

 [Back to Introduction](#)

Family *Megachilidae* Latreille, 72 taxa

General features of this family of bees include the following: Long-tongued bees, rectangular labrum that is longer than broad and broadly articulated to the clypeus (Michener 2000). Other features that help distinguish the Megachilidae in the Southeastern U.S. are the lack of a basitibial plate (except in *Lithurgus*), 2 submarginal cells in the wing with the second submarginal rather long. The metasomal sterna have scopa present except in the parasitic forms. The scopa typically found on the hind legs of other bees is absent.

The family Megachilidae is well represented in Florida. One subfamily, the [Megachilinae](#) is found in Florida with four tribes.

Last updated: 01/02/06 04:20 PM



Family Megachilidae

Subfamily Megachilinae

This is the largest subfamily of Megachilidae and the only subfamily present in Florida. In Florida, it includes four tribes. Nearly all the Megachilinae, with the exception of the Lithurgini, use foreign material from outside the nest to form cells, cell walls, and partitions.

Key to Tribes (From Michener 2000)

1. Pygidial plate of male present, that of female represented by an apical process or spine; metapleuron with lower half narrow (less than half as wide as upper end and five to six times as long as wide) to linear; outer surfaces of tibiae, except hind tibiae of some males, with coarse tubercles that do not end in bristles..Tribe [Lithurgini](#)



Pygidial plate absent; metapleuron with lower half little narrower than upper end (lower one-fourth sometimes considerably narrowed, about twice as long as wide); outer surfaces of tibiae commonly without tubercles, or with tubercles ending in bristles, but sometimes tuberculate as in Lithurgini...2

2. Stigma less than twice as long as broad, inner margin basal to vein r usually little if any longer than width, rarely about 1.5 times width; prestigma commonly short, usually less than twice as broad; claws of female cleft or with an inner tooth; outer surface of hind tibiae usually with abundant simple bristles; body commonly with yellow or white (sometimes red) integumental markings...Tribe [Anthidiini](#)





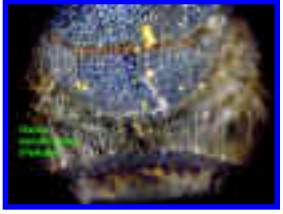
Stigma over twice as long as broad, inner margin basal to vein r longer than width; prestigma much more than twice as long as broad; claws of female usually simple; outer surface of hind tibiae with hairs, these sometimes plumose, but not bristles; body almost always without yellow or white integumental markings...3



3. Arolia absent, at least on hind legs, usually on all legs; preaxilla, below posterolateral angle of scutum, sloping and with small patch of hairs, these as long as those of adjacent sclerites; body nonmetallic or nearly so...Tribe [Megachilini](#)



Arolia present; preaxilla, below posterolateral angle of scutum, vertical, smooth and shining or with some hairs, these much shorter than those of adjacent sclerites; body sometimes metallic green, blue, or brassy..Tribe [Osmiini](#)



01/02/2006

Subfamily Megachilinae Latreille

Tribe *Lithurgini* Newman

This is a primitive tribe, thought to be the sister taxa to all other tribes in the Megachilinae. Nests are typically in dry wood.

Genus *Lithurgus* Berthold, 1 taxa

Subgenus *Lithurgopsis* Fox

This subgenus contains species that are specialists on Cactaceae.

Megachilidae: *Lithurgus gibbosus* Smith

County Records: Alachua, Brevard, Clay, Highlands, Madison, Martin, Miami-Dade, Putnam, Suwanee, Volusia

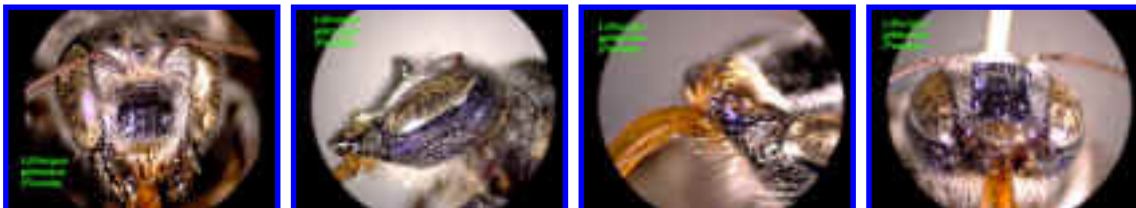


Locations: Cocoa Beach

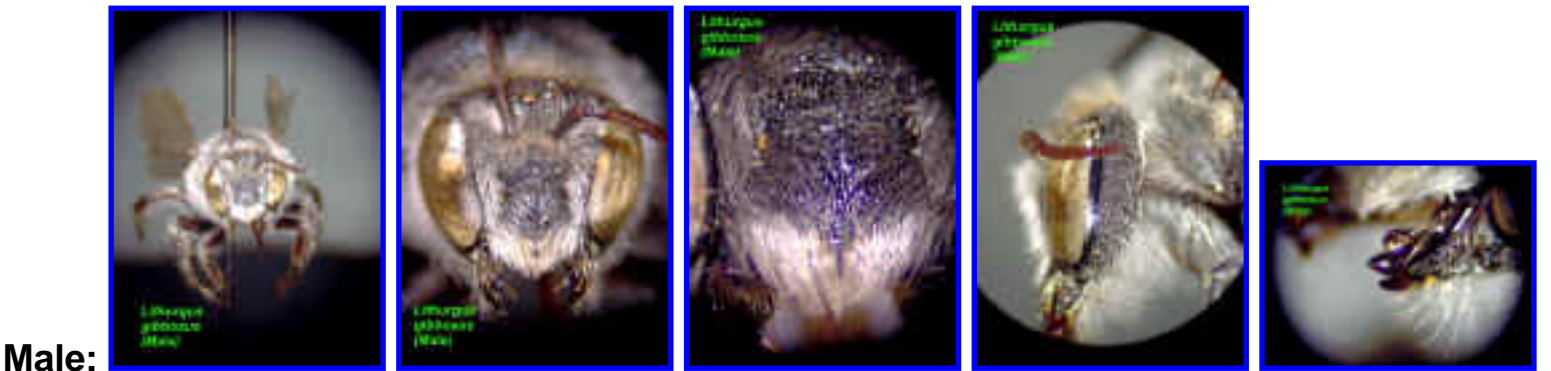
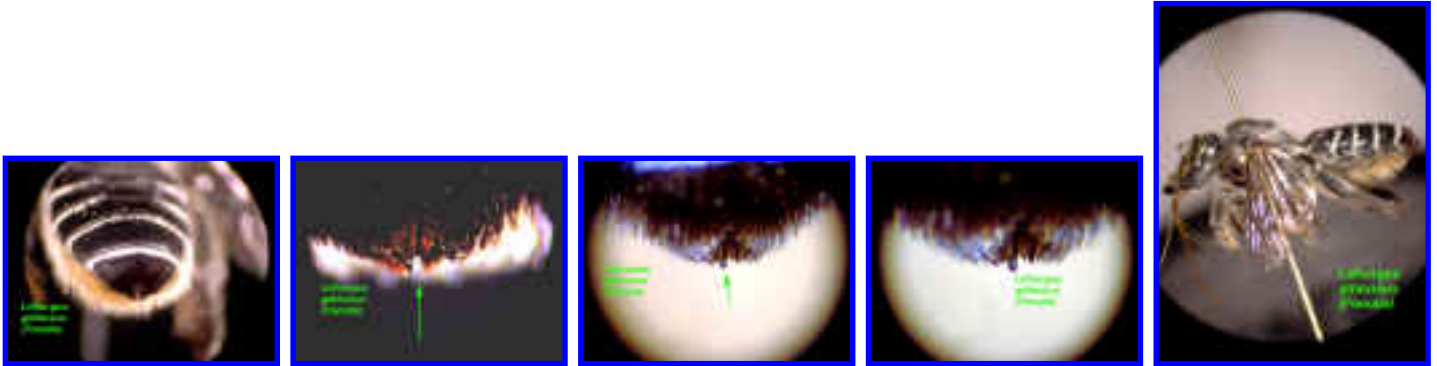
Dates: March 3-June 27; March: 1, April: 13, May: 5, June: 2; Mitchell records Jan.-July in Florida

Plants: oligolege of *Opuntia*; possibly other Cactaceae.

Notes:



Female:



Male:



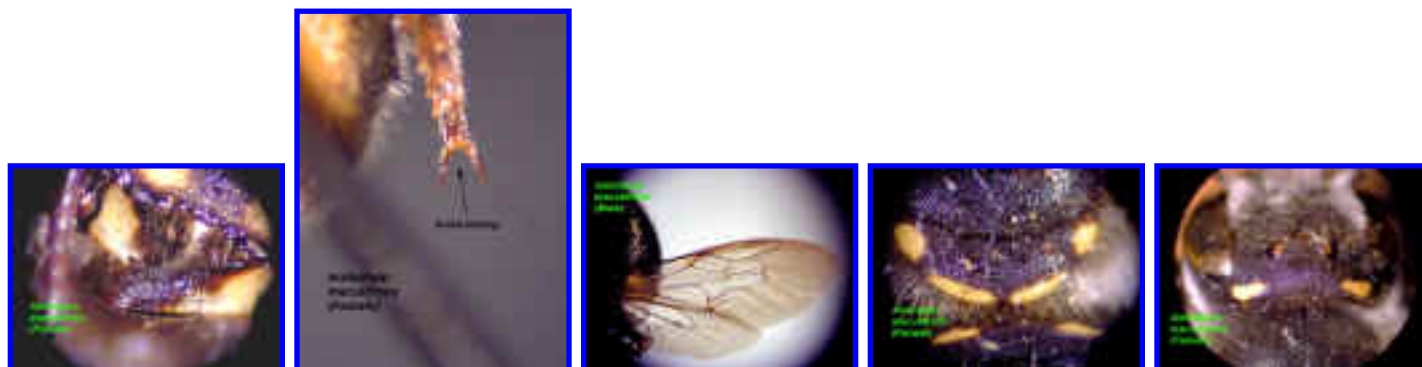
Subfamily Megachilinae

Tribe *Anthidiini* Ashmead (14 taxa)

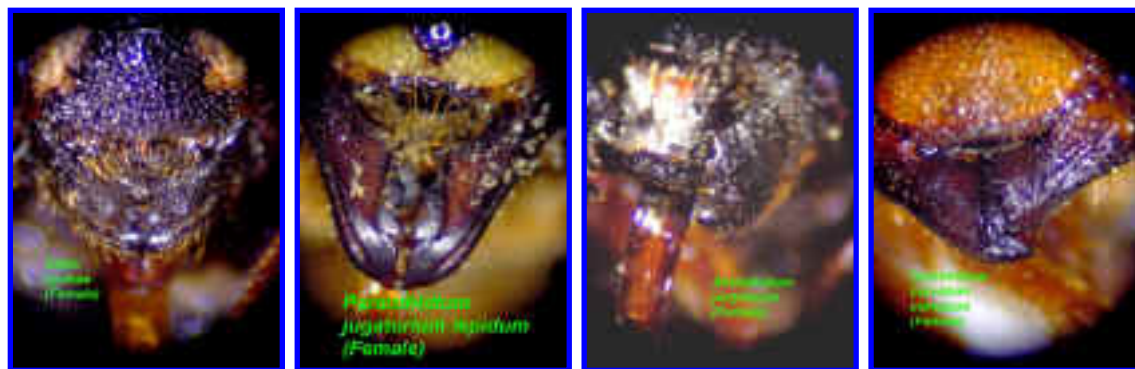
The tribe Anthidini has six genera present in Florida. Main characters are listed in the key to tribes.

Key to Genera (From Michener 2000)

1. Mandible of female with five or more teeth separated by acute notches; with the following combination of other characters: arolia absent; basal vein of forewing several vein widths basal to cu-v; base of propodeal triangle minutely roughened, punctate, hairy, without series of pits; postspiracular fovea of propodeum absent; juxtantennal carina absent...[Anthidium](#)



Mandible of female with three or four (rarely five) teeth, at least some of them separated by obtuse or rounded emarginations, rarely distal margin edentate except for small tooth near lower margin; without the combination of other characters listed above...2



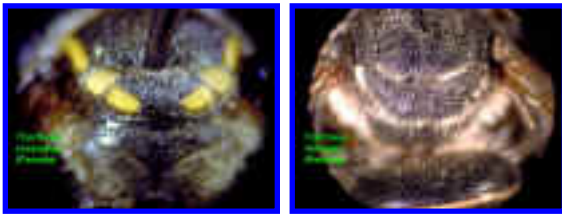
2. Middle tibia with two apical spines; scopa absent...[Stelis](#)



Middle tibia with one apical spine, or spine reduced to sharp angle or rounded margin; scopa present..3

3. Propodeum with fovea delimited posteriorly by a carina behind spiracle; omaular carina present; base of propodeum frequently with row of pits across upper margin connecting postspiracular fovea, but sometimes row present only laterally...4

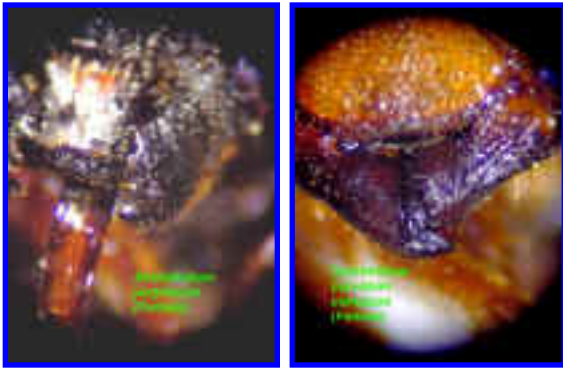
Propodeum without fovea behind spiracle; omaular carina absent or weak; row of pits across upper margin of propodeum absent, weak, or present only laterally..[Trachusa](#)



4. Apex of middle tibia without tibial spine or angular vestige of spine, but with convex carina (with dense short hairs beneath) across tibial apex, curving basad anteriorly, forming edge of broad, scoop-shaped concavity on apical tibial surface; apical margin of mandible of female strongly oblique, about half as long as mandible..[Paranthidium](#)



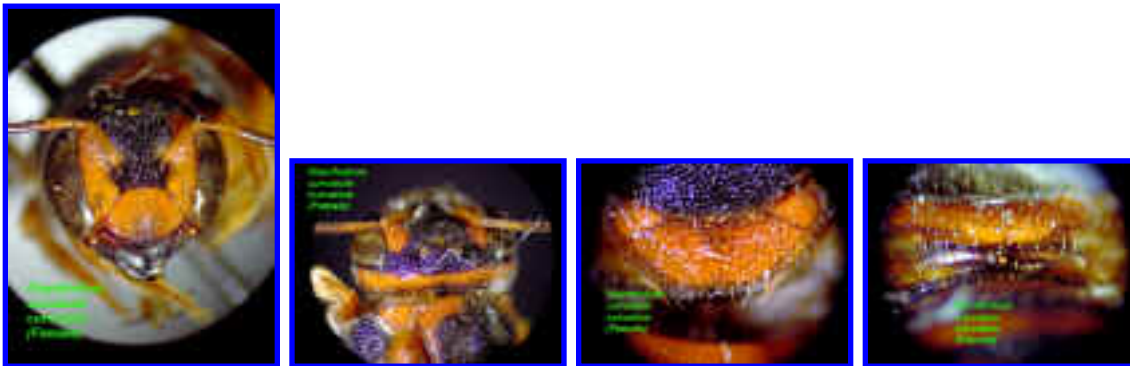
Apex of middle tibia with angle or short spine on outer side, without preapical concavity; apical margin of mandible of female usually less oblique and often less than half as long as mandible..5



5. Subantennal suture long and distinctly arcuate outward; preoccipital ridge behind vertex strongly carinate and produced posteriad, covering pronotum; scutellum ending as sharply margined truncation (with small median emargination) overhanging metanotum and propodeum..[Anthidiellum](#)



Subantennal suture more or less straight; preoccipital ridge behind vertex not or moderately carinate, not produced posteriad; scutellum not truncate, or, if so, then sharply margined only laterally...[Dianthidium](#)



Tribe Anthidini

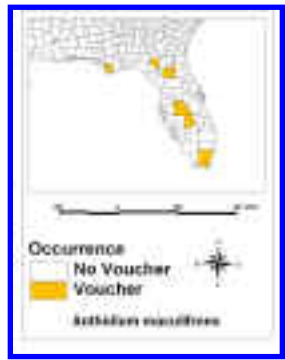
Genus *Anthidium* Fabricius, 1 taxa

This is a soil-nesting species that uses plant hairs and pebbles in nest construction.

Subgenus *Anthidium* Fabricius

Megachilidae: *Anthidium maculifrons* Smith

County Records: Alachua, Bradford, Gulf, Highlands, Miami-Dade, Polk, Suwanee



Locations:

Dates: April 7-Nov. 15; April: 5, May: 8, June: 4, July: 3, Aug: 2, Sept.:2, Oct.:2, Nov:2

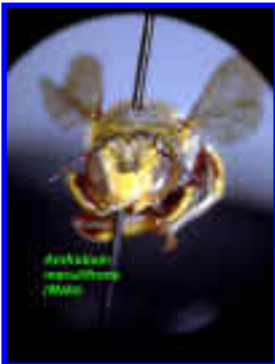
Plants:

Notes:

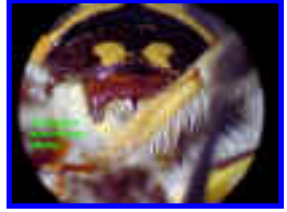


Female:

Anthidium



Male:



Tribe [Anthidini](#)

Genus *Stelis* Panzer, 5 taxa

This is a genus of parasitic [Megachilidae](#) that parasitize other [Megachilinae](#). Three subgenera, [Dolichostelis](#) Parker and Hurd, [Protostelis](#) Friese, and [Stelis](#) Panzer, are found in Florida. Michener (2001) considers all of these to be subgenera of the larger genus [Stelis](#).

Keys to the subgenera (from Michener 2000)

For both males and females

1. Hind tibia with a single prominent tooth or tibial spine (usually hidden among hairs) on margin near apex of posterior margin of tibia; hind basitarsus with strong lamella-like carina along posterior margin, separated by longitudinal depression from longitudinal thickening of outer surface of basitarsus...S. ([Protostelis](#))

Hind tibia with an apical median tooth or tibial spine and a less prominent, rounded projection near apex of posterior margin of tibia; hind basitarsus unmodified...2

2. Base of propodeum with zone set off by carina and divided into a series of pits, this zone projecting subhorizontally behind vertical metanotum; anterior surface of mesepisternum impunctate at least below and set off from lateral surface by sharp angle or weak omalar carina...S. ([Dolichostelis](#))

Base of propodeum vertical or sloping, rarely subhorizontal, without series of pits or such pits usually present only laterally, this zone with about same slope as metanotum; anterior surface of mesepisternum punctate, omalar carina absent...S. ([Stelis](#) s. str)

Dolichostelis

Parker and Hurd, 1 species

(Mitchell placed these in *Stelis*). These are cleptoparasites in nests of [Megachile](#) (Chelostomoides)

Megachilidae: *Stelis louisae* Cockerell (= *S. floridana* Graencher, = *S. costalis* Mitchell (misidentification), and *S. costalis* Krombein (misidentification))

County Records: Alachua, Hardee, Highlands, Levy, Manatee, Marion, Miami-Dade, Santa Rosa

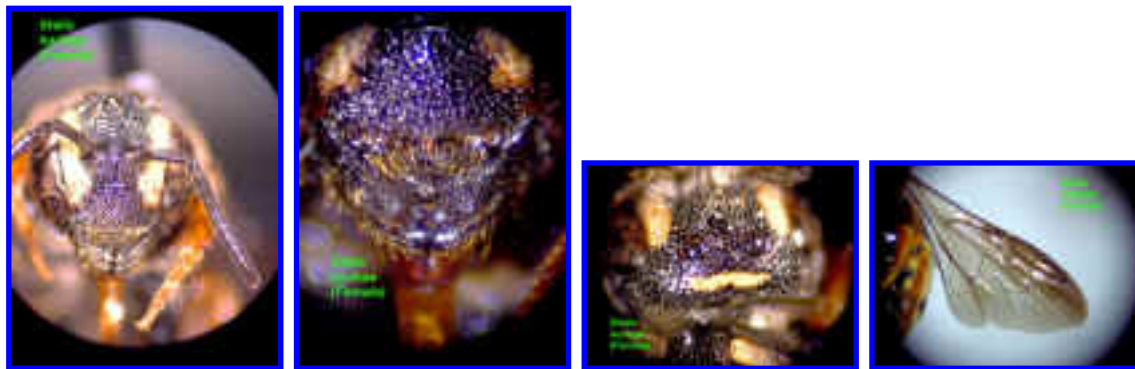


Locations: Bowling Green, Brandon

Dates:

Plants:

Notes: This species has a tortured history of misidentifications. For details, see Parker, F. D. and G. E. Bohart. 1979. *Dolichostelis*, a new genus of Parasitic Bees (Hymenoptera: Megachilidae). Journal of the Kansas Entomological Society 52(1): 138-153. The taxa called *S. floridana* is a form that has more extensive and darker red-orange markings than populations further to the north but there are intermediates. Their map shows it occurring throughout the peninsula but absent from the panhandle west of probably Lake City?.

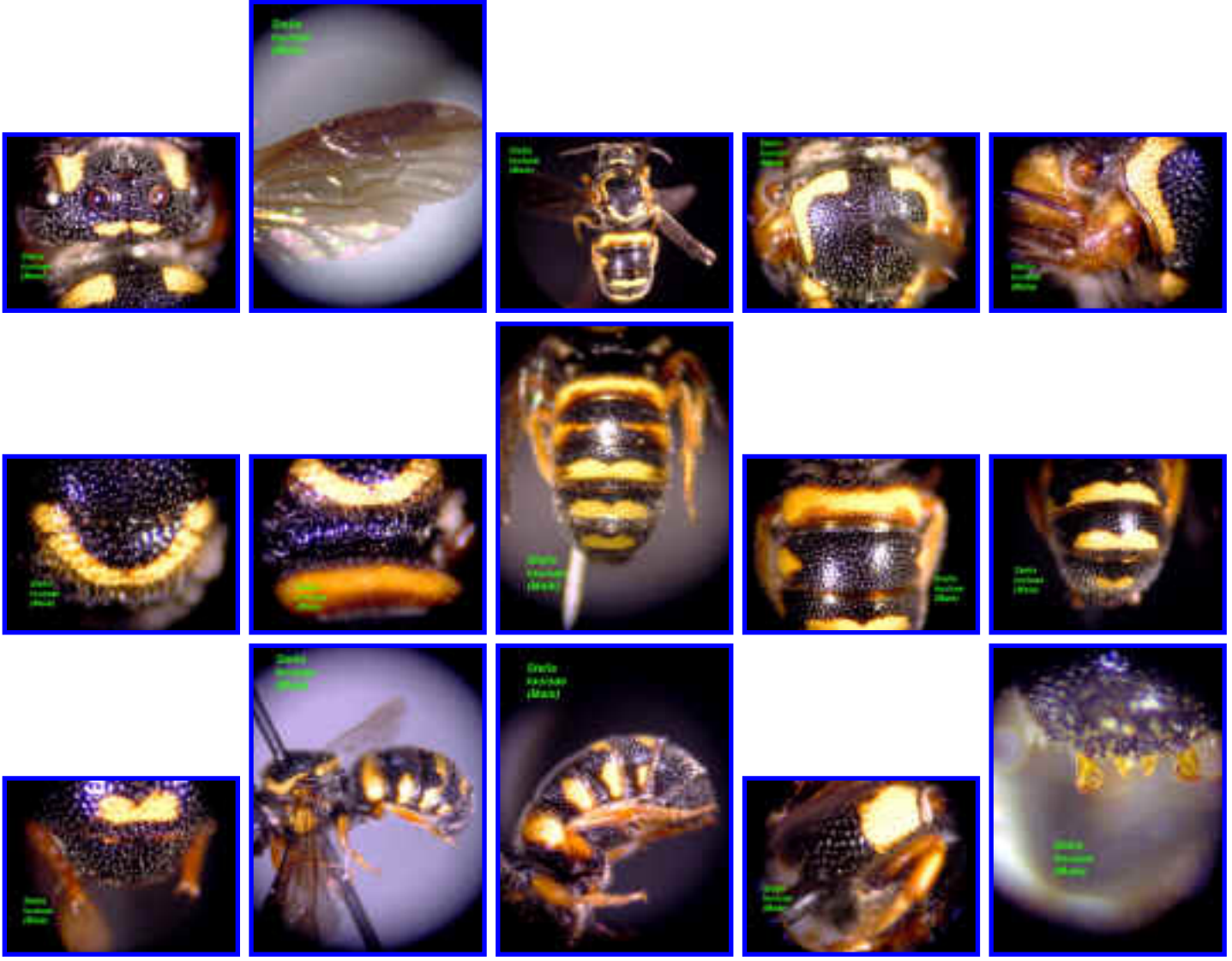


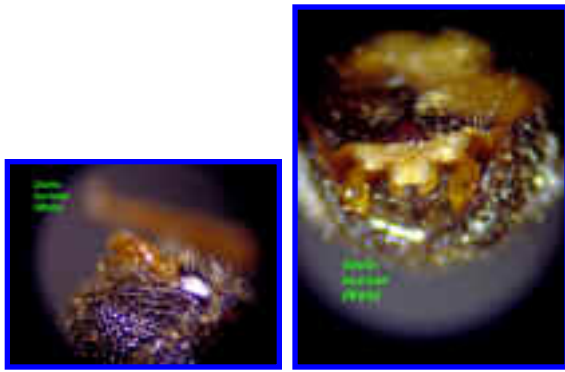
Female:





Male:





Subgenus *Protostelis* Friese, 3 species

(Mitchell and Hurd incorrectly placed these in *Heterostelis*). These are likely parasites of the genus [Trachusa](#).

Key to females of *Stelis*, subgenus *Protostelis*

1. Larger (13mm); mandibles more elongate, 2nd tooth being midway between apex and inner angle; tergum 6 obtusely angulate on each side.. [S. grossa](#)

Smaller (10mm); mandibles shorter, 2nd tooth much nearer apex than to inner angle; tergum 6 regularly rounded...2

2. Abdominal terga 1 and 2 broadly ferruginous medially, between the yellow lateral maculations.. [S. australis floridensis](#)

Terga 1 and 2 black medially... [S. australis australis](#)

Males have not been described for *S. grossa*

Megachilidae: *Stelis australis australis* Cresson

County Records: Alachua, Levy, Putnam, Volusia



Locations: Cassadega

Dates: May (1), August (1)

Plants:

Notes: Thorp (1966) listed it for Florida from Volusia county.

Megachilidae: *Stelis australis floridensis* Mitchell

County Records: Alachua, Citrus, Clay, Levy



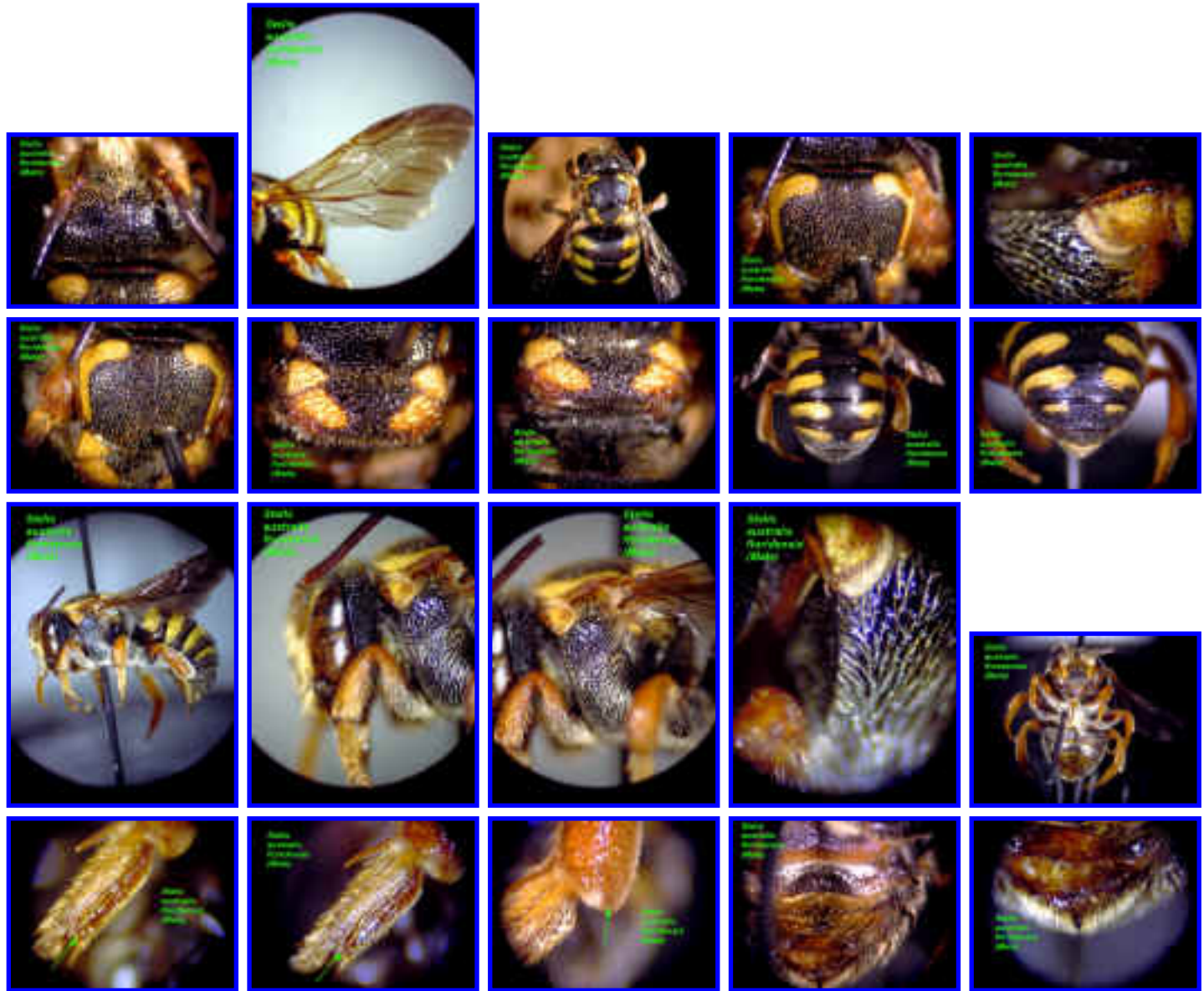
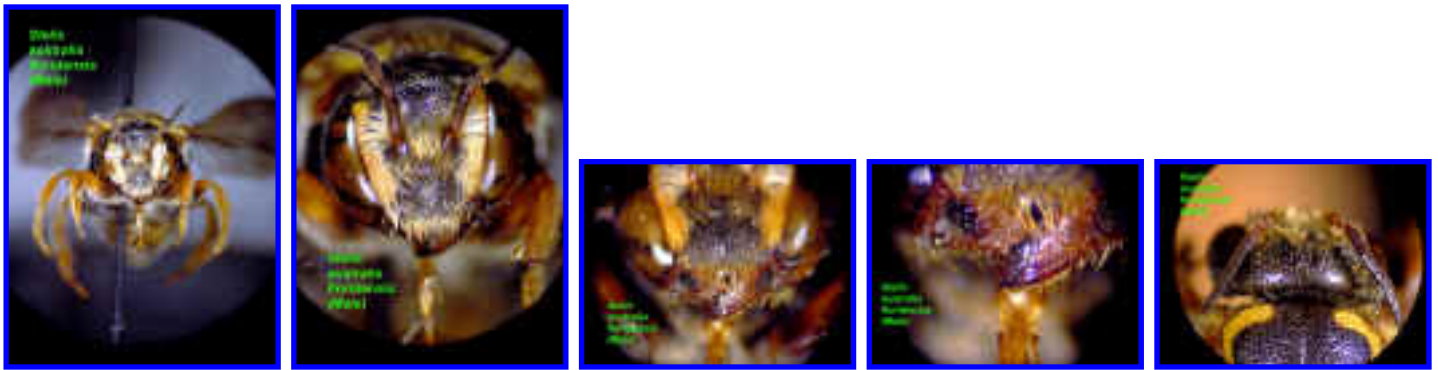
Locations: Inverness

Dates: May-August

Plants:

Notes: This subspecies appears to be restricted to Florida. These two subspecies may represent nothing more a color cline according to Thorp (1966) but they have been found together. Possibly, coloration is dependent on local environmental conditions that affect the nesting larvae.

Male:



Megachilidae: *Stelis grossa* Mitchell

County Records: Alachua



Locations:

Dates: October

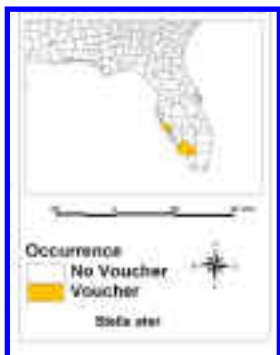
Plants:

Notes: Was described from Florida, Thorp (1966) and Hurd (1979) lists it also from Ft. Morgan, Alabama (Baldwin County). Probably occurs in north-central peninsula and in the panhandle. Photos are not yet available.

Subgenus *Stelis* Panzer, 1 species

Megachilidae: *Stelis ater* Mitchell

County Records: Collier, Sarasota



Locations: Corkscrew Swamp

Dates: January, March

Plants:

Notes: Endemic to Florida, known only from the southwestern coastal region. Photos are not yet available.

Tribe Anthidini

Genus *Trachusa* Panzer, 3 species

Three species in two subgenera are found in Florida. The subgenus *Legnanthidium* is monotypic.

Nearly all of the species of this subgenus are restricted to the coastal plain in the SE US, ranging from New Jersey to Florida and some further west. These are ground nesting species that make their own burrows, unlike most other *Megachilids*.

Key to subgenera

1. All tagmata with abundant yellow or cream-colored markings, including median tergal bands on metasoma... *T.* (*Heteranthidium*)



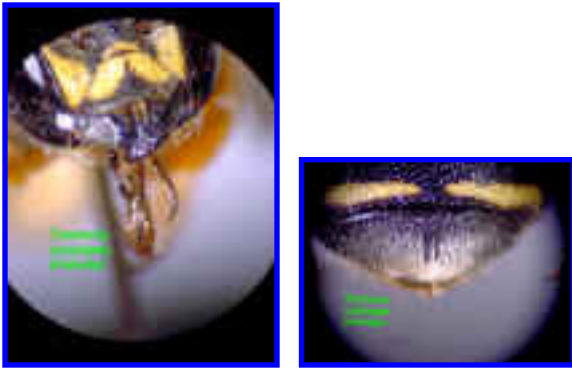
Integument without yellow or cream-colored markings except usually on face of male and on apical metasomal tergal margins .. *T.* (*Legnanthidium*)



Subgenus *Heteranthidium* Cockerell, two species

Key to females

1. Mandibles and tergum 6 of abdomen entirely black; tubercles carinate... *T. crassipes*



Mandibles and tergum 6 of abdomen yellow maculated; tubercles not carinate. [T. fontemvitae](#)

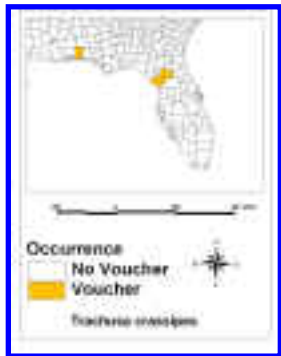
Key to males

1. Abdominal sternum 3 with a pair of short, slender spines... [T. fontemvitae](#)

Sternum 3 not spinose... [T. crassipes](#)

Megachilidae: *Trachusa crassipes* Cresson

County Records: Alachua, Levy, Okaloosa



Locations:

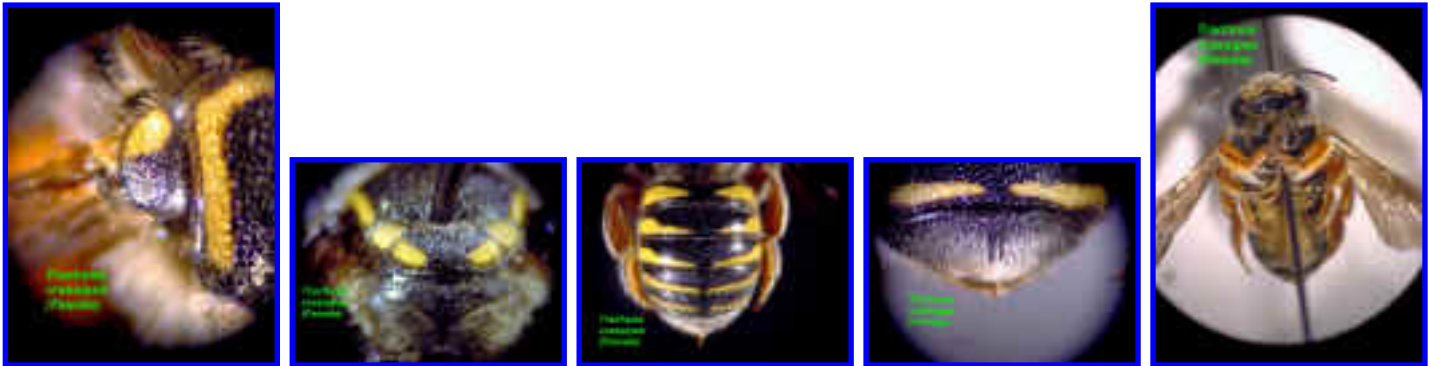
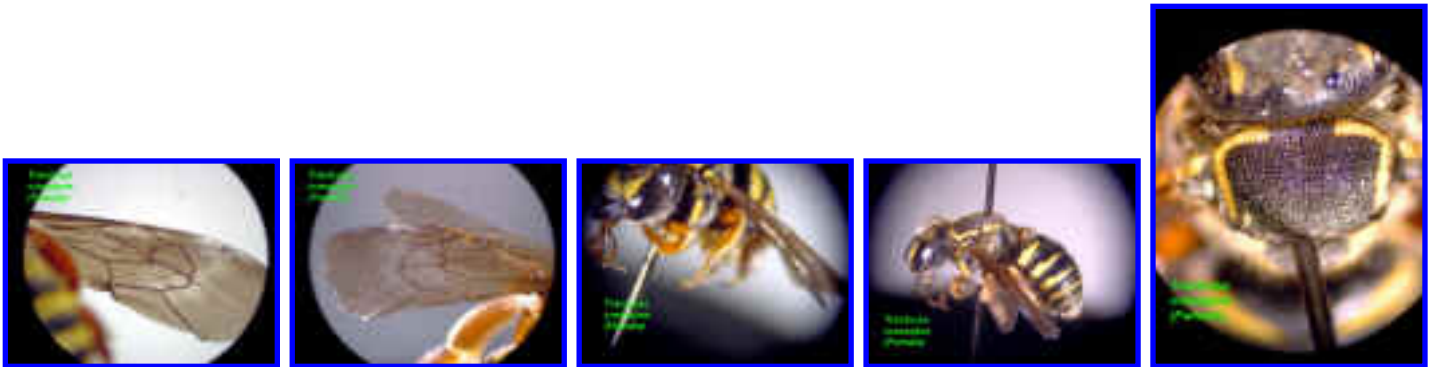
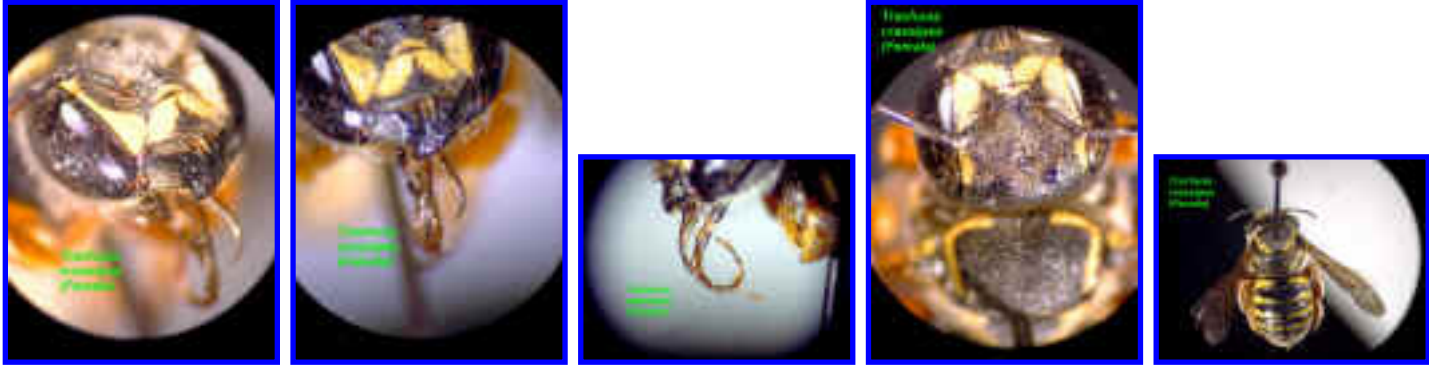
Dates: June 16-August 21; June: 1, July: 3, Aug: 1

Plants: *Galactia*

Notes: NC to Florida, coastal plain species

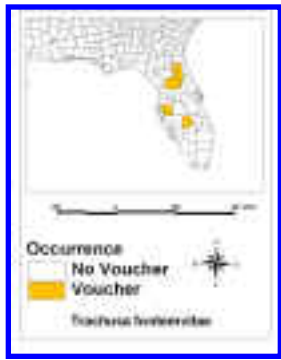


Female:



Megachilidae: *Trachusa fontemvitae* Schwarz

County Records: Clay, Highlands, Hillsborough, Marion, Putnam



Locations:

Dates: July 25-Nov. 5; July:1, Sept: 1, Oct: 4, Nov: 1

Plants: *Phoebanthus*

Notes: NC to Florida, coastal plain species. Photos not yet available.

Subgenus *Legnanthidium* Griswold and Michener, 1 species

Megachilidae: *Trachusa ridingsii* Cresson

County Records: Alachua, Leon, Levy, Miami-Dade, Santa Rosa

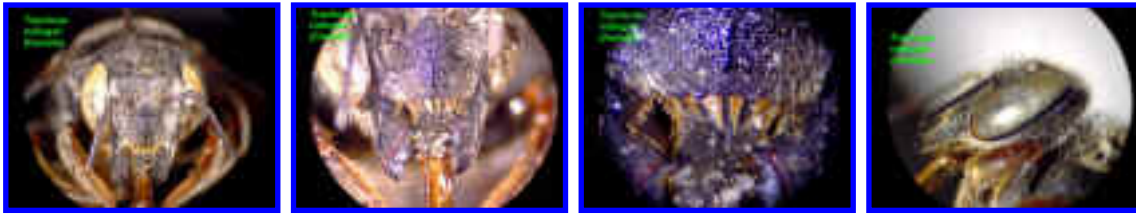


Locations:

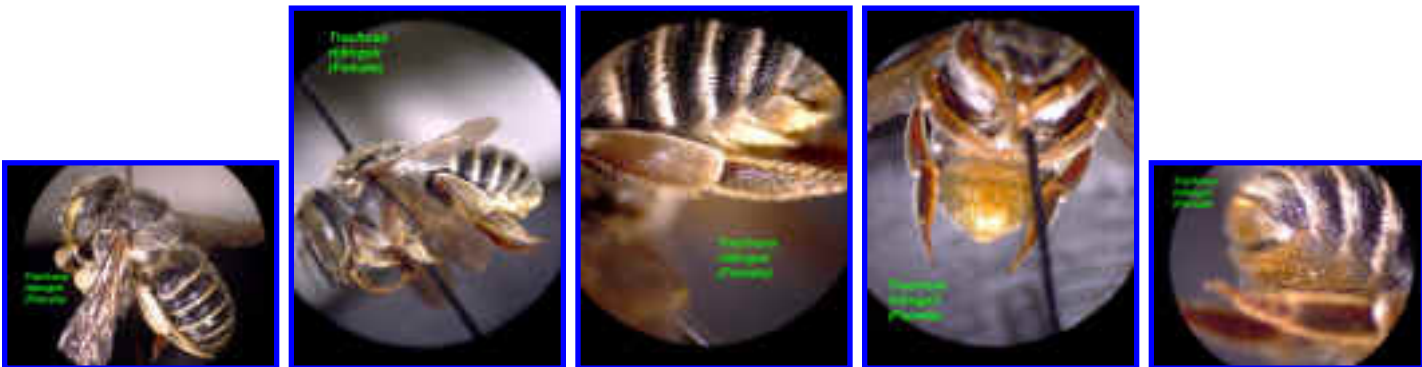
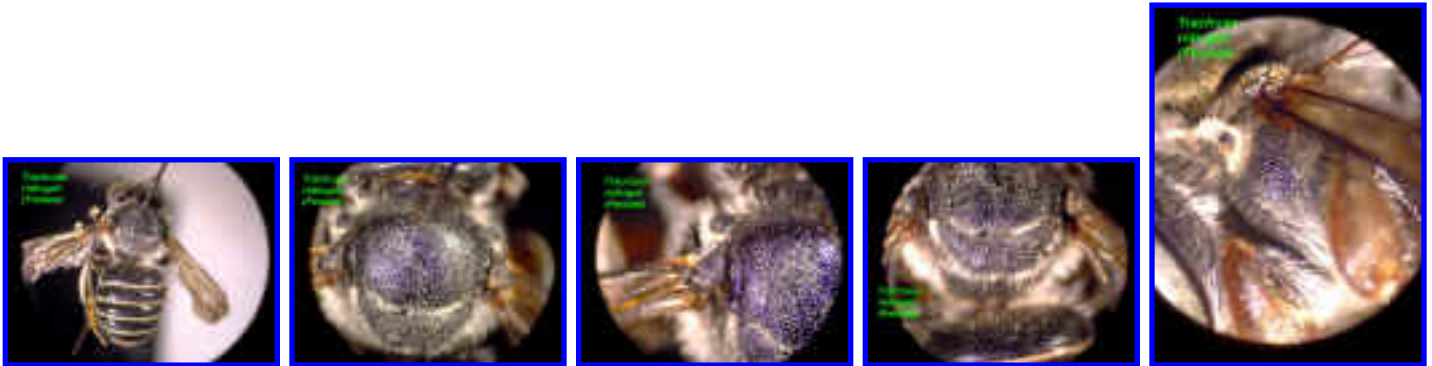
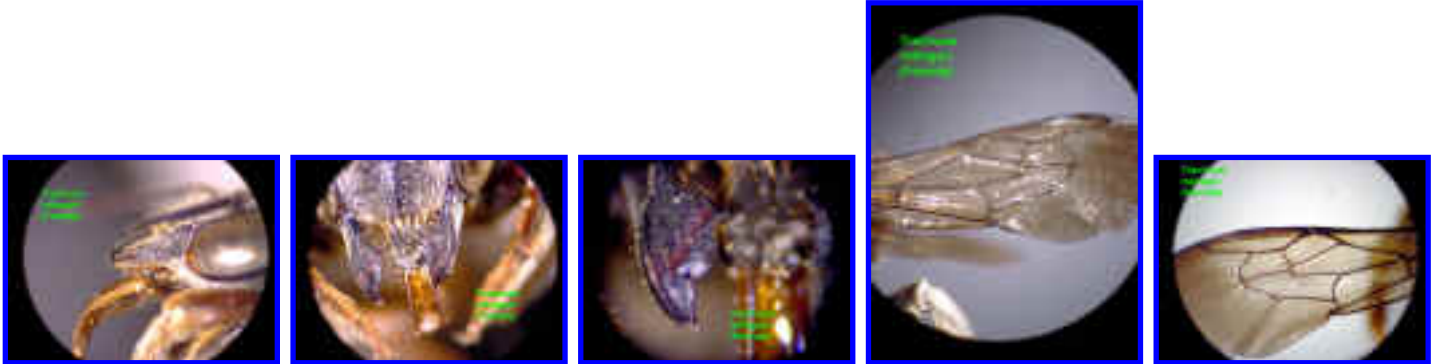
Dates: April 27, August 10-27; April: 1, August: 6

Plants: *Rhus glabra*, *Melilotus alba*

Notes: NC to Florida, coastal plain species



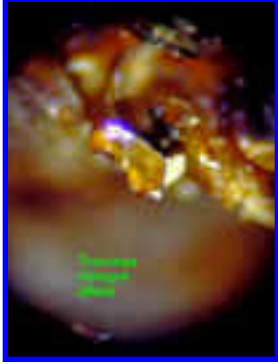
Female:





Male:





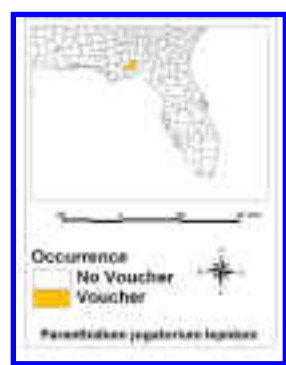
Tribe Anthidini

Genus *Paranthidium* Cockerell and Cockerell, 1 taxa

These are ground nesting bees that make their own burrows. They prefer sandy soil. Resin or gum is used to separate the cells in the burrows. The one species in Florida is a member of the Subgenus *Paranthidium* Cockerell and Cockerell

Megachilidae: *Paranthidium jugatorium lepidum* Cresson

County Records: Leon



Locations:

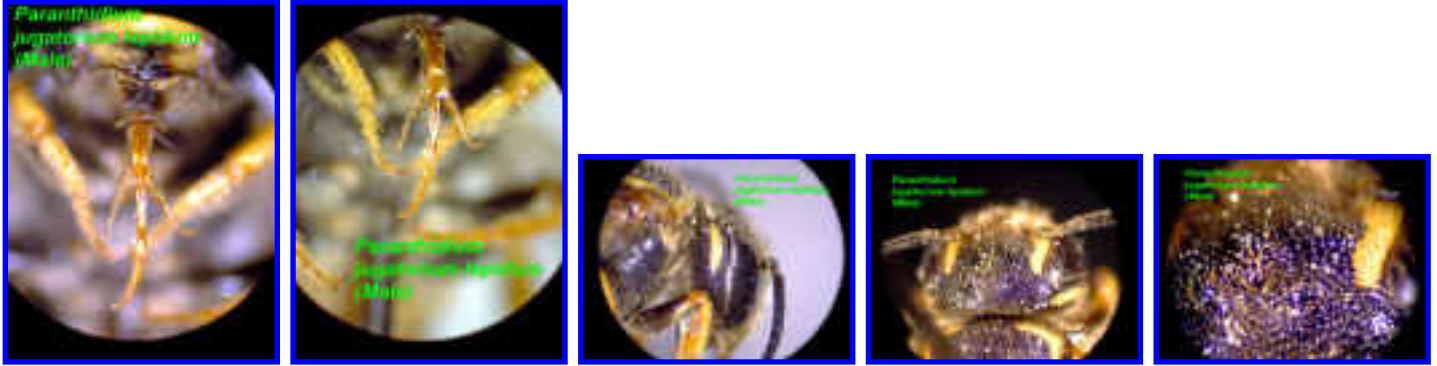
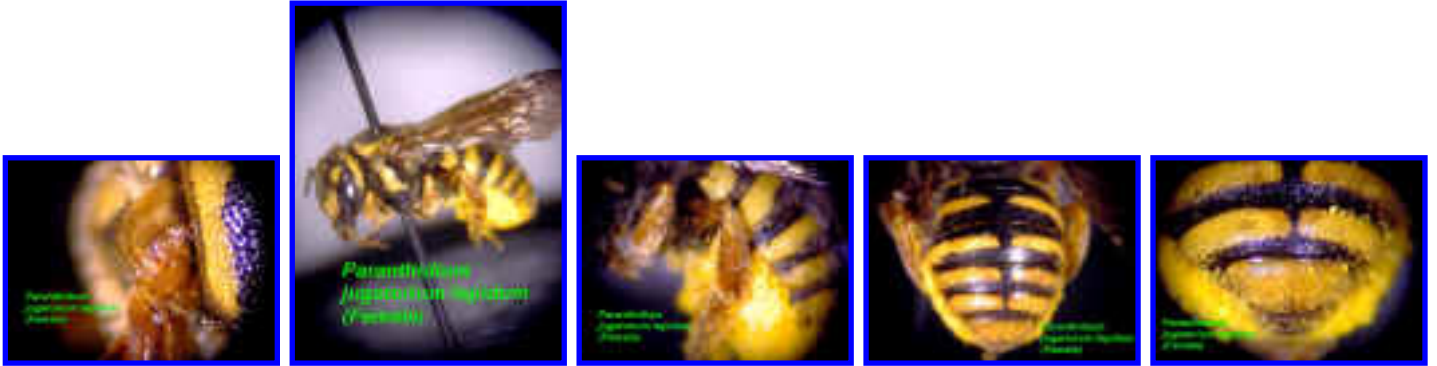
Dates:

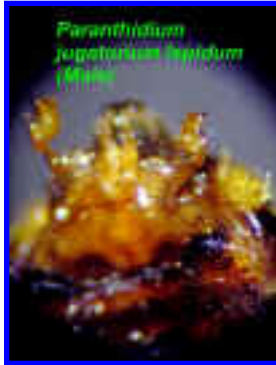
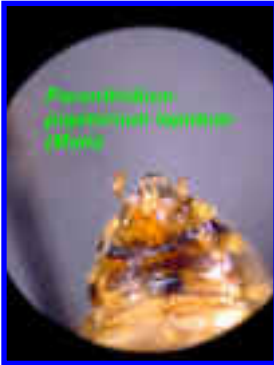
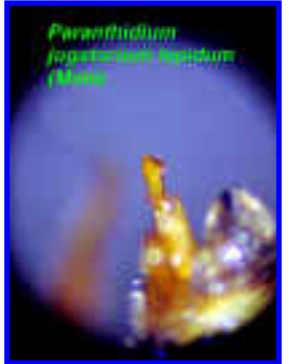
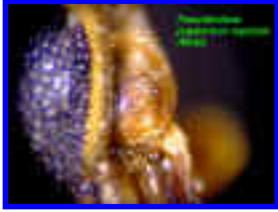
Plants: oligolectic on Asteraceae (*Helenium*, *Helianthus*, *Rudbeckia*, and *Silphium*)

Notes: New state record for Florida. Previously known from only as far south as Georgia. May be more widespread in the panhandle region.

Female:







Tribe Anthidini

Genus *Anthidiellum* Cockerell, 3 taxa

These bees make open nests using resin in the construction. All three taxa in Florida are members of the Subgenus *Anthidiellum* Cockerell

Key to females

1. Area between lateral ocelli only slightly swollen, well punctured.. [*A. perplexum*](#)



Area between lateral ocelli swollen and impunctate...2



2. Maculations yellow; basal abdominal tergum with widely separated, lateral, blotches...[*A. notatum notatum*](#)

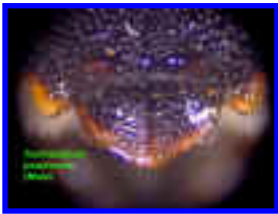


Maculations ferruginous; basal abdominal tergum ferruginous, with only a relatively narrow, apical, black band. .[*A. notatum rufimaculatum*](#)



Key to males

1. Segment 7 of abdomen triangular in outline; base of abdomen deep red ..[*A. perplexum*](#)



Segment 7 broad and very short, apical margin sinuate..2



2. Maculations yellow; basal abdominal tergum with widely separated, lateral, blotches...[*A. notatum notatum*](#)



Maculations ferruginous; basal abdominal tergum ferruginous, with only a narrow,

subapical, transverse blackish band. [*A.notatum rufimaculatum*](#)

Megachilidae: *Anthidiellum perplexum* Smith

County Records: Baker, Columbia, Leon, Miami-Dade, Monroe; Wakulla



Locations:

Dates: Jan.-December

Plants: Polylectic

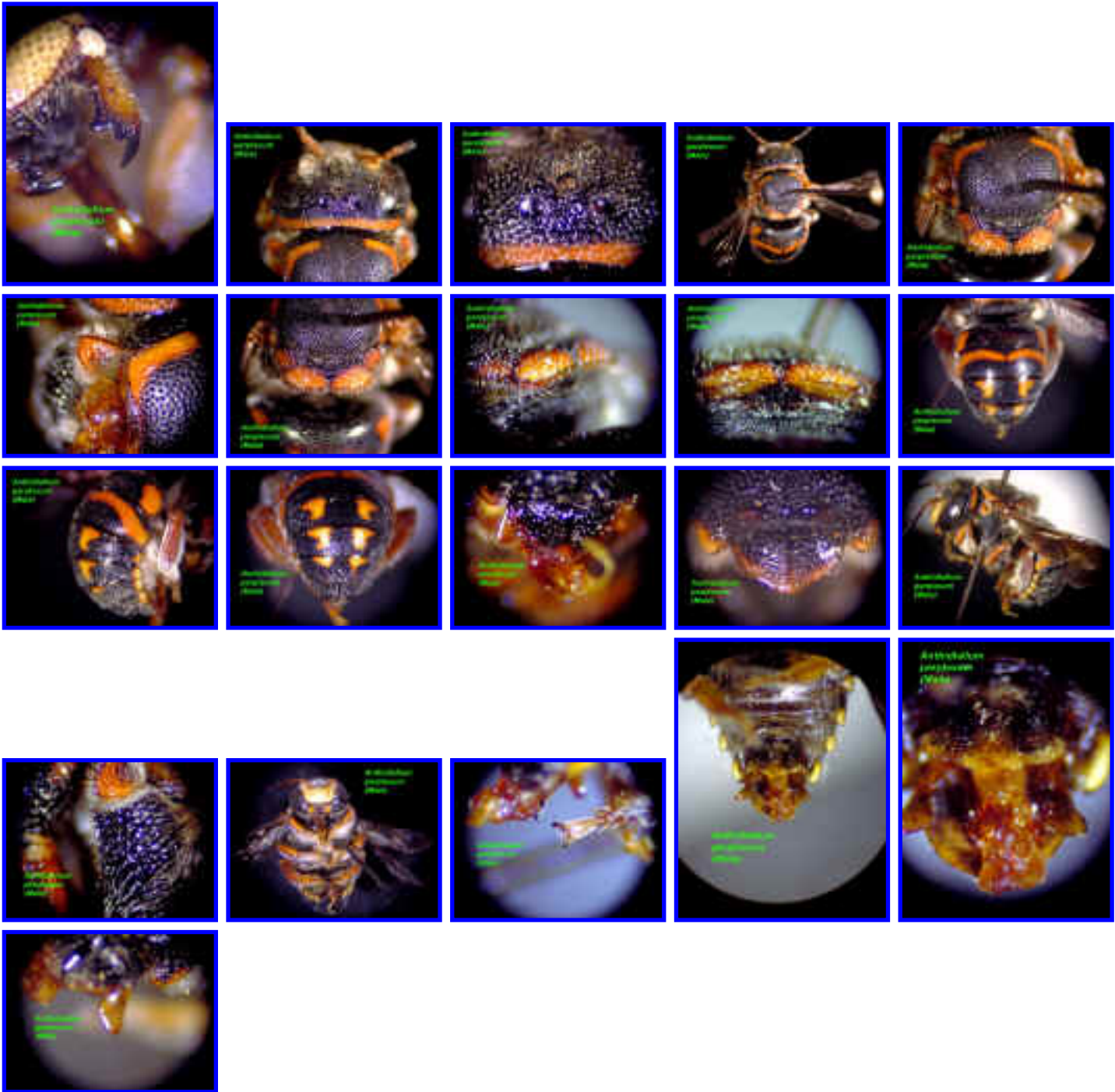
Notes: NC to Florida, coastal plain species. Likely found throughout Florida. In Leon, Wakulla, Baker, and Columbia counties, this species is most abundant in moist flatwoods and less abundant to rare in drier sandhills.



Female:

Anthidiellum





Megachilidae: *Anthidiellum notatum notatum* Latreille

County Records: Leon, Wakulla

Anthidiellum



Locations:

Dates: April-December

Plants: Polylectic

Notes:



Female:





Megachilidae: *Anthidiellum notatum rufimaculatum* Schwarz

County Records: Miami-Dade, Monroe

Anthidiellum



Locations:

Dates: March-September

Plants: *Rhus*, probably polylectic

Notes: This endemic subspecies replaces *A. notatum notatum* in the southern parts of Florida's peninsula. Where the two subspecies meet is unknown?



Female:



Tribe Anthidini

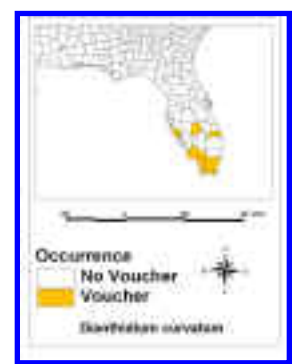
Genus *Dianthidium* Cockerell, 1 taxa

These are resin using bees that glue together pebbles or other material to make nests that they attach to a substrate, usually exposed.

Subgenus *Dianthidium* Cockerell

Megachilidae: *Dianthidium curvatum curvatum* Smith (= *D. floriense* and *D. curvatum floriense*)

County Records: Collier, Highlands, Martin, Miami-Dade, Monroe, Sarasota



Locations: Sebring

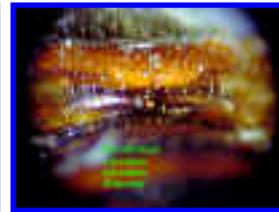
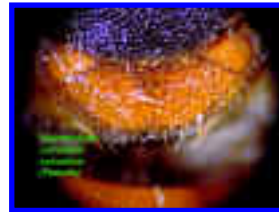
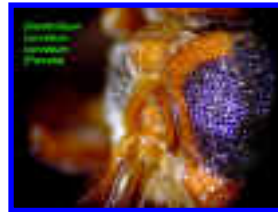
Dates: March 26-Aug. 21; March: 1, April: 6, May: 10, June: 3, July: 4, Aug: 4

Plants: *Croton linearis*

Notes: Mitchell listed these two species as distinct.



Female:



Male:



Subfamily Megachilinae

Tribe *Megachilini* Latreille

Two genera are found in this tribe, [Megachile](#) and the parasitic [Coelioxys](#).

Key to genera (From Michener 2000)

Females

Scopa present on S2 to S5 or S6; metasoma not tapering throughout its length...[Megachile](#)

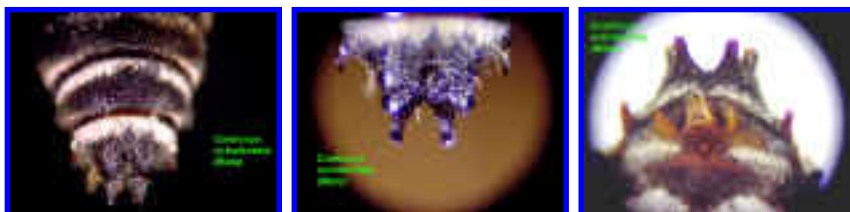


Scopa absent; metasoma tapering from near base to narrow, often acutely pointed apex...[Coelioxys](#)

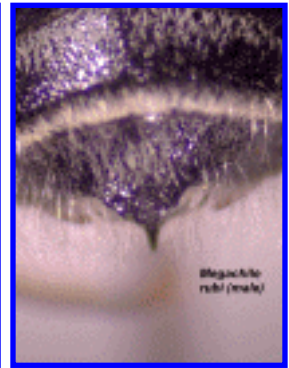
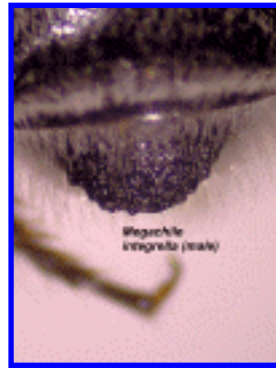
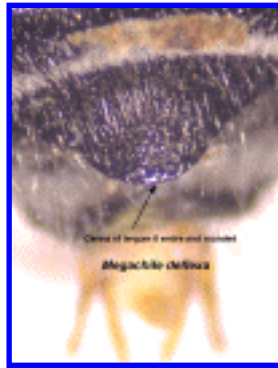
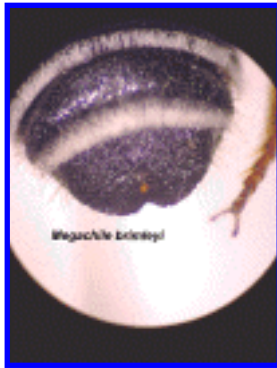


Males

T6 appearing multispinose because of two pairs of long, preapical spines, each spine of upper pair sometimes divided into two, or crenulate, rounded, or fused to other spine of pair...[Coelioxys](#)



T6 with large preapical carina (apparent apex of metasoma), often crenulate, often emarginate medially, sometimes reduced to two spines or rarely absent...[*Megachile*](#)



Tribe Megachilini

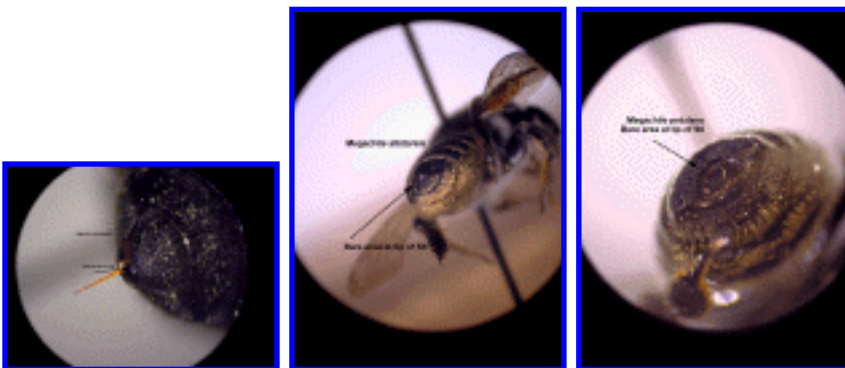
Genus *Megachile*, 26 taxa

This is a very diverse genus whose species are abundant throughout Florida. All of the species are moderate to large sized bees with black bodies and white (rarely golden) hairs. Females of most subgenera (except *Chelostomoides* that use resin) cut leaves to line their nests, which may be in the ground or in premade holes in vegetation. The following subgenera (species in parentheses) known from Florida, *Acentron* (1), *Argyropile* (2), *Chelostomoides* (4), *Eutricharaea* (1), *Leptorachis* (1), *Litomegachile* (3), *Megachiloides* (5), *Melanosarus* (2), *Pseudocentron* (1), *Pseudomegachile* (1), *Sayapis* (3), and *Xanthosarus* (2). None of the species are endemic to Florida. Many are widespread in the eastern United States or common along the SE coastal plain. Three species are endemic to the SE from N. Carolina to Florida. Two species are of introduced origin. While most species are widespread and likely occur throughout the state, a few species are geographically restricted to South Florida (*M. inimica sayi*, *M. inimica inimica*, *M. bahamensis*, *M. pruina pruina*, *M. lanata*, and *M. concinna*). Many are polylectic with legumes and composites favorite pollen sources. Most have long flight periods, although members of the subgenus *Megachiloides* have more restricted flight periods.

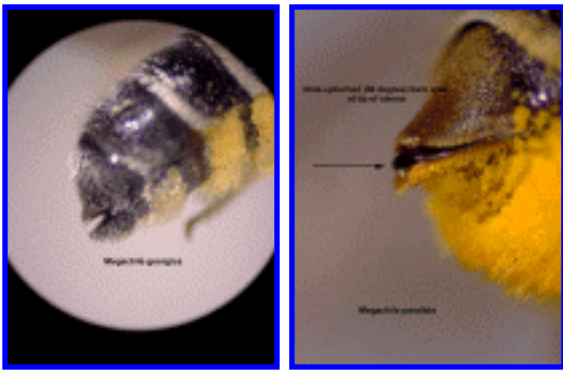
Keys to subgenera of *Megachile* known from Florida (modified from Michener 2000)

Females

1. S6 with at least posterior half bare or nearly so, except for subapical row of short hairs, behind which is bare, smooth rim, directed posteriorly (body megachiliform)...2



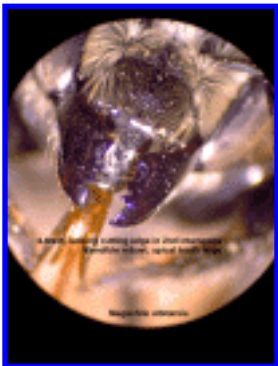
___ S6 with well-dispersed scopal hairs, or, if partly bare, then without bare apical rim behind transverse fringe of short hairs, or (in *Argyropile*) rim directed upward, or rim narrow and barely recognizable...5



2. Mandible five-toothed, a long cutting edge in second interspace, none elsewhere.. [M. \(Melanosarus\)](#)



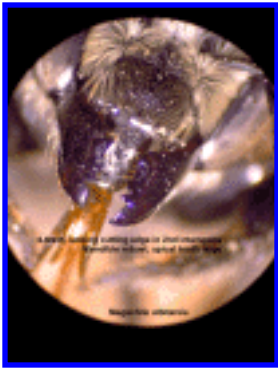
- ___Mandible four-toothed, a well-formed cutting edge in third interspace...3.



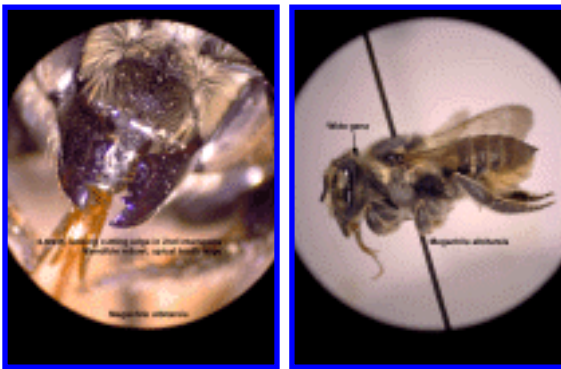
3. Second interspace distinct, with cutting edge usually present... [M. \(Pseudocentron\)](#)



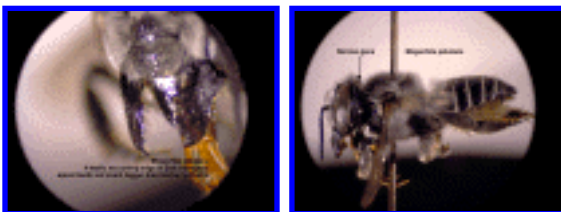
- ___Second interspace lacking or small, without cutting edge...4



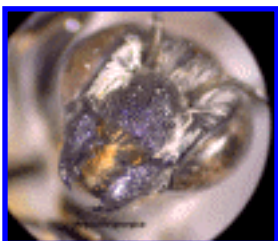
4. Mandible more robust, apical tooth more protuberant, much broader than other teeth; gena usually broader than eye in lateral view. [.M. \(Acentron\)](#)



Mandible less robust, apical tooth not much broader than second or third; gena usually narrower. [.M. \(Leptorachis\)](#)



5. Mandible without cutting edges between teeth, or with incomplete cutting edge in second interspace only; mandible with less than five teeth, or if five toothed, then upper two teeth (4 and 5) usually closer together than teeth 3 and 4...6



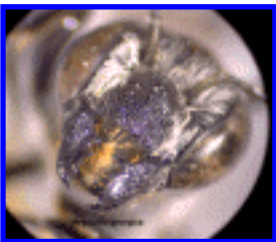
___Mandible with cutting edges between teeth, if in second interspace only, then edge

complete (in three toothed mandible) or mandible clearly five-toothed, with teeth 4 and 5 about as far apart as 3 and 4...8

6. Mandible with incomplete cutting edge in second interspace, and no cutting edge elsewhere..[M. \(Sayapis\)](#)



___Mandible without cutting edges...7



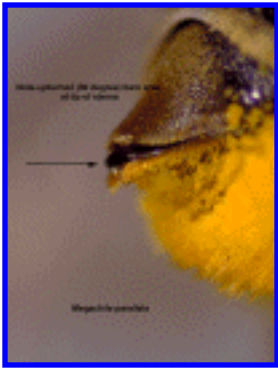
7. Pubescence largely white, not fulvous, forming narrow white apical bands on metasomal terga and sometimes narrow bands on postgradular grooves..[M. \(Chelostomoides\)](#)



Pubescence with large areas of black or fulvous, forming striking color pattern ..[M. \(Pseudomegachile\)](#)



8. S6 with apical rim directed upward beyond fringe of hairs, this rim conspicuous if tergum and sternum are spread apart. .[M. \(Argyropile\)](#)



S6 without apical rim, or, if rim present, than directed posteriorly and usually inconspicuous...9



- 9. Mandible three-toothed or median tooth weakly divided and mandible thus obscurely four-toothed, with cutting edge limited to upper interspace (Second if mandible tridentate, third if mandible quadridentate)...[M. \(Megachiloides, in part\)](#)

Mandible four- or five-toothed, with cutting edges in third and usually second interspaces, or rarely in second only.....10

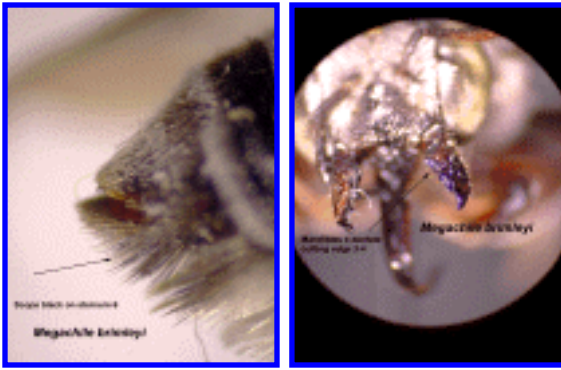
- 10. Metasomal sterna with entire and copious white apical hair fasciae beneath scopa. [.M. \(Eutricharaea\)](#)

Metasomal sterna with white hair fasciae absent or broadly interrupted medially...11

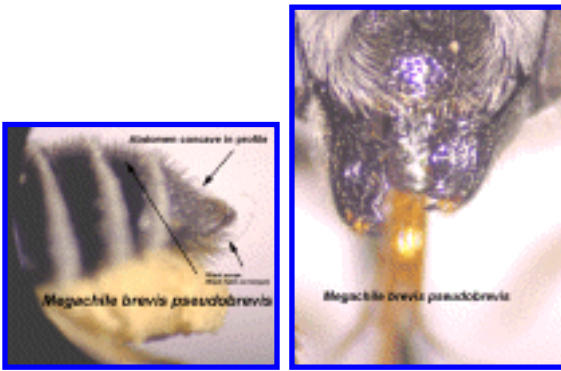
- 11. Mandible four-toothed, upper tooth acute or right-angular.....12

Mandible four or five-toothed, but if four-toothed, then upper tooth rounded, truncate, or incised (sometimes only minutely) and thus approaching the five-toothed condition....[M. \(Xanthosarus\)](#)

- 12. T6 straight in profile; mandible with second tooth often rounded or obtuse, usually no cutting edge in second interspace.....[M. \(Megachiloides, in part\)](#)



T6 usually concave in profile; mandible with second tooth acute, a small beveled cutting edge in second interspace..*M. (Litomegachile*, also includes *M. addenda (Xanthosarus)*.



Males

1. Middle tibial spur absent or much shorter than apical width of tibia, sometimes immovably fused to tibia, and middle basitarsus not or little modified...2



Middle tibial spur present, articulated to the tibia, about as long as apical tibial width, or, if absent, (as in some species of *Xanthosarus*), then middle basitarsus modified and swollen....5

2. Middle tibial spur present, articulated, but small...*M. (Leptorachis)*



Middle tibial spur absent or represented by prong immovably fused to tibia....3

3. Middle tibia with a spur like apical prong (Spur presumably fused to tibia), prong sometimes reduced to large, acute tooth...[M. \(*Pseudocentron*\)](#).

Middle tibia without such a process...4

4. Scutum finely and densely rugoso-punctate, punctures not individually distinguishable...[M. \(*Acentron*\)](#)

Punctures of scutum usually well separated, but, if close, then individually distinguishable...[M. \(*Melanosarus*\)](#)

5. S4 not exposed or only its posterior margin exposed; punctation and vestiture of S4 (except sometimes for posterior margin) reduced and different from those of S3...[M. \(*Chelostomoides*\)](#)

S4 exposed, thus four exposed sterna, punctation and vestiture of S4 similar to those of S3...6

6. S8 with hairs on lateral margin, body chalicodomiform, with large areas of black or fulvous hairs forming a striking color pattern...[M. \(*Pseudomegachile*\)](#)

S8 without marginal hairs, but discal hairs sometimes extending laterally beyond margin; body usually megachiliform, usually without a striking color pattern...7

7. Metasoma about twice as long as wide (Carina of T6 usually emarginate medially; front tarsus usually enlarged and pale; front coxa with spine and usually with red bristle)....[M. \(*Sayapis*\)](#)

Metasoma less than twice as long as wide...8

8. Carina of T6 entire or crenulate, median part the most produced, with no trace of a median emargination....9

Carina of T6 commonly crenulate, median part emarginate or sometimes irregular but not produced...11

9. Front tarsus slender and simple, black or fuscous; front coxa pubescent anteriorly, without red bristles, spine short and slender; lower tooth of mandible slender and acute; apical segment of antenna not at all dilated, fully three times as long as broad...[M. \(*Argyropile*, in part\)](#)

Front tarsus usually dilated, ferruginous or yellowish; front coxa usually bare anteriorly, with broad, flat conspicuous spine and patch of red bristles; lower tooth of mandible usually robust; apical segment of antenna usually dilated, about twice as long as broad....10

10. S4 with small but distinct median tubercle on apical margin (large, robust species, Holarctic)...
[M. \(*Xanthosarus*\), in part](#)

S4 without median apical tubercle, apical margin usually broadly membranaceous...[M. \(*Megachiloides*, in part\)](#)

11. Mandible four-toothed...12

Mandible three-toothed...13

12. Front coxa usually largely bare anteriorly, often with patch of short, red bristles in front of spine, front tarsus frequently modified, pallid (holarctic)...[M. \(*Xanthosarus*, in part\)](#)

Front coxa hairy, without red bristles; front tarsus simple, dark colored (Nearctic). [M. \(*Argyropile*, in part\)](#)

13. Front tarsus broadly dilated, pale (Holarctic)...[M. \(*Xanthosarus*, in part\)](#)

Front tarsus simple, black or nearly so...14

14. Morphological apical margin (not carina) of T6 without evident teeth. [M. \(*Eutricharaea*\)](#)

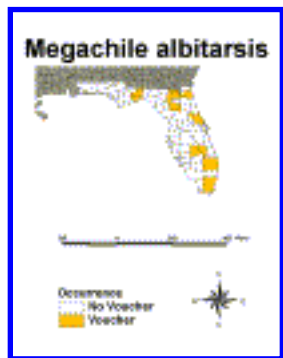
Morphological apical margin of T6 with four small but distinct teeth...[M. \(*Litomegachile*\)](#)

Megachile

Subgenus *Acentron* Mitchell, 1 species

Megachilidae: *Megachile albitarsis* Cresson

County Records: I do not have them from the FSCA. Mitchell lists Miami-Dade, Duval, Palm Beach, Highlands, Alachua, Volusia, Lee, Okeechobee; I have collected them in Baker, Columbia, Wakulla, and also Leon



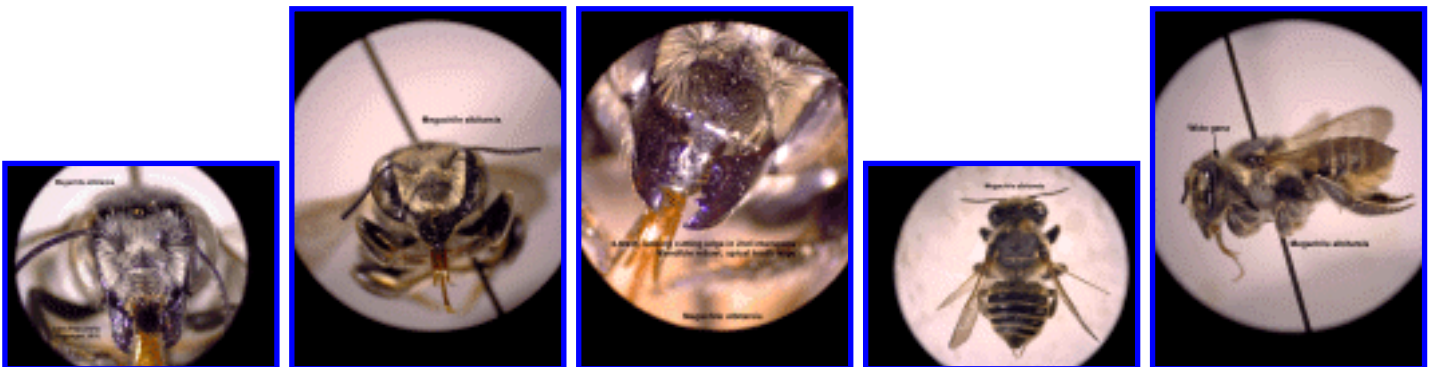
Locations: Gainesville, Cutler, Miami, Miami-Beach, Flamingo, Fort Myers, Lake Okeechobee, Coral Gables, Titusville, Enterprise

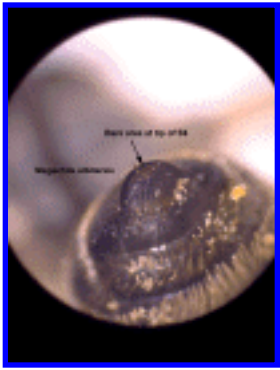
Dates: March-November

Plants: Polylectic

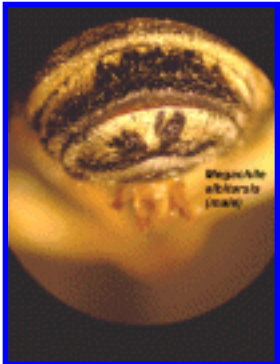
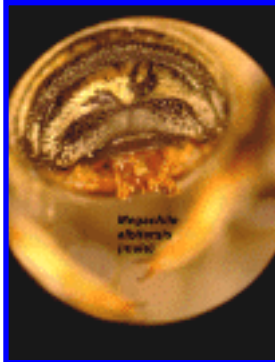
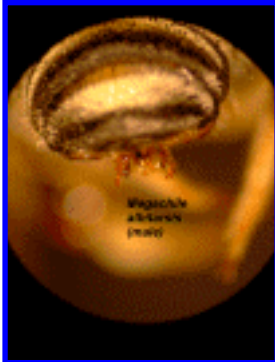
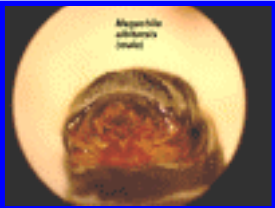
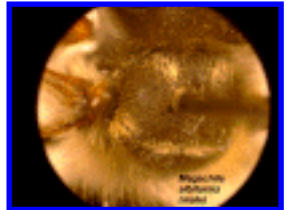
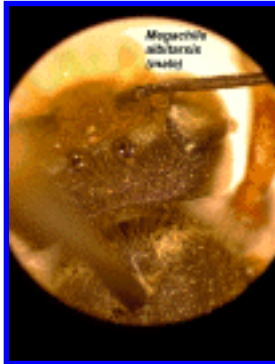
Notes: Widespread in the Southeastern U.S. A mostly neotropical species.

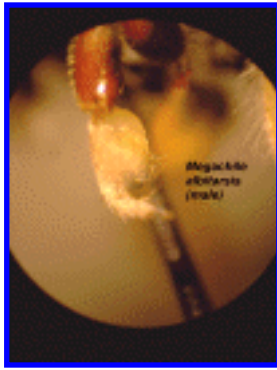
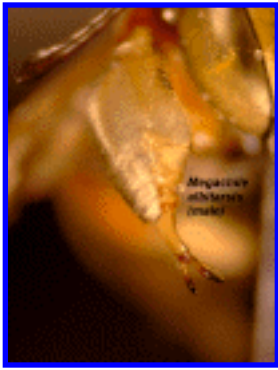
Female





Male





Megachile

Subgenus *Argyropile* Mitchell, 2 species

Key to females:

1. Abdominal terga 6 concave in profile, entirely covered with closely appressed pale tomentum, without erect basal hairs...[M. townsendiana](#) Cockerell

Tergum 6 very nearly straight in profile, with erect hairs toward the sides basally. [M. parallela](#) Smith

Key to males:

1. Larger (13mm); carina of tergum 6 broader, surface just above emargination broadly impressed...[M. parallela](#) Smith

Smaller (10mm); carina of tergum 6 narrowed apically, slightly curved ventrad, emargination small, upper surface not impressed... [M. townsendiana](#) Cockerell

Both species occur in the southwestern U.S. Apparently rare in the eastern United States, occurring from North Carolina to Florida. Our species may represent an eastward migration that is currently restricted to warm areas with sandy soil.

Megachilidae: *Megachile parallela* Smith

County Records: Levy, Nassau, Leon, Miami-Dade (Mitchell)



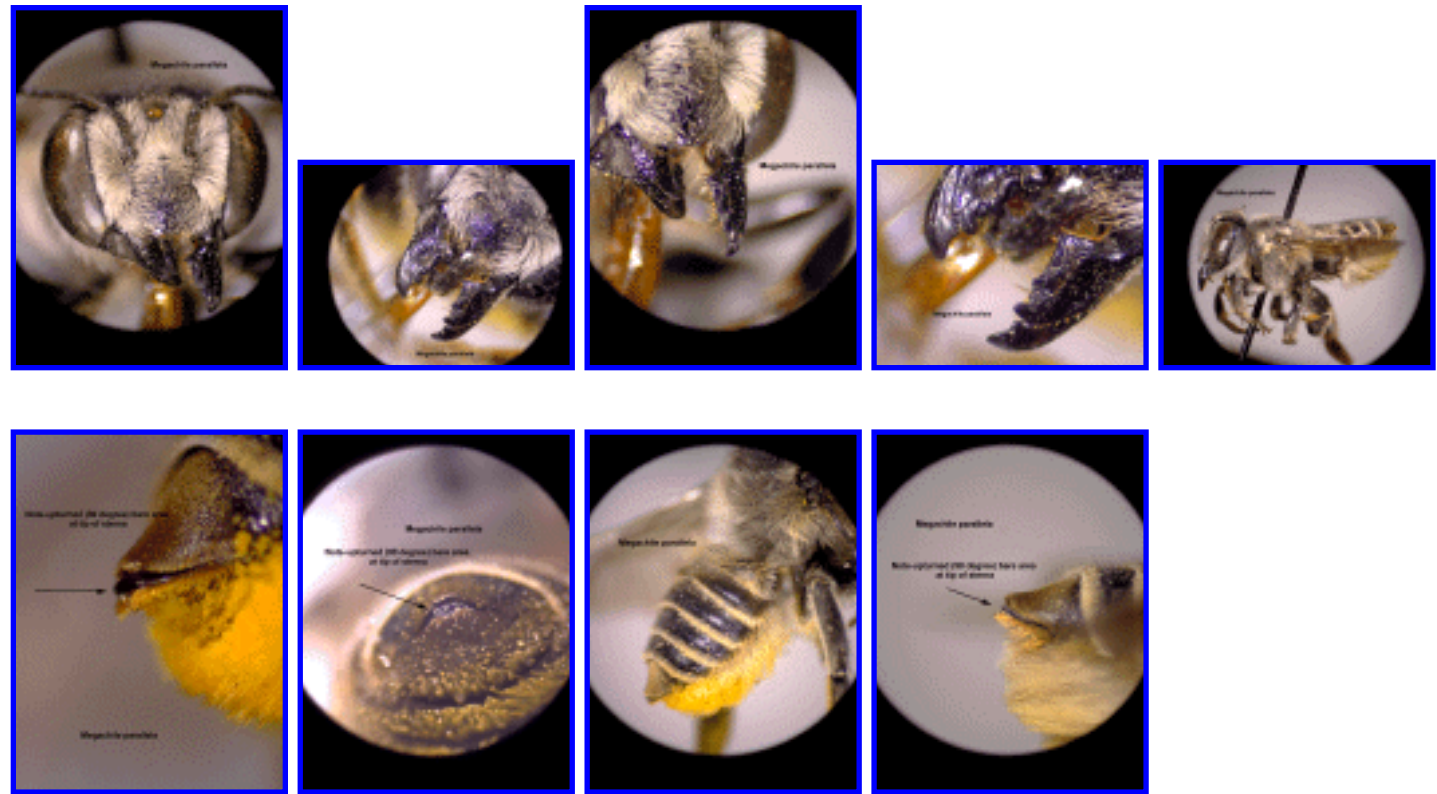
Locations: Miami, Miami Beach, Tall Timbers Research Station

Dates: June to September (Mitchell)

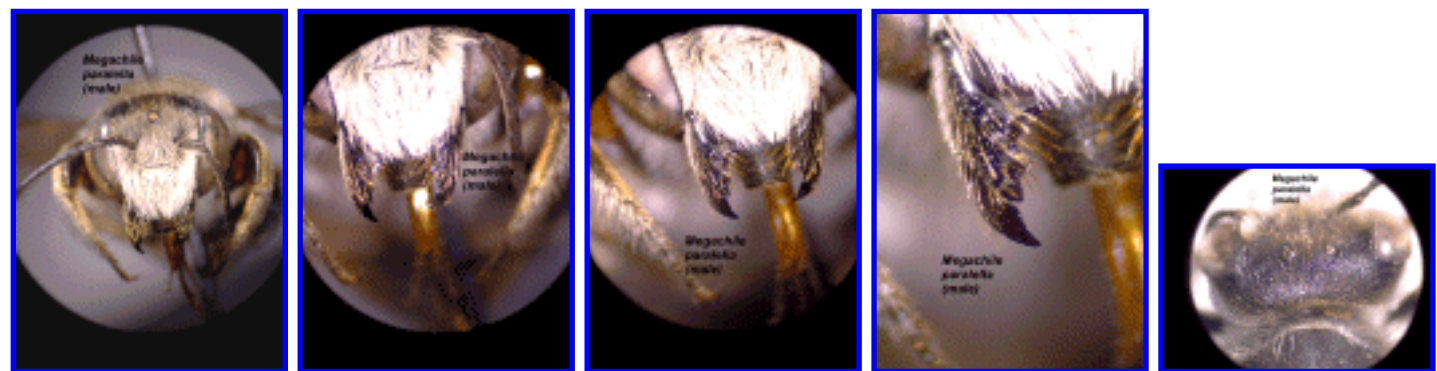
Plants: polylectic

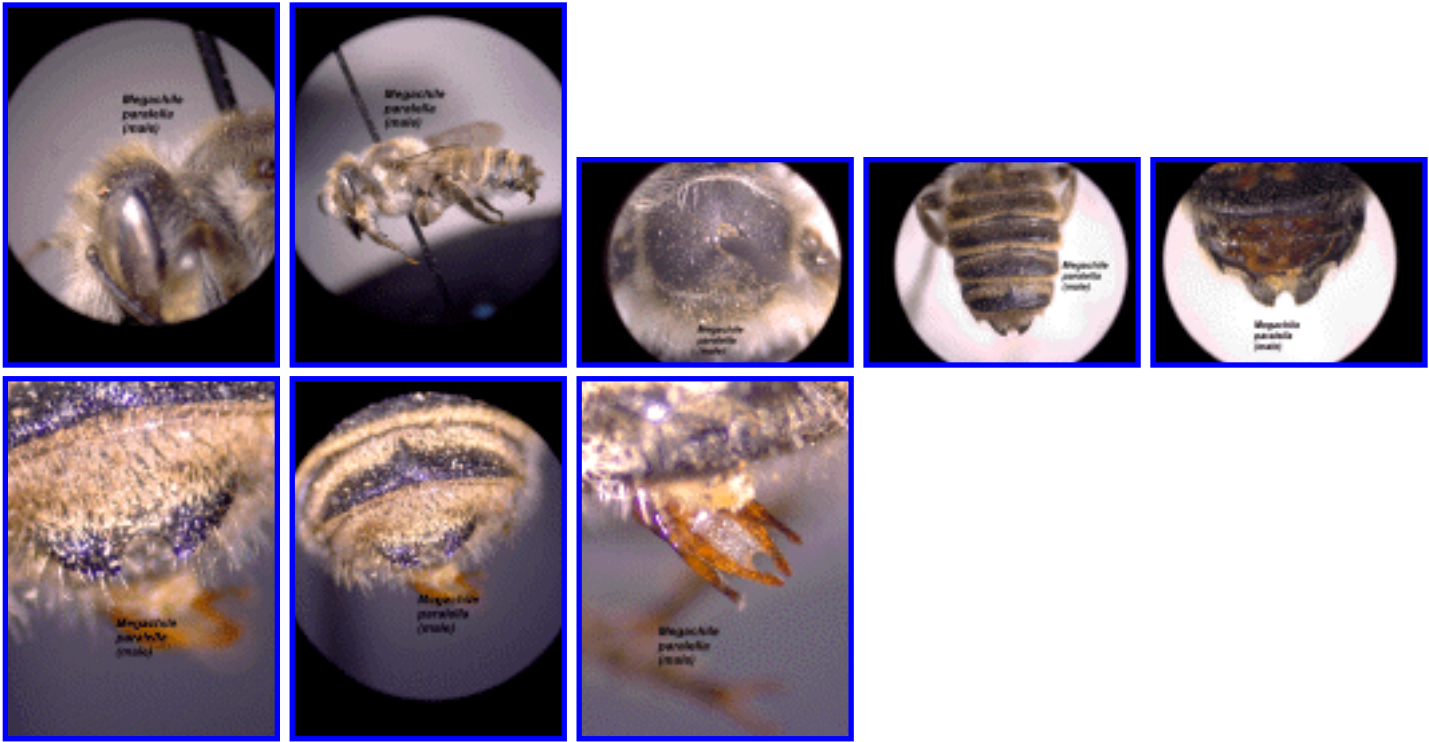
Notes: This is a ground-nesting species

Female



Male





Megachilidae: *Megachile townsendiana* Cockerell

County Records: Miami-Dade, Broward (Mitchell), St. Johns, Nassau



Locations: Ft. Lauderdale, Miami Beach

Dates: July 28-Oct. 12; July: 1, Aug: 1, Oct.: 1

Plants: oligolectic on composites (*Helianthus*, *Melanthera*, *Chrysopsis*, *Actiniella*)

Notes: Nests in sandy soil. In Florida, most of the records of this species are from the coast, in beach dunes and coastal hammocks. No photos available at this time.

Megachile

Subgenus *Chelostomoides* Robertson, 4 species

These bees do not use leaves to construct their nest but use resin, mud, or other materials. Of the four species recorded for Florida, *M. georgica* is the most common and widespread species, ranging from the northern counties to the Florida Keys.

Key to females of *Megachile* (*Chelostomoides*)

1. Clypeus much modified, produced and deeply excavated...[M. rugifrons](#)

Clypeus less modified, flattened, either entire apically or dentate or emarginate...2

2. Clypeal margin entire, neither denticulate nor emarginate...[M. georgica](#)

Clypeal margin either denticulate, tuberculate, or emarginate...3

3. Clypeal margin with a slight median denticulation...[M. exilis parexilis](#)

Clypeal margin definitely emarginate medially, with no indication of a median denticle..
[M. campanulae](#)

Key to males of *Chelostomoides*

1. Mandible without an inferior projection...[M rugifrons](#)

Mandible with a definite inferior projection...2

2. Front tarsi dark, only slightly dilated and flattened...[M. campanulae](#)

Front tarsi ferruginous, at least the basal joints distinctly dilated and flattened...3.

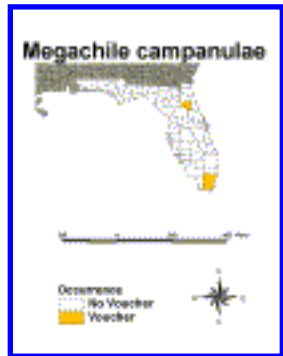
3. Front coxae definitely spiny.. ..[M. georgica](#)

Front coxae reduced to minute tubercle...[M. exilis parexilis](#)

Megachilidae: *Megachile campanulae* (Includes *M. campanulae campanulae* Robertson

and *M. campanulae wilmingtoni* Mitchell

County Records: I do not have any from the FSCA. Mitchell lists none for *M. campanulae campanulae* from Florida and record from Crescent City (county?) for *M. campanulae wilmingtoni*. Pascarella listed both for Miami-Dade County.



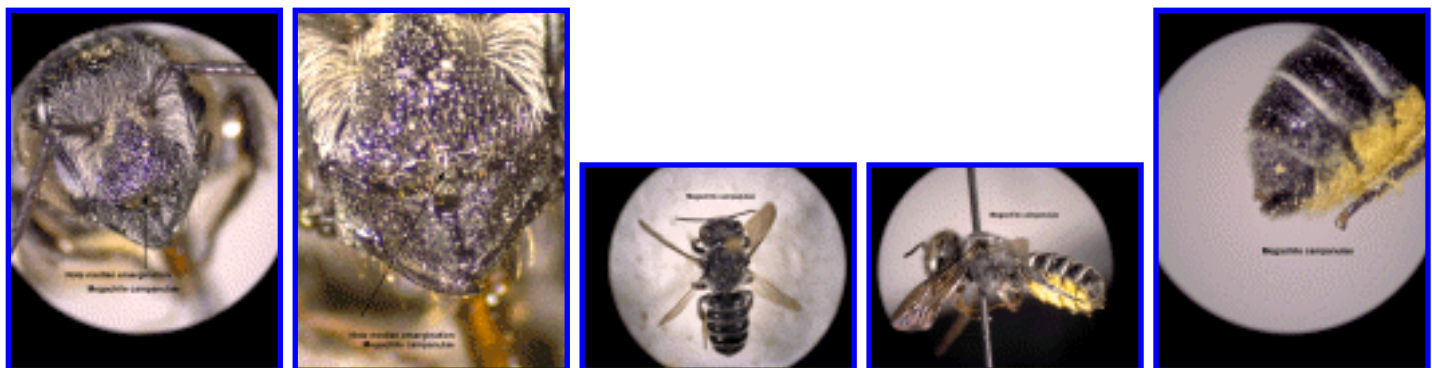
Locations:

Dates: Feb.-Nov.

Plants: Polylectic, often on legumes or composites.

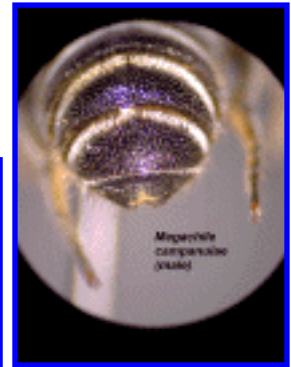
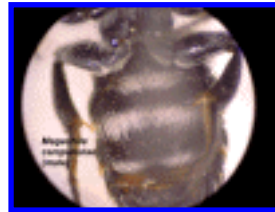
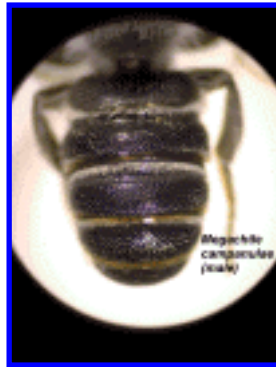
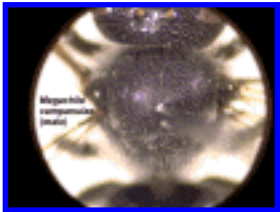
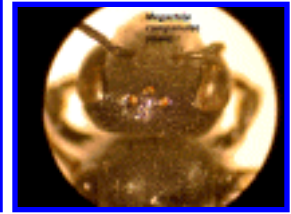
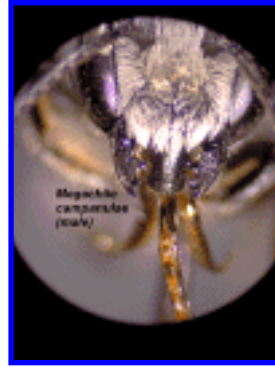
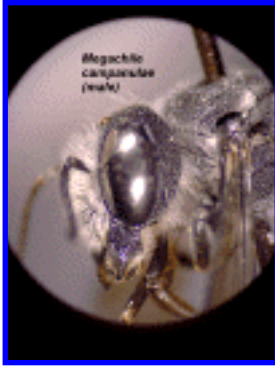
Notes: Subspecies *wilmingtoni* is the southeastern coastal form of *M. campanulae*. Nests in borings in wood. The female of *M. campanulae campanulae* is smaller than *M. campanulae wilmingtoni* (10-11 mm vs. 11-12 mm), has entirely pale pubescence on the sixth tergum vs. whitish and short erect black hairs; and has lightly infuscated wings vs. deeply infuscated wings. Males can be separated on the basis of size and wing infuscation, similar to females.

Female





Male



Megachilidae: *Megachile exilis parexilis* Mitchell

County Records: I do not have any from FSCA. Mitchell does not list any from Florida. I have collected this species in Thomas County, GA near the Leon County, FL border.

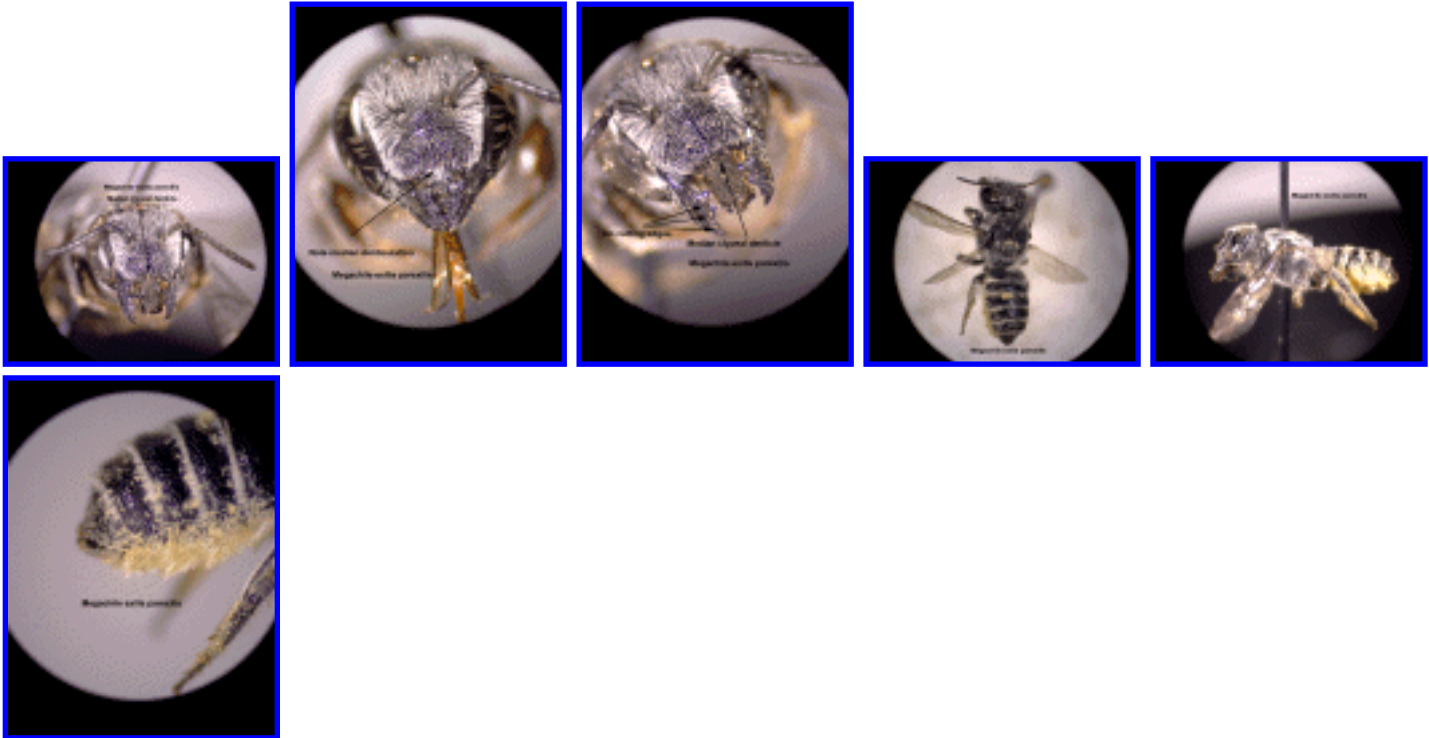
Locations:

Dates: March-October

Plants: Polylectic, primarily legumes.

Notes: Nests in borings. Primarily a southeastern species.

Female



Megachilidae: *Megachile georgica* Cresson

County Records: None from FSCA. Miami-Dade, Monroe, Volusia, Leon, Wakulla (Probably throughout)



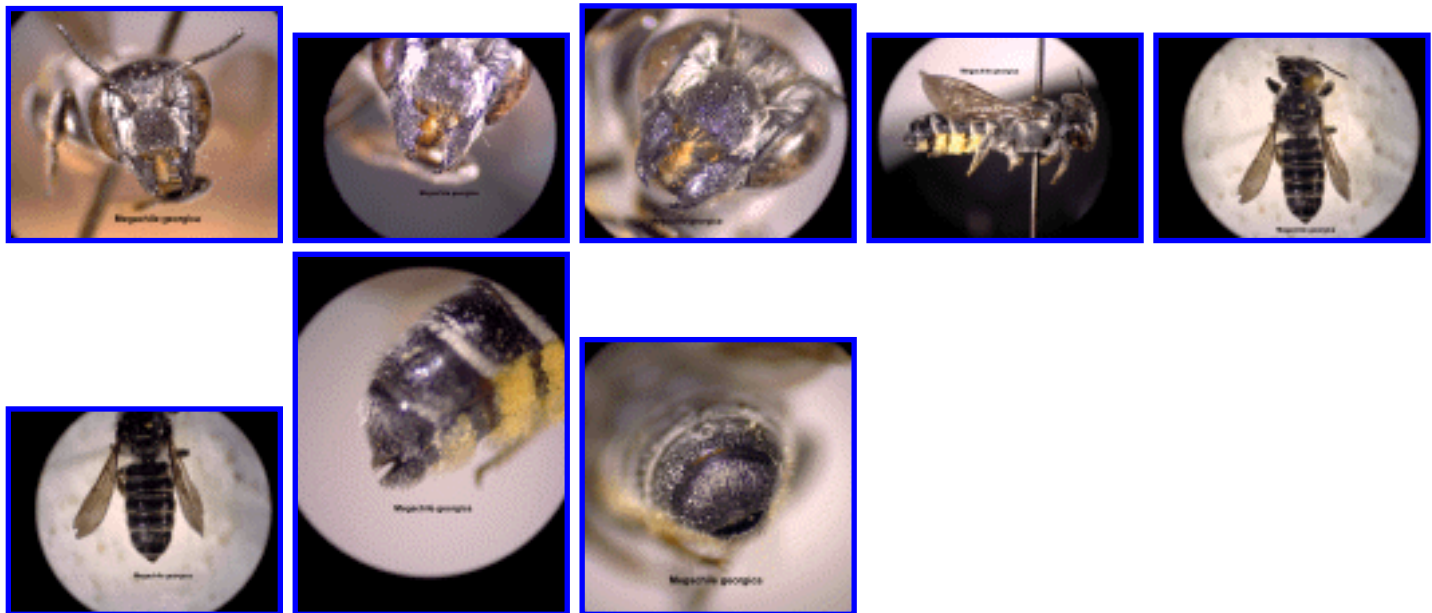
Locations: Hollywood, No Name Key, Titusville, Miami

Dates: March-November

Plants: Polylectic, primarily legumes.

Notes: Nests in borings. Primarily a southeastern species.

Female

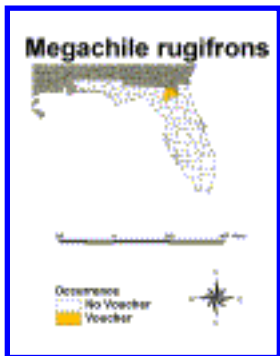


Male



Megachilidae: *Megachile rugifrons* Smith

County Records: None from FSCA. Baker/Columbia, also collected in Wakulla Co. (not shown on map)



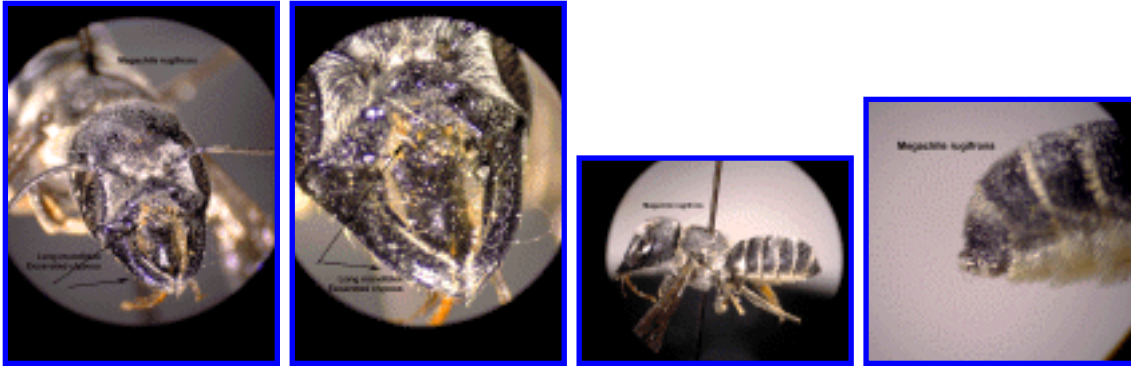
Locations:

Dates:

Plants: Polylectic

Notes: Widespread species

Female



Megachile

Subgenus *Eutricharea* Thomson, 1 species

Megachilidae: *Megachile concinna* Smith

County Records: None from FSCA. Miami-Dade, Monroe



Locations: Flamingo, Coral Gables

Dates: June

Plants:

Notes: This is an introduced species, native to the Ethiopian region.

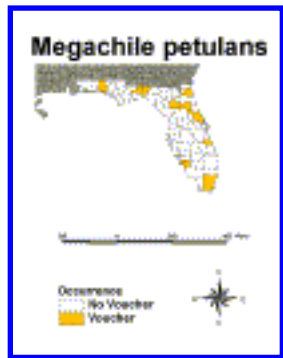


Megachile

Subgenus *Leptorachis* Mitchell, 1 species

Megachilidae: *Megachile petulans* Cresson

County Records: All from Mitchell. Miami-Dade, Walton, Indian River, Duval, Volusia, Lee, Alachua, Jefferson; Pascaella (Leon); I do not have the county records from the FSCA. Probably throughout Florida.



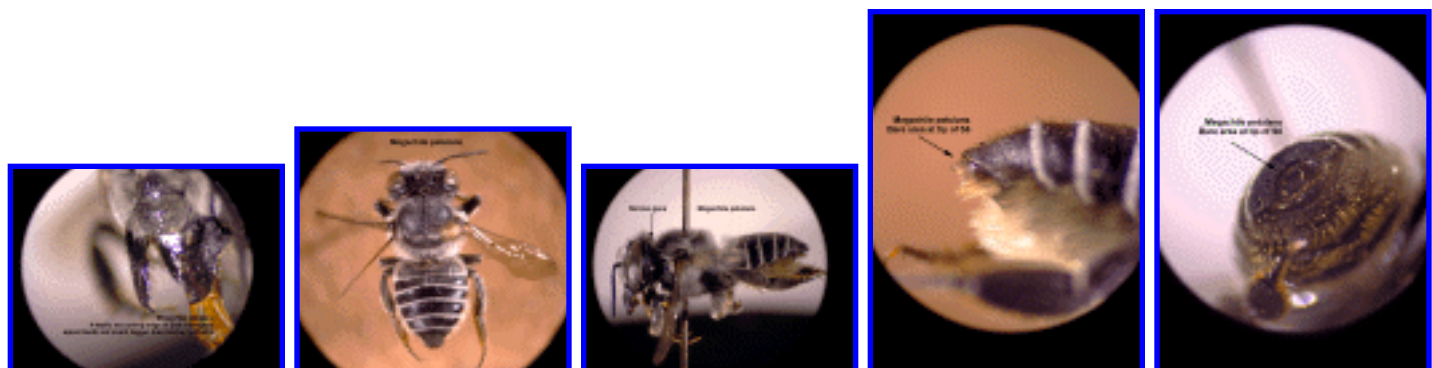
Locations: Cutler, DeFuniak Springs, Indian River, Jacksonville Beach, Titusville, Crescent City, Monticello, Gainesville, Fort Myers, Tall Timbers,

Dates:

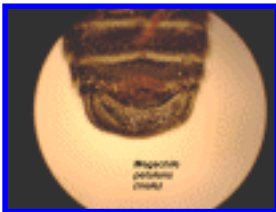
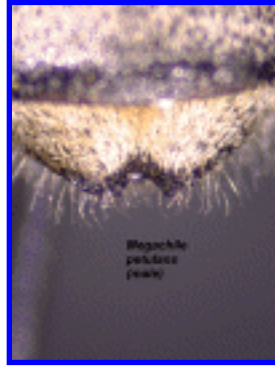
Plants: Polylectic, but especially Asteraceae, Fabaceae, and Lamiaceae

Notes: Occurs in SE USA, up to N. Jersey, coastal plain species. Subgenus is primarily neotropical in distribution. Observed to nest in ground.

Female



Male



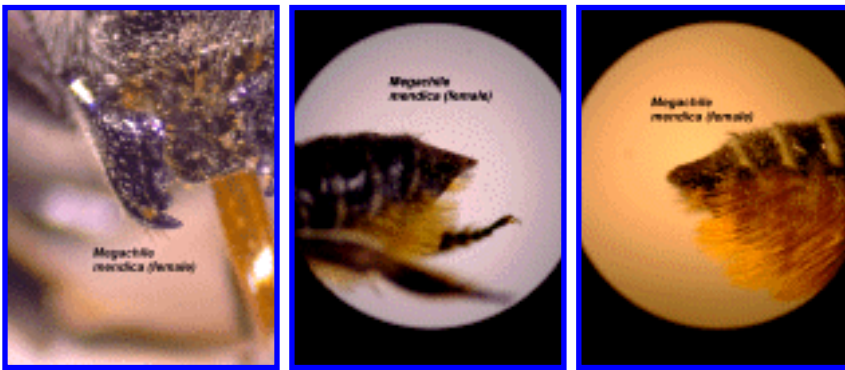
Megachile

Subgenus *Litomegachile* Mitchell, 3 species

This subgenus includes three of the most common species of *Megachile* in Florida. These are ground and stem-nesting bees, polylectic, and fly throughout most of the season.

Key to females of *Litomegachile*

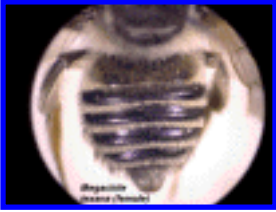
1. Mandibles angulate between third and fourth teeth; Sixth tergum straight in profile, the pubescence usually appressed; scopa yellowish...[M. mendica](#)



Mandible not angulate between third and fourth teeth; sixth tergum usually quite distinctly concave in profile, with abundant erect black hair visible...2.



2. Second, third, and fourth terga with conspicuous black hairs visible laterally in dorsal aspect. .
[M. texana](#)

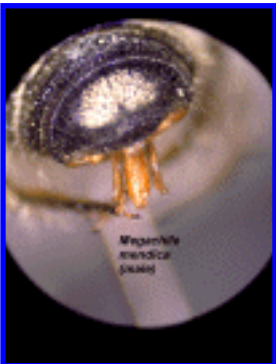


Second, third, and fourth tergites with only pale hairs visible laterally in dorsal aspect. [*M. brevis*](#)

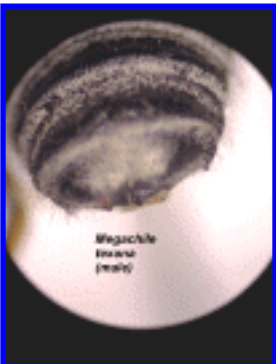


Key to males of *Litomegachile*

1. Median teeth of apical margin (not carina) of sixth tergum nearer to each other than to lateral teeth or these distance subequal...[*M. mendica*](#).



Median teeth of the sixth tergum definitely nearer the lateral teeth than to each other...2.



2. Carina of sixth tergum definitely and quite deeply emarginate medially. [*M. texana*](#)



Carina of sixth tergum with at most an indefinite median emargination which is often indistinguishable from the more lateral irregular crenulations. [.M. brevis](#)



Megachilidae: *Megachile brevis* (includes *M. brevis brevis* Say and *M. brevis pseudobrevis* Mitchell)

County Records: I do not have any from FSCA. For *M. brevis brevis*, Mitchell lists Miami-Dade, Walton, Escambia; For *M. brevis pseudobrevis*, Mitchell lists Miami-Dade.



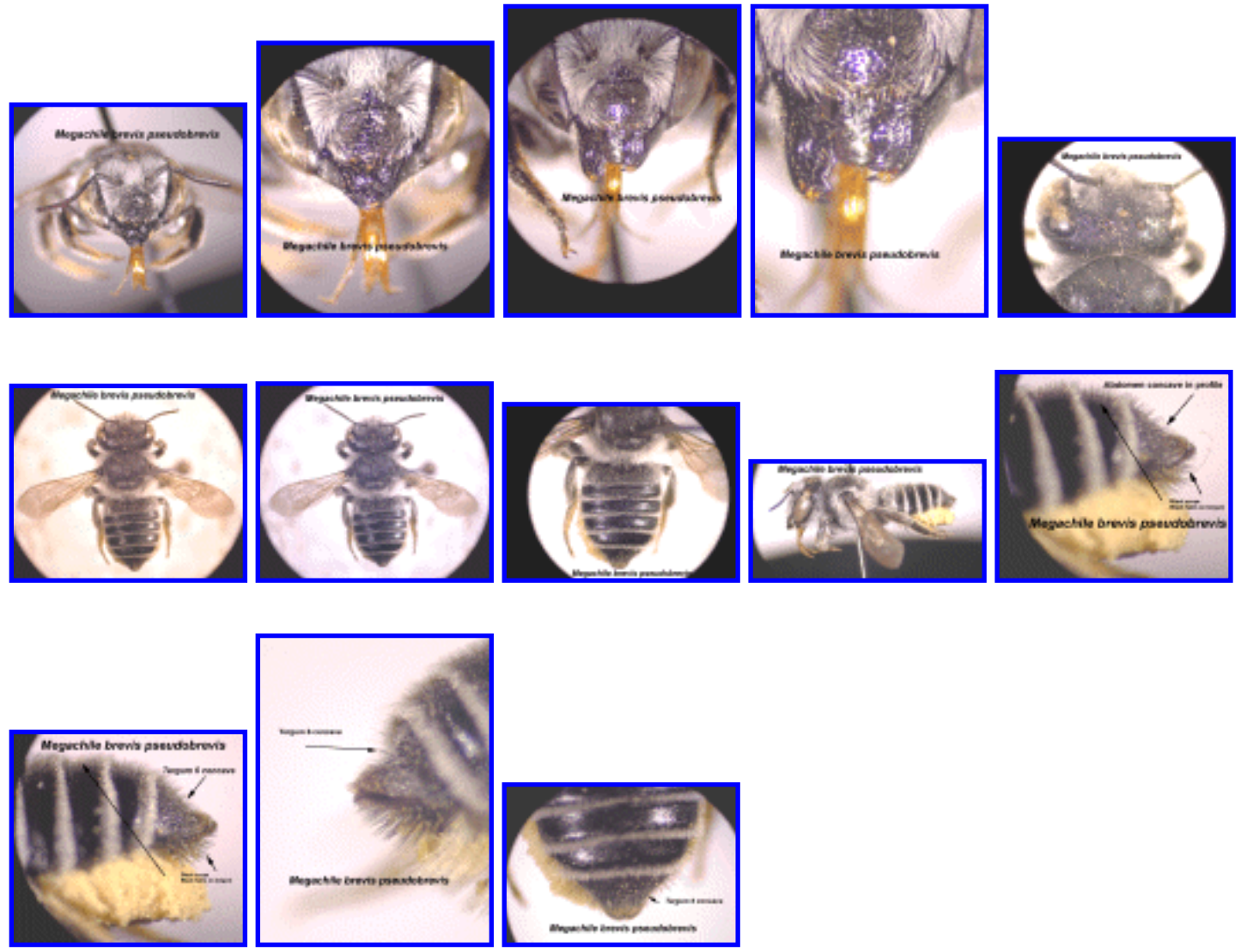
Locations: *M. brevis brevis*: DeFuniak Springs, Biscayne Bay, Miami, Lakeland, Pensacola; *M. brevis pseudobrevis*: Cutler, Miami, Silver Palm, Hollywood, Miami Beach, S. Miami, Crestview, Homestead

Dates: March-November

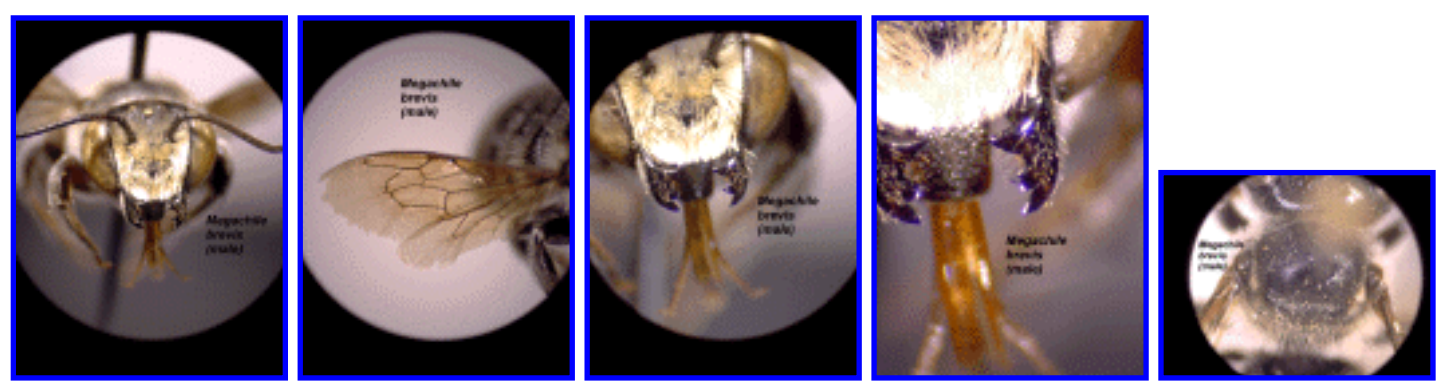
Plants: Polylectic, but especially Asteraceae, Fabaceae, and Lamiaceae

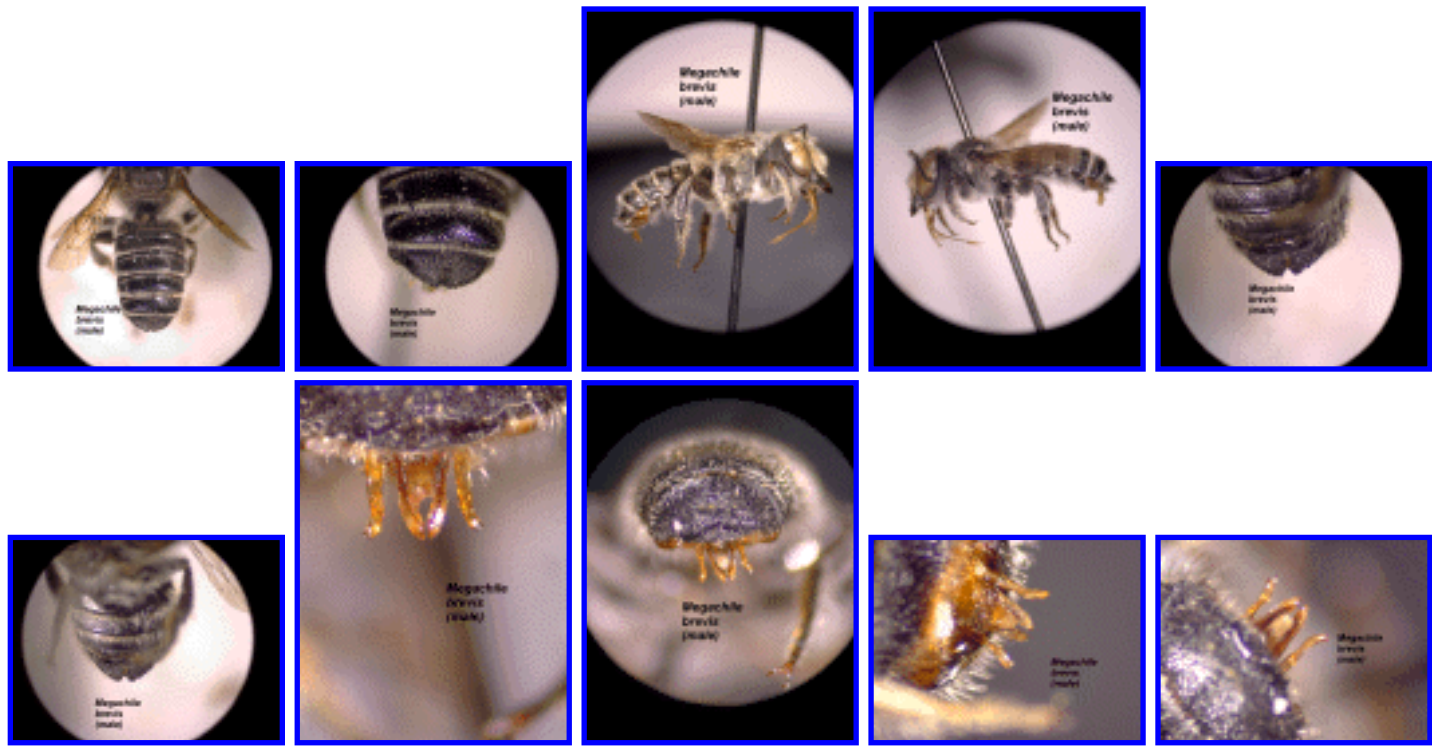
Notes: Variable in nesting habit. Both soil and stems used. Mitchell splits out a southeastern form called *Megachile brevis pseudobrevis* (females, scopa of sixth sternum entirely black versus pale at least in part in *brevis* and in males, pubescence of abdomen black in part vs. entirely pale). Nearly all of our specimens conform to this subspecies.

Female



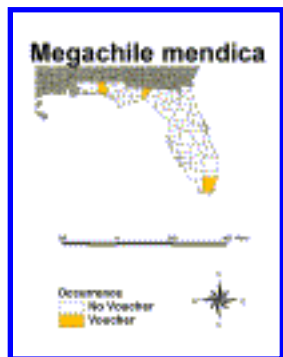
Male





Megachilidae: *Megachile mendica mendica* Cresson

County Records: I do not have any from FSCA; Mitchell lists Miami-Dade, Jefferson, Walton



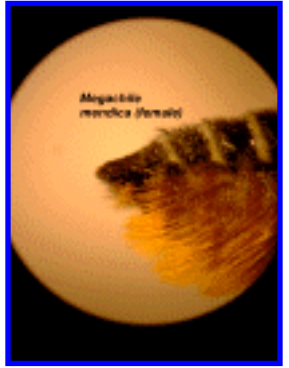
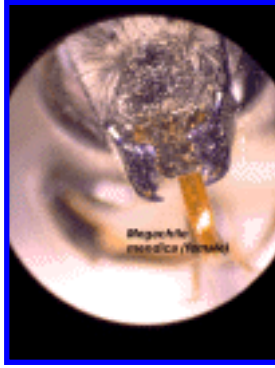
Locations: Mitchell lists DeFuniak Springs, Monticello, Miami, Cedar Keys, Crestview, Deep Lake, Homestead

Dates: nearly all year

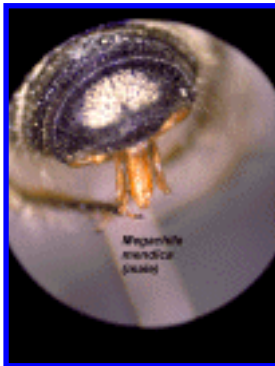
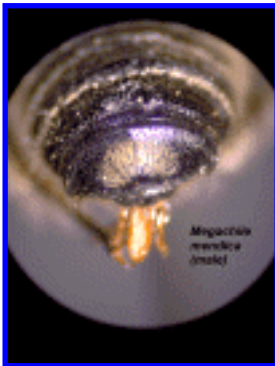
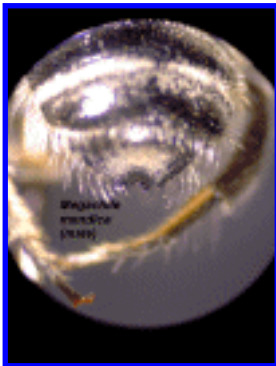
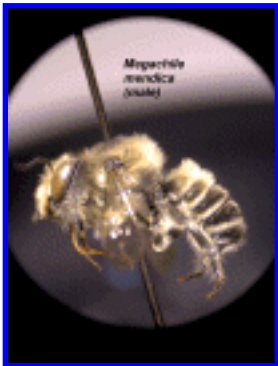
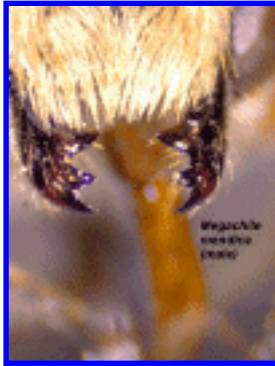
Plants: Polylectic, but especially Asteraceae, Fabaceae, and Lamiaceae

Notes: Nests primarily in wood.

Female

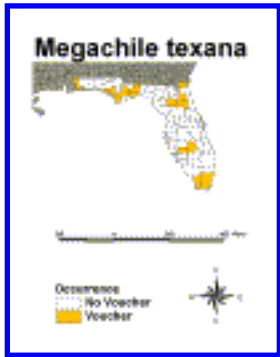


Male



Megachilidae: *Megachile texana* Cresson

County Records: Alachua, Highlands, Gulf, DeSoto, Putnam, Escambia, Liberty, Clay, Nassau, Wakulla, Monroe, Miami-Dade, Bay, Leon; Mitchell also records it from Duval.



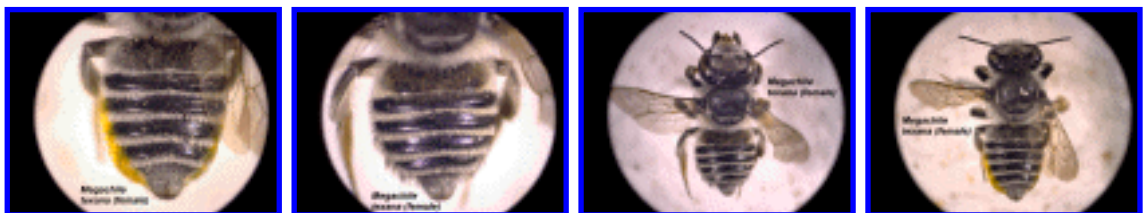
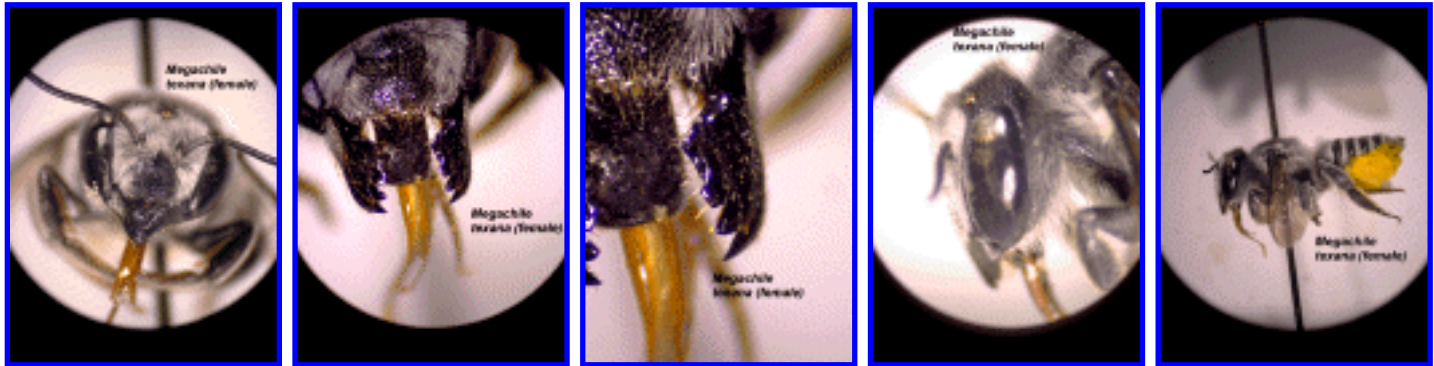
Locations:

Dates: May-Sept.

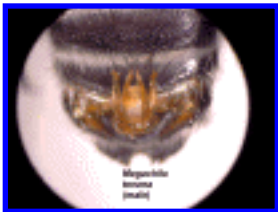
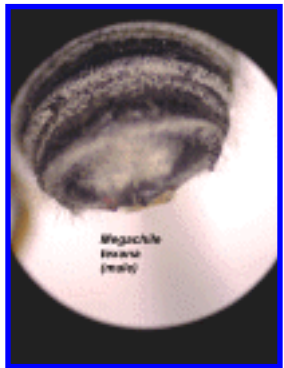
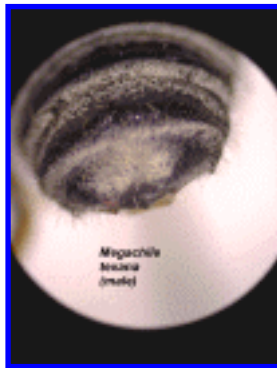
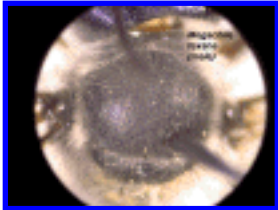
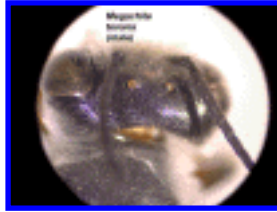
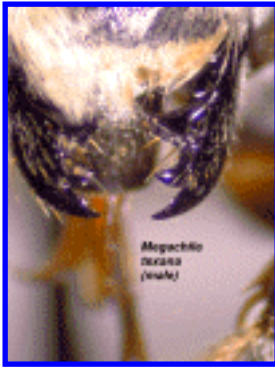
Plants: Polylectic, but especially Asteraceae, Fabaceae, and Lamiaceae

Notes: Soil nesting species.

Female



Male



Megachile

Subgenus *Megachiloides* Mitchell, 5 species

These were originally placed in the *Xeromegachile*. As the older genus name suggests, they are common in xeric areas. In Florida, they are most likely to be found in sandhills, scrub, and coastal dunes. Several species are oligolectic on particular species of plants. In comparison to the other subgenera of *Megachile*, they tend to be relatively restricted in season of flight, perhaps related to their relative specialization on certain flowers.

Key to females of *Megachiloides*

1. Lateral ocelli much nearer eyes than to edge of vertex; pubescence of sixth tergum largely appressed, the erect hairs basal, short and inconspicuous. [.*M. deflexa*](#)

Lateral ocelli subequally distant from eyes and edge of vertex, or nearer the vertex; or pubescence of sixth tergum erect and conspicuous..2

2. Clypeal margin minutely denticulate or tuberculate...3.

Clypeal margin entire....4.

3. Punctures fine and close in center of mesonotum, minute and crowded on scutellum; scopa on fifth sternum with few if any black hairs...[.*M. integra*](#)

Punctures more coarse in center of mesonotum, separated by more than their own width; punctures on scutellum fine and close, but distinct, not crowded except anteriorly; scopa on fifth sternum black along posterior margin. [.*M. brimleyi*](#)

4. Sixth tergum in profile with no erect or suberect hairs visible, the pubescence very short and closely appressed. [.*M. rubi*](#)

Sixth tergum in profile with at least suberect hairs visible...[.*M. integrella*](#)

Key to males of *Megachiloides*

1. Front metatarsi simple, neither excavated nor dilated...2

Front metatarsi more or less dilated, usually with colors other than black, and more or less excavated on the anterior margin...3.

2. Front tarsi yellowish, contrasting with the black or piceous mid and hind tarsi. [.M. integrella](#)

Front tarsi not contrasting with the others, all black, piceous, or ferruginous...[M. deflexa](#)

3. Front coxal spines broadly spatulate, almost triangular, robust.. [M. brimleyi](#)

Front coxal spines more slender and spine-like...4

4. Seventh tergum broadly rounded or subtriangular...5

Seventh tergum terminated by a quite definite spine-like median protuberance..[M. rubi](#)

5. Front metatarsi broadly dilated, equaling their tibiae in width; carina of sixth tergum broadly rounded and entire. [.M. integra](#)

Front metatarsi relatively slender, distinctly narrower than their tibiae; carina of sixth tergum broadly rounded, but the margin irregularly crenulate...[M. brimleyi](#)

Note than *M. brimleyi* males come out twice in the keys depending on the nature of their coxal spines.

Megachilidae: *Megachile brimleyi* Mitchell

County Records: Levy, Highlands, Bay



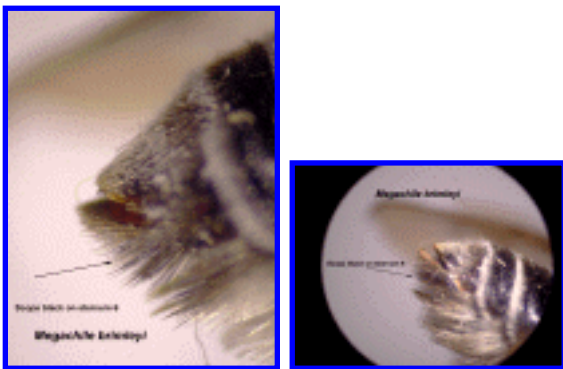
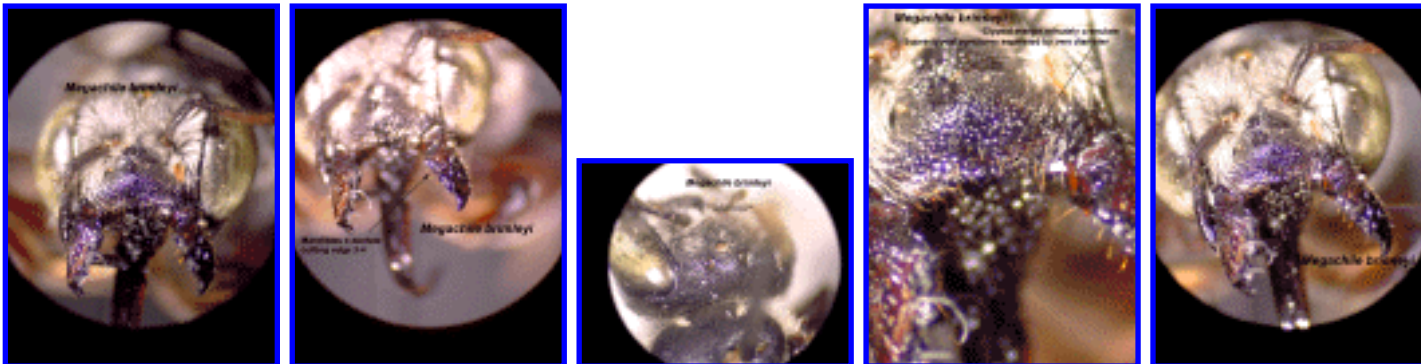
Locations: July 13-Sept. 4; July: 1, Aug: 2, Sept.:1

Dates:

Plants: Oligolege of *Galactia*

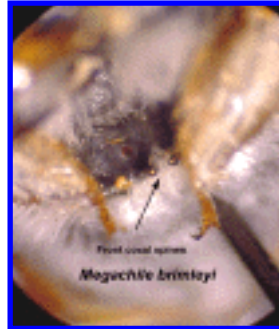
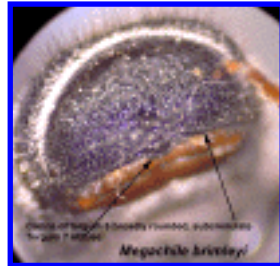
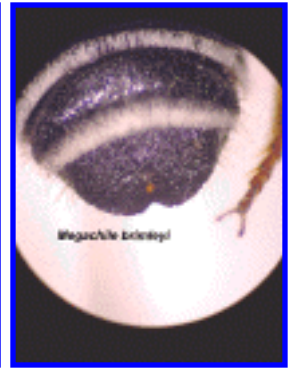
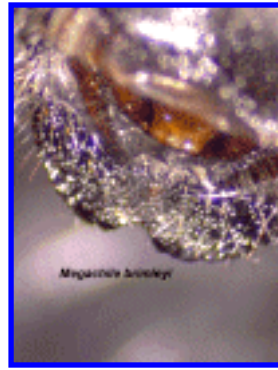
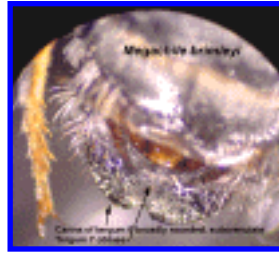
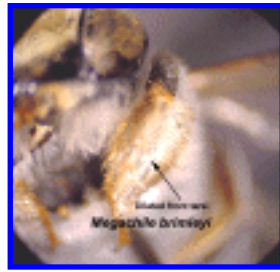
Notes: SE coastal plain endemic (NC to Florida)

Female



Male





Megachilidae: *Megachile deflexa* Cresson

County Records: Putnam, Clay, Marion, Levy, Alachua; Mitchell lists Duval, Miami-Dade



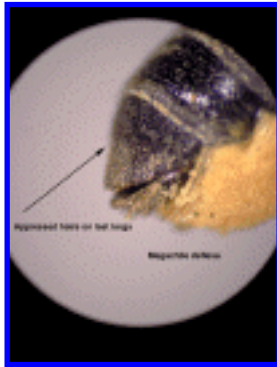
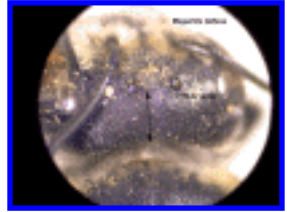
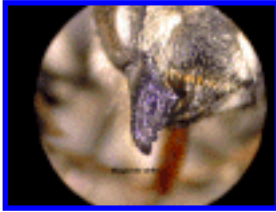
Locations: Interlachen; Mitchell lists Jacksonville Beach, Coral Gables

Dates: (April); May 12-Nov. 5; May: 1, July: 1, Aug: 6, Sept.: 4, Oct.:4, Nov.:1

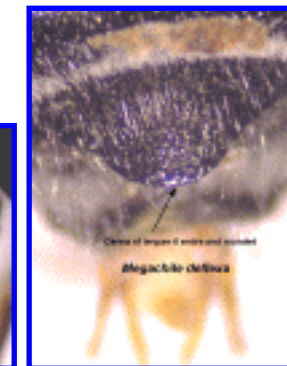
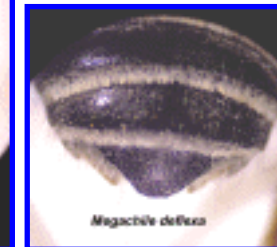
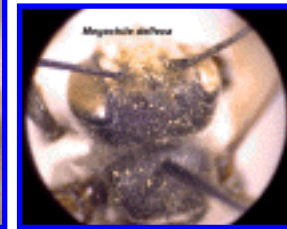
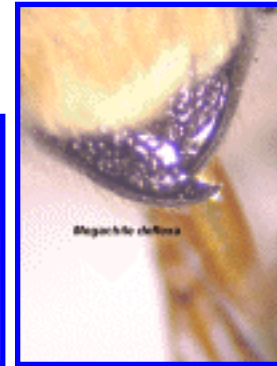
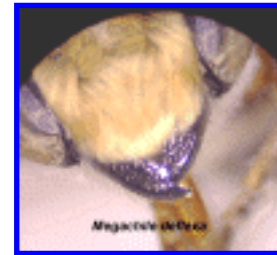
Plants: *Rhus glabra*; polylectic, many composites and legumes

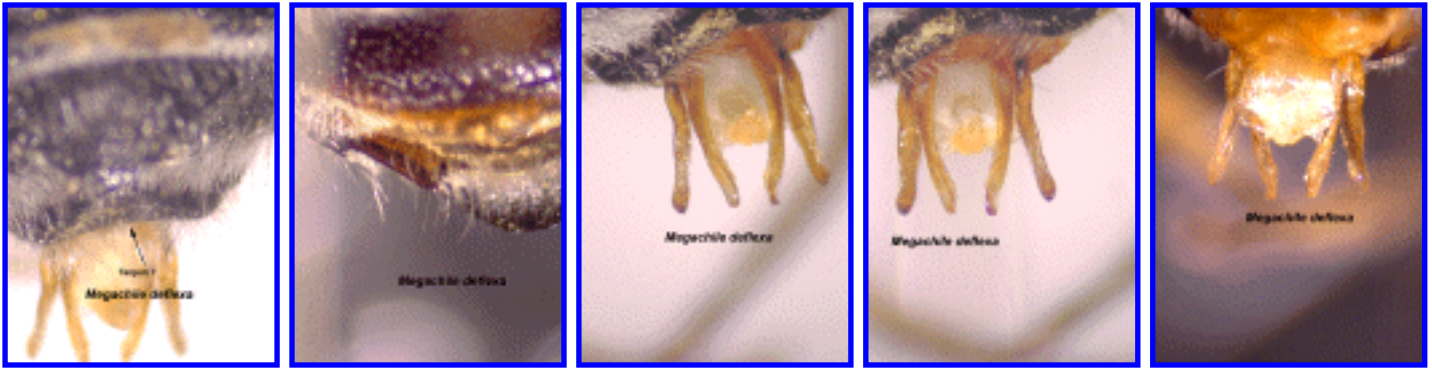
Notes:

Female



Male





Megachilidae: *Megachile integra* Cresson

County Records: Levy, Orange, Clay, Citrus, Escambia, Alachua, Highlands, Gilchrist



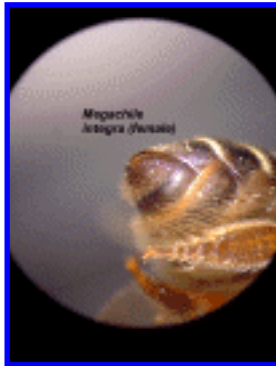
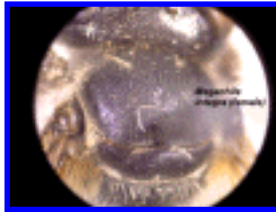
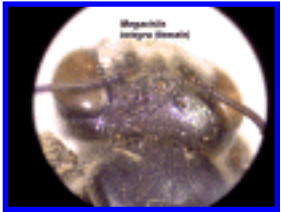
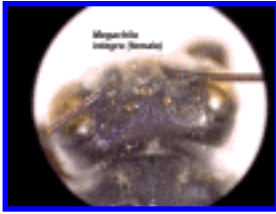
Locations: Orlando

Dates: May 13-Aug. 24; May: 1, July: 9, Aug: 5

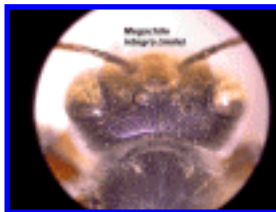
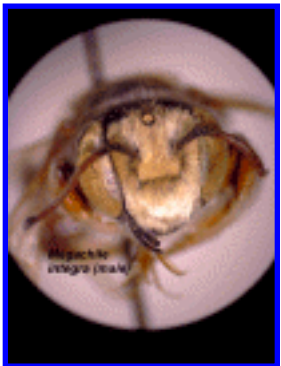
Plants: *Galactia* sp, *Glycine* max, *Phaseolus*, *Eriogonus tomentosus*; many legumes and composites

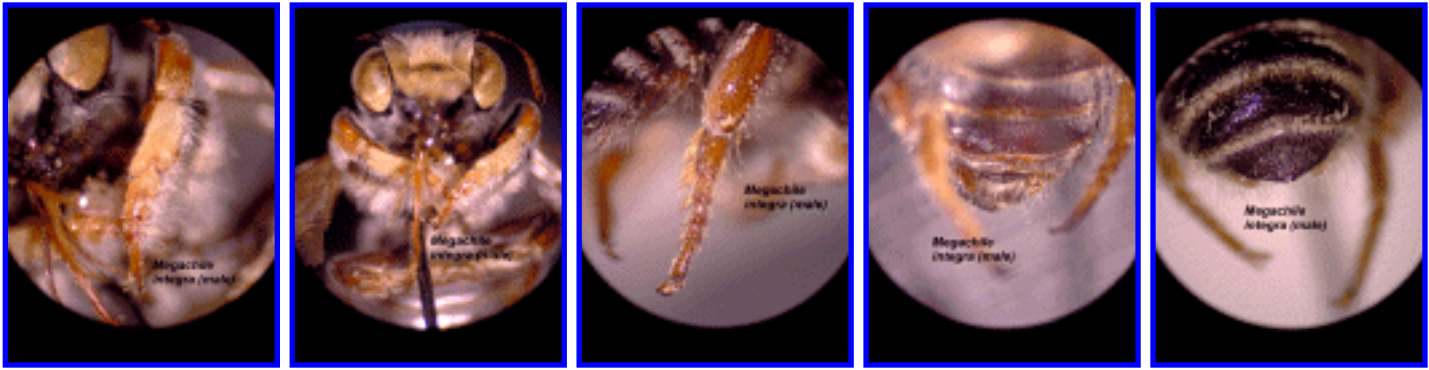
Notes:

Female



Male





Megachilidae: *Megachile integrella* Mitchell

County Records: Alachua, Nassau, Clay, Putnam; Mitchell lists Lee



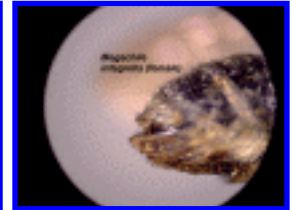
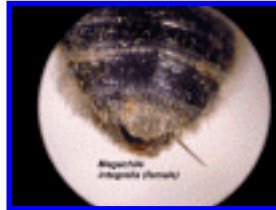
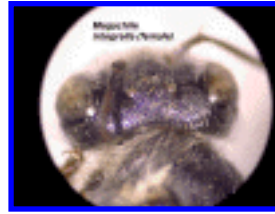
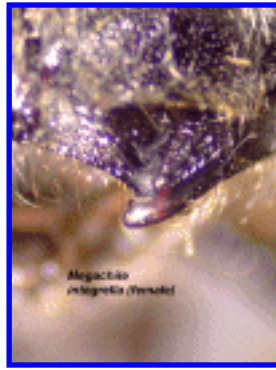
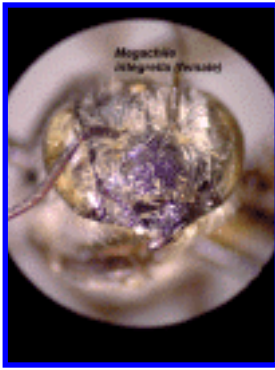
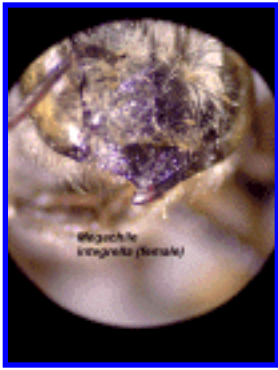
Locations: Fort Myers

Dates: April 11-November 4; April: 2, May: 3, Oct.:1, Nov.:1

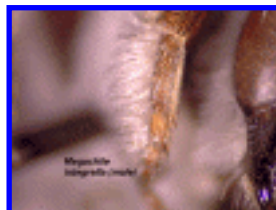
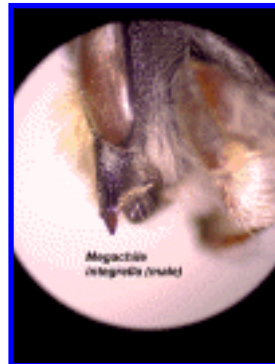
Plants: *Chrysobalanus oblongifolus*

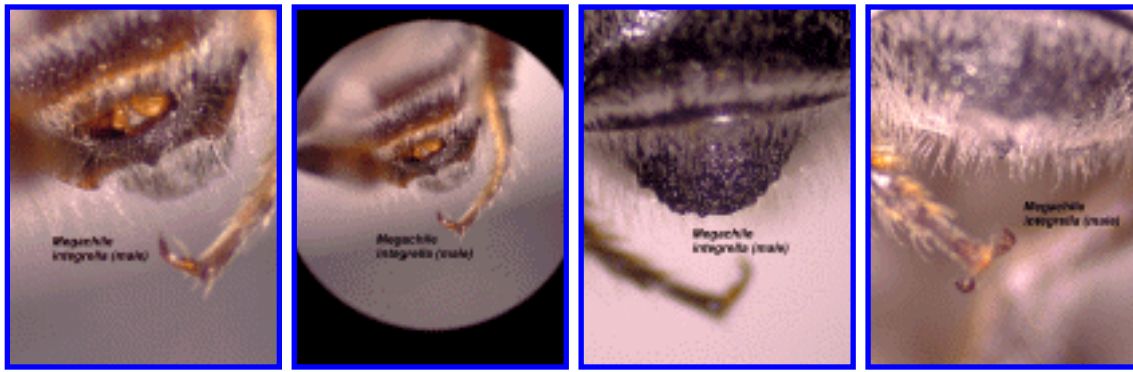
Notes: SE coastal plain endemic (NC to Florida)

Female



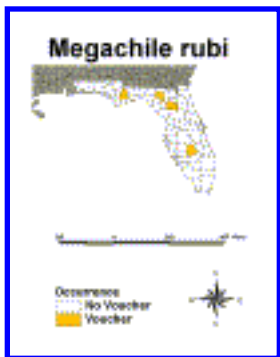
Male





Megachilidae: *Megachile rubi* Mitchell

County Records: Alachua, Suwanee, Highlands, Liberty (also caught in Lowndes County, Georgia)



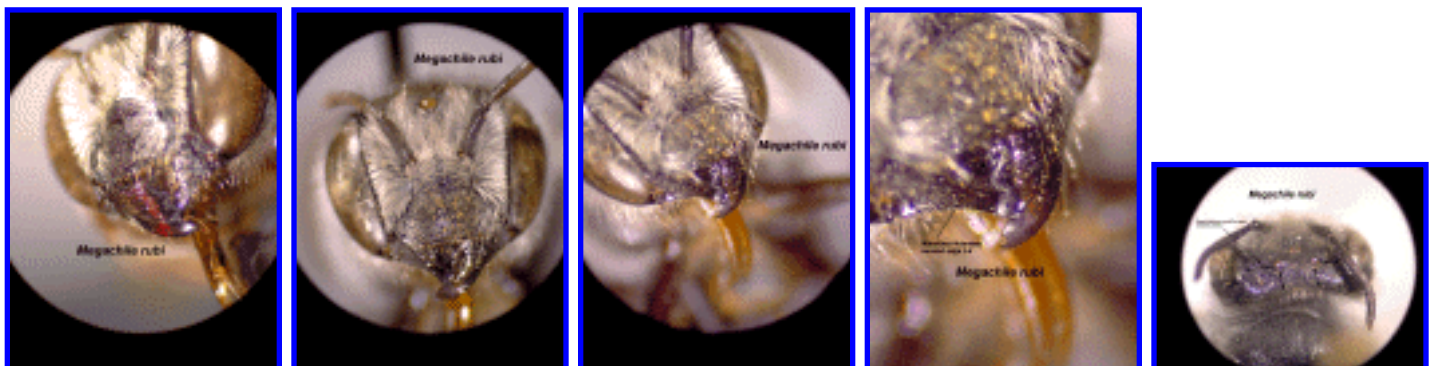
Locations:

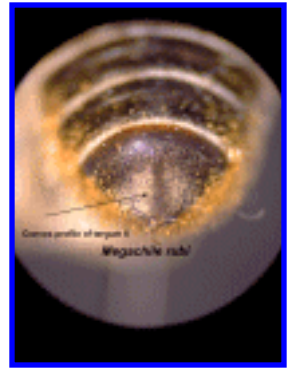
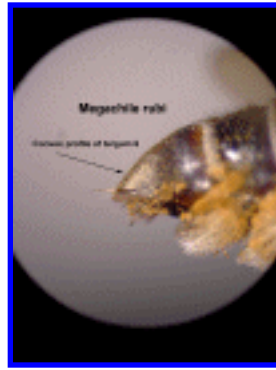
Dates: March 31-May 16; March: 1, April: 8, May: 1

Plants: *Rubus* sp., *Ilex cassine*

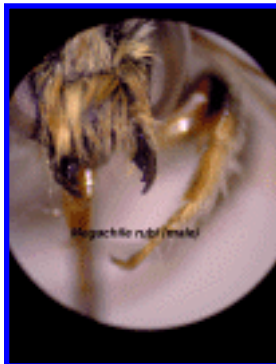
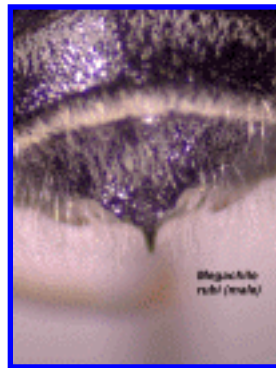
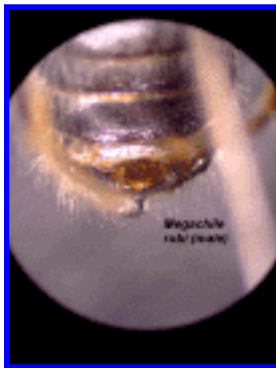
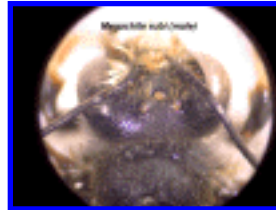
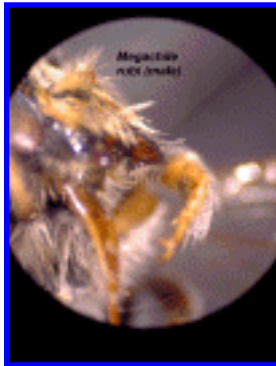
Notes: Nests in sandy loam soils; SE coastal plain endemic (NC to Florida)

Female





Male



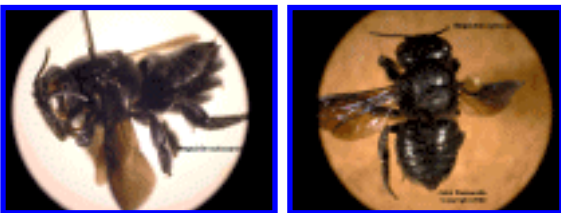
Megachile

Subgenus *Melanosarus* Mitchell, 2 species

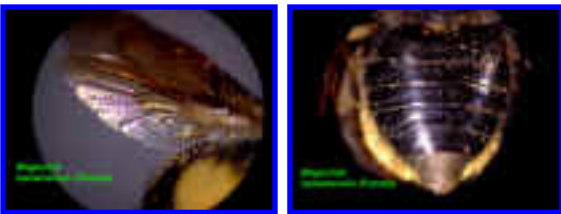
A neotropical subgenus with 2 species in the USA. *M. bahamensis* is restricted to SE Florida while *M. xylocopoides* likely occurs throughout the state.

Key to females

1. Wings very deeply infuscated, purplish; abdomen with numerous rather large and deep punctures...[*M. xylocopoides*](#) Smith



Wings less deeply infuscated, not purplish; hind wings nearly subhyaline; punctures of abdomen very minute and sparse...[*M. bahamensis*](#) Mitchell



Key to males

1. Mid and hind tarsi blackish...[*M. xylocopoides*](#) Smith



Mid and hind tarsi ferruginous...[*M. bahamensis*](#) Mitchell



Megachilidae: *Megachile bahamensis* Mitchell (= *M. floridensis* Mitchell)

County Records: Monroe, Miami-Dade

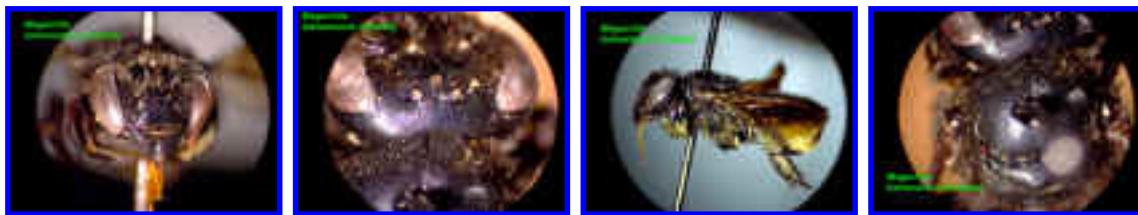


Locations: Miami, Coral Gables

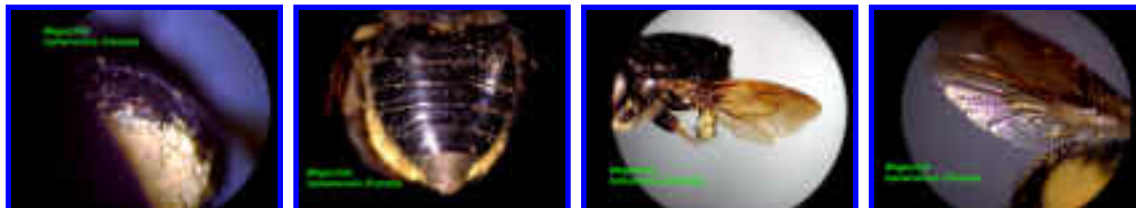
Dates: March to October

Plants:

Notes: Restricted to South Florida and the Bahamas



Female:

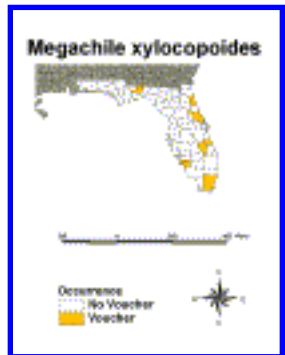


Male:



Megachilidae: *Megachile xylocopoides* Smith

County Records: Indian River, Miami-Dade, St. Johns, Leon, Lee, Okeechobee, Volusia



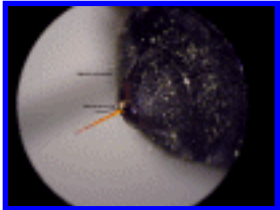
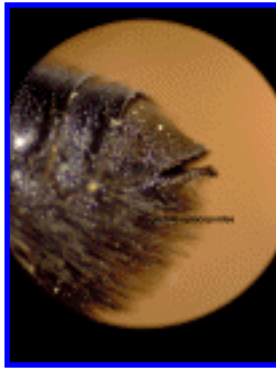
Locations: Haulover, Indian River, Miami, Melbourne, Enterprise, Fort Myers, Okeechobee, Paradise Key, St. Augustine

Dates:

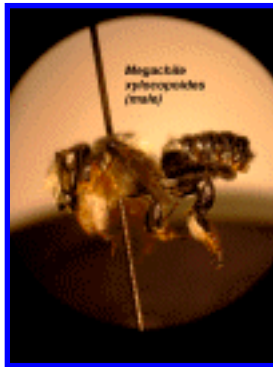
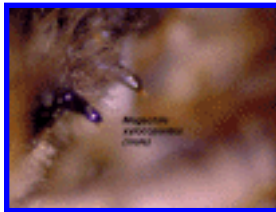
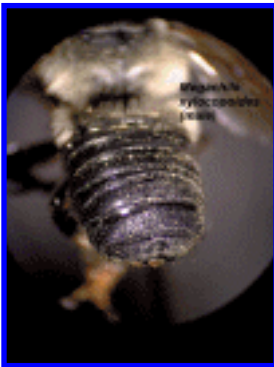
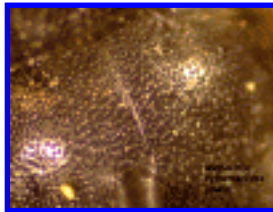
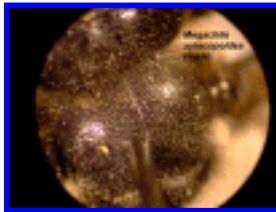
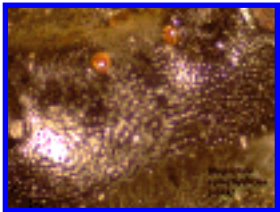
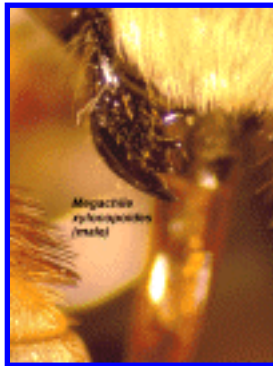
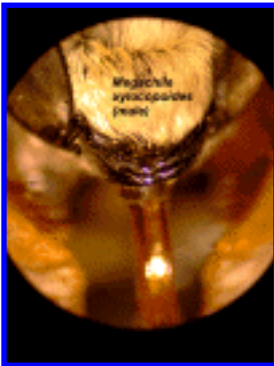
Plants: March to November

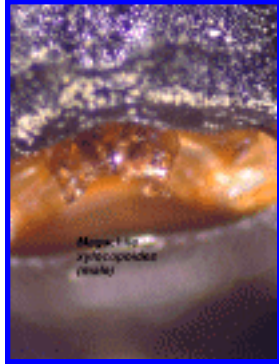
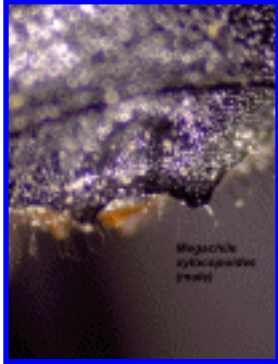
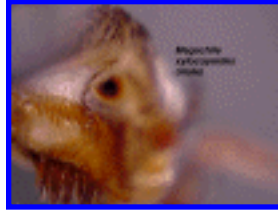
Notes: primarily a coastal plain species of the SE USA; extends west to to the western deserts.

Female



Male





Megachile

Subgenus *Pseudocentron* Mitchell, 1 species

Megachilidae: *Megachile pruina pruina* Smith

County Records: Miami-Dade, Monroe



Locations: Gordon's Pass, Cedar Keys, Miami, Miami Beach, Flamingo, Homestead, Key Largo, Long Key, ENP

Dates: April-October

Plants: Polylectic, mostly Asteraceae and Fabaceae

Notes: A neotropical subgenus of *Megachile*. Found in SE USA (NC to Florida and to Texas). This species probably occurs primarily along the coast?



Female:





Megachile

Subgenus *Pseudomegachile* Friese, 1 species

Megachilidae: *Megachile lanata* Fabricius

County Records: Miami-Dade



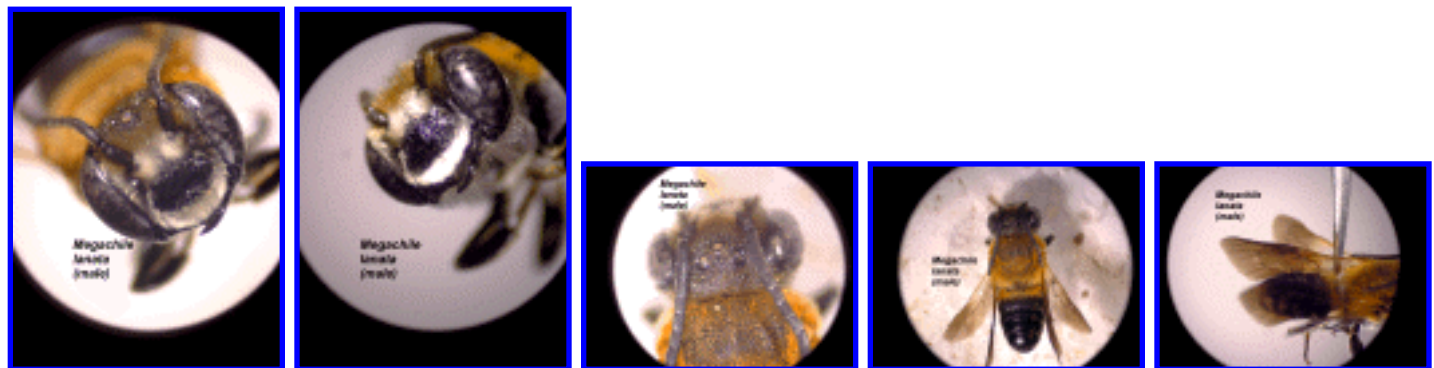
Locations: Key Biscayne

Dates:

Plants:

Notes: Introduced species from Africa. Known only from South Florida.

Male





Megachile

Subgenus *Sayapis* Titus, 4 taxa

This subgenus has species that superficially resemble those of *Chelostomoides*. However, the females can be distinguished by having a cutting edge on the mandibles that is lacking in *Chelostomoides* and the males have 4 exposed sterna while those of *Chelostomoides* have 3. In Florida, the county records suggest that only *M. frugalis frugalis* and *M. pollicaris* are widely distributed. Both subspecies of *M. inimica* appear to be restricted to southeastern Florida.

Key to females

1. Clypeus with long, erect, black pubescence...[M. frugalis frugalis](#) Cresson

Pubescence of clypeus entirely pale....2



2. Clypeal margin with a very broad and shallow, median, emarginate area, the median portion of which is slightly thickened and produced...[M. pollicaris](#) Say

Clypeal margin with a shallow incurved area on each side of center which is occupied by a low obtuse angle....3



3. Legs bright ferruginous...[M. inimica inimica](#) Cresson

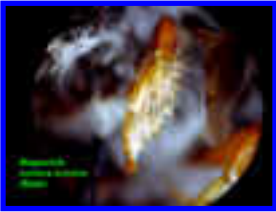


Legs black...[*M. inimica sayi*](#) Cresson



Key to males

1. Front basitarsi dilated, usually yellowish or ferruginous...2

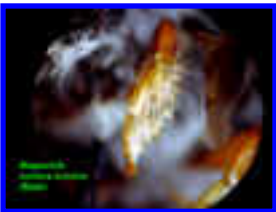


Front basitarsi simple, blackish...[*M. frugalis frugalis*](#) Cresson

2. Front basitarsal scale produced apically fully to tip of 3rd segment...[*M. polycaris*](#) Say



Apex of basitarsal scale not attaining tip of 3rd segment...3



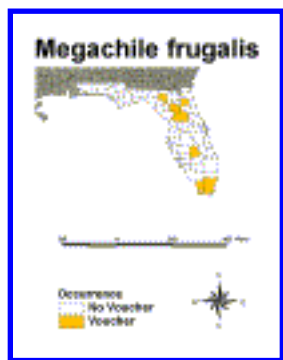
3. Legs bright ferruginous...[*M. inimica inimica*](#) Cresson



Legs black...[*M. inimica sayi*](#) Cresson

Megachilidae: *Megachile frugalis frugalis* Cresson

County Records: Monroe, Miami-Dade, Alachua, Marion, Highlands, Clay, Suwanee



Locations:

Dates: April-August

Plants: polylectic

Notes: Nests in wood borings.

Photos:

Megachilidae: *Megachile inimica inimica* Cresson

County Records: Miami-Dade, Monroe



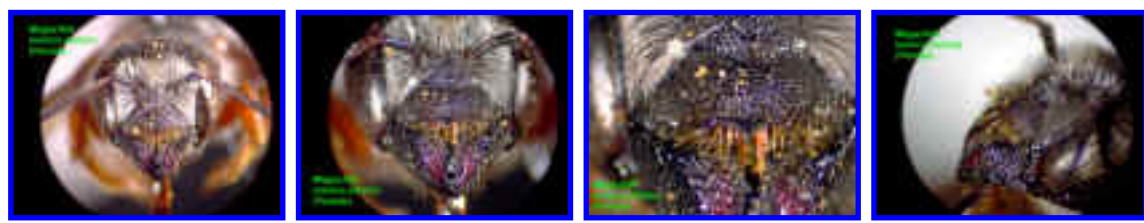
Locations: Key Largo, Biscayne Bay, Sugar Loaf Key, No Name Key, Key Biscayne, Miami

Dates: Feb.-April

Plants: Asteraceae and Fabaceae; *Crotalaria*, *Bidens*, *Borrchia*

Notes: wood boring nester; this is a SE coastal form with red legs

Female:



Male:





Megachilidae: *Megachile inimica sayi* Cresson

County Records: Miami-Dade



Locations: Cutler, Miami

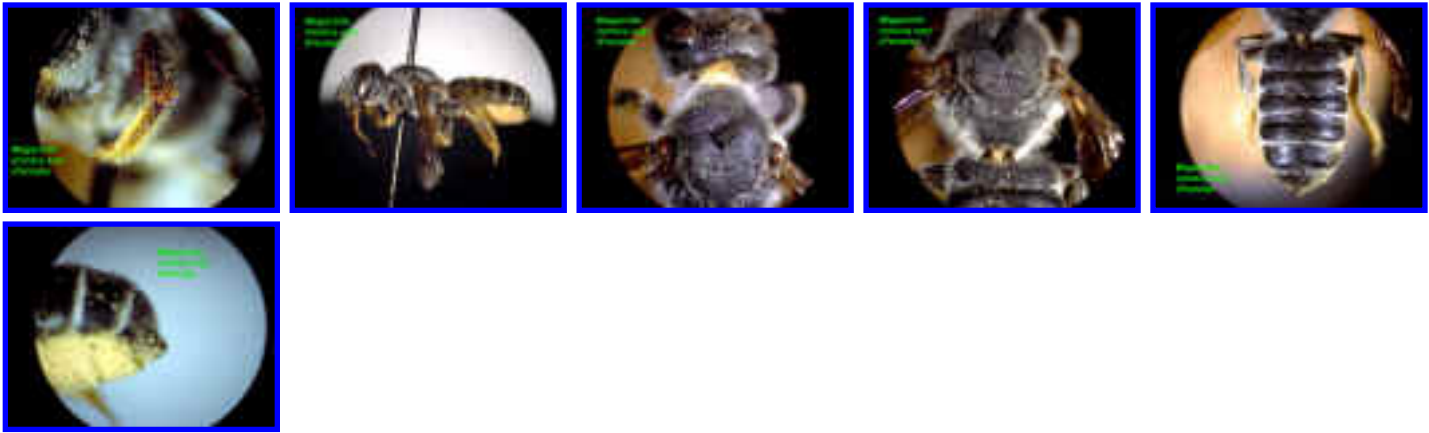
Dates:

Plants: polylectic, favors composites

Notes: nests in borings in wood; this is more widespread phenotype with black legs.

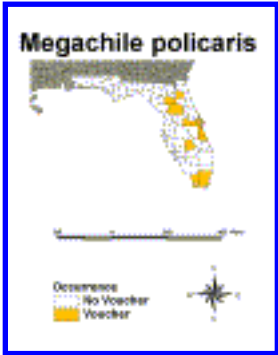
Female:





Megachilidae: *Megachile policularis* Say

County Records: Clay, Miami-Dade, Highlands, Monroe, Alachua, Marion, Indian River, Brevard, Orange, Duval (Mitchell)



Locations: Ocoee, Jacksonville Beach, Flamingo, Key Largo, Miami

Dates: March 12-Aug. 7; March: 2, April: 2, May: 1, June: 2, July: 2, Aug: 1

Plants: *Borreria*, *Erigeron*; polylectic, favors composites

Notes: In the SE, known from Florida, Georgia and Louisiana. Uses trap nests.



Male:



Megachile

Subgenus *Xanthosarus* Robertson, 2 species

These were originally placed in the subgenus *Delomegachile*

Key to females

1. Inner mandibular tooth truncate...[M. ingenua](#)

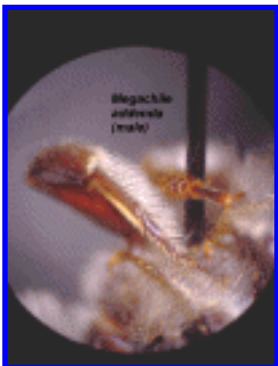
Inner mandibular tooth rounded or acute...[M. addenda](#)



Key to males

1. Front basitarsi dilated, usually yellowish or ferruginous...[M. ingenua](#)

Front basitarsi blackish, simple. [M. addenda](#)



Megachilidae: *Megachile addenda* Cresson

County Records: Highlands, Liberty, Alachua, Suwanee, Miami-Dade (Mitchell-lit record)

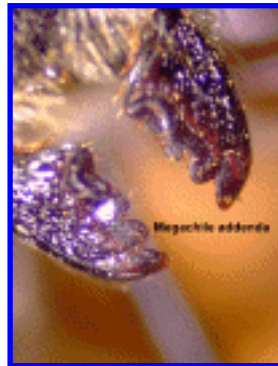
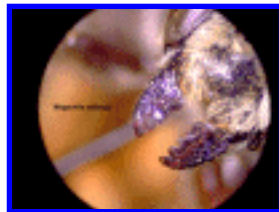


Locations: Paradise Key

Dates: March 31-April 25; March: 1, April: 5

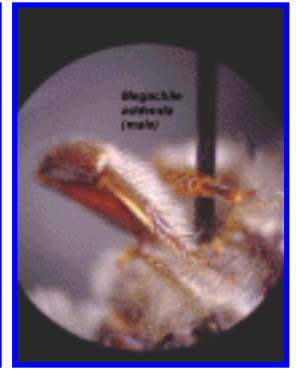
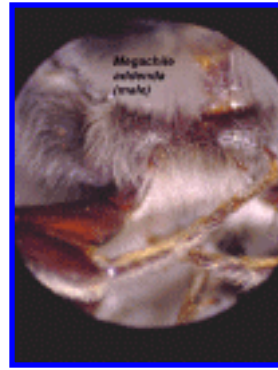
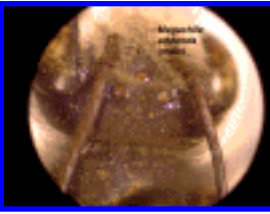
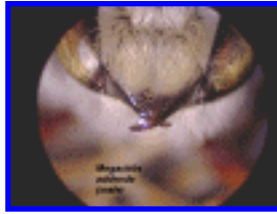
Plants: polylectic

Notes:

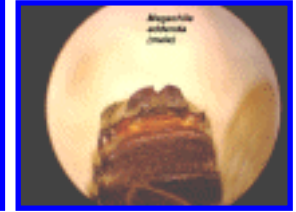
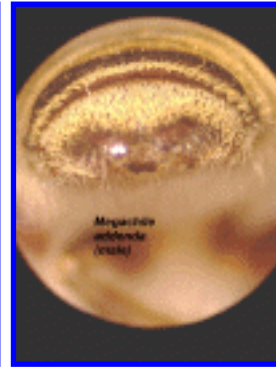
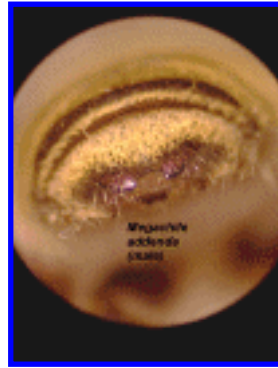


Female:





Male:



Megachilidae: *Megachile ingenua* Cresson

County Records: Santa Rosa, Alachua, Walton



Locations: Santa Rosa Beach, Navarre

Dates: May 25-Aug. 10; May: 1, Aug: 1; Mitchell records it mostly from June

Plants: appears to be oligolege of *Tephrosia virginiana* (Fabaceae)

Notes:

Female:

Male:

Subfamily [Megachilini](#)

Genus *Coelioxys* Latreille, 17 taxa

These are all parasitic bees, mostly parasitizing [Megachile](#) in Florida, but elsewhere, rarely parasitizing other genera. Females and males have distinctive metasoma and resemble more slender, pointed Megachile in color and form. They are often more densely punctate and females lack scopa. The 17 taxa are widely distributed, being found where their hosts are located. As is usual for most parasitic species, they are widely under collected and are likely found in many counties not listed here. A few taxa are described on the basis of one or two specimens of one sex. One endemic species, *C. obtusiventris* and one subspecies (a color form), *C. slossoni slossoni*, are known solely from Florida. Species are members of several subgenera, including [Coelioxys](#) (2), [Boreocoelioxys](#) (3), [Xerocoelioxys](#) (3), [Synocoelioxys](#) (2), [Glyptocoelioxys](#) (1), [Acrocoelioxys](#) (1), [Neocoelioxys](#) (1), [Cyrtocoelioxys](#) (3), and [Haplocoelioxys](#) (1).

Key references to Florida *Coelioxys*

Baker, J. R. 1975. Taxonomy of five Nearctic subgenera of *Coelioxys* (Hymenoptera: Megachilidae). The University of Kansas Science Bulletin 50(12): 649-730.

A key to subgenera is provided in Michener (2000), page 528-529. This key is not used here but is a good key to learn the main subgenera if interested. Several subgenera have only one species and subgenera with more than one species have the keys to species within subgenera are taken from Baker and/or Mitchell.

Key to subgenera with more than one species and to species from only one subgenus (modified from Baker)

Key to subgenera of females of *Coelioxys* in Florida

1. Ocellar area swollen, impunctate...2

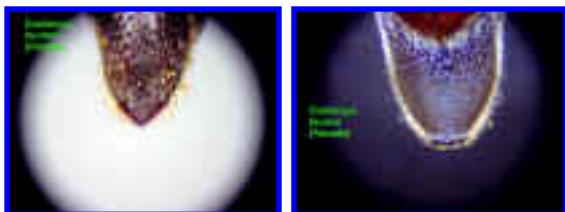


Ocellar area not swollen, or if raised then closely punctate...4

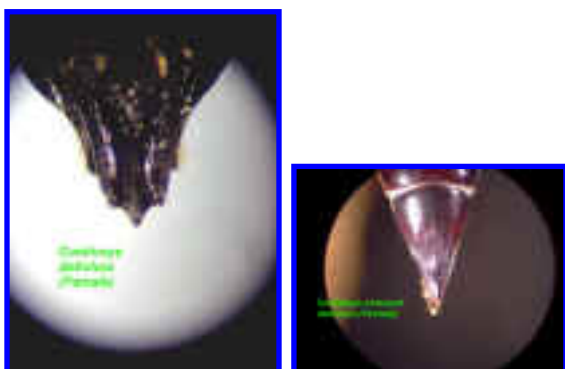


2. Sixth metasomal sternum broadly rounded to acute apically, not notched subapically...

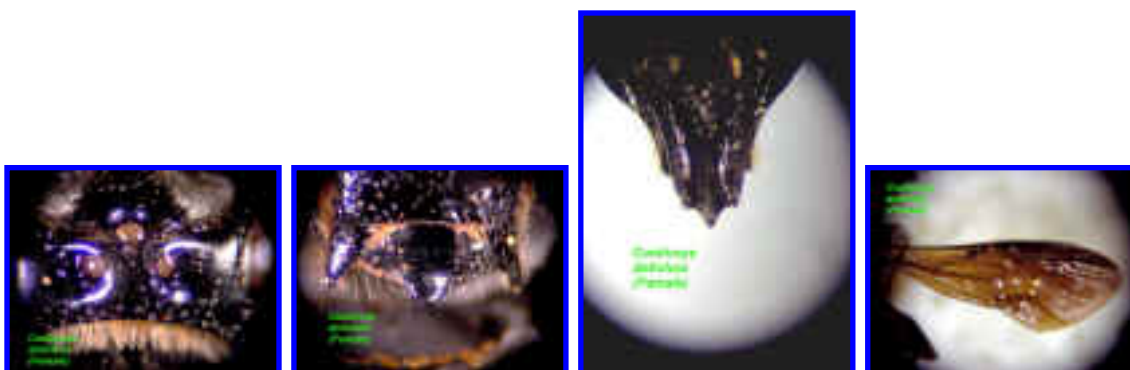
[*Synocoelioxys*](#)



Sixth metasomal sternum apically or subapically notched..3



3. Vertex between lateral ocellus and compound eye completely or almost impunctate, shining; scutellum almost impunctate medially, with a large rounded projection posteriorly; sixth metasomal tergum blunt or truncate; wings blackish-brown; large bee (13-16mm)..[*C. dolichos*](#)
([*Acrocoelioxys*](#))



Vertex moderately to closely punctured; scutellum closely, evenly, and deeply punctured, but with no projection; sixth metasomal tergum usually rounded; thoracic and metasomal fasciae narrow, inconspicuous. [C. slossoni slossoni \(Neocoelioxys\)](#)



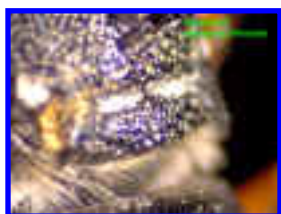
4. Sixth metasomal sternum notched subapically...5



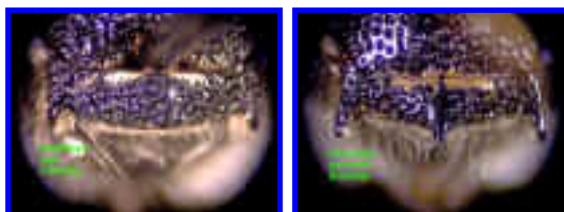
Sixth metasomal sternum with margin entire....7



5. Scutellum with longitudinal, raised, impunctate line medially. [C. mexicana \(Haplocoelioxys\)](#)



Scutellum without raised, impunctate line medially...6



6. Posterior margin of scutellum straight or very broadly angular but without a median tubercle.

[Boreocoelioxys](#)



Posterior margin of scutellum with a distinct median tubercle...[C. germana \(Glyptocoelioxys\)](#)



7. Axillae with projecting portion as long as basal portion. .[C. obtusiventris \(Cyrtocoelioxys\)](#)

Axillae with projecting portion about half as long as basal portion.....8



8. Sixth metasomal tergum in lateral view turned upwards...[C. modesta \(Cyrtocoelioxys\)](#)



Sixth metasomal tergum in lateral view tapering horizontally; Prothoracic tubercle with strong carina but not expanded into thin, plate-like structure...[Coelioxys](#)



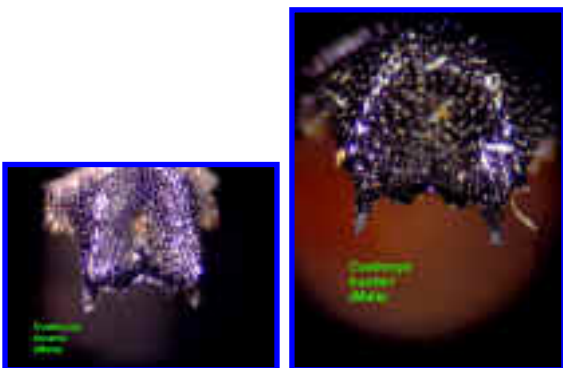
Key to subgenera of males of *Coelioxys* in Florida

1. Ocellar area impunctate and swollen..2

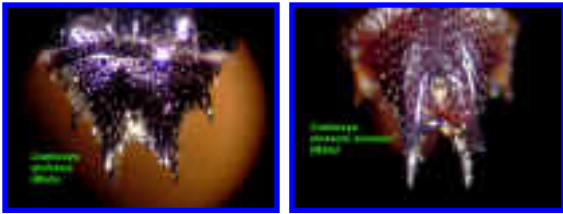


Ocellar area closely punctured and not swollen..4

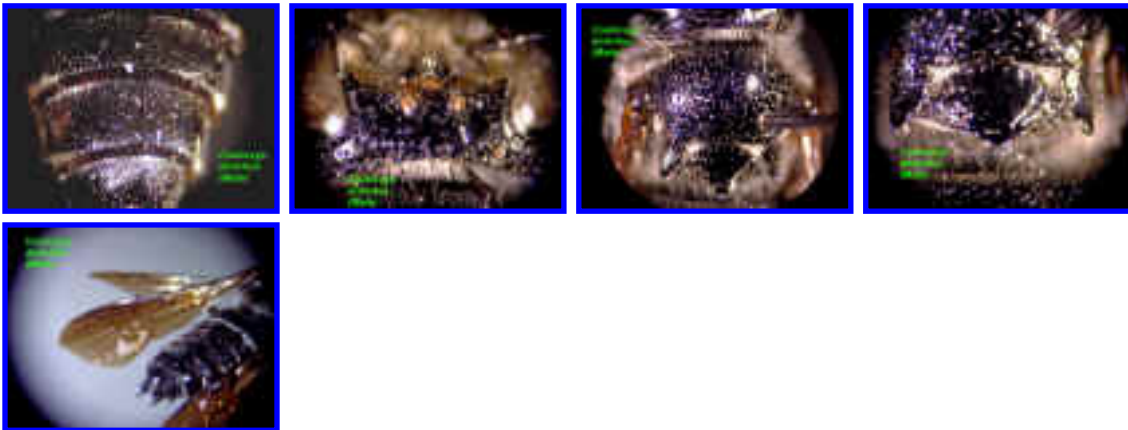
2. Sixth metasomal tergum with dorsal spines modified into a crenulate plate. .[Synocoelioxys](#)



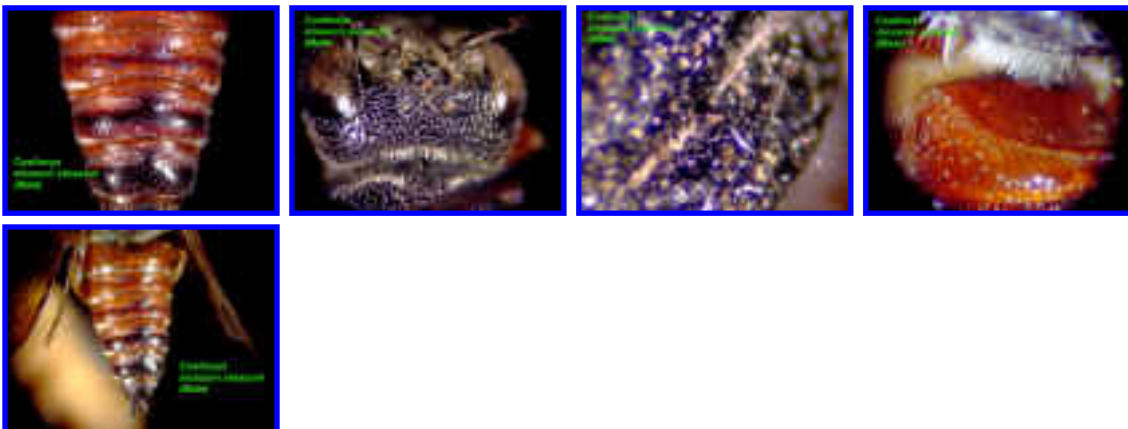
Sixth metasomal tergum with two distinct dorsal spines...3



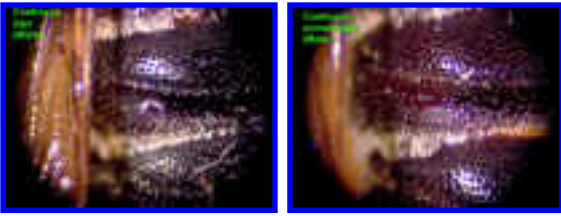
3. Metasomal tergum 3-5 with longitudinal, median ridge; vertex with scattered punctures; scutum practically impunctate on disc; scutellum impunctate medially with a large, rounded projection posteriorly; wings blackish-brown; large bee (10-14mm)... [C. dolichos \(Acrocoelioxys\)](#)



Metasomal terga 3-5 without longitudinal, median ridge; vertex variably punctured; scutellum evenly, closely, deeply punctured on dorsal surface; carina separating dorsal and posterior surfaces incomplete laterally, only a small median portion raised above level of dorsal surface; thoracic and metasomal fasciae narrow, inconspicuous... [C. slossoni slossoni \(Neocoelioxys\)](#)



4. Foveae on metasomal tergum 2 (in *C. mexicana* foveae may be very small on tergum 2 but they are in an otherwise impunctate area)...5

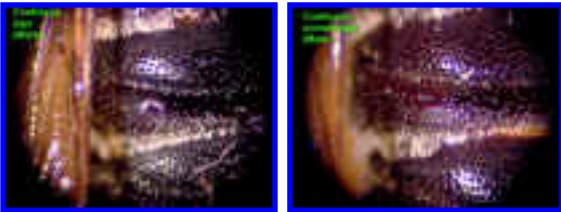


Foveae not present or present on metasomal tergum 3 only....6

5. Foveae present on metasomal tergum 3.. [C. mexicana \(Haplocoelioxys\)](#)



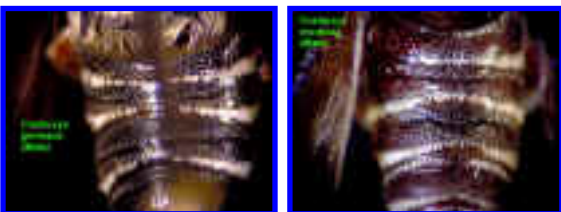
Foveae absent on metasomal tergum 3.. [Boreocoelioxys](#)



6. Foveae absent, fovea area may be closely punctured on metasomal terga 2 and 3...7



Foveae present only on tergum 3...8

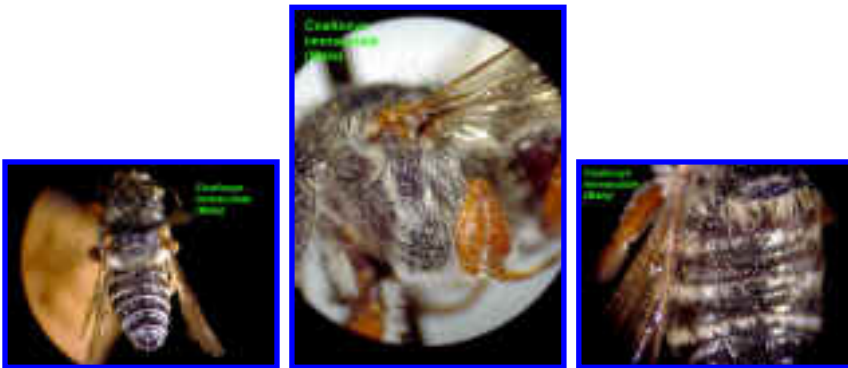


7. Thoracic and metasomal fasciae distinct; prothoracic tubercle produced into thin, plate-like

structure; gradulus of tergum 2 curved toward apical margin medially...[Xerocoelioxys](#)



Thoracic and sometimes metasomal fasciae inconspicuous; carina of prothoracic tubercle conspicuous but not expanded into thin, plate-like structure; gradulus of tergum 2 almost straight. [Coelioxys](#)



8. Posterior margin of scutellum in dorsal view with a median projection half as long as wide.. [C. germana \(Glyptocoelioxys\)](#)



Posterior margin of scutellum without median projection...9



9. Scutellum with narrow, impunctate, longitudinal median carina... [C. mexicana \(Haplocoelioxys\)](#)



Scutellum without longitudinal median carina... [Cyrtocoelioxys](#)



Coelioxys

Subgenus *Coelioxys* Latreille, 2 taxa

Key to females of *Coelioxys* Subgenus *Coelioxys*

Sixth metasomal sternum not or little constricted apically...[C. mitchelli](#)

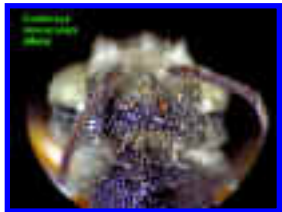
Sixth metasomal sternum conspicuously constricted subapically....[C. immaculata](#)



Key to males of *Coelioxys* Subgenus *Coelioxys*

Interocellar distance greater than ocellar-occipital distance....[C. mitchelli](#)

Interocellar distance subequal to or slightly less than ocellar-occipital distance...[C. immaculata](#)



Megachilidae: *Coelioxys immaculata* Cockerell

County Records: Listed for Florida by Mitchell; Baker's map shows it throughout Florida, including the panhandle, north and central peninsula but no specimens from south of Lake Okeechobee in Southern Florida.

Locations:

Dates: March and April

Plants:

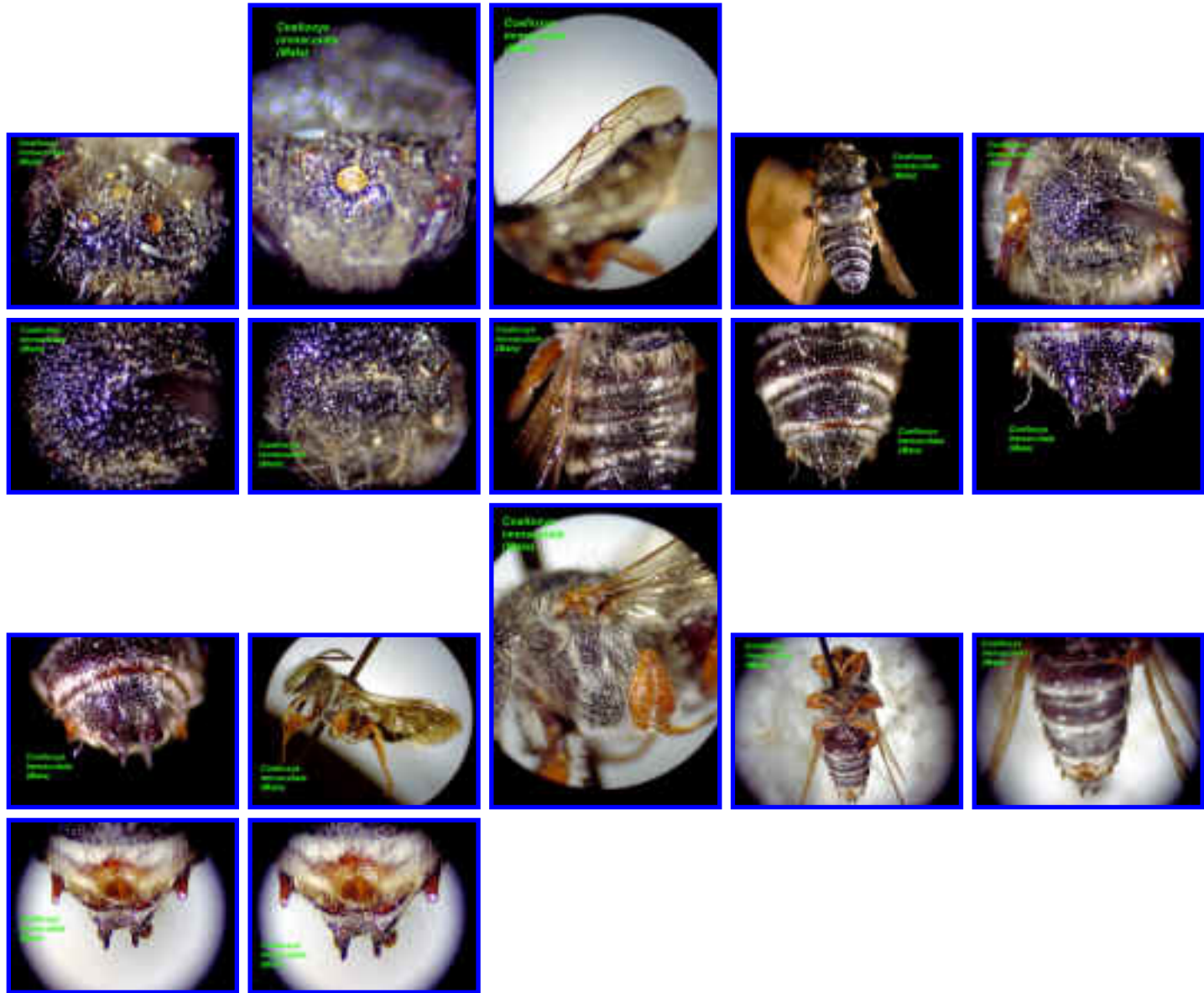
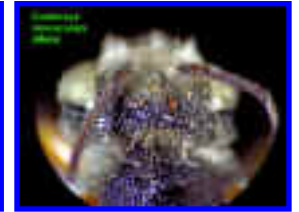
Notes: Found from Kansas to Texas in the plains and from N. Jersey to Florida along the Atlantic states.



Female:



Male:



Megachilidae: *Coelioxys mitchelli* Baker

County Records: Listed for Florida by Baker; Leon County



Locations: Tallahassee

Dates: April-June

Plants:

Notes: Found sparingly across the southern U.S. No photos available.

Coelioxys

Subgenus *Boreocoelioxys* Mitchell, 3 taxa

Both *C. octodentata* and *C. sayi* are very common in Florida according to Baker's maps. *C. rufitarsis* was originally described from Florida (specific locality unknown); Buchmann and Donovan (personal communication) have collected it from Jefferson county, Florida.

Key to females of *Coelioxys* subgenus *Boreocoelioxys*

1. Clypeal margin with distinct emargination evident in frontal view with full compliment of setae...

[*C. sayi*](#)

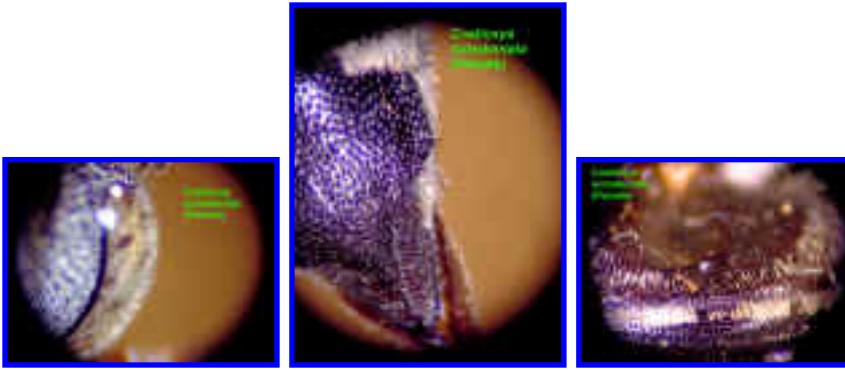


Clypeal margin straight...2



2. Ocular hairs long (about 0.15mm); tergum 6 with tiny setae ventral to angles which have a velvety appearance; tergum one with median fascia of long, slender erect setae... [*C. rufitarsis*](#)

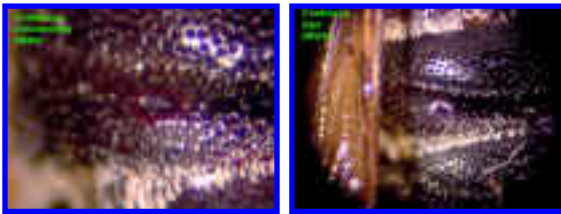
Ocular hairs short (about 0.05mm); tergum 6 with squamose white setae ventral to angles; tergum 1 with median fascia of prostrate setae, if slender, than short... [*C. octodentata*](#)



Key to males of *Coelioxys* subgenus *Boreocoelioxys*

1. Fovea on metasomal tergum 2 wide, deep, short, conspicuous; margins of fovea impunctate; bee robust. .[C. rufitarsis](#)

Fovea on metasomal tergum 2 variable, if wide, then anterior margin punctate; bee variable in form..2



2. Posterior margins of gradular grooves on metasomal terga two and three almost obliterated medially. .[C. sayi](#)



Posterior margins of gradular grooves on metasomal terga two and three distinct medially... [C. octodentata](#)



Megachilidae: *Coelioxys octodentata* Say (*C. atlantica* Mitchell is a synonym)

County Records: Listed for Florida by Mitchell; Pascarella et al (2000): Miami-Dade; Baker's map shows this species only from north central peninsular region of Florida. It likely occurs throughout the state.

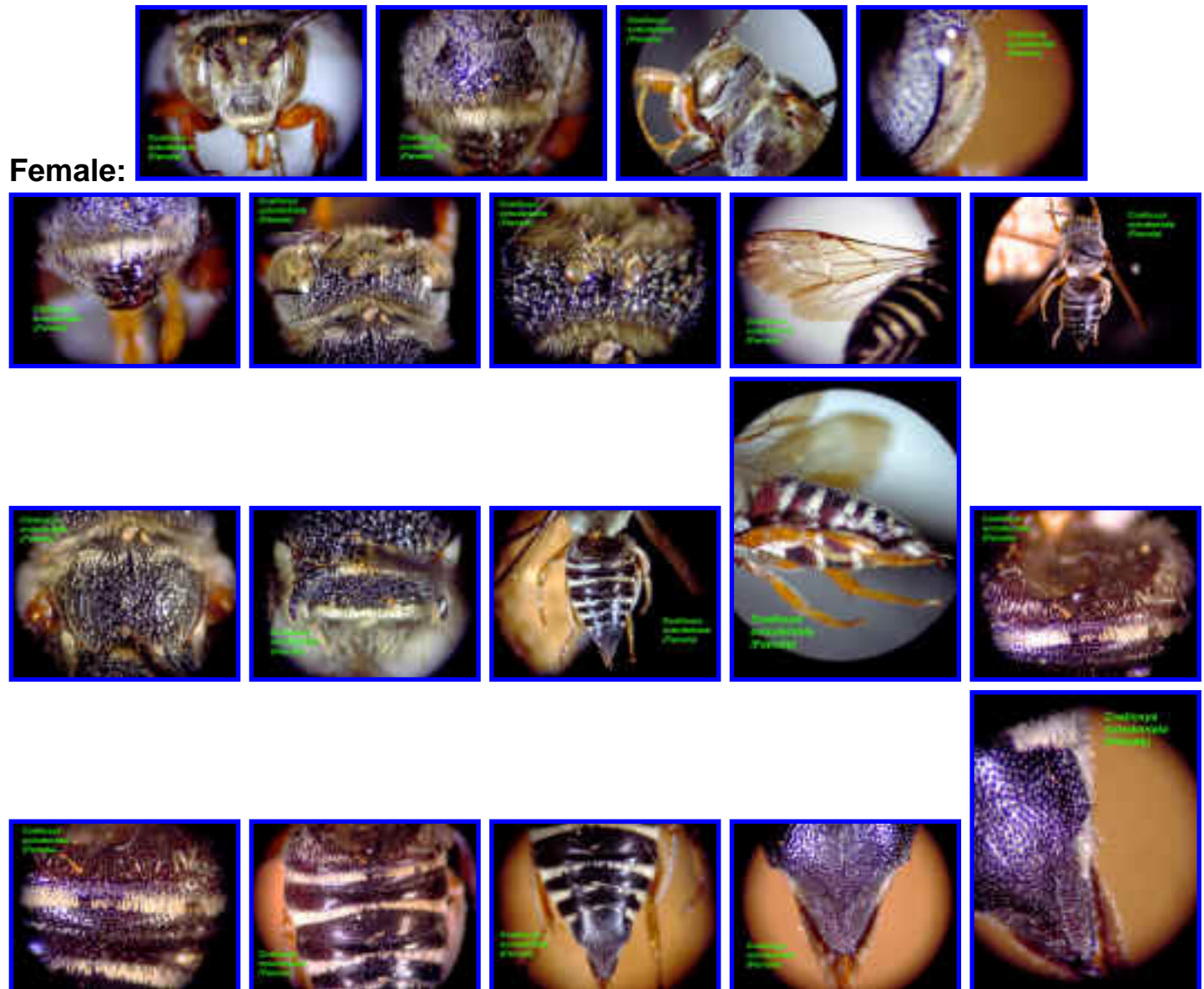
Locations: Lake Butler

Dates: May-October

Hosts: *M. mendica* and *M. brevis*

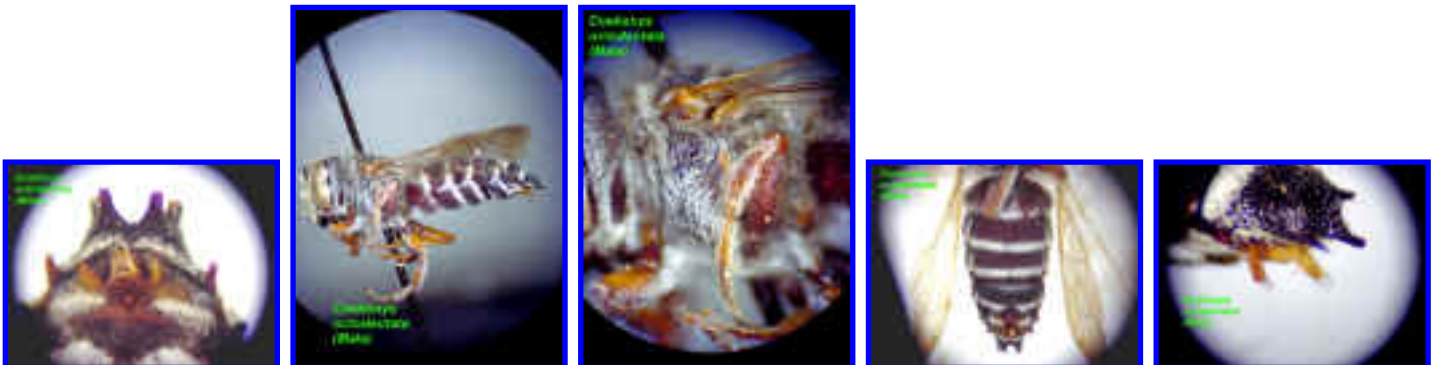
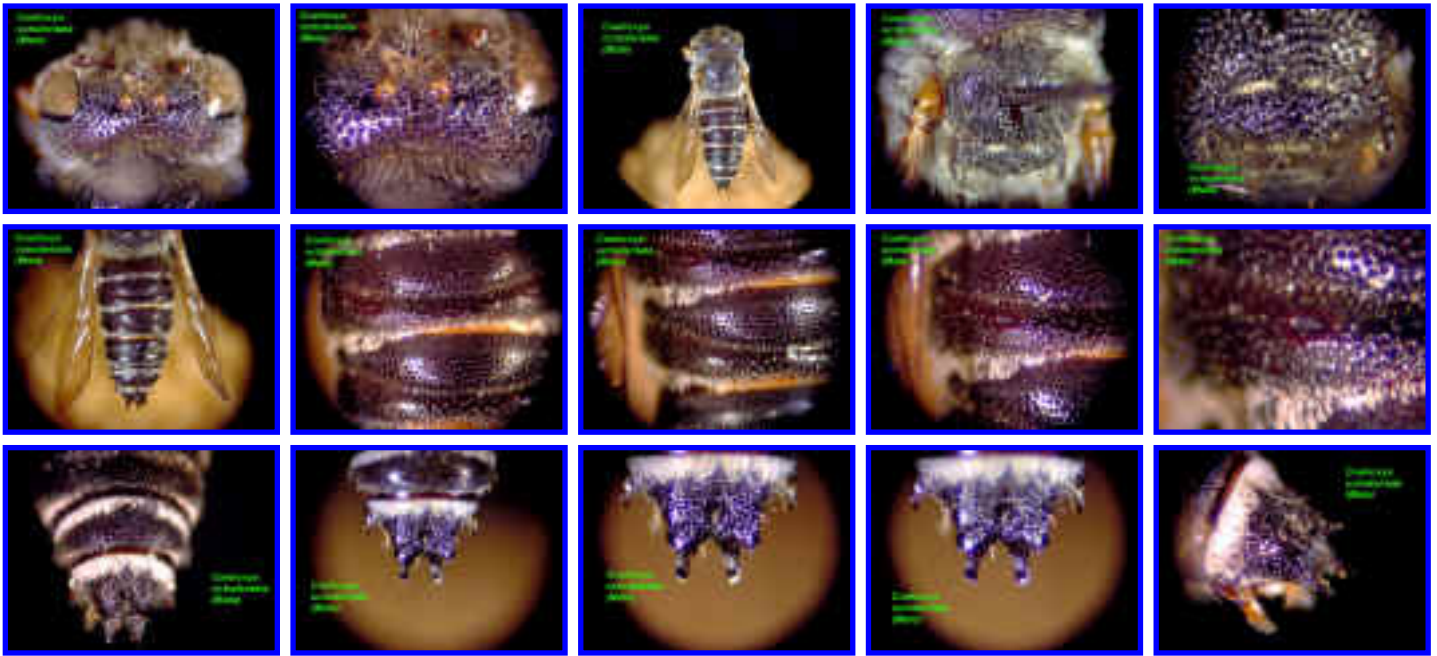
Notes:

Female:





Male:



Megachilidae: *Coelioxys rufitarsis* Smith

County records: Duval (interpreting map in Baker); Jefferson (Buchmann and Donovan, unpub. Data)



Dates: April-October

Hosts: probably *M. texana* in Florida

Notes: Photos not yet available.

Megachilidae: *Coelioxys sayi* Robertson

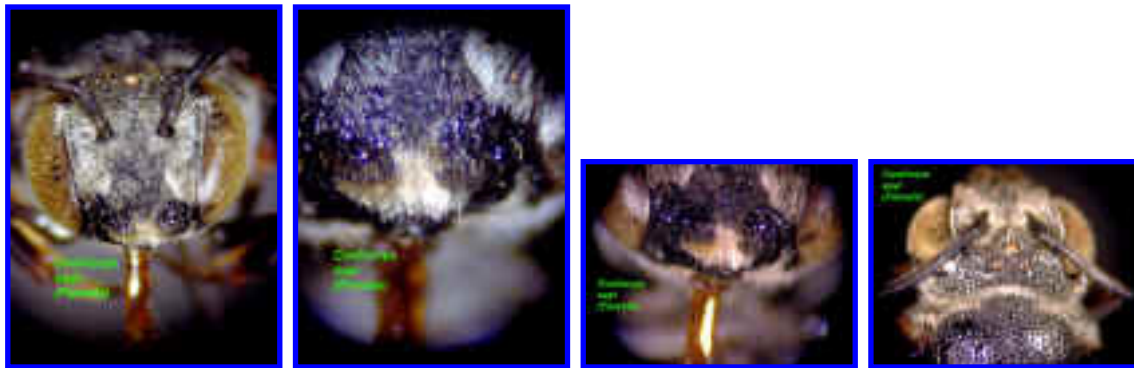
County Records: Listed for Florida by Mitchell; Highlands; throughout all regions of Florida, according to the map in Baker (1975)

Locations:

Dates:

Hosts: *M. mendica*, *M. brevis*

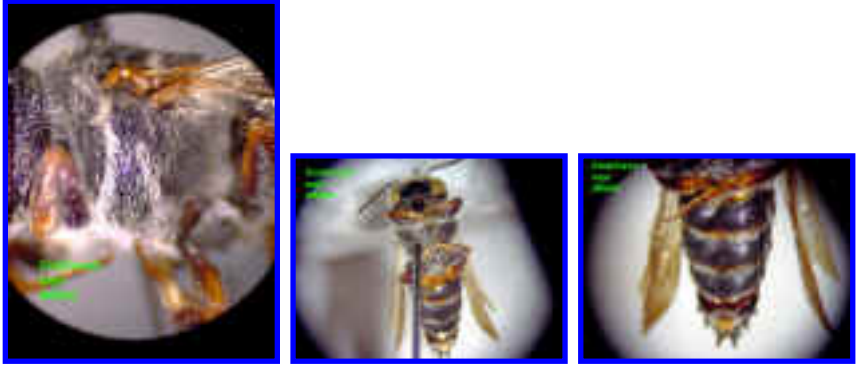
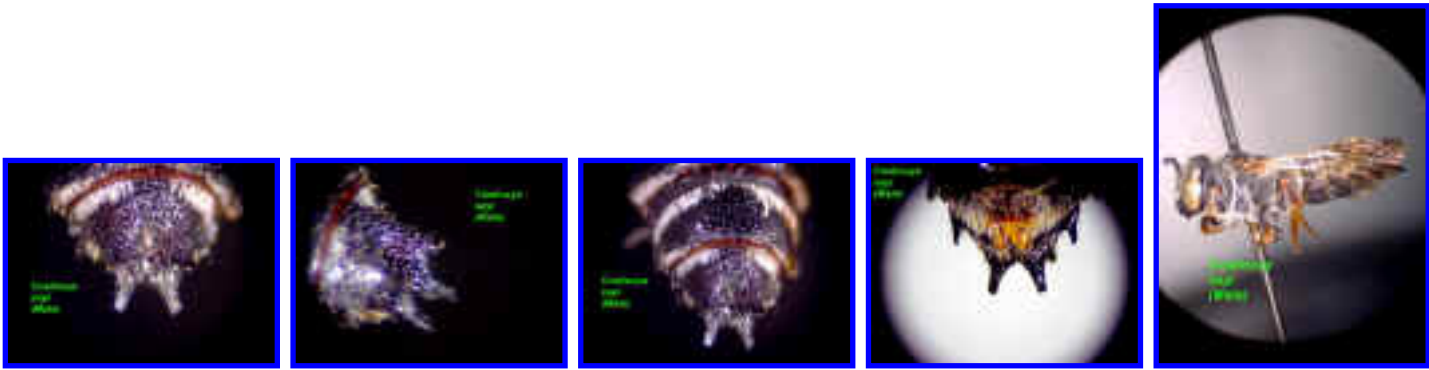
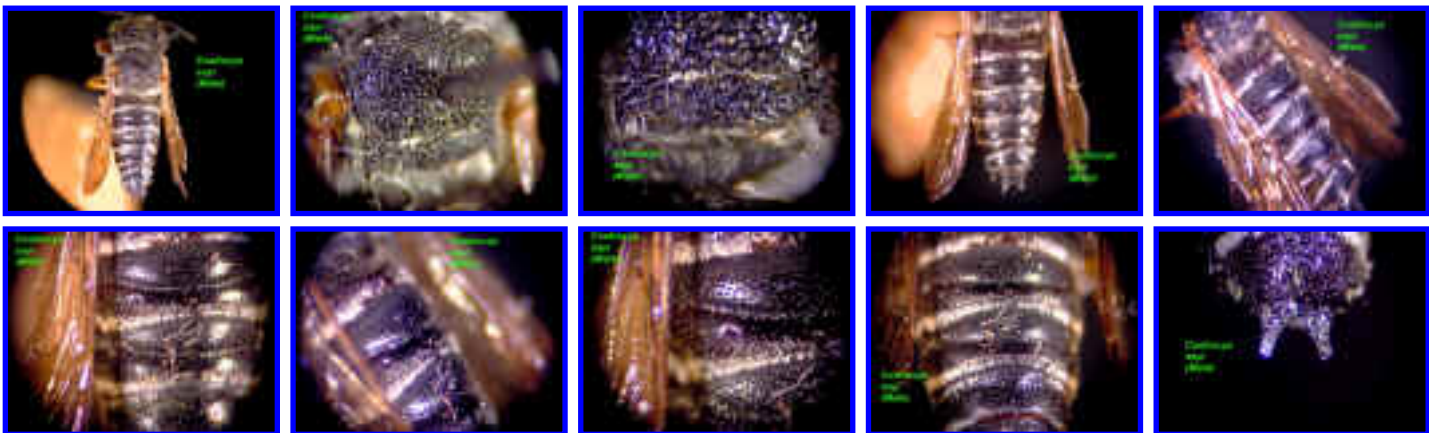
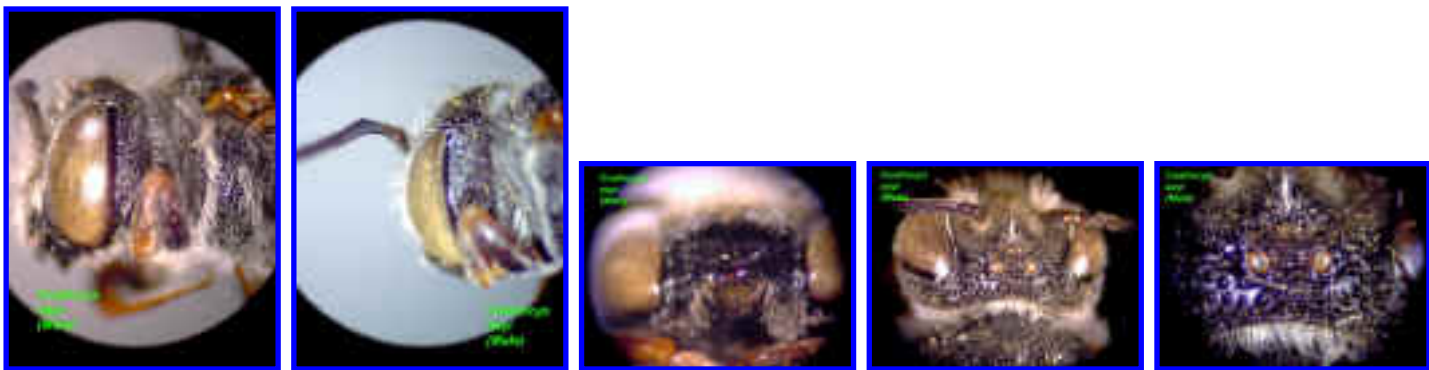
Notes:



Female:



Male:



Coelioxys

Subgenus *Xerocoelioxys* Mitchell, 3 taxa

Note: *Coelioxys piercei* Crawford was listed for Florida by Mitchell but not by Hurd. Baker states that this species is endemic to Texas and no other specimens are known. He also states that Mitchell misidentified *C. mitchelli* as *C. piercei*.

Key to females of *Coelioxys* subgenus *Xerocoelioxys*

Mesepisternum with lateral surface contiguously punctured; axillae usually with small carinae defining dorsal surface; scutum closely punctured...[C. edita](#)

Mesepisternum with lateral surface moderately punctured; axillae not carinate; scutum moderately to sparsely punctured...[C. galactiae](#)

Key to males of *Coelioxys* subgenus *Xerocoelioxys*

1. Lateral surface of mesepisternum almost covered by appressed, squamose (almost scale-like) setae; axillae without carina on dorsal surface; ocelloccipital distance at least subequal to ocellocular distance. [C. boharti](#)

Lateral surface of mesepisternum without appressed squamose setae, or if with squamose setae then axillae with small carina or ocelloccipital distance less than ocellocular distance...2.

2. Lateral surface of mesepisternum with squamose setae; scutum with anterior fascia distinct, of squamose setae. [C. edita](#)

Lateral surface of mesepisternum with plumose but slender setae; scutum with anterior fascia variable, of plumose but slender setae...[C. galactiae](#)

Megachilidae: *Coelioxys edita* Cresson

County Records: Leon? Interpreted from Baker's map



Locations:

Dates:

Plants:

Notes: rare East of the Mississippi. Only record from N. Florida panhandle is from Baker.

Megachilidae: *Coelioxys boharti* Mitchell

County Records: Volusia?, Alachua? Hendry? Interpreted from Baker's map.



Locations: Cocoa, FL; Labelle

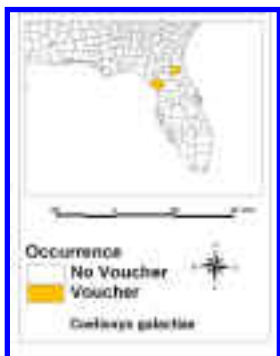
Dates:

Plants:

Notes: Described by Mitchell for male only; resembles males of *C. galactiae*. Also known from Texas

Megachilidae: *Coelioxys galactiae* Mitchell

County Records: Listed for Florida by Mitchell in Clay, Levy



Locations: Gold Head Branch State Park,

Dates: May-July

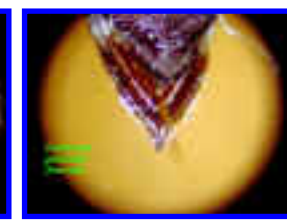
Plants:

Notes: Described by Mitchell (male and females); occurs from Florida to North Carolina



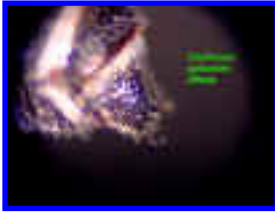
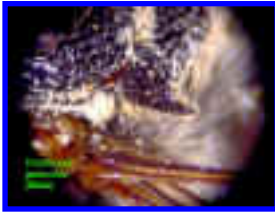
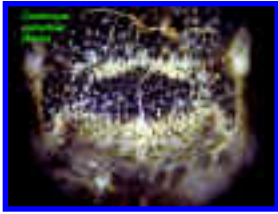
Female:





Male:





Coelioxys

Subgenus *Synocoelioxys* Mitchell, 2 taxa

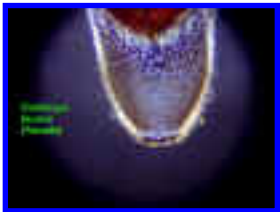
Note: *Coelioxys alternata alternata* Say was listed for Florida by Mitchell, not by Hurd, though. Baker's map does not show this species as occurring in Florida. It is likely that this species does not occur in Florida. The map in Baker shows the furthest southern populations to be in the mountains of western North Carolina.

Key to females of *Coelioxys* subgenus *Synocoelioxys*

Sixth sternum acute apically (or very narrowly rounded)...[C. hunteri](#)

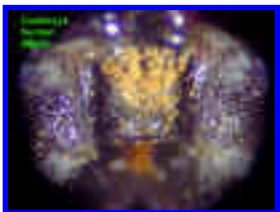


Sixth sternum rounded apically. [C. texana](#)

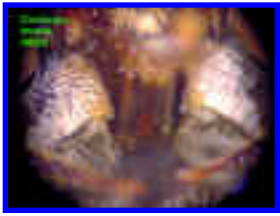


Key to males of *Coelioxys* subgenus *Synocoelioxys*

Hypostomal area of the gena bare or with small slender setae which do not obscure integument....[C. hunteri](#)



Hypostomal area of the gena obscured by setae at least as wide if not as long as setae on gena ..[C. texana](#)



Megachilidae: *Coelioxys hunteri* Crawford

County Records: Listed for Florida by Mitchell; Pascarella et al (2000): Miami-Dade; Baker shows the distribution in Florida mostly in South Florida, from Miami to Tampa.



Locations:

Dates:

Plants:

Hosts: Likely *Megachile* subgenus *Sayapis*

Notes: *C. hunteri* may be the female of *C. floridana* Cresson, but not certain.

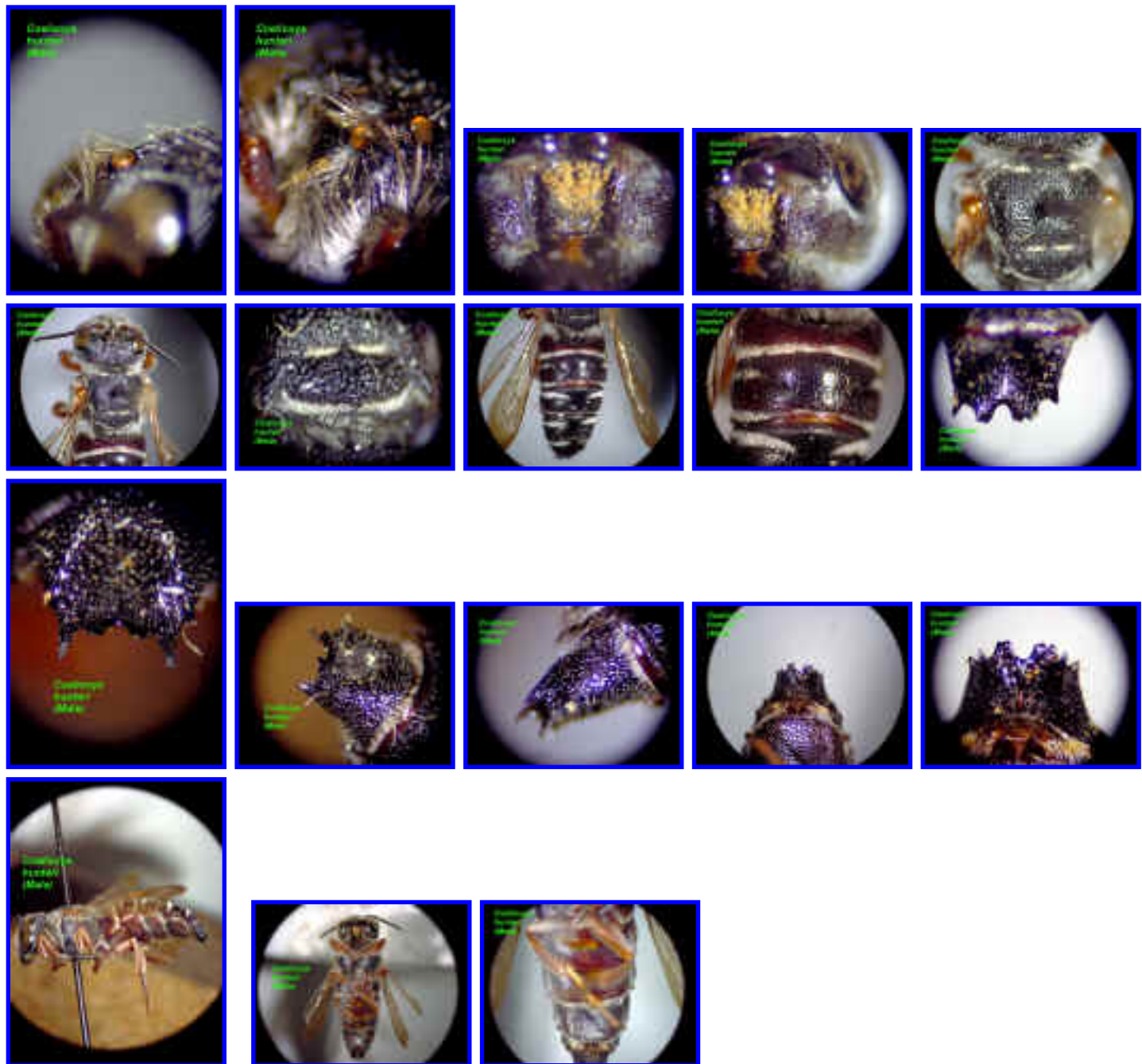
Female:





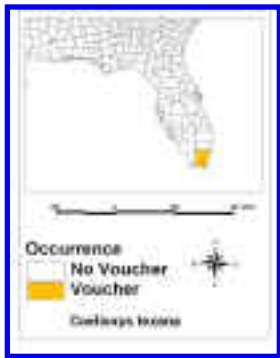
Male:





Megachilidae: *Coelioxys texana texana* Cresson

County Records: Listed for Florida by Mitchell; Pascarella et al (2000): Miami-Dade; Baker shows several locations in Florida in his map (mostly in the southern peninsula, one from the north-central peninsula, none from the panhandle)



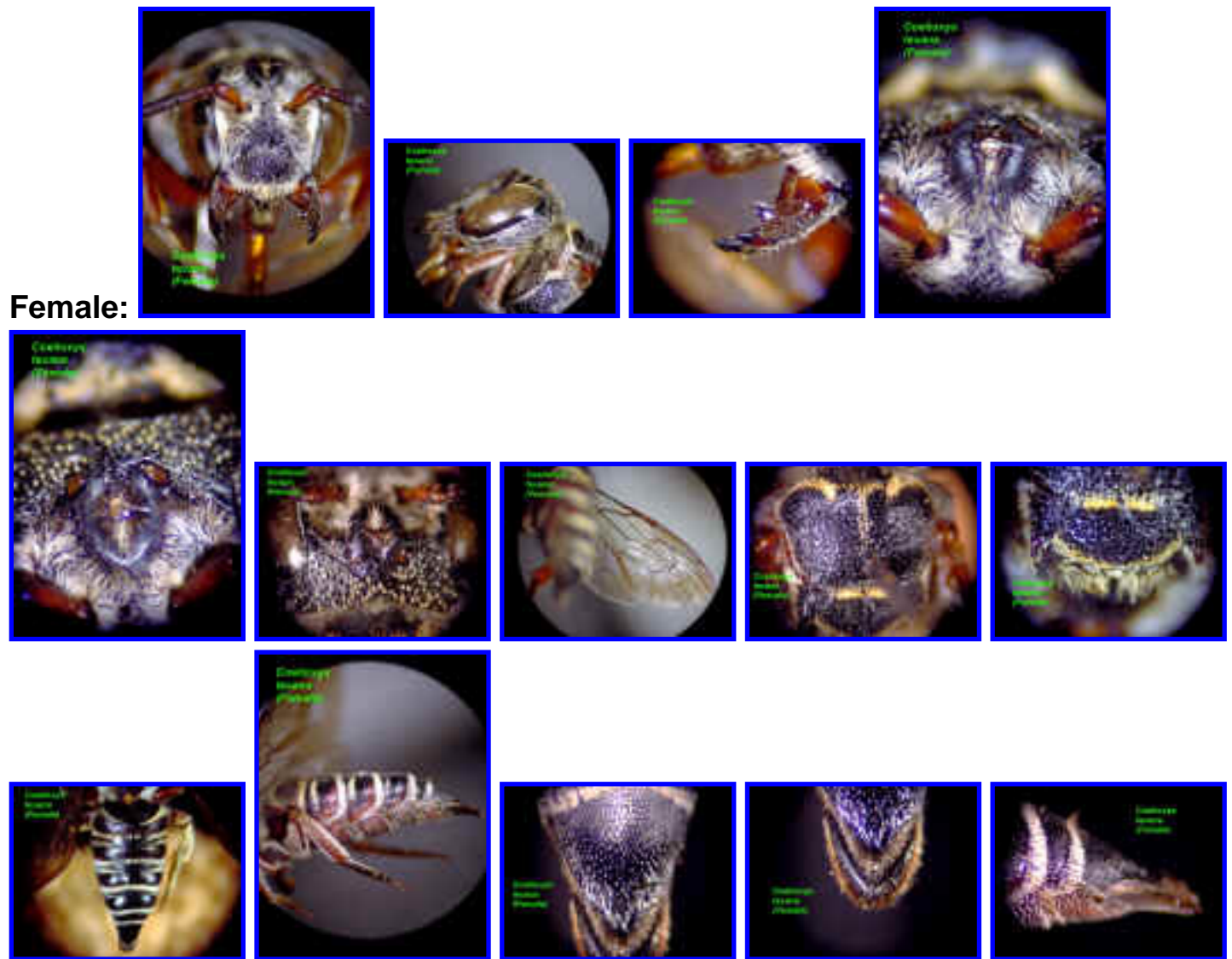
Locations:

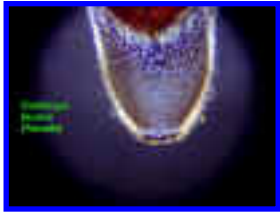
Dates: March-September

Hosts: *Megachile* subgenus *Sayapis*; *M. polycaris*

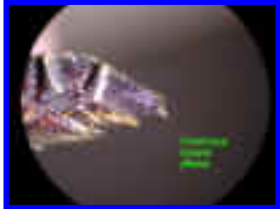
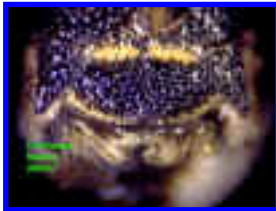
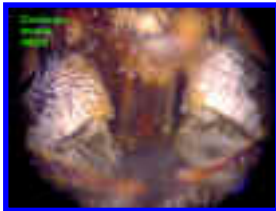
Notes: In the SE, only found in Florida.

Female:





Male:





Coelioxys

Subgenus *Glyptocoelioxys* Mitchell, 1 taxon

Megachilidae: *Coelioxys germana* Cresson

County Records: Listed for Florida by Mitchell; Pascarella et al (2000): Miami-Dade

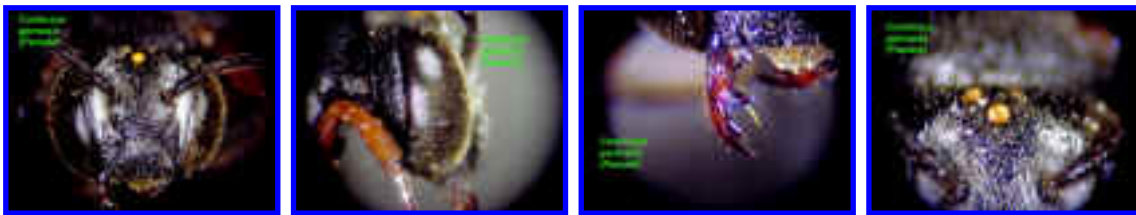


Locations:

Dates: April to August

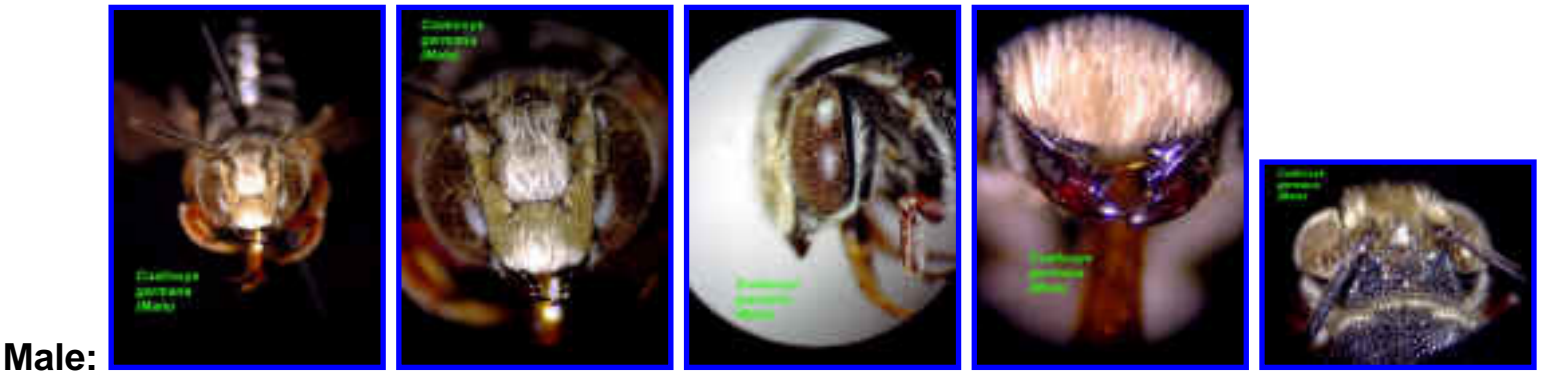
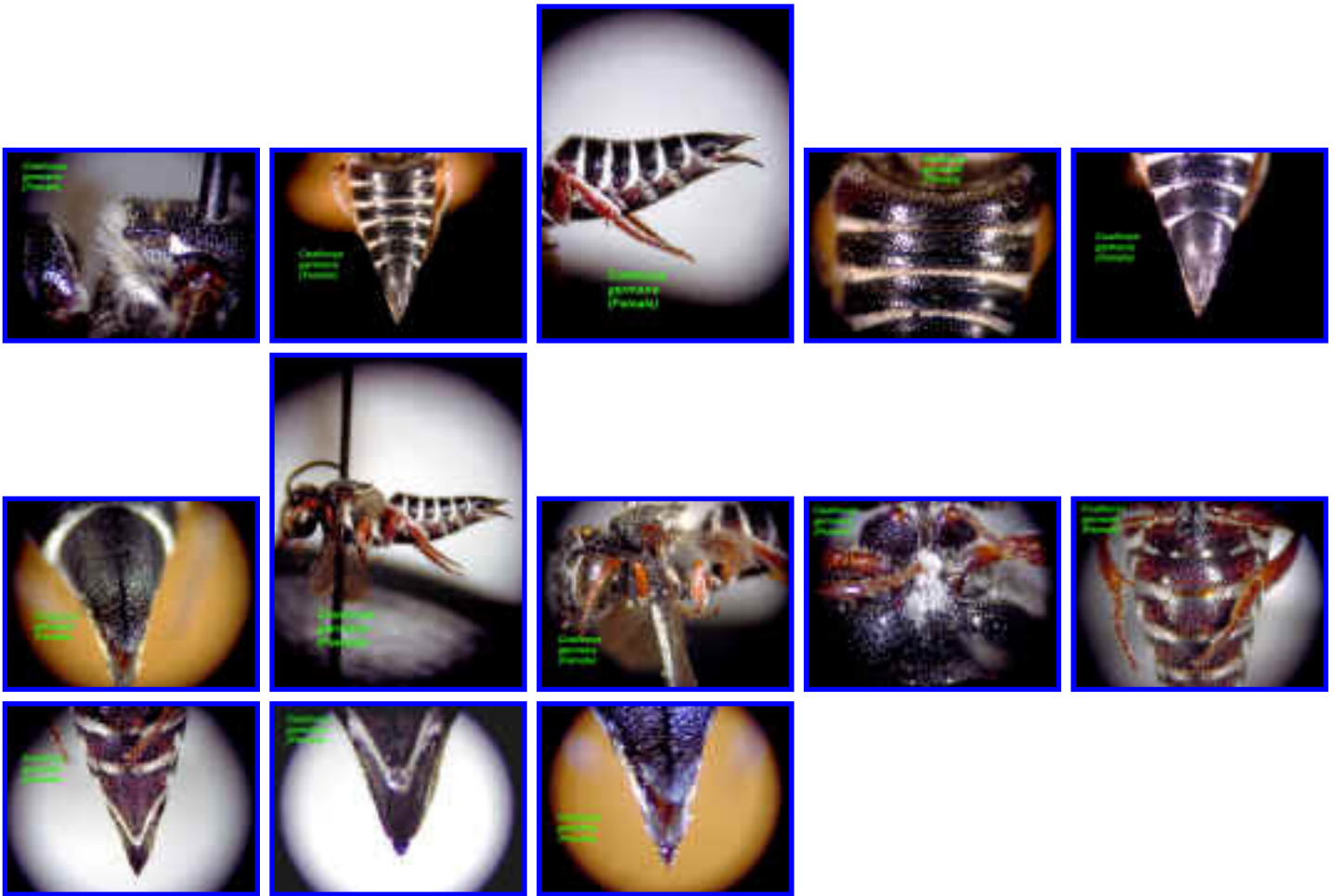
Plants:

Notes:

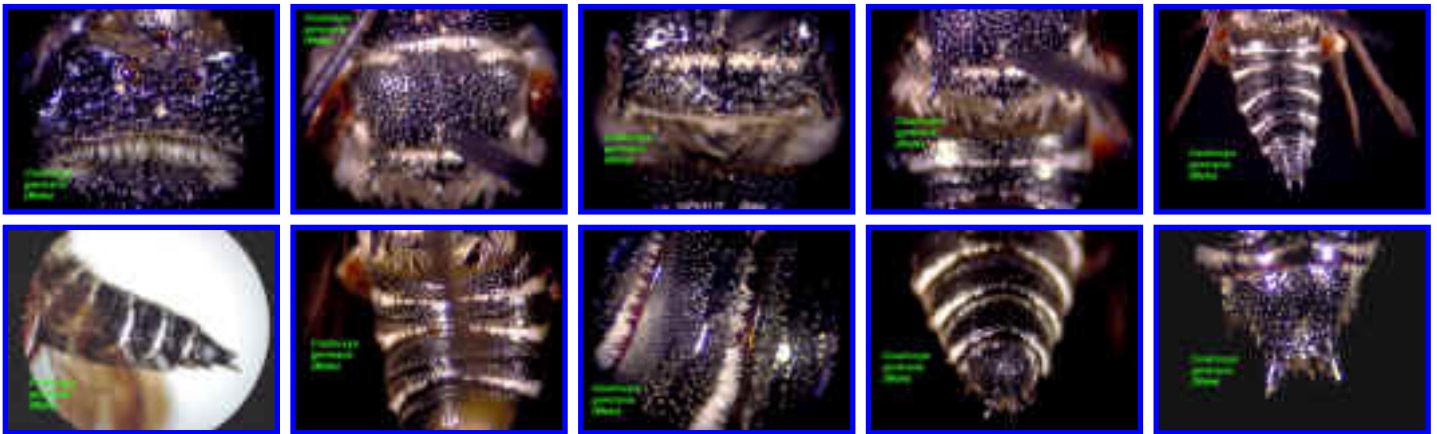


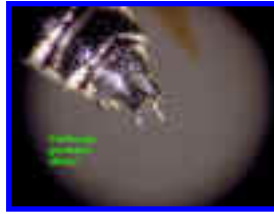
Female:





Male:





Coelioxys

Subgenus *Acrocoelioxys* Mitchell, 1 taxon

Previously placed in subgenus *Melanocoelioxys*

Megachilidae: *Coelioxys dolichos* Fox

County Records: Listed for Florida by Mitchell; Pascarella et al (2000): Miami-Dade; Pascarella (unpub. Data): Leon

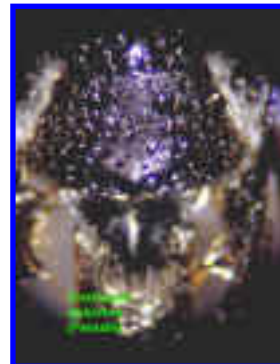


Locations:

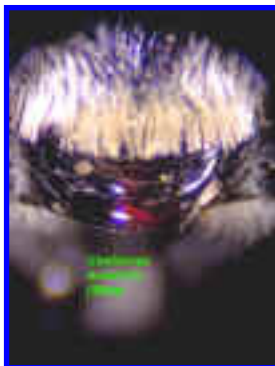
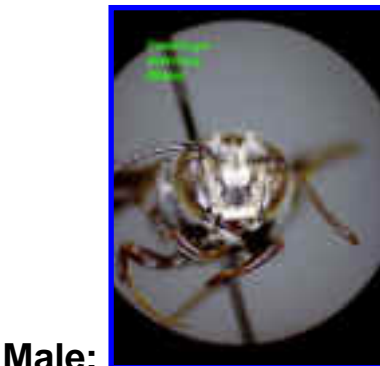
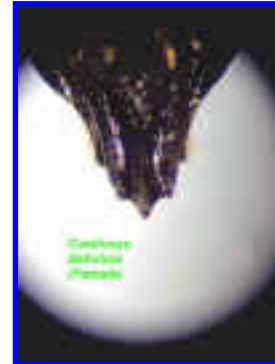
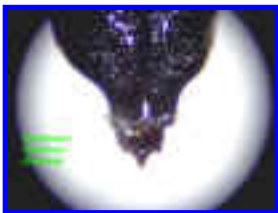
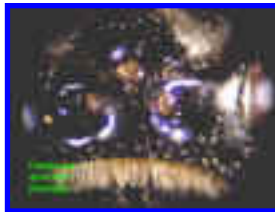
Dates:

Host: *Megachile xylocopoides*

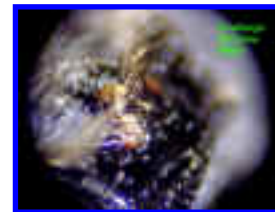
Notes: NC to Florida

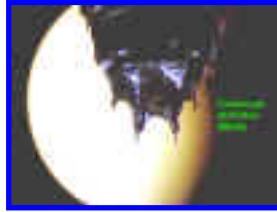
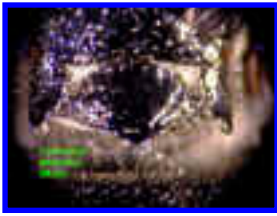
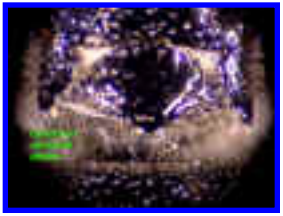


Female:



Male:





Coelioxys

Subgenus *Neocoelioxys* Mitchell, 1 taxon

Megachilidae: *Coelioxys slossoni slossoni* Viereck

County Records: Listed for Florida by Mitchell; Pascarella et al (2000): Miami-Dade



Locations:

Dates: March-September

Plants:

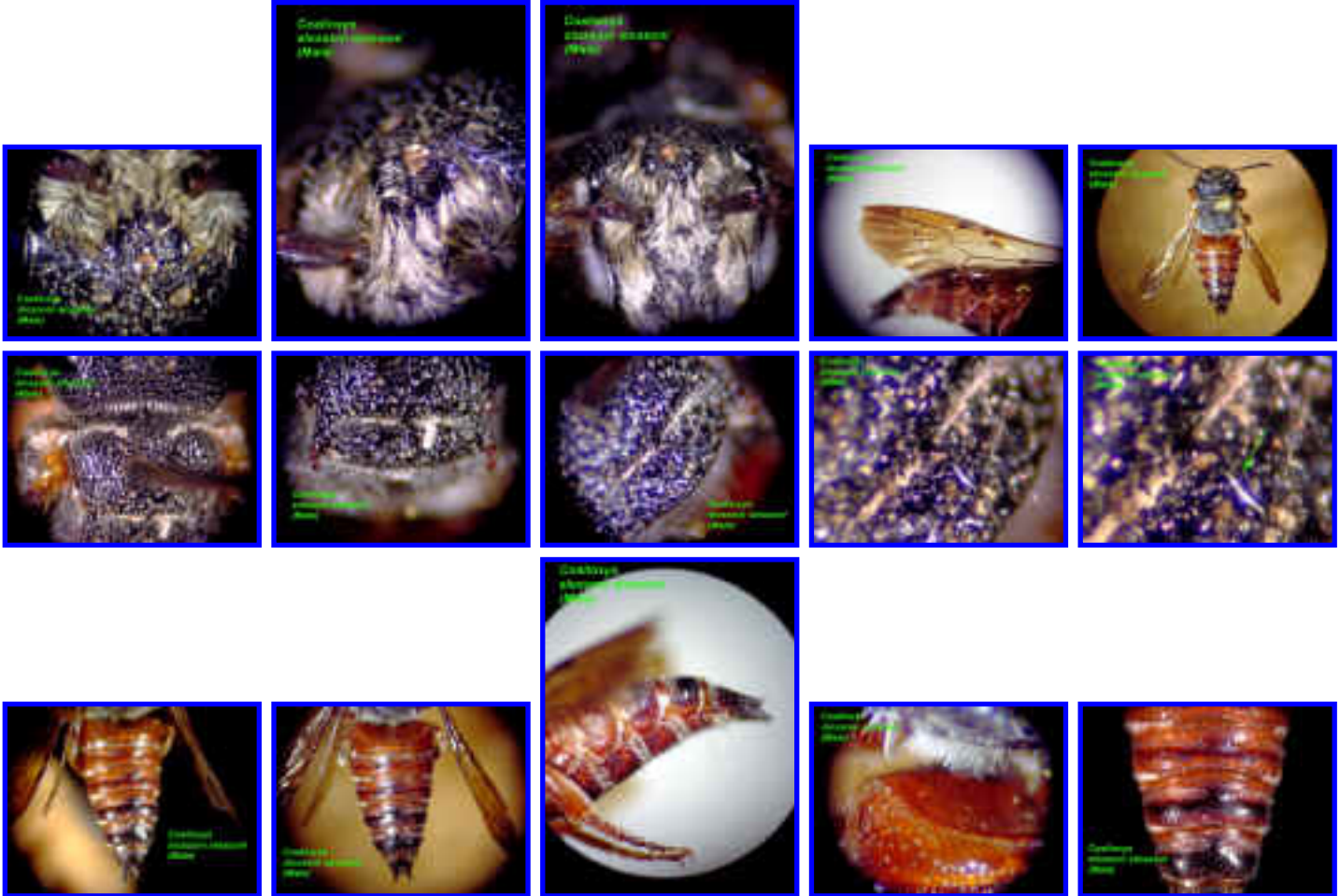
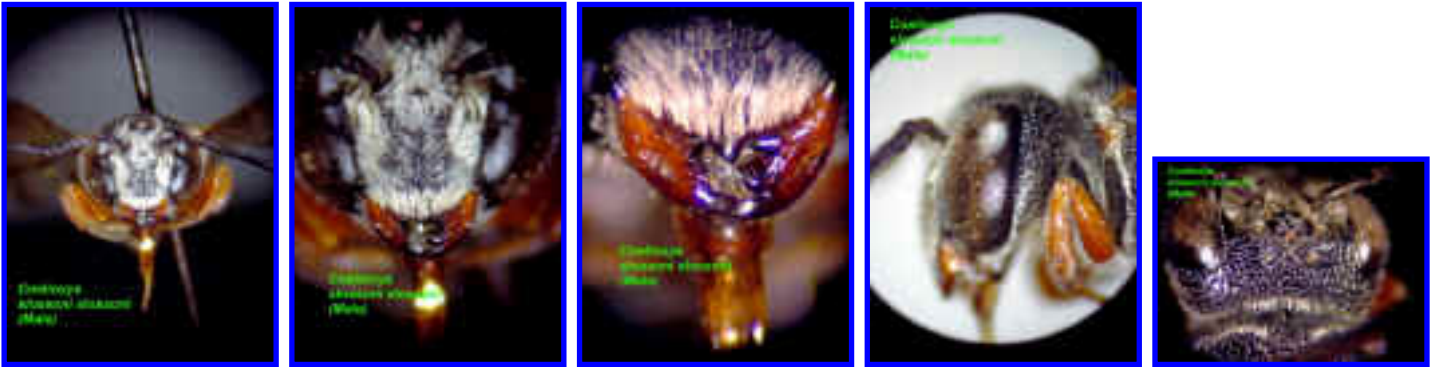
Notes: Endemic subspecies restricted to Florida; differs from *C. slossoni arenicola* solely in color differences.

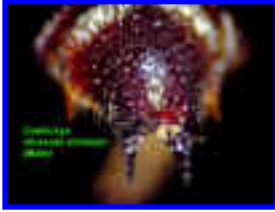


Female:



Male:





Coelioxys

Subgenus *Cyrtocoelioxys* Mitchell, 3 taxa

These bees are associated primarily with members of the subgenus *Chelostomoides* of *Megachile* as hosts. Thus, *M. rugifrons*, *M. georgica*, and *M. campanulae* could be hosts in Florida.

Key to females of *Coelioxys* subgenus *Cyrtocoelioxys*

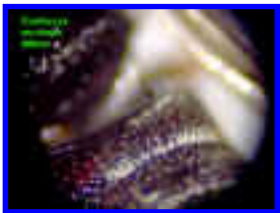
1. Sternum 6 either broadly or narrowly rounded, the sides neither notched, sinuate nor incurved...[C. modesta](#)



Sternum 6 either notched laterally, or incurved on each side to form an apical, narrowed projection...[C. obtusiventris](#)

Key to males of *Coelioxys* subgenus *Cyrtocoelioxys*

Basal concavity of abdomen with an elevated, subcarinate rim...[C. modesta](#)



Basal concavity of abdomen not carinate ..[C. floridana](#)

Megachilidae: *Coelioxys floridana* Cresson

County Records: Listed for Florida by Mitchell

Locations:

Dates:

Plants:

Notes: Mitchell described this species from the male specimens only. Occurs from NC to Florida

Male:

Megachilidae: *Coelioxys modesta* Smith

County Records: Listed for Florida by Mitchell

Locations:

Dates: March-August

Hosts: *M. campanulae wilmingtoni*

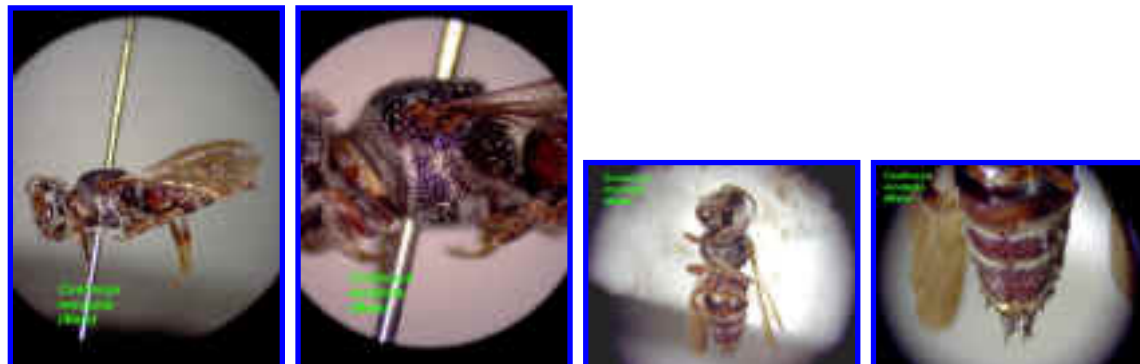
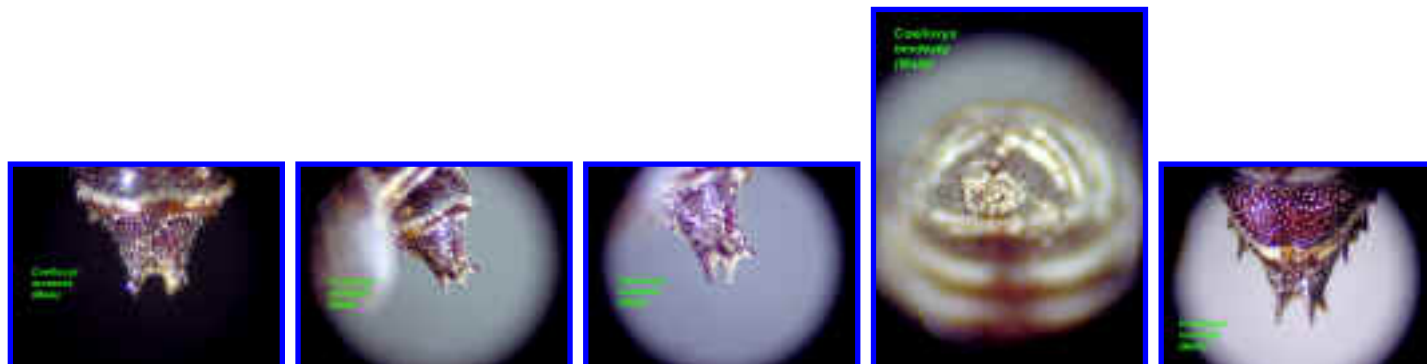
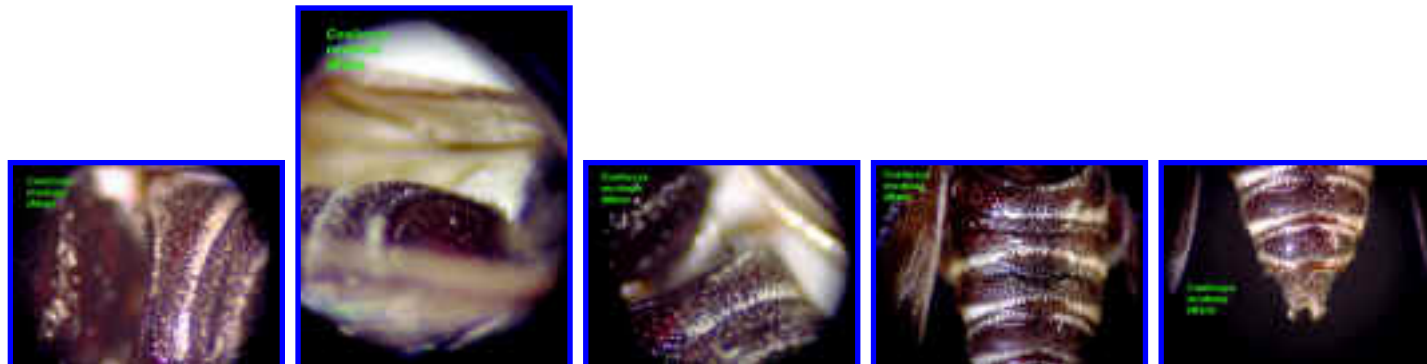
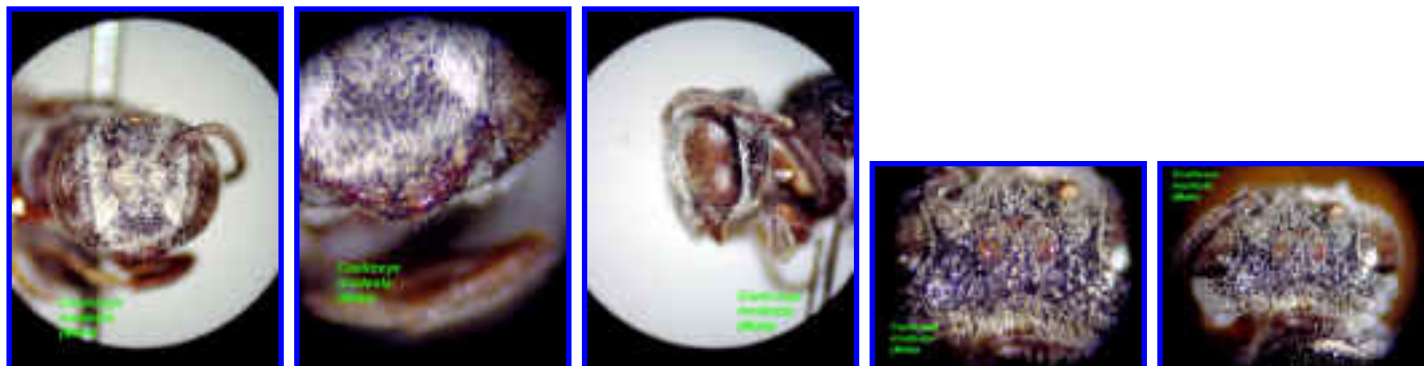
Notes: Krombein reared this species out. Probably from Highlands county?



Female:



Male:



Megachilidae: *Coelioxys obtusiventris* Crawford

County Records: Listed for Florida by Mitchell, endemic?

Locations:

Dates:

Plants:

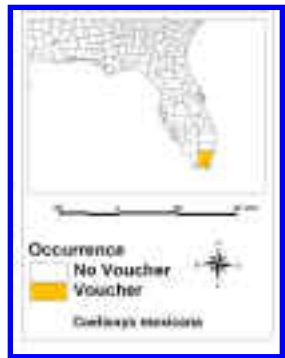
Notes: Known only from a single female related to *C. modesta* but distinguishable.

Coelioxys

Subgenus *Haplocoelioxys* Mitchell, 1 taxon

Megachilidae: *Coelioxys mexicana* Cresson (= *C. asteris* Crawford)

County Records: Listed for Florida by Mitchell; Pascarella et al (2000): Miami-Dade

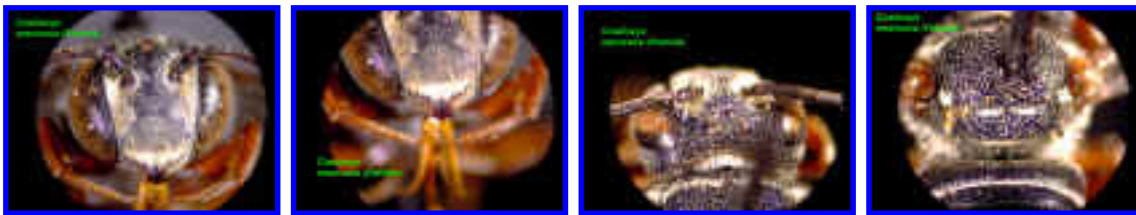


Locations:

Dates:

Plants:

Notes: Texas to Florida to North Carolina

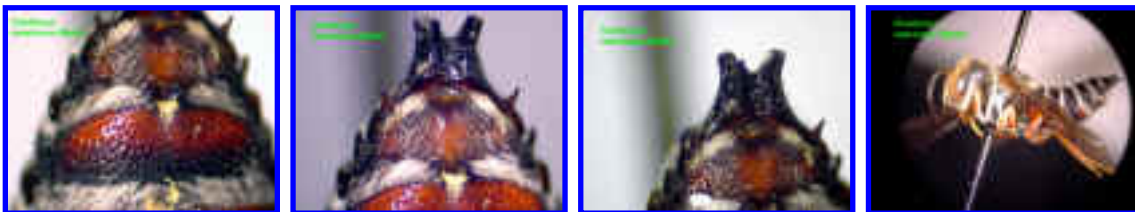


Female:





Male:



Subfamily Megachilinae

Tribe Osmiini (14 taxa)

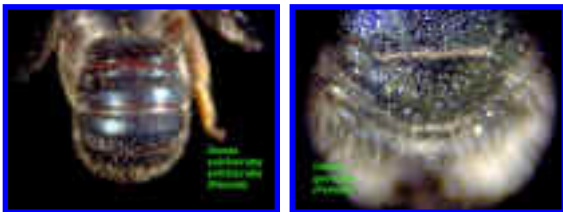
This tribe is best represented in western North America, in temperate and desert environments. It has 4 genera present in Florida, with nearly all species being winter or early spring species.

Key to Genera (From Michener 2000)

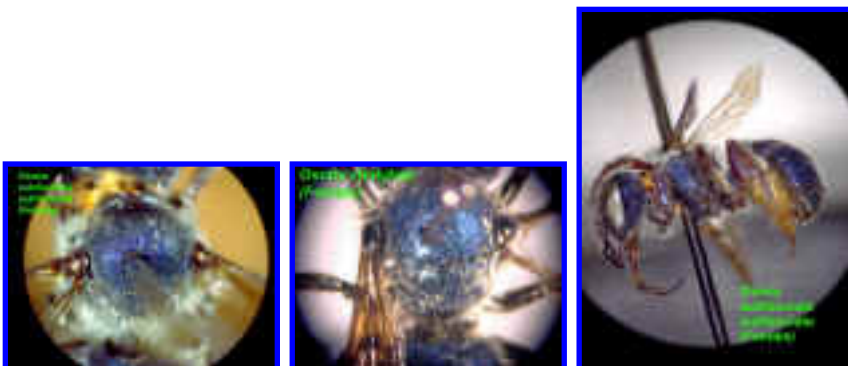
1. Propodeum with narrow horizontal basal zone, set off from declivous posterior surface by a carina, and divided by carina into a series of large pits; anterior surface of T1 broadly concave and delimited by strong carina; lines delimiting propodeal triangle absent or feeble...[Heriades](#)



Propodeum without such a horizontal basal zone (but if pits and a zone set off by a carina are evident, then zone is usually sloping, and anterior surface of T1 is neither broadly concave nor delimited by strong carina); lines delimiting propodeal triangle distinct, at least as sharp changes in sculpturing...2



2. Parapsidal lines punctiform or at most 3 times as long as wide; body usually metallic...[Osmia](#)

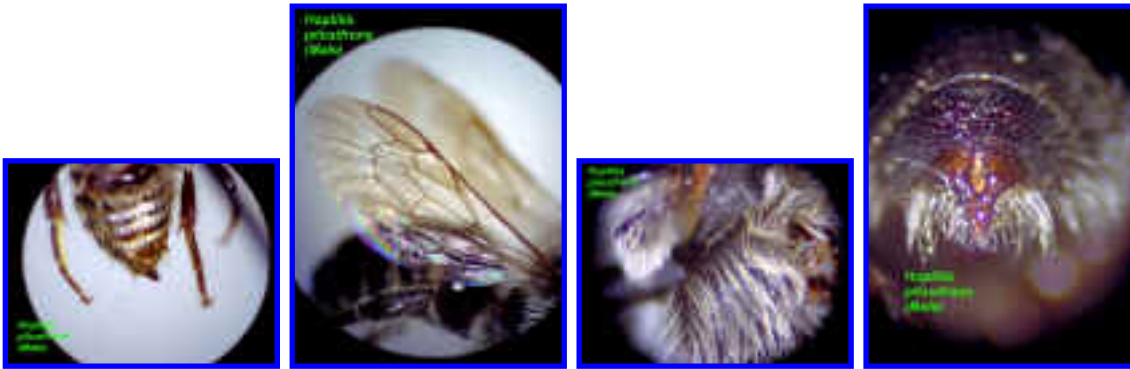


Parapsidal lines absent; body rarely metallic although sometimes strongly so...3

3. S2 and S3 of male similar to one another; S5 and S6 of male hidden, largely membranous, only transverse apical marginal areas and lateral margins somewhat sclerotized, these sterna with large, basal, minutely hairy areas invaginated anteriorly into metasoma; distance from first submarginal crossvein to first recurrent usually twice distance from second recurrent vein to second submarginal crossvein; anterior surface of mesepisternum in front of omaulus smooth, shining, lower part usually sharply divided at omaulus from outer surface, lower part of omaulus carinate; male T6 with 4 strong teeth...

[Ashmeadiella](#)

S2 and S3 commonly quite different from one another; S5 or S6 of male, or both, usually exposed, broadly sclerotized, without large, anterior hairy areas; distance from first submarginal crossvein to first recurrent almost always less than twice distance from second recurrent vein to second submarginal crossvein; anterior surface of mesepisternum in front of omaulus usually at least with a few punctures near omaulus, which is not carinate; male T6 not 4-toothed..[Hoplitis](#)



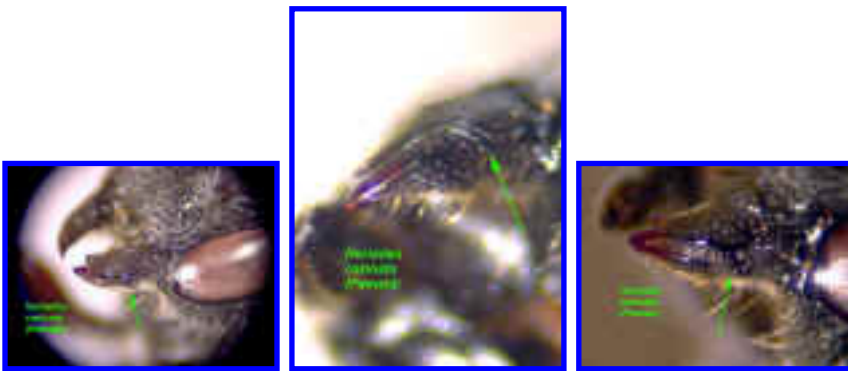
Tribe Osmiini

Genus *Heriades* Spinola, 3 taxa

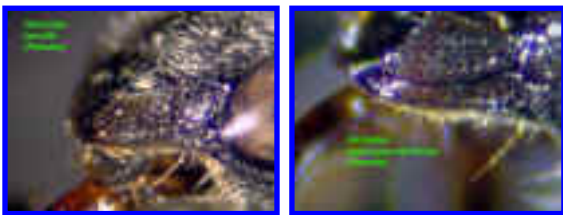
These are the smallest of the Osmiini in Florida, ranging from 4-7mm. They have coarse punctation and strong carinae present. The abdomen is strongly downcurved. Three species are known from Florida. All are in the subgenus *Neotrypeta* Robertson

Key to females (from Mitchell 1962)

1. Carina of mandibles united basally, a slight angle at this point of union...[*H. carinata*](#)



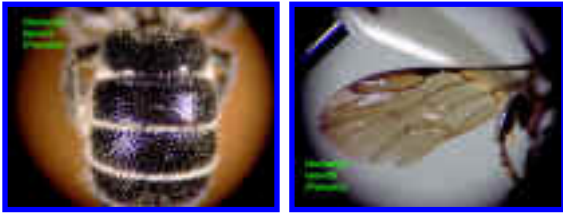
Carina of mandibles separate to the base....2



2. Punctures of tergum 2 noticeably finer than those of 3; wings relatively clear, darkened only in region of marginal cell. [*H. variolosa*](#)

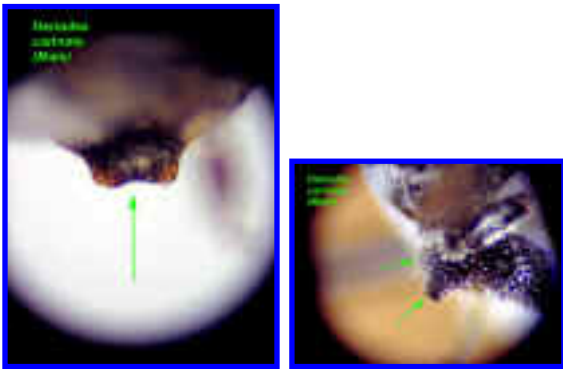


Punctures of tergum 2 and 3 not noticeably different; apical half of wings becoming rather deeply infuscated...[H. laevitti](#)

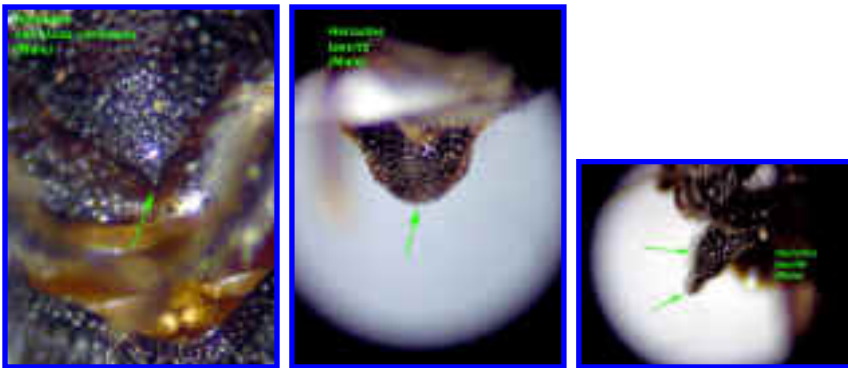


Key to males (From Mitchell 1962)

1. Abdominal sternum 1 truncate apically, with a robust, conical, median protuberance...[H. carinata](#)



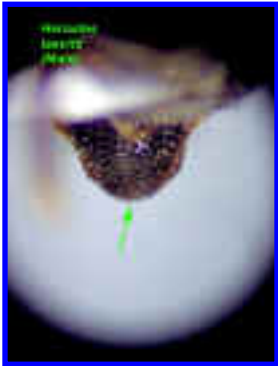
Sternum 1 produced apically, either rounded or angulate, only very slightly protuberant...2



2. Sternum 1 angulate apically, and with a low protuberance at about a third of the median length from apex...[H. variolosa](#)



Sternum 1 more rounded apically, protuberance nearer mid point of plate. [*H. leavitti*](#)



Megachilidae: *Heriades carinata* Cresson

County Records: Alachua, Baker, Columbia, Liberty, Jefferson, Leon

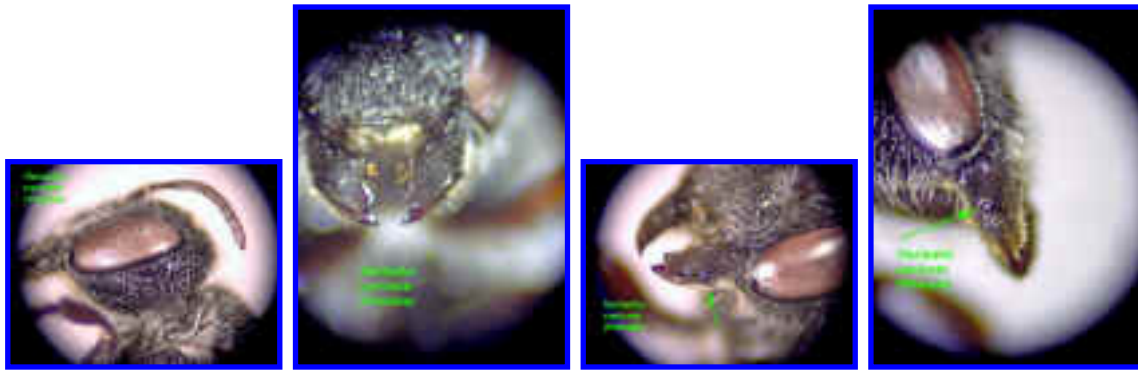


Locations: Olustee, FL

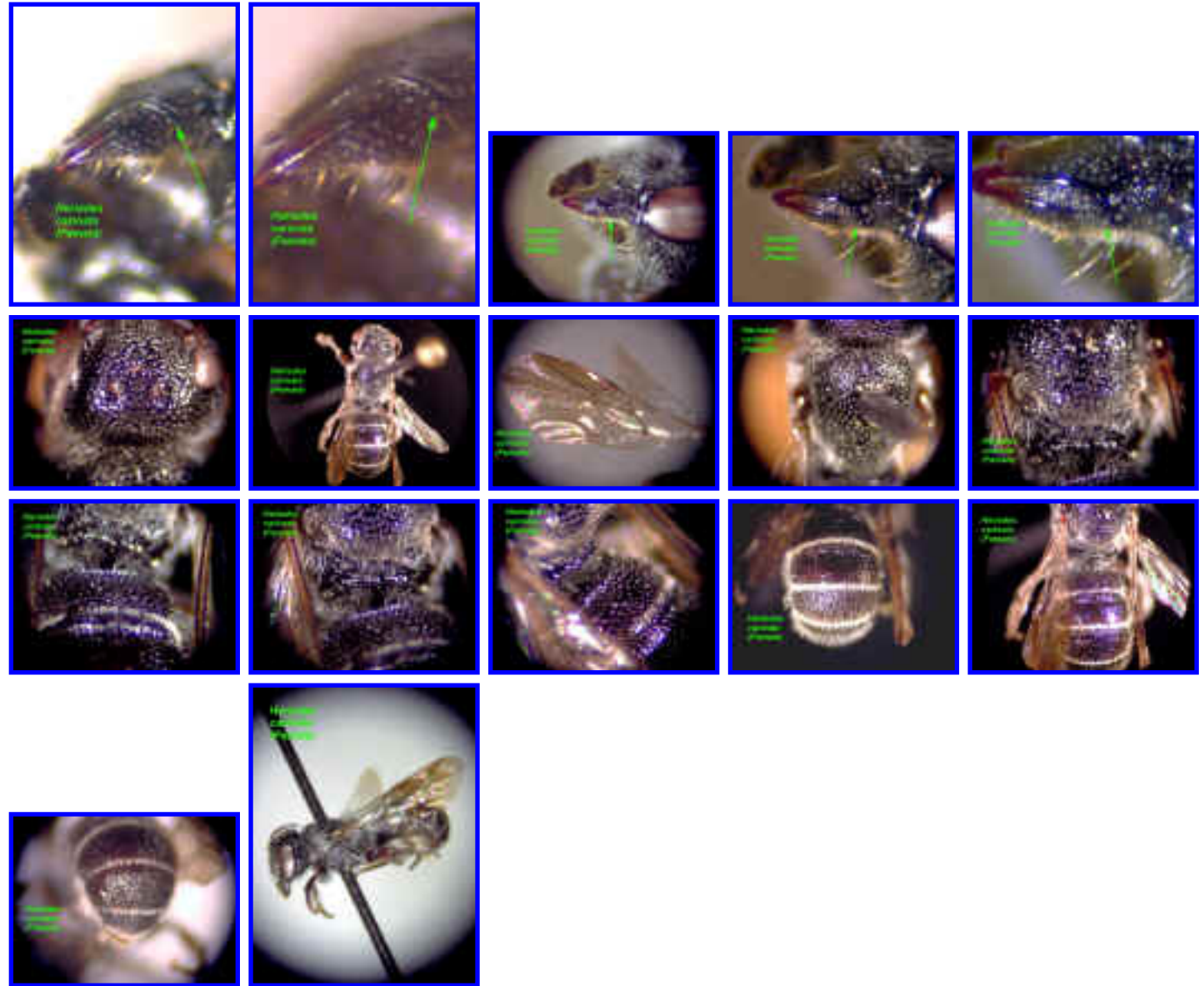
Dates: April-August

Plants: Polylectic

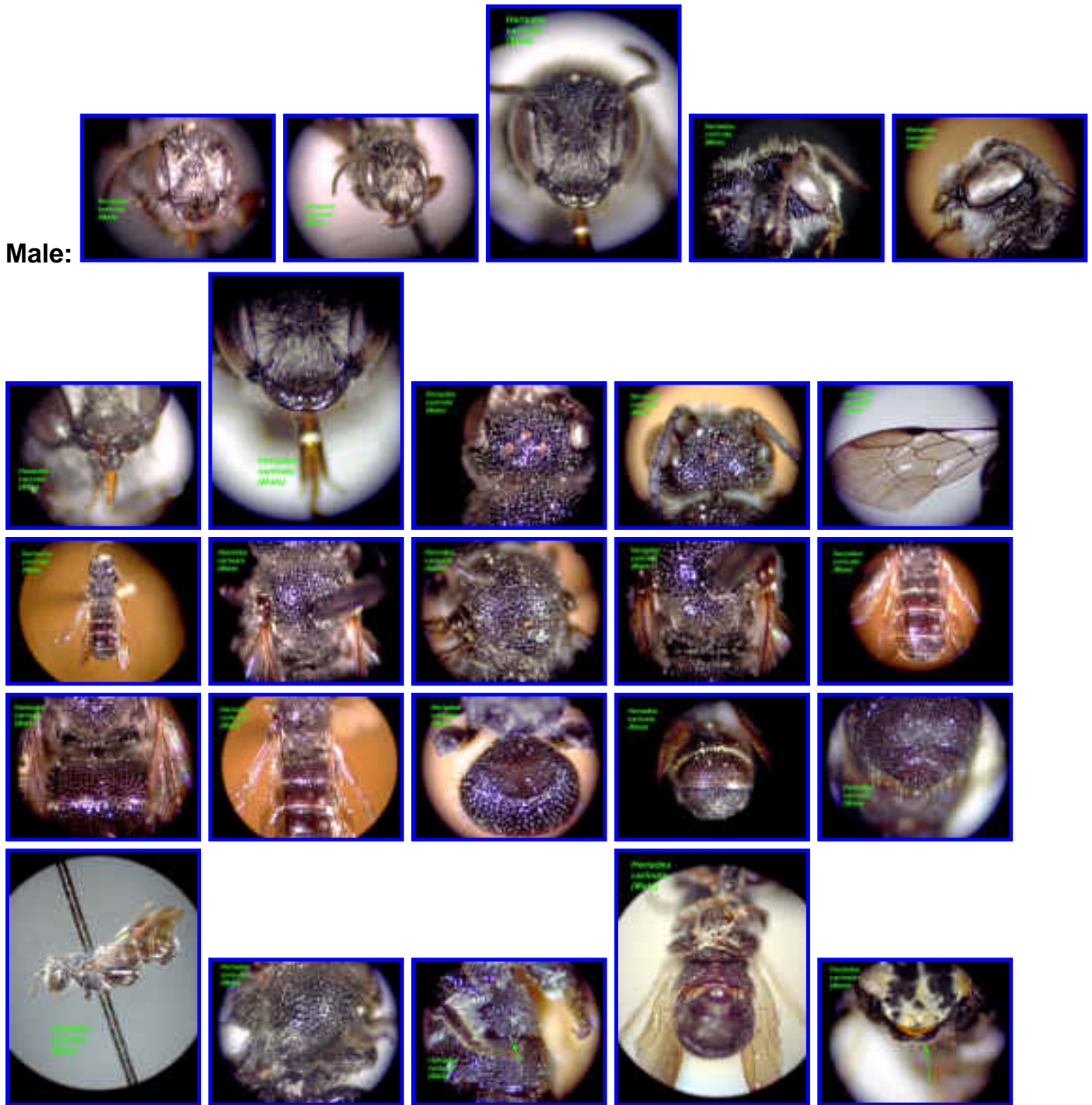
Notes:

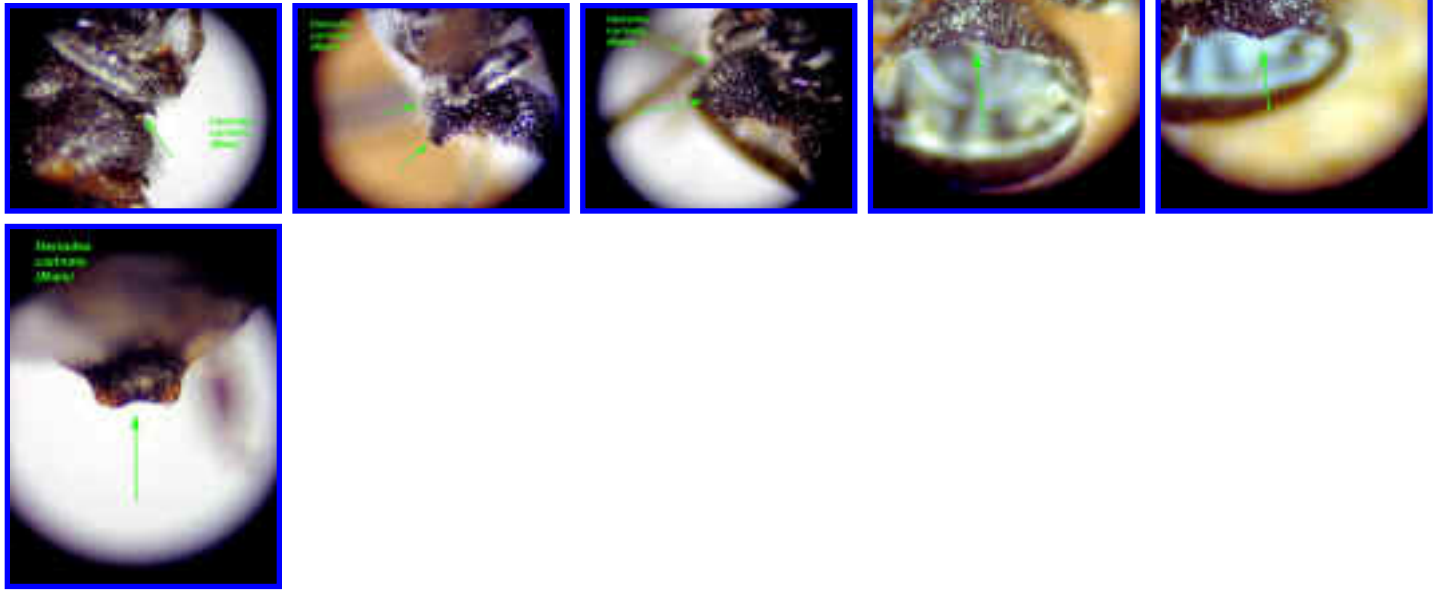


Female:



Male:





Megachilidae: *Heriades laevittii* Crawford

County Records: Alachua, Baker, Clay, Columbia, Highlands, Indian River, Jefferson, Lake, Leon, Levy, Manatee, Marion, Miami-Dade, Orange, Sarasota, Suwanee



Locations: Oscar Scherer State Recreation Area

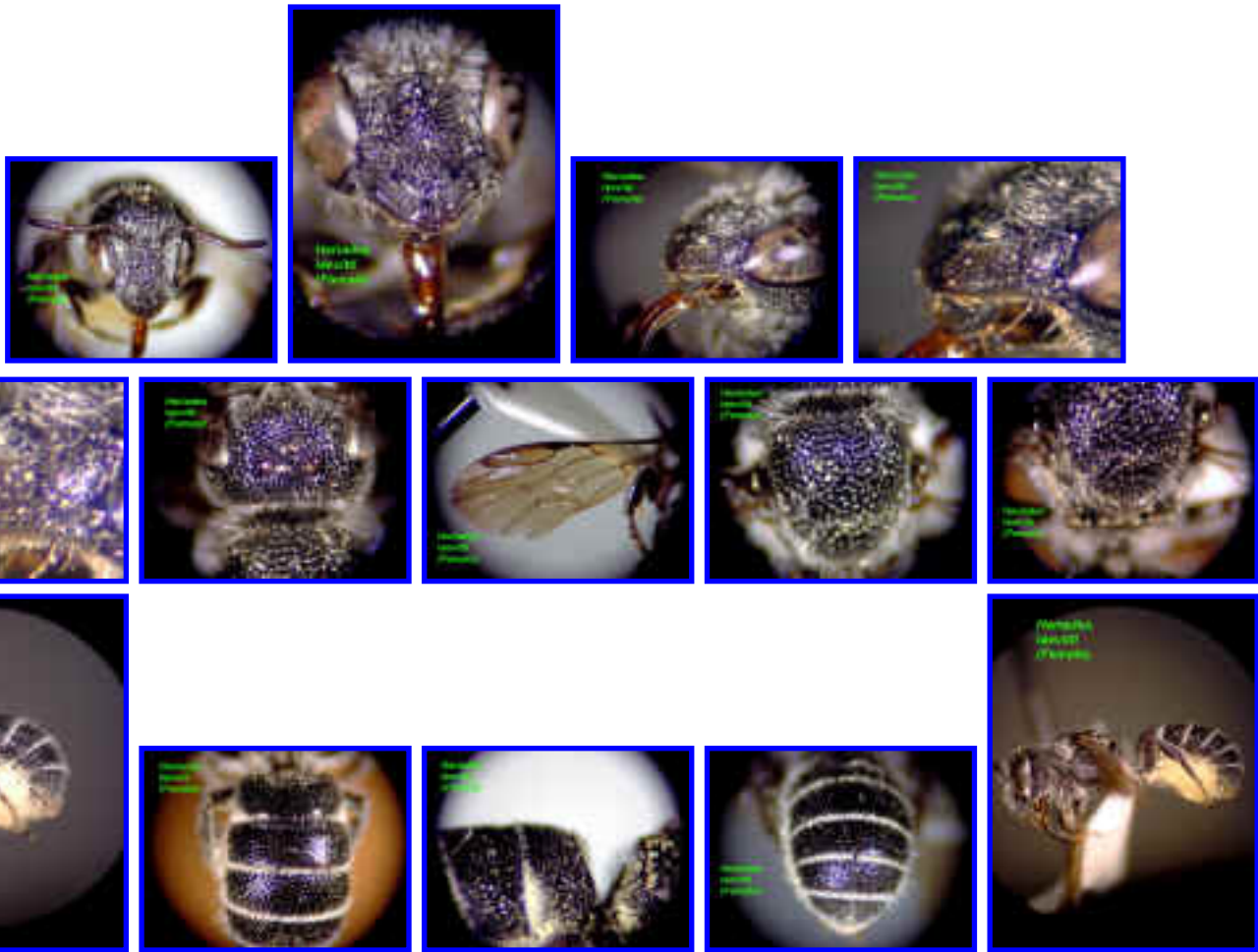
Dates: March-October

Plants: Polylectic

Notes: This species includes the subspecies described earlier by Michener as *H. laevittii laevittii* and *H.*

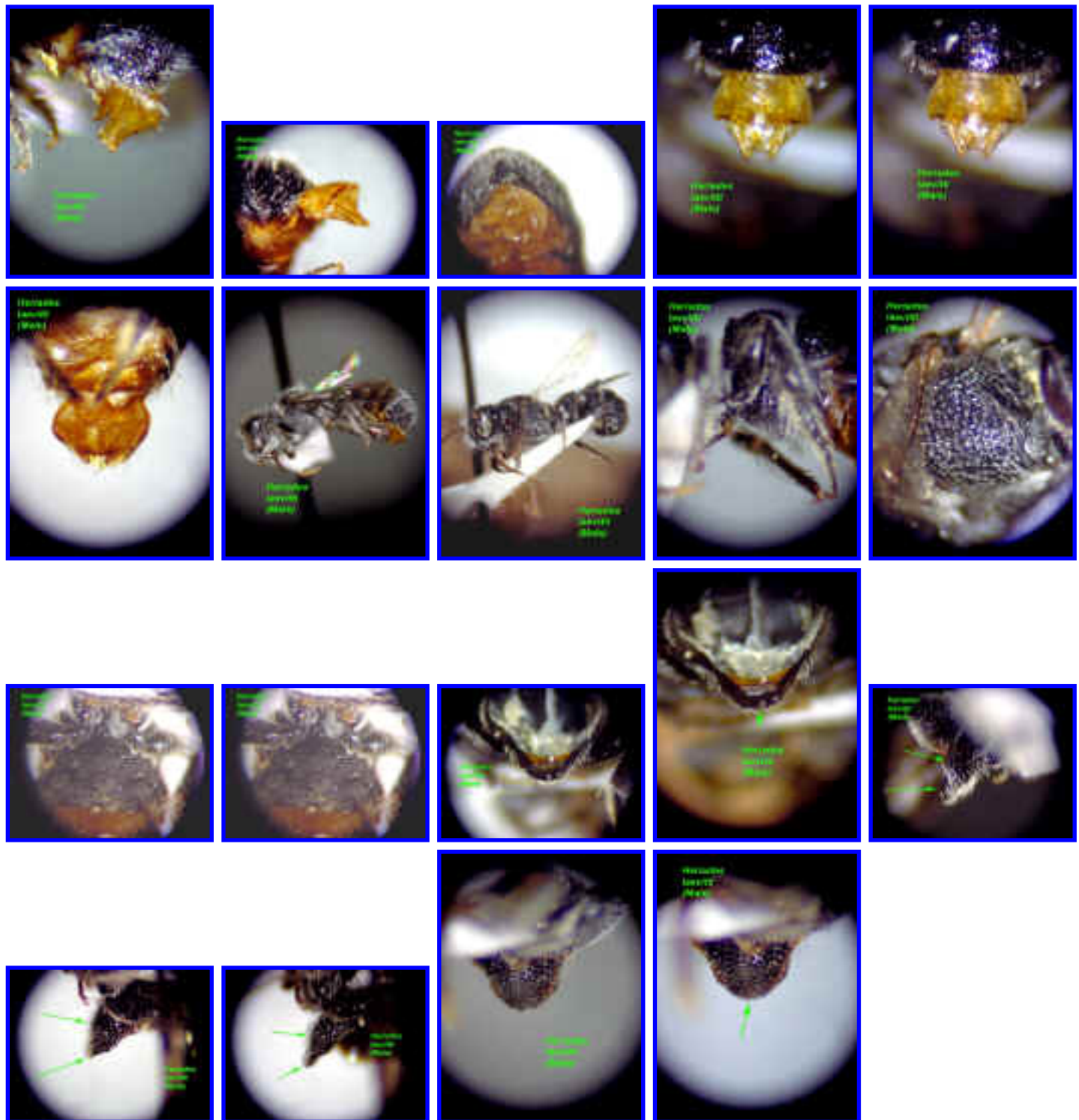
laevitti crawfordi.

Female:



Male:





Megachilidae: *Heriades variolosa variolosa* Cresson

County Records: Leon (also known from adjacent Thomas County, GA)



Locations: Tall Timbers Research Station

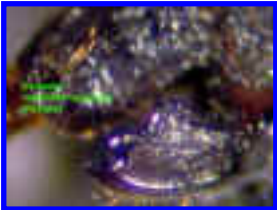
Dates: March-October

Plants: Polylectic

Notes: Michener (1939) and Mitchell (1962) list this species for Florida. It is apparently the rarest of the three species.

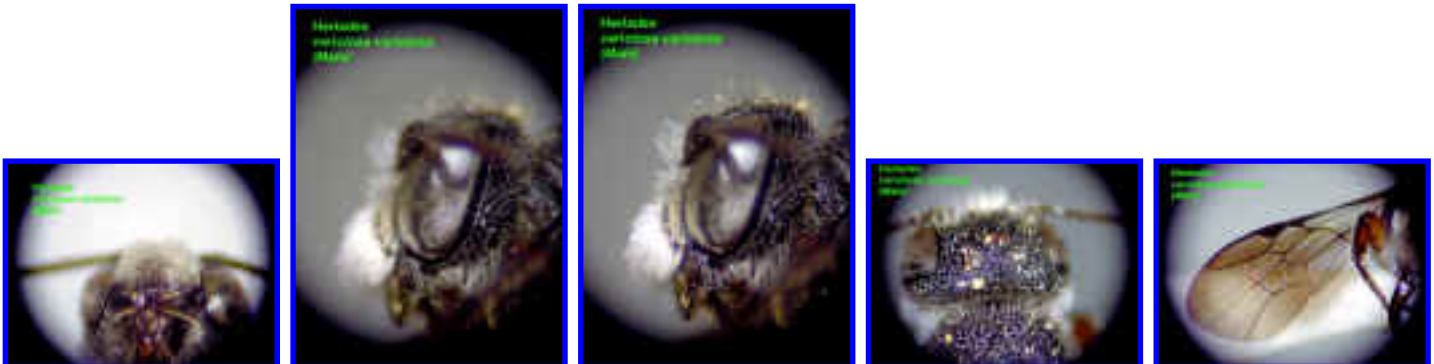


Female:





Male:





Tribe Osmiini

Genus *Osmia* Panzer, 8 taxa

In Florida, these are all bright blue bees of medium to large size. They are all spring-flying bees, mostly in March and April, although some species have been collected in February and later to July. These bees use nests in cavities that they do not construct. Subgenera are numerous and in Florida include the genera [Diceratosmia](#), [Helicosmia](#), and [Melanosmia](#).

Key References to Osmia in Florida

Rust, R. W. 1974. The systematics and biology of the genus *Osmia*, Subgenera *Osmia*, *Chalcosmia*, and *Cephalosmia* (Hymenoptera: Megachilidae). *The Wasman Journal of Biology* 32(1): 1-93.

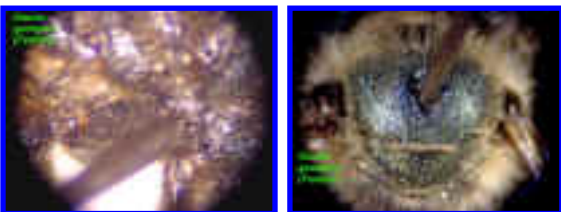
Sandhouse, G. A. 1939. The North American Bees of the Genus *Osmia* (Hymenoptera: Apoidea). *Memoirs of the Entomological Society of Washington* 1: 1-166.

Key to subgenera in Florida (both males and females)

1. Hind coxa with strong longitudinal carina along inner ventral angle; parapsidal line somewhat elongate...[Diceratosmia](#)



Hind coxa not carinate; parapsidal line punctiform...2



2. Males...3

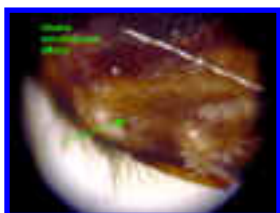
Females...4

3. Sternum 4 with apical margin laterally consisting of two carinae between which is a narrow,

hairless, shiny groove...[Helicosmia](#)



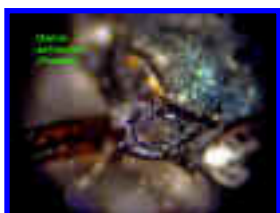
Sternum 4 with apical margin thin, without groove...[Melanosmia](#)

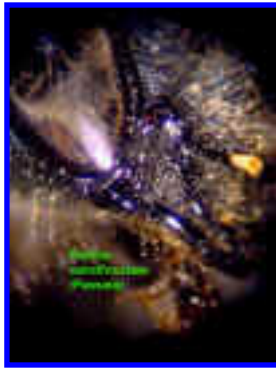


4. Orange hairs beneath clypeal margin arranged in four tufts; depression across mandibular base deep and set off almost vertically from adjacent mandibular surface and commonly emphasized by mandibular swelling just distal to depression...[Helicosmia](#)



Orange hairs beneath clypeal margin arranged in two tufts or brushes, or sometimes absent; depression across mandibular base usually less abrupt or absent and not emphasized by swelling distal to it...[Melanosmia](#)





Genus Osmia

Subgenus *Diceratosmia* Robertson, 2 taxa

Key to females

More robust (abdominal width 3mm); purplish-blue; clypeus rather finely rugoso-punctate... [Osmia subfasciata miamiensis](#)



Less robust (abdominal width 2.5 mm); greenish-blue; clypeal punctures contiguous but distinct... [Osmia subfasciata subfasciata](#)



Key to males

Greenish-blue... [Osmia subfasciata subfasciata](#)



Purplish-blue... [Osmia subfasciata miamiensis](#)

Megachilidae: *Osmia subfasciata subfasciata* Cresson

County Records: Highlands, Leon, Levy, Pasco

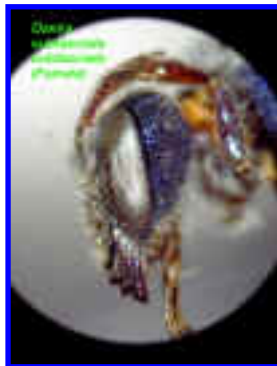


Locations:

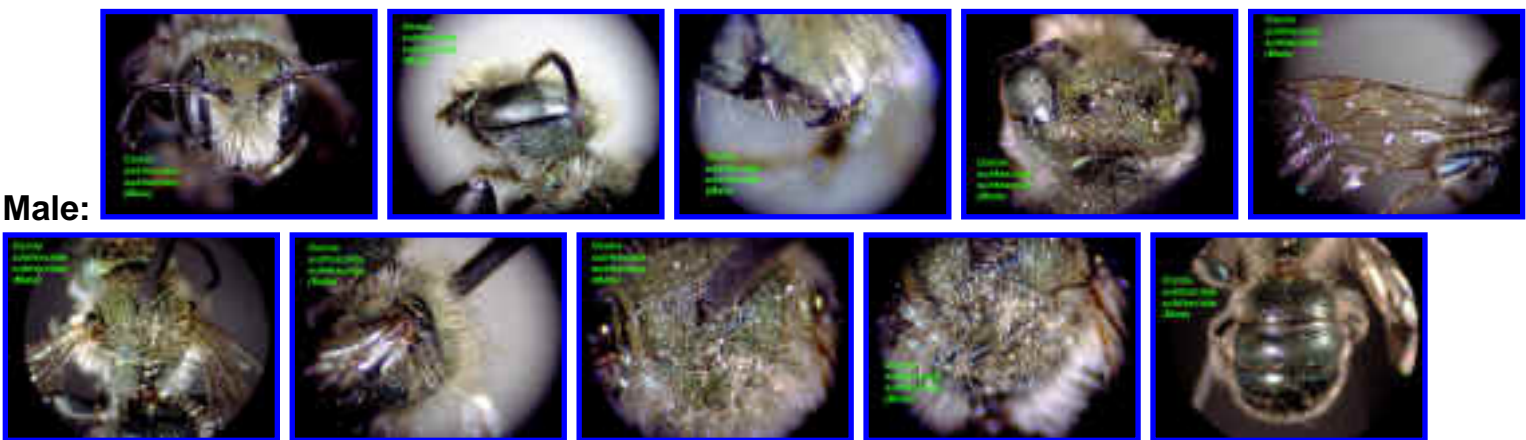
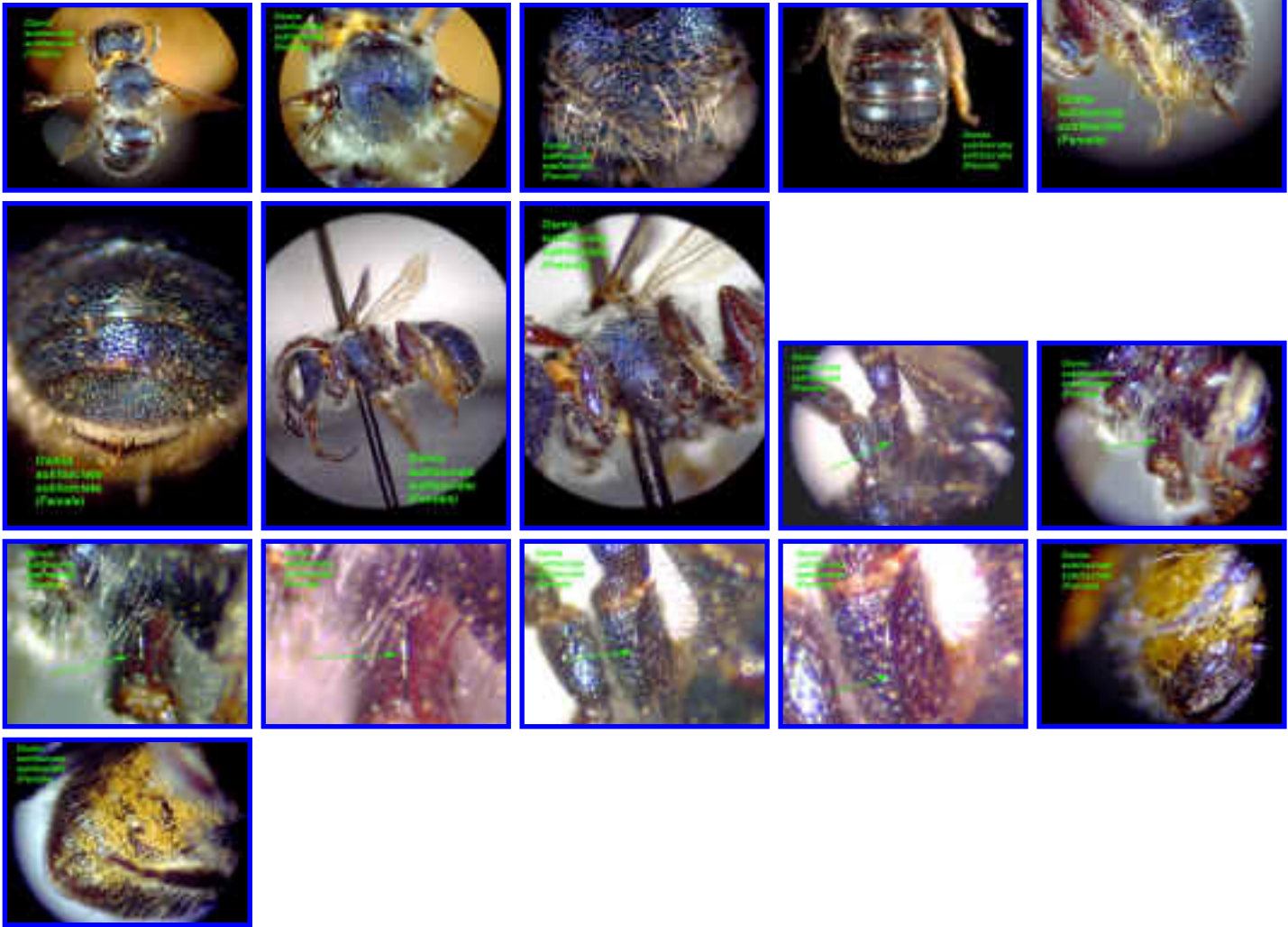
Dates: March 20-April 13

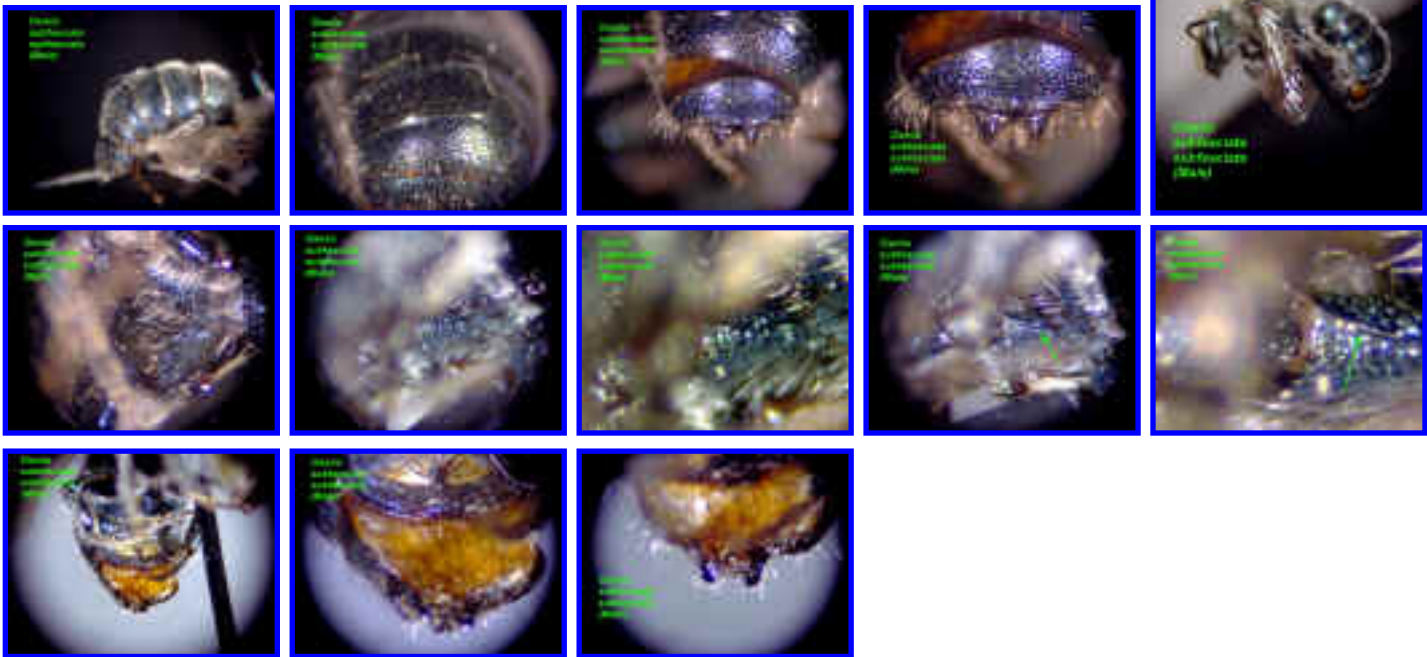
Plants: *Erigeron quercifolius*

Notes



Female:





Megachilidae: *Osmia subfasciata miamiensis* Mitchell

County Records: Citrus, Miami-Dade

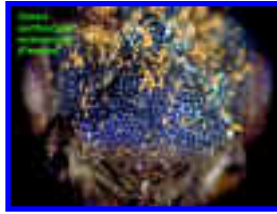


Locations: Miami Beach, Biscayne Bay, Charlotte Harbor

Dates:

Plants:

Notes: This subspecies replaces the typical subspecies in the southern part of the Florida peninsula. The type specimen from Citrus County represents an intermediate form. Individuals from the southern tip are more distinctive.



Female:

Genus Osmia

Subgenus Helicosmia Thomson, 2 (possibly 3) taxa

Formerly placed in the subgenus *Chalcosmia* Schmiedeknecht

Key to females

1. Clypeal margin somewhat excavated on each side of a median, elevated process...2



Clypeal margin greatly thickened, but neither excavated nor emarginate; mandible with a robust superior tooth projecting above clypeal margin... [Osmia georgica](#)



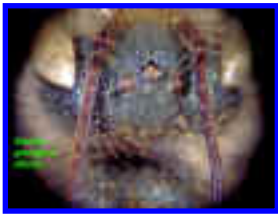
2. Larger (13-14mm); front wings deeply infuscated, median clypeal process more robust, not noticeably emarginate... [Osmia chalybea](#)



Smaller (11-12mm); front wings only lightly infuscated; median process of clypeus relatively low and inconspicuous, its margin quite deeply emarginate... [Osmia texana](#)

Key to males

1. Lateral ocelli slightly nearer margin of vertex than to each other... [Osmia georgica](#)



Lateral ocelli much nearer each other than to margin of vertex...2



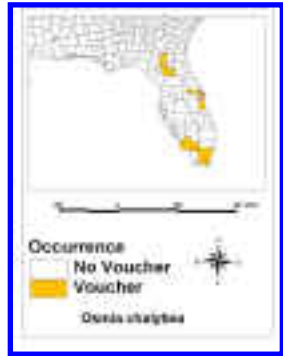
2. Wings deeply infuscated; dorsal area of propodeum densely tessellate and dull; tergum 6 deeply emarginate... [Osmia chalybea](#)



Wings faintly infuscated; lower half of dorsal area of propodeum smooth and shining; tergum 6 usually with only a small, shallow median emargination... [Osmia texana](#)

Megachilidae: *Osmia chalybea* Smith

County Records: Alachua, Brevard, Collier, Columbia, Hillsborough, Miami-Dade, Seminole



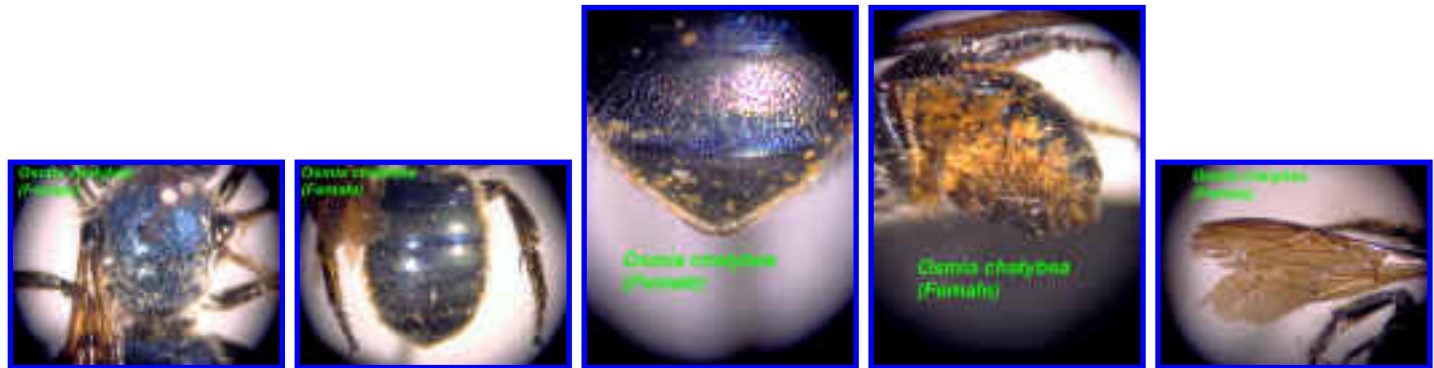
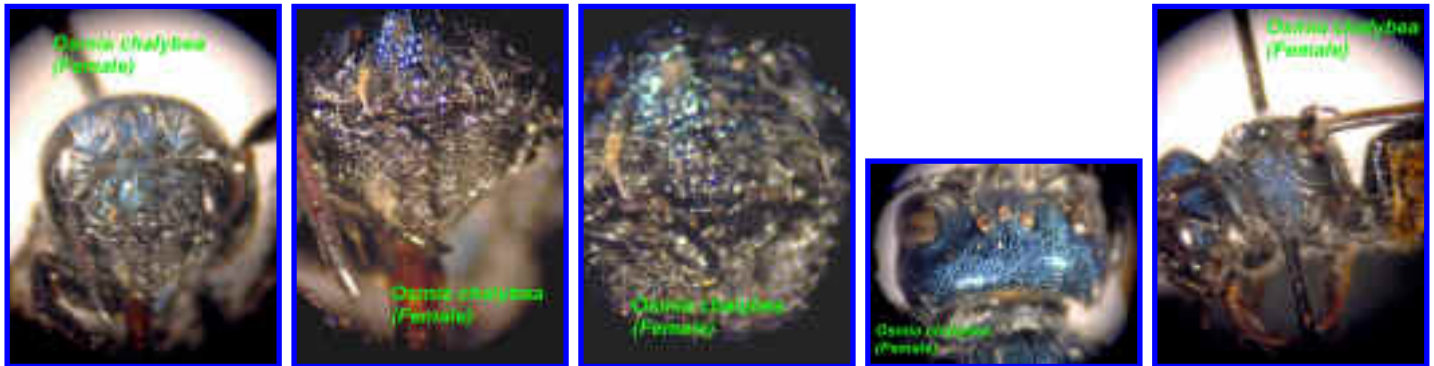
Locations: Corkscrew Swamp, Everglades National Park, Lake City, Merritt Island, Wagner, Hillsborough River State Park

Dates: March 12-July 8; March: 5, April: 2, July:1

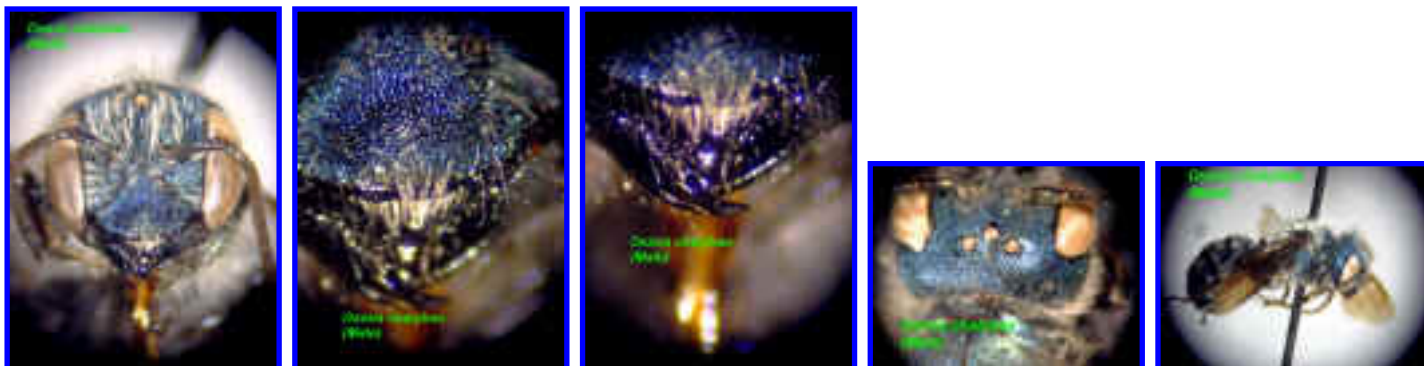
Plants: *Ceanothus* sp.

Notes: The map in Rust (1974) shows *O. chalybea* occurring throughout the peninsula. No records were noted from the panhandle though.

Female:



Male:



Megachilidae: *Osmia georgica* Cresson

County Records: Baker, Columbia, Jackson, Liberty

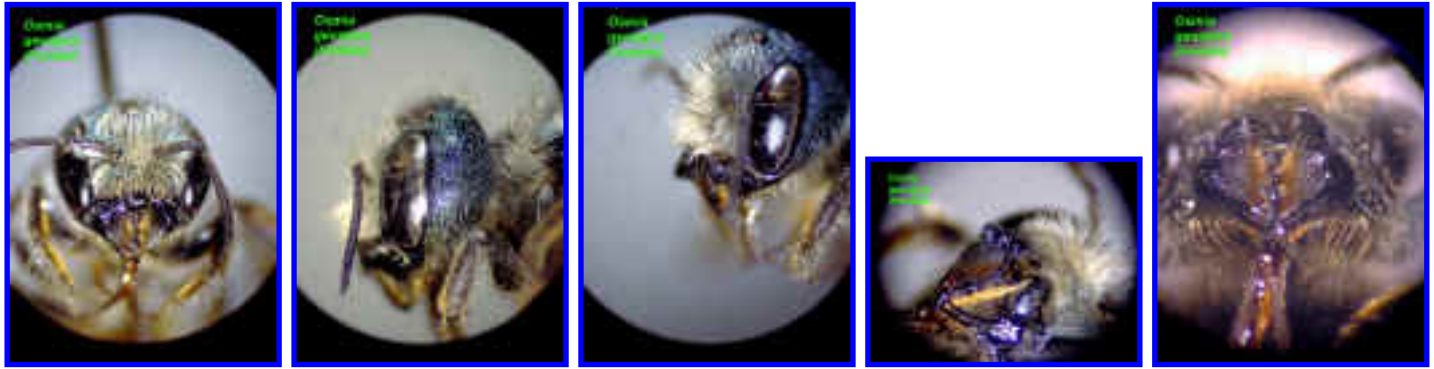


Locations:

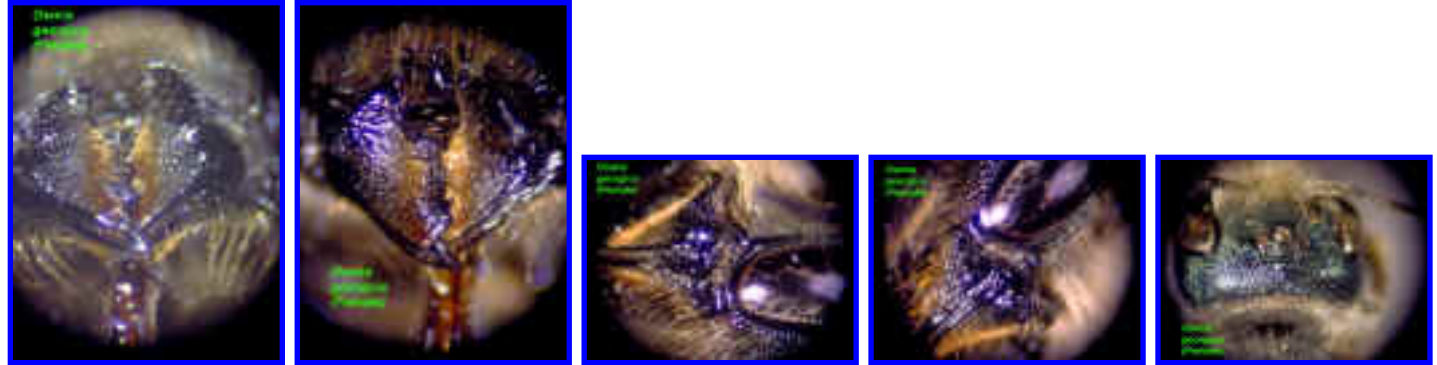
Dates: April 13-16

Plants: *Senecio glabellus*

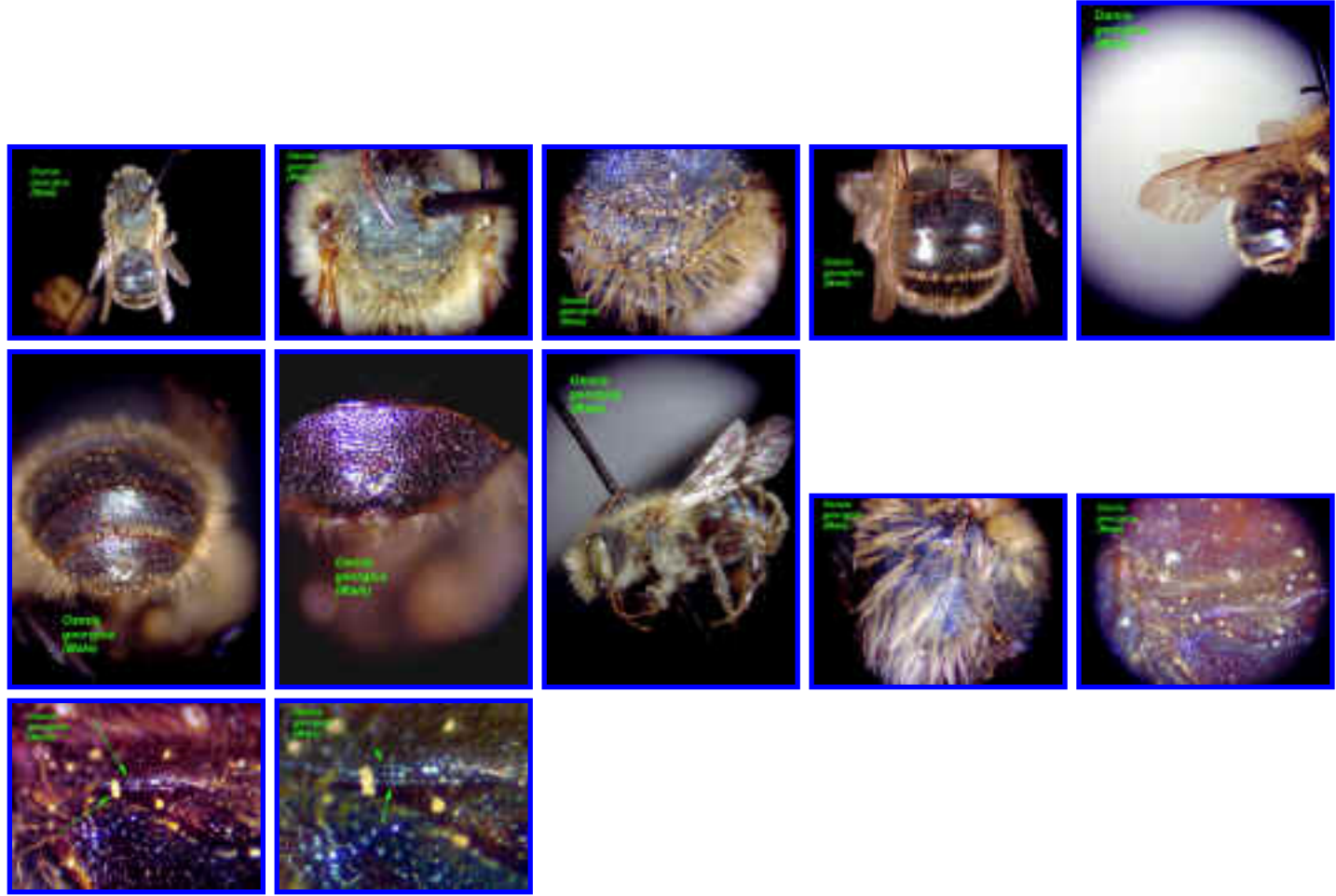
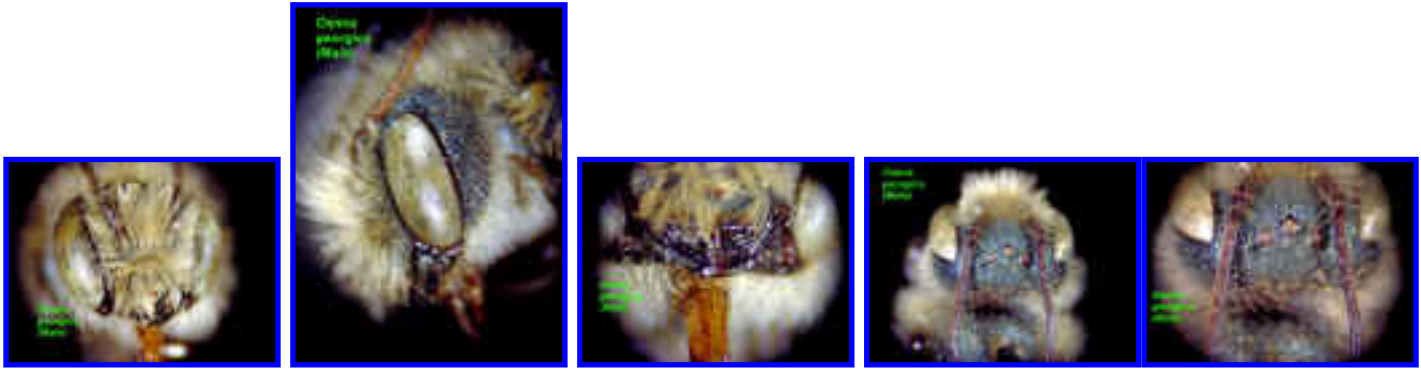
Notes: The map in Rust (1974) shows *O. georgica* as occurring near Jacksonville (Duval) and Tallahassee (Leon), FL.



Female:



Male:



Megachilidae: *Osmia texana* Cresson

County Records: Hernando



Locations:

Dates: March 20

Plants:

Notes: According to the map in Rust (1974), *O. texana* does not occur in Florida. This could be a misidentification of *O. georgica*? Mitchell states, however, that there are positive identifications in Florida.

Genus [Osmia](#)

Subgenus *Melanosmia* Schmiedeknecht, 2 (possible 3) taxa

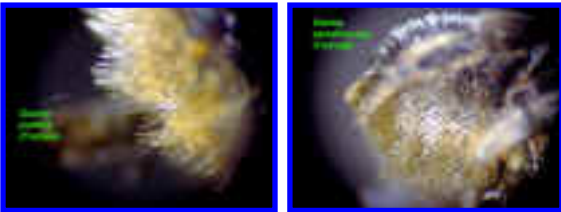
This includes species previously placed in the subgenera *Nothosmia*, *Centrosmia*, and *Chenosmia*.

Key to females

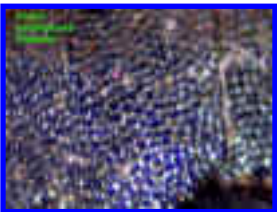
1. Scopa black...[Osmia atriventris](#)



Scopa white....2



2. Punctures coarse and confluent over most of scutum and scutellum...[Osmia sandhousea](#)



Punctures of scutum and scutellum relatively fine and distinct, not confluent, at least in center of disc...[Osmia pumila](#)



Key to males

1. Scutum dull, punctures closely crowded..[Osmia sandhousea](#)



Punctures of scutum close, but distinct, the narrow interspaces shining...2



2. Median emargination of sternum 3 completely filled by the marginal fringe, the hairs converging along mid-line...[Osmia atriventris](#)



Median emargination of sternum 3 not filled by the marginal hairs, hairs relatively short...
[Osmia pumila](#)

Megachilidae: *Osmia atriventris* Cresson

County Records: Jackson, Wakulla

Melanosmia

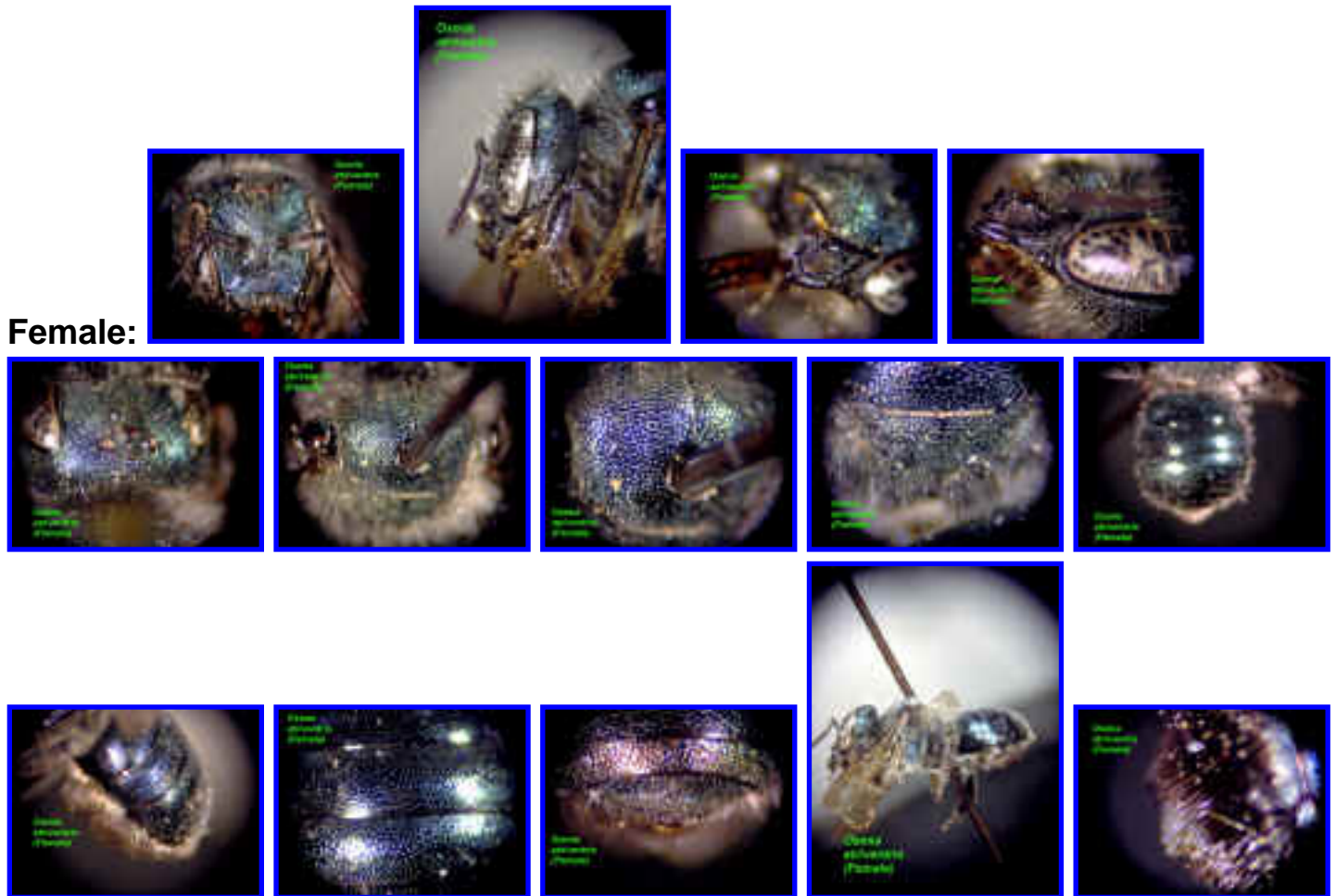


Locations:

Dates: April 13-April 30

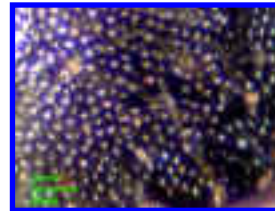
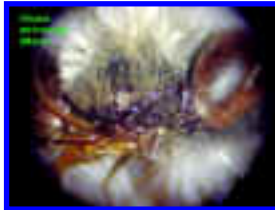
Plants:

Notes: New state record for Florida. Mitchell listed it from Georgia.



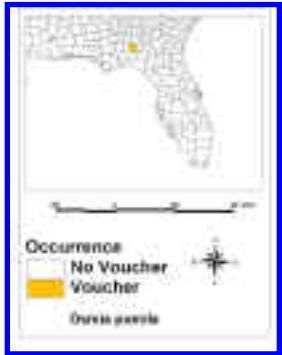


Male:



Megachilidae: *Osmia pumila* Cresson

County Records: None from Florida



Locations:

Dates:

Plants:

Notes: This species may be present in northern Florida. It has been collected in Georgia in Thomas County, a short distance from Leon County, Florida.



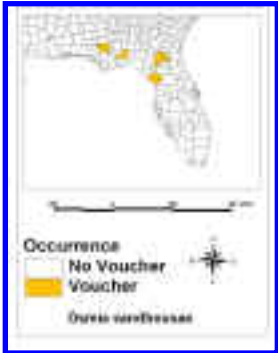
Female:





Megachilidae: *Osmia sandhouseae* Mitchell

County Records: Baker, Columbia, Jackson, Leon, Levy



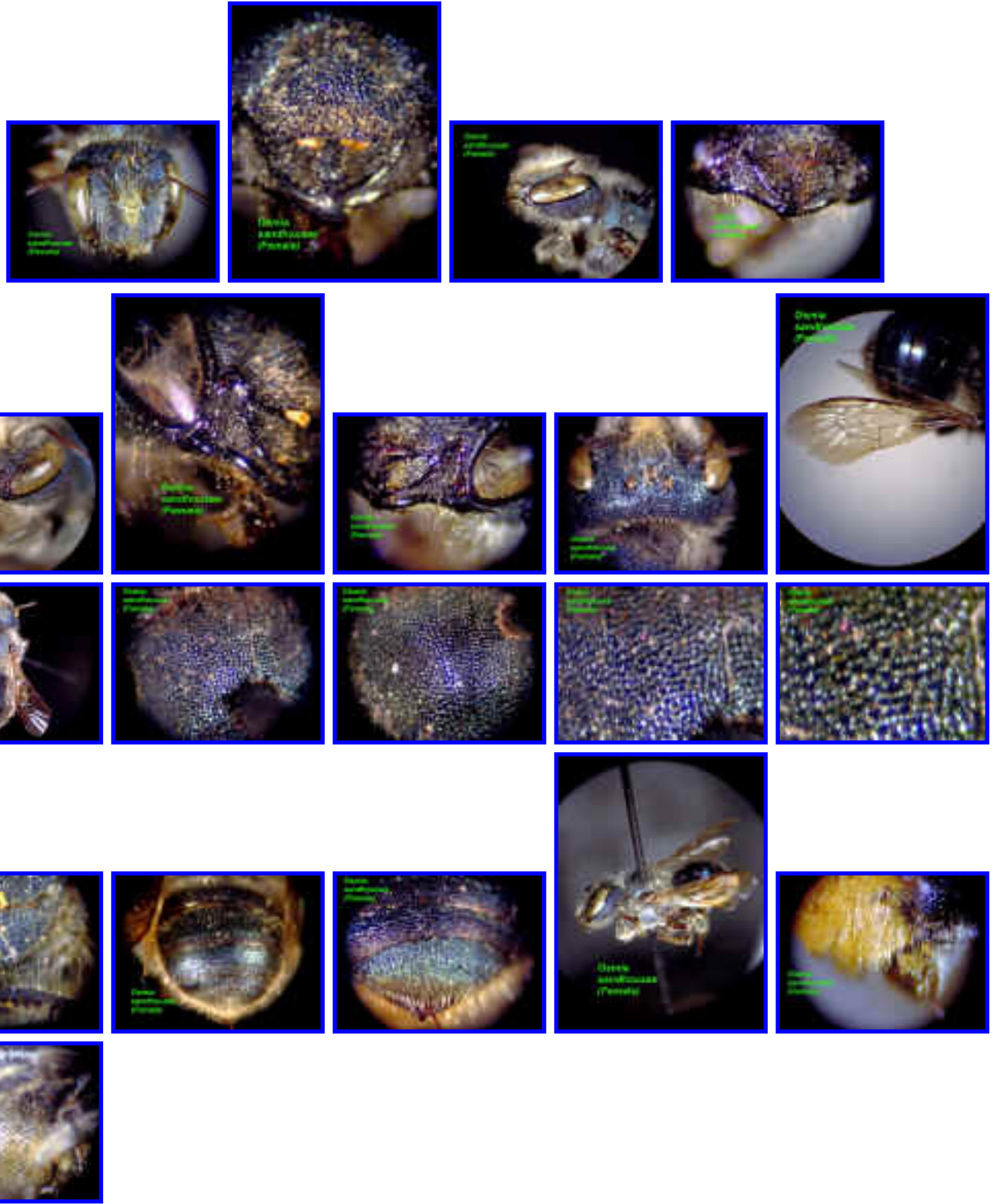
Locations:

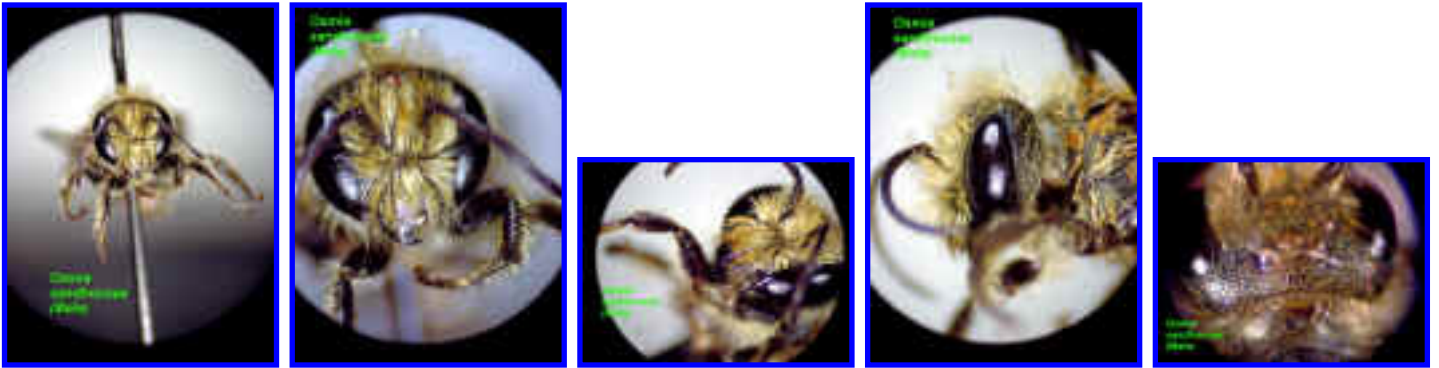
Dates: Feb 15-April 13, Feb.:2, March:1, April: 2

Plants:

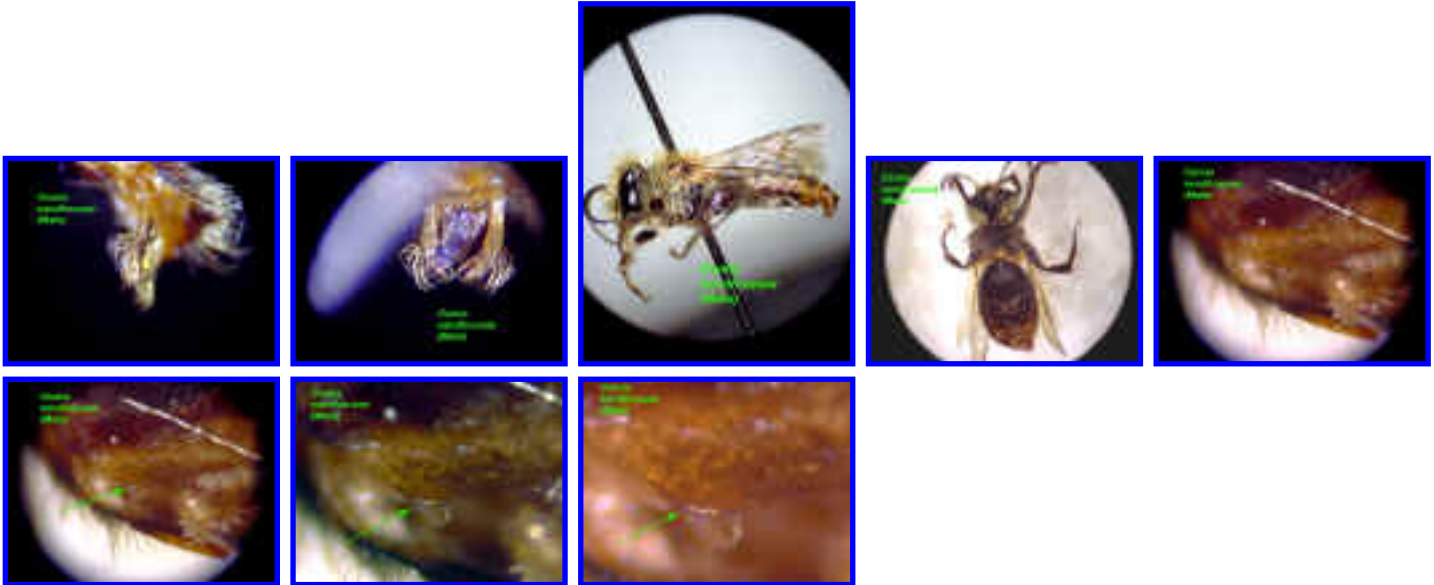
Notes

Female:





Male:



Tribe Osmiini

Genus *Ashmeadiella* Cockerell, 1 taxa

Subgenus *Ashmeadiella* Cockerell

This genus has small (3.5-9.5mm) robust nonmetallic species. Males are quite distinctive in the four-toothed tergum 6 and features of the sterna. Nests are typically made in preexisting holes in wood or stems. Can be caught in trap nests.

Megachilidae: *Ashmeadiella floridana* Robertson

County Records: Levy (also known from Thomas County, GA)



Locations:

Dates: April-July

Plants: *Lupinus*

Notes: Found from NC to Florida. This species represents the only SE species of *Ashmeadiella* which are much more diverse in the western US. Probably is more widespread than the 1 county record. Appears to be oligolectic based on the limited floral records in Mitchell.

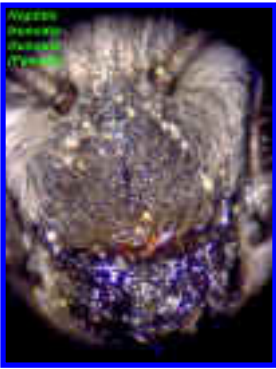
Tribe Osmiini

Genus *Hoplitis* Klug, 2 species

This genus has nonmetallic species. Both Florida species are in the subgenus *Alcidamea* and nest in pithy stems.

Key to females

1. Punctures of clypeus densely crowded, usually with a slightly elevated, median ridge... [*Hoplitis truncata*](#)



Punctures of clypeus more distinctly separated, with no median ridge. [*Hoplitis pilosifrons*](#)



Key to males

1. Tergum 7 narrow, medially acute, its median length fully equal to basal width [*Hoplitis pilosifrons*](#)



Tergum 7 broadly rounded or truncate apically, usually quite short... [Hoplitis truncata](#)



Megachilidae: *Hoplitis pilosifrons* Cresson

County Records: Alachua, Baker, Columbia, Sumter

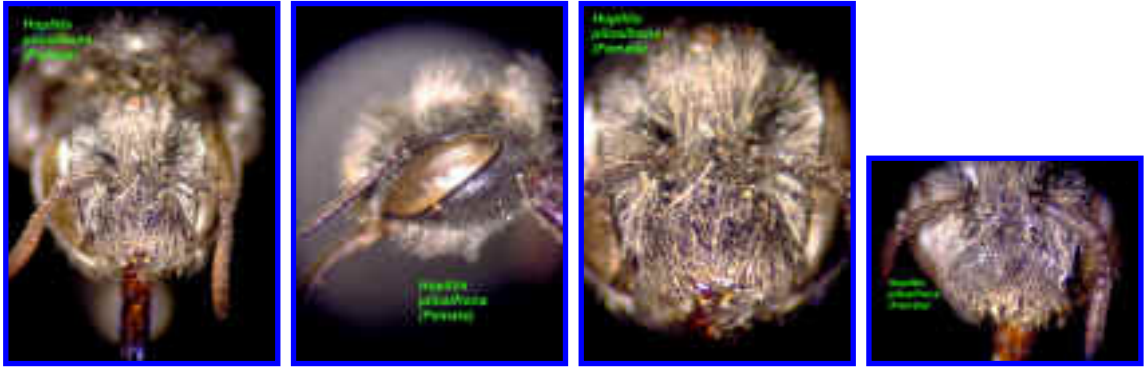


Locations:

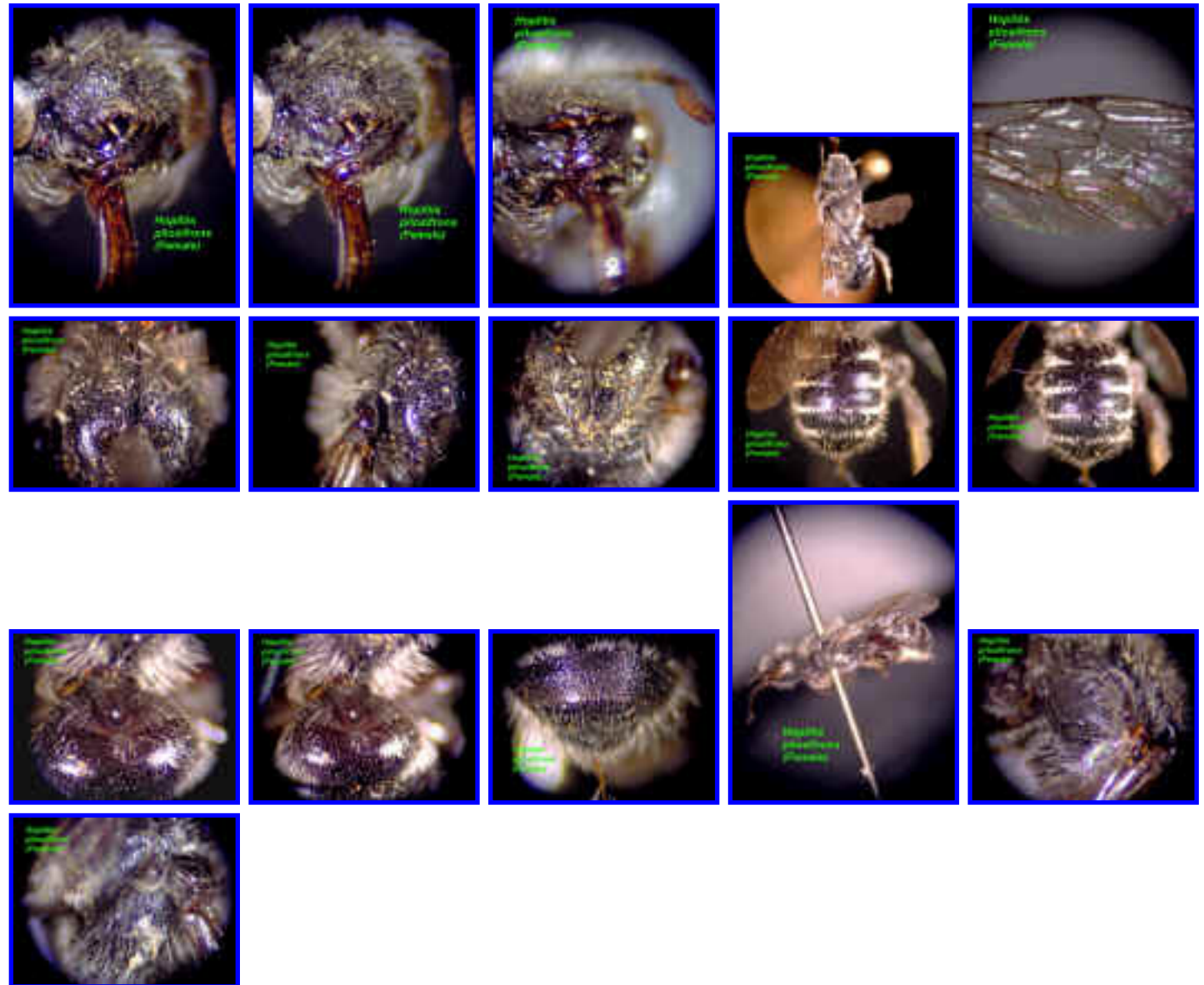
Dates: March 21-June 25; March: 4, April: 1, June: 1; Mitchell lists April-August for the entire range

Plants: polylectic

Notes:

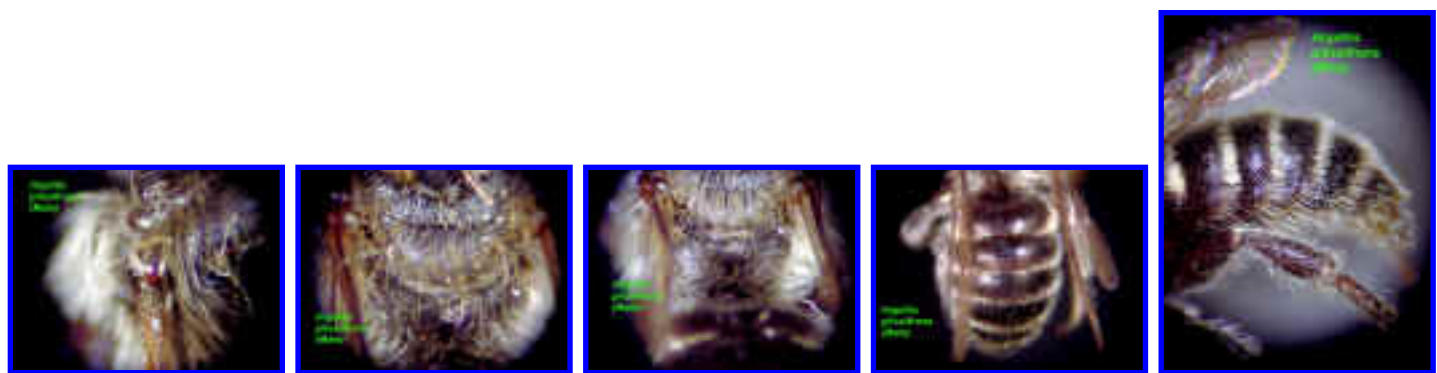
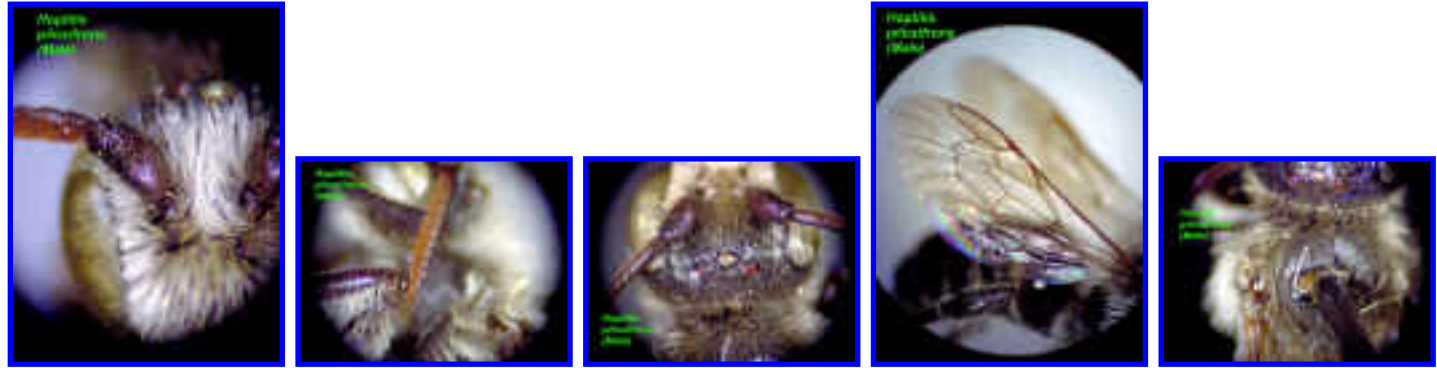
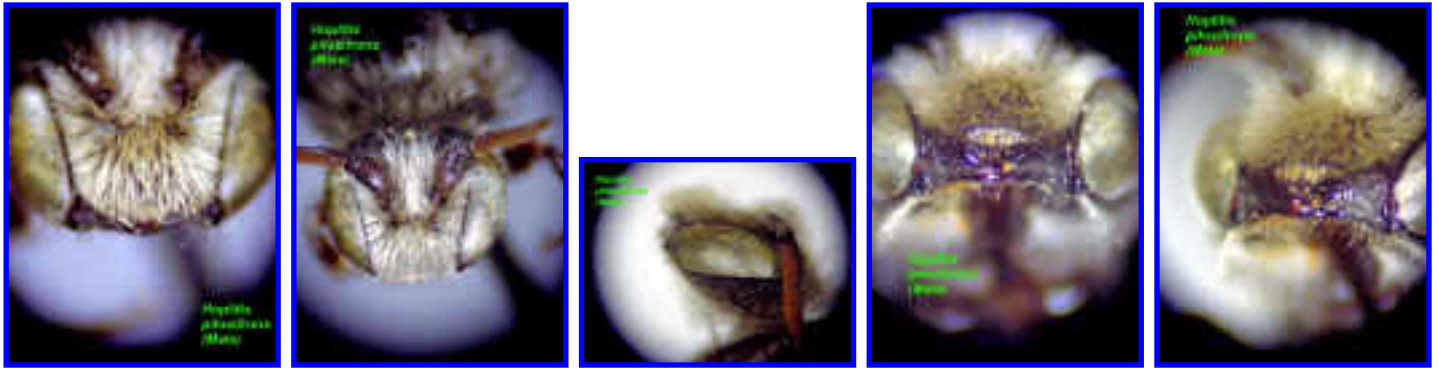


Female:



Hoplitis

Male:





Megachilidae: *Hoplitis truncata truncata* Cresson

County Records: Alachua, Baker, Bradford, Columbia, Highlands, Liberty, Marion, Suwanee, Volusia



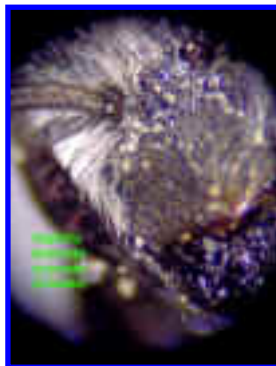
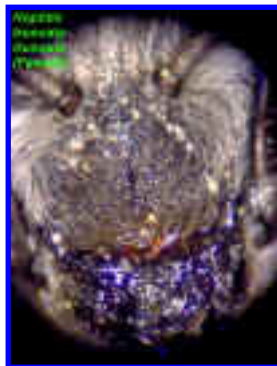
Locations: Cassadega

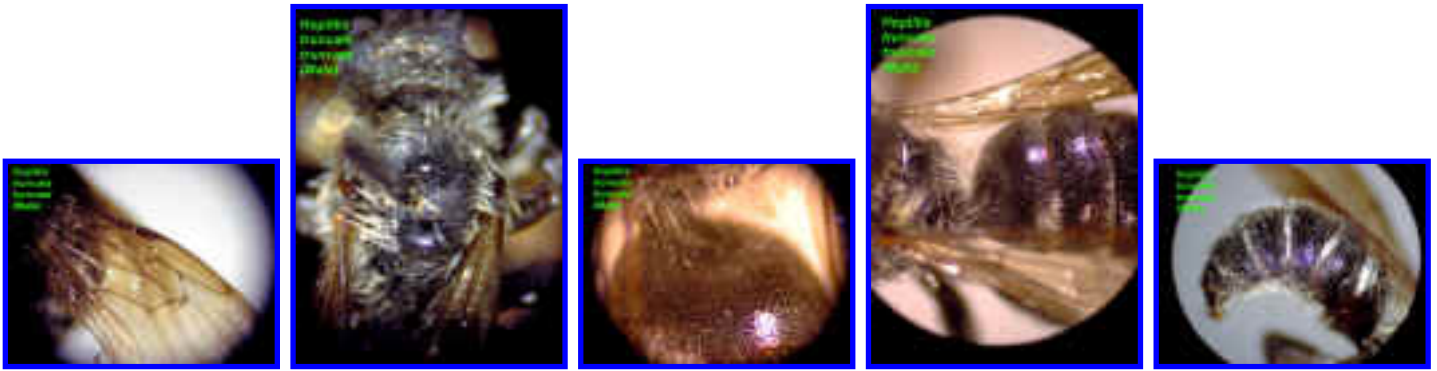
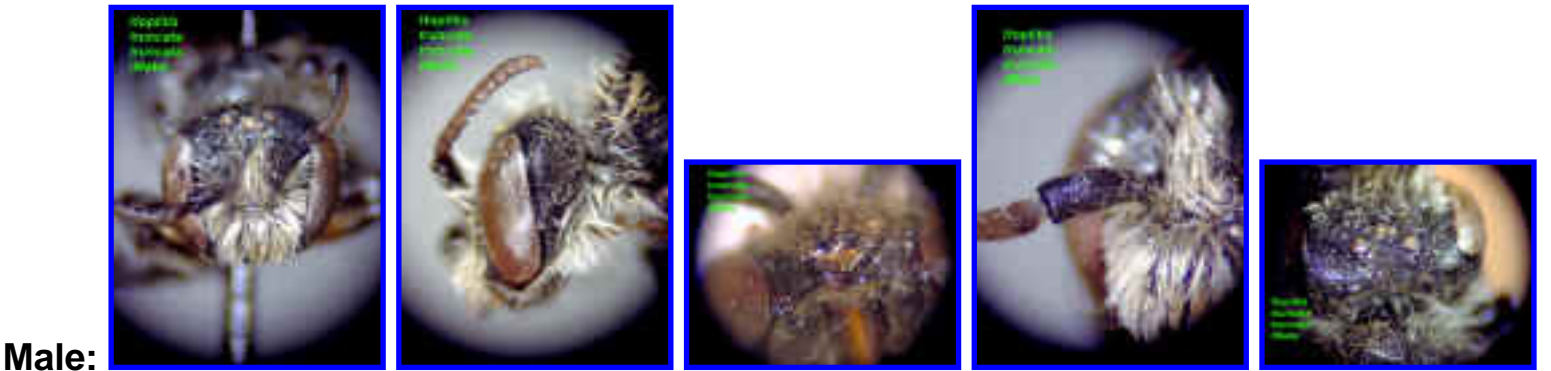
Dates: March 19-May 11; March: 1, April: 8, May: 3; Mitchell lists March-July

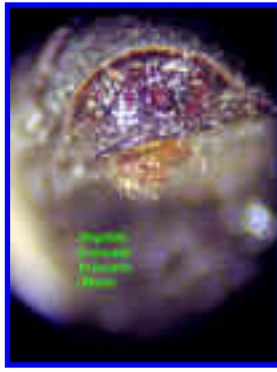
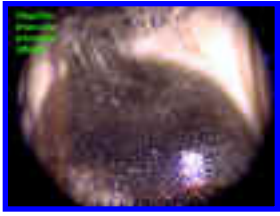
Plants: *Melilotus alba*, *Erigeron quercifolius*, *Berlandiera subacaulis*, *Melilotus officinalis*; polylectic

Notes

Female:







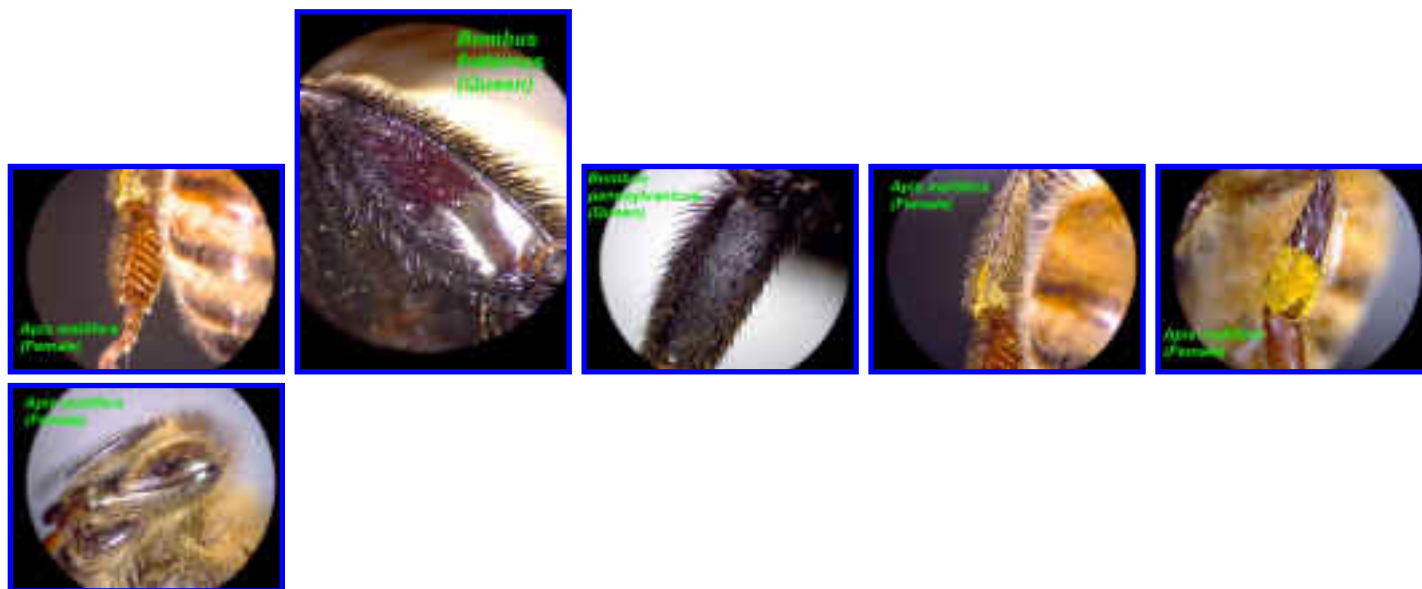
[Back to Introduction](#)

Apidae (87 taxa)

This family includes what Mitchell referred to as the families Anthophoridae and Apidae. Current phylogenetics used here are from Michener (2000).

Keys to Subfamilies of Apidae (From Michener 2000)

1. Scopa of female, when present, forming a corbicula on posterior tibia; inner apical margin of posterior tibia of nonparasitic females (except in queens of Apini) with row of stiff bristles (the rastellum); pygidial and basitibial plates absent; eyes hairy or jugal lobe of hind wing absent...2



Scopa of female not forming a tibial corbicula, and scopa sometimes absent; inner apical margins of posterior tibia bare or hairy, without comb; pygidial and basitibial plates frequently present; eyes very rarely hairy and jugal lobe of hind wing almost always present...3

2. Eye hairy; jugal lobe of hind wing present although notch delimiting it shallow; hind tibial spurs absent; arolia present...[Apinae](#), [Apini](#)



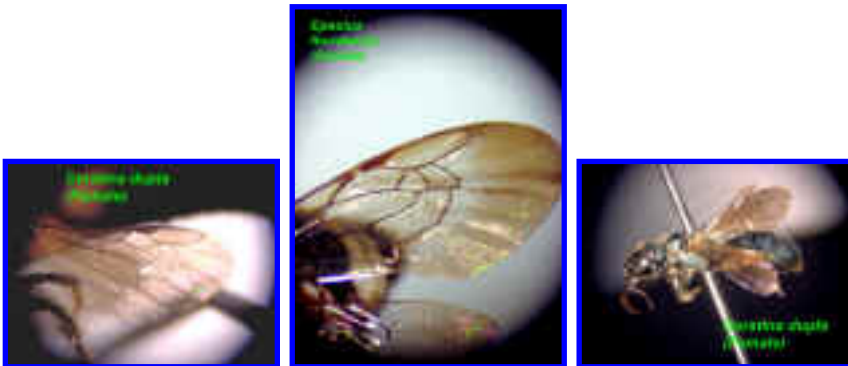
Eye bare; jugal lobe of hind wing absent; hind tibial spurs present; arolia absent...[Apinae, Bombini](#)



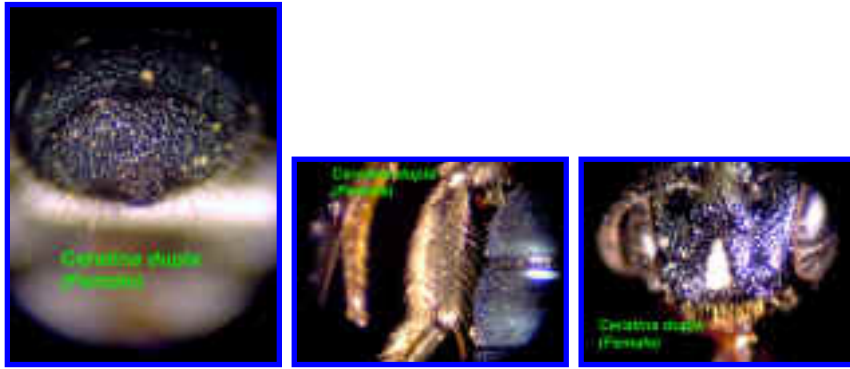
3. Stigma absent; middle and hind basitarsi usually longer than tibiae; clypeus nearly flat, lower lateral areas not curved backward...[Xylocopinae, Xylocopini](#)



Stigma present, although sometimes (e.g., *Anthophora*, *Centris*) very small; middle and hind basitarsi usually shorter than tibiae; clypeus variable but usually more convex with lower lateral parts bent backward...4



4. Pygidial plate absent, sometimes represented by spine in pygidial fimbria of female; scopa present; epistomal suture between lateral extremity and subantennal suture usually bent mesad such that upper part of clypeus is almost parallel-sided; clypeus not or weakly protuberant...[Xylocopinae, Ceratinini](#)



Pygidial plate present in females and most males, or if absent in females, then scopa also absent; epistomal suture not or rarely bent mesad such that upper part of clypeus is nearly parallel-sided; clypeus commonly strongly protuberant, lower lateral parts bent strongly posteriorly...5

5. Second abscissa of vein M+Cu of hind wing shorter than cu-v; scopa absent (posterior angle of mandible beneath middle of lower end of eye; claws of at least hind leg usually with inner ramus a broad lobe...[Apinae](#), [Ericrocidini](#))

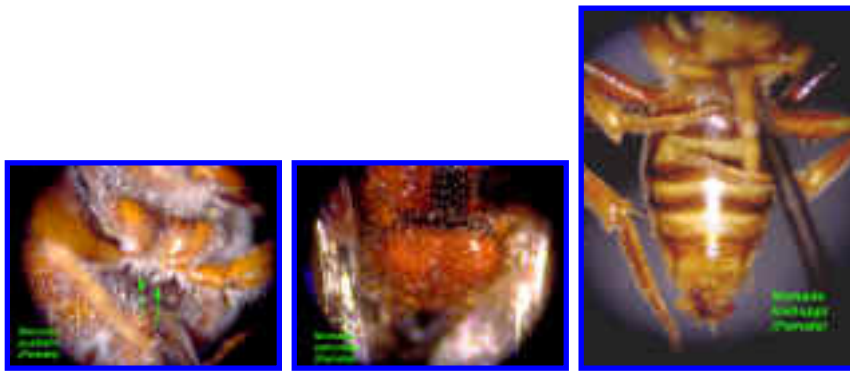
Second abscissa of vein M+Cu of hind wing as long as to much longer than cu-v, but if equal, then hairy bees with scopa...6



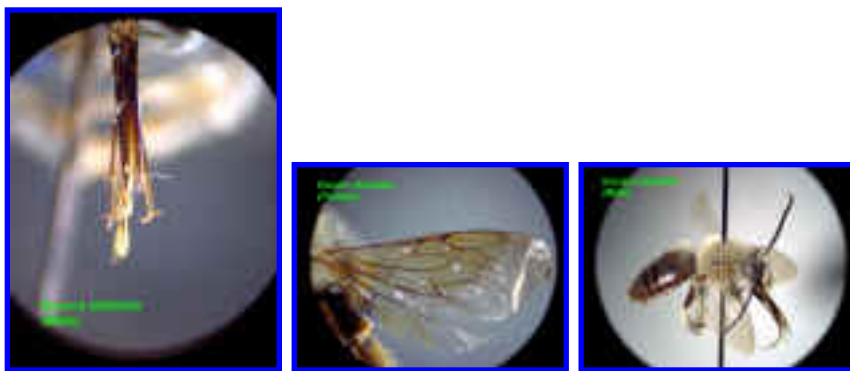
6. Front coxae quadrate, trochanters arising from outer distal angles of coxae, trochanters thus far apart; axilla nearly always produced to acute angle or spine; S6 of female largely invaginated, disc reduced and lateral distal portions produced to form a pair of long, dentate or spinose processes...[Nomadinae](#), [Epeolini](#))



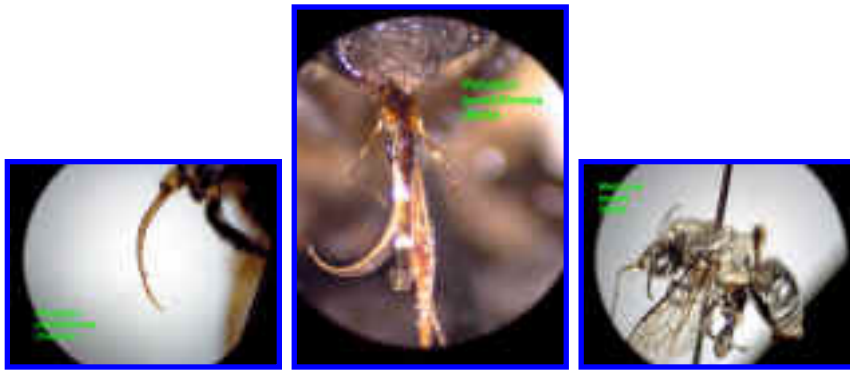
Front coxae somewhat triangular, trochanters arising close to one another from apices of coxae (except lateral to apical coxal spines if spine present); axilla usually rounded; S6 of female not much invaginated, disc not greatly reduced, spinose processes, if present, short or mere lobes...[Nomadinae](#), [Nomadini](#)



7. Paraglossa as long as first two segments of labial palpus taken together; jugal lobe of hind wing about half as long vannal lobe or sometimes more; antenna of males commonly elongate..[Apinae](#), [Eucerini](#)



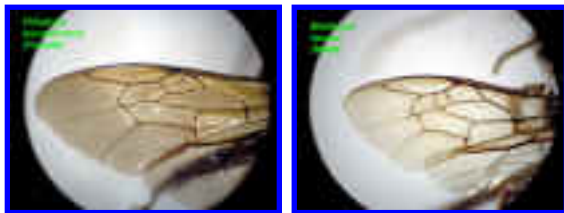
Paraglossa much shorter than first segment of labial palpus; jugal lobe of hind wing usually less than half as long as vannal lobe; antennae of males usually not elongate...8



8. Stigma small, usually shorter than prestigma, parallel sided, vein r arising near its apex; distal parts of wing strongly papillate, basal parts usually with large bare areas...9



Stigma larger, longer than prestigma, tapering beyond vein r, which arises near middle of stigma; wings usually pubescent throughout and only weakly papillate apically..[Apinae](#), [Emphorini](#)



9. First submarginal cell larger than second, posterior margin longer than that of second; scopal hairs of female largely simple, sometimes plumose along upper margin of tibia..[Apinae](#), [Anthophorini](#)



First submarginal cell usually smaller than second, posterior margin shorter than that of second; scopal hairs of female mostly plumose, often intermixed with simple hairs or with projecting simple apices...

[Apinae](#), [Centridini](#)



Systematic Overview of the Apidae in Florida

Subfamily [*Xylocopinae*](#)

Tribe [*Ceratinini*](#)

Genus *Ceratina*

Subgenus *Ceratinula*

Zadontomerus

Tribe [*Xylocopini*](#)

Genus *Xylocopa*

Subgenus *Schonherria*

Xylocopoides

Subfamily [*Nomadinae*](#)

Tribe [*Nomadini*](#)

Genus *Nomada*

Tribe [*Epeolini*](#)

Genus [*Doeringiella*](#)

Genus [*Epeolus*](#)

Subfamily [*Apinae*](#)

Tribe [*Emphorini*](#)

Genus *Melitoma*

Genus *Ptilothrix*

Tribe [Eucerini](#)

Genus [Eucera](#)

Subgenus *Synhalonia*

Genus [Florilegus](#)

Genus [Melissodes](#)

Subgenus [Apomelissodes](#)

[Eumelissodes](#)

[Melissodes](#)

Genus [Svastra](#)

Subgenus *Epimelissodes*

Genus [Xenoglossa](#)

Subgenus *Eoxenoglossa*

Tribe [Anthophorini](#)

Genus [Anthophora](#)

Subgenus *Melea*

Genus [Habropoda](#)

Tribe [Centridini](#)

Genus *Centris*

Subgenus *Centris*

Paracentris

Tribe [Erocrocidini](#)

Genus *Erocrocis*

Tribe [Bombini](#)

Genus *Bombus*

Subgenus *Bombias*

Bombus

Megabombus

Pyrobombus

Psithyrus

Tribe [Apini](#)

Genus *Apis*

Last updated: 01/02/06 04:21 PM

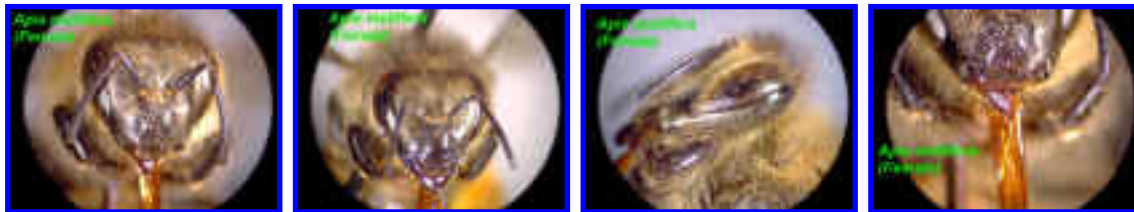
Apidae

Tribe *Apini* (one taxon)

This tribe includes the honey bees.

Genus *Apis*, one species

Apidae: Apis mellifera mellifera Linnaeus; occurs throughout Florida.



Worker:





Note the extensive variation in coloration from light to dark (compare light and dark tergal coloration above)

Apidae

Tribe *Bombini* (seven taxa)

Genus *Bombus*, seven taxa

According to Milliron, *B. fervidus* does not occur in Florida. Identifications of males of this species are likely to be [B. pennsylvanicus](#). Mitchell also notes this common mistake. I have not seen any definite specimens of *B. fervidus* from Florida. Mitchell also lists *B. terricola* from Florida but no specimens have been seen to confirm this. Milliron's map shows *B. terricola* to extend southward to about North Georgia along the higher elevations of the Appalachian mountains. It is unlikely that this species occurs in Florida. *B. affinis* is also found in a similar distribution but does not likely extend into Florida. Thus, this key does not include these 3 species. From personal experience collecting in both South Florida (Everglades National Park) and North Florida (Tall Timbers in Leon County, St. Marks Wildlife Refuge in Wakulla County, and Osceola National Forest in Baker and Columbia counties, [Bombus impatiens](#), [Bombus pennsylvanicus](#), and [Bombus fraternus](#) are the three most common species. [Bombus griseocollis](#), [B. bimaculatus](#), and [Bombus nevadensis auricornis](#) appear to be rarer. [Bombus variabilis](#) was classified as *Psithyrus variabilis* in Mitchell's book. Recent phylogenetic studies place this group of parasitic bees within the *Bombus* lineage (Michener 2000).

Keys to Queens, Workers, and Males (from Mitchell 1962)

Key to Queens

1. Hind tibiae with well developed corbiculae.....2



Hind tibiae relatively slender, rather uniformly pubescent throughout....Subgenus [Psithyrus](#), [Bombus variabilis](#) (these are the females in this group, no workers present)

2. Laterall ocelli distinctly below supraorbital line.....3



Lateral ocelli located at or near level of supraorbital line...5



3. Malar space longer than width of mandible at base...Subgenus [*Bombias*](#), [*Bombus nevadensis auricornis*](#)

Malar space shorter than width at base of mandibles....Subgenus [*Pyrobombus*](#), 4



4. Dorsum of thorax without an interalar black band, usually with a very small median area of black pubescence...[*Bombus griseocollis*](#)



Dorsum of thorax usually with a conspicuous, transverse band of black pubescence between the wing bases...[*Bombus terrestris*](#)



5. Posterior half of scutum and all of scutellum black pubescent, Subgenus [*Megabombus*](#),
[*Bombus pennsylvanicus pennsylvanicus*](#)



Posterior portion of dorsum of thorax with some yellow pubescence...Subgenus [*Bombus*](#), 6



6. Tergum 2 of abdomen entirely black pubescent...[*Bombus impatiens*](#)



Tergum 2 of abdomen largely black pubescent, with a limited amount of yellow medially at base...[*Bombus bimaculatus*](#)



Key to workers

1. Hind tibiae with well developed corbiculae.....2



Hind tibiae relatively slender, rather uniformly pubescent throughout....Subgenus [*Psithyrus*](#), [*Bombus variabilis*](#) (there are no true workers in this group, females show no distinct size differences between queens and workers)

2. Laterall ocelli distinctly below supraorbital line....3



Laterall ocelli located at or near level of supraorbital line....5



3. Malar space fully equal in length to basal width of mandible; scutellum black pubescent...
Subgenus *Bombias*, *Bombus nevadensis auricornis*

Malar space much shorter than basal width of mandible; scutum or tergum 3 with black pubescence...4



4. Dorsum of thorax with a distinct interalar black band; tergum 2 entirely covered with yellow pubescence.. *Bombus fraternus*



Dorsum of thorax with no interalar band; tergum 2 narrowly black on apical margin, otherwise yellow, slightly tinged with brown.. *Bombus griseocollis*



5. Posterior half of scutum and all of scutellum black pubescent, Subgenus *Megabombus*,
Bombus pennsylvanicus pennsylvanicus



Scutellum largely or entirely yellow pubescent...Subgenus *Bombus*, 6



6. Abdominal terga 2 to 6 entirely black pubescent, with only tergum 1 yellow; malar space shorter than basal width of mandible...*Bombus impatiens*



Abdominal tergum 2 largely black pubescent, but invaded by yellow along basal margin medially; malar space fully equal to width of mandible at base...*Bombus bimaculatus*



Key to males

1. Hind tibiae convex, quite densely pubescent on outer surface, gonostylus more elongate, much exceeding apex of gonocoxites...Subgenus *Psithyrus*, *Bombus variabilis*



Hind tibiae somewhat flattened, rather sparsely pubescent on outer surface; gonostylus of genital armature very short, not much exceeding apex of gonocoxite...2



2. Eyes usually converging above, the lateral ocelli nearer to margins of the eyes than to each other; malar space very short, length one-fourth or less the basal width of the mandible....3



Eyes about parallel, the lateral ocelli distant from eye margin; malar space nearly or quite as long as basal width of mandible....5



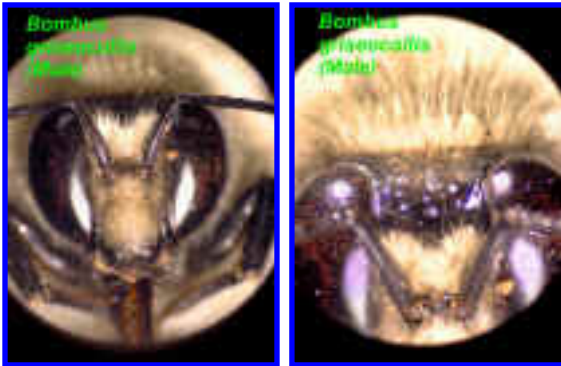
3. Malar space exceedingly short, almost obliterated, eyes nearly touching base of mandibles, strongly convergent above...[Bombus fraternus](#)



Malar space distinct, even though short, eyes somewhat removed from base of mandibles...4



4. Eyes nearly parallel, even though face very narrow, with ocelli nearer margin of vertex than to antennae...[Bombus griseocollis](#)



Eyes strongly convergent above, ocelli located midway between antennae and hind margin of vertex...[Bombus nevadensis auricornis](#)

5. Malar space not much longer than wide, about a fourth the length of the eye; abdominal tergum 5 usually black pubescent (many specimens from Florida have yellow pubescence, though!)..
[Bombus pennsylvanicus pennsylvanicus](#)



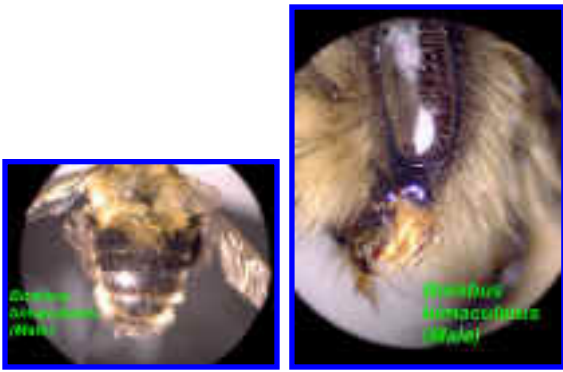
Malar space considerably longer than wide, about one third of the length of the eye; tergum yellow pubescent...Sugenus [Bombus](#), 6



6. Segment 2 of abdomen entirely black pubescent; malar space shorter than width of mandible at base..[Bombus impatiens](#)



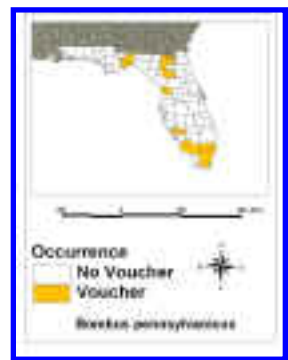
Segment 2 of abdomen with at least some yellow pubescence; malar space longer than width of mandible at base...[Bombus bimaculatus](#)



Subgenus *Megabombus*, 1 taxa

Apidae: *Bombus pennsylvanicus pennsylvanicus* De G.

County Records: Alachua, Broward, Charlotte, Citrus, Collier, Miami-Dade (From Milliron); Baker, Columbia, Leon, Wakulla (Pascarella unpub. data).



Locations: Altamonte, Bonita Springs, Crystal River, Everglades, Ft. Lauderdale, Gainesville, Homestead, Pinecrest, Punta Gorda (from Milliron)

Dates: Mid-February to late November

Plants: polylectic

Notes: One of the most common species. Extends all the way to the tip of the peninsula. Unknown from the keys. Probably occurs throughout Florida.

Queen:

Bombini

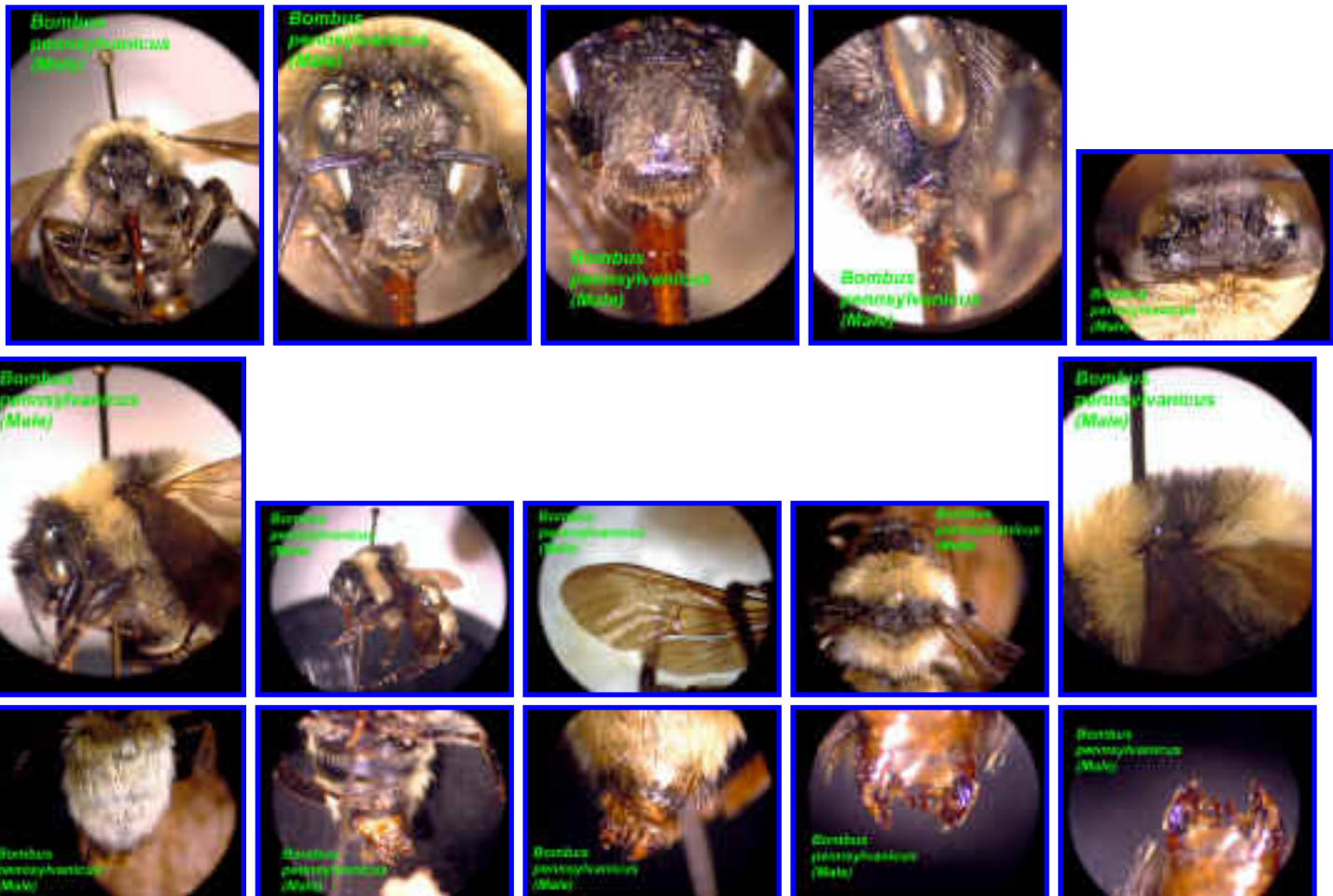


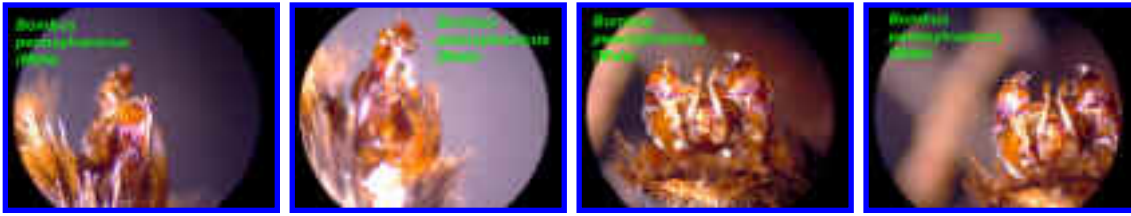
Worker:

Bombini



Male:





Subgenus *Bombias* Robertson

Apidae: *Bombus nevadensis auricormis* Robertson

County Records: None from the FSCA. Milliron's map shows it occurring throughout Florida

Locations:

Dates:

Plants: polylectic

Notes: Specimens of this species have not been seen. No photos are available at this time. Perhaps it has been confused with other species?

Subgenus *Bombus*, 2 taxa

Apidae: *Bombus impatiens* Cresson

County Records: Baker, Columbia, Leon, Miami-Dade (rare), Wakulla



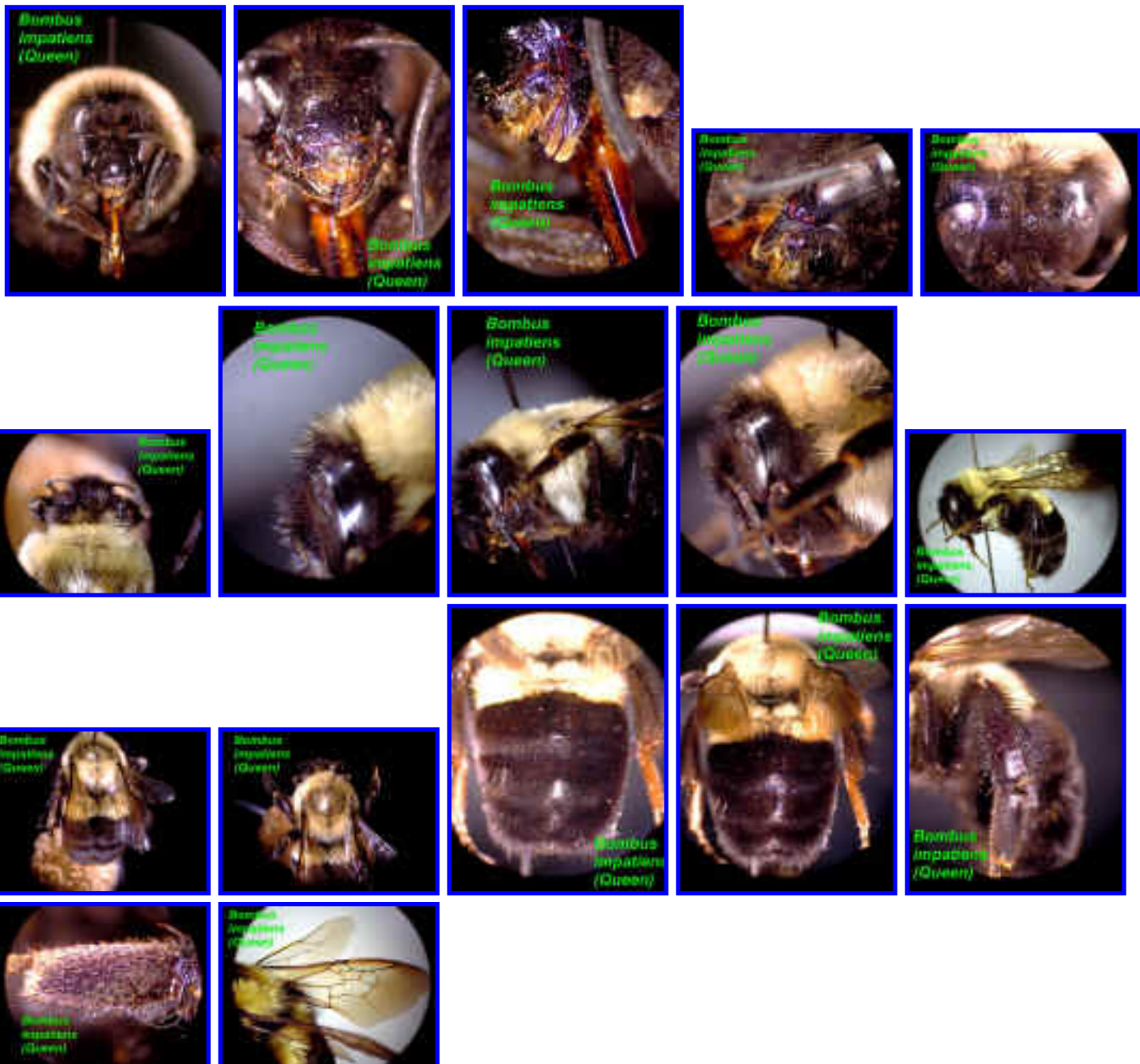
Locations:

Dates: January-November

Plants: polylectic

Notes: The map above is surprising given the abundance of this common species. It likely occurs throughout Florida.

Queen:

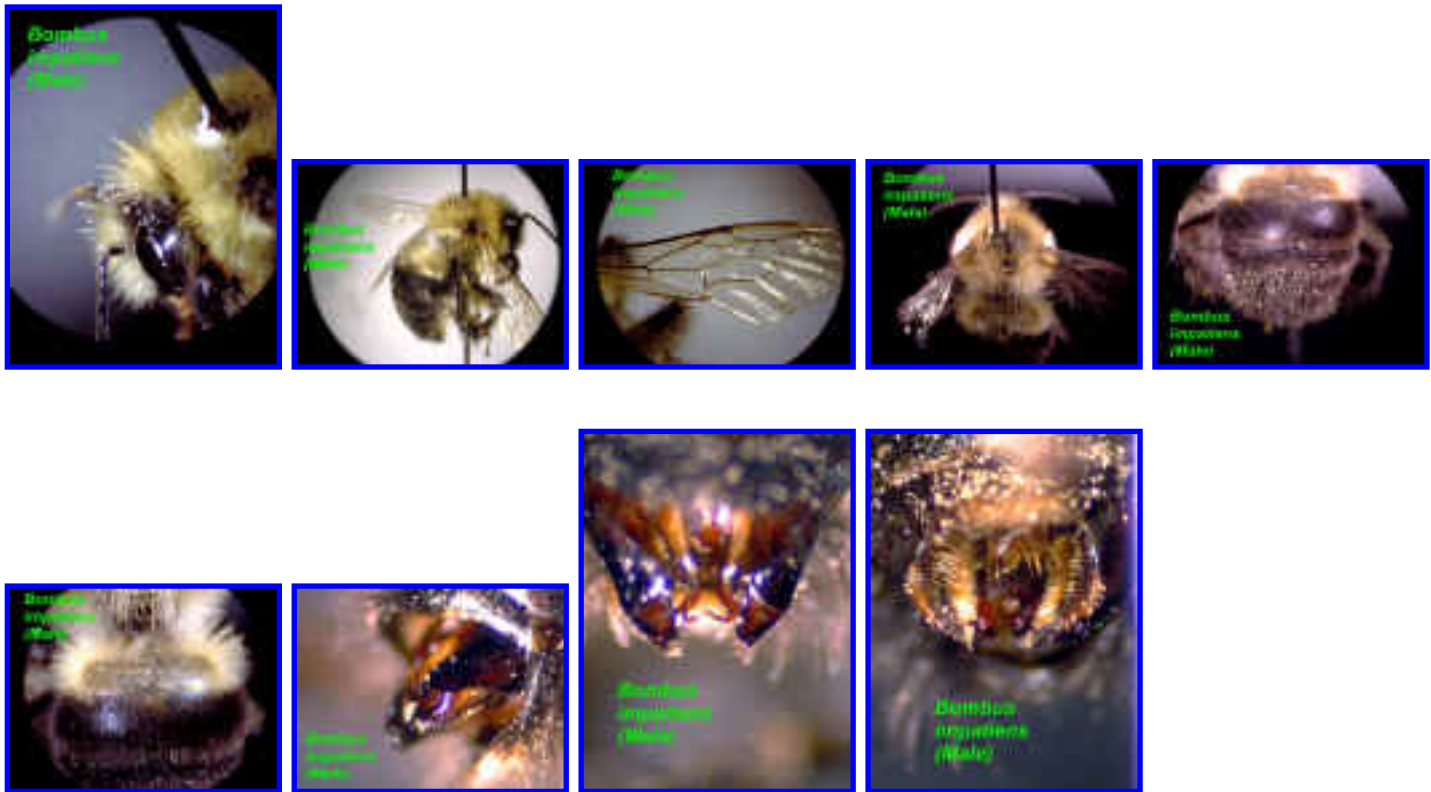


Worker:



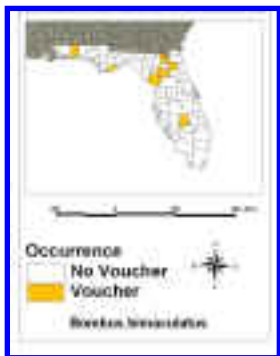
Male:





Apidae: *Bombus bimaculatus* Cresson

County Records: Alachua, Baker, Clay, Franklin, Lake, Levy, Highlands, Okaloosa, Wakulla



Locations:

Dates: Feb.-September

Plants: polylectic

Notes: This species might be limited to the panhandle and southward to the central peninsula.

Queen:



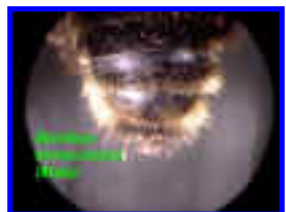
Worker:

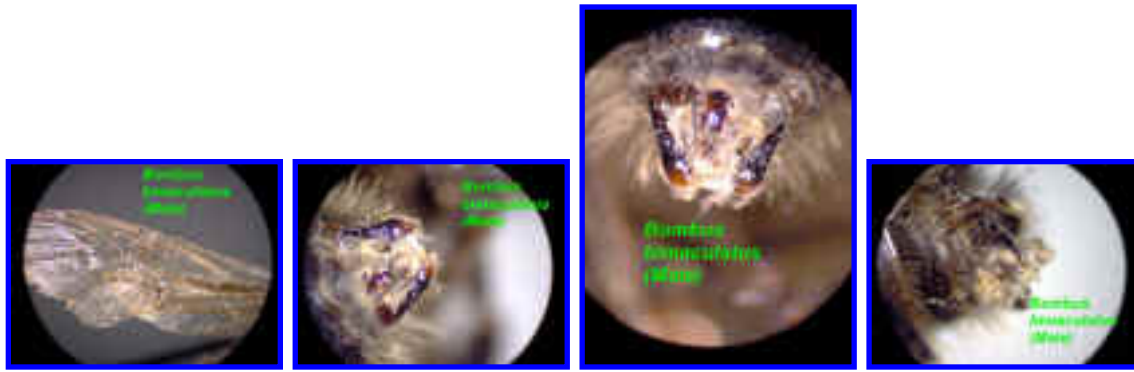


Bombini



Male:

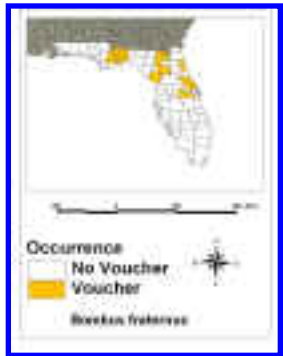




Subgenus *Pyrobombus*, species group *Cullumanobombus* Vogt.; 2 taxa

Apidae: *Bombus fraternus* Smith

County Records: Alachua, Gadsden, Levy, Liberty, Orange, St. John, Volusia



Locations: Altamonte, Glen St. Mary, Orlando (add counties), Gainesville, Vilano Beach, Wewahitchka,

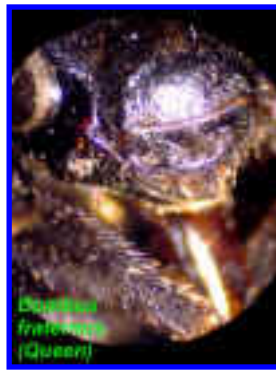
Dates: Queens: April; Workers: June-August; Males August-October

Plants: polylectic

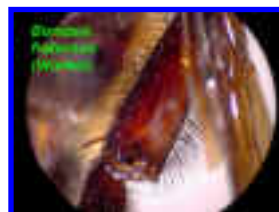
Notes: This species might be limited to the panhandle and northern peninsula based on the map above.

Queen:

Bombini

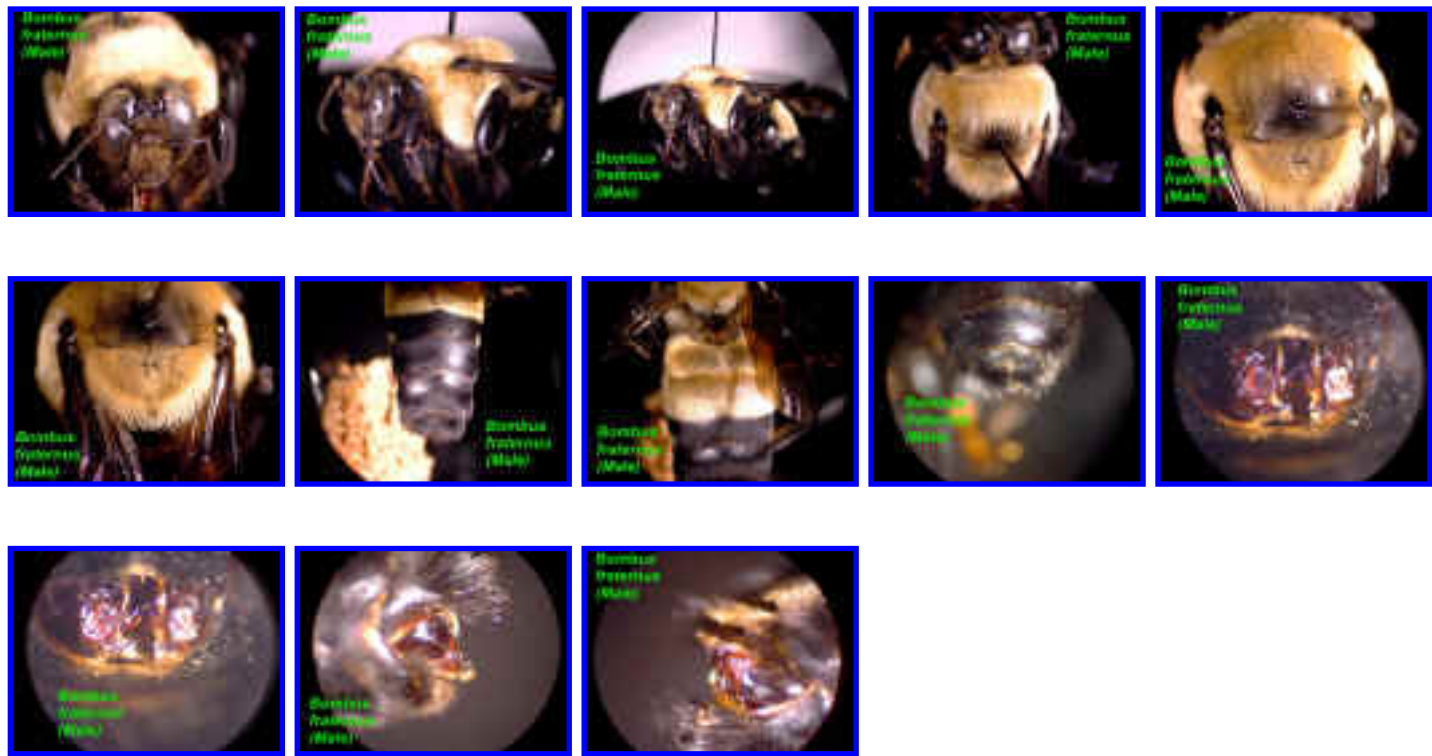


Worker:



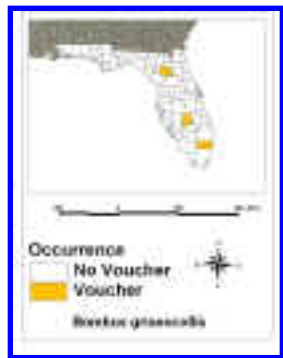
Male:





Apidae: *Bombus griseocollis* De G.

County Records: Alachua, Broward, Highlands



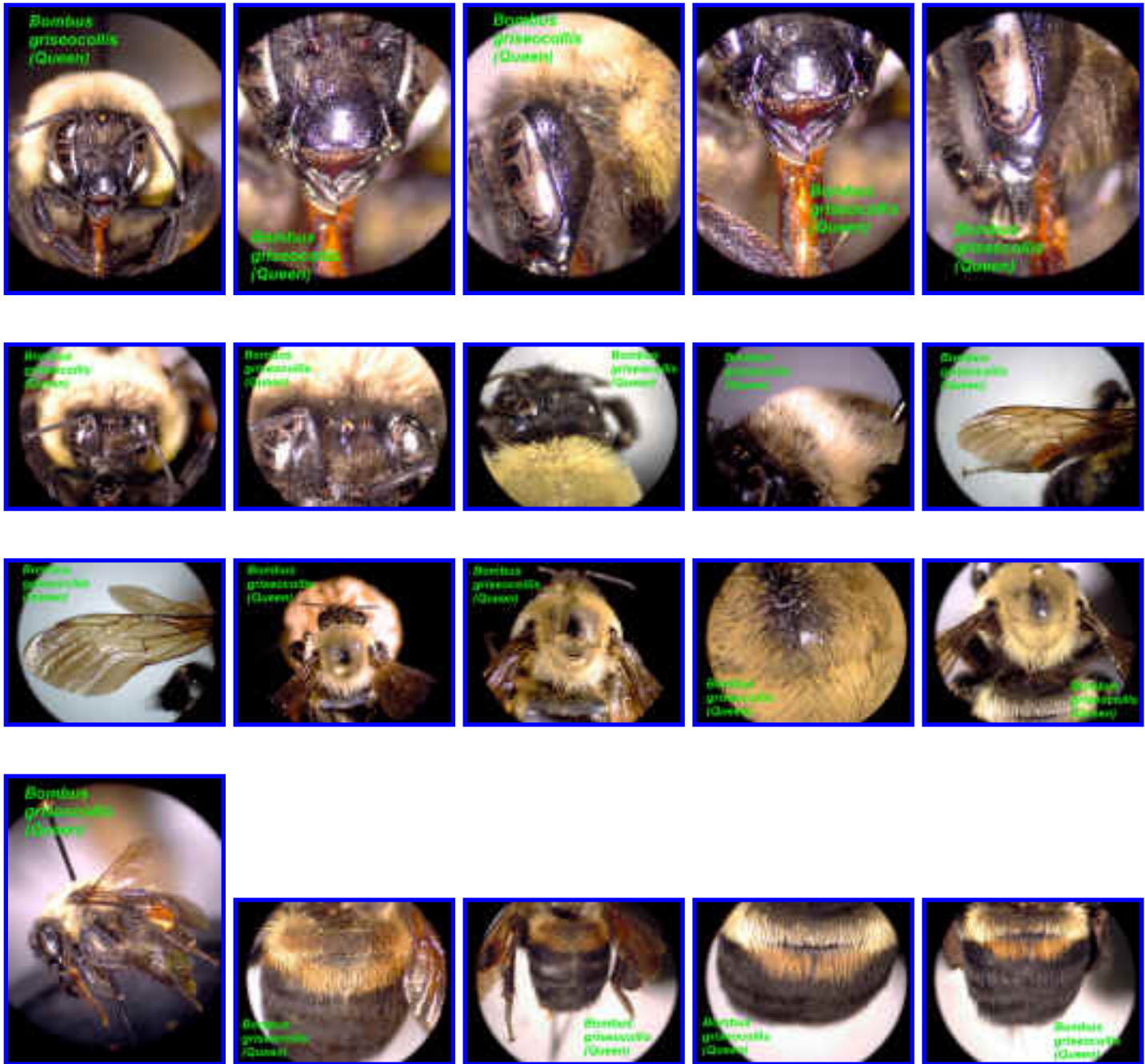
Locations: Lake Placid, Everglades, Palatka, Pinecrest

Dates: March-October; Queens: November, April; Workers: April-June; Males: April in Florida; this species may be active during the winter months in southern Florida.

Plants: polylectic

Notes: Probably occurs throughout Florida but never in great numbers.

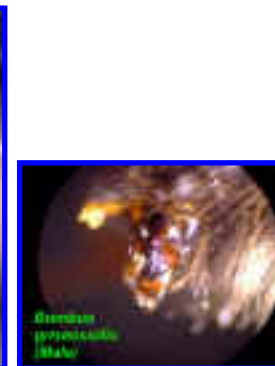
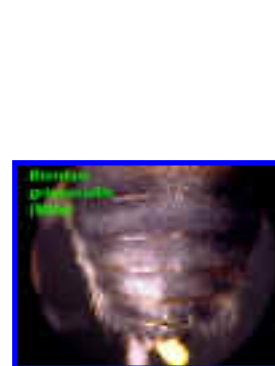
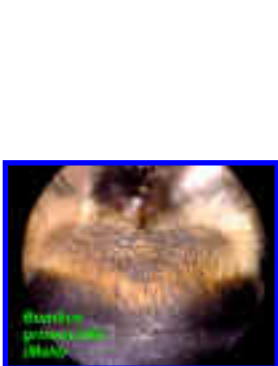
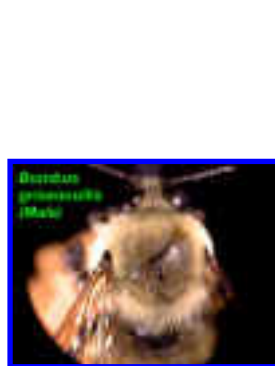
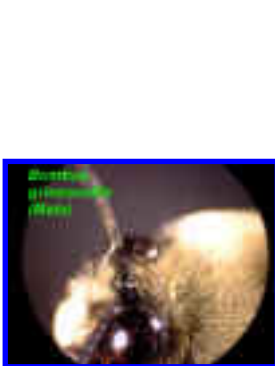
Queen:



Worker:



Male:



Subgenus *Psithyrus*, one taxon

Apidae: *Psithyrus variabilis* Cresson

County Records: Leon, Miami-Dade



Locations:

Dates: In Miami-Dade County, specimens were collected January-April, and then again in November and December. In Leon County, all specimens were collected in October.

Plants: polylectic, forages solely for nectar

Notes: probably throughout the state although collections are only known from Miami-Dade and Leon; Parasite on *Bombus* species.

Female and male and comparison with *Bombus pennsylvanicus*:



Male:



Bombini



Apidae

Tribe *Xylocopini* (3 taxa)

Genus *Xylocopa* Latreille, three taxa

These are large, wood-boring bees, common in urban areas and sometimes considered pests.

Key to females



1. Metallic purplish blue; dorsum of thorax black pubescent....[*Xylocopa micans*](#).

Black, with faint metallic tints; dorsum of thorax yellow pubescent...2



2. Abdominal terga 5 and 6 with some rather conspicuous, white pubescence at each extreme



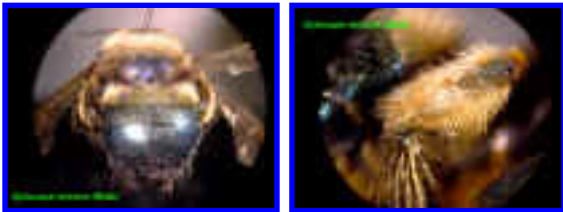
side...[*Xylocopa virginica krombeini*](#).

Terga 5 and 6 entirely black pubescent. [*Xylocopa virginica virginica*](#)



Key to males

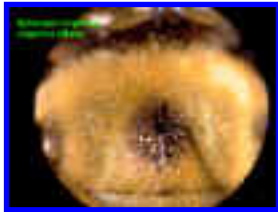
1. Bright metallic green; tibiae and metatarsi with patches of pale pubescence. [*Xylocopa micans*](#).



Dark purplish black; legs entirely dark black pubescent...2



2. Pubescence of scutum entirely pale yellow, a restricted central area bare. [*Xylocopa virginica*](#)



[*virginica*](#)

Central bare area of scutum more extensive, with a marginal fringe of conspicuous,

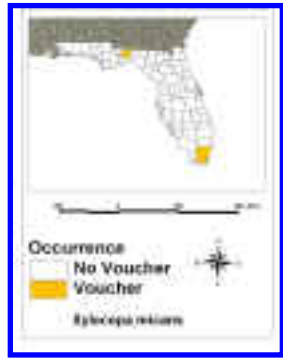


black pubescence.....[*Xylocopa virginica krombeini*](#).

Subgenus *Schonherria*

Apidae: *Xylocopa micans* Lepeletier

County Records: Leon, Miami-Dade; It is likely nearly throughout Florida.



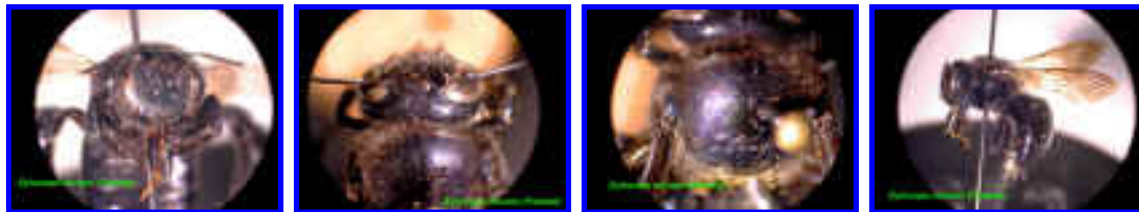
Locations:

Dates: throughout the year; Feb. 25-Nov. 25 (Graenicher data). 1-17-31 (E. Miller, Pinecrest) to 10-16-79 (J. Lewis, Levee in Everglades) (UM collections).

Plants: polylectic. *Bidens alba*, *Crotalaria* sp., *Cirsium* sp., *Ludwigia* sp., *Pluchea odorata* (UM); *Serenoa serrulata*, *Sabal palmetto*, *Sarcostemma clausa*, *Solanum bahamense*, *Solanum wendlandi*, *Chamaecrista brachiata*, *Crotalaria pumila*, *Dalbergia ecastophyllum*, *Bidens alba* (Graenicher 1930).

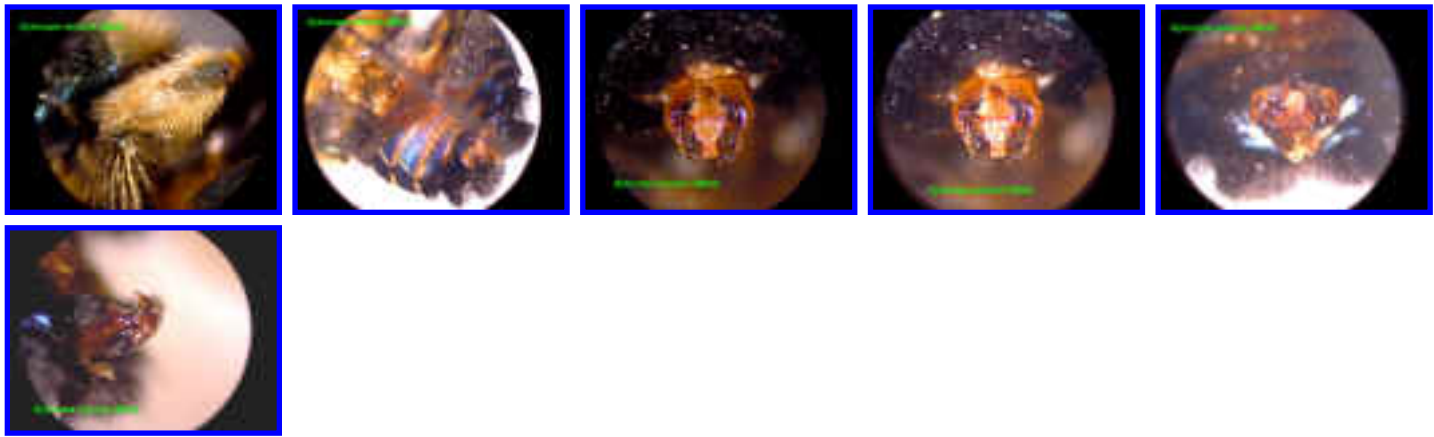
Notes: A neotropical subgenus, intrusive in warm temperate areas (primarily southeastern, Gulf of Mexico, and Atlantic coastal plain).

Female:



Male:

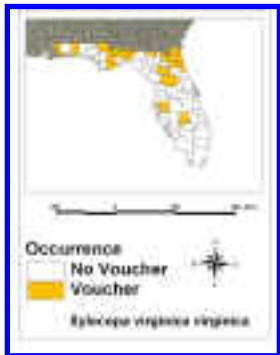




Subgenus *Xylocopoides*

Apidae: *Xylocopa virginica virginica* Linnaeus

County Records: Alachua, Baker, Clay, Duval, Escambia, Franklin, Gadsden, Hamilton, Highlands, Hillsborough, Jackson, Jefferson, Leon, Levy, Liberty, Marion, Nassau, Okaloosa, St. Johns.

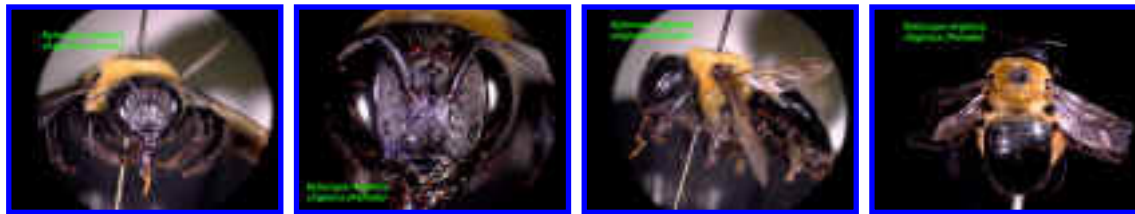


Locations:

Dates: throughout the year

Plants: polylectic

Notes: This more Northern subspecies extends to central peninsular Florida. It is replaced by the endemic Florida subspecies *X. virginica krombeini* in extreme southern Florida.



Female:

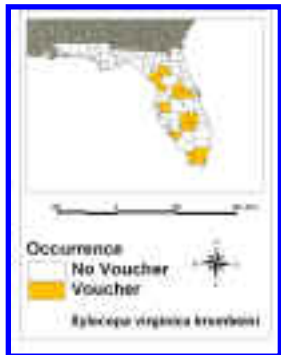


Male:



Apidae: *Xylocopa virginica krombeini* Hurd

County Records: Alachua, Citrus, Glades, Highlands, Hillsborough, Lake, Lee, Levy, Miami-Dade, Monroe, Okeechobee, Orange, Palm Beach, Seminole.

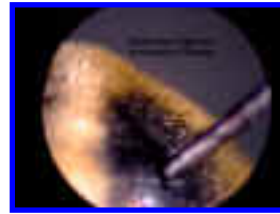
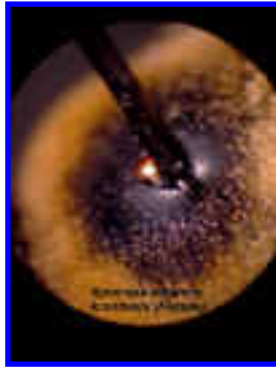


Locations: Eustis, Gulf Hammock, Winter Park

Dates: throughout the year

Plants: polylectic, *Jacquemontia* sp.

Notes: This is an endemic subspecies restricted to Florida.



Female :



Male:



Apidae

Tribe *Ceratinini* (3 taxa)

Genus *Ceratina* Latreille, three taxa

Two subgenera, *Ceratinula* and *Zadontomerus*, are known from Florida. Nesting notes: Twig-nesting, benefits from fires, agricultural development. Twigs and stems must be broken or burned before the bees can excavate nests.

Key to females

- 1. Very small (3-5mm); head and mesoscutum largely impunctate, shining; black....[*Ceratina cockerelli*](#)



Larger, head and mesoscutum punctured; metallic blue.....2



- 1. Area between notaulices of scutum with numerous punctures; clypeus with a yellow spot..
[*Ceratina dupla*](#)



Area between notaulices of scutum polished, with few if any punctures; clypeus maculated or not...[*Ceratina calcarata*](#)

Key to males

1. Carinate apex of tergum 7 composed of two, widely separated acute tubercles...[Ceratina](#)



[cockerelli](#)

Apex of tergum 7 with a single, median lobe-like carina...2



2. Hind femur somewhat dilated toward base, but without a median projection, the greatest width near the base hardly more than a third its length...[Ceratina dupla](#)



Hind femur with a median triangular projection, width at this point about equal to half the length..[Ceratina calcarata](#)



Subgenus *Ceratinula*

Apidae: *Ceratina cockerelli* Smith

County Records: Alachua, Baker, Columbia, Lake, Miami-Dade, Monroe, Okaloosa, Sarasota, Wakulla

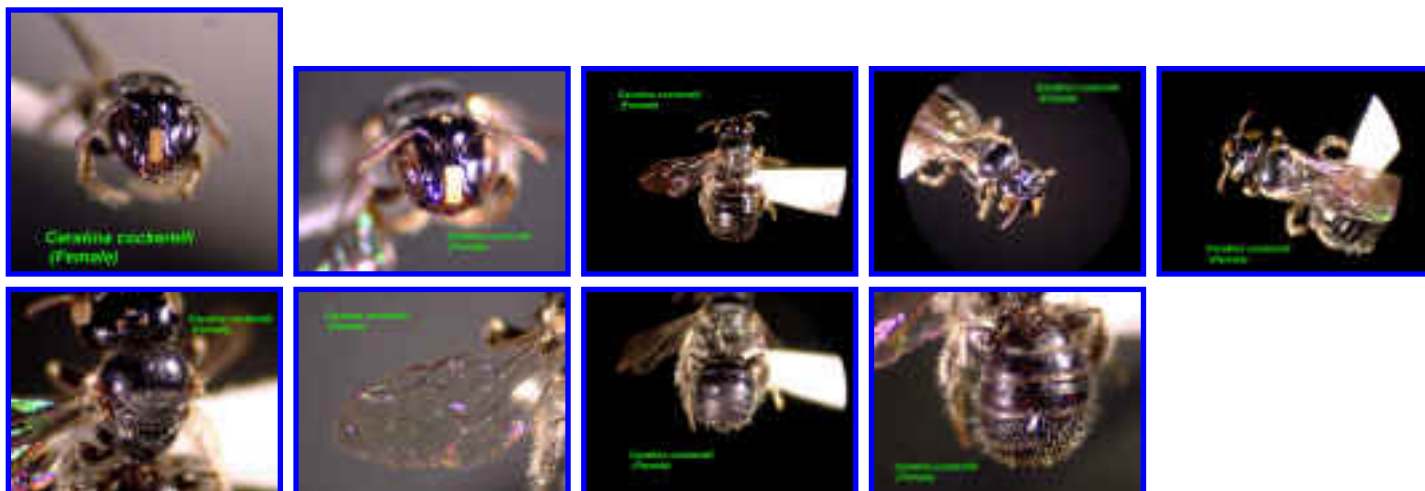


Locations: Gainesville, Key Largo, Key Vaca, Siesta Key.

Dates:

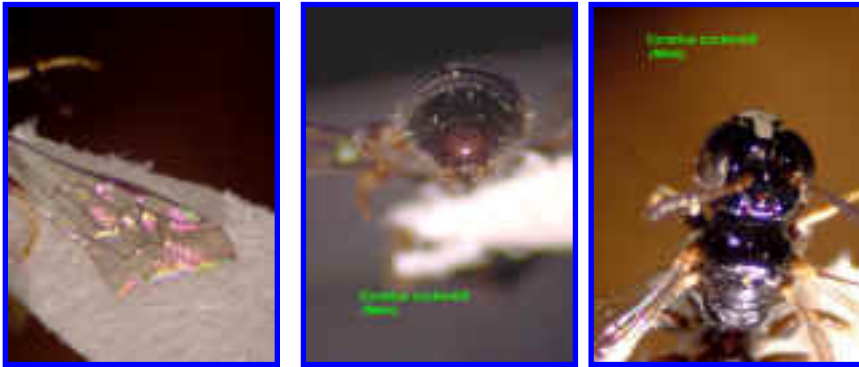
Plants: *Erigeron quercifolius*

Female:





Male:



Subgenus *Zadontomerus*

Apidae: *Ceratina calcarata* Robertson

County Records: Alachua, Jefferson, Leon, Levy, Marion, Okaloosa.



Locations:

Dates:

Plants:

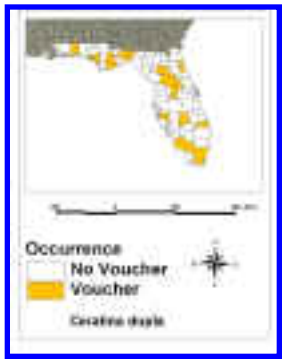
Notes:

Male:



Apidae: *Ceratina dupla* Say = (*C. florida*)

County Records: Alachua, Bay, Collier, Franklin, Highlands, Jefferson, Lake, Leon, Liberty, Manatee, Marion, Martin, Miami-Dade, Okaloosa, St. Johns.



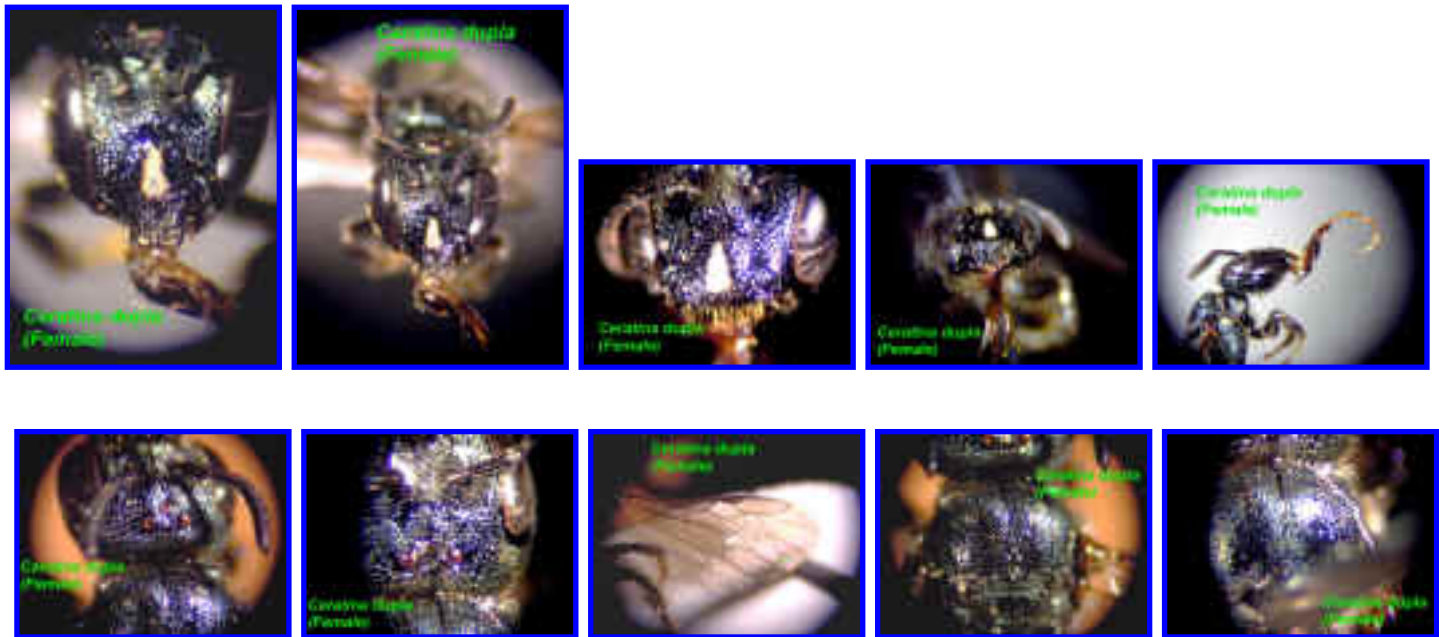
Locations:

Dates:

Plants:

Notes: Mitchell described these as separate subspecies. They have later been described as intergrading extensively in the north of Florida and are not considered subspecific.

Female:





Male:





Apidae

Tribe *Erocrocidini* (1 taxon)

Only one genus of this group of parasitic bees is known from Florida. It is a disjunct population whose other populations occur far to the west (closest populations are in Texas). Since this species has been collected only once in Florida, its distribution is probably greater than the single county record listed below. Its host, *Centris lanosa*, occurs throughout Florida from the panhandle to the southern tip of the peninsula, with an additional endemic species of *Centris*, *Centris errans*, occurring in Miami-Dade and Monroe County.

Genus *Ericrocis* Cresson, one taxa

Apidae: *Ericrocis lata* Cresson

County Records: Clay



Locations:

Dates:

Plants:

Notes: Parasitic on *Centris*, probably *Centris lanosa*.

Apidae

Tribe *Epeolini* (25 taxa)

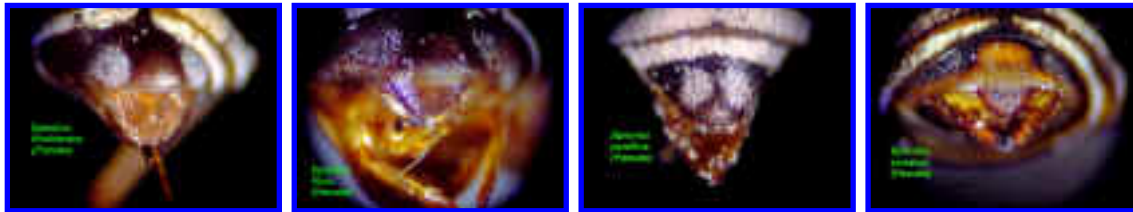
Two genera, [Doeringiella](#) and [Epeolus](#), are found in Florida.

Key to Genera (From Michener 2000)

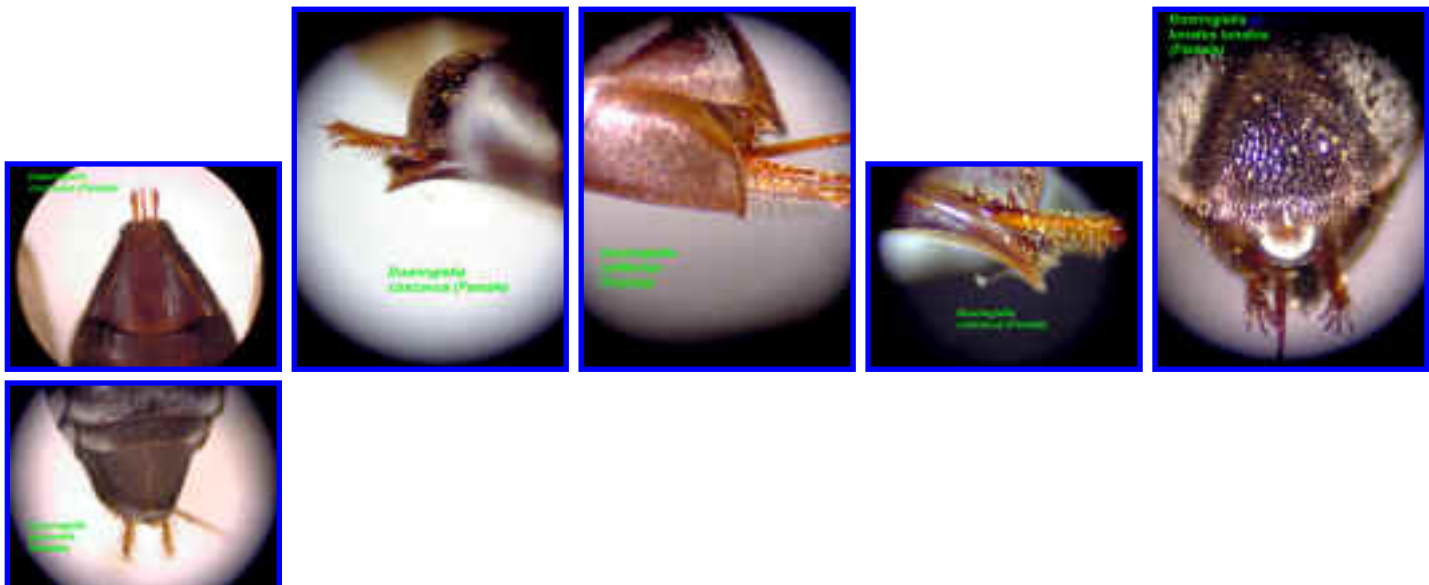
Females

S6 with lateroapical process broad, not over five times as long as broad, often somewhat spatulate, margins apically denticulate because of minute, conical setae or with spinelike, tapering setae among the hairs; disc of S6 a broad plate about as long (anteroposteriorly) as lateroapical process or longer...

Epeolus

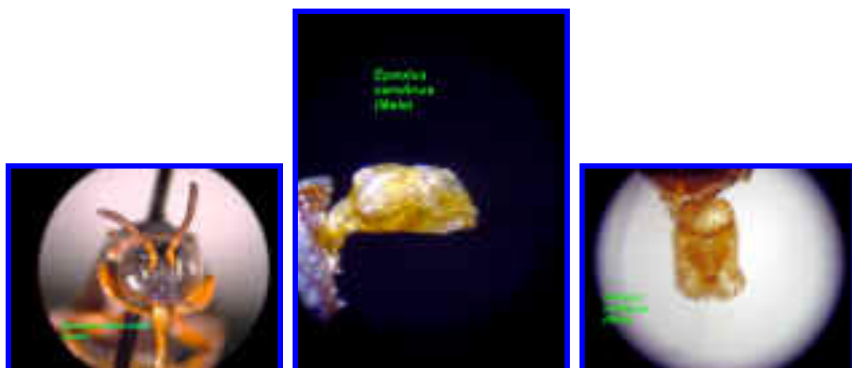


S6 with lateroapical process slender, many times as long as broad, not spatulate, apically with elongate, robust, curved, blunt setae and other hairs; disc of sternum 6 reduced to transverse connective far shorter (anterioposteriorly) than lateroapical process...[Doeringiella](#)

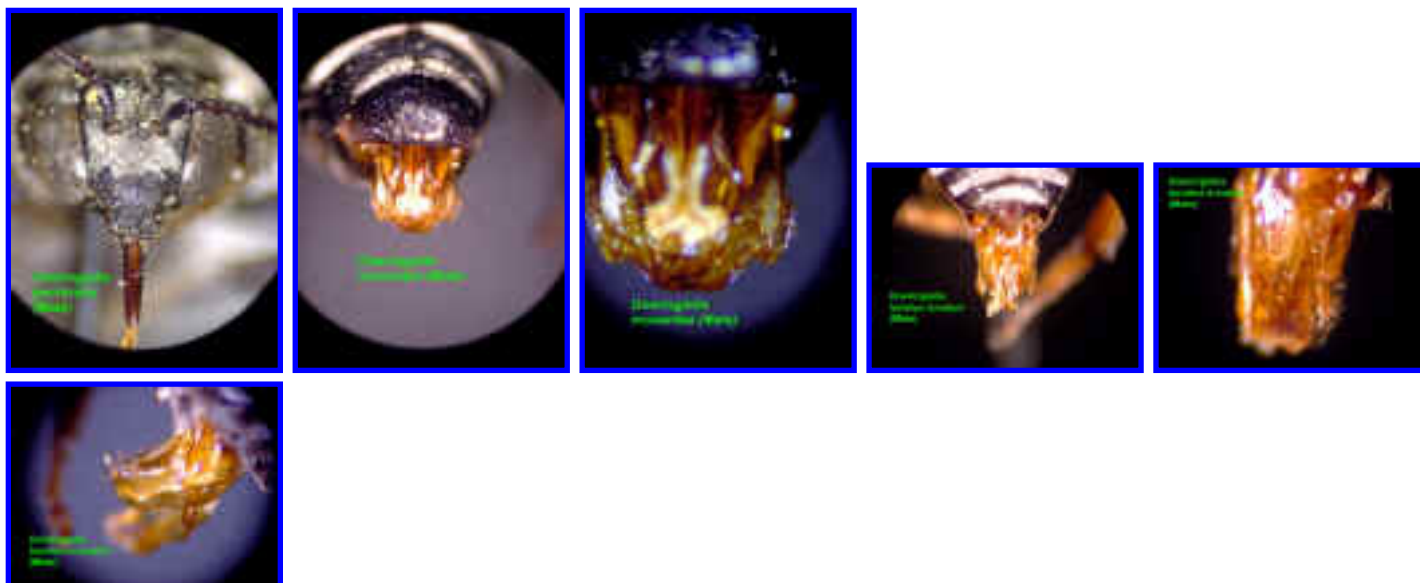


Males

Maxillary palpus usually two-segmented, rarely three segmented; body length 4.5 to 10.0 mm; base of gonostylus with dorsal protuberance..[Epeolus](#)



Maxillary palpus usually three-segmented, rarely two-segmented; length 8 to 17 mm; gonostylus slender, without basal protuberance...[Doeringiella](#)



Epeolini

Genus *Doeringiella* Holmberg, subgenus *Triepeolus* Robertson, twelve taxa

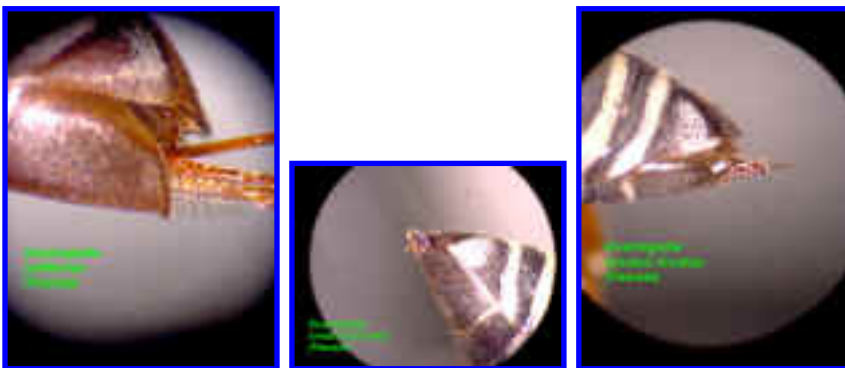
These bees are cleptoparasites of [Apidae](#), mostly [Melissodes](#), [Svastra](#), [Xenoglossa](#), [Peponapis](#), and [Eucera](#) (= [Synhalonia](#)). Mitchell placed them in the genus *Triepeolus* but this is now considered a subgenus of *Doeringiella*. This is the only subgenus of this genus found in Florida. Three species, [D. alachuensis](#), [D. rufithorax](#) and [D. rugosus](#), are endemic to Florida.

Key to females (from Mitchell)

1. Fifth sternum of abdomen concave, slightly down curved apically ..[Doeringiella concavus](#)



Fifth sternum not concave...2



2. Clypeus bright ferruginous...[Doeringiella rufithorax](#)



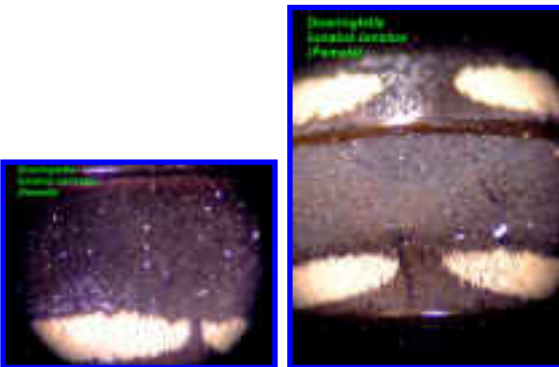
Clypeus black....3



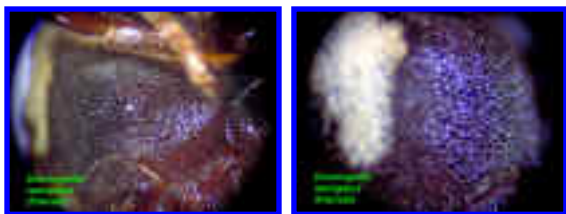
3. Abdominal punctures coarse, close, deep and very distinct; axillae long and slender...

[Doeringiella distinctus](#)

Abdominal punctures usually minute and close, obscured by short, appressed, black tomentum; if relatively distinct and deep, then the axillae are quite short, only slightly exceeding the mid transverse line of the scutellum....4



4. Pleura below densely and finely punctate, interspaces very narrow and irregular, if at all evident....[Doeringiella remigatus](#)



Pleura below either more coarsely sculptured, or the punctures to some degree separated...5



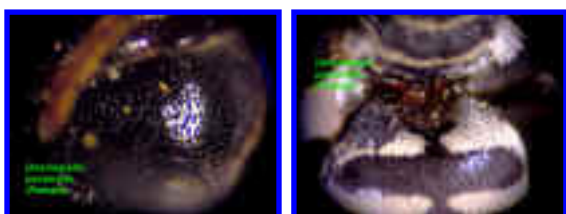
5. Basal abdominal tergum with a very broad, median, black patch, leaving lateral yellow-tomentose margins which are little if any wider than the apical, tomentose band....6



Basal tergum with a more restricted, subtriangular, black patch, the lateral yellow-tomentose areas much broader than the apical bands....7



6. Pleura below and mesosternum polished and very sparsely punctate; basal tergum with a very broad, quadrangular, median, black patch....[*Doeringiella pectoralis*](#)

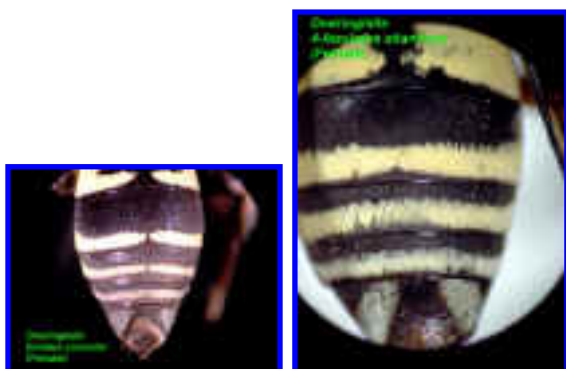


At least the mesosternum closely punctate....[*Doeringiella rugosus*](#)

7. Apical pubescent band of basal tergum very narrow and very broadly interrupted, those on 2-4 also very narrow, considerably removed from apical margin and narrowly interrupted medially...

[Doeringiella alachuensis](#)

Apical pubescent bands of terga 1-4 much broader, entire or only very slightly interrupted....8

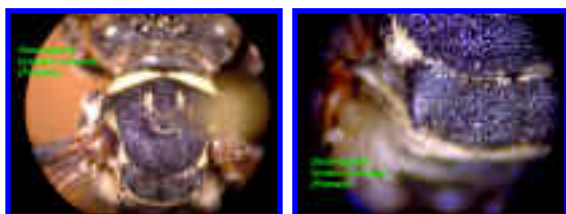


8. Axillae long and slender, slightly curved, tips about reaching posterior transverse line of scutellum; legs, tegulae, mandibles, labrum and scape ferruginous....

[Doeringiella quadrifasciatus](#)



Axillae not so long and slender, not reaching posterior transverse line of scutellum....9



9. Labrum, scape, tubercles, trochanters, and all following leg segments bright ferruginous....

[Doeringiella lunatus lunatus](#)



Labrum, scape, tubercles and legs entirely black.. [*Doeringiella lunatus concolor*](#)



Key to males

1. Clypeus bright ferruginous...[*Doeringiella rufithorax*](#)



Clypeus black.....2



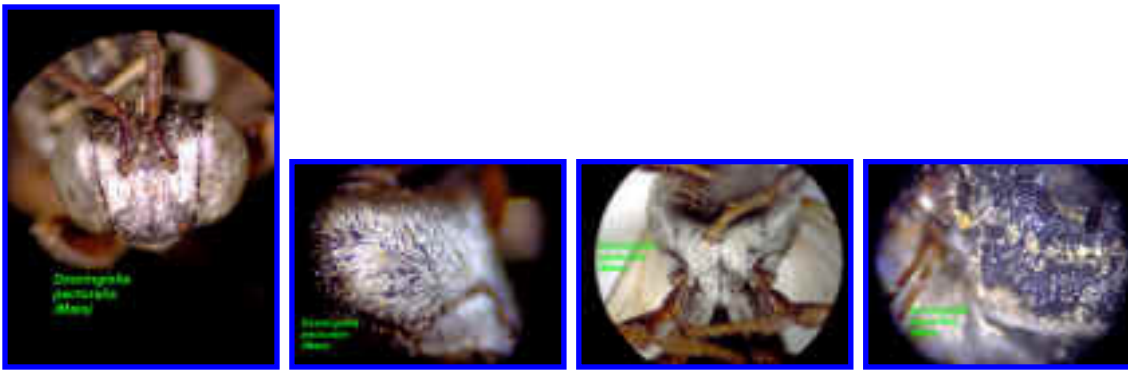
2. Median black patch of basal tergum of abdomen very broad, quadrangular, the lateral tomentose areas little if any broader than the apical band.....3



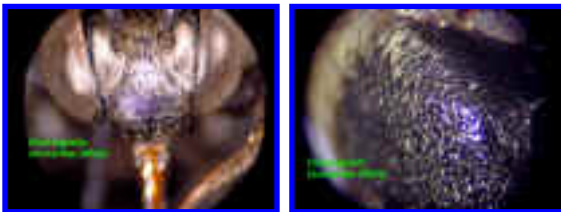
Median black patch of basal tergum narrower, more or less triangular, the lateral tomentose areas extensive, very much broader than the apical bands...6



3. Pleura, mesosternum, face, and clypeus with a dense covering of silvery tomentum, entirely hiding the surface; axillae triangular, posterior angle almost reaching posterior transverse line of scutellum...[*Doeringiella pectoralis*](#)



Pleura and clypeus bare in part....4



4. Apical tomentose band of basal tergum complete, without a median interruption; tegulae and legs black....[Doeringiella floridanus](#)

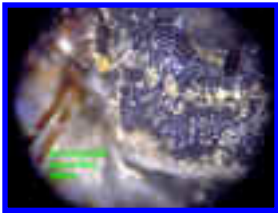
Apical band of basal tergum distinctly interrupted medially....5



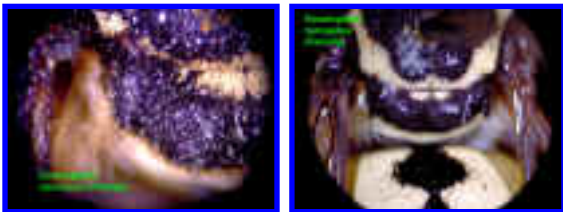
5. Large (15-16mm); axillae long and slender, nearly reaching the posterior, transverse line of scutellum; legs, tegulae, mandibles and labrum black....[Doeringiella monardae](#)



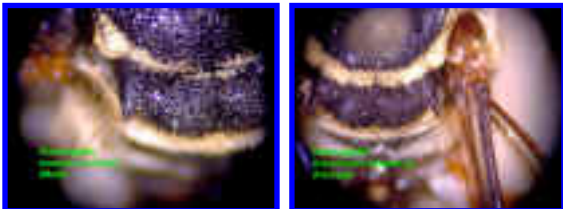
Smaller (13 mm or less); axillae usually short.. [Doeringiella pectoralis](#)



6. Axillae joined to sides of scutellum for almost entire length, the free apical angle very short....7



Axillae more elongate, with apical angle acute, diverging considerably from sides of scutellum....8



7. Scutum broadly yellow tomentose anteriorly, without a median interruption, remainder of the disk black, without yellow tomentum...[Doeringiella concavus](#)



Scutum somewhat less broadly yellow tomentose anteriorly, the yellow band narrowly interrupted, with black medially, the lateral and posterior margins also quite broadly yellow tomentose...[Doeringiella remigatus](#)



8. Punctures of abdominal terga coarse, close, deep, and very distinct...[Doeringiella distinctus](#)

Punctures of terga minute and close, obscured by dense, black tomentum...9



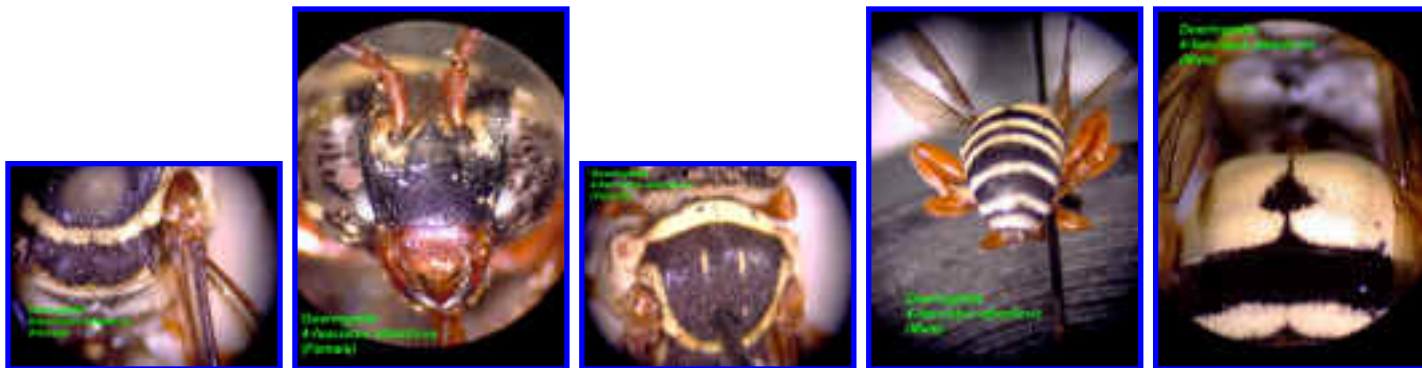
9. Scutum anteriorly with dense yellowish tomentum; tergum 2 with fascia gradually broadened on each side, to completely cover lateral areas of disc...[Doeringiella remigatus](#)



Scutum without conspicuous pale tomentum anteriorly; band on tergum 2 of nearly uniform width across plate...10



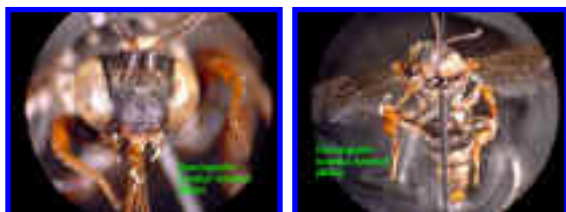
10. Axillae exceptionally long and slender apically; legs, tubercles, tegulae, mandibles, labrum, and scape bright ferruginous; black patch of basal tergum very narrow...[Doeringiella 4-fasciatus atlanticus](#)



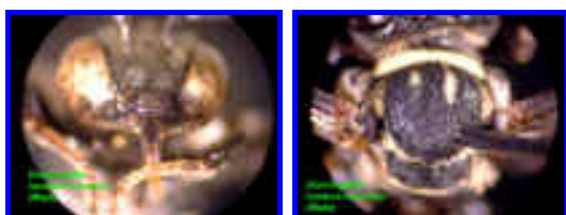
Axillae of ordinary length; black patch of basal tergum broader, or legs, tegulae, etc. black....11



11. Labrum, base of mandibles, scape, tegulae, tubercles and all legs bright ferruginous, spurs testaceous....[Doeringiella lunatus lunatus](#)



Mandibles, labrum, scape and tubercles entirely black; spurs black.. [Doeringiella lunatus concolor](#)



By Flight Time-Spring Flyers (Jan.-May), both species endemic

[D. alachuensis](#)

[D. rugosus](#)

Summer Flyers (July-Sept.)

[D. concavus](#)

[D. lunatus concolor](#)

[D. lunatus lunatus](#)

[D. quadrifasciatus atlanticus](#)

[D. remigatus](#)

[D. rufithorax](#)

Fall Flyers (Sept.-Nov.)

[D. distinctus](#)

[D. floridanus](#)

[D. pectoralis](#)

[D. monardae](#)

Apidae: *Doeringiella alachuensis* Mitchell

County Records: Alachua



Locations:

Dates: May

Plants: *Melilotus alba*

Notes: Endemic to Florida, No photos available, only known from the female.

Apidae: *Doeringiella concavus* Cresson

County Records: Hernando, Santa Rosa



Locations:

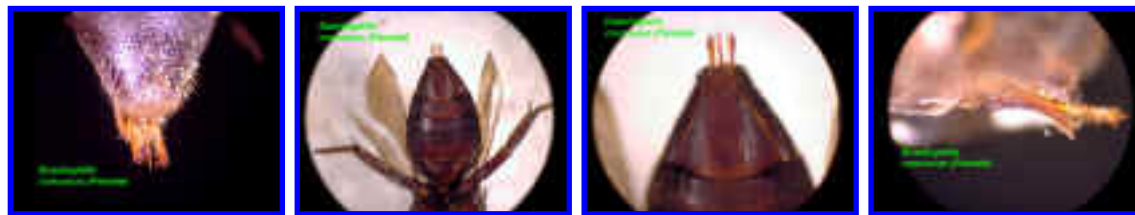
Dates: June-September according to Mitchell

Plants:

Notes: Parasite of *Svastra obliqua*; one of the largest *Doeringiella* species.



Female:



No photos available of male.

Apidae: *Doeringiella distinctus* Cresson

County Records: none from the FSCA

Locations:

Dates: September

Plants:

Notes: Known from Georgia and Florida; No photos available for either species.

Apidae: *Doeringiella floridanus* Mitchell

County Records: Alachua, Thomas (GA)



Locations:

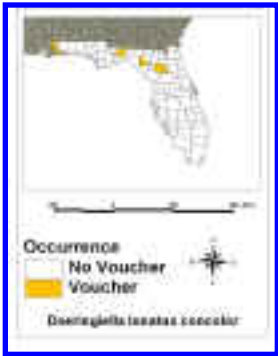
Dates: October

Plants:

Notes: no female known of this species; thought to be endemic to Florida, now known from southern counties of Georgia.

Apidae: *Doeringiella lunatus concolor* Robertson

County Records: Alachua, Escambia, Lafayette, Leon



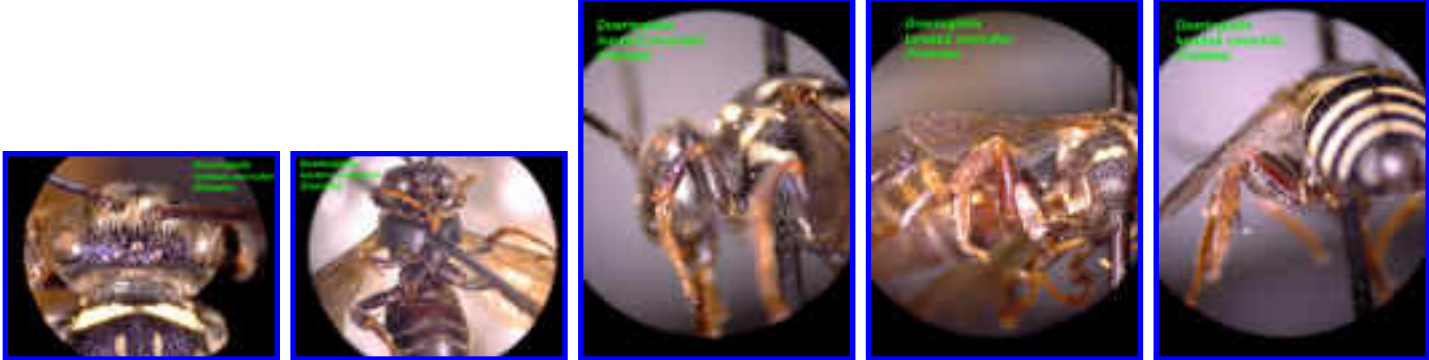
Locations:

Dates: May-September across entire range; collections from Leon County, Florida were all from July (Pascarella, unpub. data)

Plants:

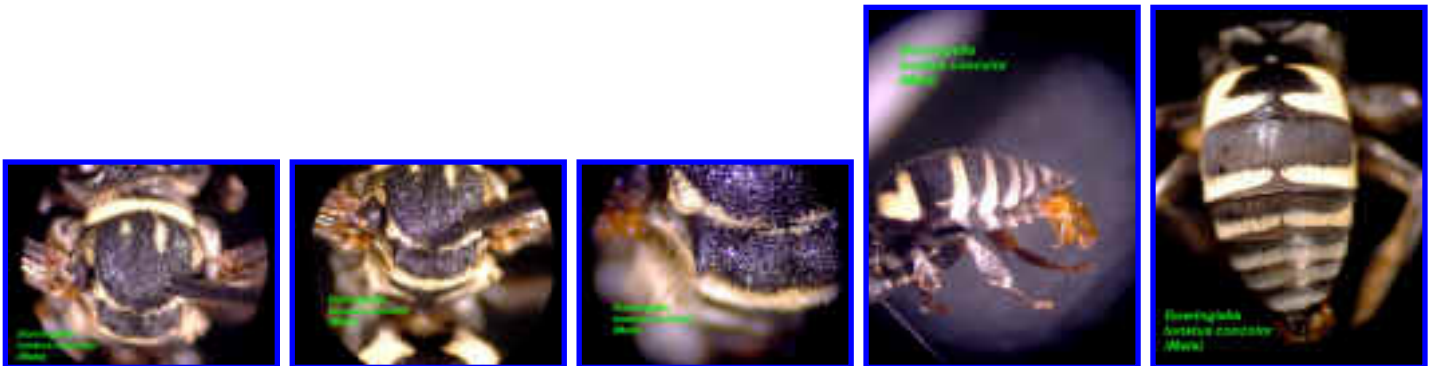
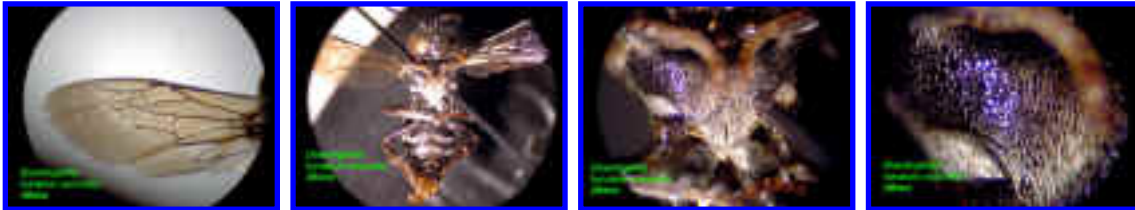
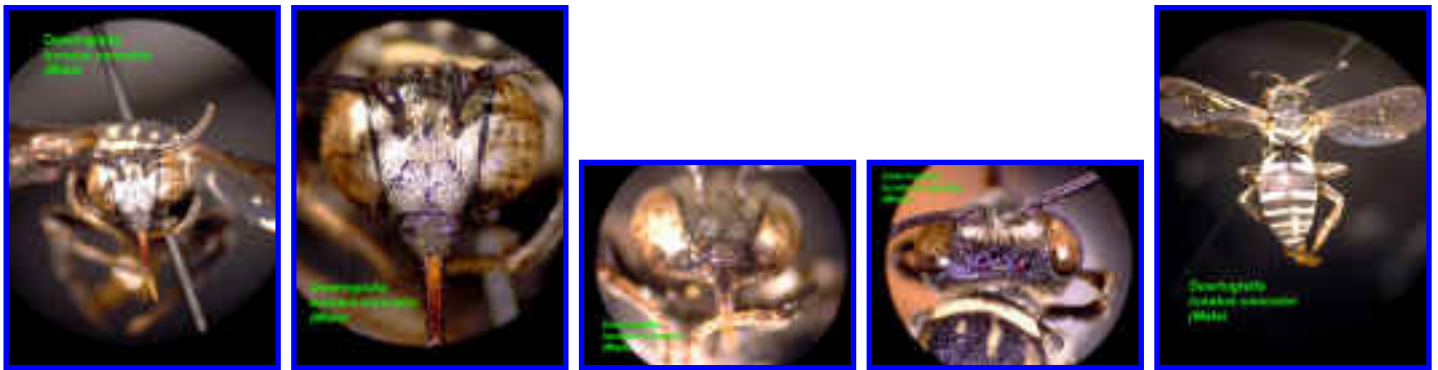
Notes: Parasite of *Melissodes bimaculata*

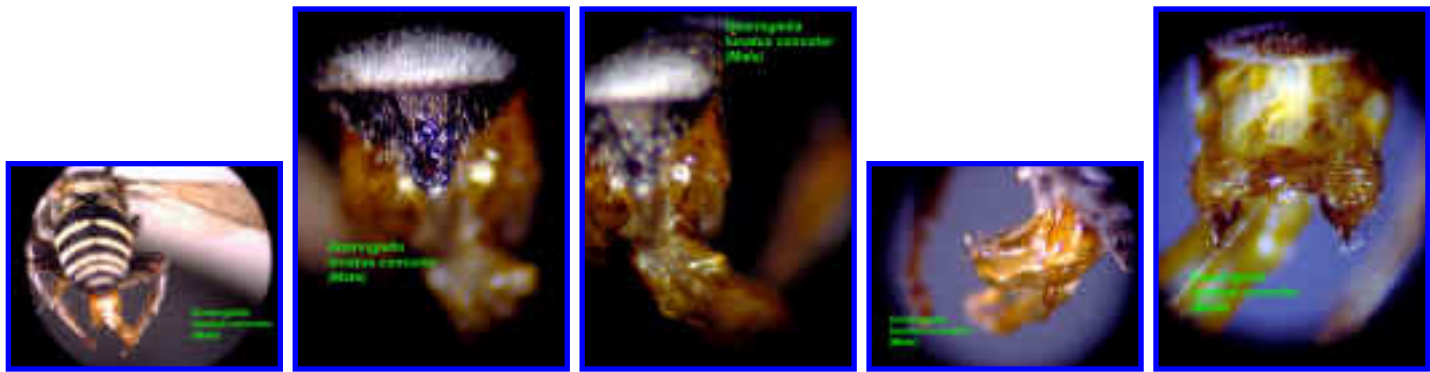
Female:





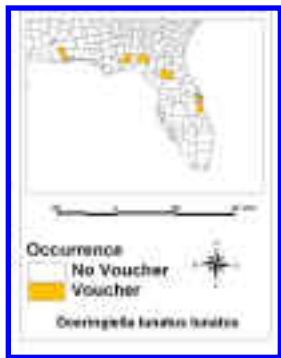
Male:





Apidae: *Doeringiella lunatus lunatus* Say

County Records: Alachua, Brevard, Escambia, Leon, Madison.



Locations:

Dates: May-September across entire range; collections from Leon County, Florida were all from July (Pascarella, unpub. data)

Plants:

Notes: Parasite of *Melissodes bimaculata*. This species and the other subspecies likely interbreed. Intermediates can be found that have varying degrees of reddish coloration. See the scape photo of the male of *D. lunatus lunatus* for variable expression of red coloration.

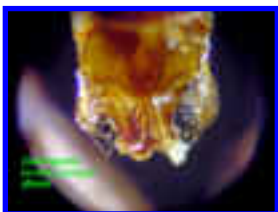
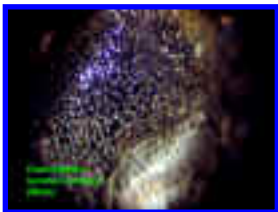


Female:



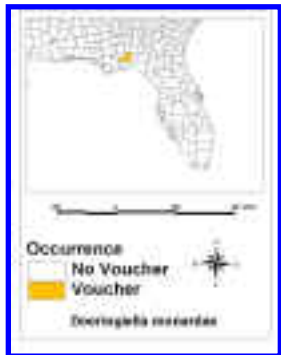


Male:



Apidae: *Doeringiella monardae* Mitchell

County Records: Leon



Locations: Tall Timbers Research Station

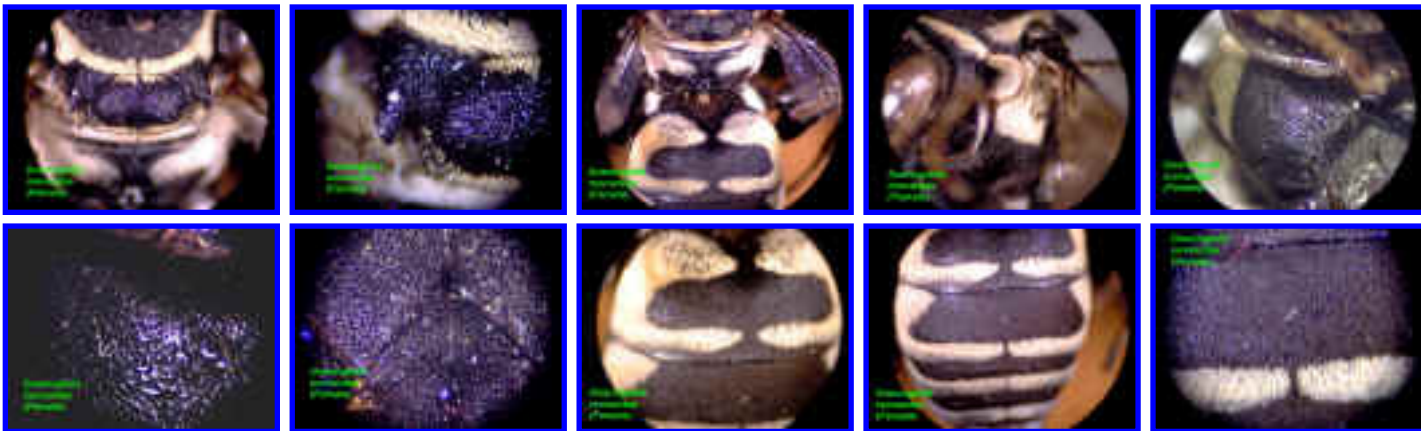
Dates: September

Plants:

Notes: very large bee, originally described from the male from North Carolina from August and September; New state record for Florida

Female:





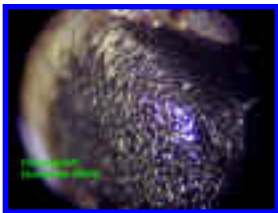
doemonmaleverte
JPG (74068
bytes)



Male:

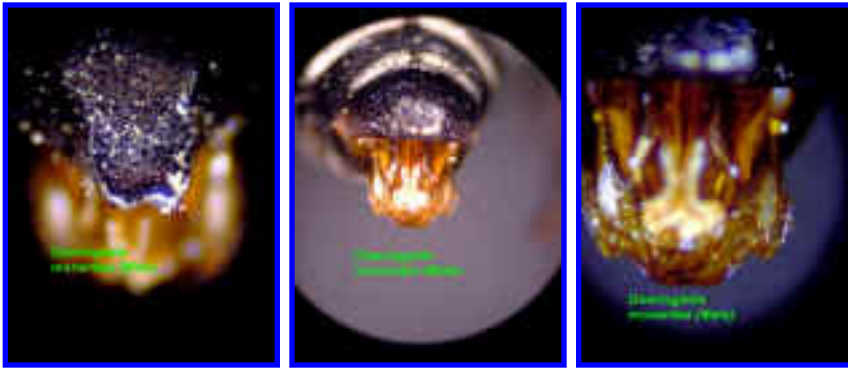
doemonmaletop.
JPG (48529
bytes)

doemonmalewing
JPG (47523
bytes)



doemonmalescuti
JPG (79799
bytes)





Apidae: *Doeringiella pectoralis* Robertson

County Records: Leon, Thomas (GA)

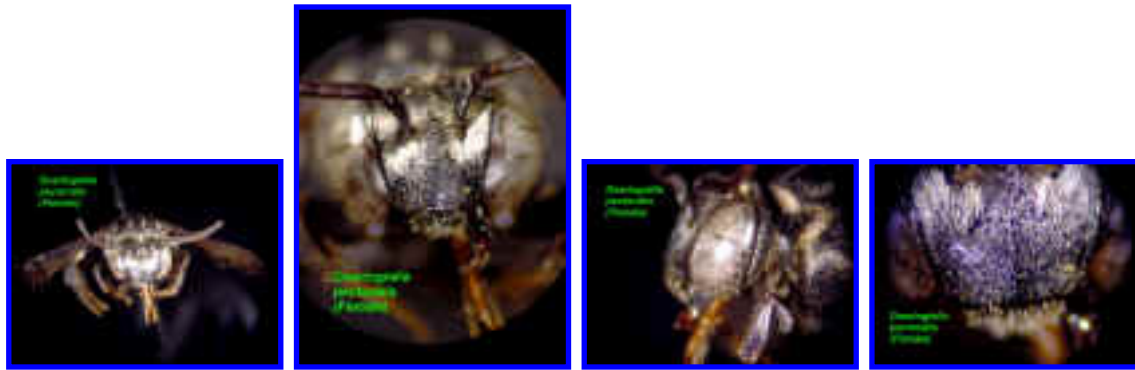


Locations: Tall Timbers Research Station

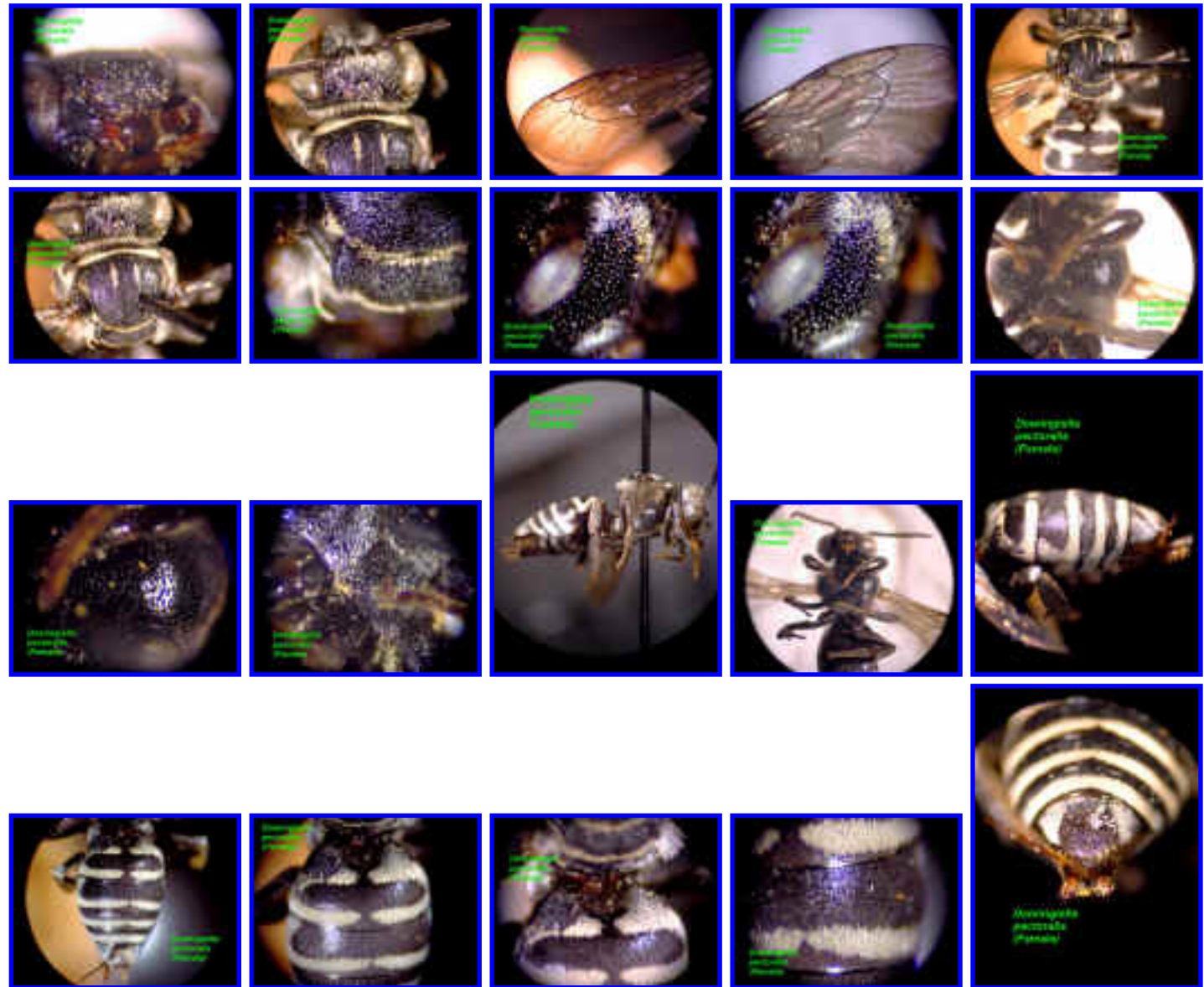
Dates: October-November

Host: *Melissodes rustica*

Notes: new state record for Florida; known previously from Georgia

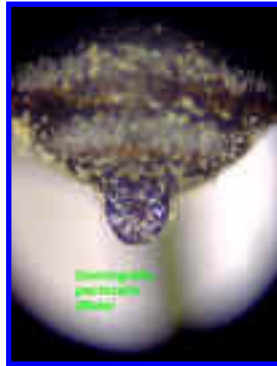
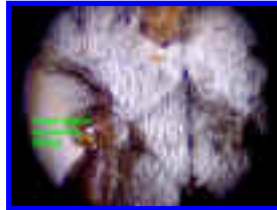
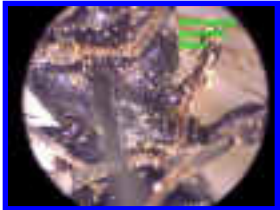
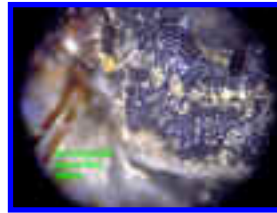


Female:





Male:



Apidae: *Doeringiella quadrifasciatus atlanticus* Mitchell

County Records: Alachua, Jefferson, Indian River, Leon

Doeringiella



Locations: Cocoa

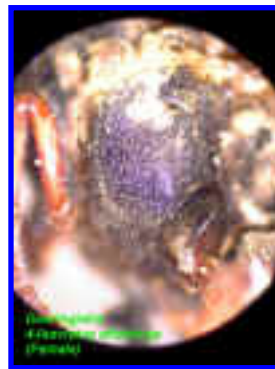
Dates: July-October

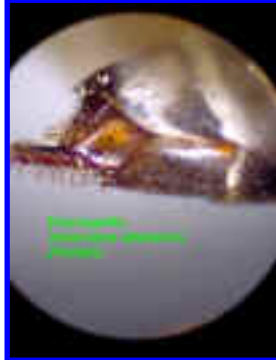
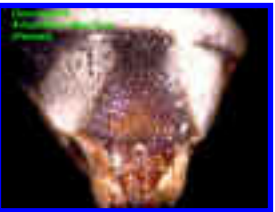
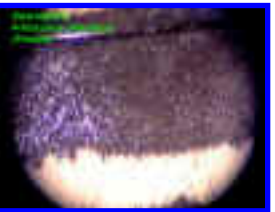
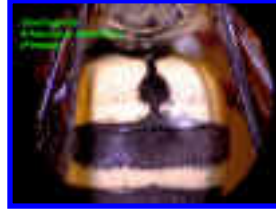
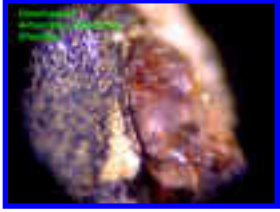
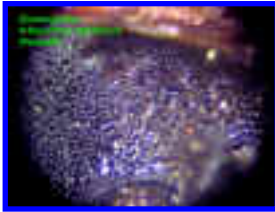
Plants:

Notes:



Female:





Male:



Apidae: *Doeringiella remigatus* Fabricius

County Records: Alachua

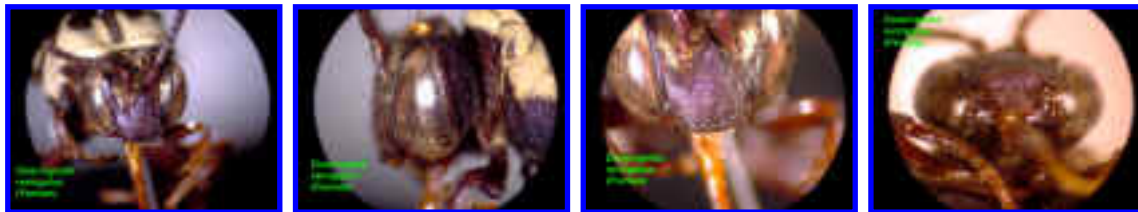


Locations:

Dates: Mitchell reports May-Sept.

Plants:

Notes: Parasite of *Xenoglossa strenua*



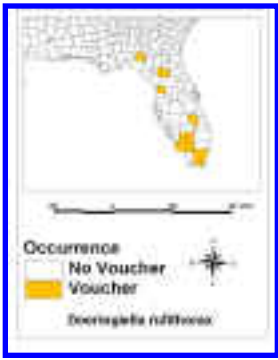
Female:





Apidae: *Doeringiella rufithorax* Graenicher

County Records: Alachua, Citrus, Collier, Hendry, Madison, Miami-Dade, Okeechobee.



Locations: ENP

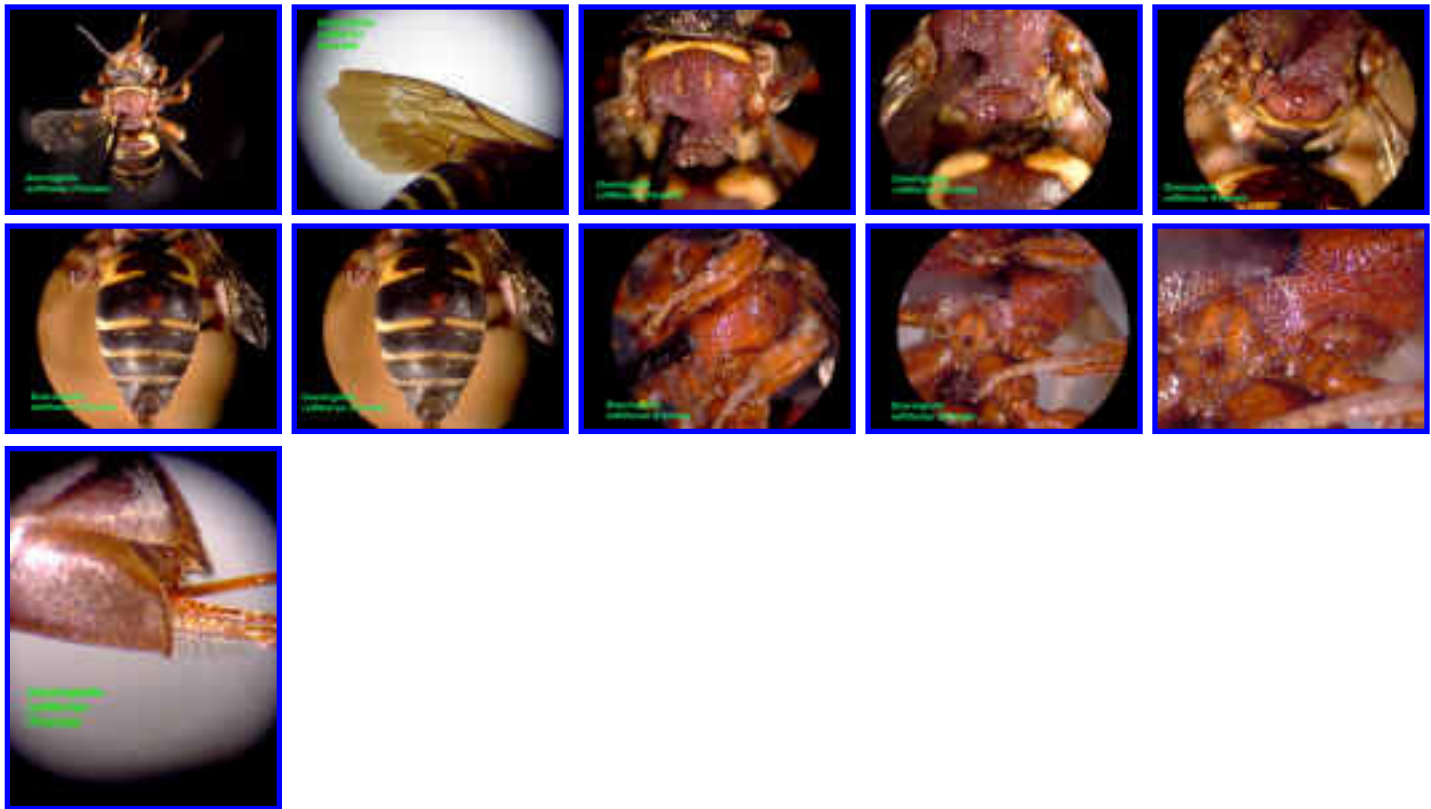
Dates: April-October; I collected this species in June in ENP

Plants:

Notes: Parasite of *Melissodes communis*; endemic to Florida

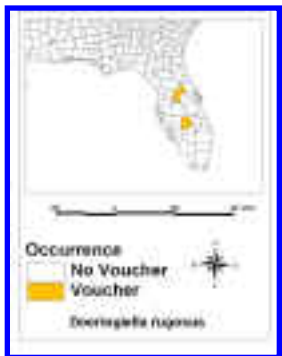


Female:



Apidae: *Doeringiella rugosus* Mitchell

County Records: Highlands, Lake



Locations: Highland Hammock State Park

Dates: March-May

Plants:

Notes: endemic to Florida, known only from the female. No photos available.

Epeolini

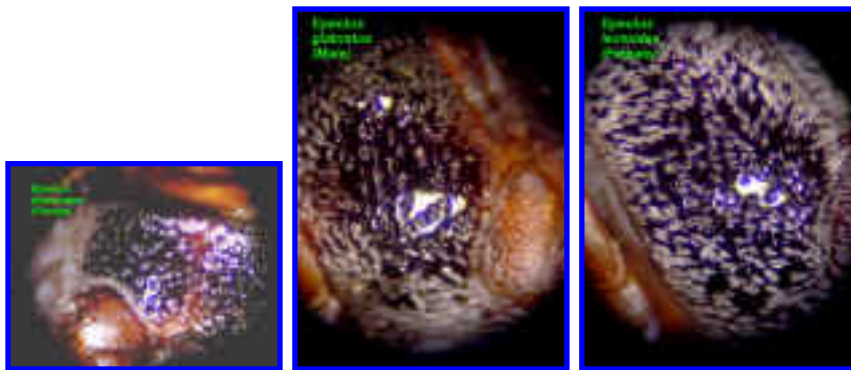
Genus *Epeolus* Latreille, thirteen taxa



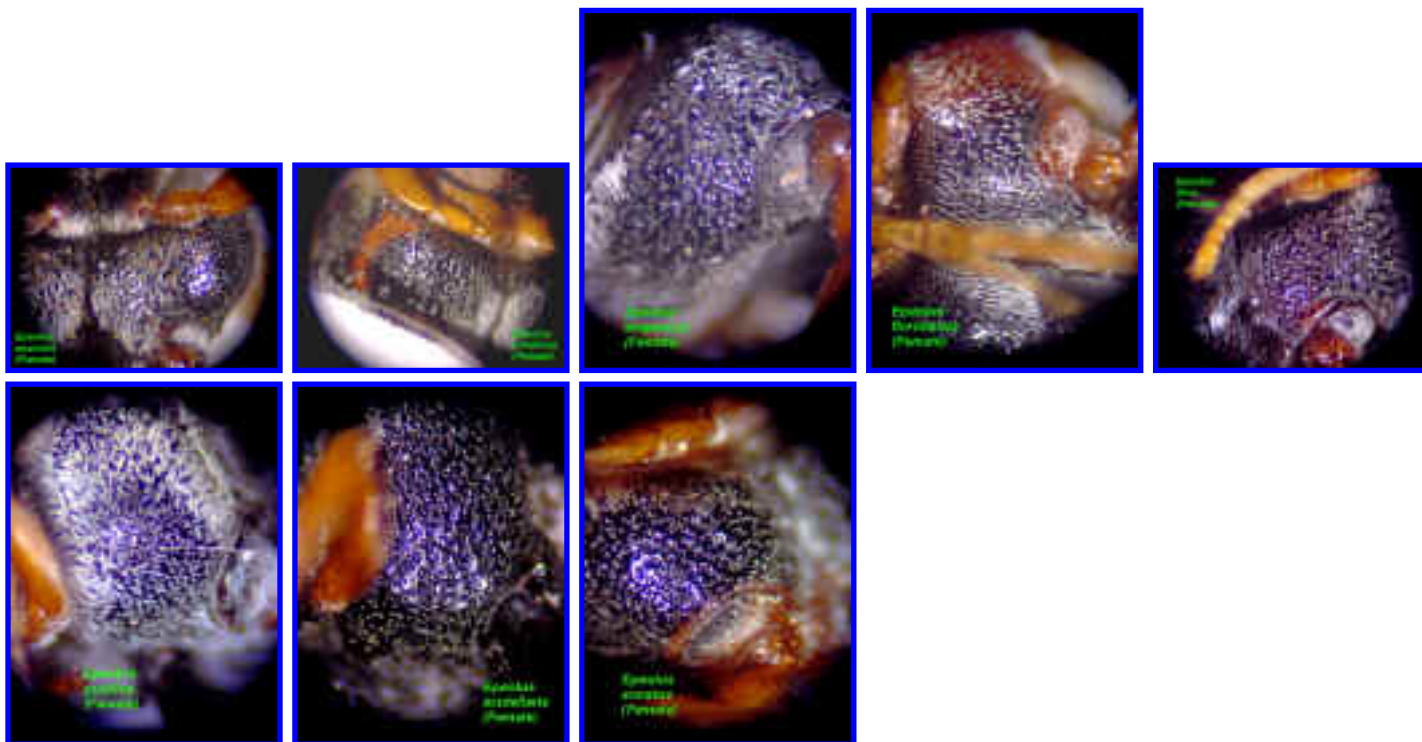
Two subgenera are present in Florida, subgenus *Epeolus* Latreille s. str. Consisting of twelve taxa, and one species, [E. bifasciatus](#), a member of the subgenus *Trophocleptria* Holmberg. These bees are cleptoparasites of bees of the genus [Colletes](#). The sexes are very similar; if photos are not available for one sex, use the other sex. As is typical of most parasitic bees, this group is undercollected. The county maps are where the species has been collected, but most species probably occur throughout Florida where their hosts are present.

Keys to females (both subgenera-from Mitchell 1962)

1. Punctures of pleura below very coarse and well separated....2



Pleura below coarsely punctate or rugose, with only very narrow, intervening spaces...4



2. Abdominal terga not fasciate, 1 and 2 ferruginous, impressed apical third of each black. .

[Epeolus glabratus](#)



Abdominal terga to some degree fasciate.....3



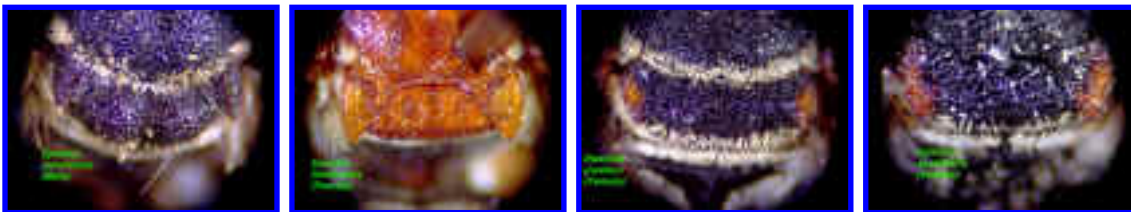
3. Basal abdominal tergum with a broad, yellow, basal fascia, 2 with a similar but narrow apical fascia, abdomen otherwise without fascia.....[*Epeolus bifasciatus*](#)



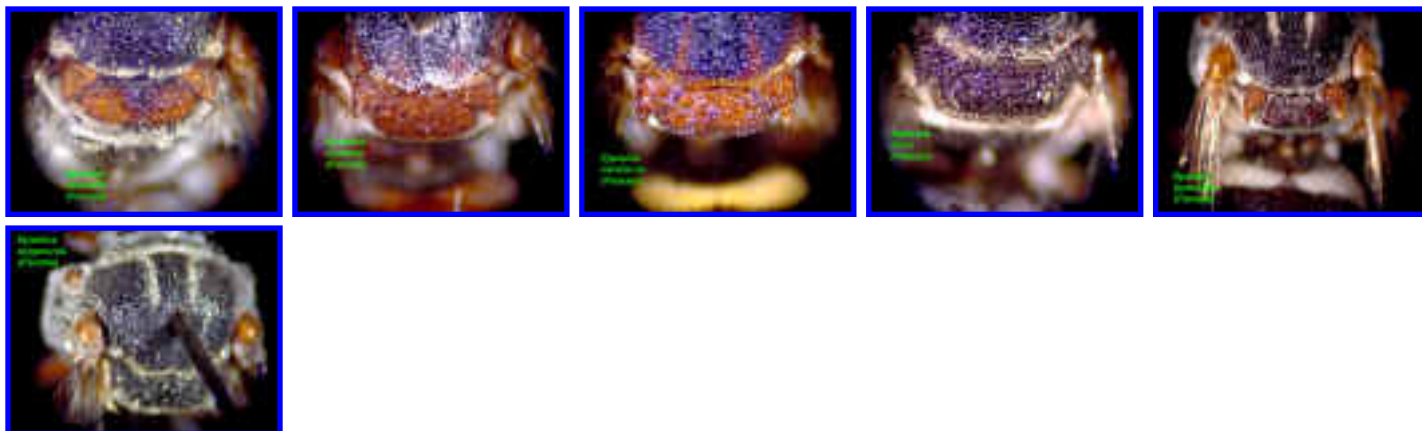
Abdominal terga 1-4 with conspicuous pale fasciae...[*Epeolus lectoides*](#)



4. Axillae robust, inner margin of each joined to side of scutellum for nearly the entire length, produced only slightly beyond, but tips fully attaining posterior, transverse line of scutellum....5



Axillae either small, or tips conspicuously diverging from sides of scutellum....8



5. Much of thorax, and usually basal abdominal tergum, bright ferruginous.. [*Epeolus floridensis*](#)



Scutum, pleura, and entire abdomen black....6



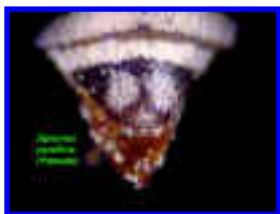
6. Slightly larger (10mm); axillae shorter, tips not protuberant, entirely black; spurs yellowish... [*Epeolus autumnalis*](#)



Usually smaller; axillae to some degree ferruginous and quite strongly protuberant....7



7. Pseudopygidium very narrow, its median length nearly equal to its breadth; scutellum black, with only a very slight impression...[Epeolus pusillus](#)



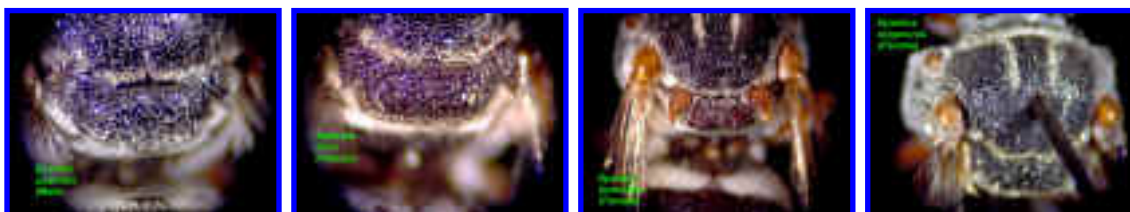
Pseudopygidium fully twice as broad as its median length; scutellum black or red, usually quite deeply grooved medially.. [Epeolus scutellaris](#)



8. Scutellum largely or entirely red, usually in marked contrast to the generally black scutum...9



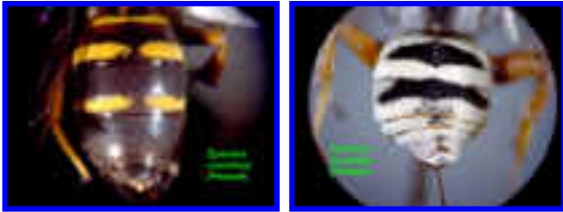
Scutellum black, the axillae either black or red...11



9. Abdominal terga 1 and 2 bright ferruginous; axillae acute, tips widely divergent from sides of scutellum...[Epeolus zonatus](#)



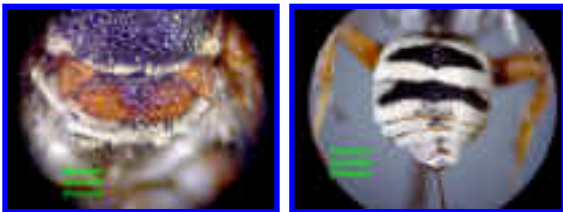
Abdomen entirely black dorsally....10



10. Axillae carinate and much thickened laterally, with broad lateral surfaces, tips somewhat compressed; fasciae fulvous, interrupted medially...[Epeolus carolinus](#)



Axillae carinate laterally, tips more flattened; the whitish fasciae complete...[Epeolus australis](#)



11. Tips of axillae strongly divergent from sides of scutellum, the free part nearly equaling the basal part bordering the scutellum....12



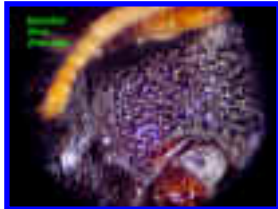
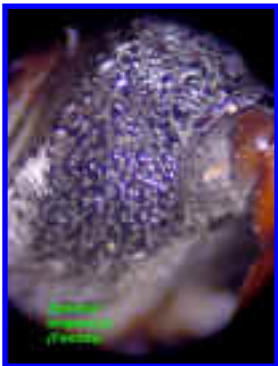
Axillae little if any divergent from sides of scutellum, the free part much shorter than the basal portion....[Epeolus australis](#)



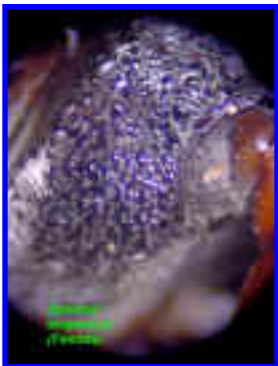
12. Pleura shining between very coarse, slightly separated punctures... [*Epeolus lectoides*](#)



Pleura reticulate or closely punctate...13

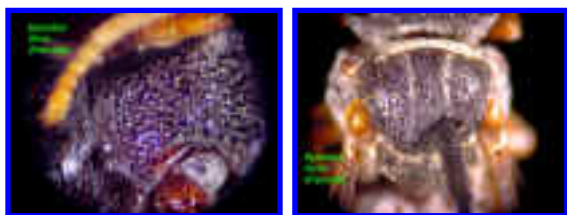


13. Pleura very coarsely reticulate; scutellum more coarsely sculptured than scutum... [*Epeolus erigeronis*](#)



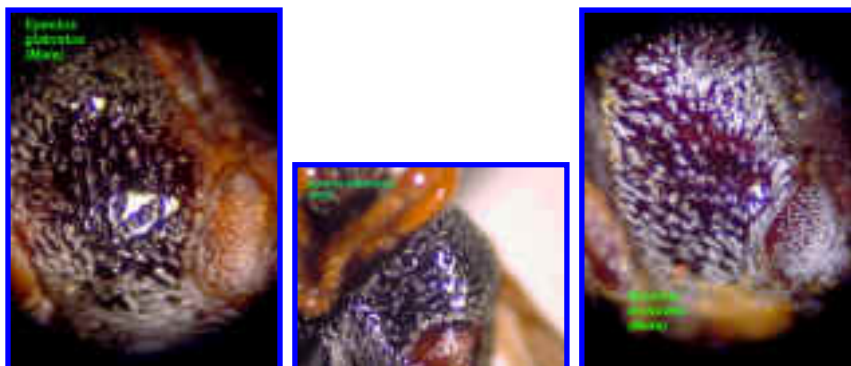
Pleura more finely reticulate or closely and finely punctate; scutellum sculptured about the same

as scutum... [*Epeolus ilicis*](#)

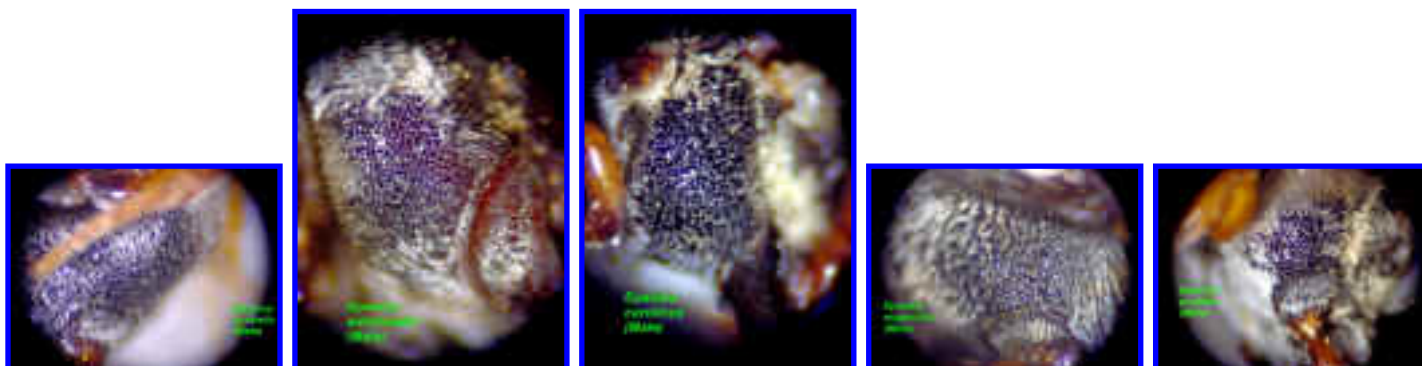


Key to males of *Epeolus* (From Mitchell 1962)

1. Punctures of pleura below coarse and well separated, with distinct, shining, intervening spaces....2



Pleura closely punctate below, with only very narrow interspaces evident....4



2. Abdominal terga not fasciate, 1 and 2 ferruginous, the impressed apical third of each black...
[*Epeolus glabratus*](#)



Abdominal terga fasciate to some degree...3



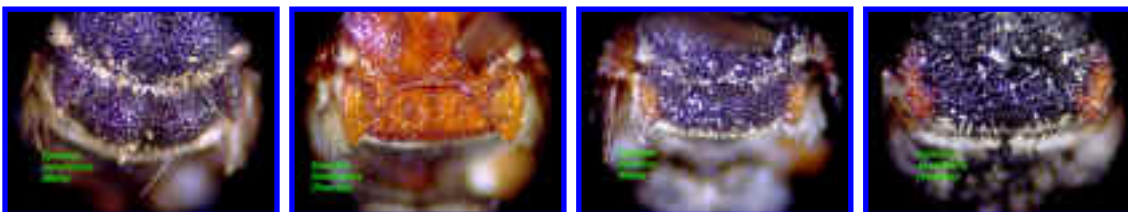
3. Basal abdominal tergum with a broad, yellow, basal fascia, tergum 2 with a similar but narrower apical fascia, abdomen otherwise without conspicuous fasciae. .[*Epeolus bifasciatus*](#)



Abdominal terga 1-4 with conspicuous pale fasciae...[*Epeolus lectoides*](#)



4. Axillae robust, inner margin of each joined to side of scutellum for nearly the entire length, produced only slightly beyond, but tips fully attaining posterior, transverse line of scutellum.....5



Axillae either small, or tips conspicuously diverging from sides of scutellum...8



5. Much of thorax, and usually basal abdominal tergum, bright ferruginous... [*Epeolus floridensis*](#)



Scutum, pleura and entire abdomen black.....6



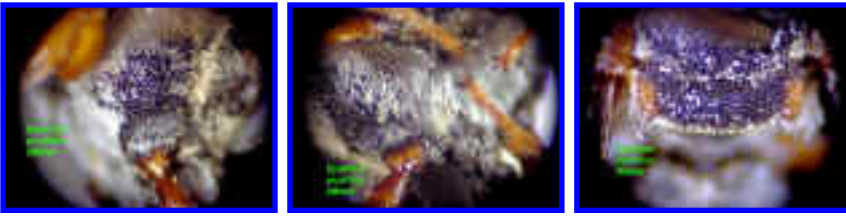
6. Slightly larger (10mm); axillae shorter, tips not protuberant, entirely black; spurs yellowish or black... [*Epeolus autumnalis*](#)



Usually smaller; axillae usually to some degree ferruginous and quite strongly protuberant....7



7. Pleura completely covered with silvery tomentum; scutellum black, with only a very slight, median impression.... [*Epeolus pusillus*](#)



Lower half of pleura largely bare, exposing the closely punctate or rugose surface; scutellum usually quite deeply grooved medially....[Epeolus scutellaris](#)



8. Tips of axillae strongly divergent from sides of scutellum, the free part nearly equaling the basal part bordering the scutellum...9



Axillae little if any divergent from sides of scutellum, the free part much shorter than the basal portion...[Epeolus australis](#)



9. Abdominal terga 1 and 2 bright ferruginous; axillae acute, tips widely divergent from sides of scutellum...[Epeolus zonatus](#)



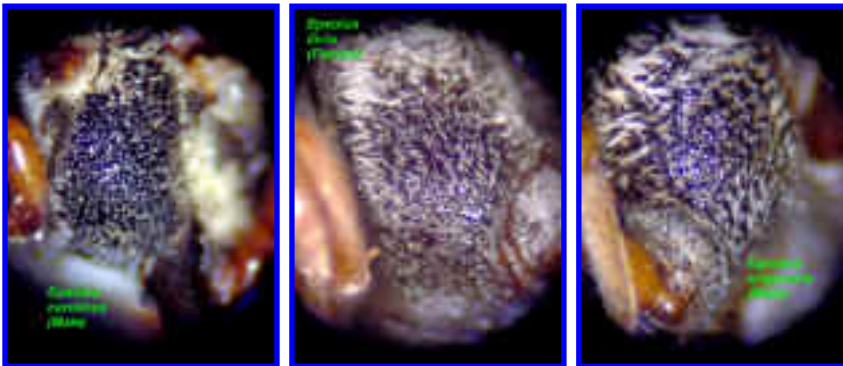
Abdomen entirely black dorsally....10



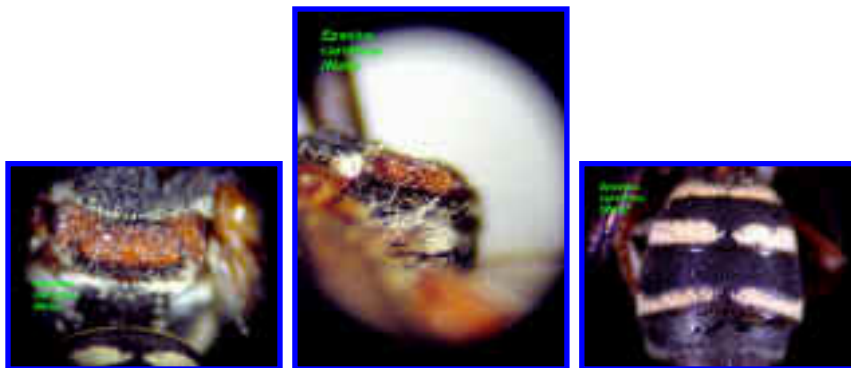
10. Pleura shining between very coarse, slightly separated punctures...[*Epeolus lectoides*](#)



Pleura coarsely reticulate or closely punctate....11



11. Axillae carinate and much thickened laterally, with broad, lateral surfaces, the tips somewhat compressed; fasciae fulvous, interrupted medially...[*Epeolus carolinus*](#)



Outer margins of axillae more rounded, if at all thickened; fasciae white or pale ochraceous...12

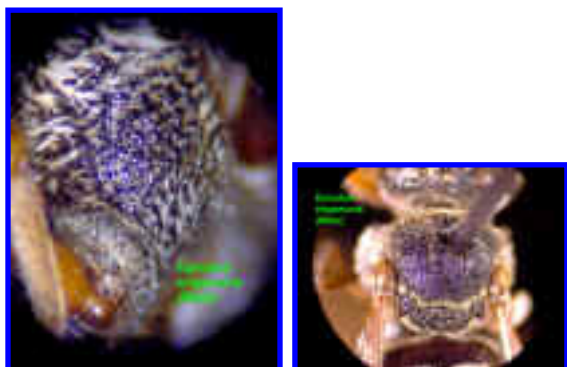


12. Abdominal fasciae narrow, distinctly interrupted medially and somewhat removed from rims of terga 1-3...[*Epeolus weemsi*](#)

Abdominal fasciae, interrupted only on terga 1 and 2, entire on 3-5, not much removed from apical margins...13



13. Pleura very coarsely reticulate; scutellum more coarsely sculptured than scutum...[*Epeolus erigeronis*](#)



Pleura more finely reticulate; scutellum sculptured about as scutum...[*Epeolus ilicis*](#)



Note that *Epeolus weemsi* has only been described from males.

By flight time. Some species may have two generations per year reflecting the spring and fall generations of their hosts. In South Florida, flight times of both *Colletes* and *Epeolus* are less seasonal than in the more temperate north.

Spring (early summer) -Flying *Epeolus*

[Epeolus australis](#)

[E. bifasciatus](#)

[E. erigeronis](#)

[E. floridensis](#)

[E. glabratus](#)

[E. ilicis](#)

[E. lectoides](#)

[E. pusillus](#)

[E. scutellaris](#)

[E. weemsi](#)

[E. zonatus](#)

Fall-Flying *Epeolus*

[Epeolus autumnalis](#)

[E. carolinus](#)

[E. floridensis](#)

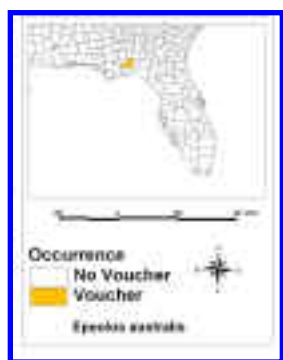
[E. lectoides](#)

[E. pusillus](#)

[E. zonatus](#)

Apidae: *Epeolus australis* Mitchell

County Records: Leon



Locations:

Dates: Mitchell: April 1-June 9. Specimens from Leon County are from April 24.

Plants:

Notes: New record for Florida. Previously known from Georgia (Richmond County).



Female:



Male:



Apidae: *Epeolus autumnalis* Robertson

County Records: Liberty



Locations:

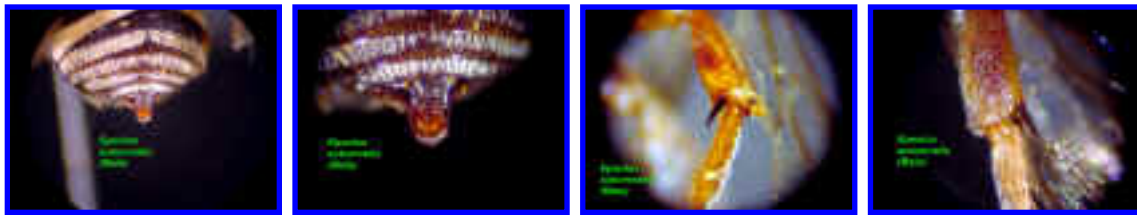
Dates: Sept.-Oct.

Plants:

Notes: New record for Florida. Previously known from as far south as North Carolina. The specimen examined from Liberty County fits the description in Mitchell but the spurs are black, not yellow and the labrum is testaceous (this was not mentioned in the description).

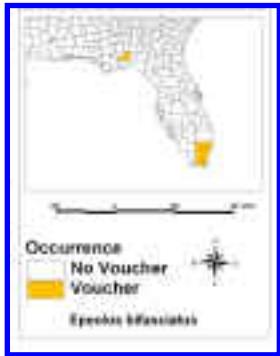
Male:





Apidae: *Epeolus bifasciatus* Cresson

County Records: Broward, Leon, Miami-Dade



Locations:

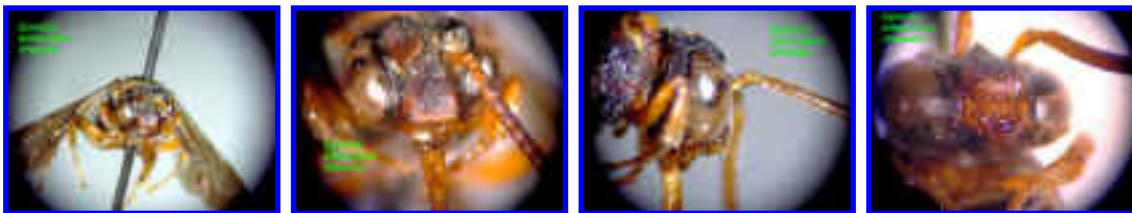
Dates: February-July in Florida; the specimens from Leon County were collected in June and July

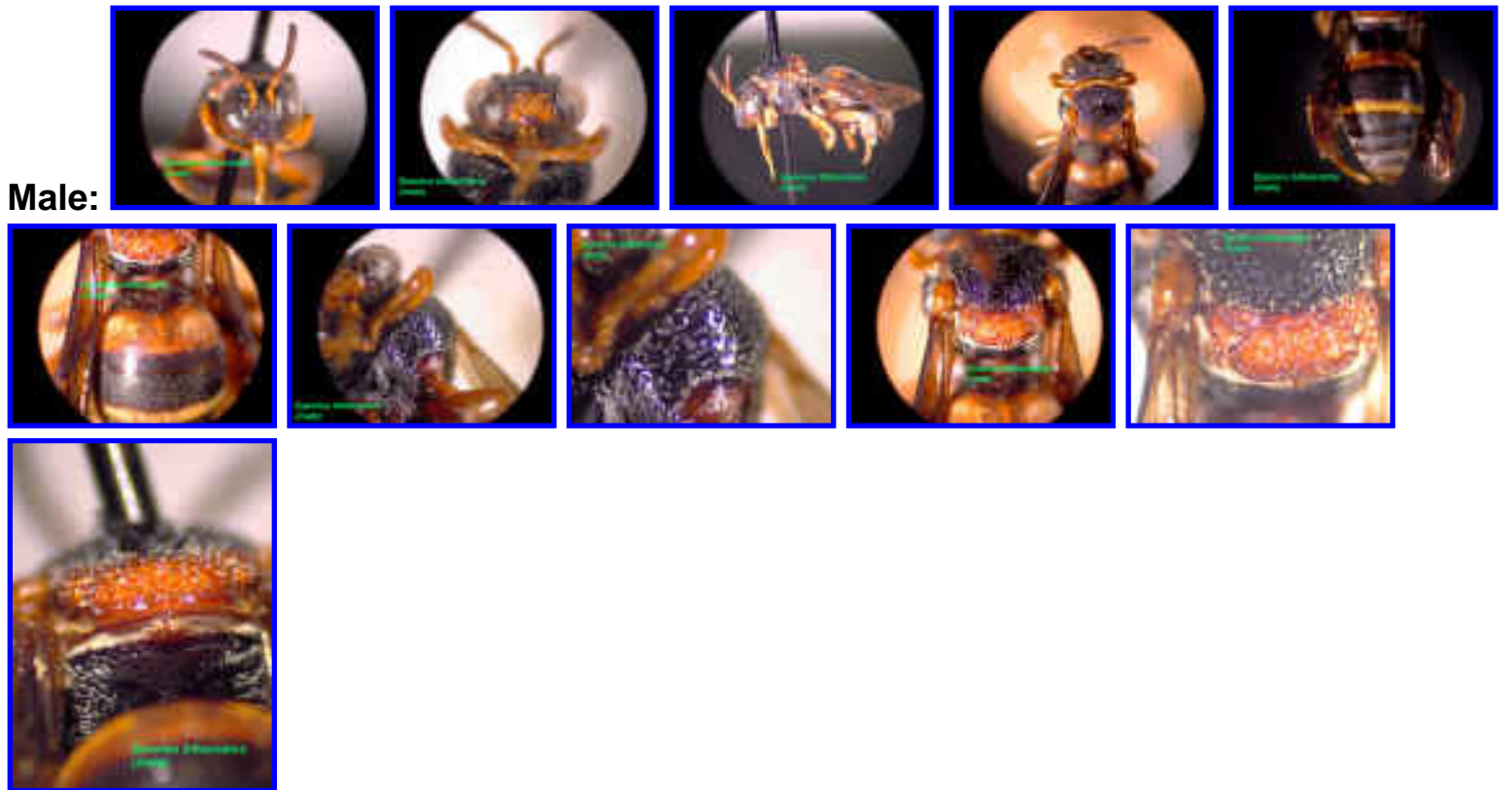
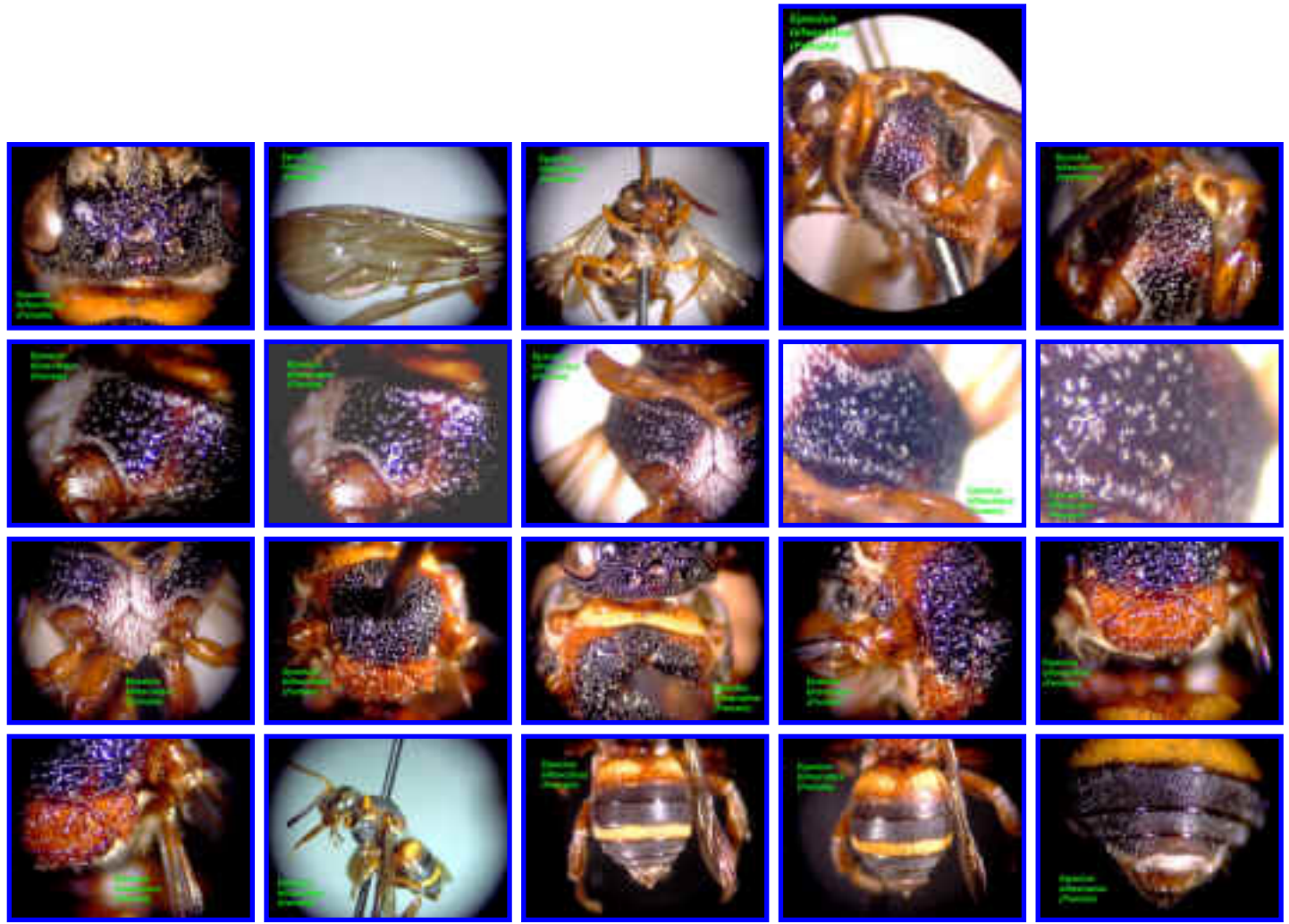
Plants:

Hosts: *Colletes latitarsis* and others?

Notes: widespread in US

Female:





Apidae: *Epeolus carolinus* Mitchell

County Records: Alachua, Jefferson, also from Thomas County, GA



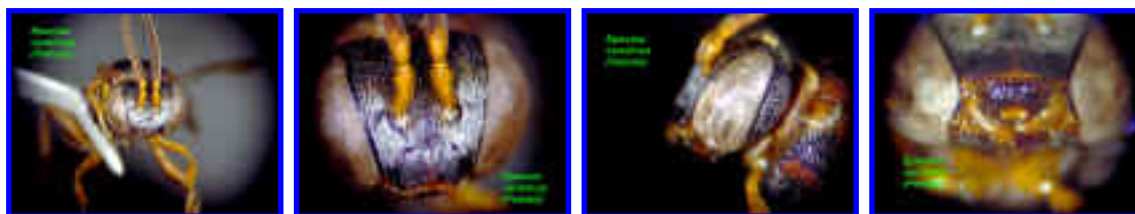
Locations: Wade Tract (Thomas Co, GA)

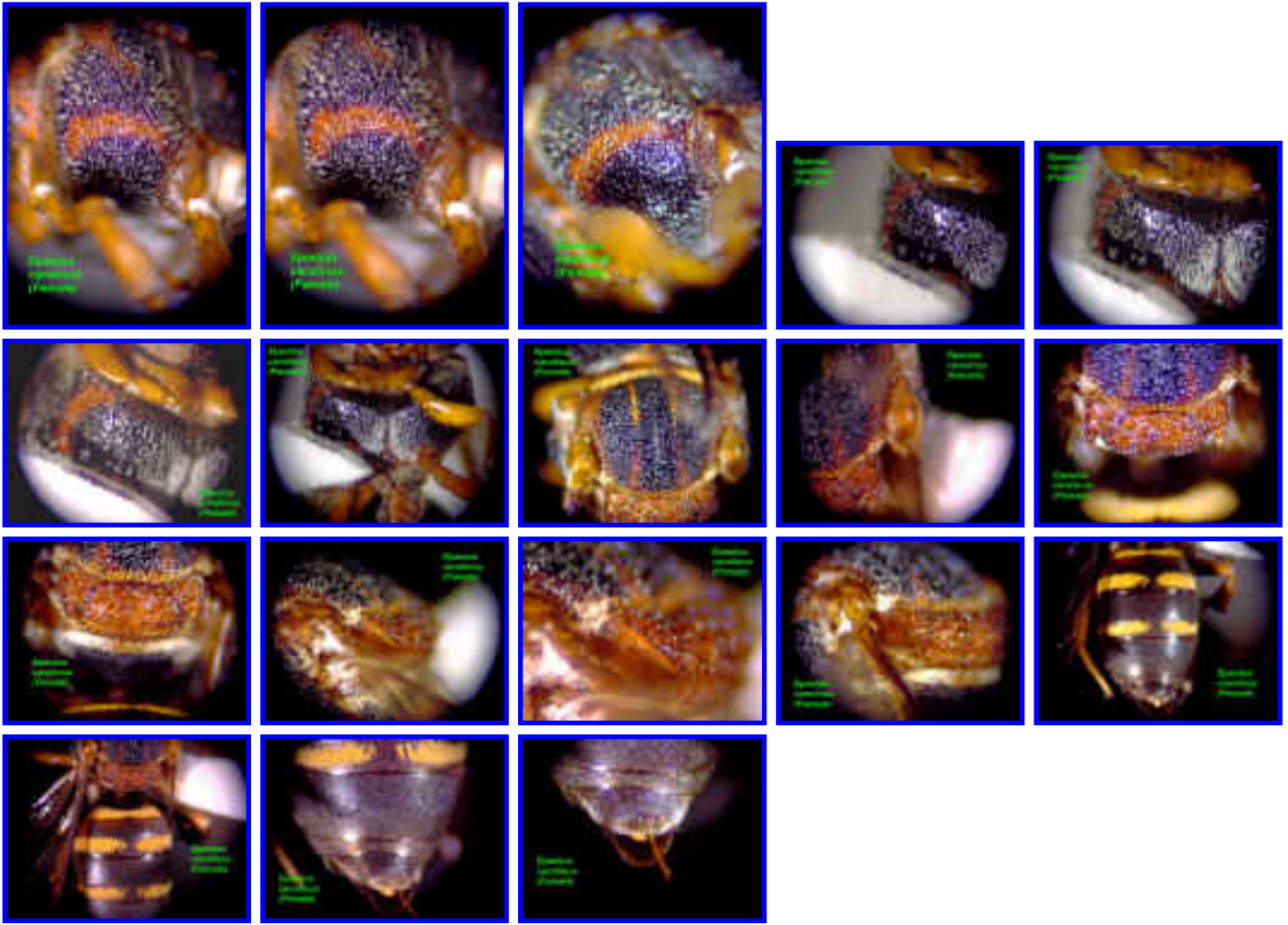
Dates: Sept. 12-Nov. 6; specimens from Thomas County, GA were collected in September and October

Plants:

Notes: Florida-North Carolina

Female:





Male:

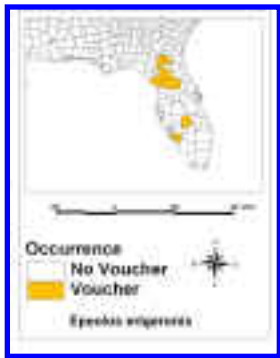




Apidae: *Epeolus erigeronis* Mitchell

County Records: Alachua, Baker, Columbia, Highlands; Lee, Levy, Marion

Epeolus



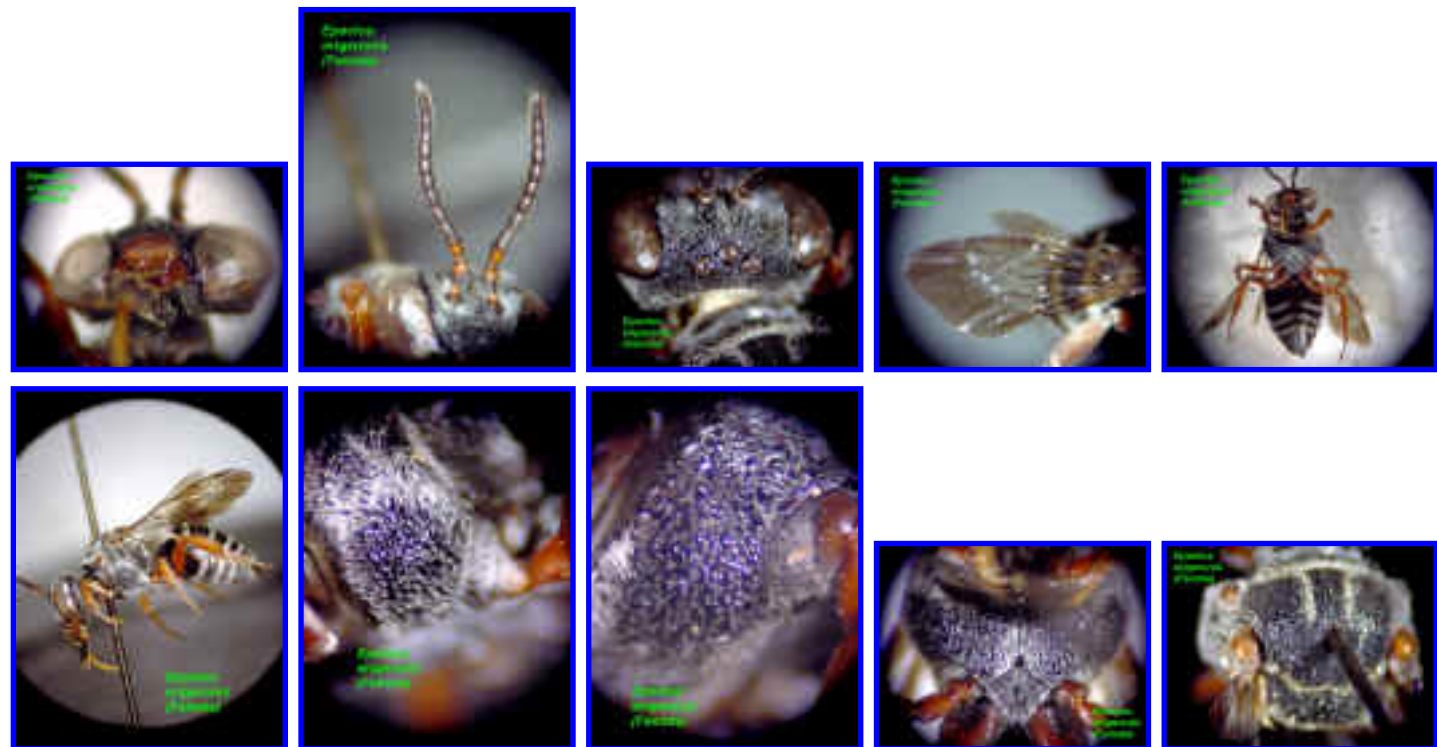
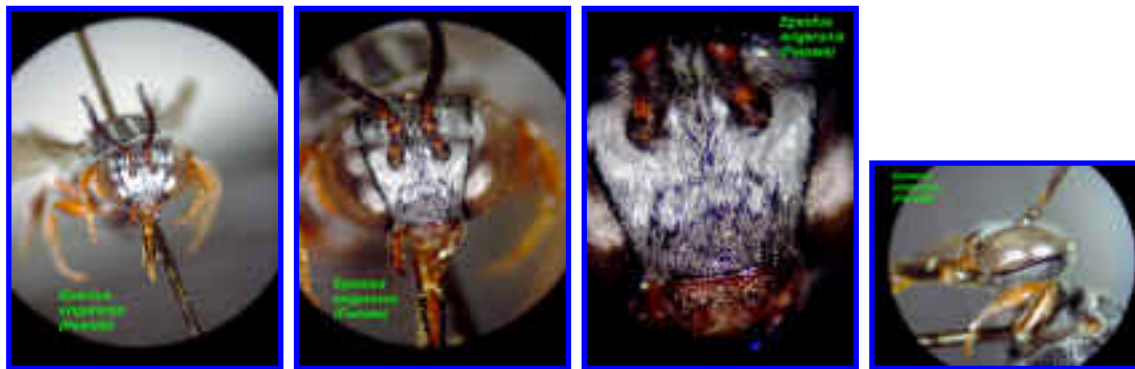
Locations: Osceola National Forest, Olga, Highlands Hammock State Park, LaBelle

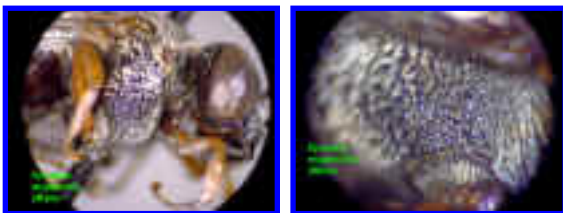
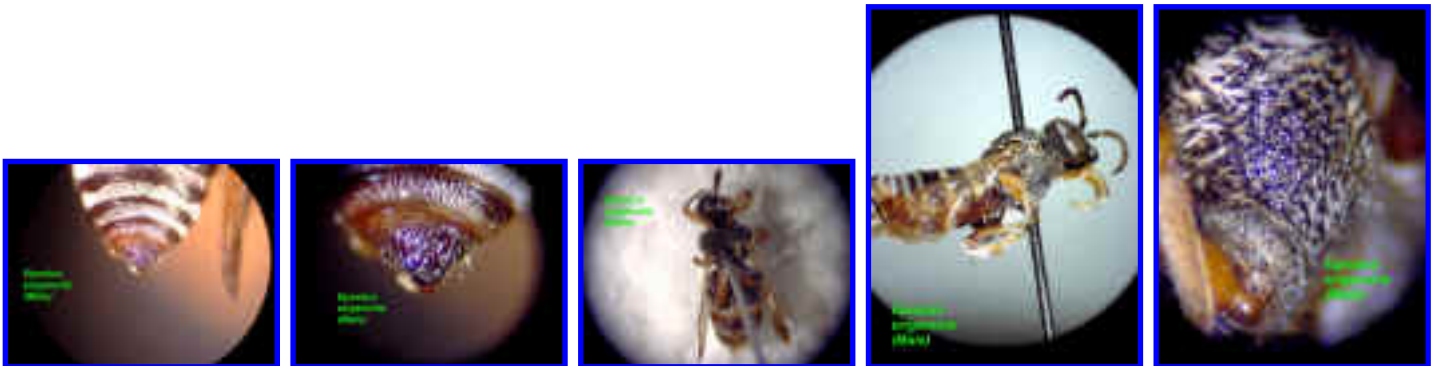
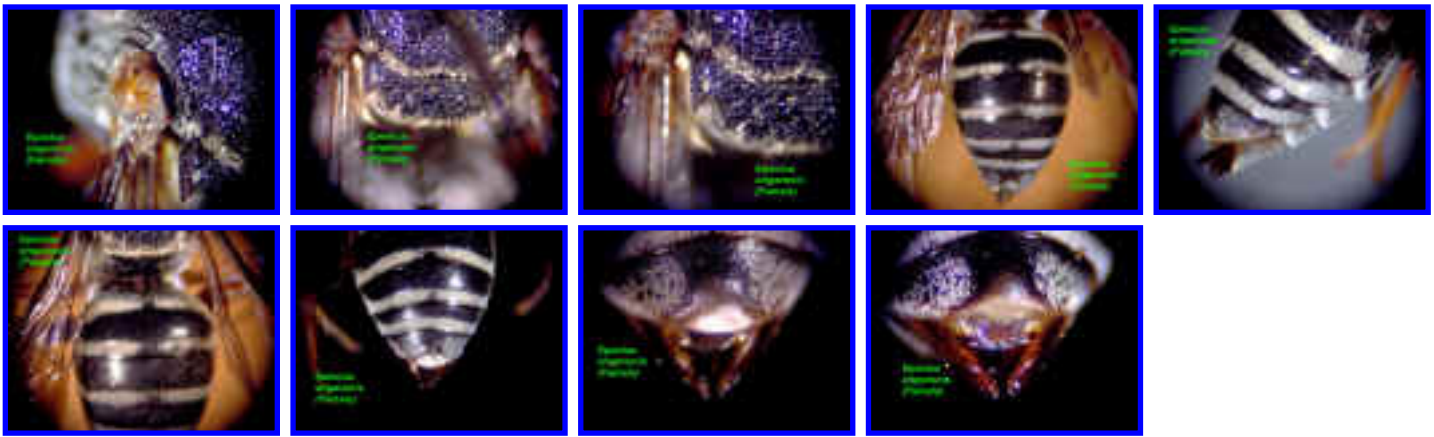
Dates: In Florida, March 30-May 27

Plants:

Notes: Florida-North Carolina

Female:





Apidae: *Epeolus floridensis* Mitchell

County Records: DeSoto, Levy



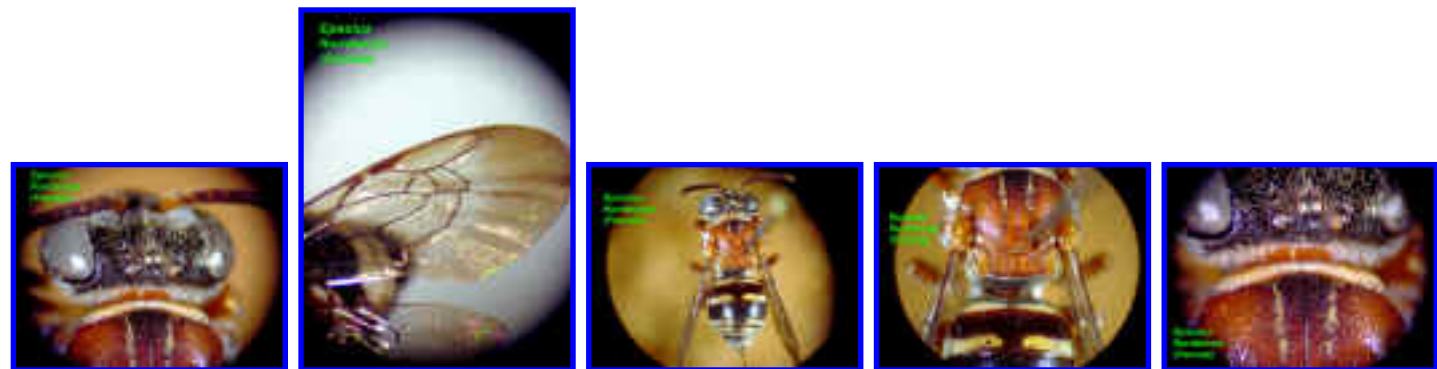
Locations: Bronson, Arcadia

Dates: April 27, July 13, October 10

Plants:

Notes:

Female:





Apidae: *Epeolus glabratus* Cresson

County Records: Jefferson, Miami-Dade



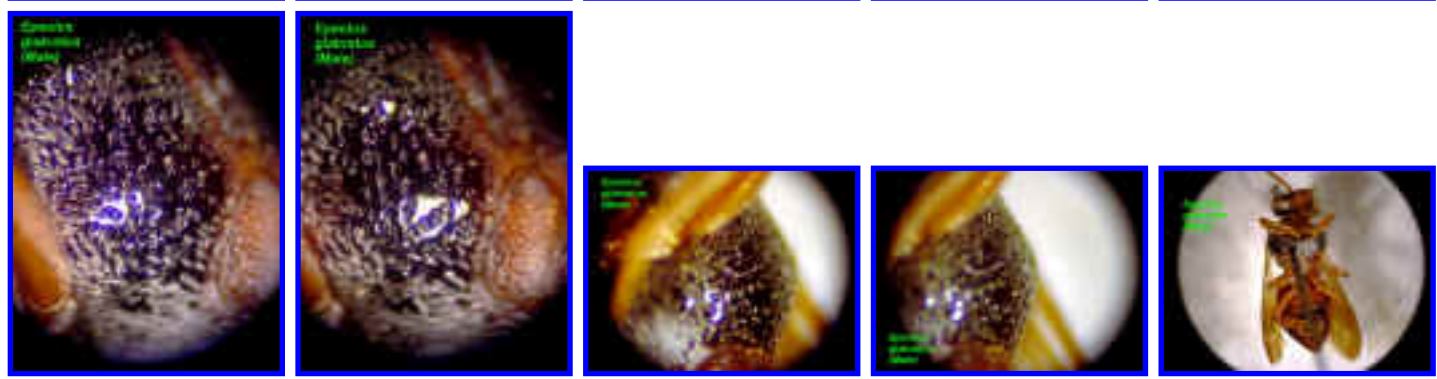
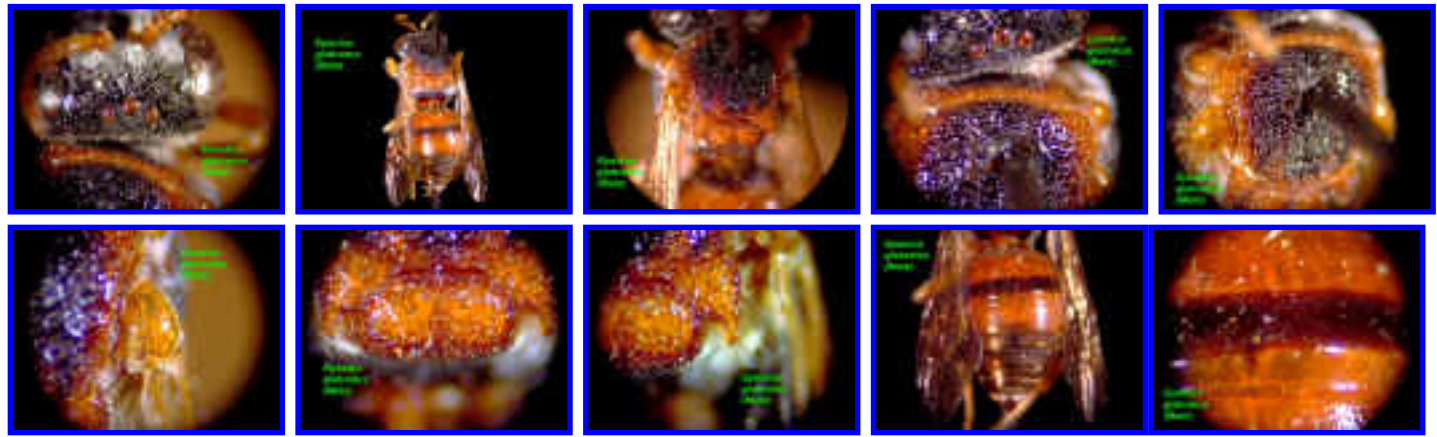
Locations: Matheson Hammock, ENP

Dates: March-July

Plants:

Notes: Found only in Georgia and Florida

Male:



Apidae: *Epeolus ilicis* Mitchell

County Records: Highlands

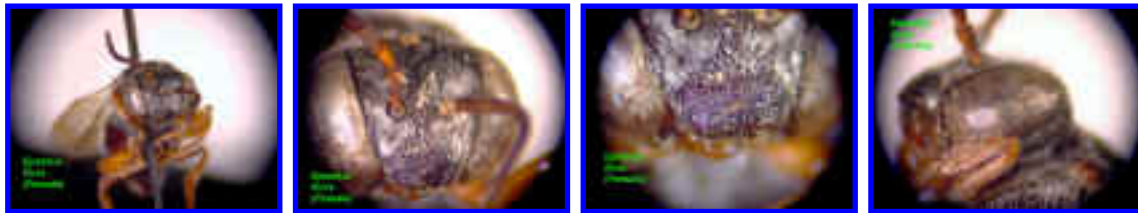


Locations: Highlands Hammock State Park

Dates: April 25-July 15

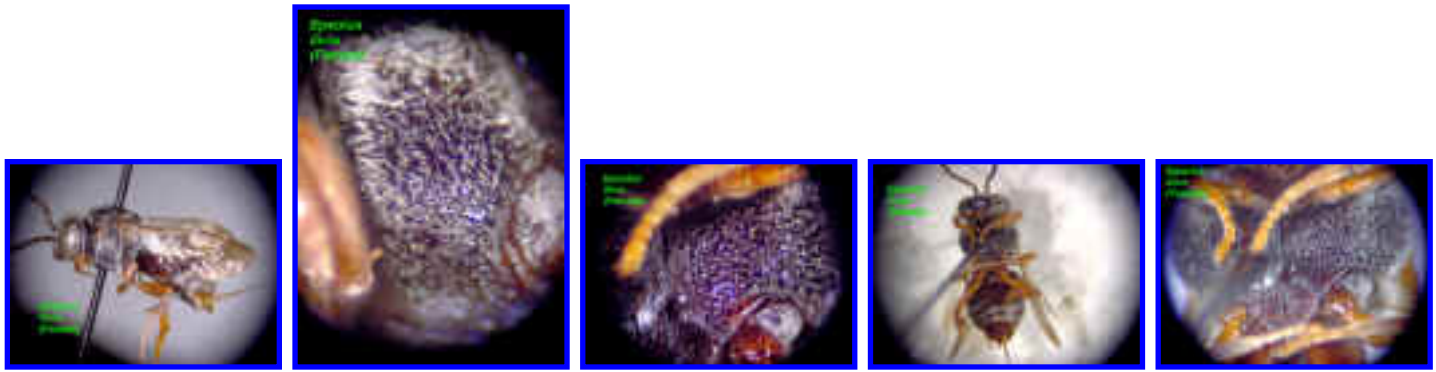
Plants:

Notes: New state record for Florida. Previously recorded from Georgia.



Female:





Apidae: *Epeolus lectoides* Robertson

County Records: Liberty



Locations: Torreya State Park

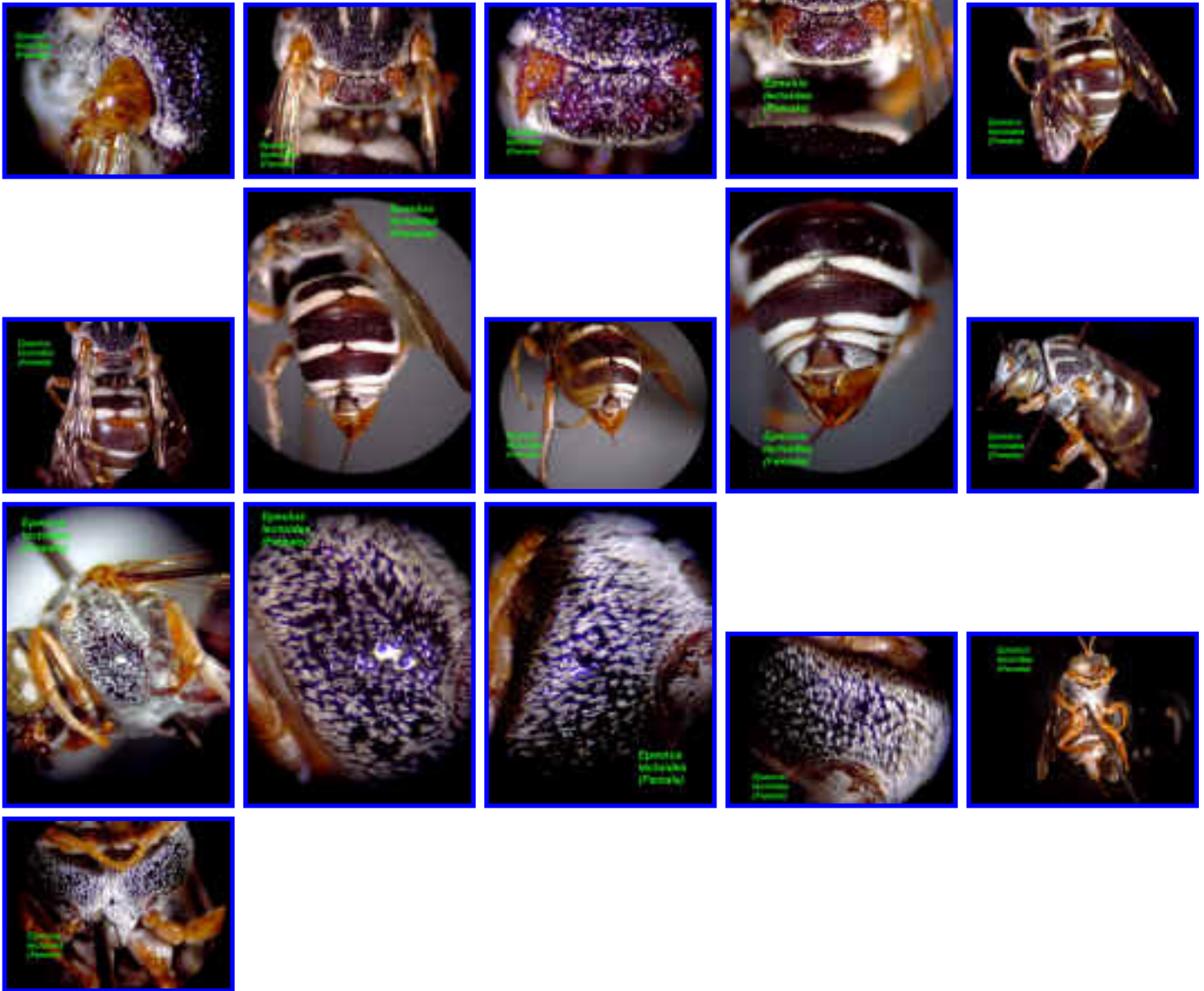
Dates: May-September

Plants:

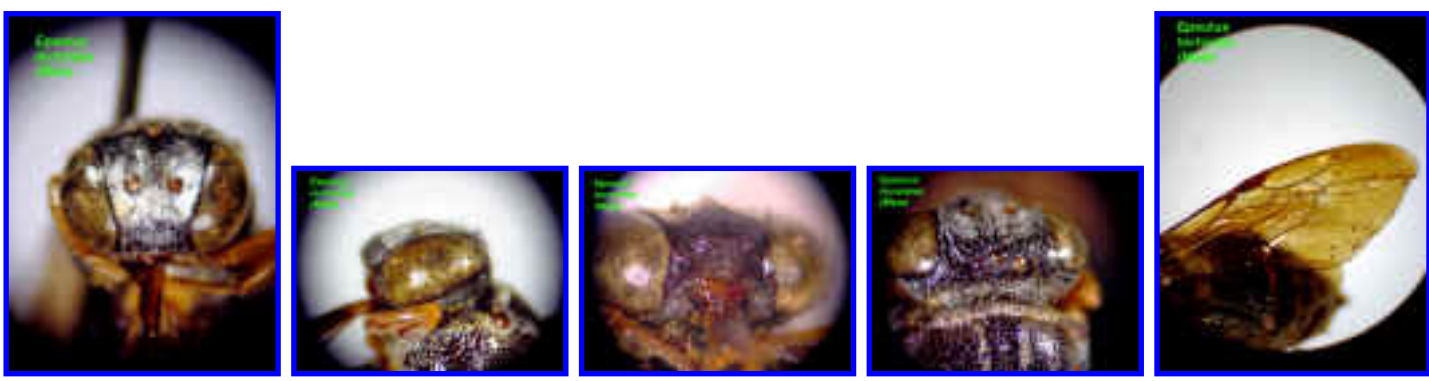
Notes: New state record for Florida.

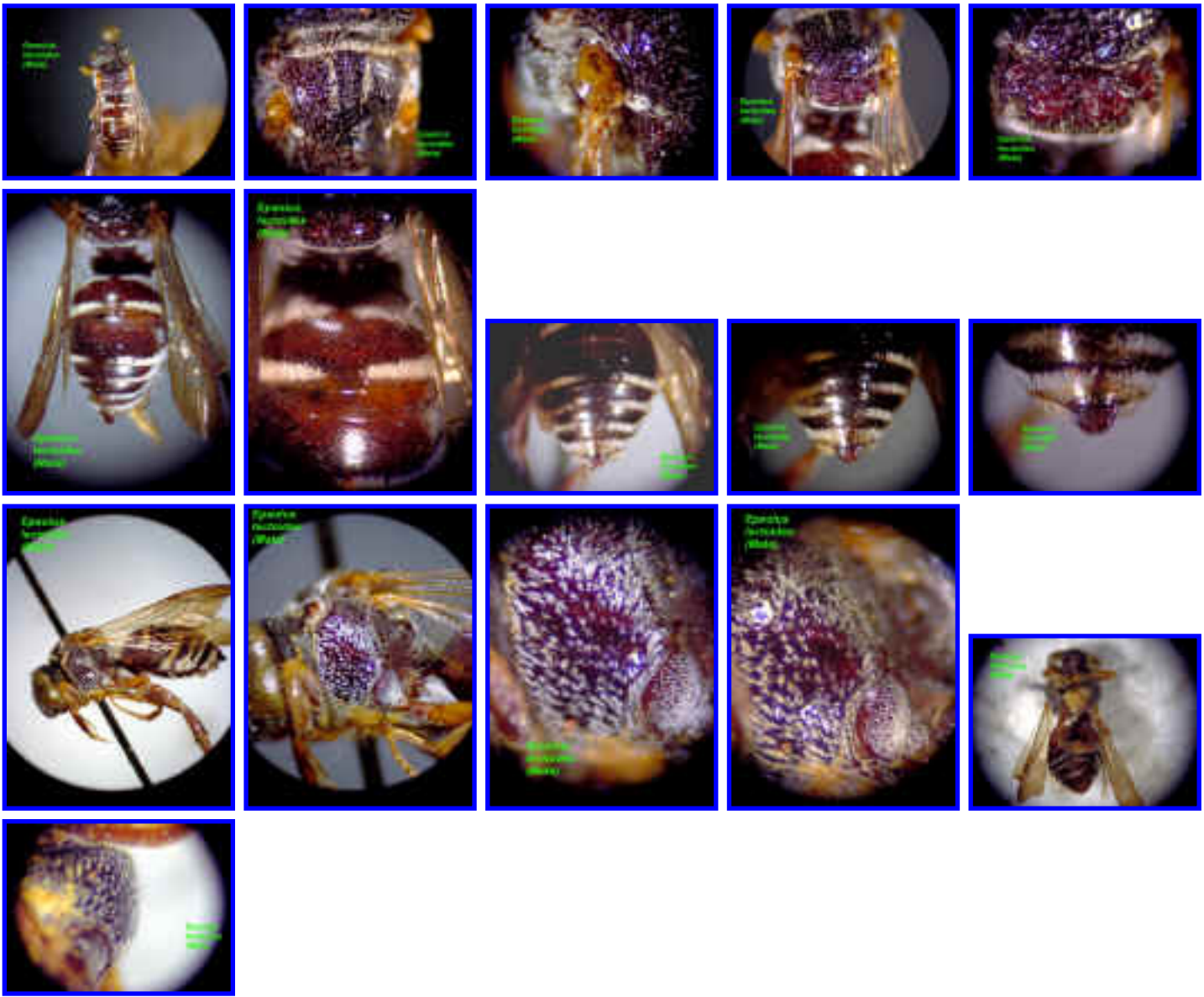
Female:





Male:





Apidae: *Epeolus pusillus* Cresson

County Records: Leon, Manatee



Locations:

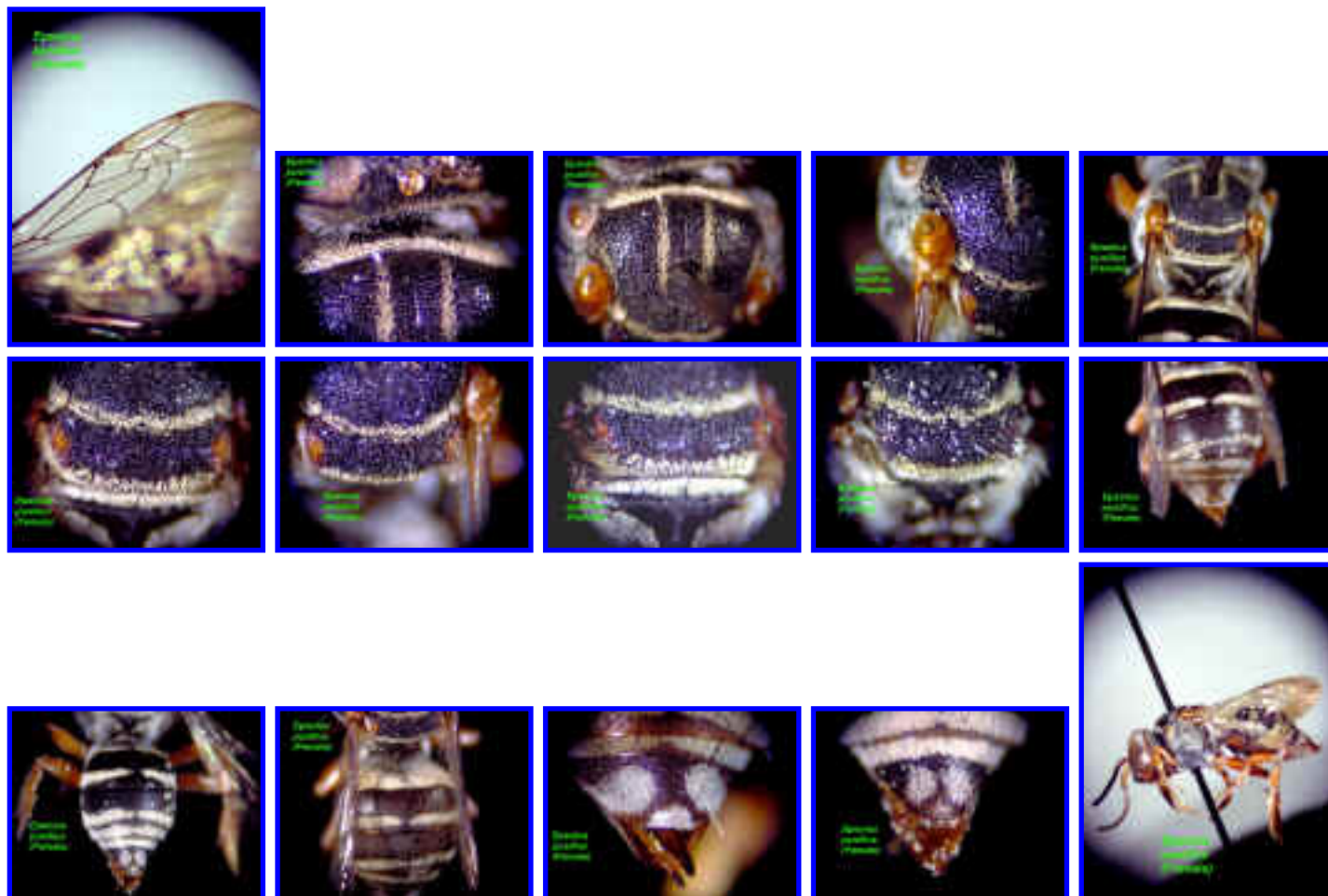
Dates: Florida, 2 generations? Mitchell reported April-May in Florida and Sept.-Oct. in North. However, I have specimens from Leon County, Florida from October and November.

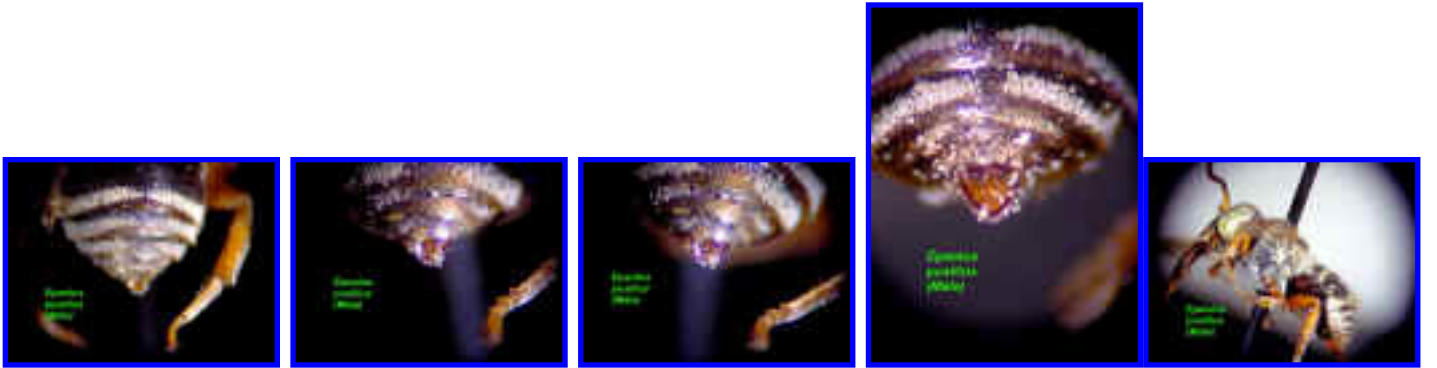
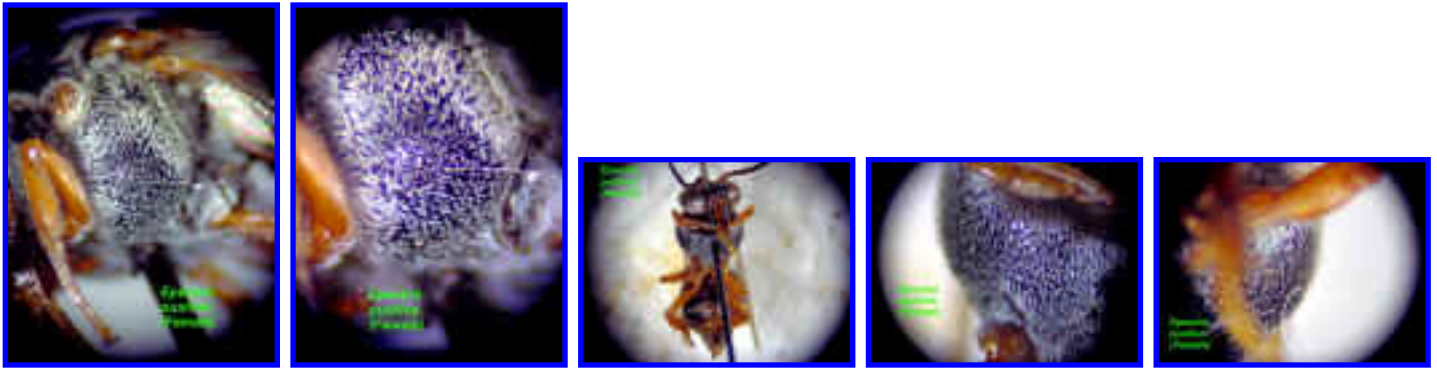
Plants:

Notes:



Female:







Apidae: *Epeolus scutellaris* Say

County Records: Alachua, Jefferson, Thomas (GA)



Locations:

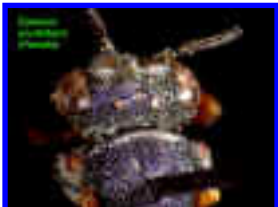
Dates: February

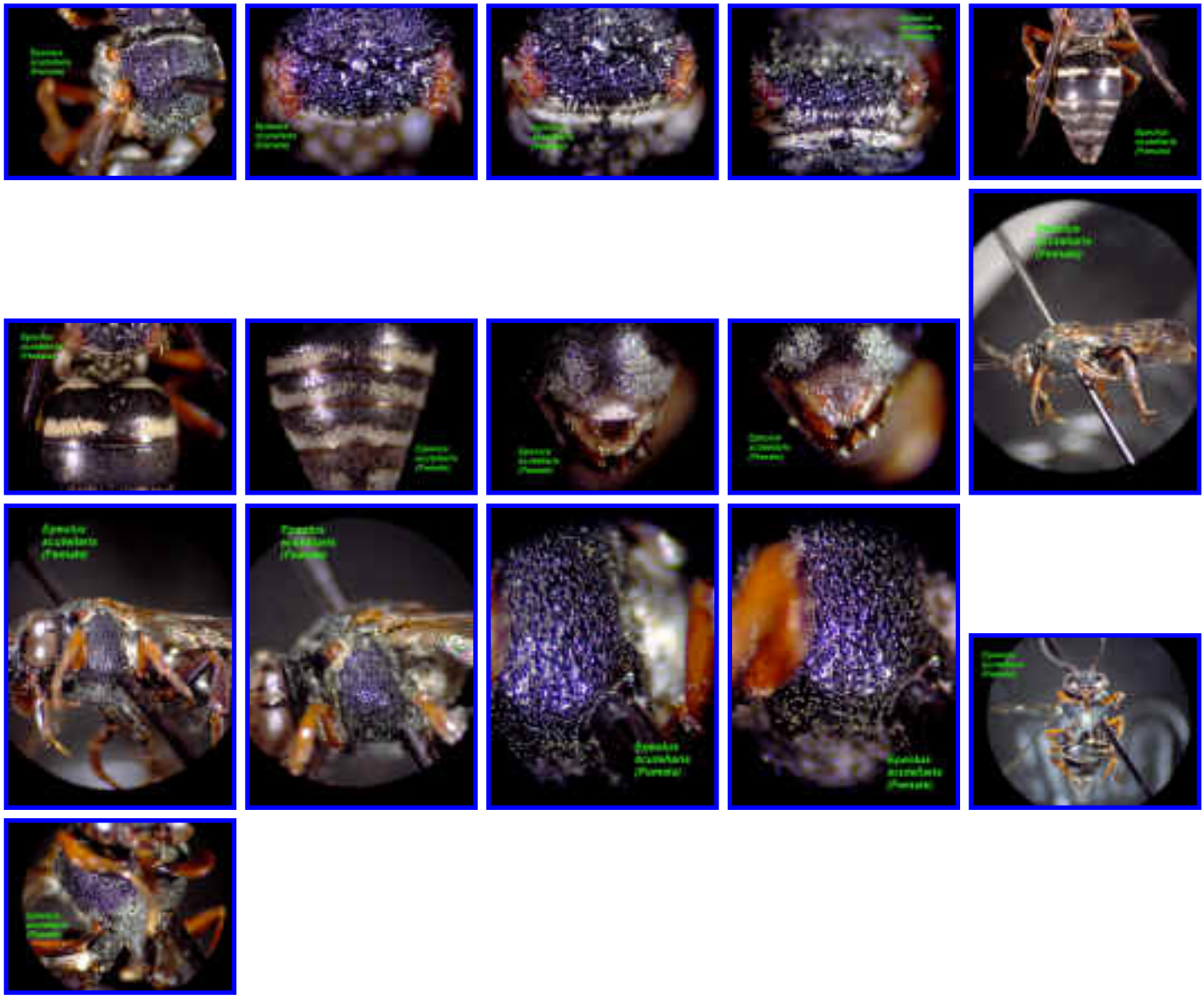
Plants:

Notes:



Female:





Apidae: *Epeolus weemsi* Mitchell

County Records: Alachua



Locations:

Dates: February

Plants:

Notes: Mitchell states that this may be the male of *E. vernalis* Mitchell. No photos are available of this species.

Apidae: *Epeolus zonatus* Smith

County Records: Highlands, Miami-Dade



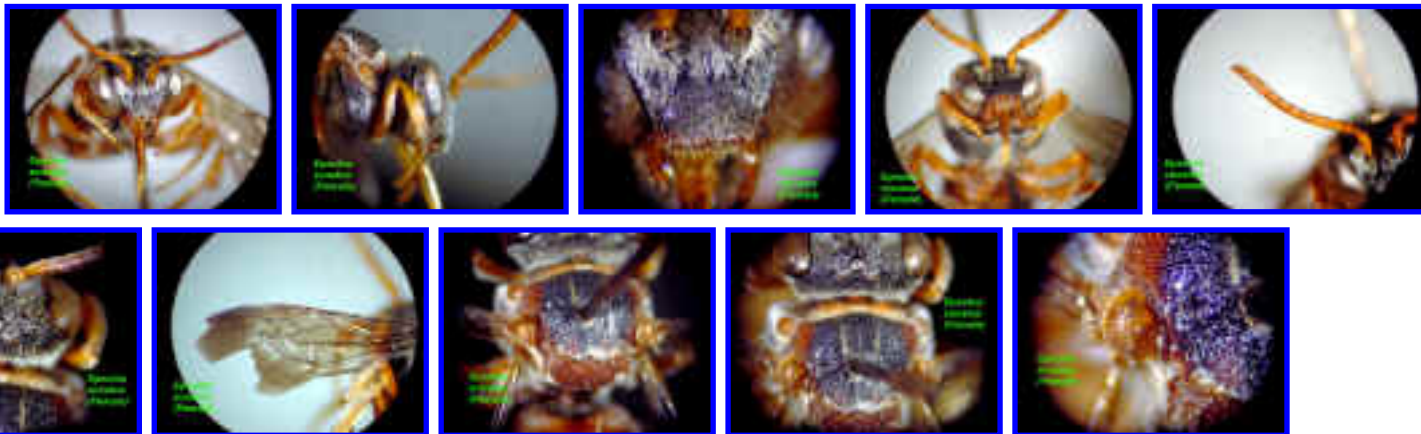
Locations:

Dates: March-May; Graenicher found this species flying Feb.-October in ENP.

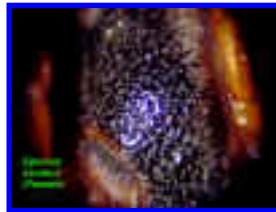
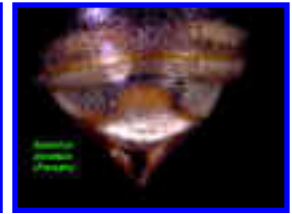
Plants:

Notes: restricted to Georgia and Florida

Female:



Epeolus



Apidae

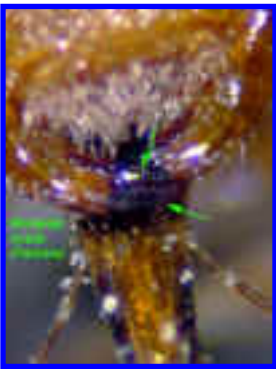
Tribe *Nomadini* (19 taxa)

Genus *Nomada*, nineteen taxa reported for Florida

These are parasitic bees, mostly on the genus *Andrena* but some other hosts are known.

Key to females (from Mitchell 1962)

1. Mandibles bidentate, having a distinct, subapical inner tooth....2

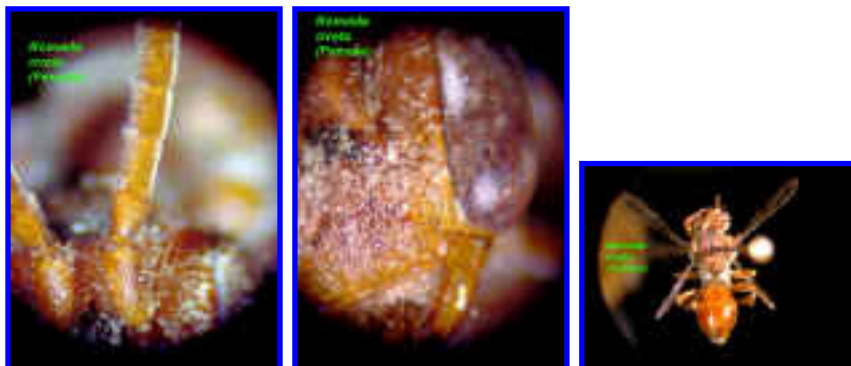


Mandibles simple.....3

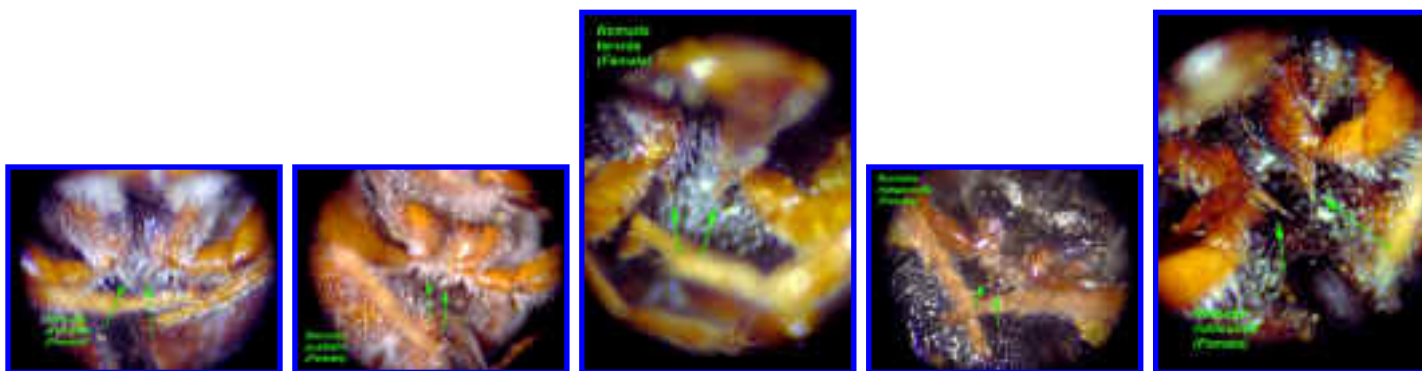


2. Segment 1 of flagellum, measured on the longer side, equal to segment 2; the abdominal terga dark red, with contrastingly yellow maculations...[Nomada lepida](#)

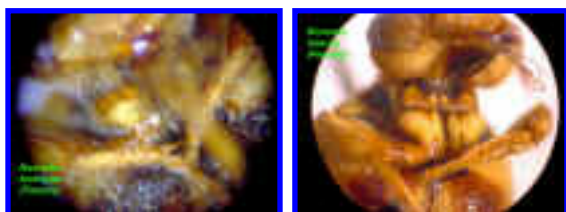
Segment 1 of flagellum considerably shorter than segment 2, even on upper side; light red, the yellow maculations not so strongly contrasting, and face often yellowish between clypeus and eyes...[Nomada ovata](#)



3. Front coxae with distinct, acute spines, often obscured by the pubescence....4



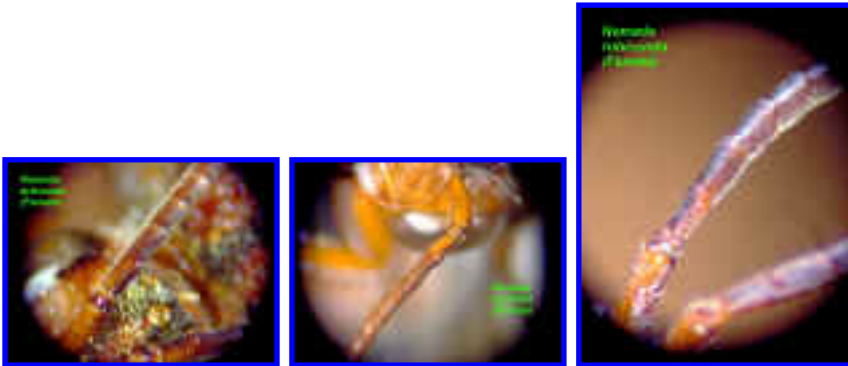
Front coxae without spines or with very short obscure spines or denticles....10



4. Segment 2 of flagellum slightly shorter than basal segment, not much longer than broad....5



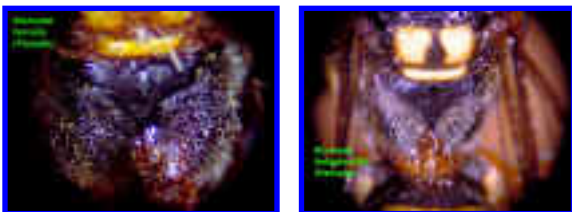
Segment 2 of flagellum much longer than broad, usually distinctly longer than basal segment....7



5. Propodeum with conspicuous yellow maculae...[*Nomada modesta*](#)



Propodeum entirely black....6



6. Abdominal terga 3-5 largely black, with only narrow, interrupted yellow or reddish bands or lateral spots...[*Nomada fervida*](#)

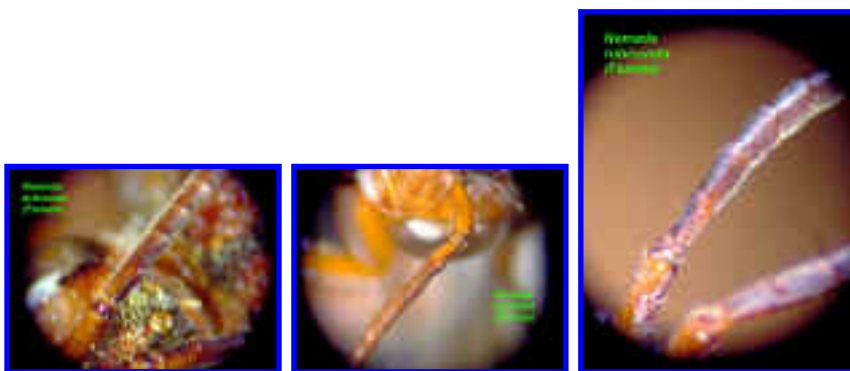


Abdominal terga 3-5 with bright yellow transverse bands, that on 3 interrupted medially or much narrowed medially....[*Nomada heiligbrodtii*](#)



7. Basal segment of flagellum very short, length about equal to the apical width; abdominal terga 2-5 with small, inconspicuous yellow maculae...[*Nomada seneciophylla*](#)

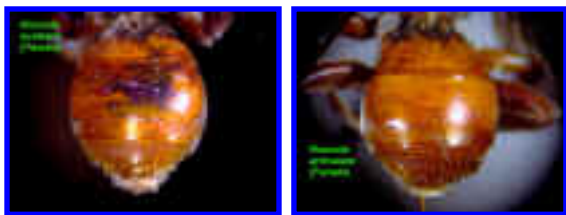
Basal segment of flagellum much longer than the apical width.....8



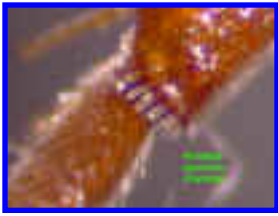
8. Terga 3-5 with ivory bands or maculae...[*Nomada rubicunda*](#)



Abdomen entirely red, without pale maculae....9



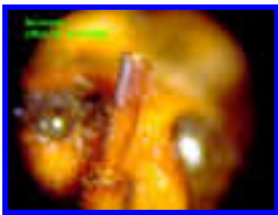
9. Hind tibiae with a row of five elongate black setae at apex....[*Nomada australis*](#)



Hind tibiae without these elongate apical setae, or if at all evident, then very short...[*Nomada articulata*](#)



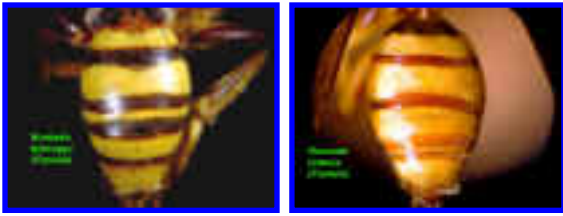
10. Basal segment of flagellum, measured along the shorter side, at least equal to segment 2...
[*Nomada affabilis*](#)



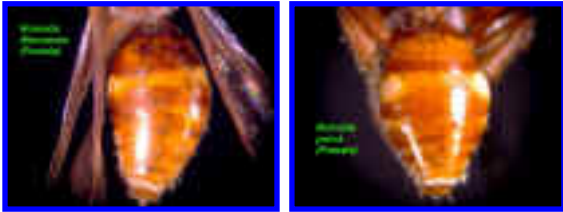
Length of segment 2 somewhat greater than the shorter side of basal segment...11



11. Abdominal terga with conspicuous, entire, bright, yellow transverse bands...12



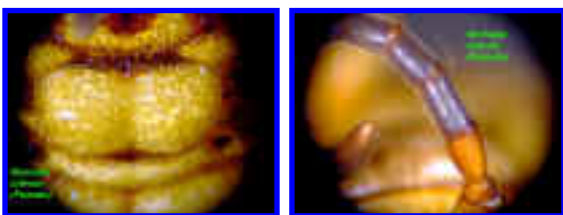
Abdominal bands, if present, interrupted medially at least on terga 2 and 3...13



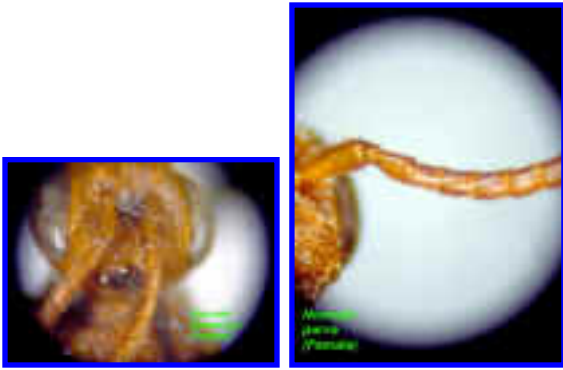
12. Dorsal surface of scutellum rather flat, smooth and shining between the coarse, deep, and distinct punctures; flagellar segment 2 only very slightly longer than shorter side of segment 1....
[*Nomada bishoppi*](#)



Scutellum more rounded, coarsely rugose or closely punctate; segment 2 of flagellum much longer than shorter side of segment 1....[*Nomada luteola*](#)



13. Segment 1 of flagellum as long as segment 2 when measured on the longer, upper side...14



Long side of segment 1 at least slightly shorter than segment 2...16

14. Front coxae with short triangular spines...[*Nomada denticulata*](#)

Front coxae simple....15

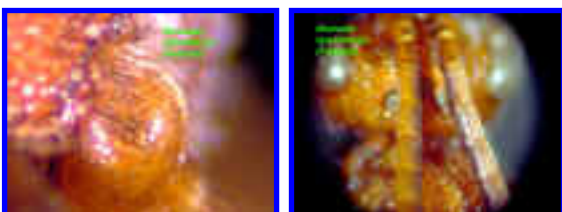
15. Very small (5mm); abdominal terga nearly impunctate, with only very minute and obscure punctures visible laterally...[*Nomada parva*](#)



Larger (7 mm or more); abdominal terga distinctly, even though finely, punctate....[*Nomada illinoensis*](#)



16. Tegulae very finely and closely punctate; face with little or no black between antennae....
[*Nomada tyrellensis*](#)



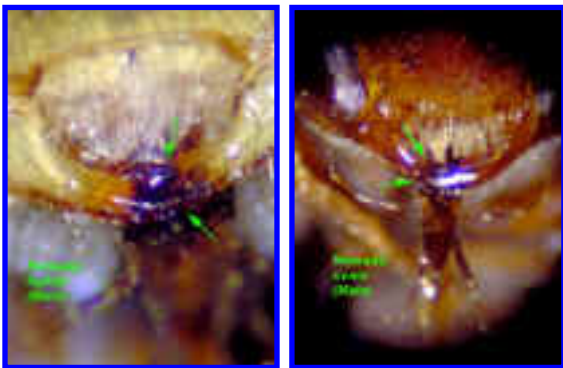
Tegulae more coarsely or sparsely punctate; face blackened between and above



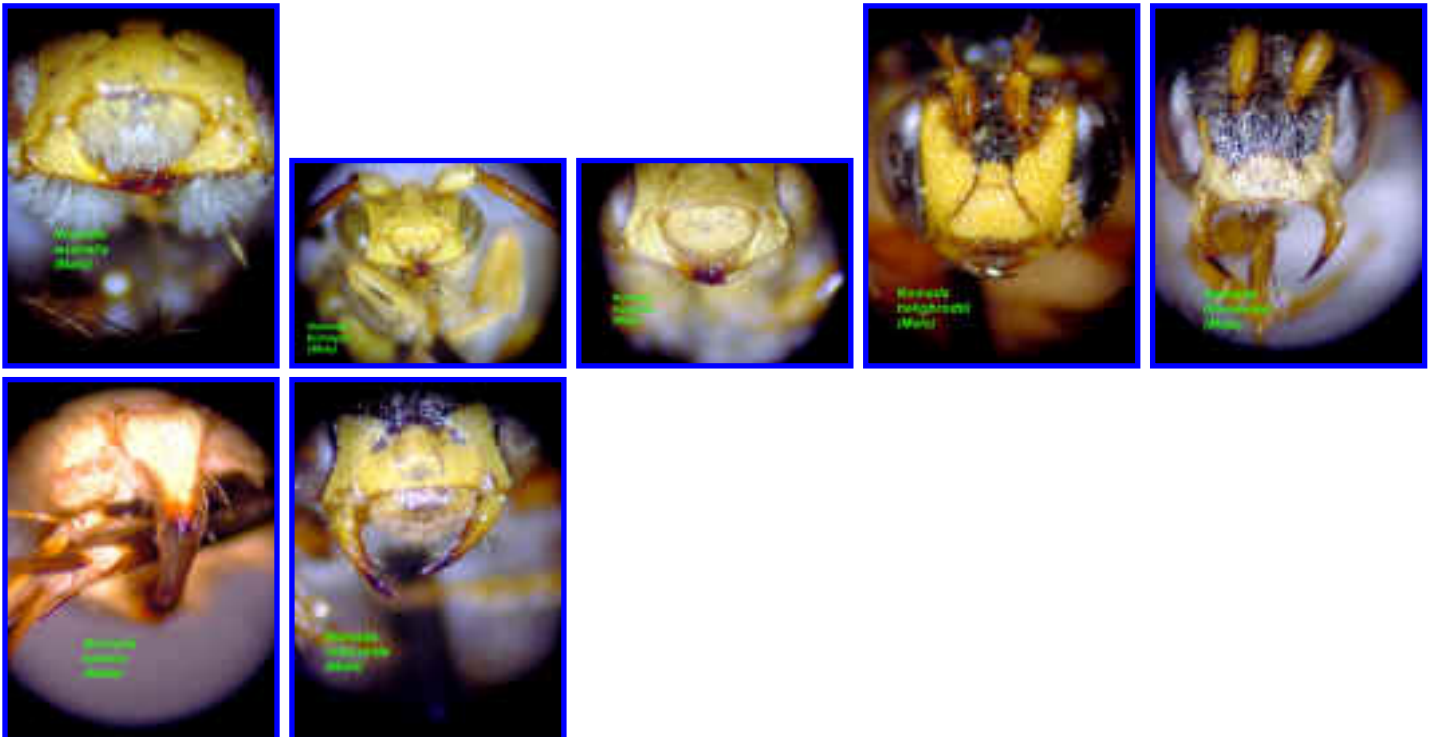
antennae... [Nomada sayi](#)

Key to males (from Mitchell 1962)

1. Mandibles bidentate, having a distinct, subapical inner tooth....2



Mandibles simple....4



2. Scutellum rounded, the median groove barely evident or entirely absent; abdominal bands nearly complete; segment 1 of flagellum nearly as long as segment 2, measured on the longer side, much longer than broad... [*Nomada bella*](#)

Scutellum with a distinct median groove, or segment 1 of flagellum not much longer than broad, and much shorter than segment 2...3



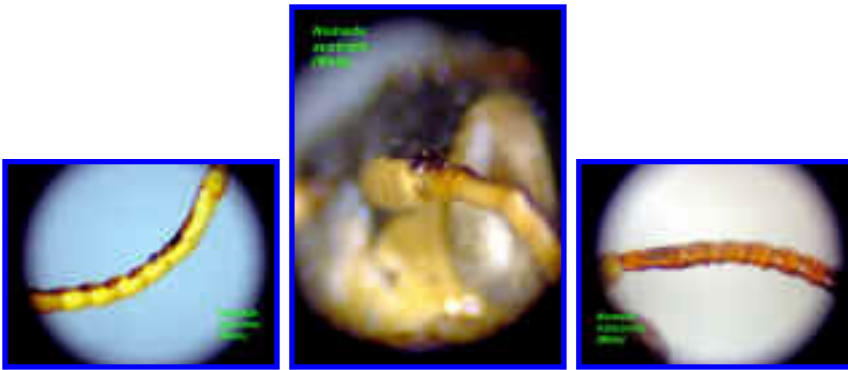
3. Scutum and mesopleura largely red.... [*Nomada ovata*](#)



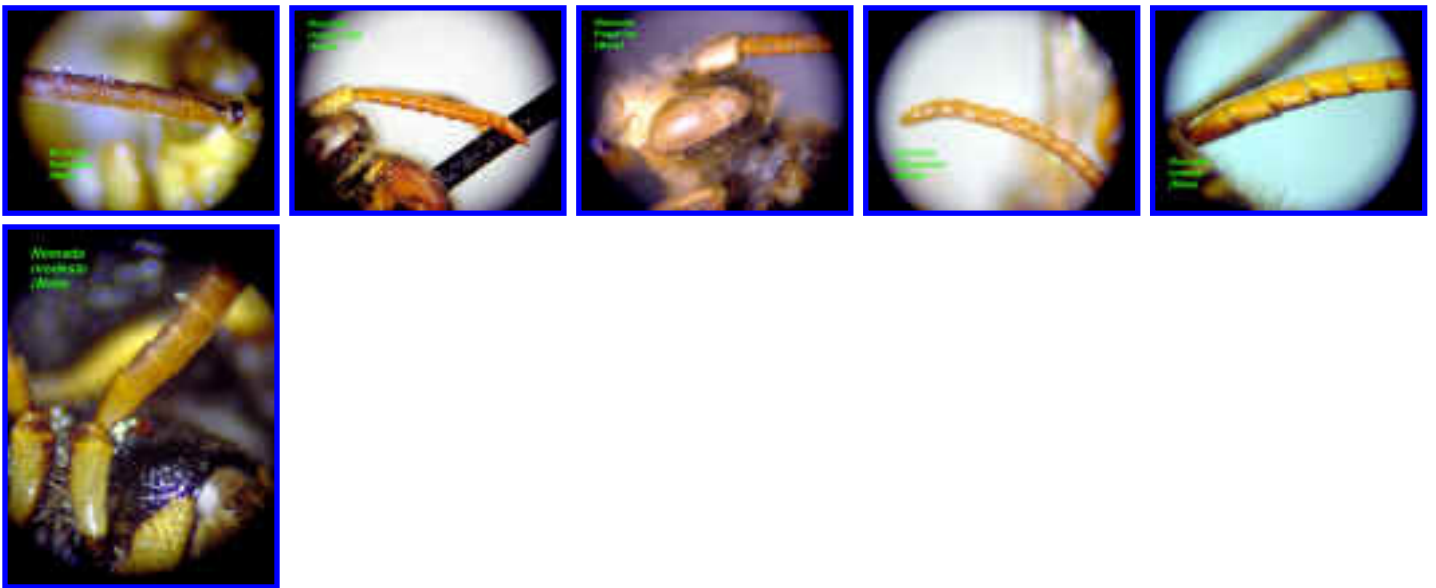
Scutum and mesopleura largely or entirely black, abdominal terga 2-5 with entire or slightly interrupted yellow bands... [*Nomada lepida*](#)



4. Segment 3 of flagellum spinose beneath; pedicel nearly or quite deeply hidden in the deeply concave apex of the scape.....5



Segment 3 of flagellum not spinose; pedicel usually not so enclosed in the scape..8

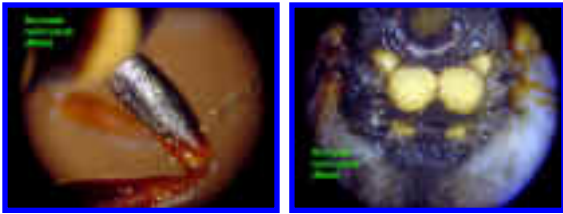


5. Segments 2 and 3 of flagellum subequal in length, the length not much exceeding the breadth...
[Nomada seneciophylla](#)

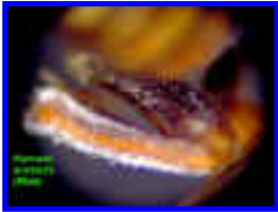
Segment 2 of flagellum considerably longer than 3, fully twice as long as broad...6



6. Hind femora simple, ventral surface rounded; scutellum bright yellow...[Nomada rubicunda](#)



Hind femora arcuate, lower surface flattened or slightly concave, the margins subcarinate...7



7. Scutum partly and scutellum entirely ferruginous; metanotum usually yellow in part..[*Nomada articulata*](#)

Thorax entirely black except the tubercles and a pair of small inconspicuous yellowish maculae on collar; scutellum sometimes red, but metanotum black...[*Nomada australis*](#)



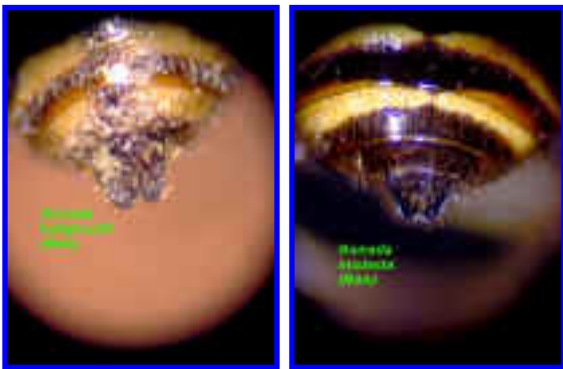
8. Basal segment of flagellum equal to segment 2, even if measured along its shorter side...9



Basal segment of flagellum considerably shorter than segment 2, at least if measured along its shorter side...12



9. Apex of pygidium deeply incised or emarginate...10



Apex of pygidium entire, rounded, or truncate...[*Nomada affabilis*](#)

10. Propodeum conspicuously yellow maculate...[*Nomada modesta*](#)



Propodeum usually entirely black, sometimes reddened, but not maculated...11



11. Scape ferruginous; transverse yellow bands on terga 3-5 very narrow; tergum 6 entirely black...
[*Nomada fervida*](#)

Scape yellow anteriorly; transverse bands on terga 3-5 broad laterally, narrowed medially; tergum 6 yellow maculate...
[*Nomada heiligbrodtii*](#)



12. Abdominal terga with broad, uninterrupted yellow bands....13



Abdominal terga either with lateral, widely separated yellow maculations, or with transverse bands that are to some degree interrupted medially....16



13. Basal vein interstitial with transverse, median vein...
[*Nomada fragariae*](#)



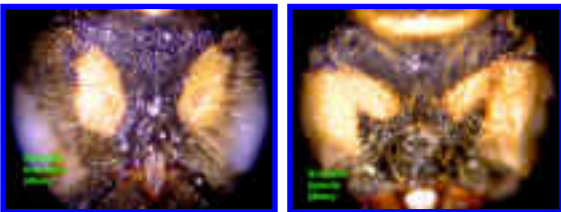
Basal vein to some degree basad of transverse median...14



14. Propodeum entirely black... [*Nomada bishoppi*](#)



Propodeum with yellow maculations....15



15. Basal segment of flagellum, measuring along the longer side, nearly as long as segment 2...
[*Nomada bishoppi*](#)



Segment 2 of flagellum about twice as long as basal segment....[*Nomada luteola*](#)



16. Segments 2-7 of flagellum excavated underneath...[*Nomada denticulata*](#)



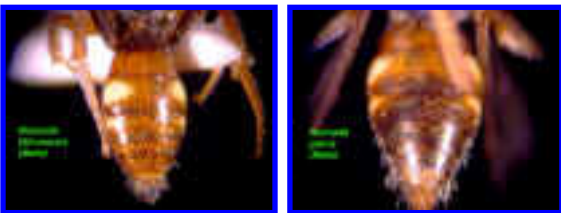
Flagellar segments not so modified...17



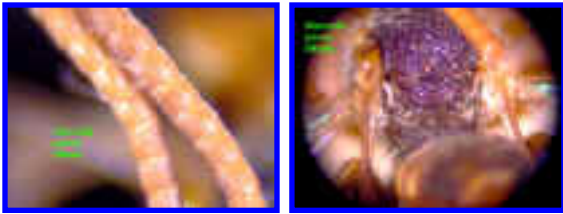
17. Abdominal terga 2 and 3 with transverse, yellow bands which are only slightly interrupted medially..[*Nomada sayi*](#)



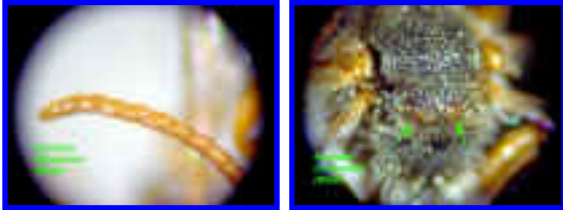
Tergum 3, and usually tergum 2 also, with lateral, yellow maculations which are rather widely separated....18



18. Very small (5mm); median antennal segments very short, breadth fully equal to length; scutellum rounded, entirely black...[*Nomada parva*](#)



Larger; median segments of antennae somewhat longer than broad; scutellum with reddish maculae, to some degree grooved or impressed medially....[*Nomada illinoensis*](#)



Apidae: *Nomada affabilis affabilis* Cresson

County Records: Wakulla

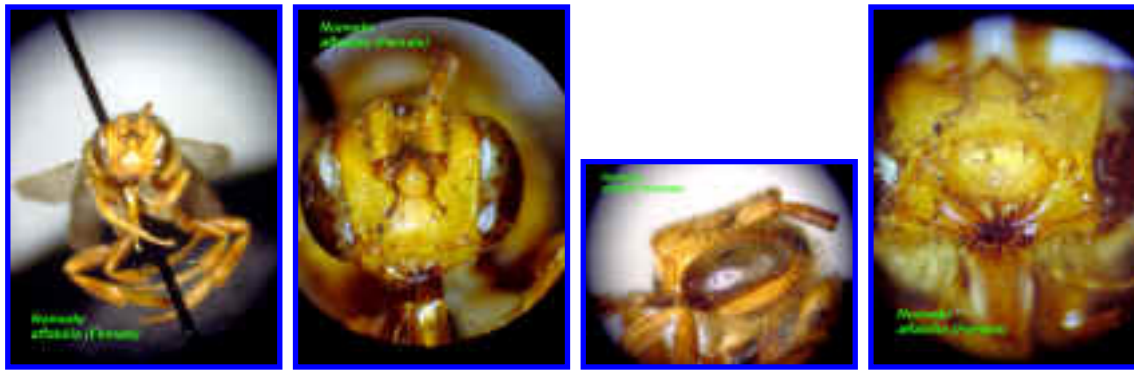


Locations:

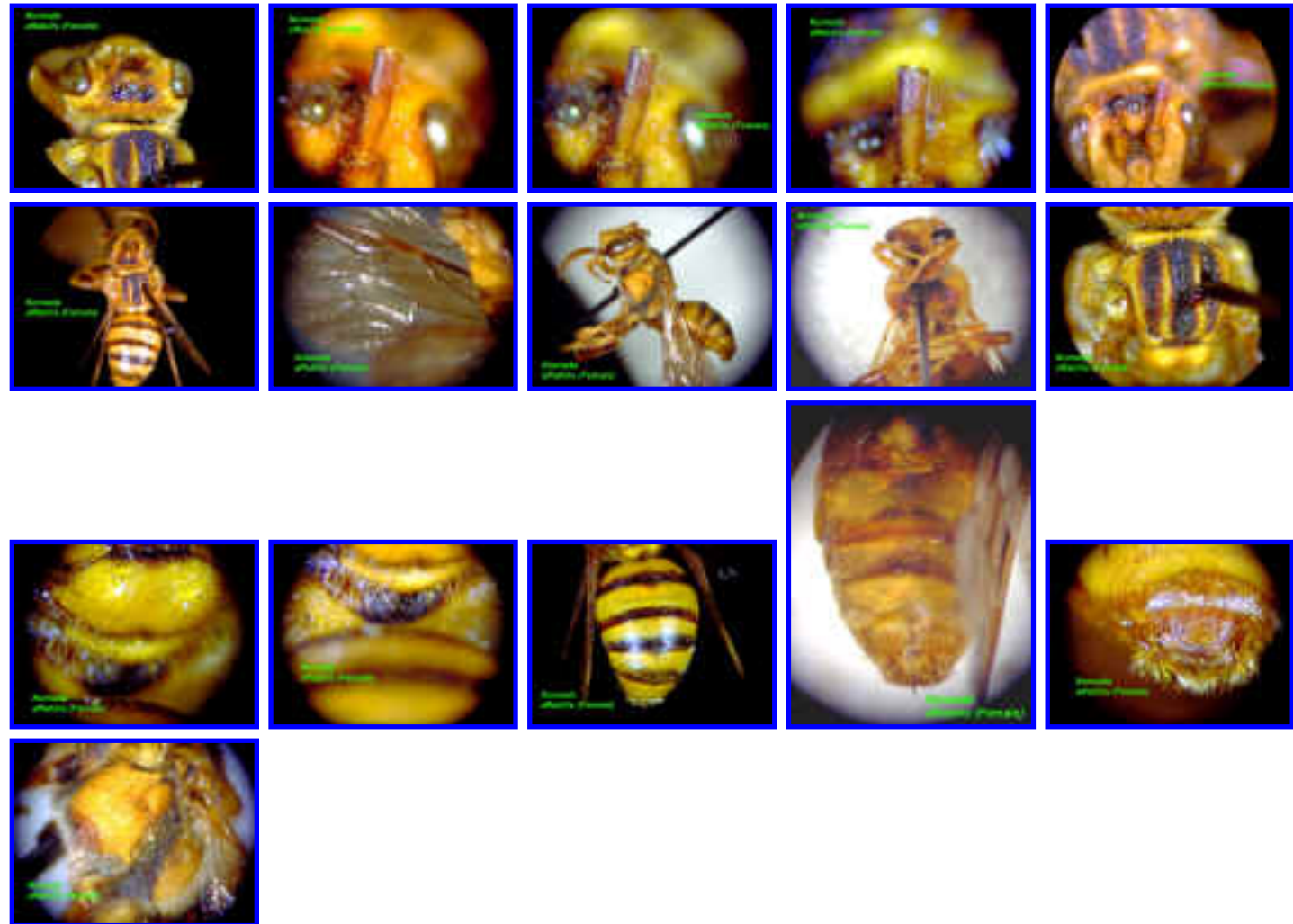
Dates: March-June

Plants:

Notes:



Female:



Apidae: *Nomada articulata* Smith

County Records: Liberty

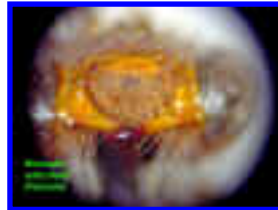


Locations: Torreya State Park

Dates: April-August; April 16 in Florida

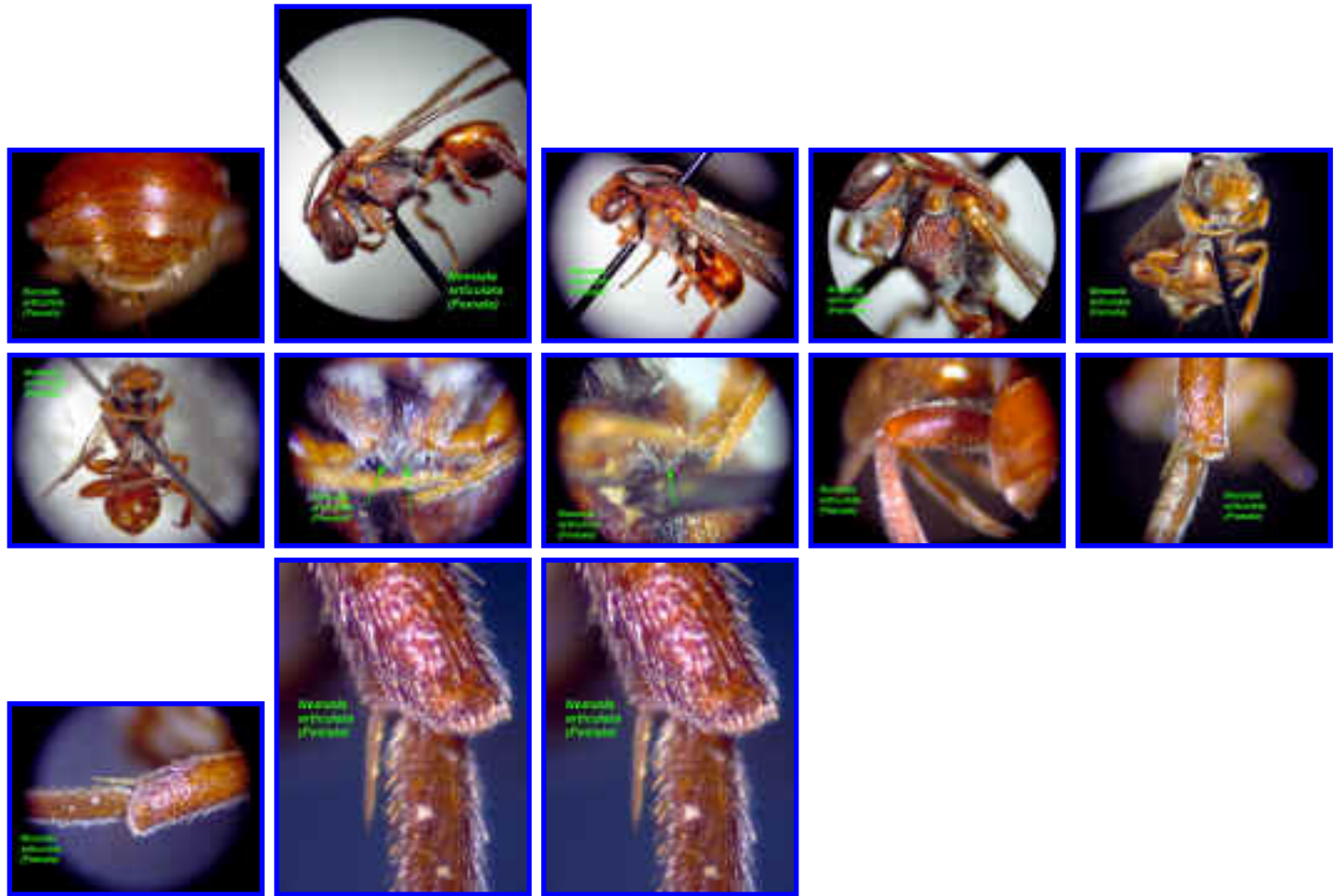
Plants:

Notes: Mitchell lists this for Florida



Female:





Apidae: *Nomada australis* Mitchell

County Records: Alachua, Gadsden, Lake, Leon, Liberty

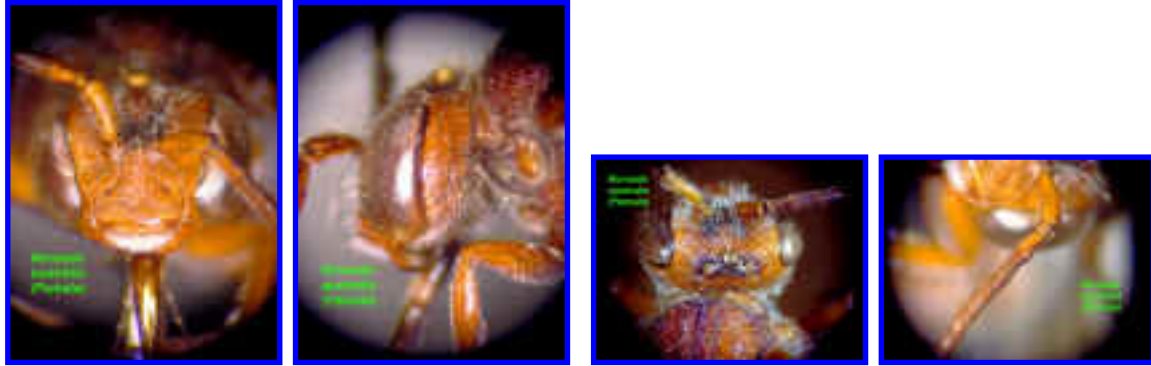


Locations: Gainesville, Tall Timbers Research Station, Torreya State Park

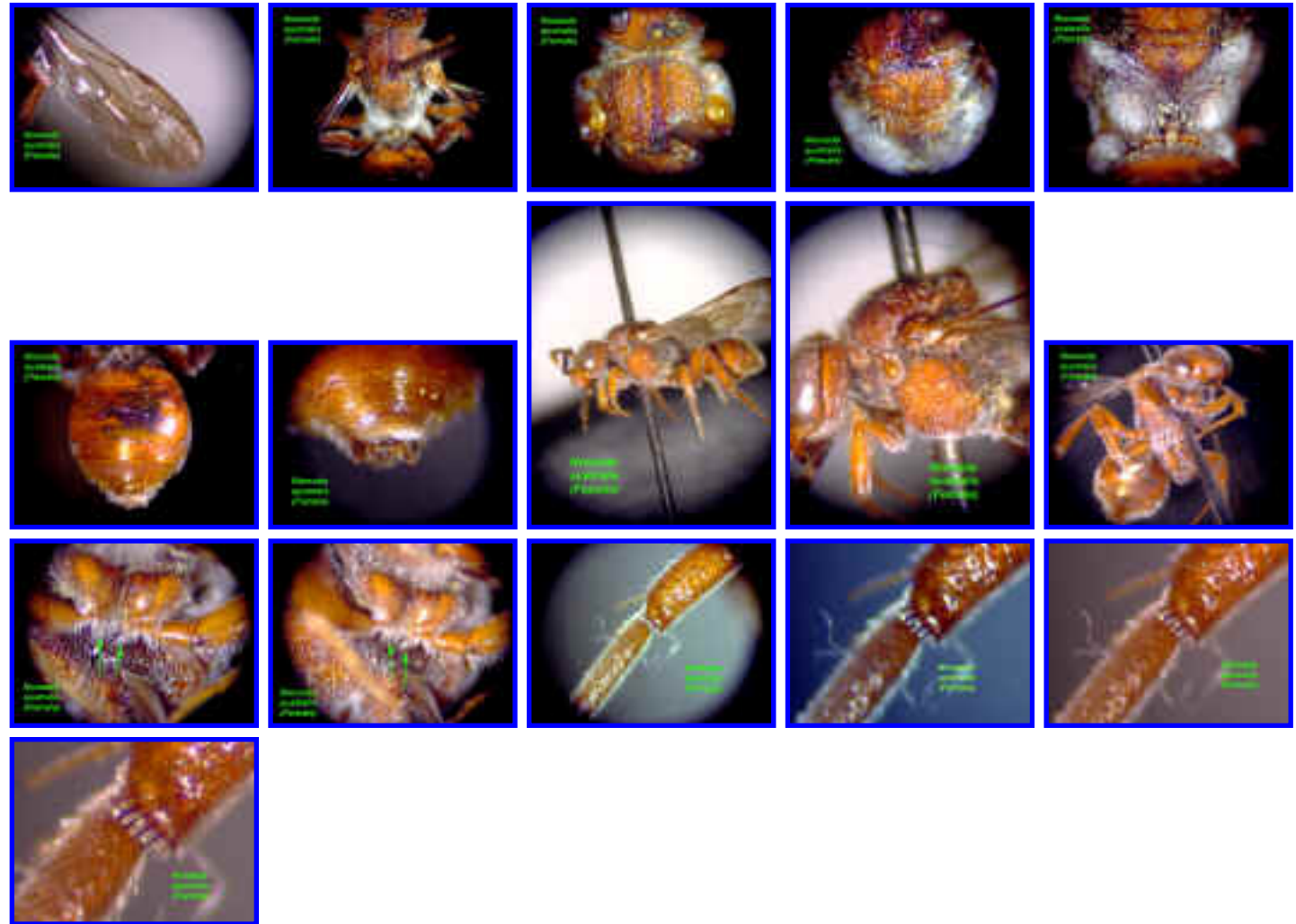
Dates: March-June; April 11-May 13 in Florida

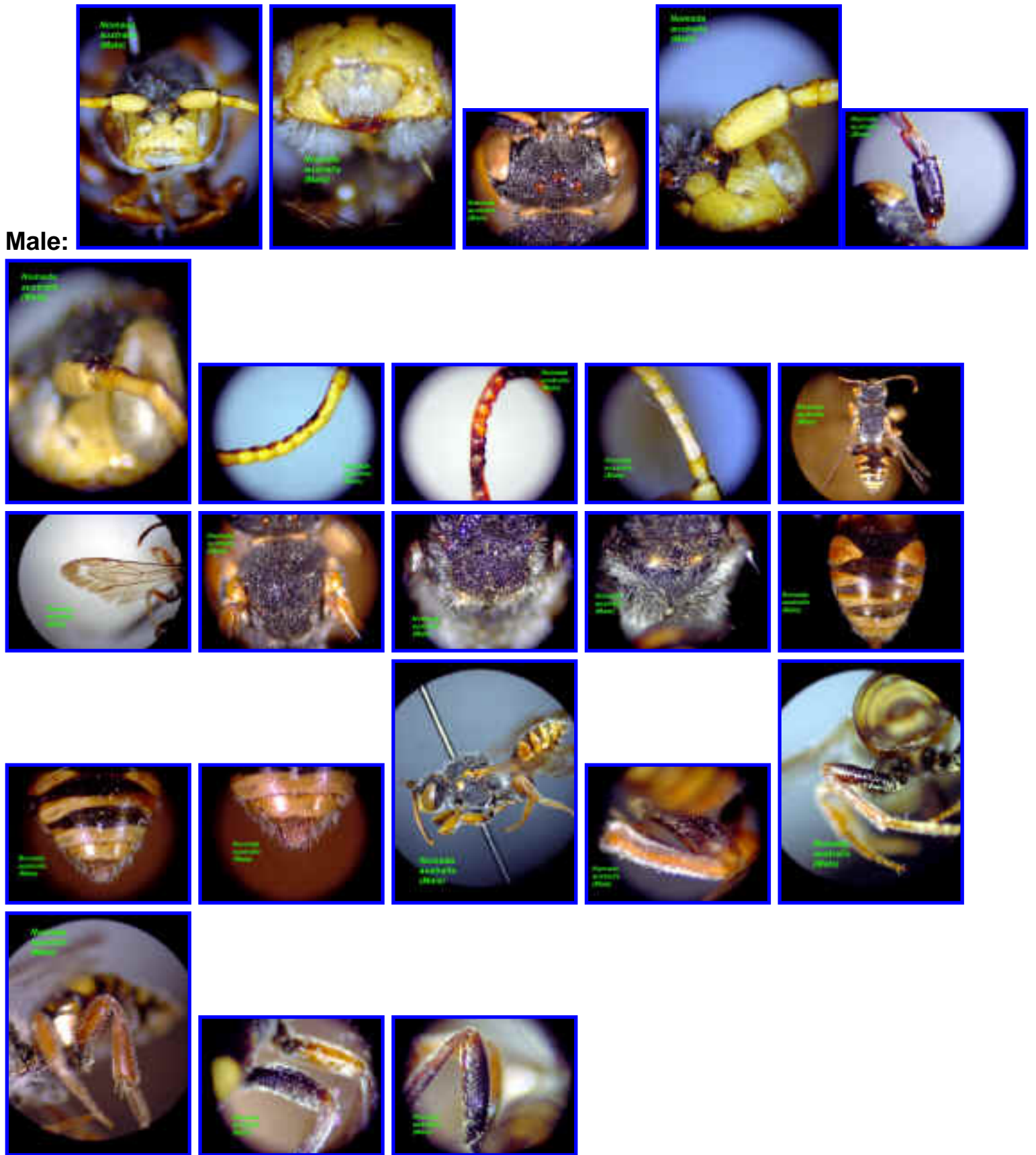
Plants:

Notes:



Female:





Apidae: *Nomada bella bella* Cresson

County Records: none in FSCA

Locations:

Dates: March to August (Mitchell)

Plants:

Notes: Mitchell lists this for Florida. No photos are available.

Apidae: *Nomada bishoppi* Cockerell

County Records: Gadsden (FL), Jackson (FL), Lowndes (GA), Thomas (GA)



Locations:

Dates: March-June; March 1-April 13 in Florida

Plants:

Notes:



Female:



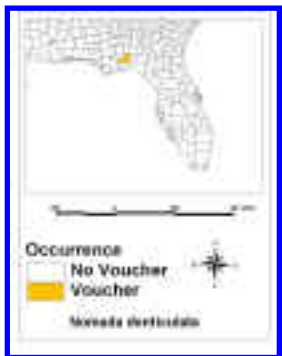
Male:





Apidae: *Nomada denticulata* Robertson

County records: Leon

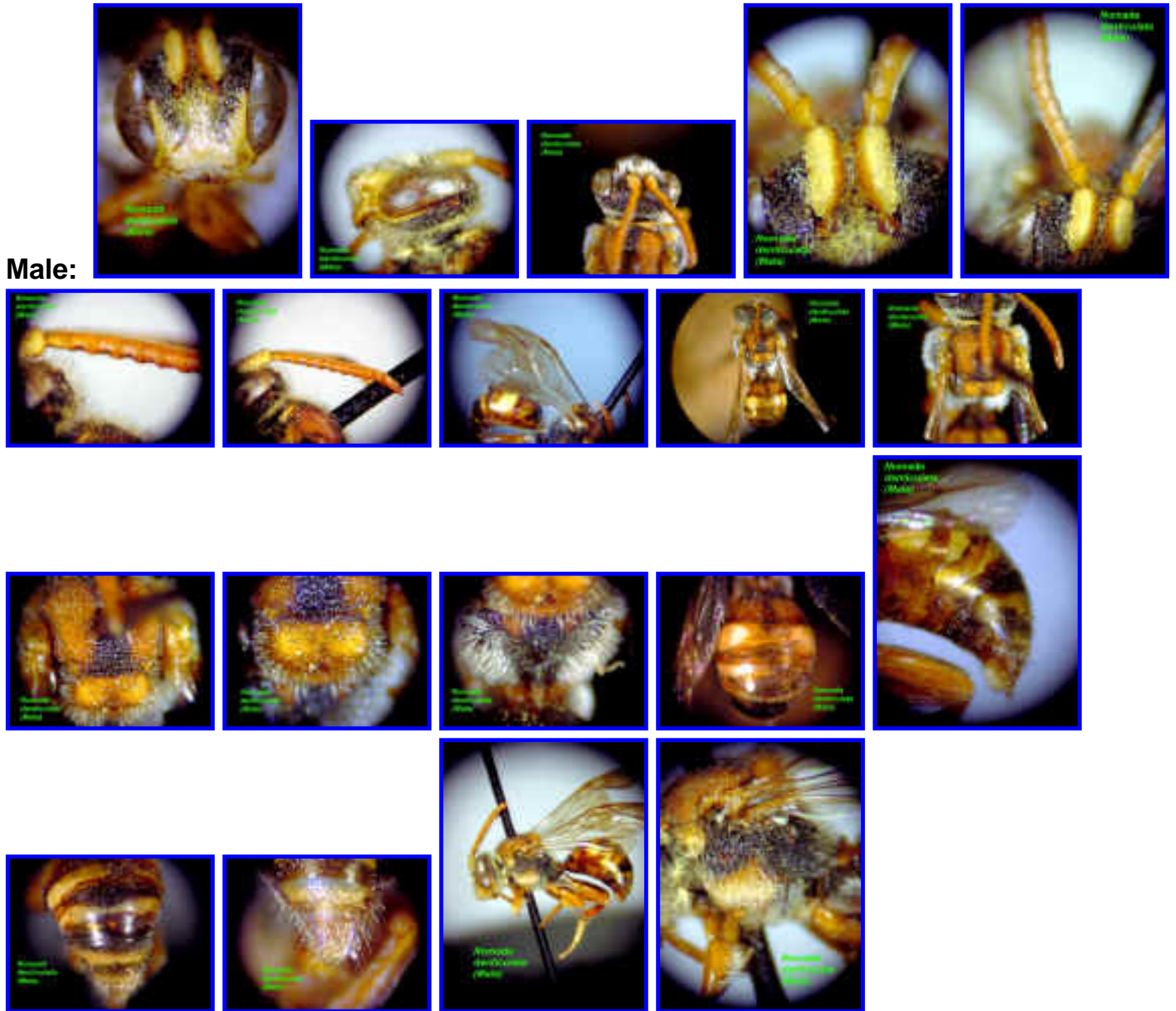


Locations: Tallahassee

Dates: March

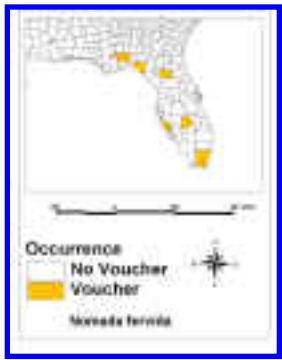
Plants:

Notes: new state record for Florida; previously known from Georgia.



Apidae: *Nomada fervida* Smith

County Records: Alachua, Gadsden, Highlands, Leon, Miami-Dade, Sarasota, Taylor

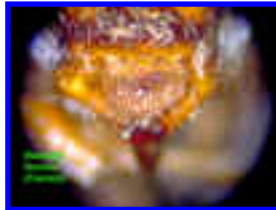


Locations: Coral Gables, Blue Spring Lake

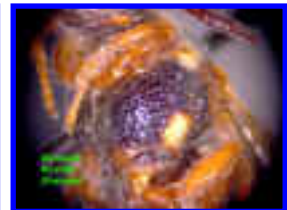
Dates: March-September; April, June, and September in Florida

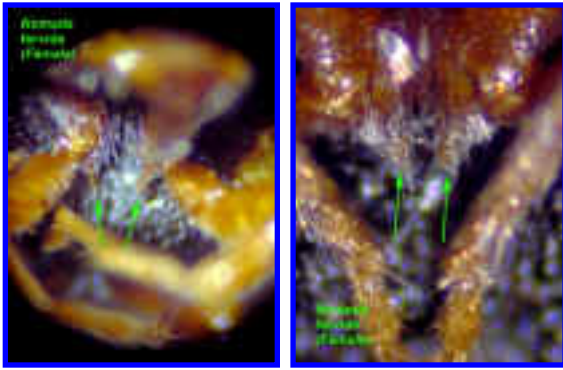
Plants:

Notes: Florida-South Carolina



Female:





Apidae: *Nomada fragariae* Mitchell

County Records: Alachua, Leon

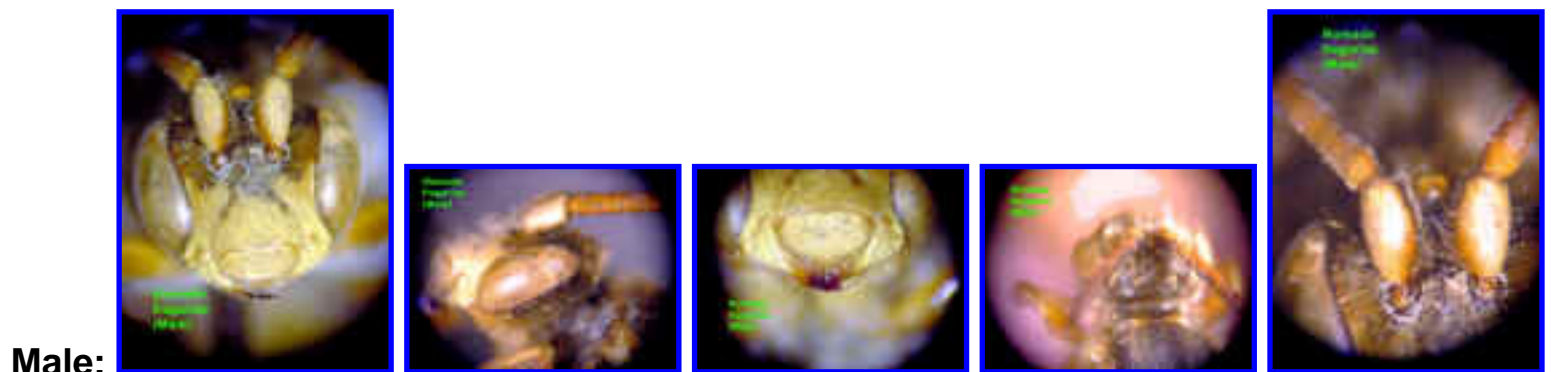


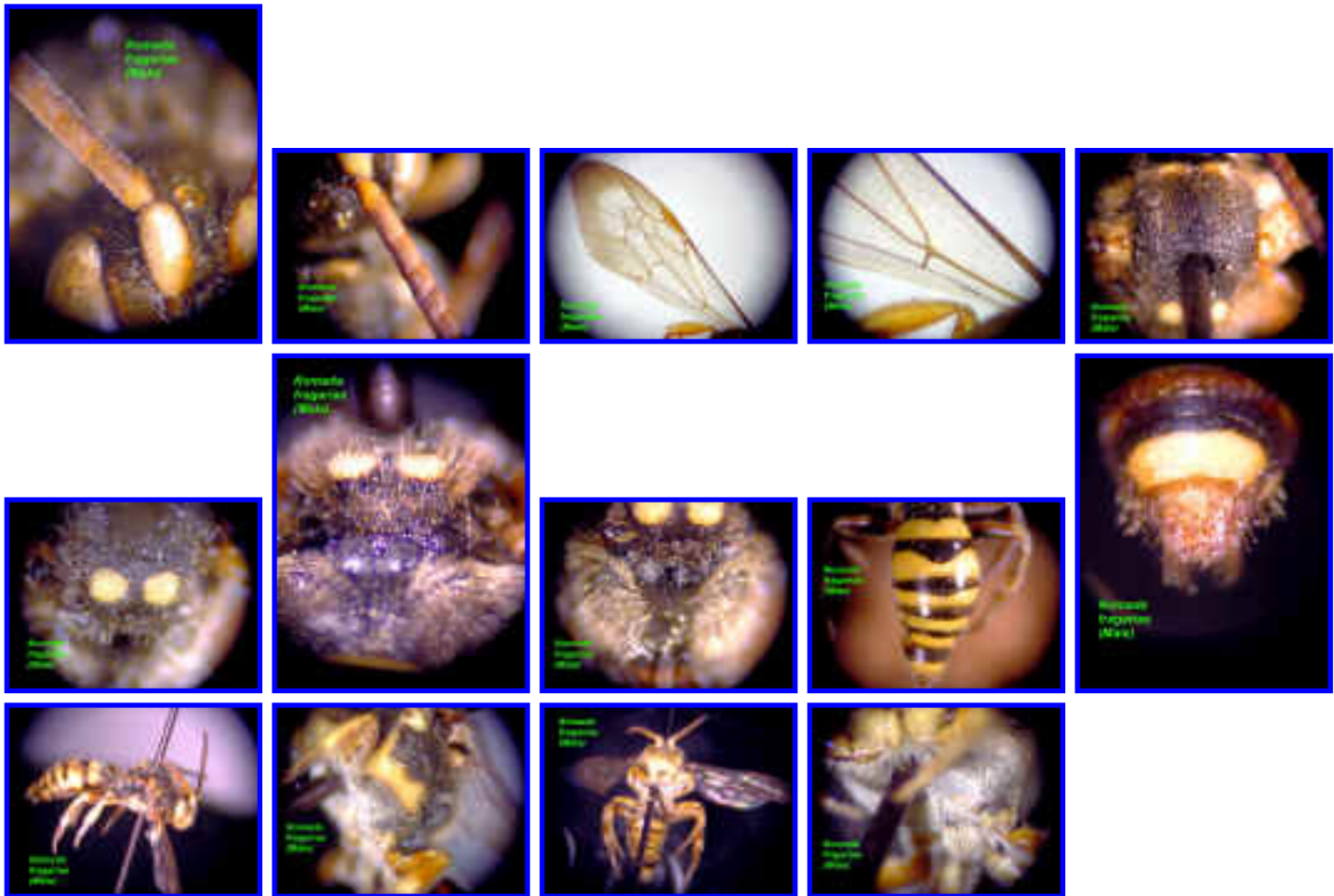
Locations: Tall Timbers Research Station

Dates: February-May

Plants:

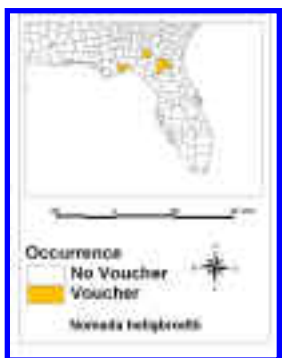
Notes:





Apidae: *Nomada heligbrodtii* Cresson

County Records: Baker, Columbia, Wakulla, Lowndes (GA)



Locations: Osceola National Forest, St. Marks National Wildlife Refuge

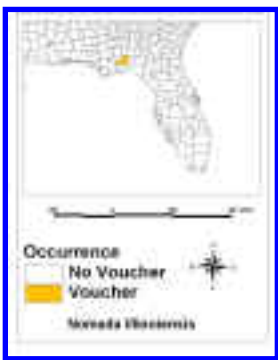
Dates: April-October

Plants:



Apidae: *Nomada illinoensis* Robertson

County Records: Leon



Locations: Tall Timbers Research Station

Dates: March

Plants:

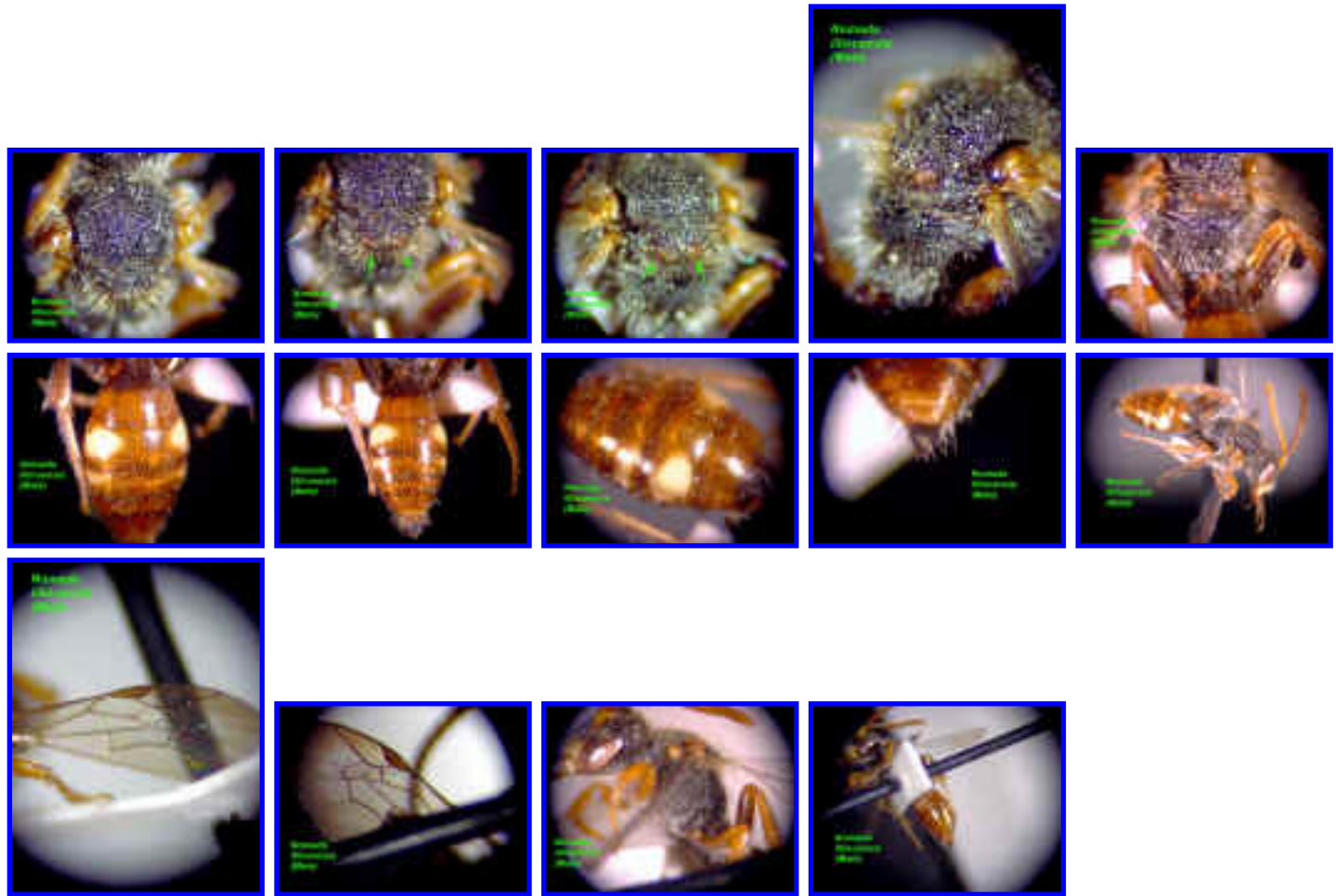
Notes: New state record for Florida; previously known from Georgia.

Female:



Male:





Apidae: *Nomada lepida* Cresson

County Records: Leon



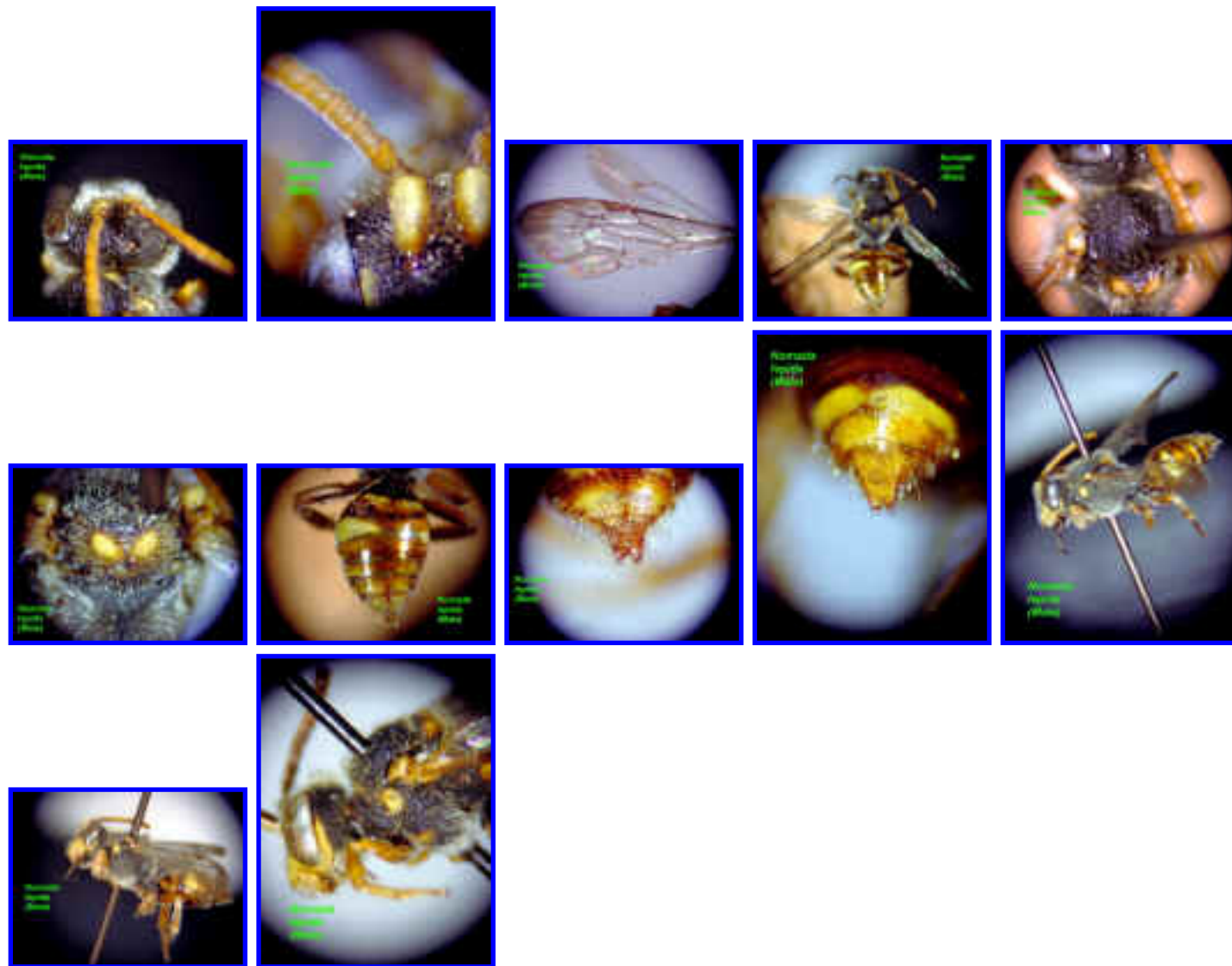
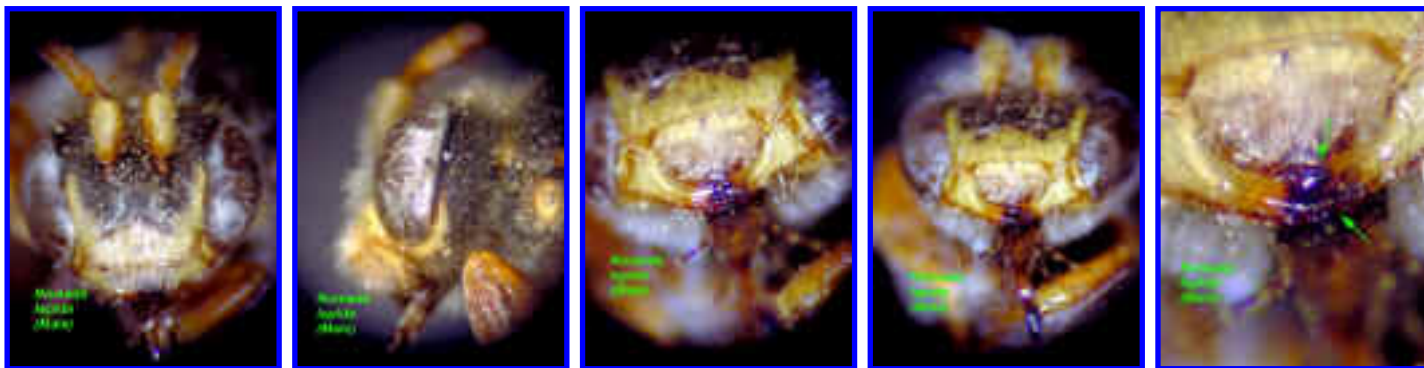
Locations: Tall Timbers Research Station

Dates: March to July

Plants:

Notes: New state record for Florida; previously known from Georgia.

Male:



Apidae: *Nomada luteola* Olivier

County Records: Alachua, Leon



Locations: Tall Timbers Research Station

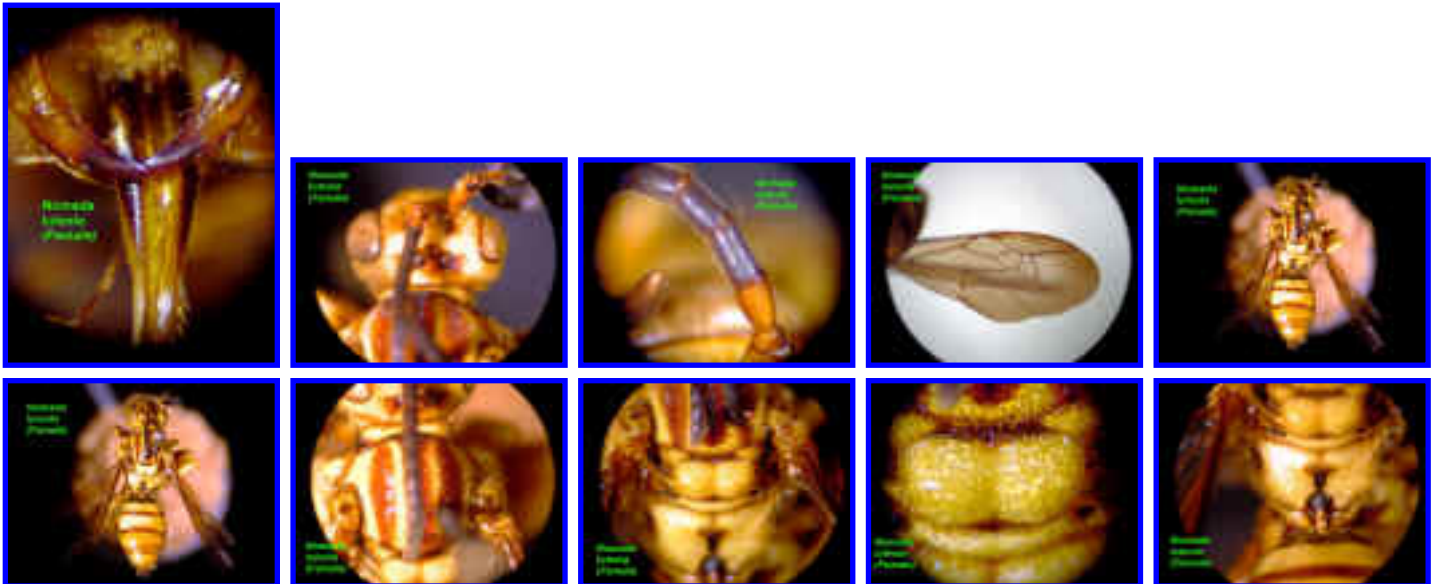
Dates: March-June

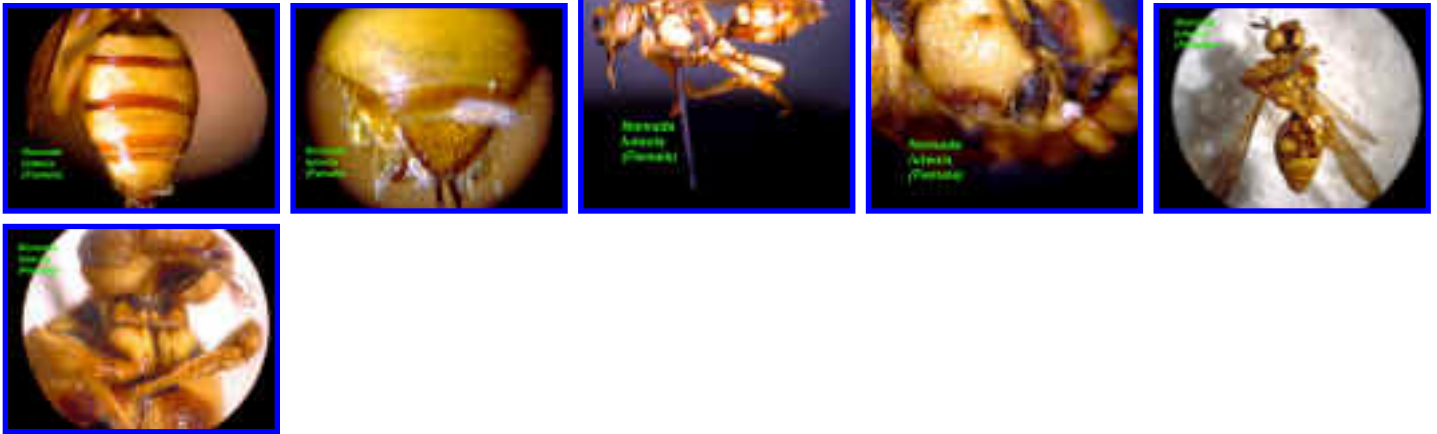
Plants:

Notes:

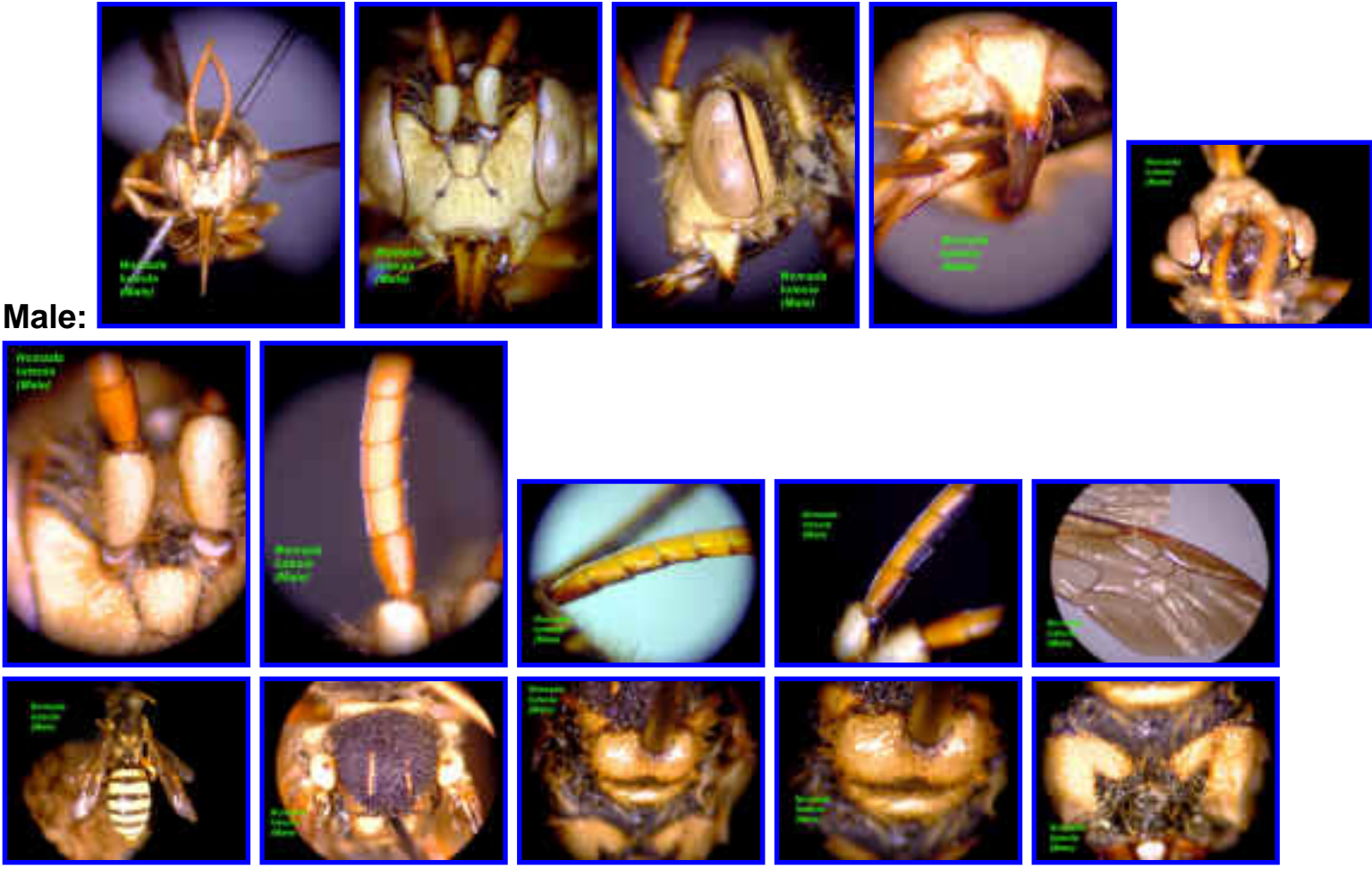


Female:





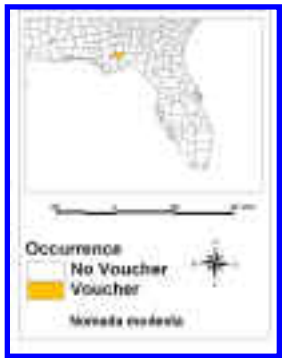
Male:





Apidae: *Nomada modesta* Cresson

County records: Gadsden



Locations: Quincy

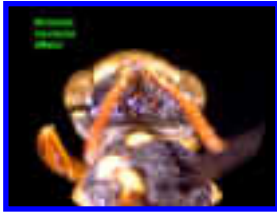
Dates:

Plants:

Notes: new state record for Florida, previously known from only Alabama



Female:



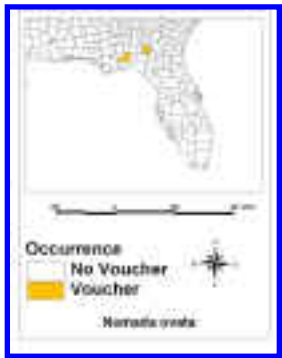
Male:





Apidae: *Nomada ovata* Robertson

County Records: Leon, Lowndes County (Georgia)

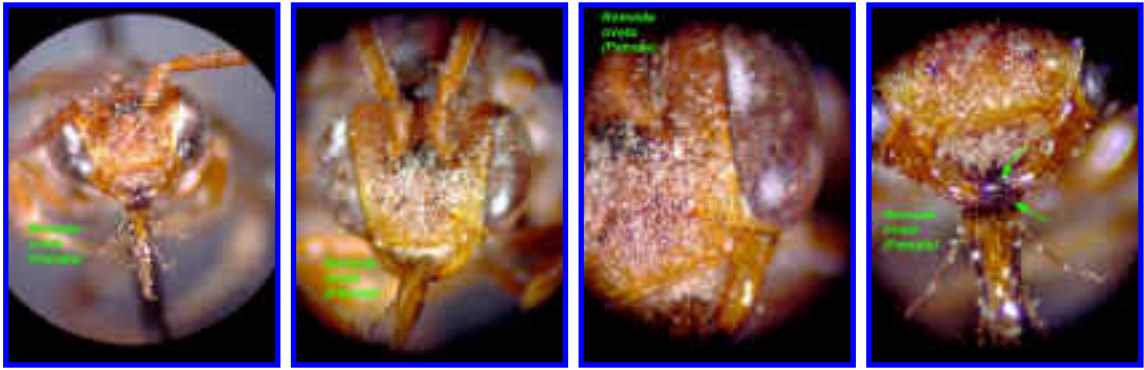


Locations: Tall Timbers Research Station, VSU

Dates: March-April

Plants:

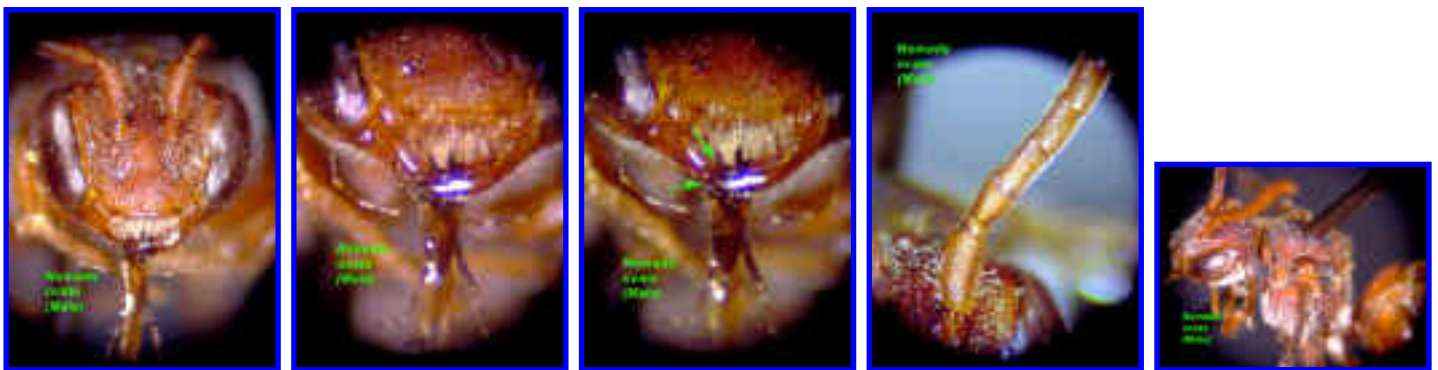
Notes: New state record for Florida; previously known from S. Carolina



Female:



Male:





Apidae: *Nomada parva* Robertson

County Records: Alachua



Locations: Gainesville

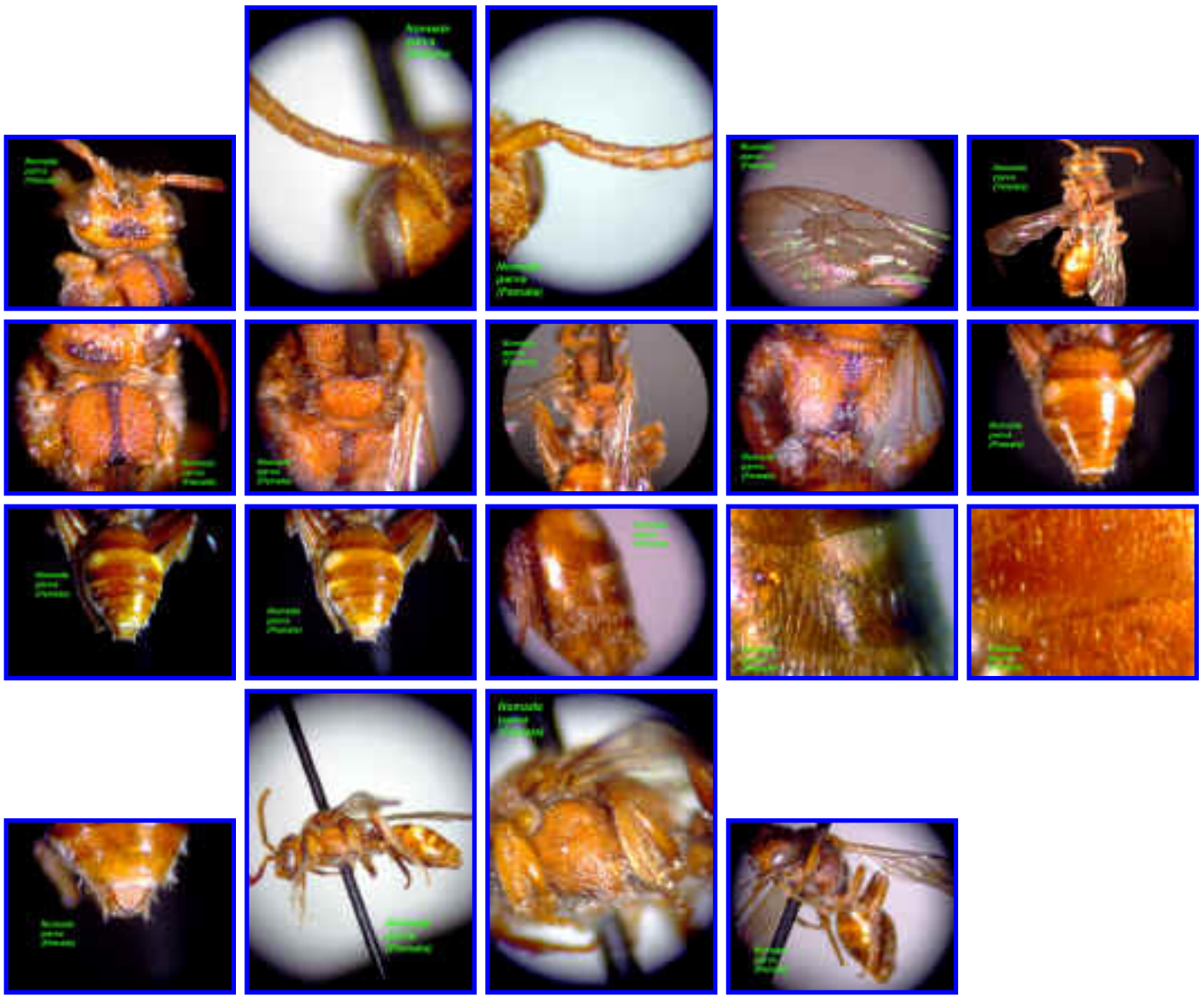
Dates: Feb.

Plants: *Prunus angustifolia*

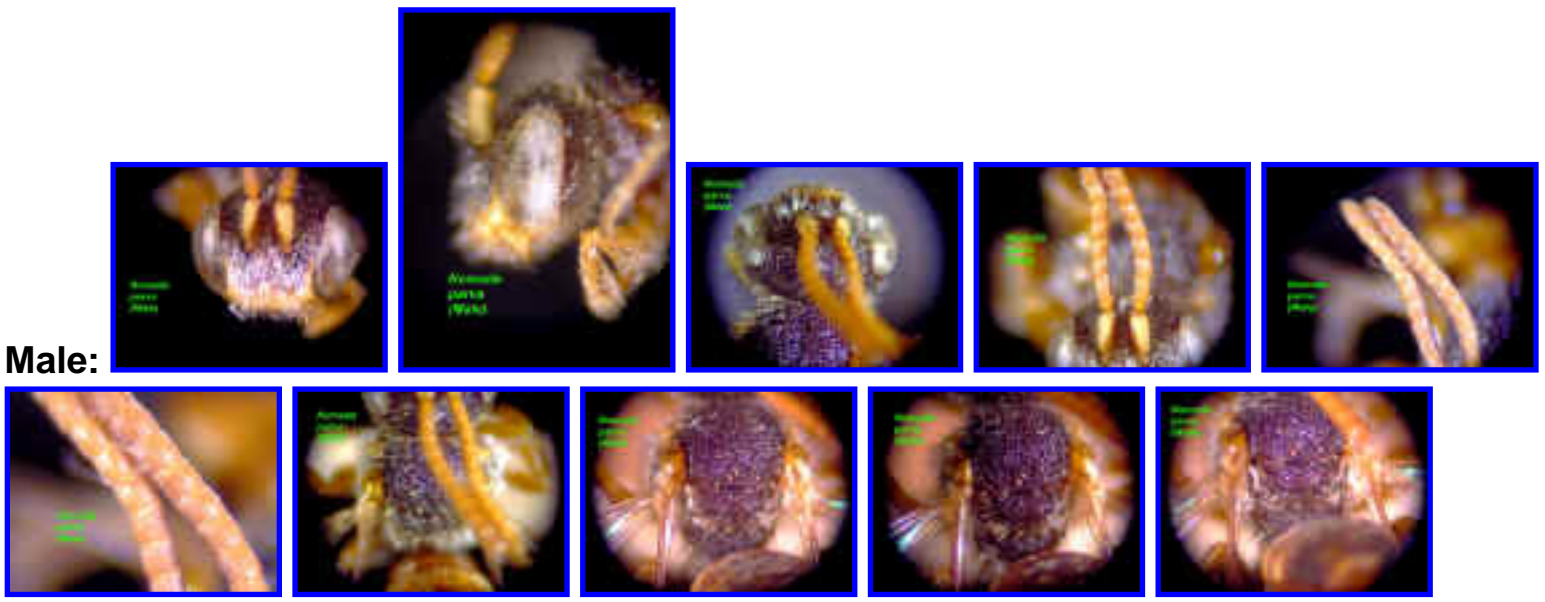
Notes: New state record; previously known from Mississippi

Female:





Male:





Apidae: *Nomada rubicunda* Olivier

County Records: Leon, Thomas County (GA)



Locations: Tall Timbers Research Station

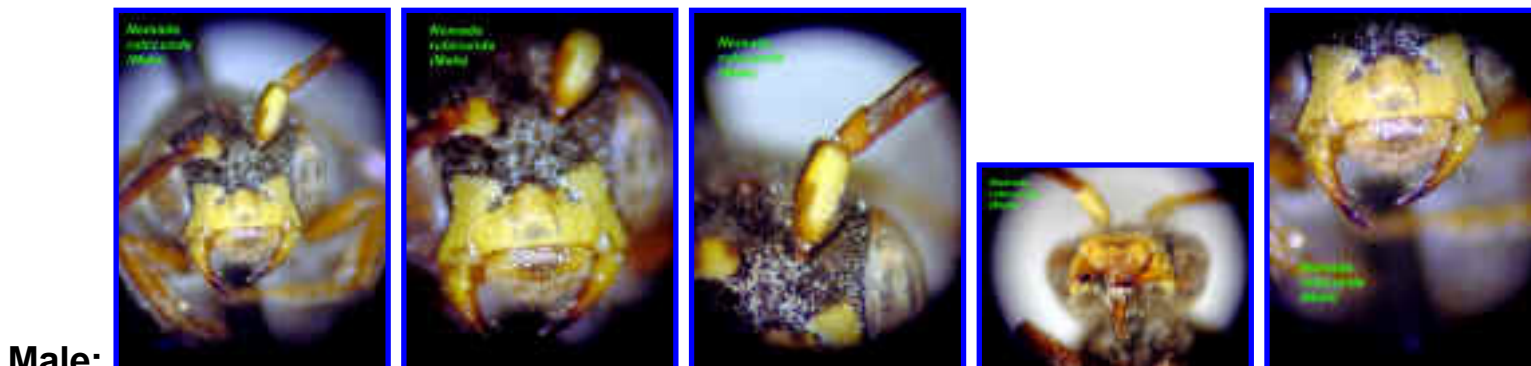
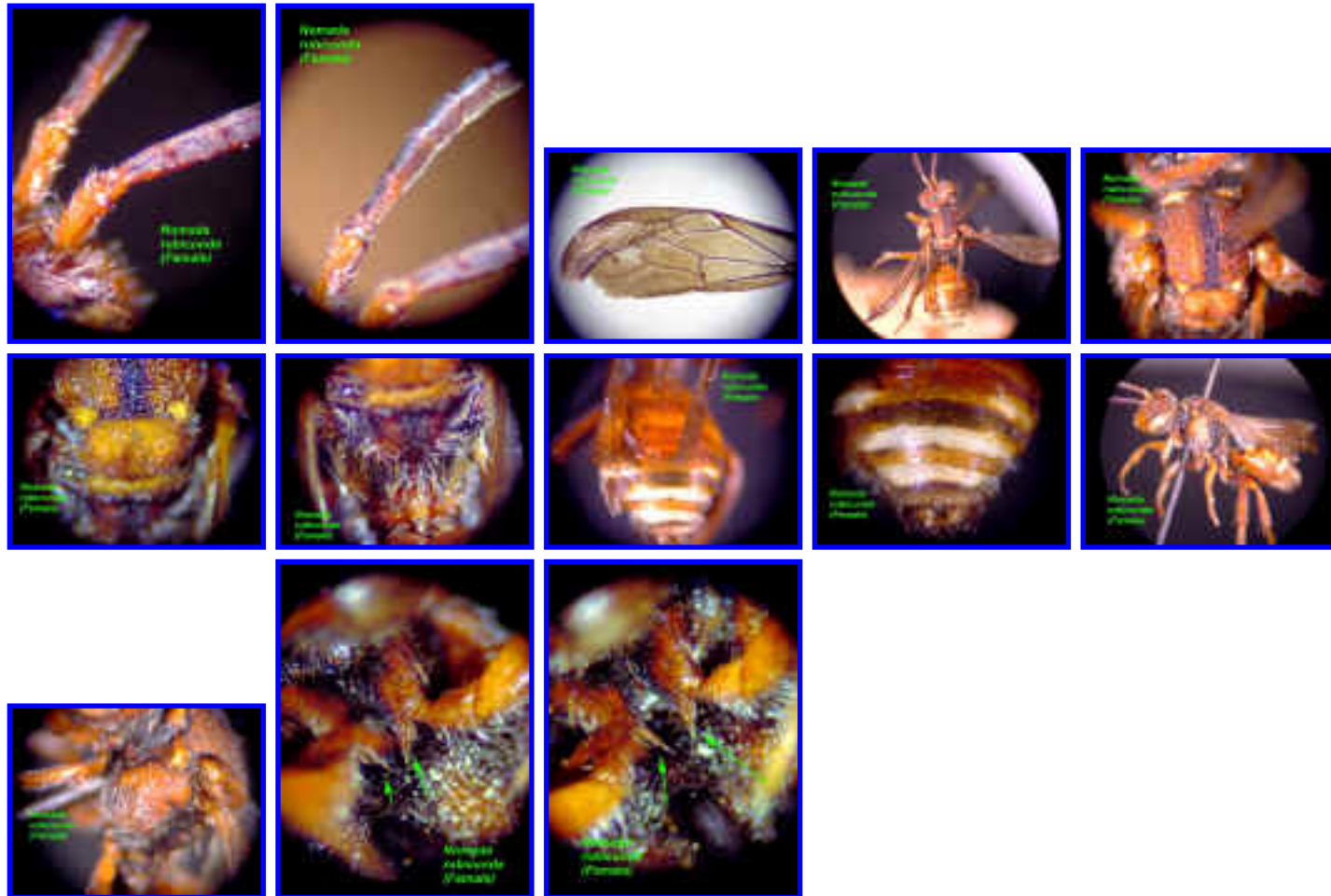
Dates: March-June

Plants:

Notes: Mitchell lists this for Florida



Female:



Male:



Apidae: *Nomada sayi* Robertson

County Records: Alachua



Locations:

Dates: March-June

Plants:

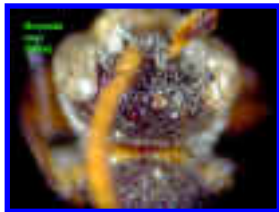
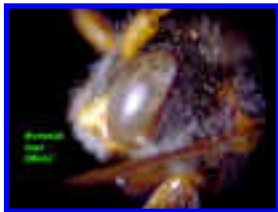
Notes:

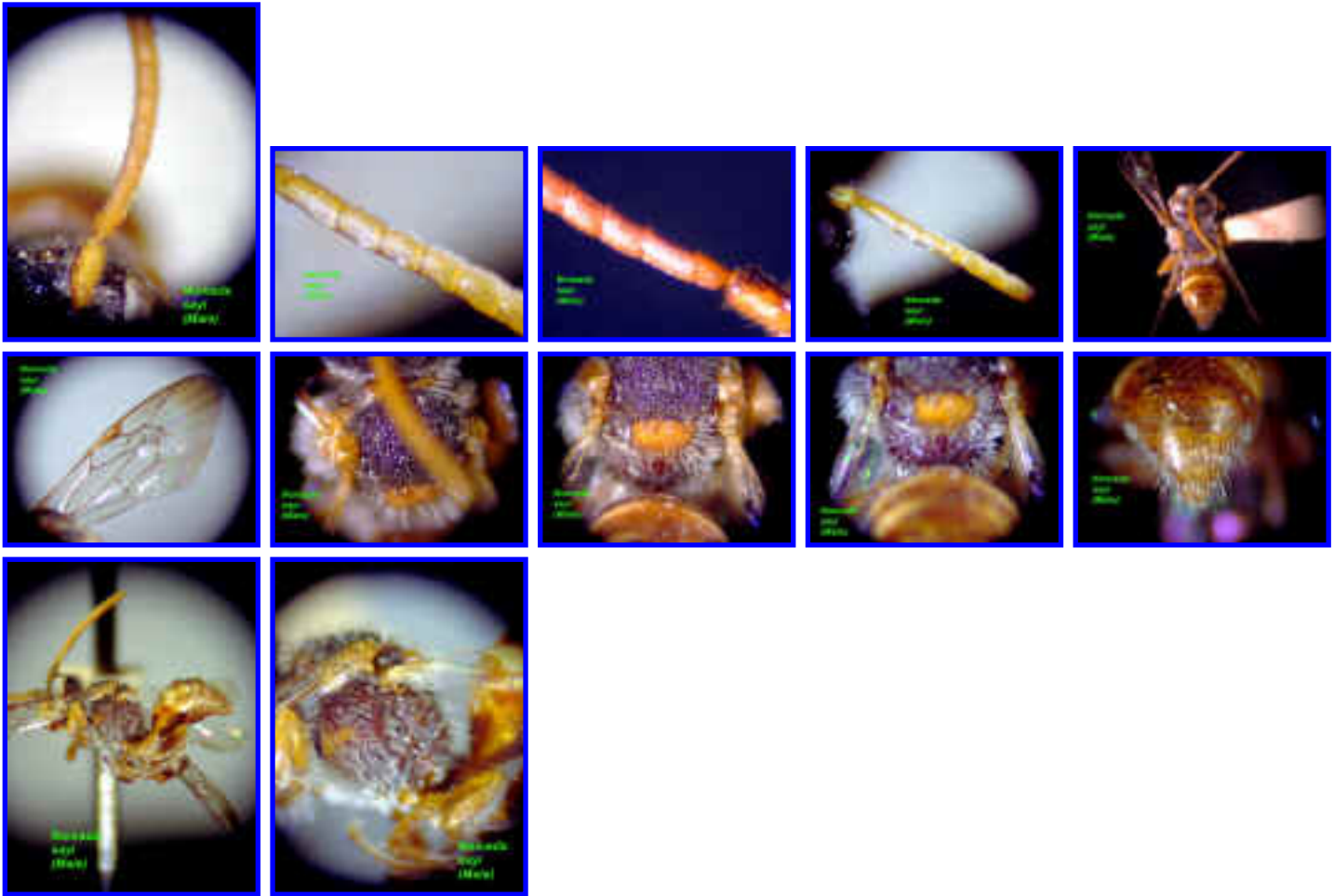


Female:



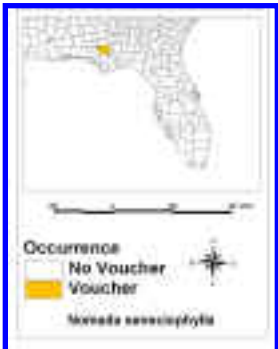
Male:





Apidae: *Nomada seneciophylla* Mitchell

County Records: Jackson



Locations:

Dates: April-May

Plants:

Notes:

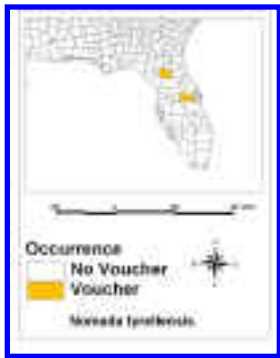


Male:



Apidae: *Nomada tyrrellensis* Mitchell

County Records: Alachua, Orange

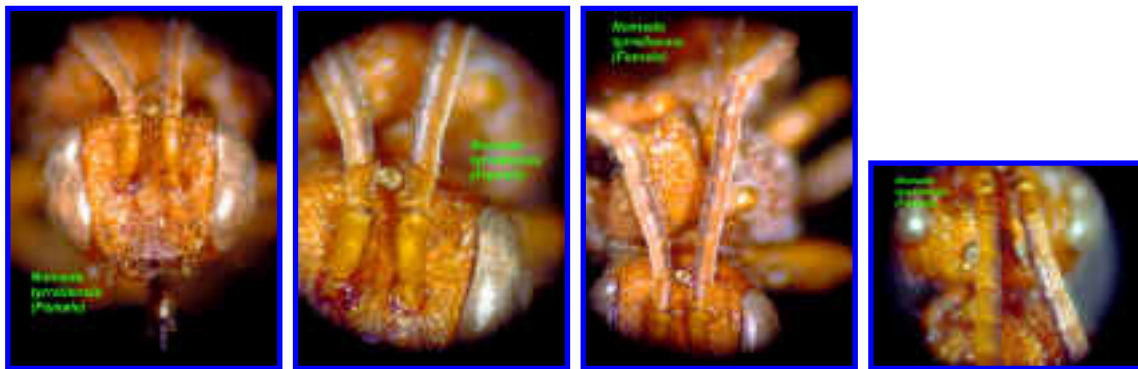


Locations:

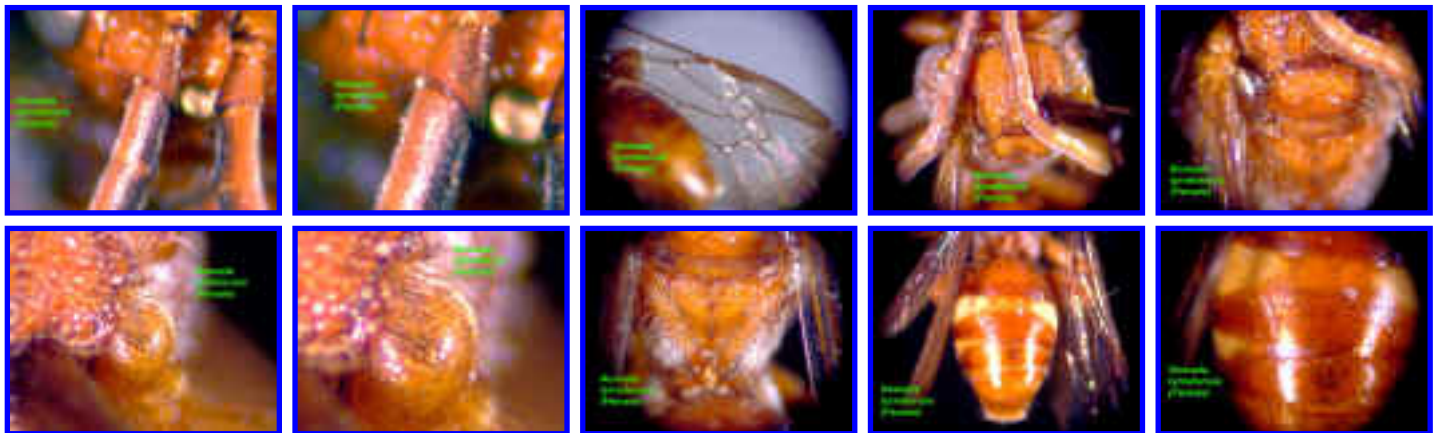
Dates: March-May

Plants:

Notes: North Carolina to Florida; males are not known from this species



Female:





Apidae

Tribe *Eucerini* (24 taxa)

This tribe has the following genera present in Florida: *Eucera* (subgenus *Synhalonia*), *Florilegus*, *Melissodes* (subgenera *Apomelissodes*, *Eumelissodes*, and *Melissodes*), *Svastra* (subgenus *Epimelissodes*), and *Xenoglossa* (subgenus *Eoxenoglossa*). These are euceriform, hairy bees, typically with pale hair bands on the metasoma. Males typically have very long antenna. Two distinguishing characteristics are the following: the *Eucerini* have long paraglossae that reach the base of the labial palpus. They also have parocular carina. Nesting is in the ground for all species. Known nests are vertical burrows in flat ground.

Key to genera of tribe *Eucerini*

Key to females

1. Inner margin of mandible with tooth near base...[Xenoglossa](#)

Inner margin of mandible without basal tooth....2

2. Tegula narrowed anteriorly, lateral margin slightly concave or straight in anterior half or less; maxillary palpus usually four-segmented, rarely three- or five-segmented....[Melissodes](#)

Tegula not narrowed anteriorly, lateral margin convex; maxillary palpus three- to six-segmented....3

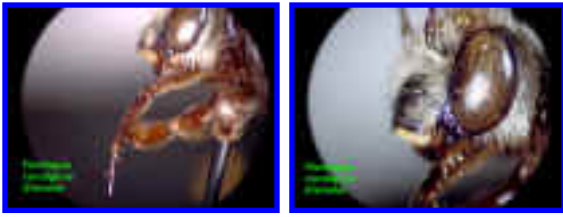


3. Blade of galea longer than eye; clypeus protuberant...[Eucera](#) (*Synhalonia*)



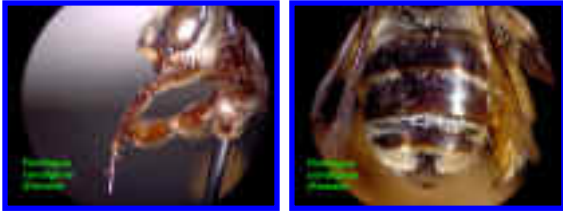
Blade of galea not longer than eye; clypeus flat to slightly protuberant (slightly less so than in

male)...4



4. Maxillary palpus usually four-segmented, but if five-segmented, then basal pubescent band of T2 with at least a few spatuloplumose hairs; lateral arms of gradulus of T6 lamelliform, often with a small tooth...[Svastra](#)

Maxillary palpus five- or six-segmented; basal pubescent band of T2 without spatuloplumose hairs; lateral arms of gradulus of T6 cariniform to lamelliform....
[Florilegus](#)



Key to males

1. T7 with lateral gradular tooth or strong angle on each side of pygidial plate, sometimes hidden in dense hair or by T6....2

T7 without lateral gradular tooth (Occasionally S6 with lateral teeth that can be seen from above and may be confused with tergal teeth)..3

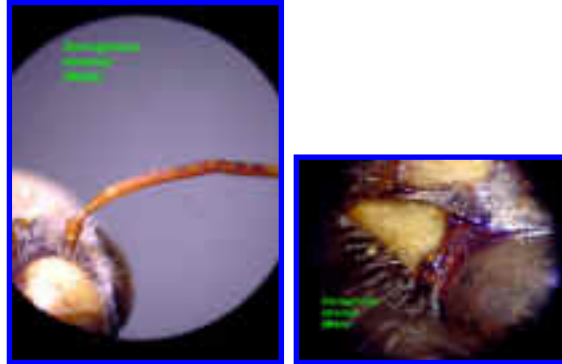
2. S6 with prominent median convexity; fore femur broadest about one-fourth or one-third of its length from apex; maxillary palpus five-segmented...[Florilegus](#)



S6 flat or with exceedingly shallow, longitudinal median depression; fore femur broadest basal to middle; maxillary palpus usually three- or four-segmented, rarely five-segmented; Tegula narrowed anteriorly, lateral margin slightly concave or straight in anterior one-half or one-third (Often hidden by hairs); clypeus little or moderately protruding, extending in front of eye by eye width or less as seen in lateral view...

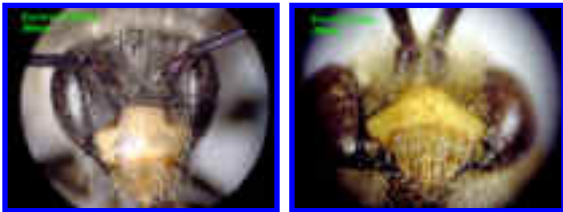
[Melissodes](#)

3. First flagellar segment longer than second; inner margin of mandible with tooth near base...



[Xenoglossa](#)

First flagellar segment no longer than second segment and often much shorter; inner margin of mandible without tooth near base...4



4. Maxillary palpus usually four-segmented, but if five-segmented, then T2 with basal pubescent band at least a few hairs of which are basally plumose and apically spatulate...[Svastra](#)

Maxillary palpus five- or six-segmented, and T2 without spatuloplumose hairs...[Eucera](#)



Eucerini

Genus *Eucera* Scopoli (subgenus *Synhalonia* Patton), two taxa

Mitchell placed this species in the genus *Tetralonia*. In Florida, these species are restricted to the northern peninsula and panhandle. They are spring-flying and visit from many plant families but not composites. Timberlake revised the genus. He states that *E. atriventris*, [E. dubitata](#), *E. hamata*, and [E. rosae](#) are the main eastern species. Records of *E. speciosa* and *E. dilecta* are in error. Of these four species, he only mentions [E. rosae](#) as occurring in Florida, with *E. atriventris* known from Georgia, *E. hamata* known from North Carolina and Georgia, and [E. dubitata](#) in South Carolina and Georgia. Mitchell lists a species, *E. fulvohirta* (as *Tetralonia fulvohirta*, originally described as *Melissodes fulvohirta* by Cresson), that is not discussed by Timberlake nor can I find any synonymy for it. It was known from North Carolina to Georgia. I have listed the key for the four known Eastern species although only two species ([E. dubitata](#) and [E. rosae](#)) have been collected from Florida.

Key to females of *Eucera* in Florida (from Timberlake)

1. Scopal hair of hind legs, or at least hair on inner side of basitarsi fuscous or black; hair of head, sides, and underparts of thorax also sometimes black...2.



Scopal hair of hind legs pale (bright fulvous) and hair on inner side of hind basitarsi ferruginous....3



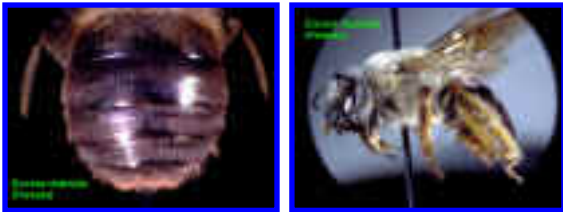
2. About 11-12mm long; apical depression of tergites 2 and 3 bare or nearly bare except towards sides; disk of mesoscutum shining, at least in middle, and with close shallow punctures....[E. rosae](#)

Larger, about 15-16 mm long; apical depression of tergite 2 finely punctured and with short appressed hair almost to apical margin; mesonotum dull, with shallow punctures.. *E. atriventris*



3. Tergites 2 to 3, or 4, of abdomen with more or less distinct light bands. *E. hamata*

Hair of abdomen black beyond tergite 1; hair of head and thorax pale fulvous or ochreous, varying to whitish, apical depression of tergite 2 more or less thinly punctate and hairy...[*E. dubitata*](#)



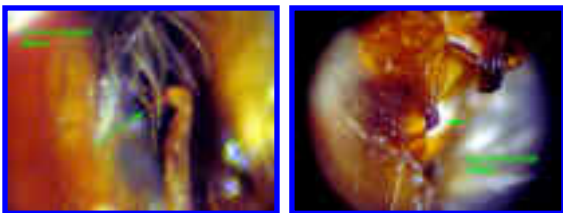
Key to males of *Eucera* in Florida (from Timberlake)

1. Sternite 6 with lateral carinae comparatively strong and distinct...[*E. dubitata*](#)



Lateral carina short, weak, or absent..2

2. Spurs of middle or hind tibiae more or less hooked or bent over at apex; sternite 6 with projecting lobe on each side towards base...*E. hamata*



Spurs of middle and hind tibiae normal; lateral lobes of sternite 6 comparatively weak or absent...3



3. Clypeal mark almost touching margin of eyes; oculoclypeal interval narrowly linear..[*E. rosae*](#)

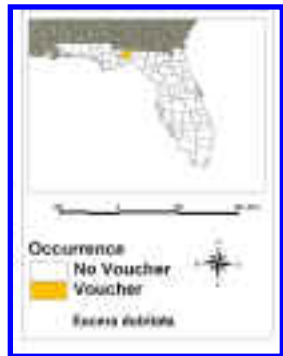


Clypeal mark ending some distance from margin of eyes, even when oculoclypeal interval is very narrow. .*E. atriventris*



Apidae: *Eucera dubitata* Cresson

County Records: Leon



Locations: Tall Timbers Research Station

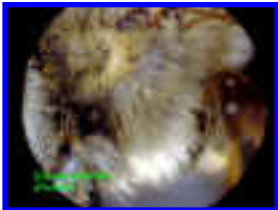
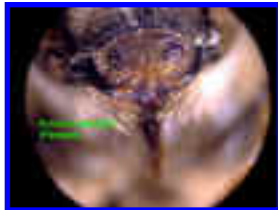
Dates: April to June over entire range; specimens from Leon County were collected in April

Plants: polylectic

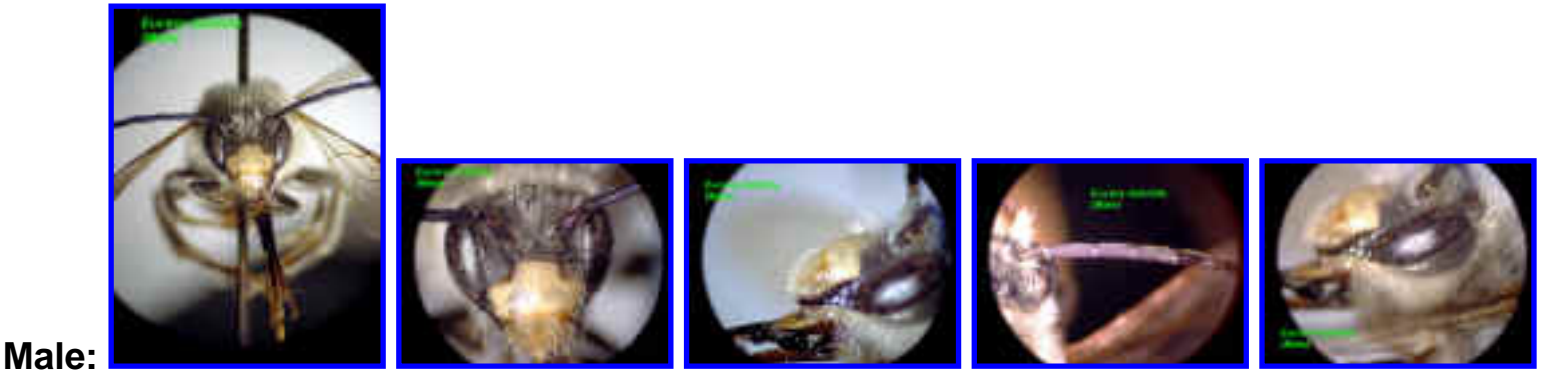
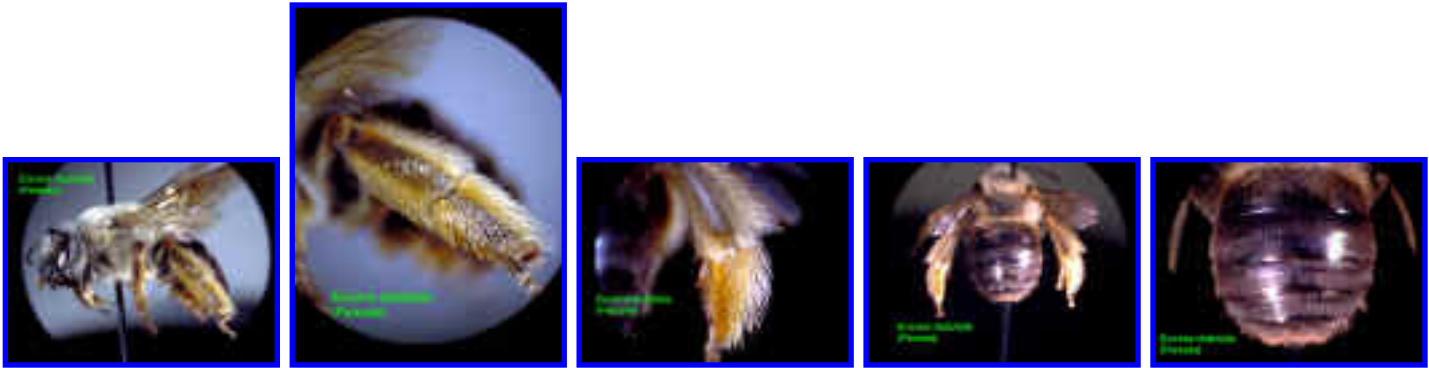
Notes:



Female:



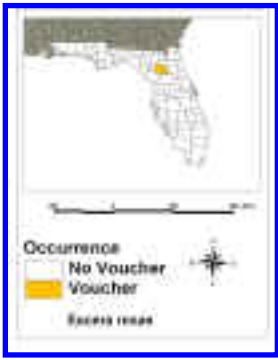
Eucera





Apidae: *Eucera rosae* Robertson

County Records: Alachua

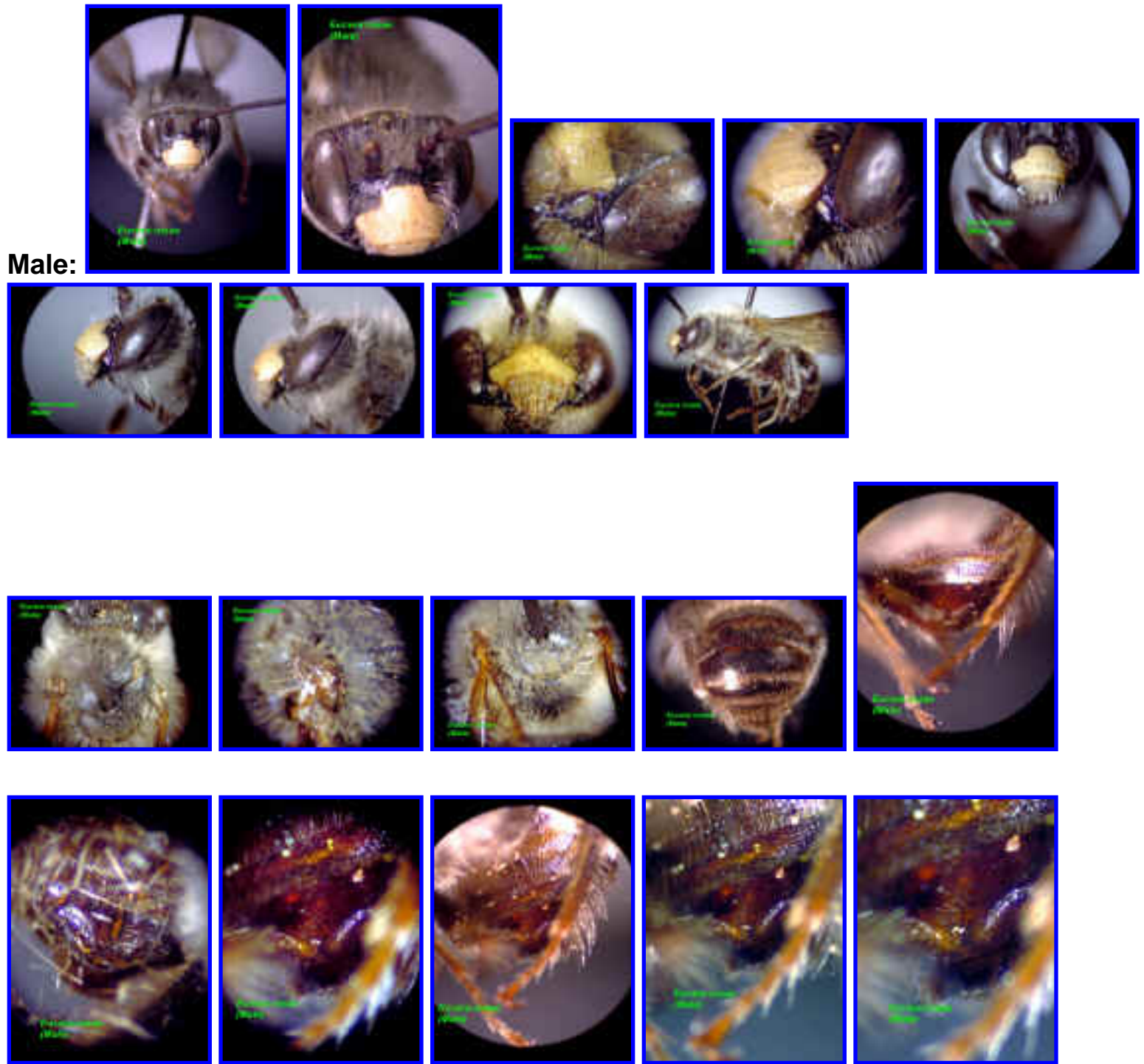


Locations:

Dates: April to June; likely earlier rather than later.

Plants: polylectic

Notes:



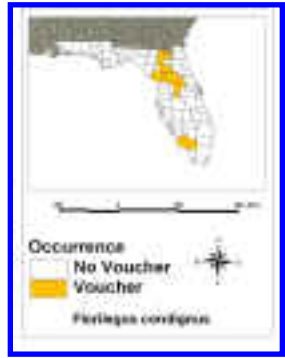
Eucerini

Genus *Florilegus* Robertson, one taxon

This is a genus of small bees (9-11mm) with much yellow hair. The one species in Florida is in the subgenus *Florilegus* Robertson s. str.

Apidae: *Florilegus condignus* Cresson

County Records: Alachua, Baker, Columbia, Collier, Lake, Levy, Marion



Locations:

Dates: April 6-May 22, Sept. 13; April: 2, May: 5, Sept: 1; In Florida, may have a spring and a fall generation. Unsure if present during the summer months.

Plants: *Pontederia*; also many Fabaceae

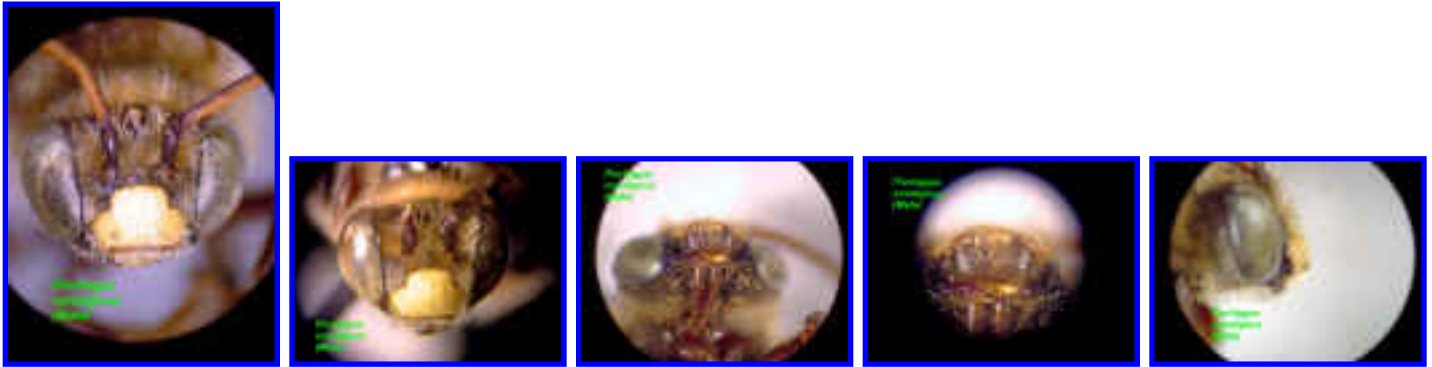
Notes:

Female:





Male:





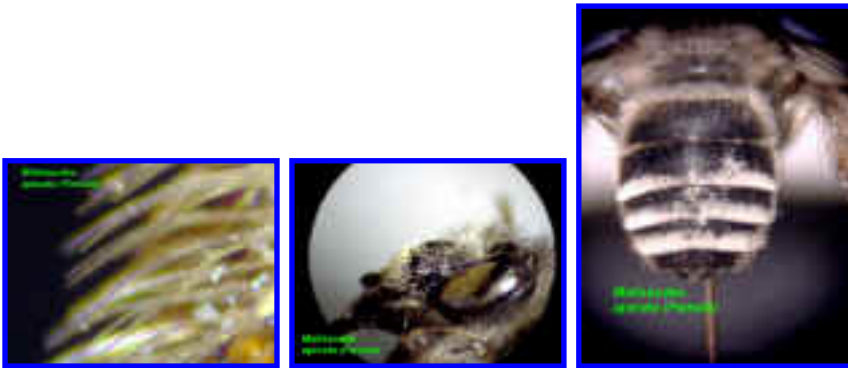
Eucerini

Genus *Melissodes*, fifteen taxa

Three subgenera of *Melissodes* are found in Florida, including subgenus [Apomelissodes](#) (2 taxa), [Eumelissodes](#) (8 taxa) and [Melissodes](#) (5 taxa).

Key to subgenera of females

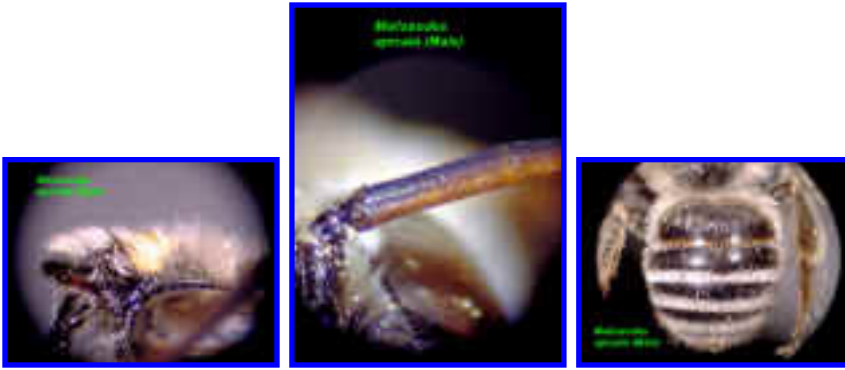
1. Scopal hairs simple, or if weakly branched, then clypeus in profile protruding in front of eye by at least two-thirds width of eye, as seen in lateral view (pygidial plate not narrow and broad tergal hair bands)...*M.* ([Apomelissodes](#))



Scopal hairs branched, usually abundantly so, but if weakly branched, then clypeus in profile not protruding in front of eye by as much as two-thirds width of eye, as seen in lateral view. *M.* ([Eumelissodes](#) and [Melissodes](#)).

Key to subgenera of males

1. Clypeus protuberant in front of face for one-half to three-fourths of eye width, as seen in lateral view and antenna long, minimum length of first flagellar segment less than one-third maximum length of second segment; T2 to T5 fringed with narrow apical bands of appressed white pubescence, bands much narrower than basal areas if present...*M.* ([Apomelissodes](#))



Clypeus usually not protruding in front of eye by as much as half of eye width or more, as seen in side view, or, if protruding by half of eye width or more, then minimum length of first flagellar segment one-third or more of maximum length of second segment; terga often not fringed by apical pubescent bands, bands when present interrupted medially and/or preapical...2

2. Median apical lobes of S7 without hairs on ventral surfaces, usually small, curled ventrally along an oblique axis to form half or more of an oblique cylinder or scroll, but often secondarily flattened and expanded, or secondarily reduced in size. .*M.* ([Melissodes](#))

Median apical lobes of S7 thin, hyaline, with short to moderately long hairs on ventral surfaces, not curled ventrally, relatively large...*M.* ([Eumelissodes](#))

Melissodes

Subgenus *Apomelissodes* LaBerge (2 taxa)

The two members of this species are immediately recognizable by either their broad apical hair bands or their simple unbranched scopal hairs. [M. apicata](#) is a wetland species, visiting a variety of flowers, while [M. mitchelli](#) is an oligolege on *Opuntia*. Both are strictly spring flying species unlike the many fall flying [Eumelissodes](#) or all-year flying [Melissodes](#).

Key to females of *Melissodes*, subgenus *Apomelissodes*

Clypeus shining, median area above sparsely and irregularly punctate...[M. mitchelli](#)

Clypeus closely punctate throughout...[M. apicata](#)



Key to males of *Melissodes*, subgenus *Apomelissodes*

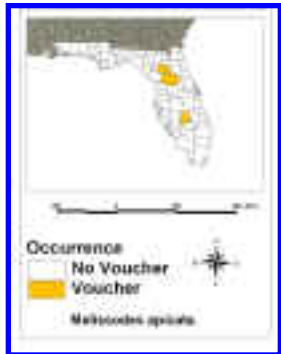
Clypeus entirely or in part black. [M. apicata](#)



Clypeus entirely yellow ..[M. mitchelli](#)

Apidae: *Melissodes apicata* Cresson

County Records: Alachua, Highlands, Marion

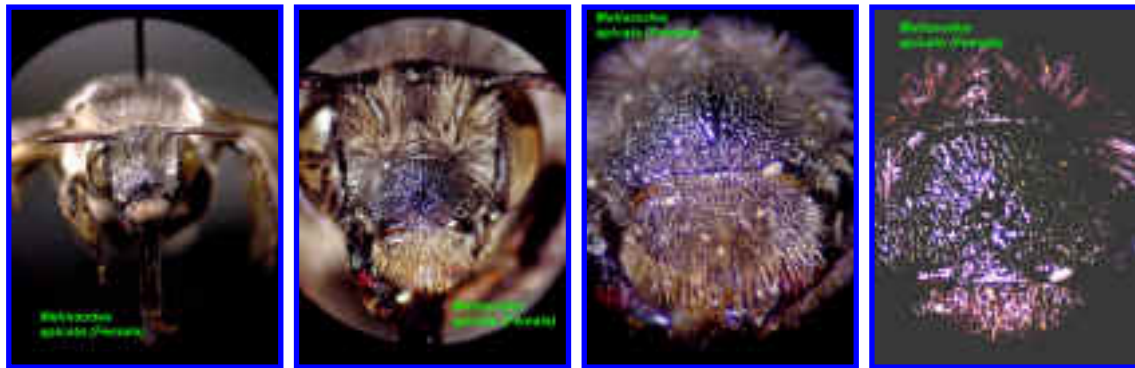


Locations:

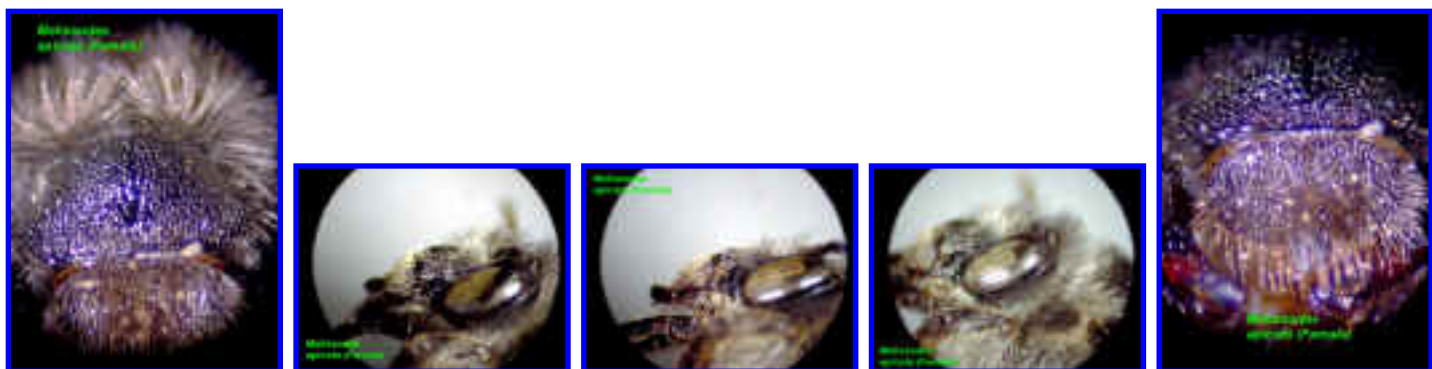
Dates: March 31-April 15; March:1, April: 3

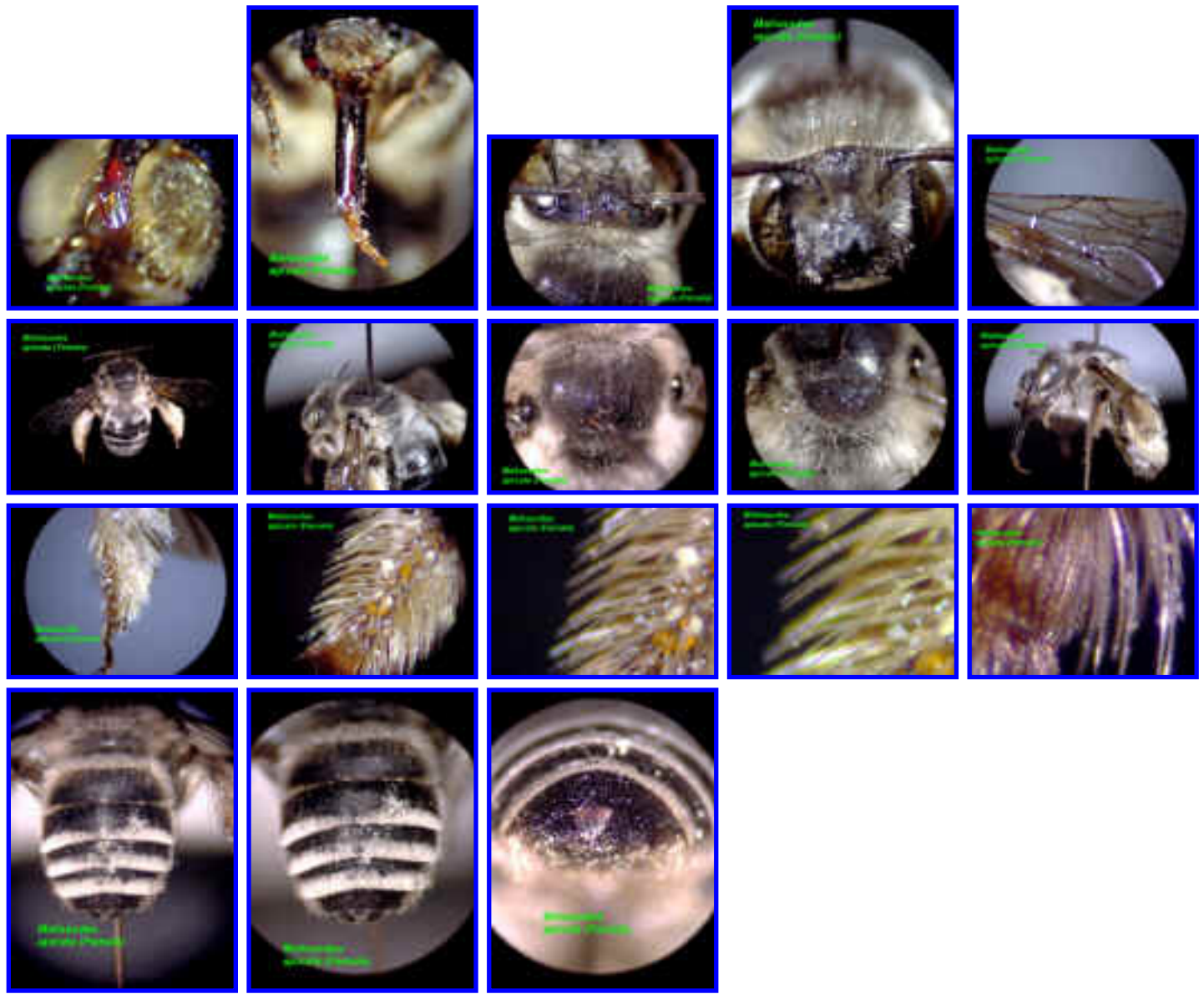
Plants: *Pontederia*, *Melilotus*, *Stachys*, *Hydrocotyle*

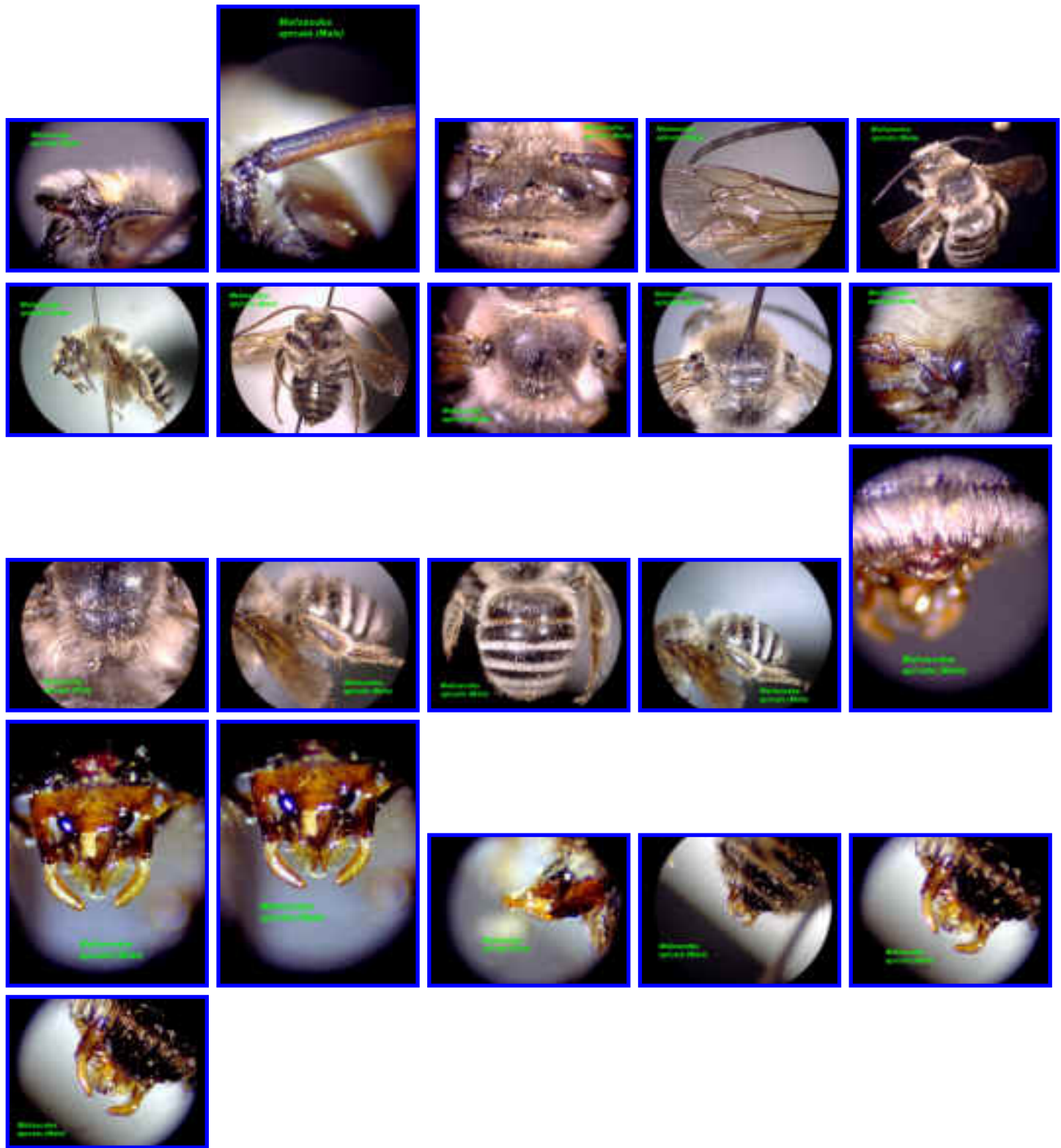
Notes: An eastern seaboard species that occurs from Maine to Florida.



Female:







Apidae: *Melissodes mitchelli* LaBerge

County Records: Alachua



Locations:

Dates: April 27; April to May (Mitchell)

Plants: Oligolege on *Opuntia*

Notes: North Carolina to Florida. No photos available at this time.

Melissodes

Subgenus *Eumelissodes* (8 taxa)

This subgenus is mostly fall-flying in Florida, particularly in September and October, with a few individuals found in August (early) and November (late). Nearly all visit the Asteraceae for pollen although individuals may visit other flowers for nectar. In Florida, *Aster*, *Chrysopsis*, *Helianthus*, *Solidago*, and *Vernonia* are the key pollen plants. Previously, only *M. boltoniae*, *M. denticulata*, *M. manipularis*, and *M. tincta* were known from Florida. This study finds that *M. agilis*, *M. dentiventris*, *M. rustica*, and *M. trinodis* can also be expected to occur, particularly in the panhandle and northern peninsula.

Males are separated below. Females cannot be identified to subgenus separately and are keyed out in conjunction with females of subgenus *Melissodes*.

Key to females of *Melissodes*, subgenera *Eumelissodes* and *Melissodes*

1. Scopa on hind legs entirely black..*M. bimaculata nulla*

Scopa pale, in part..2

2. Abdomen black pubescent, without evident spots or fasciae of pale pubescence, except possibly a basal fasciae on segment 2 which is usually covered by the disc of segment 1...3



Abdomen with spots or fasciae of pale pubescence on segments 3 and 4...4



3. Dorsum of thorax largely or entirely pale pubescent...[*M. dentiventris*](#)



Dorsum of thorax largely black pubescent (variable)..[*M. rustica*](#)

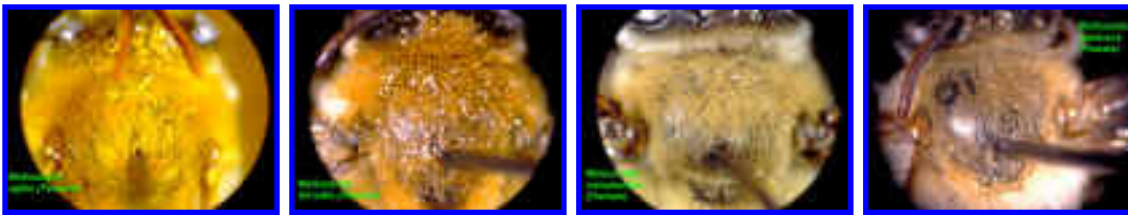


4. Pubescence, except the scopa, entirely black on head, thorax, and legs...[*M. bimaculata*](#)
[*bimaculata*](#)

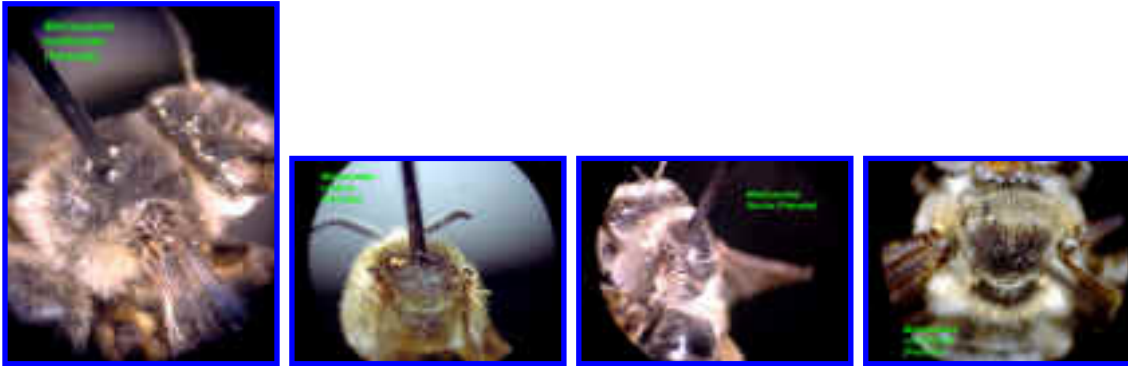


Some pale pubescence on either the head, thorax, or legs...5

5. Pubescence of scutum and scutellum entirely pale, or with but a very few inconspicuous dark hairs...6

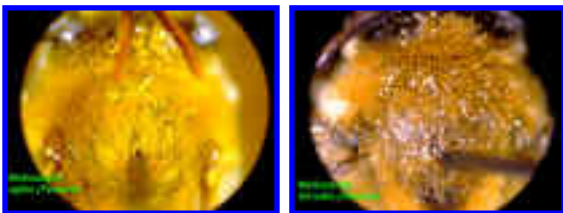


Scutum and scutellum with extensive patches of black pubescence...9



(limited black)

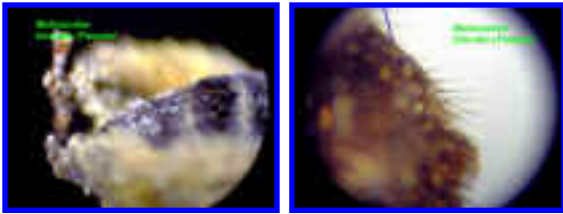
6. Pubescence of dorsum of thorax bright fulvous...7



Thorax with pale ochraceous pubescence dorsally...8



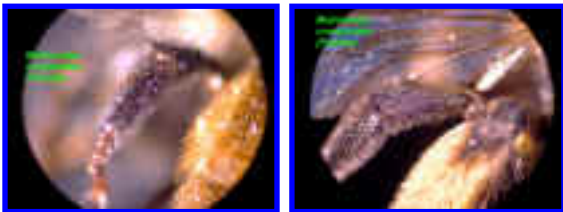
7. Abdominal terga 3-5 with rather short, but erect, black hairs basad of the fasciae...[M. trinodis](#)



Pubescence of abdominal terga 3-5 largely pale, subappressed...[*M. agilis*](#)



8. Mid basitarsi with black or piceous hairs on outer surface, mid tibiae dark pubescent at least in part...[*M. comptoides*](#)



Mid basitarsi and tibiae entirely pale pubescent...[*M. tepaneca*](#)



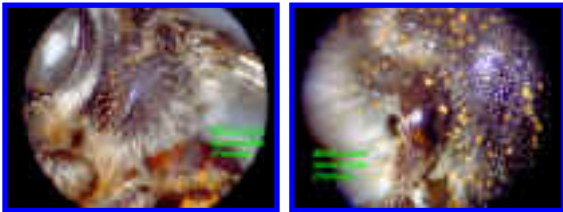
9. Pleura black pubescent, at least in part...10



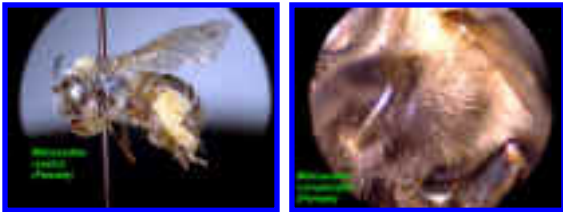
Pleura entirely pale pubescent...12



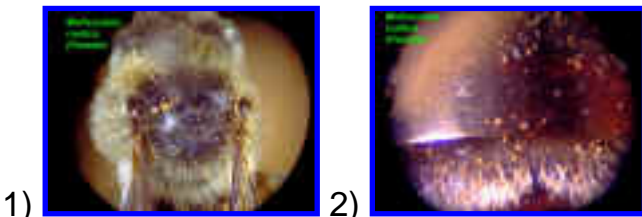
10. Pleura largely pale pubescent, with but a small amount of black pubescence beneath wing bases...[*M. denticulata*](#)



Pubescence on upper part of pleura ochraceous, becoming fuscous or blackish below...11



11. Posterior two-thirds of scutum conspicuously black pubescent (1); apical areas of terga 2 and 3 largely impunctate (2)...[*M. rustica*](#)



Scutum with only a limited area of black pubescence posteriorly; apical areas of terga 2 and 3 distinctly although finely punctate...[*M. comptooides*](#)



12. Clypeus with dark pubescence...[*M. rustica*](#)



Clypeus entirely pale...13



13. Mid basitarsi brownish or blackish pubescence....14



Mid basitarsi pale pubescent....17



14. Fascia on segment 4 entire, uninterrupted on its posterior border...[*M. boltoniae*](#)



Fascia on segment 4 interrupted medially on its posterior border, or slightly removed from rim..15

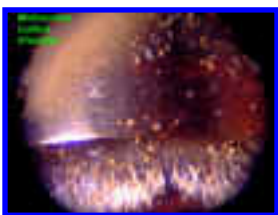


15. Second abdominal tergum very nearly impunctate...[*M. denticulata*](#)

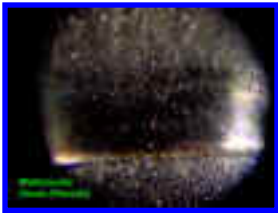


Tergum 2 with numerous close, distinct punctures, at least over basal half...16

16. Apical half of tergum 2, beyond the fascia, nearly or quite impunctate..[*M. rustica*](#)



Apical half of tergum 2 minutely but rather closely punctate, the punctures nearly as close as over the basal half...[*M. tincta*](#)



17. Wings lightly but uniformly infuscated (1); median fasciae or terga 2 and 3 very narrow, white (2); tergum 4 with conspicuous, erect, black pubescence across basal half of disc (3)...[M. communis](#)



Wings hyaline or somewhat whitish...[M. manipularis](#)

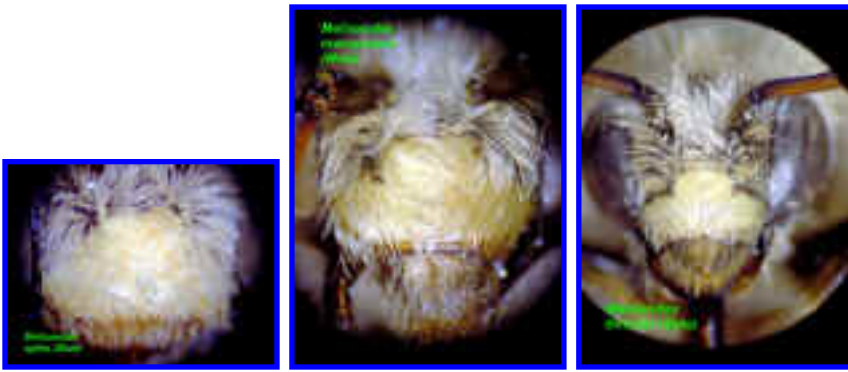


Key to males of *Melissodes*, subgenus *Eumelissodes*

1. Upper portion of clypeus to some degree black...2



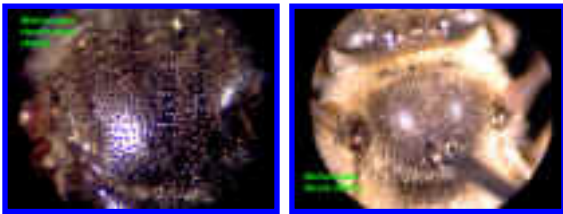
Clypeus entirely yellow...4



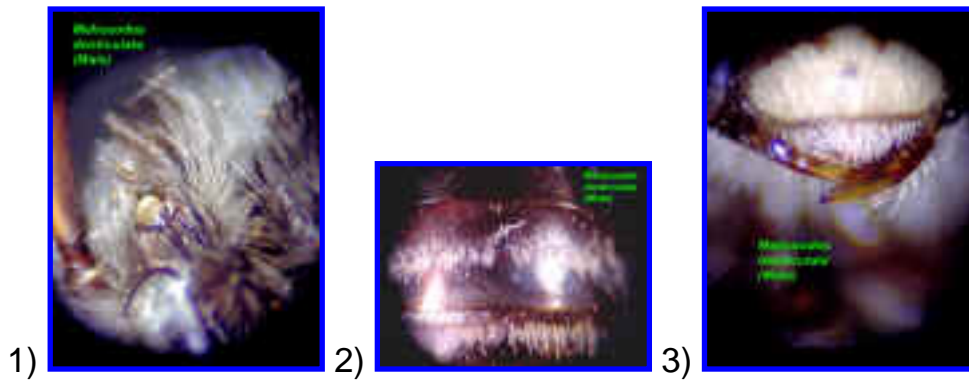
2. Pubescence of dorsum of thorax entirely pale...[*M. dentiventris*](#)



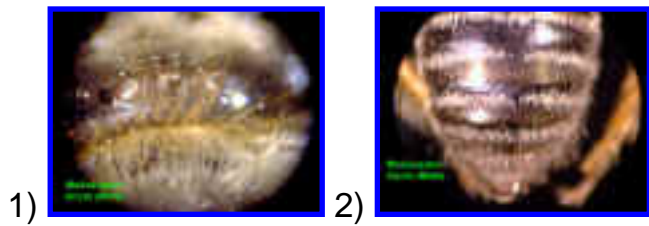
Scutum and scutellum with a considerable amount of black or fuscous pubescence...3



3. Vertex with conspicuous, erect, black hairs (1); apical impressed areas of abdominal terga dark, concolorous with the more basal areas (2), with a few very short hairs and microscopic punctures; clypeus yellowish-white (3)..[*M. denticulata*](#)



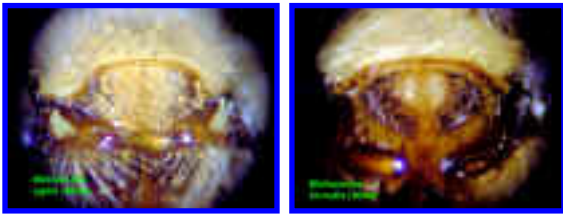
Pubescence of vertex entirely white (1); impressed areas of terga more coppery (2)...[*M. tincta*](#)



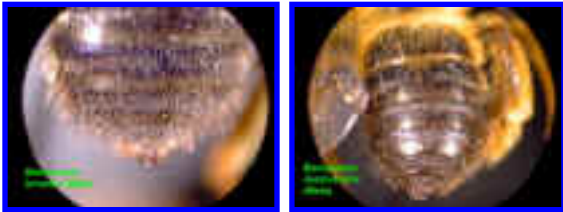
4. Labrum entirely black...5



Labrum yellow, at least in part...8



5. Apical impressed areas of abdominal terga dark, becoming somewhat yellowish along rims...6



Apical impressed areas of terga broadly hyaline...[M. boltoniae](#)

6. Dorsum of thorax with bright fulvous pubescence...[M. trinodis](#)



Thoracic pubescence pale ochraceous or whitish...7



7. Scutum closely and deeply punctate throughout, interspaces no greater than diameter of punctures, even posteriorly...[M. dentiventris](#)

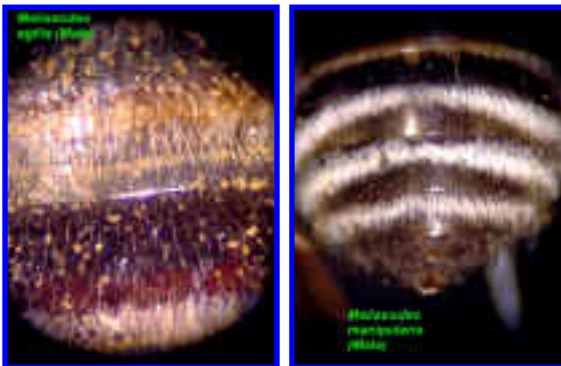


Punctures in median posterior areas of scutum quite sparse..[M. boltoniae](#)

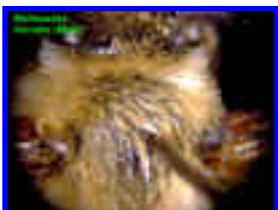
8. Apical impressed areas of terga darker, possibly becoming somewhat brownish along rims...9



Abdominal terga broadly hyaline and transparent apically...11



9. Pubescence of dorsum of thorax entirely pale...10



Dorsum of thorax with at least some intermixture of dark hairs...?

10. Dorsum of thorax with bright ochraceous or fulvous pubescence...[*M. trinodis*](#)



Pubescence of thorax pale ochraceous to whitish...[*M. rustica*](#)

11. At least basal half of mandibles black...[*M. manipularis*](#)



Mandibles with a distinct basal yellow spot...[*M. agilis*](#)



Note: Some males ([*M. dentiventris*](#), [*trinodis*](#), [*boltoniae*](#)) come out in two locations due to variation in clypeal maculations and variation in coloration of abdominal terga apical areas.

Apidae: *Melissodes agilis* Cresson

County Records: Jefferson, Leon



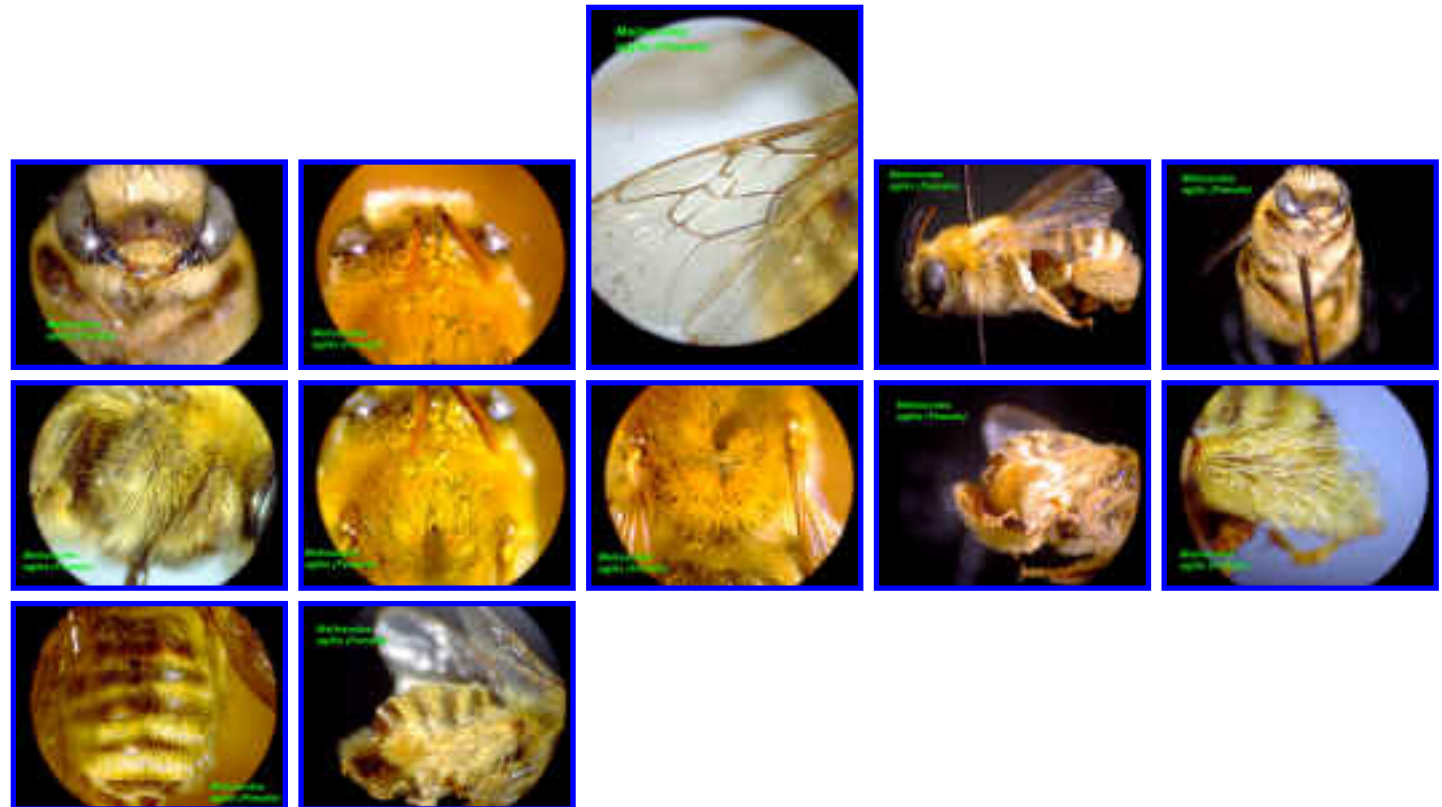
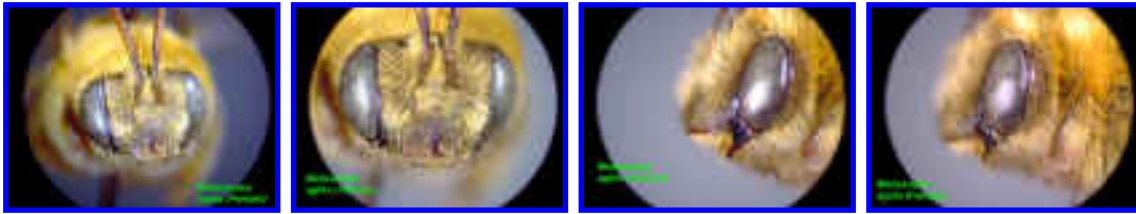
Locations: Tall Timbers, Avalon

Dates: Specimens from Leon county (all males) were collected in October. Mitchell states May-November for entire range.

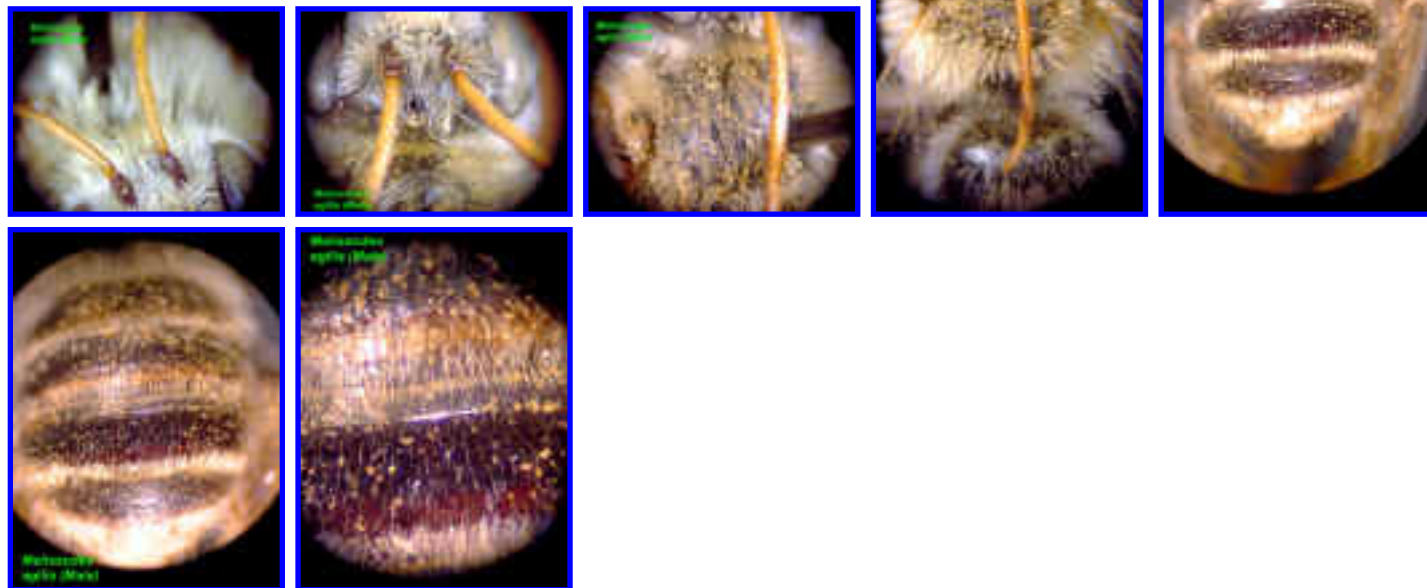
Plants: mostly *Helianthus*

Notes: New record for Florida. Previously known from Georgia near the Florida State line (LaBerge)

Female:



Male:



Apidae: *Melissodes boltoniae* Robertson

County Records: Alachua, Jefferson, Leon

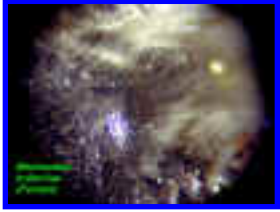


Locations: Tall Timbers, Avalon

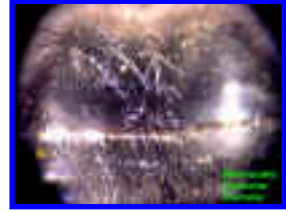
Dates: Specimens were collected in Leon County in late September and October. Mitchell reports July-November across the entire range.

Plants: various composites

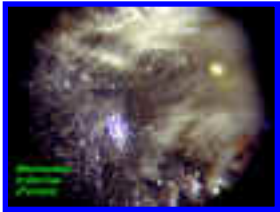
Notes: This species closely resembles *M. tincta* but is slightly larger, has black hairs on the tubercles



, and larger punctations on the first tergal basal area



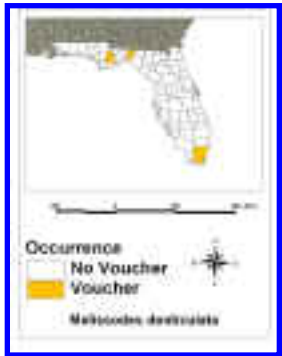
Female:





Apidae: *Melissodes denticulata* Smith

County Records: Jefferson, Liberty, Miami-Dade



Locations: Avalon

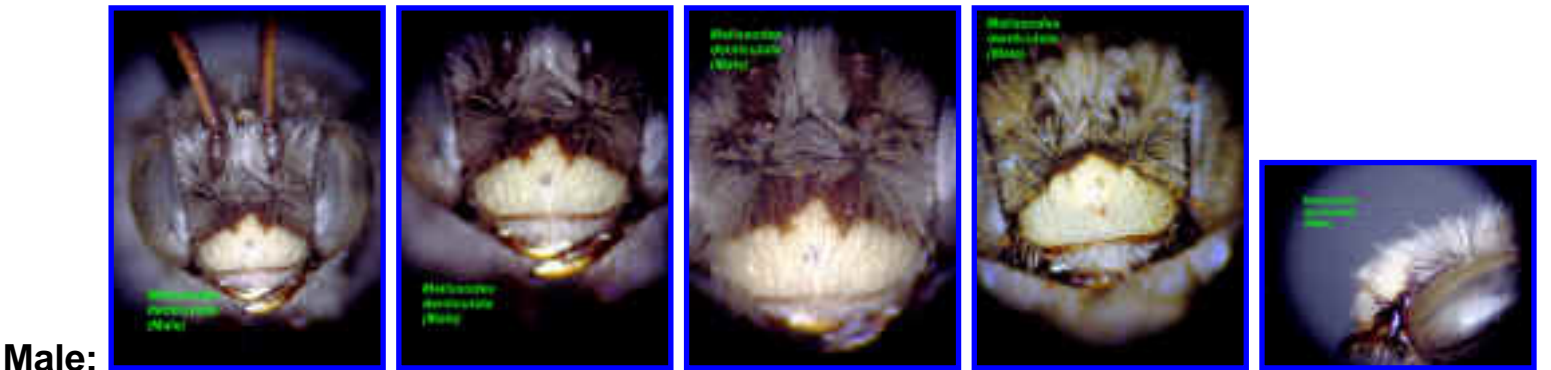
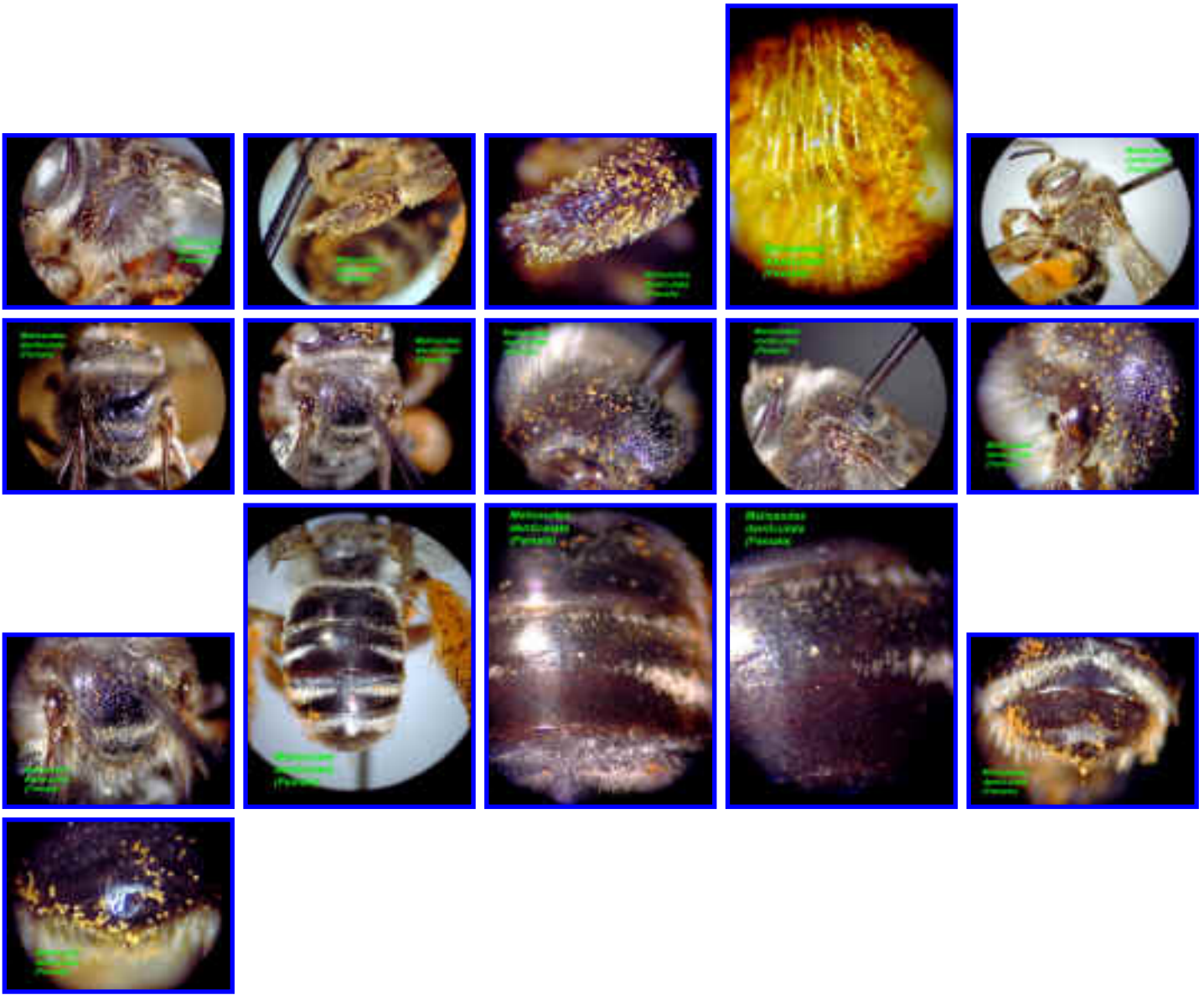
Dates: May-October according to Mitchell

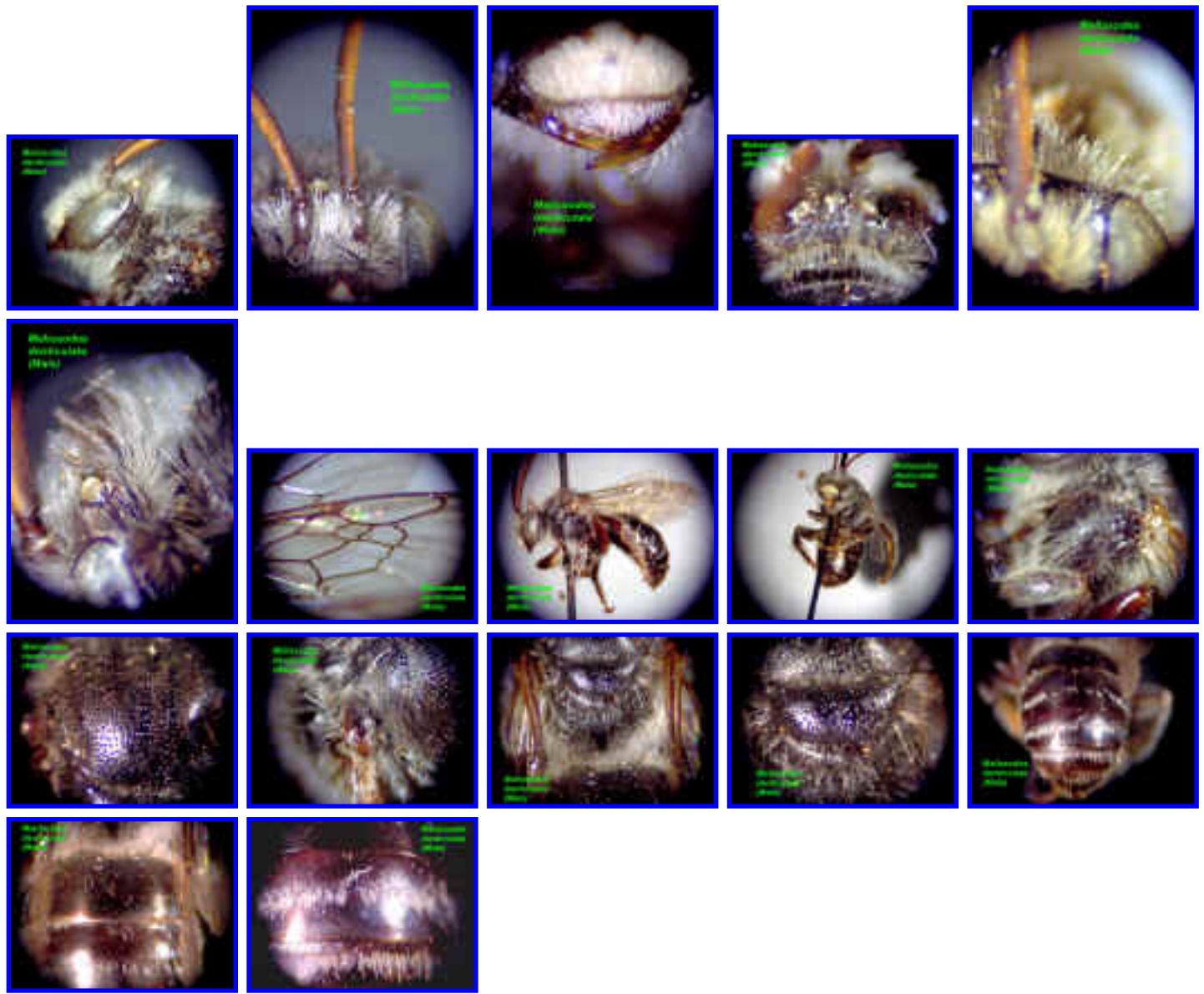
Plants: Oligolectic on *Vernonia*

Notes: Males of this species have a white, not yellow, clypeus.

Female:

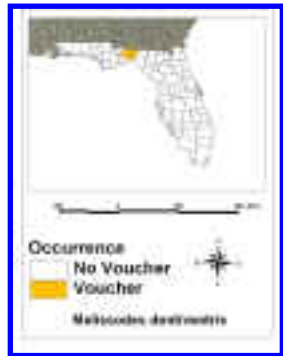






Apidae: *Melissodes dentiventris* Smith

County Records: Jefferson, Leon



Locations: Tall Timbers, Avalon

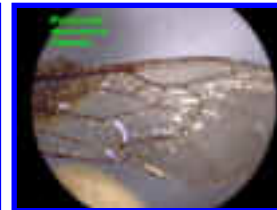
Dates: July-October according to Mitchell for entire range. From Leon County, all specimens were collected in October and November.

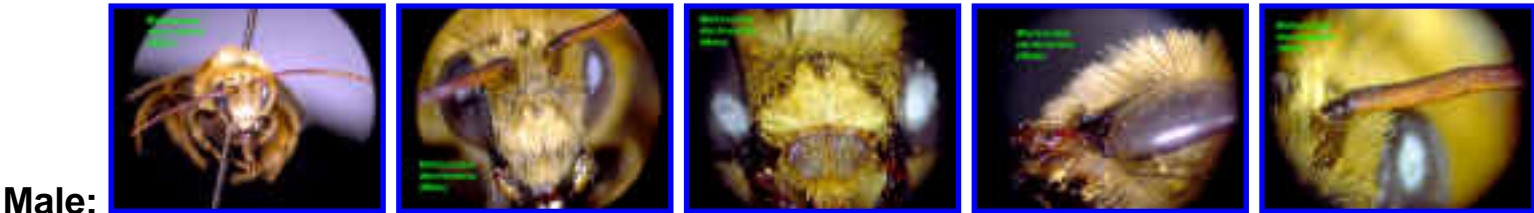
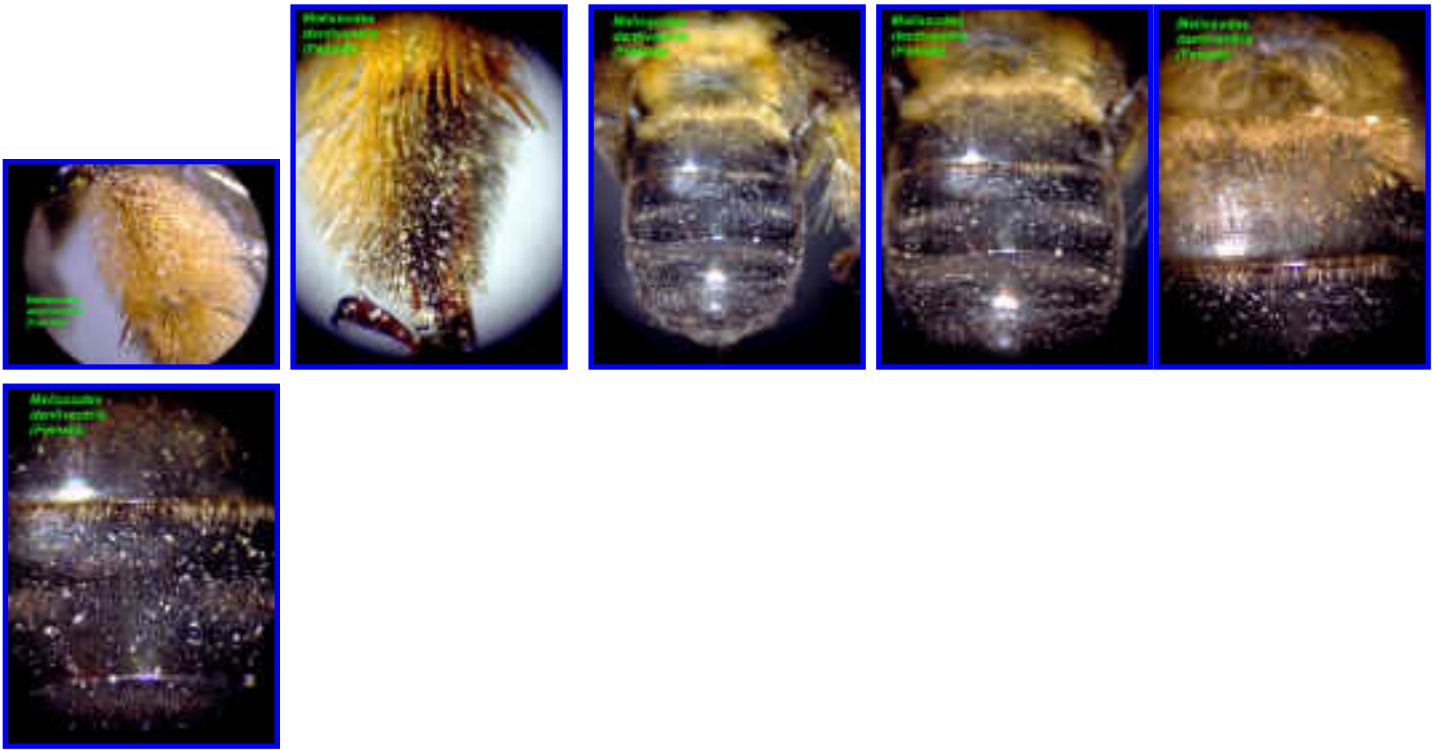
Plants: *Aster*

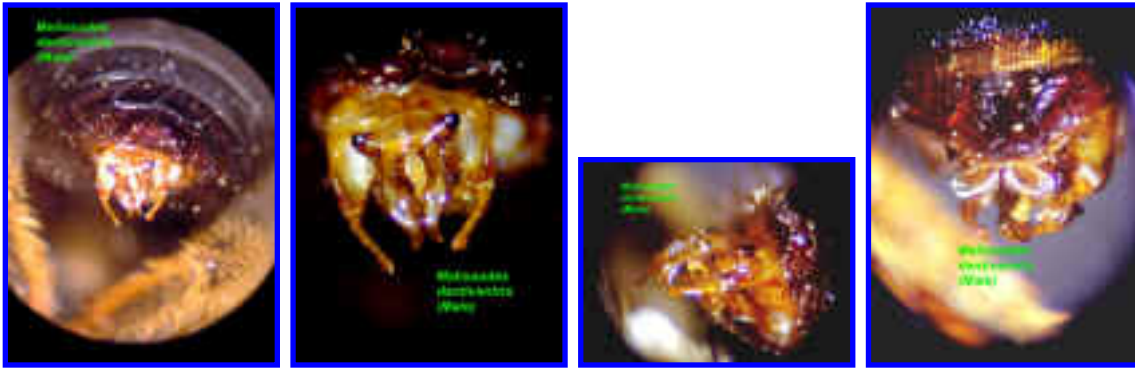
Notes: New record for Florida. Previously known from Georgia.



Female:

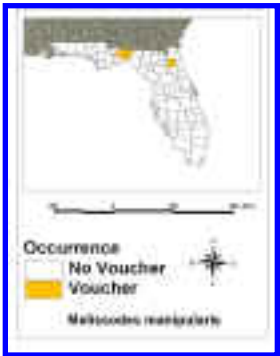






Apidae: *Melissodes manipularis* Smith

County Records: Alachua, Clay, Jefferson, Leon



Locations: Tall Timbers, Avalon

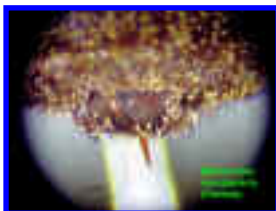
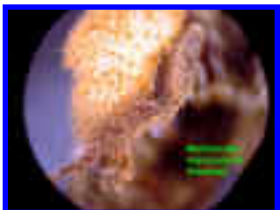
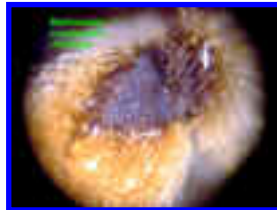
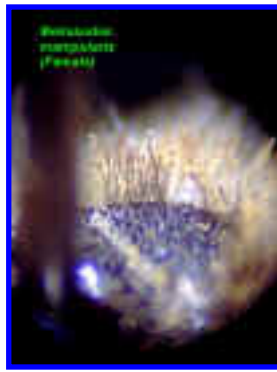
Dates: Sept. 1-Oct. 25; Sept.:1, Oct.:2; September according to Mitchell. I have specimens from Leon County from October and November.

Plants: *Chrysopsis* sp.

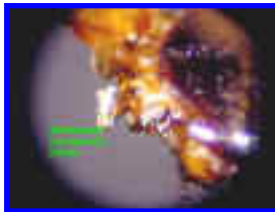
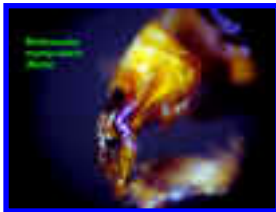
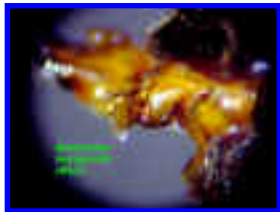
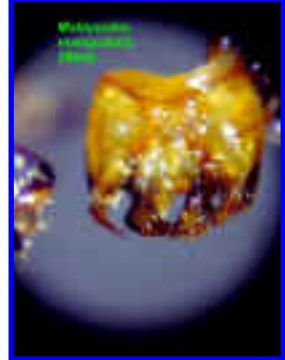
Notes: North Carolina-Florida (SE species); males have a distinctive basitibial plate that is square, not rounded.



Female:

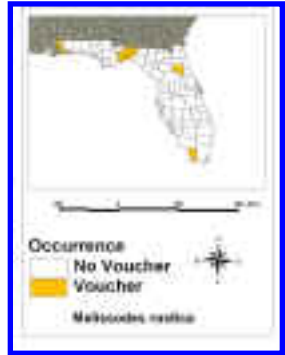


Male:



Apidae: *Melissodes rustica* Say

County Records: Escambia, Jefferson, Leon, Monroe? (This is a suspect record, see notes below), Putnam, Wakulla



Locations: Big Pine Key?, Tall Timbers, Avalon

Dates: May 2-Aug. 4; (May: 3, June: 1-these dates may be suspect if they were from other species), Aug.:1; also into Sept. and October

Plants: Prefers *Solidago* and *Aster*; *Rhus copallina*

Notes: New state record for Florida. Previously known from Georgia. Some of these southern records (Monroe) may need to be checked. I checked two specimens from the FSCA that were labeled as *M. rustica*, identified by G. E. Bohart 1968, both are actually [Melissodes communis](#) females. This suggests that many of these more southern peninsular Florida records might be actually *M. communis*. This idea is also supported by the distribution map in LaBerge that does not show any confirmed Florida records.

Female:



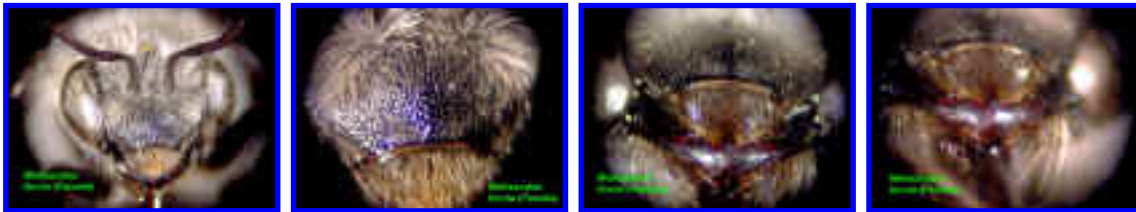


Locations: Big Pine Key, Conway, Tall Timbers, Avalon

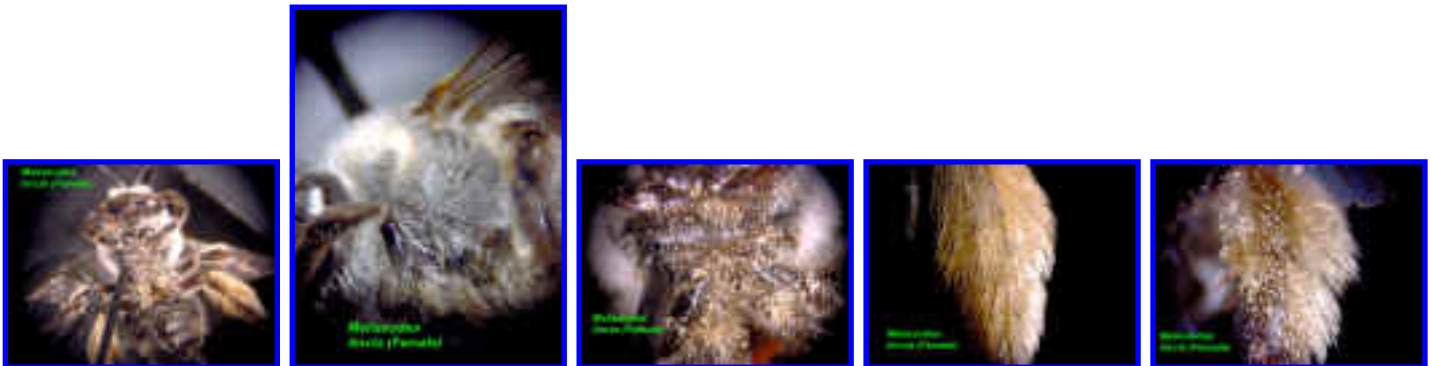
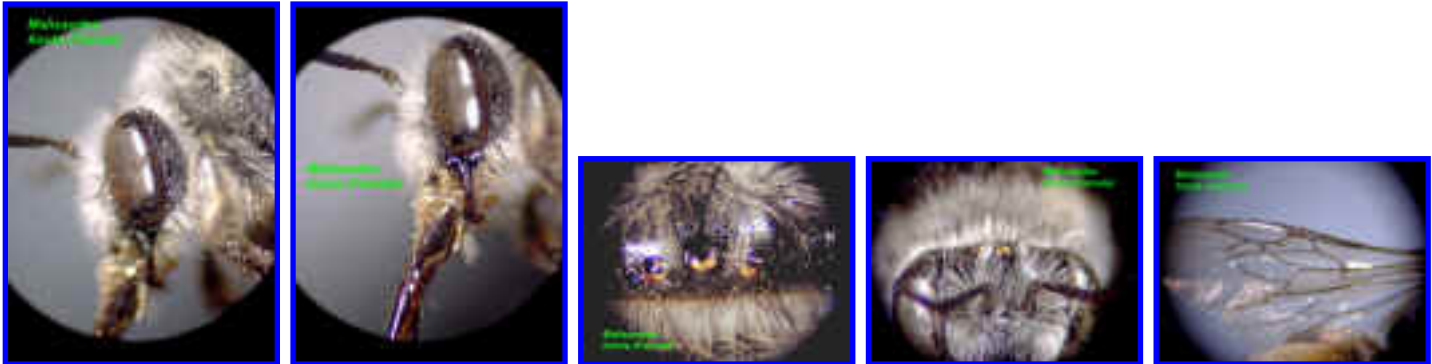
Dates: April 10, June 17 (1 record each month), October and November (Leon County collections); may fly at other times of year in the south of Florida. Pascarella et al. (2000) recorded it flying in Miami-Dade County from March through June.

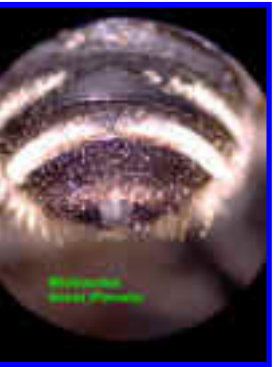
Plants: oligolege of *Chrysopsis* and *Aster*, also *Helianthus* and *Verbesina*

Notes: Males have a distinct clypeus that is black from one-third to two-thirds. Females do not have black hairs on the tubercles.

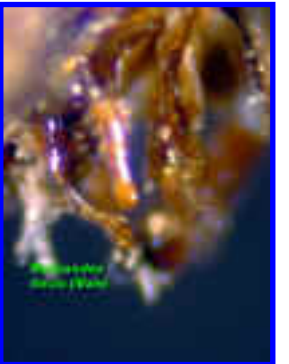
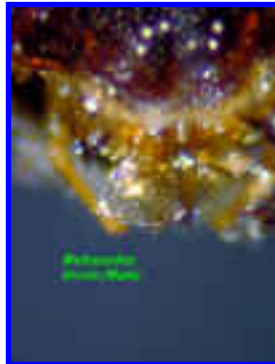
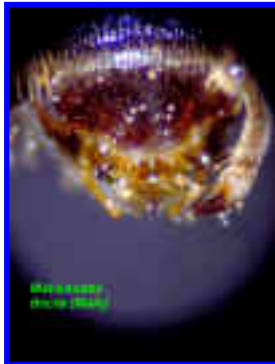
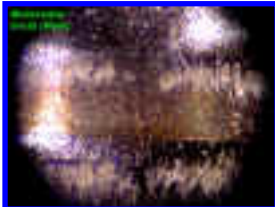


Female:



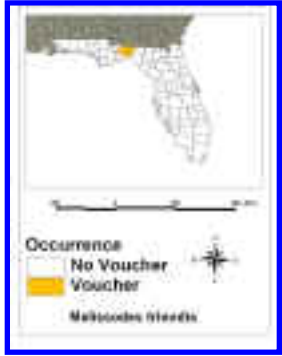


Male:



Apidae: *Melissodes trinodis* Robertson

County Records: Jefferson, Leon

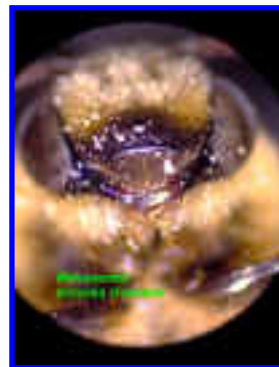


Locations: Tall Timbers, Avalon

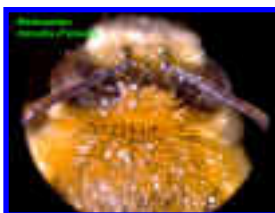
Dates: July through October according to Mitchell. Leon County specimens were all from October.

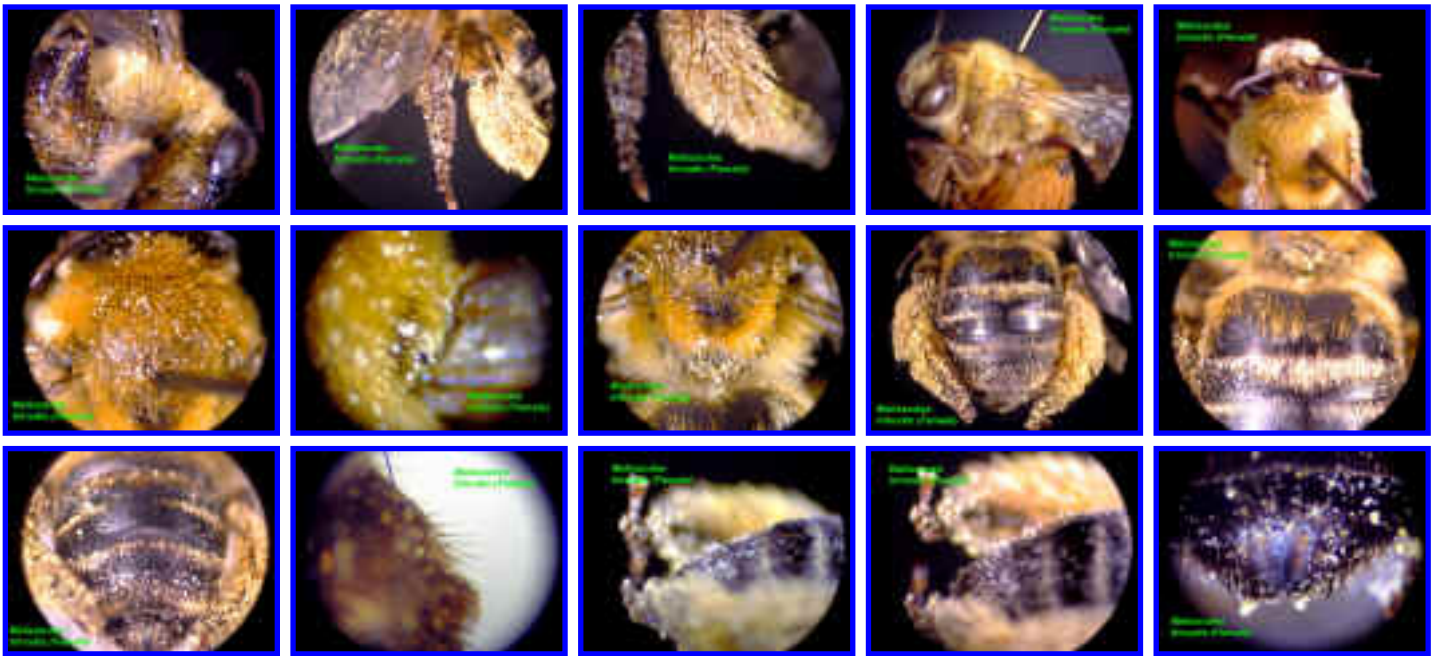
Plants: primarily *Helianthus*

Notes: new state record for Florida. Previously known from nearby areas of Georgia. Very similar to *M. agilis*, differs primarily in hair color (darker orange yellow).

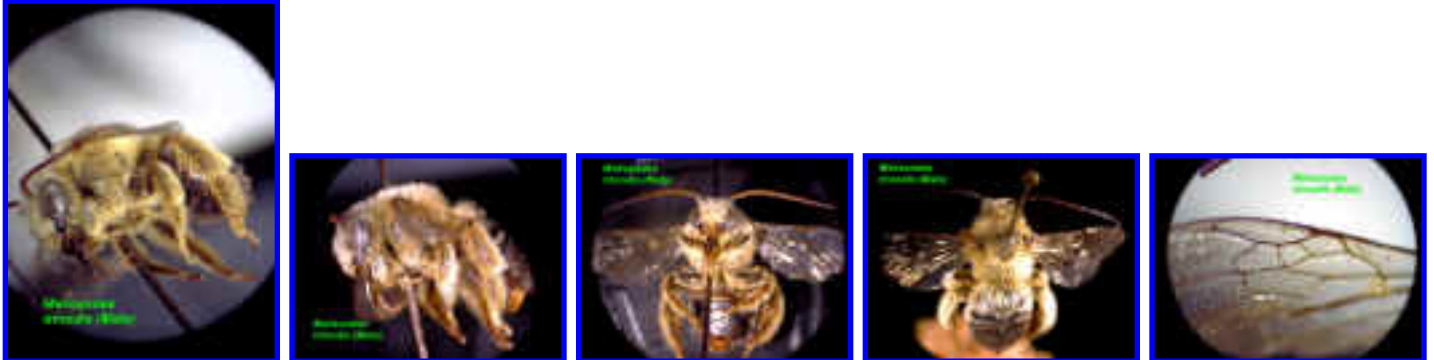
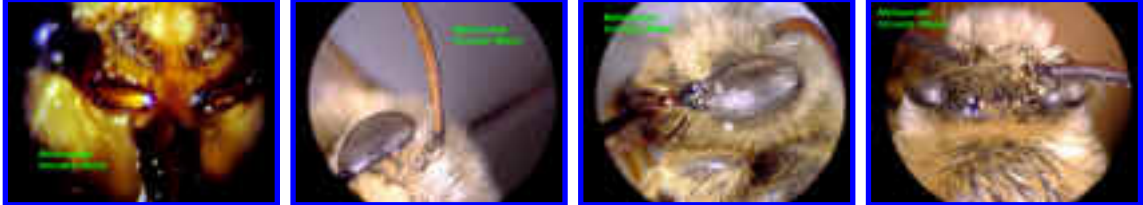
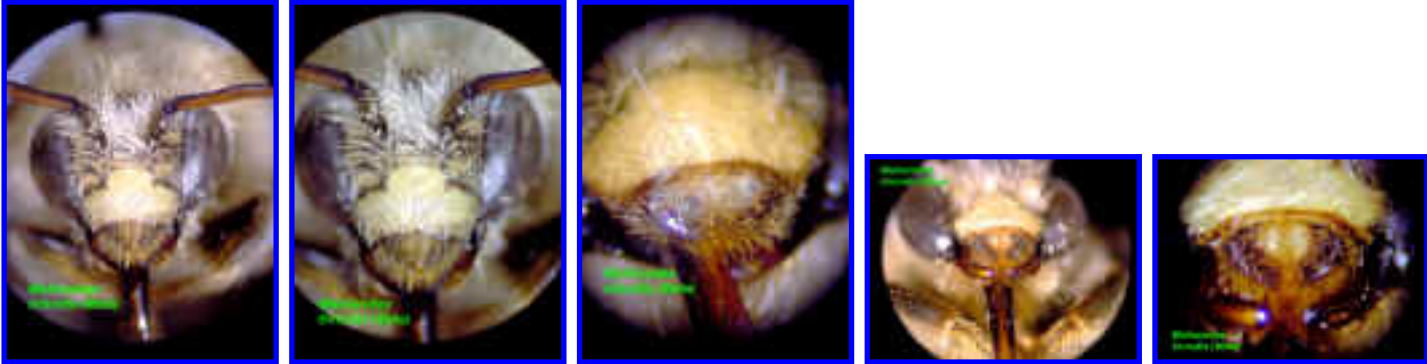


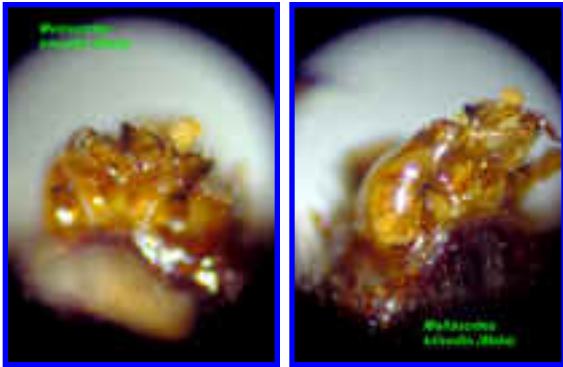
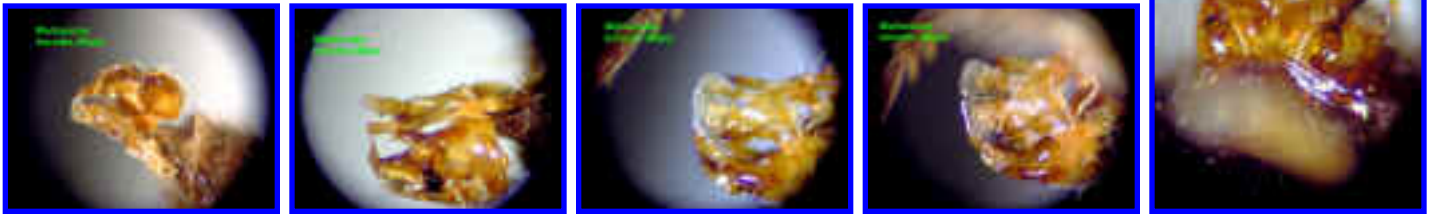
Female:





Male:





Melissodes

Subgenus *Melissodes* (5 taxa)

These are some of the most common members of the [Melissodes](#) in Florida, with [M. bimaculata](#), [M. communis](#), and [M. comptoides](#) found throughout Florida, nearly all year. [M. bimaculata nulla](#) is a color variant restricted to extreme SE Florida while [M. tepaneca](#) is likely found throughout the panhandle and slightly southward in the northern peninsula. All five species visit a wide range of flowers, but do not appear to collect pollen from members of the Asteraceae as many other [Melissodes](#) ([Eumelissodes](#)) do. This may explain their much longer period of flight when compared to the mostly fall-flying [Eumelissodes](#).

Males are keyed out below. Females may be keyed out using the key from the subgenus [Eumelissodes](#).

Key to males of *Melissodes*, subgenus *Melissodes*

1. Pubescence of legs black, at least in part...1



- Pubescence of legs entirely pale...2



2. Pubescence of mid and hind tibiae and basitarsi white..[M. bimaculata bimaculata](#)



Pubescence of mid and hind tibiae and basitarsi blackish or fuscous...[M. bimaculata nulla](#)

3. Wings lightly but uniformly infuscated...4



Wings at most faintly yellowish, usually hyaline...[M. tepaneca](#)



4. Pubescence of scutum and scutellum entirely pale ochraceous...[M. comptoides](#)



Scutum and scutellum with considerable fuscous pubescence...[M. communis](#)



Apidae: *Melissodes bimaculata bimaculata* Lapeletier

County Records: Leon, Miami-Dade



Locations: Indian River, Lacoche, Orange City, Sanford, Suwannee Springs, ENP

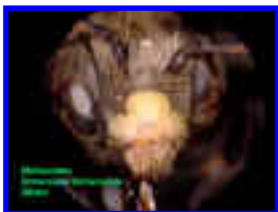
Dates: January-October

Plants: polylectic; not a big visitor to Asteraceae. *Sida* sp.

Notes: found throughout Florida



Female:



Male:

Apidae: *Melissodes bimaculata nulla* LaBerge

County Records: Miami-Dade, Monroe



Locations: ENP

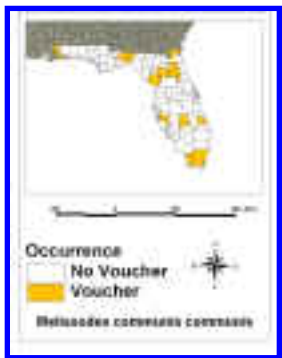
Dates: Feb.-May

Plants: polylectic; not a big visitor to Asteraceae.

Notes: Endemic subspecies restricted to SE Florida. No photos available-Appears similar to nominal subspecies except in color.

Apidae: *Melissodes communis communis* Cresson

County Records: Alachua, Clay, Escambia, Jefferson, Highlands, Leon, Levy, Manatee, Miami-Dade, Monroe, Nassau, Putnam, St. Lucie.



Locations:, Big Pine Key, Bradenton, Bartow, Biscayne Bay, Boca Grade, Camp Crystal, Cedar Key, Centerville, Cocoa, Cocconut Grove, Coral Gables, Crescent City, Dade City, Daytona, Englewood, Fort Lauderdale, Fort Myers, Ft. Pierce, Gainesville, Goulds, Homestead, Indian River, Jacksonville, Key Largo, Key West, Lahoochee, Lake Okeechobee, Larkins, Long Key, Marco, Matheson Hammock, Miami, Miami Beach, Naples, Naranja, No Name Key, Paradise Key, Parrish, Perry, Punta Gorda, Royal Palm Hammock, Royal Palm State Park, Sanford, Sanibel Island, South Bay, Stock Island, ,

South Miami, Suwannee Springs, Tamiami Trail, Titusville, Torreya ravine, Upper Matecumbe Key, Warren's Cave, Winter Park

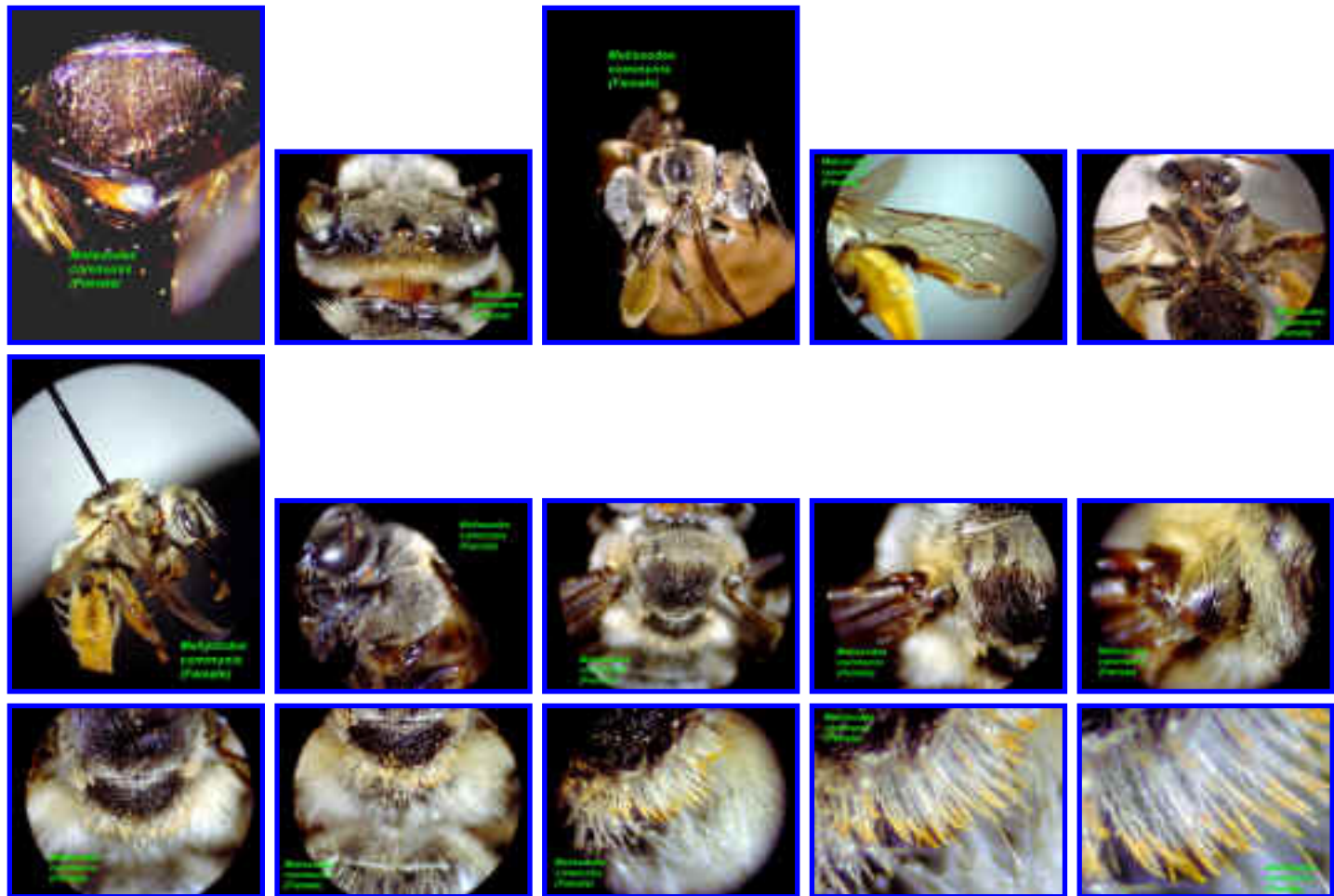
Dates: March-October

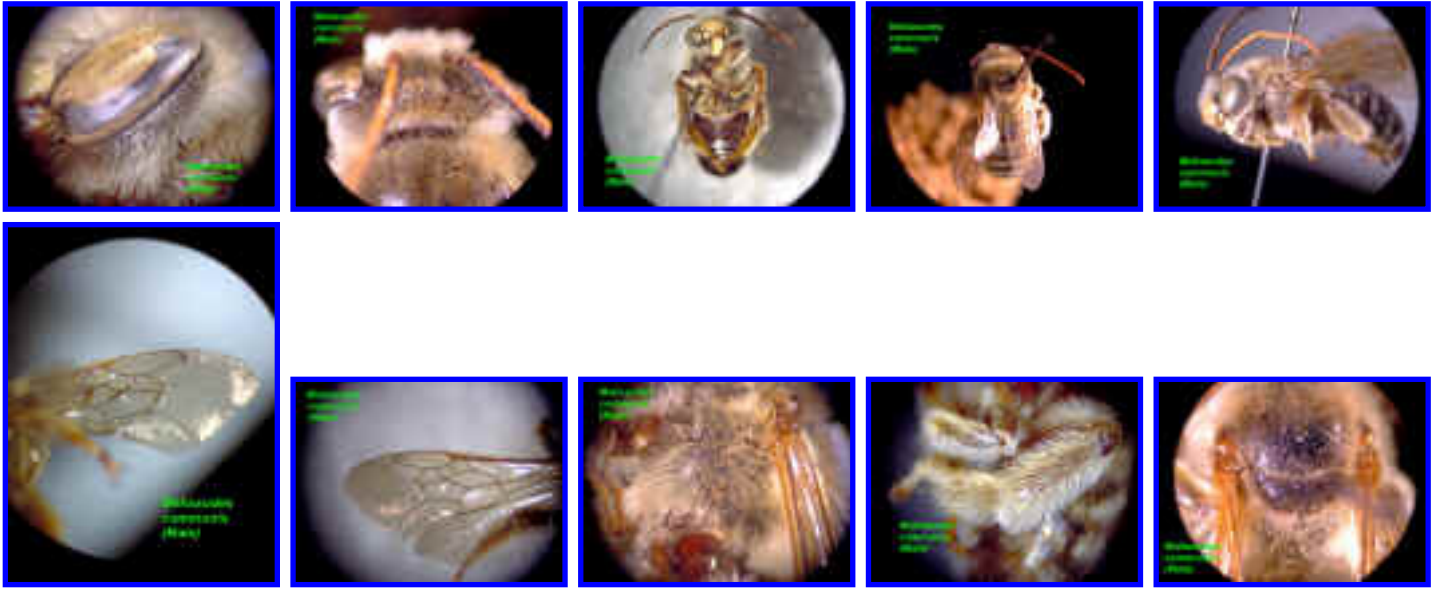
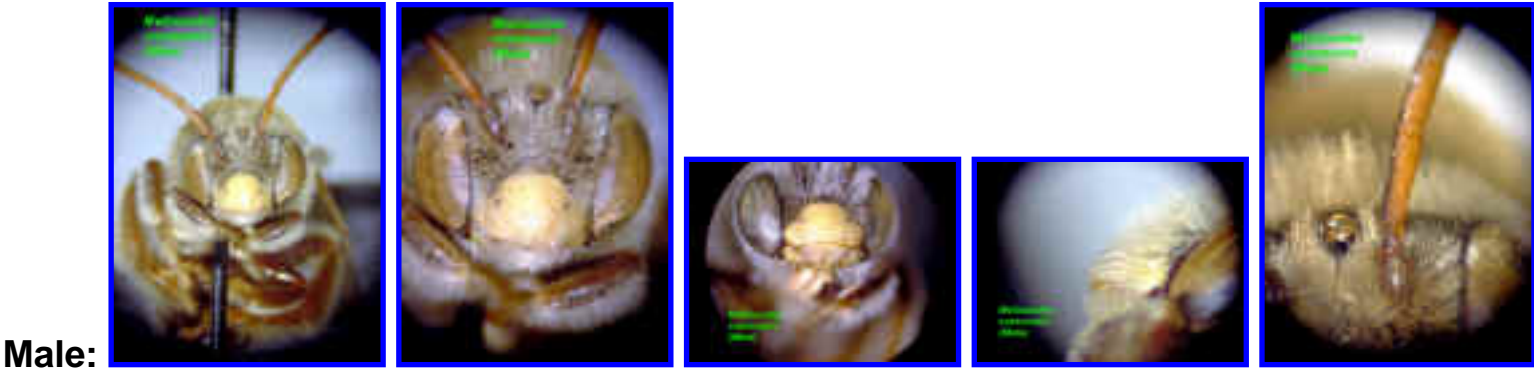
Plants: polylectic, not a big visitor to composites, prefers legumes. *Tetragonetheca helianthoides*, *Chrysobalanus oblongifolius*,

Notes: Occurs throughout Florida. Along with [M. comptoides](#), very common.



Female:







Apidae: *Melissodes comptoides* Robertson

County Records: Jefferson, Leon, Levy, Miami-Dade, Monroe, Santa Rosa, St. Lucie



Locations: Bradentown, Cocoa, Cedar Key, Estero, Lacoche, Miami Beach, Pensacola, Punta Rasa, Royal Palm Hammock, Royal Palm State Park, Sanibel, Suwannee Springs, Swan, Vero Beach

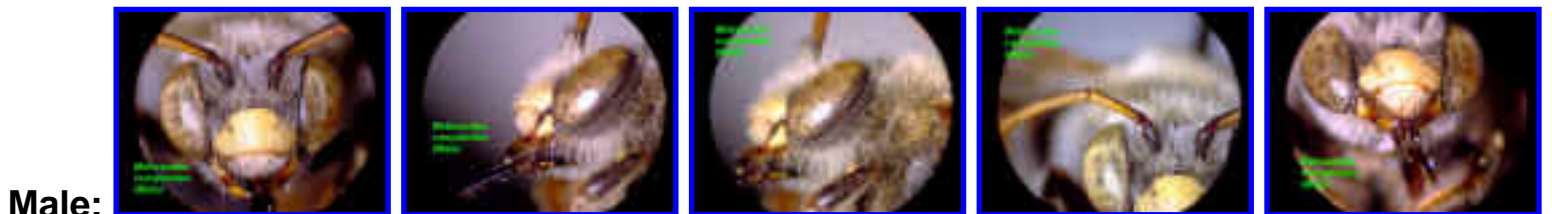
Dates: April-October

Plants: polylectic, not composites. *Sida* sp.

Notes: occurs throughout Florida

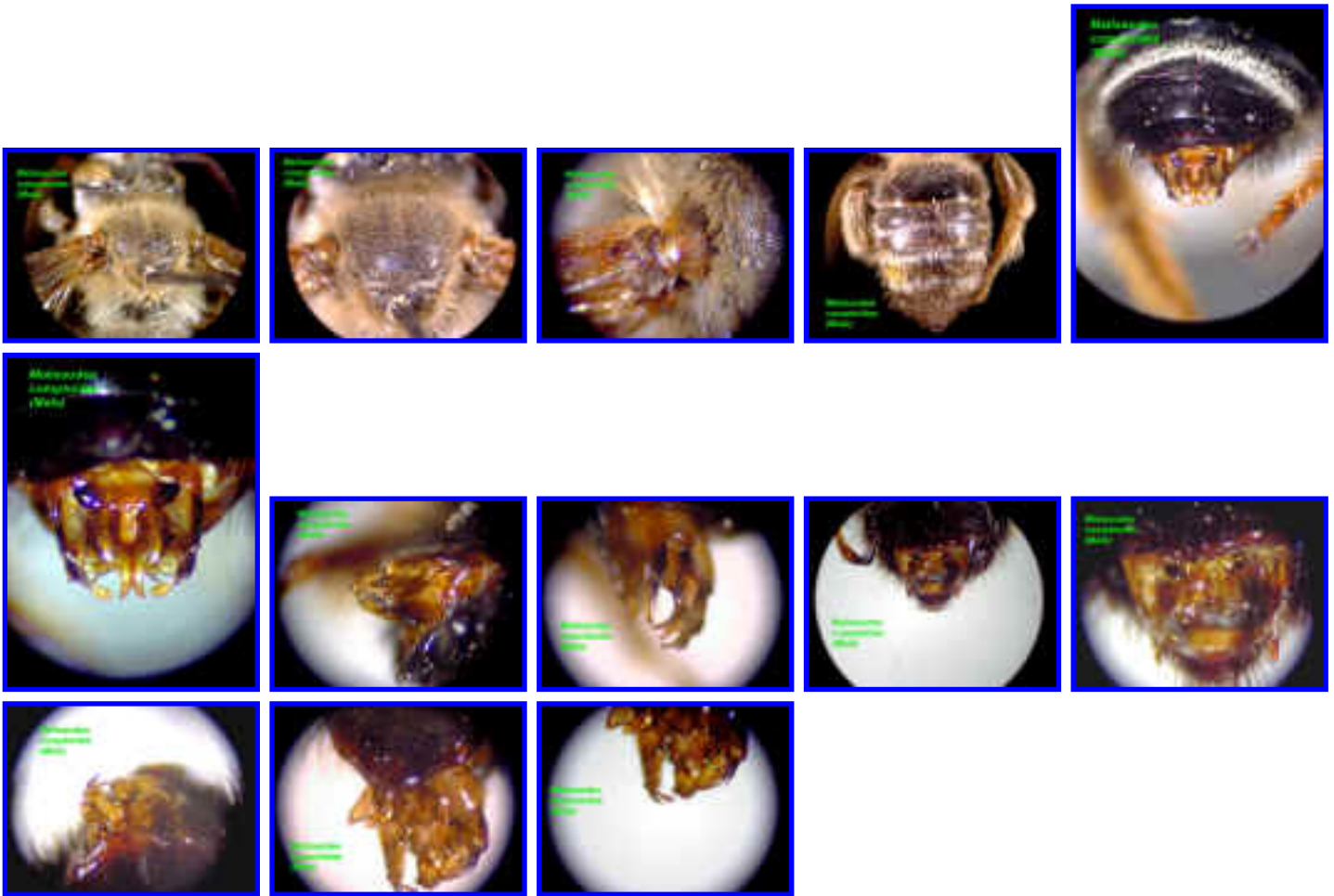


Female:



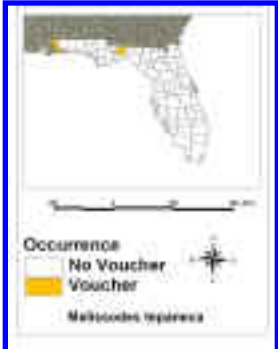
Male:





Apidae: *Melissodes tepaneca* Cresson

County Records: Escambia, Leon



Locations: Pensacola, Tall Timbers Research Station

Dates: June-October

Plants: polylectic, does not appear use Asteraceae for pollen.

Notes: Externally, nearly indistinguishable from some specimens of [M. comptoides](#). Wing membranes are clear, not infumate; in females, apical punctures of tergum 2 are finer; clypeus has shallower punctures and more dense shagreening ground areas. Males can be identified on the basis of male terminalia characters. Likely occurs only in panhandle of Florida based on map in LaBerge.



Female:



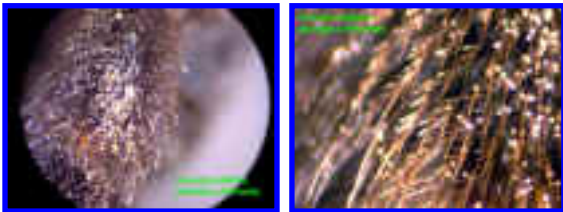
Eucerini

Genus *Svastra* Holmberg, five taxa

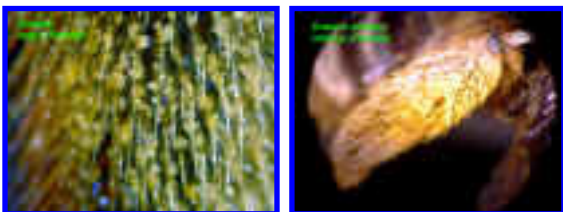
This genus has four species present in Florida. One species has a complex of two subspecies that likely hybridize in the northeast of Florida. These are large bees that resemble [Melissodes](#) in aspect. They can be distinguished easily from that genus on the hairs and tergal features listed in the key to genera.

Key to females (From Mitchell 1962)

1. Scopal hairs all or almost all black or dark brown, with few branches and with rachises of hairs extending considerably beyond plumose part so as to form what appears to be a layer of simple guard hairs...[S. atripes](#)



Scopal hairs all or almost all pale, plumose...2



2. Mesepisterna with dark brown to black pubescence on anterior faces, surfaces not greatly obscured; thorax with dark brown to black hairs on sides at least on lower fifth...[S. obliqua](#)



Mesepisterna with pale pubescence on anterior faces, surfaces often completely obscured on at least lower halves; thorax without dark hairs laterally...3



3. Tergum 2, and usually terga 3 and 4, with pale pubescence in arched bands or lateral fasciae and well separated from apical margin by an area of sparse appressed dark hair or by an apubescent area..[S. aegis](#)



Tergum 2, and usually terga 3 and 4 as well, with pale pubescence short, evenly diffused and reaching apical margin...[S. petulca](#)

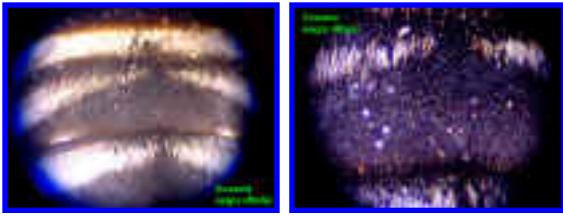


Key to males (From Mitchell 1962)

1. Apical areas of terga with distinct piliferous punctures equal in diameter to several times the width of the simple hairs arising from them (except extremely narrow impunctate margin), ground shiny with little or only delicate shagreening...[S. atripes](#)



Apical areas of terga without distinct punctures, if punctures present, these small and obscured by dense, diffuse, pale pubescence, ground usually dulled by dense shagreening...2



2. Terga 2 and 3 with pale pubescence diffuse, extending to apical margins (unless worn); anterior faces of mesepisterna with mats of closely appressed, dense, pale pubescence which hide surfaces completely on lower half...[S. petulca petulca](#)



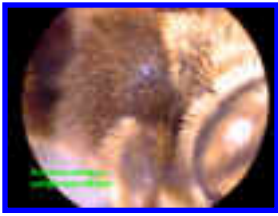
Terga 2 and 3 with pale pubescence in distinct arched bands well separated from margins, in lateral fasciae which are well separated from margins, or absent...3



3. Mesepisterna with mats of dense pale pubescence completely hiding anterior surfaces at least on lower half...[S. aegis](#)



Mesepisterna without mats of pale pubescence anteriorly, with short sparse pubescence which does not hide surface completely...[S. obliqua](#)



Key to subspecies of *Svastra atripes*

·

These subspecies likely hybridize in North Florida and Southwest Georgia.

Key to females (From Mitchell 1962)

Hind tibiae with pale ochraceous hairs along outer surface medially. [*S. atripes georgica*](#)



Hind tibiae with entirely dark hairs.. [*S. atripes atrimitra*](#)



Key to males (From Mitchell 1962)

Terga 3 and 4 with entire, white pubescent fasciae, that on tergum 2 narrow and widely interrupted medially. [*S. atripes georgica*](#)

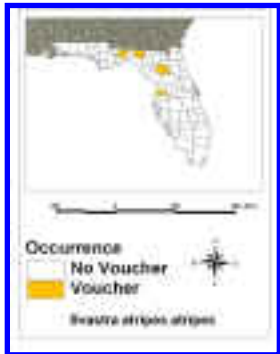


Tergum 4 entirely black, 2 and 3 reduced or absent.. [*S. atripes atrimitra*](#)



Apidae: *Svastra atripes atrimitra* LaBerge

County Records: Alachua, Hernando, Leon, Madison



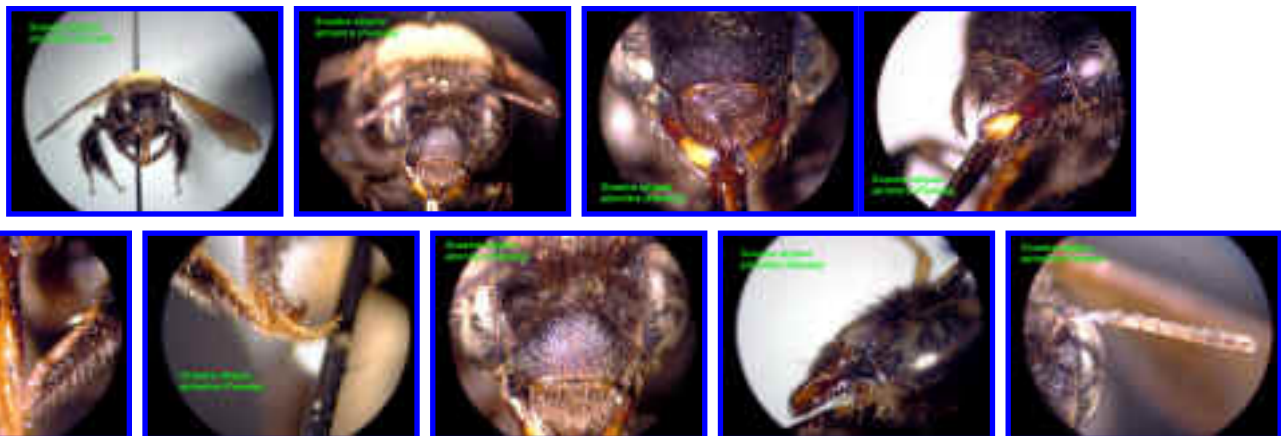
Locations: Brooksville, Boston, GA (Brooks Co., NW of Madison County), Bartow, Branford, Crestview, Fort Meade, LaBelle, Lacoche, Marianna, Suwanee Springs, Tallahassee, Wildwood

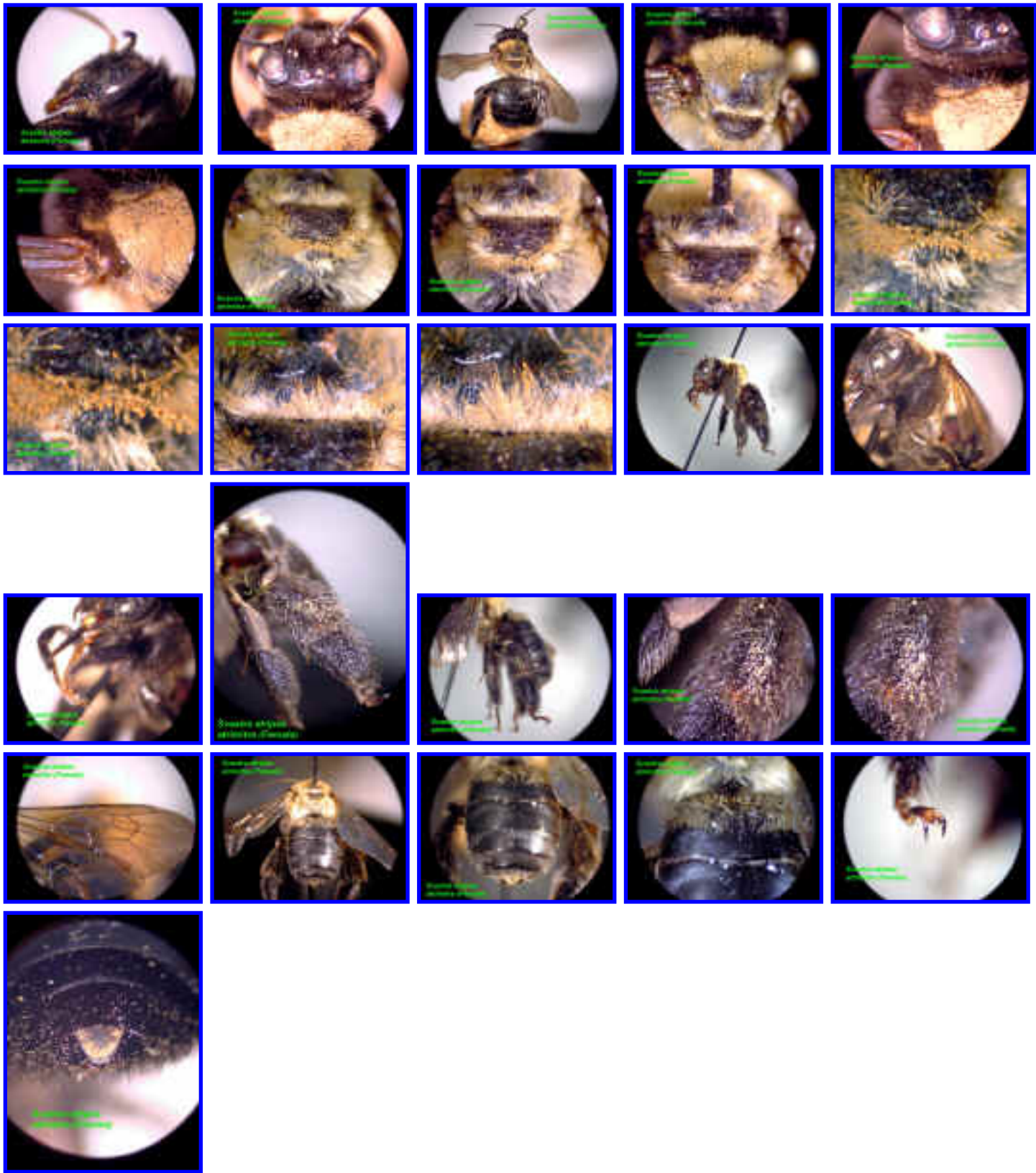
Dates: July 27-Oct. 2; July: 1, Aug: 1, Oct: 1

Plants:

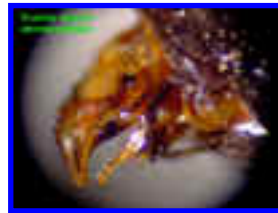
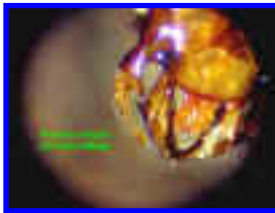
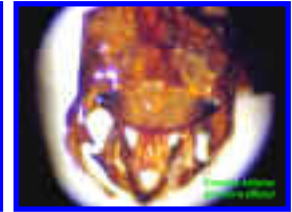
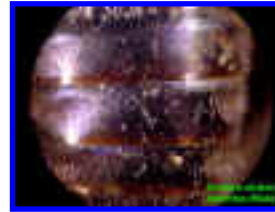
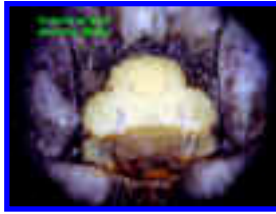
Notes: This subspecies occurs in the panhandle and down the western part of the Florida peninsula. It interbreeds with *S. atripes georgica* in the peninsula.

Female:



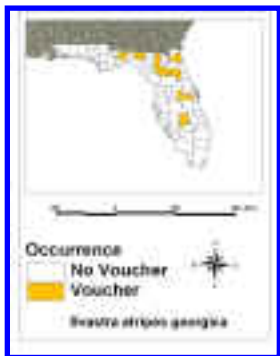


Male:



Apidae: *Svastra atripes georgica* Cresson

County Records: Alachua, Columbia, Duval, Highlands, Leon, Madison, Marion, Orange, Putnam

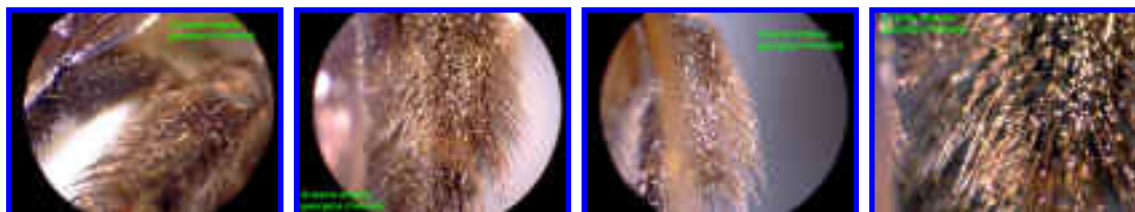


Locations: Belleville, Cocoa, Gainesville, Jacksonville Beach, Lake City, Ocala N.F., Orlando, Ortega

Dates: July 4-Aug. 29; July: 2, Aug.: 3

Plants:

Notes: This subspecies primarily occurs in the eastern half of the Florida peninsula. It interbreeds with the *S. atripes atrimitra* in the central and western peninsula.



Female:

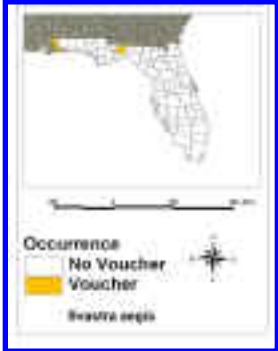


Male:



Apidae: *Svastra aegis* LaBerge

County Records: Escambia, Leon, Monroe(?)

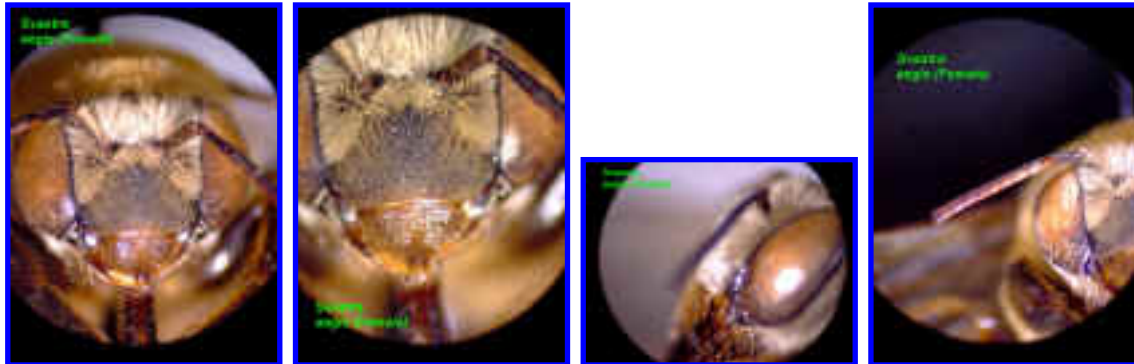


Locations: Blountstown, Key Largo?, Pensacola, Yankeetown

Dates: June 7, Aug. 18 (July-Oct from LaBerge)

Plants:

Notes: The Monroe record may be a misidentification of *Svastra petulca petulca* or *S. obliqua obliqua*. The map in LaBerge shows this species as only occurring in North Florida.



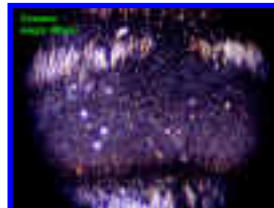
Female:

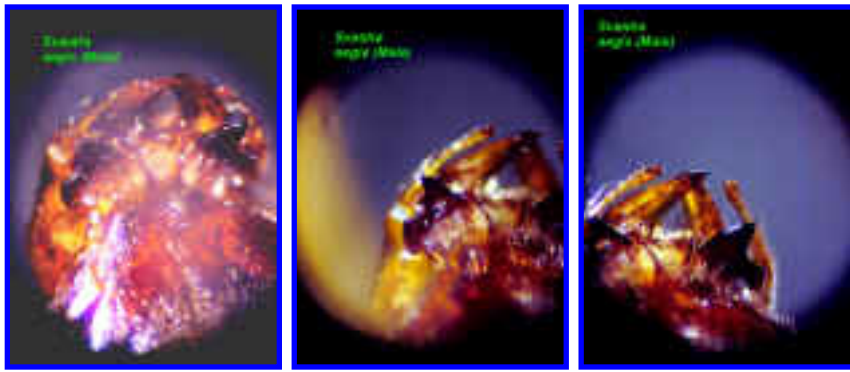


Svastra



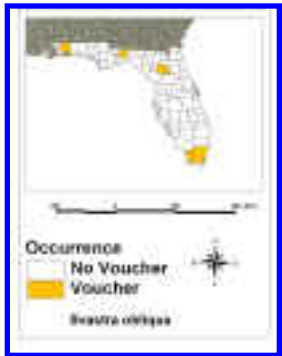
Male:





Apidae: *Svastra obliqua obliqua* Say

County Records: Alachua, Escambia, Leon, Miami-Dade, Monroe, Santa Rosa



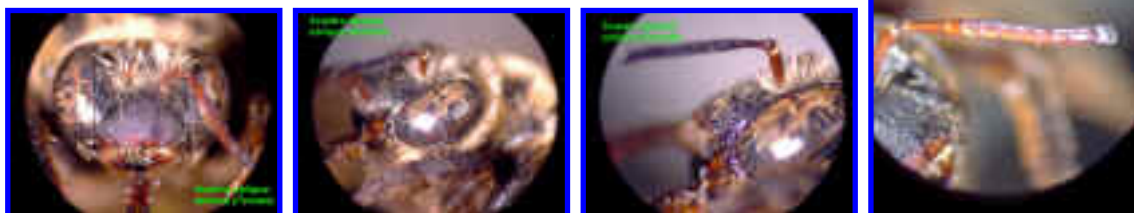
Locations: Everglades, Flamingo, Yankeetown

Dates: July 25-Aug. 4; July: 2, Aug.: 1

Plants:

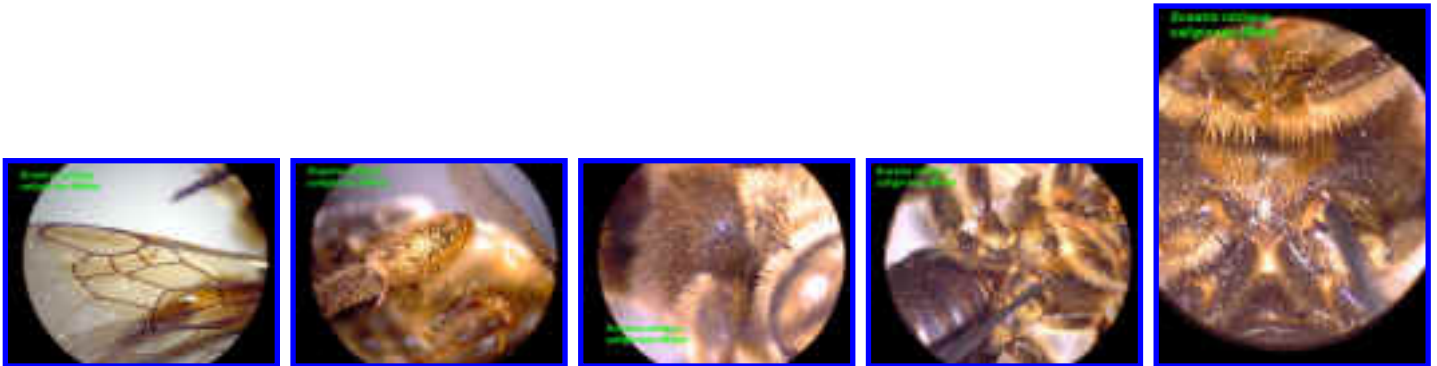
Notes: Photos of male below are of *Svastra obliqua caliginosa* from Georgia. This darker colored subspecies is NOT believed to occur in Florida.

Female:





Male:



Apidae: *Svastra petulca petulca* Cresson

County Records: Miami-Dade, Monroe



Locations: Tahiti Beach, Miami, Coral Gables, Key Largo

Dates: April-June

Plants:

Notes: Although it occurs in Georgia, Alabama, and Mississippi to the North, in Florida, this species is only known from SE Florida.



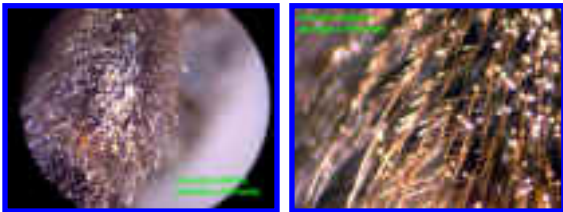
Eucerini

Genus *Svastra* Holmberg, five taxa

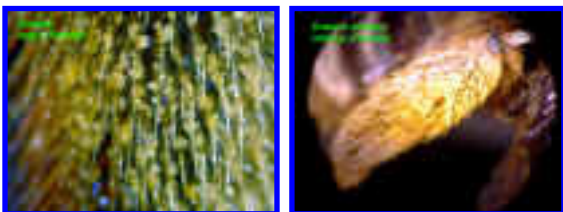
This genus has four species present in Florida. One species has a complex of two subspecies that likely hybridize in the northeast of Florida. These are large bees that resemble [Melissodes](#) in aspect. They can be distinguished easily from that genus on the hairs and tergal features listed in the key to genera.

Key to females (From Mitchell 1962)

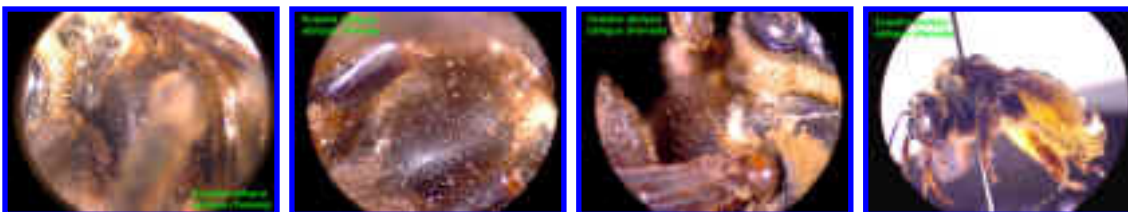
1. Scopal hairs all or almost all black or dark brown, with few branches and with rachises of hairs extending considerably beyond plumose part so as to form what appears to be a layer of simple guard hairs...[S. atripes](#)



Scopal hairs all or almost all pale, plumose...2



2. Mesepisterna with dark brown to black pubescence on anterior faces, surfaces not greatly obscured; thorax with dark brown to black hairs on sides at least on lower fifth...[S. obliqua](#)



Mesepisterna with pale pubescence on anterior faces, surfaces often completely obscured on at least lower halves; thorax without dark hairs laterally...3



3. Tergum 2, and usually terga 3 and 4, with pale pubescence in arched bands or lateral fasciae and well separated from apical margin by an area of sparse appressed dark hair or by an apubescent area.. [S. aegis](#)



Tergum 2, and usually terga 3 and 4 as well, with pale pubescence short, evenly diffused and reaching apical margin... [S. petulca](#)

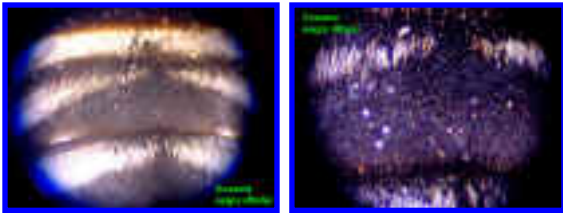


Key to males (From Mitchell 1962)

1. Apical areas of terga with distinct piliferous punctures equal in diameter to several times the width of the simple hairs arising from them (except extremely narrow impunctate margin), ground shiny with little or only delicate shagreening... [S. atripes](#)



Apical areas of terga without distinct punctures, if punctures present, these small and obscured by dense, diffuse, pale pubescence, ground usually dulled by dense shagreening...2



2. Terga 2 and 3 with pale pubescence diffuse, extending to apical margins (unless worn); anterior faces of mesepisterna with mats of closely appressed, dense, pale pubescence which hide surfaces completely on lower half...[S. petulca petulca](#)



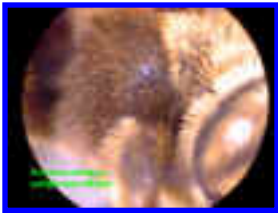
Terga 2 and 3 with pale pubescence in distinct arched bands well separated from margins, in lateral fasciae which are well separated from margins, or absent...3



3. Mesepisterna with mats of dense pale pubescence completely hiding anterior surfaces at least on lower half...[S. aegis](#)



Mesepisterna without mats of pale pubescence anteriorly, with short sparse pubescence which does not hide surface completely...[S. obliqua](#)



Key to subspecies of *Svastra atripes*

.

These subspecies likely hybridize in North Florida and Southwest Georgia.

Key to females (From Mitchell 1962)

Hind tibiae with pale ochraceous hairs along outer surface medially. [*S. atripes georgica*](#)



Hind tibiae with entirely dark hairs.. [*S. atripes atrimitra*](#)



Key to males (From Mitchell 1962)

Terga 3 and 4 with entire, white pubescent fasciae, that on tergum 2 narrow and widely interrupted medially. [*S. atripes georgica*](#)



Tergum 4 entirely black, 2 and 3 reduced or absent.. [*S. atripes atrimitra*](#)



Apidae: *Svastra atripes atrimitra* LaBerge

County Records: Alachua, Hernando, Leon, Madison

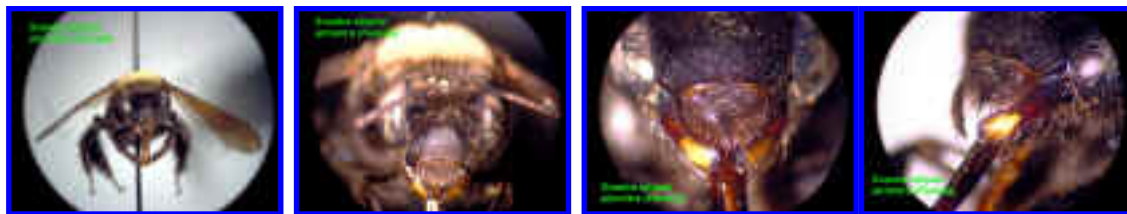


Locations: Brooksville, Boston, GA (Brooks Co., NW of Madison County), Bartow, Branford, Crestview, Fort Meade, LaBelle, Lacoche, Marianna, Suwanee Springs, Tallahassee, Wildwood

Dates: July 27-Oct. 2; July: 1, Aug: 1, Oct: 1

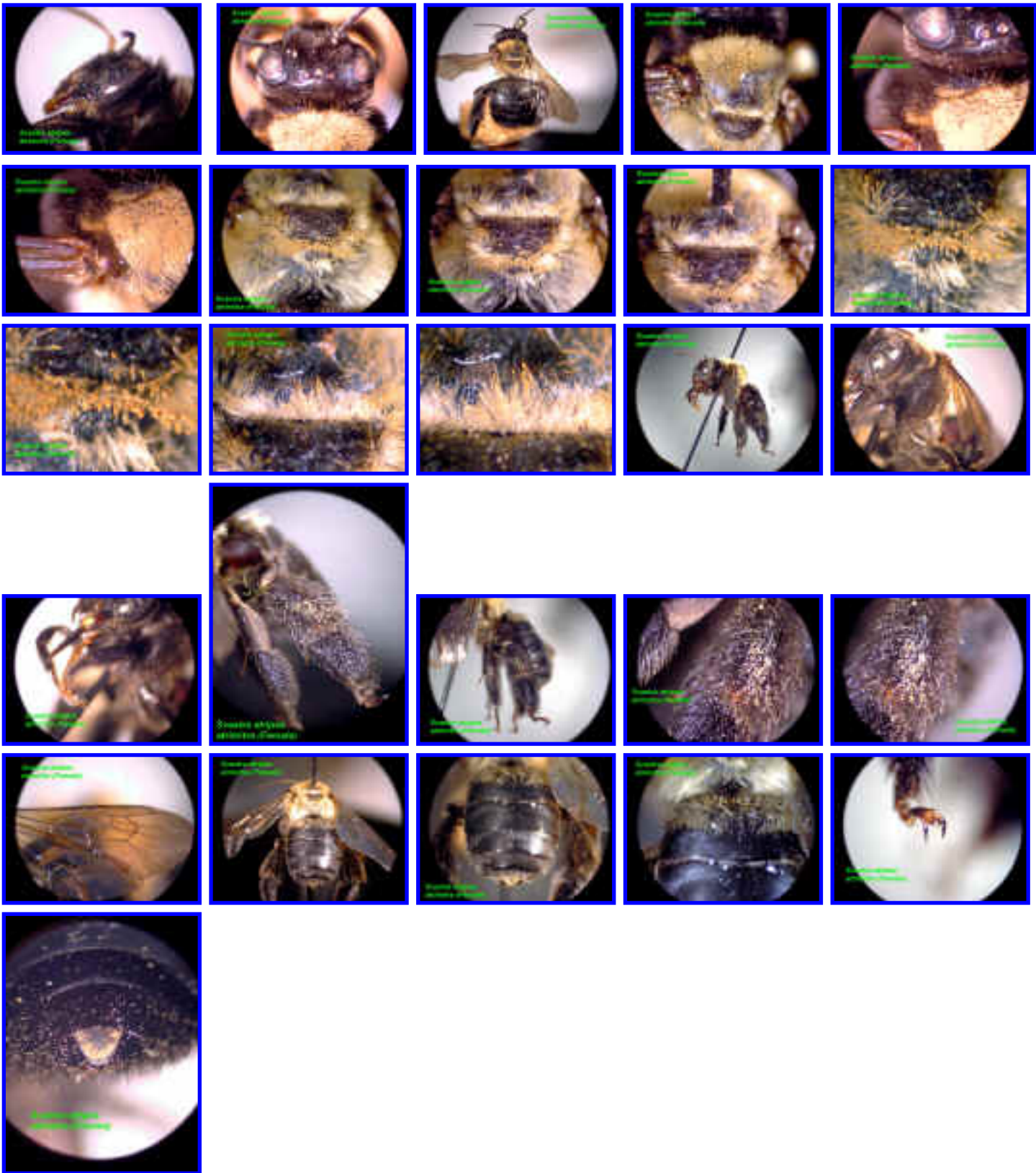
Plants:

Notes: This subspecies occurs in the panhandle and down the western part of the Florida peninsula. It interbreeds with *S. atripes georgica* in the peninsula.

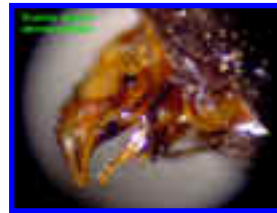
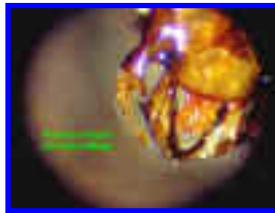
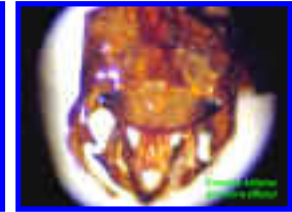
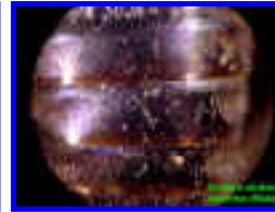
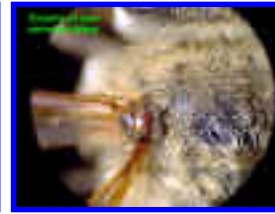
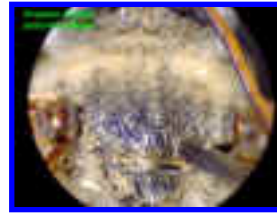
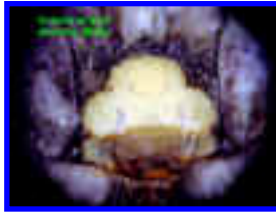


Female:





Male:



Apidae: *Svastra atripes georgica* Cresson

County Records: Alachua, Columbia, Duval, Highlands, Leon, Madison, Marion, Orange, Putnam

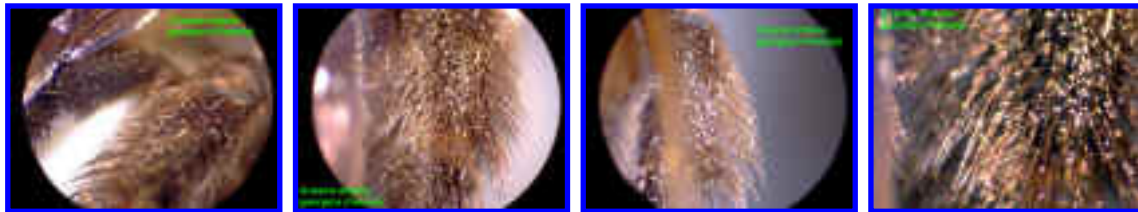


Locations: Belleville, Cocoa, Gainesville, Jacksonville Beach, Lake City, Ocala N.F., Orlando, Ortega

Dates: July 4-Aug. 29; July: 2, Aug.: 3

Plants:

Notes: This subspecies primarily occurs in the eastern half of the Florida peninsula. It interbreeds with the *S. atripes atrimitra* in the central and western peninsula.



Female:

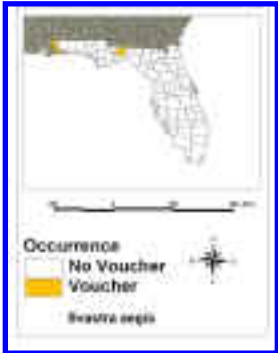


Male:



Apidae: *Svastra aegis* LaBerge

County Records: Escambia, Leon, Monroe(?)

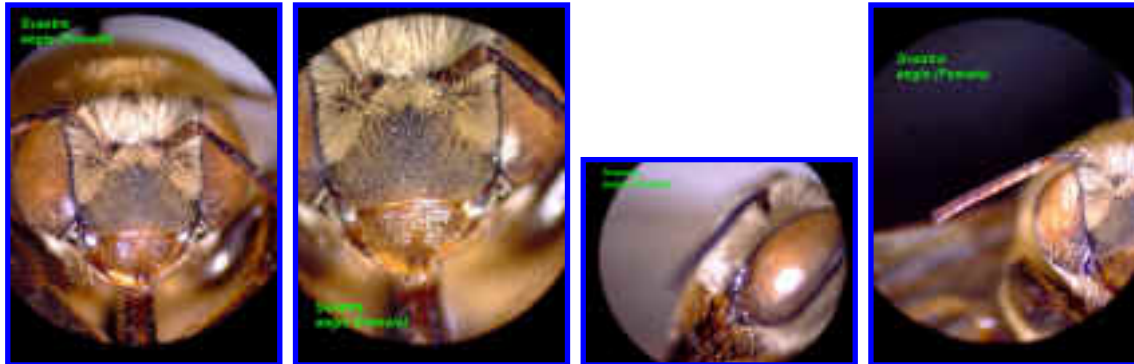


Locations: Blountstown, Key Largo?, Pensacola, Yankeetown

Dates: June 7, Aug. 18 (July-Oct from LaBerge)

Plants:

Notes: The Monroe record may be a misidentification of *Svastra petulca petulca* or *S. obliqua obliqua*. The map in LaBerge shows this species as only occurring in North Florida.



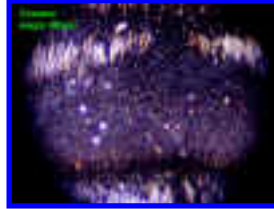
Female:

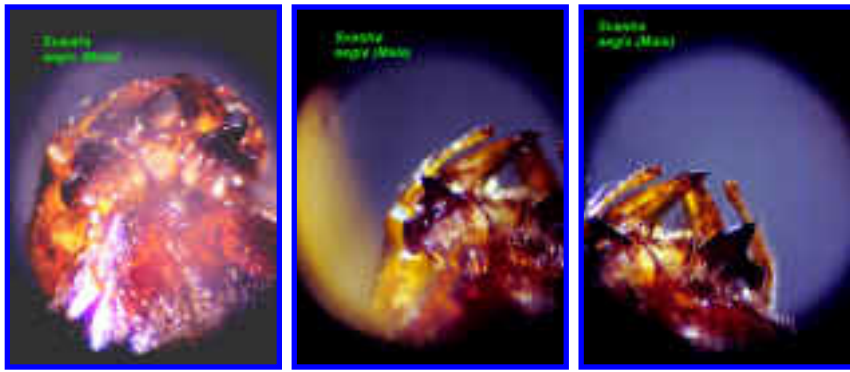


Svastra



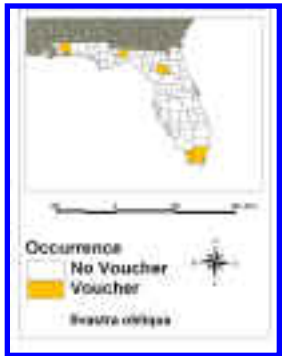
Male:





Apidae: *Svastra obliqua obliqua* Say

County Records: Alachua, Escambia, Leon, Miami-Dade, Monroe, Santa Rosa



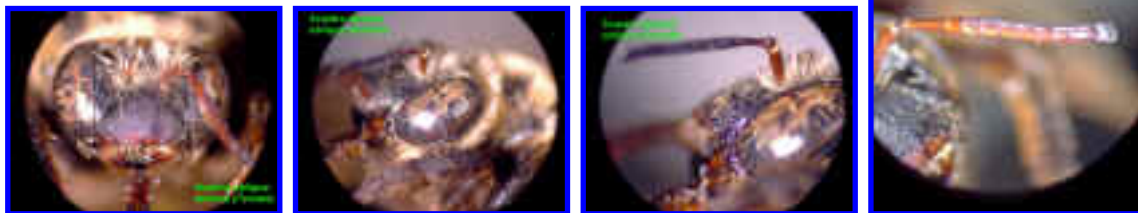
Locations: Everglades, Flamingo, Yankeetown

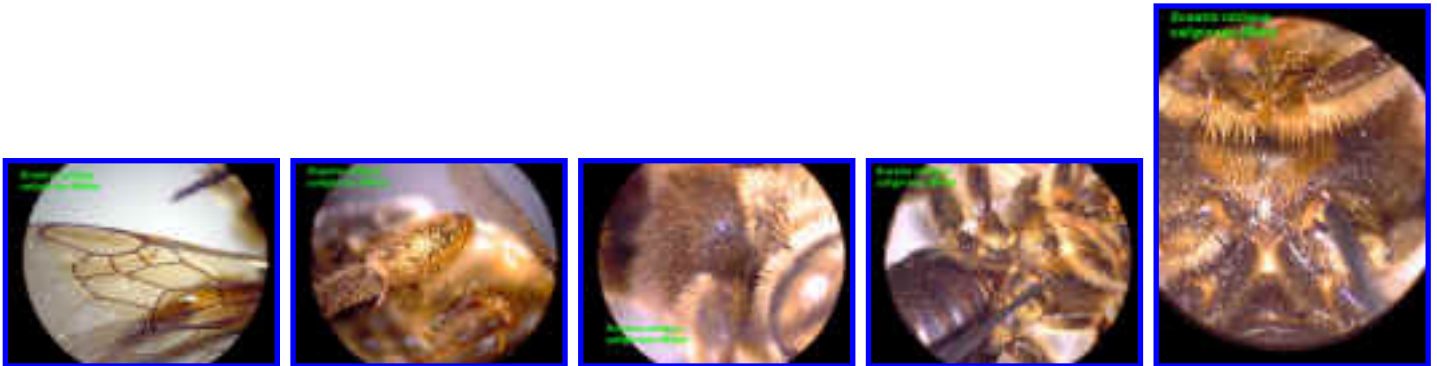
Dates: July 25-Aug. 4; July: 2, Aug.: 1

Plants:

Notes: Photos of male below are of *Svastra obliqua caliginosa* from Georgia. This darker colored subspecies is NOT believed to occur in Florida.

Female:





Apidae: *Svastra petulca petulca* Cresson

County Records: Miami-Dade, Monroe



Locations: Tahiti Beach, Miami, Coral Gables, Key Largo

Dates: April-June

Plants:

Notes: Although it occurs in Georgia, Alabama, and Mississippi to the North, in Florida, this species is only known from SE Florida.



Eucerini

Genus *Xenoglossa* Smith, one taxon

Subgenus *Eoxenoglossa* Hurd, one taxon

These bees are dependent upon wild and cultivated *Cucurbita* for pollen and nectar. Similar to *Peponapis* (which is not known from Florida but could occur in the panhandle or northern peninsula), males spend much of the night and day inside flowers. Extremely important pollinators of pumpkins, squashes, and gourds.

Apidae: *Xenoglossa strenua* Cresson

County Records: Gadsden; probably in Alachua as its parasite, *Doeringiella remigatus*, has been collected there.



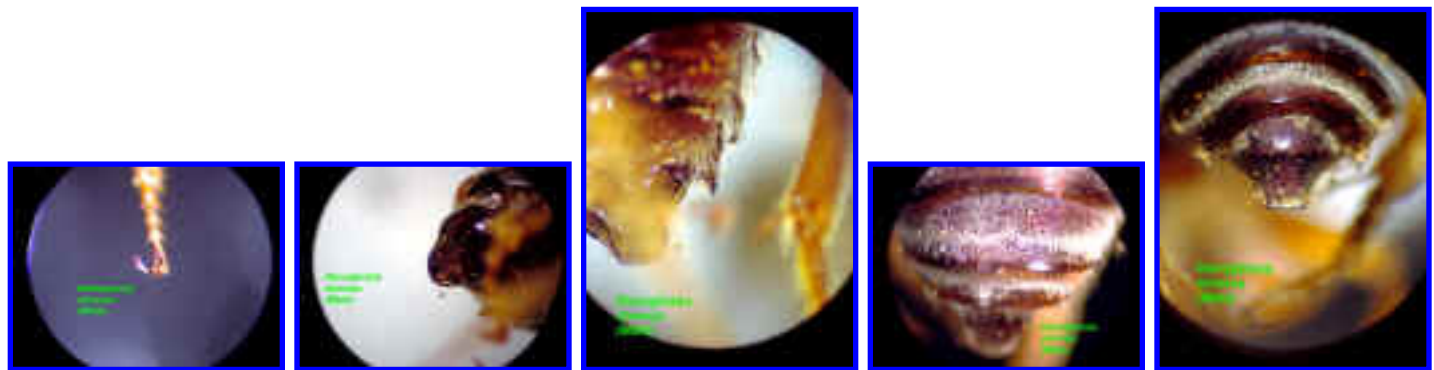
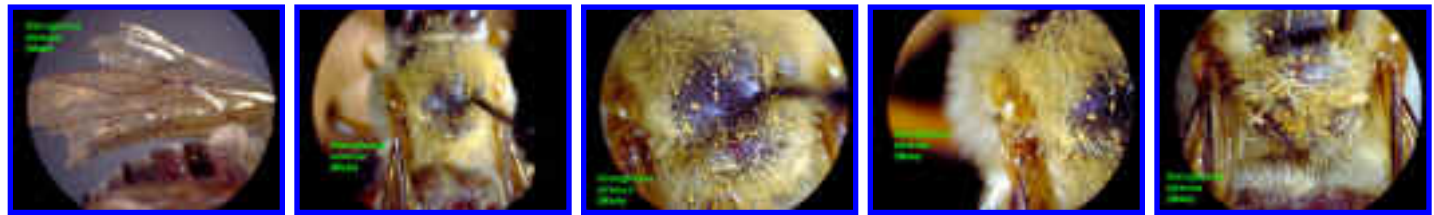
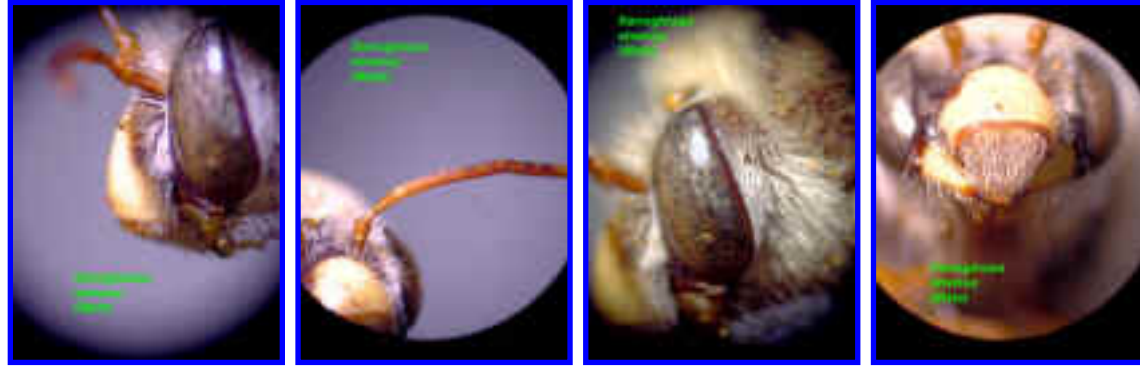
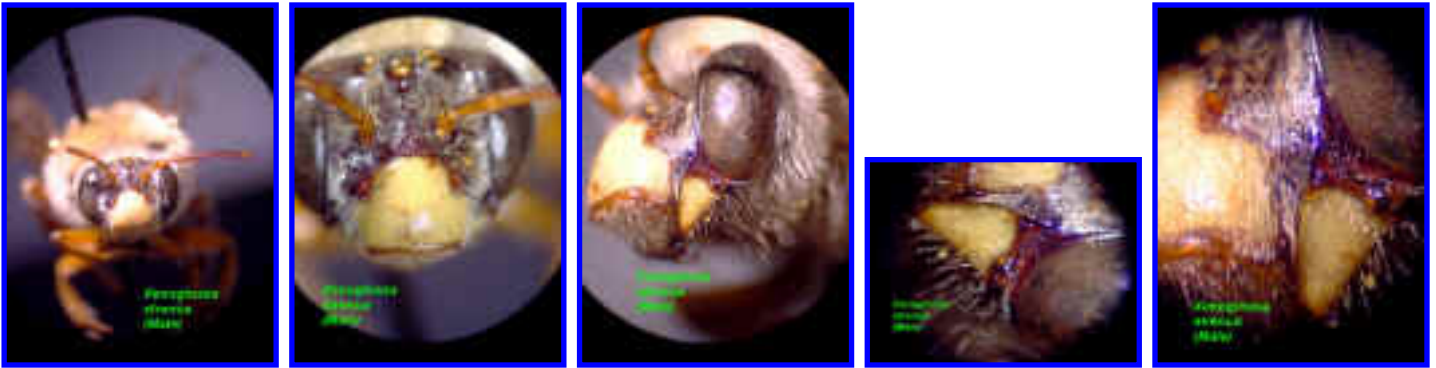
Locations: Quincy, Fl

Dates: August 1

Plants: oligolectic on *Cucurbita*.

Notes: Parasitized by [Doeringiella remigatus](#).

Male:





Apidae

Tribe *Emphorini* (2 taxa)

Two genera are found in Florida, [Melitoma](#) and [Ptilothrix](#).

Key to genera of *Emphorini*

1. Second segment of labial palpus 1.1-3.0 times as long as first and 0.95 times eye length; proboscis in repose reaching well beyond front coxae and usually surpassing middle coxae...

[Melitoma](#)



Second segment of labial palpus shorter, 0.5-0.8 times as long as first, and usually shorter (0.3-0.6 times) than eye; proboscis in repose reaching at most front coxae...

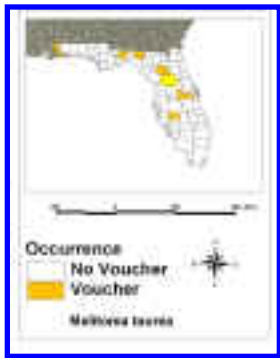
[Ptilothrix](#)



Genus *Melitoma* Lepeletier and Serville, one taxon

Apidae: *Melitoma taurea* Say

County Records: Alachua, Escambia, Hardee, Leon, Madison, Marion, Orange.



Locations: Winter Park, Zolfo Springs

Dates: May 6-Oct. 6; May: 1, June: 1, July: 3, Aug: 1, Sept.:1, Oct: 1

Plants: *Ipomoea microdactyla*

Notes: nesting in clay soils in Winter Park, oligolectic on *Ipomoea* species; Michener reports that most species of this genus nest in aggregations of hard clay banks



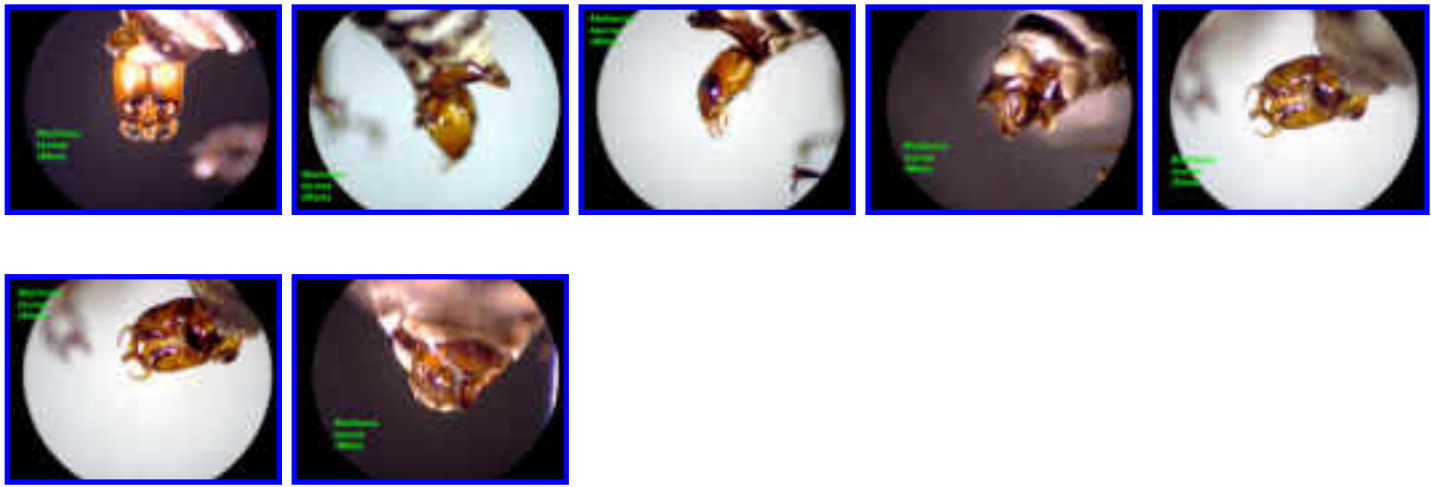
Female:





Male:

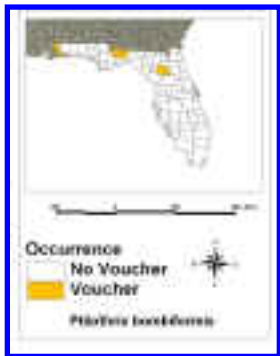




Genus *Ptilothrix* Smith, one taxon

Apidae: *Ptilothrix bombiformis* Cresson

County Records: Alachua, Escambia, Gadsden, Leon



Locations:

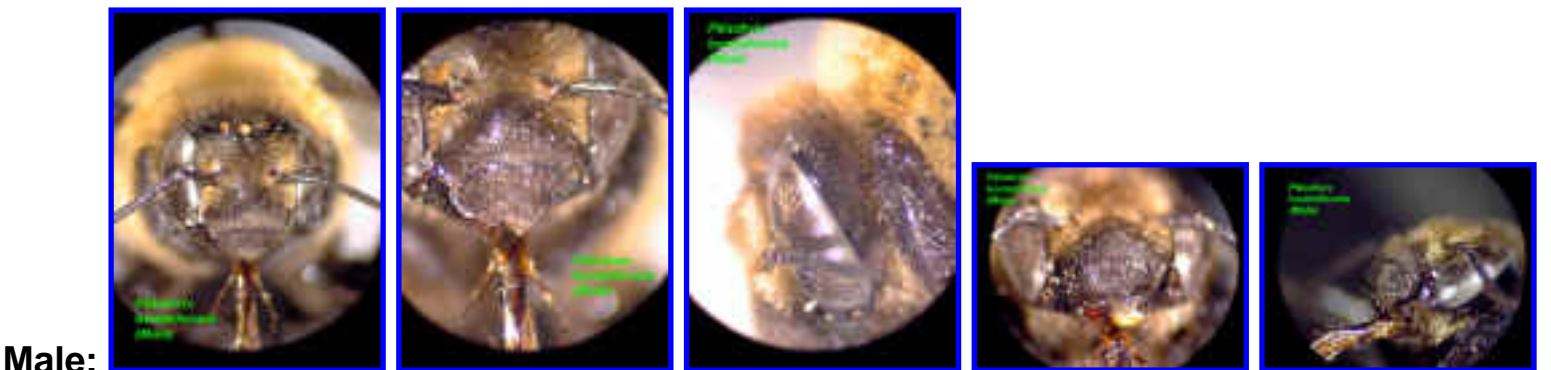
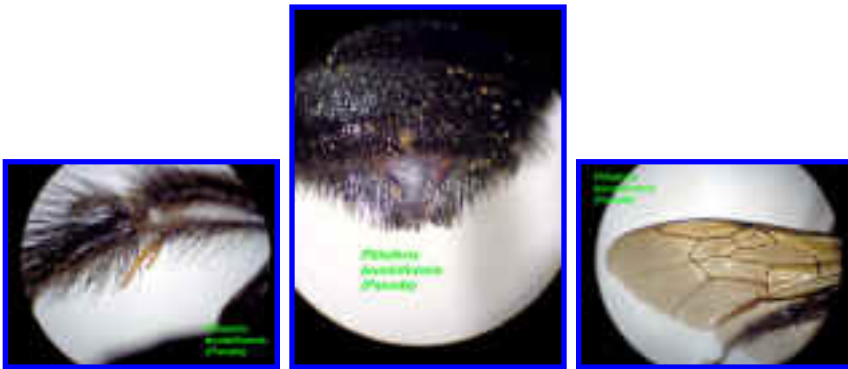
Dates: June 21-Aug. 23; July: 3, Aug: 4

Plants: Oligolege primarily on *Hibiscus*

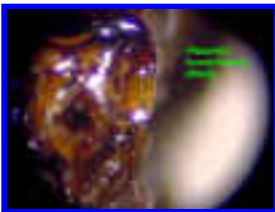
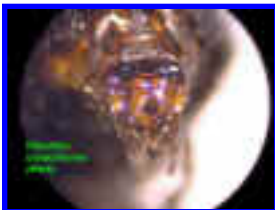
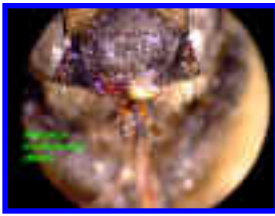
Notes: ground-nesting species

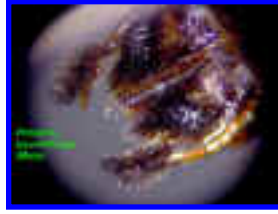
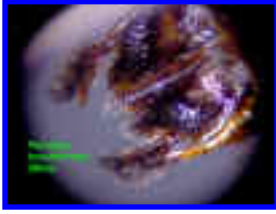
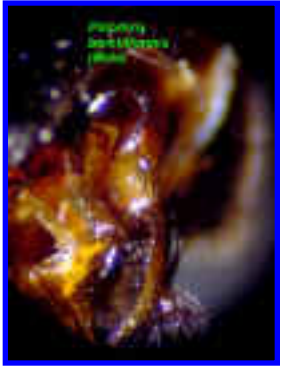
Female:





Male:





Apidae

Tribe *Anthophorini* (2 taxa)

This tribe has robust, fast-flying anthophoriform pollen-collecting bees. Nests are burrows in the soil, often in vertical clay banks.

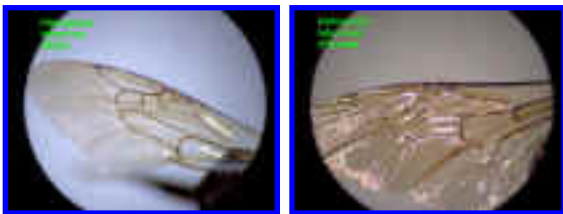
Two genera ([Anthophora](#), [Habropoda](#)) are present in Florida, each representing the main two lineages.

Key to genera (From Michener 2000)

1. First recurrent vein joining second submarginal cell near middle; third submarginal cell subquadrate, with front and rear margins of about equal length, and basal and distal margins of about equal length; male gonostylus usually less than one-third as long as gonocoxite, often not double, sometimes reduced to almost nothing...[Anthophora](#)



2. First recurrent vein terminating at or near apex of second submarginal cell; male gonostylus double, dorsal and ventral gonostyli usually both one-third as long as gonocoxite or more...[Habropoda](#)



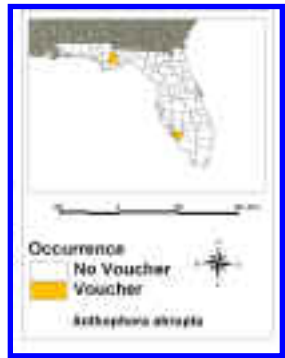
Anthophorini

Genus *Anthophora* Latreille, one taxon

The one species known from Florida, *Anthophora abrupta* Say, is in the subgenus *Melea* Sandhouse. This species forms aggregated nests in hard-packed clay banks. This bee superficially resembles a small bumblebee.

Apidae: *Anthophora abrupta* Say

County Records: Lee, Liberty



Locations:

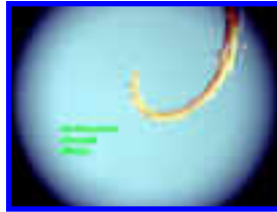
Dates: Mitchell reports March-September across the entire range.

Plants: polylectic

Notes: This bee might be found elsewhere in Florida or is it as restricted as the distribution above suggests?



Male:



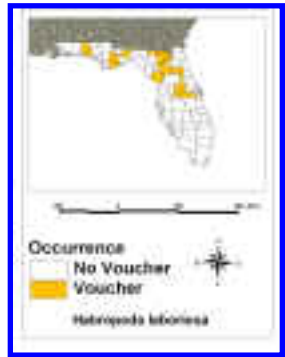
Anthophorini

Genus *Habropoda* Smith, one taxon

This genus has one species present in Florida, the only species of this genus that occurs in the Eastern U.S.

Apidae: *Habropoda laboriosa* Fabricius

County Records: Alachua, Franklin, Hamilton, Highlands, Lake, Leon, Levy, Liberty, Orange, Putnam, Union, Walton.

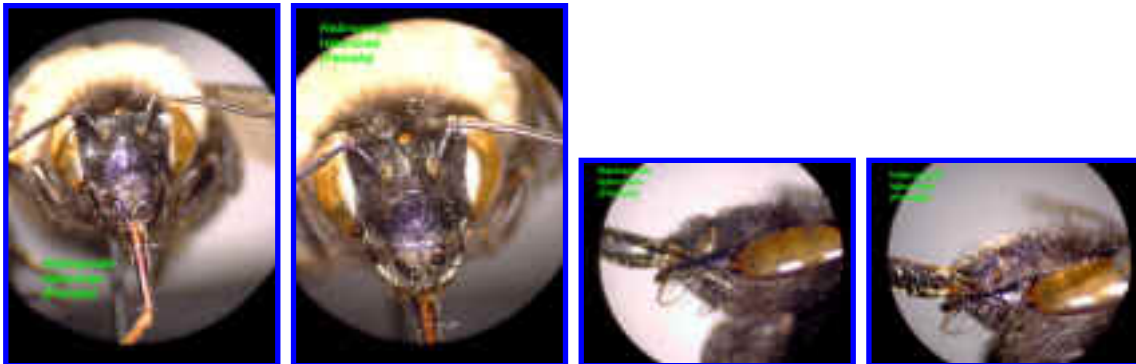


Locations:

Dates: January-April in Florida, most common in February and March

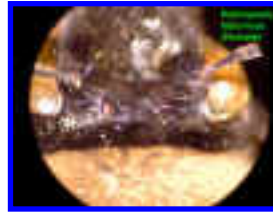
Plants: This species is an oligolege on *Vaccinium* and *Gelsemium*. Also visits other spring-flowering plants for nectar such as *Cercis*, *Viburnum*, clover, and *Azalea*.

Notes: Probably occurs throughout the panhandle and the northern tier of counties in the peninsula.



Female:

Habropoda



Male:





Apidae

Tribe *Centridini* (2 taxa)

This tribe of fast-flying, large, robust bees, lack arolia. Many collect floral oils, particularly from the Malphiaceae, Krameriaceae, or *Calceolaria*. The only genus present in Florida is the genus *Centris*.

Genus *Centris* Fabricius, two taxa

This genus consists of two taxa found in two subgenera. [Centris lanosa](#) is likely to occur throughout the state although there are relatively few records but they span the entire peninsula and eastern panhandle. In contrast, [C. errans](#) is only found in Monroe and Miami-Dade counties.

Key to subgenera (from Michener 2000)

Key to females

1. Secondary basitibial plate with distinct overhanging margin...subgenus [Centris](#)

Secondary basitibial plate without distinct overhanging margin or with slight overhang on anterior side of plate...subgenus [Paracentris](#)

Key to males

1. Giant branched setae scattered along inner margin of apical styliform projection of gonocoxite; metasoma at least feebly metallic, often extensively maculate with yellow..[Centris](#)

Giant branched setae restricted to region near base of gonostylus; gonocoxite without apical projection or with projection less than half as long as gonostylus; metasoma usually not metallic and without extensive yellow maculae or bands..[Paracentris](#)

Key to Species (From Mitchell 1962)

Females

Clypeus entirely black; abdomen black, without metallic reflections..[Centris lanosa](#)



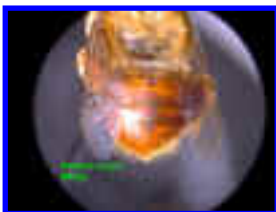
Clypeus yellow apically and along midline above; abdomen largely ferruginous, with tergum 1 and median areas of 2-4 metallic green....[Centris errans](#)



Males

Clypeus entirely yellow; legs, except the more apical tarsal segments, piceous; abdominal terga beyond the base largely black....[Centris lanosa](#)

Clypeus with narrow black lines along the lateral margins; abdomen ferruginous in large part...[Centris errans](#)



Subgenus *Centris* Fabricius s. str., one taxon

Apidae: *Centris errans* Fox

County Records: Miami-Dade, Monroe

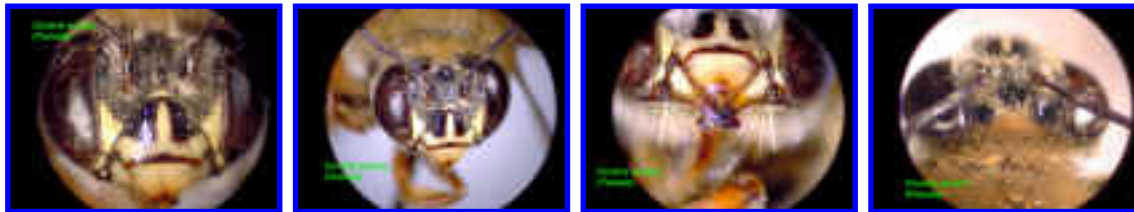


Locations: Bahia Honda, Big Coppet Key, Big Pine Key, Everglades National Park, Fleming Key, Homestead, Key West, No Name Key, Stock Island, Subtropical Experiment Station, Sugarloaf Key

Dates: March 20-June 12; March: 2, April: 10, May: 6, June: 2

Plants: often collected on *Byrsonima spicata* (Malpigiaceae)

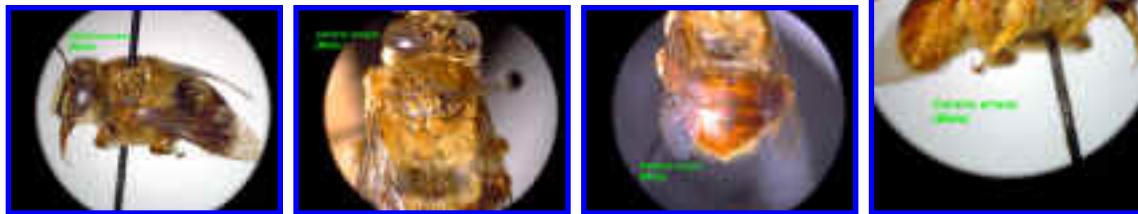
Notes: This species is restricted to the two southern counties, found only in pineland in association with its floral host.



Female:



Male:



Subgenus *Paracentris* Cameron, one taxon

Apidae: *Centris lanosa* Cresson

County Records: Alachua, Gilchrist, Leon (Pascarella), Miami-Dade



Locations: Coral Gables, Tall Timbers, Trenton

Dates: April 14-August, November-December

Plants: polylectic

Notes: This species probably occurs throughout Florida. Its northern and western limit is unknown but it has not been reported from Alabama, Mississippi or Louisiana.

Female:



Apidae

Tribe *Centridini* (2 taxa)

This tribe of fast-flying, large, robust bees, lack arolia. Many collect floral oils, particularly from the Malphiaceae, Krameriaceae, or *Calceolaria*. The only genus present in Florida is the genus *Centris*.

Genus *Centris* Fabricius, two taxa

This genus consists of two taxa found in two subgenera. [Centris lanosa](#) is likely to occur throughout the state although there are relatively few records but they span the entire peninsula and eastern panhandle. In contrast, [C. errans](#) is only found in Monroe and Miami-Dade counties.

Key to subgenera (from Michener 2000)

Key to females

1. Secondary basitibial plate with distinct overhanging margin...subgenus [Centris](#)

Secondary basitibial plate without distinct overhanging margin or with slight overhang on anterior side of plate...subgenus [Paracentris](#)

Key to males

1. Giant branched setae scattered along inner margin of apical styliform projection of gonocoxite; metasoma at least feebly metallic, often extensively maculate with yellow..[Centris](#)

Giant branched setae restricted to region near base of gonostylus; gonocoxite without apical projection or with projection less than half as long as gonostylus; metasoma usually not metallic and without extensive yellow maculae or bands..[Paracentris](#)

Key to Species (From Mitchell 1962)

Females

Clypeus entirely black; abdomen black, without metallic reflections..[Centris lanosa](#)



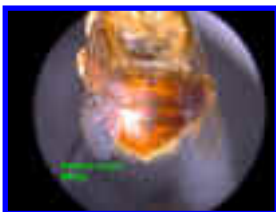
Clypeus yellow apically and along midline above; abdomen largely ferruginous, with tergum 1 and median areas of 2-4 metallic green....[Centris errans](#)



Males

Clypeus entirely yellow; legs, except the more apical tarsal segments, piceous; abdominal terga beyond the base largely black....[Centris lanosa](#)

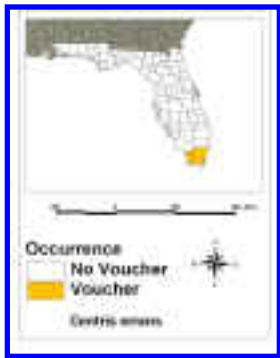
Clypeus with narrow black lines along the lateral margins; abdomen ferruginous in large part...[Centris errans](#)



Subgenus *Centris* Fabricius s. str., one taxon

Apidae: *Centris errans* Fox

County Records: Miami-Dade, Monroe

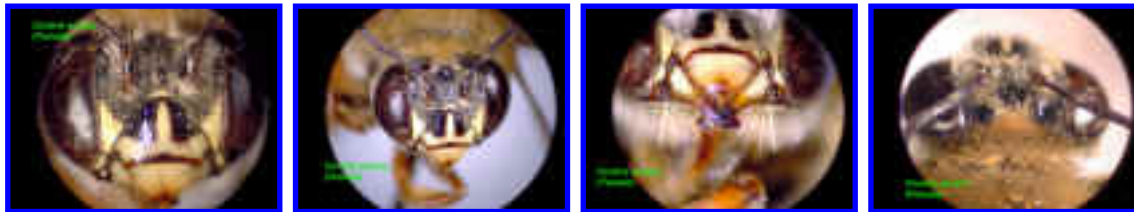


Locations: Bahia Honda, Big Coppet Key, Big Pine Key, Everglades National Park, Fleming Key, Homestead, Key West, No Name Key, Stock Island, Subtropical Experiment Station, Sugarloaf Key

Dates: March 20-June 12; March: 2, April: 10, May: 6, June: 2

Plants: often collected on *Byrsonima spicata* (Malpigiaceae)

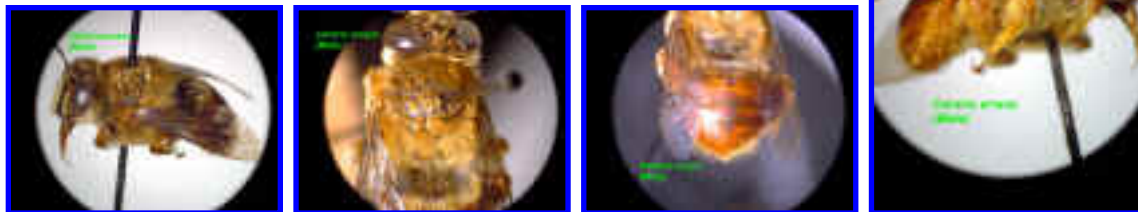
Notes: This species is restricted to the two southern counties, found only in pineland in association with its floral host.



Female:



Male:



Subgenus *Paracentris* Cameron, one taxon

Apidae: *Centris lanosa* Cresson

County Records: Alachua, Gilchrist, Leon (Pascarella), Miami-Dade



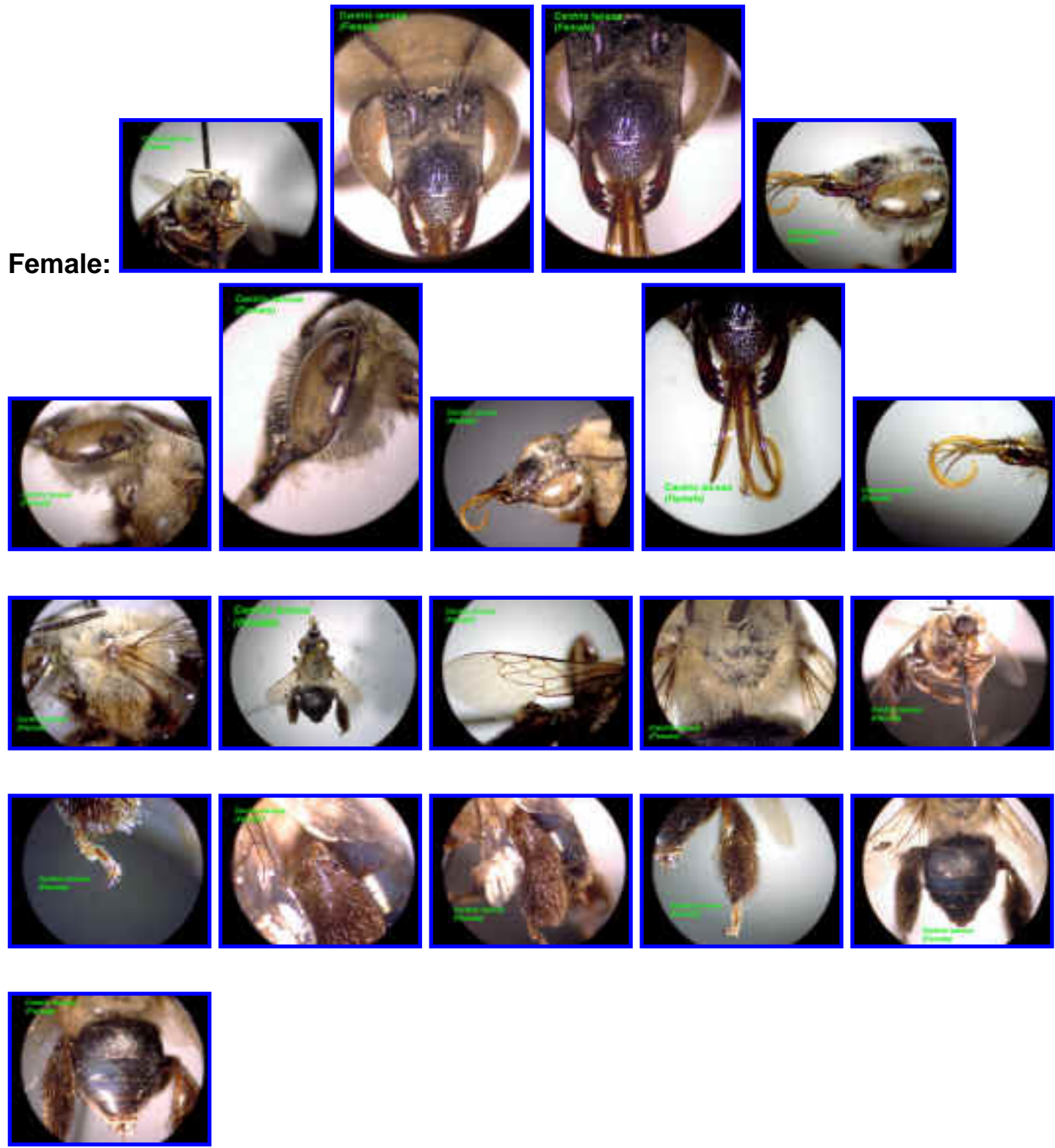
Locations: Coral Gables, Tall Timbers, Trenton

Dates: April 14-August, November-December

Plants: polylectic

Notes: This species probably occurs throughout Florida. Its northern and western limit is unknown but it has not been reported from Alabama, Mississippi or Louisiana.

Female:



Apidae

Tribe *Centridini* (2 taxa)

This tribe of fast-flying, large, robust bees, lack arolia. Many collect floral oils, particularly from the Malphiaceae, Krameriaceae, or *Calceolaria*. The only genus present in Florida is the genus *Centris*.

Genus *Centris* Fabricius, two taxa

This genus consists of two taxa found in two subgenera. [Centris lanosa](#) is likely to occur throughout the state although there are relatively few records but they span the entire peninsula and eastern panhandle. In contrast, [C. errans](#) is only found in Monroe and Miami-Dade counties.

Key to subgenera (from Michener 2000)

Key to females

1. Secondary basitibial plate with distinct overhanging margin...subgenus [Centris](#)

Secondary basitibial plate without distinct overhanging margin or with slight overhang on anterior side of plate...subgenus [Paracentris](#)

Key to males

1. Giant branched setae scattered along inner margin of apical styliform projection of gonocoxite; metasoma at least feebly metallic, often extensively maculate with yellow..[Centris](#)

Giant branched setae restricted to region near base of gonostylus; gonocoxite without apical projection or with projection less than half as long as gonostylus; metasoma usually not metallic and without extensive yellow maculae or bands..[Paracentris](#)

Key to Species (From Mitchell 1962)

Females

Clypeus entirely black; abdomen black, without metallic reflections..[Centris lanosa](#)



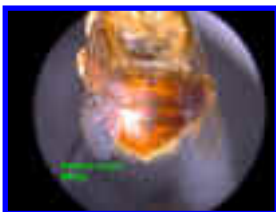
Clypeus yellow apically and along midline above; abdomen largely ferruginous, with tergum 1 and median areas of 2-4 metallic green....[Centris errans](#)



Males

Clypeus entirely yellow; legs, except the more apical tarsal segments, piceous; abdominal terga beyond the base largely black....[Centris lanosa](#)

Clypeus with narrow black lines along the lateral margins; abdomen ferruginous in large part...[Centris errans](#)



Subgenus *Centris* Fabricius s. str., one taxon

Apidae: *Centris errans* Fox

County Records: Miami-Dade, Monroe



Locations: Bahia Honda, Big Coppet Key, Big Pine Key, Everglades National Park, Fleming Key, Homestead, Key West, No Name Key, Stock Island, Subtropical Experiment Station, Sugarloaf Key

Dates: March 20-June 12; March: 2, April: 10, May: 6, June: 2

Plants: often collected on *Byrsonima spicata* (Malpigiaceae)

Notes: This species is restricted to the two southern counties, found only in pineland in association with its floral host.

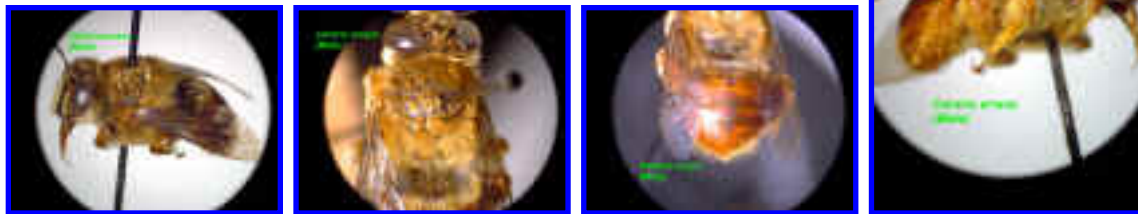


Female:



Male:





Subgenus *Paracentris* Cameron, one taxon

Apidae: *Centris lanosa* Cresson

County Records: Alachua, Gilchrist, Leon (Pascarella), Miami-Dade



Locations: Coral Gables, Tall Timbers, Trenton

Dates: April 14-August, November-December

Plants: polylectic

Notes: This species probably occurs throughout Florida. Its northern and western limit is unknown but it has not been reported from Alabama, Mississippi or Louisiana.

Female:

