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Scientific Note

Seven replacement names for bees in the genus *Protandrena* Cockerell, 1896 (Hymenoptera: Andrenidae: Panurginae)

The Protandrenini is a New World tribe of 436 species of andrenid bees (Ascher & Pickering 2022, Bossert et al. 2022). The North American protandrenines form a single clade (Bossert et al. 2022, Ramos et al 2022) of 186 species (Ascher & Pickering 2022). Over the past 170 years, the North American protandrenine bees have been placed in many different genera, including *Panurginus* Nylander, 1848 and *Psaenythia* Gerstäcker, 1868 (Michener 1944). More recently they have been considered to consist of between two (Ascher & Pickering 2022, Michener 1944, Michener, 1951, Mitchell 1960), three (Michener 2000, 2007), five (Ramos et al. 2022), six (Michener et al. 1994, Timberlake 1973), or seven (Hurd 1973) genera, sometimes including South American taxa (Michener 1944, 2000, 2007; Mitchell 1960). A recent molecular analysis (Bossert et al. 2022) has shown that none of these classifications adequately reflects the phylogeny of the group, all being paraphyletic.

Pending further research, we believe the best solution for now is to recognize a single genus (*Protandrena*) with five subgenera: *Anthemurgus* Robertson, 1902*, Heterosarus* Robertson, 1918*, Metapsaenythia* Timberlake, 1969*, Pseudopanurgus* Cockerell, 1897*, Pterosarus* Timberlake, 1967 and *Protandrena* (s. str.). A possible taxonomic alternative would be to recognize *Pseudopanurgus* along with *Anthemurgus* and the currently recognized subgenera of *Protandrena* (*sensu* Michener 2007) as genera. Unfortunately, however, it is not at all obvious that either *Heterosarus* (see Ramos 2011) or *Pterosarus* (see Ramos 2011, Timberlake 1967) is monophyletic. Far more extensive sampling is necessary to resolve the relationships of the North American protandrenines. In the absence of such a study, the one genus solution is most adequate to retain genera that correspond to natural groups. This results in seven cases of secondary homonymy for which we provide replacement names below. Only one of these species is relatively common, the rest being known from only one sex, often just the holotype.

Systematics

Tribe Protandrenini Robertson, 1904
Genus *Protandrena* Cockerell, 1896

Subgenus *Heterosarus* Robertson, 1918

Protandrena (*Heterosarus*) *chamaesycephila*, **nom. nov**.

Heterosarus euphorbiae Timberlake, 1975:24, *nomen praeoccupatum* (junior secondary homonym), *nec Psaenythia euphorbiae* Timberlake, 1955 = *Protandrena* (*Protandrena*) *euphorbiae* (Timberlake, 1955).

Etymology: The name refers to *Chamaesyce*, a subgenus of the huge genus *Euphorbia* L. (Euphorbiaceae) whose species are the primary pollen hosts of this oligolectic bee.

Comments: This is a common bee known from both males and females and occurring from southern Arizona to Chiapas, Mexico (Timberlake 1975).

Subgenus *Protandrena*

Protandrena (*Protandrena*) *impunctata*, **nom. nov**.

Protandrena pernitens Timberlake, 1976:193, *nomen praeoccupatum* (junior secondary homonym), nec *Heterosarus pernitens* Timberlake, 1975 = *Protandrena* (*Heterosarus*) *pernitens* (Timberlake, 1975).

Etymology: The name refers to the nearly impunctate male metasoma.

Comments: Known only from males from Morelos and Oaxaca, Mexico (Timberlake 1976).

Protandrena (*Protandrena*) *zacateca*, **nom. nov**.

Protandrena fasciata Timberlake, 1976:164 *nomen praeoccupatum* (junior secondary homonym), nec *Pseudopanurgus fasciatus* Timberlake, 1973 = *Protandrena* (*Pseudopanurgus*) *fasciata* (Timberlake, 1975)

Etymology: The name refers to the locale of the type female.

Comments: Known only from the type female from Zacatecas, Mexico (Timberlake 1976).

Protandrena (*Protandrena*) *pseudomexicanorum*, **nom. nov**.

Protandrena durangoensis Timberlake, 1976:159, *nomen praeoccupatum* (junior secondary homonym), nec *Heterosarus durangoensis* Timberlake, 1975 = *Protandrena* (*Heterosarus*) *durangoensis* (Timberlake, 1975)

Etymology: The name follows the suggestion of Timberlake (1976) that the species is very closely related to *P.* (*Protandrena*) *mexicanorum* (Cockerell).

Comments: Known only from the type female from Durango, Mexico (Timberlake 1976).

Protandrena (*Protandrena*) *rozeni*, **nom. nov**.

Protandrena lateralis Timberlake, 1976: 177, *nomen praeoccupatum* (junior secondary homonym), nec *Pseudopanurgus lateralis* Timberlake, 1975 = *Protandrena* (*Protandrena*) *lateralis* (Timberlake, 1975)

Etymology: The species is named for Jerome Rozen, Jr., whose numerous studies have greatly expanded what we know of the nests and larval morphology of the North American Protandrenini (Rozen 1967, 1970, 1989).

Comments: Known only from the type male from Durango, Mexico (Timberlake 1976).

Protandrena (*Protandrena*) *santacruzana*, **nom. nov**.

Protandrena amplipennis Timberlake, 1976:146, *nomen praeoccupatum* (junior secondary homonym), nec *Heterosarus amplipennis* Timberlake, 1975 = *Protandrena* (*Heterosarus*) *amplipennis* (Timberlake, 1975)

Etymology: The species is named for Santa Cruz County, Arizona, the locale of the type female.

Comments: Known only from the type female (Timberlake 1976).

Protandrena (*Protandrena*) *tauformis,* **nom. nov**.

Protandrena semilevis Timberlake, 1976:203, *nomen praeoccupatum* (junior secondary homonym), nec *Pseudopanurgus semilevis* Timberlake, 1973 = *Protandrena* (*Pseudopanurgus*) *semilevis* (Timberlake, 1973)

Etymology: The name refers to a t-shaped mark on the female clypeus.

Comments: Known from a series of females from Guerrero, Morelos and Oaxaca, Mexico (Timberlake 1976).

Protandrena (*Protandrena*) *maurula* (Cockerell, 1896)

Protandrena texana Timberlake 1976: 40, **syn. nov.**, nec *Pseudopanugus texanus* Timberlake, 1973 = *Protandrena* (*Pseudopanurgus*) *texana* (Timberlake, 1973).

Comments: Only males have been described for *P.* (*Protandrena*) texana while only females have been described for *P.* (*Protandrena*) *maurula*. We have seen a series of male and female *Protandrena* collected by Sam Droege at one site in Kent County, Texas on 22 April 2016. The females of this series are identical with the description of *P.* (*Protandrea*) *maurula* while the males agree with *P.* (*Protandrena*) *texana* supporting the synonymy of *P.* (*Protandrena*) *texana* under *P.* (*Protandrena*) *maurula*.

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Silas Bossert, *Department of Entomology, Washington State University, Pullman, Washington 99164, U.S.A., e-mail: silas.bossert@wsu.edu; and* John L. Neff (corresponding author), *Central Texas Melittological Institute, 7307 Running Rope, Austin, Texas 78731, U.S.A., e-mail: jlnatctmi@yahoo.com.*

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