A distributional checklist of the leaf-cutting bees (Hymenoptera: Megachilidae) of Florida

J. M. Leavengood, Jr. and D. Serrano
Entomology and Nematology Department
University of Florida
Gainesville, FL 32611

Introduction

The leaf-cutting bees are a diverse group which is commonly encountered all across the country. With over 600 North American species, most of which are in the genera Anthidium, Dianthidium, Stelis, Heriades, Hoplitis, Osmia, Megachile and Coelioxys, there are numerous “non-Apis” pollinators. Being an important taxon, there is a definite need for an awareness of their distribution across the United States and, perhaps in time, everywhere. This may allow us to follow the establishment of exotic species such as Megachile [Callomegachile] torrida Smith, M. [Pseudomegachile] lanata Fabricius, and an unidentified exotic which is listed below in the subgenus Callomegachile.

The purpose of this paper is to provide a county-based distribution of each species and, when applicable, each respective subspecies in the state of Florida. This information may prove useful in the investigation of potentially precognitive (endemic) species and habitat preference and/or habitat isolation across Florida’s landscape.

All information is based on specimens in the Florida State Collection of Arthropods, at the Florida Department of Agriculture and Consumer Services: Division of Plant Industry, specimens collected by the authors and J. B. Pascarella, as well as distributional notes from the literature (Mitchell 1962, Krombein et al. 1979). This is the first of a series of planned publications reviewing Florida’s megachilid fauna.

Family Megachilidae
[79 species + 7 subspecies = 86 taxa]

Subfamily Megachilinae
[79 species + 7 subspecies = 86 taxa]

Tribe Lithurgini
[2 species]

Lithurgus [Lithurgopsis] Berthold
L. gibbosus (Smith), ALA; CLA; DAD, HIG; MART, PUT, SUW, VOL, BRE
L. littoralis (Cockerell) = bruesi Mitchell, all FSCA specimens were collected in Texas.

Tribe Osmiini
[14 species + 1 subspecies]

Ashmeadiella [Ashmeadiella] Cockerell
A. floridana (Robertson), LEV
Heriades [Neotrypetes] Robertson

H. carinata Cresson, ALA, BAK, COLU, LIB, JEF, LEO
H. leavitti Crawford, ALA, BAK, CLA, COLU, DAD, HIG, IND, JEF, LAK, LEO, LEV, MAN, MARI, ORA, SAR, SUW
H. v. variolosa (Cresson), LEO, no FSCA specimens collected from Florida.

Hoplitis [Alcidamea] Cresson

H. pilosifrons (Cresson), ALA, BAK, COLU, SUM
H. t. truncata (Cresson), ALA, BAK, BRA, COLU, HIG, LIB, MARI, SUW, VOL

Hoplitis [Robertsonella] Titus

H. micheneri Mitchell, SUW, due to the large number of specimens collected at this locality, and no other locality in Florida, the species may be restricted to this region.

Osmia [Diceratosmia] Robertson

O. subfasciata miamiensis Mitchell, CIT, DAD, no FSCA specimens.
O. s. subfasciata Cresson, HIG, LEO, LEV, PAS, all FSCA specimens were collected in Texas.

Osmia [Helicosmia] Thomson, includes some Osmia [Chalcosmia]

O. chalybea Smith, ALA, BRE, COLL, COLU, HER, HIL, SEM
O. georgica Cresson, BAK, COLU, GUL, JAC, LIB
O. texana Cresson, HER, no FSCA specimens were collected in Florida.

Osmia [Melanosmia] Schmiedeknecht

O. atriventris Cresson, JAC, WAK, no FSCA specimens were collected in Florida.
O. pumila Cresson, no FSCA specimens were collected in Florida.
O. sandhouseae Mitchell, BAK, COLU, JAC, LEO, LEV

Tribe Anthidiini

[14 species + 2 subspecies]

Anthidiellum [Anthidiellum] Pasteels

A. n. notatum (Latrielle), ALA, BRA, CAL, CLA, ESC, LEO, LEV, LIB, MARI, MAD, PUT, WAK
A. notatum rufimaculatum Schwarz, DAD, HIG, LIB, MAN, MON, OSC, POL, PUT, SLU
A. perplexum (Smith), ALA, BAK, CIT, CLA, COLU, DAD, DUV, ESC, GUL, HIG, IND, LEO, LEV, LIB, MARI, MART, MON, NAS, OKA, ORA, PAS, PUT, SLU, SRO, SUW, UNI, WAK

Anthidium [Anthidium] Fabricius

A. maculifrons Smith, ALA, BRA, DAD, GUL, HIG, HIL, POL, PUT, SUW

Dianthidium [Dianthidium] Cockerell

D. c. curvatum = D. c. floridiense = D. floridiense Schwarz, COLL, DAD, HIG, MART, MON, SAR
D. sp. ?, CLA, ESC, GUL, TAY, WAK, there are six specimens of this insect, one of which keys out as D. curvatum in Mitchell (1962). However, they do not appear to be D. curvatum.

Paranthidium [Paranthidium] Cockerell

P. jugatorium (Cresson), LEO, no FSCA specimens from Florida.

Stelis [Dolichostelis] Parker and Bohart

S. loutilae Cockerell = Stelis floridana Graenicher, maybe = Stelis [Protostelis] c. costalis according to Parker and Bohart (1979), ALA, CLA, DES, HAR, HIG, HIL, LEV, MAN, MARI, ORA, ORA, PAS, POL, SRO, UNI, VOL
Stelis [Protostelis] Friese = [Heterostelis] Timberlake 1941
S. a. australis Cresson, ALA, LEO, PUT, VOL
S. australis floridensis (Mitchell), ALA, CIT, CLA, LEV
S. grossa = Stelis [Protostelis] grossa according to Mitchell (1962), ALA, no FSCA specimens.

S. ater Mitchell, COLL, SAR
S. lateralis Cresson, ALA, BAK, COLU, SUW

Trachusa [Heteranthidium] Cockerell

T. crassipes (Cresson), ALA, LEV, OKA
T. fontemvitae (Schwarz), CLA, HIG, HIL, MARI, PUT

Trachusa [Legnanthidium] Griswold and Michener

T. ridingsii (Cresson), ALA, DAD, LEO, LEV, SRO

Tribe Megachilini

[49 species + 4 subspecies]
Coelioxys [Acrocoelioxys] Mitchell
  C. dolichos Fox, ALA, CIT, CLA, COLL, DAD, GUL, HER, HIG, JAC, LEE, LEO, LEV, MARI, MON, NAS, PAL, PUT, SLU, UNI, VOL, WAK

Coelioxys [Boreocoelioxys] Mitchell
  C. octodentata Say = C. atlantica Mitchell, ALA, DAD, FLA, HIG, LEV
  C. rufitarsis Smith, DUV, JEF, no FSCA specimens were collected in Florida.
  C. sayi Robertson, ALA, BAK, BAY, CIT, COLL, COLU, CLA, DAD, DES, DIX, ESC, FRA, GUL, HIG, IND, JAC, LAK, LEE, LEO, MAN, MARI, MON, NAS, OKA, PUT, SAR, SLU, SRO, UNI, WAK

Coelioxys [Cyrtocoelioxys] Mitchell
  C. immaculata Cockerell, ALA, SUW
  C. mitchelli Baker, LEO, no FSCA specimens available.

Coelioxys [Cyltocoelioxys] Mitchell
  C. floridana ? Cresson, no FSCA specimens available.
  C. modesta Smith, ALA, HIG, JAC, SUW
  C. obtusiventris Crawford, no FSCA specimens available.

Coelioxys [Haplocoelioxys] Mitchell
  C. mexicana Cresson = asteris, ALA, CIT, CLA, DAD, DIX, GUL, HIG, HIL, LEV, MARI, MART, ORA, PUT, SAR, SJO, UNI

Coelioxys [Neocoelioxys] Mitchell
  C. s. slossoni Viereck, DAD, LEE, LEV, MON, PIN

Coelioxys [Synocoelioxys] Mitchell
  C. hunteri Crawford, DAD, MON
  C. t. texana Cresson, DAD, LEE

Coelioxys [Xerocoelioxys] Mitchell
  C. boharti Mitchell, ALA, HEN, HIG, VOL
  C. edita Cresson, LEO, no FSCA specimens were collected in Florida.
  C. galactiae Mitchell, ALA, BAY, CLA, HIG, LEV
  C. piercei Crawford, no FSCA specimens available.

Megachile [Acentron] Mitchell
  M. albitarsis Cresson, ALA, BAY, CLA, COLL, DAD, DIX, DUV, ESC, GUL, HIG, HIL, LAK, LEE, LEV, MAN, MARI, MART, OKA, OKE, ORA, PAL, PIN, PUT, SAR, SJO, SRO, TAY, VOL, WAK, WAL

Megachile [Argyrople] Mitchell
  M. parallela Smith, DAD, LEV, NAS, no FSCA specimens were collected in Florida.
  M. townsendiana Cockerell, DAD, BRO, NAS, SJO

Megachile [Callomegachile] Michener
  M. sculpteratis Smith, JEF
  M. torrida Smith, no FSCA specimens were collected in Florida.
  M. sp., a presumed exotic species

Megachile [Chelostomoides] Robertson
  M. c. campanulae (Robertson), ALA, DAD
  M. campanulae wimingtoni (Mitchell), ALA, DAD, DIX, DUV, ESC, GUL, HIG, LAK, MON
  M. e. exilis Cresson, ALA, BRO, DAD, HIG, LAK, LEO, LIB, MAN, PIN, POL, SAR
  M. exilis parexilis Mitchell, ALA, BRO, DAD, DIX, ESC, LEO, LEV, MAD, PIN, SAR
  M. georgica Cresson, ALA, BAK, BRO, CLA, COLU, DAD, ESC, HIG, JAC, LEV, LIB, MARI, MON, OKA, ORA, POL, SRO, SUW, VOL, WAK
  M. rugifrons (Smith), ALA, BAK, COLU, WAK

Megachile [Eutricharea] Thomson
  M. concinna Smith, BRO, DAD, MON

Megachile [Leptorachis] Mitchell
  M. petulans Cresson, ALA, BAY, CAL, CIT, CLA, COLL, DAD, DIX, ESC, FRA, HIG, IND, JAC, JEF, LEE, LEO, LEV, LIB, MAN, MARI, MON, OKA, ORA, SEM, SJO, SRO, UNI, VOL, WAL

Megachile [Litomegachile] Mitchell
  M. b. brevis Say, ALA, BAK, COLU, DAD, ESC, GUL, HIG, LEV, MARI, MON, NAS, OKA, POL, PUT, SJO, SRO, WAL
  M. brevis pseudobrevis Mitchell, ALA, BRE, COLL, DAD, ESC, HIG, LEV, LIB, MARI, MON, ORA, PAL, PUT, SAR, SJO, SLU, SRO, SUW, TAY, VOL
\textit{M. m. mendica} Cresson, ALA, BAK, CIT, CLA, COLL, COLU, DAD, DUV, ESC, FRA, GAD, GUL, HAR, HER, HIG, JAC, JEF, LEE, LEO, LEV, LIB, MARI, MART, MON, NAS, OKA, ORA, PAL, PAS, PUT, SAR, SJO, SRO, SUW, TAY, VOL, WAL
\textit{M. texana} Cresson, ALA, BAY, BRA, BRO, CLA, DAD, DES, DUV, ESC, GUL, HIG, LEV, LEO, LIB, MAD, MAN, MARI, MARL, MON, NAS, ORA, PUT, SRO, VOL, WAK

\textbf{Megachile [Megachiloides] Mitchell}
\textit{M. brimleyi} Mitchell, BAY, HIG, LEV
\textit{M. deflexa} Cresson, ALA, CLA, DAD, DUV, LEV, MARI, PUT
\textit{M. integra} Cresson, ALA, CIT, CLA, ESC, GIL, HIG, LEV, ORA
\textit{M. integrella} Mitchell, ALA, CLA, PUT, NAS
\textit{M. rubi} Mitchell, ALA, HIG, LIB, SUW

\textbf{Megachile [Melanosarus] Mitchell}
\textit{M. bahamensis} Mitchell, CIT, COLL, DAD, MON, PAL
\textit{M. xylocopoides} Smith, AL, BAK, BAY, BRO, CIT, CLA, COLL, COLU, DAD, DUV, ESC, FRA, GLA, GUL, HEN, HIG, HIL, IND, JAC, JEF, LAK, LEE, LEO, LEV, LIB, MARI, MON, NAS, OKA, OKE, ORA, PAL, PAS, PIN, PUT, SAR, SJO, SLU, TAY, UNI, VOL, WAK

\textbf{Megachile [Pseudocentron] Mitchell}
\textit{M. p. pruina} Smith, BAY, COLL, DAD, HIG, LEV, LIB, MON

\textbf{Megachile [Pseudomegachile] Friese}
\textit{M. lanata} Fabricius, DAD, SLU

\textbf{Megachile [Sayapsis] Titus}
\textit{M. f. frugalis} Cresson, ALA, CLA, DAD, HIG, MARI, MON, SUW
\textit{M. i. inimica} Cresson, DAD, HIG, MON
\textit{M. i. sayi} Cresson, DAD, ESC
\textit{M. policaris} Say, ALA, BRE, CLA, DAD, DUV, HIG, IND, MARI, MON, ORA

\textbf{Megachile [Xanthosaros] Robertson}
\textit{M. addenda} Cresson, ALA, DAD, HIG, LIB, SUW
\textit{M. g. gemula} Cresson, ALA, BAK, COLU, MARI
\textit{M. ingenua} Cresson, ALA, SRO, WAL
\textit{M. m. melanophaea} Smith, ALA, BAK, DAD, DUV, ESC
\textit{M. mucida} Cresson, SUW

\textbf{Acknowledgments}

We thank James Wiley, of the Division of Plant Industry, whose mentorship has been invaluable in our ambition to pursue future comprehensive reviews of Florida’s fauna. I would also like to thank Michael C. Thomas, for his support.

\textbf{Literature cited}


