New Plagithmysines from Kauai, Maui and Hawaii (Col.: Cerambycidae)[1]

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This contribution records three additional new species of the remarkable plagithmysine complex of endemic Hawaiian clytine longicorns. As pointed out elsewhere[4] all of these are believed to have evolved from a single ancient immigrant ancestor. By now nearly 130 species of this group are known, and the evolutionary pattern is proving of great interest. The species are highly host-specific and this aspect is receiving special current attention. The populations are suffering from retreat of the native Hawaiian forests, and this matter is a subject of considerable concern.

We are grateful to James Jacobi, Wayne Gagné and Wayne Ibara for help in connection with the new forms here described. One of the species, from Maui, was obtained by Gagné, Ibara and Gressitt in Waihoi Valley on a field project organized by John Kjargaard. William Ruffin and G. A. Samuelson have participated in current field activities, mainly relating to decline of *Metrosideros* on the Island of Hawaii.

Plagithmysus (Plagithmysus) eugeniae Gressitt and Davis, n. sp. (Fig. 1a).

♂ Rather bright reddish castaneous, slightly darker on side of prothorax and sides of femora; antennae slightly paler basally; petioles of mid- and hind-femur testaceous. Body sparsely to irregularly clothed with whitish pubescence; head with very little, in form of short sparse recumbent hairs, besides a few suberect buff hairs; antenna with short oblique hairs, tawny instead of white; prothorax with scattered subrecumbent white hairs, lying in different directions, on disc within sublateral ridges, sparser on median ridge, but not quite forming distinct pair of paramedian stripes; side of prothorax nearly glabrous, with a few minute suberect pale yellow hairs; scutellum bordered with narrow stripe of dense white pubescence; elytron with many somewhat evenly spaced small flecks of white pubescence on most of surface except humerus and outer 2/3 of distal 3/5—flecks along suture not forming a distinct stripe; ventral surfaces unevenly, in part very sparsely, clothed with fine sub-

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[4]For other recent papers on this group of beetles, see Proc. Hawaiian Entomol. Soc. 20: 331-393, 1969; 20: 567-569, 1970; 21: 67-77, 1972; 21: 213-221, 1972; Pacific Ins. 14: 83-92; 14: 635-645, 1972.

erect pale hairs; legs with fine oblique yellowish hairs, coarser on hind tibia, and with larger white hairs on hind tarsus and 1st segment of mid tarsus.

Head deeply and closely punctured above, in part impunctate in front; gena much deeper than eye, as deep as width of frons; eye a little longer than deep. *Antenna* nearly as long as body; segment 1 a little shorter than 3; 3-5 subequal; 5-9 decreasing in length; 9-11 subequal in length. *Prothorax* longer than broad, nearly parallel-sided except for somewhat constricted apex and base; disc with fairly well raised anterior and posterior portions of median ridge—anterior tubercle topped by a transverse ridge followed by some asperities, posterior tubercle larger, less abrupt and with equivalent of 2 transverse ridges, the 2nd somewhat interrupted; on side of densely punctured upper disc is a sinuate fairly strong ridge, external to which side is nearly vertical, with punctures diminishing to a very smooth, nearly impunctate, area on lower side. *Scutellum* broadly rounded behind, sloping, nearly smooth. *Elytron* with humerus far exceeding side of prothorax and side fairly straight and strongly narrowed to subacute slender apex; disc somewhat convex, rather unevenly and coarsely punctured but less distinctly so toward apex. *Ventral surfaces* in large part finely punctured, quite sparsely so on parts of abdomen; latter much shorter than elytra. *Legs* moderately stout, hind femur gradually thickened; exceeding elytral apex; hind tibia flattened and slightly arched; 1st hind tarsal segment slightly longer than remainder combined. Length 14.8 mm (excluding wings); breadth 3.7.

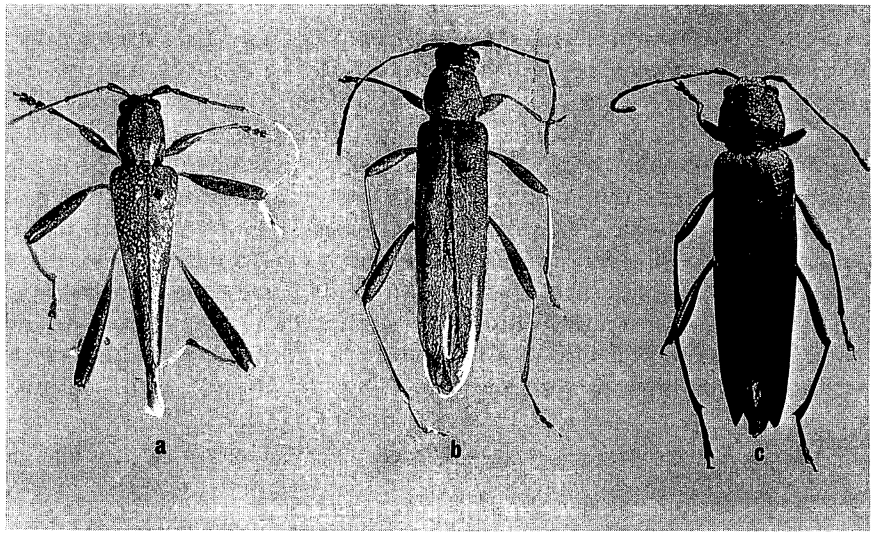

FIG. 1a, *Plagithmysus (P.) eugeniae,* n. sp.; 1b, *Plagithmysus (Neoclytarlus) jacobii,* n. sp.; 1c, *Plagithmysus (N.) hoikuahiwi,* n. sp.

Seven additional specimens probably all this species: Length 8-13 mm; breadth 2.0-3.4.

Holotype ♂ (BISHOP 9892), Waihoi Valley, 600 meters, on *Metrosideros,* June 1972, W. Ibara. Five paratypes, close to type locality, 3 taken in flight by W. Ibara or members of Waihoi team, and 2 reared from *Eugenia (Syzygium),* mid-June, Gressitt. Two additional specimens reared from *Eugenia (Syzygium) sandwichensis* at same locality, 20 July 1972, by Wayne Gagné, are small, with sparse pubescence and without very distinct elytral flecks.

Differs from *aestivus* Sharp in being more strongly narrowed posteriorly from humeri, with prothorax more parallel-sided, less strongly ridged at side of disc, less broadly swollen on pronotal disc postmedially, and with elytron generally finely flecked with white.

Plagithmysus (Neoclytarlus) jacobii Gressitt and Davis, n. sp. (Fig. 1b).

♀ Elongate, subparallel, feebly narrowed posteriorly. Pitchy brown, nearly black on elytron and side and base of pronotum; legs more reddish brown, fairly uniform in color; antenna and ventral surfaces intermediate, largely dark reddish brown. Body thinly clothed with short buff and tawny hairs, darker to blackish on legs, for the most part not conspicuous, but denser and forming a golden tawny sutural stripe on posterior 2/3 of elytron, but the stripe fading off before midline, without a distinct external border; thoracic sterna with longer, finer, more erect hairs and abdomen much more glabrous.

Head hardly broader than anterior end of prothorax, closely punctured, more finely so but quite densely, in front; gena about as deep as eye, shallower than width of frons. *Antenna* barely 3/5 as long as body, somewhat broadened distally; segment 1 longer than 3; 3-5 decreasing slightly in length; 6 shorter; 6-9 decreasing a bit in length. *Prothorax* slightly broader than long, somewhat rounded-obtuse at side, slightly irregular on disc, with fine, close punctures, and with moderately raised median strip, with some granules and partial transverse ridges, and some vague swellings at side. *Scutellum* rounded-triangular, subasperate. *Elytron* long, weakly and subevenly narrowed, rounded apically; disc rather closely punctured and rather even. *Ventral surfaces* densely and finely punctured at side of thorax, less closely so beneath, and abdomen much more finely and sparsely punctured. *Legs* of moderate build, somewhat compressed; hind femur moderately swollen, not reaching elytral apex; hind tibia nearly straight; hind tarsus with segment 1 about as long as remainder combined. Length 11.8 mm; breadth 2.2.

Paratypes: Males mostly paler, medium reddish brown, and with hind femur more strongly swollen; prothorax more angulate at side in some. Length 9.6-11.5 mm; breadth 1.9-2.1.

Holotype ♀ (BISHOP 9893), southern Kohala Mts, Island of Hawaii, 1500 meters, Sept. 1972, from *Smilax,* J. Jacobi. Allotype, ♂ and 6 paratypes, same data. Named for the collector.

Differs from *smilacis* Perkins from East Maui in being somewhat heavier-bodied, in having more transverse carinae than granulations on median pronotal ridge, with the prothorax more even at side, the elytron less closely punctured and the coloration darker. This is the first species from this species/host-group from the Island of Hawaii.

Plagithmysus (Neoclytarlus) hoikuahiwi Gressitt and Davis, n. sp. (Fig. 1c).

♀ Elongate, feebly narrowed posteriorly. Pitchy black, more brownish posteriorly and on each elytral base beside scutellum, slightly brownish on sides of pronotal disc; antenna partly tinged with brownish distally; ventral surfaces pitchy brown, with apical portions of abdominal sternites blackish; legs dark reddish brown, partly pitchy. Body very thinly clothed with short sparse pubescence, golden buff above and silvery, as well as longer and partly suberect, beneath; equally sparse on antenna and legs except closer and shorter on terminal segments of former.

Head wider than anterior end, but narrower than middle, of prothorax, closely punctured on frons and closely reticulate above; vertex convex on each side; gena 1/2 as deep as eye, as deep as 1/2 width of frons. Antenna barely over 1/2 as long as body, barely as broad at ends of penultimate segments as at end of scape; latter longer than segment 3; 3-5 subequal; 6 about 7/8 as long as 5; 6-10 decreasing considerably in length; 11 nearly as long as 7. *Prothorax* 1.1 × as broad as long, weakly rounded at side, widest behind middle; disc closely reticulate to subasperate, more coarsely so toward side of disc, which is slightly swollen; median strip broadly, but not strongly, raised, with a few subtransverse carinae. *Scutellum* triangular, rounded behind, feebly punctured. *Elytron* slender, subevenly narrowed, subacute apically; disc closely punctured, less distinctly so posteriorly, with 2 weak carinae. *Ventral surfaces* finely asperate at side of thorax, weakly punctured beneath; abdomen sparsely and minutely punctured. *Legs* slender, compressed; hind femur weakly swollen, feebly punctured, not nearly reaching elytral apex; hind tibia slightly arched preapically; hind tarsus with segment 1 as long as remainder combined. Length 9.4 mm; breadth 1.9 mm.

Paratypes: Elytral base and sutural base sometimes brown, or apex pitchy brown. Length 9-10 mm; breadth 1.8-2.2. Allotype ♂ much paler, with stouter femora and more rounded elytral apex. Length 6.8 mm; breadth 1.3.

Holotype ♀ (BISHOP 9894), Pihea Trail, 1200 meters, Kauai, 14 Dec. 1972, reared from *Smilax,* 19 Jan. 1973, C. J. Davis and D. Sugawa (K-72-46); allotype ♂ same data; 4 paratypes, all ♂♂, same data.

Differs from *indecens* (Perkins) in averaging larger size, generally darker in female, with pronotum more reticulate and with broader and less interrupted median raised strip, and with elytron more weakly punctured and less rounded apically. The species name refers to the Hawaiian name for *Smilax,* hoikuahiwi.

Biological notes: The holotype emerged from *Smilax* on 19 Jan. 1973 and lived for 10 days. It was mated by a male which emerged the same day. *Smilax* stems from Mt. Kaala, Oahu, were presented to the beetles, failing material from Kauai. The female laid eggs on stems of 6 mm diameter, on the outer surface of the stem, not always near a petiole base. In each case the hatching larva bored directly into the stem from the egg. This female laid eggs as follows: 19 Jan., 5 eggs; 20-22 Jan., 9 eggs; 22-23 Jan., 3; 23-24 Jan., 3; 24-25 Jan., 7; and 25-29 Jan., 2 eggs, making a total of 29 eggs in 10 days.