A NEW SPECIES OF HALECIA FROM COCOS ISLAND, COSTA RICA, WITH A REVIEW OF THE NEOTROPICAL GENERA OF THE TRIBE CHALCOPHORINI (COLEOPTERA: BUPRESTIDAE)

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ABSTRACT

Halecia cocosae sp. n. from Cocos Island, Costa Rica, is described, illustrated and discussed in context with others from Central and northern South America. A short discussion, diagnosis and key to the related genera in the tribe Chalcophorini is included.

Halecia cocosae sp. n. was the first buprestid to be recorded from Cocos Island, Costa Rica (Hogue and Miller 1981, as Halecia sp. n.). Its apparent relationship with a mainland species would seem to be in line with the view of Hertlein (1963) [following work by Schmidt (1930), Stewart (1912), and Vinton (1951), who stated that “the biota of Cocos Island was derived chiefly from the mainland and arrived by chance agencies of wind, ocean currents, birds and pelagic mammals.” The presence of H. cocosae would support Erwin’s (1979) argument in favor of “dispersal to the islands by air or wood drift” and is another case against the specific vicariance model of Rosen (1975), who proposed an eastern Pacific—Caribbean track. Halecia cocosae is not close to its Antillean “relatives” and the fact that it is recorded from a species of Cecropia, a genus of pioneer species (Janzen 1983), would support the rafting hypothesis used to explain the presence of cerambycids and buprestids on various eastern Pacific islands (Kuschel 1963; Linsley and Chemsak 1966). Heatwole and Levins (1972) seemingly proved the rafting argument by demonstrating that some buprestid larvae are able to survive for long periods with their hosts afloat in a marine environment.

Halecia cocosae Bellamy, sp. nov.

Figs. 1–3

HoloType Male. Size moderate, 12.7 × 4.4 mm; elongate, oval, moderately convex; dorsally dark olive in color with golden cupreous reflection; ventrally bright green with cupreous reflections, legs green with slight cupreous reflection, tarsi bluish green; irregularly covered with yellow pulverulence, especially in frontal depression, basal and lateral depressions of the pronotum, shallow depressions of elytral disc; intercostal area connecting first two depressions and sutural depression in apical ¼, and in lateral depressions on abdominal sternites.

Head (Fig. 2): slightly produced between eyes; strongly, longitudinally grooved on vertex, groove widening on frons to dorsally wider, bilobate depression; eyes large, convex, closer together on vertex; frons with two oblique, narrow grooves extending.

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Fig. 1. Holotype male, *Halecia cocosae* Bellamy, new species, dorsal habitus. Line equals 1 mm.
from below middle of eyes to inside and even with antennal foveae; antennal foveae separated by $2 \times$ width; epistoma angularly emarginate, medially with truncate and slightly anteriorly projecting lobe; genae with very shallow, broad depressions lateroventrad to antennal foveae; labrum coriaceous, distally emarginate and densely clothed with recumbent setae; mandibles robust, green on basal $\frac{1}{2}$, black distally; antenna with segment 1 geniculate, widening distally, 2 short, oblong, 3 almost $2 \times$ as long as 2, sub serrate distally, 4-10 with lateral serrate lobe rounded, width subequal to length, 11 oblong; 4-11 bicolorous, sparsely clothed with semi-erect setae; surface of head irregularly covered with large, shallow punctures and short, white recurved setae, except on epistomal lobe and small frontal area directly dorsad to antennal foveae.

*Pronotum*: $1.5 \times$ as wide as long, widest at middle; longitudinally grooved in middle, from apical $\frac{1}{2}$ to base; disc with three longitudinal green bands, one in middle from base to apex, one on either side, halfway between median groove and lateral margin, slightly oblique, wider apart at base; surface sparsely, shallowly punctate; apical margin slightly arcuate anteriorly, with wide, rounded carina across entire width; basal margin bisinuate; lateral margin arcuate, carinate almost to apex; basolateral angles slightly acute; disc laterally, steeply declivous to narrow premarginal longitudinal depression; base with one broad depression on each side, at lateral $\frac{1}{2}$, and one small, obovate fovea near base anterior to scutellum; scutellum trapezoidal, widest distally, green, slightly rugose.

*El Yer*: wider than pronotum, widest past middle; sides bisinuate in basal $\frac{1}{2}$, attenuate to apices; lateral margin a rounded carina in basal $\frac{1}{3}$, thereafter explanate and strongly serrate to separately angulate apices; humeri oblique, convex; each elytron with five
costae and four shallow, round depressions as follows: 1st costa beginning at basal ¼, parallel to sutures; 2nd costa beginning near base; 3rd costa in middle of disc, beginning posterior to basal depression; 4th and 5th costae confluent then separate anterior to humerus; one basal depression medial to humerus, more or less confluent to basolateral pronotal depression; second depression at basal ¼, interrupting 3rd costa, extending across width between 2nd and 4th costae; these first two depressions feebly connected by rugose area between 2nd and 3rd costae; third depression posterior to basal ¼, interrupting 4th costa, extending across width between 1st and 3rd costae; fourth depression medial to third depression, between 3rd and 4th costae; 2nd costa extending to just past apical ¼, costae 3, 4 and 5 confluent at about apical ½; intercostal area feebly rugose; costae sparsely punctate.

Undersides: laterally, strongly punctate and clothed with recumbent setae, disc sparsely so; anterior margin of prosternum slightly concave; prosternal process with lateral lobes only slightly dilated from parallel sides; metacoxal plate with posterior margin dilated; abdominal sternites with sutures arcuate; sternites 2–4 each with one laterobasal, rugose depression on either side; apex of sternite 5 concolorously emarginate.

Legs: pro- and mesofemora fusiform; metafemur with sides subparallel; protibia basally slightly arcuate, distally dilated; tibiae with two short spines distally; tarsi with segment 1 as long as 2 and 3 together; 1–4 each with pulvillus; segment 5 with claw slightly swollen at base.

Genitalia: as in Fig. 3.

FEMALE. Generally more robust; lateral margin of elytra slightly more arcuate; elytral apices with distal spine slightly longer; apical margin of sternite 5 triangularly emarginate.

Variation. Male, size 10.9–12.4 × 3.6–4.2 mm; female, size 13.5–17.9 × 4.6–6.4 mm; dorsal color more uniform greenish; lateral longitudinal depressions on pronotum wider and lateral margin slightly more arcuate.


Etymology. The specific epithet is the genitive form of the name of the general type locality.

Remarks. Halecia cocosae seems closest to H. auropunctata Kerremans and keys to this species in the last published key to the genus (Kerremans 1908). These two species differ with H. auropunctata being larger (22 × 7 mm), having the color a more somber green, punctuation on the head and underside being slightly denser and more regular, the pronotum being more constricted anteriorly, the elytra having six depressions on each side, with a different configuration of the elytral depressions and costae and the undersides being more heavily setose.

Halecia Laporte & Gory (1837) is one of the historically older genera of the Buprestidae. Subsequent to the definition of Halecia, the description of a large number of species has led to the current four genera complex comprised of Halecia, Pseudalecia Théry, Euplectalecia Obenberger and Eupodalecia Obenberger. These genera form part of the large tribe Chalcophorini. The other strictly Neotropical genera that belong to this tribe are Saundersina Cobos (=Pasiphae Théry), Hyphaprisis Fairmaire & Germain, Baudonista Cobos, Pelicopselaphus Solier, Chrysethes Solier, Euchroma Solier and Hilarotes Thomson. The only other New World members of the tribe, Hippomelas Laporte & Gory, Nanularia Casey, Texania Casey and Chalcophora Solier, are essentially Neartic, with Chalcophora and Hippomelas each having only one or two species distributed in the Neotropical region. The strictly Neotropical genera of the Chalcophorini can be separated as follows.
KEY TO THE NEOTROPICAL GENERA OF CHALCOPHORINI

1. Larger, 45 mm or more in length; antennal pores setose  
   — Smaller, less than 30 mm in length; antennal pores glabrous  
   2

2. Tarsal segments laterally compressed  
   — Tarsal segments dorsoventrally depressed  
   3

3. Base of pronotum truncate  
   — Chrysethes  
   4

4. Prosternum longitudinally grooved or carinate on middle  
   — Prosternum not grooved, carinate or even feebly depressed  
   7

5. Anterior margin of prosternum projecting at middle  
   — Saundersina  
   6

6. Elytra with a number of parallel, longitudinally rounded carinae and  
   three irregular shallow depressions on each side  
   — Baudonista  
   9

7. Posterior border of metacoxal plate with a strongly projecting spine  
   near middle  
   — Hypoprasis  
   8

8. Posterior border of metacoxal plate entire  
   — Hilarotes  
   10

9. Discl of elytra strongly striatopunctate; protibia strongly curved at  
   base  
   — Euplectalea  
   5

10. Clypeus more or less strongly and sometimes profoundly notched  
    — Pseudalea  
    or sinuate; basal segment of metatarsus very long and slender  
    — Halecia  
    3

   Clypeus only feebly sinuate or notched, sometimes almost straight;  
   basal segment of metatarsus very short and robust  
   — Eupodalea

Halecia and the three related genera are formed by a large complex of species  
within the Neotropical chalcophorine fauna. It is possible that the ancestral  
origin was somewhere in South America prior to the early Mesozoic separation  
of South America from Africa. This possibility is supported by the presence  
of a relatively few tribal relatives extant in the southern Ethiopian fauna, such  
as Chalcoplia Thomson and Descarpentriesthesia Cobos, in comparison to the  
large number of Neotropical species that belong to the genera of the Halecia  
complex. Radiation to the north, into the Central American and Antillean  
areas, possibly occurred in line with the evolution of these areas as discussed  
by Malfaif and Dinkelman (1972) and Rosen (1975).

Only Halecia and Euplectalea currently have described species recorded  
from Central America. There are six species of Euplectalea listed by Black-  
welder (1944) and Obenberger (1958) from Central America: E. belii (Saunders)  
from Nicaragua, E. guatam (Waterhouse) from Nicaragua and Honduras, E.  
semenovii Obenberger (=superba Hoscheck) and E. sordideornata Obenberger  
from Costa Rica, and E. pulverulenta (Waterhouse) and E. saffusa (Water-  
house) from Panama.

There are eight species of Halecia recorded in the same works from Central  
America: H. mexicana Kerremans and H. nigritennis Théry from Mexico, H.  
angustiventris Obenberger and H. debyi Waterhouse from Guatemala, H. chry-  
sodemoideus Saunders and H. cupressignata Waterhouse from Nicaragua, H.
Igneus They from Costa Rica and H. laticollis Waterhouse from Panama. In addition to these species, Thery (1930) extended the range of H. auropunctata Kerremans, described from Colombia, by recording it additionally from Nicaragua and Peru.

In addition, Fisher (1925) considered the four West Indian species of Halecia, with a subsequent study by Obenberger (1958) redefining this fauna to include one species of Halecia and two Euplectalecia spp.

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LITERATURE NOTICES


