
Faunal Zones of America North of Mexico
FAUNA
ZONE
REGION
Arctic
Hudsonian
Canadian
Boreal
Transition
Alleghanian
Transition
Upper Sonoran
Carolinian
Upper Austral
Austral
Lower Sonoran
Austroriparian
Lower Austral
Tropical
Tropical

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HYMENOPTERA OF AMERICA NORTH OF MEXICO

SYNOPTIC CATALOG

Prepared cooperatively by
specialists on the various groups of Hymenoptera
under the direction of
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HYMENOPTERA OF AMERICA NORTH OF MEXICO—SYNOPTIC CATALOG

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INTRODUCTION

As knowledge in any field grows, the tools that are to aid in making effective use of that knowledge and that are to stimulate further advances must be modernized. Among the most useful tools in the field of entomology are up-to-date catalogs of the various major groups of insects. They unlock the door to the vast store of published information pertaining to any particular species or form, and they clarify the relationships that species bear to one another. Such a modern catalog of the North American insects of the order Hymenoptera, which includes the sawflies, wood wasps, parasites of other insects that are used in biological control undertakings, bees, wasps, ants, gall wasps and related forms, has long been needed. The last regional catalog of this type was that by Cresson, published in 1887, although the North American species were included in the catalog of the known Hymenoptera of the world, by Dalla Torre, which was published in Germany in 10 volumes, between 1892 and 1902.

During the past 50 years several thousand new North American species have been described and named. Many more have been assigned to genera different from those in which they were originally described; numerous others have been found to be synonyms of previously described species; and still others have had to be renamed because of prior use of the same names for different species. Moreover, many species and genera, the names of which had been wrongly applied, have had to be redefined to correct misidentifications. New genera, too, have been established, and the classification not only of genera and species, but also of tribes, subfamilies, and families, has been appreciably altered. All this is the result of continued research which has grown increasingly critical and is continually adopting new approaches and applying new techniques.

The present contribution represents an attempt to bring together

Sapyga coloradensis Cresson, 1880. Amer. Ent. Soc. Trans. 8: Proc. p. xxi. ♂.

Sapyga truncata Cresson, 1880. Amer. Ent. Soc. Trans. 8: Proc. p. xxi. ♂.
Biology: Linsley and Michener, 1942. Pan-Pacific Ent. 18: 28.

interrupta Roberts. Colo.
Sapyga interrupta Roberts, 1929. Psyche 36: 359. ♀.

louisi Krombein. N. Y., Mich., Tex. (Fedor, Dallas, Brownsville).
Sapyga louisi Krombein, 1938. Ent. Soc. Amer. Ann. 31: 467. ♂ ♀.

maculata Provancher. Que.
Sapyga maculata Provancher, 1882. Nat. Canad. 13: 9. ♀.

martinii Smith. Canad, Wash., Wyo., Colo., Utah, N. H.
Sapyga martinii Smith, 1855. Cat. Hym. Brit. Mus., v. 3, p. 117. ♂ ♀.

nevadica Cresson. Wash., Idaho, Oreg., Calif., Nev., Utah, Tex.
Sapyga nevadica Cresson, 1880. Amer. Ent. Soc. Trans. 8: Proc. p. xxi. ♂.
Sapyga montana Cresson, 1880. Amer. Ent. Soc. Trans. 8: Proc. p. xxi. ♀.

pumila Cresson. Alta., Colo., N. Mex., Nebr., Utah, Nev., Calif. Parasitizes bees of the genera *Ashmeadiella* and *Dianthidium*.
Sapyga pumila Cresson, 1880. Amer. Ent. Soc. Trans. 8: Proc. p. xx. ♀.
Sapyga minor Roberts, 1933. Kans. Ent. Soc. Jour. 6: 96. ♂.
Biology: Hicks, 1934. Univ. Colo., Studies 21: 265–271.—Linsley, 1944. Brooklyn Ent. Soc. Bul. 39: 54.

Genus EUSAPYGA Cresson

Eusapyga Cresson, 1880. Amer. Ent. Soc. Trans. 8: Proc. p. xx.
Type: ***Sapyga rubripes*** Cresson. Desig. by Ashmead, 1903.

Host records include only the megachilid genus *Dianthidium*.

californica (Cresson). Calif.
Sapyga californica Cresson, 1880. Amer. Ent. Soc. Trans. 8: Proc. p. xx. ♂.

intermedia Roberts. Calif. Parasitizes bees of the genus *Dianthidium*.
Eusapyga intermedia Roberts, 1929. Psyche 36: 361. ♀.

nigripes (Cresson). Nev.
Sapyga nigripes Cresson, 1880. Amer. Ent. Soc. Trans. 8: Proc. p. xx. ♂.

rubripes carolina Banks. N. C.
Eusapyga carolina Banks, 1912. Canad. Ent. 44: 203. ♂.

rubripes proxima (Cresson). Colo., Wyo., Mont. Parasitizes bees of the genus *Dianthidium*.
Sapyga proxima Cresson, 1880. Amer. Ent. Soc. Trans. 8: Proc. p. xx. ♂.
Biology: Hicks, 1927. Psyche 34: 193–198.

rubripes rubripes (Cresson). Tex., Colo. Parasitizes bees of the genus *Dianthidium*.
Sapyga rubripes Cresson, 1880. Amer. Ent. Soc. Trans. 8: Proc. p. xx. ♂ ♀.

verticalis (Cresson). Calif., Nev. Transition Zone. Parasitizes bees of the genus *Dianthidium*.
Sapyga verticalis Cresson, 1880. Amer. Ent. Soc. Trans. 8: Proc. p. xx. ♀.
Biology: Hicks, 1934. Univ. Colo., Studies 21: 265–271.

Family FORMICIDAE[29]

Ants are social insects that live in colonies in diverse situations, more commonly in the ground or in rotting wood. Some are general feeders; others have highly specialized food habits. Although most ants are free-living forms, some are parasites on other species of ants or live as inquilines with them. A number of forms are of concern to man because of their feeding, nesting or stinging habits. A colony is normally composed of one of more reproductive females and workers, and at certain seasons of the year it contains also males and virgin females.

[29] By Marion R. Smith, U. S. Bureau of Entomology and Plant Quarantine.

Biology and Taxonomy: W. M. Wheeler, 1926. Ants, Their Structure, Development and Behavior.—M. R. Smith, 1943. Amer. Midland Nat. 30: 273–321.—M. R. Smith, 1947. Amer. Midland Nat. 37: 521–647.—Creighton, 1950. Harvard Univ., Mus. Compar. Zool. Bul. 104: 1-585, 57 pls.

Subfamily DORYLINAE

The legionary ants are the New World equivalent of the Old World driver or army ants. Highly predaceous, they are known for their foraging expeditions on other arthropods, including ants. They exhibit a number of peculiar developments not common to most ants, such as wasplike males, wingless, termitelike females, and often blind workers. The biology of most of the forms is not well known.

Genus ECITON Latreille

Subgenus ECITON Latreille

Eciton Latreille, 1804. Nouv. Dict. Hist. Nat. 24: 179.
Type: ***Formica hamata*** Fabricius. Desig. by Shuckard, 1840.
Ancylognathus Lund, 1831. Ann. des Sci. Nat. 23: 121.
Type: ***Ancylognathus lugubris*** Lund. Monob.
Camptognatha Westwood, 1832. *In* Griffith, Cuvier's Animal Kingdom 15 (Insecta 2), p. 516.
Type: ***Formica hamata*** Fabricius. Monob.
Mayromyrmex Ashmead, 1905. Canad. Ent. 37: 381.
Type: (***Labidus fargeavii*** Shuckard) =***Atta quadriglumis*** Haliday. Desig. by Ashmead, 1905.

Not known to occur in the Nearctic Region.

Subgenus NOMAMYRMEX Borgmeier

Eciton subg. ***Nomamyrmex*** Borgmeier, 1936. Inst. Biol. Veg. Arq. 3: 55.
Type: ***Eciton crassicornis*** F. Smith. Orig. desig.

crassicorne F. Smith. So. Amer. north to extreme south. Tex. This may prove to be the worker of *esenbeckii* (Westwood).
Eciton crassicornis F. Smith, 1855. Ent. Soc. London Trans. 3: 163. ♀.

esenbeckii (Westwood). So. Amer. north to extreme south. Tex. See note under *crassicorne* F. Smith.
Labidus Esenbeckii Westwood, 1842. Arcana Entomologica, v. 1, p. 75. ♂.
Eciton (Labidus) Esenbecki Wilsoni Santschi, 1919. Soc. Ent. France Ann. 88: 366. ♂.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 409, ♂.

Subgenus LABIDUS Jurine

Labidus Jurine, 1807. Nouv. Méth. Class. Hym. Dipt., p. 282.
Type: (***Labidus latreilli*** Jurine)=***Formica coeca*** Latreille. Desig. by Latreille, 1810.
Nycteresia Roger, 1861. Berlin. Ent. Ztschr. 5: 21.
Type: ***Formica coeca*** Latreille. Monob.
Pseudodicthadia André, 1885. Spec. Hym. Eur. Alg. 2: 838.
Type: (***Pseudodicthadia incerta*** André)=***Formica coeca*** Latreille. Monob.

coecum (Latreille). Argentina north to La., Okla., Tex. Workers are known to feed on injurious insects, especially the immature stages of the secondary screw-worm (*Callitroga macellaria* (F.)).
Formica coeca Latreille, 1802. Hist. Nat. Fourmis, v. 9, p. 270. ♀.
Labidus saji (!) Haldeman, 1852. *In* Stansbury, Exped. Great Salt Lake, p. 367. ♂.
Myrmica rubra Buckley, 1867. Ent. Soc. Phila. Proc. 6: 335. ♀. Preocc.

Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 408–409.
Taxonomy: Weber, 1941. Amer. Midland Nat. 26: 328, ♀.
Economics: Lindquist, 1942. Jour. Econ. Ent. 35: 850.

Subgenus NEIVAMYRMEX Borgmeier

Eciton subg. *Acamatus* Emery, 1894. Soc. Ent. Ital. Bol. 26: 181. Preocc.
Type: (*Eciton* (*Acamatus*) *schmitti* Emery)=*Labidus nigrescens* Cresson. Desig. by W. M. Wheeler, 1911.
Neivamyrmex Borgmeier, 1940. Rev. de Ent. 11: 606. N. name.
Revision: M. R. Smith, 1942. Amer. Midland Nat. 27: 537–590.

These ants occur mainly in the southern and southwestern U. S.; but one species, *nigrescens*, extends as far north in the Mississippi Valley Region as the 40th degree of latitude. The usually large colonies nest in rotten logs and stumps or the soil beneath stones. Most, if not all forms, make conspicuous foraging trails during daylight.

arizonense W. M. Wheeler. Ariz., Calif., N. Mex., Tex., La.; Mexico and Costa Rica. Worker and female unknown. This may prove to be the male of *commutatum* Emery.
Eciton (*Acamatus*) *arizonense* W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 414. ♂.

californicum Mayr. Calif. (San Francisco). Known only from the worker.
Eciton californicum Mayr, 1870. Zool.-Bot. Gesell. Wien Verh. 20: 969. ☿.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 62.

carolinense Emery. N. C., S. C., Tenn., Ala., Fla., Ga., Miss., La., Kans., Nebr.
Eciton (*Acamatus*) *carolinense* Emery, 1894. Soc. Ent. Ital. Bol. 26: 184. ☿.
Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 278, 304.

commutatum Emery. Ariz., Tex., La.; Lower Calif., New Granada, Bolivia. Known only from the worker caste. *E.* (*N.*) *arizonense* may prove to be the male.
Eciton (*Acamatus*) *commutatum* Emery, 1900. R. Accad. delle Sci. dell'Ist. Bologna Mem. 8: 522. ☿.

fuscipenne (W. M. Wheeler). Tex. (specific locality unknown). Only the male is known.
Acamatus fuscipennis W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: ♂. (Misdet. as *spoliator* Forel but *fuscipennis* validated by pl. 26, fig. 12.)

harrisii (Haldeman.) Ariz., N. Mex., Okla., Tex.; Mexico. Records citing this species from Utah are probably incorrect. Only the male is known. *E.* (*N.*) *wheeleri* may prove to be the worker.
Labidus harrisii Haldeman, 1852. *In* Stanbury, Exped. Great Salt Lake, p. 367. ♂.

leonardi W. M. Wheeler. Calif. (Point Loma, near San Diego). Only the worker is known.
Eciton (*Acamatus*) *leonardi* W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 392. ☿.

melanocephalum Emery. South. Ariz.; Mexico. Only the worker is known.
Eciton (*Acamatus*) *melanocephalum* Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 260. ☿.
Eciton (*Acamatus*) *melanocephalum xipe* W. M. Wheeler, 1914. N. Y. Ent. Soc. Jour. 22: 41. ☿.

melsheimeri (Haldeman). La., Okla., Tex.; Mexico, Central America. Known only from the male. Records citing this species as originally from Utah are probably incorrect.
Labidus melshaemeri (!) Haldeman, 1852. *In* Stanbury, Exped. Great Salt Lake, p. 368. ♂.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 418.

minus (Cresson). Kans. and Tex. to Ariz., south to Mexico. Only the male is known. One of the smallest males of our legionary ants.

Labidus minor Cresson, 1872. Amer. Ent. Soc. Trans. 4: 195. ♂.
Biology: W. M. Wheeler and W. H. Long, 1901. Amer. Nat. 35: 165.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 418, ♂.

mojave M. R. Smith. Calif. (Mojave Desert). Known only from the male.
Eciton (Neivamyrmex) mojave M. R. Smith, 1943. Lloydia 6: 196. ♂.

nigrescens (Cresson). Va. to Fla., west to Calif., and north to Iowa. Apparently our most common and widely distributed species of *Neivamyrmex*.
Labidus nigrescens Cresson, 1872. Amer. Ent. Soc. Trans. 4: 194. ♂.
Eciton (Acamatus) Schmitti Emery, 1894. Soc. Ent. Ital. Bol. 26: 183. ☿.
Biology: W. M. Wheeler, 1900. Amer. Nat. 34: 565–574.—M. R. Smith, 1927. Ent. Soc. Amer. Ann. 20: 401–404.

opacithorax Emery. N. C. to Fla., west to N. Mex. and north to Iowa.
Eciton (Acamatus) californicum opacithorax Emery, 1894. Soc. Ent. Ital. Bol. 26 184. ☿.
Biology: W. M. Wheeler and W. H. Long, 1901. Amer. Nat. 35: 163, 172.—M. R. Smith, 1924. Ent. News 35: 84.

oslari W. M. Wheeler. Ariz. (Nogales). Known only from the male.
Eciton (Acamatus) oslari W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 415. ♂.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 394.

pauxillum W. M. Wheeler. Tex. (Austin). Only the worker is known.
Eciton (Acamatus) pauxillum W. M. Wheeler, 1903. Psyche 10: 93. ☿.
Biology: M. R. Smith, 1938. Ent. Soc. Wash. Proc. 40: 158.

pilosum mandibulare M. R. Smith. Ariz. (30 miles east of Quijotoa in Pima County). Known only from males.
Eciton (Neivamyrmex) pilosum mandibulare M. R. Smith, 1942. Amer. Midland Nat. 27: 543, 548. ♂.

pilosum pilosum F. Smith. Miss., La., Ark., Okla., Tex., Calif., south to Brazil and Paraguay.
Eciton pilosa F. Smith, 1858. Cat. Hym. Brit. Mus., v. 6, p. 151. ☿.
Labidus Mexicanus F. Smith, 1859. Cat. Hym. Brit. Mus., v. 7, p. 7. ♂.
Eciton clavicornis Norton, 1868. Amer. Ent. Soc. Trans. 2: 46. ☿.
Eciton (Labidus) subsulcatum Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 440. ♂.
Biology: M. R. Smith, 1924. Ent. News 35: 85.
Taxonomy: Reichensperger, 1939. Zool. Jahrb. Abt. f. System. 73: 297–300, ♀.

wheeleri Emery. Tex.; Mexico. Known only from the worker and female which may prove to be the worker and female of *harrisii*.
Eciton Wheeleri Emery, 1901. Soc. Ent. Ital. Bol. 33: 65. ☿.
Eciton (Acamatus) wheeleri dubia Creighton, 1932. Psyche 39: 75. ☿ ♀.

Unrecognized Forms of Eciton Subgenus Neivamyrmex Borgemeier

californicum var. **obscura** Forel. South. Calif. (Vista).
Eciton (Acamatus) californicum var. ***obscura*** Forel, 1914. Soc. Vaud. Sci. Nat. Bul. 50: 265.

coeca (Buckley). Tex. (San Saba County).
Myrmica (Monomarium (!)) ***coeca*** Buckley, 1867. Ent. Soc. Phila. Proc. 6: 339. ☿.

Subfamily CERAPACHYINAE

This subfamily contains only three known Nearctic forms; these have been recorded from Arizona and Texas. They are extremely rare; and the colonies are usually small, being composed of a few dozen individuals or less. The ants are predaceous and carnivorous.

Genus CERAPACHYS F. Smith

Subgenus CERAPACHYS F. Smith

Cerapachys F. Smith, 1858. Linn. Soc. London, Jour., Zool. 2: 74.
Type: ***Cerapachys antennatus*** F. Smith. Monob.

Not known to occur in the Nearctic Region.

Subgenus PARASYSCIA Emery

Parasyscia Emery, 1882. *In* André, Spec. Hym. Eur. Alg. 2: 235.
Type: ***Parasyscia piochardi*** Emery. Monob.

augustae W. M. Wheeler. Ariz., Tex.; Mexico.
Cerapachys (Parasyscia) augustae W. M. Wheeler, 1902. Biol. Bul. 3: 182. ☿ ♀.
Biology: W. M. Wheeler, 1903. Psyche 10: 205–209.
Taxonomy: M. R. Smith, 1942. Ent. Soc. Wash. Proc. 44: 63, ♂.

davisi M. R. Smith. Tex. (Fort Davis, 5,000 ft.).
Cerapachys (Parasyscia) davisi M. R. Smith, 1942. Ent. Soc. Wash. Proc. 44: 64. ♂.

GENUS ACANTHOSTICHUS Mayr

Subgenus ACANTHOSTICHUS Mayr

Acanthostichus Mayr, 1887. Zool.-Bot. Gesell. Wien, Verh. 37: 549.
Type: ***Typhlopone serratula*** F. Smith. Monob.
Revision: W. M. Wheeler, 1934. Harvard Univ., Mus. Compar. Zool. Bul. 77: 161–163.

Not known to occur in the Nearctic Region.

Subgenus CTENOPYGA Ashmead

Ctenopyga Ashmead, 1905. Canad. Ent. 37: 382 (*nom. nud.*).—Ashmead, 1906. Ent. Soc. Wash. Proc. 8: 29.
Type: ***Ctenopyga townsendi*** Ashmead. Orig. desig.

Ants of this subgenus are known to occur in Mexico and southwestern United States.

texanus Forel. Tex.
Acanthostichus texanus Forel, 1904. Soc. Ent. Belg. Ann. 48: 168. ♀.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 400. ♀.

Subfamily PONERINAE

One of the smaller subfamilies with 33 Nearctic forms, most of which occur in the southern half of the United States. These are primitive ants which nest in small colonies of a few hundred individuals or less in the soil or in rotting wood. They are predaceous and carnivorous. The pupae are enclosed in cocoons.

Genus STIGMATOMMA Roger

Stigmatomma Roger, 1859. Berlin. Ent. Ztschr. 3: 250.
Type: ***Stigmatomma denticulatum*** Roger. Desig. by Bingham, 1903.
Arotropus Provancher, 1881. Nat. Canad. 12: 205.
Type: (***Arotropus binodosus*** Provancher)=[***Typhlopone***] ***pallipes*** (Haldeman). Monob.
Revision: Creighton, 1940. Amer. Mus. Novitates 1079: 1–8.

The Nearctic forms commonly occur in wooded areas, especially those that are well shaded. The workers are timid, slow of movement, and of subterranean habits. They are believed to feed largely on myriapods.

pallipes montigena Creighton. Mts. of N. C. at elevations of 3,000 ft. or more.
Stigmatomma pallipes montigena Creighton, 1940. Amer. Mus. Novitates 1079: 2, 7. ☿ ♀.

pallipes oregonense W. M. Wheeler. B. C., Calif., Oreg., Wash.
Stigmatomma pallipes oregonense W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 389. ☿ ♀.

pallipes pallipes (Haldeman). Ont. and Que. to Wis. and Mo., south to the Gulf of Mexico.

Typhlopone pallipes Haldeman, 1844. Acad. Nat. Sci. Phila. Proc. 2: 54. ☿.

Stigmatomma serratum Roger, 1859. Berlin. Ent. Ztschr. 3: 251. ☿.

Arotropus binodosus Provancher, 1881. Nat. Canad. 12: 206. ♀.

Stigmatomma pallidipes (!) var. ***Wheeleri*** Santschi, 1913. Soc. Ent. Belg. Ann. 57: 429. ☿ ♀ ♂.

Stigmatomma pallipes arizonense W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 389. ☿.

Biology: W. M. Wheeler, 1900. Biol. Bul. 2: 56–64.—Haskins, 1928. N. Y. Ent. Soc. Jour. 36: 179–184.

Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 261–262, ☿ ♀ ♂.

pallipes subterranea Creighton. Iowa, Kans.

Stigmatomma pallipes subterranea Creighton, 1940. Amer. Mus. Novitates 1079: 3, 8. ☿.

Biology: Buren, 1944. Iowa State Col. Jour. Sci. 18: 279.

Genus PLATYTHYREA Roger

Platythyrea Roger, 1863. Berlin. Ent. Ztschr. 7: 172.
Type: ***Pachycondyla punctata*** F. Smith. Desig. by Bingham, 1903.

These ants nest in small colonies of a few hundred individuals each, usually in rotten logs and stumps. They are predaceous, probably feeding largely on termites. The workers run very fast when alarmed.

punctata (F. Smith). Fla. and Tex. to So. Amer. and the W. Indies.

Pachycondyla punctata F. Smith, 1858. Cat. Hym. Brit. Mus., v. 6, p. 108. ☿ ♂.

?Platythyrea inconspicua Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 961. ♀.

Platythyrea pruinosa Mayr, 1870. Zool.-Bot. Gesell. Wien. Verh. 20: 962. ☿.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 80.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 824.

Taxonomy: Forel, 1893. Ent. Soc. London, Trans., p. 358, ☿ ♀.—Mann, 1916. Harvard Univ., Mus. Compar. Zool. Bul. 60: 403, ☿.

Genus ECTATOMMA F. Smith

Subgenus ECTATOMMA F. Smith

Ectatomma F. Smith, 1858. Cat. Hym. Brit. Mus., v. 6, p. 102.
Type: ***Formica tuberculata*** Olivier. Desig. by Bingham, 1903.

tuberculatum (Olivier). ?Tex.; Mexico, Cent. and So. Amer. This species, known as the Kelep, was introduced into Texas from Guatemala in the early part of this century to combat the cotton boll weevil. It has apparently become extinct.

Formica tuberculata Olivier, 1791. Encycl. Meth., Dict. Ins., v. 6, p. 498. ☿.

Biology: Cook, 1904. U. S. Dept. Agr. Div. Ent. Bul. 49: 1–15.—Cook, 1905. U. S. Dept. Agr. Bur. Ent. Tech. Ser. 10: 1–55.

Taxonomy: Lever, 1930. Ent. Monthly Mag. 66: 214, ♀.—Weber, 1946. Ent. Soc. Wash. Proc. 48: 4, ☿.

Physiology: Haskins and Enzmann, 1938. N. Y. Acad. Sci. Ann. 37: 100–162.

Subgenus PARECTATOMMA Emery

Ectatomma subg. ***Parectatomma*** Emery, 1911. *In* Wytsman, Gen. Ins., fasc. 118, p. 44.
Type: ***Ectatomma (Gnamptogenys) triangulare*** Mayr. Orig. desig.

hartmanni W. M. Wheeler. Tex. (Huntsville).

Ectatomma (Parectatomma) hartmani (!) W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 390. ☿.

Genus PROCERATIUM Roger

Proceratium Roger, 1863. Berlin. Ent. Ztschr. 7: 171.
Type: *Proceratium silaceum* Roger. Monob.
Revision: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 264–266.

Although most common in southeastern United States, ants of this genus have been found as far north as New York and as far west as Kansas and Texas. They usually nest in well-rotted, moist wood such as that of stumps and logs; and the colonies are small, seldom containing more than two or three dozen individuals. The workers are sluggish, hypogaeic, and entomophagous.

crassicorne Emery. N. Y., N. J., Pa., D. C., Va., Ohio, Miss.
Proceratium crassicorne Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 265. ☿.
Biology: M. R. Smith, 1928. Ent. News 29: 244.—L. G. Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 91.

crassicorne var. **vestitum** Emery. Md. (Charlton Heights).
Proceratium crassicorne var. *vestitum* Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 266. ☿.

croceum (Roger). Va. to Fla. and west to Ill. and Tex.
Ponera crocea Roger, 1860. Berlin Ent. Ztschr. 4: 288. ♀.
Biology: Haskins, 1930. N. Y. Ent. Soc. Jour. 38: 121–126.
Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 264, ☿ ♀.—M. R. Smith, 1930. Ent. Soc. Amer. Ann. 23: 390–392, ♂.

silaceum rugulosum W. M. Wheeler. Ind. (Wyandotte).
Proceratium silaceum rugulosum W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 390. ☿ ♀.
Biology: W. M. Wheeler, 1916. Ind. Acad. Sci. Proc. 26: 460.

silaceum silaceum Roger. Ont. south to Ga. and west to Ill. and Ark. One of the most common and widely distributed forms of the genus.
Proceratium silaceum Roger, 1863. Berlin. Ent. Ztschr. 7: 172. ☿.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 373, 375.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 272, 273, 276, 304.
Morphology: Kennedy and Talbot, 1939. Ind. Acad. Sci. Proc. 48: 206–210.
Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 265, ☿ ♀.—Kennedy and Talbot, 1939. Ind. Acad. Sci. Proc. 48: 202, ♂.

Genus SYSPHINCTA Roger

Sysphingta (!) Roger, 1863. Berlin. Ent. Ztschr. 7: 175.
Type: *Sysphingta* (!) *micrommata* Roger. Monob.
Sysphincta Mayr, 1865. Reise d. Novara, Zool. 1 (1) Formicidae, p. 12. Emend

The ants belonging to this genus are rare, subterranean forms, with primitive and degenerate habits. Although the biology is not well known the ants are believed to be carnivorous.

melina (Roger). "Carolina." This species has not been collected since it was originally described.
Ponera melina Roger, 1860. Berlin. Ent. Ztschr. 4: 291. ☿ ♀ ♂.
Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 263, ☿ ♀ ♂.

pergandei Emery. N. Y. south to S. C. and La.; west to Iowa.
Sysphincta pergandei Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 264. ☿.
Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 276, 304.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 90–91.
Taxonomy: M. R. Smith, 1928. Ent. News 39: 242–243, ♂.—Cole, 1940. Amer. Midland Nat. 24: 36, ☿.

Genus DISCOTHYREA Roger

Discothyrea Roger, 1863. Berlin. Ent. Ztschr. 7: 176.
Type: *Discothyrea testacea* Roger. Monob.

The biology of these ants is poorly known. A number of forms have been collected from humus on the soil floor, where they nest in extremely small colonies of about a dozen individuals.

testacea Roger. "Nord Amerika."
Discothyrea testacea Roger, 1863. Berlin. Ent. Ztschr. 7: 177. ☿ ♀.
Taxonomy: Weber, 1939. Ent. Soc. Amer. Ann. 32: 99, ☿ ♀.

Genus NEOPONERA Emery

Subgenus NEOPONERA Emery

Neoponera Emery, 1901. Soc. Ent. Belg. Ann. 45: 40, 43.
Type: ***Formica villosa*** Fabricius. Orig. desig.

A single species of this Neotropical genus has been taken as far north in Texas as San Antonio. Colonies occur in the soil and in logs and stumps. The workers can sting severely. They run rapidly in the bright sun in search of insects on which they feed.

villosa (Fabricius). South. Tex. to Brazil and Paraguay. The largest ponerine ant in the U. S.
Formica villosa Fabricius. 1804. Systema Piezatorum, p. 409. ☿.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 404.
Taxonomy: Roger, 1861. Berlin. Ent. Ztschr. 5: 1, ☿ ♂.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 403–404, ☿ ♀ ♂.

Genus PACHYCONDYLA F. Smith

Subgenus PACHYCONDYLA F. Smith

Pachycondyla F. Smith, 1858. Cat. Hym. Brit. Mus., v. 6, p. 105.
Type: ***Formica crassinoda*** Latreille. Desig. by Emery, 1901.
Revision: Emery, 1890. Soc. Ent. France Ann. 10: 71–74.

A single form of this Neotropical genus occurs in the United States.

harpax montezumia F. Smith. La., Tex.; Mexico and Cent. Amer. *Harpax harpax* (Fabricius), 1804, occurs in the Neotropical Region. Colonies of about 150 individuals occur in rotten logs and stumps or in the soil beneath objects. There are both ergatoid and normal females in this form.
Pachycondyla Montezumia F. Smith, 1858. Cat. Hym. Brit. Mus., v. 6, p. 103. ♀ ♂.
Pomera (!) ***amplinoda*** Buckley, 1866. Ent. Soc. Phila. Proc. 6: 171. ☿.
Pachycondyla Orizabana Norton, 1868. Amer. Nat. 2: 64. ☿.
Biology: W. M. Wheeler, 1900. Biol. Bul. 2: 1–31.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 401–403, ♀ ☿ ♂.

Genus EUPONERA Forel

Subgenus EUPONERA Forel

Ponera subg. ***Euponera*** Forel, 1891. *In* Grandidier, Hist. Nat. Phys. Madagascar, v. 20, p. 126.
Type: ***Ponera (Euponera) sikorae*** Forel. Monob.

Not known to occur in the Nearctic Region.

Subgenus BRACHYPONERA Emery

Euponera subg. ***Brachyponera*** Emery, 1901. Soc. Ent. Belg. Ann. 45: 43.
Type: ***Ponera sennaarensis*** Mayr. Orig. desig.

A single species has been introduced into southeastern United States, probably in plant shipments from the Old World. The small colonies occur in rotten wood or in the soil beneath objects. The ants feed largely on small arthropods.

solitaria (F. Smith). Ga., N. C., Va. (introduced); China, Japan, Formosa, and Korea.
Ponera solitaria F. Smith, 1874. Ent. Soc. London, Trans., p. 404. ☿.
Biology: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 306.
Taxonomy: Emery, 1909. Deut. Ent. Ztschr., p. 366, ☿ ♀.—M. R. Smith, 1934. Ent. Soc. Amer. Ann. 27: 558–561, ☿.

Subgenus TRACHYMESOPUS Emery

Euponera subg. *Trachymesopus* Emery, 1911. *In* Wytsman, Gen. Ins., fasc. 118, p. 84.
Type: *Formica stigma* Fabricius. Orig. desig.
Revision: M. R. Smith, 1934. Ent. Soc. Amer. Ann. 27: 561–564.

gilva (Roger). Gulf States; Ga., Tenn.
Ponera gilva Roger, 1863. Berlin. Ent. Ztschr. 7: 170. ☿.
Euponera (Trachymesopus) gilva harnedi M. R. Smith, 1929. Ent. Soc. Amer. Ann. 22: 543. ☿.
Biology: Haskins, 1931. N. Y. Ent. Soc. Jour. 39: 507–514.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 277, 304.
Taxonomy: Creighton and Tulloch, 1930. Psyche 37: 73–79, ☿ ♀ ♂.
Physiology: Haskins, 1931. N. Y. Ent. Soc. Jour. 31: 514–521.

stigma (Fabricius). Fla.; Mexico, Cent. and So. Amer., and W. Indies.
Formica stigma Fabricius, 1804. Systema Piezatorum, p. 400. ♀.
Biology: M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 824.—Haskins and Enzmann, 1938. N. Y. Acad. Sci. Ann. 37: 151.

Genus PONERA Latreille

Ponera Latreille, 1804. Nouv. Dict. Hist. Nat. 24: 179.
Type: (*Formica contracta* (!) Latreille)=*Formica coarctata* Latreille. Desig. by Westwood, 1840.
Revision: M. R. Smith, 1936. Ent. Soc. Amer. Ann. 29: 420–430.

Nests occur in small colonies in rotten wood or in the soil beneath cover. The workers are carnivorous. Both normal and ergatoid males occur in this genus, as well as individuals intermediate between the worker and female.

coarctata pennsylvanica Buckley. Que. and Ont., to Gulf of Mexico, and westward to S. Dak. and Kans. *P. coarctata coarctata* (Latreille) occurs in Europe.
Ponera Pennsylvanica Buckley, 1866. Ent. Soc. Phila. Proc. 6: 171. ☿.
Biology: W. M. Wheeler, 1900. Biol. Bul. 2: 22–23, 43–56.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 581.
Taxonomy: W. M. Wheeler, 1900. Biol. Bul. 2: 45–46, ☿ ♀ ♂.

ergatandria Forel. Calif., Tex.; Fla.; Cent. Amer. and W. Indies.
Ponera ergatandria Forel, 1893. Ent. Soc. London, Trans., p. 365. ☿ ♀, apterous ergatoid ♂.
Biology: M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 825.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 63.
Taxonomy: M. R. Smith, 1936. Ent. Soc. Amer. Ann. 29: 422, 425–426, ☿ ♀, apterous ergatoid ♂.

inexorata W. M. Wheeler. S. C. and Fla. to Tex.; Mexico; Costa Rica.
Ponera inexorata W. M. Wheeler, 1903. Psyche 10: 94. ☿ ♀.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 406.

oblongiceps M. R. Smith. Md., ?Ohio.
Ponera oblongiceps M. R. Smith, 1939. Ent. Soc. Wash. Proc. 41: 76–78. ☿ ♀, apterous ergatoid ♂.

opaciceps Mayr. S. C. to Fla. and west to Colo. and Ariz.; south to Brazil and Paraguay; also W. Indies.
Ponera opaciceps Mayr, 1887. Zool.-Bot. Gesell. Wien, Verh. 37: 536. ☿.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 125, 404.—M. R. Smith, 1927. Ent. News 38: 308–309.

trigona var. ***opacior*** Forel. Approximately southern two-thirds of U. S.; south to Chile and Argentina. Also W. Indies.
Ponera trigona var. ***opacior*** Forel, 1893. Ent. Soc. London, Trans., p. 363. ☿ ♀.
Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 272, 274, 277, 304.
Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 268, ☿ ♀ ♂.

Genus LEPTOGENYS Roger

Subgenus LEPTOGENYS Roger

Leptogenys Roger, 1861. Berlin. Ent. Ztschr. 5: 41.
Type: ***Leptogenys falcigera*** Roger. Desig. by Bingham, 1903.

Not known to occur in the Nearctic Region.

Subgenus LOBOPELTA Mayr

Lobopelta Mayr, 1862. Zool.-Bot. Gesell. Wien, Verh. 12: 733.
Type: ***Ponera diminuta*** F. Smith. Desig. by Bingham, 1903.
Revision: W. M. Wheeler, 1923. Amer. Mus. Novitates 90: 1–16.

Only two forms of this Tropicopolitan genus are known to occur in the United States. These occur in small colonies in the soil. The workers are said to forage singly and to feed largely, if not exclusively, on pill bugs. There is no typical female as with most ants, reproduction being carried on by a wingless, slightly modified worker form, with an enlarged gaster.

elongata elongata (Buckley). Ga., La., Tex.
?Ponera Texana Buckley, 1866. Ent. Soc. Phila. Proc. 6: 170. ☿.
Ponera elongata Buckley, 1866. Ent. Soc. Phila. Proc. 6: 172. ☿.
Lobopelta septentrionalis Mayr, 1866. Zool.-Bot. Gesell. Wien, Verh. 36: 438. ☿.
Biology: W. M. Wheeler, 1900. Biol. Bul. 2: 1–31.
Taxonomy: W. M. Wheeler, 1904. Biol. Bul. 6: 257–259, ☿, gynaecoid ♀, ♂.

elongata manni W. M. Wheeler. Fla.
Leptogenys (Lobopelta) elongata manni W. M. Wheeler, 1923. Amer. Mus. Novitates 90: 14, 15. ☿.

Genus ODONTOMACHUS Latreille

Odontomachus Latreille, 1804. Nouv. Dict. Hist. Nat. 24: 179.
Type: ***Formica haematoda*** Linnaeus. Monob.
Revision: M. R. Smith, 1939. N. Y. Ent. Soc. Jour. 47: 125–130.

haematoda clarus Roger. La., ?Ariz., Tex.; Mexico. *O. haematoda haematoda* (Linnaeus), 1758, is Pantropical.
Odontomachus clarus Roger, 1861. Berlin. Ent. Ztschr. 5: 26. ☿.
Odontomachus texana Buckley, 1867. Ent. Soc. Phila. Proc. 6: 335. ☿.
Biology: W. M. Wheeler, 1900. Biol. Bul. 2: 1–31.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 407, ☿ ♀ ♂.
Physiology: Haskins and Enzmann, 1938. N. Y. Acad. Sci. Ann. 37: 100–143.

haematoda coninodis W. M. Wheeler. Ariz. (Hunter and Miller Canyons, 5,000–7,000 ft.; Ramsay Canyon; all in Huachuca Mts.) . A depauperate desert mountain form.
Odontomachus haematoda coninodis W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 391. ☿ ♀.

haematoda desertorum W. M. Wheeler. Ariz., N. Mex.; Mexico.
Odontomachus haematoda desertorum W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 391. ☿.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 394.

haematoda insularis Guérin. Fla., Ga.; Mexico, Cent. Amer., W. Indies, Cocos Island.

Odontomachus insularis Guérin, 1844. Iconogr. Règne Anim. Ins., v. 7, p. 423. ☿.
Biology: Haskins and Enzmann, 1938. N. Y. Acad. Sci. Ann. 37: 149–150.
Taxonomy: Roger, 1861. Berlin. Ent. Ztschr. 5: 26, ☿ ♂.

Subfamily LEPTALEINAE M. R. Smith, new subfamily

One of the smallest subfamilies of ants, containing only one genus and five forms. These are distributed mainly south of the 35th degree of latitude from North Carolina to California. Almost exclusively plant-inhabiting ants whose small colonies occur in culms of sedges and grasses, stems of plants, and twigs and branches of trees.

Genus LEPTALEA Erichson

Pseudomyrme Lund (Latreille ms.), 1831. Ann. Sci. Nat. Zool. 23: 137 (vernacular).
Type: ***Formica gracilis*** Fabricius. Desig. by W. M. Wheeler, 1911.
Leptalea Erichson (Klug ms.), 1839. Arch. f. Naturgesch. 5: 309.
Type: ***Formica gracilis*** Fabricius. Desig. by W. M. Wheeler, 1911.
Myrmex Guérin, 1844. Iconogr. Règne Anim. Ins., v. 7, p. 427. Preocc.
Type: ***Formica (Myrmex) perboscii*** Guérin. Monob.
Pseudomyrma Guérin, 1844. Iconogr. Régne Anim. Ins., v. 7, p. 427. Emend.
Leptalaea Spinola, 1851. Accad. Torino Mem. 13: 68. Emend.
Revision: Mayr, 1870. Akad. der Wiss. Wien, Math.-Nat. Kl. Sitzber. 61: 406–413.

brunnea (F. Smith), n. comb. N. C. to Fla. west to Tex., and south to Cent. Amer.; also W. Indies.
Pseudomyrma brunnea F. Smith, 1877. Ent. Soc. London, Trans., p. 63. ☿.
Biology: Mitchell and Pierce, 1912. Ent. Soc. Wash. Proc. 14: 3.—W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 3.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 420–421, ☿ ♀.

elongata (Mayr), n. comb. Fla.; So. Amer., W. Indies, and Tres Marias Islands.
Pseudomyrma elongata Mayr, 1870. Akad. der Wiss. Wien, Math.-Nat. Kl. Sitzber. 61: 408, 413. ☿.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 86.—W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 4.
Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 85–87, ☿ ♀ ♂.

flavidula (F. Smith), n. comb. S. C., Ga., Fla., Miss., La., Tex., Ariz.; Mexico, Cent. and So. Amer., W. Indies.
Pseudomyrma flavidula F. Smith, 1858. Cat. Hym. Brit. Mus., v. 6, p. 157. ☿.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 419.—Mitchell and Pierce, 1912. Ent. Soc. Wash. Proc. 14: 69.
Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 83–85, ☿ ♀ ♂.

gracilis mexicana (Roger), n. comb. South. Tex. to Cent. Amer. *Gracilis gracilis* (Fabricius) occurs in Cent. and So. Amer.
Pseudomyrma mexicana Roger, 1863. Berlin. Ent. Ztschr. 7: 173. ☿.
Biology: W. M. Wheeler, 1901. Soc. Ent. Belg. Ann. 45: 204.—Mitchell and Pierce, 1912. Ent. Soc. Wash. Proc. 14: 69.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 421, ☿ ♀.

pallida (F. Smith), n. comb. N. C. west to Calif. and south to So. Amer., and W. Indies. This and *flavidula* may prove to be the same species.
Pseudomyrma pallida F. Smith, 1855. Ent. Soc. London, Trans. 3: 159. ☿.
Biology: Mitchell and Pierce, 1912. Ent. Soc. Wash. Proc. 14: 69.—W. M. Wheeler. 1932. N. Y. Ent. Soc. Jour. 40: 4.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 419–420, ☿.

Unrecognized Forms of Genus Leptalea Erichson

lincecumii (Buckley), n. comb. Cent. Tex.
Ponera (Ectatoma* (!)) *Lincecumii Buckley, 1866. Ent. Soc. Phila. Proc. 6: 172. ☿.

Subfamily MYRMICINAE

This is the largest subfamily and the most diverse with respect to size, shape, structure, and habits. Moreover, it contains more forms inimical to man than any other group of ants. Nests are constructed in soil, wood, crevices of plants, debris, insect galls, buildings, ships, and in many other situations. The feeding habits are highly varied; and some forms have restricted diets, whereas others are general feeders.

Genus MYRMICA Latreille

Subgenus MYRMICA Latreille

Myrmica Latreille, 1804. Nouv. Dict. Hist. Nat. 24: 179.
Type: ***Formica rubra*** Linnaeus. Desig. by Latreille, 1810.
Revisions: W. M. Wheeler, 1907. Wis. Nat. Hist. Soc. Bul. 5: 73–83.—Weber, 1947. Ent. Soc. Amer. Ann. 40: 437–474.—Weber, 1948. Ent. Soc. Amer. Ann. 41: 267–308.

brevinodis brevinodis Emery. Labrador, Alaska, Canada, and northern half of U. S. Inquilines: *Leptothorax emersoni emersoni* Whlr., *L. emersoni glacialis* Whlr., *L. emersoni hirtipilis* Whlr.
Myrmica rubra brevinodis Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 312. ☿ ♂.
Myrmica rubra brevinodis var. ***canadensis*** W. M. Wheeler, 1907. Wis. Nat. Hist. Soc. Bul. 5: 76. ☿ ♀ ♂.
Myrmica rubra brevinodis var. ***subalpina*** W. M. Wheeler, 1907. Wis. Nat. Hist. Soc. Bul. 5: 77. ☿ ♀ ♂.
Myrmica brevinodis var. ***alaskensis*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 503. ☿.
Biology: W. M. Wheeler, 1907. Wis. Nat. Hist. Soc. Bul. 5: 73, 77–83.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 587.

brevinodis brevispinosa W. M. Wheeler. Calif., N. Mex., Idaho, Colo., N. Dak., Minn., Ill., Mich., Ont.
Myrmica rubra brevinodis var. ***brevispinosa*** W. M. Wheeler, 1907. Wis. Nat. Hist. Soc. Bul. 5: 74. ☿ ♀ ♂.
Myrmica rubra brevinodis var. ***decedens*** W. M. Wheeler, 1907. Wis. Nat. Hist. Soc. Bul. 5: 75. ☿ ♂.
Biology: Weber, 1942. Canad. Ent. 74: 62.—G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 241.

brevinodis discontinua Weber. Wash., Wyo., Colo., N. Dak., Newfoundland, N. S.
Myrmica brevinodis discontinua Weber, 1939. Lloydia 2: 150. ☿.

brevinodis kuschei W. M. Wheeler. Alaska (Ketchikan).
Myrmica brevinodis var. ***kuschei*** W. M. Wheeler, 1917. Harvard Univ., Mus. Compar. Zool. Bul. 61: 17. ☿ ♀.

brevinodis sulcinodoides Emery. Alaska, Newfoundland, Canada, north. half of U. S., Calif., Ariz.
Myrmica rubra brevinodis var. ***sulcinodoides*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 313. ☿.
Myrmica rubra brevinodis var. ***frigida*** Forel, 1902. Ent. Soc. London, Trans., p. 699. ☿.
Myrmica rubra brevinodis var. ***whymperi*** Forel, 1904. Soc. Ent. Belg. Ann. 48: 154. ♀.
Biology: W. M. Wheeler, 1915. Psyche 22: 206.—Cole, 1934. Psyche 41: 223.

laevinodis Nylander. Mass., Que. Introduced.
Myrmica laevinodis Nylander, 1846. Acta Soc. Fenn. 2: 927. ☿ ♀ ♂.
?***Myrmica incompleta*** Provancher, 1881. Nat. Canad. 12: 359. ☿ ♀ ♂.
Myrmica rubra Champlaini Forel, 1901. Naturhist. Mus. Hamburg Mitt. 18: 80. ☿. N. syn.
Myrmica rubra laevinodis var. ***bruesi*** W. M. Wheeler, 1906. Psyche 13: 38. ☿ ♀ ♂. N. syn.

Biology: W. M. Wheeler, 1908. Jour. Econ. Ent. 1: 337–339.—Sturtevant, 1931. Psyche 38: 75.
Morphology: Tulloch, 1936. Ent. Soc. Amer. Ann. 29: 81–84.
Economics: W. M. Wheeler, 1908. Jour. Econ. Ent. 1: 339.

lobicornis ***fracticornis*** Emery. Alaska, Canada, Newfoundland, and most of U. S. except perhaps the extreme south. states.
Myrmica rubra scabrinodis var. ***fracticornis*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 313. ☿.
Myrmica rubra scabrinodis var. ***detrinodis*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 316. ☿.
Myrmica sabuleti var. ***lobifrons*** Pergande, 1900. Wash. Acad. Sci. Proc. 2: 521. ☿.
Myrmica rubra scabrinodis var. ***glacialis*** Forel, 1904. Soc. Ent. Belg. Ann. 48: 154. ☿.
Biology: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 587–588.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 288, 305.

punctiventris pinetorum W. M. Wheeler. Conn. to S. C., west to Okla. and Miss.
Myrmica punctiventris pinetorum W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 384. ☿ ♀.
Biology: Davis and Bequaert, 1922. Brooklyn Ent. Soc. Bul. 17: 10.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 90, 94.

punctiventris punctiventris Roger. Mass. south to Ga. and west to Iowa and Nebr.
Myrmica punctiventris Roger, 1863. Berlin. Ent. Ztschr. 7: 190. ☿.
Myrmica punctiventris var. ***isafahani*** Forel, 1922. Rev. Suisse Zool. 30: 92. ☿ ♀.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 383–384.—Sturtevant, 1925. Psyche 32: 314.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 283.

sabuleti americana Weber. Maine and Que. to Man. and Idaho south to Tenn. and Ariz. Apparently absent from extreme south. states.
Myrmica sabuleti americana Weber, 1939. Lloydia 2: 144. ☿ ♀ ♂.
Myrmica sabuleti trullicornis Buren, 1944. Iowa State Col. Jour. Sci. 18: 281. ☿ ♀.
Biology: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 587.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 282–283.

sabuleti hamulata Weber. N. Mex. (Hayne's Canyon, 8,000 ft., Sacramento Mts.).
Myrmica sabuleti hamulata Weber, 1939. Lloydia 2: 146. ☿ ♀ ♂.

sabuleti nearctica Weber. Man., N. Dak., Colo., Mich.
Myrmica sabuleti nearctica Weber, 1939. Lloydia 2: 148. ☿ ♀ ♂.
Biology: G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 243.

scabrinodis mexicana W. M. Wheeler. Ariz., Utah; Mexico. *M. scabrinodis scabrinodis* Nylander occurs in Europe and Asia.
Myrmica mexicana W. M. Wheeler, 1914. N. Y. Ent. Soc. Jour. 22: 52. ☿ ♀ ♂.

schencki emeryana Forel. Newfoundland, N. S. and Ont. to Man. and Idaho, south to Ga. and Ariz.
Myrmica scabrinodis Schencki var. ***emeryana*** Forel, 1914. Deut. Ent. Ztschr., p. 617. ☿ ♀ ♂.
Myrmica scabrinodis schencki var. ***monticola*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc., 52: 505. ☿ ♂.
Myrmica schencki latifrons Starcke, 1927. Tijdschr. v. Ent. 70: 84. ☿.
Biology: W. M. Wheeler, 1915. Psyche 22: 206.—Talbot, 1945. Ent. Soc. Amer. Ann. 38: 365–372.

schencki spatulata M. R. Smith. Ill., Tenn., Miss.
Myrmica schencki var. ***spatulata*** M. R. Smith, 1930. Ent. Soc. Amer. Ann. 23: 566. ☿ ♀.
Biology: M. R. Smith, 1931. Ent. News 42: 21.

schencki tahoënsis W. M. Wheeler. Calif., Nev.
Myrmica scabrinodis schencki var. ***tahoënsis*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 504. ☿ ♀ ♂.

wheeleri Weber. Ariz. (on Mt. Lemmon, 8,000-9,150 ft., and at Stratton, 6,000-7,000 ft. in the Santa Catalina Mts.).
Myrmica wheeleri Weber, 1939. Lloydia 2: 150. ☿ ♀ ♂.

Unrecognized Forms of Myrmica Subgenus Myrmica Latreille

dimidiata Say. North America.
Myrmica dimidiata Say, 1836. Boston Jour. Nat. Hist. 1: 293. ♀ (?).

Note.—*Myrmica rubra neolaevinodis* Forel, 1901, Naturhist. Mus. Hamburg Mitt., ☿, was described by Forel along with the statement, "from New York with iris roots." As Forel had no definite proof that the iris from which the ants were collected had come from New York, this form is not listed along with the other Nearctic *Myrmica*.

Subgenus MANICA Jurine

Manica Jurine, 1807. Nouv. Méth. Class. Hym. Dipt., p. 276.
Type: *Formica rubida* Latreille. Desig. by W. M. Wheeler, 1911.
Aphaenogaster subg. *Neomyrma* Forel, 1914. Rev. Suisse Zool. 22: 275.
Type: (*Aphaenogaster* (*Neomyrma*) *calderoni* Forel)=*Myrmica bradleyi* W. M. Wheeler. Monob.
Myrmica subg. *Oreomyrma* W. M. Wheeler, 1914. Psyche 21: 118.
Type: *Formica rubida* Latreille. Orig. desig.
Revision: W. M. Wheeler, 1914. Psyche 21: 118–122.

Apparently restricted to western Canada and United States, no specimens having been recorded farther east than the Badlands of North Dakota (approximately 103rd to 104th degree of longitude). These ants commonly nest in creek or river bottoms in the soil or beneath stones where the soil is sandy, gravelly or silty. The colonies are often small.

aldrichi W. M. Wheeler. B. C., Wash., Ore., Idaho.
Myrmica (*Oreomyrma*) *aldrichi* W. M. Wheeler, 1914. Psyche 21: 119, 120. ☿.

bradleyi W. M. Wheeler. Calif., Nev. Host of *M.* (*M.*) *parasitica* Creight. but the exact relationship is not known.
Myrmica bradleyi W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 77. ☿.
Aphaenogaster (*Neomyrma*) *Calderoni* Forel, 1914. Rev. Suisse Zool. 22: 275. ☿.
Biology: Creighton, 1934. Psyche 41: 188–189.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 65.

hunteri W. M. Wheeler. Idaho, Mont.
Myrmica (*Oreomyrma*) *hunteri* W. M. Wheeler, 1914. Psyche 21: 119, 121. ☿.

mutica Emery. Alaska and Calif. to N. Mex., Wyo., N. Dak., and Alta. Apparently the most common and widely distributed form of the subgenus in No. Amer. Host of the inquilinous ant, *Symmyrmica chamberlini* Whlr.
Myrmica mutica Emery, 1895. Zool. Jahrb. Abt. f. System, 8: 311. ☿.
Biology: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 6, 7.—W. M. Wheeler 1926. Ants, pp. 432–434.

parasitica Creighton. Calif. (summit of Polly Dome, approx. 8,600 ft., Yosemite Natl. Park). Host of *M.* (*M.*) *bradleyi* Whlr.; precise relationship between the two is not definitely known.
Myrmica (*Manica*) *parasitica* Creighton, 1934. Psyche 41: 185. ☿.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 66.

Genus POGONOMYRMEX Mayr

Subgenus POGONOMYRMEX Mayr

Pogonomyrmex Mayr, 1868. Soc. Nat. Modena Ann. 3: 169.
Type: *Formica badia* Latreille. Desig. by W. M. Wheeler, 1911.

Revisions: W. M. Wheeler, 1902. Amer. Nat. 36: 85–100.—W. M. Wheeler, 1902. Psyche 9: 387–393.—W. M. Wheeler, 1914. Psyche 21: 151–157.—Olsen, 1934. Harvard Univ., Mus. Compar. Zool. Bul. 77: 493–514.

Most forms in the United States occur west of the 95th degree of longitude, the group being especially common in the Southwest. A single form occurs in the coastal states from Mississippi to North Carolina.

apache W. M. Wheeler. Ariz., N. Mex., Tex.
Pogonomyrmex apache W. M. Wheeler, 1902. Psyche 9: 392. ☿.
Biology: W. M. Wheeler, 1926. Ants. p. 283.

badius (Latreille). Fla., Ala., Ga., Miss., S. C., N. C., N. J. (?). Our only known species east of the Mississippi River.
Formica badia Latreille, 1802. Hist. Nat. Fourmis, p. 238. ☿ ♀.
Myrmica transversa F. Smith, 1858. Cat. Hym. Brit. Mus., v. 6, p. 129. ☿.
Atta crudelis F. Smith, 1858. Cat. Hym. Brit. Mus., v. 6, p. 170. ☿ ♀.
?*Myrmica brevipennis* F. Smith, 1858. Cat. Hym. Brit. Mus. v. 6, p. 130. ♂.
Biology: W. M. Wheeler, 1926. Ants, pp. 131, 152, 201, 280, 283–285, 292.—Wray, 1938. Ent. Soc. Amer. Ann. 31: 196–200.
Taxonomy: Mayr, 1862. Zool.-Bot. Gesell. Wien, Verh. 12: 740, ♀ ♂.

barbatus barbatus (F. Smith). Tex.; Mexico.
Myrmica barbata F. Smith, 1858. Cat. Hym. Brit. Mus. v. 6, p. 130. ♀.
Biology: W. M. Wheeler, 1901. Soc. Ent. Belg. Ann. 45: 202.—W. M. Wheeler, 1901. Amer. Nat. 35: 723–724.—W. M. Wheeler, 1926. Ants, pp. 11, 85, 203, 222, 284, 291–292, 293.—Michener, 1948. N. Y. Ent. Soc. Jour. 56: 239–242.
Taxonomy: W. M. Wheeler, 1914. N. Y. Ent. Soc. Jour. 22: 51–52, ☿ ♀ ♂.

barbatus curvispinosus Cole. Ariz., Calif.
Pogonomyrmex barbatus curvispinosus Cole, 1936. Ent. News 47: 120. ☿.
Biology: Cole, 1937. Ent. News 48: 134.

barbatus rugosus Emery. Calif., Ariz., N. Mex., Utah, Kans.
Pogonomyrmex barbatus rugosus Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 309. ☿ ♂.
Biology: W. M. Wheeler, 1917. Psyche 24: 178.—W. M. Wheeler, 1926. Ants, pp. 284, 290.

barbatus var. **fuscatus** Emery. Ariz., N. Mex., Tex., Utah, Colo.; Mexico.
Pogonomyrmex barbatus var. *fuscatus* Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 309. ☿.
Biology: Cole, 1942. Amer. Midland Nat. 28: 367.
Economics: Lindquist, 1942. Jour. Econ. Ent. 35: 850–852.

barbatus var. **marfensis** W. M. Wheeler. N. Mex., Tex., Utah.
Pogonomyrmex barbatus var. *marfensis* W. M. Wheeler, 1902. Amer. Nat. 36: 98. ☿.
Biology: W. M. Wheeler, 1902. Psyche 9: 393.—W. M. Wheeler, 1926. Ants, p. 284.
Taxonomy: W. M. Wheeler, 1902. Psyche 9: 391, 393. ☿ ♀ ♂.

barbatus var. **molefaciens** (Buckley). Ariz., N. Mex., Colo., Okla., Tex., Kans. La., Utah; Mexico.
Myrmica (Atta) molefaciens Buckley, 1860. Acad. Nat. Sci. Phila. Proc. 12: 445. ☿ ♀.
Biology: McCook, 1879. The Natural History of the Agricultural Ant of Texas, pp. 1–311.—W. M. Wheeler, 1926. Ants, pp. 179, 197, 202–203, 264, 284, 286–288, 290, 292–293.
Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 308, ☿ ♀ ♂.
Economics: Hunter, 1921. U. S. Dept. Agr. Bur. Ent. Cir. 148: 4–7.

barbatus var. **nigrescens** W. M. Wheeler. Calif. to Tex.
Pogonomyrmex barbatus var. *nigrescens* W. M. Wheeler, 1902. Psyche 9: 389, 391. ☿.
Biology: W. M. Wheeler, 1926. Ants, p. 284.

californicus barnesi M. R. Smith. Ariz. (20 miles northwest of Phoenix in Maricopa County).
Pogonomyrmex californicus barnesi M. R. Smith, 1929. Ent. Soc. Amer. Ann. 22: 546. ☿.

californicus californicus (Buckley). Nev., Utah, Calif., Ariz., N. Mex., Tex.; Mexico.
Myrmica californica Buckley, 1867. Ent. Soc. Phila. Proc. 6: 336. ☿.
Biology: W. M. Wheeler, 1926. Ants, pp. 188–190, 200, 201, 284–286, 290, 292.—Michener, 1942. Sci. Monthly 55: 248–258.
Morphology: Shapley, 1921. Nat. Acad. Sci. Proc. 6: 687–690.—Tulloch, 1930. Psyche 37: 61–70.
Economics: Essig, 1926. Ins. of West. No. Amer., p. 861.

californicus longinodis Emery. Calif., N. Mex., Tex.
Pogonomyrmex californicus longinodis Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 311. ☿.

californicus maricopa W. M. Wheeler. Ariz., Calif., N. Mex., ?Tex.; Mexico.
Pogonomyrmex californicus maricopa W. M. Wheeler, 1914. Psyche 21: 155. ☿ ♀.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 399.

californicus var. **estebanius** Pergande. Ariz., Calif.; Mexico.
Pogonomyrmex badius var. *estebanius* Pergande, 1893. Calif. Acad. Sci. Proc. 4: 33. ☿ ♀.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 399.

californicus var. **hindleyi** Forel. Ariz., Calif., N. Mex.
Pogonomyrmex californicus var. *Hindleyi* Forel, 1914. Soc. Vaud. Sci. Nat. Bul. 50: 270. ☿.

comanche W. M. Wheeler. Ariz., N. Mex., Tex., Kans.
Pogonomyrmex occidentalis comanche W. M. Wheeler 1902. Psyche 9: 392. ☿.
Biology: W. M. Wheeler, 1926. Ants, pp. 201, 284–285, 292.—Strandtmann, 1942. Ent. Soc. Amer. Ann. 38: 140.

desertorum W. M. Wheeler. Calif. to Okla. and Tex.
Pogonomyrmex desertorum W. M. Wheeler, 1902. Psyche 9: 387, 390. ☿.
Biology: W. M. Wheeler, 1926. Ants, p. 283.—Cole, 1934. Ent. Soc. Amer. Ann. 27: 399.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 64.

desertorum var. **ferrugineus** Olsen. Ariz. (Tucson and College Peak).
Pogonomyrmex desertorum var. *ferrugineus* Olsen, 1934. Harvard Univ., Mus. Compar. Zool. Bul. 77: 496. ☿.

desertorum var. **tenuispina** Forel. "U. S."
Pogonomyrmex desertorum var. *tenuispina* Forel, 1914. Soc. Vaud. Sci. Nat. Bul. 50: 269. ☿.

huachucanus W. M. Wheeler. Ariz., Calif.
Pogonomyrmex huachucanus W. M. Wheeler, 1914. Psyche 21: 151. ☿.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 400.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 64–65.

occidentalis occidentalis (Cresson). B. C. and Wash. to N. Dak. and south to Ariz. and Okla. The most common and widely distributed form of the subgenus. Its nests are a conspicuous feature of the Great Basin and Great Plains Areas.
Myrmica occidentalis Cresson, 1865. Ent. Soc. Phila. Proc. 4: 426. ☿ ♀.
Myrmica seminigra Cresson, 1865. Ent. Soc. Phila. Proc. 4: 427. ♂.
Pogonomyrmex opaciceps Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 971. ☿.
Pogonomyrmex occidentalis ruthveni Gaige, 1914. Biol. Soc. Wash. Proc. 27: 93. ☿ ♀ ♂.
Biology: McCook, 1882. The Honey Ants of the Garden of the Gods, and the Occident Ants of the American Plains, pp. 123–160.—W. M. Wheeler, 1926. Ants, pp. 145, 200, 202–205, 222, 283–284, 290, 291, 426.—Cole, 1933. Ohio Jour. Sci. 32: 533–538.—Cole, 1934. Canad. Ent. 66: 193–198.
Economics: Headlee and Dean, 1908. Kans. Agr. Expt. Sta. Bul. 154: 165–180.—Herrick, 1914. Insects Injurious to the Household and Annoying to Man, pp. 172–173.

occidentalis owyheei Cole. Idaho (Indian Cove near Hammett).
Pogonomyrmex occidentalis owyheei Cole, 1938. Amer. Midland Nat. 19: 240. ☿ ♀.

occidentalis var. **utahensis** Olsen. Utah (Zion Natl. Park).
Pogonomyrmex occidentalis var. ***utahensis*** Olsen, 1934. Harvard Univ., Mus. Compar. Zool. Bul. 77: 498, 509. ☿ ♀ ♂.
Biology: Cole, 1942. Amer. Midland Nat. 28: 366.

salinus Olsen. Calif. (near Soda Springs, Bridgeport).
Pogonomyrmex salinus Olsen, 1934. Harvard Univ., Mus. Compar. Zool. Bul. 77: 498, 510. ☿.

sancti-hyacinthi W. M. Wheeler. Kans., Tex., N. Mex., Ariz.
Pogonomyrmex sancti-hyacinthi W. M. Wheeler, 1902. Psyche 9: 388, 391. ☿.
Biology: W. M. Wheeler, 1926. Ants, p. 283.

similis Olsen. Ariz. (Oracle on the north slope of Mt. Lemmon, 4,500 ft.).
Pogonomyrmex similis Olsen, 1934. Harvard Univ., Mus. Compar. Zool. Bul. 77: 497, 512. ☿.

subdentatus Mayr. Ariz., Calif., N. Mex. Mayr's citation of this form from Conn. is an error.
Pogonomyrmex subdentatus Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 971. ☿.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 399.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 65.

subnitidus Emery. Calif.
Pogonomyrmex occidentalis var. ***subnitidus*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 310. ☿.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 399.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 65.

Subgenus EPHEBOMYRMEX W. M. Wheeler

Pogonomyrmex subg. ***Ephebomyrmex*** W. M. Wheeler, 1902. Psyche 9: 390, Type: ***Pogonomyrmex naegelii*** Forel. Desig. by W. M. Wheeler. 1911.
Revisions: W. M. Wheeler, 1902. Amer. Nat. 36: 85–100.—W. M. Wheeler, 1902. Psyche 9: 390.—Olsen, 1934. Harvard Univ., Mus. Compar. Zool. Bul. 77: 494–495, 513–514.

imberbiculus W. M. Wheeler. Okla., Tex., N. Mex.
Pogonomyrmex imberbiculus W. M. Wheeler, 1902. Amer. Nat. 36: 87, 97. ☿.
Biology: W. M. Wheeler, 1917. Psyche 24: 178–179.—W. M. Wheeler, 1926. Ants. pp. 283–284, 290, 292.

pima W. M. Wheeler. Ariz.
Pogonomyrmex (Ephebomyrmex) pima W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 79. ☿.
Biology: W. M. Wheeler, 1926. Ants, p. 283.—Cole, 1934. Ent. Soc. Amer. Ann. 27: 399–400.

townsendi W. M. Wheeler. Ariz.; Mexico.
Pogonomyrmex (Ephebomyrmex) townsendi W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 80. ☿.
Biology: W. M. Wheeler, 1926. Ants, p. 283.

Genus STENAMMA Westwood

Stenamma Westwood, 1840. Introduct. Mod. Class. Ins. Sup. 2: 83.
Type: ***Stenamma westwoodii*** Westwood. Monob.
Asemorhoptrum Mayr, 1861. Die Europäischen Formiciden, p. 76.
Type: (***Myrmica lippula*** Nylander)=*Stenamma westwoodii* Westwood. Monob.
Revisions: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 297–301.—Forel, 1901. Soc. Ent. Belg. Ann. 45: 347–348.—W. M. Wheeler, 1903. Psyche 10: 164–168.

brevicorne brevicorne (Mayr). Ont. and Que. to N. C. and west to Ill., Iowa and Minn.

Aphaenogaster brevicornis Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 443, 447–448. ☿ ♀.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 373, 382.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 585.
Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 299, ☿ ♀ ♂.

brevicorne diecki Emery. B. C., Calif., N. Dak., Ill., N. J., Conn., Pa., N. Y., Que., Wash.
Stenamma westwoodi diecki Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 300. ☿ ♀.
Biology: G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 244.

brevicorne heathi W. M. Wheeler. Calif. (King's River Canyon).
Stenamma brevicorne heathi W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 410. ☿.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bull. 40: 66.
Taxonomy: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 520, ☿.

brevicorne impar Forel. Mass., Pa., Va.
Stenamma brevicorne impar Forel, 1901. Soc. Ent. Belg. Ann. 45: 347. ☿ ♀.

brevicorne impressum Emery. Maine to N. C. and west to Iowa and Minn.
Stenamma westwoodi diecki var. ***impressum*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 301. ☿.
Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 284, 304.

brevicorne schmittii W. M. Wheeler. Pa. and Md. to Ill. and Wis.
Stenamma brevicorne schmittii W. M. Wheeler, 1903. Psyche 10: 167. ☿.
Biology: L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 93.

brevicorne sequoiarum W. M. Wheeler. Calif. (Muir Woods on Mt. Tamalpais).
Stenamma brevicorne sequoiarum W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 520. ☿ ♀.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 66.

foveolocephalum M. R. Smith. Miss. (2 miles south of Ackerman).
Stenamma fovolocephala (!) M. R. Smith, 1930. Ent. Soc. Amer. Ann. 23: 564. ☿.
Biology: M. R. Smith, 1931. Ent. News 42: 17.

nearcticum Mayr. B. C., Wash., Oreg., Calif.
Stenamma neoarcticum (!) Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 454. ♀ ♂ (☿ misdet.).
Taxonomy: Mayr, 1887. Zool.-Bot. Gesell. Wien, Verh. 37: 628, ♀ ♂.—Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 299–300, ☿ ♀.

Genus APHAENOGASTER Mayr

Subgenus APHAENOGASTER Mayr

Aphaenogaster Mayr, 1853. Zool.-Bot. Gesell. Wien, Verh. 3: 107.
Type: ***Aphaenogaster sardous*** Mayr. Desig. by Bingham, 1903.

Not known to occur in the Nearctic Region.

Subgenus ATTOMYRMA Emery

Aphaenogaster subg. ***Attomyrma*** Emery, 1915. R. Accad. delle Sci. dell'Ist. Bologna. Mem. (n. s.) 19: 70.
Type: ***Formica subterranea*** Latreille. Orig. desig.
Revisions: Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 443–446.—Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 301–306.—G. C. and E. W. Wheeler, 1934. Psyche 41: 6–12 (*treatae* and forms).

boulderensis boulderensis M. R. Smith. Ariz. (Horseshoe Island in Mead Lake of Boulder Dam).
Aphaenogaster (Attomyrma) boulderensis M. R. Smith, 1941. Great Basin Nat. 2: 118, 120. ☿.

boulderensis smithi R. E. Gregg. N. Mex. (Carrizozo).
Aphaenogaster (*Attomyrma*) *boulderensis smithi* R. E. Gregg, 1949. Ent. Soc. Wash. Proc. 51: 171. ☿.

floridana M. R. Smith. Fla., Ga.
Aphaenogaster (*Attomyrma*) *floridana* M. R. Smith, 1941. Great Basin Nat. 2: 118. ☿.

fulva aquia (Buckley). Mass. to Fla. and west to Nebr. Temporary host of *A. mariae* Forel and *A. tennesseensis* (Mayr).
Myrmica (*Monomarium* (!)) *aquia* Buckley, 1867. Ent. Soc. Phila. Proc. 6: 341. ☿ ♀.
Biology: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 586.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 286, 305.—Headley, 1949. Ent. Soc. Amer. Ann. 42: 265–272.
Taxonomy: Buren, 1944. Iowa State Col. Jour. Sci. 18: 284, ☿.

fulva aquia var. **picea** (Emery). Ont. to S. C. and west to Wis. and Iowa. Temporary host of *A. tennesseensis* (Mayr).
Stenamma (*Aphaenogaster*) *fulvum aquia* var. *piceum* Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 305. ☿ ♀ ♂.
Aphaenogaster texana punctithorax Cole, 1938. Amer. Midland Nat. 19: 239. ☿.
Biology: W. M. Wheeler, 1926. Ants, pp. 195, 282, 447–448, 453.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 286–287, 305.—L. G. Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 94.

fulva aquia var. **pusilla** (Emery.) D. C.
Stenamma (*Aphaenogaster*) *fulvum aquia* var. *pusillum* Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 306. ☿.

fulva fulva Roger. Vt. to Ga. and west to Iowa, Kans., and La. Temporary host of *A. tennesseensis* (Mayr) and possibly of *A. mariae* Forel.
Aphaenogaster fulva Roger, 1863. Berlin. Ent. Ztschr. 7: 190. ☿.
Aphaenogaster fulva var. *rubida* J. Enzmann, 1947. N. Y. Ent. Soc. Jour. 55: 147. ☿.
Biology: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 586.—W. M. Wheeler, 1926. Ants, pp. 81, 83, 206, 448, 453.

fulva rudis (Emery), n. status. N. C., Va., D. C., Tenn., Ohio, Ill., ?C 1. Temporary host of *A. tennesseensis* (Mayr).
Stenamma (*Aphaenogaster*) *fulva aquia* var. *rude* Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 305. ☿ ♀.
Biology: L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 90, 94.

huachucana Creighton. Ariz. (Ramsey Canyon, Huachuca Mts., 7,000 ft.).
Aphaenogaster (*Attomyrma*) *huachucana* Creighton, 1934. Psyche 41: 189. ☿.

lamellidens Mayr. N. Y. to Fla. and west to Ill., Mo., and La.
Aphaenogaster lamellidens Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 443, 445. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 383.—M. R. Smith, 1918. Ent. News 29: 21.—M. R. Smith, 1928. Ent. News 39: 246.
Taxonomy: Cole, 1940. Amer. Midland Nat. 24: 50, 52, ☿.

lamellidens var. **nigripes** M. R. Smith. N. C. and Ga. to Ill. and La.
Aphaenogaster lamellidens var. *nigripes* M. R. Smith, 1923. Ent. News 34: 308. ☿.
Biology: M. R. Smith, 1924. Ent. News 35: 51.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 285, 304.
Taxonomy: Cole, 1940. Amer. Midland Nat. 25: 50, 52. ☿.

mariae Forel. N. Y. to Fla. and west to Iowa and Kans. Temporary parasite of *A. fulva aquia* (Buckl.).
Aphaenogaster Mariae Forel, 1886. Soc. Ent. Belg. Bul. (C. R.) 30: 41. ☿.
Biology: W. M. Wheeler, 1926. Ants, pp. 151, 448.—L. G. Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 93.
Taxonomy: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 585. ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 284, ☿.

mutica Pergande. ?Tex., Mexico (Lower Calif.).
Aphaenogaster mutica Pergande, 1895. Calif. Acad. Sci. Proc. 5: 891. ☿.

patruelis bakeri (W. M. Wheeler). Calif. (Catalina Isl.). *A. patruelis patruelis* Forel occurs in Mexico.
Stenamma (Aphaenogaster) patruelis bakeri W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 270. ☿.

patruelis willowsi W. M. Wheeler. Calif. (San Nicolas Isl.).
Aphaenogaster patruelis willowsi W. M. Wheeler, 1933. Calif. Acad. Sci. Proc. 21: 64. ☿.
Taxonomy: W. M. Wheeler, 1934. Pan-Pacific Ent. 10: 133, ☿.

subterranea borealis W. M. Wheeler. B. C., Wash. *A. subterranea subterranea* (Latreille) occurs in the Mediterranean Region and Cent. Europe.
Aphaenogaster subterranea borealis W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 412. ☿.

subterranea occidentalis (Emery.) B. C., Wash., Oreg., Idaho, Mont., Calif., Ariz., Utah, Colo.
Stenamma (Aphaenogaster) subterraneum occidentale Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 301. ☿.
Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 515.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 67.
Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 363, ☿.

subterranea valida W. M. Wheeler. Colo. (Cheyenne Canyon, near Colorado Springs).
Aphaenogaster subterranea valida W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 411. ☿ ♀ ♂,
Biology: R. E. Gregg, 1947. Colo. Univ., Studies (ser. D) 2: 393.

subterranea valida var. **manni** W. M. Wheeler. Wash. (Pullman).
Aphaenogaster subterranea valida var. ***manni*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 516. ☿.

tennesseensis (Mayr). Ont. to Ga. and west to Minn., Nebr., and Okla. Temporary parasite of *A. (Attomyrma) fulva fulva* Roger, *fulva rudis* Emery, *fulva aquia* (Buckley), and *fulva aquia* var. *picea* Emery.
Atta Tenneseensis (!) Mayr, 1862. Zool.-Bot. Gesell. Wien. Verh. 12: 743. ☿.
Atta laevis Mayr, 1862. Zool.-Bot. Gesell. Wien, Verh. 12: 743. ♀.
Myrmica subruba Buckley, 1867. Ent. Soc. Phila. Proc. 6: 336. ☿ "♀"=♂.
Biology: W. M. Wheeler, 1926. Ants, pp. 114, 447–448,450—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 287–288.—L. G. Jr. and R. G. Wesson, 1940. Amer. Midland Nat. 24: 90, 94.
Taxonomy: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 585, 586 ☿ ♀.

tennesseensis var. **ecalcarata** (Emery.) N. H.
Stenamma (Aphaenogaster) tenesseense (!) var. ***ecalcaratum*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 301. ☿.

texana flemingi M. R. Smith. Miss. (State College).
Aphaenogaster texana flemingi M. R. Smith, 1928. Ent. News 39: 275. ☿.

texana macrospina M. R. Smith. Fla., Ga., Miss., S. C.
Aphaenogaster texana macrospina M. R. Smith, 1934. Ent. Soc. Amer. Ann. 27: 386. ☿.

texana nana W. M. Wheeler. Fla. (Gainesville).
Aphaenogaster (Attomyrma) texana nana W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 6. ☿.

texana texana (Emery). Kans., Tex.
Stenamma (Aphaenogaster) fulvum aquia var. ***texanum*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 306. ☿.
Taxonomy: W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 412–413, ☿ ♀ ♂.

texana var. **carolinensis** W. M. Wheeler. N. C., S. C., Ga., Miss., Tenn., Ind., Mich., Mo., Ark., Okla., Tex.
Aphaenogaster texana var. ***carolinensis*** W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 414. ☿ ♀.
Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 287, 305.
Taxonomy: M. R. Smith, 1931. Ent. News 42: 17, ☿.

texana var. **furvescens** W. M. Wheeler. Fla., S. C., Tenn., Miss., Ariz.
Aphaenogaster texana var. *furvescens* W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 413. ☿ ♀.
Biology: W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 5.
Taxonomy: Creighton, 1934. Psyche 41: 192, ☿.

texana var. **miamiana** W. M. Wheeler. Fla. (Miami).
Aphaenogaster (*Attomyrma*) *texana* var. *miamiana* W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 5. ☿ ♀ ♂.

texana var. **silvestrii** Menozzi. Fla. (Gainesville).
Aphaenogaster (*Deromyrma*) *Silvestrii* Menozzi, 1929. Portici Lab. Zool. Gen. e Agr. Bol. 22: 282. ☿ ♀.
Taxonomy: W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 5, ☿ ♀.

treatae ashmeadi (Emery), n. status. Fla., Ga.
Stenamma (*Aphaenogaster*) *treatae* var. *ashmeadi* Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 302. ☿.
Taxonomy: W. M. Wheeler, 1919. Psyche 26: 50, ☿.

treatae harnedi W. M. Wheeler. Miss., Tenn., Mo., Tex.
Aphaenogaster treatae harnedi W. M. Wheeler, 1919. Psyche 26: 50. ☿.
Taxonomy: M. R. Smith, 1924. Ent. News 35: 50, ☿.

treatae pluteicornis G. C. and E. W. Wheeler. Ohio, Okla., Tex.
Aphaenogaster treatae pluteicornis G. C. and E. W. Wheeler, 1934. Psyche 41: 7, 12. ☿ ♀ ♂.

treatae pluteicornis var. **alabamensis** G. C. and E. W. Wheeler. Ala. (Lookout Mt., Fort Payne).
Aphaenogaster treatae pluteicornis var. *alabamensis* G. C. and E. W. Wheeler, 1934. Psyche 41: 10. ♀ ☿.

treatae pluteicornis var. **oklahomensis** G. C. and E. W. Wheeler. Okla. (Poteau).
Aphaenogaster treatae pluteicornis var. *oklahomensis* G. C. and E. W. Wheeler, 1934. Psyche 41: 10,12. ☿ ♀.

treatae treatae Forel. Ont. south to Ga. and west to Nebr. and Tex.
Aphaenogaster treatae Forel, 1886. Soc. Ent. Belg. Bul. (C. R.) 30: 40, 41. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 383.—W. M. Wheeler, 1926. Ants, pp. 151, 200.
Taxonomy: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 585, ☿ ♀.

treatae wheeleri Mann. Mass. (Naushon Isl. opposite Woods Hole).
Aphaenogaster treatae wheeleri Mann, 1915. Psyche 22: 51. ☿ ♀.
Taxonomy: W. M. Wheeler, 1919. Psyche 26: 50, ☿ ♀.

uinta W. M. Wheeler. Idaho, Utah.
Aphaenogaster uinta W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 517. ☿ ♀ ♂.
Biology: Cole, 1934. Psyche 41: 223.
Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 363, 364. ☿.

Unrecognized Forms of Aphaenogaster Subgenus Attomyrma Emery

opposita (Say). North America.
Myrmica opposita Say, 1836. Boston Jour. Nat. Hist. 1: 292. ☿ ♂.

Genus NOVOMESSOR Emery

Novomessor Emery, 1915. Accad. delle Sci. dell'Ist. Bologna, Rend. (n. s.) 19: 73.
Type: *Aphaenogaster* (*Ischnomyrmex*) *cockerelli* André. Orig. desig.
Revision: W. M. Wheeler and W. S. Creighton, 1934. Amer. Acad. Arts Sci. Proc. 69: 343–354.

Occurs in arid plateaus, approximately 2,500 to 5,000 feet high, mainly in a narrow zone extending from Del Rio, Tex., to Gilabend, Ariz. At least one form, *cockerelli*, occurs in Mexico.

albisetosus (Mayr). Ariz., N. Mex., Tex.
Aphaenogaster albisetosa Mayr, 1886. Zool.-Bot. Gesell, Wien, Verh. 36: 443, 446. ☿.
Novomessor cockerelli var. *minor* J. Enzmann, 1947. N. Y. Ent. Soc. Jour. 55: 148. ☿.
Biology: W. M. Wheeler, 1926. Ants, pp. 280–282.—Cole, 1934. Ent. Soc. Amer. Ann. 27: 398.

cockerelli (André). Ariz., Calif., N. Mex., Tex.; Mexico.
Aphaenogaster (Ischnomyrmex) Cockerelli André, 1893. Rev. Ent. 12: 150. ☿.
Aphaenogaster sonorae Pergande, 1893. Calif. Acad. Sci. Proc. 4: 34. ☿.
Biology: W. M. Wheeler, 1926. Ants, pp. 69, 178, 201, 280–282.—Cole, 1934. Ent. Soc. Amer. Ann. 27: 397–398.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 67.

Genus VEROMESSOR Forel

Novomessor subg. *Veromessor* Forel, 1917. Soc. Vaud. des Sci. Nat. Bul. 51: 235.
Type: *Aphaenogaster andrei* Mayr. Desig. by Emery, 1921.
Revision: W. M. Wheeler and W. S. Creighton, 1934. Amer. Acad. Arts and Sci. Proc. 69: 354–387.

This genus extends from Mexico into southwestern and western United States.

andrei andrei (Mayr). Ariz., Calif., Nev., ?Oreg.; Mexico.
Aphaenogaster Andrei Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 443, 448. ☿.
Biology: W. M. Wheeler, 1926. Ants, p. 280.—Cole, 1934.Ent. Soc. Amer. Ann. 27: 398.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 67.
Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 306–307, ☿ ♀.—Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 8, 24, ☿.
Economics: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 24.

andrei castaneus W. M. Wheeler and W. S. Creighton. Calif.
Veromessor andrei castaneus W. M. Wheeler and W. S. Creighton, 1934. Amer. Acad. Arts and Sci. Proc. 69: 361, 365. ☿.

andrei flavus W. M. Wheeler and W. S. Creighton. Calif. (Jacumba).
Veromessor andrei flavus W. M. Wheeler and W. S. Creighton, 1934. Amer. Acad. Arts and Sci. Proc. 69: 361, 366. ☿.

chamberlini (W. M. Wheeler). Calif. (Santa Cruz Isl.).
Messor chamberlini W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 410. ☿.

lobognathus (Andrews). Colo. (Glenwood Springs).
Messor lobognathus Andrews, 1916. Psyche 23: 82. ☿.

pergandei (Mayr). Ariz., Calif.; Mexico.
Aphaenogaster Pergandei Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 444, 448. ☿.
Biology: W. M. Wheeler, 1926. Ants, pp. 16, 280.—Cole, 1937. Ent. News 48: 101.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 68.
Taxonomy: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 8, 25, ☿.

stoddardi (Emery). Calif. (San Jacinto in Riverside Co.); Mexico (Lower Calif.).
Stenamma (Messor) stoddardi Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 307. ☿.
Biology: W. M. Wheeler, 1926. Ants, p. 280.

Genus PHEIDOLE Westwood

Subgenus PHEIDOLE Westwood

Pheidole Westwood, 1841. Ann. Mag. Nat. Hist. 6: 87.
Type: *Atta providens* Sykes=?(*Pheidole indica* Mayr). Monob.
Oecophthora Heer, 1852. Naturf. Gesell. in Zürich, Neujahrsbl. 54: 11, 15.
Type: (*Oecophthora pusilla* Heer)=[*Formica*] *megacephala* (Fabricius). Monob.

Leptomyrma Motschulsky, 1863. Soc. Imp. Nat. Moscou Bul. 36: 17.
Type: ***Leptomyrma gracilipes*** Motschulsky. Monob.
Allopheidole Forel, 1912. Soc. Ent. Belg. Mem. 19: 237. N. syn.
Type: ***Pheidole kingi*** André. Desig. by W. M. Wheeler, 1913.
Cardiopheidole W. M. Wheeler, 1914. N. Y. Ent. Soc. Jour. 22: 48–51. N. syn.
Type: ***Pheidole vasliti*** Pergande. Orig. desig.
Macropheidole Emery, 1915. Soc. Ent. France Bul., p. 190. N. syn.
Type: ***Pheidole fimbriata*** Roger. Monob. and orig. desig.
evisions: Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 979–989.—Mayr, 1887. Zool.-Bot. Gesell. Wien, Verh. 37: 582–608.—Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 288–297.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 431–478.

anastasii Emery. (In flavens group.) Fla., N. C., Que.; Mexico, Cent. Amer. Introduced into U. S.
Pheidole Anastasii Emery, 1896. Soc. Ent. Ital. Bol. 28: 76. ☿ ♀.
Biology: W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 6.—M. R. Smith, 1933. Fla. Ent. 17: 23.
Taxonomy: Forel, 1901. Naturhist. Mus. Hamburg Mitt. 18: 78. ♀.

anastasii var. **cellarum** Forel. (In flavens group.) Mass., N. J., Md., D. C., Va., Ill., Calif.; Cent. Amer.
Pheidole Anastasii var. ***cellarum*** Forel, 1908. Soc. Vaud. des. Sci. Nat. Bul. 44: 55. ☿ ♀.
Biology: Bondroit, 1911. Soc. Ent. Belg. Ann. 55: 14.—Donisthorpe, 1927. British Ants, ed. 2, p. 390.
Taxonomy: Forel, 1915. Fauna Ins. Helvet. Hym., pp. 33, 34, ☿ ♀.

barbata W. M. Wheeler. (In subarmata group.) Calif. (Needles).
Pheidole barbata W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 448. ☿ ♀.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 68.

bicarinata Mayr. (In subarmata group.) Mich. and Tenn. to Nebr. and S. Dak.
Pheidole bicarinata Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 982, 989. ♀.
Biology: Talbot, 1934. Ecology 15: 418, 420, 422.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 286.

californica californica Mayr. (In subarmata group.) Calif., Idaho, Utah.
Pheidole californica Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 981, 984, 987. ☿ ♀.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 395–397.—Mallis, 1941. South Calif. Acad. Sci. Bul. 40: 68–69.
Taxonomy: W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 406–407, ☿ ♀ ♀.

alifornica micula W. M. Wheeler. (In subarmata group.) Ariz. (Huachuca Mts.).
Pheidole californica micula W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 408. ☿ ♀.
alifornica oregonica Emery. (In subarmata group.) Ariz., Calif., Utah, Idaho, Oreg., Wash.
Pheidole oregonica Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 288, 291. ☿ ♀.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 69.—Cole, 1942. Amer. Midland Nat. 28: 362.
Taxonomy: W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 407–408, ☿ ♀ ♀.

californica pyramidensis Emery. (In subarmata group.) Nev. (Pyramid Lake).
Pheidole californica nevadensis W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 408. ☿ ♀ ♀. Preocc.
Pheidole californica pyramidensis Emery, 1922. *In* Wytsman, Gen. Ins., fasc. 174 b, p. 105. N. name.

californica var. **hagermani** Cole. (In subarmata group.) Idaho (Hagerman). This may prove to be a synonym of *oregonica*.
Pheidole californica var. ***hagermani*** Cole, 1936. Canad. Ent. 68: 35. ☿ ♀.

californica var. **incenata** W. M. Wheeler. (In subarmata group.) Calif. (Palo Alto).

Pheidole californica var. ***incenata*** W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 407. ☿ ♀.

californica var. **satura** W. M. Wheeler. (In subarmata group.) Calif.
Pheidole californica var. ***satura*** W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 407. ☿ ♀.

californica var. **shoshoni** Cole. (In subarmata group.) Idaho (Twin Falls).
Pheidole californica var. ***shoshoni*** Cole, 1933. Ent. Soc. Amer. Ann. 26: 618. ☿ ♀.

casta W. M. Wheeler. (In subarmata group.) Tex. (Langtry).
Pheidole casta W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 454. ☿ ♀.

ceres W. M. Wheeler. (In subarmata group.) Ariz., N. Mex., Tex., Colo. Host of the permanently parasitic ant, *Sympheidole elecebra* Whlr. Parasitized colonies have been found to contain only soldiers and workers of *ceres*. *Ceres* nests under stones in rather dry, sunny localities at altitudes of 5,000–9,000 ft. A seed-storing form.
Pheidole ceres W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 10. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1919. Amer. Philos. Soc. Proc. 58: 25.—W. M. Wheeler, 1923. Social Life among the Insects, p. 219.—W. M. Wheeler, 1926. Ants, pp. 279, 497.

cockerelli W. M. Wheeler. (In fallax group.) Ariz., N. Mex., Okla.
Pheidole cockerelli W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 464. ☿ ♀.

constipata W. M. Wheeler. (In flavens group.) Tex.
Pheidole constipata W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 468. ☿ ♀ ♂.

crassicornis crassicornis Emery. (In fallax group.) N. C., S. C., Ga., ?Miss., Tenn.
Pheidole crassicornis Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 289, 296. ♀.
Biology: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 302.—M. R. Smith, 1918. Ent. News 29: 22.
Taxonomy: Forel, 1901. Soc. Ent. Belg. Ann. 45: 350. ☿ ♀ ♂.

crassicornis porcula W. M. Wheeler. (In fallax group.) Tex. (Chisos Mts.).
Pheidole crassicornis porcula W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 466. ☿ ♀.

crassicornis porcula var. **tetra** W. M. Wheeler. (In fallax group.) Tex.
Pheidole crassicornis porcula var. ***tetra*** W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 467. ☿ ♀.

crassicornis vallicola W. M. Wheeler. (In fallax group.) Ariz. (Miller Canyon in Huachuca Mts., 5,000 ft.).
Pheidole crassicornis vallicola W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 409. ☿ ♀.

crassicornis var. **diversipilosa** W. M. Wheeler. (In fallax group.) Tex. (Fort Davis).
Pheidole crassicornis var. ***diversipilosa*** W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 467. ☿ ♀ ♀.

davisi W. M. Wheeler. (In subarmata group.) N. J., N. Y.
Pheidole davisi W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 380. ☿ ♀.
Biology: Davis and Bequaert, 1922. Brooklyn Ent. Soc. Bul. 17: 8–9.—Bequaert, 1928. Cornell Univ. Agr. Expt. Sta. Mem. 101: 996.

dentata Mayr. (In fabricator group.) Va. to Fla. and west to Ill., Kans., and Tex.
Pheidole Morrisi var. ***dentata*** Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 457. ☿ ♀ ♂.
Biology: Mitchell and Pierce, 1912. Ent. Soc. Wash. Proc. 14: 71.—M. R. Smith, 1924. Ent. News 35: 77.—Cole, 1940. Amer. Midland Nat. 24: 29, 44.
Taxonomy: Forel, 1901. Soc. Ent. Belg. Ann. 45: 351–352, ♀ ♂.—Cole, 1940. Amer. Midland Nat. 24: 42, ♀.

dentata var. **commutata** Mayr. (In fabricator group.) N. C. to Fla. and west to Kans. and Tex.
Pheidole commutata Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 459. ☿. ♀.
Leptothorax tennesseensis Cole, 1938. Amer. Midland Nat. 19: 238. ☿.
Biology: M. R. Smith, 1924. Ent. News 35: 77–78.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 281, 304.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 460–461. ☿ ♀ ♀.

dentata var. **faisonsica** Forel. (In fabricator group.) Ga., N. C.
Pheidole dentata var. *faisonsica* Forel, 1901. Soc. Ent. Belg. Ann. 45: 352. ☿ ♀.

dentigula M. R. Smith. (In flavens group.) N. C. to Fla. and west to La.
Pheidole dentigula M. R. Smith, 1927. Ent. News 38: 310. ☿ ♀.
Biology: M. R. Smith, 1944. Fla. Ent. 27: 14.
Taxonomy: M. R. Smith, 1928. Ent. News 39: 245–246, ♀.—Cole, 1940. Amer. Midland Nat. 24: 42, 45.

desertorum W. M. Wheeler. (In biconstricta group.) Utah, Ariz., Tex.
Pheidole desertorum W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 337. ☿ ♀ ♀ ♂.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 397.—Cole, 1937. Ent. News 48: 100.
Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 362, ♀.

desertorum var. **comanche** W. M. Wheeler. (In biconstricta group.) Tex.
Pheidole desertorum var. *comanche* W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 339. ☿ ♀ ♀.

desertorum var. **maricopa** W. M. Wheeler. (In biconstricta group.) Ariz. (Grand Canyon).
Pheidole desertorum var. *maricopa* W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 339. ☿ ♀.

flavens sculptior Forel. (In flavens group.) Fla.; W. Indies.
Pheidole flavens sculptior Forel, 1893. Ent. Soc. London Trans., p. 414. ☿ ♀ ♀.
Biology: M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 842.
Taxonomy: Forel, 1901. Soc. Ent. Belg. Ann. 45: 366, ☿ ♀.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 134, ♀.

floridana Emery. (In flavens group.) Fla., ?Miss., ?La.
Pheidole flavens floridana Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 289, 293. ☿ ♀ ♀.

grallipes W. M. Wheeler. (In biconstricta group.) Calif.; Mexico.
Pheidole susannae longipes Pergande, 1895. Calif. Acad. Sci. Proc. 5: 885. ☿ ♀. Preocc.
Pheidole grallipes W. M. Wheeler, 1916. Psyche 23: 40. N. name.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 69.
Taxonomy: W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 397–398, ☿ ♀ ♀.

grallipes var. **vistana** Forel. (In biconstricta group.) Calif. (Vista).
Pheidole longipes var. *vistana* Forel, 1914. Soc. Vaud. Sci. Nat. Bul. 50: 272. ☿.

hayesi M. R. Smith. (In subarmata group.) Kans. (Manhattan).
Pheidole hayesi M. R. Smith, 1924. Ent. News 35: 251. ☿ ♀.
Economics: Hayes, 1925. Ent. News 36: 42.

humeralis W. M. Wheeler. (In subarmata group.) Tex. (Corsicana).
Pheidole humeralis W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 456. ☿ ♀.

hyatti hyatti Emery. (In fallax group.) Okla. and Calif. to Mexico.
Pheidole hyatti Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 289, 290, 295. ☿ ♀.
Biology: Essig, 1926. Ins. of West. No. Amer., p. 859.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 462–463, ♀.
Economics: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 26.

hyatti solitanea W. M. Wheeler. (In fallax group.) Calif. (San Diego).
Pheidole hyatti solitanea W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 409. ☿ ♀ ♀.

hyatti var. **ecitonodora** W. M. Wheeler. (In fallax group.) Colo., Tex., N. Mex.
Pheidole hyatti var. *ecitonodora* W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 463. ☿ ♀ ♂.

kingi instabilis Emery. (In subarmata group.) Tex.; Mexico. *P. kingi kingi* André occurs in Mexico.
Pheidole kingi instabilis Emery, 1901. Soc. Ent. France Bul., p. 120. ☿ ♀.
Biology: W. M. Wheeler, 1901. Soc. Ent. Belg. Ann. 45: 203.—W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 2–12.
Morphology: W. M. Wheeler, 1926. Ants, p. 56.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 431–433, ☿ ♀ ♂.

kingi torpescens W. M. Wheeler. (In subarmata group.) Ariz. (Tucson).
Pheidole kingi torpescens W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 404. ☿ ♀.

lamia W. M. Wheeler. (In subarmata group.) Miss., Tex.
Pheidole lamia W. M. Wheeler, 1901. Amer. Nat. 35: 534. ☿ ♀.
Biology: W. M. Wheeler, 1926. Ants, pp. 212, 248.—M. R. Smith, 1931. Ent. News 42: 21–22.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 477–478. ♀ ♀

lauta W. M. Wheeler. (In flavens group.) Tex. (New Braunfels).
Pheidole lauta W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 470. ☿ ♀ ♂.

macclendoni W. M. Wheeler. (In subarmata group.) Tex.
Pheidole macclendoni W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 450. ☿ ♀.

marcidula W. M. Wheeler. (In subarmata group.) Tex. (Austin).
Pheidole marcidula W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 457. ☿ ♀.

megacephala (Fabricius). (In megacephala group.) Fla. Pantropical.
Formica megacephala Fabricius. 1793. Ent. System. 2: 361. ♀.
Biology: Phillips, 1934. (Hawaii Univ.) Expt. Sta. Pineapple Prod. Coop. Assoc. Bul. 15: 5–12.
Taxonomy: M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 843–844, ♀.
Economics: Illingworth, 1916. Hawaii. Ent. Soc. Proc. 3: 349–368.

metallescens metallescens Emery. (In flavens group.) Fla., Ga., N. C.
Pheidole metallescens Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 289, 294. ☿.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 476–477, ☿ ♀.

metallescens splendidula W. M. Wheeler. (In flavens group.) N. C. to Ga. and west to Tex.
Pheidole metallescens splendidula W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 474. ☿ ♀ ♀ ♂.
Biology: M. R. Smith, 1924. Ent. News 35: 78.
Taxonomy: M. R. Smith, 1934. N. Y. Ent. Soc. Jour. 42: 356, ☿ ♀.

militicida W. M. Wheeler. (In subarmata group.) Ariz.
Pheidole militicida W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 398. ☿ ♀.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 395.

morrisii Forel. (In fabricator group.) N. Y. to Fla. and west to Ill., La. and Tex.
Pheidole Morrisii Forel, 1886. Soc. Ent. Belg. Bul. 30: 46. ☿ ♀.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 380.—Davis and Bequaert, 1922. Brooklyn Ent. Soc. Bul. 17: 8–9.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 460–461, ☿ ♀ ♀ ♂.

morrisii var. **impexa** W. M. Wheeler. (In fabricator group.) Tex. (Del Valle near Austin).
Pheidole morrisi var. *impexa* W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 461. ☿ ♀ ♀ ♂.
Economics: Lindquist, 1942. Jour. Econ. Ent. 35: 850–852.

morrisii var. **vanceae** Forel. (In fabricator group.) Miss., N. C.

Pheidole morrisii var. ***Vanceae*** Forel, 1901. Soc. Ent. Belg. Ann. 45: 351. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 302.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 461.—M. R. Smith, 1924. Ent. News 35: 53.

nuculiceps W. M. Wheeler. (In flavens group.) Tex. (New Braunfels).
Pheidole nuculiceps W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 473. ☿ ♀.

pilifera artemisia Cole. (In subarmata group.) Utah (Provo).
Pheidole pilifera artemisia Cole, 1933. Ent. Soc. Amer. Ann. 26: 616. ☿ ♀.
Biology: Cole, 1942. Amer. Midland Nat. 28: 362.
Taxonomy: Cole, 1938. Amer. Midland Nat. 20: 372, ♀.

pilifera coloradensis Emery. (In subarmata group.) Colo. Host of the permanently parasitic ant *Epipheidole inquilina* Whlr.
Pheidole pilifera var. ***coloradensis*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 288, 291. ☿ ♀.
Biology: W. M. Wheeler, 1903. Amer. Mus. Nat. Hist. Bul. 19: 666.—W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 16–17.—W. M. Wheeler, 1926. Ants, pp. 279, 498.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 434, ☿ ♀ ♂.

pilifera coloradensis var. **neomexicana** W. M. Wheeler. (In subarmata group.) N. Mex.
Pheidole pilifera coloradensis var. ***neomexicana*** W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 436. ♀.

pilifera pilifera (Roger). (In subarmata group.) Mass. and N. Y. to Miss. and west to Kans. and Nebr. Host of *Epipheidole inquilina* Whlr.
Leptothorax pilifer Roger, 1863. Berlin. Ent. Ztschr. 7: 180. ☿.
Pheidole pennsylvanica Roger, 1863. Berlin. Ent. Ztschr. 7: 199. ♀.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 379–380.—W. M. Wheeler, 1926. Ants, pp. 152, 278.—L. G. ,Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 92.

pilifera septentrionalis W. M. Wheeler. (In subarmata group.) Mass., N. Y.
Pheidole pilifera septentrionalis W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 436. ♀.

pilifera var. **simulans** W. M. Wheeler. (In subarmata group.) N. C., N. J., N. Y.
Pheidole pilifera var. ***simulans*** W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 436. ♀.

pinealis W. M. Wheeler. (In subarmata group.) Tex. (Limpio Canyon).
Pheidole pinealis W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 459. ☿ ♀.

proserpina W. M. Wheeler. (In subarmata group.) Ariz. (Tempe).
Pheidole proserpina W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 437. ☿ ♀.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 397.

rhea W. M. Wheeler. (In macropheidole group.) Ariz.; Mexico.
Pheidole rhea W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 452. ♀.
Biology: R. E. Gregg, 1949. Psyche 56: 70–73.
Taxonomy: M. R. Smith, 1943. Ent. Soc. Wash. Proc. 45: 5–9, ☿ ♀.—R. E. Gregg, 1949. Psyche 56: 70–73, ☿ ♀ ♀.

ridicula W. M. Wheeler. (In praeusta group.) Tex. (Brownsville).
Pheidole ridicula W. M. Wheeler, 1916. New England Zool. Club Proc. 6: 29. ♀.

sciophila W. M. Wheeler. (In flavens group.) Tex.
Pheidole sciophila W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 443. ☿ ♀ ♀ ♂.

sciophila var. **semilaevicephala** M. R. Smith. (In flavens group.) Ariz. (Yuma).
Pheidole sciophila var. ***semilaevicephala*** M. R. Smith, 1934. Ent. Soc. Amer. Ann. 27: 385. ♀.

sitarches rufescens W. M. Wheeler. (In subarmata group.) Miss., Mo., Kans., Okla., Tex.

Pheidole sitarches rufescens W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 443. ☿ ♀ ♀.
Biology: M. R. Smith, 1924. Ent. News 35: 53.

sitarches rufescens var. **campestris** W. M. Wheeler. (In subarmata group.) Tex. (Henrietta).
Pheidloe sitarches rufescens var. ***campestris*** W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 443. ☿ ♀.

sitarches sitarches W. M. Wheeler. (In subarmata group.) Iowa, Kans., Tex.
Pheidole sitarches W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 440. ☿ ♀ ♀.
Biology: Hayes, 1925. Ent. News 36: 41.—W. M. Wheeler, 1926. Ants, p. 279.
Taxonomy: Buren, 1944. Iowa State Col. Jour. Sci. 18: 285, ♀.

sitarches var. **transvarians** W. M. Wheeler. (In subarmata group.) Tex. (Mt. Barker near Austin).
Pheidloe sitarches var. ***transvarians*** W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 442. ☿ ♀.

soritis W. M. Wheeler. (In subarmata group.) N. Mex. (Albuquerque).
Pheidole soritis W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 439. ☿ ♀.

spadonia W. M. Wheeler. (In praeusta group.) Ariz. (Tucson).
Pheidole spadonia W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 400. ☿ ♀.

tepicana cavigenis W. M. Wheeler. (In subarmata group.) Ariz. (Miller Canyon).
P. tepicana tepicana Pergande occurs in Mexico.
Pheidole tepicana cavigenis W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 403. ♀.

texana W. M. Wheeler. (In fallax group.) Tex. (Travis Co.).
Pheidole texana W. M. Wheeler, 1903. Psyche 10: 97. ☿ ♀.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 464, ☿ ♀.

titanis W. M. Wheeler. (In fallax group.) Tex.
Pheidole titanis W. M. Wheeler, 1903. Psyche 10: 95. ☿ ♀.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 461–462.

tysoni Forel. (In subarmata group.) N. Y. to Ga., west to Ohio and La.
Pheidole Tysoni Forel, 1901. Soc. Ent. Belg. Ann. 45: 348. ☿ ♀ ♂.
Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 282, 304.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 92.
Taxonomy: Cole, 1940. Amer. Midland Nat. 24: 42, 45. ♀.

vasliti subdentata var. **arizonica** Santschi. (In fallax group.) Ariz. (Tucson).
P. vasliti subdentata Pergande occurs in Mexico. Workers are polymorphic.
Pheidole arizonica Santschi, 1909. Soc. Ent. Ital. Bol. 41: 3. ♀.
Taxonomy: W. M. Wheeler, 1914. N. Y. Ent. Soc. Jour. 22: 49–51, ♀.

vinelandica buccalis W. M. Wheeler. (In subarmata group.) Ariz.
Pheidole vinelandica buccalis W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 454. ☿ ♀ ♀.

vinelandica cerebrosior W. M. Wheeler. (In subarmata group.) Ariz. (Tucson).
Pheidole vinelandica cerebrosior W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 405. ☿ ♀.

vinelandica laeviuscula Emery. (In subarmata group.) Mo. (Doniphan).
Pheidole vinelandica laeviuscula Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 289, 292. ☿ ♀.

vinelandica longula Emery. (In subarmata group.) N. Y., Tex., Colo., Idaho.
Pheidole vinelandica var. ***longula*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 289, 292. ☿ ♀.
Biology: Davis and Bequaert, 1922. Brooklyn Ent. Soc. Bul. 17: 9.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 453–454, ♀.

vinelandica longula var. **huachucana** M. R. Smith, n. name. (In subarmata group.) Ariz. (Huachuca Mts.).
Pheidole vinelandica longula var. ***castanea*** W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 405. ☿ ♀. Preocc. by F. Smith, 1858.
Biology: Cole, 1937. Ent. News 48: 100.

vinelandica vinelandica Forel. (In subarmata group.) N. Y. to Ga., west to N. Dak. and Ariz.
Pheidole bicarinata race *vinelandica* Forel, 1886. Soc. Ent. Belg. Ann. 30: 45. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 336–337.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 92.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 453, ☿ ♀.

vinelandica var. **nebrascensis** Forel. (In subarmata group.) Nebr. (No specific locality cited.)
Pheidole (*Allopheidole*) *vinelandica* var. *nebrascensis* Forel, 1922. Rev. Suisse Zool. 30: 92. ☿ ♀ ♀.

virago W. M. Wheeler. (In praeusta group.) Ariz. (Tucson).
Pheidole virago W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 401. ☿ ♀.

xerophila pacifica W. M. Wheeler. (In subarmata group.) Calif.
Pheidole xerophila pacifica W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 404. ☿ ♀ ♀ ♂.

xerophila tucsonica W. M. Wheeler. (In subarmata group.) Ariz. (Tucson).
Pheidole xerophila tucsonica W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 448. ☿ ♀.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 397.

xerophila tucsonica var. **gilvescens** W. M. Wheeler. (In subarmata group.) Ariz.
Pheidole xerophila tucsonica var. *gilvescens* W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 448. ☿ ♀.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 397.

xerophila xerophila W. M. Wheeler. (In subarmata group.) Tex. (Ft. Davis).
Pheidole xerophila W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 446. ☿ ♀ ♂.

Unrecognized Forms of Genus Pheidole Westwood

buckleyi M. R. Smith, n. name.
Atta pennsylvanica Buckley, 1867. Ent. Soc. Phila. Proc. 6: 345. ☿ ♀. Preocc. by Roger, 1863.

picea (Buckley). Tex.
Atta picea Buckley, 1867. Ent. Soc. Phila. Proc. 6: 344. ☿ ♀.

Subgenus CERATOPHEIDOLE Pergande

Pheidole subg. *Ceratopheidole* Pergande, 1895. Calif. Acad. Sci. Proc. 5: 889. Type: *Pheidole* (*Ceratopheidole*) *granulata* Pergande. Monob.

Previously known only from the Oriental and Neotropical Regions, this group of ants has recently been found in New Mexico. The general habits are very probably similar to those of the subgenus *Pheidole*.

clydei R. E. Gregg. N. Mex. (Carrizozo).
Pheidole (*Ceratopheidole*) *clydei* R. E. Gregg, 1950. N. Y. Ent. Soc. Jour. 58: 89. ☿.

Genus EPIPHEIDOLE W. M. Wheeler

Epipheidole W. M. Wheeler, 1903. Amer. Mus. Nat. Hist. Bul. 19: 664. Type: *Epipheidole inquilina* W. M. Wheeler. Monob.
Revision: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 14–17.

Represented by a single, rare species, *inquilina*.

inquilina W. M. Wheeler. Nebr., Colo. Permanent parasite in the nest of *Pheidole pilifera* (Roger) and its subspecies, *coloradensis*.
Epipheidole inquilina W. M. Wheeler, 1903. Amer. Mus. Nat. Hist. Bul. 19: 664. Gynandromorph.
Biology: W. M. Wheeler, 1923. Social Life Among the Insects, pp. 215–219.—W. M. Wheeler, 1926, Ants, pp. 107, 113, 150, 156, 497–498.
Taxonomy: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 15–17, ♀ ♂.—M. R. Smith, 1940. Ent. Soc. Wash. Proc. 42: 106–109, ☿.

Genus SYMPHEIDOLE W. M. Wheeler

Sympheidole W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 1, 7.
Type: ***Sympheidole elecebra*** W. M. Wheeler. Monob.

This genus contains a single known species.

elecebra W. M. Wheeler. Colo. A permanent parasite in colonies of *Pheidole ceres* W. M. Wheeler, a common ant in the mountains of Colorado and New Mexico, at altitudes between 2,500 and 3,000 feet.
Sympheidole elecebra W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 8. ♀ ♂.
Biology: W. M. Wheeler, 1923. Social Life Among the Insects, p. 219.—W. M. Wheeler, 1926. Ants, p. 497.

Genus CARDIOCONDYLA Emery

Cardiocondyla Emery, 1869. Accad. degli Aspiranti Naples, Ann. 2: 20.
Type: ***Cardiocondyla elegans*** Emery. Monob.
Emeryia Forel, 1890. Soc. Ent. Belg. Ann. (C. R.) 34: 110.
Type: ***Emeryia wroughtoni*** Forel. Monob.
Revision: M. R. Smith, 1944. Ent. Soc. Wash. Proc. 46: 30–41.

In the United States this genus is known only from Florida. The colonies are small and the nests are constructed in the soil and in cavities of plants.

emeryi Forel. Fla.; W. Indies, Africa, Asia, Pacific Isl. Probably introduced into U. S.
Cardiocondyla Emeryi Forel, 1881. München Ent. Ver. Mitt. 5: 6. ☿.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 89.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 835.
Morphology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 89.
Taxonomy: Borgmeier, 1937. Rev. de Ent. 7: 133, ergatoid ♂.

nuda var. **minutior** Forel. Fla., Ga.; Pacific Isl. Probably introduced into U. S.
Cardiocondyla nuda var. ***minutior*** Forel, 1899. Fauna Hawaii., v. 1, p. 120. ☿.
Biology: Phillips, 1934. (Hawaii Univ.) Expt. Sta. Pineapple Prod. Coop. Assoc. Bul. 15: 22.

venustula W. M. Wheeler. Fla.; Puerto Rico, Haiti.
Cardiocondyla venustula W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 128. ☿ ♀.
Biology: M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 836.—M. R. Smith, 1944. Fla. Ent. 27: 15.

wroughtoni var. **bimaculata** W. M. Wheeler. Fla.; Formosa. Probably introduced into U. S. *C. wroughtoni* Forel occurs in India.
Cardiocondyla wroughtoni var. ***bimaculata*** W. M. Wheeler, 1929. Lab. Zool. Gen. e Agr. Portici Bol. 24: 43. ☿ ♀.
Biology: W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 7.—M. R. Smith, 1933. Fla. Ent. 17: 24.

Genus CREMATOGASTER Lund

Subgenus ORTHOCREMA Santschi

Orthocrema Santschi, 1918. Soc. Ent. France Bul., p. 182.
Type: ***Myrmica sordidula*** Nylander. Orig. desig.
Neocrema Santschi, 1918. Soc. Ent. France Bul., p. 182.
Type: ***Crematogaster distans*** Mayr. Orig. desig.
Revisions: W. M. Wheeler, 1919. Psyche 26: 111.—Creighton, 1939. Psyche 46: 137–140.

In the Nearctic Region the ants of this subgenus are largely confined to the southern part of the United States.

arizonensis W. M. Wheeler. Ariz.
Crematogaster arizonensis W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 482. ☿.
Biology: W. M. Wheeler, 1912. N. Y. Ent. Soc. Jour. 20: 130–133.

minutissima minutissima Mayr. S. C. to Fla., west to Tex.
Crematogaster minutissima Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 991, 995. ☿ ♀.
Biology: M. R. Smith, 1928. Ent. News 39: 277.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 484, ☿ ♀.

minutissima missouriensis Emery. S. C. to Fla., west to Nebr., Tex. and N. Mex.
Crematogaster victima missuriensis (!) Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 287. ☿.
Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 284, 304.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 289.
Taxonomy: M. R. Smith, 1924. Ent. News 35: 81, ☿.—Cole, 1940. Amer. Midland Nat. 24: 46, ☿.

minutissima smithi Creighton. Ariz.
Crematogaster (*Orthocrema*) *minutissima thoracica* Creighton, 1939. Psyche 46: 138. ☿. Preocc.
Crematogaster (*Orthocrema*) *minutissima smithi* Creighton, 1950. Harvard Univ., Mus. Compar. Zool. Bul. 104: 205. N. name.

Subgenus CREMATOGASTER Lund

Crematogaster Lund, 1831. Ann. des Sci. Nat., Zool. 23: 132.
Type: *Formica scutellaris* Olivier. Desig. by Bingham, 1903.
Cremastogaster Agassiz, 1846. Nomencl. Zool., Index Univ., p. 103. Emend.
Acrocoelia Mayr, 1852. Zool.-Bot. Gesell. Wien, Verh. 2: 147.
Type: (*Acrocoelia ruficeps* Mayr)=*Formica scutellaris* Olivier. Desig. by W. M. Wheeler, 1911.
Revisions: Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 989–996.—Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 280–288.—W. M. Wheeler, 1919. Psyche 26: 111.

These ants nest in moderately large colonies in the soil, wood, crevices of plants, insect galls, carton nests of their own making, and even in buildings. Some are well known house-infesting forms; others have been reported to kill young birds and even to gnaw the rubber insulation from telephone wires. Two apparently workerless species have been found to live as parasites in the nests of closely related forms of *Crematogaster*.

ashmeadi Mayr. Va. to Fla. west to Tex.; Bahamas.
Crematogaster Ashmeadi Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 463. ☿ ♂.
Biology: M. R. Smith, 1924. Ent. News 35: 79.—Cole, 1940. Amer. Midland Nat. 24: 46.
Taxonomy: W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 8, ☿ ♂.

ashmeadi var. **matura** W. M. Wheeler. Fla.
Crematogaster (*Acrocoelia*) *ashmeadi* var. *matura* W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 8. ☿.

atkinsoni W. M. Wheeler. Va., N. C., Fla., Ala., Miss. The nests are of coarse gray or blackish carton on sedges or bushes, a foot and a half or more above the ground. In size they range from the diameter of an egg to that of the human head.
Crematogaster atkinsoni W. M. Wheeler, 1919. Psyche 26: 108. ☿.
Biology: Atkinson, 1887. Amer. Nat. 21: 770–771.—M. R. Smith, 1930. Fla. Ent. 14: 4–5.—W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 8–9.

atkinsoni var. **helveola** W. M. Wheeler. N. C., Ga., Fla.
Crematogaster atkinsoni var. *helveola* W. M. Wheeler, 1919. Psyche 26: 109. ☿ ♀ ♂.

californica Emery, n. status. Calif.; Lower Calif.
Crematogaster lineolata laeviuscula var. *californica* Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 285. ☿.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 70.
Taxonomy: W. M. Wheeler, 1934. Pan-Pacific Ent. 10: 135–136, ☿.

coarctata Mayr. Calif., Oreg., Ariz.
Crematogaster coarctata Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 990, 992. ☿.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 70–71.—Essig, 1926. Ins. of West. No. Amer., p. 859.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 482, ☿.

coarctata mormonum Emery, n. status. Tex., Utah, N. Mex.
Crematogaster lineolata coarctata var. ***mormonum*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 284. ☿.
Biology: Cole, 1942. Amer. Midland Nat. 28: 363.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 482, ☿ ♀ ♂.

creightoni W. M. Wheeler. Va. (Roanoke). Parasitic in nest of *Crematogaster pilosa* Emery.
Crematogaster (***Acrocoelia***) ***creightoni*** W. M. Wheeler, 1933. Psyche 40: 86. ♀.

kennedyi W. M. Wheeler. Ind. (Robinson Park in Fort Wayne). Parasitic in nest of *Crematogaster lineolata* var. near *cerasi* (Fitch).
Crematogaster (***Acrocoelia***) ***kennedyi*** W. M. Wheeler, 1930. Psyche 37: 58. ♀ ♂.
Biology: Morris, 1943. Ind. Acad. Sci. Proc. 52: 208.
Taxonomy: W. M. Wheeler, 1933. Psyche 40: 83–84, ♀ ♂.

laeviuscula Mayr. Va. to Fla., west to Kans., Tex. and N. Mex.
Crematogaster laeviuscula Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 990, 993. ☿.
Biology: M. R. Smith, 1924. Ent. News 35: 80.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 283, 304.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 481, ☿ ♀ ♂.—Cole, 1940. Amer. Midland Nat. 24: 46, ☿.

laeviuscula var. **clara** Mayr. Ill., N. C., and Fla. to Kans., Tex., and Ariz.
?***Oecodoma*** (***Atta***) ***arborea*** Buckley, 1867. Ent. Soc. Phila. Proc. 6: 349, 350. ☿ ♀. Preocc.
?***Oecodoma*** (***Atta***) ***bicolor*** Buckley, 1867. Ent. Soc. Phila. Proc. 6: 350. ☿. Preocc.
Crematogaster clara Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 990, 993. ☿.
Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 283.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 481, ☿ ♀ ♂.—M. R. Smith, 1924. Ent. News 35: 80, ☿.

lineolata cerasi (Fitch). Que. to Va., west to Idaho.
Myrmica cerasi Fitch, 1855 (1854). N. Y. State Agr. Soc. Trans. 14: 835. ☿.
Biology: Gaige, 1914. Mich. Univ. Mus. Zool. Occas. Papers 5: 8–9.—Headley, 1943. Ohio Jour. Sci. 43: 25.—G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart, 11: 245.
Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 282–283, ☿.

lineolata lineolata (Say). Ont. to Fla., west to N. Dak. and Tex. Infests houses, often nesting within the buildings. One of the best known and most widely distributed forms of *Crematogaster*.
Myrmica lineolata Say, 1836. Boston Jour. Nat. Hist. 1: 290. ☿ ♀ ♂.
?***Myrmica*** (***Monomarium*** (!)) ***marylandica*** Buckley, 1867. Ent. Soc. Phila. Proc. 6: 339. ☿.
?***Myrmica*** (***Monomarium*** (!)) ***columbiana*** Buckley, 1867. Ent. Soc. Phila. Proc. 6: 340. ☿ ♀.
Biology: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 1–18.—W. M. Wheeler, 1916. Conn. State Geol. and Nat. Hist. Survey Bul. 22: 585.—L. G., Jr. and R. G. Wesson, 1940. Amer. Midland Nat. 24: 93.
Taxonomy: Buren, 1944. Iowa State Col. Jour. Sci. 18: 288, ☿.
Economics: Wallace, 1945. Conn. State Ent. 44th Rpt., Bul. 488: 389.

lineolata subopaca Emery, n. status. Ga., Va.
Crematogaster lineolata lineolata var. ***subopaca*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 283. ☿ ♀ ♂.

lineolata var. **lutescens** Emery. N. J. to Ga. Probably an invalid form.
Crematogaster lineolata lineolata var. ***lutescens*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 282. ☿.

Taxonomy: M. R. Smith, 1918. Ent. News 29: 19, ☿.

opaca depilis W. M. Wheeler, n. status. Ariz., N. Mex., Tex.; Mexico. *C. opaca opaca* Mayr occurs in Mexico.

Crematogaster lineolata opaca var. ***depilis*** W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 478. ☿.

opaca punctulata Emery, n. status. S. C., west to Colo. and N. Mex.; Mexico.

Crematogaster punctulata Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 287. ☿.

Biology: M. R. Smith, 1927. Ent. News 38: 310.

Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 479–480, ☿ ♀.

pilosa Emery. N. Y. to Fla., west to Tex. Host of the parasitic ant, *C. creightoni* Whlr.

Crematogaster lineolata pilosa Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 285. ☿.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 379.—W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 6–7.

Taxonomy: W. M. Wheeler, 1933. Psyche 40: 85, ☿ ♀.

vermiculata Emery. Calif., Utah, La.

Crematogaster vermiculata Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 286. ☿.

Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 363, ☿.

Unrecognized Forms of Subgenus Crematogaster Lund

Crematogaster* (*Acrocoelia*) *lineolata cerasi var. ***punctinodis*** J. Enzmann, 1946. N. Y. Ent. Soc. Jour. 54: 91, 93, 96. ☿ ♀ ♂.

Crematogaster* (*Acrocoelia*) *lineolata cerasi var. ***wheldeni*** J. Enzmann, 1946. N. Y. Ent. Soc. Jour. 54: 92, 93, 96. ☿.

Myrmica novaeboracensis Buckley, 1867. Ent. Soc. Phila. Proc. 6: 337. ♀.

Crematogaster* (*Acrocoelia*) *opaca var. ***texana*** Santschi, 1929. Wien. Ent. Ztg. 46: 91. ☿.

Crematogaster* (*Acrocoelia*) *sanguinea coachellai J. Enzmann, 1946. N. Y. Ent. Soc. Jour. 54: 95, ☿.—***Crematogaster* (*Acrocoelia*) *lineolata var. coachellai*** J. Enzmann, 1946. N. Y. Ent. Soc. Jour. 54: 97, fig. 3, ☿ (petiole).

Genus MONOMORIUM Mayr

Subgenus MONOMORIUM Mayr

Monomorium Mayr, 1855. Zool.-Bot. Gesell. Wien, Verh. 5: 452.
Type: ***Monomorium minutum*** Mayr. Monob.

Represented in almost all the temperate and tropical regions of the world.

floricola (Jerdon). Ala., Fla. Tropicolitan, probably originally native to the East Indies and introduced into the United States. Infest houses.

Atta Floricola Jerdon, 1851. Madras Jour. Lit. and Sci. 17: 107. ☿.

Biology: W. M. Wheeler, 1926. Ants, pp. 153, 426.—M. R. Smith, 1930. Fla. Ent. 14: 3.—W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 9.

Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 88, ♀.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 831, 834, ☿.

minimum emersoni R. E. Gregg. Ariz., Tex.

Monomorium minimum emersoni R. E. Gregg, 1945. Psyche 52: 66. ☿ ♀.

minimum ergatogyna W. M. Wheeler. Calif. (Catalina Isl.).

Monomorium minutum ergatogyna W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 269. ☿, apterous ergatoid ♀.

Taxonomy: W. M. Wheeler, 1905. South. Calif. Acad. Sci. Bul. 40: 60, ☿, apterous ergatoid ♀.

minimum minimum (Buckley). Canada, U. S.; Mexico. Host of the parasitic ant, *Epoecus pergandei* Emery. A common house-infesting form.

Myrmica* (*Monomarium*)** (!) ***minima Buckley, 1867. Ent. Soc. Phila. Proc. 6: 338. ☿ ♀.

Myrmica* (*Monomarium*)** (!) ***atra Buckley, 1867. Ent. Soc. Phila. Proc. 6: 342. ?☿.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 274, 377.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 271, 272, 274, 279–280.—R. E. Gregg, 1944. Ent. Soc. Amer. Ann. 37: 454, 456, 466.
Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 274–275, ☿ ♀ ♂.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 423, ☿ ♀.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 289, ☿.
Economics: Marlatt, 1922. U. S. Dept. Agr. Farmers' Bul. 740: 4, 10.—Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 23.—Metcalf and Flint, 1939. Destructive and Useful Insects, p. 770.

peninsulatum R. E. Gregg. Fla. (South Miami).
Monomorium peninsulatum R. E. Gregg, 1945. Psyche 52: 62. ☿ ♀.

pharaonis (Linnaeus). All U. S.; Canada. Introduced into U. S. Probably a native of India but has become cosmopolitan through commerce. Especially troublesome in hotels, hospitals, apartment houses, restaurants and wholesale groceries. Nests in buildings in the colder regions and is active the entire year. The colonies are very populous and contain numerous females.
Formica Pharaonis Linnaeus, 1758. Syst. Nat., Ed. 10, v. 1, p. 580.
Biology: Bellevoye, 1889. U. S. Dept. Agr. Insect Life 2: 230–233.—Essig, 1926. Ins. of West. No. Amer., p. 857.—R. C. Smith, 1934. Kans. Acad. Sci. Trans. 37: 140–142.
Taxonomy: Emery, 1908. Deut. Ent. Ztschr., pp. 664–665, 667, 684, ☿ ♀ ♂.—Donisthorpe, 1927. British Ants, p. 104, ☿ ♀ ♂.—Buren, 1944. Iowa State Col. Jour. Sci. 18:289, ☿.
Economics: Herrick, 1914. Insects Injurious to the Household and Annoying to Man, pp. 174–176.—Metcalf and Flint, 1939. Destructive and Useful Insects, p. 770.
Physiology: Tanquary, 1913. Ill. State Lab. Nat. Hist. Bul. 9: 443–453.

viridum Brown. N. J. (Lakehurst).
Monomorium viridum Brown, 1943. Ent. News 54: 243. ☿ ♀.

Subgenus PARHOLCOMYRMEX Emery

Monomorium subg. *Parholcomyrmex* Emery, 1915. Soc. Ent. France Bul., p. 190.
Type: *Myrmica gracillima* F Smith. Orig. desig.

destructor (Jerdon). Fla., Tenn. Introduced.
Atta Destructor Jerdon, 1851. Madras Jour. Lit. and Sci. 17: 105. ☿.
Biology: W. M. Wheeler, 1926. Ants. pp. 10, 153, 221.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 833.
Taxonomy: Bingham, 1903. Fauna of British India, v. 2, p. 209, ☿ ♀ ♂.—Emery, 1908. Deut. Ent. Ztschr., pp. 665–666, 671, ☿ ♀.—Phillips, 1934. (Hawaii Univ.) Expt. Sta. Pineapple Prod. Coop. Assoc. Bul. 15: 2, ☿.
Economics: W. M. Wheeler, 1914. Amer. Jour. Trop. Dis. and Prev. Med. 2: 160–168.—Kalshoven, 1937. Ent. Meded. van Nederland. Indië. 3: 65–71.—Marlatt, 1928. U. S. Dept. Agr. Farmers' Bul. 740: 9.

Genus XENOMYRMEX Forel

Xenomyrmex Forel, 1885. Soc. Vaud. des Sci. Nat. Bul. 20: 369.
Type: *Xenomyrmex stollii* Forel. Monob.
Myrmecinella W. M. Wheeler, 1922. Amer. Mus. Novitates 46: 1.
Type: *Myrmecinella panamana* W. M. Wheeeler. Monob.
Revision: W. M. Wheeler, 1931. Rev. de Ent. 1: 129–139.

These ants nest in small colonies in plant cavities such as twigs, galls, and thorns. They appear to be strictly arboreal.

stollii floridanus Emery. Fla. *X. stollii stollii* Forel occurs in Guatemala.
Xenomyrmex stolli floridanus Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 275. ☿ ♂.
Biology: W. M. Wheeler, 1901. Amer. Nat. 35: 538.—W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 6.

stollii rufescens W. M. Wheeler. Fla. (Long Pine Key).
Xenomyrmex stolli rufescens W. M. Wheeler, 1931. Rev. de Ent. 1: 133, 137. ♀.

Genus SOLENOPSIS Westwood

Subgenus SOLENOPSIS Westwood

Solenopsis Westwood, 1841. Ann. Mag. Nat. Hist. 6: 86.
Type: (*Solenopsis mandibularis* Westwood)=[*Atta*] *geminata* (Fabricius). Monob.
Revisions: W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 397.—Creighton, 1930. Amer. Acad. Arts and Sci. Proc. 66: 39–105.

Heat-loving forms which usually nest in the soil but sometimes in rotten wood and occasionally in houses. The colonies are usually populous, and the workers are aggressive. They are carnivorous, granivorous, predaceous, and also feed on honeydew. Most of the Nearctic forms are serious pests, stealing seeds from seed beds, killing young quail and poultry or even small game, gnawing into vegetables, fruits, flowers, crops and fabrics, attending or fostering honeydew-excreting insects, damaging telephone equipment, making ugly mounds on lawns, and girdling young nursery trees. The workers of one form have been shown to carry viable dysentery germs for at least 24 hours on their bodies.

geminata geminata (Fabricius). Fla. to Tex.; W. Indies, Mexico, Cent. Amer. and Pacific Coastal Plain through Colombia, Ecuador, and Peru.
Atta geminata Fabricius, 1804. Systema Piezatorum, p. 423. ♀.
?*Myrmica* (*Monomarium* (!)) *saxicola* Buckley, 1867. Ent. Soc. Phila. Proc. 6: 341. ☿.
?*Atta Lincecumii* Buckley, 1867. Ent. Soc. Phila. Proc. 6: 344. ☿ ♀.
?*Atta brazoensis* Buckley, 1867. Ent. Soc. Phila. Proc. 6: 345. ☿ ♀.
?*Atta coloradensis* Buckley, 1867. Ent. Soc. Phila. Proc. 6: 346. ☿ ♀.
Biology: Mann, 1920. Amer. Mus. Nat. Hist. Bul. 42: 427.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 838–839.—Travis, 1941. Fla. Ent. 24: 15–22.
Economics: Clark, 1931. Tex. Agr. Expt. Sta. Bul. 435: 1–12.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 838.—H. K. Plank and M. R. Smith, 1940. Puerto Rico Univ. Jour. Agr. 24: 49–76.—Griffiths, 1942. Science (n. s.) 96: 271–272.—Lindquist, 1942. Jour. Econ. Ent. 35: 850–851.

geminata rufa (Jerdon). Fla. to Panama; also in the Oriental and Australian Regions.
Atta Rufa Jerdon, 1851. Madras Jour. Lit. and Sci. 17: 106. ☿.
Solenopsis geminata var. *diabola* W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 424. ♀ ☿ ♂.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 395.—Phillips, 1934. (Hawaii Univ.) Expt. Sta. Pineapple Prod. Coop. Assoc. Bul. 15: 12–17.
Economics: Marlatt, 1928. U. S. Dept. Agr. Farmers' Bul. 740: 5.—Neig, 1930. Bombay Nat. Hist. Soc. Jour. 34: 185.

saevissima var. **richteri** Forel. Ala., Fla., Miss. Introduced from South America. *S. saevissima saevissima* (F. Smith) occurs in South America. This form is a serious pest.
Solenopsis Pylades var. *Richteri* Forel, 1909. Deut. Ent. Ztschr. p. 267. ☿ ♀.
Solenopsis Pylades var. *tricuspis* Forel, 1912. Soc. Ent. Belg. Mem. 20 :4. ☿.
Biology: Lyle and Fortune, 1948. Jour. Econ. Ent. 41: 833.

xyloni amblychila W. M. Wheeler. Ariz.; Mexico.
Solenopsis aurea amblychila W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 394. ☿ ♀ ♂.

xyloni aurea W. M. Wheeler. Tex., Ariz., N. Mex., Calif.; Mexico.
Solenopsis geminata var. *aurea* W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 336. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 425–426.

xyloni xyloni McCook. S. C. to Fla., west to Tex. and Ariz. The most widely distributed and common form of the subgenus in the Gulf Coast States.
Solenopsis xyloni McCook, 1879. *In* Comstock, Rpt. Cotton Ins., p. 188. ☿ ♀.

?***Myrmica* (*Atta*) *sabeana*** Buckley, 1867. Ent. Soc. Phila. Proc. 6: 343. ☿.
Biology: Metcalf and Flint, 1939. Destructive and Useful Insects, p. 771.
Economics: M. R. Smith, 1936. Jour. Econ. Ent. 29: 120–122.—Eagleson, 1940. Jour. Econ. Ent. 33: 700.

xyloni var. **maniosa** W. M. Wheeler. Ariz., Calif., N. Mex.; Mexico. Apparently the only form of *xyloni* occurring in California where it is widely distributed in the southern part of the State and occurs also in the interior valleys under 2,000 feet. Probably the most important native ant in California.

Solenopsis geminata maniosa W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 396. ☿ ♀ ♂.
Biology: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 19–21.
Economics: Severin, 1923. Jour. Econ. Ent. 16: 96–97.—Mallis, 1938. Pan-Pacific Ent. 14: 87–91.

Subgenus EUOPHTHALMA Creighton

Solenopsis subg. ***Euophthalma*** Creighton, 1930. Amer. Acad. Arts and Sci. Proc. 66: 43.
Type: ***Myrmica globularia*** F. Smith. Orig. desig.
Revision: Creighton, 1930. Amer. Acad. Arts and Sci. Proc. 66: 42–43, 105–139.

Neotropical and Nearctic.

globularia littoralis Creighton. N. C. to Fla., west to La.; Mexico. *S. globularia globularia* (F. Smith) occurs in Central and South America.

Solenopsis* (*Euophthalma*) *globularia littoralis Creighton, 1930. Amer. Acad. Arts and Sci. Proc. 66: 110, 113. ☿ ♀ ♂.

Solenopsis globularia mobilensis M. R. Smith, 1931. Ent. News 42: 20. ☿. *Nom. nud.*
Biology: M. R. Smith, 1931. Ent. News 42: 20.—M. R. Smith, 1933. Fla. Ent. 17: 23.

huachucana W. M. Wheeler. Ariz. (Huachuca Mts.).

Solenopsis huachucana W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 393. ☿ ♀.

Subgenus DIPLORHOPTRUM Mayr

Diplorhoptrum Mayr, 1855. Zool.-Bot. Gesell. Wien, Verh. 5: 449.
Type: ***Formica fugax*** Latreille. Monob.
Revisions: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 277–279.—Creighton, 1930. Amer. Acad. Arts and Sci. Proc. 66: 43–44.—M. R. Smith, 1942. Ent. Soc. Wash. Proc. 44: 209–211.

This is the largest subgenus of *Solenopsis* in the Nearctic Region, with the majority of the forms occurring in southern and southwestern United States. Most forms nest in the soil freely or under cover, but some nest in wood, plant cavities, or insect galls, or even in buildings.

krockowi W. M. Wheeler. N. Mex. (Box Canyon in Sacramento Mts.).

Solenopsis krockowi W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 428. ☿ ♀.

laeviceps Mayr. Fla., La., Ohio; Colombia, British Guiana.

Solenopsis laeviceps Mayr, 1870. Akad. der Wiss. Wien, Math.—Nat. Kl. Sitzber. 61: 406. ☿.
Biology: W. M. Wheeler, 1936. Amer. Acad. Arts and Sci. Proc. 71: 194.
Taxonomy: Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 996, ☿.—Emery, 1896. Soc. Ent. Ital. Bol. 28: 86, ☿.

molesta molesta (Say). Canada, all U. S. The most common and widely distributed form of the subgenus. An important economic species.

Myrmica molesta Say, 1836. Boston Jour. Nat. Hist. 1: 293. ♀.

Myrmica minuta Say, 1836. Boston Jour. Nat. Hist. 1: 294. ☿.

Myrmica* (*Tetmamorium* (!)) *exigua Buckley, 1867. Ent. Soc. Phila. Proc. 6: 342. ☿; "♀"=♂.

Solenopsis debilis Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 461. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 377–378.—Hayes, 1920. Kans. Agr. Expt. Sta. Tech. Bul. 7: 1–54.
Taxonomy: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 584. ☿ ♀ ♂.
Economics: McColloch and Hayes, 1916. Jour. Econ. Ent. 9: 23–38.—Metcalf and Flint, 1939. Destructive and Useful Insects, p. 770.

molesta validiuscula Emery. Wash., Calif., Idaho, Ariz., Utah, N. Mex. This is apparently the common form in the extreme western states. An important economic species.
Solenopsis molesta var. ***validiuscula*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 278. ☿.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 72.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 430, ☿.
Economics: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 21-22.

molesta var. **castanea** W. M. Wheeler. Colo. (Woodland Park, 8,500 ft.).
Solenopsis molesta var. ***castanea*** W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 430. ☿.

pergandei Forel. N. C. to Fla., west to La.
Solenopsis Pergandei Forel, 1901. Soc. Ent. Belg. Ann. 45: 343. ☿ ♀ ♂.
Biology: M. R. Smith, 1931. Ent. News 42: 20.—M. R. Smith, 1944. Fla. Ent. 27: 15.
Taxonomy: M. R. Smith, 1931. Ent. News 42: 20. ☿.

picta Emery. S. C., Ga., Fla., La.
Solenopsis picta Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 278. ☿.
Biology: W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 10.
Taxonomy: M. R. Smith, 1942. Ent. Soc. Wash. Proc. 44: 211, ☿.

picta var. **moerens** W. M. Wheeler. Tex. (Victoria).
Solenopsis picta var. ***moerens*** W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 393. ☿.

pilosula W. M. Wheeler. Tex. (Alice).
Solenopsis pilosula W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 426. ☿ ♂.

rosella Kennedy. Ont. (Pelee Isl.).
Solenopsis rosella Kennedy, 1938. Canad. Ent. 70: 232. ☿ ♀ ♂.

salina W. M. Wheeler. Tex. (Ft. Davis); Mexico.
Solenopsis salina W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 427. ☿.

tennesseensis M. R. Smith, n. name. Fla., Tenn., Miss., Tex.
Solenopsis (Diplorhoptrum) longiceps M. R. Smith, 1942. Ent. Soc. Wash. Proc. 44: 210. ☿. Preocc. by Forel, 1907.

texana carolinensis Forel. N. C., Ohio.
Solenopsis texana race ***carolinensis*** Forel, 1901. Soc. Ent. Belg. Ann. 45: 345. ☿ ♀ ♂.
Biology: L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 92.

texana catalinae W. M. Wheeler. Calif. (Catalina Isl.).
Solenopsis texana catalinae W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 269. ☿ ♀.
Taxonomy: W. M. Wheeler, 1905. South. Calif. Acad. Sci. Bul. 4: 60, ☿ ♀.

texana texana Emery. Kans., Tex.
Solenopsis pollux var. ***texana*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 278. ☿.
Biology: Mitchell and Pierce, 1912. Ent. Soc. Wash. Proc. 14: 70.—Hayes, 1925. Ent. News 36: 41.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 430–431, ☿ ♀ ♂.

texana truncorum Forel. N. C. (Faisons).
Solenopsis texana race ***truncorum*** Forel, 1901. Soc. Ent. Belg. Ann. 45: 346. ☿ ♀.

Unrecognized Form of Subgenus Diplorhoptrum Mayr

Solenopsis madara Roger, 1863. Berlin. Ent. Ztschr. 7: 200. ☿ ♀.

Genus EPOECUS Emery

Epoecus Emery, 1892. Soc. Ent. France Bul. 61: CCLXXVI.
Type: ***Epoecus pergandei*** Emery. Monob.
Revision: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 272–274.

This genus is represented by a single form, *pergandei*, which was collected from a colony of *Monomorium minimum* (Buckl.). The host colony contained only winged males and winged females. As only males and females of *Epoecus* were noted, the ants of this genus are supposed to be workerless and parasitic.

pergandei Emery. D. C. See remarks under the genus.
Epoecus pergandei Emery, 1892. Soc. Ent. France Bul. 61: CCLXXVI. ♀ ♂.

Genus ANERGATES Forel

Anergates Forel, 1874. Schweiz. Naturf. Gesell. Denkschr. 26: 93.
Type: ***Myrmica atratula*** Schenck. Monob.

Palearctic. Presumably introduced into the United States with the host ant. A permanent parasite on colonies of *Tetramorium caespitum* (L.). Parasitized colonies of that ant are rare, and contain only workers of the host species. Workers are entirely lacking in *Anergates*. The virgin females of *Anergates* are winged, the males, wingless, pupoid. As the parasites are entirely dependent on the host for food and care, a colony dies out when all the host workers die.

atratulus (Schenck). Conn., Del., Va. Collected on only one occasion in each of the three states.
Myrmica atratula Schenck, 1852. Nassau. Ver. f. Naturk. Jahrb. 8: 91. ♀.
Biology: W. M. Wheeler, 1923. Social Life among the Insects, pp. 215–219.—W. M. Wheeler, 1926. Ants. pp. 498–504.—Donisthorpe, 1927. British Ants, pp. 96–102.
Taxonomy: Emery, 1922. *In* Wytsman, Gen. Ins., fasc. 174, pp. 205–206, ♀ ♂.—Donisthorpe, 1927. British Ants, pp. 96–97, ♀ ♂.

friedlandi Creighton. N. J. (Englewood).
Anergates friedlandi Creighton, 1934. Psyche 41: 193. ♀. This form may eventually prove to be a synonym of *atratulus*.

Genus EREBOMYRMA W. M. Wheeler

Erebomyrma W. M. Wheeler, 1903. Biol. Bul. 4: 138.
Type: ***Erebomyrma longii*** W . M. Wheeler. Monob.

The only known Nearctic species has been collected on only one occasion (in Texas). It is believed to live as a thief ant in the nests of other ants and termites.

longii W. M. Wheeler. Tex. (Denton).
Erebomyrma Longii W. M. Wheeler, 1903. Biol. Bul. 4: 140. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 423.—W. M. Wheeler, 1926. Ants, pp. 113, 140, 152, 158–159, 427–428.
Taxonomy: Mann, 1926. Psyche 33: 104, ☿.—W. M. Wheeler, 1936. Amer. Acad. Arts and Sci. Proc. 71: 197, ☿ ♀.

Genus MYRMECINA Curtis

Myrmecina Curtis, 1829. Brit. Ent., v. 6, p. 265.
Type: (***Myrmecina latreillii*** Curtis)=***Formica graminicola*** Latreille. Monob.
Revisions: Emery, 1895 Zool. Jahrb. Abt. f. System. 8: 271.—M. R. Smith, 1948. Ent. Soc. Wash. Proc. 50: 238–240.—Brown, 1949. Psyche 56: 44–47.

americana americana Emery. Eastern half of U. S.; also reported from Ariz. and Mont.

Myrmecina latreillei americana Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 271. ☿.

Myrmecina latreillei americana var. *brevispinosa* Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 271. ☿ ♀ ♂.

Myrmecina graminicola quadrispina J. Enzmann, 1946. N. Y. Ent. Soc. Jour. 54: 13. ☿.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 373, 376.—W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 332, 335–336.—Talbot, 1934. Ecology 15: 420, 427, 428.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 274, 278–279, 304.

Taxonomy: Cole, 1940. Amer. Midland Nat. 24: 39, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 290.

americana texana W. M. Wheeler, n. status. Tex. (Austin).

Myrmecina graminicola texana W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 422. ☿.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 502.

Taxonomy: M. R. Smith, 1948. Ent. Soc. Wash. Proc. 50: 239, ☿.

californica M. R. Smith. Calif. (Santa Barbara).

Myrmecina californica M. R. Smith, 1948. Ent. Soc. Wash. Proc. 50: 239. ☿.

Genus MACROMISCHA Roger

Macromischa Roger, 1863. Berlin. Ent. Ztschr. 7: 184.

Type: *Macromischa purpurata* Roger. Desig. by W. M. Wheeler, 1911.

Macromischa subg. *Croesomyrmex* Mann, 1920. Amer. Mus. Nat. Hist. Bul. 42: 408.

Type: *Macromischa* (*Croesomyrmex*) *wheeleri* Mann. Orig. desig.

Macromischa subg. *Antillaemyrmex* Mann, 1920. Amer. Mus. Nat. Hist. Bul. 42: 408.

Type: *Macromischa* (*Antillaemyrmex*) *terricola* Mann. Orig. desig.

Revisions: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 138–142.—Mann, 1920. Amer. Mus. Nat. Hist. Bul. 42: 407–424.—W. M. Wheeler, 1931. Harvard Univ., Mus. Compar. Zool. Bul. 72: 3–34.—W. M. Wheeler, 1937. Harvard Univ., Mus. Compar. Zool. Bul. 81: 441, 449–458, 463–465.—M. R. Smith, 1939. Ent. Soc. Amer. Ann. 32: 502–509.

floridana (W. M. Wheeler). Fla. (Paradise Key).

Antillaemyrmex floridanus W. M. Wheeler, 1931. Harvard Univ., Mus. Compar. Zool. Bul. 72: 27. ☿.

Biology: W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 11.

polita M. R. Smith. Ariz.

Macromischa polita M. R. Smith, 1939. Ent. Soc. Amer. Ann. 32: 503, 506. ☿.

subditiva W. M. Wheeler. La., Tex.

Macromischa subditiva W. M. Wheeler, 1903. Psyche 10: 99. ☿.

Biology: Mitchell and Pierce, 1912. Ent. Soc. Wash. Proc. 14: 73.—M. R. Smith, 1939. Ent. Soc. Amer. Ann. 32: 506.

Genus LEPTOTHORAX Mayr

Subgenus NESOMYRMEX W. M. Wheeler

Leptothorax subg. *Goniothorax* Emery, 1896. Soc. Ent. Ital. Bol. 28: 26, 58. Preocc.

Type: *Leptothorax vicinus* Mayr. Desig. by W. M. Wheeler, 1911.

Nesomyrmex W. M. Wheeler, 1910. Amer. Mus. Nat. Hist. Bul. 28: 259.

Type: *Nesomyrmex clavipilis* W. M. Wheeler. Monob.

Leptothorax subg. *Caulomyrma* Forel, 1914. Soc. Vaud. des Sci. Nat. Bul. 50: 233.

Type: *Leptothorax echinatinodis* Forel. Orig. desig.

The only known species in the Nearctic Region forms small colonies in the crevices of plants and trees.

wilda M. R. Smith. Tex. (Brownsville); Mexico.
Leptothorax (Goniothorax) wilda M. R. Smith, 1943. Ent. Soc. Wash. Proc. 45: 155. ☿ ♀.

Subgenus MYRAFANT M. R. Smith

Myrafant M. R. Smith, 1950. Psyche 57: 29.
Type: *Leptothorax curvispinosus* Mayr. Orig. desig.
Revisions: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 317–318, 320–323.—W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 215, 224, 232–256.

andrei Emery. Calif.
Leptothorax (Leptothorax) andrei Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 318, 322. ☿.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 73.

bradleyi W. M. Wheeler. Fla., Ga.
Leptothorax bradleyi W. M. Wheeler, 1913. Psyche 20: 113. ☿.

curvispinosus ambiguus Emery. Que. to Va., west to S. Dak. and Nebr.
Leptothorax (Leptothorax) curvispinosus ambiguus Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 317, 320. ☿.
Biology: Sturtevant, 1925. Psyche 32: 314.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 287.
Taxonomy: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 588–589, ☿.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 97, ☿ ♀ ♂.

curvispinosus ambiguus var. **pinetorum** L. G., Jr., and R. G. Wesson. N. J., Ohio, Pa.
Leptothorax ambiguus var. *pinetorum* L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 97. ☿ ♀ ♂.

curvispinosus curvispinosus Mayr. Maine to Fla., west to Iowa, Kans. and Tex. Enslaved by: *Harpagoxenus americanus* (Emery) and *Leptothorax duloticus* L. G. Wesson, Jr.
Leptothorax curvispinosus Mayr, 1866. Akad. der Wiss. Wien, Math.-Nat. Kl. Sitzber. 53: 508. ☿.
Stenamma gallarum Patton, 1879. Amer. Nat. 13: 126. ☿ ♀.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 385.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 289, 305.—Headley, 1943. Ent. Soc. Amer. Ann. 36: 743–753.
Taxonomy: Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 451, 453, ☿ ♀.—Cole, 1940. Amer. Midland Nat. 24: 56–57, ☿.
Physiology: L. G. Wesson, Jr., 1940. Psyche 47: 105–111.

eldoradensis W. M. Wheeler. Calif., Wash., Idaho.
Leptothorax eldoradensis W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 414. ☿.
Biology: Cole, 1934. Psyche 41: 222.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 73.

fortinodis Mayr. Mass. to Fla., west to Kans. and Tex.; ?Idaho.
Leptothorax fortinodis Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 451. ☿ ♀.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 385.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 90, 94–96.
Taxonomy: L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 94–96.—Cole, 1940. Amer. Midland Nat. 24: 56, ☿.

fortinodis var. **gilvus** W. M. Wheeler. Tex. (Austin).
Leptothorax fortinodis var. *gilvus* W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 235. ☿ ♀.

fortinodis var. **melanoticus** W. M. Wheeler. S. C., Ohio, Mich., Ind., Ill., Tenn., Iowa, La., Nebr.
Leptothorax fortinodis var. *melanoticus* W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 235. ☿ ♀.
Biology: W. M. Wheeler, 1916. Ind. Acad. Sci. Proc. 26: 461.
Taxonomy: L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 94–96, ☿ ♀ ♂.

foveata M. R. Smith. Ill. (Plainfield). In a nest of *Aphaenogaster fulva aquia* (Buckl.) in a roadside ditch.
Leptothorax foveata M. R. Smith, 1934. Psyche 41: 211. ☿.

furunculus W. M. Wheeler. Colo. (Manitou).
Leptothorax furunculus W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 82. ☿.

gallae M. R. Smith. Calif. Commonly collected from the canyon live oak, *Quercus chrysolepis* Liebm., often from twig galls made by *Heteroecus pacificus* (Ashm.), *H. sanctaeclarae* (Fullaway), and *Disholcaspis truckeensis* (Ashm.).
Leptothorax (Leptothorax) gallae M. R. Smith, 1949. Psyche 56: 112. ☿.

longispinosus iowensis Buren. Iowa.
Leptothorax (Leptothorax) longispinosus laeviceps Buren, 1944. Iowa State Col. Jour. Sci. 18: 286. ☿. Preocc.
Leptothorax longispinosus iowensis Buren, 1945. Ent. Soc. Wash. Proc. 47: 288. N. name.

longispinosus longispinosus Roger. Ont. to N. C., west to Ill. Enslaved by: *Harpagoxenus americanus* (Emery) and *Leptothorax duloticus* Wesson.
Leptothorax longispinosus Roger, 1863. Berlin, Ent. Ztschr. 7: 180. ☿.
Biology: W. M. Wheeler, 1926. Ants, pp. 212, 222, 495, 504.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 274, 289, 305.—Headley, 1943. Ent. Soc. Amer. Ann. 36: 743–753.
Taxonomy: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 588, ☿.—Cole, 1940. Amer. Midland Nat. 24: 56–57, ☿.

melanderi W. M. Wheeler. Idaho, Wash.
Leptothorax melanderi W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 81. ☿.

minutissimus M. R. Smith. D. C.
Leptothorax minutissimus M. R. Smith, 1942. Ent. Soc. Wash. Proc. 44: 59. ♀.

neomexicanus W. M. Wheeler. Ariz., N. Mex.
Leptothorax neomexicanus W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 223, 248. ☿.
Biology: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 341.

nevadensis nevadensis W. M. Wheeler. Nev., Utah.
Leptothorax nevadensis W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 224, 252. ☿ ♀ ♂.
Biology: Cole, 1942. Amer. Midland Nat. 28: 370.
Taxonomy: W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 81, ☿.

nevadensis rudis W. M. Wheeler. Calif., Oreg.
Leptothorax nevadensis rudis W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 508. ☿ ♀.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 73.

nitens nitens Emery. Colo., Utah, Ariz., Calif.
Leptothorax (Leptothorax) nitens Emery, 1895. Zool. Jahrb. Abt. f. System. 8:318, 322. ☿.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 73.
Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 369–370, ☿.

nitens occidentalis W. M. Wheeler. Wash. (Friday Harbor).
Leptothorax nitens occidentalis W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 223, 245. ☿.

nitens var. **heathii** W. M. Wheeler. Calif. (Pacific Grove).
Leptothorax nitens var. *heathii* W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 223, 245. ☿.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 73.

nitens var. **mariposa** W. M. Wheeler. Calif. (Tenaya Canyon in Yosemite Valley).
Leptothorax nitens var. *mariposa* W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 507. ☿.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 73–74.

obturator W. M. Wheeler. Tex. (Austin).
Leptothorax obturator W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 224, 249. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1903. Amer. Mus. Nat. Hist. Bul. 19: 663–664.—W. M. Wheeler, 1926. Ants, pp. 208–209.

rugatulus annectens W. M. Wheeler. Colo. (Boulder).
Leptothorax curvispinosus annectens W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 242. ☿.

rugatulus brunnescens W. M. Wheeler. Colo. (Creede Co.).
Leptothorax rugatulus brunnescens W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 510. ☿.

rugatulus dakotensis G. C. and E. W. Wheeler. N. Dak. (Sentinel Butte).
Leptothorax rugatulus dakotensis G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 247. ☿.

ruga'ulus rugatulus Emery. N. Dak. and S. Dak., west to B. C. and Ariz.
Leptothorax (Leptothorax) rugatulus Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 317, 321. ☿.
Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 509.—Cole, 1934. Psyche 41: 222.
Taxonomy: W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 223, 241, ☿.—Cole, 1942. Amer. Midland Nat. 28: 369, ☿.

rugatulus var. **cockerelli** W. M. Wheeler. Ariz., N. Mex.
Leptothorax curvispinosus rugatulus var. *Cockerelli* W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 241. ☿ ♀.

rugatulus var. **mediorufus** W. M. Wheeler. Oreg., Calif.
Leptothorax rugatulus var. *mediorufus* W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 510. ☿ ♀.

schaumi Roger. N. Y. to Va., west to Kans. and Tex. Commonly nests in the bark of trees, especially oaks.
Leptothorax Schaumi Roger, 1863. Berlin. Ent. Ztschr. 7: 180. ☿.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 385.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 94.
Taxonomy: W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 223, 232–233, ☿ ♂.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 95–96, ☿ ♀ ♂.

schmittii W. M. Wheeler. Colo. (Canyon City).
Leptothorax Schmittii W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 223, 242. ☿.

terrigena W. M. Wheeler. Tex.
Leptothorax terrigena W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 224, 254. ☿ ♀.

texanus davisi W. M. Wheeler. Mass., N. Y., N. J., Fla.
Leptothorax texanus davisi W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 385. ☿ ♀.

texanus texanus W. M. Wheeler. N. C., Ohio, Mich., Ill., Miss., Minn., Mo., La , Okla., Tex., Ariz.
Leptothorax texanus W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 223, 245. ☿ ♀ ♂.
Biology: M. R. Smith, 1932. Ent. News 43: 160.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 98.
Taxonomy: M. R. Smith, 1932. Ent. News 43: 160, ☿.—R. E. Gregg, 1944. Ent. Soc. Amer. Ann. 37: 466, ☿.

tricarinatus Emery. Iowa, S. Dak.
Leptothorax (Leptothorax) tricarinatus Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 318, 321. ☿.
Biology: Buren, 1944. Iowa State Col. Jour. Sci. 18: 288.
Taxonomy: W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 223, 247–248, ☿. —Buren, 1944. Iowa State Col. Jour. Sci. 18: 286, 288, ☿.

wheeleri M. R. Smith. N. C., Ga., Fla., Ohio, Tenn., Ala., Miss.
Leptothorax wheeleri M. R. Smith, 1929. Ent. Soc. Amer. Ann. 22: 547. ☿ ♀.
Biology: M. R. Smith, 1931. Ent. News 42: 18.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 90, 96.
Taxonomy: M. R. Smith, 1931. Ent. News 42: 18, ☿.

Subgenus DICHOTHORAX Emery

Leptothorax subg. ***Dichothorax*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 323.
Type: ***Leptothorax (Dichothorax) pergandei*** Emery. Desig. by W. M. Wheeler, 1911.
Revisions: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 318, 323–324.—W. M. Wheeler, 1903.Acad. Nat. Sci. Phila. Proc. 55: 224, 256–260.

Apparently exclusively Nearctic. Known to occur in the U. S. from Maryland and Florida to Nebraska and Texas.

pergandei flavus M. R. Smith. Miss., Ark.
Leptothorax (Dichothorax) pergandei flavus M. R. Smith, 1929. Ent. Soc. Amer. Ann. 22: 549. ☿ ♀.
Biology: M. R. Smith, 1931. Ent. News 42: 18.

pergandei floridanus Emery. N. C., S. C., Ga., Fla., Tenn., Miss.
Leptothorax (Dichothorax) floridanus Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 318, 324. ☿.
Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 290, 305.
Taxonomy: M. R. Smith, 1931. Ent. News 42: 18–19, ☿.

pergandei floridanus var. **spinosus** M. R. Smith. Miss. (Summit).
Leptothorax (Dichothorax) pergandei floridanus var. ***spinosus*** M. R. Smith, 1929. Ent. Soc. Amer. Ann. 22: 551. ☿.

pergandei pergandei Emery. D. C. to Ga., west to Nebr. and Tex.
Leptothorax (Dichothorax) pergandei Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 318, 323. ☿.
Leptothorax (Dichothorax) manni L. G. Wesson, Jr., 1935. Ent. News 46: 208. ☿ ♀ ♂. Preocc.
Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 290.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 288.
Taxonomy: W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 224, 256–259, ☿ ♀. M. R. Smith, 1924. Ent. News 35: 50, ☿.—Cole, 1940. Amer. Midland Nat. 24: 56, 58, ☿.

Subgenus LEPTOTHORAX Mayr

Leptothorax Mayr, 1855. Zool.-Bot. Gesell. Wien, Verh. 5: 431.
Type: ***Formica acervorum*** Fabricius. Desig. by Bingham, 1903.
Mychothorax Ruzsky, 1904. Sapiski Imp. Russ. Geog. Obschtsch. 41: 288.
Type: ***Formica acervorum*** Fabricius. Orig. desig.

Holarctic. In the United States confined largely to the northern and western states. The ants live in living and dead trees, logs, stumps, decaying wood, soil, insect galls, and nests of other ants. Colonies are small to moderate in size. Many forms are free living but some are inquilines in the nests of other ants.

acervorum canadensis Provancher. Labrador, Canada, north. U. S. and Alaska; Colo. *L. acervorum acervorum* (Fabricius) occurs in Europe, Russia, Central Asia. Boreal in distribution. Enslaved by *Harpagoxenus canadensis* M. R. Smith. This ant has been found at latitude 69° 22′ N., the northernmost record of any New World ant.
Leptothorax canadensis Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 245. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 621.—G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 247.—R. E. Gregg, 1946. Amer. Midland Nat. 35: 748.
Taxonomy: W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 223, 225–227, ☿ ♀.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 588, ☿.

acervorum canadensis var. **calderoni** Forel. Calif. (Lake Tahoe).
Leptothorax (Mychothorax) acervorum race ***canadensis*** var. ***Calderoni*** Forel, 1914. Deut. Ent. Ztschr., p. 617. ☿ ♀.
Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 73.
Taxonomy: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 513. ☿.

acervorum canadensis var. **convivialis** W. M. Wheeler. Newfoundland, N. S., Conn., Wis., N. Mex.

Leptothorax acervorum canadensis var. ***convivialis*** W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 228. ☿ ♀.

Leptothorax canadensis obscurus Viereck, 1903. Amer. Ent. Soc. Trans. 29: 72. ☿.

acervorum canadensis var. **kincaidi** Pergande. Alaska (Metlakahtla).

Leptothorax yankee var. ***kincaidi*** Pergande, 1900. Wash. Acad. Sci. Proc. 2: 520. ☿ ♀.

Taxonomy: W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 228–229, ☿ ♀.—W. M. Wheeler, 1917. Harvard Univ., Mus. Compar. Zool. Bul. 61: 18, 21, ☿.

acervorum canadensis var. **yankee** Emery. Mich., N. Dak., S. Dak., Colo., Alta., Utah, B. C., Wash.

Leptothorax* (*Leptothorax*) *canadensis var. ***yankee*** Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 317, 319. ☿ ♀.

Biology: Cole, 1942. Amer. Midland Nat. 28: 369–370.—G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 248.

Taxonomy: W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 227, ☿ ♀.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 512–513, ☿ ♀ ♂.

acervorum crassipilis W. M. Wheeler. Colo. (Colorado Springs).

Leptothorax* (*Mychothorax*) *acervorum crassipilis W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 513. ☿ ♀ ♂.

diversipilosus M. R. Smith. Wash. (Fort Lewis). Inquiline in nest of *Formica rufa melanotica* Emery. Unpublished data indicate that this ant is very closely related in both habits and structure to the European *Formicoxenus nitidulus* (Nylander). Like that species, *diversipilosus* has normal workers and females and forms intermediate between these, as well as apterous, ergatoid males.

Leptothorax* (*Mychothorax*) *diversipilosus M. R. Smith, 1939. Ent. Soc. Wash. Proc. 41: 179. ☿, ergatoid ♀.

duloticus L. G. Wesson, Jr. Ohio (near Jackson). This form enslaves *L.* (*Myrafant*) *longispinosus longispinosus* Roger and *L.* (*Myrafant*) *curvispinosus curvispinosus* Mayr in a manner similar to *Harpagoxenus americanus* (Emery) but the habits are more primitive.

Leptothorax* (*Mychothorax*) *duloticus L. G. Wesson, Jr., 1937. Ent. News 48: 125. ☿ ♀.

Biology: L. G. Wesson, Jr., 1940. Brooklyn Ent. Soc. Bul. 35: 73–81.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 94.

Taxonomy: L. G. Wesson, Jr. 1940. Brooklyn Ent. Soc. Bul. 35: 81–83, ♂.

emersoni emersoni W. M. Wheeler. Maine, N. H., Mass., Conn. A boreal form. Lives in nests of *Myrmica brevinodis brevinodis* Emery but has not lost the habit of constructing its own nest, rearing its brood, or feeding independently. In addition to workers there are individuals with morphological characters intermediate between those of the worker and the female.

Leptothorax emersoni W. M. Wheeler, 1901. Amer. Nat. 35: 433. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1901. Amer. Nat. 35: 436–438.—W. M. Wheeler, 1903. Jour. Psych. and Neurol. 2: 1–21.—W. M. Wheeler, 1926. Ants, pp. 107, 393, 434–436.

Taxonomy: W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 230–232, ☿ ♀ ♂.

emersoni glacialis W. M. Wheeler. Colo. (Florissant Canyon). Apparently this form never lives alone. Inquiline in nest of *Myrmica brevinodis brevinodis* Emery living in chambers apart from the host, at least during the brood-rearing season. The host workers cannot enter the chambers of the inquiline but the *glacialis* workers mix freely in the *Myrmica* colony, soliciting regurgitated food from the adult members and licking their bodies for the excretions.

Leptothorax emersoni glacialis W. M. Wheeler, 1907. Wis. Nat. Hist. Soc. Bul. (n. s.) 5: 71. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1907. Wis. Nat. Hist. Soc. Bul. (n. s.) 5: 78–83.—W. M. Wheeler, 1926. Ants, pp. 393, 436.

emersoni hirtipilis W. M. Wheeler. Alta. (Banff). An inquiline in the nest of *Myrmica brevinodis brevinodis* Emery.

Leptothorax (Mychothorax) emersoni hirtipilis W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 515. ☿.

hirticornis Emery. N. Dak., S. Dak., Colo., Utah. Apparently an inquiline in the nest of *Formica rufa obscuripes* Forel.

Leptothorax (Leptothorax) hirticornis Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 317, 319. ☿.

Biology: Weber, 1935. Ecol. Monog. 5: 200.—G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 248.

Taxonomy: W. M. Wheeler, 1903. Acad. Nat. Sci. Phila Proc. 55: 223–224, ☿.—M. R. Smith, 1939. Ent. Soc. Wash. Proc. 41: 176–179, ☿, ergatoid ♀.

provancheri Emery. Canada.

Leptothorax (Leptothorax) provancheri Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 317, 320. ☿.

Taxonomy: W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 223, 229, ☿.

muscorum var. **septentrionalis** W. M. Wheeler. Alta., B. C.

Lepthorax (Mychothorax) muscorum var. ***septentrionalis*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 511. ☿ ♀ ♂.

muscorum var. **sordidus** W. M. Wheeler. Ariz., Colo., S. Dak., Utah. *L. muscorum muscorum* (Nylander) occurs in Europe and Asia.

Leptothorax muscorum var. ***sordidus*** W. M. Wheeler, 1903. Acad. Nat. Sci. Phila. Proc. 55: 223, 224. ☿.

Genus SYMMYRMICA W. M. Wheeler

Symmyrmica W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 1, 3.
Type: ***Symmyrmica chamberlini*** W. M. Wheeler. Monob.

Nearctic. This genus is represented by a single species.

chamberlini W. M. Wheeler. Utah (near Salt Lake City). Inquiline in nest of ***My****rmica* (*Manica*) *mutica* Emery.

Symmyrmica chamberlini W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 5. ☿ ♀, apterous, ergatoid ♂.

Biology: W. M. Wheeler, 1919. Amer. Philos. Soc. Proc. 58: 22.—W. M. Wheeler, 1926. Ants, pp. 432–434.

Genus HARPAGOXENUS Forel

Tomognathus Mayr, 1861. Die Europäischen Formiciden, pp. 29, 56. Preocc.
Type: ***Myrmica sublaevis*** Nylander. Monob.

Harpagoxenus Forel, 1893. Soc. Ent. Belg. Ann. 37: 167. N. name.

Protomognathus W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 3.
Type: ***Tomognathus americanus*** Emery. Monob.

Revision: M. R. Smith, 1939. Ent. Soc. Wash. Proc. 41: 165–172.

Holarctic. Our two North American forms are not rare but are discontinuously distributed. The ants make slaves of certain species of *Le tothorax*.

americanus (Emery). Mass. to Va., west to Ill. This form makes slaves of *Leptothorax (Myrafant) curvispinosus curvispinosus* Mayr and *L. (M.) longispinosus longispinosus* Roger.

Tomognathus americanus Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 272 ☿.

Biology: Sturtevant, 1927. Psyche 34: 1–9.—Creighton, 1927. Psyche 34: 11–29.—L. G. Wesson, Jr., 1939. Amer. Ent. Soc. Trans. 65: 97–122.

Taxonomy: Creighton, 1927. Psyche 34: 28, ♂.—M. R. Smith, 1939. Ent. Soc. Wash. Proc. 41: 166–168. ☿ ♀ ♂.

canadensis M. R. Smith. Que., N. S., Maine, Mich., Minn. Apparently very closely related to the Palearctic *H. sublaevis* and like that form has ergatoid females in addition to normal workers and females. Its slave is *Leptothorax acervorum canadensis* Prov.

Harpagoxenus canadensis M. R. Smith, 1939. Ent. Soc. Wash. Proc. 41: 168. Ergatoid ♀, ♀.
Biology: R. E. Gregg, 1946. Amer. Midland Nat. 35: 748.
Taxonomy: R. E. Gregg, 1945. Canad. Ent. 77: 74–76, ☿.

Genus TRIGLYPHOTHRIX Forel

Triglyphothrix Forel, 1890. Soc. Ent. Belg. Ann. (C. R.) 34: CVI.
Type: ***Triglyphothrix walshi*** Forel. Monob.
Revision: Bingham, 1903. Fauna British India Hym., v. 2, pp. 172–175.

A single introduced form is now established in a number of localities in the southern states.

striatidens (Emery). S. C., Ga., Fla., Ala., Miss., La. Introduced into the United States.
Tetramorium obesum race ***striatidens*** Emery, 1889. Ann. Mus. Civ. Stor. Nat. Genova 7: 501. ☿.
Biology: W. M. Wheeler, 1916. Jour. Econ. Ent. 9: 566–568.—Donisthorpe, 1927. British Ants, p. 393.—M. R. Smith, 1931. Ent. News 42: 21.
Taxonomy: W. M. Wheeler, 1912. N. Y. Ent. Soc. Jour. 20: 46, ☿.—W. M. Wheeler, 1916. Jour. Econ. Ent. 9: 568–569, ☿.

Genus TETRAMORIUM Mayr

Tetramorium Mayr, 1855. Zool.-Bot. Gesell. Wien, Verh. 5: 423.
Type: ***Formica caespitum*** Linnaeus. Desig. by Girard, 1879.
Tetrogmus Roger, 1857. Berlin, Ent. Ztschr. 1: 10.
Type: (***Tetrogmus caldarius*** Roger) = ***Myrmica simillima*** Smith. Monob.
Revisions: Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 972–977.—Bingham, 1903. Fauna British India Hym., v. 2, pp. 175–189.—Emery, 1916. Soc. Ent. Ital. Bol. 47: 195.—M. R. Smith, 1943. Ent. Soc. Wash. Proc. 45: 1–5.

Peculiar to the Old World, especially the Ethiopian Region. The group contains many important economic forms. All of those occurring in the Nearctic Region are thought to have been introduced.

caespitum (Linnaeus). Europe, Asia, U. S. Most abundant in the states along the Atlantic Seaboard, becoming more sporadically distributed farther inland. An important economic species; infests houses, steals seed from seed beds, gnaws into tubers, roots, and stalks of flowers and vegetables, attends honeydew-excreting insects. The colonies are populous. Host of parasitic ants belonging to the genera *Anergates* and *Strongylognathus*.
Formica caespitum Linnaeus, 1758. Syst. Nat., ed. 10, v. 1, p. 581.
Myrmica (Myrmica) brevinodis var. ***transversinodis*** J. Enzmann, 1946. N. Y. Ent. Soc. Jour. 54: 47. ☿.
Biology: W. M. Wheeler, 1919. Amer. Phil. Soc. Proc. 58: 23–26.—W. M. Wheeler, 1927. Psyche 34: 164–165.—Donisthorpe, 1927. British Ants, pp. 193–198.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 74.
Taxonomy: Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 972, ☿.—Donisthorpe, 1927. British Ants, p. 189, ☿ ♀ ♂.—M. R. Smith, 1943. Ent. Soc. Wash. Proc. 45: 2, ☿.
Economics: L. B. Smith, 1915. Va. Truck Expt. Sta. Bul. 16: 1–15.—Metcalf and Flint, 1939. Destructive and Useful Insects, p. 771.

guineense (Fabricius). Apparently most common in towns and cities in the southern and southeastern states; occasionally found in greenhouses farther north. Pantropical; becoming widely distributed by commerce. Introduced into the United States.
Formica guineensis Fabricius, 1793. Ent. System., v. 2, p. 357. ☿
Biology: Phillips, 1934. (Hawaii Univ.) Expt. Sta. Pineapple Prod. Coop. Assoc. Bul. 15: 23–24.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 851–852.—M. R. Smith, 1943. Ent. Soc. Wash. Proc. 45: 1.
Taxonomy: Emery, 1909. Deut. Ent. Ztschr., p. 695, ☿ ♀ ♂.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 831, 852, ☿.—M. R. Smith, 1943. Ent. Soc. Wash. Proc. 45: 3, ☿.

Economics: Marlatt, 1928. U. S. Dept. Agr. Farmers' Bul. 740: 6.—M. R. Smith, 1943. Ent. Soc. Wash. Proc. 45: 2.

pacificum Mayr. Oriental and Australian Regions. Calif. (Los Angeles Co., introduced into a nursery).

Tetramorium pacificum Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 972, 976. ☿ ♀.

Taxonomy: M. R. Smith, 1943. Ent. Soc. Wash. Proc. 45: 2–3, ☿.

rugiventris M. R. Smith. Ariz. (vicinity of Prescott). Believed to have been introduced with camels or supplies for camels.

Tetramorium rugiventris M. R. Smith, 1943. Ent. Soc. Wash. Proc. 45: 2, 4. ☿.

simillimum (F. Smith). Ga., Fla. Introduced into U. S. Pantropical. Becoming widely distributed by commerce.

Myrmica simillima F. Smith, 1851. List Hym. Brit. Mus., pt. 6, p. 118. ☿.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 101.—M. R. Smith, 1933. Fla. Ent. 17: 24.—Phillips, 1934. (Hawaii Univ. Expt. Sta. Pineapple Prod. Coop. Assoc. Bul. 15: 24.

Taxonomy: Emery, 1909. Deut. Ent. Ztschr., pp. 695–696. ☿ ♀ ♂.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 831, 853, ☿. M. R. Smith, 1943. Ent. Soc. Wash. Proc. 45: 2, ☿.

Economics: Marlatt, 1928. U. S. Dept. Agr. Farmers' Bul. 740: 6.—M. R. Smith, 1933. Fla. Ent. 17: 24.

Genus XIPHOMYRMEX Forel

Tetramorium subg. ***Xiphomyrmex*** Forel, 1887. Schweiz. Ent. Gesell. Mitt. 7: 385.

Type: ***Tetramorium (Xiphomyrmex) kelleri*** Forel. Desig. by W. M. Wheeler, 1911.

Revision: M. R. Smith, 1938. Wash. Acad. Sci. Jour. 28: 126–130.

The three forms in the United States nest in the soil in deserts or in warm, dry open areas. The colonies are apparently small and the workers not aggressive.

spinosus hispidus W. M. Wheeler. Ariz. *T. spinosus spinosus* Pergande occurs in Mexico.

Xiphomyrmex spinosus hispidus W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 415. ☿.

Biology: M. R. Smith, 1938. Wash. Acad. Sci. Jour. 28: 127, 129, ☿.

spinosus insons W. M. Wheeler. Ariz., Tex. This may be the most common form of *Xiphomyrmex* in the United States.

Xiphomyrmex spinosus insons W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 416. ☿ ♀ ♂.

Biology: M. R. Smith, 1938. Wash. Acad. Sci. Jour. 28: 129.

spinosus wheeleri (Forel). Ariz.; Mexico.

Tetramorium (Xiphomyrmex) Wheeleri Forel, 1901. Soc. Ent. Belg. Ann. 45: 128. ☿.

Biology: W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 416.

Taxonomy: W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 416, ☿.—M. R. Smith, 1938. Wash. Acad. Sci. Jour. 28: 127, 130, ☿.

Genus WASMANNIA Forel

Wasmannia Forel, 1893. London Ent. Soc. Trans. 4: 383.

Type: ***Tetramorium ? auropunctatum*** Roger. Desig. by W. M. Wheeler, 1911.

Hercynia J. Enzmann, 1947. N. Y. Ent. Soc. Jour. 55: 43. Preocc.

Type: ***Hercynia panamana*** J. Enzmann. Monob.

auropunctata (Roger). Calif., Fla.; Cent. and So. Amer., Mexico and the W. Indies. Introduced into U. S. Nests in the soil freely or under cover, also in wood. Attends honeydew-excreting insects. An important economic species; stings severely, infests houses.

Tetramorium ? auropunctatum Roger, 1863. Berlin. Ent. Ztschr. 7: 182. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1929. Psyche 36: 89–90.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 854.—Spencer, 1941. Fla. Ent. 24: 6–14.
Taxonomy: M. R. Smith, 1929. Jour. Econ. Ent. 22: 243, ☿.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 831, 854, ☿.
Economics: Fernald, 1947. Jour. Econ. Ent. 40: 428.—Osburn, 1948. Fla. Ent. 31: 11–15.

Genus PARACRYPTOCERUS Emery

Subgenus PARACRYPTOCERUS Emery

Cryptocerus subg. ***Paracryptocerus*** Emery, 1915. Soc. Ent. France Bul., p. 192.
Type: ***Cryptocerus spinosus*** Mayr. Orig. desig.

The subgenus *Paracryptocerus* is not known to occur in the Nearctic Region.

Subgenus HARNEDIA M. R. Smith

Paracryptocerus subg. ***Harnedia*** M. R. Smith, 1949. Psyche 56: 20.
Type: ***Cryptocerus umbraculatus*** Fabricius. Orig. desig.
Revision: M. R. Smith, 1947. Ent. Soc. Wash. Proc. 49: 34–40.

Mainly Neotropical with slight extensions into the Nearctic Region. General habits similar to those of the subgenus *Cyathomyrmex*. Only two species are known to occur in the United States.

rohweri (W. M. Wheeler). Ariz.
Cryptocerus (Cyathocephalus) rohweri W. M. Wheeler, 1916. New England Zool. Club Proc. 6: 32. ☿ ♀.
Biology and taxonomy: M. R. Smith, 1947. Ent. Soc. Wash. Proc. 49: 34–37. ☿ ♀ ♀.

texanus (Santschi). Tex.; Mexico.
Cryptocerus texanus Santschi, 1915. Soc. Ent. France Bul., p. 208. ☿ ♀.
Biology and taxonomy: M. R. Smith, 1947. Ent. Soc. Wash. Proc. 49: 37–40, ☿ ♀ ♀ ♂.

Subgenus CYATHOMYRMEX Creighton

Cyathocephalus Emery, 1915. Soc. Ent. France Bul., p. 192. Preocc.
Type: ***Cryptocerus pallens*** Klug. Orig. desig.
Cyathomyrmex Creighton, 1933. Psyche 40: 98. N. name.
Revision: M. R. Smith, 1947. Ent. Soc. Wash. Proc. 49: 29–33.

Distribution mainly Neotropical with a slight extension into the Nearctic Region (southern Florida). Arboreal in habit, forming small colonies in cavities of plants, especially twigs. Food largely honeydew and the flesh of small arthropods. The soldier is believed to keep intruders from the nest by blocking the entrance hole with its head.

varians (F. Smith). Fla.; Cent. Amer., W. Indies.
Cryptocerus varians F. Smith, 1876. London Ent. Soc. Trans., p. 606. ☿.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 104.—W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 11.—M. R. Smith, 1947. Ent. Soc. Wash. Proc. 49: 33.
Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 102–104 ☿ ♀ ♀ ♂.—M. R. Smith, 1947. Ent. Soc. Wash. Proc. 49: 30–33, ☿ ♀ ♀ ♂.

Genus STRUMIGENYS F. Smith

Subgenus STRUMIGENYS F. Smith

Strumigenys F. Smith, 1860. Jour. Ent. (London) 1: 72.
Type: ***Strumigenys mandibularis*** F. Smith. Monob.
Revisions: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 325–326.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 145–147.—M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 688–691.

S. (S.) louisianae, our only Nearctic form of this subgenus, appears to be confined mainly to the southern section of the United States. It nests in the soil beneath objects, in rotting wood such as stumps and logs, in plant cavities, etc. The colonies are small, seldom composed of more than a hundred or so individuals. The ants are thought to feed largely on insects, especially Collembola.

louisianae Roger. N. C. to Fla., west to Ariz.; Cent. Amer., W. Indies. General habits as mentioned under the subgenus.

Strumigenys Louisianae Roger, 1863. Berlin. Ent. Ztschr. 7: 211. ☿.

Strumigenys unispinulosa Emery, 1890. Soc. Ent. Ital. Bol. 22: 67. ☿ ♀.

Strumigenys (Strumigenys) louisianae laticephala M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 688, 690. ☿.

Biology: M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 690–691.—Creighton, 1937. Psyche 44: 97–109.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 269, 291, 305.

Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 325–326, ☿ ♀.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 147, ☿ ♀.—M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 688–691, ☿.—Haug, 1932. Ent. Soc. Amer. Ann. 25: 170–172, ♂.

Genus SMITHISTRUMA Brown

Subgenus WESSONISTRUMA Brown

Smithistruma subg. ***Wessonistruma*** Brown, 1948. Amer. Ent. Soc. Trans. 74: 106.

Type: ***Strumigenys pergandei*** Emery. Orig. desig.

Revisions: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 325–327.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 148.—M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 697–699.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 110.

This subgenus includes two forms, both of which are exclusively Nearctic. These ants nest in small colonies in the soil beneath cover and in rotten logs and stumps.

angulata (M. R. Smith). Ala., Ill., Miss.

Strumigenys (Cephaloxys) angulata M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 697. ☿.

Biology: M. R. Smith, 1932. Ent. News 43: 158.

Taxonomy: M. R. Smith, 1932. Ent. News 43: 157–158, ☿.—L. G., Jr., and R. . Wesson, 1939. Psyche 46: 110. ☿.

pergandei (Emery). Ont. to N. C., west to Iowa.

Strumigenys pergandei Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 325. ☿ ♀ ♂.

Biology: M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 687, 699.—Kennedy and Schramm, 1933. Ent. Soc. Amer. Ann. 26: 95–98, 100.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 91–92.

Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 148, ☿ ♀.—M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 698–699, ☿.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 110, ☿.

Subgenus SMITHISTRUMA Brown

Smithistruma Brown, 1948. Amer. Ent. Soc. Trans. 74: 104–106.

Type: ***Strumigenys pulchella*** Emery. Orig. desig.

Revisions: Mayr. 1887. Zool.-Bot. Gesell. Wien, Verh. 37: 571.—Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 325–329.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 148.—M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 686–710.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 91–112.

Almost cosmopolitan. The Nearctic forms nest in small colonies in the soil, or humus, usually beneath objects; also in decayed wood,

cavities of plants, and nuts on the ground. Nests are often located near or within colonies of other ants. It has been assumed that members of this group are thief ants. The Wesson brothers have definitely found some of the forms predaceous on collembolans.

abdita (L. G., Jr., and R. G. Wesson). Ind., Ohio, Pa.
Strumigenys (Cephaloxys) abdita L. G., Jr., and R. G. Wesson 1939. Psyche 46: 106, 110. ☿.

bimarginata (L. G., Jr., and R. G. Wesson). Ohio, Ill.
Strumigenys (Cephaloxys) bimarginata L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 95, 109. ☿.

brevisetosa (M. R. Smith). N. C., Ala., Miss.
Strumigenys (Cephaloxys) clypeata var. ***brevisetosa*** M. R. Smith, 1935. Ent. Soc. Amer. Ann. 28: 215. ☿.
Taxonomy: L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 108. ☿.

bunki Brown. Ga., Fla., La., Miss.
Smithistruma (Smithistruma) bunki Brown 1950. Amer. Ent. Soc. Trans. 76: 41. ☿.

californica Brown. Calif. (Claremont). Formerly recorded as *rostrata*. ***Smithistruma (Smithistruma) californica*** Brown, 1950. Amer. Ent. Soc. Trans. 76: 40. ♀.

clypeata (Roger). N. J. to Fla., west to Ill. and Tex.
Strumigenys clipeata (!) Roger, 1863. Berlin. Ent. Ztschr. 7: 213. ☿.
Biology: M. R. Smith, 1932. Ent. News. 43: 159.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 291, 305.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 93–94.
Taxonomy: Mayr, 1887. Zool.-Bot. Gesell. Wien, Verh. 37: 571, ☿ ♀.—Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 326, 328, ☿ ♀ ♂.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 148, ☿ ♀.—M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 699–700, ☿.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 109. ☿.

creightoni (M. R. Smith). Ala., D. C.
Strumigenys (Cephaloxys) creightoni M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 692, 705. ☿.
Taxonomy: L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 110. ☿.

dietrichi (M. R. Smith). Md. to Fla., west to Ill. and La.
Strumigenys (Cephaloxys) dietrichi M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 696. ☿.
Biology: L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 93.—Kennedy and Schramm, 1933. Ent. Soc. Amer. Ann. 26: 95–96, 100–101.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 270, 272–273, 291, 305.
Morphology: Kennedy and Schramm, 1933. Ent. Soc. Amer. Ann. 26: 101–104.
Taxonomy: M. R. Smith, 1932. Ent. News 43: 159, ☿.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 108, ☿.

filirrhina Brown. N. C. (Williamston).
Smithistruma (Smithistruma) filirrhina Brown, 1950. Amer. Ent. Soc. Trans. 76: 37. ☿.

filitalpa Brown. Ark. (Pike Co.).
Smithistruma (Smithistruma) filitalpa Brown, 1950. Amer. Ent. Soc. Trans. 76: 39. ☿.

laevinasis (M. R. Smith). Va., Ill., Tenn., Miss.
Strumigenys (Cephaloxys) clypeata var. ***laevinasis*** M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 701. ☿.
Biology: M. R. Smith, 1932. Ent. News 43: 159.
Taxonomy: M. R. Smith, 1932. Ent. News 43: 158, ☿—.L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 109, ☿.

margaritae (Forel). Ala., Tex.; W. Indies. This may be an introduced or "tramp" species.
Strumigenys margaritae Forel, 1893. London Ent. Soc. Trans., p. 378. ☿ ♀ ♂.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 148, ☿ ♀.—M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 692–693, ☿.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 108. ☿.

missouriensis (M. R. Smith). N. Y., Va., N. C., Ohio, Miss., Mo.
Strumigenys (*Cephaloxys*) *missouriensis* M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 701. ☿.
Strumigenys (*Cephaloxys*) *sculpturata* M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 692, 706. ☿.

ohioensis (Kennedy and Schramm). Va., N. C., Ohio, Ill., Tenn., La., Ark.
Strumigenys ohioensis Kennedy and Schramm, 1933. Ent. Soc. Amer. Ann. 26: 98. ☿.
Strumigenys (*Cephaloxys*) *manni* L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 97. ☿.
Biology: L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 98.

ornata (Mayr). Md. to Fla., west to Ill. and Miss.
Strumigenys ornata Mayr, 1887. Zool.-Bot. Gesell. Wien, Verh. 37: 571. ☿.
Biology: M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 695–696.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 92–93.
Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 325, 328, ☿.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 148, ☿ ♀.—M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 695–696, ☿.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 109, ☿.

pilinasis (Forel). Pa., D. C., Ohio, Ill.
Strumigenys clypeata var. *pilinasis* Forel, 1901. Soc. Ent. Belg. Ann. 45: 339. ☿.
Strumigenys (*Cephaloxys*) *medialis* L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 94, 110. ☿.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 148, ☿ ♀.— M. R.Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 700.☿.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 109, ☿.

pulchella (Emery). N. J. to Fla., west to Iowa and La.
Strumigenys pulchella Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 325, 327. ☿.
Biology: M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 687, 704.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 291, 305.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 93, 100–101.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 148, ☿ ♀.— M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 702, ☿.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 111, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 290, ☿.

reflexa (L. G., Jr., and R. G. Wesson). Ohio to N. C., west to Ill., Tenn. and Ala.
Strumigenys (*Cephaloxys*) *reflexa* L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 102, 111. ☿.

rohweri (M. R. Smith). Miss. (Holly Springs).
Strumigenys (*Cephaloxys*) *rohweri* M. R. Smith, 1935. Ent. Soc. Amer. Ann. 28: 214. ☿.
Taxonomy: L. G., Jr., and R. G. Wesson, 1939. 46: 109, ☿.

rostrata (Emery). N. J. to N. C., west to Ill. and Tenn.
Strumigenys rostrata Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 326, 329. ☿ ♀ ♂.
Biology: M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 705.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 273, 291–292, 305.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 99–100.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 148, ☿ ♀.— M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 692, 704–705, ☿.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 110, ☿.

talpa (Weber). N. C., Fla., Ohio, Tenn., Ala., Ill.
Strumigenys (*Cephaloxys*) *talpa* Weber, 1934. Psyche 41: 63. ☿.
Strumigenys (*Cephaloxys*) *venatrix* L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 103, 110. ☿.

wrayi Brown. N. C. (Fayetteville).
Smithistruma (*Smithistruma*) *wrayi* Brown, 1950. Amer. Ent. Soc. Trans. 76: 38. ☿.

Genus TRICHOSCAPA Emery

Strumigenys subg. ***Trichoscapa*** Emery, 1869. Accad. Degli Aspiranti Naples Ann. 2: 24.
Type: ***Strumigenys (Trichoscapa) membranifera*** Emery. Monob.

Revisions: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 144–145, 148.—M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 693–695.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 108–112.—Brown, 1948. Amer. Ent. Soc. Trans. 74: 112–114.

Brown is of the opinion that all the described forms are only variants of a single species, *membranifera*, and that these ants are tramps which have been widely distributed by commerce. The ants nest in soil, wood, and plant cavities.

membranifera (Emery). Va., Ga., Fla., Ala., Miss., La.; W. Indies. Introduced into the U. S.

Strumigenys (Trichoscapa) membranifera Emery, 1869. Accad. degli Aspiranti Naples Ann. 2: 24. ☿.

Strumigenys membranifera simillima Emery, 1890. Soc. Ent. Ital. Bol. 22: 69. ☿.

Strumigenys membranifera var. ***marioni*** W. M. Wheeler, 1933. Hawaii. Ent. Soc. Proc. 8: 276. ☿.

Biology: M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 694.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 856.—Brown, 1948. Amer. Ent. Soc. Trans. 74: 113.

Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 144–145, 148, ☿ ♀.—M. R. Smith, 1931. Ent. Soc. Amer. Ann. 24: 691, 693–694, ☿.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 829, 856 ☿.—L. G., Jr., and R. G. Wesson, 1939. Psyche 46: 108, ☿.—Brown, 1948. Amer. Ent. Soc. Trans. 74: 114.

Genus QUADRISTRUMA Brown

Quadristruma Brown, 1949. Amer. Ent. Soc. Trans. 75: 47.
Type: ***Epitritus emmae*** Emery. Orig. desig.

emmae (Emery). Fla. (Homestead). Probably introduced.

Epitritus emmae Emery, 1890. Soc. Ent. Ital. Bol. 22: 70. ☿.

Biology: Weber, 1934. Rev. de Ent. 4: 51.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 858 —Brown, 1949. Amer. Ent. Soc. Trans. 75: 49–50.

Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 149, ♀.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 829, 858, ☿.—Brown, 1949. Amer. Ent. Soc. Trans. 75: 48–50, ☿ ♀.

Genus CYPHOMYRMEX Mayr

Subgenus CYPHOMYRMEX Mayr

Cyphomyrmex Mayr, 1862. Zool.-Bot. Gesell. Wien, Verh. 12: 690.
Type: ***Cyphomyrmex minutus*** Mayr=***Cryptocerus? rimosus*** Spinola. Monob.

Revisions: Mayr, 1887. Zool.-Bot. Gesell. Wien, Verh. 37: 555–562.—W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 670, 719–728, 765–773.—Weber, 1940. Rev. de Ent. 11: 406–427.

Neotropical with extensions into the Nearctic Region (Alabama, Arizona, California, Florida, Texas). The ants of this subgenus form small colonies, usually in the soil, and live on fungi which they cultivate from a substratum of vegetable matter or faeces of certain insects.

rimosus (Spinola). Fla., Ala., Tex., Ariz.; Mexico, Cent. and So. Amer., W. Indies.

Cryptocerus? rimosus Spinola, 1853. Accad. Sci. Torino Mem. (2) 13: 65. ☿ ♂.

Meranoplus difformis F. Smith, 1858. Cat. Hym. Brit. Mus., v. 6, p. 195. ☿.

Cyphomyrmex minutus Mayr, 1862. Zool.-Bot. Gesell. Wien, Verh. 12: 691. ☿.

Cyphomyrmex steinheili Forel, 1884. Soc. Vaud. des Sci. Nat. Bul. 20: 368. ☿.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 106.—Weber, 1941. Rev. de Ent. 12: 99–103.—Weber, 1945. Rev. de Ent. 16: 5–14.

Taxonomy: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 719, 722, ☿ ♀ ♂. —Weber, 1941. Rev. de Ent. 17: 116–119.

rimosus var. **comalensis** W. M. Wheeler. Tex., Calif.

Cyphomyrmex rimosus var. *comalensis* W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 719. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 769–773.

Taxonomy: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 719–721, ☿ ♀ ♂. —Weber, 1940. Rev. de Ent. 11: 411, ☿.

wheeleri Forel. Cent. Tex. to Calif.; Mexico. Nests in the soil beneath stones in very arid habitats.

Cyphomyrmex Wheeleri Forel, 1900. Schweiz. Ent. Gesell. Mitt. 10: 282. ☿ ♀.

Biology: W. M. Whéeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 765–768.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 74.

Taxonomy: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 725–726, ☿ ♀ ♂. —Weber, 1940. Rev. de Ent. 11: 409, ☿.

Subgenus MYCETOSORITIS W. M. Wheeler

Atta subg. *Mycetosoritis* W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 714.

Type: *Atta* (*Mycetosoritis*) *hartmanni* W. M. Wheeler. Monob.

Neotropical and Nearctic (southern United States). Intermediate in form between *Cyphomyrmex* and *Trachymyrmex* but with habits more like those of the latter genus. Very small colonies are formed in the soil. The food consists of a fungus grown upon a substratum composed of the anthers of plants. The workers are thought to be nocturnal or crepuscular.

hartmanni (W. M. Wheeler). La., Tex.

Atta (*Mycetosoritis*) *hartmanni* W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 714. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 761–765.—W. M. Wheeler, 1926. Ants, pp. 334–335.

Genus TRACHYMYRMEX Forel

Atta subg. *Trachymyrmex* Forel, 1893. Soc. Ent. Belg. Ann. 37: 600.

Type: *Atta septentrionalis* McCook. Desig. by W. M. Wheeler, 1911.

Revisions: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 706–714, 746–760. —W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 245–255.

Neotropical and Nearctic, occurring as far north as Long Island, N. Y. Although most forms are recorded from the more humid areas of the United States, a few occur even in arid sections. The fungi on which the ants feed is grown on a substratum of plant particles and insect excrement.

arizonensis (W. M. Wheeler). Ariz. (Palmerlee).

Atta (*Trachymyrmex*) *arizonensis* W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 710. ♀ ♂.

Biology: W. M. Wheeler, 1911. Psyche 18: 95–98.—Essig, 1926. Ins. of West. No. Amer., p. 862.

Taxonomy: W. M. Wheeler, 1911. Psyche 18: 93–95, ☿.—W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 250, ☿.

desertorum (W. M. Wheeler). Ariz.

Atta (*Trachymyrmex*) *desertorum* W. M. Wheeler, 1911. Psyche 18: 98. ☿.

Biology: W. M. Wheeler, 1911. Psyche 18: 100–101.—Essig, 1926. Ins. of West. No. Amer., p. 862.
Taxonomy: W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 249, ☿.

jamaicensis (André). Fla. (Dania). ?Introduced.
Atta (*Acromyrmex*) *jamaicensis* André, 1893. Rev. Ent. Caen 12: 149. ☿.
Trachymyrmex sharpi Forel, 1893. Ent. Soc. London, Trans., p. 372. ☿.
Atta (*Trachymyrmex*) *maritima* W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 107. ☿.

septentrionalis obscurior (W. M. Wheeler). Ill., La., Tex.
Atta (*Trachymyrmex*) *septentrionalis* var. *obscurior* W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 706. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 747–753.
Taxonomy: W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 246, 250, ☿.

septentrionalis obscurior var. **crystallina** (W. M. Wheeler). Tex. (Huntsville). The validity of this form is questionable.
Atta (*Trachymyrmex*) *septentrionalis obscurior* var. *crystallina* W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 247, 250. ☿ ♀.
Biology: W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 250–255.

septentrionalis obscurior var. **irrorata** (W. M. Wheeler). Ariz., Tex. The validity of this form is questionable.
Atta (*Trachymyrmex*) *septentrionalis obscurior* var. *irrorata* W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 247, 250. ☿.
Biology: W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 250–255.

septentrionalis obscurior var. **seminole** (W. M. Wheeler). Ga., Fla., ?Ind., Tenn., Miss., Okla. Of some economic importance because of the habit of cutting leaves from domesticated plants.
Atta (*Trachymyrmex*) *septentrionalis obscurior* var. *seminole* W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 247, 250. ☿ ♀ ♂.
Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 273, 292, 305.—Cole, 1939. Lloydia 2: 153–160.
Taxonomy: M. R. Smith, 1924. Ent. News 35: 52, ☿.—Cole, 1940. Amer. Midland Nat. 24: 59, ☿.

septentrionalis septentrionalis (McCook). N. Y. to S. C., west to Tenn.
?*Oecodoma virginiana* Buckley, 1867. Ent. Soc. Phila. Proc. 6: 346. ☿.
Atta septentrionalis McCook, 1880. Acad. Nat. Sci. Phila. Proc. 32: 359. ☿.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 374, 386–387.—Wheeler, 1907. Amer. Mus. Nat. Hist, Bul. 23: 680–681, 746–747.—W. M. Wheeler, 1911. Psyche 18: 95–97.
Taxonomy: Forel, 1884. Soc. Vaud. des Sci. Nat. Bul. 20: 91, ☿ ♀ ♂.—W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 708–710.—W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 245–246, ☿ ♀.

septentrionalis var. **vertebrata** (W. M. Wheeler). N. J. (Lakehurst).
Atta (*Trachymyrmex*) *septentrionalis* var. *vertebrata* W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 246, 250. ☿ ♀.

turrifex caroli (W. M. Wheeler). Tex. (Huntsville).
Atta (*Trachymyrmex*) *turrifex caroli* W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 248. ☿.

turrifex turrifex (W. M. Wheeler). La., Tex.; Mexico.
Atta (*Trachymyrmex*) *turrifex* W. M. Wheeler, 1903. Psyche 10: 100. ☿ ♀
Biology: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 753–759.—W. M. Wheeler, 1911. Psyche 18: 95–97.
Taxonomy: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 709–710, ☿ ♀.—W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 249, ☿.

Unrecognized Form of Genus Trachymyrmex Forel

Oecodoma tardigrada Buckley, 1867. Ent. Soc. Phila. Proc. 6: 349. ☿ ♀ ♂.

Genus ACROMYRMEX Mayr

Subgenus ACROMYRMEX Mayr

Atta subg. *Acromyrmex* Mayr, 1865. Reise d. Novara, Zool., v. 1, Hym., p. 83.
Type: *Formica hystrix* Latreille. Monob.

Not known to occur in the Nearctic Region.

Subgenus MOELLERIUS Forel

Atta subg. ***Moellerius*** Forel, 1893. Soc. Ent. Belg. Ann. 37: 589.
Type: ***Atta (Acromyrmex) landolti*** Forel. Desig. by W. M. Wheeler, 1911.
Revisions: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 669, 700, 703–706, 743–746.—Santschi, 1925. Rev. Suisse de Zool. 31: 386–398.

Neotropical with a slight extension into the Nearctic Region (Ariz., Calif., Tex.). Our common form, *versicolor versicolor* (Perg.), is apparently largely confined to arroyos in arid areas where the ants nest in the soil. The habits are very similar to those of *Atta texana* Buckl. but colonies are apparently not so large and the leaf-cutting habits are not on so extensive a scale.

versicolor chisosensis (W. M. Wheeler). Tex. (Chisos Mts. of southwest. Tex. and Terlingua in the same region).
Atta (Moellerius) versicolor chisosensis W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 705. ☿.

versicolor versicolor (Pergande). Ariz., Calif.; Lower California.
Atta versicolor Pergande, 1893. Calif. Acad. Sci. Proc. 4: 31. ☿.
Biology: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 743–746.—W. M. Wheeler, 1911. Psyche 18: 101.—W. M. Wheeler, 1917. Psyche 24: 179–180.
Taxonomy: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 703–705, ☿ ♀ ♂.

Genus ATTA Fabricius

Atta Fabricius, 1804. Systema Piezatorum, p. 421.
Type: ***Formica cephalotes*** Linnaeus. Desig. by W. M. Wheeler, 1911.
Oecodoma Latreille, 1818. Nouv. Dict. Hist. Nat. 23: 223.
Type: ***Formica cephalotes*** Linnaeus. Desig. by Shuckard, 1840.
Archeatta Goncalves, 1942. Soc. Brasil. de Agron. Bol. 5: 342. N. Syn.
Type: ***Oecodoma mexicana*** F. Smith. Orig. desig.
Revisions: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 669, 700–703, 729–742.—Goncalves, 1942. Soc. Brasil. de Agron. Bol. 5: 333–358.

Neotropical with an extension into the Nearctic Region (Ariz., La., Tex.). Two forms occur in the United States, *A. mexicana* in southern Arizona and *A. texana* in Louisiana and Texas. Nests, which are deep in the soil and usually have many lateral and vertical entrances, are often extremely large and contain innumerable individuals. Workers defoliate both wild and domesticated plants, including trees. The ants live on a fungus grown from a substratum composed of macerated leaves and other vegetable matter.

mexicana (F. Smith). Ariz. (Organ Pipe Cactus National Monument); Mexico.
?***Formica fervens*** Drury, 1782. Illus. Nat. Hist. ,v. 3, p. 58. ♀.
Oecodoma Mexicana F. Smith, 1858. Cat. Hym. Brit. Mus., v. 6, p. 185. ♀ ♂.
Biology: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 703.—Byars, 1949. Jour. Econ. Ent. 42: 545.
Taxonomy: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 702–703, ☿ ♂.—Goncalves, 1942. Soc. Brasil. de Agron. Bol. 5: 335, 337, 343, ☿ ♂.—Byars, 1949. Jour. Econ. Ent. 42: 545. 2n.

texana (Buckley). Much of western Louisiana and eastern Texas between the 92d and 101st degrees of longitude but not uniformly distributed in Louisiana at least.
Myrmica (Atta) texana Buckley, 1860. Acad. Nat. Sci. Phila. Proc. 12: 233. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 729–742.—Walter, Seaton, and Mathewson, 1938. U. S. Dept. Agr. Cir. 494: 2–9.—M. R. Smith, 1939. South. Forest Expt. Sta. Occas. Papers 84: 2–6.

Taxonomy: W. M. Wheeler, 1907. Amer. Mus. Nat. Hist. Bul. 23: 700–703, ☿ ♀ ♂.—Goncalves, 1942. Soc. Brasil. de Agron. Bol. 5: 335, 337, 343, ☿ ♂.—Byars, 1949. Jour. Econ. Ent. 42: 545, ♀.

Economics: Hunter, 1912. U. S. Dept. Agr. Bur. Ent. Cir. 148: 1–4.—Jones, 1917. Jour. Econ. Ent. 10: 561.—Snyder, 1937. La. Conserv. Rev., pp. 14–17.—Walter, Seaton, and Mathewson, 1938. U. S. Dept. Agr. Cir. 494: 1–18.—Metcalf and Flint, 1939. Destructive and Useful Insects, p. 771.—Johnston, 1944. Jour. Forestry 42: 130–132.

Unrecognized Forms of Myrmicinae

Tetramorium* (*Cephalomorium*) *bahai Forel, 1922. Rev. Suisse de Zool. 30: 91. ☿. Santschi (1925. Soc. Ent. Belg. Bul. et Ann. 65: 228), who has examined the type of Forel's *Tetramorium* (*C.*) *bahai*, says that it is a species of *Pheidole*, subg. *Hendecapheidole*. No ants of this subgenus have ever been found in the United States.

Myrmica corrugata Say, 1836. Boston Jour. Nat. Hist. 1: 291. ♀ ♂.

Myrmica* (*Monomarium* (!)) *diversa Buckley, 1867. Ent. Soc. Phila. Proc. 6: 337. ☿ ♀.

Myrmica inflécta Say, 1836. Boston Jour. Nat. Hist. 1: 292. ♂.

Myrmica* (*Monomarium* (!)) *lineolata Buckley, 1867. Ent. Soc. Phila. Proc. 6: 340. ☿ ♀. Preocc.

Myrmica* (*Monomarium* (!)) *montana Buckley, 1867. Ent. Soc. Phila. Proc. 6: 339. ☿.

Oecodoma pilosa Buckley, 1867. Ent. Soc. Phila. Proc. 6: 348. ☿.

Myrmica* (*Diplorhoptrum*) *scabrata Buckley, 1867. Ent. Soc. Phila. Proc. 6: 343. ☿.

Tetramorium silvestrii Santschi, 1909. Soc. Ent. Ital. Bol. 41: 6. ☿.

Myrmica* (*Atta*) *sublanuginosa Buckley, 1867. Ent. Soc. Phila. Proc. 6: 343. ☿.

Subfamily DOLICHODERINAE

More common in southern United States than elsewhere.

Genus DOLICHODERUS Lund

Subgenus DOLICHODERUS Lund

Dolichoderus Lund, 1831. Ann. des Sci. Nat., Zool. 23: 130.
Type: ***Formica attelaboides*** Fabricius. Monob.

Not known to occur in the Nearctic Region.

Subgenus HYPOCLINEA Mayr

Hypoclinea Mayr, 1855. Zool.-Bot. Gesell. Wien, Verh. 5: 377.
Type: ***Formica quadripunctata*** Linnaeus. Desig. by W. M. Wheeler, 1911.

Revisions: Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 953–960.—Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 434–437.—W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 305–319.

In the United States the genus ranges from Canada to the Gulf of Mexico and as far west as approximately the 104th degree of longitude. Colonies are small to moderately large. Nests are constructed in the soil, in curled leaves and hollow stems of plants, and in cartons attached to plants. Workers attend honeydew-excreting insects and feed on small arthropods. Some forms emit a fluid from their anal glands which has a peculiar smoky or pungent odor. So far as is known, none of the species is of any economic importance.

mariae davisi W. M. Wheeler. N. J. (Jamesburg).
Dolichoderus mariae davisi W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 306, 308. ☿.
Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 388, ☿.

mariae mariae Forel. Mass. to Ga., west to Minn., Okla. and La.
Dolichoderus Mariae Forel, 1884. Soc. Vaud. des Sci. Nat. Bul. 20: 349. ☿.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 316–319, 387–388.—M. R. Smith, 1924. Ent. News 35: 81.—Cole, 1940. Amer. Midland Nat. 24: 29, 60.
Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 306–308, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 589, ☿ ♀.—Cole, 1940. Amer. Midland Nat. 24: 60, ☿.

mariae var. **blatchleyi** W. M. Wheeler. Ind. (Hammond).
Dolichoderus (*Hypoclinea*) *mariae* var. *blatchleyi* W. M. Wheeler, 1917 (1916). Ind. Acad. Sci. Proc. 26: 462. ☿.

plagiatus plagiatus (Mayr.) Ont. to S. C., west to Minn. and Tenn.
Hypoclinea plagiata Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 957, 960. ☿.
Dolichoderus borealis Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 408. ☿.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 306, 315–316, 388.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 621–622.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 90, 99.
Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 310–312, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 590, ☿.—Cole, 1940. Amer. Midland Nat. 24: 60, ☿.

plagiatus pustulatus Mayr. N. Y. to Fla., west to Ill. and Okla.
Dolichoderus pustulatus Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 435, 436. ☿ ♀.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 315–316, 388.—W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 12.
Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 306, 313, 388, ☿ ♀.—M. R. Smith, 1924. Ent. News 35: 82, ☿.

plagiatus pustulatus var. **beutenmuelleri** W. M. Wheeler. N. Y. to Fla., west to Ill. and La.
Dolichoderus plagiatus var. *beutenmülleri* W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 304. ☿.
Biology: W. M. Wheeler, 1917 (1916). Ind. Acad. Sci. Proc. 26: 462.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 89, 99.
Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 306, 313, 388, ☿.—M. R. Smith, 1931. Ent. News 42: 22, ☿.

plagiatus var. **inornatus** W. M. Wheeler. Mass., N. Y., N. J., Ill., N. Dak.
Dolichoderus plagiatus var. *inornatus* W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 306, 313. ☿.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 315–316.
Taxonomy: R. E. Gregg, 1944. Ent. Soc. Amer. Ann. 37: 467, ☿.

taschenbergi (Mayr.) Ont. to S. C., west to Man., S. Dak. and La.
Hypoclinea Taschenbergi Mayr, 1866. Akad. der Wiss. Wien, Math.-Nat. Kl. Sitzber. 53: 498. ☿.
Biology: M. R. Smith, 1924. Ent. News 35: 81–82.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 292–293.
Taxonomy: Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 958, ☿.—W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 306, 309–310, ☿.—M. R. Smith, 1924. Ent. News 35: 82, ☿.

taschenbergi var. **aterrimus** W. M. Wheeler. Ont. to S. C., west to N. Dak. and Miss.
Dolichoderus taschenbergi var. *gagates* W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 306, 310. ☿. Preocc.
Dolichoderus (*Hypoclinea*) *taschenbergi* var. *aterrimus* W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 417. N. name.
Dolichoderus Taschenbergi var. *wheeleriella* Forel, 1916. Rev. Suisse de Zool. 24: 458. N. name.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 316–319.—W. M. Wheeler, 1915. Psyche 22: 306.—Logier, 1923. Canad. Ent. 55: 247–249.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 99.
Taxonomy: Cole, 1940. Amer. Midland Nat. 24: 60, ☿.

Genus LIOMETOPUM Mayr

Liometopum Mayr, 1861. Die Europäischen Formiciden, pp. 25, 38.
Type: *Formica microcephala* Panzer. Monob.
Revision: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 321–333.

Holarctic. In the United States known to occur from Wyoming to Texas, west to Oregon and California. The Nearctic forms nest in the soil beneath cover, and also beneath the bark or in crevices of trees. Colonies are often populous. Workers forage in files sometimes several hundred feet long. They are pugnacious and eject a repellent secretion from their anal glands.

apiculatum apiculatum Mayr. Ariz., N. Mex., Tex., Colo.; Mexico.
Liometopum apiculatum Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 961. ☿.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 325–333.—W. M. Wheeler, 1917. Psyche 24: 177–178.
Taxonomy: Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 331, ♀.—W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 322–324, ☿ ♀ ♂.

apiculatum luctuosum W. M. Wheeler. Calif., Utah, Ariz., Colo., N. Mex., Tex.
Liometopum apiculatum luctuosum W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 325. ☿.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 332.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 75.
Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 325, ☿.—Forel, 1914. Deut. Ent. Ztschr. 6: 619, ♂.—Cole, 1942. Amer. Midland Nat. 28: 371, ☿.

occidentale Emery. Calif., Oreg.
Liometopum microcephalum var. *occidentale* Emery, 1895. Zool. Jahrb. Abt. f. System. 8: 330. ☿ ♀.
Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 522.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 75.
Taxonomy: W. M. Wheeler 1905. Amer. Mus. Nat. Hist. Bul. 21: 324–325, ☿.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 521–522, ♀ ♂.—Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 8, 17. ☿.

Unrecognized Species of Liometopum Mayr

Formica masonia Buckley, 1866. Ent. Soc. Phila. Proc. 6: 165. ☿.

Genus IRIDOMYRMEX Mayr

Iridomyrmex Mayr, 1862. Zool.-Bot. Gesell. Wien, Verh. 12: 702.
Type: *Formica detecta* F. Smith. Desig. by Bingham, 1903.
Tapinoma subg. *Doleromyrma* Forel, 1907. Mus. Nat. Hungarici Ann. 5: 28.
Type: *Tapinoma* (*Doleromyrma*) *darwinianum* Forel. Monob.
Revisions: Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 953–960.—M. R. Smith, 1929. Jour. Econ. Ent. 22: 241–243.

The native forms are largely confined to the southern half of the United States.

analis (André). Ohio to Fla., west to Calif.; Mexico, Cuba.
Tapinoma anale André, 1893. Rev. Ent. France 12: 148. ☿.
Biology: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 342.—M. R. Smith, 1924. Ent. News 35: 83.—Dennis, 1938. Amer. Ent. Soc. Ann. 31: 294, 305.
Taxonomy: M. R. Smith, 1929. Jour. Econ. Ent. 22: 241, ☿.—Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 8, ☿.—Cole, 1942. Amer. Midland Nat. 28: 372, ☿.

humilis (Mayr). Md. to Fla., west to Ill. and Calif. Introduced into the United States from Brazil; becoming widely distributed over the world by commerce. This is the notorious "Argentine ant." It usually nests in the soil, rotting wood or debris, and lives in large colonies that contain many females. It destroys all the native species in its territory except a few insignificant ones, and is one of the worst of the known house-infesting ants. It is known to steal seeds from seedbeds, drive poultry from their nests, kill newly hatched chickens, foster honeydew-excreting insects, disrupt bee hives, and gnaw into ripened fruits.

Hypoclinea* (*Iridomyrmex*) *humilis Mayr, 1868. Soc. Nat. Modena Ann. 3: 164. ☿.

Biology: Newell, 1909. Jour. Econ. Ent. 2: 174–192.

Taxonomy: W. M. Wheeler, 1913. *In* Newell and Barber, U. S. Dept. Agr. Bur. Ent. Bul. 122: 27–30, ☿ ♀ ♂.—M. R. Smith, 1929. Jour. Econ. Ent. 22: 241, ☿.

Economics: Newell and Barber, 1913. U. S. Dept. Agr. Bur. Ent. Bul. 122: 1–98.—E. R. Barber, 1920. U. S. Dept. Agr. Farmers' Bul. 1101: 1–11.—Woglum and Borden, 1921. U. S. Dept. Agr. Bul. 965: 1–43.—R. W. Harned and M. R. Smith, 1922. Jour. Econ. Ent. 15: 261–264.—M. R. Smith, 1936. U. S. Dept. Agr. Cir. 387: 1–39.—Essig, 1926. Ins. of West. No. Amer., pp. 865–866.

iniquus var. **nigellus** Emery. Mass., Ill.; Cent. Amer. Introduced into U. S. *I. iniquus* Mayr occurs in Central and South America and the West Indies.

Iridomyrmex iniquus* var. *nigellus Emery, 1890. Soc. Ent. Ital. Bol. 22: 56. ☿.

Biology: W. M. Wheeler, 1929. Psyche 36: 89–90.—M. R. Smith, 1929. Jour. Econ. Ent. 22: 241.

Taxonomy: M. R. Smith, 1929. Jour. Econ. Ent. 22: 241–242, ☿

pruinosus (Roger). N. Y. to Fla., west to S. Dak., Utah and Calif.; W. Indies.

Tapinoma pruinosum Roger, 1863. Berlin. Ent. Ztschr. 7: 165. ☿.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 389.—M. R. Smith, 1930. Fla. Ent. 14: 5.—Cole, 1940. Amer. Midland Nat. 24: 64–65.

Taxonomy: M. R. Smith, 1929. Jour. Econ. Ent. 22: 241, ☿.—Cole, 1940. Amer. Midland Nat. 24: 64, ☿.—Cole, 1942. Amer. Midland Nat. 28: 372, ☿.

pruinosus var. **testaceus** Cole. Idaho, Utah.

Iridomyrmex pruinosus* var. *testaceus Cole, 1936. Ent. News 47: 121. ☿ ♀.

Biology and taxonomy: Cole, 1942. Amer. Midland Nat. 28: 372–373 ☿.

Genus FORELIUS Emery

Forelius Emery, 1888. Ztschr. f. Wiss. Zool. 46: 389.

Type: (***Iridomyrmex mccooki*** Forel) = ***Formica foetida*** Buckley. Monob.

Neotropical and Nearctic. The exact range of this genus and the number of forms in the United States have not yet been definitely ascertained.

foetidus andrei Forel, n. status. Calif.

Forelius MacCooki* race *Andrei Forel, 1912. Soc. Ent. Belg. Mem. 20: 44 ☿.

foetidus foetidus (Buckley). Ariz., Calif., Tex. (Incorrectly reported from D. C.)

Formica foetida Buckley, 1866. Ent. Soc. Phila. Proc. 6: 167. ☿ ♀.

Iridomyrmex McCooki Forel, 1878. Soc. Vaud. des Sci. Nat. Bul. 15: 382.

Biology: Cole, 1937. Ent. News 48: 137.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 77.

Taxonomy: Forel, 1886. Soc. Ent. Belg. Bul. (C. R.) 30: 39, ☿.

Economics: Lindquist, 1942. Jour. Econ. Ent. 35: 850–852.

Genus DORYMYRMEX Mayr

Subgenus DORYMYRMEX Mayr

Dorymyrmex Mayr, 1866. Akad. der Wiss. Wien, Math.-Nat. Kl. Sitzber. 53: 494.

Type: ***Dorymyrmex flavescens*** Mayr, not Fabricius. Monob.

Not known to occur in the Nearctic Region.

Subgenus CONOMYRMA Forel

Conomyrma Forel, 1913. Rev. Zool. Africaine 2: 350.
Type: *Prenolepis pyramica* Roger. Desig. by Santschi, 1922.

Neotropical and Nearctic. In the United States the subgenus occurs as far north as the 42d degree of latitude. Our forms construct craterlike nests in the soil usually in open, sunny areas. Colonies are small to moderate in size. The workers are predaceous, active, and aggressive. They possess anal glands which emit a fluid with a disagreeable odor. Occasionally two forms occupy the same nest. Some infest houses.

pyramicus flavopectus M. R. Smith. Fla. (Lake Placid).
Dorymyrmex pyramicus flavopectus M. R. Smith, 1944. Fla. Ent. 27: 15. ☿.

pyramicus pyramicus (Roger). N. Y. to Idaho, south to So. Amer.; also W. Indies and Galapagos Isl.
Prenolepis pyramica Roger, 1863. Berlin. Ent. Ztschr. 7: 160. ☿.
Formica insana Buckley, 1866. Ent. Soc. Phila. Proc. 6: 165. ☿ ♀.
Biology: W. M. Wheeler, 1926. Ants. pp. 146, 201, 205, 426.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 293, 305.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 291.
Taxonomy: Emery: 1895. Zool. Jahrb. Abt. f. System. 8: 331–332, ♂.—Cole, 1940. Amer. Midland Nat. 24: 61, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 291, ☿.
Economics: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 19.

pyramicus var. **bicolor** W. M. Wheeler. Calif., Utah. Ariz., Tex.; Mexico. Infests houses.
Dorymyrmex pyramicus var. *bicolor* W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 342. ☿ ♀.
Biology: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 335, 342.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 76.
Taxonomy: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 7, 19.—Cole, 1942. Amer. Midland Nat. 28: 372, ☿.
Economics: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 19.

pyramicus var. **flavus** McCook. Approximately southern half of the United States.
Dorymyrmex flavus McCook, 1879. *In* Comstock, Rpt. on Cotton Insects, p. 186. ☿.
Biology: M. R. Smith, 1924. Ent. News 35: 82.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 293, 305.
Taxonomy: Cole, 1940. Amer. Midland Nat. 24: 61–62, ☿.—Cole, 1942. Amer. Midland Nat. 28: 371, ☿.

pyramicus var. **niger** Pergande. N. C., S. C., Ala., Miss., Iowa, La., N. Dak., Tex., Ariz., Calif.
Dorymyrmex pyramicus var. *nigra* Pergande, 1895. Calif. Acad. Sci. Proc. 5: 871. ☿.
Biology: M. R. Smith, 1924. Ent. News 35: 82.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 864–865.
Taxonomy: M. R. Smith, 1924. Ent. News 35: 82, ☿.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 861, 864, ☿.

pyramicus var. **smithi** Cole. Nebr. (North Platte).
Dorymyrmex pyramicus var. *smithi* Cole, 1936. Ent. News 47: 120. ☿.

Genus TAPINOMA Foerster

Tapinoma Foerster, 1850. Hym. Stud., v. 1, p. 43.
Type: (*Tapinoma collina* Foerster) = *Formica erratica* Latreille. Monob.
Micromyrma Dufour, 1857. Soc. Ent. France Ann. 5: 60. Preocc. N. syn.
Type: (*Micromyrma pygmaea* Dufour, not *Formica pygmaea* Latreille = *Tapinoma Dufourii* Donisthorpe, preocc. by Perris, 1877) = *Tapinoma confusum* M. R. Smith, n. name. Monob.

litorale W. M. Wheeler. Fla.; W. Indies. Nests in twigs of trees and bushes, hollow culms, or between leaves. Apparently largely arboreal in habit.

Tapinoma litorale W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 109. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 150.—W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 13.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 862.

Taxonomy: M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 861–862, ☿.

melanocephalum (Fabricius). Fla., Ga. Tropicopolitan. Introduced into U. S. Widely distributed by commerce. An important house-infesting form.

Formica melanocephala Fabricius, 1793. Ent. System., v. 2, p. 353. ☿.

Biology: Phillips, 1934. (Hawaii Univ.) Expt. Sta. Pineapple Prod. Coop. Assoc. Bul. 15: 20–21.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 861–862.

Taxonomy: M. R. Smith, 1928. Ent. Soc. Amer. Ann. 21: 311. ☿.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 861–862, ☿.

Economics: W. M. Wheeler, 1926. Ants, pp. 154, 156.—Marlatt, 1928. U. S. Dept. Agr. Farmers' Bul. 740: 6.

sessile (Say). Canada, U. S.; Mexico. A common and troublesome house-infesting ant.

Formica sessilis Say, 1836. Boston Jour. Nat. Hist. 1: 287. ☿ ♀.

Tapinoma boreale Roger, 1863. Berlin. Ent. Ztschr. 7: 165. ☿ ♀.

Formica gracilis Buckley, 1866. Ent. Soc. Phila. Proc., p. 158. ☿ ♀.

Formica parva Buckley, 1866. Ent. Soc. Phila. Proc., p. 159. ☿.

Tapinoma boreale Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 238. ☿ ♀. Preocc.

Biology and taxonomy: M. R. Smith, 1928. Ent. Soc. Amer. Ann. 21: 307–329, ☿ ♀ ♂.

Economics: Metcalf and Flint, 1939. Destructive and Useful Insects, ed. 2, p. 770.

Unrecognized Form of Tapinoma Foerster

Bothriomyrmex dimmocki W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 417. ☿ ♀. This may be a pale, depauperate form of *Tapinoma sessile* (Say).

Unrecognized Form of Dolichoderinae

Formica (Hypochira) subspinosa Buckley, 1866. Ent. Soc. Phila. Proc. 6: 169 ☿.

Subfamily FORMICINAE

Second largest subfamily of ants. Although representatives occur in every section, these ants are relatively more abundant in northern areas than elsewhere. Nests are constructed in diverse places, as in the soil, in logs and stumps, in crevices of plants and trees, in insect galls or even in houses. The food includes honeydew, sap, juices of plants and fruits, flesh of arthropods, etc. Some forms even foster mealybugs, plant lice, and possibly other honeydew-excreting insects. Many of them infest houses. One of the most troublesome is the black carpenter ant, *Camponotus herculeanus pennsylvanicus*, which not only infests human foods but may nest in the woodwork and cause appreciable injury. This ant is also known to damage telephone poles.

Genus BRACHYMYRMEX Mayr

Subgenus BRACHYMYRMEX Mayr

Brachymyrmex Mayr, 1868. Soc. Nat. Modena Ann. 3: 163.
Type: ***Brachymyrmex patagonicus*** Mayr. Monob.

Revisions: W. M. Wheeler, 1903. Psyche 10: 102–103.—Santschi, 1923. Buenos Aires Mus. Nac. de Hist. Nat. An. 31: 650–674.

depilis Emery. N. S. to Fla. and west to S. Dak., B. C., and ?Wash.
Brachymyrmex heerii depilis Emery, 1893. Zool. Jahrb. Abt. f. System. 7: 635. ☿.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 389.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 294.
Taxonomy: W. M. Wheeler, 1903. Psyche 10: 103, ☿ ♂.—Cole, 1940. Amer. Midland Nat. 24: 65, ☿.—R. E. Gregg, 1944. Ent. Soc. Amer. Ann. 37: 469, ☿.
heeri var. **obscurior** Forel. Fla. Possibly introduced into U. S.; Mexico, Central America, West Indies. *B. heeri* Forel occurs in South America and West Indies.
Brachymyrmex Heeri var. ***obscurior*** Forel, 1893. Ent. Soc. London, Trans., p. 345. ☿ ♀ ♂.
Biology: M. R. Smith, 1936. Puerto Rico Univ. Jour Agr. 20: 866–867.
Taxonomy: Santschi, 1923. Buenos Aires Mus. Nac. de Hist. Nat. An. 31: 654, 666, ☿ ♀.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 865, 867, ☿.
Economics: H. K. Plank and M. R. Smith, 1940. Puerto Rico Univ. Jour. Agr. 24: 60.

nanellus W. M. Wheeler. Miss., Tex.
Brachymyrmex nanellus W. M. Wheeler, 1903. Psyche 10: 102. ☿ ♂.
Biology: M. R. Smith, 1927. Ent. News 38: 313.
Taxonomy: Santschi, 1923. Buenos Aires Mus. Nac. de Hist. Nat. An. 31: 664, ☿.

Genus CAMPONOTUS Mayr

Subgenus CAMPONOTUS Mayr

Camponotus Mayr, 1861. Die Europäischen Formiciden, pp. 25, 35.
Type: ***Formica ligniperda*** Latreille. Desig. by Bingham, 1903.
Revisions: Emery, 1893. Zool. Jahrb. Abt. f. System. 7: 667–682.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 295–354.

acutirostris W. M. Wheeler. N. Mex.
Camponotus (Camponotus) acutirostris W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 317. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 318.
Taxonomy: W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 420.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 561-562, ☿.

acutirostris var. **clarigaster** W. M. Wheeler. Ariz. (Grand Canyon).
Camponotus acutirostris var. ***clarigaster*** W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 420. ☿.

castaneus americanus Mayr. N. H. to Fla., west to Kans. and Tex.
Camponotus americanus Mayr, 1862. Zool.-Bot. Gesell, Wien, Verh. 12: 661. ☿ ♀.
Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 273, 275, 300–301.—R. E. Gregg, 1944. Ent. Soc. Amer. Ann. 37: 457, 477.
Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 323–325, ☿ ♀ ♂.—Cole, 1940. Amer. Midland Nat. 24: 82, 84, ☿.—R. E. Gregg, 1944. Ent. Soc. Amer. Ann. 37: 477, ☿.

castaneus castaneus (Latreille). N. Y. to Fla., west to Okla. and Tex.
Formica castanea Latreille, 1802. Hist. Nat. Fourmis, p. 118. ☿ ♀ ♂.
Formica mellea Say, 1831. Descr. N. Spp. No. Amer. Ins. Found in La. by Jos. Barabino, p. 14. ♂.
Camponotus clarus Mayr, 1862. Zool.-Bot. Gesell. Wien, Verh. 12: 660. ♀.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 402.—R. E. Gregg, 1944. Ent. Soc. Amer. Ann. 37: 457, 477.
Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 321–323, ☿ ♀ ♂.—Cole, 1940. Amer. Midland Nat. 24: 82, 84, ☿.—R. E. Gregg, 1944. Ent. Soc. Amer. Ann. 37: 477, ☿.

castaneus rufinasis Santschi. Okla. (Poteau).
Camponotus (Camponotus) castaneus stirps ***rufinasis*** Santschi, 1936. Rev. de Ent. 6: 204. ☿.
herculeanus ligniperdus var. ***noveboracensis*** (Fitch). N. S. and Que. to Va. west to Colo., Utah, Oreg., and B. C. *C. herculeanus ligniperdus* (Latreille) occurs in Europe.

Formica novaeboracensis Fitch, 1855. N. Y. State Agr. Soc. Trans. 14: 766. ☿.

Camponotus herculeanus ligniperdus var. *pictus* Forel, 1879. Soc. Vaud. des Sci. Nat. Bul. 16: 59. ☿ ♀ ♂.

Camponotus herculeanus ligniperdus var. *noveboracensis* Forel, 1899. Soc. Ent. Belg. Ann. 43: 447. Emend.

Biology: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 341.—R. E. Gregg, 1944. Ent. Soc. Amer. Ann. 37: 457–458.—G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 250–251.

Morphology: Falconer Smith, 1942. Tenn. Acad. Sci. Jour. 17: 368.

Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 300, 340, ☿ ♀ ♂.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 293, ☿.

herculeanus pennsylvanicus (Degeer). Ont. and Que. to Fla. west to N. Dak. and Tex. An important economic species; a wood-nesting form which damages wooden buildings and telephone poles, and infests human foods.

Formica pensylvanica (!) Degeer, 1773. Mem. Serv. Hist. Ins., v. 3, p. 603. ☿ ♀ ♂.

Biology: McCook, 1877. Amer. Ent. Soc. Trans. 6: 253–296.—Pricer, 1908. Biol. Bul. 14: 177–218.

Morphology: Forbes, 1938. Ent. Soc. Amer. Ann. 31: 181–195.—Falconer Smith, 1942. Tenn. Acad. Sci. Jour. 17: 367–373.

Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 335–336, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 600. ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 293, ☿.

Economics: Herrick, 1914. Insects Injurious to the Household and Annoying to Man, pp. 177–178.—Gibson, 1916. Canad. Ent. 48: 365–366.— Graham, 1918. Minn. State Ent. Rpt. 17: 32–40.—Back, 1937. U. S. Dept. Agr. Leaflet 147.

Bibliography: Townsend, 1945. Ky. Agr. Expt. Sta. Cir. 59: 1–27.

Physiology: McCook, 1878. Phila. Acad. Nat. Sci. Proc. 30: 15–19.—Fielde, 1903. Biol. Bul. 5: 320–325.—Fielde and Parker, 1904. Phila. Acad. Nat. Sci. Proc. 56: 642–649.

herculeanus pennsylvanicus var. **ferrugineus** (Fabricius). N. Y. to Ga., west to Nebr. and Kans.

Formica ferruginea Fabricius, 1798. Sup. Ent. System., p. 279. ☿ ♀.

Biology: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 339.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 301–302.

Taxonomy: Emery, 1893. Zool. Jahrb. Abt. f. System. 7: 668. ☿.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 338–339, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 600–601, ☿.—Cole, 1940. Amer. Midland Nat. 24: 86, ☿.

Embryology: Tanquary, 1913. Ill. State Lab. Nat. Hist. Bul. 9: 454–475.

herculeanus var. **modoc** W. M. Wheeler. S. Dak. to N. Mex., west to B. C. and Calif. *C. herculeanus herculeanus* (Linnaeus) occurs in Europe. Nests in wood of buildings and infests human food.

Camponotus (*Camponotus*) *herculeanus* var. *modoc* W. M. Wheeler, 1910, N. Y. Acad. Sci. Ann. 20: 299, 333. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 557.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 90.

Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 387, ☿.

Economics: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 29.—Furniss, 1944. Oreg. Agr. Expt. Sta. Cir. 158: 1–12.

herculeanus var. **whymperi** Forel. Alaska, Canada, Labrador, Newfoundland, N. B., N. S., Maine, N. Y., and Pa. west to Wash. and Oreg. Also Colo., Utah, N. Mex. A boreal and alpine form.

Camponotus herculeanus var. *Whymperi* Forel, 1902. Ent. Soc. London, Trans., p. 699. ☿ ♀.

Biology: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 333.—Gregg, 1946. Amer. Midland Nat. 35: 753.

Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 330–333, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 387, ☿.

laevigatus (F. Smith). Mont. and N. Mex. to B. C. and Mex. (Gulf of Calif.). Occurs at 4,000 to 11,000 ft. Nests in, and damages wood of buildings; infests human foods.

Formica laevigata F. Smith, 1858. Cat. Hym. Brit. Mus., v. 6, p. 55. ☿ . ♀ .
Biology: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 329.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 556.—Cole, 1942, Amer. Midland Nat. 28: 388.
Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 327–330, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 387, ☿ .
Economics: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 29.—Furniss, 1944. Oreg. Agr. Expt. Sta. Cir. 158: 1–12.

ocreatus ocreatus Emery. Calif. (Panamint Mts.); Mexico. Very closely related to *C. acutirostris* W. M. Wheeler and its form.
Camponotus (Camponotus) maculatus ocreatus Emery, 1893. Zool, Jahrb., Abt. f. System. 7: 668, 673. ☿ .
Taxonomy: Emery, 1895. Zool. Jahrb., Abt. f. System. 8: 336, ☿ .—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 309–310, ☿ .—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 561–562, ☿ .

ocreatus primipilaris W. M. Wheeler. Ariz.
Camponotus (Camponotus) acutirostris primipilaris W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 319. ☿ ♀ .
Biology: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 319, footnote.
Taxonomy: W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 420.—W. M. Wheeler., 1917. Amer. Acad. Arts and Sci. Proc. 52: 561–562, ☿ .

sansabeanus bulimosus W. M. Wheeler. Ariz.
Camponotus (Camponotus) maculatus bulimosus W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 308. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 560–561.

sansabeanus dumetorum W. M. Wheeler. Calif. (dry foothills of San Gabriel Range near Pasadena and Claremont to an altitude of 2,000 ft.). The dominant insect of the chaparral.
Camponotus (Camponotus) maculatus dumetorum W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 354. ☿ ♂.
Camponotus (Myrmoturba) maculatus Maccooki berkeleyensis Forel, 1914. Deut. Ent. Ztschr., p. 619. ☿ .
Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 560.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 90–91.

sansabeanus maccooki Forel. Okla. and Tex. west to Oreg. and Calif., south to Mexico. Infests houses and disfigures lawns with its nests.
Camponotus sylvaticus maccooki Forel, 1879. Soc. Vaud. des Sci. Nat. Bul. 16: 69. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 345.—Cole, 1934 Ent. Soc. Amer. Ann. 27: 403.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 91.
Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 668, 672, ☿ .—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 306, ☿ ♀ ♂.
Economics: Essig, 1926. Ins. of West. No. Amer., p. 868.—Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 28.

sansabeanus sansabeanus (Buckley). Ark. and La., west to Utah and Ariz.
Formica San Sabeana Buckley, 1866. Ent. Soc. Phila. Proc. 6: 167. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1901. Amer. Nat. 35: 518, 520, 533.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 308.—W. M. Wheeler, 1926. Ants, pp. 349, 393.
Morphology: W. M. Wheeler, 1926. Ants, pp. 24, 49.
Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 672–673, ☿ ♀ .—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 307–308, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 387. ☿ .

sansabeanus sansabeanus var. **torrefactus** W. M. Wheeler. Ariz., Utah.
Camponotus (Camponotus) maculatus sansabeanus var. ***torrefactus*** W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 308. ☿ ♂.
Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 559.—Cole, 1942. Amer. Midland Nat. 28: 388.
Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 387, ☿ .

sansabeanus vicinus Mayr. Alta. to N. Mex., west to B. C. and Calif.
Camponotus vicinus Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 940. ☿ .

Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 668, 671–672, ☿ ♀.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 301–303, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 387, ☿.

sansabeanus vicinus var. **infernalis** W. M. Wheeler. Ariz., Calif., N. Mex.

Camponotus* (*Camponotus*) *maculatus vicinus var. ***infernalis*** W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 305. ☿.

Camponotus* (*Myrmoturba*) *maculatus vicinus var. ***subrostrata*** Forel, 1914. Deut. Ent. Ztschr., p. 620. ☿.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 560.

sansabeanus vicinus var. ***luteangulus*** W. M. Wheeler. Mont. to Ariz., west to B. C. and Calif.

Camponotus* (*Camponotus*) *maculatus vicinus var. ***luteangulus*** W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 304. ☿ ♂.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 559.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 92.—Cole, 1942. Amer. Midland Nat. 28: 388.

Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 387, ☿.

sansabeanus vicinus var. **maritimus** W. M. Wheeler. Calif.

Camponotus* (*Camponotus*) *maculatus vicinus var. ***maritimus*** W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 305. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci Proc. 52: 559.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 92.

sansabeanus vicinus var. **nitidiventris** Emery. S. Dak. to Okla., west to Wash. and Calif.; ?La.

?***Formica Tejonia*** Buckley, 1866. Ent. Soc. Phila. Proc. 6: 161. ♂.

Camponotus* (*Camponotus*) *maculatus vicinus var. ***nitidiventris*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 668, 672. ☿.

Biology: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 345.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 559.—Cole, 1942. Amer. Midland Nat. 28: 387.

Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 304–305, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 387, ☿.

sansabeanus vicinus var. **plorabilis** W. M. Wheeler. Wash., Calif., Idaho, Nev., Man.

Camponotus* (*Camponotus*) *maculatus vicinus var. ***plorabilis*** W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 303. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 559.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 92.—McClure, 1943. Ecol. Monog. 13: 19.

sansabeanus vicinus var. **semitestaceus** Emery. Calif.

Camponotus* (*Camponotus*) *maculatus vicinus var. ***semitestaceus*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 668, 672. ☿.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci Proc. 52: 559.—Essig, 1926. Ins. West. No. Amer., p. 868.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 92.

Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 304, ☿.

Unrecognized Forms of Subgenus Camponotus Mayr

herculeanus herculeanus herculeano-pennsylvanicus Forel. Allegheny Mts., N. Y., S. C., Ill.

Camponotus herculeanus herculeanus herculeano-pennsylvanicus Forel, 1879. Soc. Vaud. des Sci. Nat. Bul. 16: 57. ☿ (?).

Camponotus herculeanus pennsylvanicus var. ***mahican*** W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 338. ♀. Unnecessarily proposed as a new name for *herculeano-pennsylvanicus*.

herculeanus ligniperdus var. **rubens** W. M. Wheeler. Maine, Mich.

Camponotus herculeanus ligniperdus var. ***rubens*** W. M. Wheeler, 1906. Psyche 13: 41. ♀ ♂.

semipunctata Kirby. "Taken on a journey from New York to Cumberland House."

Formica semipunctata Kirby, 1837 Fauna Bor.-Amer., v. 4, p. 262. ♀.

Subgenus TANAEMYRMEX Ashmead

Tanaemyrmex Ashmead, 1905. Canad. Ent. 37: 384.
Type: ***Formica longipes*** Gerstaecker. Orig. desig.
Myrmoturba Forel, 1912. Soc. Ent. Belg. Mem. 20: 91.
Type: ***Formica maculata*** Fabricius. Desig. by W. M. Wheeler, 1913.
Revision: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298–299, 310–317, 319–321.

Some forms nest in wood, others in the soil. Food habits in general similar to those of the subgenus *Camponotus*. Several forms infest houses.

fumidus var. **festinatus** (Buckley). Ariz., Colo., N. Mex., Tex., Mex. *C.* (*T.*) *fumidus* Roger occurs in Central America. Workers timid, crepuscular or nocturnal.
Formica festinata Buckley, 1866. Ent. Soc. Phila. Proc. 6: 164. ☿ ♀.
Camponotus (Camponotus) fumidus var. ***pubicornis*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 668, 670. ☿.
Biology: W. M. Wheeler, 1901. Amer. Nat. 35: 518, 520, 533.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 314.
Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 312–314, ☿ ♀ ♂.

fumidus var. **fragilis** Pergande. Calif., Tex. (?), Mexico. Infests houses at night.
Camponotus fragilis Pergande, 1893. Calif. Acad. Sci. Proc. 4: 26. ☿.
Taxonomy: Emery, 1895. Zool. Jahrb., Abt. f. System. 8: 336, ☿.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 315, ☿.

fumidus var. **spurcus** W. M. Wheeler. Ariz., Tex.
Camponotus (Camponotus) fumidus var. ***spurcus*** W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 315. ☿ ♀.

incensus W. M. Wheeler. Fla. (Pigeon Key near Miami).
Camponotus (Tanaemyrmex) incensus W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 14. ☿.

socius Roger. N. C. to Fla., west to La.; Brazil. Probably introduced into U. S.
Camponotus socius Roger, 1863. Berlin. Ent. Ztschr. 7: 140. ☿.
Biology: W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 14–15.
Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 667, 670, ☿.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 298, 319–321, ☿ ♀ ♂.

socius var. **osceola** W. M. Wheeler. Ga., Fla., This color variant of *socius* may not have any validity.
Camponotus (Tanaemyrmex) socius var. ***osceola*** W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 15. ☿.

tortuganus Emery. Fla. (lower third of the state).
Camponotus maculatus tortuganus Emery, 1895. Zool. Jahrb., Abt. f System. 8: 336. ☿
Biology: W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 13–14.
Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 310–312, ☿ ♀ ♂.

vafer W. M. Wheeler. Ariz. (Huachuca Mts., 5,000–6,000 ft.). Nests under stones. Infests houses.
Camponotus (Camponotus) vafer W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 315. ☿ ♀.

Subgenus MYRMOTHRIX Forel

Myrmothrix Forel, 1912. Soc. Ent. Belg. Mem. 20: 91.
Type: ***Formica abdominalis*** Fabricius. Desig. by W. M. Wheeler, 1913.
Revisions: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 325–327.—Santschi, 1936. Rev. de Ent. 6: 207–218.

Neotropical with extensions into southeastern and southwestern United States. Apparently native. General habits similar to other *Camponotus*. At least one form is of economic importance.

abdominalis floridanus (Buckley). N. C., S. C., Ga., Fla. *C.* (*M.*) *abdominalis abdominalis* (Fabricius) occurs in Central and South America. One of the most common species of *Camponotus* in Florida. Wood-nesting. Infests beehives and houses, and damages woodwork of buildings.

Formica Floridana Buckley, 1866. Ent. Soc. Phila. Proc. 6: 161. ☿.

Camponotus atriceps stirps ***Yankee*** Forel, 1884. Soc. Vaud. des Sci. Nat. Bul. 20: 340. ☿.

Biology: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 326.

Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 668, 670, ☿.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 325–326, ☿ ♀.—Santschi, 1936. Rev. de Ent. 6: 213–214, ☿.

abdominalis transvectus W. M. Wheeler. Tex.

Camponotus (Camponotus) abdominalis transvectus W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 326, ☿ ♀ ♂.

Taxonomy: Santschi, 1936. Rev. de Ent. 6: 213, ☿.

Subgenus MYRMENTOMA Forel

Myrmentoma Forel, 1912. Soc. Ent. Belg. Mem. 20: 92.
Type: ***Formica lateralis*** Olivier. Desig. by W. M. Wheeler, 1913.

Revisions: W. M. Wheeler, 1910. N. Y. Ent. Soc. Jour. 18: 216–232.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 300–301, 342–346.—W. M. Wheeler, 1917. Psyche 24: 27–29.

The Nearctic forms nest in insect galls, in branches and stems of plants, under bark of trees, in wood and buildings, and even in the soil. Colonies are small, consisting of a few dozen to several hundred individuals. The food is largely honeydew and the flesh of arthropods. A number of forms infest human foods, especially sweets, and some of them apparently nest in houses. The group is badly in need of revision.

anthrax W. M. Wheeler. Calif. (vicinity of Santa Barbara).

Camponotus anthrax W. M. Wheeler, 1911. N. Y. Ent. Soc. Jour. 19: 96. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 558.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 89.

caryae caryae (Fitch). N. Y. to Fla., west to Ill. and Miss. Often confused with *C.* (*M.*) *nearcticus* Emery.

Formica caryae Fitch, 1855. N. Y. State Agr. Soc. Trans. 14: 855. ☿ ♀ ♂.

Camponotus marginatus discolor var. ***cnemidatus*** Emery, 1893. Zool. Jahrb., Abt. f. System., 7: 669, 678. ☿.

Biology: M. R. Smith, 1940. Ent. Soc. Wash. Proc. 42: 137–141.

Taxonomy: M. R. Smith, 1940. Ent. Soc. Wash. Proc. 42: 139–141, ☿ ♀ ♂.

caryae discolor (Buckley). Ohio to Ga., west to Kans., Okla. and Tex.

Formica discolor Buckley, 1886. Ent. Soc. Phila. Proc. 6: 166. ☿ ♀.

Biology: W. M. Wheeler, 1902. Tex. Acad. Sci. Trans. 4: 23.—L. G., Jr., and R. G Wesson, 1940. Amer. Midland Nat. 24: 103.

Taxonomy: W. M. Wheeler, 1910. N. Y. Ent. Soc. Jour. 18: 222, 230–231, ☿ ♀ ♂. —Buren, 1944. Iowa State Col. Jour. Sci. 18: 293, ☿.

clarithorax Emery, n. status. Calif.

Camponotus marginatus discolor var. ***clarithorax*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 670, 678. ☿ ♀ ♂.

Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 89.

Taxonomy: W. M. Wheeler, 1910. N. Y. Ent. Soc. Jour. 18: 222, 231–232, ☿ ♀ ♂. —W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 301, ☿.

essigi M. R. Smith, n. status. Calif. (Lagunitas).

Camponotus caryae var. ***essigi*** M. R. Smith, 1923. Ent. News 24: 306. ☿.

Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 89.

hyatti bakeri W. M. Wheeler, n. status. Calif. (Catalina Isl.).

Camponotus hyatti var. ***bakeri*** W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 271. ☿ ♀.

Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 300, 346, ☿ ♀.

hyatti hyatti Emery. Calif., ?Idaho. Original specimens from stem of *Yucca*.
Camponotus (*Camponotus*) *hyatti* Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 669, 680. ☿.
Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 300, ☿.

nearcticus Emery, n. status. Ont. to Fla., west to Minn., Nebr. and Tex. Nests in houses. One of the most common and most widely distributed forms of the subgenus.
?*Formica americana* Buckley, 1866. Ent. Soc. Phila. Proc. 6: 154. ☿ ♀.
Camponotus (*Camponotus*) *marginatus* var. *nearcticus* Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 669, 675. ☿ ♀.
Camponotus (*Camponotus*) *marginatus* var. *minutus* Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 669, 676. ☿ ♀.
Camponotus (*Camponotus*) *marginatus* var. *decipiens* Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 669, 676. ☿ ♀.
Camponotus fallax fallax var. *pardus* W. M. Wheeler, 1910. N. Y. Ent. Soc. Jour. 18: 222, 225. ☿ ♀ ♂.
Camponotus fallax fallax var. *tanquaryi* W. M. Wheeler, 1910. N. Y. Ent. Soc. Jour. 18: 222, 226. ☿ ♀ ♂.
Camponotus fallax rasilis var. *pavidus* W. M. Wheeler, 1910. N. Y. Ent. Soc. Jour. 18: 222, 228. ☿ ♀.
Biology: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 21: 402–403.—W. M. Wheeler, 1910. N. Y. Ent. