The Bees of Florida

Dr. John B. Pascarella
Department of Biology
Valdosta State University
Valdosta, Georgia 31698
Phone (229) 333-5766;
email: jbpascar@valdosta.edu.

Introduction

This web site is about the bees found living in Florida, USA. It is designed to help facilitate their identification by serving as a virtual reference collection and to help point out the key features used in identifying bees to family, genus, and species. It is organized taxonomically-bees are grouped by family, subfamily, genus, subgenus, and species. The links at the top of each page can take you to the linked pages within each group, up one level, and to my home page. Due to the many images found associated with the species, a high speed internet connection is highly recommended (cable modem, dsl, or higher speed).

The bees of Florida include members of six families of bees, the Colletidae (26 taxa), Melittidae (2 taxa), Andrenidae (63 taxa), Halictidae (66 taxa), Megachilidae (72 taxa), and Apidae (87 taxa) for a total of 316 taxa. Bees are likely the most important pollinators of native plants in Florida, although many other organisms (e.g., butterflies, moths, beetles, and birds) contribute to pollination services. In addition to ensuring the reproductive success of native plants, many of our crop plants depend on bees and wild pollinators for fruit set. Invasive species may also exploit native pollinators for ensuring fruit set.

Because the technical literature on bees is quite complex, I have summarized the most important elements of this literature as it applies to Florida. In addition to a literature review, I have used the collections at the Florida State Collection of Arthropods to obtain county records, dates of flight in Florida or over the entire range, plants visited in Florida from label records and polylecty (collecting pollen from many species) vs. oligolecty (collecting pollen from one or a few closely related species). A county map showing the distribution of vouchered specimens of the species in Florida is provided for each species. Collecting in

Florida is inadequate to provide a full county by county resolution. Many species are likely to be found in additional counties.

Keys taken from the literature (Michener 2000, Mitchell 1960, 1962, others listed in text) are provided for identification of families of bees, genera, and species (both males and females). These keys are based on complete keys to all Eastern species or from a full revision of the group by other scientists. Full descriptions are not provided but references are listed for each species where a full description can be found.

Digitized photographs of many of the species are provided, with highlights pointing out key characters used in the keys. Some taxa do not yet have photos and others have photos of only one sex. As additional specimens are collected or obtained on loan, additional photographs will be added.

Biogeography and Conservation of Bees in Florida

The vast majority of bees found in Florida are species that have more extensive distributions to the north of the state. Some are widespread across the United States while others are restricted to sandy areas of the Southeastern Coastal plain (e.g., *Perdita* species in the Andrenidae). Florida has a relatively large number of endemic species and subspecies. Many of these are color variants such as *Anthidiellum notatum rufimaculatum* versus the more northern *Anthidiellum notatum notatum*. Many of our endemic subspecies have darker red coloration that usually is yellow further north and often the coloration is more widespread in Florida. Another color difference is seen in the three genera of sweat bees that are very common in Florida (*Augochlora*, *Augochlorella*, and *Augochloropsis*). In most of Florida, these bees are a bright green in color. In the southern most counties such as Miami-Dade, these species are bright blue. Causes of these color differences may be related to soil temperatures encountered by the larvae during pupation although they have not been well studied. Several endemic species have been described on the basis of a single or a few specimens. The status of these species and their conservation is unknown for most of them.

Relatively few species are shared with the Caribbean islands of the Bahamas and Cuba. Three to four exotic species of bees are found, three restricted to South Florida, with *Apis mellifera* (the honeybee) found throughout Florida. Distributions outside of Florida are sometimes mentioned in the species references. If not, full ranges can be found in the key references cited for each genus. Florida has a relatively large number of species that are also found in the desert southwest and that extend their ranges eastward primarily along the sandy outer coastal plain of the Gulf states. A few species are disjunct in their distribution, with

populations in Florida and elsewhere only in Texas or the Southwest.

The conservation of bees requires that bees have the appropriate soil or vegetation conditions for nesting, that host plants have flowers present during the period of flight, that bees that have specific pollen requirements have flowers available during the period of flight, and that adult bees are not exposed to excessive mortality agents during flight (insecticides, fire, hurricanes, predators (spiders, beeflies, etc.). Many species of bees have natural parasites, including other bee species that may periodically limit bee populations.

It is likely that most of our species of bees in Florida have viable populations, both in protected natural areas and in areas heavily modified by humans, including cities and agricultural areas. Relatively few surveys of bee communities have been conducted in Florida. Surveys of southern Florida include Graenicher (1927) and Pascarella et al. (2000). Deyrup et al. (2002) recently published a systematic surveys in central Florida. Recent work by Pascarella, Buchmann, and Donovan in forest ecosystems of North Central Florida and the Florida panhandle have found considerable differences in bee community structure from the southern wetlands of the Everglades.

Key to Families

Other Insects As Pollinators

Key References Mentioned in this website

Michener, C. D. 2000. Bees of the World. Johns Hopkins University Press, Baltimore, MD, USA. 913 p.

Mitchell, T.B. 1960, 1962. Bees of the Eastern United States, 1:1-538 (1960);2:1-557 (1962). North Carolina Agricultural Experiment Station Technical Bulletin 141, 152.

Technical Details

All digital photographs of preserved specimens were taken using a JVC GC-QX5HD Digital Still Camera mounted on a Leica GZ6 stereo dissecting microscope. Images were modified using Adobe Photoshop 5.0 Limited Edition image editing software.

Images and text were created using Microsoft Front Page 2000 web authoring software. County distribution maps were created using ESRI ArcView GIS 3.2 and exported as bitmaps which were then saved as GIF or JPEG images. Most images are in JPEG format although a few are in GIF format.

Funding for the development of this site was provided by a grant from the U.S. Fish and Wildlife Foundation "Bring Back the Natives" to the Bee Works, Inc. and Valdosta State University and from a Faculty Research Grant to JBP from the Graduate School of Valdosta State University. Thanks to Cecil Smith of the University of Georgia and James Wiley and Lionel Stange of the Florida State Collection of Arthropods for loans of some specimens featured in this website.

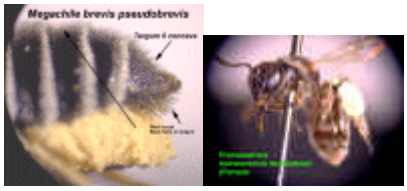
Last updated:

John B. Pascarella

Back to Introduction

Practical key to Family-Group Taxa (Based on Females-From Michener 2000)

1. Scopa, consisting of hairs for carrying pollen, present...2

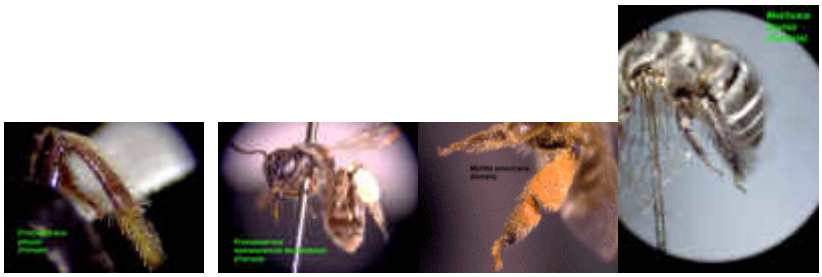


Scopa absent..11

2. Scopa well developed on metasomal sterna, but absent on hind legs, submarginal cells two, usually about equal in length..Megachilidae

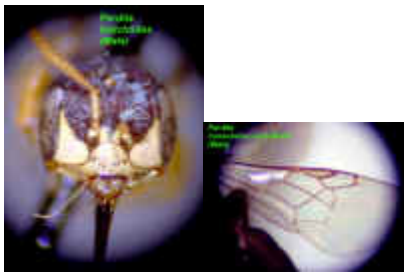
Scopa on hind legs, sometimes also on sterna...3

3. Scopa (sometimes as a tibial corbicula) on hind tibia and usually basitarsus, elsewhere not well developed, tibial scopa thus looking considerably larger than that of femur...4

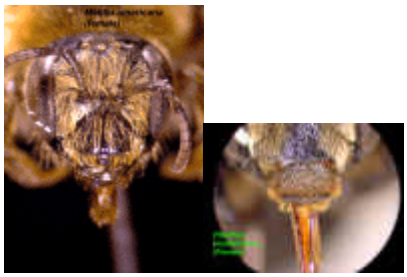


Scopa on hind femur, where a corbicula is usually evident, scopal hairs usually also present on trochanter, tibia and basitarsus and sometimes on metasomal sterna...6

4. Facial fovea small but well defined; two subantennal sutures well separated on clypeal margin below antenna; apex of marginal cell truncate or sometimes obliquely cut off and thus pointed, but apex well separated from wing margin..Andrenidae (Panurginae)



Facial fovea absent or vaguely defined; one subantennal suture below each antenna, or if two, then the two meeting nearly on clypeal margin...5



5. Long-tongued bees, first two segments of labial palpus elongate, flattened; episternal groove commonly present down to or curving into and joining scrobal groove...Apidae

Short-tongued bees, first two segments of labial palpus similar in form to subsequent segments; episternal groove almost completely absent...Melittidae

6. Facial fovea well developed, covered with short hairs (two subantennal sutures below each antenna, often difficult to see)...Andreninae (Andrenidae)

Facial fovea absent or not well defined, not bearing distinctive short hairs, but if defined, then bare...7

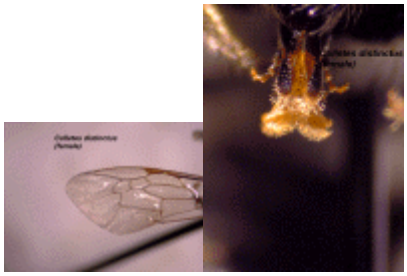
7. Stigma almost always shorter than prestigma, vein r arising almost at apex, margin of stigma in marginal cell concave or straight and not much longer than width of stigma; large robust euceriform hairy bees..Diphaglossinae (Colletidae)

Stigma longer than prestigma, vein r arising near its middle or at least well before apex, margin of stigma in marginal cell straight or convex, much longer than width of stigma; andreniform bees, much more slender than those of above alternative...8

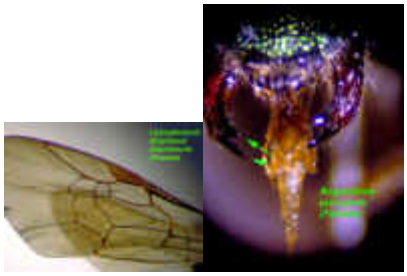
8. Episternal groove extending little below scrobal groove...Nomiinae (Halictidae)

Episternal groove extending far below scrobal groove...9

9. Basal vein only feebly arcuate; glossa bilobed...Colletinae (Colletidae)



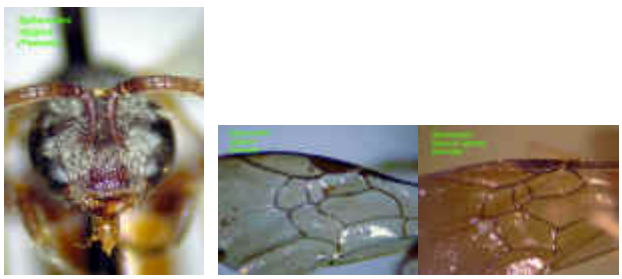
Basal vein strongly curved, glossa acutely pointed...Halictinae (Halictidae)



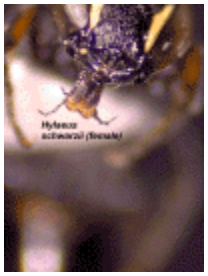
11. Episternal groove extending far below scrobal groove toward ventral surface of thorax (S6 exposed, not bifurcate)...19

Episternal groove absent or curving into scrobal groove...13

12. Glossa pointed; basal vein strongly curved; submarginal cells usually three..Cleptoparasites in Halictinae (Halictidae)



Glossa bilobed or broadly truncate...Hylaeineae (Colletidae)



13. S6 retracted under S5 except for apex; metasomal venter thus appearing to be five-segmented; apex of S6 bilobed, bifurcate, or produced to median spine, frequently bearing rows or clumps of stiff setae...Nomadinae (Apidae)

S6 more fully exposed; the metasomal venter thus recognizably six-segmented; apex of S6 not modifed as above...14

14. Labrum with basolateral angles strongly developed, labrum thus broad at extreme base, where articulated to clypeus; labral shape more or less rectangular and usually longer than broad; forewing with two submarginal cells...Cleptoparasites in Megachilinae (Megachilidae)

Labrum with basolateral angles weakly developed, labrum thus not broadest at extreme base, articulation with clypeus not extending full width of labrum; labral shape often less rectangular, often rounded apically, usually broader than long...Cleptoparasites and social parasites within Apinae (Apidae)

Endemic Bee Species to Florida (29 taxa)

All families, with the exception of Melittidae, have at least 5 endemic taxa known only from Florida. Twenty-one of the 29 are pollen-collecting species and 8 are parasitic species. Six of the 29 taxa are endemic subspecies with other subspecies known from outside of Florida. Within Florida, 14 of the 29 endemic taxa are found only in southern Florida, 2 are known only from the southern tip of the central sand ridge, 3 are only known from 3 counties where a single specimen was collected, 3 are known from the north and central peninsula, and 4 are known from the central peninsula northward and from the panhandle, and 3 are found throughout Florida.

Conservation Status

Of the 29 endemic taxa, 3 are known from a single specimen, *Perdita krombeini* Timberlake and *Hylaeus flammipes* Robertson, from Lee and Citrus counties, and *Coelioxys obtusiventris* Crawford, locality not given. Additional collecting in these counties is needed to verify their taxonomic status and current abundance. Of the remaining endemic taxa, populations are known from protected areas including National and State Parks, National Forests, Wildlife Refuges, and private research centers with the

exception of the following 11 taxa: *Perdita nubila* Timberlake, *Perdita consobrina lepida* Timberlake, *Hylaeus volusiensis* Mitchell, *Colletes longifacies* Stephen, *Colletes titusensis* Mitchell, *Lasioglossum* (*Dialictus, Habralictellus) eleutherensis* Engel; *Lasioglossum (Dialictus) miniatulus* Mitchell, *Lasioglossum (Dialictus) placidensis* Mitchell, *Lasioglossum (Dialictus) stuartensis* Mitchell, *Lasioglossum (Dialictus) tahitensis, and Doeringiella alachuensis* Mitchell. Additional collecting in protected areas in counties these species are known from is needed to assess their abundance and conservation status. The remaining 15 taxa have been collected from protected natural areas although direct estimates of abundance have not been made of population sizes.

Family Andrenidae (5 taxa)

All Florida endemics are found in the genus *Perdita*.

Perdita blatchleyi Timberlake (Hexaperdita); known from North-Central Peninsula and Panhandle

Perdita graenicheri Timberlake (Hexaperdita); restricted to southern Florida

Perdita nubila Timberlake (Hexaperdita); known from North-Central Peninsular Florida

Perdita consobrina lepida Timberlake (Perdita); endemic subspecies restricted to southern Florida

Perdita krombeini Timberlake (Endemic-unassigned subgenus); known only from Lee County, W Central Florida

Family Colletidae (5 taxa)

Florida endemics are found in the genus *Colletes* and *Hylaeus*.

Hylaeus flammipes Robertson; known only from Citrus county, W Central Florida

Hylaeus graenicheri Mitchell; restricted to southern Florida

Hylaeus volusiensis Mitchell; restricted to SE Counties

Colletes longifacies Stephen; known from North-Central Peninsular Florida and Panhandle

Colletes titusensis Mitchell; known from Central Peninsular Florida

Family Melittidae

No endemics found strictly in Florida; however, *Hesperapis oraria* Snelling and Stage is found only in Florida and adjacent Alabama.

Family Halictidae (9 taxa)

Nine endemic taxa in 3 genera are found in Florida. Most are in the genus *Lasioglossum* (subgenus *Dialictus*). 1 parasitic species is known only from Florida.

Sphecodes fattigi Mitchell; known from Northern Florida

Augochlora pura mosieri Cockerell; endemic subspecies restricted to southern Florida.

Lasioglossum (*Dialictus, Habralictellus) eleutherensis* Engel; restricted to SE southern Florida

Lasioglossum (Dialictus) flaveriae Mitchell; restricted to SE southern Florida

Lasioglossum (Dialictus) miniatulus Mitchell; known from NE and North Central Florida; reported from Florida Keys (may be misid)

Lasioglossum (Dialictus) placidensis Mitchell; restricted to Central Ridge of Central Florida

Lasioglossum (Dialictus) stuartensis Mitchell; restricted to SE Florida

Lasioglossum (Dialictus) surianae Mitchell; known from Florida Keys only

Lasioglossum (Dialictus) tahitensis Mitchell; restricted to SE southern Florida

Family Megachilidae (5 taxa)

With the exception of one pollen-collecting subspecies, 4 of the 5 taxa are parasitic bees.

Stelis australis floridensis Mitchell; endemic subspecies in north-central Florida

Stelis ater Mitchell; known only from Southwest Florida

Anthidiellum notatum rufimaculatum Schwarz; endemic subspecies in extreme southern Florida

Coelioxys slossoni slossoni Viereck; endemic subspecies in Florida; known only from SE southern Florida

Coelioxys obtusiventris Crawford; known only from Florida, locality not given.

Family Apidae (5 taxa)

Three of the five endemic taxa are parasitic bees.

Xylocopa virginica krombeini Hurd; endemic subspecies in central-southern Florida

Doeringiella alachuensis Mitchell; known only from north-central Peninsular Florida

Doeringiella rufithorax Graenicher; known only from southern Florida

Doeringiella rugosus Mitchell; known only from southern tip of central ridge of Central-Southern Florida

Centris errans Fox; found only in extreme southern Florida

 Back to Introduction

In addition to bees, a variety of organisms may be flower visitors in Florida and the Southeast. Many of these are pollinators, many are not. Other flower visitors include butterflies, flies, wasps, beetles, and other types of insects. No keys to insects of these

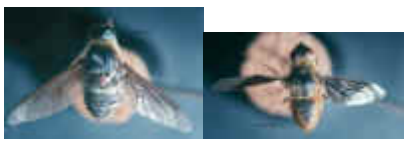
groups are provided. Some web sites to visit for information on butterflies are the following: http://www.chebucto.ns.ca/Environment/NHR/lepidoptera.html or http://www.daltonstate.edu/galeps/ for information on Georgia Lepidoptera.

Other Insects

Flies (Order Diptera)

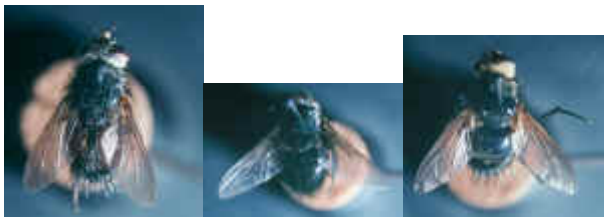
Many different taxa of flies are frequent flower visitors. Below are pictures of some common groups including the Syrphidae, Bombyliidae, and Conapidae. Below are pictures of flies collected from flowers in Everglades National Park (Miami-Dade and Monroe Counties, Florida). Many of these species might be found on flowers throughout Florida. There are no keys to flies provided in these web site. A general entomology text should be used to identify species to family. Expert assistance will likely be needed for identification to the species level.

Syrphidae (above)

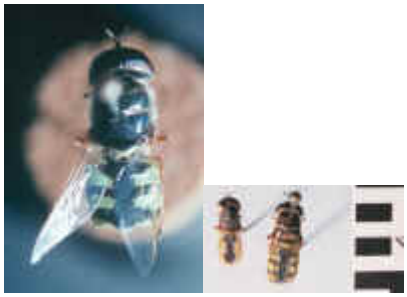


Bombylidae (above)

Conapidae (above)



Tachinidae (above)



Stratiomyidae (above)

Various taxa (above)

Other Insects

Hymenoptera

A large number of wasps visit flowers for nectar. Probably few if any of these species serve as effective pollinators. Below are pictures of wasps collected from flowers in Everglades National Park (Miami-Dade and Monroe Counties, Florida). Many of these species might be found on flowers throughout Florida. There are no keys to wasps provided in these web site. A general entomology text should be used to identify species to family. Expert assistance will likely be needed for identification to the species level.

Mutillids

Scolids

Craboninae

Yellowjackets

Vespidae

Various taxa

Other Insects

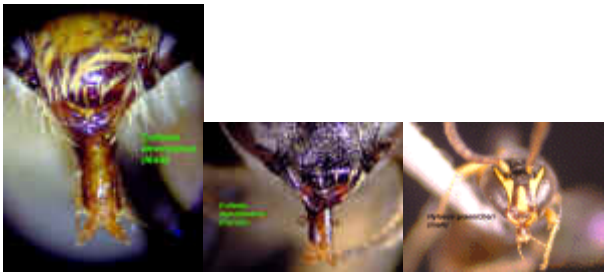
Coleoptera

A variety of beetles visit flowers. Some of the Scarab beetles, shown below, may be very common on certain flowers. The sabal palm typically has many beetles, particularly the species in the lower left, visit flowers and they may serve as pollinators in some plant species. Below is a picture of beetles collected from flowers in Everglades National Park (Miami-Dade and Monroe Counties, Florida). Many of these species might be found on flowers throughout Florida. There are no keys to beetles provided in these web site. A general entomology text should be used to identify species to family. Expert assistance will likely be needed for identification to the species level.

Back to Introduction

Family Colletidae Lepeletier (26 taxa, including 5 state endemics)

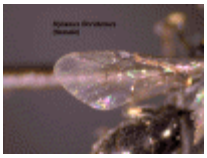
At the family level, these bees may be most easily recognizable by the bifid glossa. This is the only family of bees that has this type of glossa.



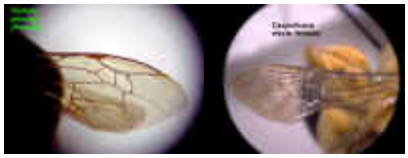
There are three genera (*Colletes*, *Hylaeus*, and *Caupolicana*, each in a different subfamily) that are very easy to recognize to genus level but in the two diverse genera, difficult to identify to species level in the field and somewhat difficult in the lab under the microscope.

Key to Genera (from Mitchell 1960)

1. Front wing with two submarginal cells.....*Hylaeus*



Front wing with three submarginal cells....2

2. Pygidial plate absent; 2nd recurrent vein recurved posteriorly toward outer margin of wing.....*Colletes*

Pygidial plate present; 2nd recurrent vein nearly straight, not at all recurved.....*Caupolicana*


Colletidae

Subfamily *Colletinae* Lepeletier

Genus *Colletes* Latreille (15 taxa)

Bees of the genus *Colletes* are solitary, but sometimes nest gregariously. These are ground nesting bees that often have prominent nests in open areas. These are either spring (9 species) or fall (5 species) flying but one species (*C. mandibularis*) exhibits two generations and flies in both spring and fall. In Florida and the south, they are generally lacking during the summer months of June and July. Most species are polylectic, foraging primarily on shrubs and trees.

Fifteen to seventeen species, depending on the uncertain taxonomy of three species, are found in Florida. There is some disagreement on species between Stephen (1954) and Mitchell (1960). For example, Mitchell separates *C. banksii* from *C. distinctus* while Stephen makes it a synonym. In contrast, Mitchell synonymizes *C. carolinus* with his *C. distinctus*. All of our species, with two exceptions, are found elsewhere, primarily in the eastern U.S. but some extending further west. The two endemic species include *C. titusensis*, found in the central peninsula, and *C. longifacies*, found in the western panhandle and north-central peninsula. Both species have been described on the basis of 2-3 specimens. One new range extension to Florida is proposed for *C. inaequalis*, based on the specimens collected by Pascarella (unpublished data) in Leon County, Florida. There are no recognized subspecies but Stephen recognized several species groups.

Key features used in identifying *Colletes* to species level include, besides the male genitalia, the presence of a dorsal prominence or horizontal carina on the mesepisternum and metepisternum (Stephen collectively referred to these as the metapleura), the malar length vs. malar width, flagellar length vs. width, hair color, prothoracic spines in females, sterna, and tergum punctation. Hair color is also used although hair color was found to be highly variable in many species (Stephen 1954). The horizontal carina character is found below the wings and can be hard to see. Some species have an orange to yellow edge to the carina, others just a black prominence, and others no noticeable swelling of either type.

Key references to *Colletes*.

Michener, C. D. 2000. Bees of the World. Johns Hopkins University Press, Baltimore, MD, USA. 913 p.

Mitchell, T.B. 1960. Bees of the Eastern United States. Volume I. North Carolina Agricultural Experiment Station Technical Bulletin 141, 538 p.

Stephen, W. P. 1954. A revision of the bee genus *Colletes* in America North of Mexico (Hymenoptera, Colletidae). The University of Kansas Science Bulletin 36(1): 149-527.

Key to females (From Mitchell 1960)

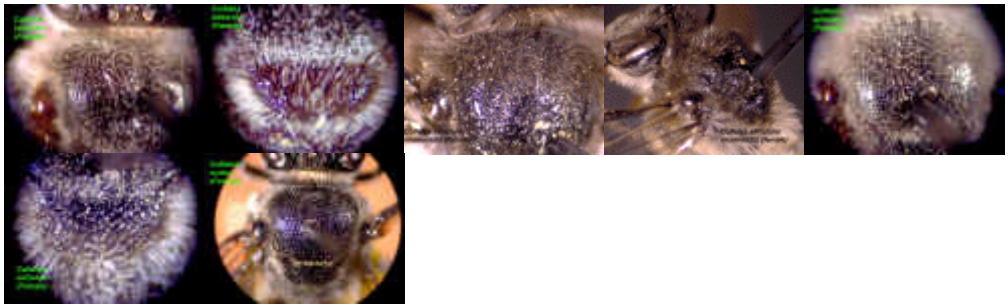
1. Metapleura each with dorsal prominence or horizontal carina usually with testaceous rim; malar spaces no longer than one-half as long as broad; last exposed sternum with apex not depressed..16

Metapluera with no dorsal prominence, or if weak prominence, with carina curving ventrally well in front of posterior margins; if having metapleural prominences, then malar spaces as long as broad…2

2. Median flagellar segments short, usually one-half to three-fourths as long as broad when viewed from above; and last exposed sternum with apical portion strongly depressed with basal arcuate band of overhanging pile; when apical depression very small, sterna with strong scopa..*C. brevicornis*

Median flagellar segments usually as long as broad when viewed from above; last exposed sternum usually lacking depressed apical portion…3

3. Mesoscutum and/or scutellum with admixture of black pile…4



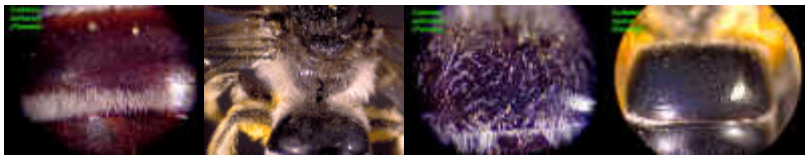
Mesoscutum and scutellum with no black pile…12

4. Malar spaces at least three-fourths as long as broad…*C. longifacies*

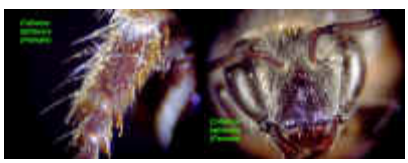
   Malar spaces usually one-half as long as broad or less…5

5. First metasomal terga very finely punctate, punctures folliclelike and at least two puncture widths apart on discal area…*C. titusensis*

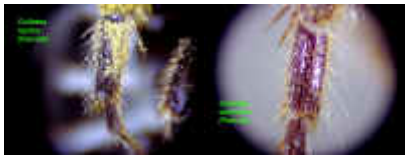
   First metasomal tergum deeply punctate, punctures one to one and one-half puncture widths apart laterally, or punctures fine and contiguous….6



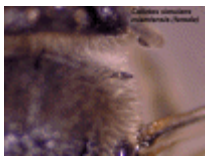
6. Posterior basitarsi twice as long as broad, clypeus flattened, obscurely striately punctate; malar spaces one-third as long as broad..*C. latitarsis*



Posterior basitarsi at least three times as long as broad…7



7. Prothoracic spines long and sharp, longer than width across base…8

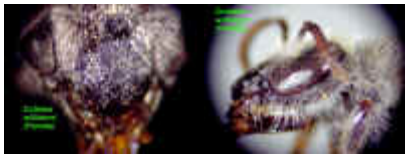


Prothoracic spines short, absent, or obliquely truncate, never terminating in a needlelike point to edge of head….10

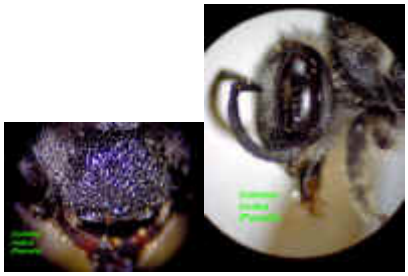
8. Fore coxae with long spines, at least as long as broad..*C. simulans*

Fore coxae lacking spines…9.

9. Clypeus long, flat, dull, and roughened; flagellar segments short, about five-eights as long as broad…*C. willistoni*



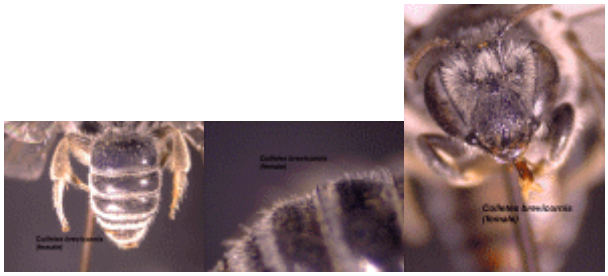
Clypeus short, convex, coarsely punctate with shiny interspaces; flagellar segments about as long as broad..*C. nudus*



10. Antennae very short, flagellar segments one-half as long as broad; length 9-10mm..11

Antennae long, flagellar segments as long as broad; length 12-14mm….*C. inaequalis*

11. Metasomal terga one to three with distinct narrow preapical groove, followed by raised flangelike margins; clypeus closely punctate…*C. brevicornis*

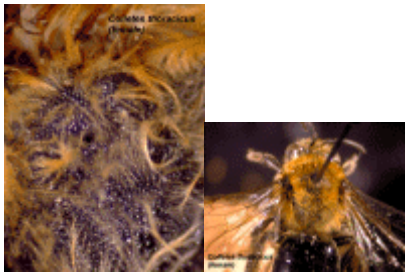


Metasomal terga one to three with apical margins entire and smooth, broadly fasciate; clypeus flat, dull, and weakly roughened..*C. willistoni*

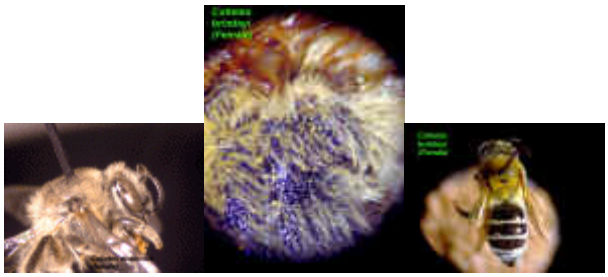
12. Prothoracic spines sharp, at least as long as width across base..*C. distinctus*

Prothoracic spines short or absent, never as long as width across base…13

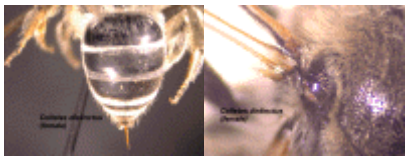
13. Mesepisterna dull, obscurely or finely and densely punctate; mesoscutum with pile bright ochreus..*C. thoracicus*



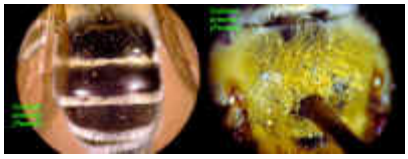
Mesepisterna rugosely punctate with shiny, although sometimes roughened, interspaces; pile variable in color….14



14. Last metasomal sternum with weak, elevated lateral longitudinal carina curved medially at apex; second metasomal tergum finely and densely folliculated; tegulae black..*C. distinctus*

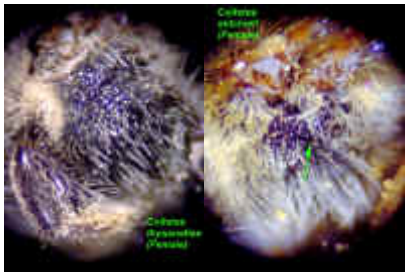


Last metasomal sternum lacking carinae; second metasomal tergum sparsely folliculated; tegulae brown hyaline…*C. brimleyi*



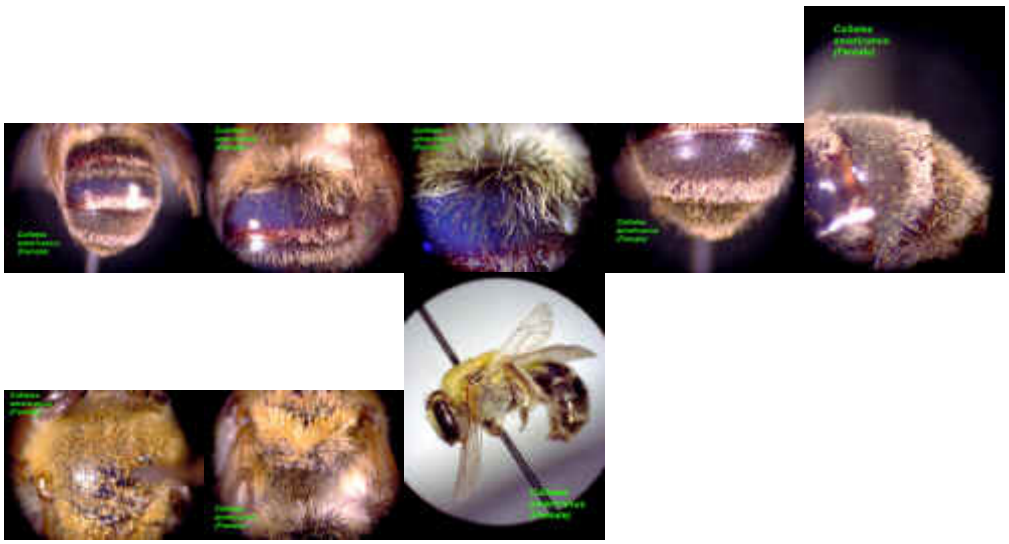
15. Metapleural prominence strongly protuberant with a broad rim, abruptly declivous beneath..16

Metapleural prominence weakly protuberant with a narrow brown to black rim, shallowly concave beneath…17

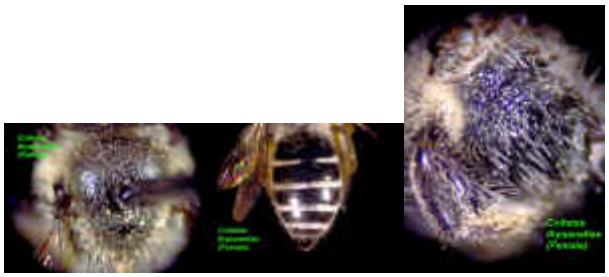


16. Second metasomal tergum with broad, dense basal fascia, at least as broad as nonpubescent areas between basal and apical fasciae; first metasomal tergum finely and densely punctate especially laterally; metasomal terga three to five with short, white, and semierect pile, giving the surface a whitish sheen; apical fasciae broad and white; lateral fringes of first metasomal tergum dense and continuous to apical fascia; mesoscutum with pile white to ochreus…*C. mandibularis*

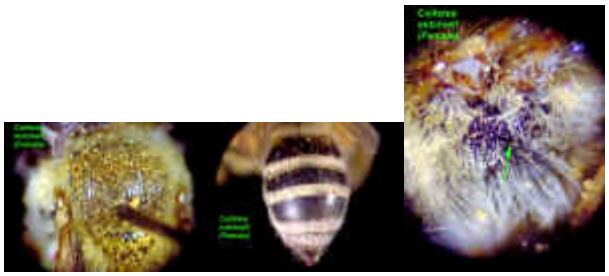
Second metasomal tergum with basal fascia weak or absent, nor more than one-third as wide as nonpubescent area between basal and apical fascia; first metasomal tergum with disc sparsely folliculated and shiny; metasomal terga three to five bare and shiny, occassionally with a few semierect hairs; apical fascia weak and narrow; first metasomal tergum with lateral fringes weak and usally not continuous to apical fascia; mesoscutum with pile deep ochreus to yellow; Second metasomal tergum with a narrow basal fascia; mesepisterna densely, almost contiguously punctate; propodeum with posterior face smooth, sparsely punctate; pile of body tinged with fuscous..*C. americanus*



17. Mesoscutum and scutellum with strong admixture of black and dark hairs; second metasomal tergum with no basal fascia; mesepisterna rugose…*C. thysanellae*



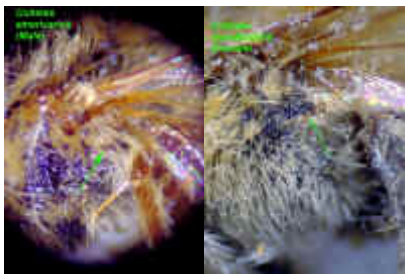
Mesoscutum and scutellum with pile entirely light; second metasomal tergum with strong basal fascia; mesepisterna distinctly punctate…*C. mitchelli*



For females, *C. brimleyi* and *C. distinctus* come out twice in the key.

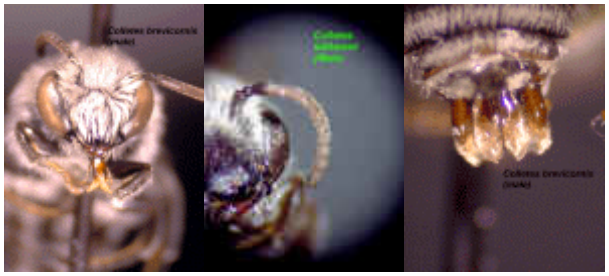
Key to males (From Mitchell 1960)

1. Metapleura each with dorsal prominence or horizontal carina, usually with testaceous rim, and malar spaces no longer than broad, flagellar segments longer than broad…13

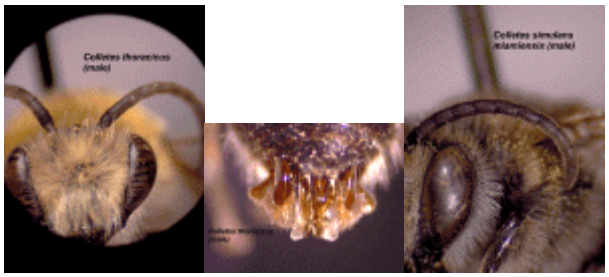


Metapleura with no dorsal prominence or if weakly prominent with carinae curving ventrally well in front of posterior margins, if having rimmed prominence then malar spaces one and one-half times as long as broad…2

2. Median flagellar segments usually as long as broad or slightly longer, and penis valves with broad dorsal and ventral wings…16



Median flagellar segments usually at least one and one-half times as long as broad; if shorter, penis valves lacking dorsal wing….3



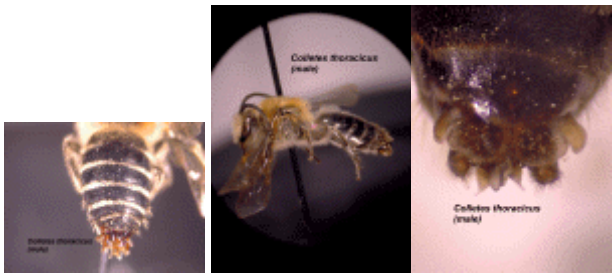
3. Mesoscutum, scutellum, or inner orbital margins with varying amounts of black hair…4

   Mesoscutum, scutellum, and inner orbital margins with light hair…9

4. Malar spaces at least as long as broad, usually longer…5

   Malar spaces no longer than three fourths as long as broad…6

5. Propodeum with posterior face outside of triangle rugose above; metasomal terga with discs having abundant short, erect, black pile; thorax with pile long, dense, and ochreus; seventh ventral plates with lateral lobe short and at tijmes partially fused to median..*C. thoracicus*



Prododeum with posterior face outside of triangle dull and roughened; metasomal terga with discs having pile white to pale grey; thorax with pile, long, fine, and pale grey on periphery; seventh ventral plates tripartite apically, lateral lobes long and broadly separated from median lobe…*C. inaequalis*

6. Posterior basitarsi short, no more than two and one-half times as long as broad..*C. latitarsis*

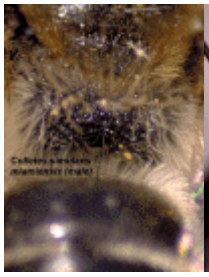
   Posterior basitarsi about four times as long as broad…7

7. Prothoracic spines long and sharp, at least as long as width across base…8

   Prothoracic spines short, vestigial, or obliquely truncate…*C. inaequalis*

8. Vertex and mesoscutum with abundant black pile; length 11-14 mm, body coarsely punctate…*C. nudus*

   Vertex with light pile; mesoscutum with but a few black hairs; length 8-10 mm…. *C simulans*


9. First metasomal terga shiny, impunctate, or, if punctate, with a few scattered folliclelike punctures especially laterally…10

   First metasomal terga closely punctate, punctures no more than two puncture widths apart…12

10. Flagellar segments short, as long as broad; malar spaces linear…*C. titusensis*

    Flagellar segments about one and one-half times as long as broad; malar spaces at least three-eights as long as broad…11

11. Malar spaces three-fourths as long as broad; seventh ventral plates with discs broader than long, weakly quadrate…*C. brimleyi*

    Malar spaces three-eigths as long as broad; seventh ventral plates longer than broad, roughly triangular…*C. distinctus*

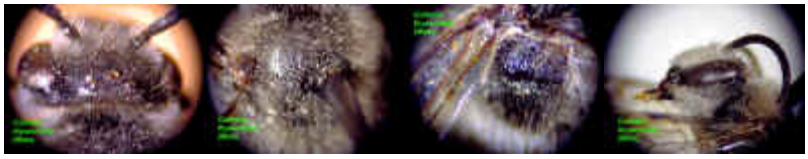
12. Metasomal tergum two uniform from base to apex, not depressed basally..*C. thoracicus*

    Metasomal tergum two depressed basally, with or without basal fasciae…*C. simulans*

13. Lower edge of metapleural prominence weakly protuberant with a narrow rim which projects laterally…14

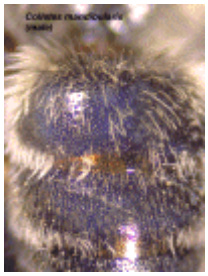
    Lower edge of metapleural prominence with a broad rim which hangs down and obscures surface beneath it in lateral view….15

14. Vertex and mesoscutum with admixture of black pile; hypoepimeral area abruptly protuberant; flagellar segments short, about as long as broad..*C. thysanellae*



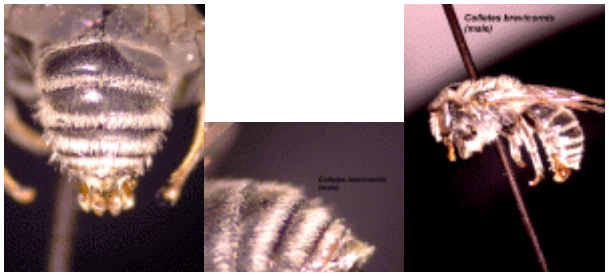
    Vertex and mesoscutum with pile all light…*C. mitchelli*

15. First metasomal tergum with disc distinctly punctate, punctures no more than three punctures width apart at mid-line..*C. mandibularis*

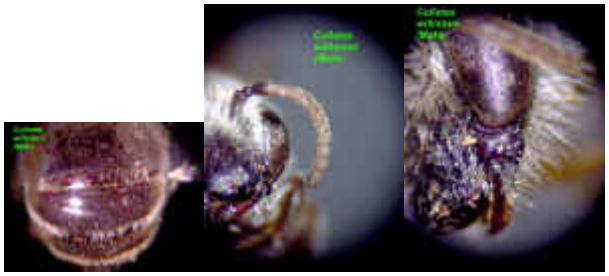


    First metasomal tergum with disc impunctate and shiny or, if punctate, punctures weak and sparse and folliclelike.. *C. americanus*

16. Metasomal terga one to three with distinct narrow preapical grooves followed by raised flangelike margins; antennal segment three one and one-half times as long as four; malar spaces linear…*C. brevicornis*



Metasomal terga one to three with apex smooth, not grooved; antennal segment three subequal to four; malar spaces one-third as long as broad..*C. willistoni*.



Note that no males have been described for *C. longifacies*.

Colletidae

Subfamily *Hylaeinae* Viereck

Genus *Hylaeus* Fabricius (10 taxa)

Three subgenera are found in Florida, including *Hylaeana* Michener, *Paraprosopis* Popov, and *Prosopis* Fabricius. Most of the species are in the subgenus *Prosopis*. Three species are endemic to Florida, *H. graenicheri* in the *Hylaeana*, and *H. flammipes* and *H. volusiensis* in *Prosopis*.

These are very small bees in general, but easily recognizable to the genus level. Some species are restricted geographically, some have notable red colorations, and many have distinctive facial and body maculae. Based on these characteristics, some species may be identifiable in the field. Specimens should be identified first to subgenus and then to species.

All of our species appear to be polylectic, collecting pollen from a wide variety of flowers. Some species elsewhere have been shown to be oligolectic on Rosaceae. These bees carry pollen internally, where it is mixed with nectar to form a wet fluid. If pinning specimens, a yellow fluid (pollen mixed with nectar) in females is usually disgorged when the pin penetrates the thorax. Like the genus *Colletes*, the cells are provisioned with liquid. Detailed analysis of pollen contents from female guts should be used to determine if polylecty occurs in these species in Florida.

Several species are common to abundant in wetlands, including *H. confluens* (very common in Osceola National Forest in Baker and Columbia counties, also found from wet Flatwoods sites

from St. Marks National Wildlife Refuge, relatively uncommon in Everglades National Park) and *H. schwarzi* in Everglades National Park (Miami-Dade county). They appear to be less common in upland sites, although *H. floridanus* is known from sand hill sites in Leon and Wakulla counties. Abundance patterns may be related to the nesting habits which are primarily stem nesting in pithy stems and twigs. These may be more abundant in marshes than in fire-prone upland habitats.

Key references to Florida *Hylaeus*.

Michener, C. D. 2000. Bees of the World. Johns Hopkins University Press, Baltimore, MD, USA. 913 p.

Mitchell, T.B. 1960. Bees of the Eastern United States. Volume I. North Carolina Agricultural Experiment Station Technical Bulletin 141, 538 p.

Snelling, R.R. 1966. Studies on North American Bees of the Genus Hylaeus. 3. The Nearctic Subgenera (Hymenoptera: Colletidae). Bulletin of the Southern California Academy of Sciences 65(3): 165-175.

Key to subgenera in Florida (from Snelling in Michener 2000)

Females (From Snelling 1966)

1. Basal depression of tergum 1 longer than broad; dorsal surface of tergum 1 impunctate, strongly tessellate and dull; punctures of thorax rather coarse, obscured by very dense tessellation or roughening of the integument; carina bordering posterior margin of horizontal zone of propodeum strongly sinuate; sides of propodeum distinctly and deeply punctate..*Hylaeana*

   Basal depression of tergum 1 triangular, wider basally than long; horizontal surface of tergum 1 either strongly shining or distinctly, deeply punctate, or both; thoracic punctures usually fine, integument as a rule not strongly tessellate or roughened between punctures; posterior carina of basal zone of propodeum, when present, transverse or evenly curved, not at all sinuate; punctures of sides of propodeum as a rule not distinct…2

2. Punctures of horizontal area of tergum 1, and usually of tergum 1, as a rule dense and distinct; facial foveae usually ending midway between eyes and ocelli, or nearer ocelli; posterior declivity of basal triangle of propodeum separated from horizontal face by distinct transverse carina..*Paraprosopis*

   Puncture of terga 1 and 2 fine, usually separated by two or more times a puncture diameter; if denser, than apical margin of terga 2 reflexed upward; facial foveae usually ending nearer eyes than ocelli, rarely attaining midpoint; posterior declivity of basal triangle of propodeum separated from horizontal face by a carina, or not…*Prosopis*

Males

Note-The omaulus is the angle between the anterior and lateral faces of the mesespisternum (the lateral part of the pleura), anterior to the episternal groove.

1. Omaulus, at least below level of lower end of episternal groove, carinate…*Hylaeana*.

   Omaulus rounded…2

2. Apical process of S8 entire, more or less parallel-sided for most of its length and usually subapically broadened, apex rounded or truncate; first flagellar segment about as long as second.. *Prosopis*

   Apical process of S8 deeply bifid at apex; first flagellar segment distinctly shorter than second..*Paraprosopis*

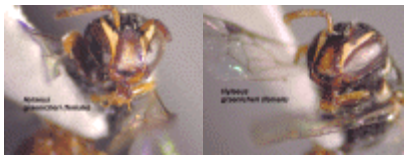
Hylaeus, Subgenus *Hylaeana* Michener (2 sp.)

This is a subtropical subgenus. In Florida, the two species in this subgenus are restricted to southern Florida. *H. graenicheri* is found on the mainland from St. Petersburg to Miami and *H. formosus* is known only from the Florida Keys.

Keys to the subgenus *Hylaeana* in Florida (From Mitchell 1960)

Females

Legs black in part; the tibiae more or less yellow at base; face with conspicuous yellow maculae between clypeus and eyes that extend narrowly along inner orbits nearly to top of eye…*H. graenicheri*



Legs entirely ferruginous; clypeus and lateral face marks ferruginous, the face marks terminating at level of antennae….*H. formosus*

Males

Legs entirely red…*H. formosus* Krombein

Base of legs black…*H. graenicheri* Mitchell

Colletidae: *Hylaeus formosus* Krombein (= *H. metopii* Mitchell)

County Records: Monroe

Locations: Key Largo, Stock Island

Dates: December, April, July

Plants:

Notes: also found in the Bahamas; Endemic to South Florida and the Bahamas

Photos: None available at present. See key for major differences from *H. graenicheri*.

Colletidae: *Hylaeus graenicheri* Mitchell

County Records: Miami-Dade, Pinellas

Locations: ENP

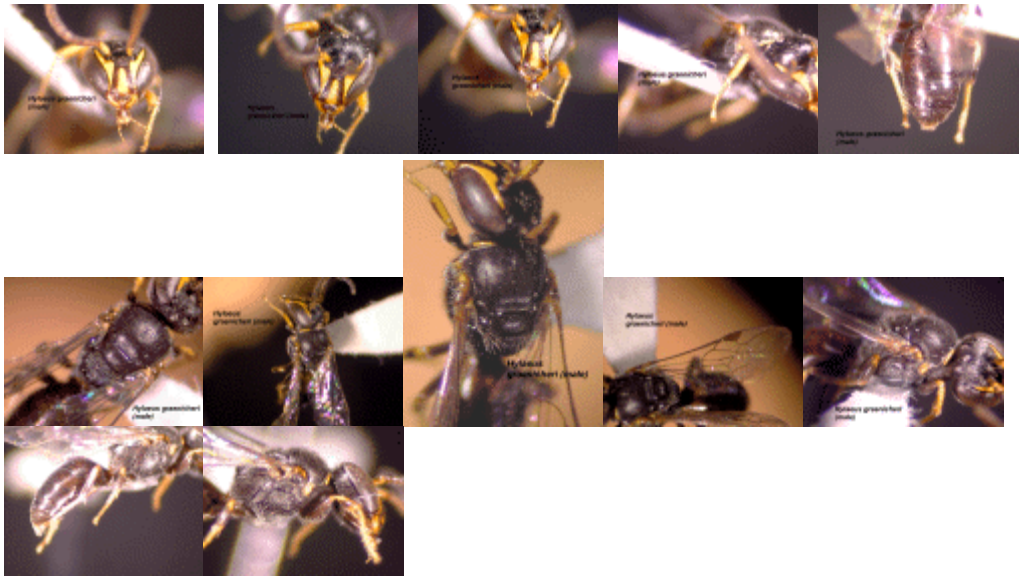
Dates: most of the year. Pascarella et al. (2000) recorded it from in ENP.

Plants:

Notes: Endemic to South Florida

Females

Males



Hylaeus, Subgenus *Paraprosopis* Popov (1 sp.)

Colletidae: *Hylaeus floridanus* Robertson (Synonym = *H. eulophi* Robertson, *H. packardi* Mitchell)

County Records: Baker, Columbia, Leon, Wakulla

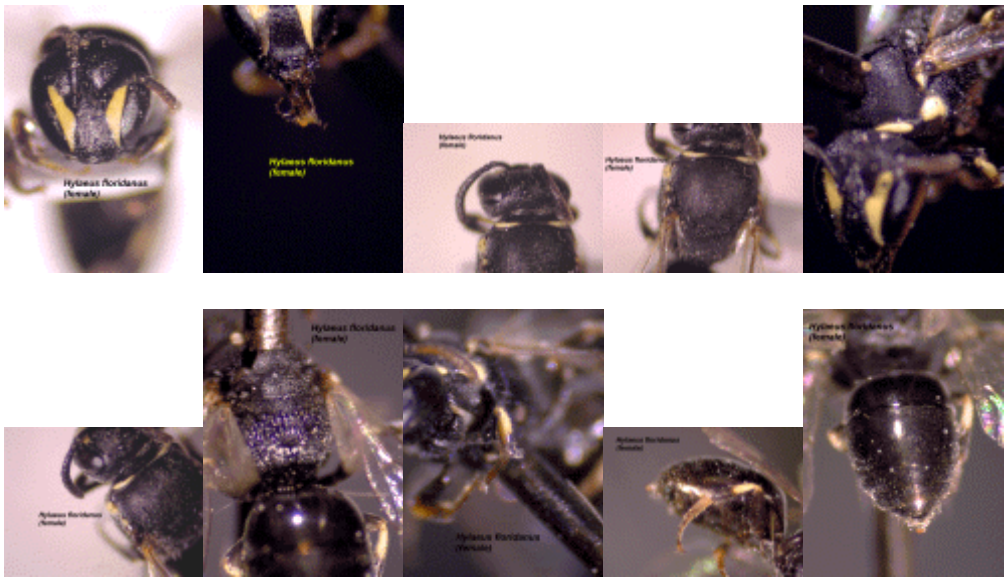
Locations:

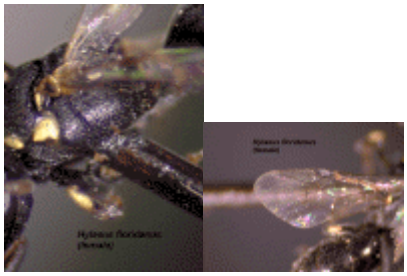
Dates:

Plants:

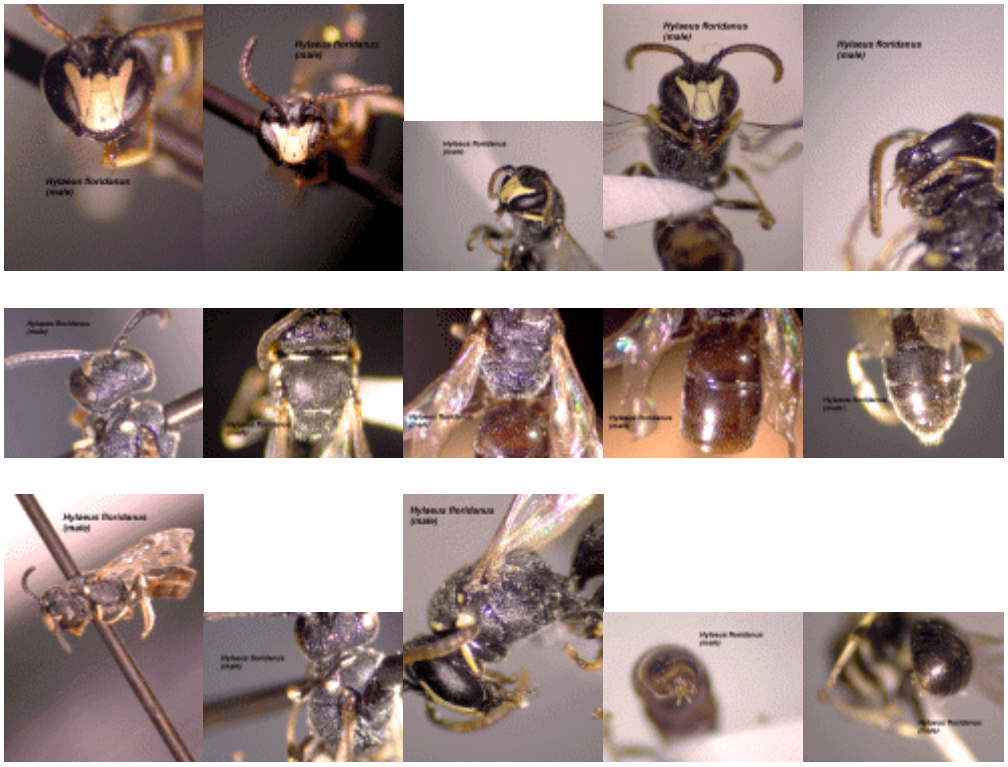
Notes: This species, in Florida and in North Carolina, has two generations per year, a spring flying (April-July) and a fall (Sept.-Oct.). Females may be distinguished from similar *Prosopis* species by the long facial foveae terminating closer to the ocelli than to the eye (however, this is not always apparent), males by the distinctive 7th and 8th sterna.

Female





Male



Hylaeus, Subgenus *Prosopis* Fabricius (6 sp.)

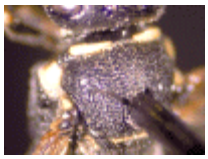
Keys to the subgenus *Prosopis* in Florida

In addition to the species in the key, Mitchell listed *H. modestus* as also occurring in Florida. No specimens of this species from Florida have been seen.

Key to females (From Mitchell 1960)

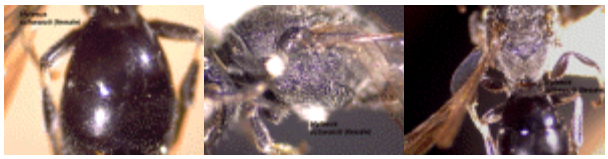
1. Collar entirely black….2

Collar maculated…3



2. Base of abdomen red; pleura rugose, the punctures very closely crowded..*H. nelumbonis*

   Abdomen entirely black; thorax coarsely sculptured; wings fuliginous except at base..*H. schwarzii*



3. Tegulae maculated…4

   Tegulae not maculated…5

4. Entire clypeus and basal segments of abdomen bright ferrugineous, the lateral face marks, maculations of collar and the pronotal tubercles pale yllow or ivory..*H. volusiensis*

   Clypeus and abdomen black..*H. confluens*

5. Clypeus entirely ferrugineous, the lateral face marks ivory..*H. volusiensis*

   Clypeus black, lateral face marks yellow..6

6. Segments 1 and 2 of abdomen and mid and hind legs entirely bright ferrugineous; wings hyaline…*H. flammipes*

   Second abdominal segment, and mid and hind femora black; apical half of wings infuscated…*H. ornatus*

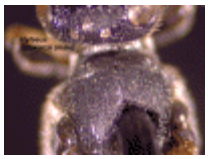
In the above key to females, *H. volusiensis* comes out in two places due to variation in whether the tegulae are maculated or not.

Key to males (From Mitchell 1960)

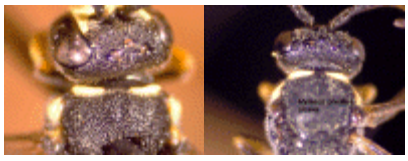
1. Pleura coarsely rugose….2

   Pleura with distinctly separated punctures, though these punctures possibly coarse and and quite close…5

2. Collar black…3



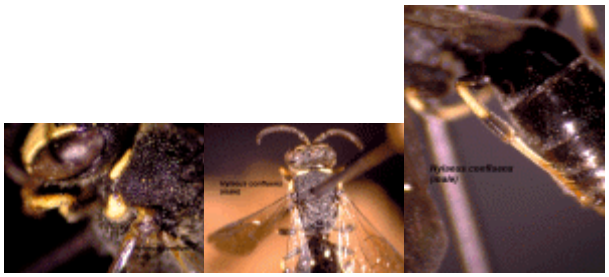
   Collar maculated…4



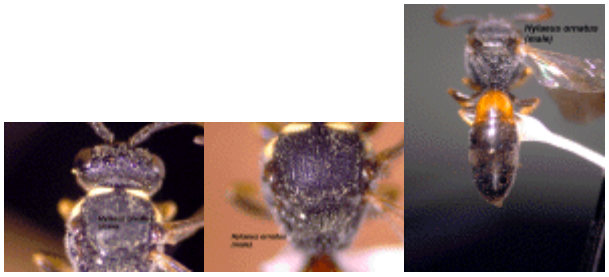
3. Base of abdomen usually red; pleural punctures closely crowded, more definitely rugose..*H. nelumbonis*

   Abdomen entirely black; pleura not so definitely rugose, the coarse punctures slightly separated in part. .*H. schwarzii*

4. Tegulae maculated (occasionally an individual will have weak maculation or lack maculae entirely); punctures on scutum and scutellum coase and crowded; hind tibiae dark apically..*H. confluens*



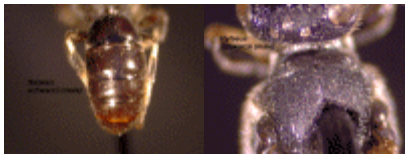
Tegulae entirely dark; punctures on scutellum distinctly more coarse and sparse than those on scutum; base of abdomen red…*H. ornatus*



5. Base of abdomen ferrugineous, in marked contrast to the blackish 2nd and following segments; facial and thoracic maculae ivory-colored..*H. volusiensis*

6.

Abdomen of uniform color, either black or dark ferrugino-piceous; maculae usually yellow; larger (7mm), collar entirely black, pleura dull and densely rugose..*H. schwarzii*



Note that males of *H. flammipes* have not been described. *H. schwarzii* comes out in 2 locations in the key based on variation in rugosity of the pleura. I have also verified that the maculation of the tegulae varies in *H. confluens* (absent in a few individuals)

Colletidae: *Hylaeus confluens* Smith

County Records: Baker, Columbia, Highlands, Leon, Miami-Dade, Wakulla

Locations:

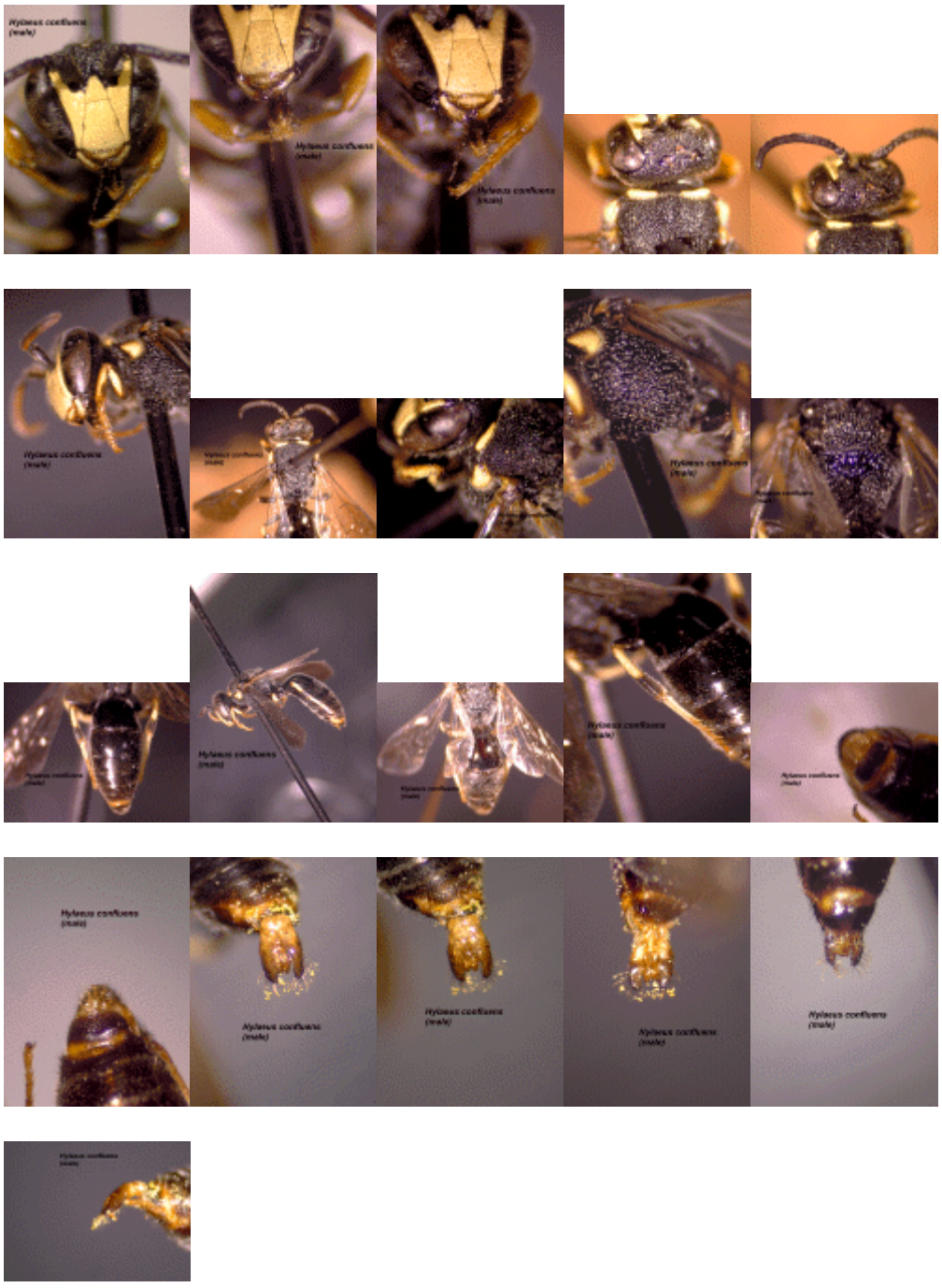
Dates:

Plants:

Notes:

Female

Male



Colletidae: *Hylaeus flammipes* Robertson

County Records: Citrus

Locations:

Dates:

Plants:

Notes: This is based on a collection of a single female. If still extant and a valid species, probably of conservation concern? Endemic to Florida. No photos are available.

Colletidae: *Hylaeus nelumbonis* Robertson

County Records: no specimens in FSCA

Locations:

Dates:

Plants:

Notes: Mitchell lists this species for Florida. A wetland species based on floral records in Mitchell. No photos are available at this date.

Colletidae: *Hylaeus ornatus* Mitchell

County Records: Alachua, Highlands

Locations: This has also been taken in Lowndes County, Georgia.

Dates:

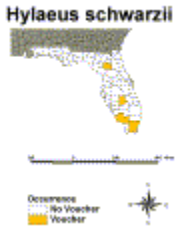
Plants: *Salix*

Notes:

Male

Colletidae: *Hylaeus schwarzii* Cockerell

County Records: Alachua, Collier, Highlands, Miami-Dade



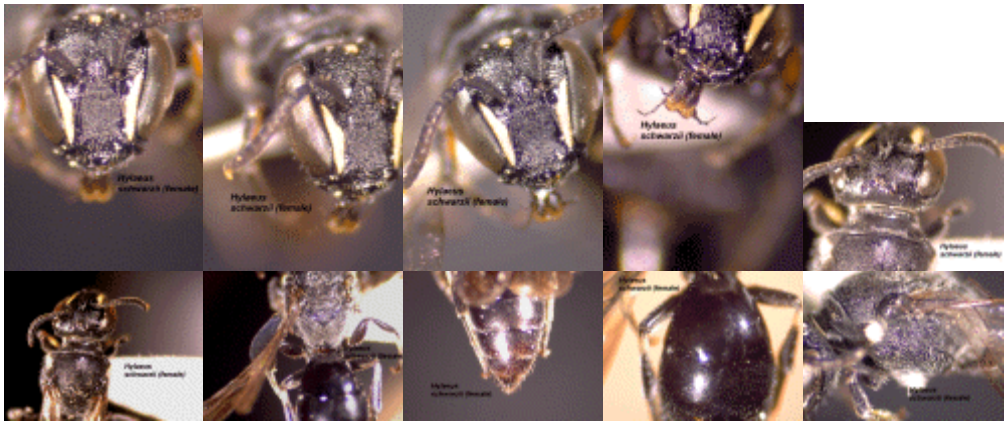
Locations:ENP

Dates: April-December (Mitchell)

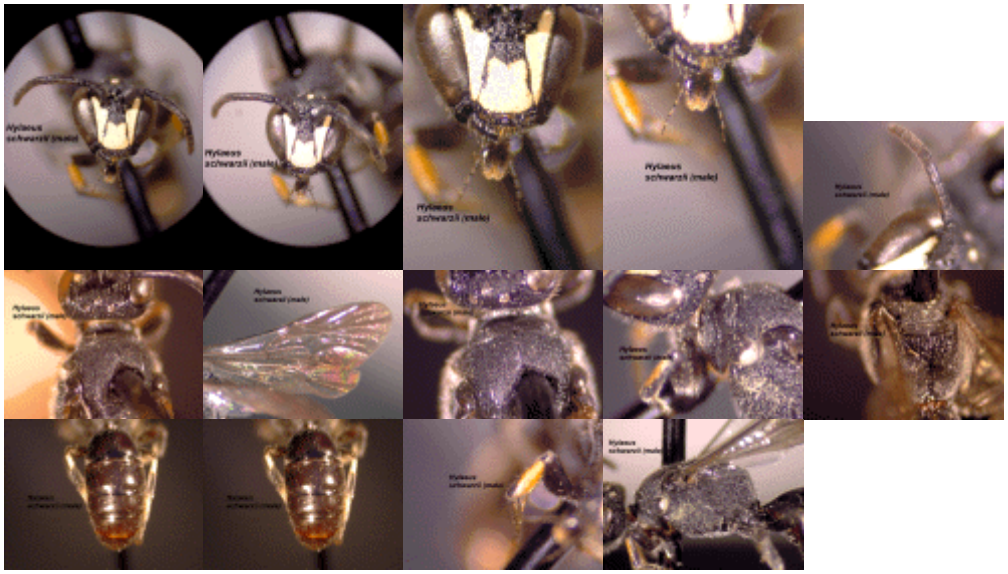
Plants: wetland plants

Notes: A wetland species, extremely common in wet prairies of the Everglades. Particularly abundant on *Oxypolis* sp.

