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New family record for the West Indies and two new species of *Glaresis* Erichson (Coleoptera: Scarabaeoidea: Glaresidae) from Hispaniola

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New family record for the West Indies and two new species of *Glaresis* Erichson (Coleoptera: Scarabaeoidea: Glaresidae) from Hispaniola

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Abstract. *Glaresis franki* Keller and Skelley **new species** and *Glaresis thomasi* Keller and Skelley **new species** (Coleoptera: Scarabaeoidea: Glaresidae) are described and illustrated. They represent the first record of the family for the West Indies. Both species are placed into the phoenicis species group. A key to the two West Indies species is presented.

Key words. Haiti, Dominican Republic, enigmatic scarab beetles, Greater Antilles.

Resumen. Se describe e ilustra *Glaresis franki* Keller y Skelley **nueva especie** y *Glaresis thomasi* Keller y Skelley **nueva especie** (Coleoptera: Scarabaeoidea: Glaresidae). Estas especies representan el primer record de la familia para las indias occidentales. Ambas especies se colocan en el grupo de especies de phoenicis. Sé presenta una clave dicotómica para las dos especies de las Antillas.

Palabras clave. Haití, República Dominicana, enigmáticos escarabajos, Antillas Mayores.

ZooBank registration. urn:lsid:zoobank.org:pub:6B2D5CD0-9036-44FD-B80F-4E1F10530ED**4**

Introduction

The scarabaeoid family Glaresidae Kolbe (1905) has one extant genus, *Glaresis* Erichson (1848) with 84 species worldwide (Zidek 2015; Paulsen 2016; Král et al. 2017; Král and Hrůzová 2018; Ochi et al. 2019; Ziani et al. 2020). The family is currently known from all continents except for Australia and Antarctica. The genus *Glaresis* was first revised for North America by Gordon (1970), having species added by Gordon (1974) and Warner (1995), and a subsequent update and expanded revision for all of the Americas by Gordon and Hanley (2014). Gordon and Hanley (2014) reported 35 species from the Western Hemisphere, and Paulsen (2016) added two species from South America. The Nearctic is the most speciose zoogeographical region (31 species; Zidek 2015; Král et al. 2017), while the neotropics have the smallest number of described species (8 species; Král et al. 2017; this paper).

Here we report the first family record from Hispaniola in the West Indies and describe two new species in the genus *Glaresis*, raising the species total to 86. Specimens were collected in both the Dominican Republic and Haiti and are morphologically distinct from any congeners from the New World.

Materials and Methods

As with all other *Glaresis* species, specimens of these new species were encrusted with dirt or secretions. To see structures, they were relaxed in a weak detergent, water with a small amount of ammonia, before initial cleaning and dissection. Harder surface deposits softened quickly in a 10% KOH solution and were easily brushed away. Key characters and others stated in the descriptions are not readily visible on encrusted specimens.

Specimens were examined using a Leica MS5 stereomicroscope equipped with an ocular grid. Photographs of the type specimen were taken with a Visionary Digital Passport imaging system (Dun, Inc.). Images were stacked with Zerene Stacker® software version 1.04 and digitally edited in Adobe PhotoShop® CS6. Lateral pronotal and genitalia photographs were taken with a Syncroscopy Auto-Montage system with a JVC 3-CCD, KY-F75U digital camera through a Leica Z16 APO lens.

Verbatim label data are cited for all designated type material. Separate labels are indicated by space, double slash, double slash, space (//), and line breaks by slash, space (/). Additional information and remarks are placed in brackets.

All holotypes of the new species have printed red labels with: "HOLOTYPE / [name of new species], [sex symbol] / Keller & Skelley det. 2020". The allotype has a blue label with: "ALLOTYPE / [name of new species], [sex symbol] / Keller & Skelley det. 2020". Specimens studied are deposited at the Florida State Collection of Arthropods (FSCA).

Morphological descriptions and terminology followed the descriptions given in Gordon and Hanley (2014) and followed recommendations on useful characters for identifications and diagnostic keys by Gordon and Hanley (2014) and Král et al. (2017).

Results

Although the pronotal surface sculpture is similar to some members of the inducta species group, these Hispaniolan species of *Glaresis* will key to the phoenicis species group in Gordon and Hanley (2014). Besides being from the Greater Antilles, they differ from other members of that group in the following characters [comments in brackets are for the phoenicis group]: pronotum with seta-bearing longitudinal carinae close [vs. longitudinal carinae well separated], metatibial outer margin weakly curved, margin crenulate but lacking teeth [vs. margin with row of teeth or a distinct tooth and emargination at apical third]; metatrochanteral posterior margin strongly crenate, almost toothed [vs. margin weakly crenate].

Key to species of West Indian Glaresidae

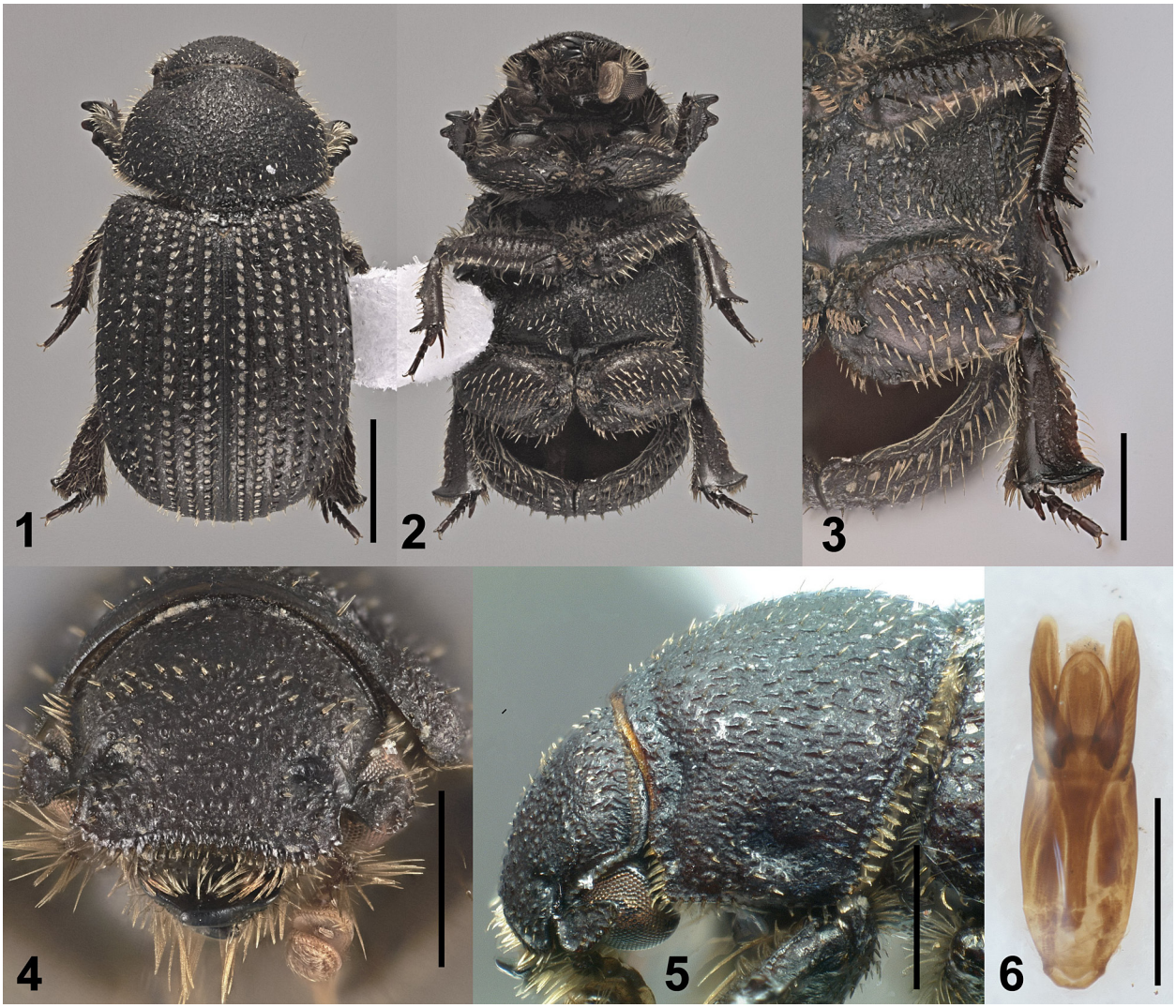
1. Body dark brown-black; pronotal longitudinal carinae weakly raised, indistinct laterally above foveae; pronotal surface between carinae strongly rugose and strongly microreticulate, distinctly dulled; southeastern Haiti . . . . . ***Glaresis franki* Keller and Skelley, n. sp**.

— Body red-brown; pronotal longitudinal carinae sharply raised, distinctly present laterally above foveae; pronotal surface between carinae strongly rugose, weakly microreticulate, somewhat glossy; northwestern Dominican Republic . . . . . ***Glaresis thomasi* Keller and Skelley, n. sp.**

Glaresis franki Keller and Skelley, new species

Figures 1–6

Description. Male holotype. Length 3.8 mm, width 2.0 mm; body form elongate, slightly widened from elytral base to apical ⅓ (Fig. 1–2). Color dark brown, nearly black. Head surface densely microreticulate, strongly dull with shiny tubercles each bearing a single seta, separated by 2–3 diameters, tubercle diameters equal 1–2 ocular facets; setae short, barely visible medially, longer and distinct laterally and basally. Vertex with basal groove and carina complete from side to side, groove continuing laterally above eyes. Clypeal apex weakly emarginate medially, somewhat sinuate, with small, dense, evenly spaced tubercles, appearing serrate, without large tubercle on each side of middle, lateral angles sharply oblique, pronounced, lacking tooth (Fig. 4–5). Mandible pair symmetrical; mesal tooth strong; lateral prominence weak; outer margin abruptly rounded. Pronotum with all foveae



Figures 1–6. *Glaresis franki* Keller and Skelley, holotype male. **1)** Dorsal habitus. **2)** Ventral habitus. **3)** Middle and hind legs. **4)** Clypeus and head surface**. 5)** Pronotal surface, lateral view. **6)** Male genitalia. Figures 1–2 scale bar = 1.0 mm, Figures 3–6 scale bar = 0.5 mm.

weakly impressed except fovea on each side medially near lateral margin strongly impressed; surface with straight setae-bearing carinae short, weakly raised; surface between carinae rugose and strongly microreticulate, dulled (Fig. 5); carinae weakly raised, indistinct above lateral foveae. Elytra with surface dull, densely microreticulate; striae convex, feebly carinate, carinal segments widely separated, each with short seta; intervals with deep, circular to nearly rectangular punctures. Metasternum long, feebly shiny, densely microreticulate and rugose, surface medially flat with weak median carina on posterior ⅓, surface either side of glabrous middle with short seta bearing ridges; metasternal groove nearly invisible. Lateral protibial teeth unevenly spaced, basal 2 teeth close together. Mesotibia with 8 spines laterally, evenly spaced in posterolateral emargination terminating at base of strong apical projection (Fig. 3). Posterior metatrochanteral margin strongly crenate, almost toothed (Fig. 3); posterosuperior surface of metatrochanter with tooth. Metafemoral surface with widely scattered, elongate, setae-bearing tubercles, strongly microreticulate; width to length ratio 1.0:1.5, with narrow flange on anterior margin; small blunt tooth at angle near trochanter; posterosuperior margin without teeth (Fig. 3). Metatibia broadly triangular, surface rugose-microreticulate, outer margin evenly strongly crenate, lacking large teeth, inner margin smooth, pubescent (Fig. 3). Apex of 5th abdominal ventrite truncate. Genitalia with basal piece slightly longer

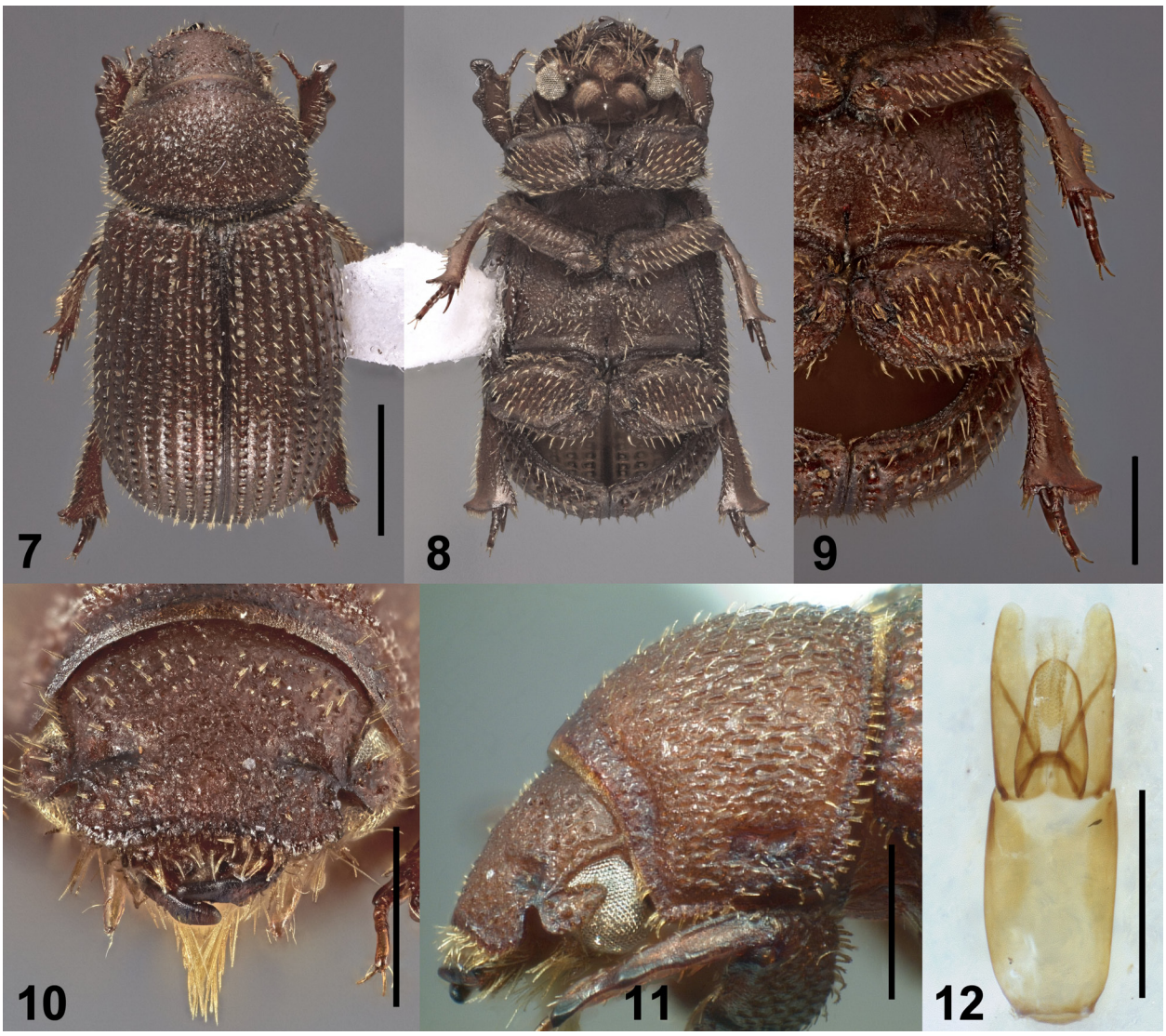
than parameres, proximal end curved; median lobe shorter than parameres, tapered from base to rounded apex, broad, about 1.5× width of paramere at middle, curved upward before apex; paramere weakly curved in lateral view, apex bluntly rounded (Fig. 6).

Type material. Holotype male (FSCA): **Haiti**: 5 mi. W. of / Ganthier by road / 26-XI-1970, J. H. Frank, / black-light trap.

Etymology. This species is named for the collector of the species, J. Howard Frank, a close friend and colleague of Mike Thomas. They were both long-term members of the Editorial Board for Insecta Mundi from its early years until recently. Naming the two *Glaresis* species on Hispaniola for these two friends seems appropriate.

Glaresis thomasi Keller and Skelley, new species

Figures 7–12



Figures 7–12. *Glaresis thomasi* Keller and Skelley, holotype male. **7)** Dorsal habitus. **8)** Ventral habitus. **9)** Middle and hind legs. **10)** Clypeus and head surface. **11)** Pronotal surface, lateral view. **12)** Male genitalia. Figures 7–8 scale bar = 1.0 mm, Figures 9–12 scale bar = 0.5 mm.

Description. Male holotype. Length 3.6 mm, width 2.0 mm; body form elongate, slightly widened from elytral base to apical ⅓ (Fig. 7–8). Color red-brown. Head surface densely microreticulate, strongly dull with shiny tubercles each bearing single seta, separated by 2–3 diameters, tubercle diameters equal 1–2 ocular facets; setae short, barely visible medially, longer and distinct laterally and basally. Vertex with basal groove and carina complete from side to side, groove continuing laterally above eyes. Clypeal apex weakly emarginate medially, somewhat sinuate, with small, dense, evenly spaced tubercles, appearing serrate, without large tubercle on each side of middle, lateral angles roundly oblique, pronounced, lacking tooth (Fig. 10–11). Mandible pair symmetrical; mesal tooth strong; lateral prominence weak; outer margin abruptly rounded. Pronotum with all foveae weakly impressed except fovea on each side medially near lateral margin strongly impressed; surface with straight setae-bearing carinae long, sharply raised; surface between carinae rugose and weakly microreticulate, glossy (Fig. 11); carinae distinct laterally above lateral foveae. Elytra with surface somewhat glossy, microreticulate; striae convex, feebly carinate, carinal segments widely separated, each with short seta; intervals with deep, circular punctures. Metasternum long, feebly shiny, microreticulate and rugose, surface medially flat with weak median carina on posterior ⅓, surface either side of glabrous middle with short seta bearing ridges; metasternal groove nearly invisible. Lateral protibial teeth unevenly spaced, basal 2 teeth close together. Mesotibia with 9 spines laterally, evenly spaced in posterolateral emargination terminating at base of strong apical projection (Fig. 9). Posterior metatrochanteral margin crenate (Fig. 9); posterosuperior surface of metatrochanter with tooth. Metafemoral surface with widely scattered, elongate, setae-bearing tubercles, microreticulate; width to length ratio 1.0:1.5, with narrow flange on anterior margin; small blunt tooth at angle near trochanter; posterosuperior margin without teeth (Fig. 9). Metatibia broadly triangular, surface microreticulate, outer margin evenly crenate, lacking teeth, inner margin smooth, pubescent (Fig. 9). Apex of 5th abdominal ventrite truncate. Genitalia with basal piece slightly longer than parameres, proximal end curved; median lobe shorter than parameres, tapered from base to rounded apex, broad, about width of paramere at middle, reflexed before apex; paramere feebly curved in lateral view, apex bluntly rounded (Fig. 12).

Female allotype. Length 3.6 mm, width 2.0 mm. Apex of 5th abdominal ventrite with triangular notch. Other differences here considered individual variations include: Mesotibia with 7 spines laterally, 4 short on median tooth, 3 longer and evenly spaced in posterolateral emargination. Metatibia narrower, not as broad medially as in male holotype.

Type material. Holotype male (FSCA): **DOMINICAN REPUBLIC**/ Monte Cristi, 4.8 km. N / Villa Elisa, mv + bl, 31 / May 1994, R. Turnbow. Allotype female (FSCA): same label data as holotype.

Etymology. This species is named for our late friend and colleague Dr. Michael C. Thomas, who took multiple trips to Hispaniola together with Robert Turnbow collecting many new species.

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