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species and first genus record from The Bahamas

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Trixagus steineri (Coleoptera: Throscidae), a new species and first genus record from The Bahamas

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Abstract. *Trixagus steineri* Johnson **new species** (Coleoptera: Throscidae) is described from New Providence Island, The Bahamas. This is the first report of *Trixagus* Kugelann from The Bahamas and the first of Throscidae since the transfer of Lissominae to Elateridae.

Key Words: throscid beetle, new country record, West Indies, Lucayan Archipelago, Caribbean

Introduction

Trixagus Kugelann 1794 is the second largest genus of Throscidae with 80 valid species presently assigned. Horn (1885, 1890) reviewed the species for the United States and Mesoamerica, and then Blanchard (1917) revised part of the family for Canada and the United States in a posthumous article edited by H.C. Fall. Schenkling (1928) provided the only published worldwide catalog. Yensen (1975) provided a modern revision for the species for Canada and the United States, and then (Yensen 1980) described *T. cobosi* from Panama and provided a new key to all of the described American species. Among these studies only *T. chevrolati* (Bonvouloir 1859) was recorded from southern Florida, thus being a species potentially shared with The Bahamas. *Aulonothroscus bicarinatus* Fleutiaux (1911, 1947) (Blackwelder 1944), from Guadeloupe, is the only other throscid species previously described from the West Indies.

Prior to the work of Lawrence and Newton (1995) the subfamily Lissominae received divergent treatment and was usually treated as a subfamily of Throscidae (e.g., Schenkling 1928, Blackwelder 1944, Yensen 1975). This subfamily is represented in The Bahamas by two species of *Drapetes* Megerle 1821 (Turnbow and Thomas 2008). Representation of the subsequently restricted family in The Bahamas was provided by two undetermined species of *Aulonothroscus* Horn listed by Turnbow and Thomas (2008) from Andros, Eleuthera, and Great Inagua islands; these will be treated separately from here. The reporting of a new species of *Trixagus* from New Providence Island provides a second genus from the country and the entire Lucayan Archipelago, and suggests that related species of both genera from Hispaniola and Cuba are probable and await discovery (Peck 2005; Perez-Gelabert 2008).

Methods and Materials

Specimens reported below were submitted for determination by Warren Steiner, United States National Museum of Natural History (USNM), and were collected by black light during a series of sampling efforts on various islands of The Bahamas. Basic measurements were taken with an ocular micrometer at 0.1 mm increments. Dissections were initiated by soaking each specimen in household ammonia for 1.0–1.5 hr, removing the abdomen, determining the sex, and extracting the aedeagus from male specimens. Dissected genitalia and lightly sclerotized abdominal sclerites are in a plastic microvial with a drop of glycerine and pinned below the pointed specimen. Label data is presented verbatim. All specimens were returned to the USNM.

Taxonomy

Trixagus steineri Johnson, new species
(Figures 1–2)

Description. Male. Body (Fig. 1) elongate-oval, moderately convex, 2.3–2.4 mm long, 0.9–1.0 mm wide; shining, dark castaneous, except tarsi brunneotestaceous; pubescence cinereoflavous, decumbent, with strial setae suberect and an erect brush of setae laterally near midlength of elytron.

Head moderately convex; finely, shallowly punctured; with a pair of fine carinae slightly converging from vertex around compound eyes then diverging around antennal fossae to anterolateral angles of frons. Ocular canthus long, narrowly triangular; nearly dividing eye, separated from ocular rim by two facets; anterior area of eye with 83–85 facets. Antenna clavate; antennomere 2 subequal in length to antennomeres 3 and 4, and 1.5 times as wide; antennomeres 3–8 short, subcylindrical; antennomeres 9–11 abruptly forming a serratiform club, densely setose.

Thorax with pronotum 1.9 times wider than long; moderately-densely punctured, interpunctural spaces subequal to puncture diameter; lateral margin carina abbreviated, reaching approximately 80% of distance to anterior margin. Hypomeron punctured as pronotum; posterior third deeply fossate to receive antennal club and foreleg tibia and tarsus; mesal margin deeply sulcate to receive antennal flagellum. Hind angle venter fossate to hold knee of foreleg. Scutellar shield triangular, flat on disc. Elytra 3 times length of pronotum along median. Striae moderately impressed from base to apex; shallowly, serially punctate; marginal striae deeply impressed in basal half. Intervals flat, finely biserially punctured. Prosternum with broad intercoxal process, margins of process extended as carinae to meet anterior margin, intercarinal space sparsely punctured, shining. Ventrites of mesothorax deeply depressed laterally, forming cural depressions receiving fore and middle legs. Metaventrite moderately convex; moderately, shallowly punctured; densely pubescent; short transverse tarsal sulcus, not reaching metepimeron. Metacoxa deeply excavated posteriorly to received femur; ventral plate subquadrate basally, subangulate, rapidly narrowing laterally. Middle and hind leg tibiae with fringe of long setae along subcarinate dorsal angle. Tarsi slender filiform; tarsomere 3 slightly dilated apically; tarsomere 4 with membranous ventral lobe extending about half-length of tarsomere 5; claws small, slender.

Abdomen with ventrites punctured and pubescent as metaventrite; ventrite 5 broadly rounded apically, pubescence becoming longer and suberect posteriorly. Aedeagus as in Fig. 2; basal piece 0.64 times total length; basal third with narrow incision; bearing two large setae laterally and ventrally at shoulder before articulation. Median lobe 0.34 times total length, evenly attenuate apically, apex narrowly rounded. Lateral lobes 0.32 times total length, sinuate at midlength, apex acuminate, with four stout setae basally and ventrally.

Female unknown.

Type Material: HOLOTYPE, male, labeled “BAHAMA ISLANDS: New Providence, near Old Fort Bay, 25°02'43”N, 77°29'54”W, 15 June 2011 / at black light, gap at base of forested hill, sandy soil; coll. W.E. Steiner & J.M. Swearingen.” Deposited in the USNM.

Paratypes labeled identically as holotype (2, USNM).

Etymology. It is with great pleasure to name this new species after my friend and colleague Warren E. Steiner, Jr., who co-collected the known specimens.

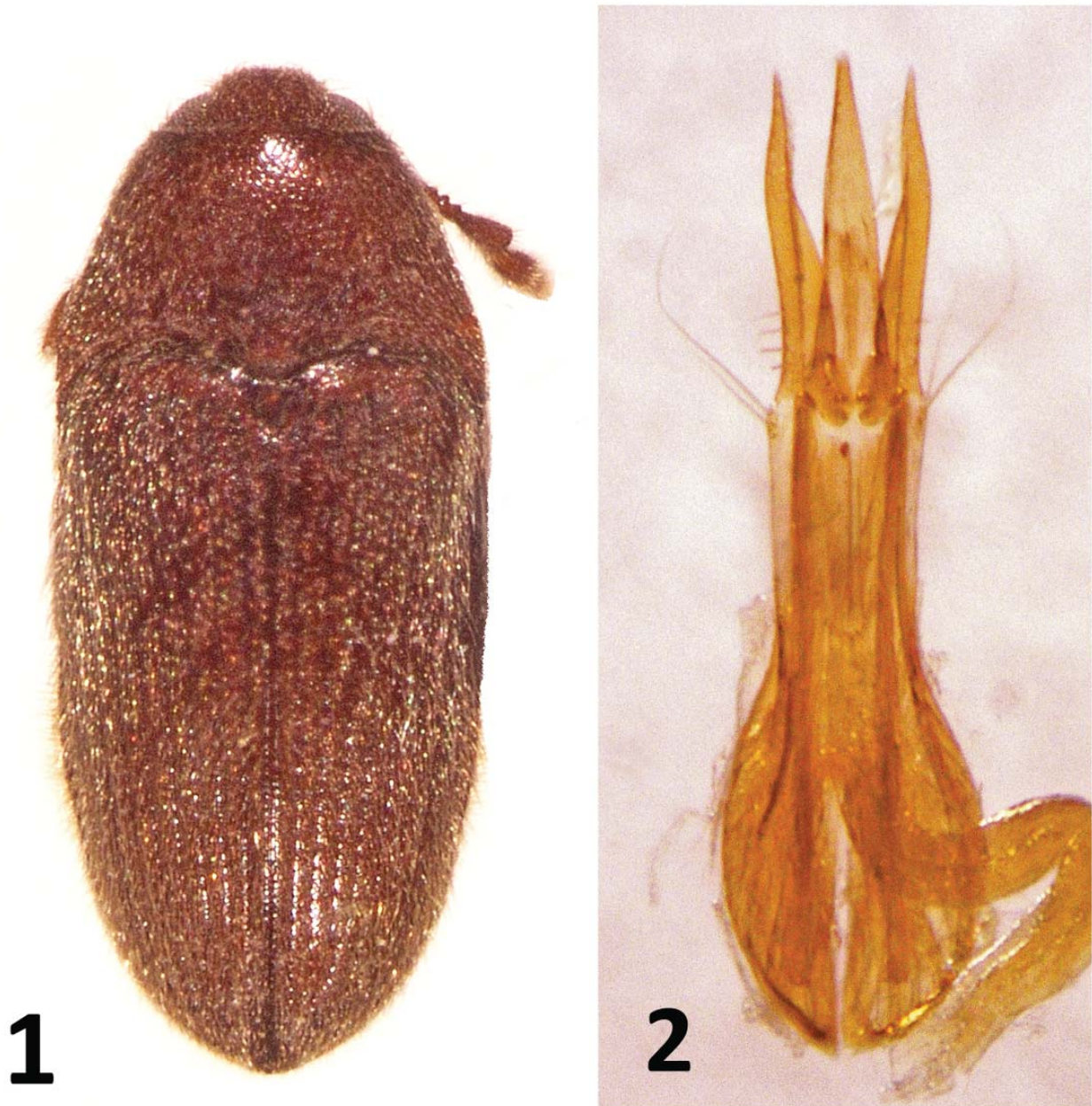
Distribution. All specimens were collected on New Providence Island in The Bahamas. It is doubtful that this species is endemic to this island, but should be expected on other forested islands of the western portions of the archipelago, especially Andros Island.

Discussion. Yensen (1975, 1980) gave key characters for recognizing *Trixagus* species with an emphasis on the appearance of the pubescence, especially the relative setal lengths and proportion of the elytral length occupied by long, projecting lateral setae, the body shape in dorsal silhouette, and the aedeagi. With these characters *T. steineri* is most similar to *T. chevrolati* in overall appearance, though slightly more parallel at midlength and with a shorter length to the elytral fringe of setae. The aedeagus differs from all described North American species by having the lateral lobes broader basally, sinuate laterally at midlength and evenly attenuate to subacute apices (Fig. 2), and the median lobe evenly attenuate

apically to a narrowly rounded and membranous apex. In his key to the species of the Americas (Yensen 1980), *T. steineri* will trace to *T. chevrolati* (Bonvouloir), being reliably separated by aedeagal morphology and distribution (Fig. 2; Yensen 1975, Fig. 3b).

Acknowledgments

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Figures 1–2. Adult and aedeagal habitus of *Trixagus steineri* Johnson, new species. 1) Adult male habitus, dorsal aspect. 2) Aedeagus, dorsal aspect.

Literature Cited

- Blackwelder, R. E. 1944.** Checklist of coleopterous insects of Mexico, Central America, The West Indies, and South America. United States Natural Museum Bulletin, Part 2, 185: 189–341.
- Blanchard, E. 1917.** Revision of the Throscidae of North America (Coleoptera). Transactions of the American Entomological Society 43: 1–26.
- Fleutiaux, E. 1911.** Revision des Trixagidae, Melasidae et Elateridae (Col.) des Antilles française. Annales de la Société Entomologique de France 80: 235–264.
- Fleutiaux, E. 1947.** Throscidae. p. 135–138. *In*: Fleutiaux, E., C. Legros, P. Lepesme et R. Paulian, Faune de l'Empire française. VII. Coléoptères des Antilles, vol. 1. Office de la Recherche Scientifique Coloniale; Paris, France. 239 p.
- Horn, G. H. 1885.** Synopsis of the Throscidae of the United States. Transactions of the American Entomological Society 12: 198–208.
- Horn, G. H. 1890.** Fam. Throscidae. p. 193–209, pl. X. *In*: F. D. Godman and O. Salvin (Eds.). Biologia Centrali-Americana, Insecta, Coleoptera, vol. 3, part 1, Serricornia. R. H. Porter; London, U.K. 690 p. + 27 pl.
- Lawrence, J. F., and A. F. Newton, Jr. 1995.** Families and Subfamilies of Coleoptera (with selected genera, notes, references and data on family-group names). p. 779–1006. *In*: J. Pakaluk, and S. A. Slipinski (eds.). Biology, phylogeny, and classification of Coleoptera: Papers celebrating the 80th birthday of Roy A. Crowson. 2 vols. Museum i Instytut Zoologii PAN; Warszawa, Poland. 1092 p.
- Peck, S. B. 2005.** A checklist of the beetles of Cuba with data on distributions and bionomics (Insecta: Coleoptera). Arthropods of Florida and Neighboring Land Areas 18: 1–241.
- Perez-Gelabert, D. E. 2008.** Arthropods of Hispaniola (Dominican Republic and Haiti): A checklist and bibliography. Zootaxa 1831: 1–530.
- Schenkling, S. 1928.** Throscidae, Cerophytidae, Perothopidae. p. 3–26. Vol. 11, Pars 101. Coleopterorum Catalogus. W. Junk; Berlin.
- Turnbow, R. H., Jr., and M. C. Thomas. 2008.** An annotated checklist of the Coleoptera (Insecta) of the Bahamas. Insecta Mundi 0034: 1–64.
- Yensen, E. 1975.** A revision of the North American species of *Trixagus* Kugelann (Coleoptera: Throscidae). Transactions of the American Entomological Society 101(1): 125–166.
- Yensen, E. 1980.** A New Species of *Trixagus* from Panama and a key to New World *Trixagus* (Coleoptera: Throscidae). The Coleopterists Bulletin 34(3): 257–261.

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