Female



Male



Colletidae: *Hylaeus volusiensis* Mitchell

County Records: Miami-Dade, Volusia

Locations:

Dates: March-May

Plants: Notes: Endemic to Southeastern Florida

Male

Colletidae

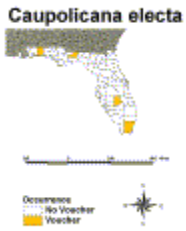
Subfamily *Diphaglossinae* Vachal

Tribe *Caupolicanini* Michener

Genus *Caupolicana* (1 sp.)

Colletidae: *Caupolicana electa* Cresson

County Records: Highlands, Leon, Miami-Dade (Lit), Okaloosa (Lit). Also collected in Thomas County, GA.



Locations: Archbold Biological Station; Tall Timbers Research Station.

Dates. Females: none Males: Sept. 5, 1983; Michener reports Sept.-Oct., I have collected males and females in November in Thomas Co., GA and females in October in Leon county, Florida.

Plants:

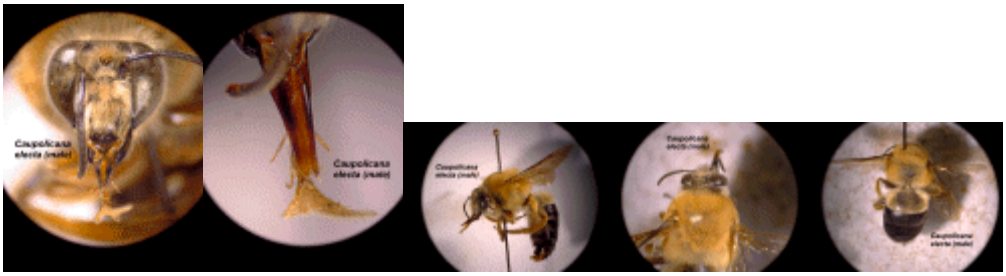
Notes: Although not endemic to Florida, this species is the only bee in the Rare and Endangered Invertebrates of Florida (Deyrup 1994). A population that existed in Miami-Dade County is believed to be extirpated. This species is restricted to sand hill regions of the southeastern United States.

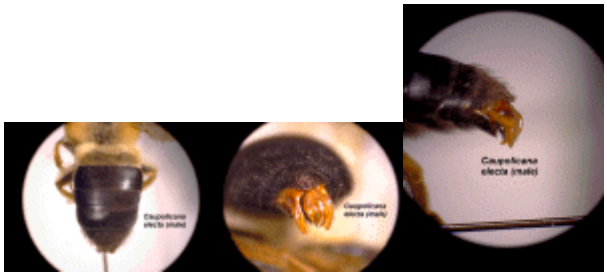
Female:







Male: 



Key references to Florida *Caupolicana*

Michener, C. D. 1966. The classification of the Diphaglossinae and North American species of the genus Caupolicana (Hymenoptera, Colletidae). The University of Kansas Science Bulletin 46(20): 717-751.

Michener, C. D. 2000. Bees of the World. Johns Hopkins University Press, Baltimore, MD, USA. 913 p.

Mitchell, T.B. 1960. Bees of the Eastern United States. Volume I. North Carolina Agricultural Experiment Station Technical Bulletin 141, 538 p.

Back to Introduction

Family *Melittidae* Schenck (2 taxa)

This family consists of andreniform short-tongued bees. The family has a mix of characteristics of short-tongued and long-tongued bees. Two subfamilies, each with one genera with one species, are found in Florida, *Melitta* and *Hesperapis*. These are ground-nesting bees. Both appear to be oligolectic.

Key to Subfamilies (From Michener 2000)

Paraglossa largely bare, usually markedly shorter than suspensorium, its hairs largely limited to apex, or paraglossa absent; forewing with two submarginal cells, second usually shorter than

first; first submarginal crossvein usually more or less at right angles to longitudinal veins and usually close to recurrent vein; non cocoon spinning larvae..Dasypodinae

Paraglossa densely hairy; forewing with 2 or 3 submarginal cells, second (if only 2) or second plus third as long as or longer than first; first submarginal crossvein slanting, usually well separated from first recurrent vein; larvae spin cocoons...Melittinae

Subfamily *Dasypodainae* Borner

Tribe *Dasypodaini* Borner

Genus *Hesperapis* (1 sp.)

Melittidae: *Hesperapis oraria* Snelling and Stage

County Records: Bay, Escambia, Okaloosa, Santa Rosa, Walton

Locations:

Dates: late September-early October

Plants: specialist on *Balduina angustifolia* (Asteraceae).

Notes: Found only on beach dunes, Endemic to Gulf coastal barrier islands of Florida and Alabama. No photos available at this time.

Subfamily *Melittinae* Schenk

Genus *Melitta*, one species.

Mellitidae: *Melitta americana* Smith

County Records: Alachua, Baker, Clay, Columbia, Dixie, Liberty, Suwanee

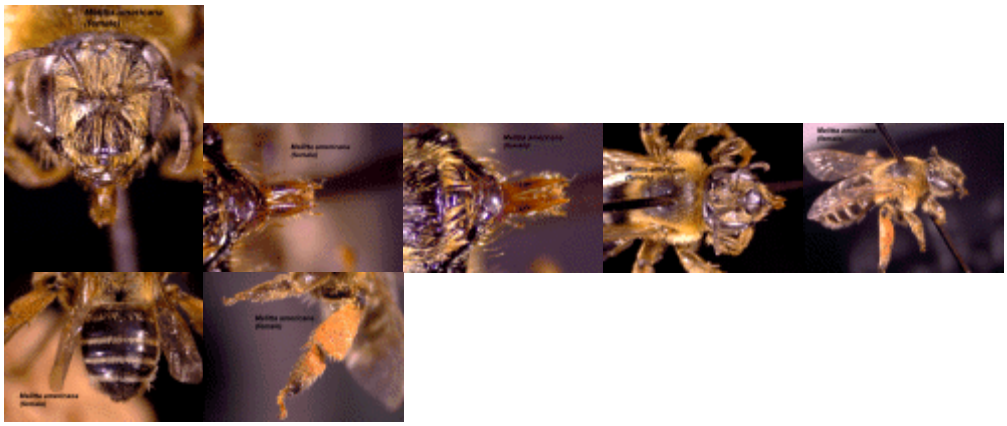
Locations:

Dates: March 7-May 25; March: 1, April: 10, May: 4

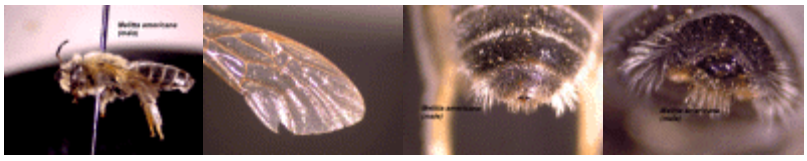
Plants: This species is an oligolege on *Vaccinium*.

Notes: This represents a new state record for Florida. Previously, this species had been collected as far south as Georgia (Mitchell 1960).

Female



Male



Back to Introduction

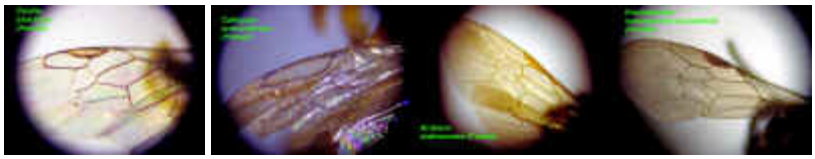
Family *Andrenidae* Latreille (63 taxa, 5 endemic to Florida)

This family has two subfamilies present in our area, the *Andreninae* and the *Panurginae*. In the *Andrenidae*, only the genus *Andrena* is found in Florida. In the Panurginae, three genera, *Perdita*, *Protoandrena*, and *Pseudopanurgus*, are found in Florida, and a fourth, *Calliopsis*, may be present in the northern counties of the peninsula and panhandle.

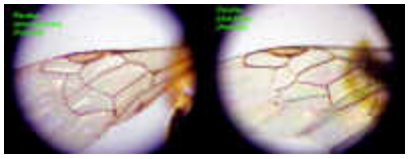
Key to genera of *Andrenidae* in Florida

1. With three submarginal cells…*Andrena*

With two submarginal cells….2



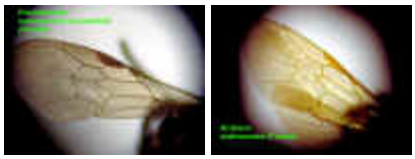
2. Marginal cell very short, about equal in length to stigma, abruptly truncate apically….*Perdita*



Marginal cell much longer than stigma…3

1. Stigma very small; recurrent veins about equidistant from transverse cubitus..*Calliopsis*

Stigma large; recurrent veins about equidistant from transverse cubitus…4



4. Tip of marginal cell narrowly rounded...*Andrena*

Tip of marginal cell truncate**...***Includes Protoandrena and Pseudopanurgus.*

Systematic Overview of the Andrenidae in Florida

Andreninae

Andrena

Panurginae

Calliopsini

Calliopsis

Perditini

Perdita

Alloperdita

Cockerellia

Andrenidae

Subfamily *Andreninae* Latreille

Genus *Andrena*

A very large genus with many species in the United States. Florida has an estimated 35 species, none of which are endemic. Most of the species are associated with spring-flowering trees and shrubs, many in the Rosaceae and Salicaceae. Although most are broadly polylectic, a few species are oligolectic (*A. violae*, *A. hilaris*). All species nest in the soil, often in communal groups. Dirt roads and road banks as well as bare areas in lawns are favorite nesting sites. There are many subgenera. Only three species, all in the Callandrena, fly in the fall and are associated primarily with fall-flowering composites. Any collection made on spring-flowering Rosaceous shrubs and willows should yield several species of this genus.

Since the publication of Mitchell's key in 1960, a number of revisions have been made to the genus that have resulted in the description of new species, corrections of misidentifications and misinterpretations, synonymization of species, and rearrangement of subgeneric placement of species. Users may want to consult the following publications that are listed next to the specific subgenera. To simplify identifying *Andrena* in Florida, modified keys to the subgenera are presented. Using these, species keys for each subgenus, if more than one species is known from Florida, are presented. Additional species not listed here should be keyed out using the full subgeneric key from the listed revision.

The following subgenera are known from Florida: *Andrena* (1 sp.), *Archiandrena* (2 sp.), *Callandrena* (5 sp.), *Euandrena* (1 sp.), *Holandrena* (1 sp.), *Iomellissa* (1 sp.), *Larandrena* (1 sp.), *Leucandrena* (1 sp.), *Melandrena* (7 sp.), *Micrandrena* (3 sp.), *Parandrena* (2), *Scrapteropsis* (6

sp.), *Taeniandrena* (1 sp.), *Trachandrena* (2 sp.), and *Tylandrena* (1 sp.). For subgenera with more than 1 species, keys to the species (both males and females) are provided. For subgenera with only 1 species known from Florida, only the key to subgenus is used.

Of these species, two species are not recorded from Florida but are found in Thomas County, Georgia, approximately 10 miles from the state line and may occur in nearby counties near Tallahassee, FL. Several species are from a single collection in Sumter County, FL, listed on the label as June 25, a very late date for many species to be flying, particularly in Florida. These collections, especially if other counties are not listed, should be viewed with some caution as definitive records. Where possible, I have checked all of the identifications of those species in the FSCA to verify their determination.

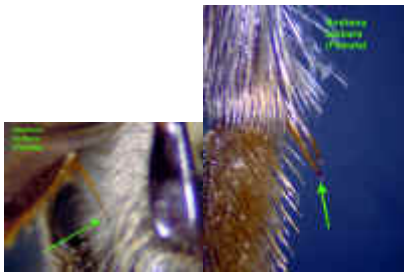
None of the species of the genus *Andrena* are endemic to Florida. With one doubtful exception, none occur south of Lake Okeechobee or in the Southeast coast of Florida. Many may be restricted to the panhandle, northern counties of the peninsula, or the central sand ridge.

Key to Subgenera (From Michener 2000)

Females

1. Middle and hind tibial spurs unusually thick, their apices abruptly hooked (Terga without apical pale bands, facial fovea narrow)...*Euandrena*

Middle and hind tibial spurs long, slender, not bent nor markedly twisted at apical third..2

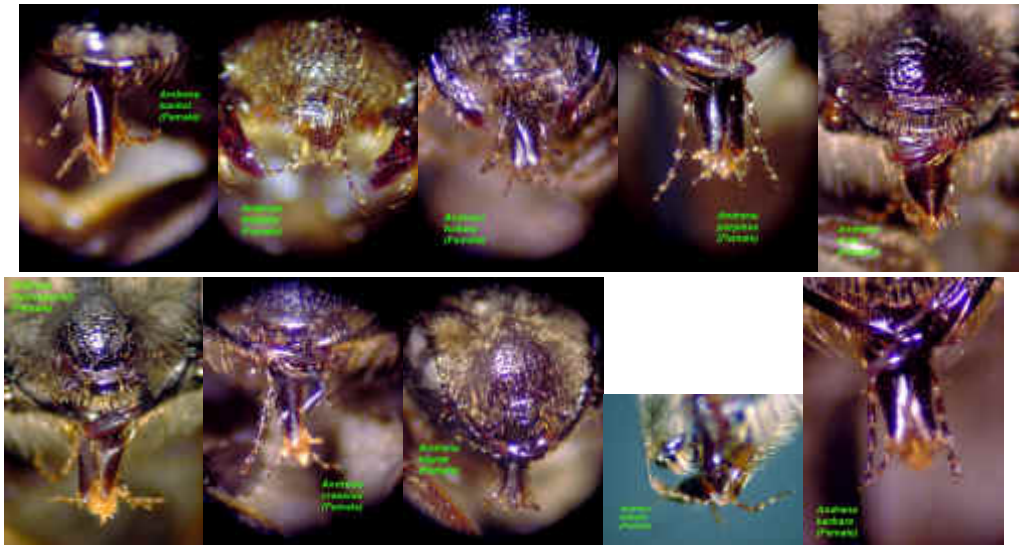


2. Inner hind tibial spur rather abruptly bent and slightly twisted at about one-third of its length from apex (T2-T4 with conspicuous, usually medially interrupted white fasciae).. *Leucandrena*

Inner hind tibial spur long, slender, not bent nor markedly twisted at apical third...3

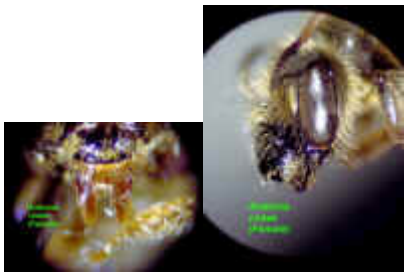
3. Galeal blade as long as clypeus or slightly longer; maxillary and/or labial palpi greatly elongate (T2-T4 with pale apical fasciae, often weak)...4

Galeal blade not as long as clypeus; maxillary and labial palpi not greatly elongate...5



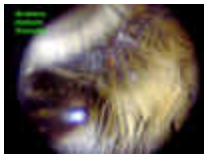
4. Labial palpus greatly elongate, segments 1 plus 2 three to five times as long as segments 3 plus 4 and flattened; maxillary palpus of normal length, half as long as galeal blade; basal area of labrum not much raised above general level of surface...*Callandrena*

Labial palpus elongate, but first two segments not unusually long nor much flattened; maxillary palpus elongate, more than half as long as galeal blade; basal area of labrum distinctly raised above general level of surface...*Iomellissa*

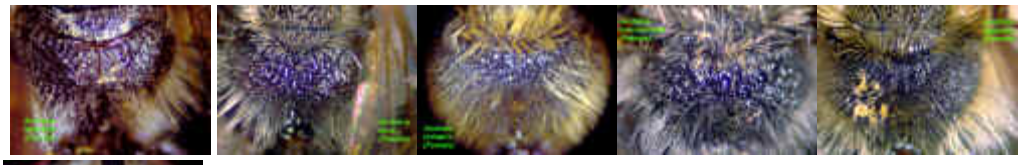


5. Pronotum without dorsolateral angle, smoothly rounded posteriorly from one posterior pronotal lobe to the other; or, if weak angle present, then without trace of lateral ridge or elevation....6

Pronotum with dorsolateral angle on posterior margin just above and in front of pronotal lobe, usually with a ridge or elevation extending down side of pronotum from dorsolateral angle, often with depressed or flattened area posterior to this ridge; angle and ridge occasionally quite weak and rarely only that part of ridge immediately above front coxa present....8

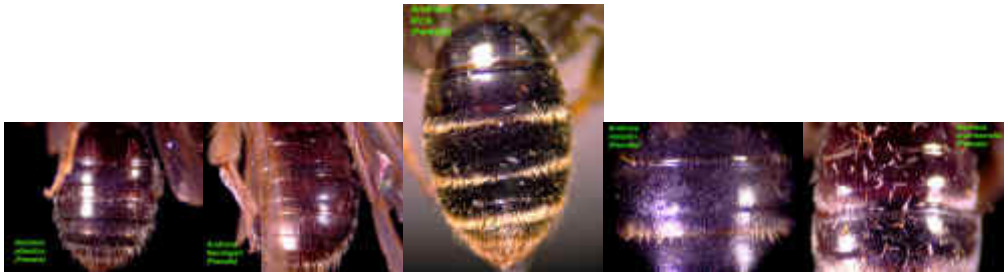


6. Propodeal triangle coarsely sculptured, often bounded posteriorly by a strong transverse carina, or if finely sculptured, then with longitudinal rugae at least basally and with transverse carina at apex...7

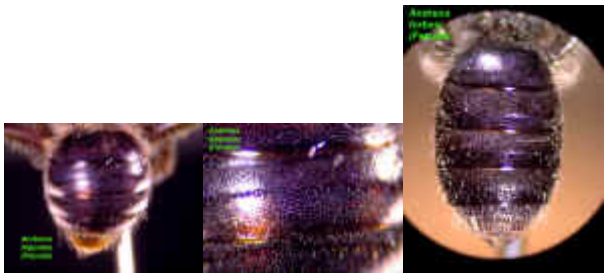


Propodeal triangle usually finely sculptured, usually tessellate, never with strong transverse posterior carina, or if coarsely sculptured, then without longitudinal basal rugae and/or without transverse apical carina..13

7. T2-T4 with depressed marginal zones less than half length of exposed part of each tergum medially..*Scrapteropsis*



T2-T4 with depressed marginal zones half or more length of exposed part of each tergum medially...*Trachandrena*



8. Pronotum laterally with deeply impressed groove cutting diagonally up and forward from pronotal spiracle to near midline anteriorly, this groove crossing and strongly depressing ridge extending down from dorsolateral angle; T2-T4 without apical pale fasciae or these weak and broadly interrupted; genal area broader than eye in side view; ocellooccipital distance about one and one-half to two and one-half ocellar diameters...*Tylandrena*

Pronotum without lateral groove, or groove not deeply impressed and not depressing dorsoventral ridge, or if diagonal groove present and depressing ridge, then terga with distinct pale apical fasciae; genal area often narrow; ocellooccipital distance often one ocellar diameter or less...9

9. Submarginal cells two...*Parandrena*

Submarginal cells three...10

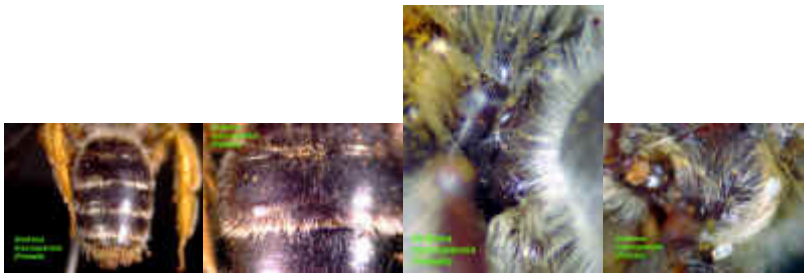
10. Tibial scopal hairs highly plumose throughout....*Archiandrena*

Tibial scopal hairs simple or largely so, occasionally weakly plumose throughout...11

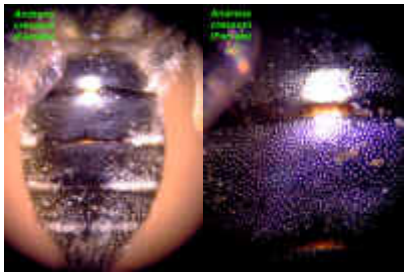
11. Median third of clypeus impunctate, shiny; tibial scopal hairs weakly plumose throughout; scutellum shiny, unshagreened at least medially..*Larandrena*

Median third of clypeus punctate or dulled by dense shagreening or tessellation or both, sometimes with impunctate and shiny area occupying much less than one-third of clypeus; tibial scopal hairs usually simple, at least medially; scutellum often opaque, dulled by fine tessellation or shagreening.....12

12. Metasomal terga usually weak, pale apical fasciae, weakly if at all punctate; pronotal dorsoventral ridge roughened below oblique groove; propodeal corbicula complete anteriorly..*Andrena*



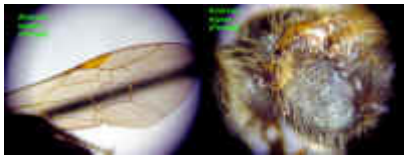
Metasomal T2-T4 with distinct, pale apical fasciae often interrupted medially; the terga distinctly punctate; pronotal dorsoventral ridge usually sharp, subcarinate, or if rounded below, then propodeal corbicula incomplete anteriorly...*Holandrena*



13. Maxillary palpus short, usually not exceeding galea or occasionally exceeding galea by length of terminal segment; stigma narrow, tibial scopal hairs almost always plumose throughout...*Callandrena*

Maxillary palpus exceeding galea by at least two segments; stigma often broader than width of prestigma, as measured to wing length; tibial scopal hairs usually simple, at least medially..14

14. Length usually 9 mm or less; stigma large, first submarginal crossvein usually meeting marginal cell within two or three vein widths of stigma; propodeal corbicula usually incomplete anteriorly, often with internal hairs...*Micrandrena*



Length usually more than 9mm; stigma narrow or only moderately broad, first submarginal crossvein usually meeting marginal several vein widths from stigma; but if length less than 9mm or less and stigma broad, then propodeal corbicula complete anteriorly, without internal hairs...15

15. T2-T4 with pale apical fasciae of hair...*Taeniandrena*

T2-T4 without pale apical fasciae of hair (in a few species with incomplete fasciae)...*Melandrena*

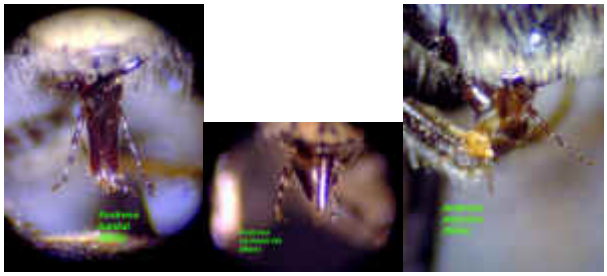
Males

1. Submarginal cells two..*Parandrena*

Submarginal cells three...2

2. Mouthparts elongate, galeal blade as long as clypeus or slightly longer; maxillary palpus and/or labial palpus elongate; T2-T4 with pale, often weak, apical fasciae...3

Mouthparts short, galeal blade usually not as long as clypeus; neither maxillary nor labial palpus greatly elongate, but if galeal blade as long as clypeus, then metasomal terga lacking pale apical fasciae...4



3. Labial palpus greatly elongate, segments 1 and 2 three to five times as long as segments 3 and 4 taken together, first two segments greatly flattened; maxillary palpus normal in length, half as long as galeal blade...*Callandrena*

Labial palpus elongate but normal, first two segments neither unusually long or flattened; maxillary palpus usually about as long as galeal blade or much longer...*Iomellissa*

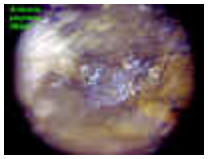
4. Middle and hind tibial spurs unusually thick, their apices rather abruptly hooked; terga without pale apical fasciae; clypeus black..*Euandrena*

Middle and hind tibial spurs neither unusually thickened nor strongly hooked at apices; terga often with pale apical fasciae ...5

5. Inner hind tibial spur rather abruptly bent and slightly twisted at about one-third length from apex; T3-T4 with pale apical fasciae and distinct punctures...*Leucandrena*

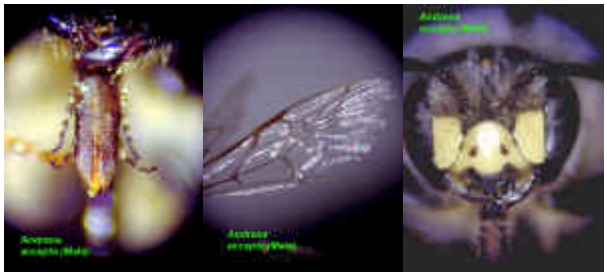
Inner hind tibial spur long, slender, neither bent abruptly nor twisted in apical third; T3-T4 with or without pale apical fasciae; often impunctate...6

6. Pronotum with distinct dorsolateral angle along posterior margin, and with more or less distinct dorsoventral ridge extending down from angle to anterior coxa, area between ridge and pronotal lobe often shiny and impunctate, occasionally deep and narrow or rugulose...7

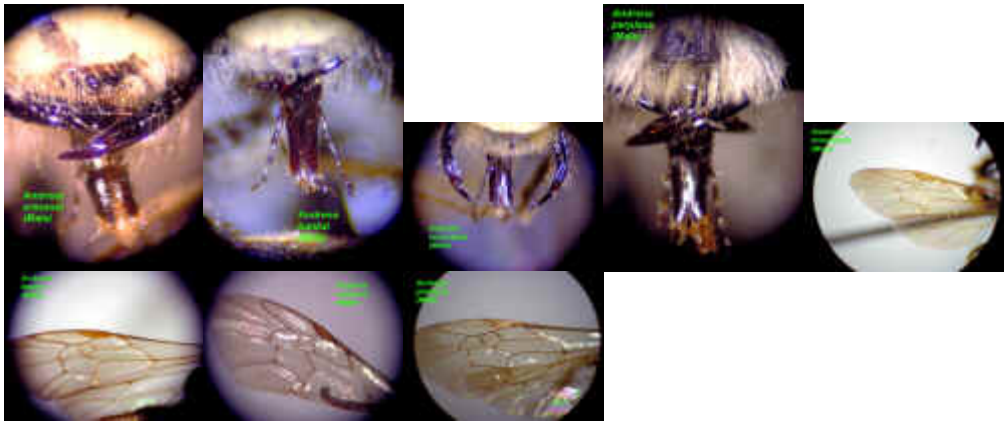


Pronotum without dorsolateral angle along posterior margin, without dorsoventral ridge...13

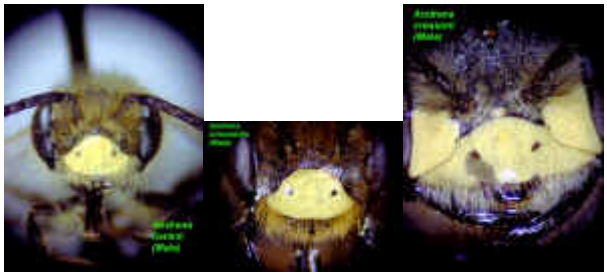
7. Maxillary palpus short, not exceeding galea (when extended distad) by more than length of apical segment of palpus; stigma usually narrower than prestigma, as measured to anterior margin of wing; clypeus yellow....*Callandrena*



Maxillary palpus usually exceeding galea by at least last two lengths of last palpal segments; stigma variable, often broader than or equal to prestigma, as measured by wing margin; but, if palpus short and stigma narrow, then clypeus black...8

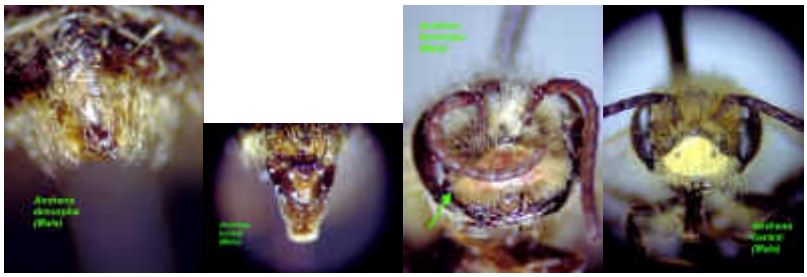


8. Clypeus partially or wholly yellow or cream-colored...9

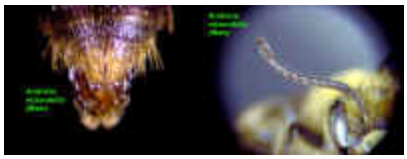


Clypeus entirely black...11

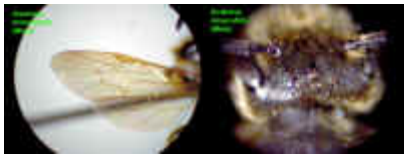
9. Pygidial plate well developed, narrow, V-shaped; first flagellar segment usually about two-thirds as long as second...*Archiandrena*



Pygidial plate absent or vestigial (narrow and linear when present); first flagellar segment usually as long or almost as long as second...10



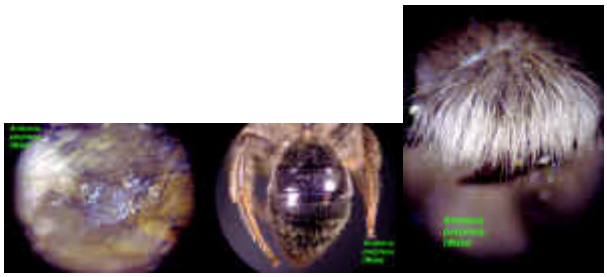
10. Stigma large, broader than prestigma as measured to anterior wing margin; first submarginal crossvein meeting marginal cell within three to four vein widths of stigma or less; pronotum with dorsoventral ridge crossed by distinctly impressed oblique groove...*Larandrena*



Stigma narrower, or, if as above, then first submarginal crossvein meeting marginal cell at more than four vein widths from stigma; pronotum with dorsoventral ridge relatively sharp, not depressed by oblique groove...*Holandrena*

11. Pronotum with dorsoventral ridge extending down from dorsolateral angle interrupted by distinct, oblique, deeply impressed groove, or, if groove present, then a mere line; T2-T4 usually

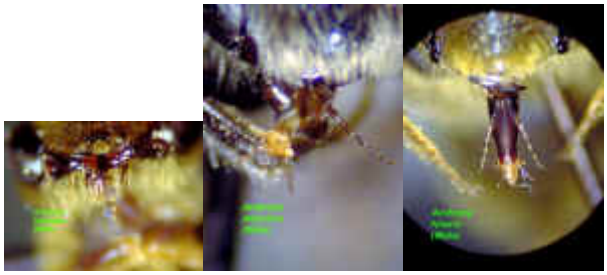
without pale apical fasciae; clypeus short, not produced much beyond level of lower ends of compound eyes...*Tylandrena*



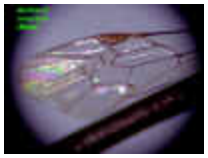
Pronotum with dorsoventral ridge extending down from dorsolateral angle not interrupted by distinctly impressed groove, or, if groove present, then a mere line; T2-T4 often with pale apical fasciae; clypeus often produced by as much as one-fourth or more of median length beyond level of lower ends of compound eyes...*Andrena*

12. Maxillary palpus short, rarely exceeding galea when extended distad or exceeding galea by less than length of last two palpal segments..*Callandrena*

Maxillary palpus long, exceeding galea when extended distad by at least length of last two palpal segments...13



13. Stigma large, first submarginal crossvein ending one to three vein widths from stigma; body 9 mm or less in length...*Micrandrena*

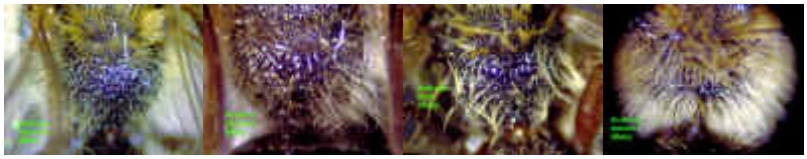


Stigma narrower, first submarginal crossvein usually ending more than three vein widths from stigma; body usually more than 9mm in length...14

14. Pleura and propodeal triangle coarsely or moderately coarsely sculptured, or, if finely sculptured, then genal area narrow, about as wide as eye in side view...15

Pleura and propodeal triangle usually finely sculptured, often merely granular or tessellate, or, if moderately coarsely sculptured, then genal area much broader than eye in side view...18

15. Propodeal triangle coarsely areolate or irregularly rugose, with transverse posterior carina separating dorsal from posterior surface....16

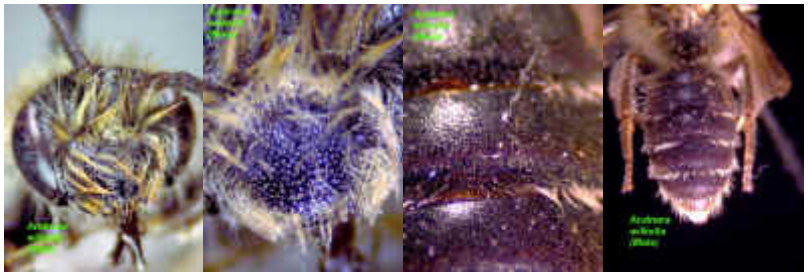


Propodeal triangle coarsely punctate or finely areolate, without transverse carina separating dorsal from posterior surface..17

16. Marginal zone of T2 one-third or more of median tergal length; third flagellar segment usually two-thirds as wide as long or longer; antennae in repose usually reaching beyond scutellum; First recurrent vein meeting second submarginal cell near middle of cell, rarely beyond..*Trachandrena*

Marginal zone of T2 less than one-third of median tergal length; third flagellar segment distinctly more than two-thirds as wide as long or longer; antennae in repose usually not reaching middle of scutellum; first recurrent vein meeting second submarginal cell two-thirds or more of length of cell from base...*Scrapteropsis*

17. Clypeus flattened mediobasally; metasomal terga distinctly punctate; surface and bottoms of punctures dulled by fine tessellation; T2-T5 with pale apical fasciae, but these often interrupted medially..*Taeniandrena*



Clypeus usually not flattened mediobasally; metasomal terga punctate but shiny or moderately so, at most dulled by fine reticulate shagreening; T2-T5 without pale apical fasciae (or weak and interrupted)...*Melandrena*

18. Genal area narrow, at most slightly broader than eye in lateral view; metasomal sterna usually with pale subapical fimbriae....*Euandrena*

Genal area conspicuously broader than eye in lateral view; metasomal sterna without pale subapical fimbriae...19

19. T2-T4 and often T5 with more or less distinct pale apical fasciae; ocelloccipital distance about one ocellar diameter, often less and rarely slightly more...*Leucandrena*

T2-T5 without pale apical fasciae, or, if present, on some terga, then weak, and ocelloccipital distance at least one and one-half ocellar diameters, often more...*Melandrena*

Andrena

Subgenus *Andrena* (1 sp.)

This subgenus has little to distinguish it. Most species have a mandibular angle or tooth on the inferior margin near the base, but the one Florida species has a indistinct basal tooth. Andrena species are moderately large to large bees with long malar spaces, often with a basal inferior tooth or angle, well formed pronotal humeral angles and ridges, front wing has the 1st marginal-cubital meeting the second submarginal in the outer third or more of the cell. Terga rarely have apical pale fasciae and if present, weak.

For more information, see LaBerge, Wallace E. 1980. A Revision of the bees of the genus Andrena of the Western Hemisphere. Part X. Subgenus Andrena.

Andrenidae: *Andrena macoupensis* Robertson (Andrena)

County Records: Jefferson County; also collected in Thomas Co., Georgia. The map in LaBerge (1980) has the panhandle and the northern counties bordering Georgia in north peninsular Florida shaded indicating its possible presence.

Locations: Lamont, FL

Dates: April 9; LaBerge reports Feb. 22-July 13 across its entire transcontinental range but chiefly collected in March-May.

Plants: Oligolege of willows (*Salix* sp.)

Notes: This is a widespread, southern oligolege of willows. It can be distinguished by the shiny clypeus, short malar space, shiny scutellum and often scutum, pale vestiture, usually red or yellow hind tarsi and tibiae and often red or partially red abdomen. Females have short tergal hairs with fasciae present on terga 2-4, short tibial scopal hairs and males have distinctive apical tuft of hairs on sternum 6 which is flat apically but not markedly emarginate.

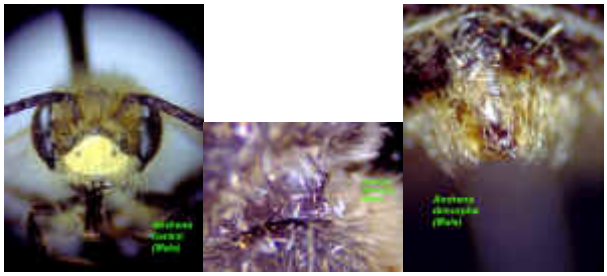
Female:

For more information, see LaBerge, Wallace E. 1980. A Revision of the bees of the genus Andrena of the Western Hemisphere. Part X. Subgenus Andrena.

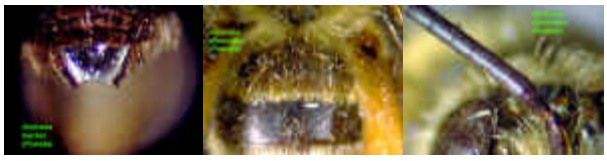
Andrena

Subgenus *Archiandrena* (2 sp.)

LaBerge (1986) states that males are easily recognized to this subgenus by the yellow clypeus, distinct pronotal humeral angles, and the large, well-formed pygidial plate of metasomal tergum 7.



Females are less distinctive. They do have very large pygidial plates, an apical fasciae on tergum 1, and an unusually short first flagellar segment.

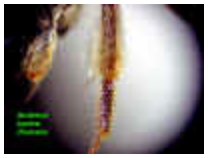


For more information, see LaBerge, Wallace E. 1986. A revision of the bees of the genus Andrena of the Western Hemisphere. Part XI. Minor subgenera and subgeneric key. Transactions of the American Entomological Society 111: 441-567.

Key to Females

Tibial scopa highly plumose, mostly in Florida peninsula...*A. dimorpha*

Tibial scopa usually less plumose, mostly in Florida panhandle...*A. banksi*



Key to Males

Conspicuous yellow maculae between clypeus and eyes, mostly in Florida peninsula...*A. dimorpha*

Lateral face marks either lacking or with mere traces of yellow along clypeal margin which do not extend to margin of eye, mostly in Florida panhandle..*A. banksi*

Andrenidae: *Andrena banksi* Malloch (Archiandrena)

County Records: Alachua, Leon, Liberty, Okaloosa. With the exception of Alachua, most of the records of this species are from the panhandle of Florida.

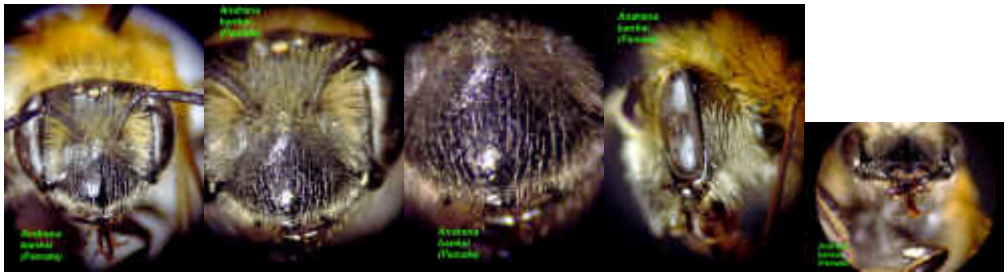
Locations:

Dates: March 15-April 15, March: 1, April:4; further north it flies from March 11-May 19.

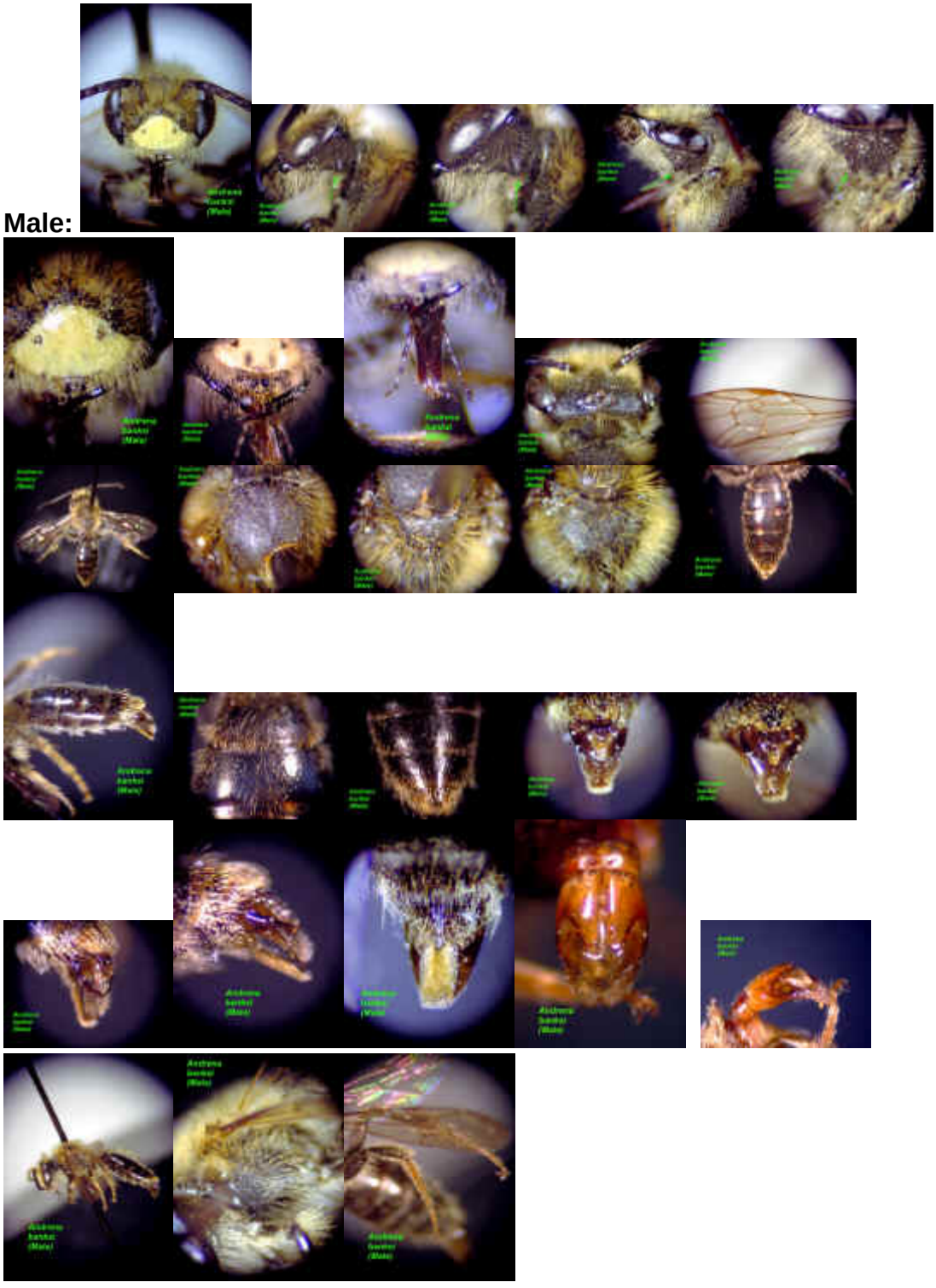
Plant: *Crataegus*, *Prunus angustifolia*; elsewhere (LaBerge 1986) it has been collected on *Diospyros virginiana*, *Prunus caroliniana*, *Prunus* sp., *Pyracantha* sp., and *Salix* spp.

Notes: This is a new State record for Florida. Previously collected in Mississippi, Georgia and Alabama. This is a primitive species in the subgenus. Females have a bowed out, almost impunctate clypeus, large blunt or apically rounded pygidial plate, short malar space, and well formed tergal fasciae. Males are distinctive in the large well formed pygidial plate, yellow clypeus, and the genal area with posterior process from near the midpoint of the hind margin.

Female:

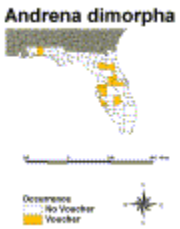


Male:



Andrenidae: *Andrena dimorpha* Mitchell (Archiandrena)

County Records: Alachua, Highlands, Hillsborough, Lake, Okaloosa, Orange, Pasco, Putnam, Sarasota. With the one exception of the collection from Okaloosa, most of the records are in Peninsular Florida.



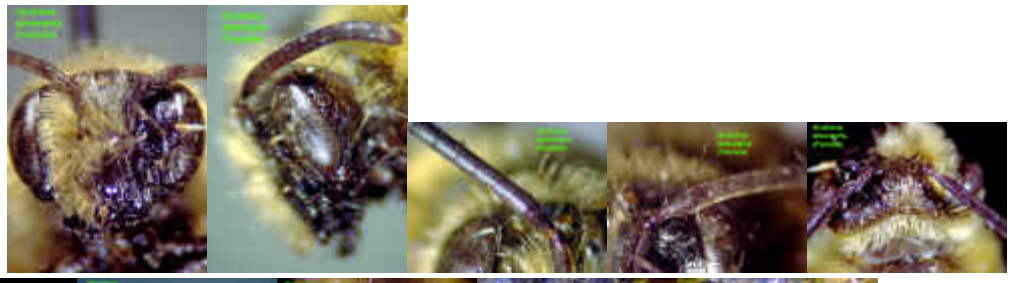
Locations: Archbold Biological Station, Destin, Gainesville, Interlachen, Orlando, Sarasota, Tampa

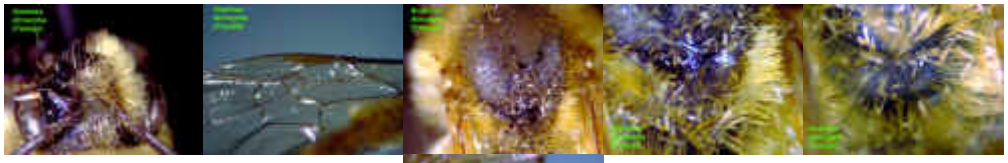
Dates: March 13-April 15; March:5, April:1; LaBerge reports flight times across the entire range north to New Jersey are March 23-April 24.

Plant: *Conradina canescens* from Florida. No floral records are listed in literature.

Notes: This is a smaller species than *A. banksi* and is rare in collections. It resembles *A. banksi* in the weakly punctate clypeus, short first flagellar segment, and large pygidial plates in both sexes. Females are distinctive in the malelike, elongate antennae, plumose tibial scopal hairs, plumose corbicular hairs and males have well-formed basal mandibular teeth, parocular yellow spot, and apical fasciae on terga 2-5. Males also have the genal process similar to males of *A. banksi*.

Female:





Male:

Andrena

Subgenus *Callandrena* (5 species)

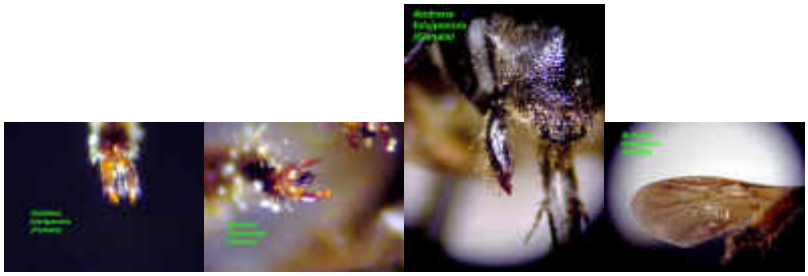
Includes 3 fall flying species (*A. accepta*, *A. asteroides*, and *A. fulvipennis*) and 2 spring-flying species (A. gardineri and A. krigiana). LaBerge places each of these species into separate species groups. These subgenus has unusually short maxillary palpi in both sexes. These are usually shorter than the galea when stretched forward. Females have highly plumose tibial scopal

hairs, flattened emarginate labral process, and narrow pterostigma. Males have the narrow pterostigma, yellow clypeus, often with yellow parocular areas, and flat emarginate labral process. Both sexes lack the pronotal humeral angles and ridges, usually with tergal fasciae, and finely sculptured propodeal enclosures.

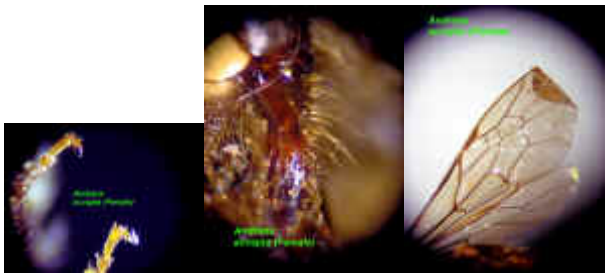
For more information, see LaBerge, Wallace E. 1967. A revision of the bees of the genus Andrena of the Western Hemisphere. Part I. Callandrena (Hymenoptera: Andrenidae). Bulletin of the University of Nebraska State Museum 7:1-316.

Key to Females of *Callandrena*

1. Hind tarsal claws distinctly smaller than middle and fore tarsal claws; mandible abruptly narrowed about one-third distance from base, least width (near mandible) equal to half or less of greatest width (near base); fore wings deeply infumate, dark blackish-brown…*A. fulvipennis* Smith



Hind tarsal claws as large as or larger than fore and middle tarsal claws; mandible usually not abruptly broadened near base (without basoventral lamella), or if so, then fore wings not deeply infumate, clear to moderate infumation….2



2. Propodeal corbicula with interior free of hairs or with several long hairs restricted to dorsoposterior third, or with minute hairs scattered over surface, anterior margin without long plumose hairs…*A. krigiana* Robertson

---Propodeal corbicula with interior with long simple or plumose hairs scattered throughout or concentrated in upper half or anterodorsal area, if anterior without long hairs, then anterior margin with long plumose hairs (corbicula complete)…..3

3. Clypeus and/or parocular areas with yellow or cream-colored markings…*A. accepta* Viereck

---Clypeus and parocular areas black….4.

4. Small to medium sized bees (11mm or less in length), facial fovea short, not extending down beyond level of upper margins of antennal fossa, spring-flying species…*A. gardineri* Cockerell

---Medium-sized to large bees, usually 11mm or more in length, or if smaller, than facial fovea extends down to about lower margins of antennal fossa (fovea often short in larger forms); fall-flying species…*A. asteroides* Mitchell

Key to males of Callandrena in Florida (from Mitchell)

1. With conspicuous yellow maculae between clypeus and eye...2

Lateral face marks either lacking or with mere traces of yellow along clypeal margin which do not extend to margin of eye...3

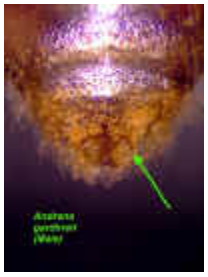
2. Lateral face marks large, extending to level of antennae...*A. accepta*

Lateral face marks small, not nearly attaining level of upper margin of clypeus...*A. fulvipennis*

3. Basal segment of flagellum considerably shorter than segments 2 and 3 combined..*A. asteroides*.

Basal segment of flagellum nearly or quite equal in length to segments 2 and 3 combined..4

4. Lateral angles of sternum 6 strongly reflexed...*A. gardineri*



Lateral angles of sternum 6 not reflexed...5

5. Lateral and upper margins of clypeus dark; segments 2-4 of flagellum very short, their combined length not much exceeding the basal segment...*A. krigiana*

Clypeus entirely yellow; at least 4th segment of flagellum fully as long as broad..*A. fulvipennis*

Note depending on the extent of the clypealocular maculation, *A. fulvipennis* comes out twice in the key.

Andrenidae: *Andrena accepta* Viereck (Callandrena)

County Records: Leon

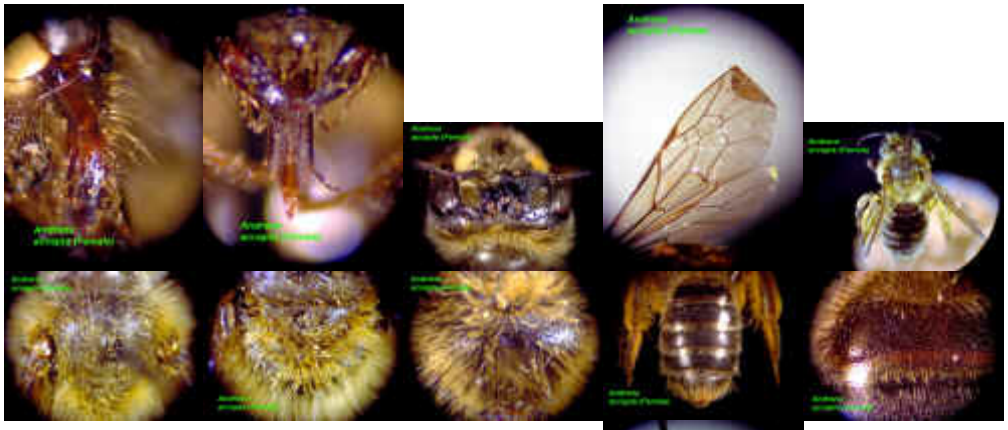
Locations: Tall Timbers Research Station

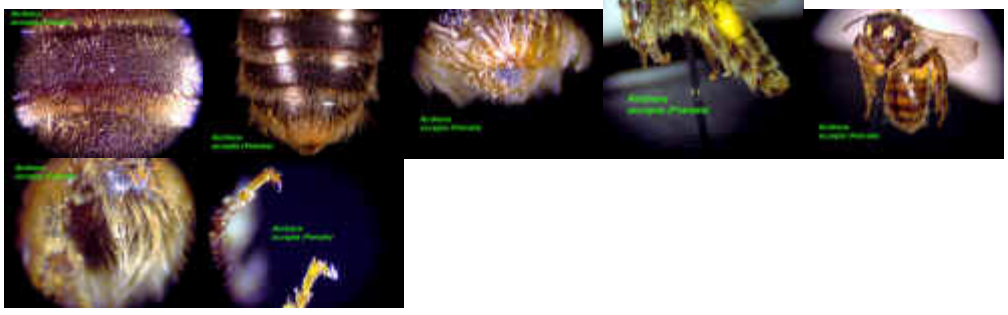
Dates: Oct. 16-Nov. 7.

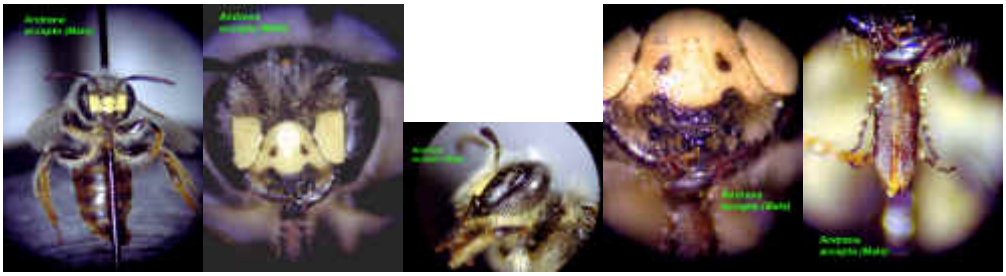
Plant:

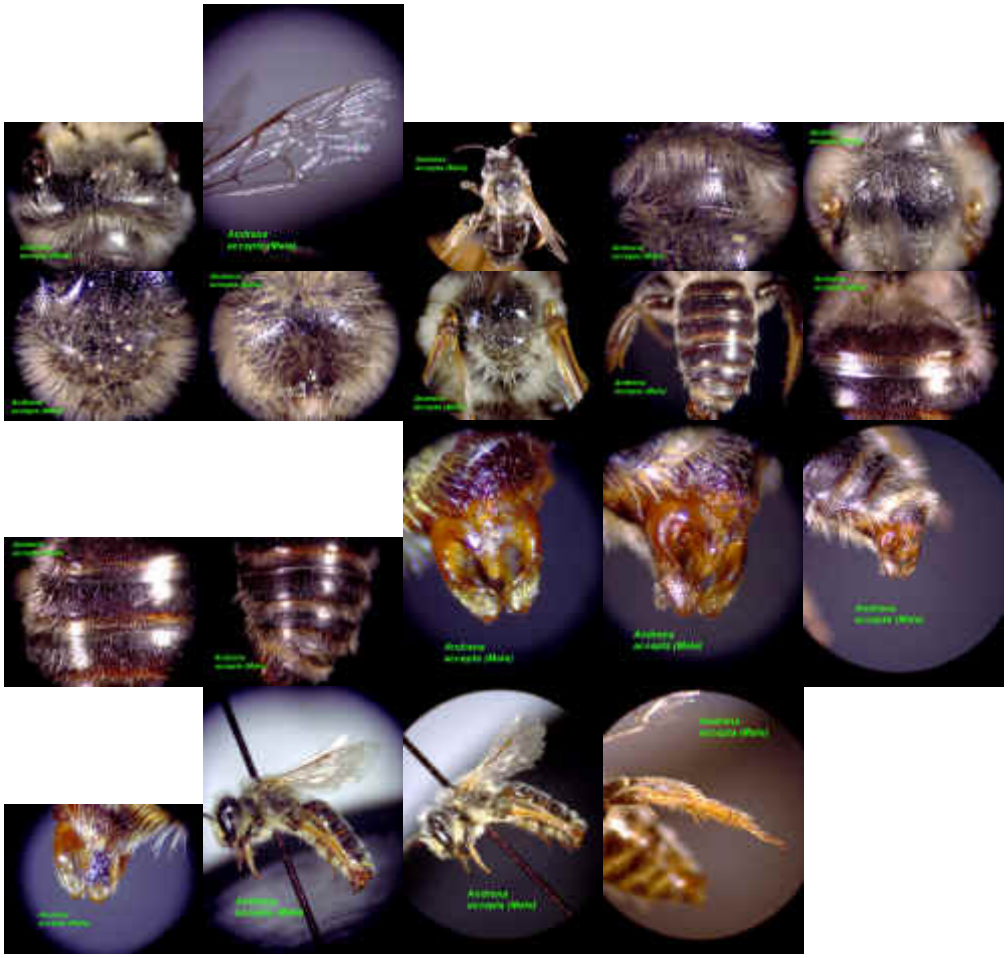
Notes: New state record for Florida, prev. collected in Georgia. This is one of three fall-flying *Callandrena*.

Female:





Male: 



Andrenidae: *Andrena asteroides* Mitchell (Callandrena)

County Records: Found in Thomas Co, GA, may be found in Florida

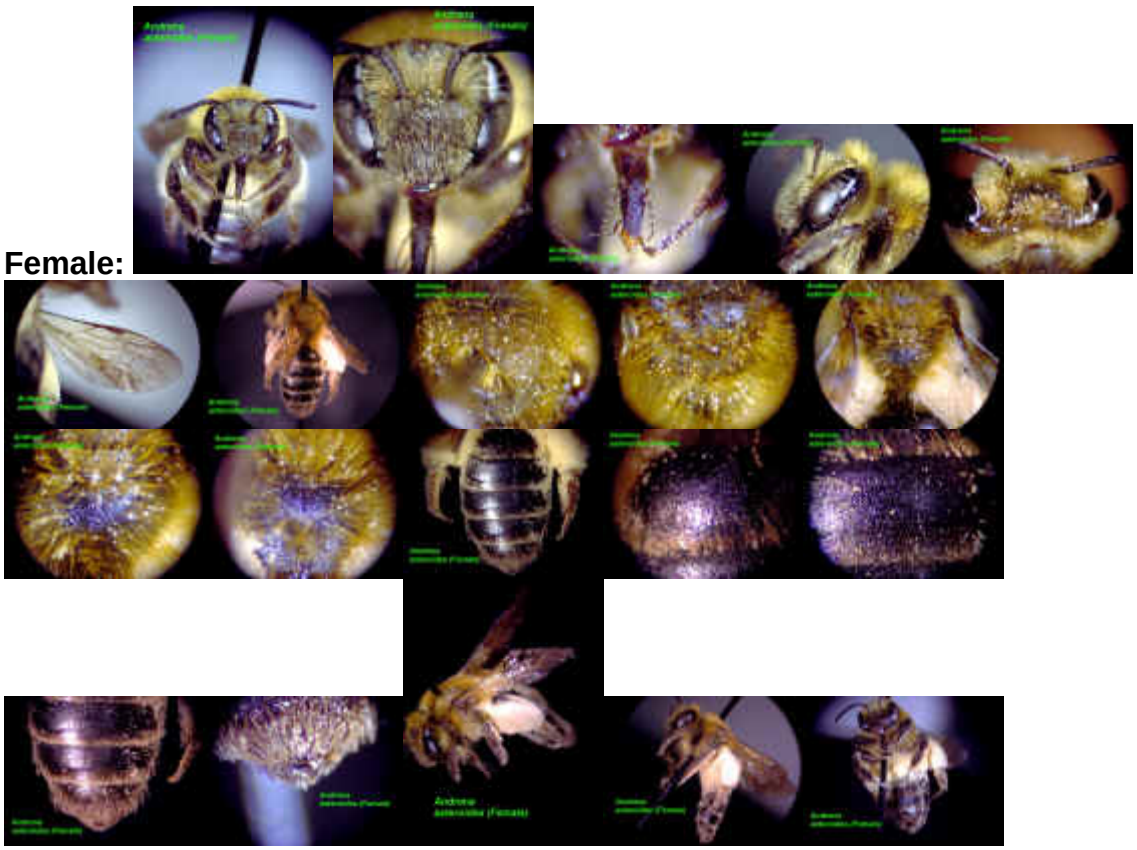
Locations:

Dates: fall flying

Plant: New state record for Georgia

Notes:

Female:



Andrenidae: *Andrena fulvipennis* Smith (Callandrena)

County Records: Alachua, Baker, Bay, Clay, Columbia, Escambia, Gulf, Leon, Marion, Okaloosa, Putnam, Pasco, Santa Rosa, Volusia, Wakulla

Locations: Blackwater River State Forest, Daytona Beach, Destin, Interlachen, St. Andrews State Park, St. Joseph, St. Marks National Wildlife Refuge, Tall Timbers

Dates: Sept. 11-Nov. 5, Sept.:1, Oct: 13, Nov:2

Plant:

Notes:

Female:

Male:

Andrenidae: *Andrena gardineri* Cockerell (Callandrena)

County Records: Jackson, Liberty

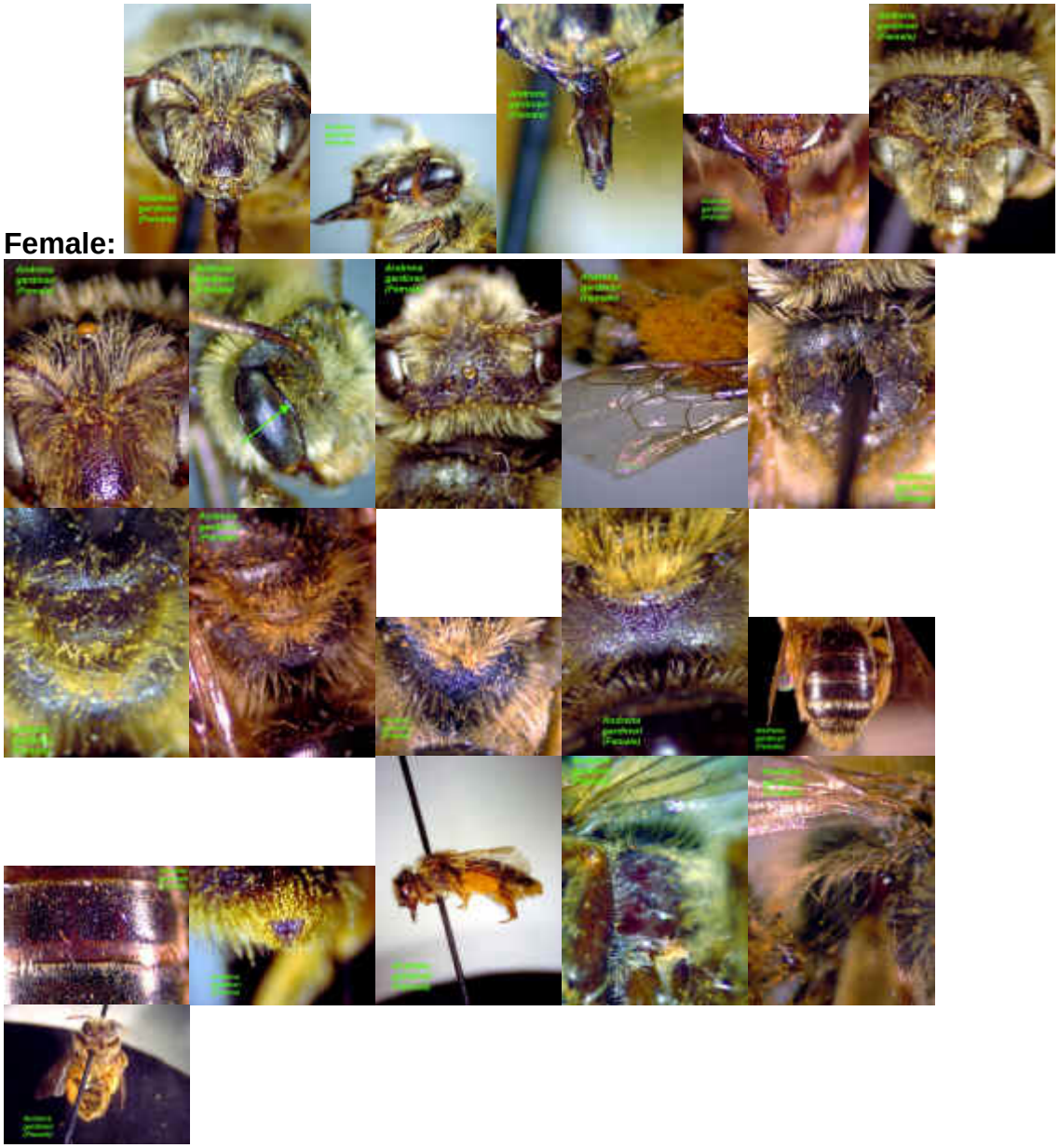
Locations:

Dates: March 19-April 13, March:1, April:1

Plant: *Senecio glabellus* (Specialist on *Senecio*?)

Notes: New state record for Florida, previously collected in Georgia. Spring flying.

Female:



Male:

Andrenidae: *Andrena krigiana* Robertson (Callandrena)

County Records: Alachua, Suwanee

Locations:

Dates: March 20-April 25

Plant:

Notes: New state record for Florida, previously collected in Georgia. This is an early summer species in the southeastern United States.

Female: 

Andrena

Subgenus *Iomellisa* (1 sp.)

Both sexes can be distinguished by the bowed out clypeus, the elongate glossa, galea, and palpi, and the usually distinct humeral angles of the pronotum. The labial palpi are extraordinarily long but the maxillary palpi are elongate proportionally to the elongate galea and glossa. Both sexes have well formed apical pale tergal fasciae (LaBerge 1986).

For more information, see LaBerge, Wallace E. 1986. A revision of the bees of the genus Andrena of the Western Hemisphere. Part XI. Minor subgenera and subgeneric key. Transactions of the American Entomological Society 111: 441-567.

Andrenidae: *Andrena violae* Robertson (Iomelissa)

County Records: Found in Thomas Co, GA, may be found in Florida

Locations:

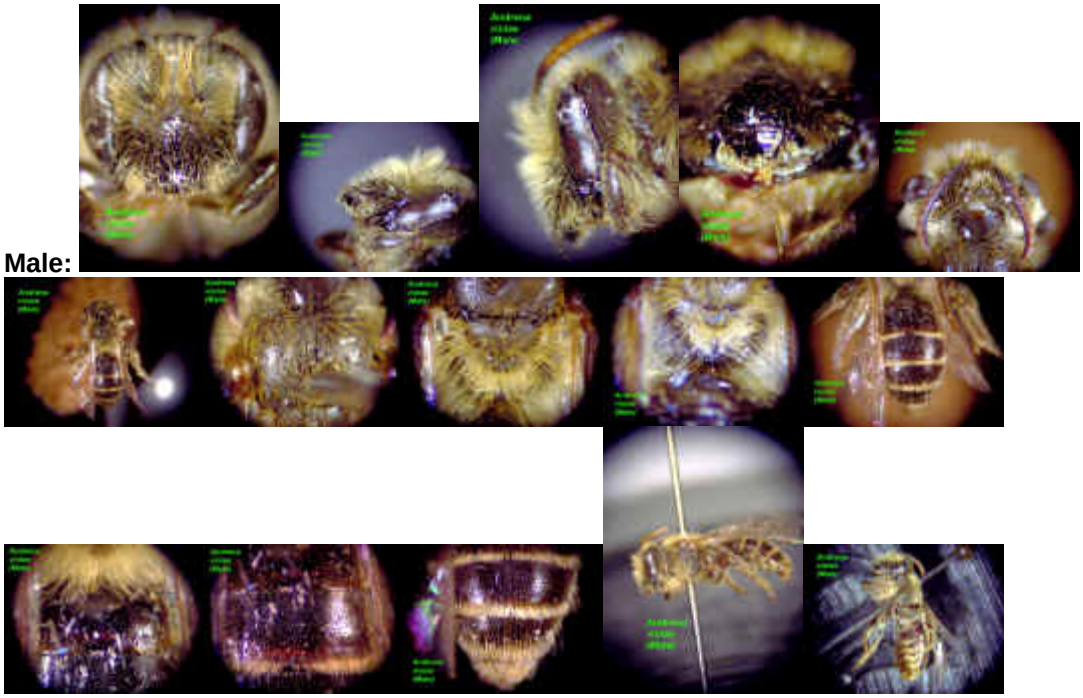
Dates: April and May, primarily

Plant: Oligolege of *Viola*.

Notes: This is a new state record for Georgia. The species may occur in Florida occurring on Violets

Female:

Male:



Andrena

Subgenus *Larandrena* (1 sp.)

Andrenidae: *Andrena miserabilis* Cresson (Larandrena)

County Records: Alachua, Baker, Citrus, Duval, Gadsden, Jackson, Leon, Marion, Okaloosa, Suwanee

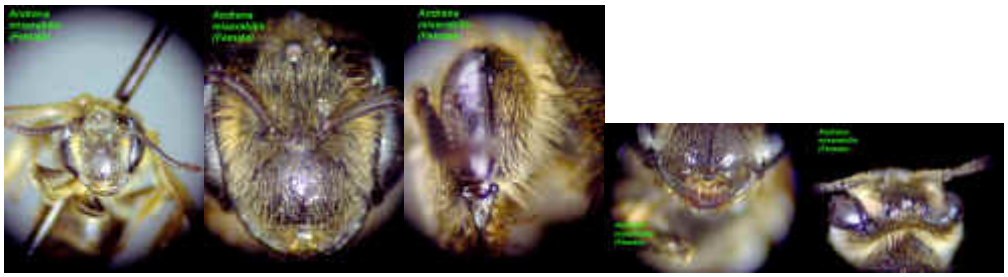
Locations: Archer, Hildreth, Inverness

Dates: Jan. 27-April 14; Jan: 3, Feb: 4, March: 1, April: 4

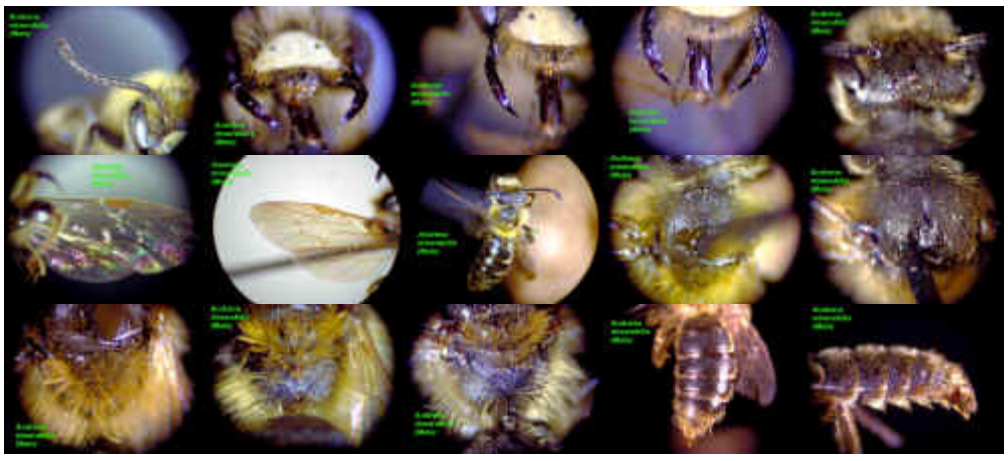
Plant: Polylectic, with a preference for Rosaceae and Salicaceae; *Crataegus*, *Prunus angustifolia*, *Melilotus alba*, *Salix*, *Pyrus*

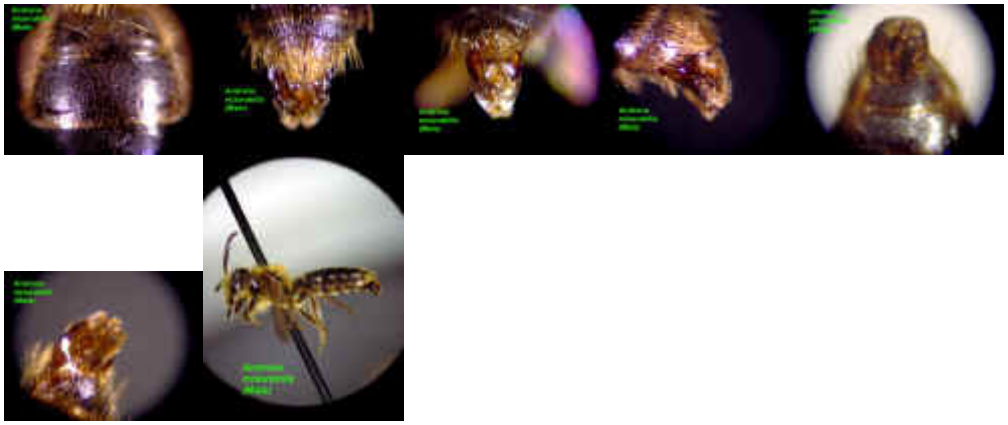
Notes: Ribble considers the subspecies that Mitchell lists (*bipunctata*, *miserabilis*, and *scutellata*) as synonyms of one highly variable species.

Female:



Male:





Andrena

Subgenus *Leucandrena* (1 sp.)

This subgenus is characterized by weak pronotal humeral angles, dorsoventral ridges, short malar space, distinct tergal apical pale fasciae, and dark clypeus. Females have a simple hind tibial scopal hairs and a simple labral process. The one species of *Leucandrena* known from Florida has the pale pubescent fasciae of terga 2-4 broadly interrupted and occasionally absent on tergum 4, narrow hyaline terga apices, and the clypeus lacks a median impunctate line. The notable feature of this species is the posterior hind tibial spur is flexed in the outer third (found in both sexes but sometimes more weakly expressed in the male).

For more information, see LaBerge, Wallace E. 1987. A revision of the bees of the genus Andrena of the Western Hemisphere. Part XII. Subgenera Leucandrena, Ptilandrena, Scoliandrena, and Melandrena. Transactions of the American Entomological Society 112: 191-248.

Andrenidae: *Andrena macra* Mitchell (Leucandrena)

County Records: Alachua

Locations: Gainesville

Dates: April 20-May 16

Plants: Polylectic; *Crataegus*, *Fragaria*, *Lycopersicum*, *Oenothera*, *Pyracantha*, *Rubus*, *Salix*

Notes: LaBerge lists it for Florida based on one specimen. No photos are currently available.

Andrena

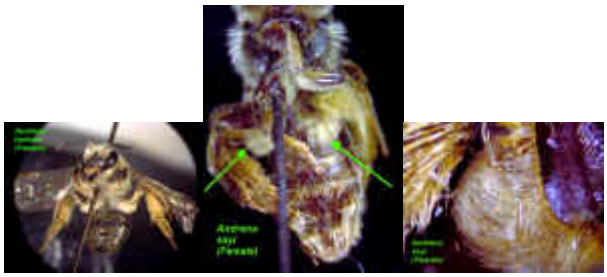
Subgenus *Melandrena* (7 sp.).

Bouseman and LaBerge (1979) state that "Melandrena are large bees with long malar spaces, tall vertices, and wide genal areas. They usually lack tergal pale fasciae (or these are weak and interrupted) and lack male sternal subapical fimbriae (or these are weak and interrupted). The propodeum usually has the area outside of the dorsal enclosure at least moderately roughened by punctures. The female propodeal corbiculum has simple internal hairs and is incomplete anteriorly and the trochanteral floccus may be complete or incomplete basally."

For more information, see revision by J. K. Bouseman and W. E. LaBerge. 1979. A revision of the bees of the genus Andrena of the Western Hemisphere. Part IX. Subgenus Melandrena. Trans. Amer. Ent. Soc. 104: 275-389.

Key to Females (from Bouseman and LaBerge)

1. Hind trochanters with flocculus complete...2



Hind trochanters with flocculus incomplete, basal half or more of flocculus composed of short hairs, usually about half as long as hairs near apex...4

2. Terga 2-4 with weak apical pale fasciae at least laterally; labrum apical of process without median crista..*A. sayi*

Terga 2-4 without trace of pale apical fasciae laterally; labrum with median crista present...3

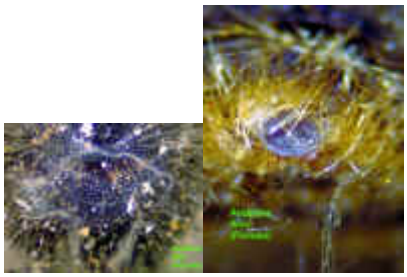
3. Facial fovea narrow, occupying about one-third of space from inner margin compound eye to outer margin antennal fossa..*A. pruni*

Facial fovea broader, occupying at least half of space from inner margin compound eye to outer margin antennal fossa..*A. barbara*

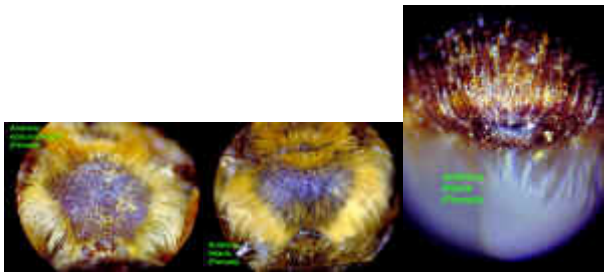
4. Vertex above lateral ocellus equals one ocellar diameter or slightly more...*A. confederata*

Vertex above lateral ocellus equals one and one-half or two ocellar diameters or slightly more..5

5. Propodeum with dorsal enclosure abruptly declivous posteriorly, usually with one to three short transverse rugulae at apex of dorsal area; pygidial plate broadly rounded apically..*A. illini*



Propodeum with dorsal enclosure rounded posteriorly, without transverse rugulae; pygidial plate usually pointed or narrowly rounded apically...6



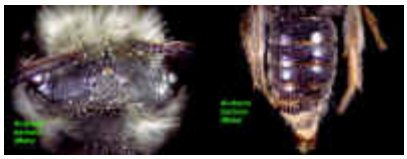
6. Terga 2-4 with weak pale apical fasciae often interrupted medially..*A. hilaris*

Terga 2-4 without pale apical fasciae..*A. obscuripennis*

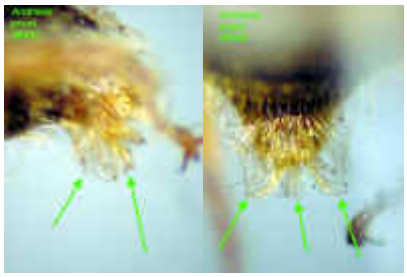
Key to Males

1. Vertex above lateral ocellus equals one ocellar diameter or extremely slightly more; terga dull, evenly shagreened, almost impunctate...*A. confederata*

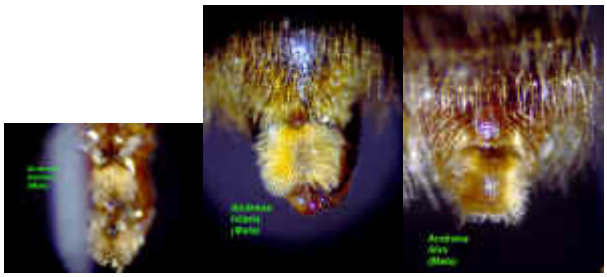
Vertex above lateral ocellus equals one and one-half to two ocellar diameters; terga often punctate and often shiny...2



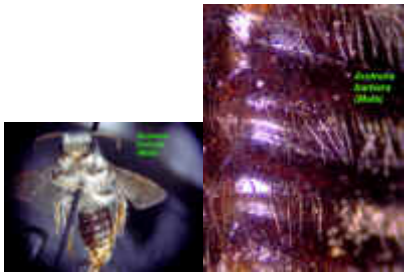
2. Sixth sternum with a tuft of long, plumose, pale hairs hanging downwards, hairs longer than subapical hairs of sternum 5..*A. pruni*



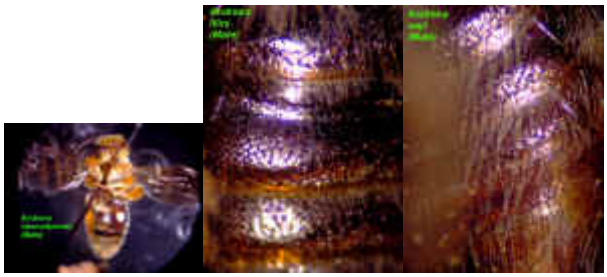
Sixth sternum with hairs short, often depressed, if hanging downwards near tip of sternum, then half as long as subapical hairs of sternum 5...3



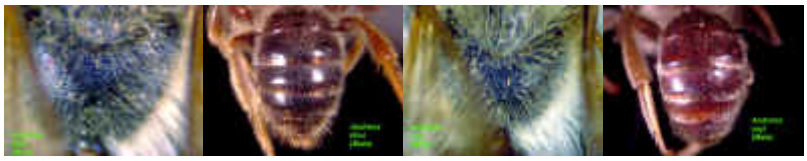
3. Sterna 3-5 with basal areas virtually impunctate, punctures extremely small, obscure, concentrated in a narrow line near base of apical area..*A. barbara*



Sterna 3-5 with basal areas with distinct punctures scattered over most of surface, concentrated near base of apical areas, punctures distinct...4

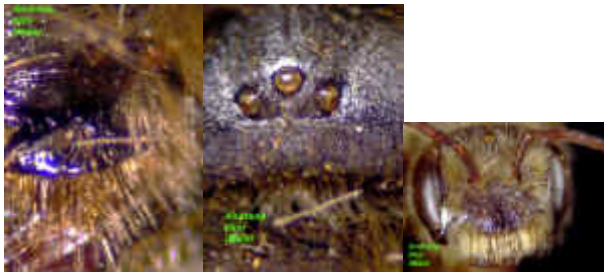


4. Propodeum with dorsal enclosure abruptly declivous posteriorly, with one or more short transverse rugulae separating dorsal from posterior surface; terga 2-5 with weak apical fasciae laterally...5

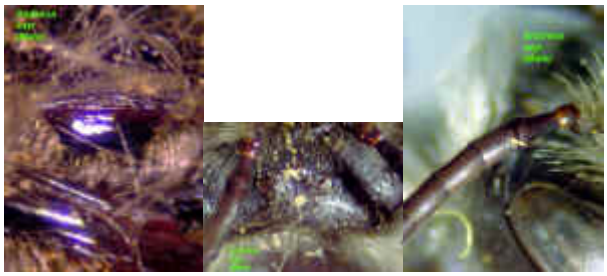


Propodeum with dorsal enclosure evenly rounded posteriorly, without transverse rugulae apically; terga 2-5 often without pale apicolateral fasciae...6

5. Labral process with apical half of less with a row of two to ten distinct punctures; vertex above lateral ocelli equals two to two and one-half ocellar diameters; flagellar segment 1 slightly longer than segment 2...*A. illini*



Labral process without distinct punctures or only one or two present; vertex above lateral ocellus equals slightly less than two ocellar diameters; flagellar segment 1 usually no longer than segment 2 or shorter...*A. sayi*



6. Tarsi and hind tibiae bright red to orange, often legs entirely orange except bases of femora, trochanters, or coxae...*A. obscuripennis*

Tarsi and hind tibiae dark brown to black, at most with distitarsi rufescent..*A. hilaris*

Andrenidae: *Andrena barbara* Bouseman and LaBerge

County Records: Leon

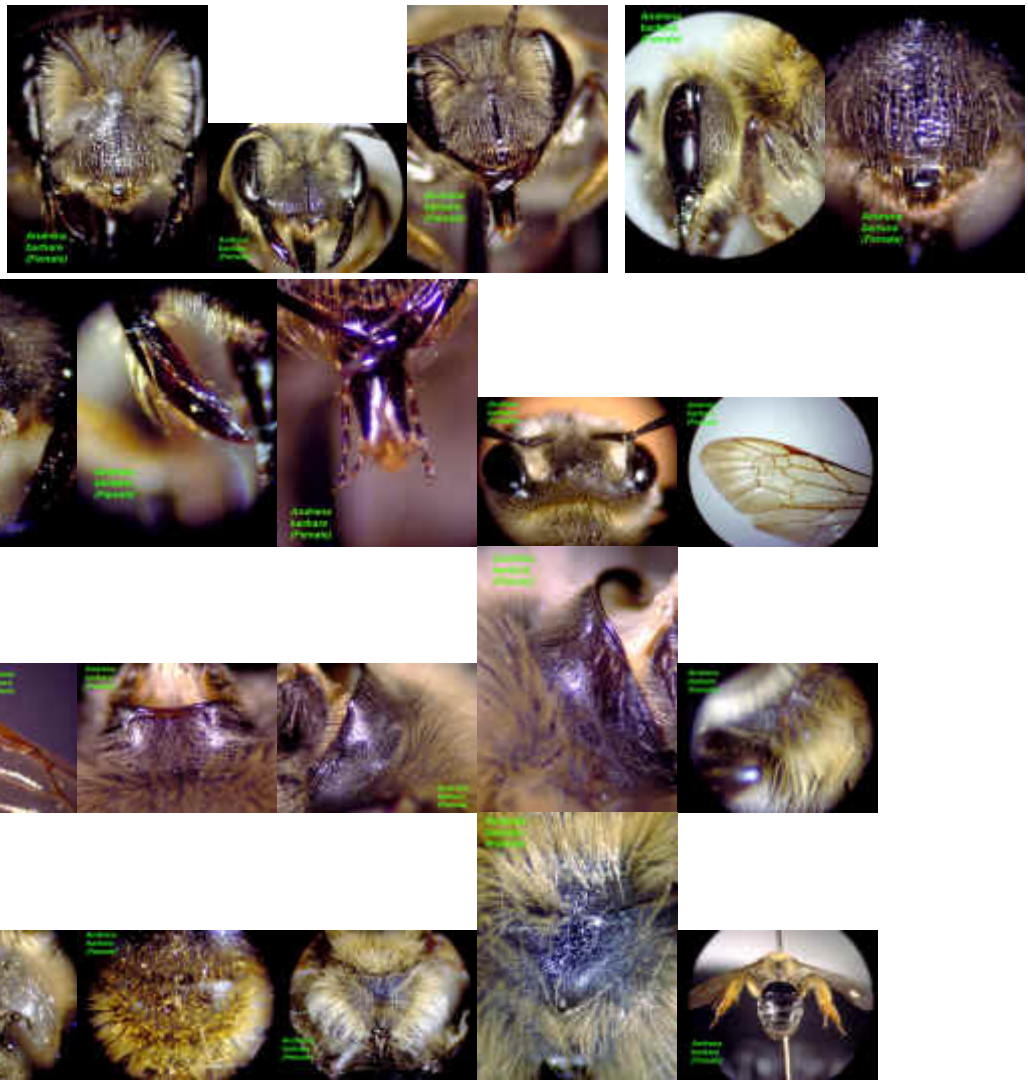
Locations: Known from Tall Timbers Research Station in Leon County. Also collected from Valdosta State University campus and the author's lawn in Valdosta, Georgia. Probably distributed throughout the panhandle. It was not collected during a one year survey of Osceola National Forest and might be limited to higher elevations with sufficient numbers of food plants.

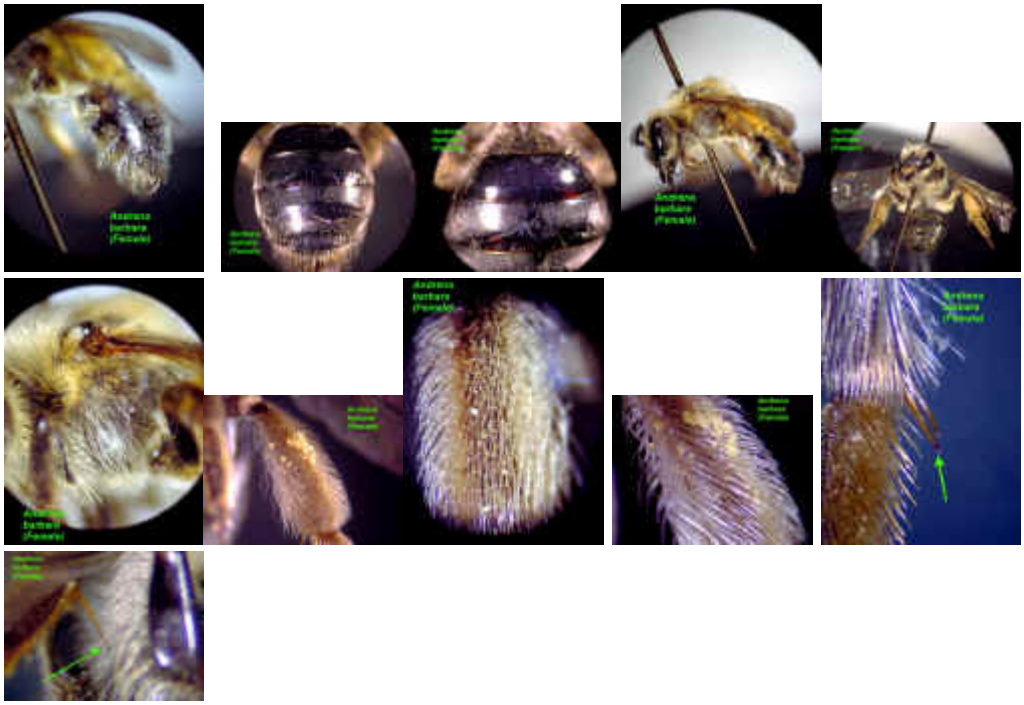
Dates: LaBerge and Bouseman list Feb. 23-May 26 from throughout the range. I have collected it in Valdosta and Leon County Florida from Feb. 27-March 20.

Plant: Polylectic on Rosaceae (*Prunus*, *Crataegus*, *Pyrus*), Salicaceae.

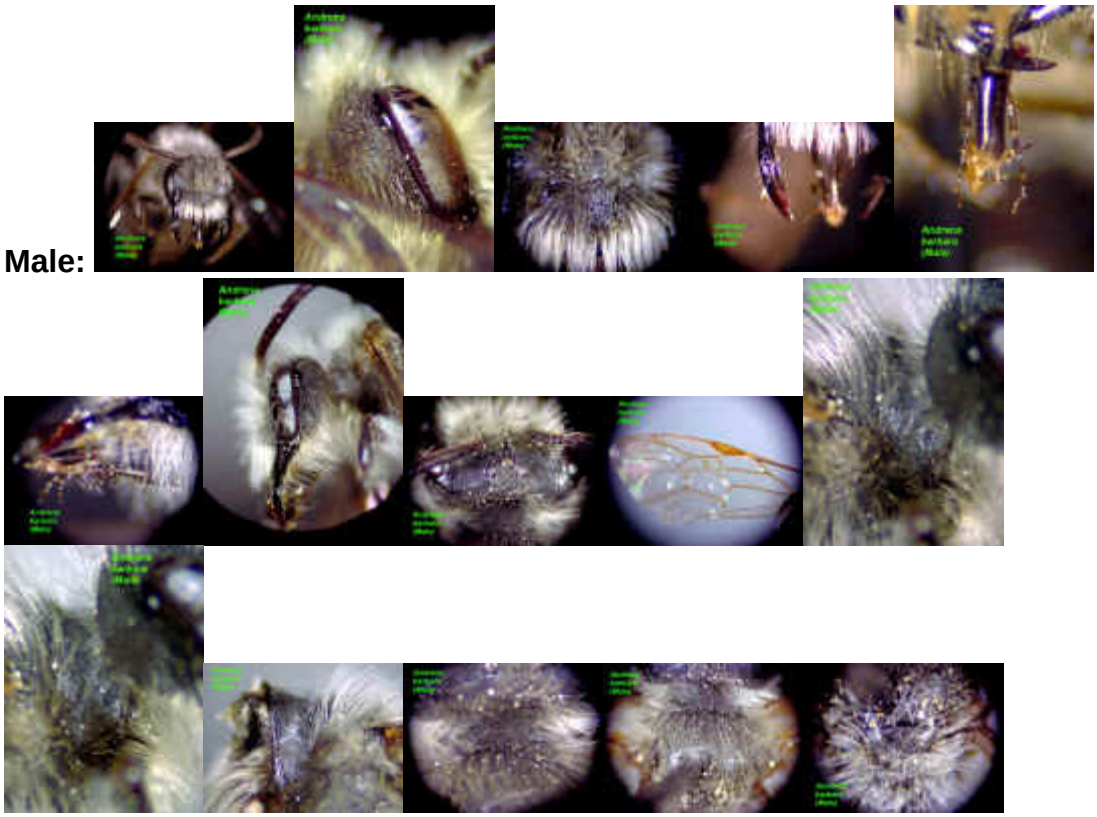
Notes: New State record for Florida. Previously collected in Georgia, Alabama, and Mississippi. This species was confused as *A. viburnella* Graenicher by Mitchell and with *A. perplexa* Brimley. This is a large bee common throughout the southeast. The female can be distinguished by the pale scopal hairs, cristate labrum, trapezoidal labral process and distinctly punctate terga. The male has densely and coarsely punctate terga and pale vestiture. This bee nests in lawns and forms large communal nesting areas in the early spring.

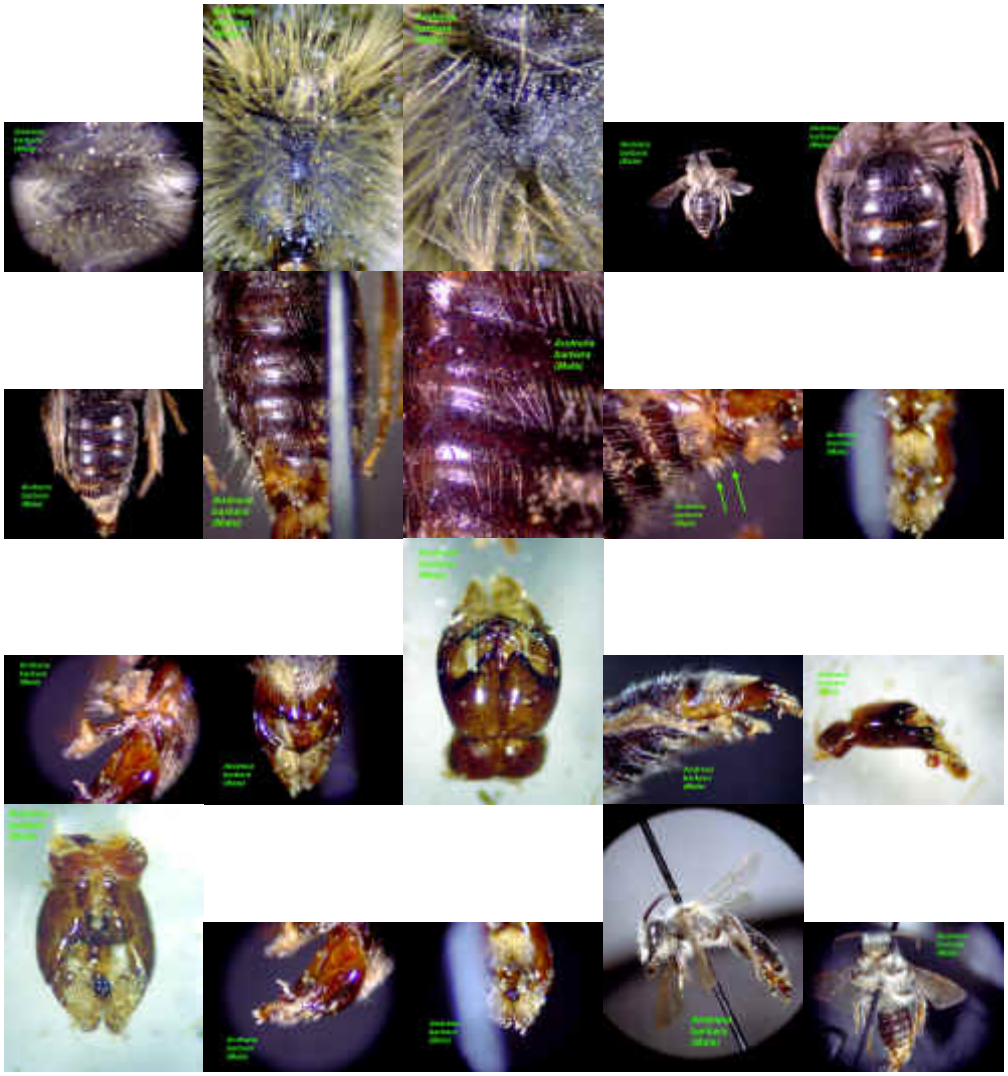
Female:





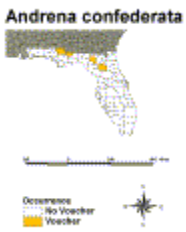
Male:





Andrenidae: *Andrena confederata* Viereck (Melandrena)

County Records: Alachua, Gadsden, Jackson, Suwannee; also found in Thomas and Lowndes Counties, GA.



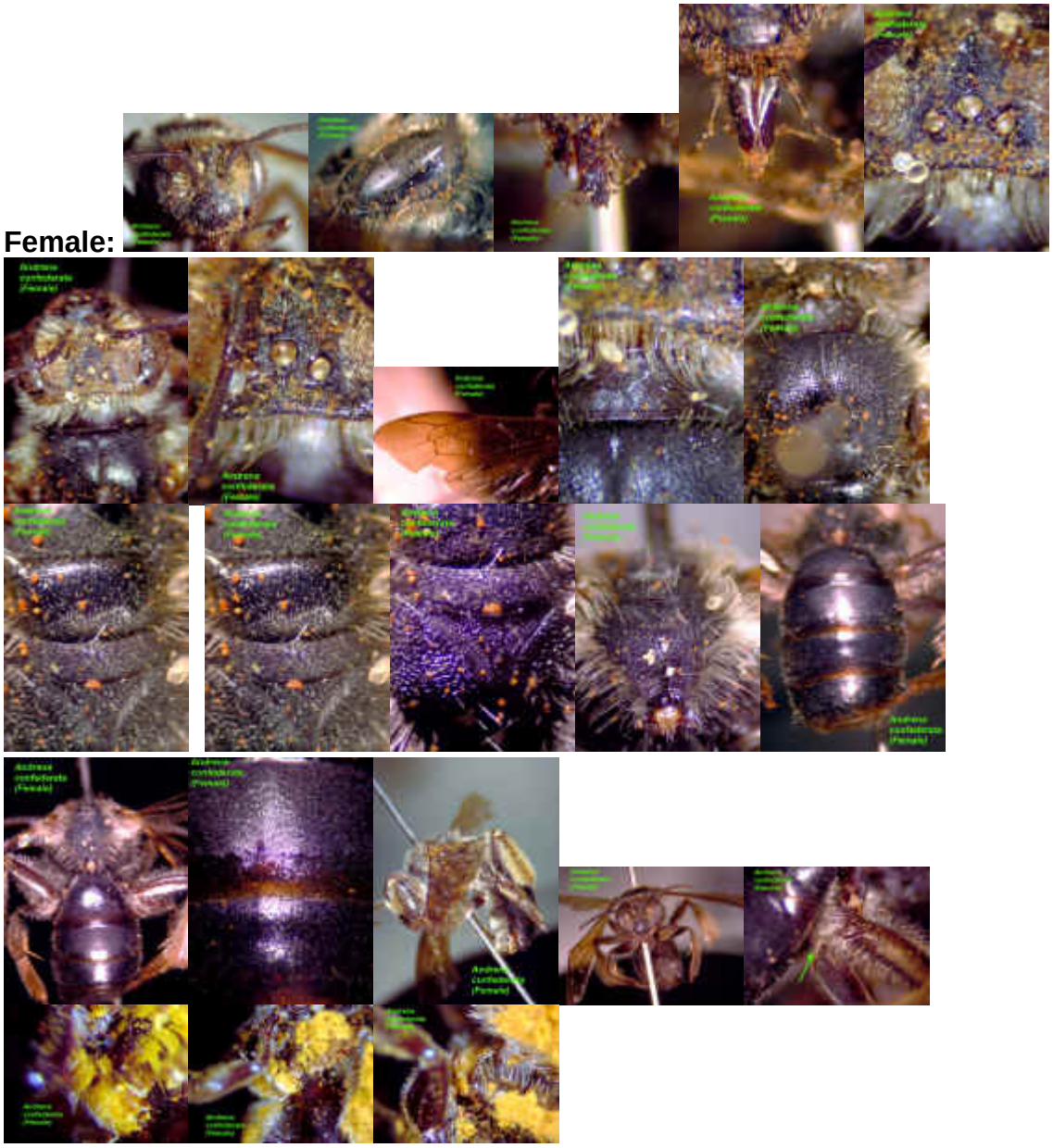
Locations: Gainesville, Hildreth

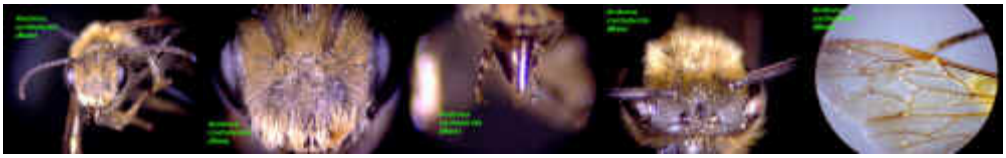
Dates: March 22-April 14; March:2, April: 3; Bouseman and LaBerge list Feb-June across the entire range

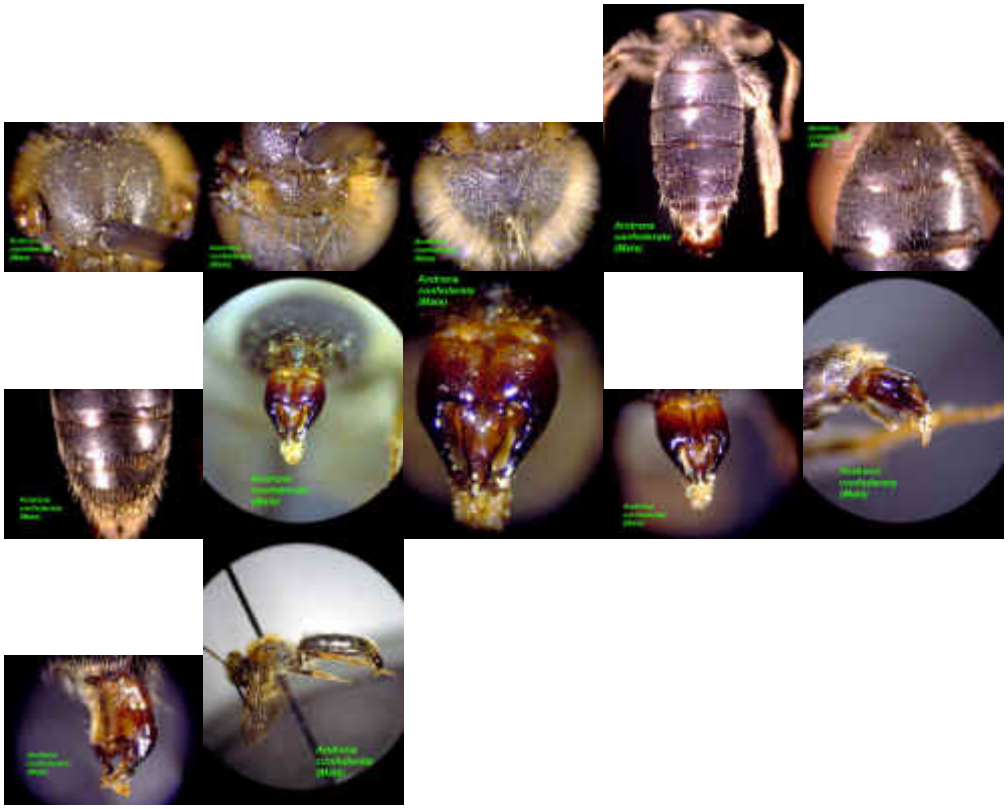
Plant: Polylectic; *Crataegus*

Notes: This is a medium sized slender species distinguished from all other North American Melandrena by the short vertex in both sexes. It is believed to be a primitive species of the Melandrena. Probably occurs throughout the panhandle and into the northern peninsula.

Female:



Male: 



Andrenidae: *Andrena hilaris* Smith (Melandrena)

County Records: Okaloosa Co., FL (also found in Thomas Co, GA)

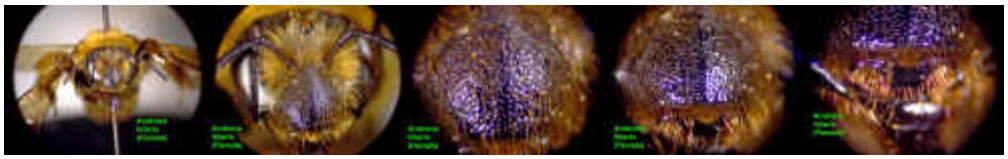
Locations: Blackwater River State Forest

Dates: March 10-April 11 (from my collections in Thomas County and the single specimen from Okaloosa County). LaBerge and Bouseman list March 12-July 5 across the entire range, with most specimens taken in April through early June.

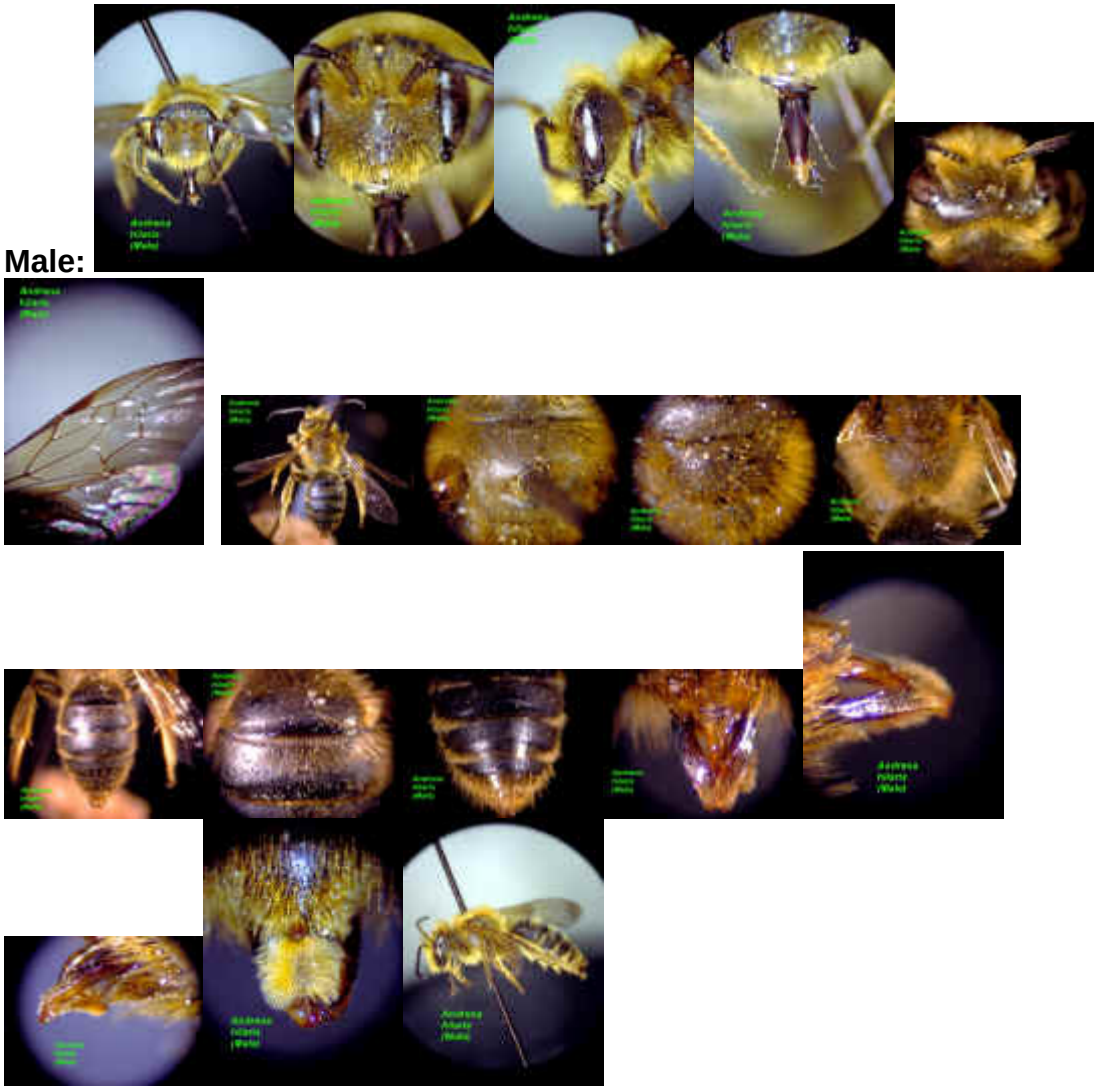
Plant: Polylectic, many species.

Notes: Relatively rare bee in collections, new state record for Florida. Previously known from many locations in Georgia. Probably found throughout the Florida panhandle. It resembles pale specimens of *A. nivalis*, a species not found in Florida. Both sexes have short lateral pale pubescent fasciae on terga 2-4. Females have pale scopal hairs, the labral process lacking both crista and transverse sulcus, incomplete trochanteral floccus, and sparsely punctate and shiny scutellum. Males have a sparsely punctate and shiny scutellum. Both sexes have the galea blade shiny to moderately shiny in the basal half or more.

Female:



Male:



Andrenidae: *Andrena illini* Bouseman and LaBerge (Melandrena)

County Records: Gadsden County (listed in Bouseman and LaBerge)

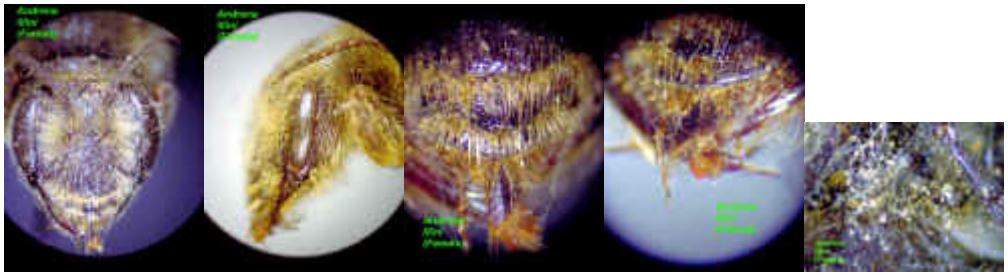
Locations:

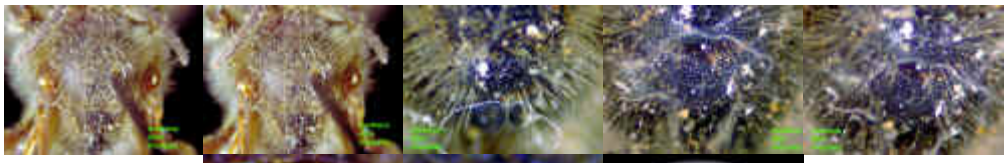
Dates: March 13-June 2 (LaBerge and Bouseman); mostly in April and May across the entire range.

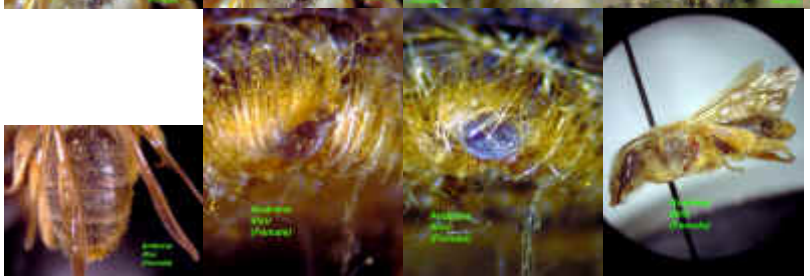
Plant: Polylectic, many species.

Notes: Not found in FSCA collections. Apparently local and rare. Probably limited to the eastern panhandle of Florida. Often confused with *Andrena sayi*, including in Mitchell. This is a large species that has a incomplete trochanteral floccus, unlike *A. sayi* that has a complete floccus. Males resemble *A. pruni* except for the long tuft of hairs on sternum 6. Females also resemble A. hilaris but lack the tergal bands and the rugulose dorsal propodeum. Males have a distinctive punctate apical margin of the labral process.

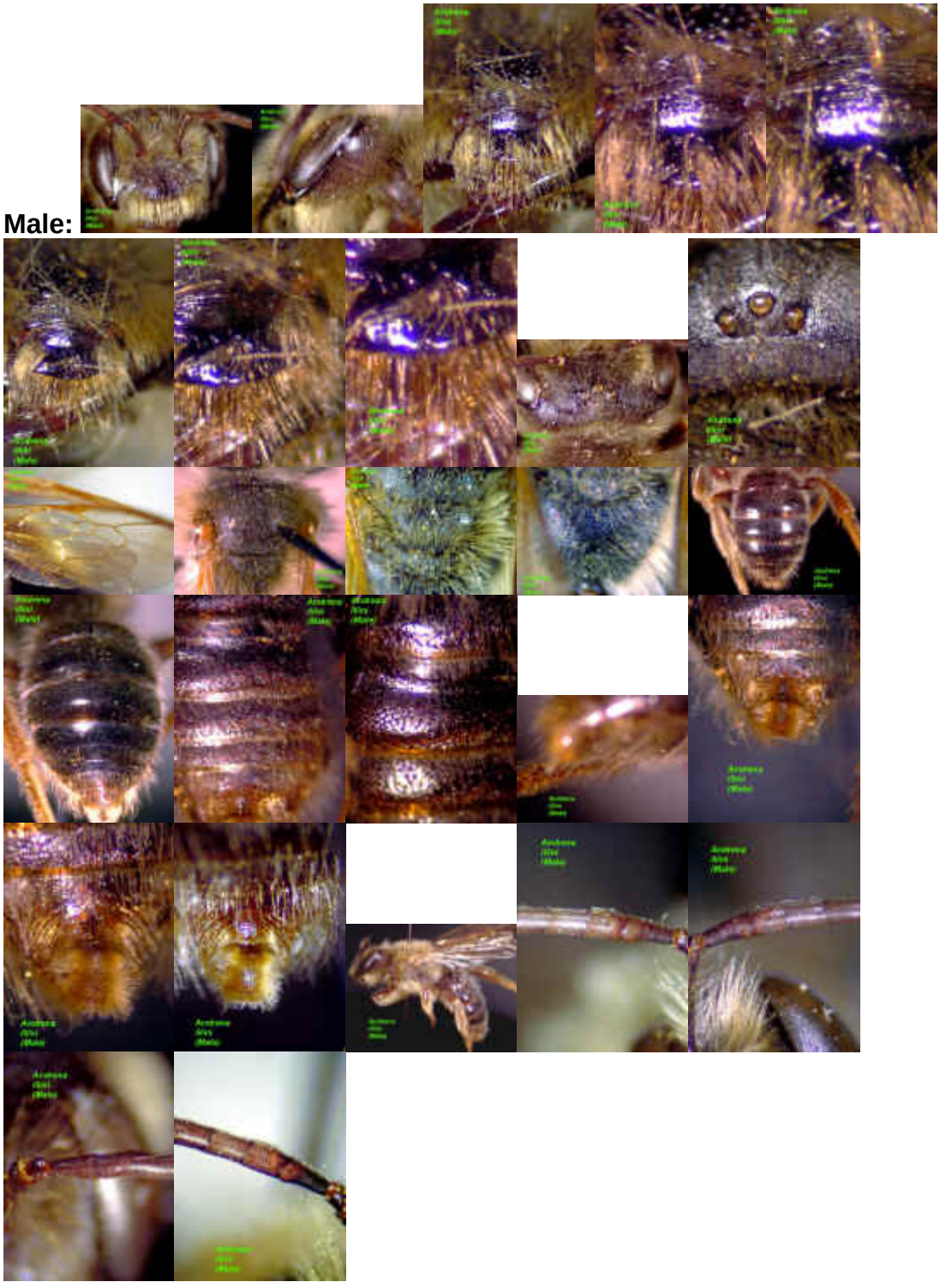
Female:







Male:



Andrenidae: *Andrena obscuripennis* Smith (Melandrena)

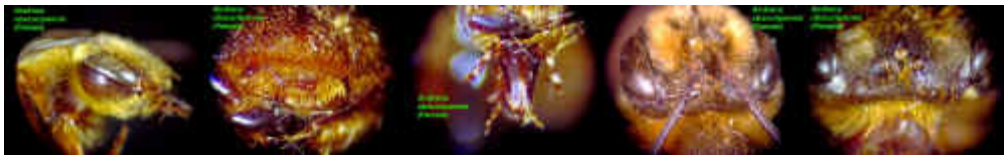
County Records: Alachua

Locations:

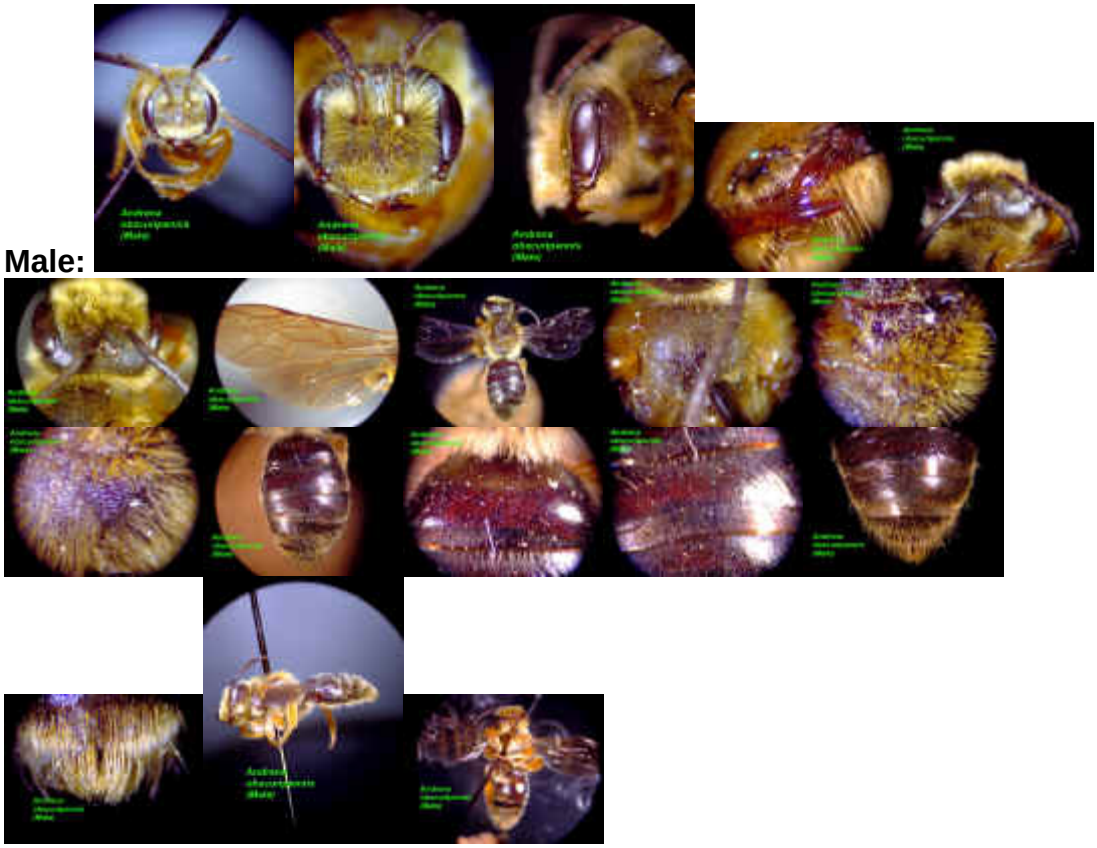
Dates: March 9-April 3, March :2, April:1; Bouseman and LaBerge list April and May for entire range of species

Plant: *Crataegus*; Bouseman and LaBerge also list *Ilex* and *Batodendron* (*Vaccinium arboreum*)

Notes: New state record for Florida. This species is a species of the coastal plain apparently. It was previously known only from North Carolina. It is a large dark-winged southeastern species related to A. dolomella (known from Texas and Louisiana). The two may be the same species as they are closely related. It is quite distinctive in coloration from the other members of the Melandrena in Florida.

Female: 

Male:



Andrenidae: *Andrena pruni* Robertson (Melandrena)

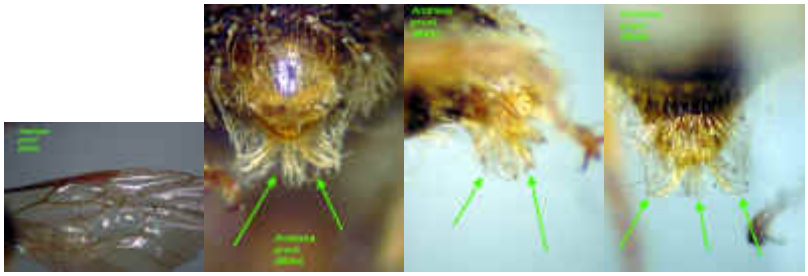
County Records: Leon

Locations: Tall Timbers Research Station

Dates: March 3; Flight dates in literature are April 12-June 28th but these are for northern populations.

Plant: Polylectic according to LaBerge and Bouseman.

Notes: New state record for Florida. The map in LaBerge and Bouseman show the southern limit to be North Carolina with a possible extension into the N. GA mountains. It is rare in collections. Females resemble *A. carlini* which does not occur in Florida. It has very narrow facial fovea that are distinctive. Males are unique in the large tuft of plumose hairs that hang down on the sixth sternum (see photos below). It is possible that this may be an isolated population, persisting in the eastern panhandle region of Florida. No photos of the female are currently available.

Male: 

Andrenidae: *Andrena sayi* Robertson (Melandrena)

County Records: Gadsden

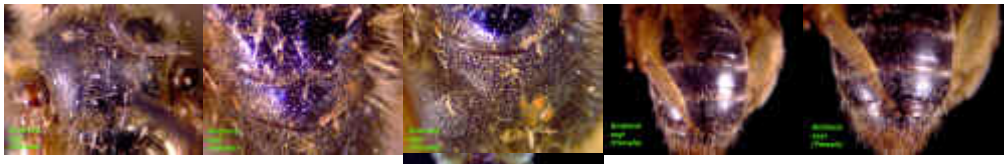
Locations:

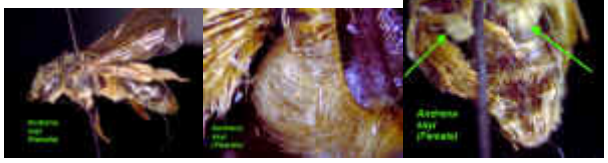
Dates: March 17 in Gadsden. LaBerge and Bouseman report March 2-June 20 across the entire range including many northern locations.

Plant: Data is sparse but appears polylectic; *Prunus angustifolia.*

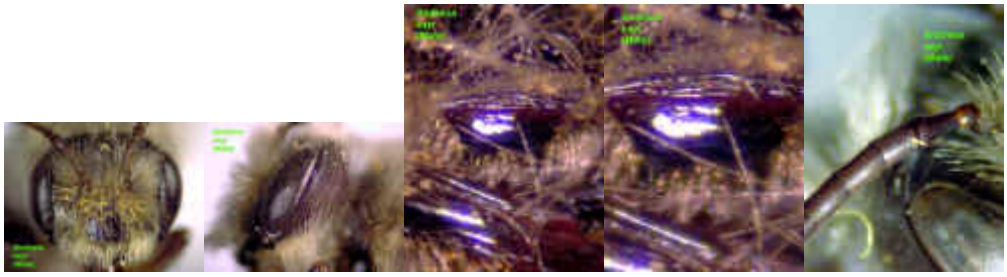
Notes: New state record for Florida; previous southern collection was in River Bend, Dougherty County, GA, located to the north of Gadsden County, FL. This is a large conspicuous bee that is rare in collections. It can be distinguished in both sexes by the distinct but interrupted pale tergal bands and the abruptly declivous propodeal dorsal enclosure. The female lacks the labral median crista and the male has a relatively weak beard. It is probably limited to the eastern panhandle region of Florida.

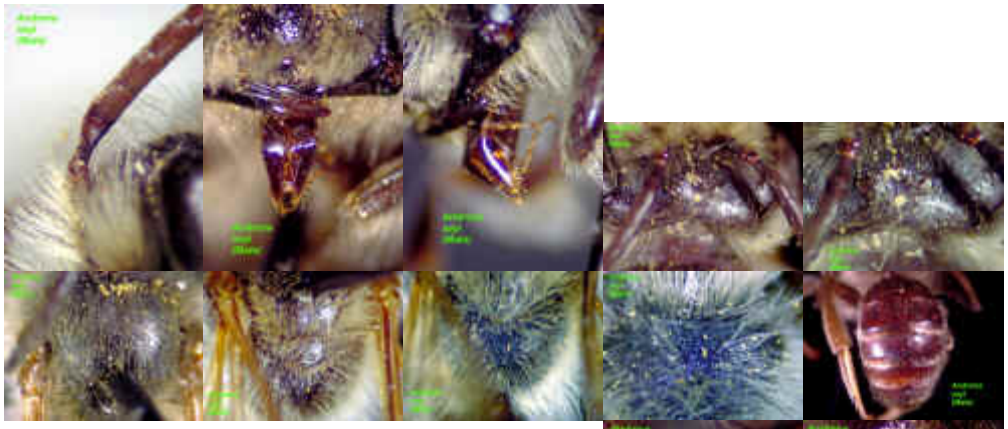
Female:

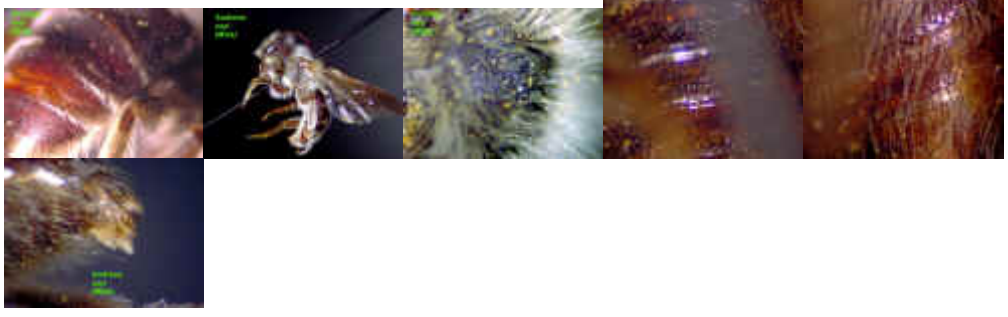




Male:







Andrena

Subgenus *Micrandrena* (3 sp.)

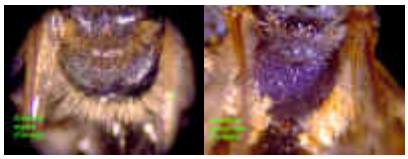
The subgenus Micrandrena is mostly characterized by the small size of its members. All three species reported for Florida are the smallest of the genus. They usually have enlarged pterostigmata and often with broadened hind tibiae in the females. The ocelli are often close to the posterior margin of the vertex.

For more information, see Ribble, D.W. 1968. Revisions of two subgenera of Andrena: Micrandrena Ashmead and Deandrena, a new subgenus. Bulletin of the University of Nebraska State Museum 8: 237-394.

Key to females

1. Dorsal surface of propodeum with strong rugae over entire surface ..*A. neonana*

Dorsal enclosure of propodeum without strong rugae, rugalae may be present on anterior portion of enclosure…2



2. Hind tibiae much broadened, with short hairs on outer surface….*A. personata*

Hind tibiae slender, not widened, scopal hairs long, anterior hairs curving posteriorly, hairs greatly overlapping…*A. nigrae*

Key to males

1. Dorsal surface of propodeum with strong rugae over entire surface. .*A. neonana*

   Dorsal enclosure of propodeum without strong rugae, rugalae may be present on anterior portion of enclosure…2

2. Clypeus yellow (or cream-colored) or partly so…*A. personata*

   Clypeus dark, without light maculation…*A. nigrae*

Andrenidae: *Andrena neonana* Viereck (Micrandrena)

County Records: Baker, Columbia, Jefferson, also found in Thomas Co., GA. *A. neonana* is only known from these Northern counties; it may extend further south but no records are at hand.

Locations: Lamont, Glen St. Mary

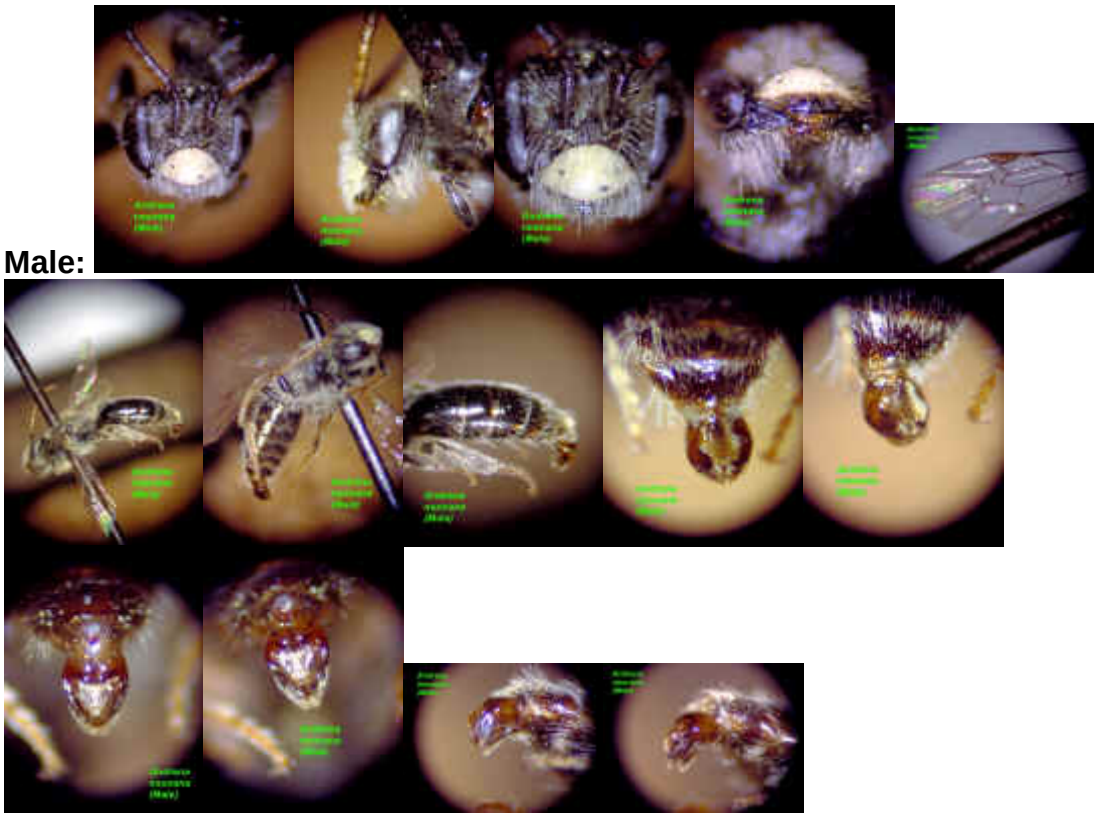
Dates: March 16-April 9, March :1, April:2; Ribble lists April 5-May 27 from across the entire range.

Plant: *Prunus serotina*, *Ilex*, *Malus*

Notes: This species resembles *A. personata* but has coarser rugae on the dorsal enclosure of the propodeum. The entire propodeum is coarsely rugose and the posterior and lateral surfaces are separated by a carina. The female hind tibia is narrow, not broad. Male has a yellow clypeus and dull antennae.

Female:

Male:



Andrenidae: *Andrena nigrae* Robertson (Micrandrena)

County Records: Jefferson (Ribble); also found in Lowndes and Thomas Counties, GA. Collected from only one county in Florida; likely more widespread in Northern Counties.

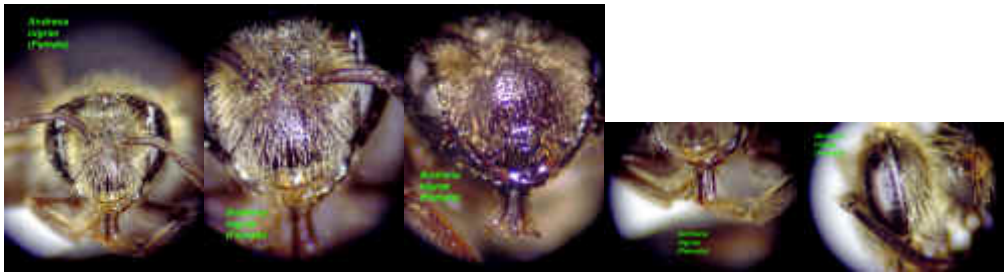
Locations: Lamont, FL

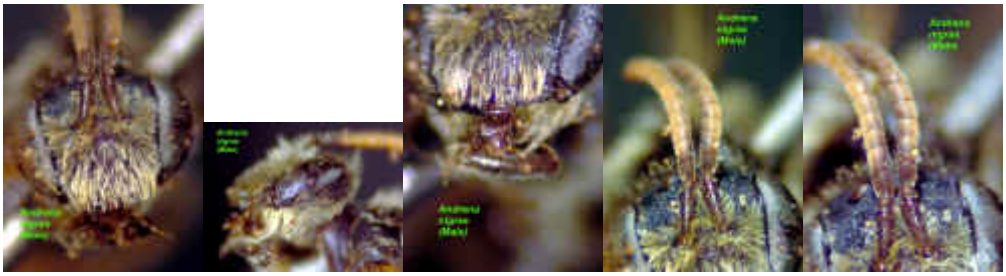
Dates: Primarily April and May

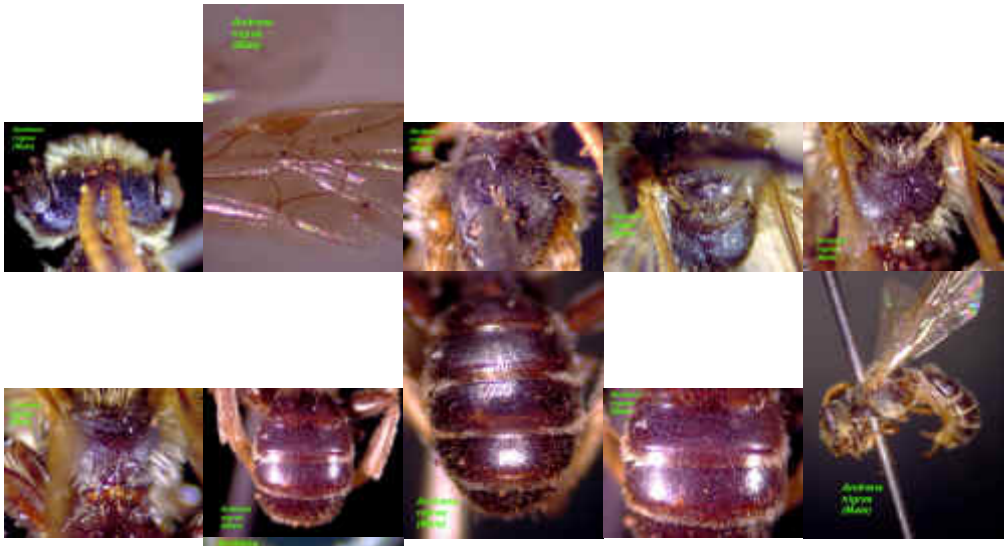
Plant: Mostly collected on *Salix* but also Rosaceae and Brassicaceae

Notes: Often confused with *A. illinoiensis*; Males may be distinguished from *A. illinoiensis* by lacking the distinct tuft of hair on sternum 6. Females have weak apical abdominal tergal fasciae on terga 2-4. Band on tergum 3 is interrupted medially. Some females have red abdomens. Mitchell's description is incorrect.

Female:



Male: 



Andrenidae: *Andrena personata* Robertson (Micrandrena)

County Records: Sumter

Locations: Webster

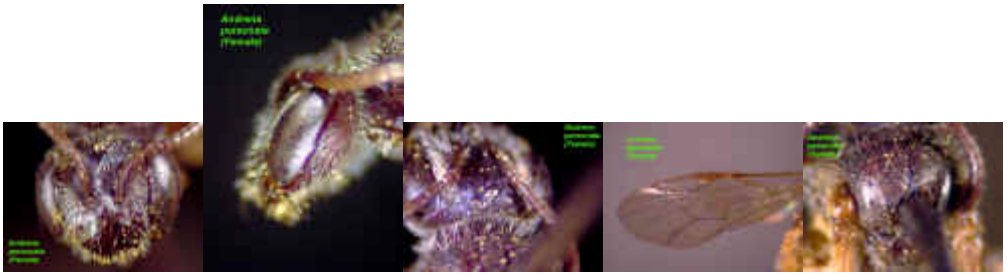
Dates: June 25; Ribble lists most collections from April and May

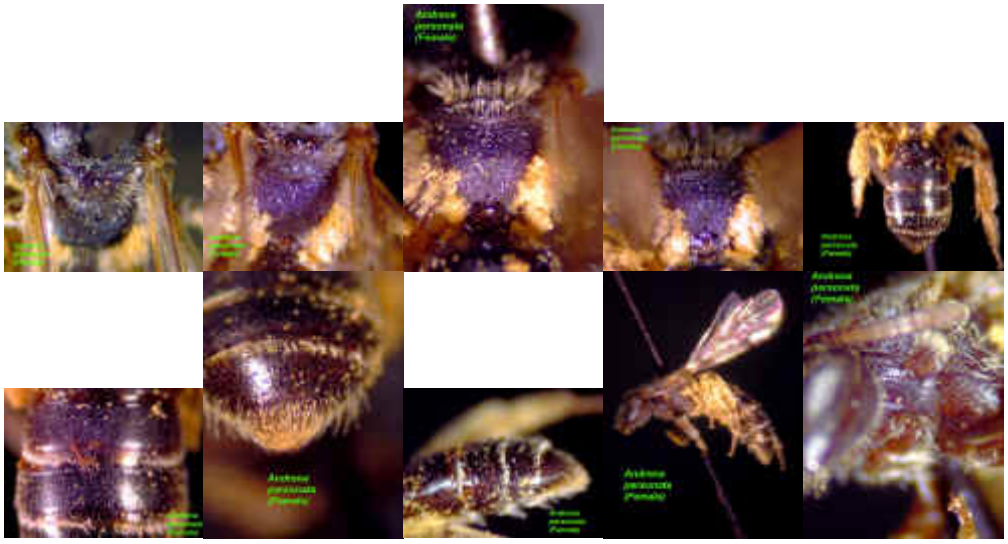
Plant: Polylectic, often on *Crataegus* and Rosaceae, *Rubus*, Salicaceae, Hydrophyllaceae, and Umbelliferae.

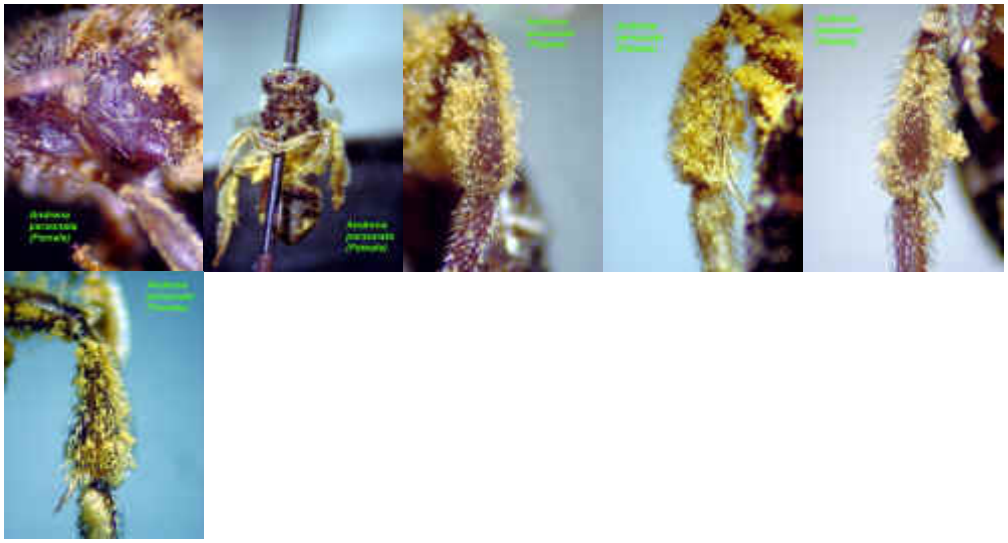
Notes: New state record for Florida, previously known from Georgia. This single location has a number of unusual species that have unusual summer collection dates. These should be viewed with some suspicion. As the id of this species has not been confirmed, this could be a misidentification of *A. neonana* or *A. nigrae*.

Ribble states that *A. personata* can be separated from related species by the following: non-metallic reflections of integument; females have narrow facial fovea which are not widened dorsally, hind tibia is broad with short corbicular hairs, hairs overlap only slightly, hairs do not orientate in the same direction, short plumose hairs on scutum. Males have yellow clypeus, yellow parocular areas, and long shiny antennae with first flagellar segment much shorter than others.

Female:







Male:

Andrena

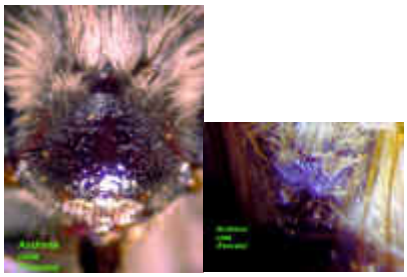
Subgenus *Parandrena* (2 sp.).

This subgenus is closely related to the subgenus Larandrena. Both species are early vernal oligoleges of willow. Members of this subgenus have two, not three, submarginal cells, the female labrum is transversely sulcate, and the male sixth sternum is reflexed with apicolateral teeth.

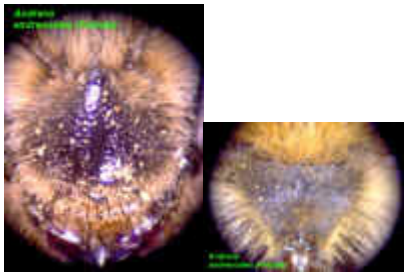
For more information, see W. E. LaBerge and D. W. Ribble, 1972, A revision of the bees of the genus Andrena of the Western Hemisphere. Part V. Gonandrena, Geissandrena, Parandrena, Pelicandrena. Trans. Amer. Ent. Soc. 98: 271-358.

Key to Females (from Mitchell)

Clypeus more sparsely punctate; propodeal triangle subrugose..*A. nida*

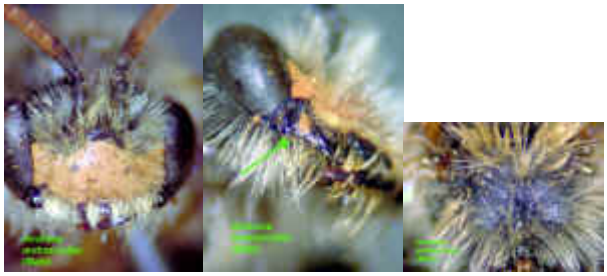


Clypeus more closely punctate, with at most a narrow submedian impunctate line; propodeal triangle smooth...*A. andrenoides andrenoides*

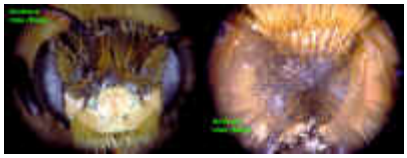


Key to Males (from Mitchell)

Face with large yellow maculae between clypeus and eye, reaching slightly above upper margin of clypeus; mandibles with a small, basal, yellow maculation; propodeal triangle smooth..*A. andrenoides andrenoides*



Lateral facial maculae small; not extending above margin of clypeus; mandibles not maculated; propodeal triangle subrugose...*A. nida*.



Andrenidae: *Andrena andrenoides* Cresson (Parandrena)

County Records: Found in Lowndes Co, GA; LaBerge lists it from Jefferson and Miami-Dade (?) counties

Locations: Lamont, Miami?

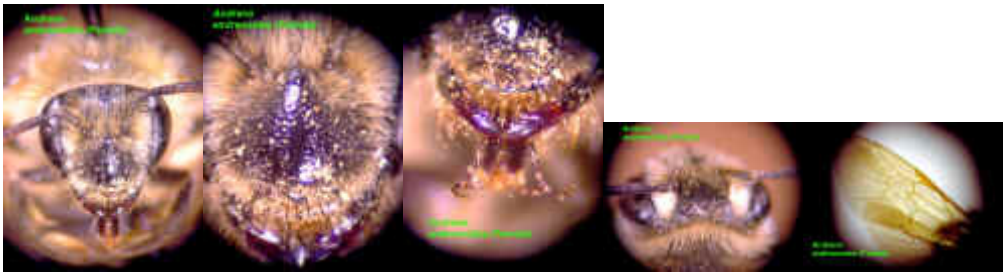
Dates: LaBerge lists from March 18-July 3 across entire range; chiefly in April and May

Plant: Oligolege of Willows

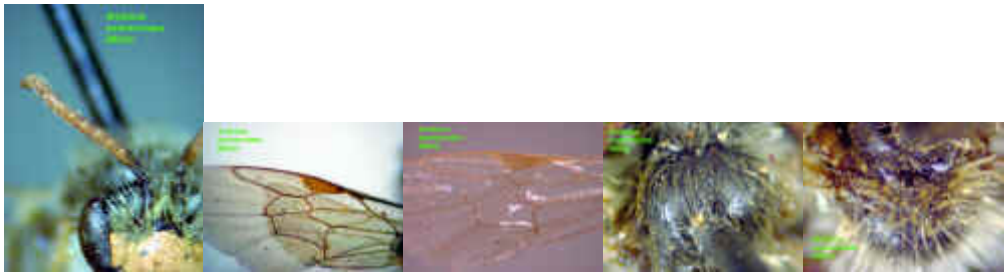
Notes: This species includes the two subspecies (*andrenoides* and *clarigastra*) listed by Mitchell. The record from Miami is suspect. This may be a mislabeling. No other Andrenid bee occurs this far south in Florida. No *Andrena* species were collected by Pascarella et al. (2000) during an intensive survey of Everglades National Park in 1996-1997, including extensive sampling on willows. Pearson, who sent the specimen to LaBerge, worked at the University of Miami and this is likely the source of the error in the literature.

This is a widely distributed species that usually has a red terga in the female (however all of the specimens from the southeast including Florida have a completely black terga!), the reflexed sixth sternum of the male is not bent forward laterally, and the large male parocular yellow maculae has sinuous posterior border, a high vertex, and a shiny propodeum.

Female:



Male:



Andrenidae: *Andrena nida* Mitchell (Parandrena)

County Records: Gadsden, Also found in Thomas Co, GA.

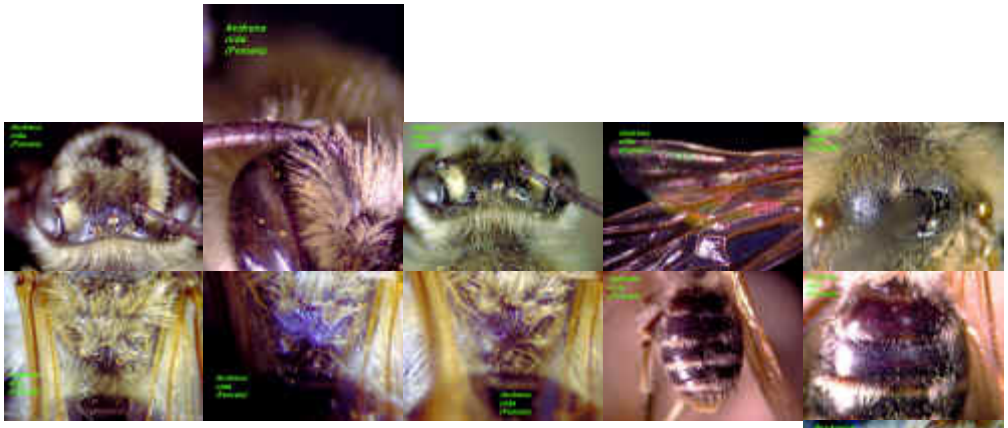
Locations:

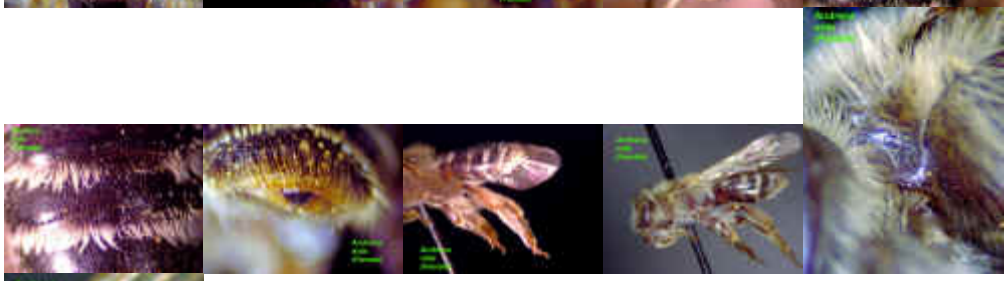
Dates: March 11; LaBerge lists March 10-May 4

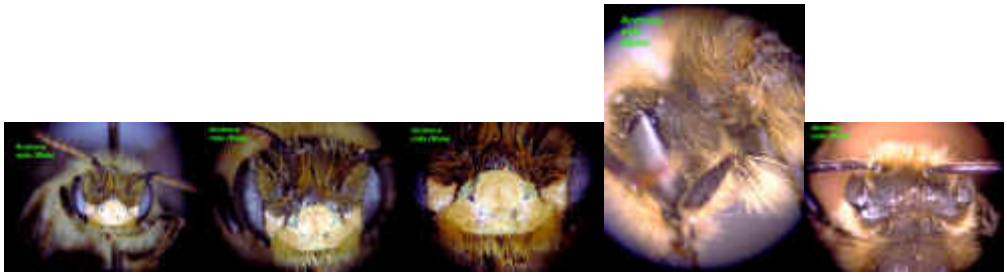
Plant: *Prunus angustifolia*; probably oligolege of willow, collected on other plants, mostly Rosaceae and *Viola*.

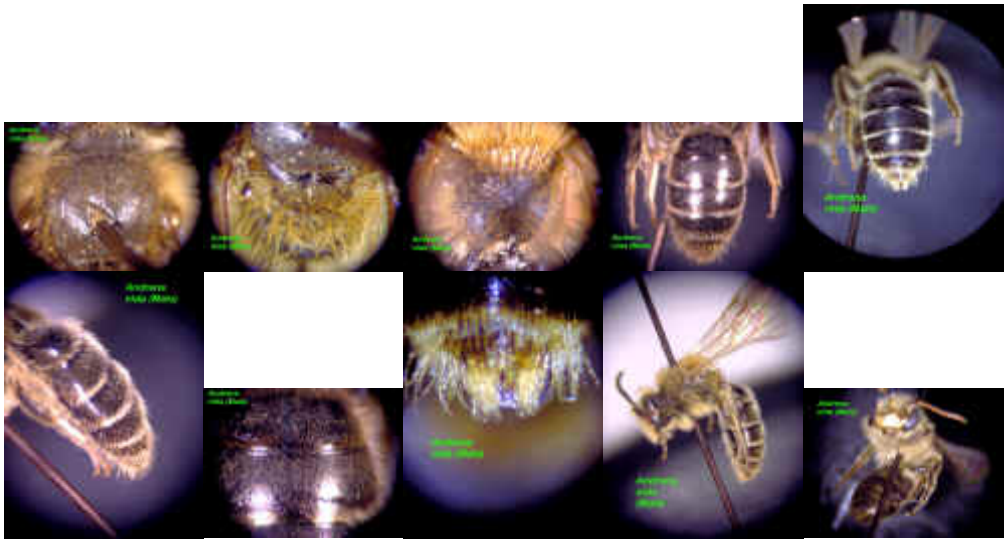
Notes: New state record for Florida. Previously collected in Georgia. Closely related to *A. andrenoides*. LaBerge and Ribble (1972) state it was collected in a sandy area. This is a smaller Eastern species closely related to *A. andrenoides.* Both sexes differ from *A. andrenoides* in the shorter vertex, the more coarsely sculptured dorsal enclosure of the propodeum and the duller integument of the scutum and tergum. The male lacks the basal mandibular yellow macula present in *A. andrenoides* and has the first flagellar segment shorter in relation to the second segment.

Female:





Male: 



Andrena

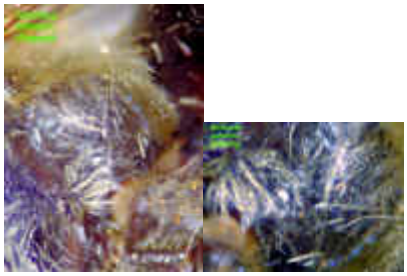
Subgenus *Scrapteropsis* (6 sp.).

This genus has the dorsal enclosure of the propodeum more or less coarsely rugulate. The terga have short apical areas; usually about 1/3 in the females in terga 2; shorter in males. Males typically have very short antennae; the sixth sternum is often reflexed apically. The genus Trachandrena is closely related but has a transverse ruga cutting off the posterior margin of the dorsal enclosure, facial fovea that are strongly constricted in the lower half or third in females, and the apical areas are greater than 1/2 in terga 2 in females.

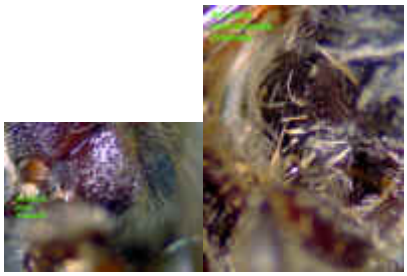
For more information, see W. E. LaBerge. 1971. A revision of the bees of the genus Andrena. Part IV. Scrapteropsis, Xiphandrena, and Rhaphandrena. Trans. Amer. Ent. Soc. 97: 441-520.

Key to Females (From LaBerge)

1. Propodeal corbicula with internal hairs plumose at least in part and with anterior fringe of moderately long, plumose hairs...*A. imitatrix*



Propodeal corbicula with internal hairs simple, anterior margin without plumose hairs..2

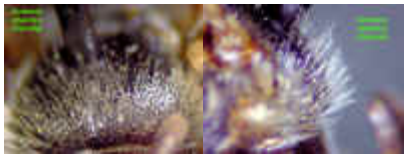


2. Hind femur ventrally with one or two longitudinal ridges or carinae or middle femur with anterior surface strongly concave and ventral margin sharp...3

Hind femur without longitudinal ridge or carinae ventrally; middle femur with anterior surface flat or only gently concave, ventral margin moderately sharp...4

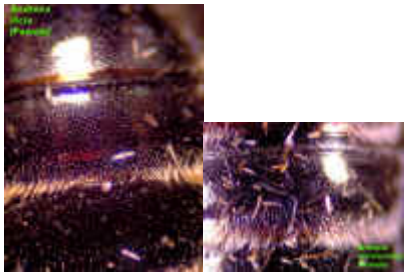
3. Thoracic dorsum with hairs short, thick, scalelike...*A. alleghaniensis*

Thoracic dorsum with hairs long, pointed, loosely plumose, not at all scalelike...*A. atlantica*



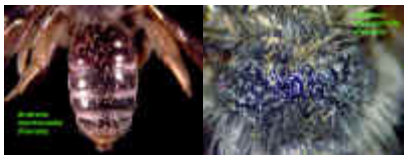
4. Metasomal terga 2-4 with basal area punctures crowded, separated by less than one puncture width, apical area punctates irregular, separated mostly by one to two puncture widths, often restricted to basal half or slightly more of each apical area at least medially..*A. fenningeri*

Metasomal terga 2-4 with basal area punctures not usually so crowded, apical area punctures at least as crowded as basal area or more so, not contrasting as in above...5



5. Terga 2-4 with dense apical pale pubescent fasciae but usually interrupted medially; propodeum outside of dorsal enclosure coarsely rugatulopunctate..*A. ilicis*

Terga 2-4 without pale fasciae or these weak; propodeum outside of dorsal enclosure finely to moderately coarsely punctatorugose...*A. morrisonella*



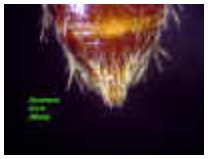
Key to Males (From LaBerge)

1. Hind tibia swollen just below middle so that tibia broader just below middle than at apex..*A. imitatrix*

Hind tibia not swollen just below middle, broadest at apex..2

2. Sternum 6 with apical margin reflexed...3

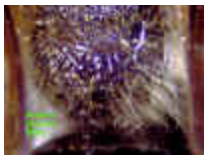
Sternum 6 flat, apical margin not reflexed...5



3. Minimum length first flagellar segment as long as second or longer; sternum 2 with apical area equal to at least two-fifths of median length of sternum...4

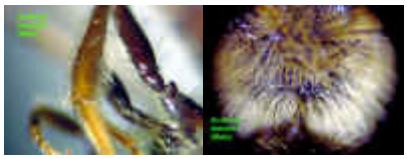
Minimum length first flagellar segment distinctly shorter than second; sternum 2 with apical area short, usually equal to one-forth of median sternal length or less...*A. fenningeri*

4. Propodeum outside of dorsal enclosure coarsely to moderately coarsely punctatorugose; ranges along coast from N. Jersey to Florida, west to state of Mississippi..*A. atlantica*



Propodeum outside of dorsal enclosure moderately coarsely to finely punctatorugose; more interior range..*A. alleghaniensis*

5. Hind tibia swollen below middle; propodeum outside of dorsal enclosure finely puctatorugose..*A. imitatrix*



Hind tibiae not swollen below middle; propodeum outside of dorsal enclosure coarsely punctatorugose..*A. ilicis*

No males of *A. morrisonella* are known.

Species Group Allaghaniensis (2 sp.)

Andrenidae: *Andrena alleghaniensis* (Scrapteropsis)

County Records: Leon

Locations:

Dates: March 18

Plant:

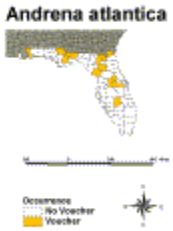
Notes: New State record for Florida. Previously collected in North Georgia Mountains. This could be a misidentification of *Andrena atlantica*, as both are in the same species group. The map in LaBerge strongly suggests that *A. atlantica i*s distributed along the coastal plain and *A. alleghaniensis* is an interior species. If it does occur in Florida, it may be a remnant disjunct

population and is probably limited to the eastern panhandle. No photos are currently available at this time.

This primarily northern species has long apical areas in tergum 2 and 3; tergum 2 has apical area at 2/5 length; females have short scalelike scutum hairs; two irregular ridges on the hind femur; male has the sixth sternum reflexed apically.

Andrenidae: *Andrena atlantica* Mitchell (Scrapteropsis)

County Records: Alachua, Baker, Columbia, Escambia, Gadsden, Highlands, Jackson, Lake, Leon, Levy, Liberty, Nassau, Orange



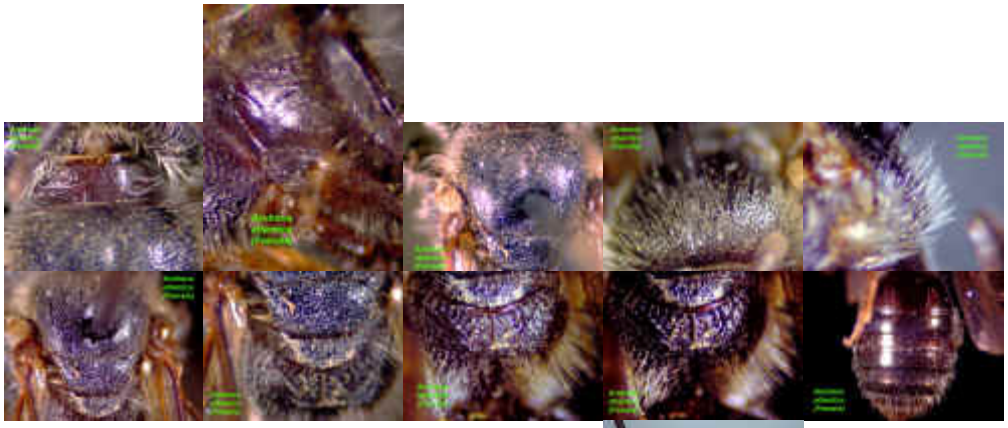
Locations: Gainesville, Highlands Hammock, Orlando, Pensacola

Dates: March 16-May 11; elsewhere mid April to mid May.

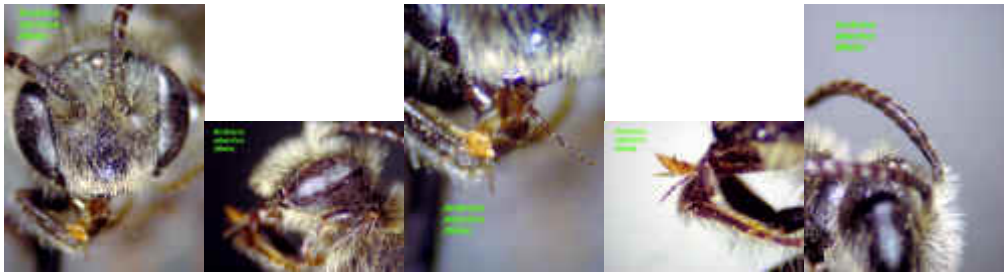
Plant: *Erigeron quercifolius*, *Ilex cassine*, *Nyssa sylvatica*, *Melilotus alba;* elsewhere polylectic with preference for *Ilex* and *Rubus*.

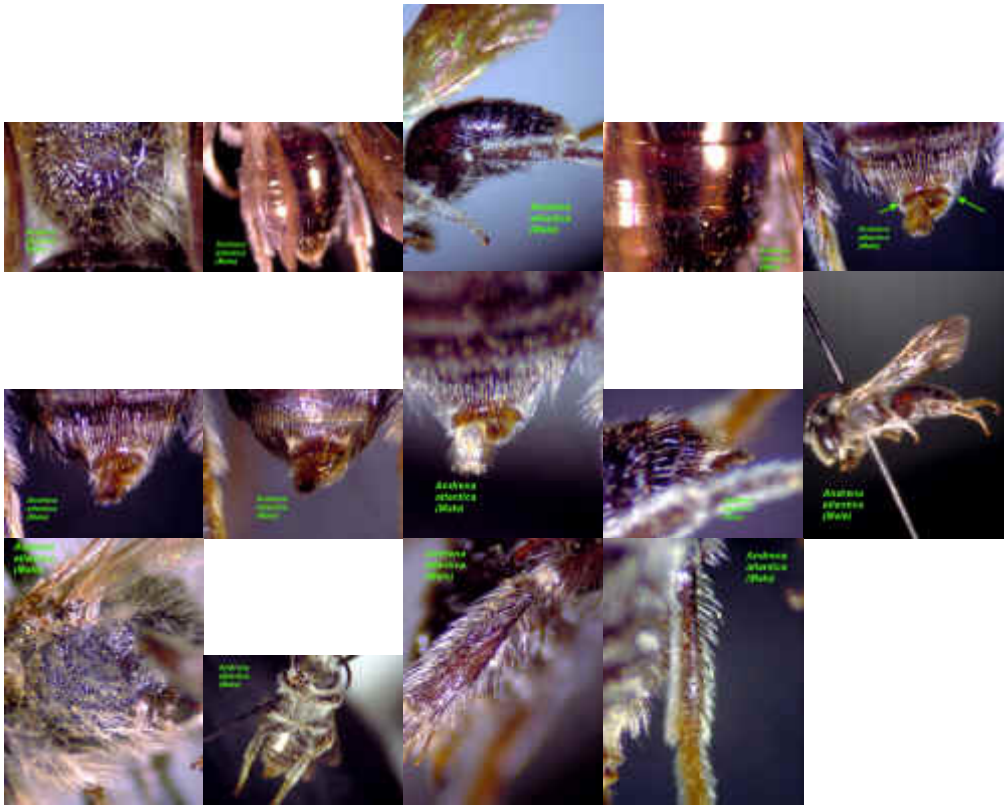
Notes: This species is closely related to the more northern and interior species *A. alleghaniensis*. It can be distinguished from that species by the normal, long barbed hairs on the scutum, the more coarsely sculptured propodeum outside of the dorsal enclosure, and the narrower facial fovea. Males are almost indistinguishable from *A. alleghaniensis*. These two species may be geographical races or subspecies of one widespread species.

Female:



Male:





Species Group Imitatrix (4 sp.)

Andrenidae: *Andrena fenningeri* Viereck (Scrapteropsis)

County Records: Gadsden, Jackson

Locations:

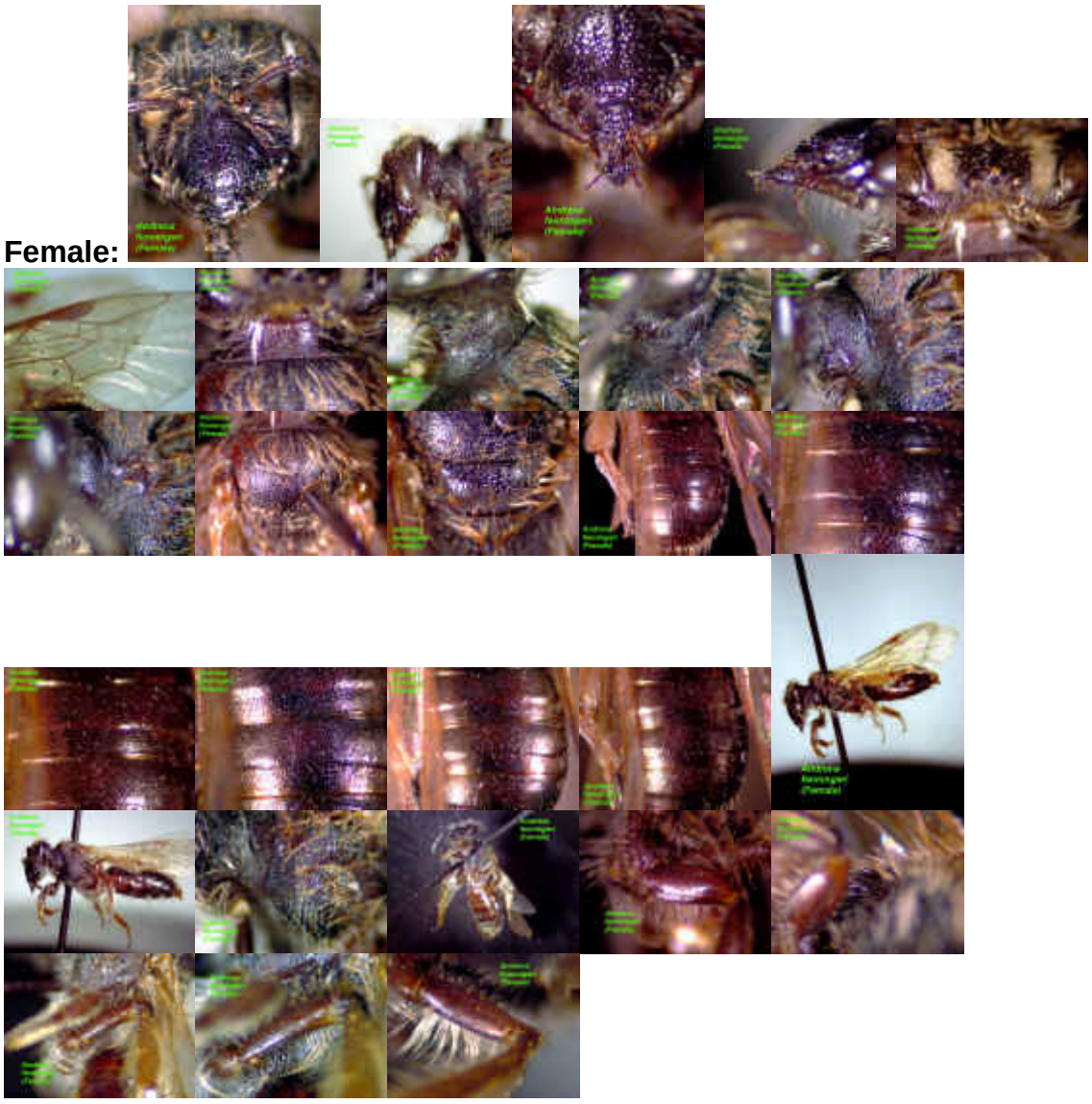
Dates: April 2-April 14; across the range March 2-May 24, chiefly in March and April

Plant: Polylectic, preference for *Salix* and *Prunus*

Notes: New state record for Florida; previously known from Georgia. Mitchell described the male of this species as *A. verna* Mitchell. His male of *A. fenningeri* actually belongs with the species he called *A. ilicis*. This is an uncommon but widespread species closely related to *A. imitatrix* and *A.*

morrisonella. Female *A. fenningeri* can be distinguished by *A. imitatrix* by the propodeal corbicula lacking plumose hairs anteriorly and having only simple internal hairs. *A. fenningeri* females have basal area punctures close set in terga 2-4 (often 1) but the apical areas are more sparse and irregularly spaced, especially in the median third of each terga. Male *A. fenningeri* can be distinguished by *A. imitatrix* or *A. ilicis* by the sixth sternum being reflexed apically with the lateral corners of the reflexed margin forming right angles and toothlike.

Female:



Andrenidae: *Andrena ilicis* Mitchell (Scrapteropsis)

County Records: Alachua, Baker, Columbia, Duval, Gadsden, Jackson, Levy, Liberty, Okaloosa, Orange, Volusia

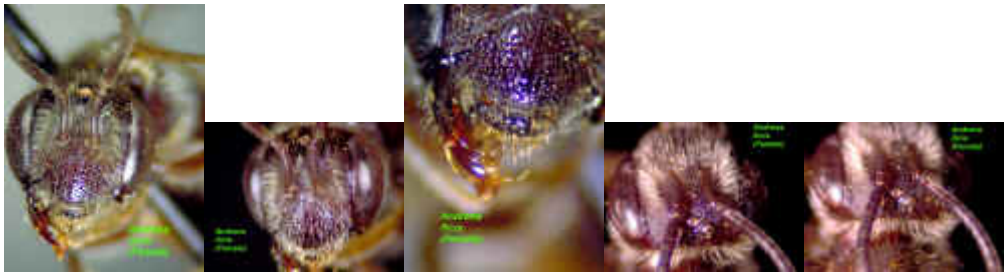
Locations: Cassadega, Deland, Gulf Hammock, Jacksonville, Orlando

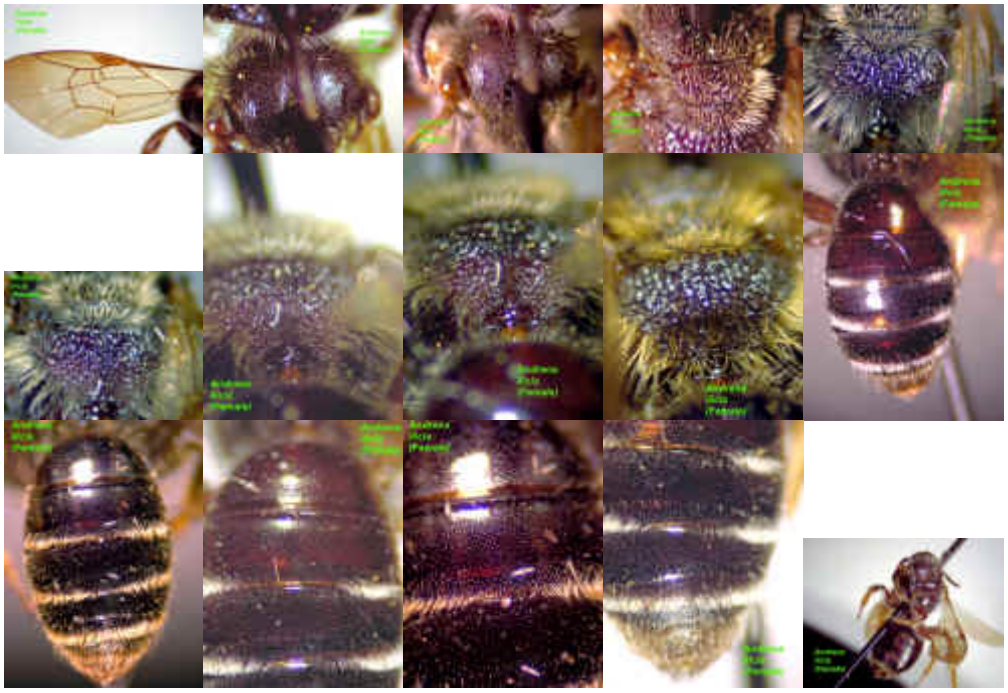
Dates: Feb., 29-May 17, Feb: 1, March: 4, April:5, May: 1

Plant: Polylectic; *Ceonothus microphylla* and others.

Notes: Closely related to *A. imitatrix*. Female *A. ilicis* can be distinguished from *A. imitatrix* by the propodeal corbicula having simple internal hairs and being incomplete anteriorly, the propodeum outside of the dorsal enclosure is more coarsely sculptured, the narrower hind tibiae, and the form of the rugulae on the underside of the genal area. The male is very similar to that of *A. imitatrix* but have a more slender hind tibiae, a more coarsely sculptured propodeum, and slightly longer antennae.

Female:





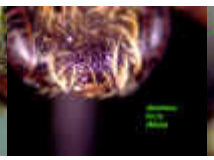
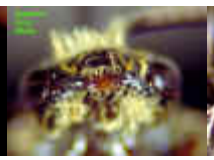
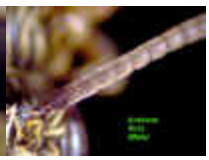
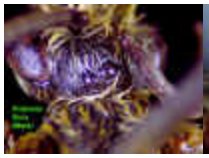
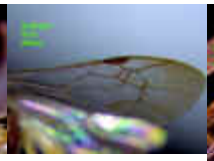
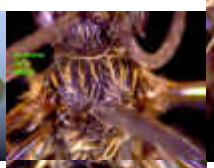


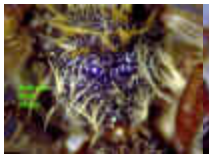




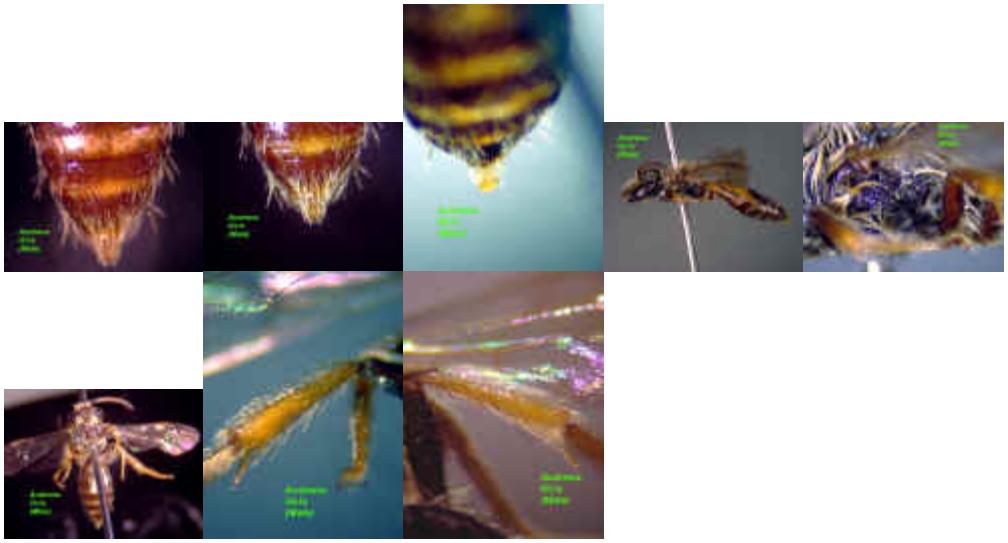

Male:



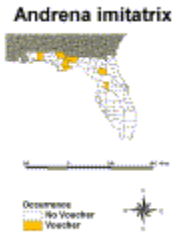







Andrenidae: *Andrena imitatrix* Cresson (Scrapteropsis)

County Records: Alachua, Franklin, Gadsden, Jackson, Leon, Liberty, Okaloosa, Sumter



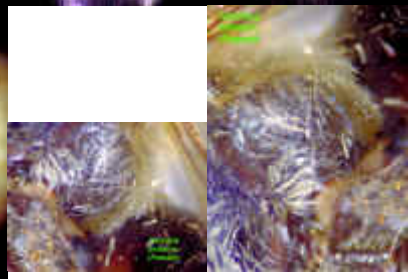
Locations:

Dates: March 14-April 14, March: 9, April:1; also to early May elsewhere

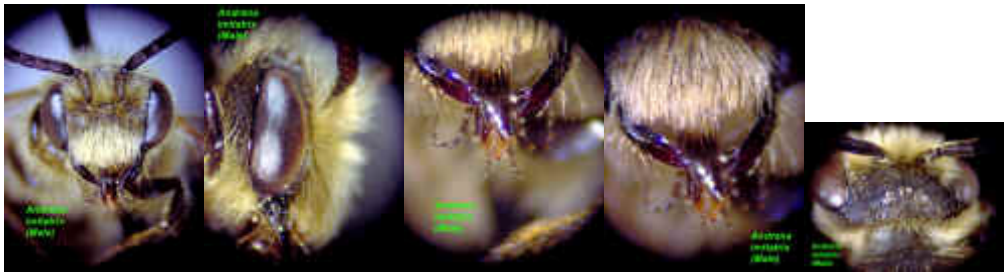
Plant: Polylectic, often on Rosaceae and *Salix*

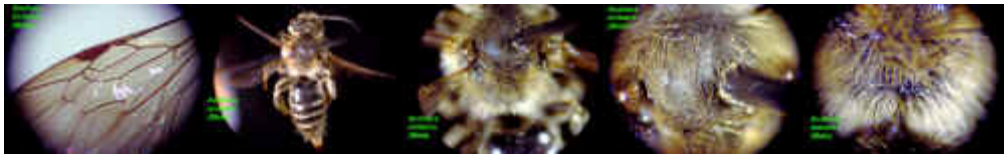
Notes: This includes the subspecies listed in Mitchell (*imitatrix*, *profunda*). This species is highly variable characterized by often having red legs (especially the hind legs) in both sexes. The female can be distinguished from other Scrapteropsis by the relatively weak tergal fasciae, the propodeal corbicula almost always having at least a few internal hairs plumose (and the anterior margin hairs plumose) and rather broad hind tibiae. The males have a flat sixth sternum and the hind tibiae is broadest just below the middle.

Female:



Male:





Andrenidae: *Andrena morrisonella* Viereck (Scrapteropsis)

County Records: Alachua, Orange, Sumter

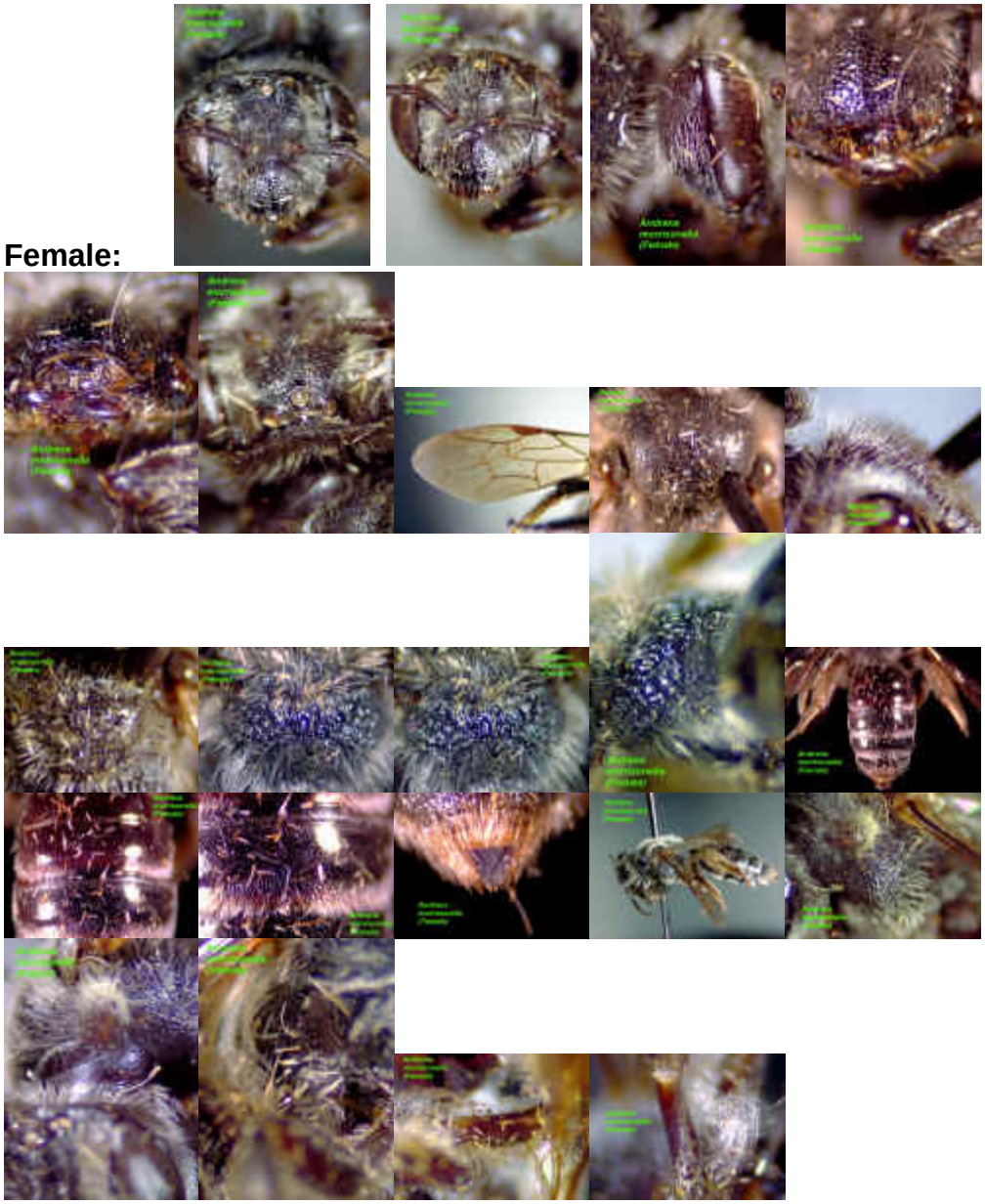
Locations: Orlando

Dates: March 26-June 25, March: 1, April: 1, June: 1

Plant: Polylectic

Notes: New state record for Florida, previous distribution was furthest south in Georgia. Often confused with other three species (*A. imitatrix*, *A. ilicis*, and *A. fenningeri*). This is a species of dubious status according to LaBerge and it may just be a variant of A. imitatrix or a hybrid between imitatrix and another species. It could be a valid species and may just need more specimens taken to fully characterize it. *A. morrisonella* females can be distinguished by the broader head, lack of tergal pubescenct fasciae from *A. ilicis* and from *A. fenningeri* by the tergal sculpturing.

Female:



Andrena

Subgenus *Simandrena* (1 sp.)

Andrenidae: *Andrena nasonii* Robertson (Simandrena)

County Records: none

Locations:

Dates:

Plant: no records

Notes: It is uncertain if this species occurs in Florida. It is not listed for Florida by either Mitchell or LaBerge nor are collections of it found in the FSCA. It is known from Georgia though.

Andrena

Subgenus *Taeniandrena* (1 sp.)

This is the only species of this subgenus in North America. This is a large, easily recognized bee. The female has a slightly elongated punctures on the flattened clypeus, highly punctate metasomal terga, roughened but not rugulose propodeal enclosure, and pollen collecting hairs similar to Thysandrena. Males are similar but the clypeal punctures tend to be round and sternum 6 is flat and slightly emarginate.

Andrenidae: *Andrena wilkella* Kirby (Taeniandrena)

County Records: Sumter

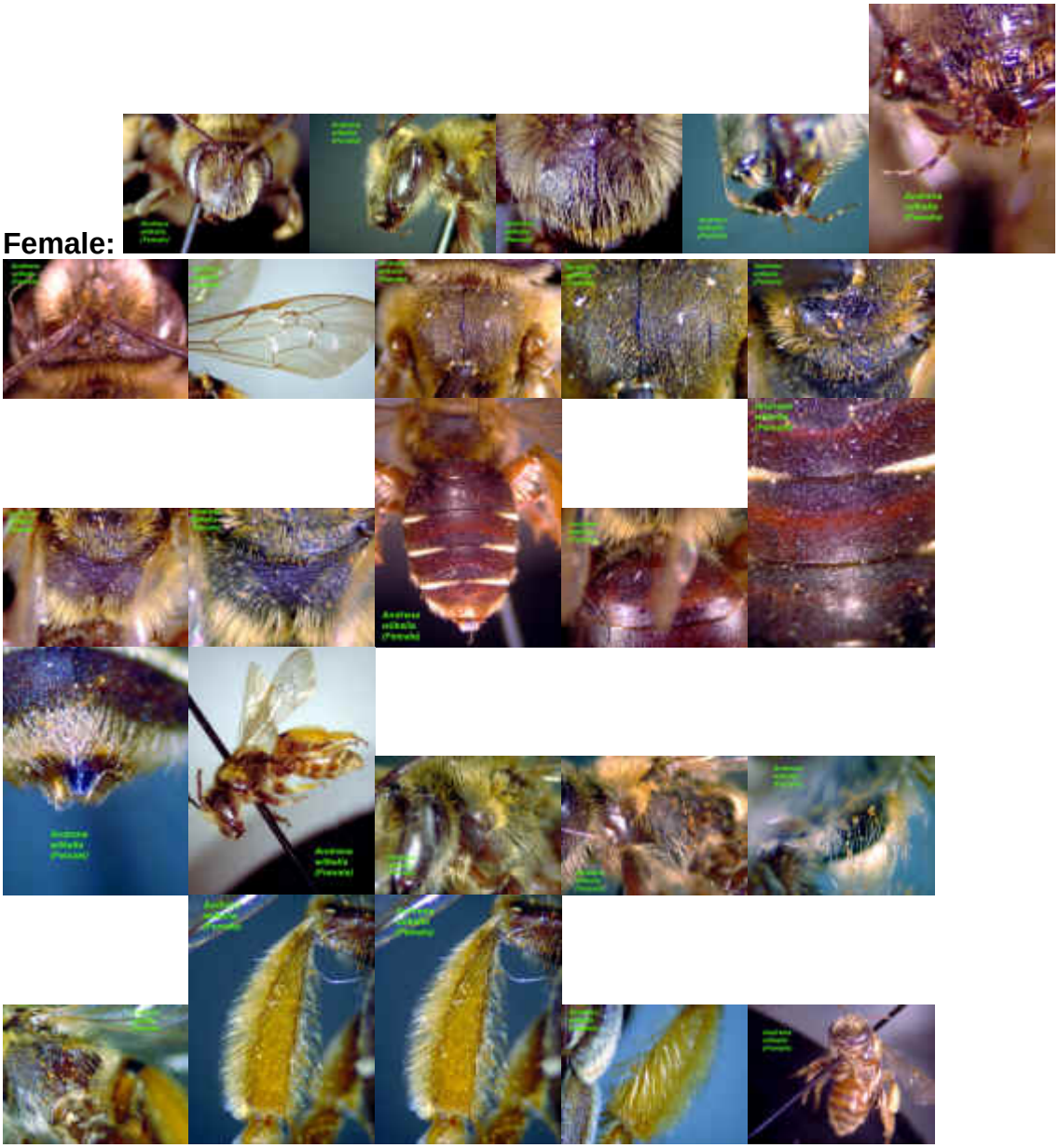
Locations: Webster

Dates: May-July

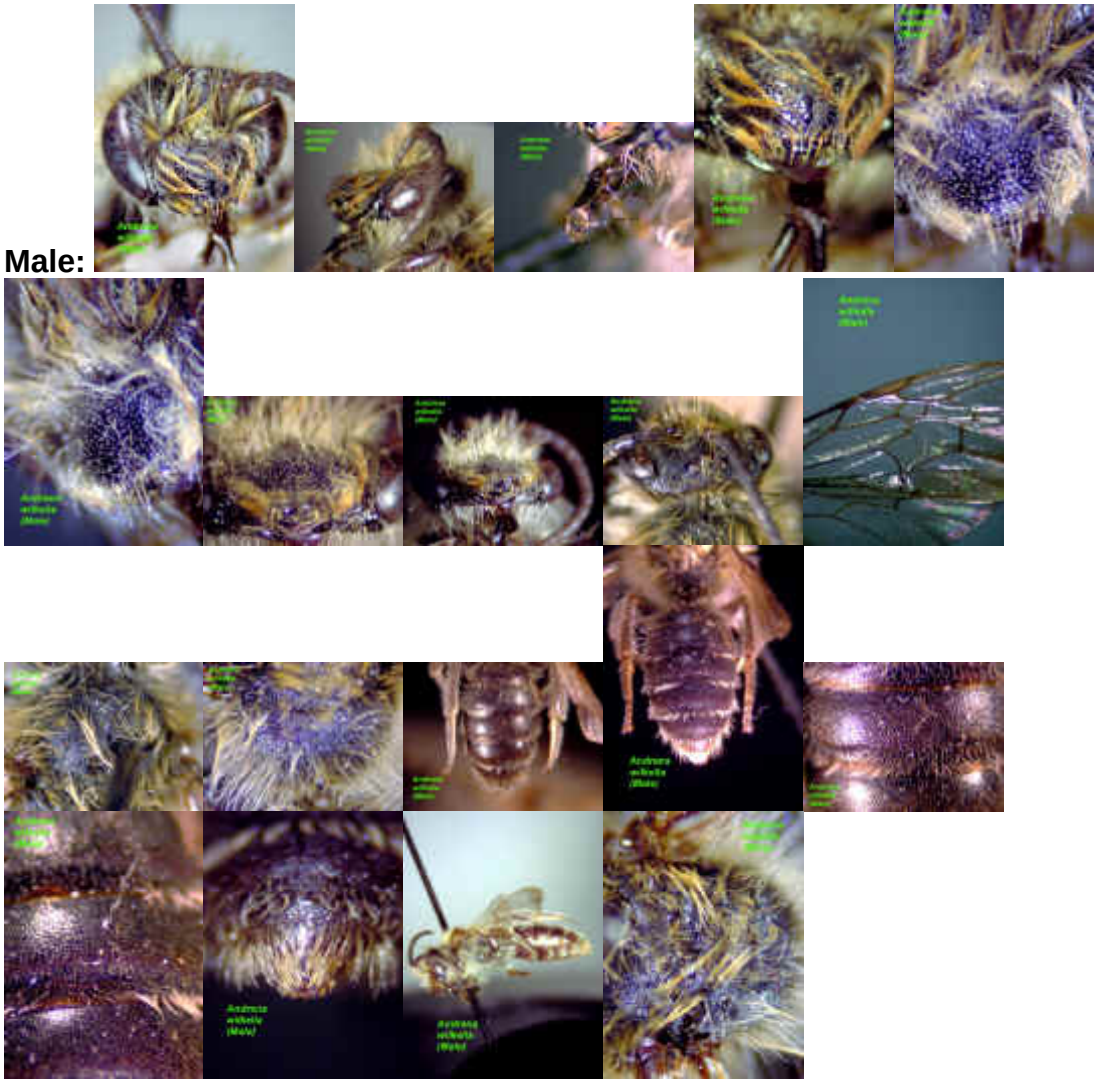
Plant: Polylectic (many plants, especially legumes, see list in LaBerge)

Notes: It is uncertain if this species occurs in Florida. There are no collections of it in the FSCA. However, LaBerge lists it based on one specimen if from Sumter Co.

Female:



Male:



Andrena

Subgenus *Trachandrena* (2 sp.).

This subgenus is closely related to Scrapteropsis. It has vernal or early summer bees primarily associated with Prunus, Salix, and other trees and shrubs. Most species are polylectic. Females are distinguished by having narrowed facial fovea in the lower half, dorsal enclosure of the propodeum is coarsely rugose, set off by a transverse carina; metasomal terga 2-4, especially 2, with apical depressed area equal to 1/2 of the tergal length (may be less but more than 1/3); coarse sculpturing. Males have similar propodeal features as the females and long tergal apical areas. They also have a distinctive genital capsule.

For more information, see W. E. LaBerge. 1973. A revision of the bees of the genus Andrena of the western hemisphere. Part VI. Subgenus Trachandrena. Trans. Amer. Ent. Soc. 99:235-371.

Key to Females

Punctures of tergum 1 and 2 close, deep and quite coarse, interspaces not exceeding their diameters..*A. forbesii*

Basal abdominal tergum shining and punctures minute, irregular and sparse over most of disc..*A. hippotes*

Key to Males

Basal abdominal tergum closely, deeply and rather coarsely punctate, interspaces not much exceeding diameter of punctures..*A. forbesii*

Basal tergum shining, punctures fine and close; hind tibiae and all tarsi testaceous...*A. hippotes*

Andrenidae: *Andrena forbesii* Robertson (Trachandrena)

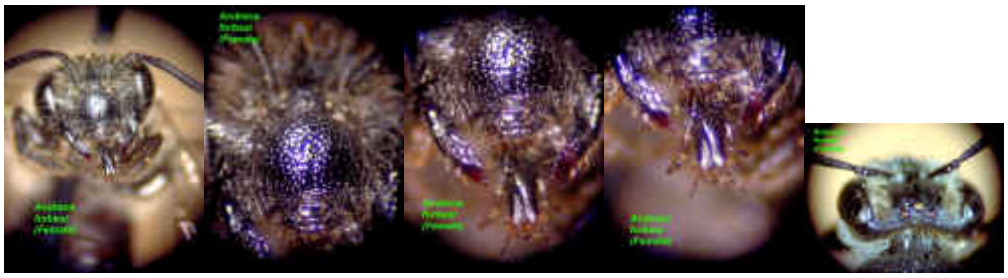
County Records: Leon, Sumter

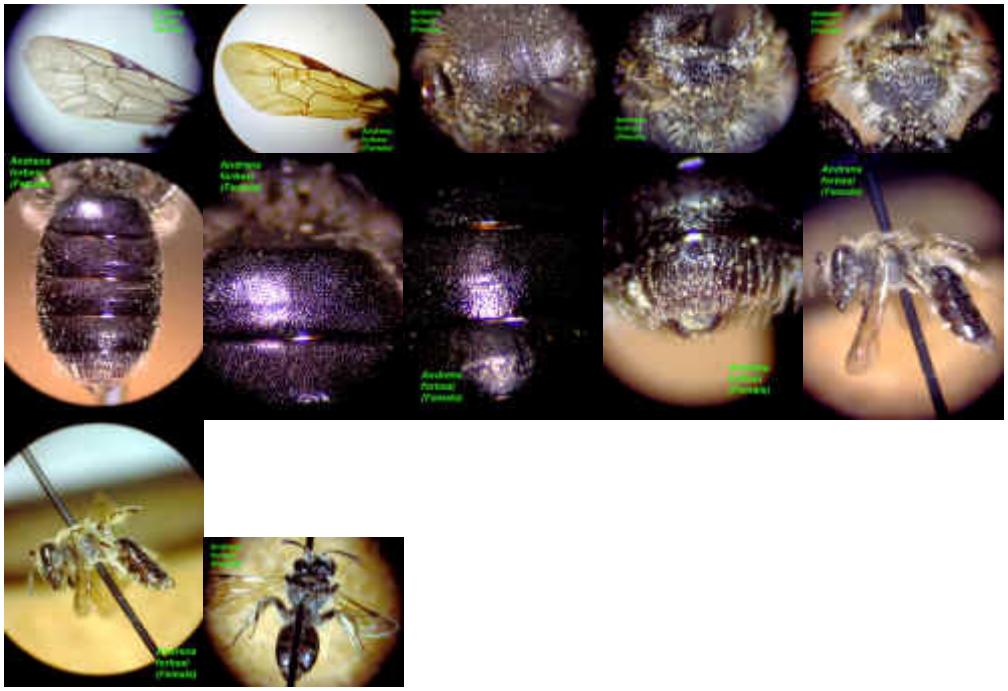
Locations:

Dates: June 25;

Plant: Polylectic, primarily on Rosaceae and Salicaceae

Notes: New state record for Florida, previously known from Georgia. Mitchell described *A. pyracanthae* as a new species, is actually a synonym of *A. forbesii*.

Female: 



Andrenidae: *Andrena hippotes* Robertson (Trachandrena)

County Records: Alachua, Liberty, Sumter

Locations:

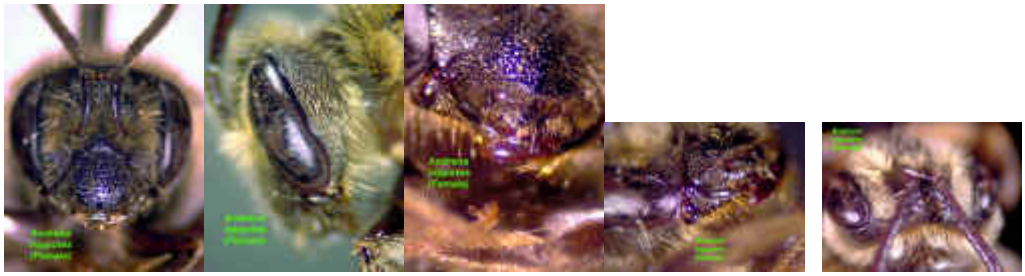
Dates: March 26-June 25, March: 2, June:1

Plant: Polylectic, preferring Rosaceae and Salicaceae

Notes: New state record for Florida, previously known from Thomasville, GA. Mitchell described *A. arenakensis* as a new species, is actually a synonym of *A. hippotes*.

These two species listed above may hybridize in nature. Occasionally individuals with characteristics of both species have been found.

Female:



Male:

Andrena

Subgenus *Tylandrena* (1 sp.).

General features of *Tylandrena* in Florida are large size, lack of apical tergal bands, and the pronotal humeral angle and dorsoventral ridge moderately to well-developed with the ridge crossed by a distinctly impressed, oblique suture. Females have incomplete corbicula with abundant, long internal hairs and the males lack well-formed subapical sternal fimbriae. *Tylandrena* species might be confused with similar large members of the *Melandrena* that also lack tergal hairs. Key features are the pronotal characters.

There was a specimen collected in the FSCA that was collected in Alachua County (Gainesville) and identified as *A. buetenmuelleri* (=*A. wilmattae*) by Mitchell. I have determined that it is really a specimen of *A. perplexa*. *A. perplexa* shows considerable variation in hair color on the dorsum of the thorax, ranging from pale white to deep yellow. This may have been the source of the confusion.

For more information, see W. E. LaBerge and J. K. Bouseman. 1970. A revision of the bees of the genus Andrena of the Western Hemisphere. Part III. Tylandrena. Trans. Amer. Ent. Soc.: 96:543-605.

Andrenidae: *Andrena perplexa* Smith (Tylandrena)

County Records: Alachua, Gadsden, Leon

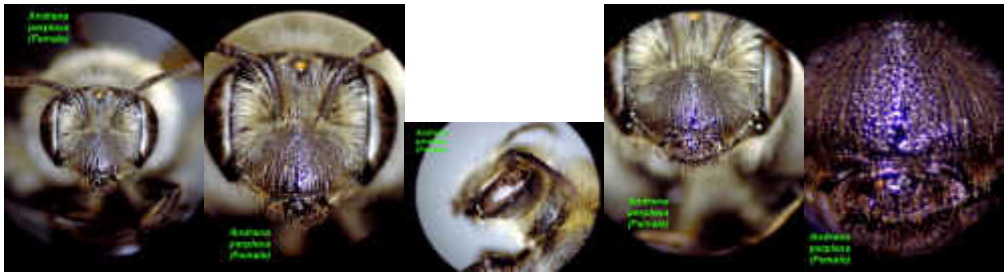
Locations:

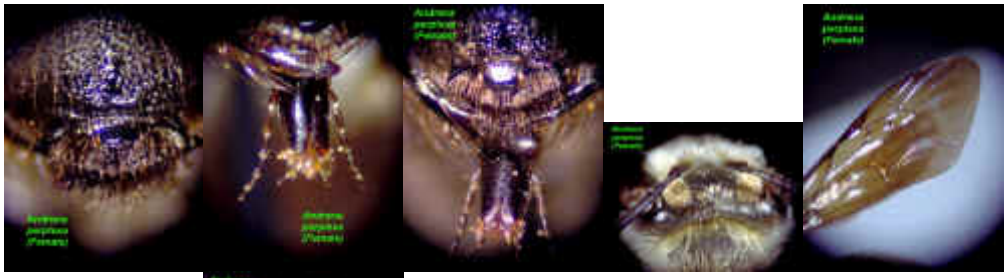
Dates: March 17-April 3, March:2, April:1

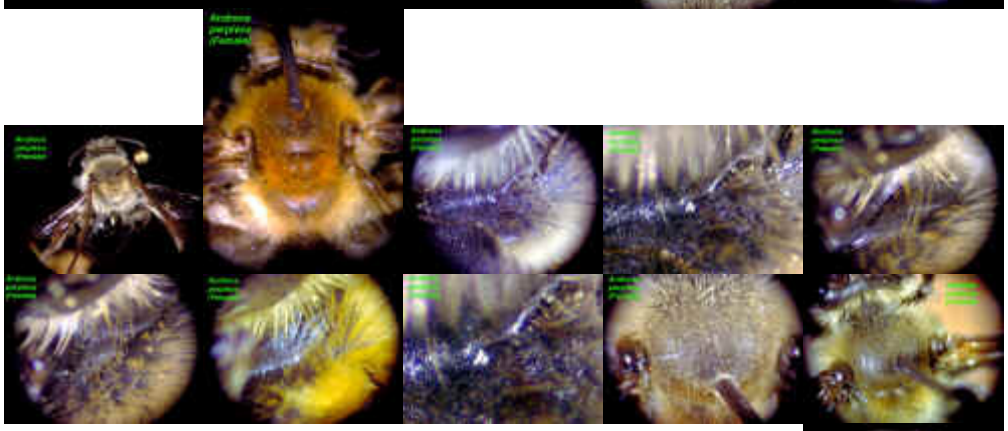
Plant: *Crataegus*

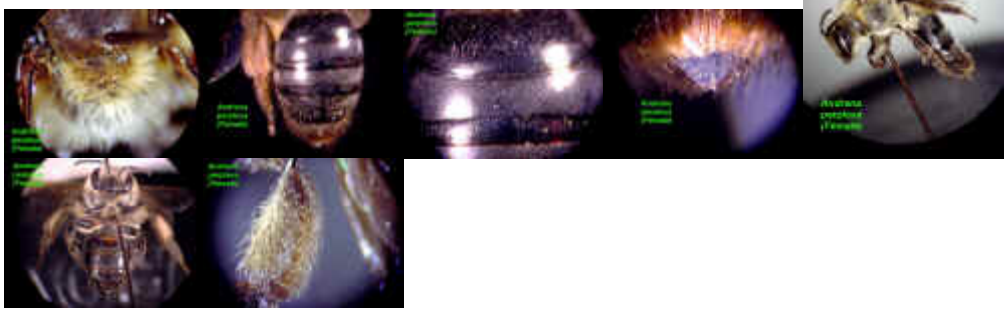
Notes: New state record for Florida, previously collected in Georgia (Pine Mt.). Often confused with *A. barbara*.

Female:

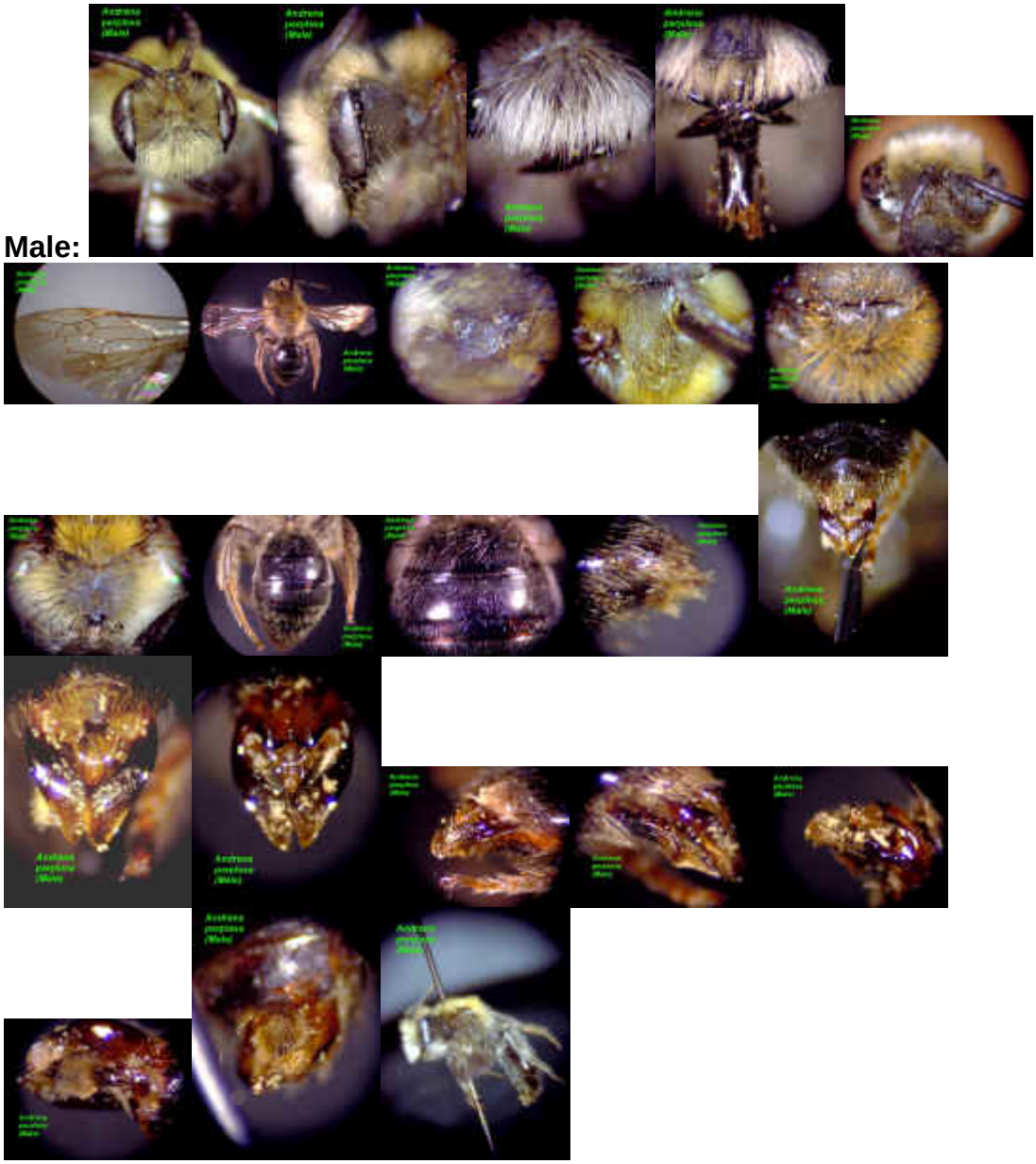








Male:



Panurginae

Tribe *Protoandrenini* Robertson

Two genera are found in Florida, *Protoandrena*, subgenus *Heterosarus*, and *Pseudopanurgus*. Michener (2000) states that these are closely related and *Pseudopanurgus* might be considered a subgenus of *Protoandrena*.

Key to genera of Protoandrenini (from Michener 2000)

Punctation strong, punctures usually contiguous on some areas of thorax; omaulus sharp, at least dorsally; hind tibia with upper margin a strong, untoothed carina…*Pseudopanurgus*

Punctation well marked but punctures not contiguous to fine, weak; omaulus smoothly curved from lateral to anterior mesepisternal surfaces; hind tibia with upper margin at least at base carinate with teeth or serrate…*Protoandrena*

Notes on using the Mitchell (1960) key. The species listed as under *Pseudopanurgus* are currently placed into several subgenera in the genus *Protoandrena* (Subgenus *Heterosarus*, *Metapsaenythia*, *Protoandrena*, and *Pterosarus*). Of the five Florida species, three are placed in *Protoandrena*, subgenus *Heterosarus* and two are placed in the genus *Pseudopanurgus*. None are endemic to Florida. Two are spring flying and three are fall flying.

Genus *Protoandrena* Cockerell

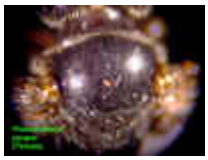
Subgenus *Heterosarus* Robertson

Key to Females

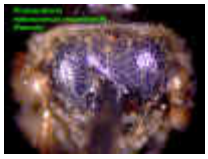
1. Dorsum of thorax with quite dense covering of short, brownish pubescence, more evident when viewed at an angle….*P. (Heterosarus) illinoiensis*

   Dorsum of thorax without evident erect pubescence on scutum and scutellum (but fine hairs closely appressed)….2

2. Scutum and scutellum very finely, closely and uniformly punctate throughout, interspaces not exceeding diameter of punctures…. *P (Heterosarus). pauper*



   Punctures of scutum more coarse and deep, to some degree separated in center of posterior half of disc, or those on scutellum more irregular and to some degree separated… *P (Heterosarus). nebrascencis muesebecki*



Key to Males

1. Scape to some degree maculated… *P (Heterosarus). nebrascencis muesebecki*

Scape entirely black…2

2. Scutum with a quite dense covering of erect, yellowish pubescence, which does not obscure the close and fine, but deep and distinct punctures… *P (Heterosarus). illinoiensis*

Scutum practically bare, hairs fine and closely appressed to surface of scutum… *P (Heterosarus). pauper*

Andrenidae: *Protoandrena (Heterosarus) illinoiensis* Cresson

County Records: none in FSCA

Locations:

Dates: Flies in May

Plants:

Notes: Both Mitchell and Timberlake mention this species as occurring in Florida. No photos are available at this time.

Andrenidae: *Protoandrena (Heterosarus) pauper* Robertson

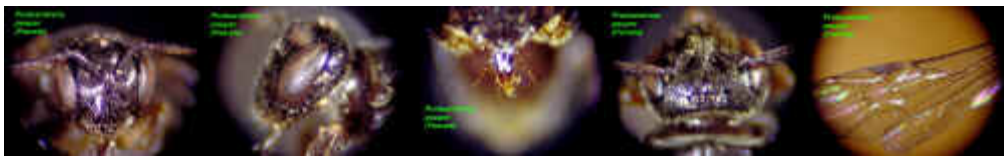
County Records: FSCA: Liberty, Leon

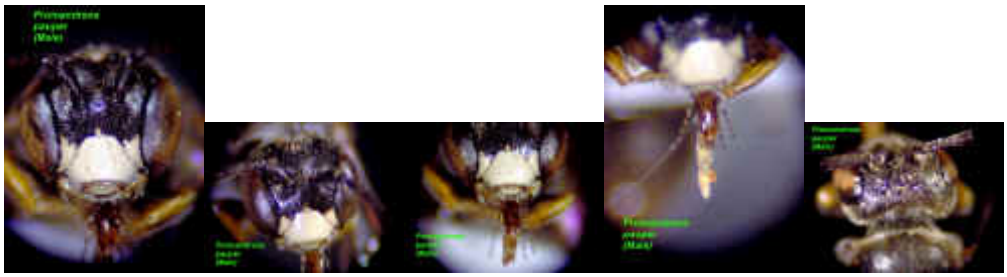
Locations:

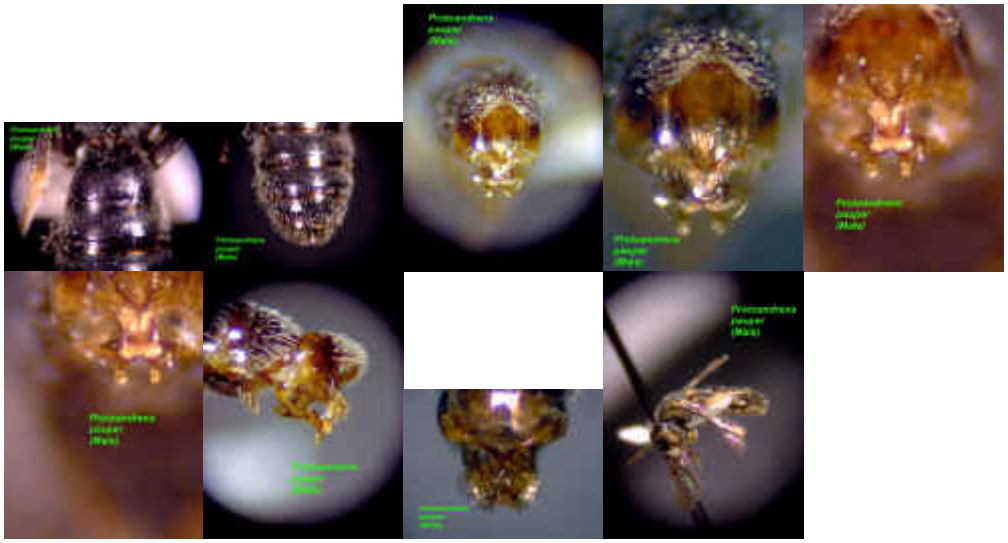
Dates: spring flying; May

Plants:

Notes: Collects pollen especially from *Ceonothus americanus* (New Jersey Tea)

Female: 

Male: 



Andrenidae: *Protoandrena (Heterosarus) nebrascencis muesebecki* Michener

County Records: Leon

Locations:

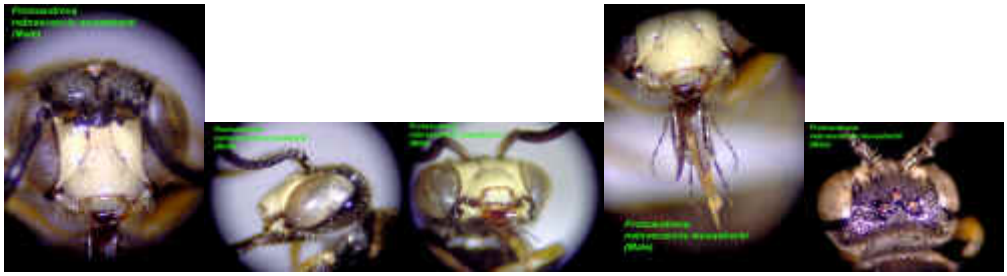
Dates: Fall flying (Sept.-Oct.)

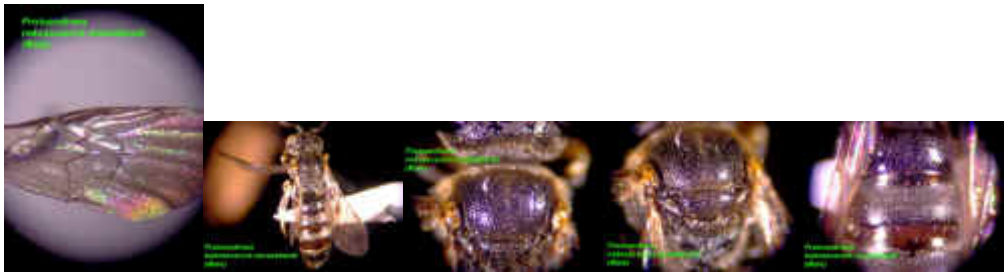
Plants:

Notes:

Female:

Male:





Genus *Pseudopanurgus* Cockerell

Key to females

1. Pleura very coarsely rugoso-punctate, the scutum with equally coarse and deep punctures, but these not crowded even though very close over entire disc..*P. rugosus*

Pleura and scutum much less coarsely sculptured...*P. solidaginis*

Key to males

1. Supraclypeal area yellow at least in part.....*P. solidaginis*

Supraclypeal area usually entirely black, but sometimes with a narrow yellow border along clypeal suture....*P. rugosus*

Andrenidae: *Pseudopanurgus rugosus* Robertson

County Records: Leon

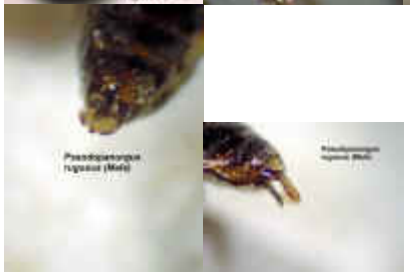
Locations: Tall Timbers

Dates: Fall flying (Oct.)

Plants:

Notes: new state record for Florida. Previously known from Georgia and Mississippi.

Male:



Andrenidae: *Psuedopanurgus solidaginis*

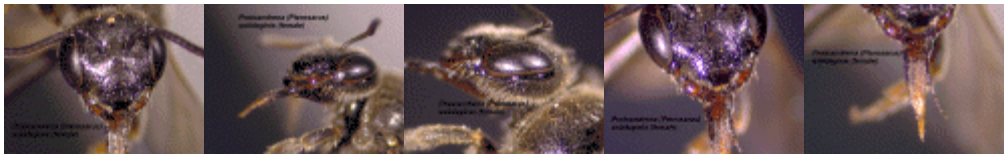
County Records: Leon (see map for *P. rugosus* above)

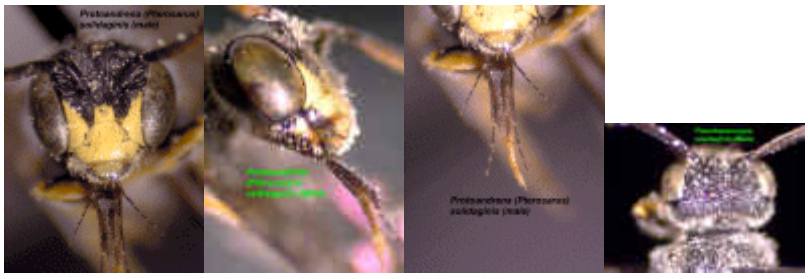
Locations: Tall Timbers

Dates: Fall flying (Oct.)

Plants:

Notes: new state record for Florida. Previously known from Georgia and Mississippi.

Female: 

Male: 

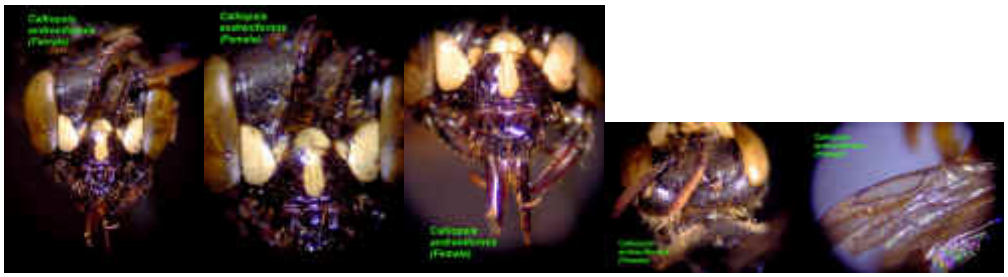
Panurginae

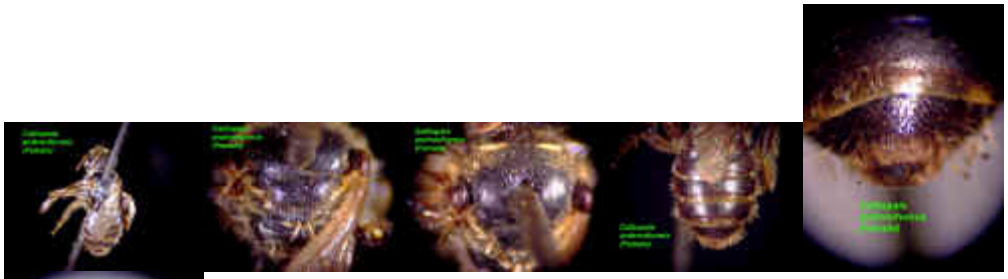
Tribe *Calliopsini* Robertson

Genus *Calliopsis* Smith, One taxa

Calliopsis andreniformis Smith

Mitchell does not list this species for Florida nor does the FSCA have any specimens in their collection. Shinn (1967), however, lists the type specimen as being collected in "East Florida" and has a distribution dot indicating a collection approximately in the location of Jacksonville, FL. The abundance of this bee on school campuses suggests that it would be commonly collected but it may be rare in Florida due to a nesting preference for clayey soils.

Female: 



Panurginae

Tribe *Perditini* Robertson

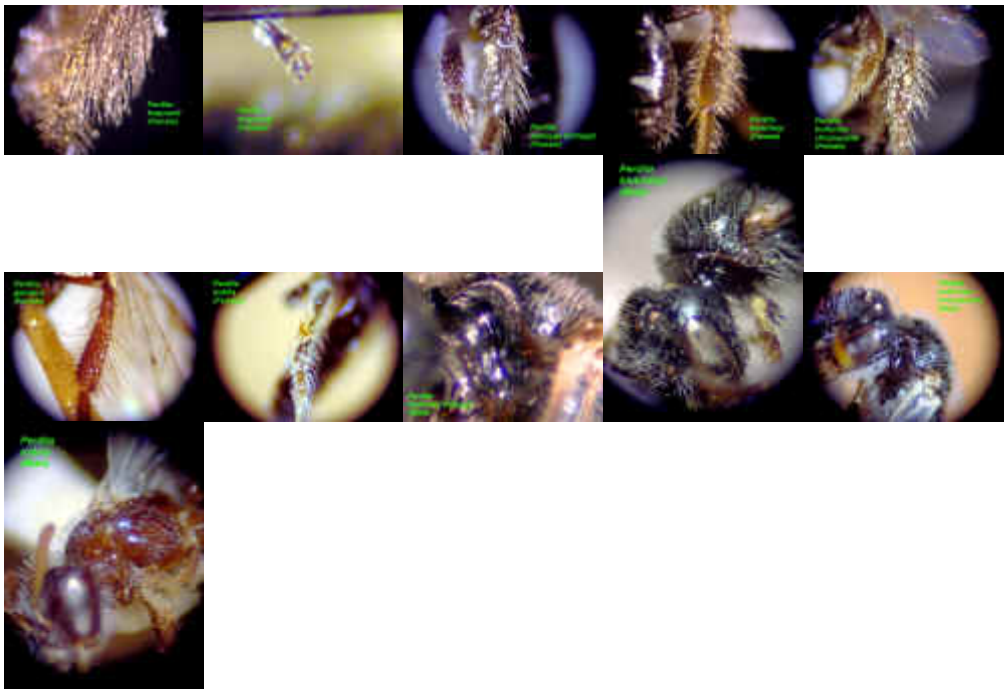
Genus *Perdita* Smith, twenty taxa

These are all small bees, with distinctive wing venation patterns. They usually have brightly colored bodies with colored integumental markings. The genus is associated with xerophytic vegetation and found mostly in the coastal plain areas of the southeastern United States. Florida and North Carolina are the states with the greatest number of known species. Bees of this genus nest in the soil. Nesting sites are primarily in well-drained sandy soils that are abundant in these states. Michener notes that species are nearly all oligolectic on a wide variety of plants. In the

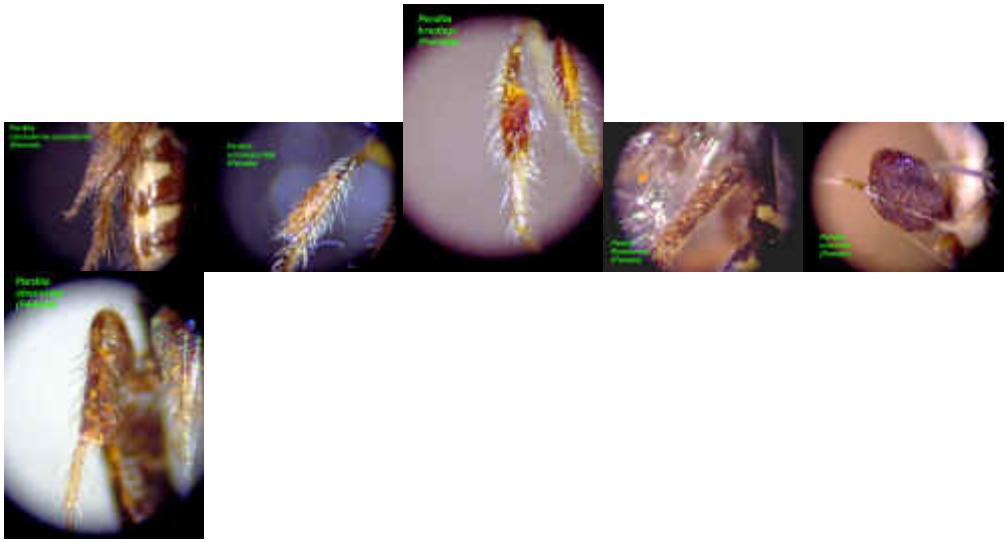
FSCA, there are 16 taxa of Perdita, while Mitchell lists 4 others as occurring in Florida. Of these 20 taxa, there are five endemic taxa, including four species (*P. krombeini*, *P. graenicheri, P. blatchleyi*, and *P. nubila*) and one subspecies (*P. consobrina lepida*). New state records for Florida since Mitchell (1960) include *P. consobrina consobrina* (furthest south was S. Carolina) and *P. octomaculata* (furthest south was Georgia). Mitchell's key to the species of the eastern U.S. may be sufficient for identification. With the exception of *P. townesi*, which was described in Timberlake (19xx). Several subgenera are found in Florida including Alloperdita, Cockerellia, Hexaperdita, and Perdita.

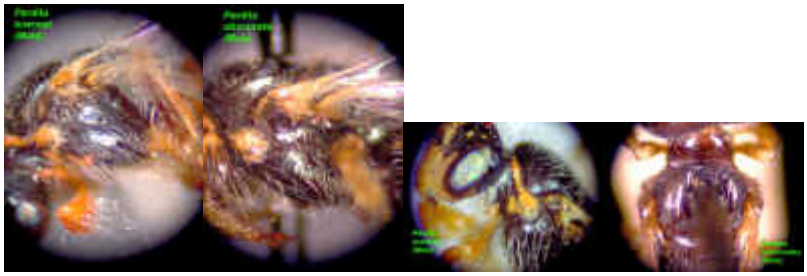
Key to subgenera. Modified from Michener (2001) which was modified from Timberlake (1954)

1. Scopa of hind tibia copious, hairs long, often more or less crinkly or branched, seemingly adapted for carrying pollen at least partly dry; claws of female simple; side of pronotum of male more ore less deeply furrowed; S8 of male with bilobate base……..2



--Scopa of hind tibia composed of long, curved, simple, widely spaced hairs, seemingly adapted for carrying agglutinated pollen; claws of female more or less distinctly dentate within; side of pronotum of male usually not grooved; s8 of male with simple, medium spiculum at base…3

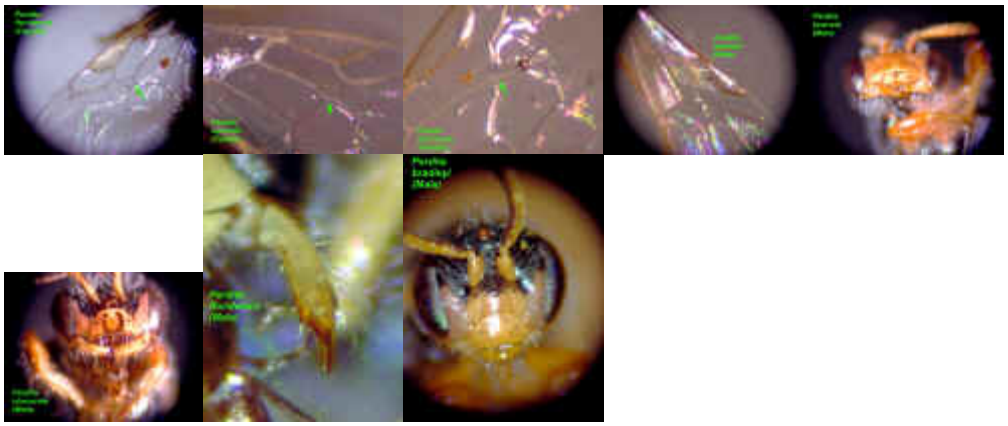




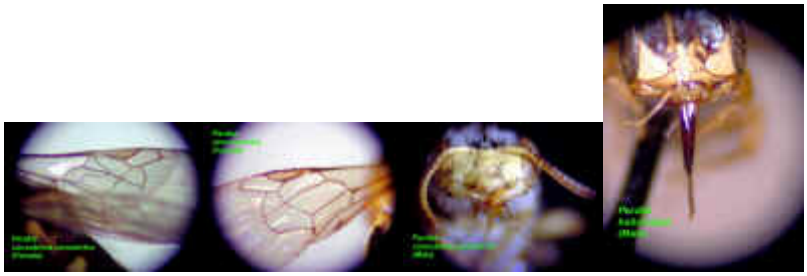
2. Usually large species, 5 to 9 mm long; mandible of female dilated on inner margin and abruptly bent inward before apex, incurved part tapering and simple; metasoma of male no wider than thorax; claws of male hind leg simple……..*Cockerellia*

--Smaller species, rarely exceeding 6 mm in length; mandible of female ordinary or only moderately expanded within, and but little incurved at apex; metasoma of male usually moderately broad and depressed; claws of male hind leg cleft…….*Hexaperdita*

3. Small intercalary cell usually present between first and second submarginal cells; mandible of male with small subapical tooth on inner margin……..*Alloperdita*



--Intercalary cell never present; mandible of male usually simple and acute at apex…*Perdita*



Perditini

Subgenus *Alloperdita* (6 species, spring-early summer flying)

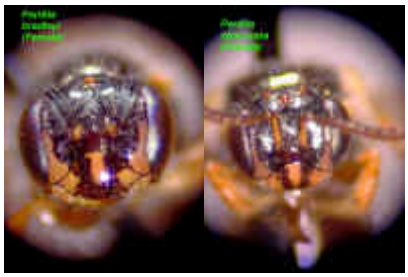
Key to *Alloperdita*. Modified from Mitchell and Timberlake.

Females

1. Abdominal terga entirely dark, without pale maculations.. *P. mitchelli*

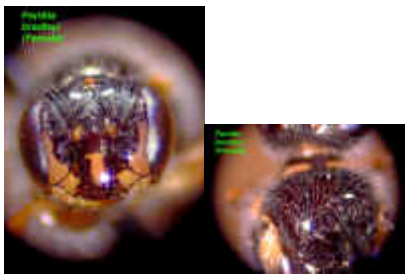
-----Abdominal terga with conspicuous, transverse, yellowish maculae…2

2. Length of face slightly less than distance between outer margin of eyes…3



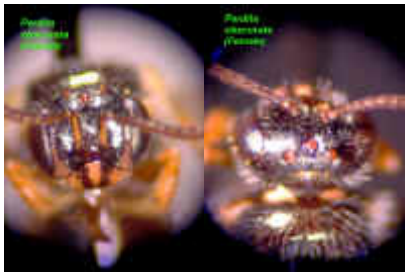
-----Length of face somewhat exceeding distance between outer margin of eyes…4

3. Clypeus with a broad, median, yellow stripe, sometimes entirely yellow; pronotum with a pair of yellow maculae; glossa and maxillae very short…..*P. bradleyi*



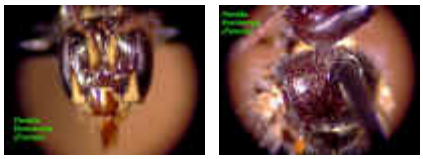
----Similar to *bradleyi* and having well-developed face marks...*P. townesi.*

----Clypeus either entirely dark or with a very narrow, median, yellow line; pronotum without maculae; glossa and maxillae elongate….*P. obscurata*



4. Face narrow and more elongate, length much greater than distance between eyes; lateral facial maculae small, not extending above upper margin of clypeus; pronotum not maculated…*P. novae-angliae*

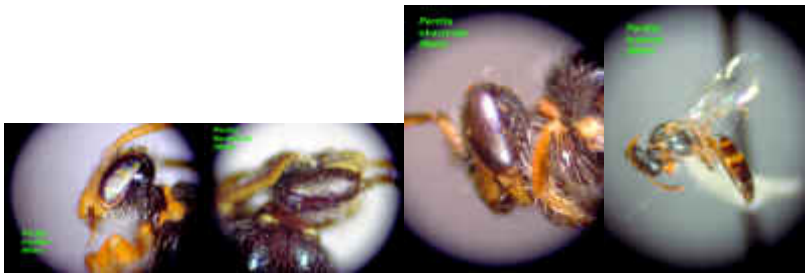
   ----Face somewhat broader; lateral facial maculae extending narrowly along eye margin to level of antennae; pronotum with a pair of yellow maculae…*P. floridensis*



Males

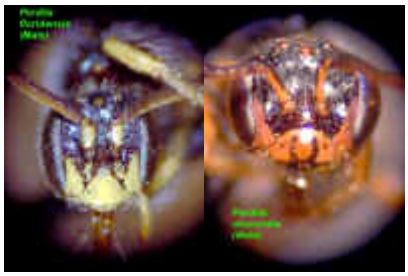
1. Cheeks beneath tuberculate or spinose..*P. mitchelli*

   ----Cheeks at most only slightly protuberant beneath…2



2. Face entirely yellow below level of antennae, and scape entirely yellow..3

---At least the supraclypeal area in large part greenish…4

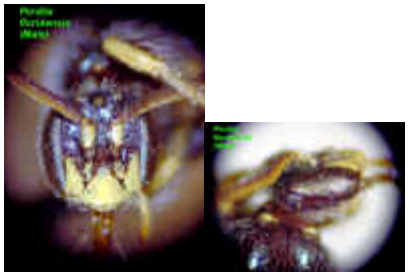


3. More completely yellow beneath level of antenna, mesoplectus with yellow T-mark..*P. townesi*

---Less completely yellow beneath level of antenna, lacking mesoplectus T-mark..*P. bradleyi*

4. –Face broader, its median length considerably less than width to outer margin of eyes; cheeks above subequal to eyes in width..*P. obscurata*

----Face more elongate, its median length equal to or greater than width to outer margin of eyes; cheeks narrower than eyes…5



5. Clypeus entirely yellow; lateral facial maculae large and conspicuous, reaching level of antennae on eye margin...*P. floridensis*

---Clypeus dark in large part, and face without yellow maculations….*P. novae-angliae*

Andrenidae: *Perdita bradleyi* Viereck (Alloperdita)

County Records: Baker, Highlands

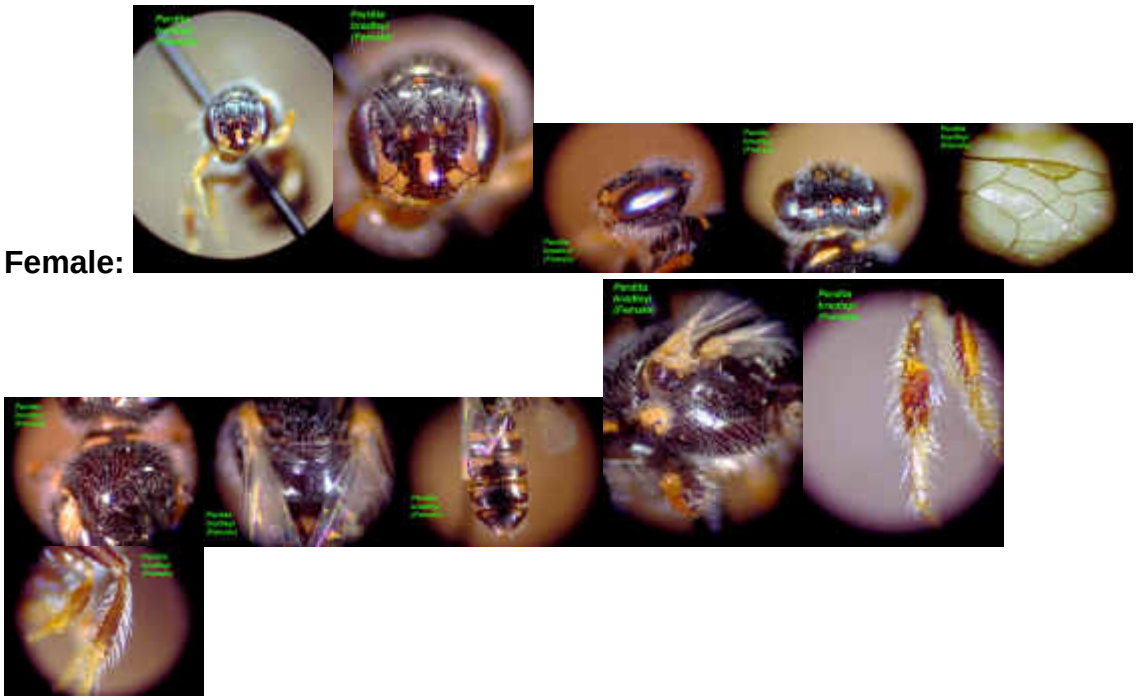
Locations: Glen St. Mary, Highlands Hammock

Dates: April 3

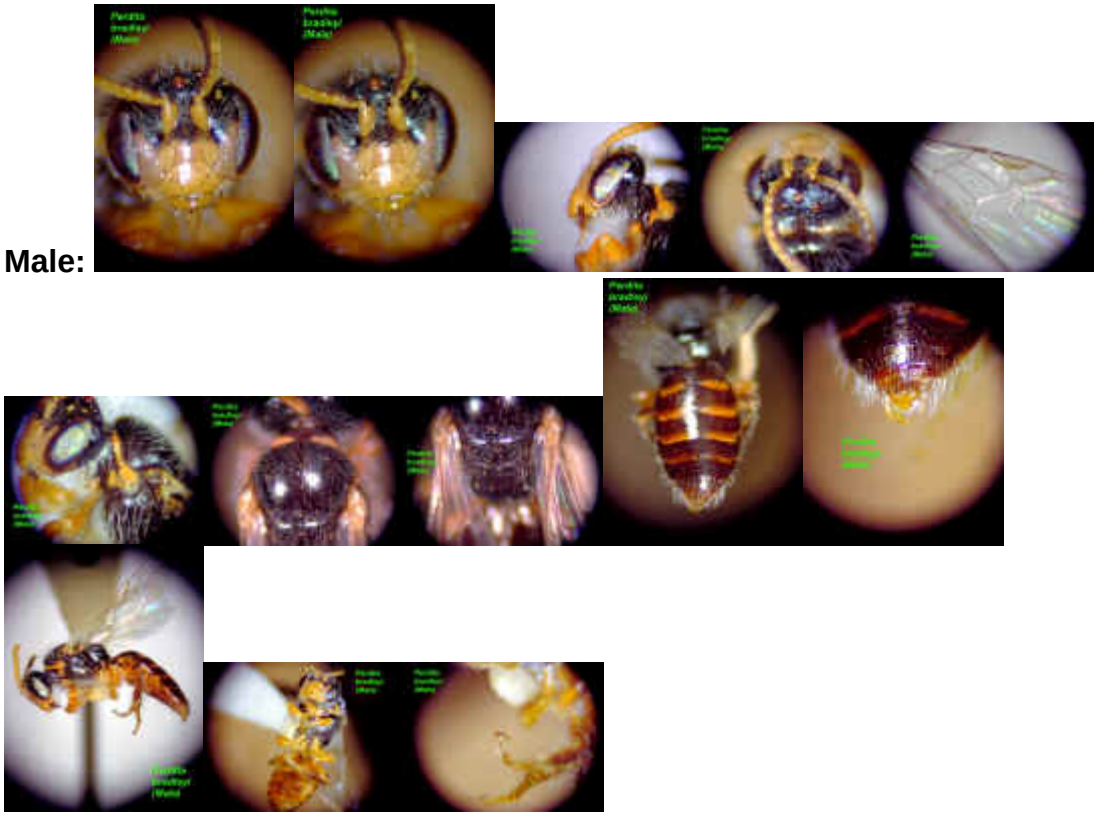
Plant: *Prunus serotina*, Mitchell lists *Vaccinium*, *Crataegus*, *Ilex*, *Nyssa*, *Pyracantha*, *Sarracenia*, and *Hydrocotyle*

Notes: New Jersey-Florida, March to May, closely resembles *P. obscurata* and *P. townesi*. *P. bradleyi* may occasionally lack the intercalary cell.

Female:



Male:



Andrenidae: *Perdita floridensis* Timberlake (Alloperdita)

County Records: Marion, Okaloosa, Pinellas

Locations: Ft. Walton Beach, Clearwater

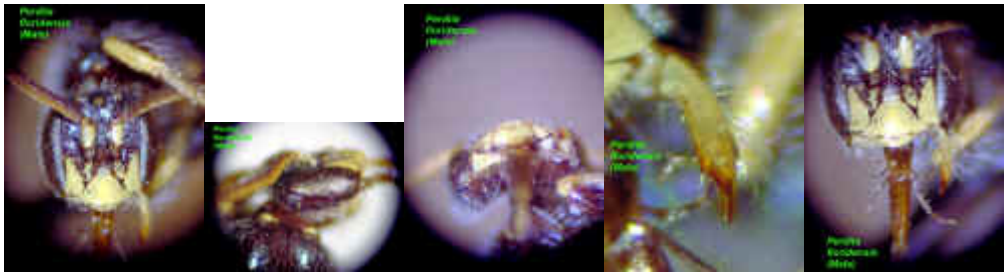
Dates: May 19

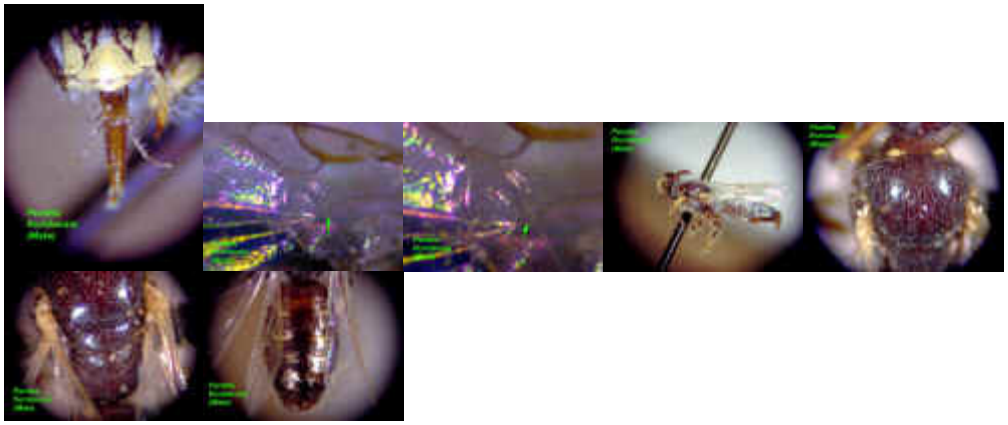
Plant: *Ilex glabra* Mitchell also lists *Leucothoe* and *Vaccinium*

Note: North Carolina to Florida, April-May

Female:

Male:





Andrenidae: *Perdita mitchelli* Timberlake (Alloperdita)

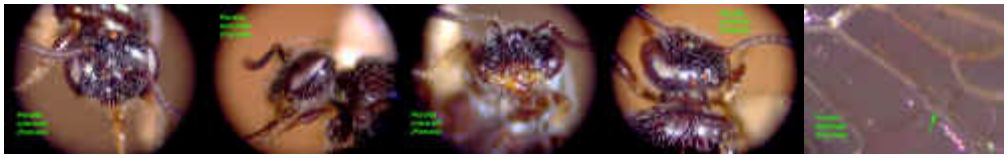
County Records: Bradford

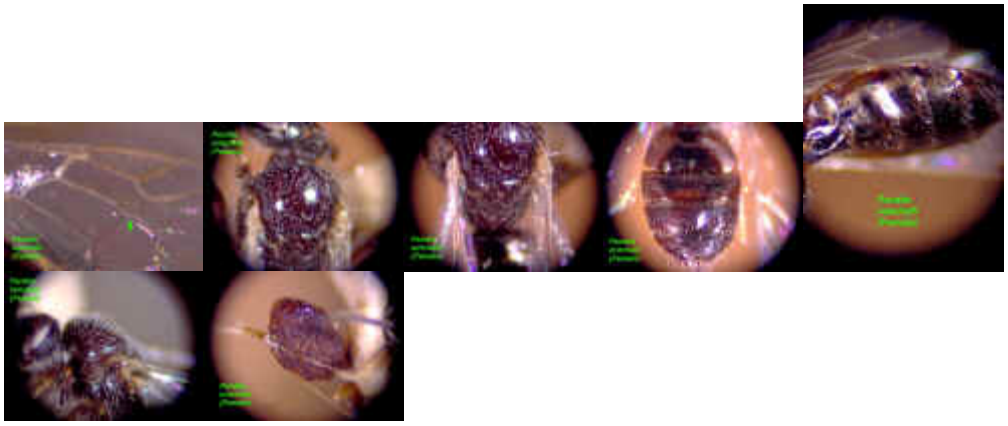
Locations:

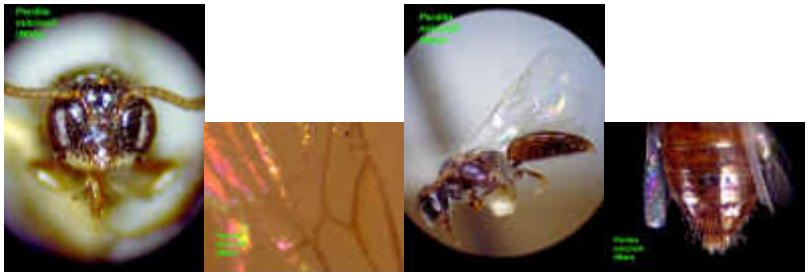
Dates: June; Mitchell lists June

Plant: *Oxydendron arboreum*, Mitchell: *Ceonothus*, *Cyrilla*

Notes: North Carolina-Florida-Mississippi, outer coastal plain probably.

Female: 



Male: 

Andrenidae: *Perdita novae-angllie* Viereck (Alloperdita)

County Records: Levy

Locations:

Dates: May 6

Plant: Mitchell lists *Gaylussacia*, *Vaccinium*, and *Lyonia*

Notes: Massachusetts to Florida, May-July. No photos available at this time.

Andrenidae: *Perdita obscurata* Cresson (Alloperdita)

County Records: Duval, Highlands, Orange

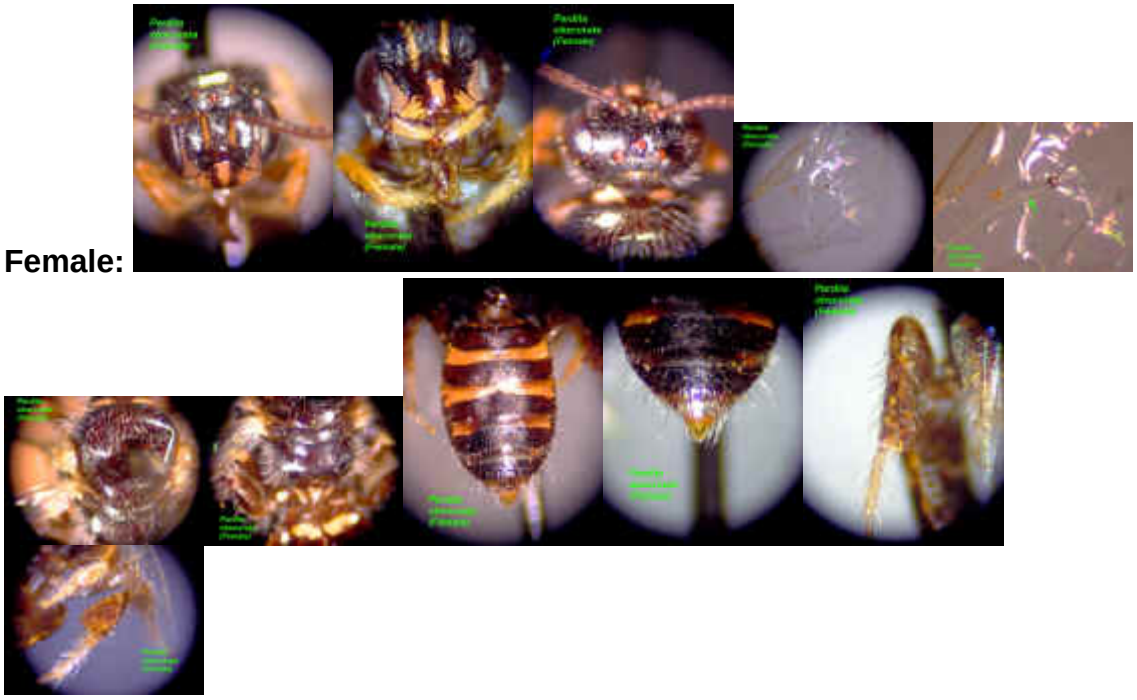
Locations: Jacksonville, Highlands Hammock, Orlando

Dates: June 7

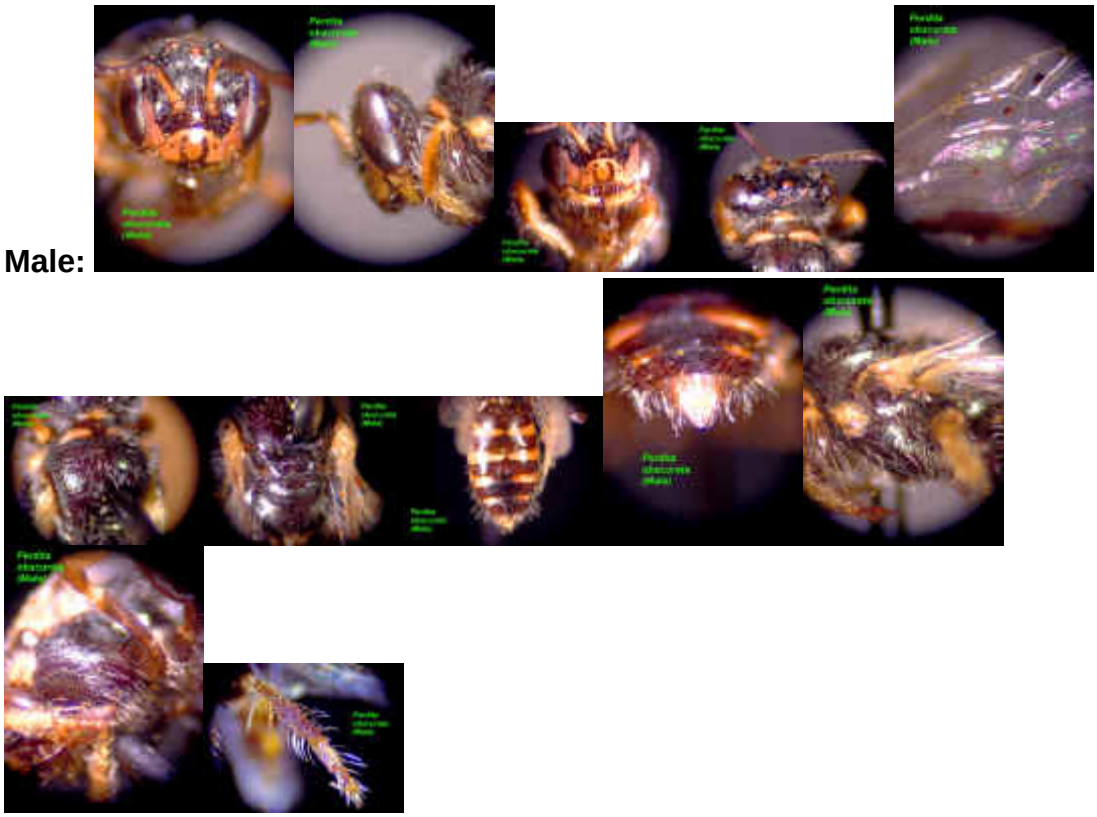
Plant: *Ilex cassine*

Notes: Outer coastal plain species, New Jersey to N. Carolina to Texas, flies primarily in May, collected elsewhere on *Diospyros*, *Stillingia*, and *Vaccinium arboreum*, also *Hydrocotyle*

Female:



Male:



Andrenidae: *Perdita townesi* (Alloperdita)

County Records: Duval, Highlands, Orange, Volusia

Locations: Cassadega, FL; Jacksonville, FL; Highlands Hammock State Park; Orlando.

Dates: March 30-April 15; March:1, April: 1

Plant: Timberlake lists *Ilex*, *Nyssa*, *Ceanothus*, *Diospyros*, *Vaccinium*

Notes: Described in Timberlake; confused with *P. bradleyi* often.

Male: 

Perditini

Subgenus *Hexaperdita* (7 species including 3 endemic species, 4 species fall flying)

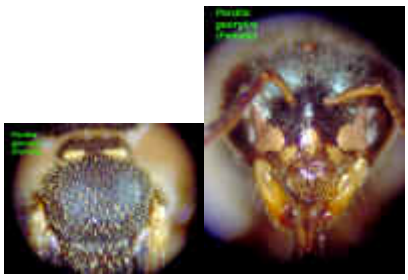
Key to *Hexaperdita*. Modified from Mitchell (1960) and Timberlake (1954)

Females

1. Abdomen entirely dark, without pale maculations, or with at most a single pair of widely separated and very small spots on tergum 2……2

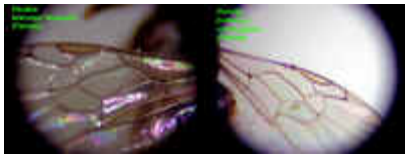
--Abdomen usually with whitish or yellowish transverse spots or bands…..5

2. Dorsum of thorax rather densely covered with short, erect , plumose, ochraceous pubescence; facial maculae extending narrowly up to eye margin level to antennae….*P. georgica*



-----Pubescence of dorsum of thorax less dense and more whitish; facial maculae not reaching above upper margin of clypeus…..3.

3. Wings hyaline or nearly so, veins brownish-testaceous…..4



---Wings milky-white, veins and stigma nearly colorless….*P. nubila*

4. Clypeus entirely yellow; mandibles and labrum mostly yellow; facial maculae largely filling space between clypeus and eyes…….*P. bishoppi*

-----Clypeus dark in part; mandibles and labrum dark; facial maculae small, not nearly filling space between clypeus and eyes….*P. boltoniae chrysopsina*

5. Abdominal terga 2-4 with conspicuous, lateral, transverse, yellow maculae, those on 2 only slightly separated medially….*P. graenicheri*

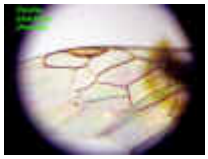
   -----Abdominal maculations limited to terga 2 and 3, and either very narrow and inconspicuous, or widely separated….6

6. Lateral facial maculae extending narrowly along eye margin to level of antennae; clypeus with dorso-lateral dark areas…7

   -----Facial maculae whitish, reduced, not extending above upper margin of clypeus; clypeus usually entirely whitish…..*P. bishoppi*

7. Wings milky-white, stigma very pale yellow, and veins nearly colorless…*P. foveata*

   ----Wings hyaline, veins relatively dark, brownish, or testaceous……*P. blatchleyi*



Males

1. Cheeks below tuberculate or spinose…2

----Cheeks at most only slightly tuberculate….5

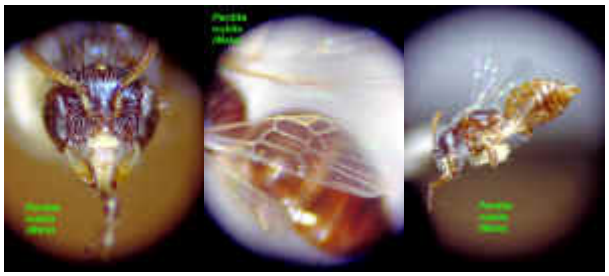
2. Entire clypeus and conspicuous lateral facial maculae pale yellow….*P. bishoppi*

Either the clypeus dark in part, or facial maculae absent…3

3. Head unusually large, much broader than thorax, cheeks swollen, much broader than eyes, with a rounded angle above and the lower angle produced and founded…*P. foveata*

Head only slightly broader than thorax, if at all; ventral angle of cheek more distinctly tuberculate or spinose…4

4. Clypeus more yellow, face with small but distinct lateral maculations adjacent to clypeus; scape rufo-testaceous or yellow; wings milky-white; femora and tibia more piceous, markedly contrasting with the yellow tarsal segments….*P. nubila*



-----Clypeus darker, sometimes without yellow; lateral facial maculations usually absent; scape piceous or blackish……*P. boltoniae chrysopsina*

5. Cheeks much broader than eyes, more or less angulate below; clypeus ivory, the lateral maculae broad and extensive, ending acutely on eye margin at level of antennae…*P. georgica*

----Cheeks rounded posteriorly, usually but little broader than eyes; abdomen dark, with at most one pair of very small and inconspicuous pale maculae; some portions of face below level of antennae dark; lower half of clypeus yellow, the upper half dark; lateral facial maculae absent (According to Norden et al (1992), some males do have tuberculate cheeks!)..*P. graenicheri.*

Andrenidae: *Perdita bishoppi bishoppi* Cockerell (Hexaperdita)

County Records: Alachua, Levy, St. Johns

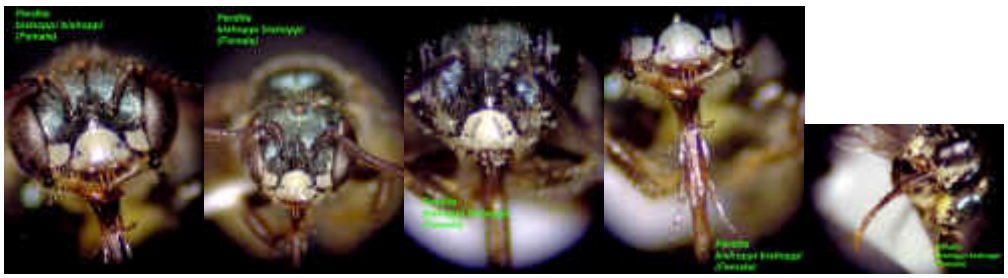
Locations: Ponte Vedra Beach

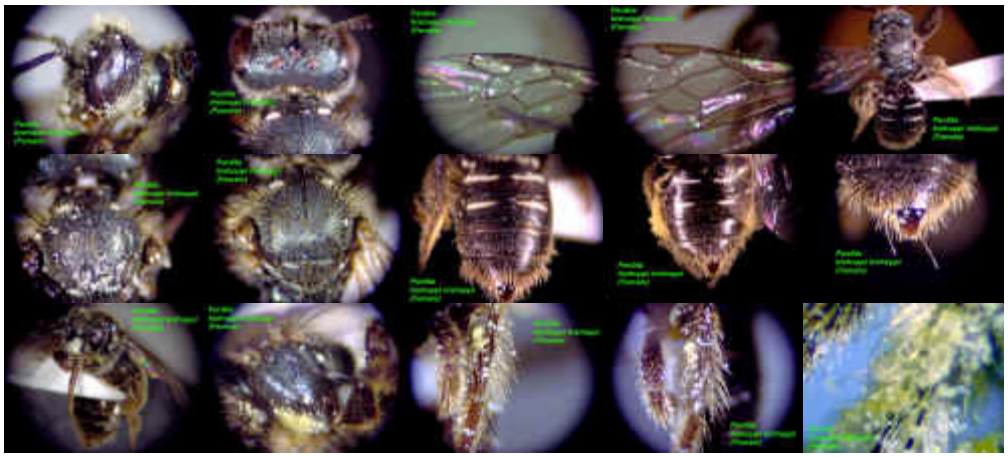
Dates: Oct. 12-Nov. 24, October:1, November: 4

Plant: *Heterotheca subaxillaris*; Mitchell lists *Heterotheca* and *Isopappus* (=*Croptilon*)

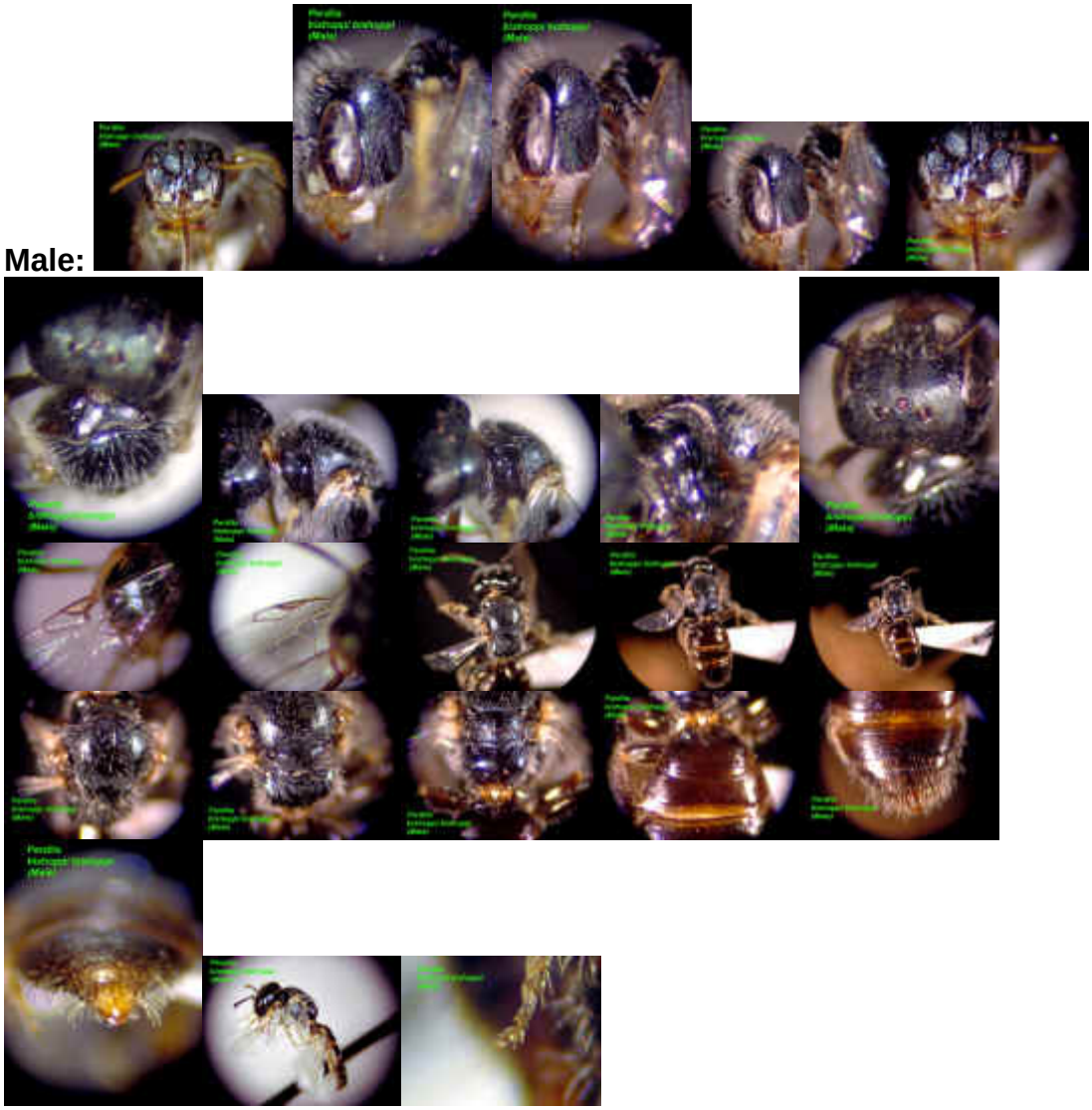
Notes: Coastal plain species-North Carolina-Florida-Texas; Flies Aug.-Oct.

Female:





Male:



Andrenidae: *Perdita blatchleyi* Timberlake ((Hexaperdita)

County Records: Alachua, Orange, Pinellas, Wakulla

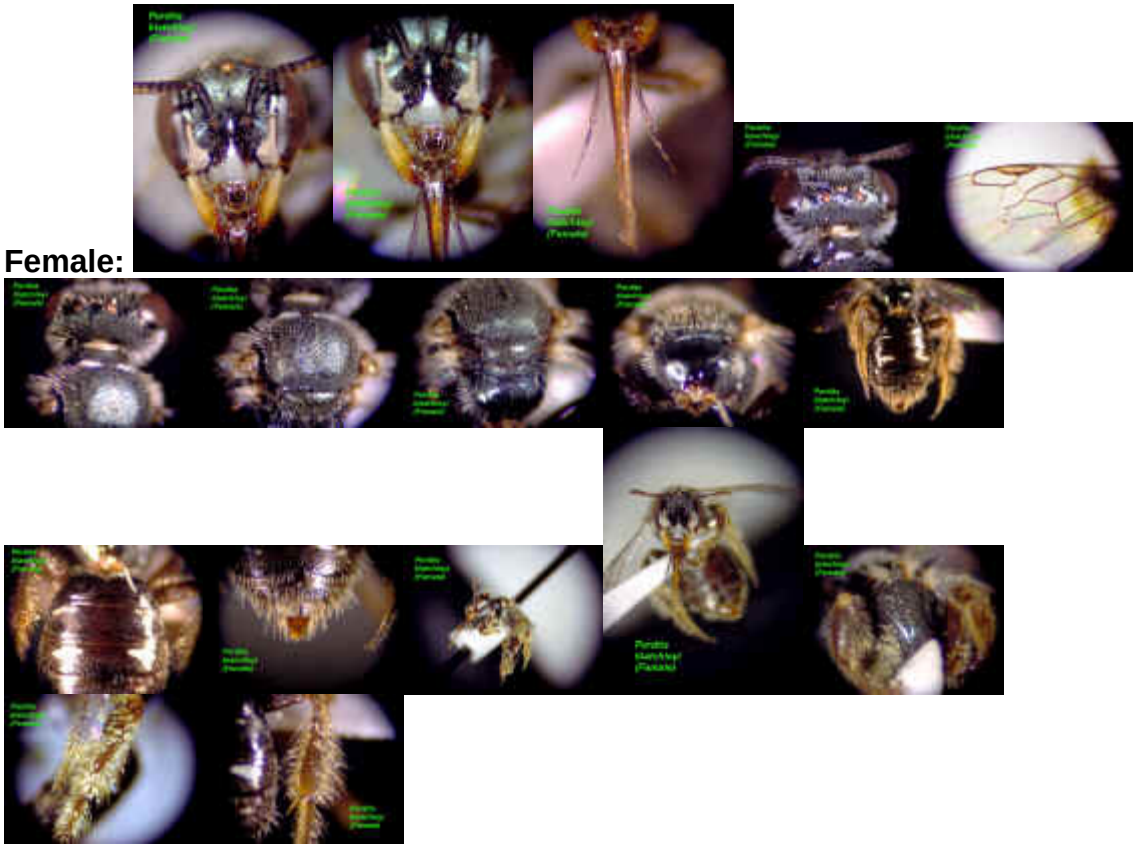
Locations: Winter Park, Dunedin

Dates: Oct. 12-Nov. 1, Oct: 1. Nov:1

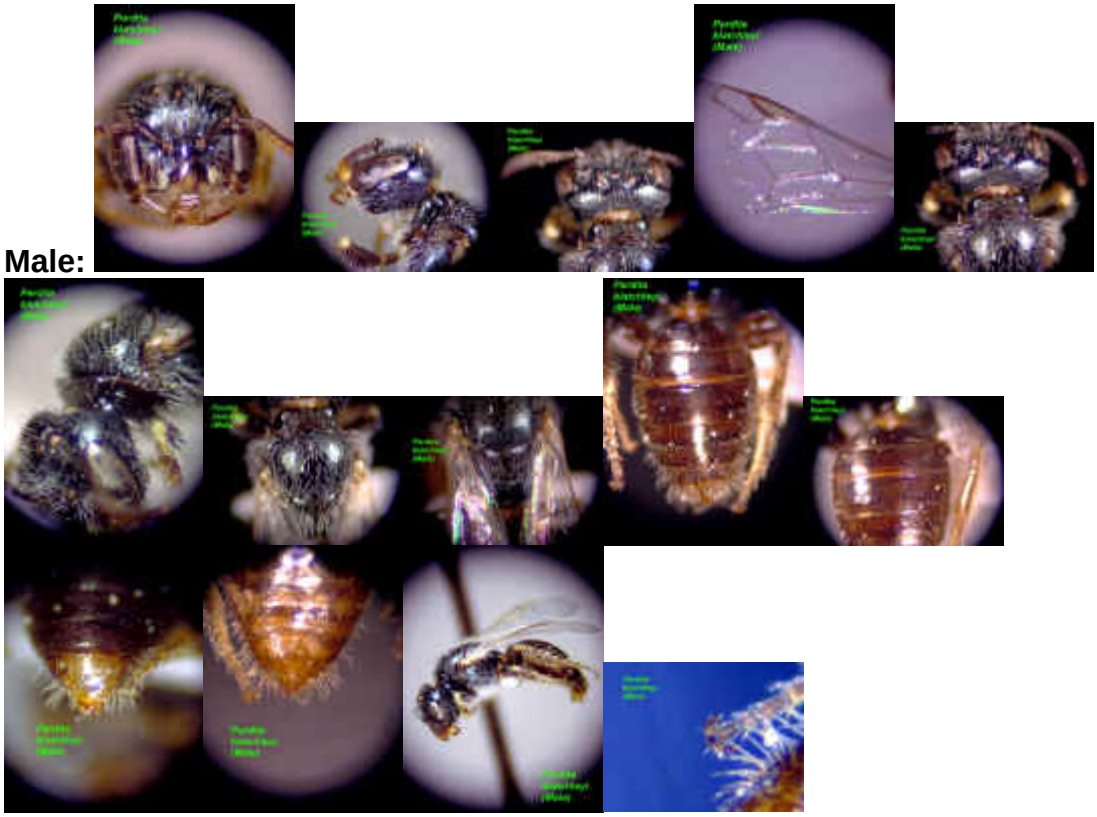
Plant: *Chrysopsis*

Notes: Endemic to Florida. Flies Oct-Nov.

