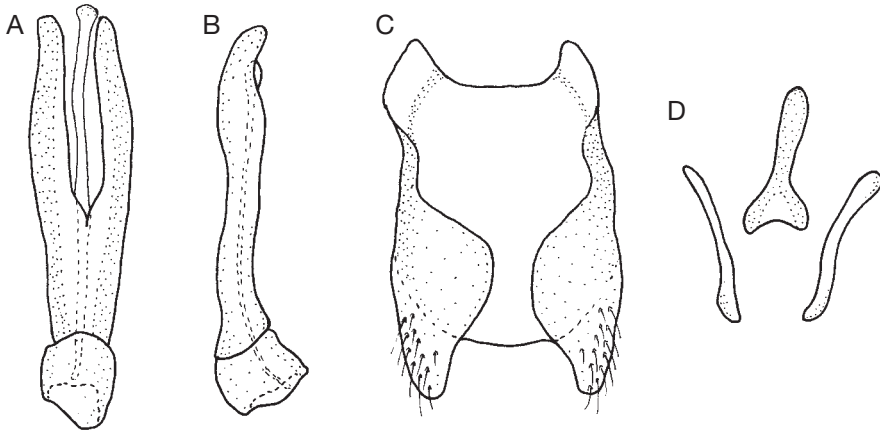


FIG. 9. — *Eucurtiopsis ibisca* n. sp., male genitalia: **A**, aedeagus, dorsal view; **B**, same, lateral view; **C**, eighth sternite-tergite complex; **D**, ninth sternite (spiculum gastrale) and tergite.

166.6479°E, 600 m, flight intercept trap, 4.XI-1.XII.2006, A. K. Tishechkin, one also bears the following label “DNA Extraction TAK-0001. May 2009 Baton Rouge”, 17 (MNHN [including molecular voucher]), 8 (coll. AKT), 2 (LSAM). — Saratsi Range, 14.9667°S, 166.6560°E, 900 m, 7-18.XI.2006, 1 (MNHN), 2 (coll. AKT).

ETYMOLOGY. — The species is named after Roger Kitching of Griffith University, a comrade in several expeditions, a source of endless knowledge and genuine enthusiasm, with a special recollections of our joint work at highland camp in Penaoru transect.

DESCRIPTION

L: 1.49; W: 1.03; E/Pn L: 1.88; E/Pn W: 1.50; Pn W/L: 1.25; E L/W: 1.01; Pr/Py: 0.93; sterna: 0.48, 0.08, 0.37; tibiae: 0.43, 0.50, 0.53. Body (Fig. 10A) elongate, rufescent brown, with antennae and legs somewhat paler, prothorax substantially narrower than elytra. Frons (Fig. 10D) 1.3 times longer than wide, sides weakly arcuate, incised at antennal bases, narrowed anteriorly, covered with deep, dense, mostly elongate punctures, with two parallel longitudinal rows consisting of three irregular blunt tubercles arranged into indistinct ridges, each tubercle with a cluster of long branched setae; labrum weakly convex, semicircular, with few setae, primarily near tip, and punctation much smaller than on frons; mandibles strongly bent, with long narrow tips, outer edges with few branched setae, several large punctures near base and reticulate

microsculpture more anteriorly; maxillar palpi with three palpomeres, labial palpi with two palpomeres, mentum present as separate sclerite; antennal scape elongate triangular, 2.1 times longer than wide, with inner edge weakly inwardly arcuate, outer edge strongly angulate, surface more or less flat, with apical angle bluntly rounded, disc densely punctate throughout with oval punctures, with several clusters of short branched setae; antennal funicle and club about 0.8 and 0.9 times length of scape, respectively, no sexual dimorphism in size an shape of antennae is apparent.

Pronotum (Fig. 10A, C) with posterior margin shallowly arcuate, with sides unmarginated, straight, faintly narrowed anteriorly; antennal cavities partially visible from above, with pronotal margin not elevated above; medial portion of pronotal margin unelevated, straight; marginal striae visible from above in basal third, then abruptly descending downwards to meet supracoxal striae, ascending again anteriorly towards antennal sockets; pronotal dorsum strongly convex, densely and deeply punctate throughout, with eight parallel longitudinal rows of blunt tubercles arranged into indistinct ridges, two outer ridges on each side much less regularly linearly arranged than discal ridges, each ridge consisting of 4-6 tubercles, clumps of elongate branched setae present on every tubercle, several single setae present along lateral sides of

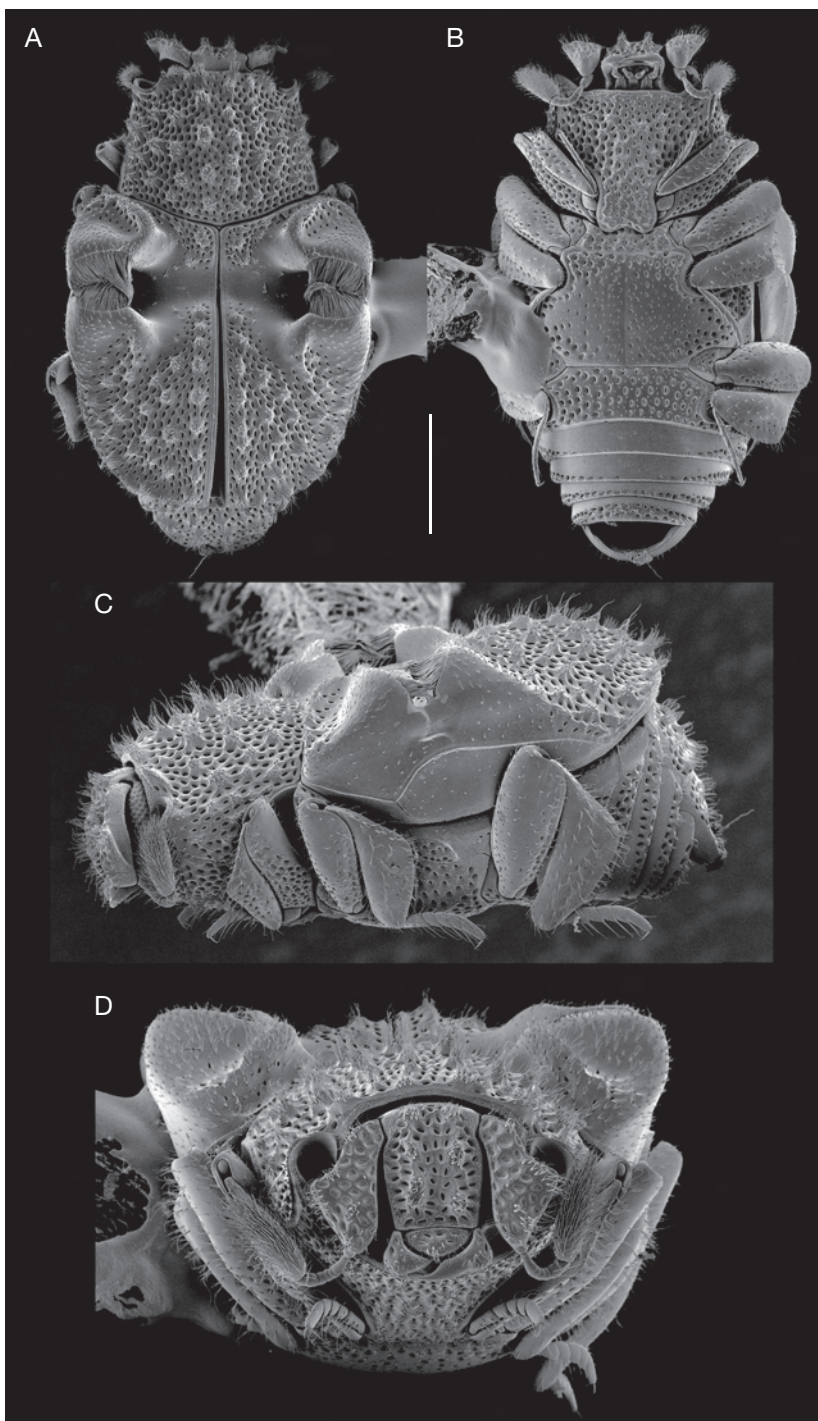


FIG. 10. — *Eucurtiopsis kitchingi* n. sp., habitus: **A**, dorsal view; **B**, ventral view; **C**, lateral view; **D**, frontal view. Scale bar: A, B, 0.5 mm.

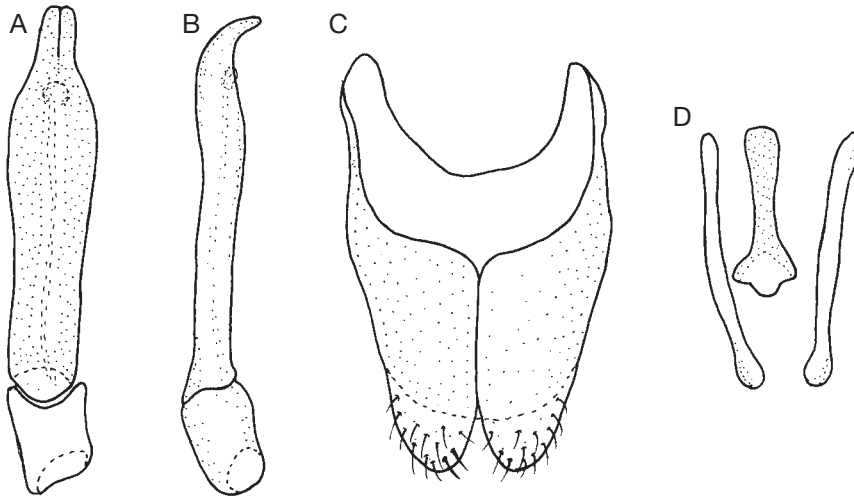


FIG. 11. — *Eucurtiopsis kitchingi* n. sp., male genitalia: **A**, aedeagus, dorsal view; **B**, same, lateral view; **C**, eighth sternite-tergite complex; **D**, ninth sternite (spiculum gastrale) and tergite.

pronotum. Prosternum (Fig. 10B) with anterior margin broadly concave, marginal stria represented by series of elongate wrinkles; prosternal disc evenly convex, keel elevated between procoxae, flattened, slightly expanded posteriorly, emarginate at apex, disc densely punctate throughout, punctures variable in shape, from narrowly elongate on keel base to larger circular in anterolateral angles.

Scutellum (Fig. 10A) tiny, sunk below the elytral-pronotal plane, but distinctly visible. Elytra (Fig. 10A, C) with sides weakly arcuate, widest around anterior trichome process; humeral trichome prominent, elevated, longitudinally oriented, anterior process rising almost vertically at base till transverse ridge, process surface area between base of elytron and ridge deeply concave, inner lateral and apical edges of anterior process raised as crests continuous with transverse ridge, enclosed surface of posterior half of the process deeply concave; posterior process only slightly less robust, evenly rising towards anterior one, its surface evenly convex; trichome with setae only along apical edges of processes, shallowly excavate beneath setose fringe, width of the fringe more than one-third of elytral width, trichome gap wide, about one-sixth of elytra length, fringe setae long and densely packed; dorsum of elytral disc with punctuation occupying most of surface, no

punctuation present on upper halves of trichome elevations, their inner sides and between elevations, although substantial punctured areas extend between elevations along the suture both anteriorly and posteriorly; punctures deep and elongate, densely spaced, branched setae present throughout, being larger and clustered into separate clumps or looser groups in punctated areas and smaller and evenly distributed at upper parts of trichome elevations, impunctate area between elevations devoid of setae; sutural stria thin, but distinct, complete, although may be weak and almost broken between trichome elevations; epipleuron smooth and glabrous, with sparsely scattered short branched setae; marginal epipleural stria distinct, elevated above metafemur, continuous with complete marginal elytral stria; short fragment of accessory epipleural stria present near angle of marginal stria above mesofemur.

Mesoventrite (Fig. 10B) wide, short, weakly convex, bluntly projecting at middle, no traces of marginal stria present, surface with dense, deep, elongate punctures; mesometaventral suture well impressed, complete, median suture of metaventrite fine, inconspicuous, narrowly abbreviated anteriorly, lateral striae of metaventrite present, elevated, enclosing largely impunctate depression for mesotibiae in repose; disc of metaventrite punctate throughout,

primarily with circular punctures, with larger, denser and more elongate ones along anterior and lateral margins, fragment of transverse stria of metaventricle present along anterior edges of metafemora; first abdominal ventrite similarly punctate, punctures being on average larger and denser than on disc of metaventricle, with postmetacoxal line originating at metacoxa, extended directly posteriorly close to edge of sternite, curving laterad, terminating freely just before reaching epipleuron; surfaces of meso- and metaventricle and first abdominal ventrite with scattered, short, inconspicuous branched setae. Femora (Fig. 10B, C) with deep, large punctures, covering most of profemora and situated along edges on meso- and metafemora; profemora with posterior margins obtusely angular in basal one-third, meso- and metafemora with their margins arcuate, metafemora much more robust than mesofemora; protibia with prominent angle at basal third of outer margins, meso- and metatibiae with outer margins more bluntly angulate, around midpoint; all tibiae longitudinally convex, with punctuated sulci along outer edges; tarsi weakly compressed laterally about 0.6–0.7 times length of corresponding tibiae; tarsal claws simple, divergent, almost straight, about 0.4 times length of corresponding apical tarsomere.

Propygidium twice as wide as midline length, weakly convex; pygidium nearly as long as wide, weakly convex; both with punctures and setae as on the posterior half of elytral disc. Male genitalia as on Figure 11.

Eucurtiopsis pascali n. sp.
(Figs 12; 13)

HOLOTYPE. — “VANUATU: Santo I., Cumberland Peninsula, Saratsi Range at 14.9638°S 166.6362°E. 500 m. Flight intercept FL5A-1. 27-28.xi.2006. A. K. Tishechkin AT796 / HOLOTYPE *Eucurtiopsis pascali* sp. n. A. Tishechkin des. 2008”, ♂ point-mounted (MNHN).

PARATYPES (29). — Same locality as the holotype, flight intercept trap, 27.XI-1.XII.2006, A. K. Tishechkin coll., one also bears the following label “Caterino DNA Voucher Extraction: MSC-1213 Species: *Eucurtiopsis* Extraction Date: i.26.2007”, 11 ♂♂ (MNHN), 9 ♂♂ (coll. AKT [including DNA voucher]), 2 ♂♂ (LSAM). — Saratsi Range, 14.9626°S, 166.6485°E, 300 m, flight intercept

trap, 23.XI-1.XII.2006, A. K. Tishechkin coll., one also bears the following label “Caterino DNA Voucher Extraction: MSC-1230 Species: *Eucurtiopsis* Extraction Date: ii.2.2007”, 6 ♂♂ (MNHN [including DNA voucher]), 1 ♂ (coll. AKT).

ETYMOLOGY. — The species is named after Olivier Pascal of Pronatura International in recognition of his enthusiastic efforts in organization and support of biotic inventories and conservation of tropical forests and commemoration of our joint field experience in Panamá and Vanuatu.

DESCRIPTION

L: 1.87; W: 1.26; E/Pn L: 1.75; E/Pn W: 1.35; Pn W/L: 1.36; E L/W: 1.00; Pr/Py: 0.94; sterna: 0.61, 0.11, 0.47; tibiae: 0.56, 0.61, 0.61. Body (Fig. 12A) rectangular, robust, dark reddish brown, with antennae and legs somewhat paler, prothorax substantially narrower than elytra, entire body surface with scattered or clustered minute, appressed, inconspicuous scale-like setae. Frons (Fig. 12D) 1.2 times longer than wide, sides nearly straight, incised at antennal bases, narrowed anteriorly, covered with deep, small, sparse, circular punctures, with two parallel longitudinal rows consisting of three irregular blunt tubercles arranged into indistinct ridges, each tubercle with a cluster of setae; labrum weakly convex, semicircular, with few setae and punctures similar to that on frons; mandibles strongly bent, with long narrow tips, with few setae and deep small punctures on smooth outer edges; maxillar palpi with three palpomeres, labial palpi with two palpomeres, mentum present as separate sclerite; antennal scape elongate triangular, 1.4 times longer than wide, with inner edge weakly inwardly arcuate, its surface more or less flat, with apical angle bluntly rounded, outer edge with blunt strong angle, disc densely punctate throughout with circular, dense punctures, with setae present in anterior half; antennal funicle and club (of male) about two-thirds of, and same length as scape, respectively.

Pronotum (Fig. 12A, C) with posterior margin shallowly obtusely angular, with sides unmarginated, straight, faintly narrowed anteriorly; antennal cavities partially visible from above, with pronotal margin not elevated above; medial portion of pronotal margin unelevated, straight; marginal striae visible from above in basal third, then abruptly descending

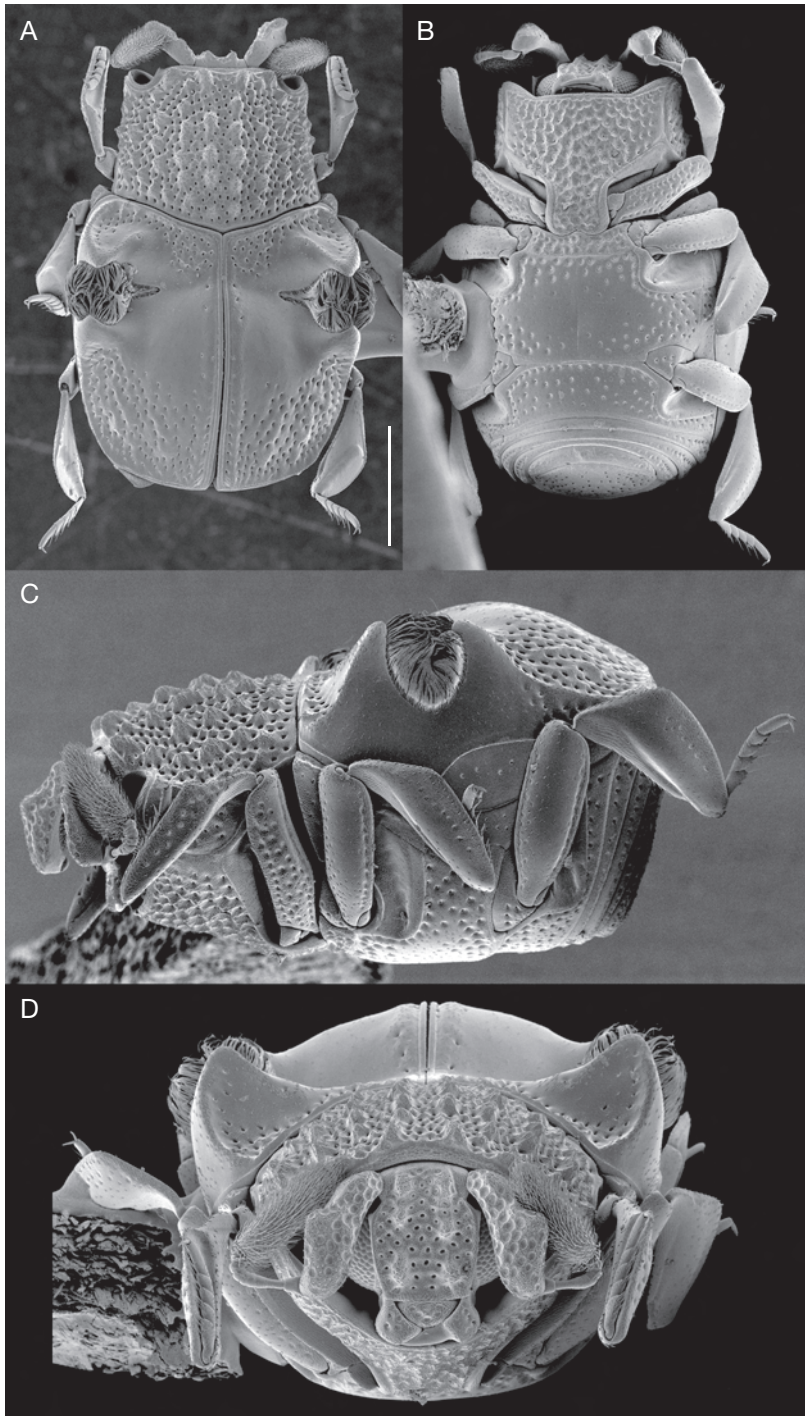


FIG. 12. — *Eucurtiopsis pascali* n. sp., habitus: A, dorsal view; B, ventral view; C, lateral view; D, frontal view. Scale bar: A, B, 0.5 mm.

downwards to meet supracoxal striae, ascending again anteriorly towards antennal sockets; pronotal dorsum strongly convex, densely and deeply punctate throughout with small circular punctures, with eight parallel, longitudinal rows of blunt tubercles arranged into indistinct ridges, two outer ridges on each side much less regularly linearly arranged than discal ridges, each ridge consisting of 4–6 tubercles, clumps of short setae present on every tubercle, two similar tubercles present on each lateral lateral margin in median third. Prosternum (Fig. 12B) with anterior margin broadly concave, marginal stria complete; prosternal disc evenly convex, keel in the same plane as the rest of prothorax, flattened, slightly expanded posteriorly, emarginate at apex, disc sparsely punctate throughout, punctures circular, intervals raised creating honeycomb sculpture, intervals bearing setae throughout the prothorax surface.

Scutellum (Fig. 12A) invisible. Elytra (Fig. 12A, C) with sides weakly arcuate, widest around trichome gaps; humeral trichome prominent, elevated, longitudinally oriented, both processes evenly rising obliquely, conical in shape, surface of anterior process deeply concave, of posterior one convex; trichome deeply excavate beneath setose fringe, with setae along all edges of trichome gap and narrow triangular inward expansion on elytral disc plane reaching middle of elytron width, width of the fringe about half of elytral width, trichome gap wide, about one-fifth of elytra length, fringe setae long and densely packed, short and even denser in inward extensions; dorsum of elytral disc strongly convex, with punctuation occupying most of posterior half reaching lateral margins and bases of posterior trichome elevations and narrow band of punctures along anterior margin, narrow band of punctures may connect those two areas along elytral suture, varying from four or five punctures wide band to total absence of punctures; punctures small, deep and elongate, sparsely spaced, setae sparsely scattered throughout, being more abundant in anterior third; sutural stria fine, but distinct, complete; epipleuron smooth and glabrous, with sparsely scattered setae and few punctures along margin in posterior half; marginal epipleural stria distinct, elevated above metafemur, continuous

with complete marginal elytral stria; no traces of accessory epipleural stria present.

Mesoventrite (Fig. 12B) wide, short, weakly convex, bluntly projecting at middle, no traces of marginal stria present, surface with dense, shallow, circular punctures; mesometaventral suture complete, distinct, median suture of metaventrite finely impressed, abbreviated both anteriorly and posteriorly, lateral striae of metaventrite present, elevated, enclosing largely impunctate depression for mesotibiae in repose; disc of metaventrite punctate around margins, with large, ocellate, circular punctures, shallow longitudinal impression present (in males) along longitudinal suture; first abdominal ventrite similarly punctate, punctures being on average smaller and scattered throughout disc, with postmetacoxal line originating at metacoxa, extended directly posteriorly close to edge of sternite, curving laterad, terminating freely just before reaching epipleuron; surfaces of meso- and metaventrite and first abdominal ventrite with sparsely scattered setae. Profemora (Fig. 12B, C) with dense punctures, with posterior margins obtusely angular in basal third, meso- and metafemora with row of punctures along margins, those arcuate, metafemora much more robust than mesofemora; protibia with prominent angle around midpoint of outer margins, meso- and metatibiae with outer margins more bluntly angulate, around midpoint; all tibiae longitudinally convex, meso- and metatibia with longitudinal sulci along inner edge; tarsi weakly compressed laterally about 0.6–0.7 times length of corresponding tibiae; tarsal claws simple, divergent, almost straight, about 0.4 times length of corresponding apical tarsomere.

Propygidium twice as wide as midline length, weakly convex; pygidium nearly as long as wide, weakly convex; both with punctures and setae as on the posterior half of elytral disc, but spaced more sparsely. Male genitalia as on Figure 13.

Eucurtiopsis penaoru n. sp.
(Figs 14; 15)

HOLOTYPE. — “VANUATU: Santo, Cumberland Peninsula, lower Penaoru River at 14.9611°S 166.6331°E. 100 m.

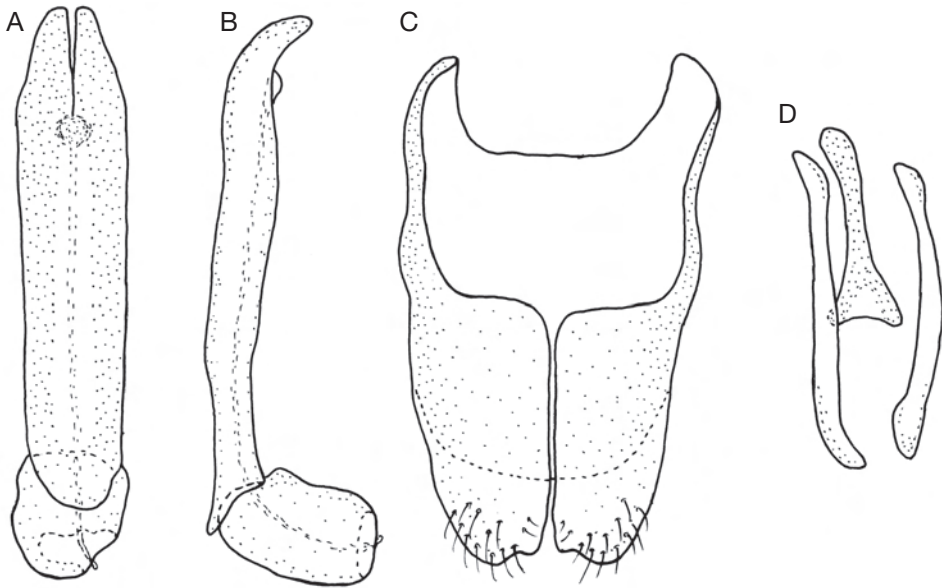


FIG. 13. — *Eucurtiopsis pascali* n. sp., male genitalia: **A**, aedeagus, dorsal view; **B**, same, lateral view; **C**, eighth sternite-tergite complex; **D**, ninth sternite (spiculum gastrale) and tergite.

Flight intercept F1D-4. 10-11 Nov 2006. A.K. Tishechkin AT646 / HOLOTYPE *Eucurtiopsis penaoru* sp. n. A. Tishechkin des. 2008", ♂ point-mounted (MNHN).

PARATYPES (10). — Same locality as the holotype, flight intercept trap, 7-19.XI.2006, A. K. Tishechkin, also bears the following label "Caterino DNA Voucher Extraction: MSC-1229 Species: *Eucurtiopsis* Extraction Date: ii.2.2007", 2 spec. (MNHN); 1 spec. (coll. AKT [voucher]). — Saratsi Range, 14.9626°S, 166.6485°E, 300 m, flight intercept trap, 17-29.XI.2006, A. K. Tishechkin coll., 1 spec. (MNHN); 2 spec. (coll. AKT). — Saratsi Range, 14.9638°S, 166.6362°E, 500 m, flight intercept trap, 27.XI-1.XII.2006, A. K. Tishechkin coll., 2 spec. (MNHN); 1 spec. (coll. AKT). — Saratsi Range, 14.9657°S, 166.6521°E, 700 m, flight intercept trap, 27-28.XI.2006, A. K. Tishechkin coll., 1 spec. (AKT).

ETYMOLOGY. — The specific epithet is a noun in apposition referring to the name of the species type locality and honouring the hospitality of the Penaoru village people.

DESCRIPTION

L: 1.35; W: 0.85; E/Pn L: 1.84; E/Pn W: 1.35; Pn W/L: 1.27; E L/W: 1.07; Pr/Py: 0.93; Sterna: 0.42, 0.07, 0.37; Tibiae: 0.36, 0.42, 0.44. Body (Fig. 14A) elongate, rufescent brown, with antennae and legs

somewhat paler, prothorax substantially narrower than elytra. Frons (Fig. 14D) 1.3 times longer than wide, sides weakly arcuate, incised at antennal bases, narrowed anteriorly, covered with deep, dense, mostly elongate punctures, with two parallel longitudinal rows consisting of four irregular blunt tubercles arranged into indistinct ridges, each of tubercles with a cluster of short branched setae; labrum weakly convex, semicircular, with few setae, primarily near tip, and small punctures and reticulate background microsculpture; mandibles strongly bent, with long narrow tips, outer edges with few branched setae and reticulate microsculpture, impunctate; maxillar palpi with three palpomeres, labial palpi with two palpomeres, mentum partially fused to submentum; antennal scape elongate triangular, 2.2 times longer than wide, with inner edge weakly inwardly arcuate, outer edge strongly angulate, surface more or less flat, with apical angle bluntly rounded, disc densely punctate throughout with oval punctures, with several clusters of long branched setae; antennal funicle and club about three-quarters and two-thirds length of scape, respectively, no sexual dimorphism in size and shape of antennae is apparent.

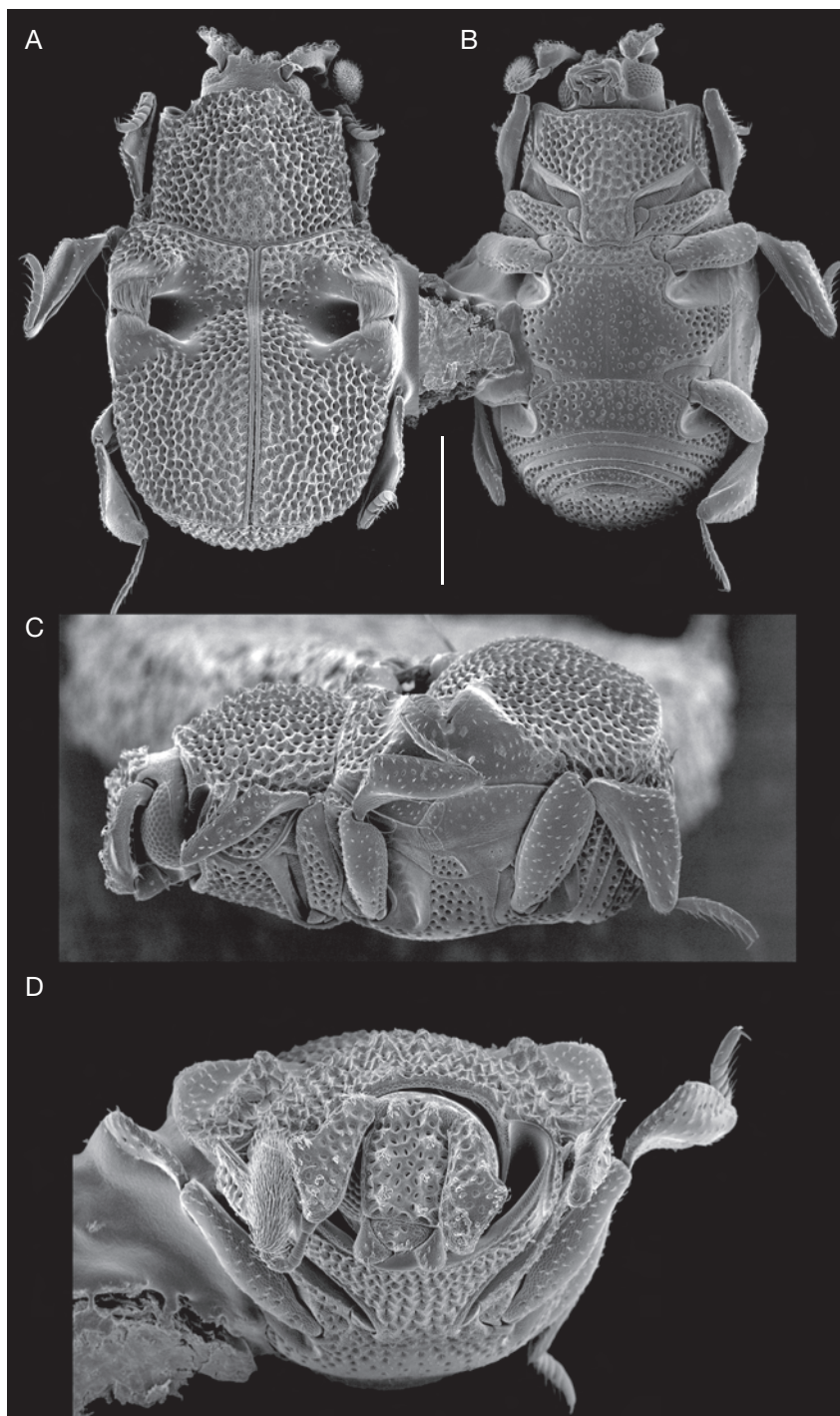


FIG. 14. — *Eucurtiopsis penaoru* n. sp., habitus: **A**, dorsal view; **B**, ventral view; **C**, lateral view; **D**, frontal view. Scale bar: A, B, 0.5 mm.

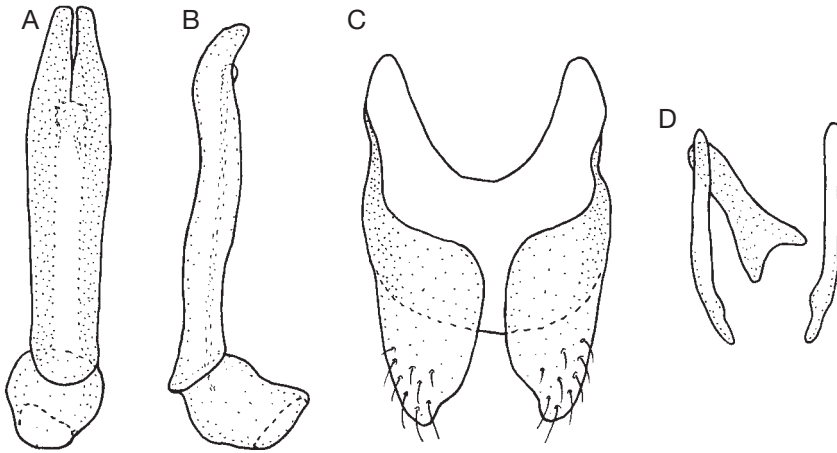


FIG. 15. — *Eucurtiopsis penaoru* n. sp., male genitalia: **A**, aedeagus, dorsal view; **B**, same, lateral view; **C**, eighth sternite-tergite complex; **D**, ninth sternite (spiculum gastrale) and tergite.

Pronotum (Fig. 14A, C) with posterior margin shallowly arcuate, with sides unmarginated, straight, faintly narrowed anteriorly; antennal cavities partially visible from above, with pronotal margin not elevated above; medial portion of pronotal margin unelevated, shallowly arcuate; marginal striae visible from above only near base, then abruptly descend downwards to meet supracoxal striae, ascend again anteriorly towards antennal sockets; pronotal dorsum strongly convex, densely and deeply reticulopunctate throughout, elevated intervals between punctures with clusters of short, inconspicuous branched setae. Prosternum (Fig. 14B) with anterior margin weakly concave, marginal stria more or less distinct, at least laterally; prosternal disc evenly convex, keel on the same plane as anterior half of prothorax, flattened, slightly expanded posteriorly, emarginate at apex, disc of prosternum densely punctate throughout, punctures variable in shape, from narrowly elongate on keel base to larger circular in anterolateral angles, short inconspicuous branched setae scattered throughout the prothorax surface.

Scutellum (Fig. 14A) tiny, sunk below the elytral-pronotal plane, but distinctly visible. Elytra (Fig. 14A, C) with sides nearly parallel in anterior half, then weakly arcuately descending towards apices, widest around anterior trichome process; humeral trichome prominent, elevated, longitudinally oriented, ante-

rior process relatively low, rising obliquely towards apex, its surfaces relatively flat, except transverse keel running obliquely from anterolateral corner of elytra, its inner part being more elevated; posterior process only slightly less robust, evenly rising towards anterior one, its surface flat; trichome with setae only along apical edges of processes, shallowly excavate beneath setose fringe, width of the fringe less than one-third of elytral width, trichome gap wide, about one-sixth of elytra length, fringe setae long and densely packed; dorsum of elytral disc with punctation occupying most of surface, no punctures present on tips of trichome elevations, their inner sides and cavities beneath trichomes, punctured areas almost continuous between elevations along the suture; punctures deep and elongate, densely spaced, intervals raised creating reticulate pattern; branched setae present throughout, but short and inconspicuous; sutural stria deeply impressed, complete; epipleuron smooth and glabrous, with sparsely scattered short-branched setae; marginal epipleural stria distinct, elevated above metafemur, continuous with complete marginal elytral stria; short notch (fragment of accessory epipleural stria) present near angle of marginal stria above mesofemur.

Mesoventrite (Fig. 14B) wide, short, weakly convex, bluntly projecting at middle, no traces of marginal stria present, surface with dense, deep, elongate

punctures; mesometaventral suture well impressed, complete, median suture of metaventrite fine, inconspicuous, narrowly abbreviated anteriorly, lateral stiae of metaventrite present, elevated, enclosing largely impunctate depression for mesotibiae in repose; disc of metaventrite punctate throughout with sparse circular punctures, being distinctly denser along anterior and lateral margins, fragment of transverse stria of metaventrite present along anterior edges of metafemora; first abdominal ventrite similarly punctate, punctures being on average larger and denser than on disc of metaventrite, with postmetacoxal line originating at metacoxa, extended directly posteriorly close to edge of sternite, curving laterad, terminating freely just before reaching epipleuron; surfaces of meso- and metaventrite and first abdominal ventrite with scattered, short, inconspicuous branched setae. Femora (Fig. 14B, C) with deep, large punctures, covering most of profemora and situated along edges on meso- and metafemora; profemora with posterior margins obtusely angular in basal one-third, meso- and metafemora with their margins arcuate, metafemora much more robust than mesofemora; protibia with prominent angle at basal third of outer margins, meso- and metatibiae with outer margins more bluntly angulate, around midpoint; all tibiae longitudinally convex, punctated sulci along outer edges; tarsi weakly compressed laterally about 0.6–0.7 times length of corresponding tibiae; tarsal claws simple, divergent, almost straight, about 0.4 times length of corresponding apical tarsomere.

Propygidium twice as wide as midline length, weakly convex; pygidium nearly as long as wide, weakly convex; both with punctures and setae as on the posterior half of elytral disc. Male genitalia as figured (Fig. 15).

DISCUSSION

DIAGNOSTICS AND SYSTEMATICS

The described species fall into three separate genera, although each of these combinations is quite different in terms of assignments of new species and their relationships with described species.

Ceratohister vanuatu n. sp. agrees well with the concept of the genus as represented by its type spe-

cies, *C. pheidoliphilus* Reichenasperger, 1924. Up to now, *Ceratohister* included five described species known from India and the islands of Borneo and Sulawesi (Caterino & Dégallier 2007). *Ceratohister vanuatu* n. sp., along with *C. leai* Dégallier & Caterino, 2005, are the only two species in the genus possessing an unmodified, simple anterior margin of the pronotum (Dégallier & Caterino 2005). The remaining three species have anterior margins of pronotum with median elevations, although not conspicuous in the type species (Reichenasperger 1924). *Ceratohister vanuatu* n. sp. can be easily distinguished from *C. leai* by different body proportions, i.e. more elongate and parallel-sided outline of the pronotum and more elongate elytra as well as lack of distinct sutural striae substituted in *C. vanuatu* n. sp. by a row of densely aligned large punctures.

Chlamydopsis caterinoi n. sp. falls into an unrecognised, but distinct, species group including two New Caledonian species, *C. caledoniae* Caterino, 2006 and *C. baloghi* Caterino, 2006 (Caterino 2003, 2006). The new species shares with both these species multiple characters of pronotum and elytra, trichome in particular, as well as unique synapomorphic structure of expanded and fossulate fore tibia. In fact, the new species is quite similar to *C. caledoniae* differing in relatively minute characters of setation (less dense and shorter), body shape (distinctly more elongate) and trichome elevations (posterior elevation much narrower and differently shaped).

To the contrary with the two previous genera, the taxonomic assignments of the new species described here in *Eucurtiopsis*, are not so straightforward and controversial. The discovery of these new species brings more disorder and inconsistency into the systematics of one of two major clades of Chlamydopsinae including *Quasimodopsis* Caterino & Dégallier, 2007, *Kanakopsis* Caterino, 2006, *Chlamydonia* Caterino, 2006 and so-called “*Orectoscelis* lineage” (*Ceratohister*, *Eucurtiopsis*, *Gomyopsis* Dégallier, 1984, *Orectoscelis* Lewis, 1903, *Pheidoliphila* Lea, 1914 and *Teretriopsis* Caterino & Dégallier, 2007) (Caterino & Dégallier 2007). All non-monotypic genera in this clade include quite variable sets of species and are not resolved as monophyletic in the

most comprehensive phylogenetic analysis based on morphological characters (Caterino & Dégallier 2007). One consistent result of this analysis is an inferred sister relationship between *Chlamydonia* and “*Orectoscelis* lineage”, but analysis of the character distribution in Vanuatuan species assigned here to *Eucurtiopsis* challenges this statement and diagnostic characters of *Chlamydonia* and *Eucurtiopsis*.

Vanuatuan *Eucurtiopsis* species possess complicated mosaics in respect to characters diagnostic for *Chlamydonia* and *Eucurtiopsis*. All of them have transversely cut trichomes, two labial palpomeres and pronotum much narrower than elytra (*Eucurtiopsis* characters). Five out of six, with the exception of *E. pascali* n. sp., possess abundant branched setae, four out of six lack accessory epipleural striae, in *E. ibisca* n. sp. and *E. kitchingi* n. sp. those are represented by short anterior fragments (also *Eucurtiopsis* characters). On the other hand, all of them have two rows of frontal tubercles and separate mentum (in *E. degallieri* n. sp. and *E. penaoru* n. sp. this separation seems to be incomplete, but basal notches and traces of separating suture are nevertheless present), and all but one (*E. pascali* n. sp.) species have a visible scutellum (*Chlamydonia* characters). Caterino & Dégallier (2007) in their review of chlamydopsine systematics listed narrow pronotum, branched setae, hidden scutellum and transverse trichomes as diagnostic characters of *Eucurtiopsis* and frontal tubercle rows, accessory epipleural striae, visible scutellum and longitudinal trichomes as diagnostic of *Chlamydonia*. So, character distribution in Vanuatuan species blurs the line between two genera. After a long struggle, I chose with some hesitation to describe these new species as *Eucurtiopsis* species with mostly exposed scutellums and separate mentums. As to diagnostics of the Vanuatuan *Eucurtiopsis* species relative to the other members of the genus, they are unique and may be distinguished by the structure of their pronotums. First, they lack median anterior elevations, often present in other *Eucurtiopsis* species as a pair of more or less prominent knobs. Second, they possess multiple (eight or 10) longitudinal rows of tubercles furnished atop with clusters of setae.

It is obvious that generic concepts in the “*Orectoscelis* lineage” and allies, especially in *Chlamydonia*,

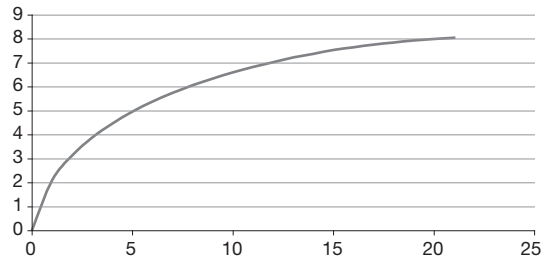


Fig. 16. — Species accumulation curve (sample-based rarefaction Mao Tau curve, Colwell 2009) for the Saratsi Range altitudinal transect, Espiritu Santo Island, November-December 2006. Samples (x-axis) represent days with at least one specimen of any chlamydopsine species collected; y-axis represents number of species.

Eucurtiopsis and *Orectoscelis*, are in need of revision. Fundamental morphological study addressing variability of key characters in multiple species and use of DNA sequence analyses would be the primary tools for such a revision. Unfortunately, both approaches are not practical in the near future due to the same basic problem, namely, the lack of sufficient specimens for both types of analysis. Chlamydopsinae are still rare in collections, being collected mostly by extensive flight intercept trap sampling (Caterino 2000, 2003, 2006). So far, such collecting efforts have been sketchy given the size and complexity of the subfamily’s range and overwhelming undiscovered diversity (Caterino & Dégallier 2007). As a result, even the best collecting efforts for Chlamydopsinae bring very few long series and numerous rare and unique species. Also, no DNA-quality material has been collected prior to the present study; DNA extracts (and some sequences already produced) from the species described above are the only ones available for Chlamydopsinae to date (Caterino & Tishechkin, unpublished). So, histerid systematists have a long, but exciting, way to go to elucidate relationships and improve taxonomy of this still mysterious group of beetles.

