

A PRELIMINARY KEY TO THE WORKER ANTS OF ALACHUA COUNTY, FLORIDA ¹

By

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The following key is an outgrowth of a study on the ecology of the ants of the Gainesville region and vicinity in Alachua County, Florida. It is based, with modifications, on the work of Cole (1940), Creighton (1939), Gregg (1944), Smith (1936, 1942a, 1942b, 1943, 1944, 1947), and Wheeler (1910).

Certain groups, such as the subgenus *Diplorhoptrum* of the genus *Solenopsis*, contain more representatives from the region studied than the key indicates. These forms have not been included because of the uncertainty of their taxonomic status. They differ only slightly from other forms in the key. Under certain other genera forms are listed as "Species A" or "Species B". These are not to be considered new until further diagnoses can prove or disprove their correspondence with known species, subspecies, or varieties. The term "var." indicates that the specimens involved are atypical of the species or subspecies.

The record of *Iridomyrmex humilis* is included on the authority of Wheeler (1932), but Smith (in litt) states that he questions its validity.

The ant list for Alachua County as here presented cannot be considered complete, but it is felt that it will serve as a basis for future myrmecological work in Florida, if not in the most northern and southern districts, at least in the central district.

Thanks are due the members of the Department of Biology of the University of Florida for suggestions and aid. I am particularly indebted to Dr. M. R. Smith of the United States National Museum for aid in the determination of the more difficult forms and for his permission to redraw the figures appearing in his 1947 paper. The American Midland Naturalist has also kindly granted permission for the redrawing of Smith's figures. Miss Esther Coogle, of this department, has ably executed the drawings. In some cases the ants represented are not found in Alachua County, but these are included to show subgeneric characters.

¹ Contribution from the Department of Biology, University of Florida.

KEY TO THE SUBFAMILIES²

1. Abdominal pedicel composed of two segments, the petiole and post-petiole 2
- 1'. Abdominal pedicel composed of a single segment, the petiole 4
- 2(1). Frontal carinae located very close to each other and not covering the antennal insertions 3
- 2'. Frontal carinae not placed close to each other and each often bearing a lobe which more or less conceals the antennal insertion; clypeus almost always prolonged back between the frontal carinae

MYRMICINAE

- 3(2). Eye remarkably large, reniform or subelliptical, occupying approximately half the length of the side of the head; ocelli usually present; clypeus not prolonged back between the frontal carinae

PSEUDOMYRMINAE

- 3'. Eye either absent or vestigial, ocellus-like; no ocelli DORYLINAE

- 4(1'). Cloacal orifice circular, terminal, surrounded by a fringe of hairs FORMICINAE

- 4'. Cloacal orifice not as described above 5

- 5(4'). No constriction between the first and second gastric segments; integument usually soft, flexible; sting rudimentary or absent; anal glands present which produce a characteristic "tapinoma odor"

DOLICHODERINAE

- 5'. A pronounced constriction between the first and second gastric segments

PONERINAE

KEY TO THE DORYLINAE

1. Head distinctly shining, never densely sculptured or opaque

Eciton opacithorax Emery

- 1'. Head, thorax, petiole, and postpetiole densely punctate, opaque, with scattered foveolate impressions (Plate I, Fig. 1)

Eciton nigrescens (Cresson)

KEY TO THE PONERINAE

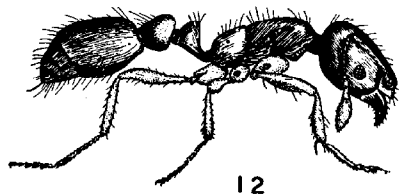
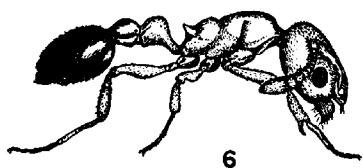
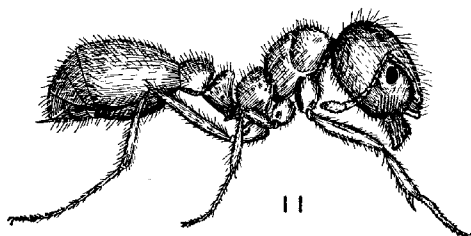
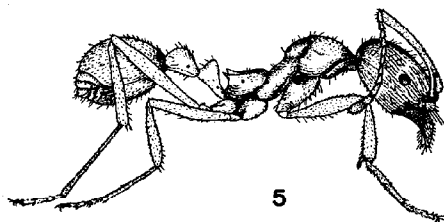
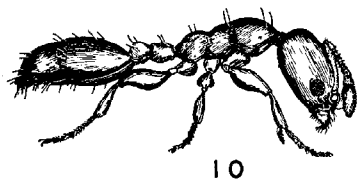
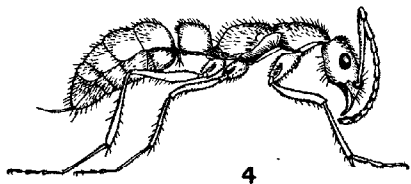
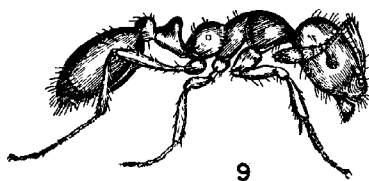
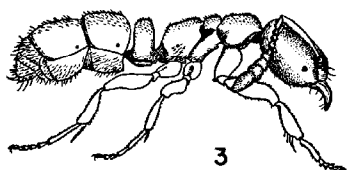
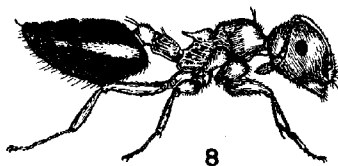
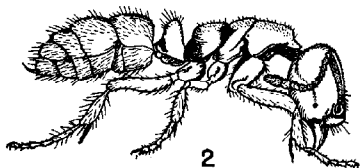
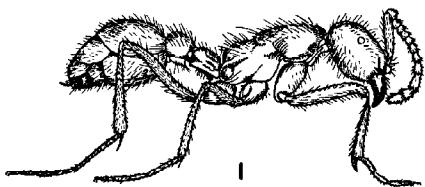
1. Mandibles inserted at the corners of the head; petiole rounded or flattened above 2

² The subfamily Cerapachyinae is not represented in Alachua County.

PLATE I

- Fig. 1. *Eciton (Neivamyrmex) nigrescens* (Cresson), worker.
 Fig. 2. *Euponera (Trachymesopus) gilva* (Roger), worker.
 Fig. 3. *Ponera coarctata pennsylvanica* Buckley, worker.
 Fig. 4. *Leptogenys (Lobopelta) elongata* (Buckley), worker.
 Fig. 5. *Aphaenogaster (Attomyrma) treatae* Forel, worker.
 Fig. 6. *Cardiocondyla emeryi* Forel, worker.
 Fig. 7. *Crematogaster (Orthocrema) minutissima missouriensis* Emery, worker.
 Fig. 8. *Crematogaster (Acrocoelia) laeviuscula* var. *clara* Mayr, worker.
 Fig. 9. *Monomorium (Monomorium) minimum* (Buckley), worker.
 Fig. 10. *Xenomyrmex stolli floridanus* Emery, worker.
 Fig. 11. *Solenopsis (Solenopsis) xyloni* McCook, soldier.
 Fig. 12. *Solenopsis (Euopthalma) globularia littoralis* Creighton, worker.

PLATE I



- 1'. Mandibles inserted close together at the middle of the oral border;
petiole terminating in a spine or point above
Odontomachus haematoda insularis Guerin
- 2(1). Claws pectinate (similar to Plate I, Fig. 4)
Leptogenys elongata manni Wheeler
- 2'. Claws simple 3
- 3(2'). Tibiae of middle and hind legs each with a single spur....*Ponera* Latr.
- 3'. Tibiae of middle and hind legs each with 2 spurs, the smaller being
sometimes difficult to discern (Plate I, Fig. 2)
Euponera gilva (Roger)

KEY TO THE SPECIES OF *Ponera*

1. Petiole when viewed in lateral profile slender, sub-triangular (that is,
narrower dorsally than ventrally) *trigona* var. *opacior* Forel
- 1'. Petiole when viewed in lateral profile robust, sub-rectangular (that is,
approximately as wide dorsally as ventrally) 2
- 2(1'). Head with dense, coarse punctures, subopaque (Plate I, Fig. 3)
coarctata pennsylvanica Buckley
- 2'. Head densely, but more finely punctate, thus giving the general surface
a subopaque appearance but lacking the coarse granular effect
opaciceps Mayr

KEY TO THE PSEUDOMYRMICINAE

1. Color red-brown to dark brown; about 4.0 mm. in body length
Pseudomyrma brunnea F. Smith
- 1'. Color light to dark yellow; about 5.0 mm. in body length
Pseudomyrma flavidula F. Smith

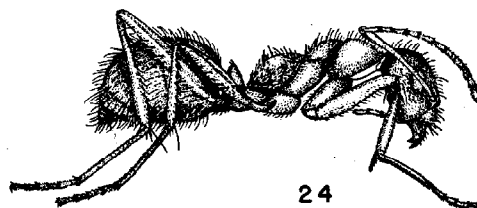
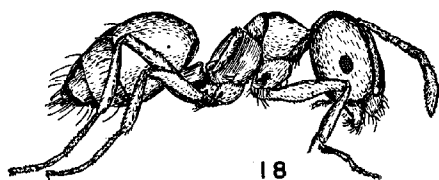
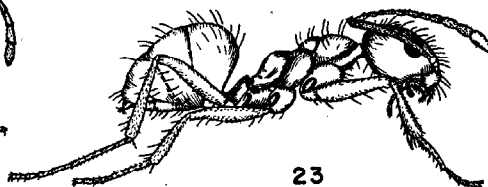
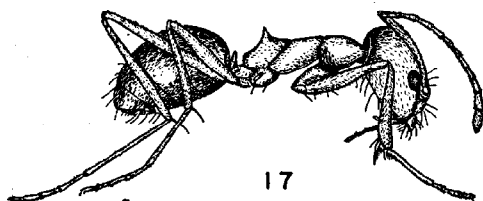
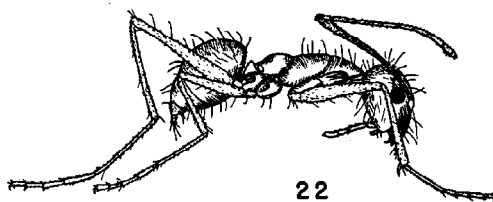
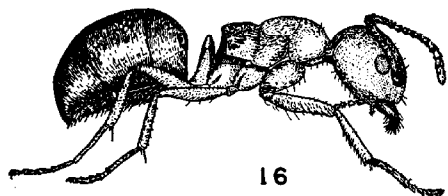
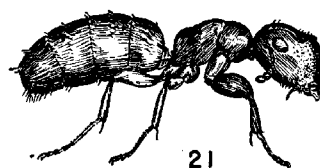
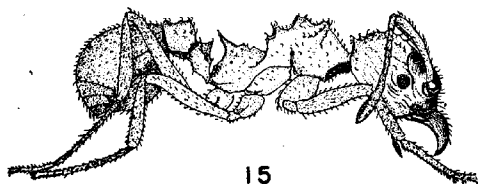
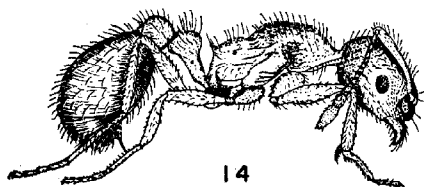
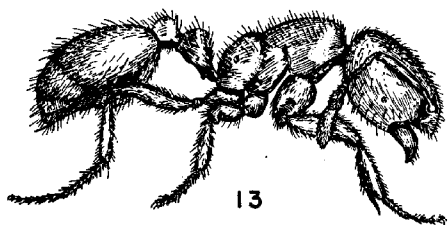
KEY TO THE MYRMICINAE

1. Antennae with six segments *Strumigenys louisiana* Roger
- 1'. Antennae with more than six segments 2

PLATE II

- Fig. 13. *Solenopsis (Diplocephtrum) pergandei* Forel, worker.
- Fig. 14. *Leptothorax (Dichothorax)* sp., worker.
- Fig. 15. *Trachymyrmex septentrionalis obscurior seminole* Wheeler, worker.
- Fig. 16. *Dolichoderus (Hypoclinea) taschenbergi* Mayr, worker.
- Fig. 17. *Dorymyrmex (Conomyrma) pyramicus flavopectus* M. R. Smith,
worker.
- Fig. 18. *Brachymyrmex (Brachymyrmex)* sp., worker.
- Fig. 19. *Camponotus (Myrmothrix) abdominalis floridanus* (Buckley),
major worker.
- Fig. 20. *Camponotus (Myrmentoma) caryae nearcticus* Emery, major
worker.
- Fig. 21. *Camponotus (Colobopsis) etiolatus* Wheeler, soldier.
- Fig. 22. *Paratrechina (Paratrechina) longicornis* (Latreille), worker.
- Fig. 23. *Paratrechina (Nylanderia) parvula* (Mayr), worker.
- Fig. 24. *Formica (Neofornica) pallidefulva schaufussi* Mayr, worker.

PLATE II



- 2(1'). Antennae with ten segments, the last two segments of the funiculus forming a distinct club *Solenopsis* Westwood
- 2'. Antennae with more than ten segments 3
- 3(2'). Antennae with eleven segments 4
- 3'. Antennae with twelve segments 7
- 4(3). Postpetiole attached to dorsal surface of the base of the gaster; gaster subcordate, more convex ventrally than dorsally and with an acute apex *Crematogaster* Lund
- 4'. Postpetiole attached to basal surface of gaster; gaster not as above 5
- 5(4'). Region between mandible and inner border of eye with a longitudinal carina which extends posteromesially (Plate II, Fig. 15) *Trachymyrmex septentrionalis obscurior seminole* Wheeler
- 5'. Region between mandible and inner border of eye without a longitudinal carina 6
- 6(5'). Epinotum unarmed; integument smooth or very weakly sculptured (Plate I, Fig. 10) *Xenomyrmex stolli floridanus* Emery
- 6'. Epinotum armed; part of integument, at least, with well-developed sculpture *Leptothorax bradleyi* Wheeler
- 7(3'). Clypeus elevated in the form of a carina or ridge in front of the antennal socket *Tetramorium* Mayr
- 7'. Clypeus otherwise; if clypeus appears somewhat similar to that described above, then the spurs of each middle and hind tibia are pectinate, the mesoepinotal constriction on the dorsal surface of the thorax is usually absent or obsolescent, and the ventral surface of the head may bear a psammophore 8
- 8(7'). Spurs of each middle and hind tibia very distinctly pectinate *Pogonomyrmex badius* (Latr.)
- 8'. Spurs of each middle and hind tibia simple or absent 9
- 9(8'). Epinotum unarmed *Monomorium* Mayr
- 9'. Epinotum armed 10
- 10(9'). In profile, clypeus strongly projecting above mandibles; each middle and hind tibia without spurs; body clothed with closely appressed pubescence; erect hairs almost, if not entirely, absent from the dorsal surface of the body except on the clypeus, mandibles, and apex of gaster; monomorphic; small (1.6-2.5 mm.) *Cardiocondyla* Emery
- 10'. Differing in one or more characters 11
- 11(10'). Antennae without a 3-segmented club *Aphaenogaster* Emery
- 11'. Antennae with a 3-segmented club 12
- 12(11'). Dimorphic (or polymorphic), the soldier with an abnormally large head *Pheidole* Westwood
- 12'. Monomorphic form which lack the large-headed soldier (Similar to Plate II, Fig. 14) *Leptothorax floridanus* Emery

KEY TO THE SPECIES OF *Aphaenogaster*

1. Base of antennal scape lobed or with an extension 2
- 1'. Base of antennal scape not lobed 3

- 2(1). Color yellow to yellow-brown; postpetiole elongated; well-developed, protruding lobe at base of antennal scape *floridana* M. R. Smith
- 2'. Color ferruginous red to dark brown; postpetiole not elongated; more node-like 5
- 3(1'). Body length under 4.0 mm. *texana nana* Wheeler
- 3'. Body length 5.0 mm. or over 4
- 4(3'). Dorsal portion of head rugulose-punctate, the rugulae being very low *texana silvestrii* Menozzi
- 4'. Dorsal portion of the head rugulose punctate, the rugulae being prominent and running longitudinally *lamellidens* Mayr
- 5(2'). Lobes at base of antennal scapes extending for a short distance up the scape; lobes convex away from carinae; dark brown in color (similar to Plate I, Fig. 5) *treatae ashmeadi* Emery
- 5'. Lobes at base of antennal scape short, convex toward carinae; ferruginous red in color *lamellidens* Mayr

KEY TO THE SPECIES OF *Pheidole*

1. Epinotal spines vestigial, or very short and blunt in the worker *morrisi* Forel
- 1'. Epinotal spines distinct 2
- 2(1'). Color black, with a metallic appearance; gaster, occiput, and median longitudinal line on thorax shining *metallesceus* Emery
- 2'. Color other than black, metallic appearance lacking 3
- 3(2'). Color dark brown or reddish brown; minor worker about 3.0 mm. in body length 4
- 3'. Color yellow or very light brown Species B, cf. *floridana* Emery
- 4(3). Size of major worker about six millimeters; major worker slender; epinotal spines short but distinct in minor worker, longer in major worker Species A
- 4'. Size of major worker only slightly larger than that of minor worker, or about 4.0 mm. 5
- 5(4'). Posterior half of head, not merely occiput, dorsum of the prothorax and mesothorax, and dorsum of the petiole and postpetiole smooth and shining *commutata* Mayr
- 5'. Posterior half of head, etc., not as above *dentata* Mayr

KEY TO THE SPECIES OF *Cardiocondyla*

1. Petiolar node, from above, very distinctly longer than broad, compressed (Plate I, Fig. 6) *emeryi* Forel
- 1'. Petiolar node, from above, not as described, more sub-globular and lacking the distinctly compressed appearance; gaster a deep uniform brown or black *nuda* var. *minutier* Forel

KEY TO THE SPECIES OF *Crematogaster*

1. Antennal club 3-segmented; postpetiole with an impression or longitudinal furrow dividing it into two more or less distinct lobes 2

- 1'. Antennal club 2-segmented; postpetiole without an impression or longitudinal furrow 3
- 2(1). Epinotal spines about one-half as long as the distance that separates their bases and rather strongly directed upward; pronotum with the rugae usually lateral in position (Plate I, Fig. 7)
minutissima missouriensis Emery
- 2'. Epinotal spines less than half as long as the distance which separates their bases and directed more backward than upward; pronotum with two prominent rugae near middle
minutissima minutissima Mayr
- 3(1'). Thorax with reticulate-rugose sculpturing *lineolata* (Say) var.
- 3'. Thorax smooth and shining, or only slightly sculptured 4
- 4(3'). Epinotal spines robust and incurved; deep brown to blackish in color *ashmeadi* Mayr
- 4'. Epinotal spines long; head and thorax brown, gaster black (similar to Plate I, Fig. 8) *laeviuscula* Mayr

KEY TO THE SPECIES OF *Monomorium*

1. Clypeal teeth prominent; color brown or black 2
- 1'. Clypeal teeth indistinct; color straw yellow to yellowish red
pharaonis (L.)
- 2(1). Antennal fossa with concentric rugulae; pronotum about twice as wide as dorsum of epinotum; color dark brown Species A
- 2'. Antennal fossa without rugulae, shining; pronotum less than twice as large as epinotum; color very dark brown or black (Plate I, Fig. 9) *minimum* (Buckley)

KEY TO THE SPECIES OF *Solenopsis*

1. Width of postpetiole from the dorsal aspect, twice as great as that of the petiole; monomorphic (Plate I, Fig. 12)
globularis littoralis Creighton
- 1'. Width of postpetiole from the dorsal aspect the same, or only slightly larger than that of the petiole 2
- 2(1'). Body length 2 mm. or less; monomorphic 4
- 2'. Body length of minor worker about 3 mm.; polymorphic, body length of major worker being more than 3 mm. 3
- 3(2'). Head and rest of body dark brown, or head slightly tinged with reddish brown; mesosternum of the thorax without a spine or projection (similar to Plate I, Fig. 11) *geminata* (F.)
- 3'. Head a light reddish yellow, with the abdominal segments narrowly bordered with brown; mesosternum of the thorax with a spine or projection (similar to Plate I, Fig. 11) *geminata rufa* (Jerdon)
- 4(2). Postpetiole appearing subglobular from above (Plate II, Fig. 13)
pergandei Forel
- 4'. Postpetiole not appearing subglobular from above 5
- 5(4'). Head and gaster deep brown and usually darker than the thorax;

- 2(1'). Anterior median clypeal margin with a distinct but narrow notch;
whole body black (Plate II, Fig. 20) *caryae nearcticus* Emery
- 2'. Anterior clypeal margin entire, or at most feebly and broadly excised
or sinuate in the middle; whole body not black 3
- 3(2'). Clypeus ecarinate, or with a very feeble or blunt carina
castaneus Latr.
- 3'. Clypeus carinate 4
- 4(3'). Middle and hind tibiae without a row of graduated bristles on the
flexor surface; thorax yellowish to reddish brown, gaster very dark
brown or black (Plate II, Fig. 19)
abdominalis floridanus (Buckley)
- 4'. Middle and hind tibiae with such a row; coloring different than above.. 5
- 5(4'). Dorsal surface of the first to third gastric segments pale yellow,
separated from the pale posterior border by a narrow dark brown
band *socius osceola* Wheeler
- 5'. Dorsal surface of only the first and second gastric segments yellow;
yellow spot on the dorsal surface of the second segment interrupted
in the middle *socius* Roger

KEY TO THE SPECIES OF *Paratrechina*

1. Antennae and legs usually long, the scape extending more than one-half
its length beyond the posterior border of the head; body slender;
long, coarse, suberect or erect hairs normally absent on the scape;
integument with a metallic luster (Plate II, Fig. 22)
longicornis (Latr.)
- 1'. Unlike the above in one or more respects; tibiae and scapes, especially
the former, usually with coarse, suberect hairs (similar to Plate
II, Fig. 23) (*Nylanderia*) sp. A

KEY TO THE SPECIES OF *Prenolepis*

1. Body piceous black; mandibles, antennae, tibiae, and tarsi lighter
imparis (Say)
- 1'. Body brownish or reddish yellow; gaster and occipital region darker
imparis testacea Emery

KEY TO THE SPECIES OF *Formica*

1. Erect hairs absent on gula and petiole *pallidefulva* Latr. var.
- 1'. Erect hairs present on gula and petiole 2
- 2(1'). Gaster distinctly infuscated, darker than head and thorax (close
to Plate II, Fig. 24) *pallidefulva schaufussi* Mayr var.
- 2'. Gaster scarcely darker than the head and thorax, its pubescence longer
and denser *pallidefulva schaufussi dolosa* Wheeler

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