

B O C A G I A N A

Museu Municipal do Funchal

Madeira

10.VII.1987

No. 107

**A REVIEW OF THE SCOLYTIDAE (COLEOPTERA)
OF THE AZORES WITH DESCRIPTION OF A NEW SPECIES
OF PHLOEOSINUS**

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ABSTRACT. *Phloeosinus gillerforsi* n.sp. from Pico and San Miguel islands in the Azores Archipelago is described. *Coccotrypes canariensis* Eggers is placed in synonymy under *C. carpophagus* (Hornung). A brief review of the scolytid fauna of the Azores is included and a key to the species from the Archipelago is given.

RESUMO. Neste trabalho é descrito *Phloeosinus gillerforsi* n.sp. das ilhas do Pico e São Miguel, Arquipélago dos Açores. *Coccotrypes canariensis* Eggers é colocado como sinónimo de *C. carpophagus* (Hornung). É incluída uma breve revisão da fauna de Scolitídeos dos Açores e é fornecida uma chave para as espécies do Arquipélago.

Recently, Mr. Gösta Gillerfors of Varberg, Sweden sent seven specimens of an unknown *Phloeosinus* species from the Azores for my examination. The specimens were carefully compared to all Nearctic and Palearctic species in the genus and were found to represent an undescribed relict, probably endemic, species. The species is described below and named in honor of its collector. I wish to thank Mr. Gillerfors for sending the specimens and for allowing me to describe them at this time.

The scolytid fauna of the Azores is extremely depauperate. Serrano (1982) recorded only 10 species from the Archipelago, seven of which are clearly introduced and 3 occur also on the Canary or Madeira Islands.

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Two of the latter are misidentifications of the same species and one is placed in synonymy herein thus reducing the total to 8 species. Israelson (1984) adds two more species and the presently described species brings the total to 11. The *Phloeosinus* species described herein is the only endemic species of Scolytidae known from the Archipelago. The known introduced species are: *Scolytus rugulosus* (Ratzeburg), *Hylurgus ligniperda* (Fabricius), *Hylastes attenuatus* Erichson, *H. ater* Paykull, *Hypoborus ficus* Erichson, *Hypothenemus eruditus* Westwood, *H. crudiae* Panzer, *Xyleborinus saxeseni* Ratzeburg and *Coccotrypes carpophagus* (Hornung). The Canary/Madeira Islands species is *Liparthrum curtum* Wollaston (recorded as *L. lowei* Wollaston and *L. mandibulare* Wollaston by Serrano, 1982). Adults of these species can be identified by the key below.

1. Venter of abdomen gradually ascending to elytral tips; fore tibia with a single curved process at outer apical angle; elytra not declivous posteriorly
 *Scolytus rugulosus* (Ratzeburg)
- Venter of abdomen horizontal; fore tibia with several toothlike processes; elytra declivous posteriorly 2
2. Anterior margins of elytra arcuate, raised and bearing a row of crenulations; head usually visible from above 3
- Anterior margins of elytra straight, smooth; head usually not visible from above 8
3. Lateral prosternal area sharply elevated from coxa to anterior margin, prosternum concave; crenulations on elytral bases poorly developed; antennal funicle 7-segmented 4
- Lateral prosternal area without elevated ridge, prosternum flat; crenulations on elytral bases usually well-developed; antennal funicle 4- to 6-segmented ... 5
4. Length 2.5 mm or less; elytral interstriae narrower than striae, each with a median row of long setae, these longer than interstitial width; entire dorsal surface dull *Hylurgops attenuatus* Erichson
- Length greater than 4.0 mm; elytral interstriae equal in width or slightly wider than striae, each with 2 or 3 rows of very short setae, each seta much shorter than interstitial width; entire dorsal surface shining ... *Hylurgops ater* Paykull
5. Crenulations on elytral bases low, generally distributed along base; vestiture hairlike; larger species, length greater than 2.5 mm 6
- Crenulations on elytral bases prominent, clustered near scutellar notch; vestiture scale-like; smaller species, length less than 1.5 mm 7
6. Scutellum not visible; antennal funicle 6-segmented, club conical; eyes entire; length 5 mm or more *Hylurgus ligniperda* (Fabricius)
- Scutellum visible; antennal funicle 5-segmented, club elongate; eyes emarginate opposite antennal insertion; length 2.4-3.1 mm
 *Phloeosinus gillerforsii* Bright n. sp.

7. Interstitial scales slender, 4-6 times longer than wide, longer than interstitial width; antennal funicle 5-segmented *Hypoborus ficus* Erichson
- Interstitial scales broad, as long as wide, shorter than interstitial width; antennal funicle 4-segmented *Liparthrum curtum* Wollaston
8. Antennal club flattened, with sutures on both surfaces; vestiture on body scalelike and hairlike; smaller species, less than 2 mm in length 9
- Antennal club obliquely truncate, sutures absent on posterior surface; vestiture on body hairlike only; larger species, more than 3 mm in length 10
9. Length 1.0-1.3 mm; interstitial ground vestiture consisting of fine, randomly placed hairlike setae in addition to uniseriate rows of erect scales and striae hairlike setae *Hypothenemus eruditus* Westwood
- Length 1.4-1.6 mm; interstitial ground vestiture absent, elytral vestiture consisting only of uniseriate rows of erect interstitial scales and rows of fine striae setae *Hypothenemus crudiae* (Panzer)
10. Scutellum conical, not filling scutellar notch; elytral declivity with distinct, acute spines *Xyleborinus saxeseni* Ratzeburg
- Scutellum flat, filling scutellar notch; elytral declivity smooth, without spines *Coccotrypes carpophagus* (Hornung)

Phloeosinus gillerforsii n.sp.

Length 2.4-3.1 mm, 2.2 times longer than wide.

Female. Frons evenly, weakly convex, with a distinct, sharply elevated, median, longitudinal carina that extends from epistomal margin to level of upper margin of eye; surface on either side of carina densely granulate-punctate, with abundant, erect, yellowish setae, these more abundant, shorter along epistomal margin. Antennal club 2.5 times longer than wide, with two distinct, arcuate sutures chitinized at lateral margin and 1 arcuate suture marked by denser row of setae and punctures.

Pronotum 1.25 times wider than long, widest well behind middle; sides distinctly, strongly arcuate on basal two-thirds, strongly converging to broadly rounded anterior margin; surface densely, evenly punctured, all punctures nearly equal in size, about 0.2 mm in diameter, separated by a distance less than half their diameters, interpuncture space brightly shining, smooth; each puncture with a short erect, hairlike, yellowish seta.

Elytra (measured along suture) about as long as wide; sides parallel to posterior one-quarter, broadly rounded behind; anterior margin arcuate, overlapping base of pronotum, with a row of erect crenulations; striae moderately impressed, punctures slightly larger, more deeply impressed than those on pronotum; interstriae about as wide as striae, flat, shining, with scattered, weakly elevated crenulations on basal areas, these becoming larger and more uniseriately placed posteriorly; setae on disc basically two-ranked on interstriae 2, 4 and 6, with several supplemental setae on other interstriae. Declivity evenly convex; first and third inter-

striae very weakly elevated, with a median row of low, rounded tubercles, these slightly more abundant on 3; interstriae 2 as on disc, tubercles slightly smaller than those on 3, about equal in size to those on 1; interstriae 3 and 9 distinctly joined, 9 weakly elevated with a median row of acute tubercles; remaining interstriae as on disc but with larger tubercles posteriorly.

Head, pronotum, femur, tibia and ventral areas black, elytra, antenna and tarsi reddish-brown to light brown.

Male. Frons transversely impressed at about level of eye emargination, with a distinct, sharply elevated, longitudinal carina extending from epistoma to level of eye emargination; surface shining, densely punctate-granulate; vestiture as in female. Antenna as in female.

Pronotum as described for female.

Elytra 1.2 times longer than wide; striae shallowly impressed, less deeply so than on female, punctures slightly larger than those on pronotum, moderately impressed; interstriae 2.5 to 3.0 times wider than striae, slightly convex, with scattered, small, low crenulations and other surface irregularities; vestiture as described for female. Declivity convex; first and third interstriae very weakly elevated, almost imperceptibly so, interstriae 1 and 2 without granules or with a few very small granules or tubercles, 3 with obscure, median row of small, rounded granules, surface of interstriae shining, minutely punctured; striae not impressed, punctures moderately large, shallowly impressed, obscure; interstriae 4-9 with a median row of slightly larger granules.

Type material. Holotype (♀) labeled: "P. Açores 98. Pico, 25.6.1985, Cab. do Teixa, G. Gillerfors"/"HOLOTYPE *Phloeosinus gillerforsi*; D.E. Bright, 1986". The allotype bears the same locality label plus the appropriate allotype label. Five paratypes are labeled: "P. Azores. SM: 29.7.1983, Furnas, G. Gillerfors"/plus the appropriate paratype label.

The holotype, allotype and 2 paratypes are in the Canadian National Collection of Insects (Type No. 19391). Three paratypes have been returned to Mr. G. Gillerfors.

Remarks. This endemic species is characterized by the lack of distinct sexual dimorphism except in the weakly impressed male frons and by the unmodified elytral declivity. Adults are easily recognized by the convex elytral declivity on which the first and third interstriae are, at most, very weakly elevated and all interstriae bear a row of minute to small granules or tubercles and distinct punctures and by the distinct, median carina on the frons of both sexes. The species is probably endemic to the Azores.

The series from Pico (holotype and allotype) were "knocked from *Juniperus brevifolia* Antoine about 800 m above sea level" and the series "from Furnas on San Miguel were collected under bark of *Thuja* sp." (G. Gillerfors, personal communication). *Juniperus brevifolia* is an endemic

species now found generally above 500 m on Pico, San Miguel, Terceira, S. Jorge, Flores, Corvo and Faial (Sjögren, 1973).

NEW SYNONYMY

Coccotrypes carpophagus (Hornung), 1842, p. 116.

Coccotrypes canariensis Eggers, 1928, p. 117. New Synonymy.

The lectotype of *C. canariensis* was designated by Anderson and Anderson (1971) and is in the United States Museum of Natural History. It bears the labels: ♀ /Gran Canaria, Uyttenboogaart II-1928/ TYPE (black-bordered label)/ *Coccotrypes canariensis* n.sp., type ♀, Eggers det./ Cotype No. 60608 U.S.N.M./ *Coccotrypes canariensis* Egg. It was directly compared to authentic specimens of *C. carpophagus* in the Canadian National Collection. No differences of taxonomic value could be found.

Coccotrypes carpophagus is a species that is easily transported to various areas of the world by commerce. It is known from most tropical and subtropical regions where its hosts, principally palm seeds, grow. The species has at least 11 confirmed synonyms plus 3 or 4 additional suspected synonyms. Many more will probably be detected when the world fauna of *Coccotrypes* is studied.

I wish to thank Dr. D.M. Anderson, United States Museum of Natural History, Washington, D.C. for sending the lectotype of *C. canariensis* for my examination.

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