BIOGEOGRAPHY AND DIVERSITY

Since the publication of Caterino (2000), claims of discovering completely unknown local faunas became clichés in chlamydopsine taxonomic publications. This case is quite special in a way, since three genera with eight species were discovered on a small island of a remote archipelago, on a short transect across

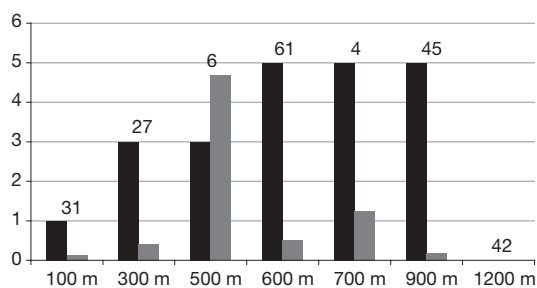


Fig. 17. — Diversity and abundance of Chlamydopsinae along Saratsi Range altitudinal transect, Espiritu Santo Island, November-December 2006. Black bars, diversity, number of species; gray bars, abundance, number of specimens of all species combined per trap-day. Figures above bars represent collecting effort in trap-days.

a single mountain range. The local Saratsi Range chlamydopsine species diversity is higher than currently reported for the entire island of New Guinea (seven species; Caterino 2007; Caterino & Dégallier 2007). Furthermore, if the Penaoru transect is treated as a single site (Fig. 16), there seems to be a potential for the discovery of extra species. Although the half of eight diversity estimators available for calculation in the EstimateS software (Colwell 2009) converges on observed number of eight species, diversity predictions by ICE, Jack1 and both variants of MM estimators vary between 8.7-9.7 species. So, despite of relatively extensive sampling at Penaoru (no singletons were observed, a rare case for tropical insect inventories), actual diversity there may be even higher than originally unexpected eight species.

In addition to high local diversity, at least one substantial generic range extension was observed. The discovery of *Ceratohister vanuatu* n. sp. extends the known range of the genus all the way from northern Sulawesi. This island is also the closest area where representatives of *Eucurtiopsis* are known to occur, but as noted above, *Eucurtiopsis* species from Santo may be more closely related to *Chlamydonia* and so might represent a Melanesian component of the fauna. This is the case with *Chlamydonia caterinoi* n. sp., which is the member of distinct group including two New Caledonian species. At the present level of knowledge of chlamydopsine systematics and distribution the questions of the

origin of the Vanuatuan fauna and roles of dispersal and vicariance in its formation remain open. Range characteristics of the genera recorded make both Wallacean (via New Guinea and Solomon Islands) and New Caledonian/Gondwanan impacts plausible components of a historical scenario. Poor knowledge of New Guinean fauna and practical lack of records from Solomons (only one species is known from New Britain, Dégallier & Caterino 2005) are key gaps in the biogeography of Chlamydopsinae in Wallacea and Melanesia. Recent publication on the histerid fauna of Rennel Island, Santa Cruz Islands, a stepping stone between Solomon Islands and Vanuatu (Gomy & Aberlenc 2006) did not report any chlamydopsines despite the use of flight intercept trapping. The secondary nature of sampled habitat and trap position in a clearing might be the reason for unsuccessful collecting, since trapping in a way reported by Gomy & Aberlenc (2006) did not produce any Chlamydopsinae on Santo, where all were collected in the interior of primary or tall secondary forest.

Figure 17 illustrates the vertical distribution of chlamydopsine abundance and diversity at Saratsi Range. Beetles were collected from 100 to 900 m, but not above 900 m despite of substantial collecting effort. In Australia and larger islands, chlamydopsines are known to reach higher elevations, up to slightly above 2000 m in New Guinea (Caterino & Dégallier 2007). On Santo, both extreme altitudinal localities have been represented by substantially lower specimen yields per collecting effort, and only a single species was found at 100 m (the most anthropogenically disturbed site). Altitudinal ranges of all but two species (*C. vanuatu* n. sp. and *E. pascali* n. sp.) spanned at least 300 m and two species were observed over 600 m of altitude, *E. penaoru* n. sp. from 100 to 700 m and *C. ibisca* n. sp. from 300-900 m. An apparent break in altitudinal distribution was observed between 500 and 600 m, since *C. vanuatu* n. sp. and *E. pascali* n. sp. were not collected above 500 m despite the most substantial collecting effort at the 600 m site. So, extensive collecting at middle elevations (500-700 m) only would allow to sample the entire known Saratsi fauna. Beetles were collected more or less throughout the entire sampling period from November 4 to December 1,

but the last week was the most productive in terms of specimen numbers. The highest specimen counts per short collecting efforts observed for 500 and 700 m sites (Fig. 16) were recorded during this week, which was characterized by regular abundant rains signaling an apparent transition to wetter part of the year. So, summarizing collecting patterns observed at Saratsi Range, flight intercept collecting at middle elevations during more rainy seasons is suggested as more effective way to discover chlamydopsine faunas on islands of Melanesia and Wallacea.

HOST INFORMATION

Chlamydopsines are known to inhabit colonies of ants and termites and are believed to be obligate inquilines of these social insect taxa. Ten ant genera from four subfamilies and a single termite genus are reported as hosts of chlamydopsine species (Caterino & Dégallier 2007). However, essentially nothing is known about host connections in tropical rainforests since all the host information was collected in temperate, subtropical and open arid habitats (Caterino & Dégallier 2007 and references therein). All tropical rainforest chlamydopsines are known primarily from flight intercept trapping, with few specimens collected also by pyrethrum fogging of canopy and understory and forest litter sifting. Limited attempts to find Chlamydopsinae in host colonies at Saratsi have failed. On several occasions I have searched for ant colonies near productive traps, primarily turning rocks and dead logs. Species of *Rhytidoponera* Mayr, 1862 and *Pheidole* Westwood, 1839, both regularly reported as chlamydopsine hosts and thought to be most probable chlamydopsine hosts in Melanesia (Caterino 2006; Caterino & Dégallier 2007), were relatively common, but no beetles were found during the inspection of 13 colonies of the former and 21 colonies of the latter. Also, 64 *Hydnophytum* Jack (Rubiaceae) myrmecophytes harboring in total 11 ant genera have been collected in the canopy along the transect (550-900 m) and opened without recording any myrmecophilous beetles (B. Corbara pers. comm.). More systematic effort and/or methodological breakthrough are necessary to discover and study host connections of rainforest Chlamydopsinae.

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