Female:



Male:



Andrenidae: *Perdita boltoniae chrysopsina* Timberlake (Hexaperdita)

County Records: Alachua, Wakulla

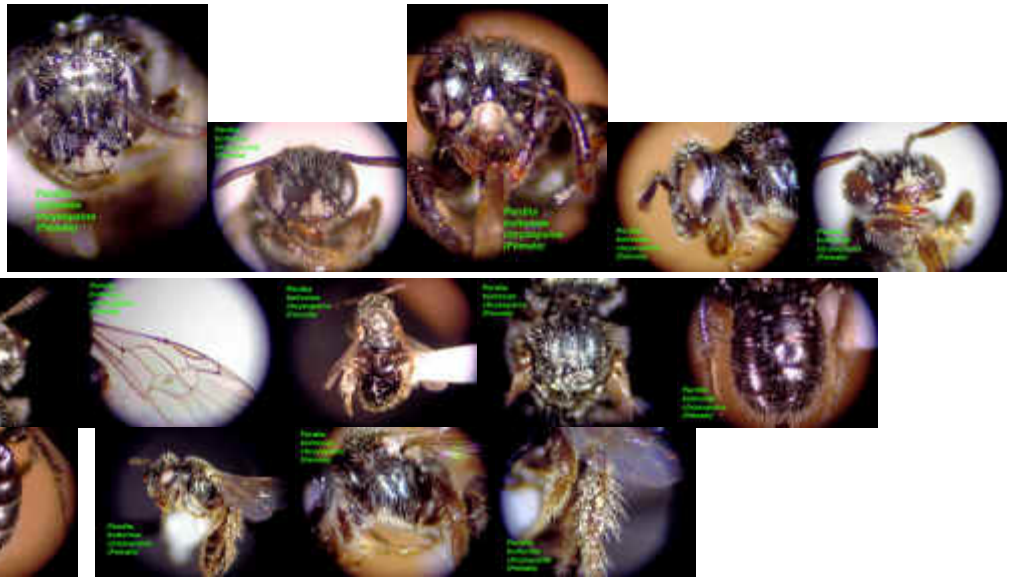
Locations:

Dates: May 2-July 2, May: 2, July: 1

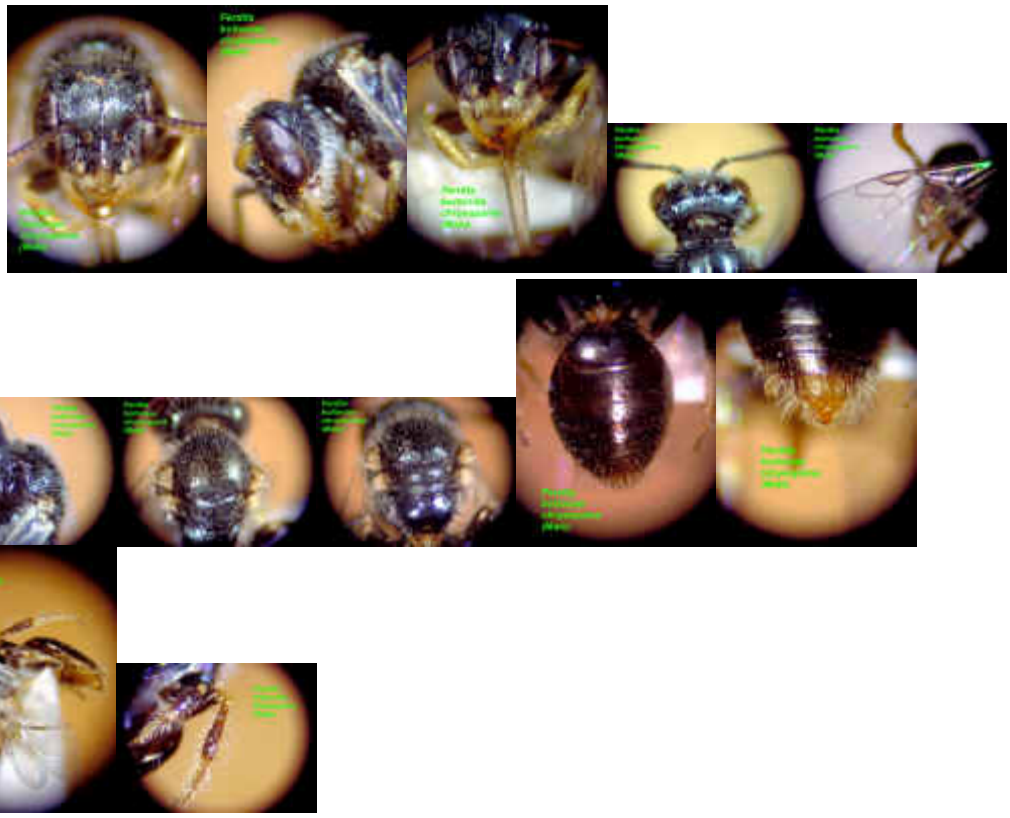
Plant: *Erigeron quercifolius*; Mitchell also lists *Chrysopsis*, *Coreopsis*, *Erigeron*, *Haplopappus*, and *Agalinis* (as *Gerardia*)

Notes: New Jersey-Florida, flies July-Oct.

Female:



Male:



Andrenidae: *Perdita foveata foveata* Timberlake (Hexaperdita)

County Records: none in FSCA, Timberlake (1956) does not list it for Florida.

Locations:

Dates:

Plant:

Notes: Flies May-June, disjunct species?

Andrenidae: *Perdita georgica* Timberlake (Hexaperdita)

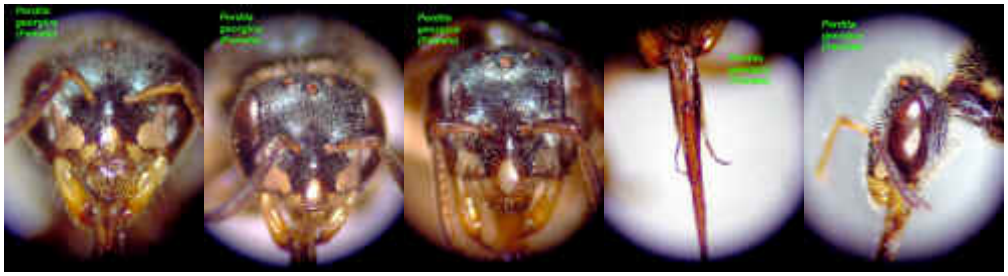
County Records: Orange, Volusia, Walton

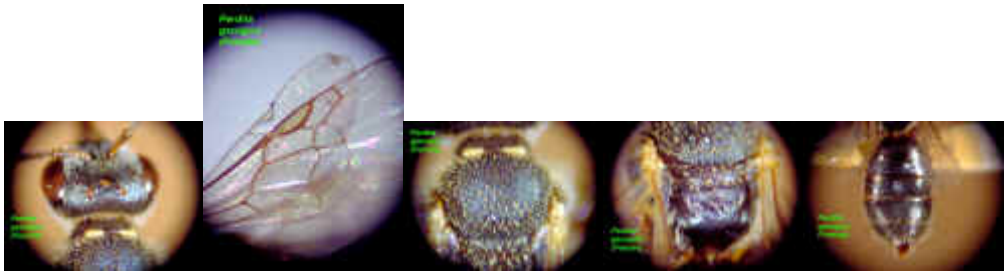
Locations: Daytona Beach, Winter Park, DeFuniak Springs

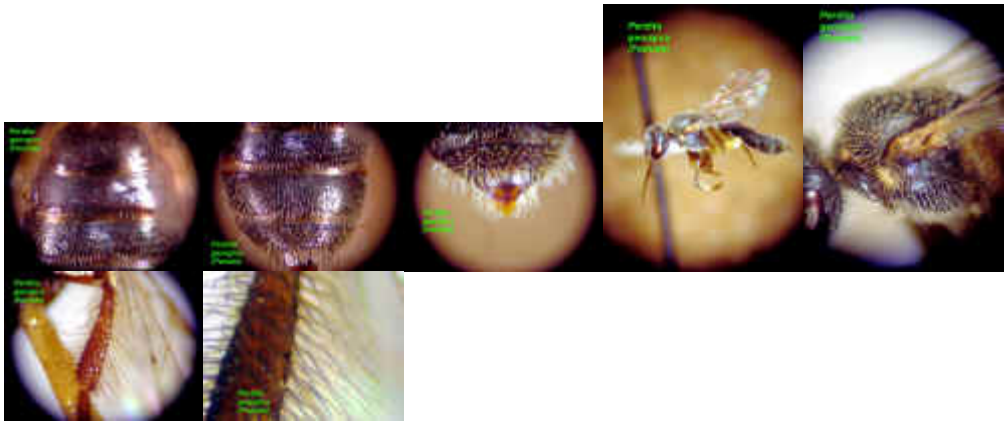
Dates: Sept. 6-Nov. 1; Sept.: 1, Nov:

Plant: Mitchell lists *Aster*, *Chrysopsis*, *Haplopappus* (*Rayjacksonia* or *Croptilon*), and *Heterotheca*; Flies August-October, North Carolina-Florida-Mississippi (coastal plain sp.)

Female:







Andrenidae: *Perdita graenicheri* Timberlake (Hexaperdita)

County Records: Highlands (Norden et al. 1992); Miami-Dade (Graenicher 1927?)

Locations:

Dates: Flies in October (Graenicher); Norden et al. (1992) found it in flight from late July-early November. Believed to be univoltine

Plant: collected on *Chrysopsis tracyi* only (Graenicher); Norden et al. (1992) found it on *Heterotheca subaxillaris* and *Chrysopsis microcephala*, collecting pollen from H. subaxillaris and nectar from both.

Notes: Originally thought to be endemic to SE coast of Florida (Miami-Dade to Palm Beach?); Recent collections from the central sand ridge area (Norden et al. 1992) have expanded its range to the south-central peninsula. Perhaps, it occurs in two disjunct areas (the sandy areas of southeastern Florida and the central sand ridge). Norden et al. (1992) also found much greater morphological variation in males than that of the original type specimens and males may not key out using the key in Mitchell. Females key out ok. Males show variation in head size and gena tubercules, with larger males having tubercules and smaller males lacking them.

Andrenidae: *Perdita nubila* Timberlake (Hexaperdita)

County Records: Alachua

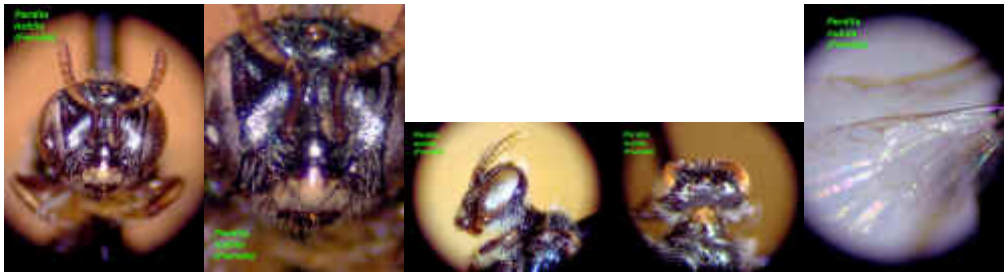
Locations:

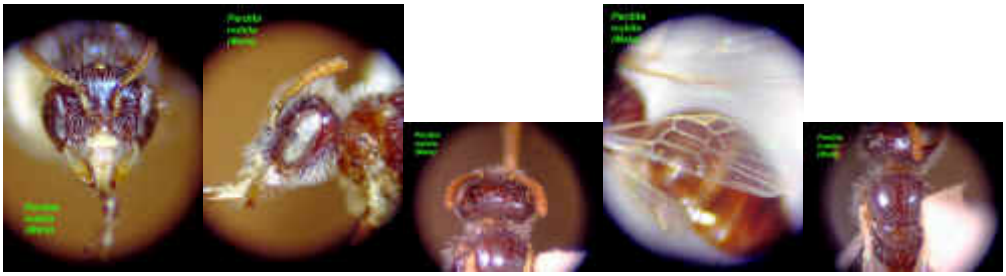
Dates: May 1-June 25, May: 2. June:

Plant: Mitchell lists *E. strigosus* (=*Erigeron ramosus*), Flies April-July

Notes: Endemic to Florida. *P. nubila* may occasionally lack the dense hairs.

Female:



Male: 

Perditini

Subgenus *Perdita* (5 taxa) and unassigned species (1 sp.)

Key to taxa of subgenus *Perdita* and unassigned male of *P. krombeini*

Females

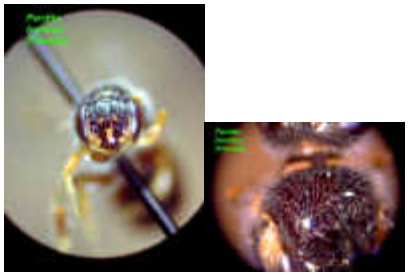
1. Abdominal maculations very small and inconspicuous or entirely lacking, if present, limited to terga 2 and 3….2

   ----Abdominal terga 2-4 with distinct yellowish or whitish, lateral maculations….3

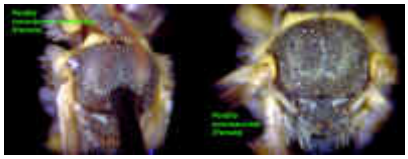
2. Face, including clypeus, entirely dark; clypeus protuberant, nearly as long as broad; mandibles bright yellow…*P. halictoides*

   ----Clypeus more or less extensively cream colored; large (7mm); clypeus whitish in large part, dark along upper margin; lateral facial maculae broad but very small.. *P. gerardiae*

3. Thorax entirely lacking maculations, but front tibiae with an anterior yellow stripe…*P. bradleyi* (Alloperdita-lacking intercalary cell).

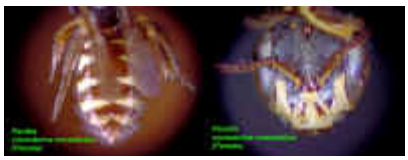


---Tubercles and pair of spots on pronotal collar bright yellow…4.

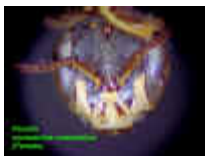


4. Fifth abdominal terga without maculae, and scape entirely dark…*P. octomaculata*

----Fifth abdominal terga conspicuously maculated, and scape yellow anteriorly…5



5. Supraclypeal area dark or with a pair of small, yellow spots, and clypeus with a pair of rather large, elongate, oblique, dark bands..*P. consobrina consobrina*



----Supraclypeal area yellow, the facial maculae larger, broadly truncate above, and clypeus almost entirely yellow, the dark bands reduced…*P. consobrina lepida*

Males

1. Abdomen dark, with at most one pair of very small and inconspicuous pale maculae…2

---Abdomen conspicuously maculated….4

2. Larger (6mm); supraclypeal area not maculated; clypeus and face marks ivory, the latter filling area between clypeus and each eye, abruptly truncate above and not extending above upper margin of clypeus…*P. gerardiae*

----Smaller; supraclypeal area maculated; clypeus largely yellow; facial maculae filling area between clypeus and eyes, and extending nearly or quite to level of antennae…3

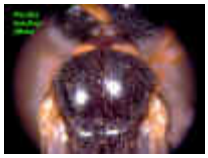
3. Face broad, eyes slightly divergent below; facial maculae ending acutely on eye margin slightly above level of antennae…*P. halictoides*

--Face not so broad, eyes subparallell; facial maculae broadly truncate above, ending at level of lower margin of antennal fossa….*P. krombeini*

4. Supraclypeal and subantennal area largely greenish…*P. octomaculata*

----Entire face below level of antenna yellow or ivory….5

5. Scutum polished, with sparse, minute punctures….*P. bradleyi* (Alloperdita lacking intercalary cell).



----Scutum densely tessellate…6

6. Transverse yellow maculae well developed on terga 1-4…*P. consobrina consobrina*

----Maculae well developed only on terga 2-3….*P. consbrina lepida*

Andrenidae: *Perdita consobrina consobrina* Timberlake (Perdita)

County Records: Alachua, Okaloosa

Locations:

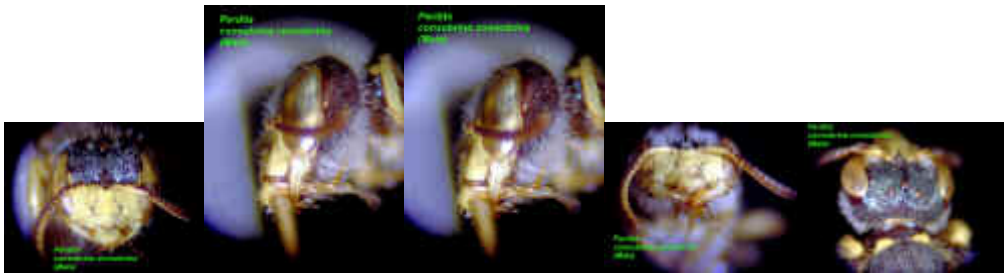
Dates: Sept. 23-Oct. 18; Sept.: 2, Oct:4

Plant: *Dalea*, *Chrysopsis*, *Agalinis*, *Happlopappus*, and *Heterotheca*

Notes: Also found in N. and S. Carolina, probably intervening areas of Georgia also. New state record for Florida. Not previously known from state.

Female:

Male:



Andrenidae: *Perdita consobrina lepida* Timberlake (Perdita)

County Records: Palm Beach, Pinellas

Locations: Dunedin, Lake Worth

Dates: Sept 24

Plant:

Notes: endemic to Florida, Sept.-November

Andrenidae: *Perdita gerardiae* Crawford (Perdita)

County Records: None from FSCA, Jefferson Co. (Buchmann and Donovan)

Locations:

Dates: Sept-Oct.

Plant: *Agalinis* (=*Gerardia*)

Notes: North Carolina to Florida to Mississipi, apparently a coastal plain species, specialist on *Agalinis* (False Foxglove), which are primarily summer-fall flowering plants.

Andrenidae: *Perdita halictoides* Smith (Perdita)

County Records: Miami-Dade, Volusia

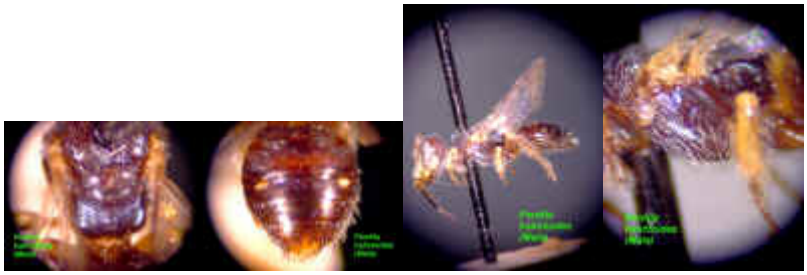
Locations:

Dates: July 24

Plant: Mitchell lists only *Physalis*

Notes: This species is highly disjunct, with populations from Florida and other populations known only from Michigan and Wisconsin (or these populations should be known as *P. maura*) and thus the species would be an endemic species. Graenicher recorded this species from Coral Gables, FL.

Male: 



Andrenidae: *Perdita octomaculata* Say (Perdita)

County Records: Clay

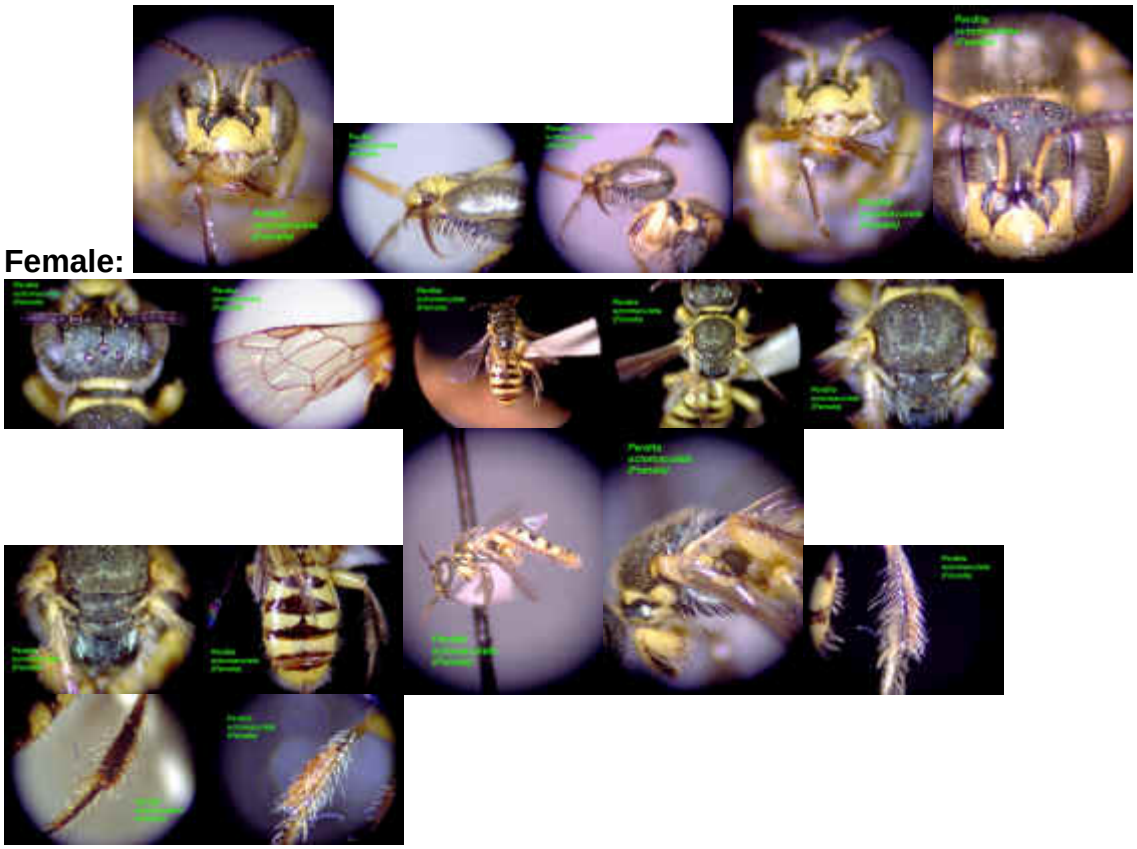
Locations:

Dates: Sept. 15-Oct. 22, Sept: 1, Oct: 3

Plant: Mostly composites according to Timberlake.

Notes: new state record for this species, Mitchell did not list if from Florida. Timberlake did not have specimens from Florida either.

Female:



Species listed for Florida, not in the FSCA, not assigned to a subgenus

Andrenidae: *Perdita krombeini* Timberlake (Endemic)

County Records: Lee

Locations: Olga, on sand flats

Dates: March 30

Plant:

Notes: only 1 male collected, no other specimens seen. Related to *P. sphaeralceai*, *P. calloleuca*, *P. tarda*, and *P. sidae* of the Southwestern United States. Very rare?

Perditini

Subgenus *Cockerellia* (1 taxa)

Andrenidae: *Perdita bequaerti bequaerti* Vierecki (Cockerellia)

County Records: Flager, Leon, Levy, St. Johns, Volusia

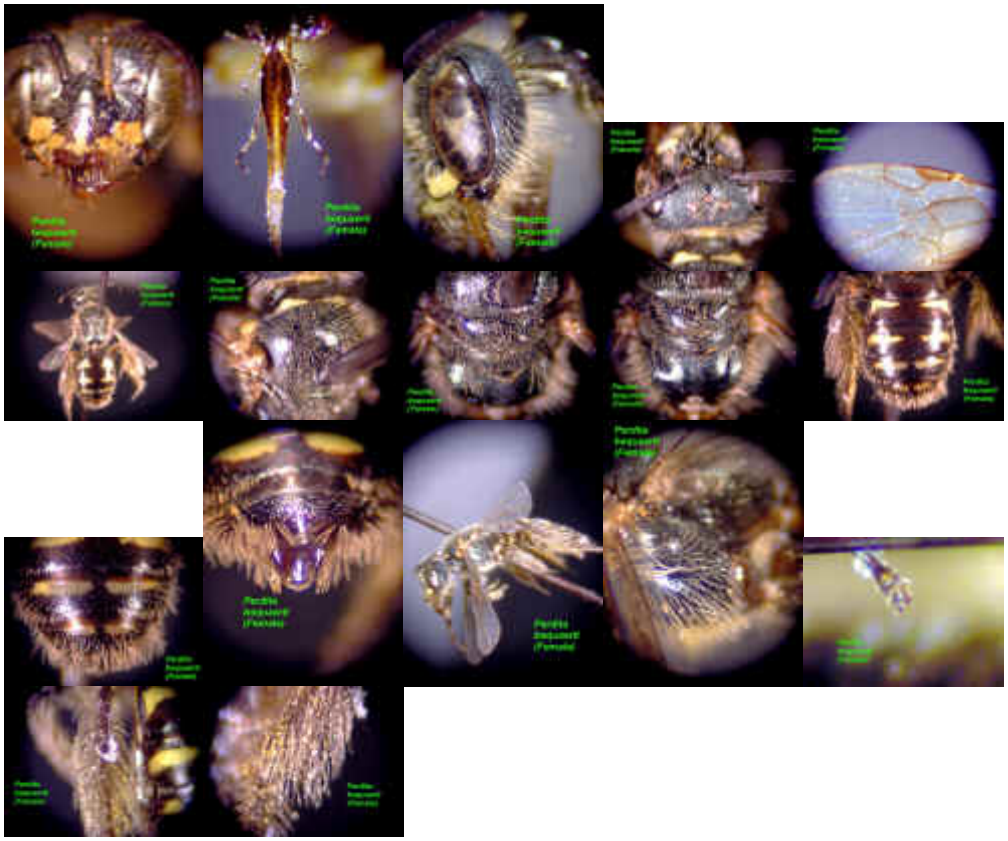
Locations: Ormond Beach, Daytona Beach

Dates: July 8-November 3, July:1, September: 3, November: 2

Plants: Mitchell lists *Physalis*, *Bidens*, *Helianthus*;

Distribution: sandy areas of Minnesota, outer coastal plain, New Jersey to Florida to Mississippi.

Female: 



Halictidae

Subfamily Halictiniae

This subfamily has two tribes in Florida, the Augochlorini and the Halictini.

Halictidae

Halictiniae

Tribe Augochlorini

Augochlora

Augochlorella

Augochloropsis

Halictidae

Halictiniae

Augochlorini

Genus *Augochlora*, 2 species

This is one of the most common species in Florida, particularly in wetlands.

Key to Species (from Mitchell 1962)

1. Females....2

Males...3

2. Punctures of pleura distinctly separated; wings subhyaline or faintly infuscated; color green or coppery...*A. pura pura*

Pleura almost rugose, punctures fine and contiguous; wings quite uniformly pale brownish; color deep blue or purple (South Florida)...*A. pura mosieri*

3. Wings subhyaline or faintly infuscated; color green or coppery...*A . pura pura*

Wings uniformly pale brownish; color deep blue or bluish-green...*A. pura mosieri*

Halictidae: *Augochlora pura mosieri* Cockerell

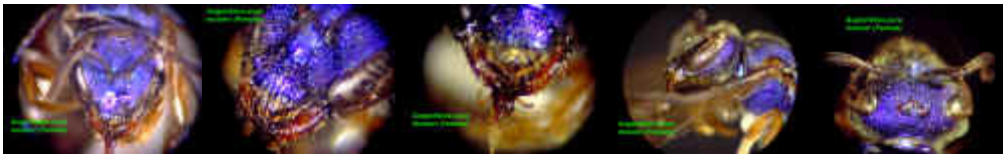
County Records:

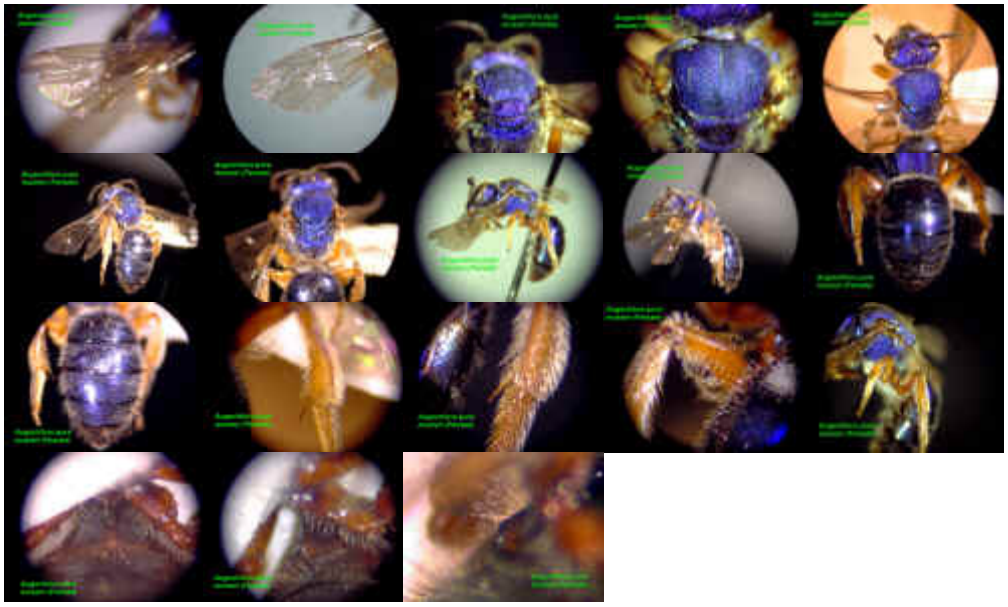
Locations:

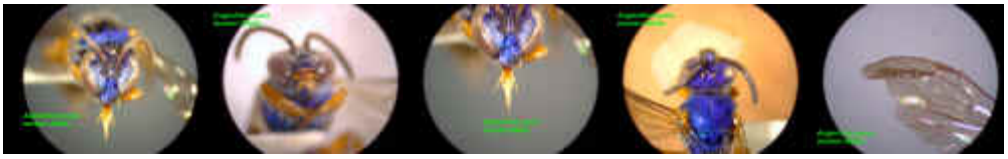
Dates:

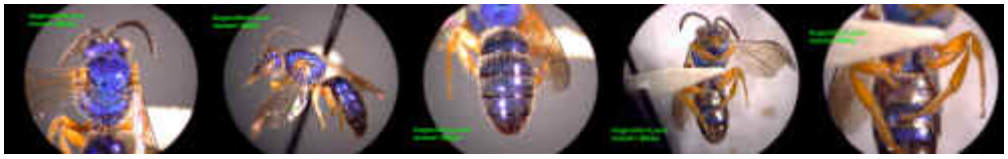
Plants: *Wedelia trilobata, Phytolacca americana, Psychotria sulzneri, Eugenia axillaris, Calyptranthes pallens, Myrcianthes fragrans, Metopium toxiferum, Tetrazygia bicolor, and Ardisia escallonioides* (Pascarella, unpub. data and Pascarella 1997). *Warea carteri, Oxypolis filiformis, Phytolacca rigida, Sida acuta, Rhus copallina var. Leucantha, Salix caroliniana, Hamelia patens, Sagittaria lancifolia, Bidens alba, Solidago stricta* (Graenicher 1930). *Bidens, Cattleya, Flaveria, Hamelia, Melaleuca, Psychotria, Salix, and Sida* (Mitchell)

Notes:

Female: 



Male: 



Halictidae: *Augochlora pura pura* Say

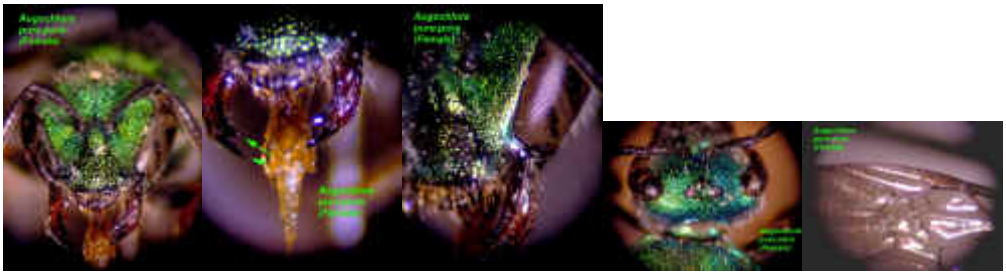
County Records:

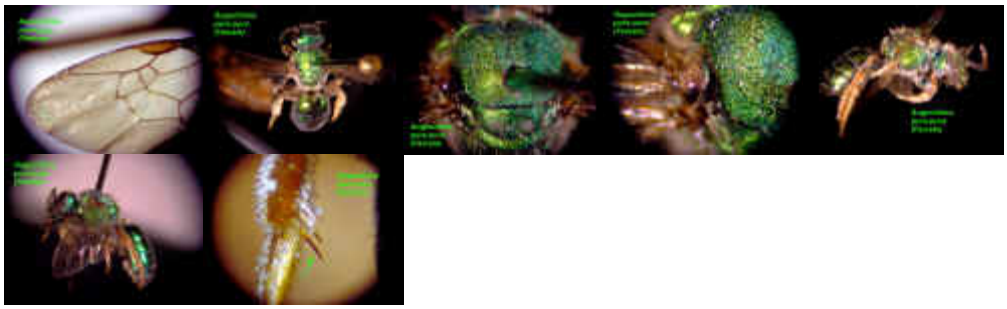
Locations:

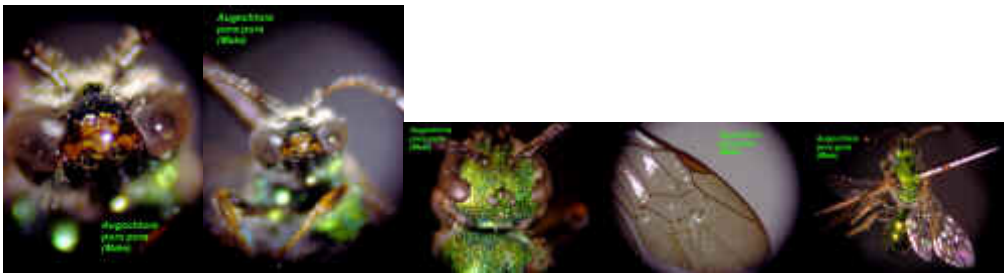
Dates:

Plants:

Notes:

Female: 



Male: 

Halictidae

Halictiniae

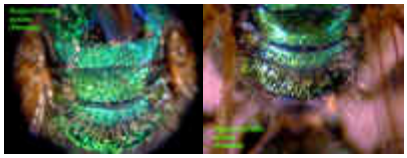
Augochlorini

Genus *Augochlorella*, 3 species

Key to females in Florida

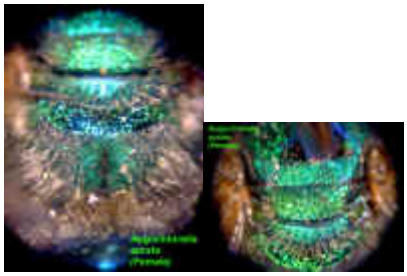
1. Posterior vertical surface of propodeum irregularly or coarsely granular; length of propodeal disc equal to or shorter than metanotum…*A. gratiosa*

Posterior vertical surface of propodeum finely and evenly granular or smooth; length of disc equal to or slightly greater than length of metanotum…2



2. Straie of propodeal disc thick, regular, straight, or slightly wavy….*A. striata*

Striae of propodeal disc fine, close, irregular…*A. aurata*

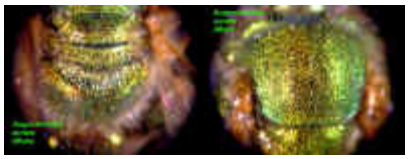


Key to males in Florida

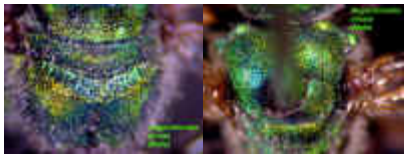
1. Hind basitarsis with erect hairs of two distinctly different lengths (exclusive of basal tuft), longest hairs at least twice as long as width of segment, usually curved at tips, basal third of hind basitarsus bearing long curved hairs, four times as long as width of segment; least antennal segment entirely dark brown; fifth metasomal sternum with greenish reflections….*A. gratiosa*

Hind basitarsis with erect hairs of similar lengths (exclusive of basal tuft), 1.5 times as long as width of segment or less; all hairs straight…2

2. Striae of propodeal disc fine and close together; scutum with small, distinct but crowded punctures, weakly rugose anteriorly….*A. aurata*



Striae of propodeal disc coarse, widely or closely spaced; scutum smooth with large, widely spaced punctures or rough and coarsely punctate, coarsely rugose anteriorly.. *A. striata*.



Halictidae: *Augochlorella aurata* Smith

County Records: FSCA: Brevard, Miami-Dade, Highlands, Duval, Pasco, Alachua, Orange, Levy Ordway (1966): Broward, Collier, Alachua, Brevard, Dixie, Duval, Flager, Glades Highlands, Hillsborough, Indian River, Jackson, Levy, Marion, Martin, Nassau, Okeechobee, Orange, Palm Beach, Pasco, Pinellas, Polk, St. Lucie, St. Johns, Seminole. Volusia

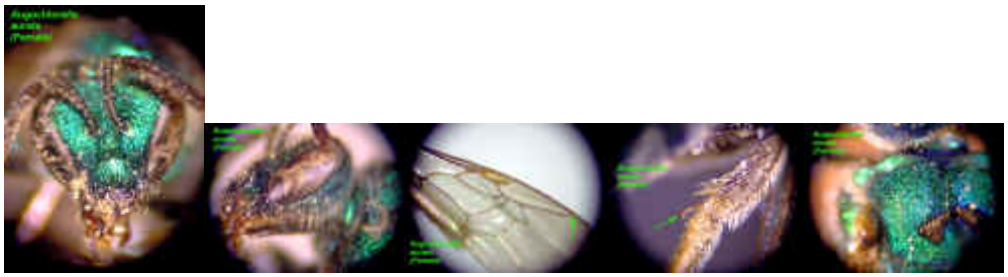
Locations:

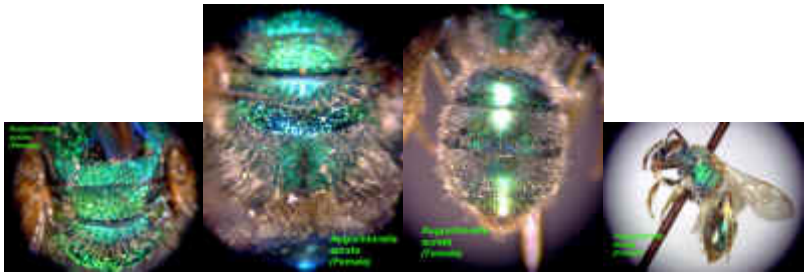
Dates: March 2-Nov. 13

Plants: Opuntia, Polygonum hydropiperoides, Viburnum rufidulum, Rubus, Aster

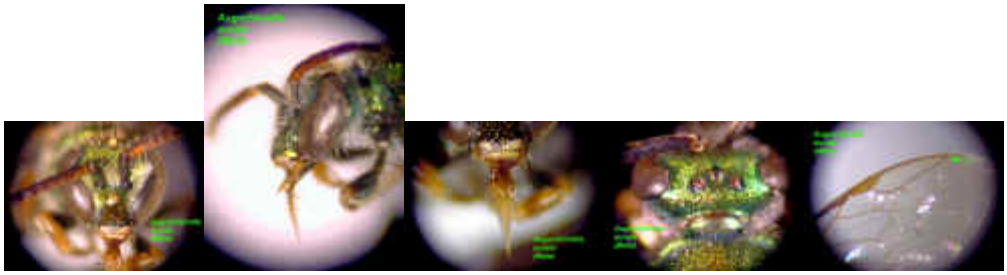
Notes: The map in Ordway (1966) shows this species occurring throughout Florida.

Female:





Male:



Halictidae: *Augochlorella gratiosa* Smith

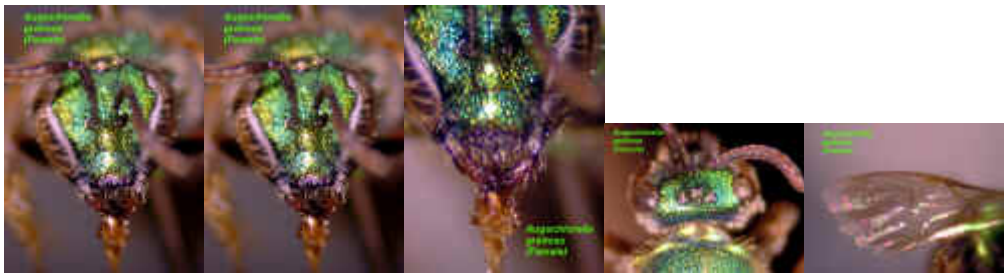
County Records: FSCA: Alachua, Levy, Miami-Dade, Gilchrist, Lake, Highlands, Polk, Sarasota, Marion, Hillsborough, Lake, Lee, St. Lucie; Ordway (1966): Alachua, Bradford, Brevard, Broward, Collier, Dade, Duval, Gadsden, Hendry, Hernando, Highlands, Hillsborough, Lake, Lee, Levy, Manatee, Marion, Martin, Monroe, Nassau, Orange, Palm Beach, Pasco, Polk, Putnam, Seminole, St. Lucie, Volusia

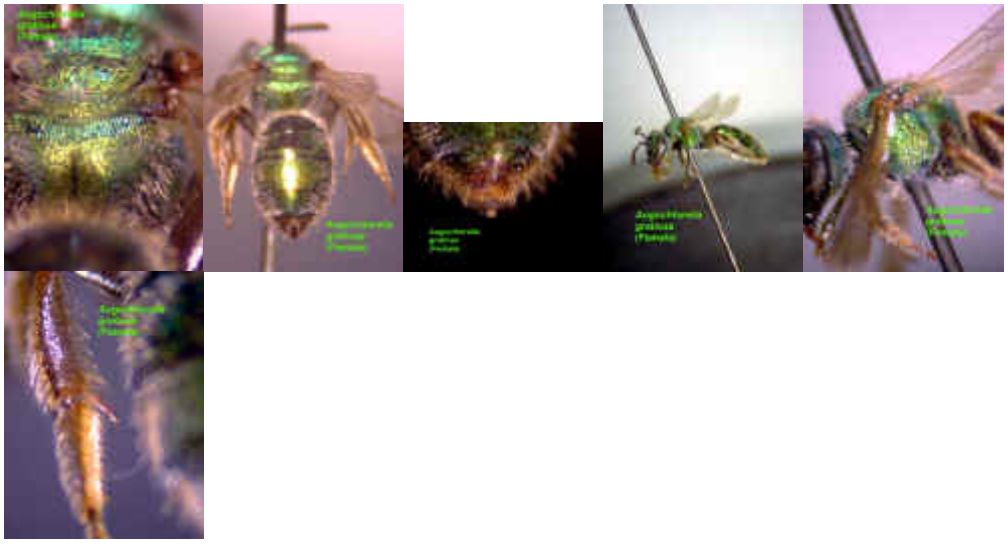
Locations:

Dates: Feb.-December

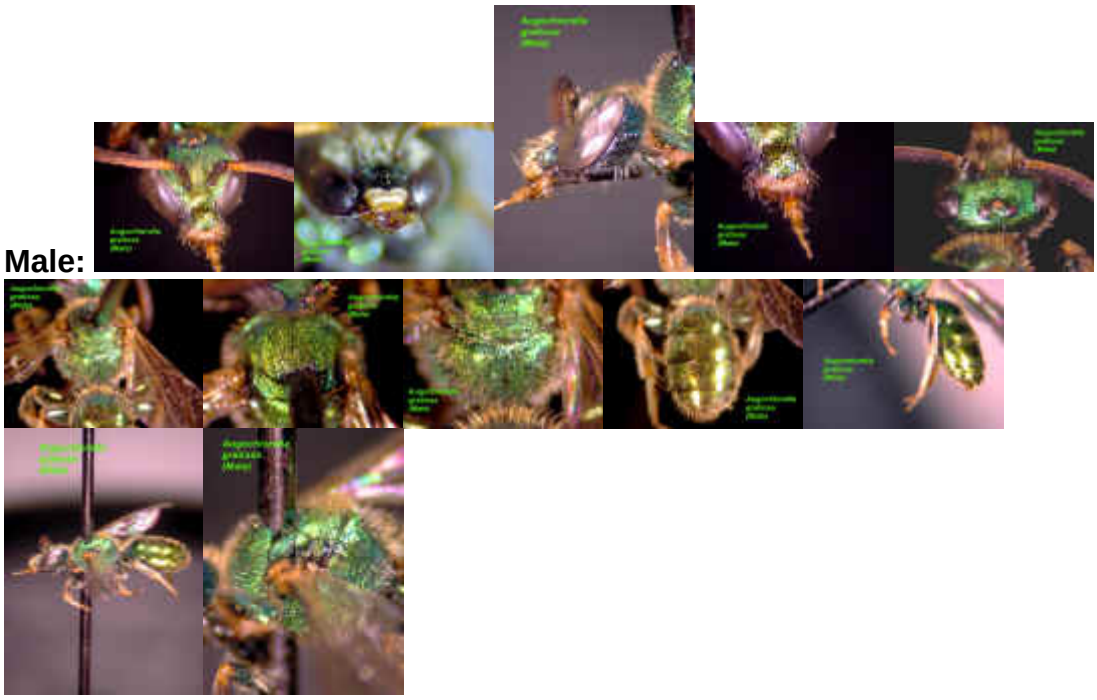
Plants: *Crotalaria pumila, Sysrynchium,Sabal palmetto, Salx caroliniana, Bidens* (UM); *Sabal palmetto, Warea carteri, Lepidium virginicum, Opuntia austrina, Croton linearis, Callicarpa americana, Chamaecrista aspera, Piriqueta tomentosa, Pcynothymus rigidus, Galactia floridana, Agalinis purpurea, Solidago angustifolia, Pityopsis graminifolia, Aster sp., Bidens alba, Helianthus debilis, Chrysobalanus icaco, Jacquemontia reclinata* (Graenicher 1930, listed as *Augochlora festiva*).

Notes: The map in Ordway (1966) shows this species occurring throughout Florida.

Female: 



Male:



Halictidae: *Augochlorella striata* Provancher

County Records: Ordway does not list counties but occurs throughout the state.

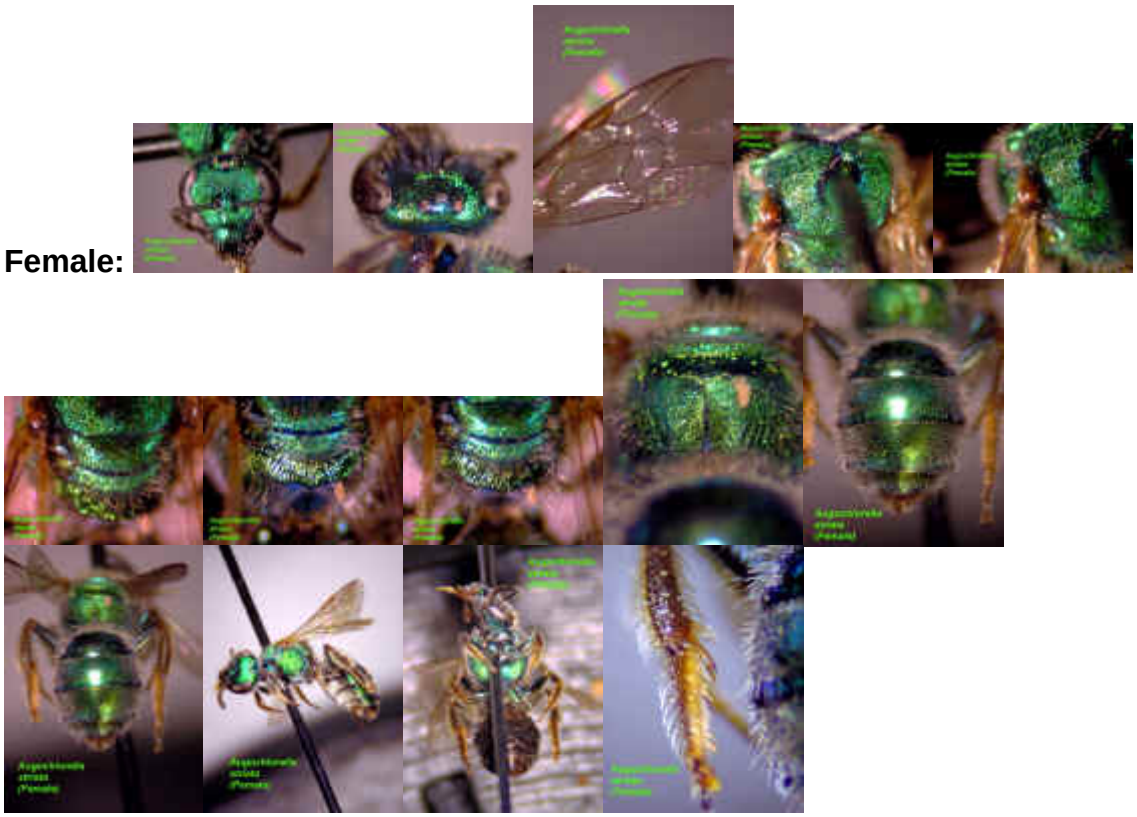
Locations:

Dates: Feb.-December

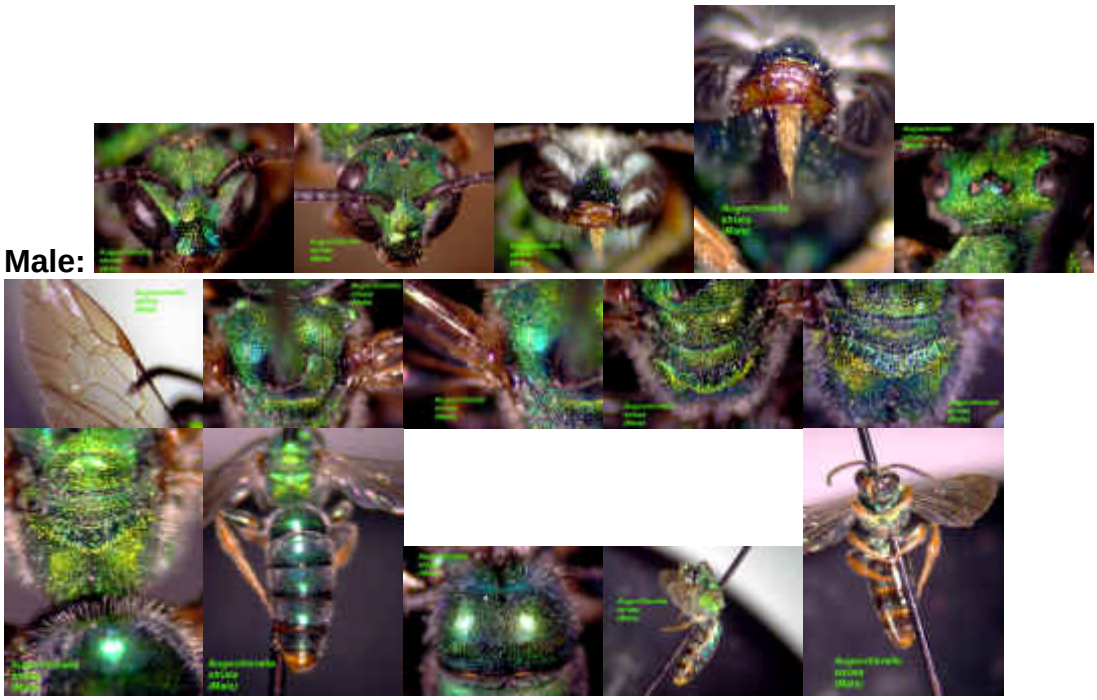
Plants:

Notes: The map in Ordway (1966) shows this species occurring throughout Florida. Ordway states that nearly only form A of *A. striata* occurs in Florida.

Female:



Male:



Halictidae

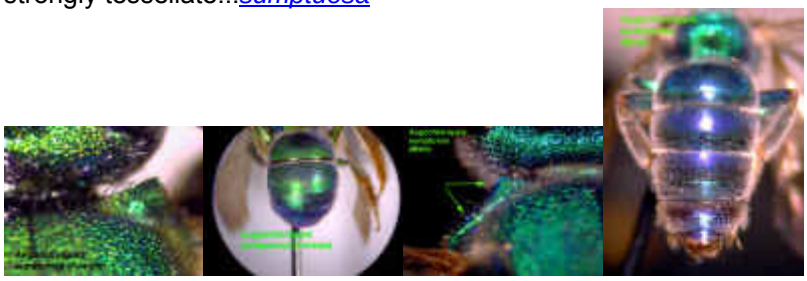
Halictiniae

Augochlorini

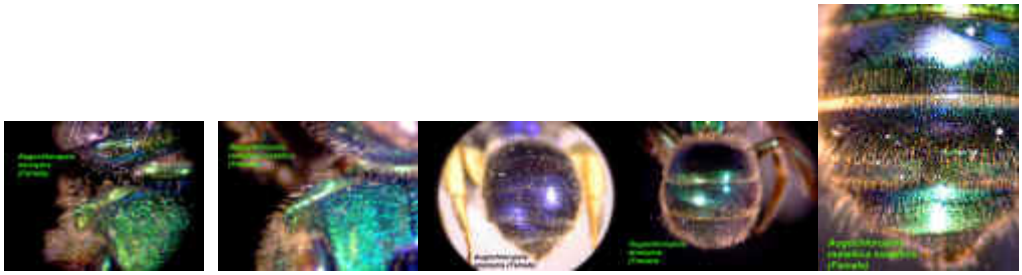
Genus Augochloropsis (3 taxa)

Key to species (both males and females)

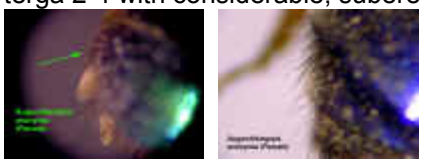
1. Posterior margin of prothorax with a pair of wing-like carinae above the tubercles, or abdomen strongly tessellate...*sumptuosa*



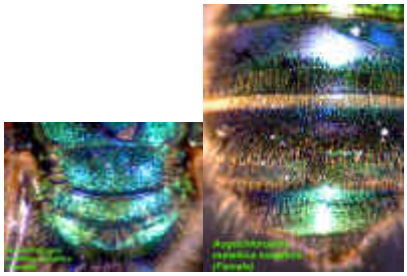
Posterior margin of prothorax only slightly produced above the tubercles; abdomen shining between distinct, deep punctures...2



2. Dorsal area of propodeum smooth, very narrow, about half as wide as metanotum; abdominal terga 2-4 with considerable, suberect, black pubescence, not vibrassate apically.....*anonyma.*



Dorsal area of propodeum tessellate, subequal in breadth to metanotum; abdominal terga largely pale pubescent..3



3. Abdominal terga 1 and 2 with a conspicous apical fringe of pale vibrasse...*metallica metallica*

Apical vibrassae of terga 1 and 2 much reduced or lacking..*metallica fulgida* (usally bright green)

Halictidae: *Augochloropsis anonyma* Cockerell

County Records: likely throughout

Locations:

Dates:

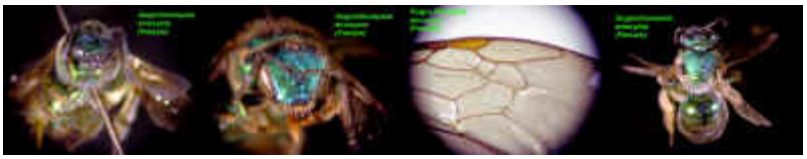
Plants: *Crotalaria, Chaemaecrista, Bidens, Sysrynchium, Physalis, Salix, Conocarpus erectus* (UM); *Baccharis, Bidens, Cirsium, Erigeron, Helenium, Metopium, Rhus* (Mitchell)

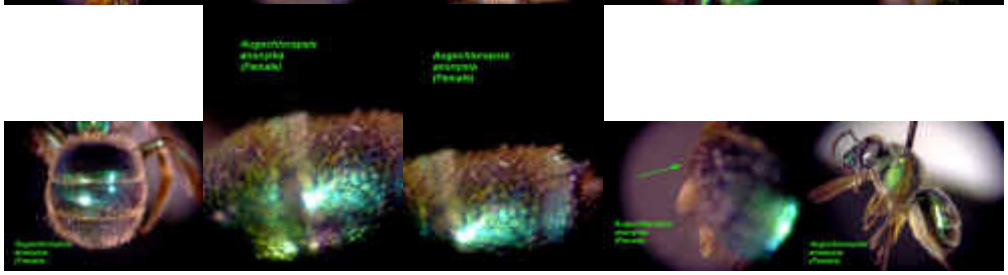
Notes: abundant in S. Florida, rare in N. Florida

Female:

South Florida Blue Form:

North Florida Green Form:





Male (South Florida Blue Form):

Halictidae: *Augochloropsis metallica*, includes *metallica metallica* Fabricius and *metallica fulgida* Smith. The majority of Florida specimens conform to the subspecies *metallica metallica.*

County Records: likely throughout

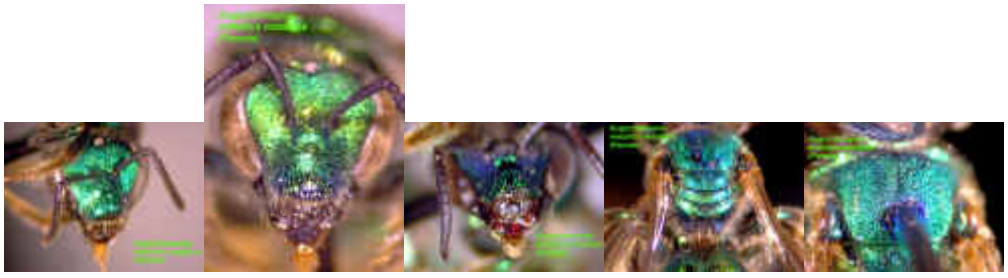
Locations:

Dates:

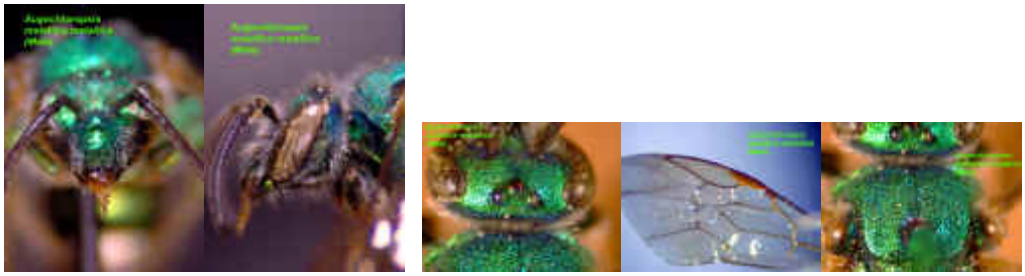
Plants: *Warea carteri, Lantana ovatifolia v. reclinata, Pityopsis graminifolia v. tracyi, Bidens alba, Helianthus debilis, Baccharis halimifolia, Solanum wendlandi, Rhus copallina var. Leucantha, Jacquemontia reclinata* (on sand dunes at Jupiter Island) (Graenicher 1930).

Notes:

Female:



Male:



Halictidae: *Augochloropsis sumptuosa* Smith

County Records: likely throughout

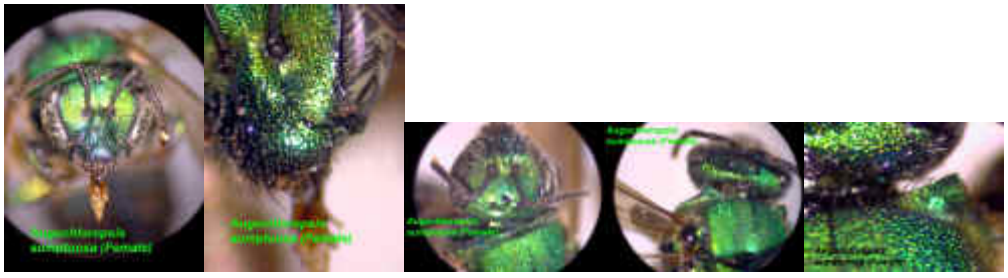
Locations:

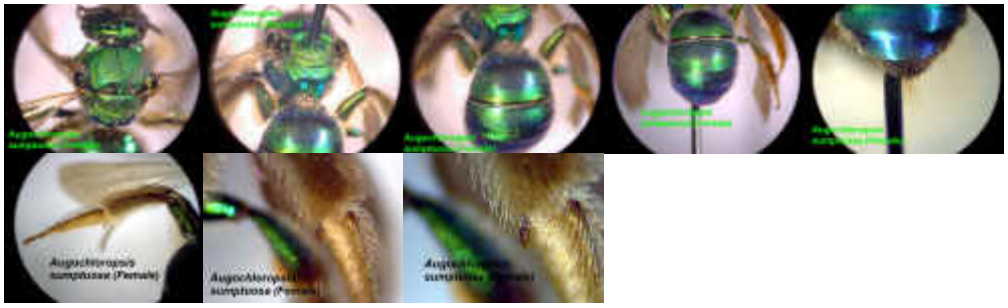
Dates:

Plants:

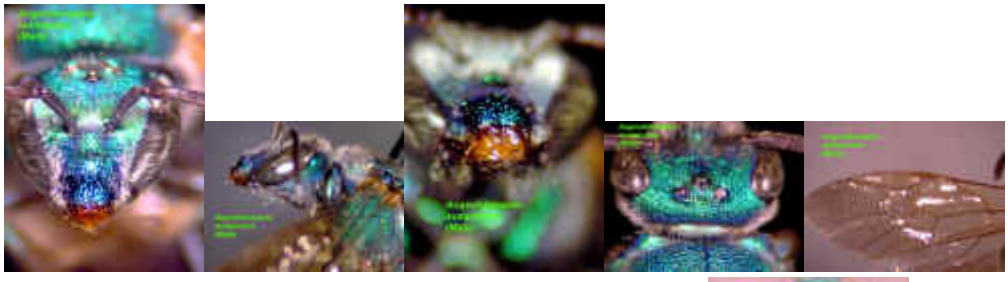
Notes:

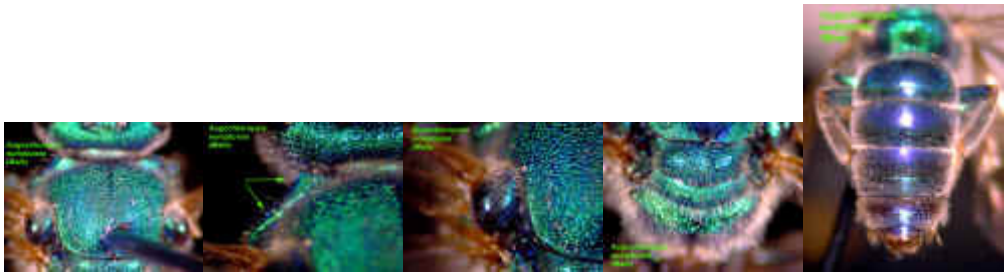
Female:

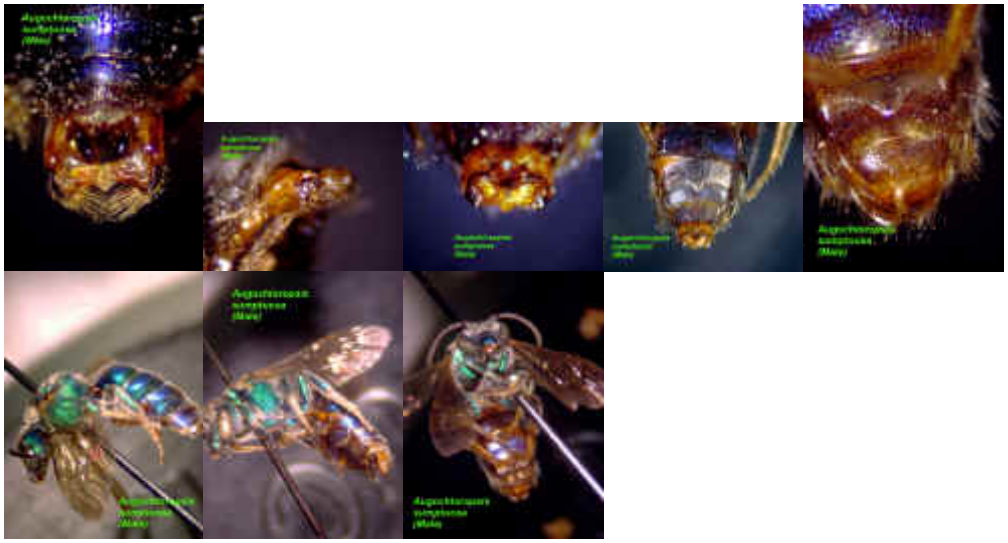




Male:







Halictiniae

Tribe Halictini

- *Agapostemon*
- *Halictus*
- *Lasioglossum*
  - *Lasioglossum*
  - *Evylaeus*
  - *Hemihalictus*
  - *Dialictus*
    - *Habralictellus*
    - *Dialictus*
  - *Sphecodes*

Halictidae

Halictini

Genus *Agapostemon* (2 taxa)

Key to Females

Abdomen black, with pale basal fasciae..*Agapostemon virescens*

Abdomen metallic green..*Agapostemon splendens*

Key to Males

Hind femora robust, thickened, only about twice as long as the greatest width....*Agapostemon splendens*

Hind femora slender, fully three times as long as the greatest width....*Agapostemon virescens*

Halictidae: *Agapostemon splendens* Lepeletier

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

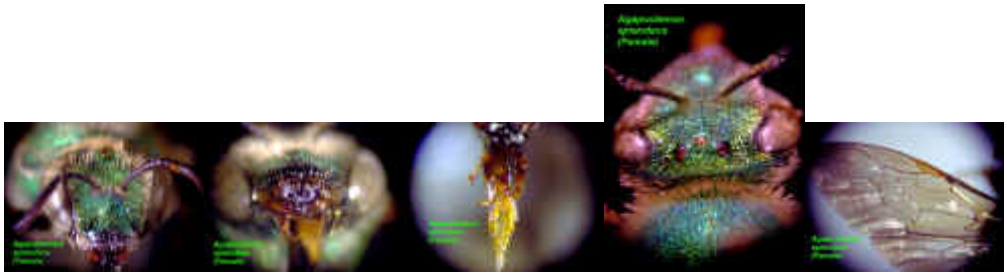
Locations:

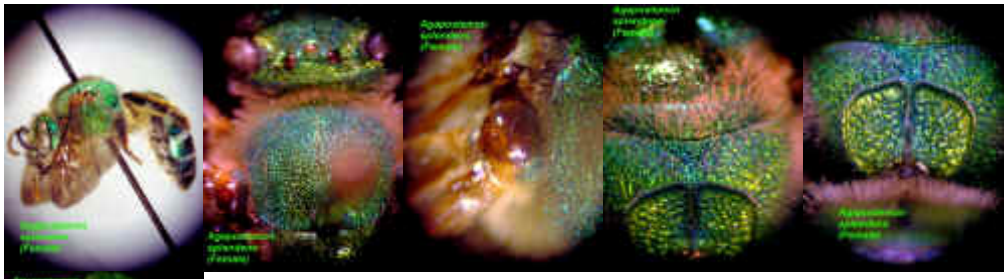
Dates:

Plants: *Phytolacca rigida, Opuntia humifusa, Warea carteri, Vernonia blodgettii, Helianthus debilis, Bidens alba* (Graenicher 1930), *Ardisia escallonioides* (Pascarella 1997); *Bidens alba, Crotalaria, Opuntia, Amorpha, Salix* (UM)

Notes:

Female:





Male: 

Halictidae: Agapostemon virescens

County Records: none in FSCA

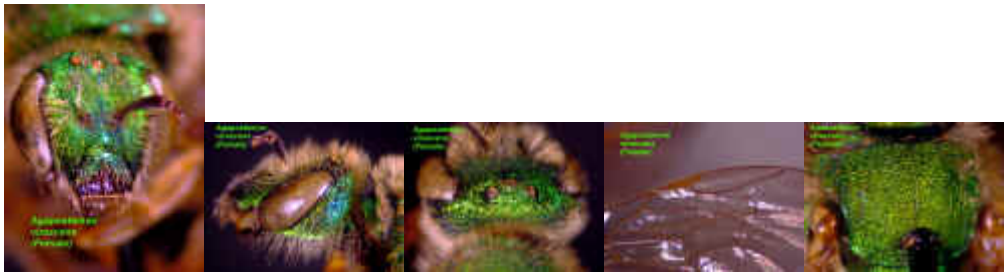
Locations:

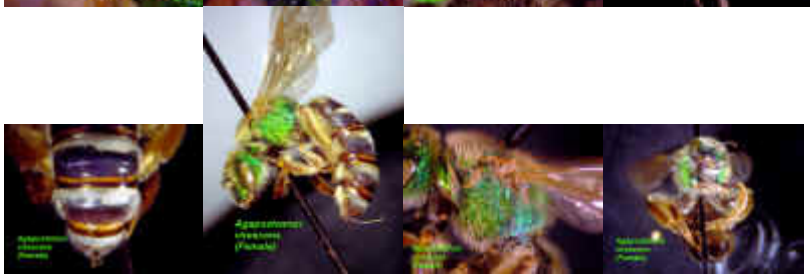
Dates:

Plants:

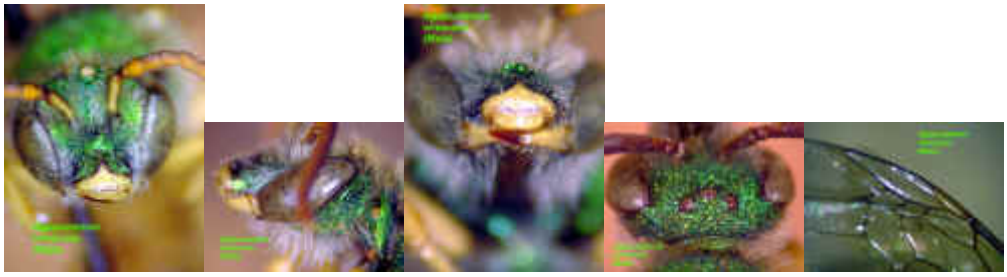
Notes: Mitchell lists it for Florida. No specimens have been seen.

Female:





Male:



Halictidae

Halictini

The genus *Lasioglossum* is used by Michener to include the following genera that were previously recognized as distinct genera:

Dialictus

This genus includes the genus *Habralictellus*

Evylaeus

Lasioglossum

Halictidae

Halictini

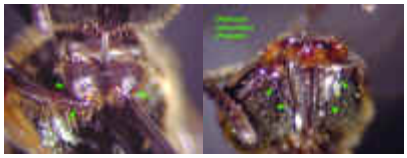
Lasioglossum (Subgenus *Dialictus*), 27 taxa

Key to Females (From Mitchell 1960)

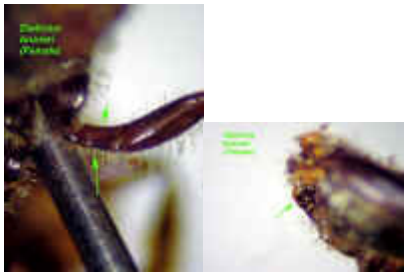
1. Hypostomal carina strongly divergent toward base of mandibles, Larger (7-8mm); pleura coarsely rugose and scutum deeply and rather coarsely punctate, rugose in part...2

Hypostomal carina nearly or quite parallel...3

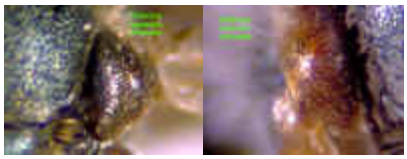
2. Front trochanters rounded; front coxae carinate laterally; hypostomal carinae usually not produced, the hypostome not deeply excavated...L. (D.) reticulatus



Front trochanters flattened and slightly excavated anteriorly; front coxae not carinate; hypostome deeply excavated, the carinae usually strongly produced...L. (D.) bruneri

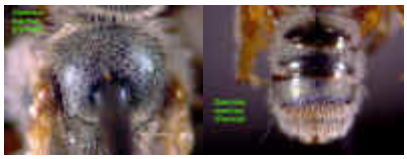


3. Tegulate elongate, being somewhat angulately produced posteriorly, distinctly and quite deeply punctate...4

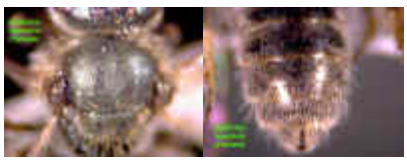


Tegulae usually quite short, broadly rounded or truncate posteriorly; if at all produced, then not truncate...5

4. Scutum and scutellum shining between quite close and deep punctures; apical margins of abdominal terga conspicously yellowish-hyaline..L. (D.) marinus



Scutum and scutellum dull, densely tessellate between the punctures; apical margins of abdominal terga dark..L. (D.) tegularis



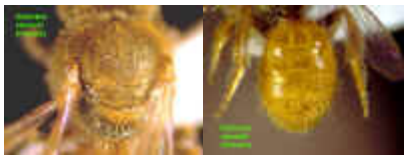
5. Front trochanters broadly dilated and much flattened, the length sometimes not greatly exceeding the breadth..*L. (D.) versatus*

Front trochanters more slender and cylindric...6

6. Abdomen ferruginous in large part or entirely pale testaceous, contrasting with the metallic greenish head and thorax...7

Abdomen dark in general, either piceous or metallic greenish or bluish, often with apical margins of the segments yellowish or ferruginous-hyaline..12

7. Scutum with a dense covering of golden tomentum, obscuring the surface, with subcontiguous punctures; abdomen pale testaceous...*L. (D.) vierecki*



Scutum not densely tomentose, punctures in center of disc relatively sparse...8

8. Pleura with distinct punctures...9

Pleura impunctate..*L. (D.) stuartensis*

9. Pleura shining, punctures very fine and sparse..*L. (D.) tahitensis*

Pleura dull, closely and rather deeply punctate..10

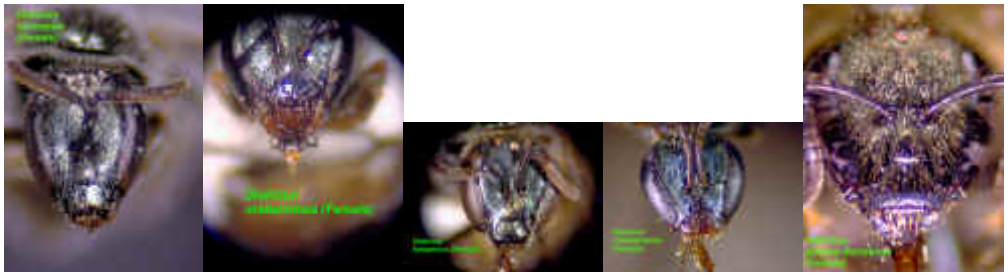
10. Punctures of scutum uniformly close throughout; only apical third or less of clypeus ferruginous...*L. (D.) nymphalis*

Punctures of scutum well separated over median area of disc; half or more of clypeus ferruginous...*L. (D.) surianae*

12. Posterior face of propodeum sharply truncate, delimited both laterally and dorsally by a distinct, carinate rim; punctures of scutum coarse and deep...L. (D.) brassicae

Propodeum not so distinctly truncate posteriorly, margin between dorsal and posterior surfaces more or less rounded, not sharply carinate; or punctures of scutum minute...13

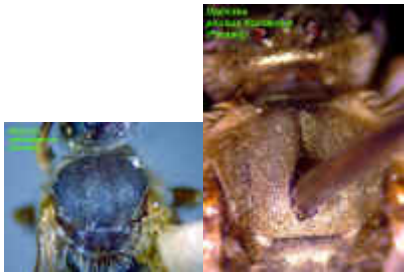
13. Head more elongate, length of supraclypeal area being at least equal to its greatest width...14



Head more rounded, supraclypeal area being broader than long, and clypeus usually not extended much below suborbital line...19

14. Punctures in central area of scutum to some degree separated...15

Punctures close over entire scutum, interspaces little, if any, exceeding diameter of punctures...17



15. Punctures of scutum very minute and obscure, well separated throughout; size very small (4mm)..*L. (D.) coreopsis*

Scutum quite densely punctate laterally...16

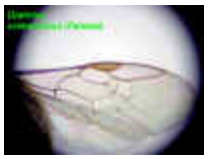
16. Scutum medially and scutellum very sparsely and minutely punctate...*L. (D.) halophitus*

Punctures of scutum medially deep and distinct, well separated but not sparse..*L. (D.) creberrimus*

17. Supraclypeal area quite flat, not noticeably elevated above surrounding areas of face; clypeus medially also flat...*L. (D.) rahleighensis*

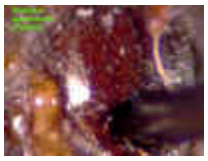
Supraclypeal area more or less strongly convex, thus slightly elevated in center above surrounding area of face...18

18. Smaller (4-5m); second submarginal cell considerably shorter than third..L. (D.) creberrimus



Larger (6-7mm); second submarginal cell nearly equal in length to third..L. (D.) pilosus floridanus

19.Scutum sparsely punctate throughout, punctures being widely separated even in areas between notaulices and tegulae at each side..L. (D.) apopkensis



Scutum quite closely punctate between notaulices and tegulae...20

20. Cheeks considerably broader than eyes, in lateral view of head... L. (D.) imitatus

Cheeks subequal to eyes in width, or slightly narrower...21

21. Clypeus all or in part ferruginous...22

Clypeus entirely dark in color...25

22. Pleura dull, densely tessellate between close and rather deep punctures..L. (D.) surianae

Pleura shining, punctures, if present, very minute and sparse...23

23. Pleura anteriorly quite smooth, with scattered shallow but rather distinct punctures...24

Pleura roughened or subreticulate, anteriorly, without distinct punctures even posteriorly..L. (D.) alachuensis

24. Dorsal surface of propodeum reticulate, the posterior margin smooth and rounded...L. (D.) tarponensis

Dorsal surface of propodeum smooth, almost completely devoid of striations or reticulations..L. (D.) tahitensis

25. Scutum uniformly, closely punctate, interspaces not greatly exceeding diameter of punctures..L. (D.) miniatulus

Punctures of scutum well separated over median area, interspaces being fully twice diameter of punctures near center of disc...26

26. Dorsal face of propodeum striate only along basal margin, at least the apical half smooth, the margin rounded...L. (D.) flaveriae

Dorsal face of propodeum striate or rugose in large part, only the apical margin smooth, if at all...27

27. Pleura distinctly punctate...L. (D.) oblongus

Pleura either impunctate, or with obscure or indefinite punctures visible only at certain angles...28

28. Abdominal terga 3-5 densely ochraceous tomentose, obscuring the surface; pleura dull, densely tessellate, the punctures sparse, shallow and obscure..L. (D.) admirandus

Surface of tergum 3, at least, not obscured by tomentum; pleural punctures closer and more distinct..29

29. Abdominal terga uniformly dark, and entirely bare, except for their scattered, erect hairs..L. (D.) oblongus

Abdominal terga either yellowish apically or with basal tomentose areas or with scattered, appressed, plumose hairs that partially hide the surface...30

30. Abdominal terga 2 and 3 largely impunctate over apical half of disc, the impressed margin and an adjacent area smooth and impunctate...L. (D.) leviensis

Discs of terga 2 and 3 with minute but rather distinct punctures extending to the apical margin...L. (D.) admirandus

No key is provided for males

Halictidae: *Lasioglossum (Dialictus) admirandus* Sandhouse

County Records: Escambia, Franklin, Okaloosa, Santa Rosa

Locations:

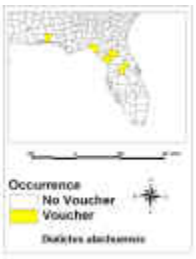
Dates: March-Sept.

Plants:

Notes: quite variable in color, hair, and pleura morphology according to Mitchell. No photos are available.

Halictidae: *Lasioglossum (Dialictus) alachuensis* Mitchell

County Records: Alachua, Levy, Lake, Okaloosa, Taylor



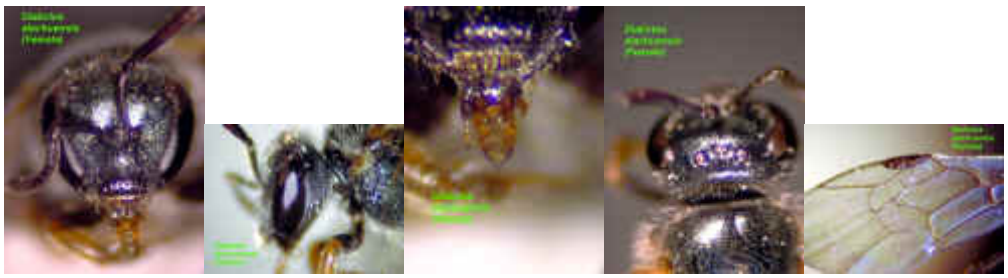
Locations:

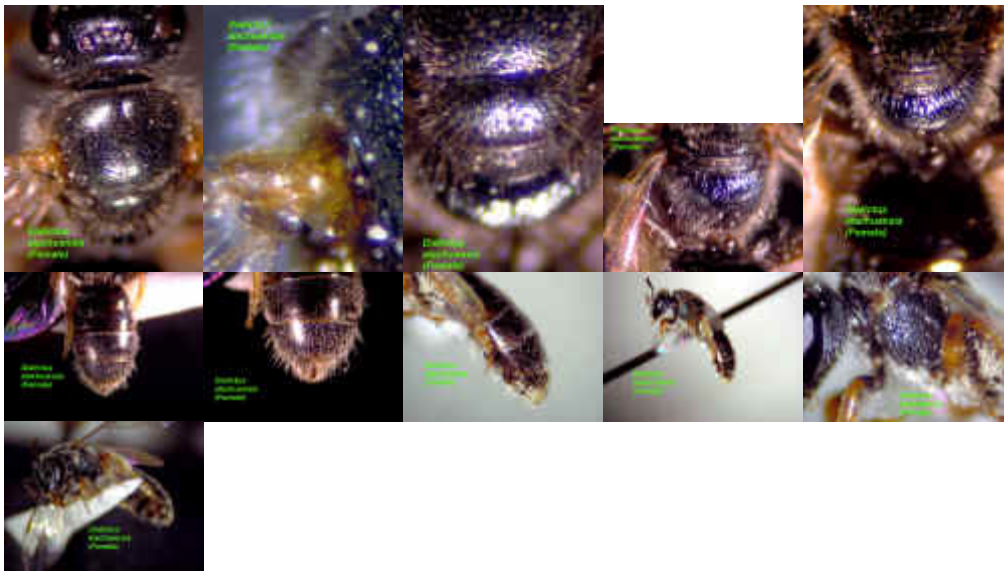
Dates: June-Sept.

Plants:

Notes: Endemic to Florida/SE. Georgia

Female:





Halictidae: *Lasioglossum (Dialictus) apopkensis* Robertson

County Records: Alachua, Liberty, Santa Rosa, Volusia

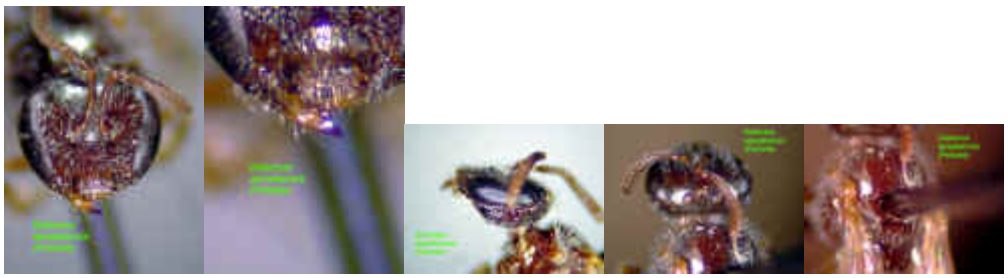
Locations:

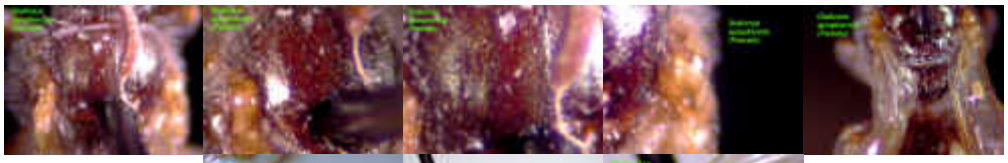
Dates: Feb.-Oct.

Plants:

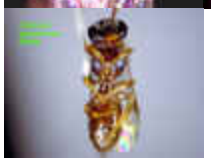
Notes:

Female:





Male: 



Halictidae: *Lasioglossum (Dialictus) brassicae* Mitchell

County Records: none in FSCA; Alachua

Locations:

Dates: April

Plants: *Stachys floridana*

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

Halictidae: *Lasioglossum (Dialictus) bruneri* Crawford

County Records: Gadsden, Jackson, Levy, Liberty (also known from Lowndes Co., GA)

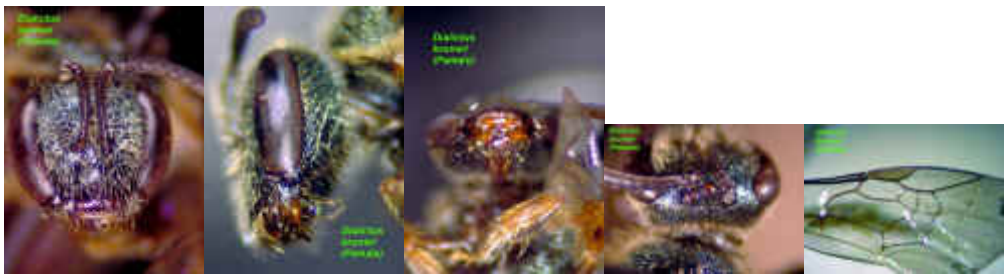
Locations:

Dates: Feb.-Oct.

Plants:

Notes:

Female:



Halictidae: *Lasioglossum (Dialictus) coreopsis* Robertson

County Records: Alachua, Baker, Columbia, Escambia, Marion, Martin, Miami-Dade, Santa Rosa, Wakulla

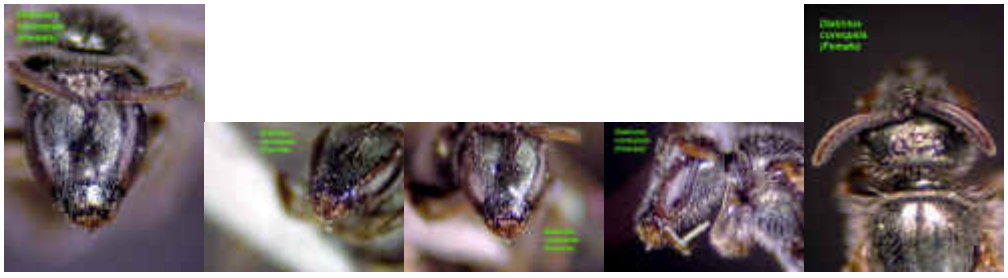
Locations:

Dates: nearly all year in Florida

Plants: Xyris sp., Rhexia sp., *Croton linearis, Warea carteri, Lepidium virginicum, Satureja rigida, Opuntia humifusa, Galactia pinetorum, Liatris gracilis, Mikania batatifolia, Chrysopsis tracyi, and Solidago stricta* (Graenicher 1927). *Bidens alba*, *Samodia sp., Opuntia, Erigeron, Jacquemontia, Galactia, Cirsium* (UM)

Notes:

Female:



Male:

Halictidae: *Lasioglossum (Dialictus) creberrimus* Smith (*D. tamiamiensis* Mitchell is a synonym according to Eickwort)

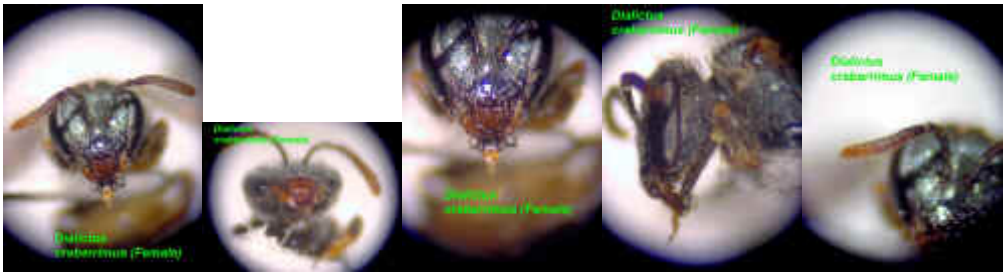
County Records: Alachua, Collier, Highlands, Lake, Liberty, Miami-Dade, Polk, Monroe, Sarasota, Volusia

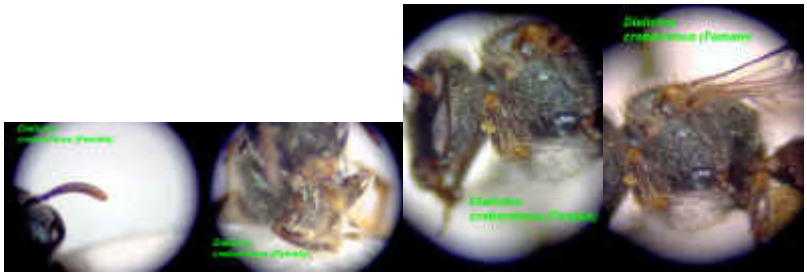
Locations: Key West

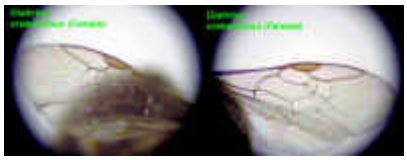
Dates: nearly all year in Florida

Plants: *Solidago stricta*

Notes:

Female: 





Halictidae: *Lasioglossum (Dialictus) flaveriae* Mitchell

County Records: Miami-Dade, Monroe

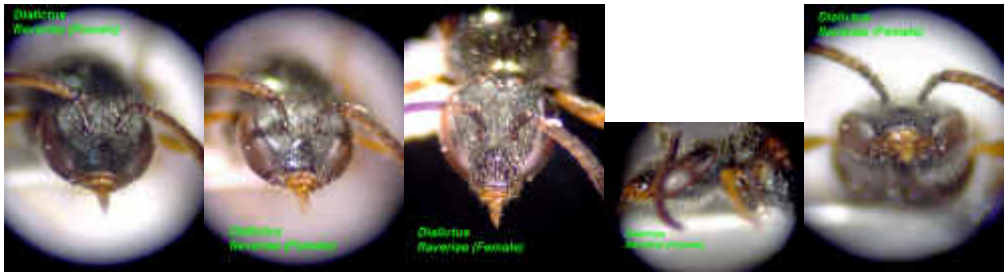
Locations: ENP, Big Pine Key

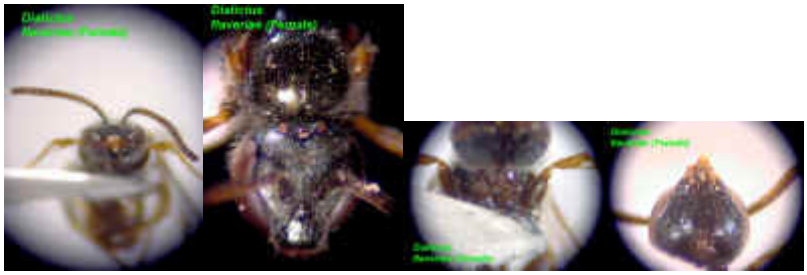
Dates: March 2-Aug. 29

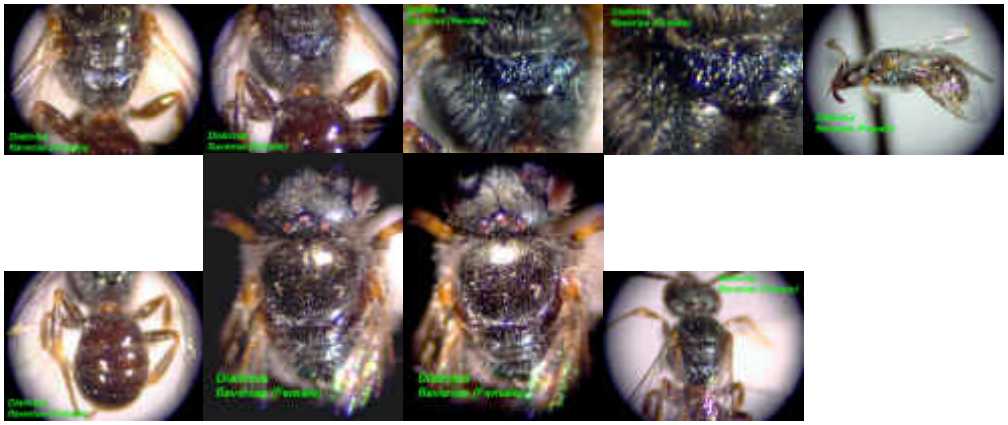
Plants: *Ardisia escallonioides* (Pascarella 1997). *Mikania, Flaveria linearis* and *Achranthes mecranthifolia* (FSCA)

Notes: Endemic to S. Florida

Female:







Halictidae: *Lasioglossum (Dialictus) halophitus* Graenicher

County Records: Miami-Dade, Monroe, Wakulla

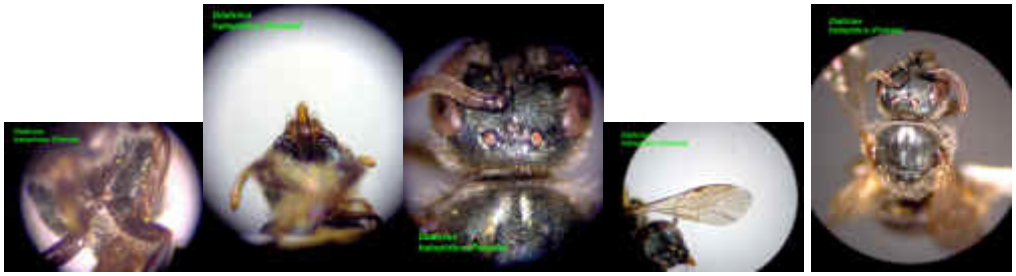
Locations: Homestead, Big Pine Key

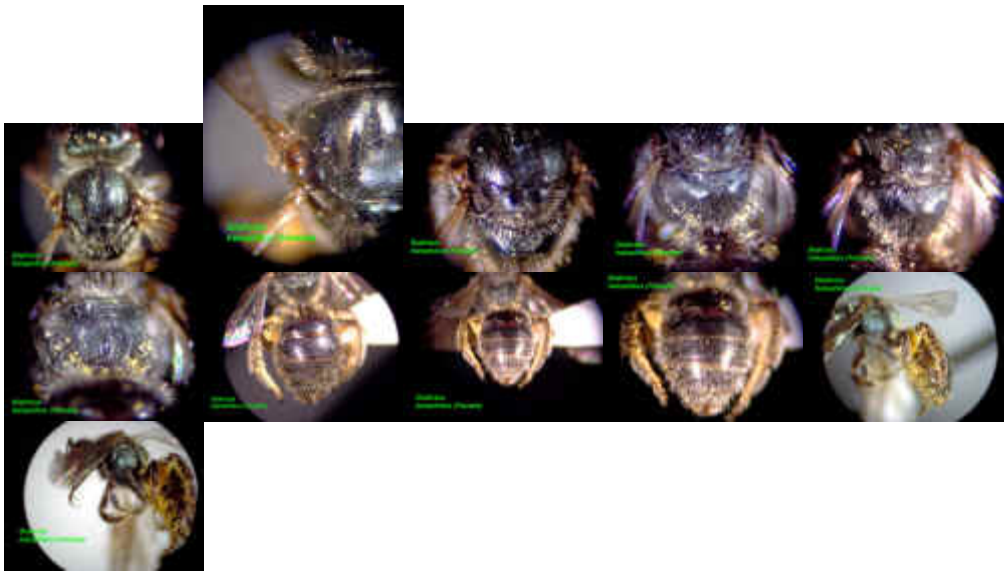
Dates:

Plants: *Borrichia arborescens*, *Acranthes mecranthifolia, Bacopa monnieri, Sesuvium maritinum (Graenicher); Acranthes mecranthifolia and Borrichia arborescens (FSCA). Achyranthes, Anthemis, Baccharis, Borrichia, Bacopa, Cirsium, Eupatorium, Euphorbia, Heliotropium, Mikania, Portulaca, Sesuvium, and Suriana (Mitchell); Sysrynchium, Crotalaria sp. (UM).*

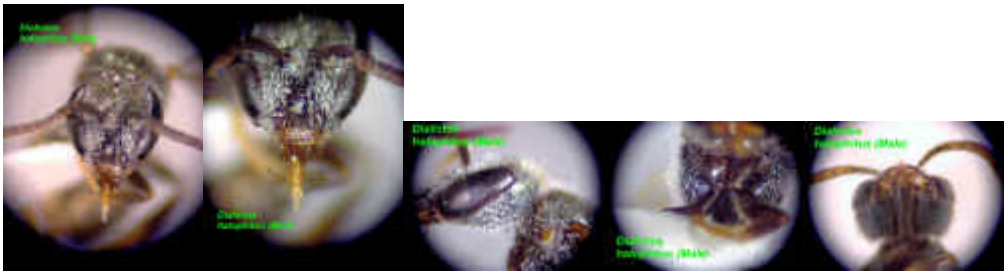
Notes: Found in coastal areas of mangrove and marsh

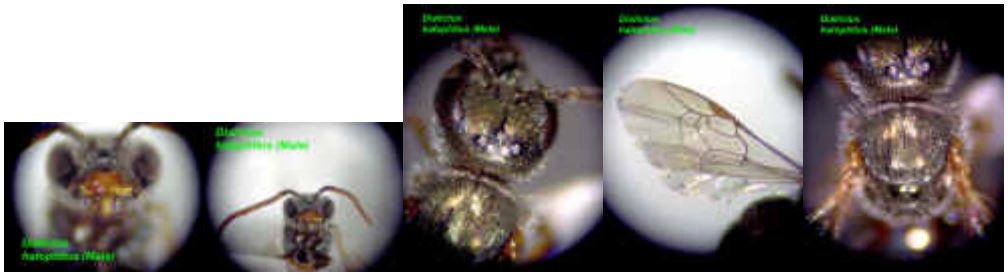
Female:





Male:





Go to Dialictus Page 2

Halictidae

Halictini

Lasioglossum (Subgenus *Dialictus*), 26 taxa

Dialictus (Page 1)

Dialictus (Continued), Page 2

Halictidae: *Lasioglossum (Dialictus) imitatus* Smith (*D. inconspicuus* Smith is the same according to notes from Eickwort at FSCA)

County Records: Baker, Columbia, Jackson, Leon, Okaloosa, Wakulla

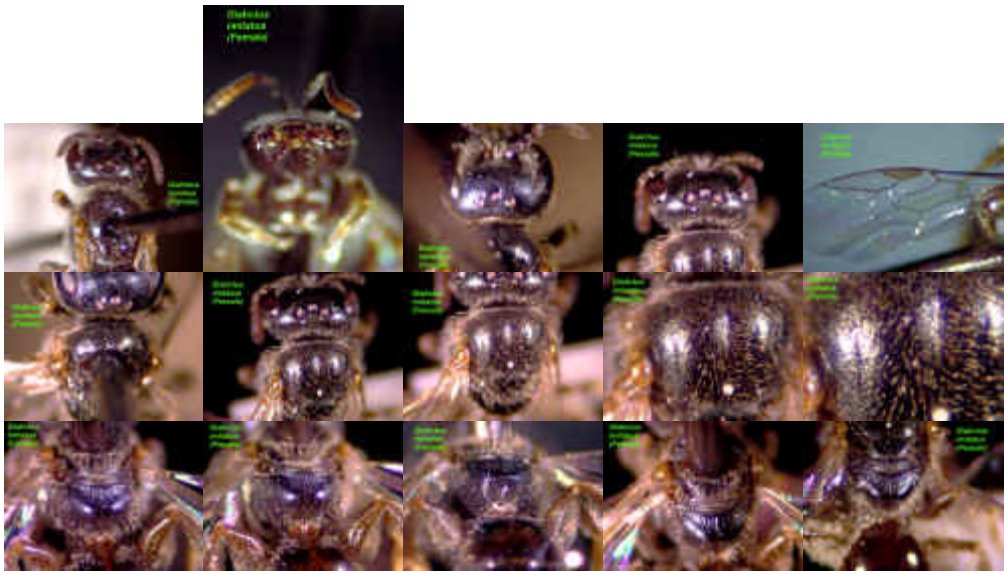
Locations:

Dates: spring-fall

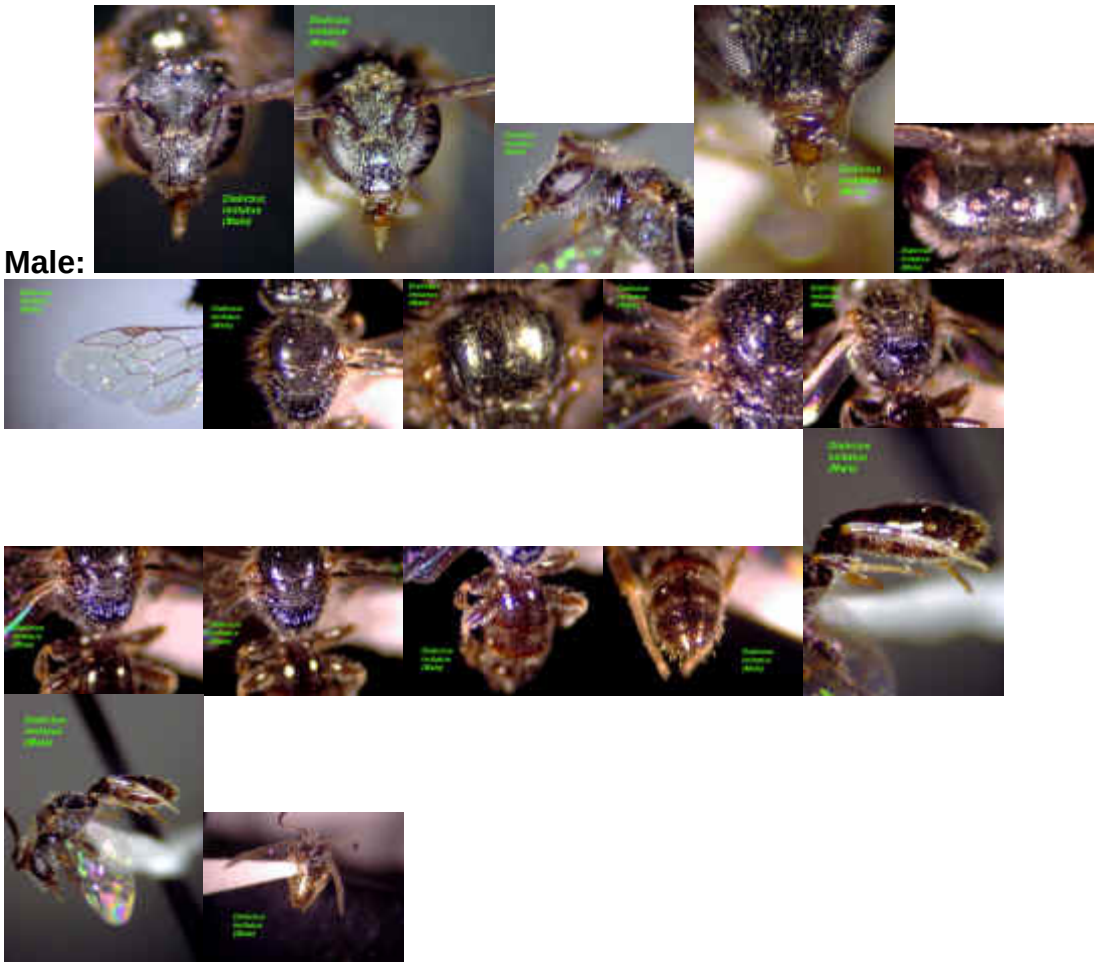
Plants: polylectic

Notes: widespread in eastern US

Female: 



Male:



Halictidae: *Lasioglossum (Dialictus) leviensis* Mitchell

County Records: Alachua, Levy, Liberty, Jackson

Locations:

Dates: June-Sept.

Plants: *Polygonum, Zizia* (Mitchell).

Notes: Endemic to SE USA; may be a wetland species based on the two floral records. No photos available at this time.

Halictidae: *Lasioglossum (Dialictus) marinus* Crawford

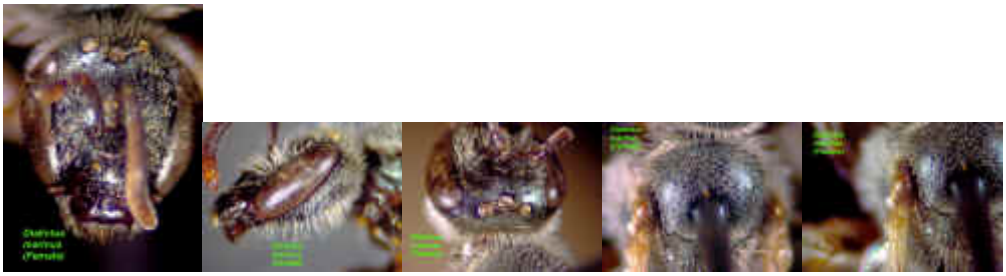
County Records: Flagler, Volusia

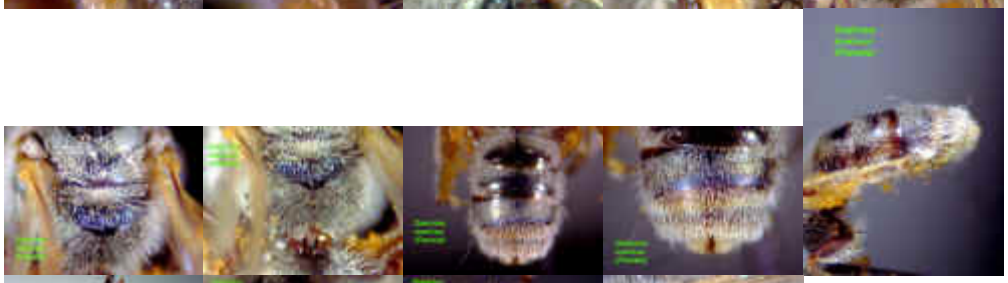
Locations:

Dates: April-Jan. in Florida (Mitchell)

Plants: *Bidens, Helianthus, Parthenocissus, Alternanthera* (Mitchell)

Notes: Known from the coastal zone only. This is an eastern seaboard species, occurring from Massachusetts to Florida, may be limited to the Florida east coast only.

Female: 



Halictidae: *Lasioglossum (Dialictus) miniatulus* Mitchell

County Records: Duval, Marion, Monroe (?)

Locations: Ocala, Jacksonville Beach, Key West

Dates:

Plants:

Notes: Endemic to Florida; known only from the female

Halictidae: *Lasioglossum (Dialictus) nymphalis* Smith

County Records: Alachua, Gadsden, Highlands, Levy, Marion, Okaloosa, Putnam, Santa Rosa, Sarasota, Volusia

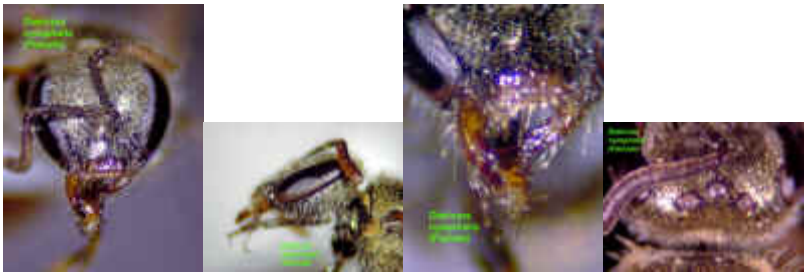
Locations:

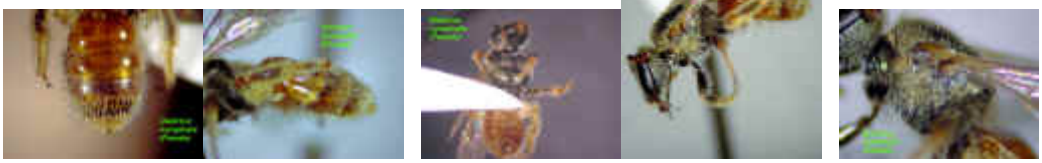
Dates: throughout the year in Florida (Mitchell)

Plants:

Notes:

Female:





Halictidae: *Lasioglossum (Dialictus) oblongus* Lovell

County Records:

Locations:

Dates: Mar.-Oct. (Mitchell)

Plants:

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

Male:

Halictidae: *Lasioglossum (Dialictus) pilosus floridanus* Robertson

County Records: Alachua, Gadsden, Leon, Madison, Orange, Putnam, Volusia, Wakulla

Locations:

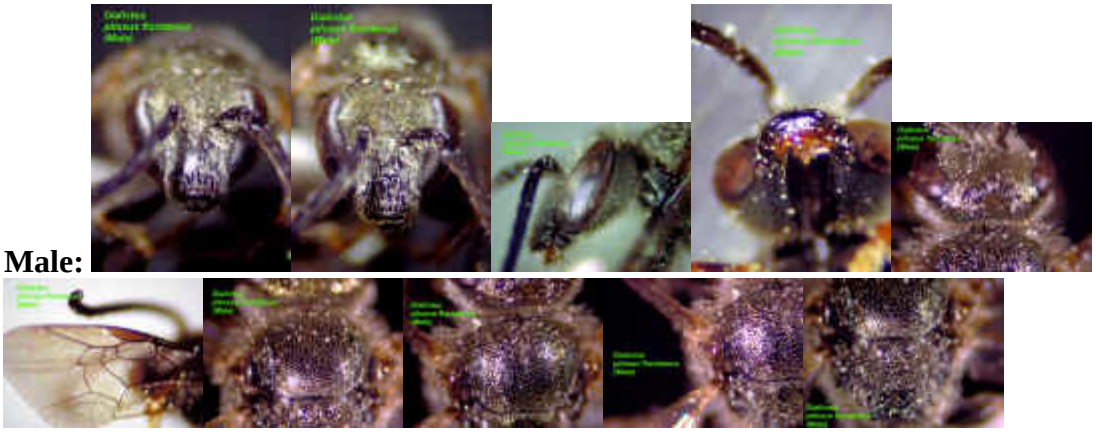
Dates: Feb.-Oct. (Mitchell)

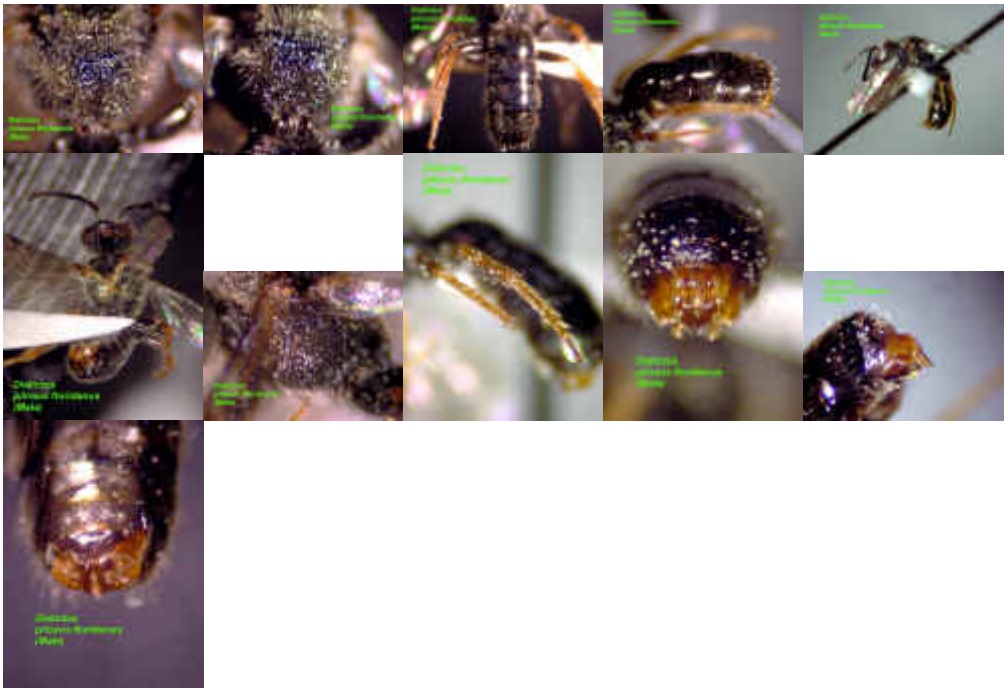
Plants:

Notes:

Female:

Male:





Halictidae: *Lasioglossum (Dialictus) placidensis* Mitchell

County Records: Highlands, Manatee

Locations: Oneco, Lake Placid

Dates: March, December

Plants:

Notes: Endemic to Florida, known only from the male. Only 2 specimens known. No photos available.

Halictidae: *Lasioglossum (Dialictus) rahleighensis* Crawford

County Records: Alachua, Volusia

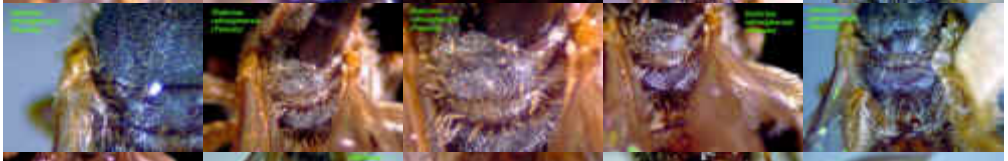
Locations:

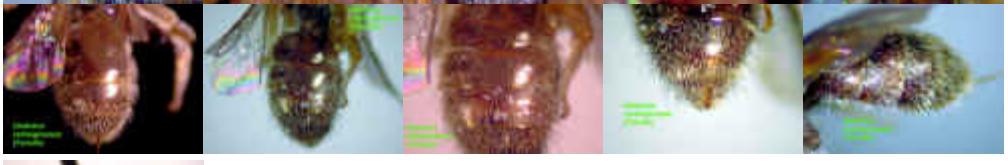
Dates: May-Sept. (Mitchell)

Plants: *Galactia, Polygonum, Tephrosia* (Mitchell)

Notes:

Female:





Halictidae: *Lasioglossum (Dialictus) reticulatus* Robertson

County Records: Alachua, Baker, Bradford, Columbia, Clay, Escambia, Leon, Liberty, Manatee, Marion, Orange, Pinellas, Putnam

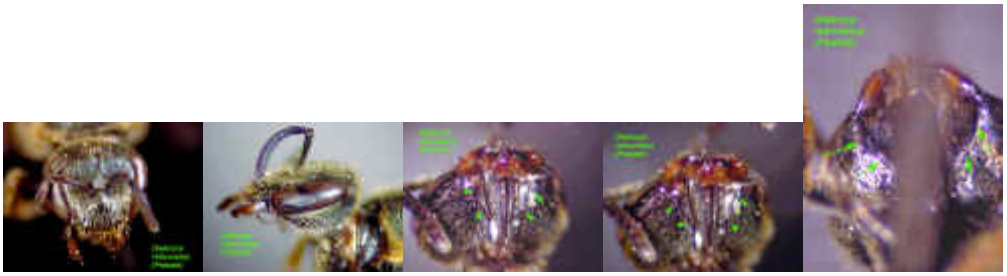
Locations:

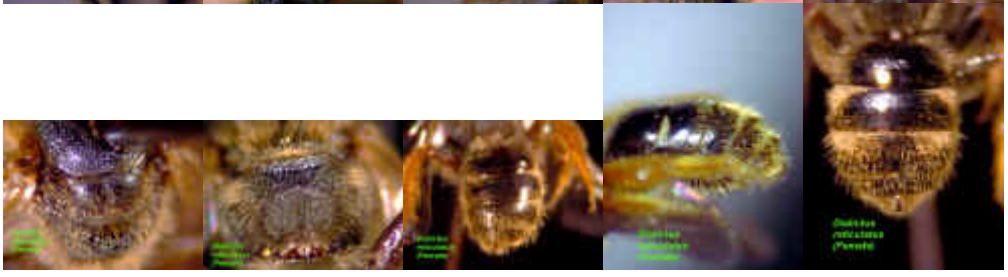
Dates: throughout the year in Florida (Mitchell)

Plants:

Notes:

Female:





Halictidae: *Lasioglossum (Dialictus) stuartensis* Mitchell

County Records: Martin

Locations: Stuart, FL

Dates:

Plants: *Chrysopsis*

Notes: Known only from the female; endemic to SE Florida.

Halictidae: *Lasioglossum (Dialictus) surianae* Mitchell

County Records: Monroe

Locations: Key Vaca, Plantation Key

Dates: Nov.-Dec.

Plants: *Bidens, Suriana* (Mitchell)

Notes: Endemic to the Florida Keys, No photos available at this time.

Halictidae: *Lasioglossum (Dialictus) tahitensis* Mitchell

County Records: Miami-Dade, Monroe

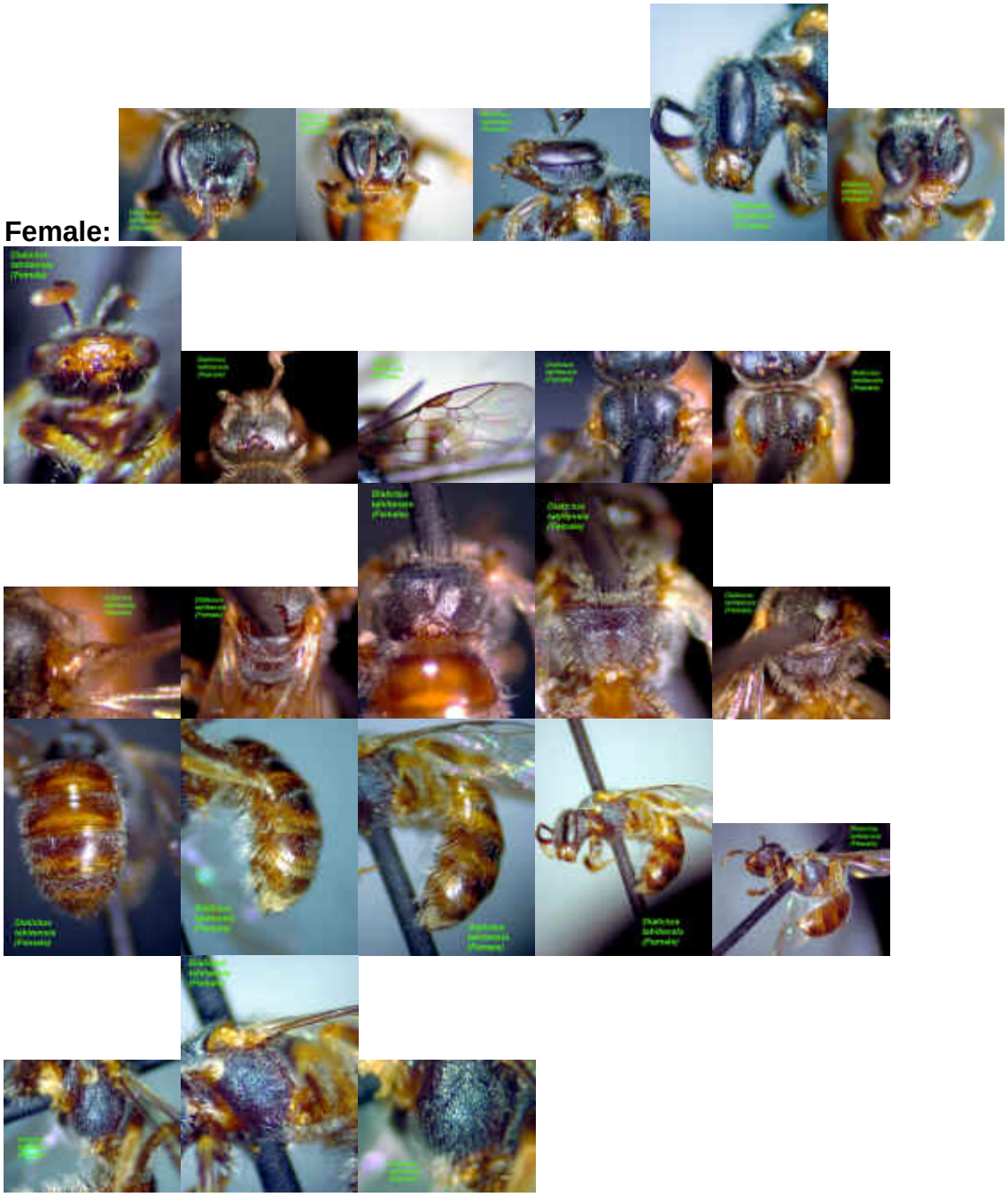
Locations: Tahiti Beach (Coral Gables, FL)

Dates: May

Plants:

Notes: Endemic to SE Florida

Female:



Halictidae: *Lasioglossum (Dialictus) tarponensis* Mitchell

County Records: Alachua, Highlands, Monroe?

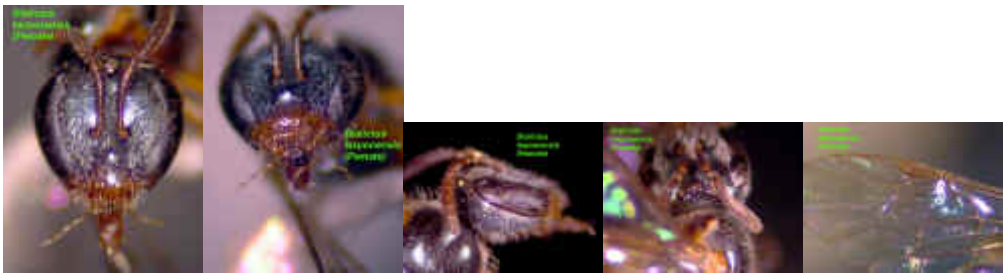
Locations:

Dates:

Plants:

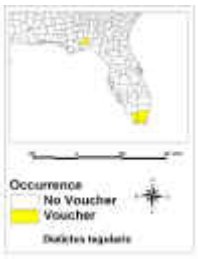
Notes: The Monroe record might be a misidentification of either *L. (Dialictus) surianea* or *tahitensis*, both endemic to the Florida Keys. Endemic to Florida and coastal Georgia.

Female:



Halictidae: *Lasioglossum (Dialictus) tegularis* Robertson

County Records: Leon, Miami-Dade, Monroe (probably throughout)



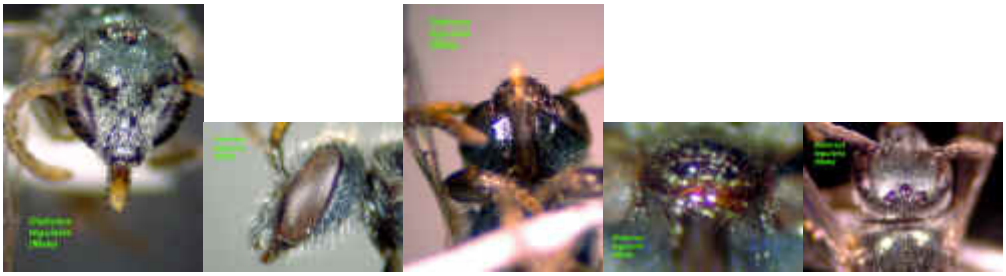
Locations:

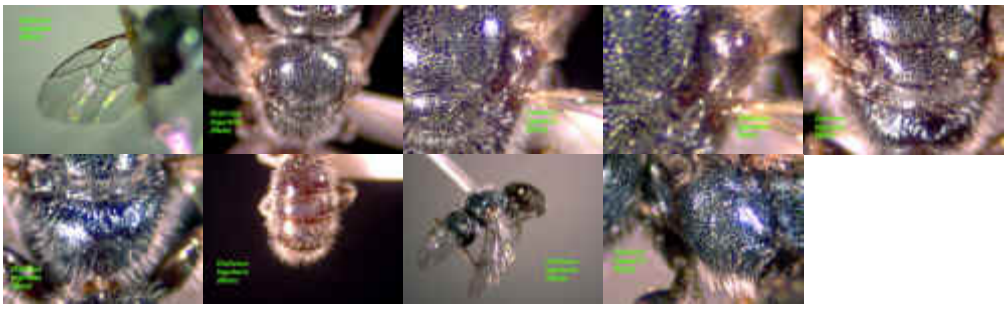
Dates:

Plants:

Notes:

Female:

Male: 



Halictidae: *Lasioglossum (Dialictus) versatus* Robertson

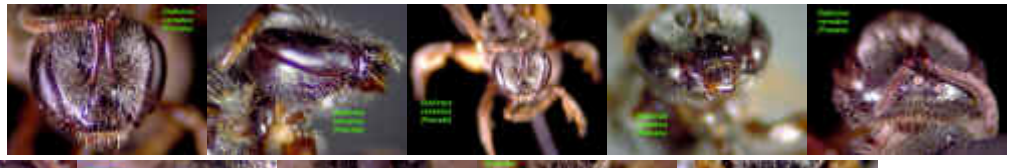
County Records: Leon, Wakulla

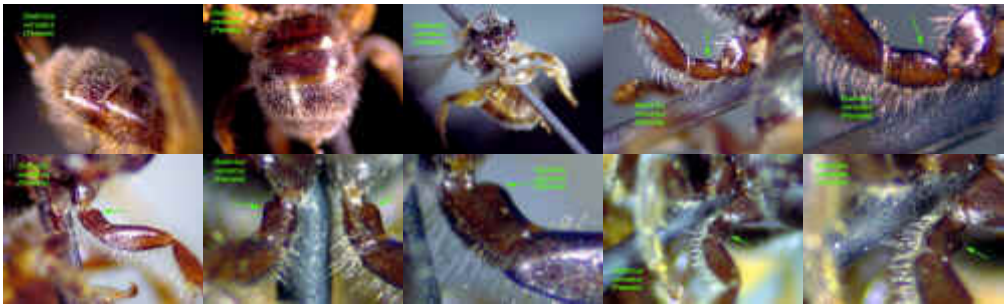
Locations:

Dates: March-October (Mitchell)

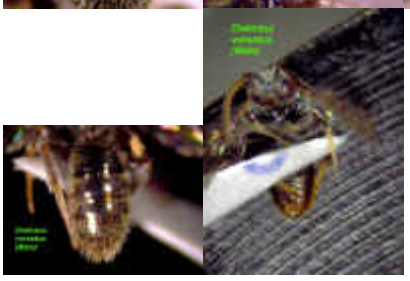
Plants: polylectic

Notes: New state record for Florida. Previously known from as far south as Georgia.

Female: 



Male:



Halictidae: *Lasioglossum (Dialictus) vierecki* Crawford

County Records: Thomas Co, GA (near Tallahassee, FL)

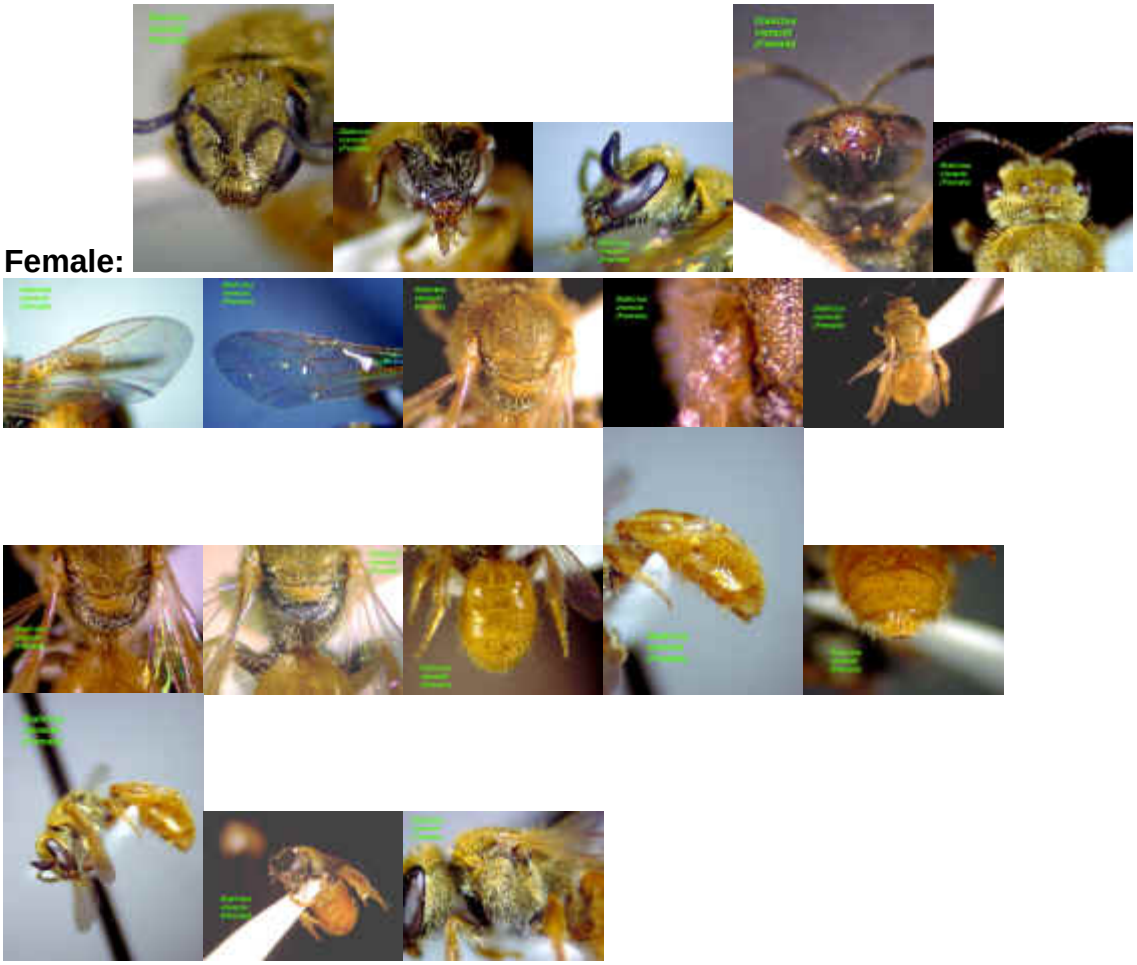
Locations:

Dates: April-Sept. (Mitchell)

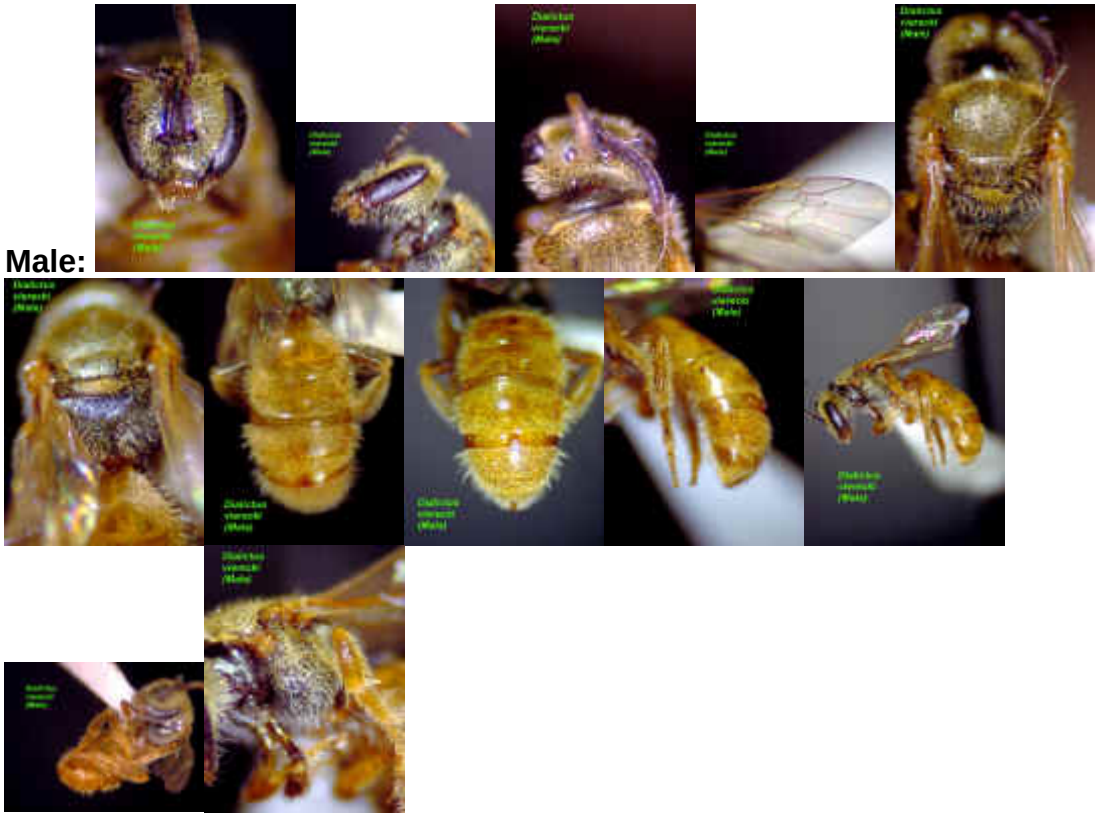
Plants: *Ceonothus, Rubus, Hydrangea, Specularia, Helianthus, Monarda, Solidago* (Mitchell)

Notes:

Female:



Male:



Halictidae: *Lasioglossum (Dialictus) viridatus* Lovell

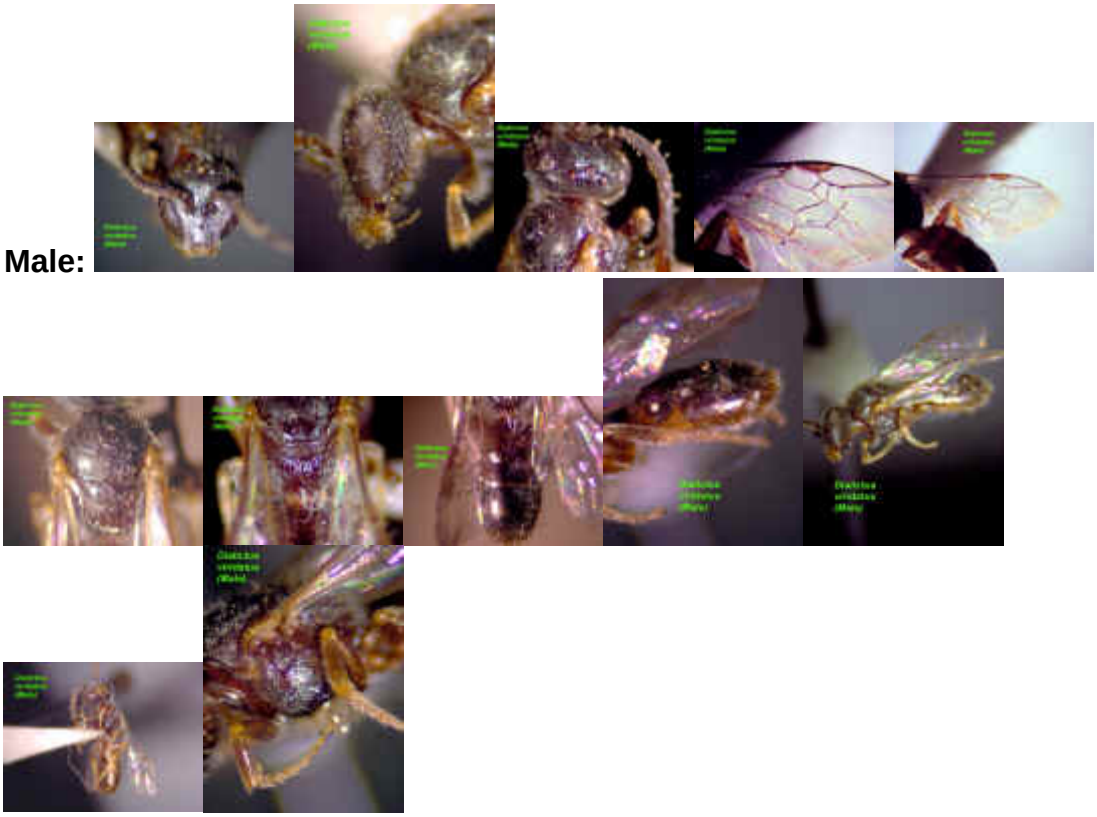
County Records:

Locations:

Dates:

Plants:

Notes:

Male: 

Halictidae

Halictini

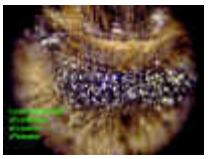
Genus *Lasioglossum* (Subgenus *Evylaeus*), five taxa

I found two species in the FSCA, from single specimens of what were labeled *L*. (*Evylaeus*) *sopinci* (a female specimen) and *L*. (*Evylaeus*) *truncatus*. Upon examination, I determined that *L. sopinci* was a misidentification of *L*. *fuscipenne* and *L*. *truncatus* was a misidentification of *L. arcuatus*. Mitchell did not list either *L. truncatus* or *L. sopinci* from Florida. Also, an error in Mitchell's table was found that listed *E*. *foxii* for Florida but in the text, he stated that the southern limit in the SE was Georgia.

Key to Females (from Mitchell 1962)

1. Propodeum, except the dorsal triangle, densely covered with greyish-white tomentum, obscuring the surface...*L. (Evylaeus) nelumbonis*

Propodeum not tomentose, the surface quite visible and usually shining...2



2. Dorsal area of propodeum, just behind metanotum, coarsely, striately rugose, the rugae fully attaining posterior margin of area which is distinct, more or less carinate...3

Dorsal area of propodeum at most finely rugose or striate along its basal margin, the posterior margin usually smooth and rounded....*L. (Evylaeus) macoupensis*

3. Entire pluera very coarsely rugose...*L. (Evylaeus) pectoralis*

Pleura finely or obscurely rugose, at least in part...4

4. Anterior portion of scutum with a deep, median groove; punctures of abdominal tergum minute and obscure..*L. (Evylaeus) cinctipes*

Median groove of scutum very shallow, barely evident; punctures of basal tergum distinct...*L. (Evylaeus) arcuatus*

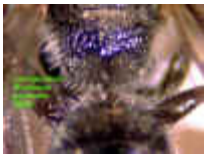
Key to Males (includes males of Lasioglossum (subgenus Lasioglossum)

1. Propodeum, except dorsal triangle, covered with dense, greyish-white tomentum, obscuring the surface..*L. (Evylaeus) nelumbonis*

Propodeum relatively bare...2

2. Dorsal area of propodeum either incompletely striate, with hind margin smooth and rounded, or rather finely, evenly though completely, rugose...3

Dorsal area of propodeum completely and coarsely striate...4



3. Small (4-4.5mm in length); second flagellar segment much shorter than first segment and pedicel combined; pleura shining, with fine but distinct punctures...*L. (Evylaeus) macoupensis*

Larger (7-8mm); second flagellar segment equal to first and pedicel combined...*L. (Lasioglossum) fuscipenne*

4. Segments of flagellum very short, length subequal to breadth...*L. (Evylaeus) pectoralis*

Flagellar segments more elongate, considerably longer than broad...5

5. Tibiae yellow at base and apex; gonostylus bearing long, conspicuous plumose setae..*L. (Evylaeus) arcuatus*

Tibiae entirely dark; gonostyli not setose and very short...*L. (Evylaeus) cinctipes*

Halictidae: *Lasioglossum* (*Evylaeus*) *arcuatus* Robertson

County Records: Gadsden, Leon

Locations:

Dates: Feb. 27-April 11

Plants: *Craetagus*, *Prunus*

Notes: Mitchell lists this species for Florida. It may be restricted to the panhandle and or northern peninsula.

Female:

Halictidae: *Lasioglossum* (*Evylaeus*) *cinctipes* Provancher

County Records: Gadsden, Jackson, Liberty, Okaloosa

Locations:

Dates: March 15-May 17; March: 2, April: 4, May: 1

Plants: *Hydrangea quercifolia*, *Prunus angustifolia*, *Crataegus* sp.

Notes: This is a new state record for Florida. Previously, the species was known from as far south as North Carolina. From the distribution record, it may be restricted to the western Florida panhandle. No photos currently available.

Halictidae: *Lasioglossum* (*Evylaeus*) *macoupensis* Robertson

County Records: Alachua, Jackson, Manatee, Sarasota

Locations:

Dates: Dec. 26-May 19; Dec.:2, Feb.:1, March: 1, April:2, May:1

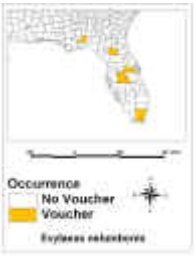
Plants:

Notes: This is a new state record for Florida. Previously, the species was known from as far south as Georgia. The distribution record suggests that it may occur throughout the state with the exception of the southeast.

Female:

Halictidae: *Lasioglossum* (Evylaeus) *nelumbonis* Robertson

County Records: Alachua, Leon, Miami-Dade, Orange, Polk



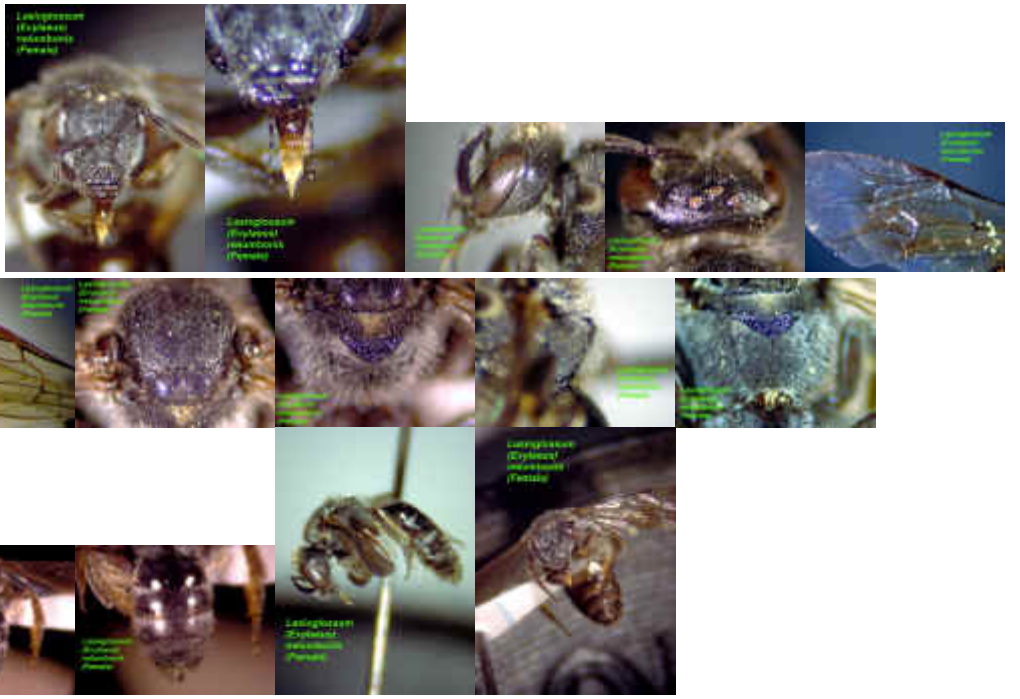
Locations:

Dates: Feb. 18-April 13, Nov. 25; Feb.:2, March: 1, April: 5, Nov. :1

Plants: *Erigeron quercifolius*, *Medicago lupulina*, *Melilotus alba*, *Bidens mitis*, *Hydrocotyle umbellata*, *Salix longipes, Sagittaria lancifolia*

Notes: This species probably occurs throughout the state.

Female:



Halictidae: *Lasioglossum* (*Evylaeus*) *pectoralis* Smith

County Records: Alachua, Bradford, Collier, Gadsden, Hernando, Jackson, Lake, Leon, Levy, Marion, Miami-Dade, Orange, Seminole, Volusia

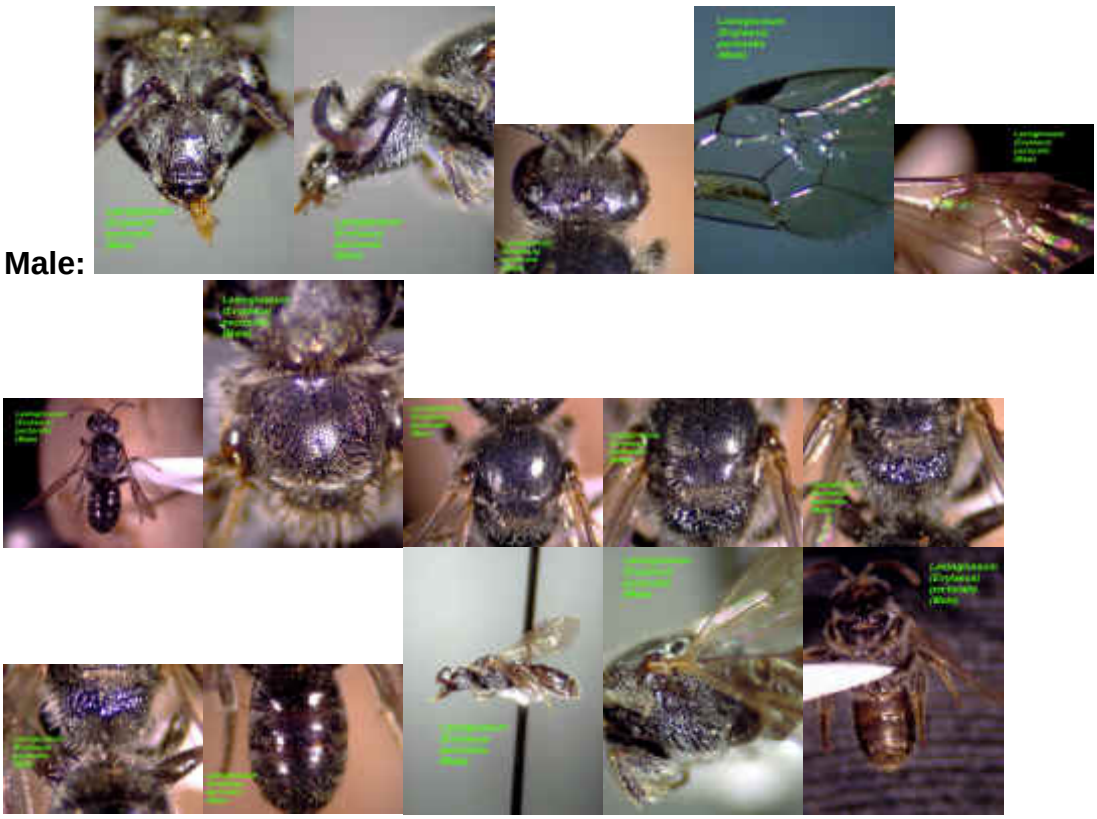
Locations:

Dates: Feb. 24-Nov. 13, Feb.: 3, March: 3, April: 4, May: 1, Aug: 1, Nov.:1

Plants:

Notes: This species probably occurs throughout the state.

Female: 

Male: 

Halictidae

Halictini

Lasioglossum (Dialictus, Habralictellus)

This is a group that has been accorded generic status as *Habralictellus*, as a subgenus of *Dialictus*, and with *Dialictus* as a subgenus or group of the larger genus *Lasioglossum*. For a full description, see M. S. Engel. 2001. Three new *Habralictellus* bee species from the Caribbean (Hymenoptera: Halictidae). Solenodon 1: 33-37.

Halictidae: *Lasioglossum* (*Dialictus, Habralictellus) eleutherensis* Engel

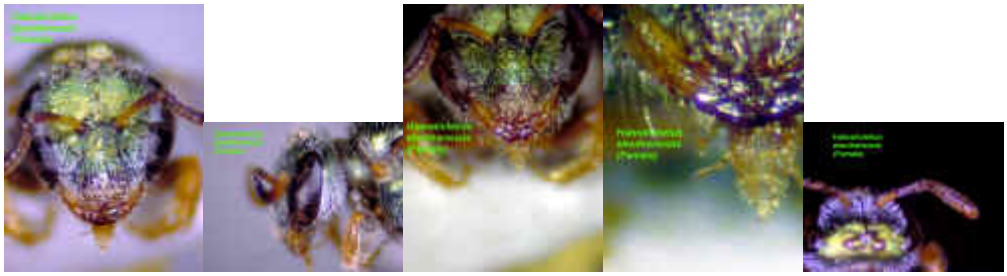
County Records: Known only from Miami-Dade

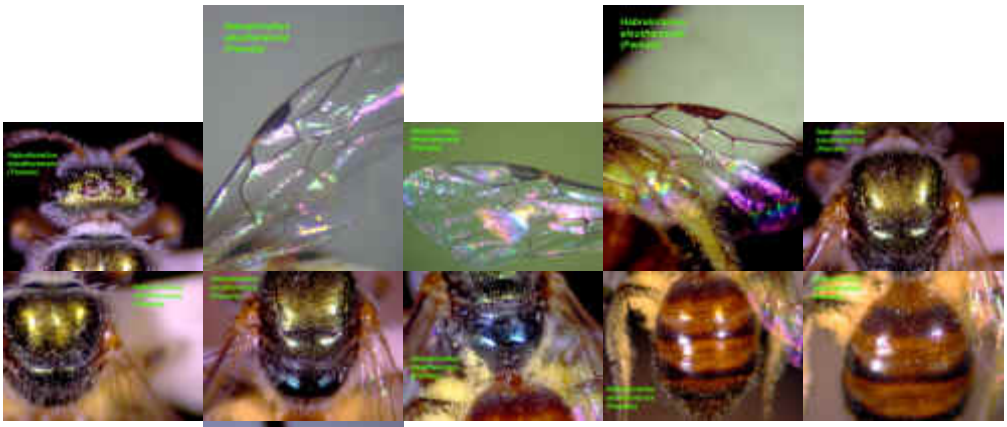
Localities: University of Miami Gifford Arboretum (Coral Gables, FL)

Plants: *Ardisia escallonioides, Calyptranthes pallens*

Notes: Recently described by Engel (2001); known from the Bahamas (Eleuthera) and Cuba (Cayo Guillermo, Cayo Paredon). Its status in Florida is unknown; four females were collected by J. Pascarella in 1996-1997 while they were foraging in the University of Miami arboretum. Perhaps it is a recent immigrant brought to Florida by a hurricane or tropical storm. There are no previous records of this very distinctive bee.

Female:





Halictidae

Halictini

Genus *Lasioglossum* (Subgenus *Hemihalictus*), one species

Halictidae: *Lasioglossum* (*Hemihalictus*) *lustrans* Cockerell

County Records: Alachua, Columbia, Madison (also Thomas County, GA)

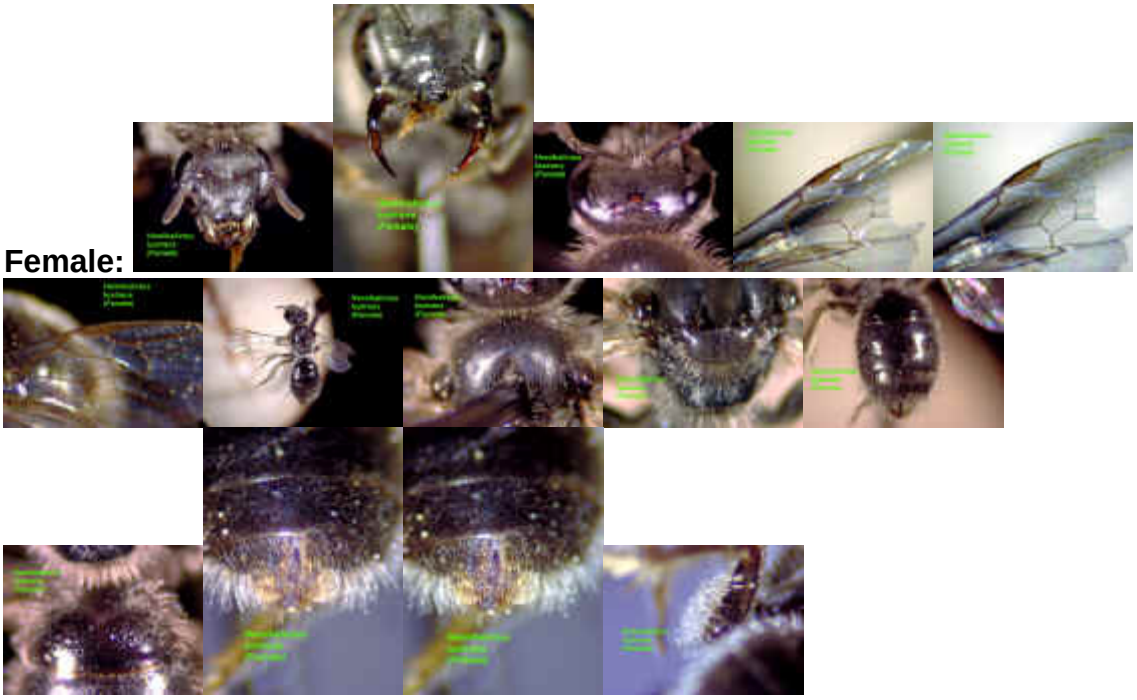
Locations:

Dates: April -Sept.

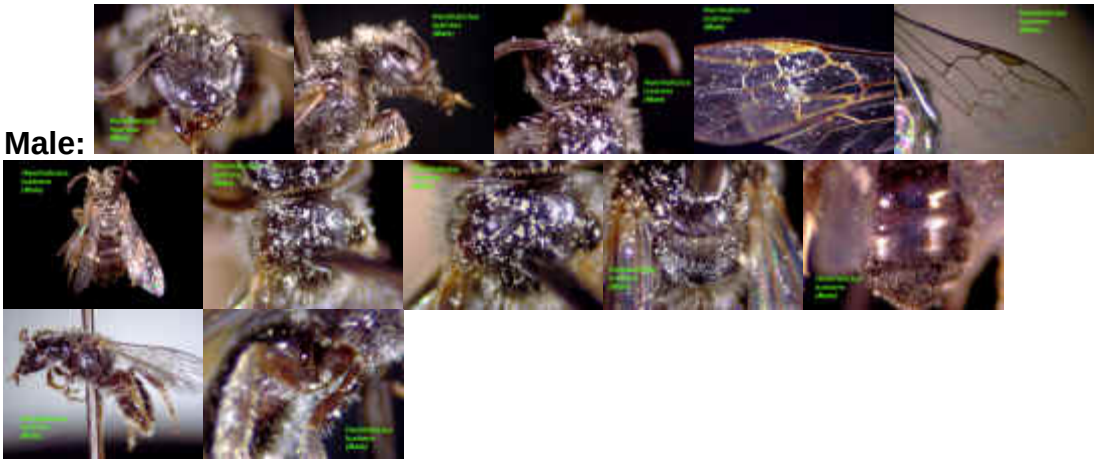
Plants: Pollen collected primarily from *Pyropappus* and other members of the tribe Lactucaee of the Asteraceae

Notes: This species may occur further to the south and in the panhandle.

Female:



Male:



Halictidae

Halictini

Genus *Lasioglossum* (subgenus *Lasioglossum*), one taxon

Halictidae: *Lasioglossum fuscipenne* Smith

County Records: Alachua, Jackson, Liberty; also known from Lowndes and Thomas Counties, GA

Locations: Torreya State Park

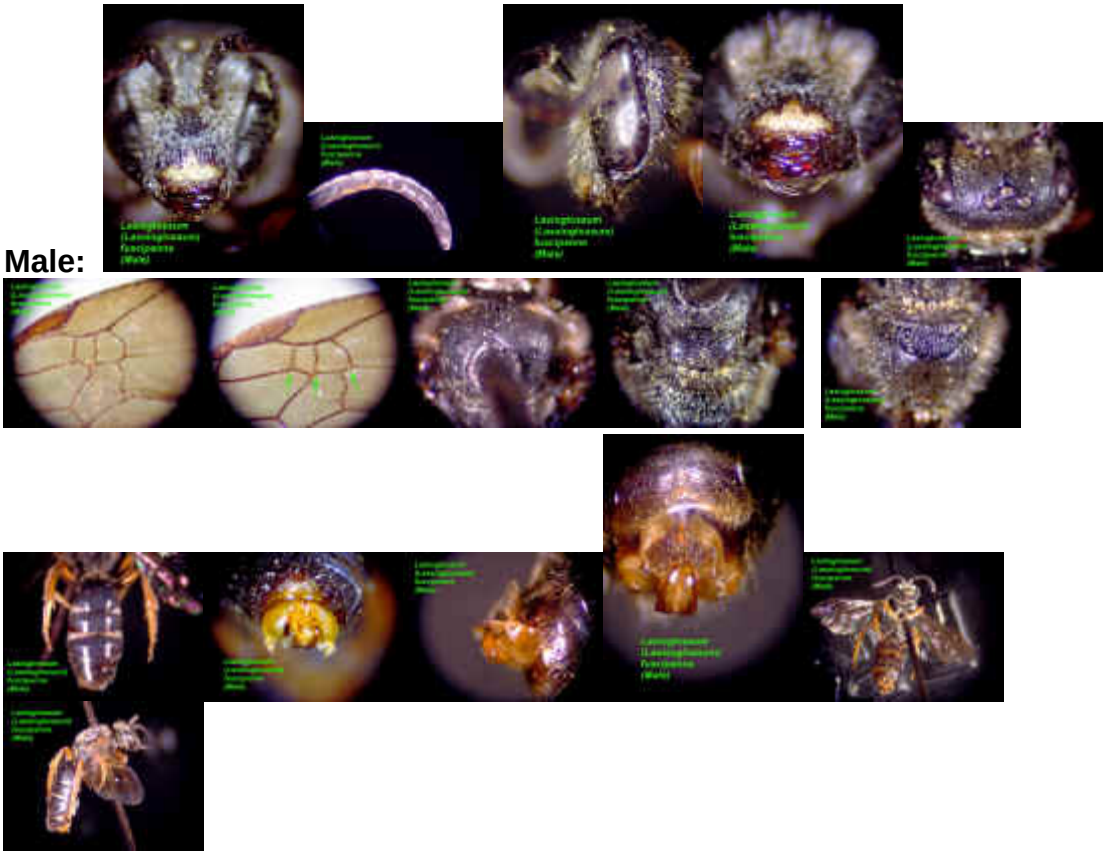
Dates: March 20-May 17; March: 2, April:2, May:2

Plants:

Notes: In the specimens from South Georgia in my collection and probably from Florida also, the tibiae, basitarsus, and tarsi are entirely ferruginous in color. This is in contrast to specimens from further North that have just the base and apex of the legs ferruginous. The description in Mitchell mentions just the base and apex, but clearly the ferruginous color is more widely distributed in the more southern specimens.

Female:

Male:



Halictidae

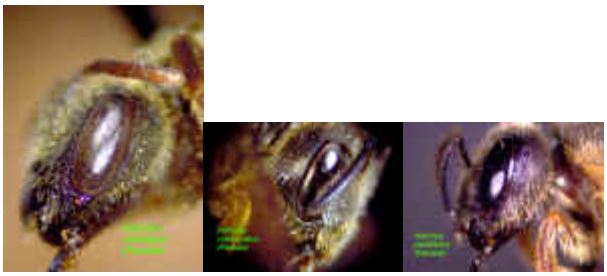
Halictini

Genus *Halictus* Latreille, four taxa

Key to Females (From Mitchell 1962)

1. Cheeks angulate or toothed below...*H. ligatus*

Cheeks rounded below....2



2. Dull metallic; size small (8mm)...*H. confusus*

Black, usually larger (9mm or more)...3

3. Vertex broad, the lateral ocelli being subequally distant from eyes and margin of vertex..*H. parallelus*

Vertex not so broad, the lateral ocelli being considerably nearer its hind margin than to eyes..*H. rubicundus*

Key to Males (from Mitchell 1962)

1. Flagella entirely black or piceous; apical margin of sternum 5 broadly, triangularly incurved..*H. rubicundus*

Flagella bright ferruginous or yellowish beneath; margin of sternum 5 straight, or it at all incurved, then body dull green in color...2

2. Dull metallic; face quite narrow and elongate; apical third of clypeus yellow...*H. confusus*

Black; face rounded; apical two thirds of clypeus yellow...3

3. Smaller (9mm); wings subhyaline; dorsum of thorax shining between the rather close and fine punctures...*H. ligatus*

Larger (11mm); wings brown; dorsum of thorax dull between the punctures....*H. parallelus*

Subgenus *Odontolictus*, 1 taxa

Halictidae: *Halictus ligatus* Say

County Records: nearly throughout

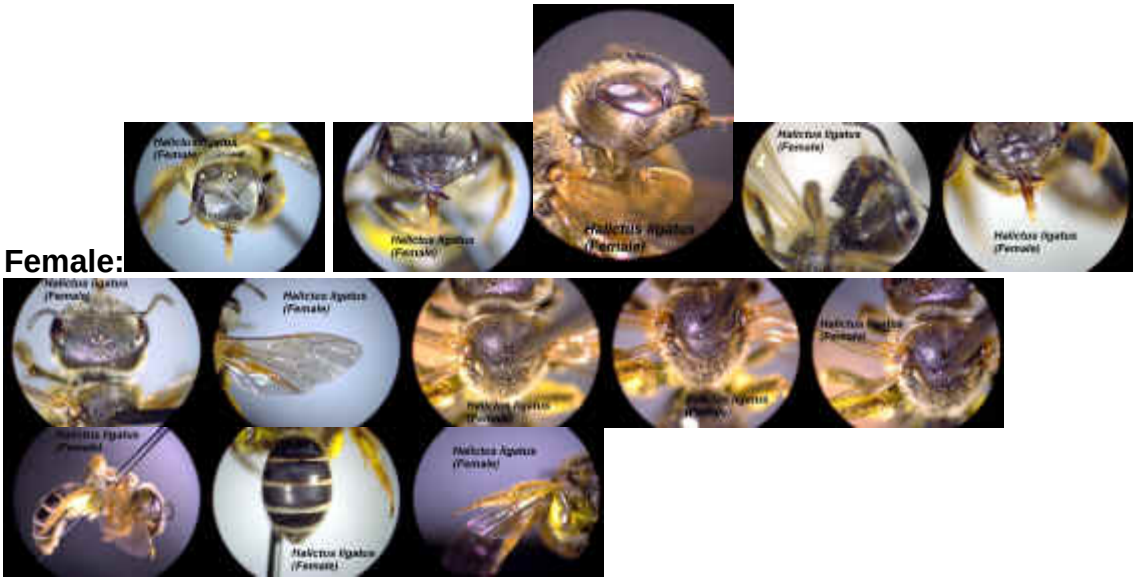
Locations:

Dates: all year in Florida

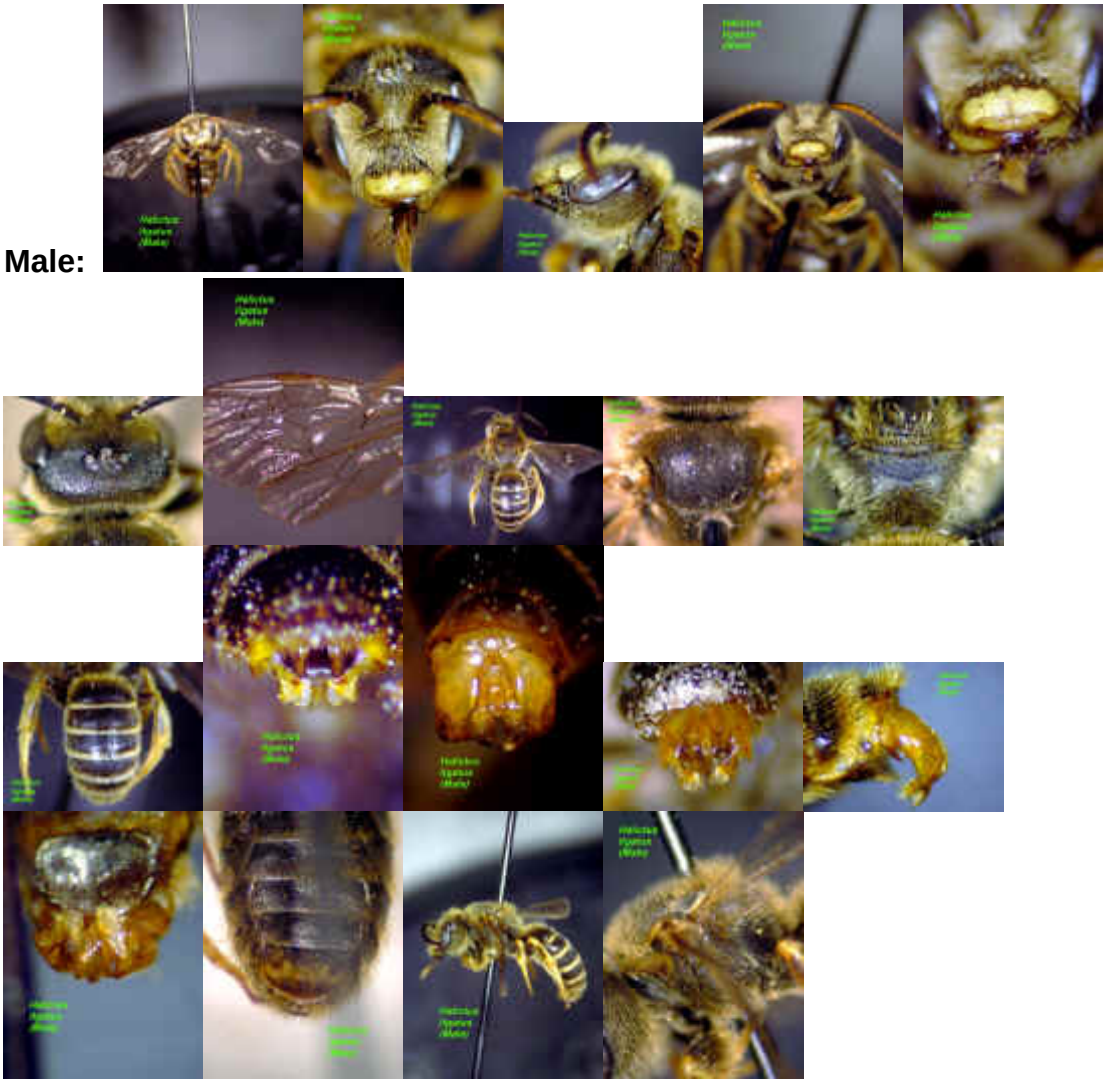
Plants: composites (Graenicher); *Bidens, Ludwigia, Mimosa, Sagittaria, Salix, and Pterocaulon* (UM); *Lactuca sp., Rudbeckia fulgida Sida sp. (1 ♂), Piriqueta caroliniana, Helianthus radula, Rubus argutus, Erigeron, Melanthera*, *Aster*, *Coreopsis (Pascarella unpub. data)*

Notes:

Female:



Male:



Subgenus *Protohalictus*, 1 taxa

Halictidae: *Halictus rubicundus* Christ

County Records: Alachua, Leon, Liberty

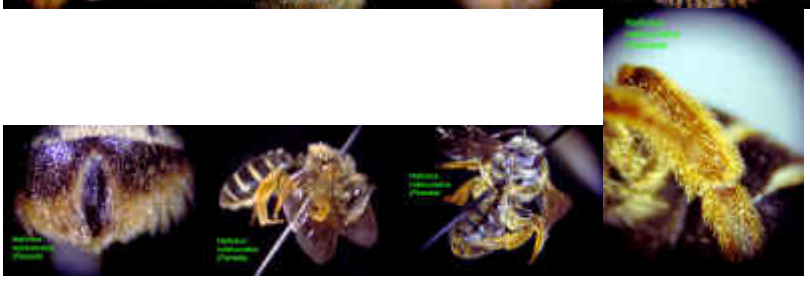
Locations: Torreya State Park

Dates: May 17, Nov. 4 (March-September)

Plants:

Notes:

Female:



Male: 

Subgenus *Nealictus*, 2 taxa

Halictidae: *Halictus parallelus* Say

County Records: Levy

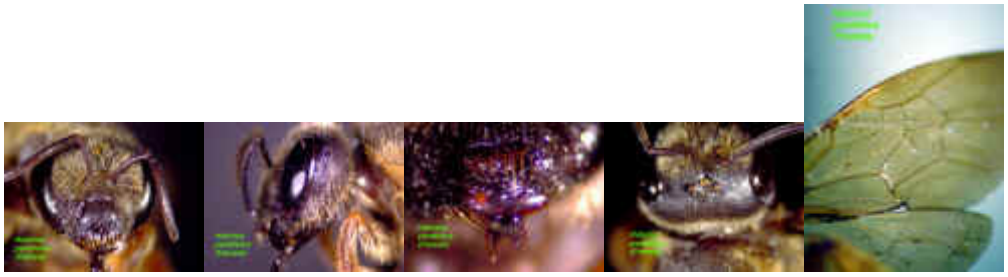
Locations:

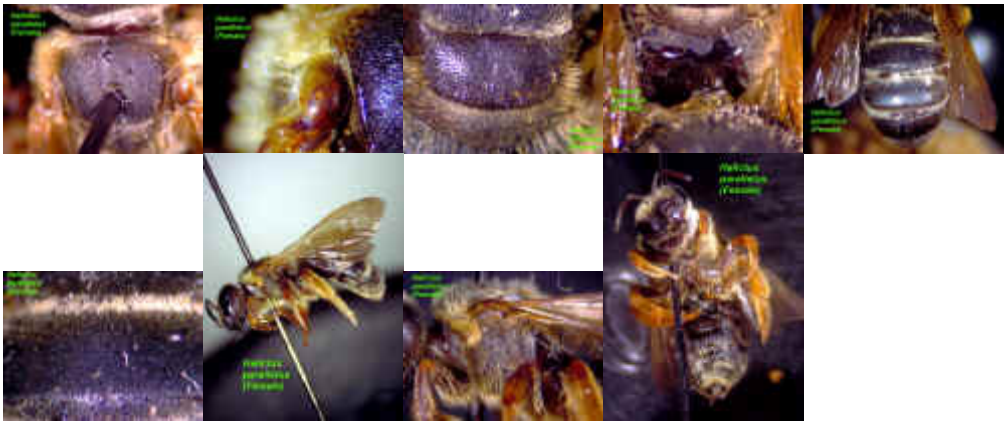
Dates: March-November

Plants:

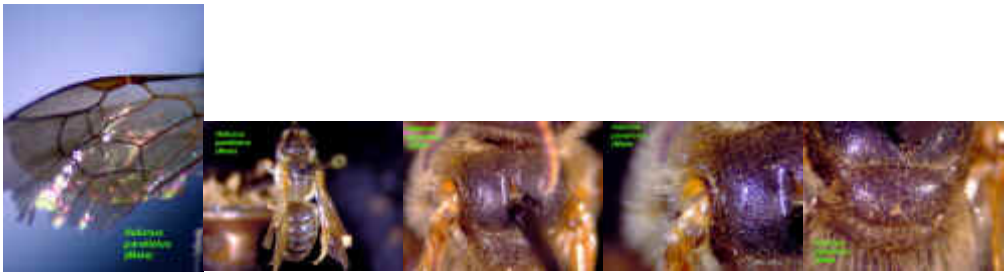
Notes:

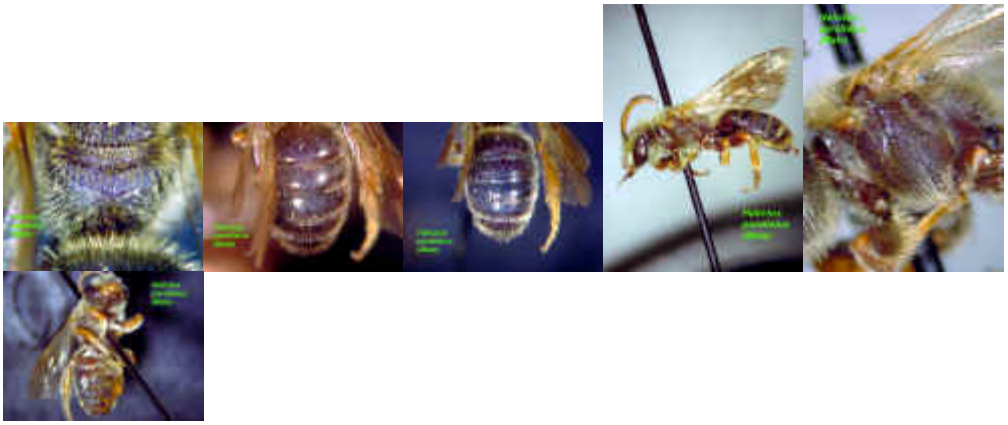
Female:





Male:





Halictidae: *Halictus confusus* Smith

County Records: none in FSCA

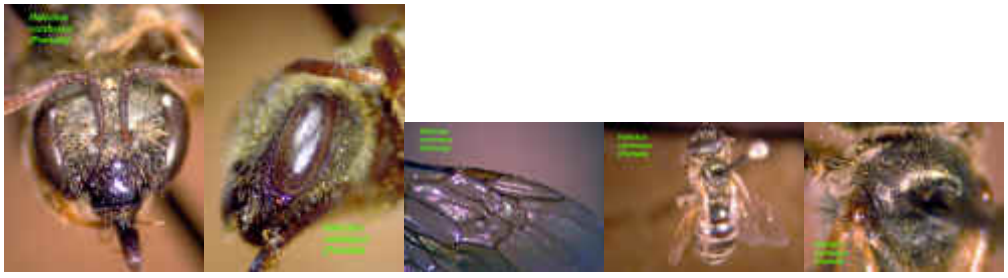
Locations:

Dates: March-October

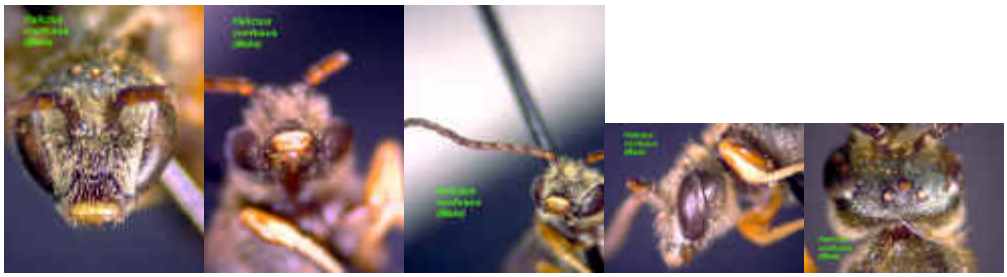
Plants: polylectic

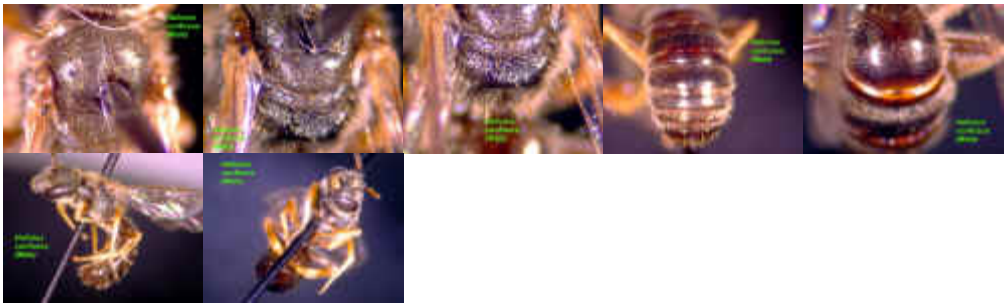
Notes: Mitchell lists this species for Florida but no specimens have been personally observed.

Female:



Male:





Halictidae

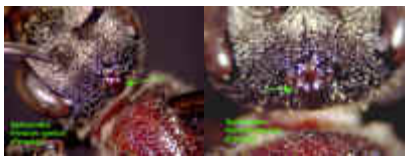
Halictini

Genus *Sphecodes* Latreille, eleven taxa

These bees are parasites of other Halictidae. Previously (Mitchell 1960), seven taxa were known from Florida. This study finds that four additional taxa have been collected. These bees resemble other Halictidae but have coarse punctation and reduced hairs. Unlike most Halictids (except some Dialictus) in Florida, they often have red on the body.

Key to Females

1. Vertex with a pronounced median tubercle..2

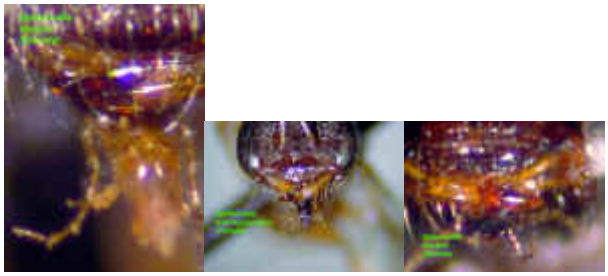


Vertex not tuberculate...3

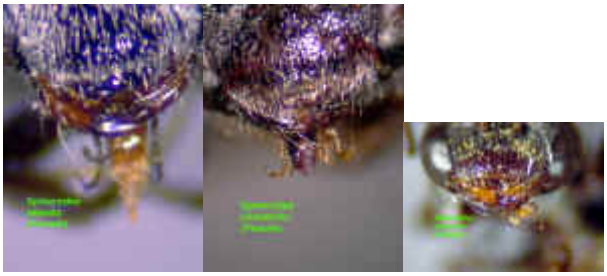
2. Head and thorax black..*Sphecodes heraclei heraclei*

Thorax largely red...*Sphecodes heraclei ignitus*

3. Mandibles entirely simple, or with a very minute and obscure, subapical angle or tooth..4



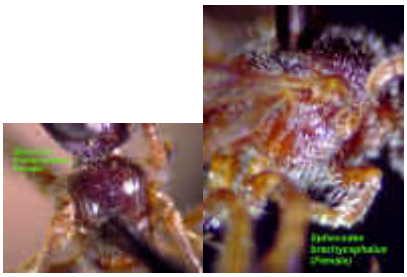
Mandibles with a distinct, inner, subapical angle or tooth...6



4. Scutum rather coarsely and closely punctate, anterior portion rugose..*Sphecodes stygius*

Scutum more finely or sparsely punctate, the anterior punctures distinct...5

5. Punctures of scutum quite sparse; pleura rather smooth or finely rugose...*Sphecodes brachycephalus*

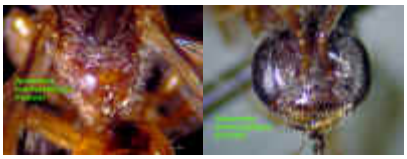


Punctures of scutum rather close; pleura coarsely rugose; basal segment of flagellum about half as long as broad...*Sphecodes banksii*

6. Size larger (8mm or more); scutum not at all sulcate medially..*Sphecodes clematidis*

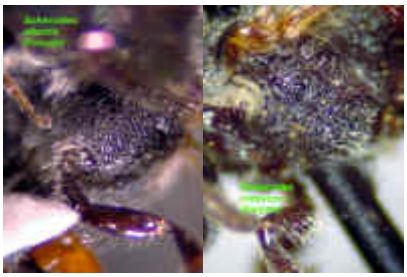
Size smaller (6 mm or less); if larger, scutum with a distinct, anterior, median longitudinal sulcus or impression..7

7. Dorsal area of propodeum with very fine, short striae along basal margin; rounded and smooth posteriorly, head very broad..*Sphecodes brachycephalus*



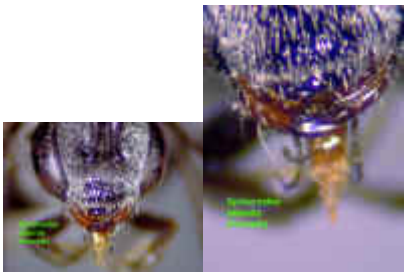
Dorsal area of propodeum quite coarsely and completely striate or rugose...8

8. Pleura, including hypoepimeral area, densely rugose or very finely reticulate..9



Pleura coarsely reticulate and hypoepimeral area more reticulate than rugose..*Sphecodes prosphorus*

9. Clypeus very short, median length llittle if any exceeding space between margin and antennae, with only a few scattered punctures.....*Sphecodes atlantis*



Clypeus more extensive and more closely punctate...*Sphecodes cressonii*

Sphecodes coronus and *Sphecodes fattigi* are known only from the male sex.

Key to Males

1. With 2 submarginal cells...*Sphecodes stygius*

With 3 submarginal cells..2

2. Vertex with a pronounced median tubercle..3

Vertex not tuberculate...4

3. Body entirely black..*Sphecodes heraclei heraclei*

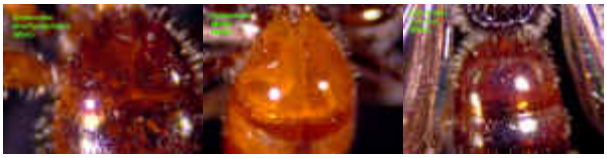
Body ferruginous in large part...*Sphecodes heraclei ignitus*

4. Segments of flagellum beneath with basal, densely pilose, semicircular facets...*Sphecodes prosphorus*

Segments of flagellum of the usual form, or the facets very narrow or very obscure..5

5. Basal abdominal tergum well covered with deep and distinct punctures, although possibly fine punctures...6

Basal abdominal tergum with sparse, minute, or lacking punctures...9



Note on key couplet 5-Some species will key out both ways (*Sphecodes atlantis* and *S. stygius*)

6. Second segment of flagellum nearly or quite as long as basal segment and pedicel combined; larger (6mm or more)...*Sphecodes clematidis*

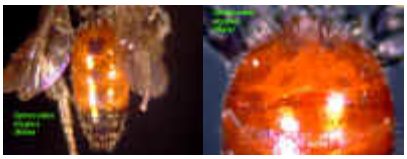
Second flagellar segment considerably shorter than basal segment and pedicel combined; smaller (5mm or less)...7

7. Scutum closely punctate throughout...8

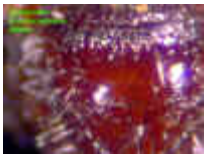
Punctures of scutum sparse over median portion of disc..*Sphecodes atlantis*

8. Usually smaller (4mm); abdomen entirely black or piceous; punctures of basal abdominal tergum covering most of disc...*Sphecodes banksii*

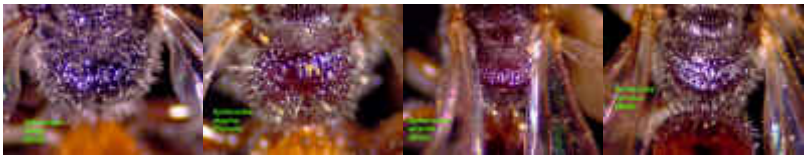
Somewhat larger (5mm); abdomen ferruginous or testaceous in part; punctures of basal abdominal tergum limited to median portion of disc, apical third of plate impunctate...*Sphecodes stygius*



9. Dorsal area of propodeum finely and incompletely striate, rounded and shining posteriorly...*Sphecodes brachycephalus*



Dorsal area of propodeum completely and usually coarsely striate or reticulate, with a distinct posterior rim..10

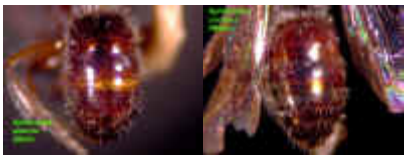


10. Scutum either rugose or closely punctate throughout, interspaces being less than diameter of punctures, in large part...*Sphecodes fattigi*

Punctures of scutum more widely separated, at least in part...11

11. Abdomen ferruginous or testaceous in part...12

Abdomen entirely black or piceous...13



12. Scutum somewhat greenish; punctures rather sparse posteriorly; tarsi yellow; flagellum pale testaceous; gonostyli with a slender, elongate, apical projection directed toward median line...*Sphecodes cressonii*

Scutum black; more coarsely and closely punctate; antennae and tarsi relatively dark; gonostyli without a slender apical projection..*Sphecodes stygius*

13. Very small (3.5-4.0mm); tegulae pale testaceous-hyaline..*Sphecodes atlantis*

Larger (5-6mm); tegulae relatively dark..*Sphecodes coronus*

Halictidae: *Sphecodes atlantis* Mitchell

County Records: Alachua, Levy, Miami-Dade

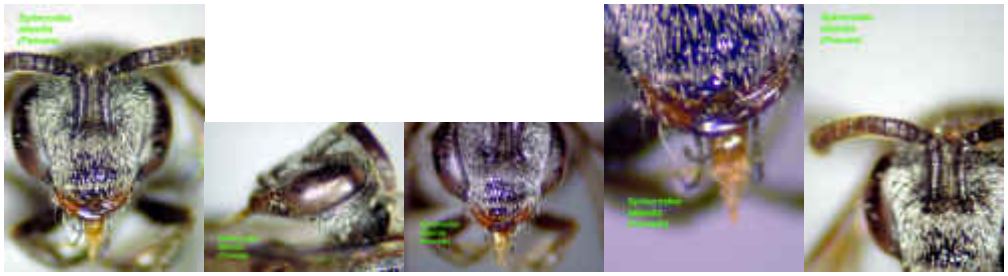
Locations:

Dates: March 26-June 17; March: 1, April: 2, May: 3, June: 1

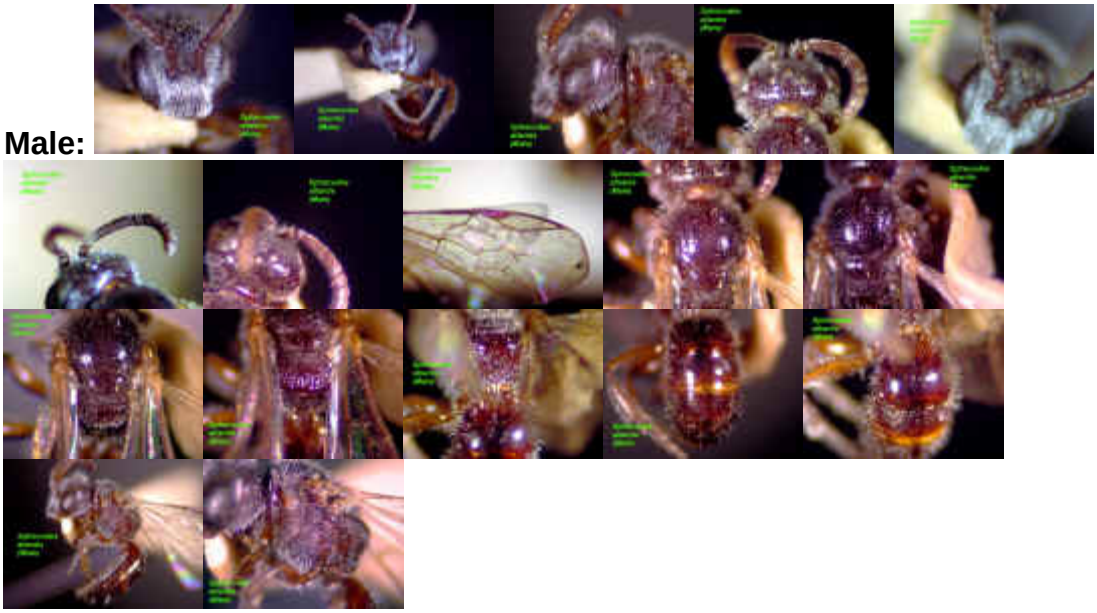
Plants: *Erigeron quercifolius, Hydrangea arborescens, Dichromena sp, Lippia nodiflora (UM)*

Notes:

Female:



Male:



Halictidae: *Sphecodes banksii* Lovell

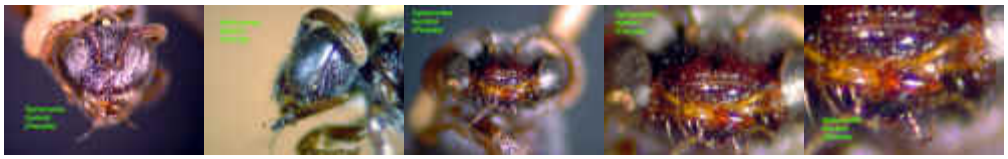
County Records: Alachua

Locations:

Dates: April 13

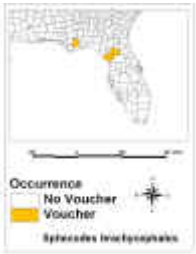
Plants: *Melilotus alba*

Notes:

Female: 

Halictidae: *Sphecodes brachycephalus* Mitchell

County Records: Alachua, Levy, Liberty



Locations:

Dates: April 17-May 8; April:2, May:2

Plants: *Quercus laevis*

Notes: May be parasitic on *Calliopsis andreniformis*

Female:

Male:

Halictidae: *Sphecodes clematidis* Robertson

County Records: Liberty, Gadsden

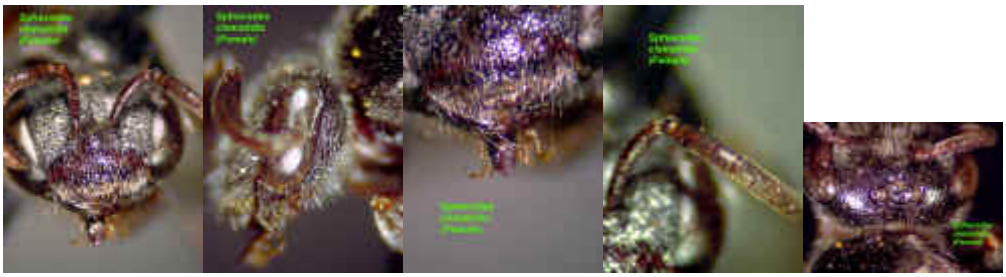
Locations:

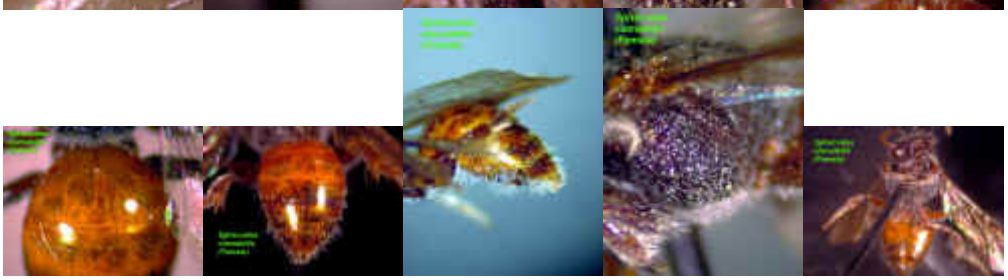
Dates: April 12, July 31

Plants:

Notes: New state record for Florida. Previously collected in NC.

Female:





Halictidae: *Sphecodes coronus* Mitchell

County Records: Alachua

Locations:

Dates:

Plants:

Notes: New state record for Florida. Previously collected in NC. Only known from the male sex.

Male:

Halictidae: *Sphecodes cressoni* Robertson

County Records: Alachua, Jackson, Levy

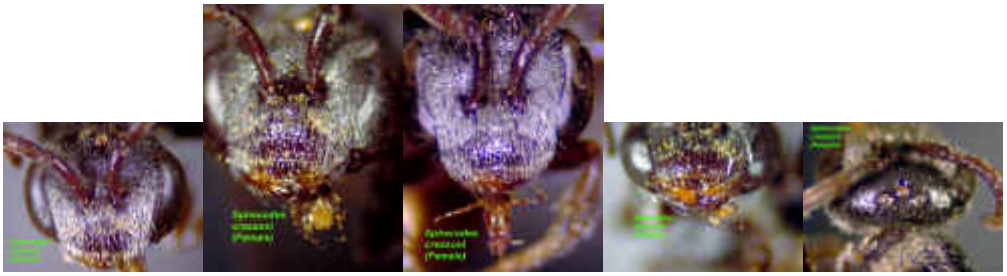
Locations:

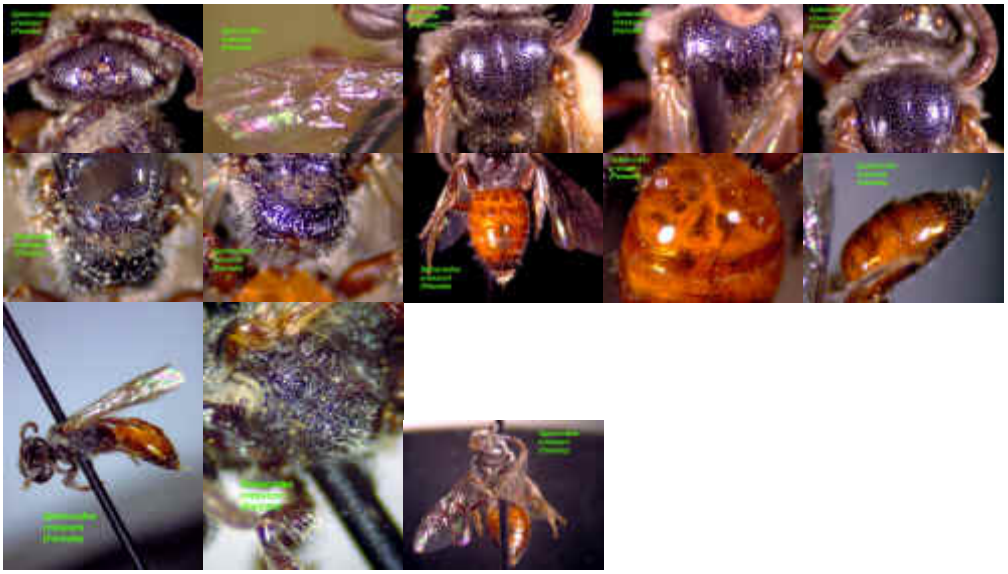
Dates:

Plants:

Notes: New state record for Florida. Previously collected in NC.

Female:





Halictidae: *Sphecodes fattigi* Mitchell

County Records: Leon

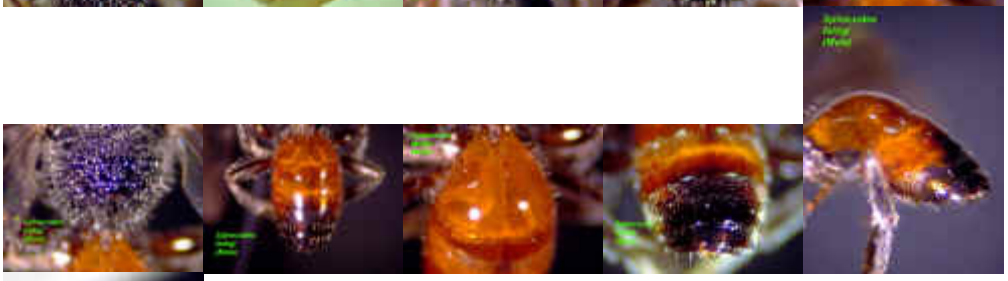
Locations:

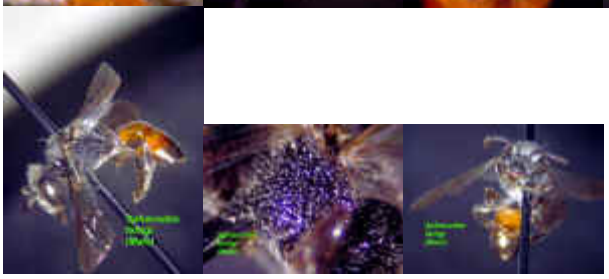
Dates: April

Plants:

Notes: Endemic to Florida. Only known from the male sex.

Male:





Halictidae: *Sphecodes heraclei heraclei* Robertson

County Records: Alachua, Gadsden, Leon

Locations:

Dates: April 3, Sept. 8

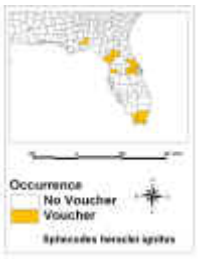
Plants:

Notes:

Male:

Halictidae: *Sphecodes heraclei ignitus* Cockerell

County Records: Alachua, Hernando, Leon, Levy, Miami-Dade, Monroe, Orange, Seminole, Volusia



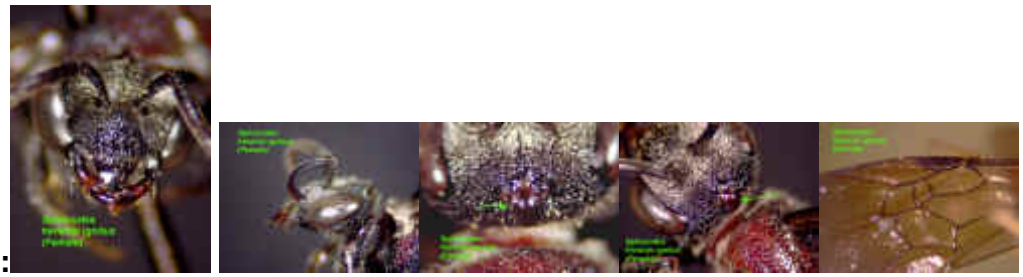
Locations:

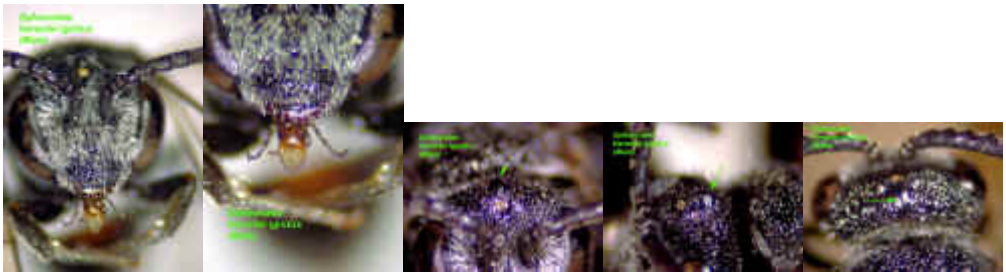
Dates: March-November

Plants:*Sabal palmetto, Phytolacca rigida, Opuntia humifusa, Warea carteri, Vernonia blodgettii, Helianthus debilis, and Bidens alba* (Graenicher 1930)

Notes: Endemic to SE US (Alabama and Florida)

Female:



Male: 

Halictidae: *Sphecodes prosphorus* Lovell and Cockerell

County Records: Miami-Dade

Locations: Opa-Locka

Dates: Oct. 10

Plants:

Notes: New state record for Florida. Previously collected in NC. No photos available at this time.

Halictidae: *Sphecodes stygius* Robertson

County Records: Alachua, Leon, Levy, Polk

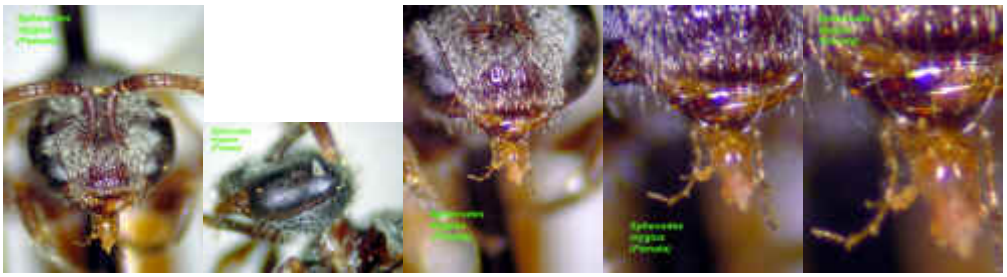
Locations: Cypress Gardens

Dates: March 2-Aug. 20; March: 4, April: 4, May: 1, July: 1, Aug: 3

Plants: *Erigeron quercifolius*, *Medicago lupulina*, *Melilotus alba*

Notes: This is evidently one of the more variable species, with males having either 2 or 3 submarginal wing cells and showing variation in the punctation of the first basal tergum.

Female:



Male:

Halictidae

Subfamily *Nomiinae* Robertson

Genus *Nomia*, five taxa

Key to Males and Females (from Mitchell 1962)

1. Abdomen without conspicuous apical greenish or brownish integumental bands, at most the margins yellowish-hyaline...2


Abdomen with conspicuous apical greenish or brownish bands...4


2. Large and robust (18mm), with fuliginous or blackish wings...3


Smaller (10-15mm); wings subhyaline except for a possible clouded apical border...*N. nevadensis bakeri*

3. Wings uniformly fuliginous...*N. heteropoda heteropoda*


Wings yellowish; broadly infuscated along apical margin...*N. heteropoda kirbii*

4. Males...5

Females...6

5. Smaller (10mm); hind tibiae moderately dilated apically, its apical width exceeded by its length..*N. maneei*

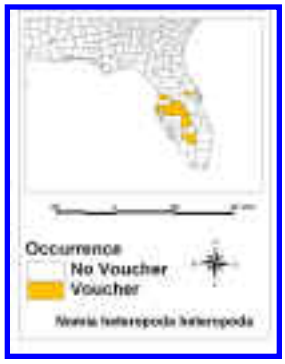

Larger (20mm); hind tibiae enormously produced at apex...*N. nortoni*


6. Smaller (9-10mm); punctures of dorsum of thorax relatively coarse, close and uniform...*N. maneei*


Larger (15mm); punctures of dorsum of thorax very irregular both in size and distribution..*N. nortoni*


Halictidae: *Nomia heteropoda heteropoda* Say

County Records: Hendry, Hernando, Highlands, Hillsborough, Pinellas, Polk, Seminole.



Locations: Avon Park, Clewiston, Haines City, Sanford, Sebring

Dates: July 20-Oct. 17; July: 1, Sept: 6, Oct: 2

Plants: *Bidens pinnata*, *Bidens pilosa*; also *Helianthus*, *Helenium*, and *Eupatorium* (Mitchell)

Notes:

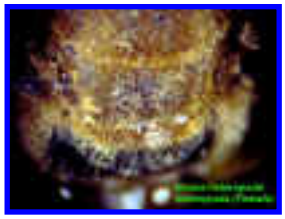
Female:













Male:







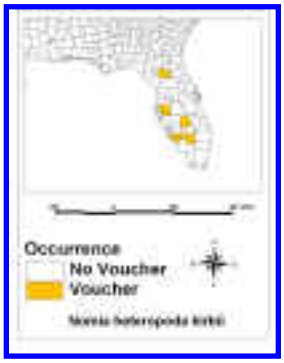







Halictidae: *Nomia heteropoda kirbi* Smith

County Records: Alachua, Hendry, Highlands, Hillsborough, Lee



Locations: Clewiston, Sebring, Tampa

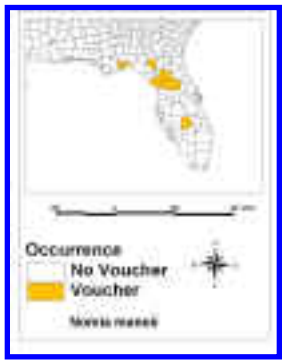
Dates: August and October (Mitchell)

Plants: *Helianthus*

Notes: This may not be a valid subspecies as it usually occurs intermixed with individuals of the nominate subspecies. No photos are currently available.

Halictidae: *Nomia maneii* Cockerell

County Records: Alachua, Highlands, Levy, Marion, Suwanee, Wakulla



Locations:

Dates: May 24-Aug. 28; May:1, June: 1, July: 1, Aug: 2 (also to Sept. according to Mitchell)

Plants: *Galactia, Phaseolus, Eriogonum, Asclepias* (Mitchell)

Notes:

Female:

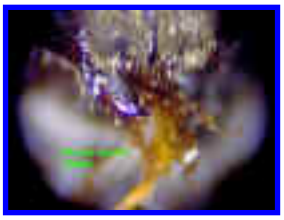


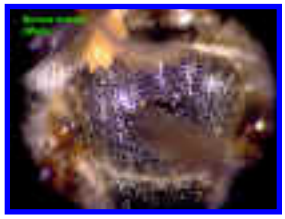




Male:









Halictidae: *Nomia nevadensis bakeri*

County Records: None seen from FSCA

Locations:

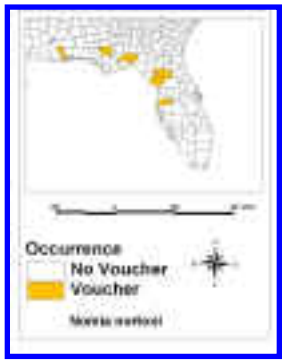
Dates: July-October

Plants:

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

Halictidae: *Nomia nortoni* Cresson

County Records: Alachua, Escambia, Jackson, Jefferson, Gilchrist, Leon, Levy, Pasco



Locations: Dade City, Monticello, Morriston, Tall Timbers Research Station

Dates: July 21-Oct. 14; July: 2, Aug: 5, Sept.:2, Oct: 3 (extending to November according to Mitchell)

Plants: *Clethra, Helenium, Ligustrum, Rhus* (Mitchell)

Notes:

Female:    











Male:













Halictidae

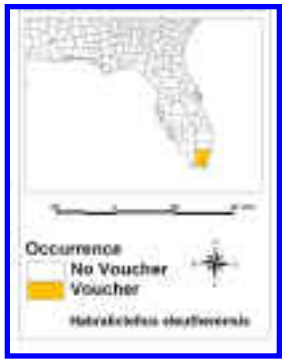
Halictini

Lasioglossum (Dialictus, Habralictellus)

This is a group that has been accorded generic status as *Habralictellus*, as a subgenus of *Dialictus*, and with *Dialictus* as a subgenus or group of the larger genus *Lasioglossum*. For a full description, see M. S. Engel. 2001. Three new *Habralictellus* bee species from the Caribbean (Hymenoptera: Halictidae). Solenodon 1: 33-37.

Halictidae: *Lasioglossum* (*Dialictus*, *Habralictellus) eleutherensis* Engel

County Records: Known only from Miami-Dade



Localities: University of Miami Gifford Arboretum (Coral Gables, FL)

Plants: *Ardisia escallonioides, Calyptranthes pallens*

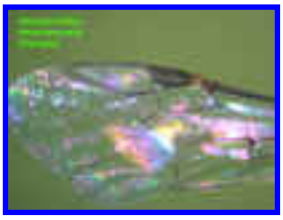
Notes: Recently described by Engel (2001); known from the Bahamas (Eleuthera) and Cuba (Cayo Guillermo, Cayo Paredon). Its status in Florida is unknown; four females were collected by J. Pascarella in 1996-1997 while they were foraging in the University of Miami arboretum. Perhaps it is a recent immigrant brought to Florida by a hurricane or tropical storm. There are no previous records of this very distinctive bee.

Female:















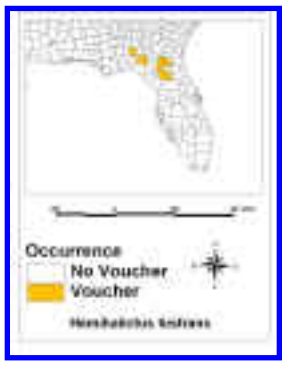

Halictidae

Halictini

Genus *Lasioglossum* (Subgenus *Hemihalictus*), one species

Halictidae: *Lasioglossum* (*Hemihalictus*) *lustrans* Cockerell

County Records: Alachua, Columbia, Madison (also Thomas County, GA)



Locations:

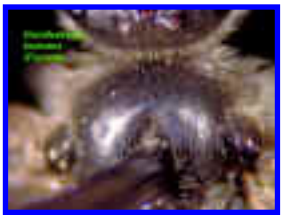
Dates: April -Sept.

Plants: Pollen collected primarily from *Pyropappus* and other members of the tribe Lactucaee of the Asteraceae

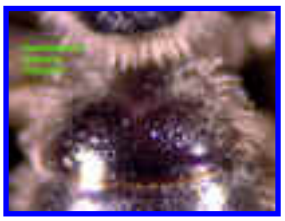
Notes: This species may occur further to the south and in the panhandle.

Female: 






Male: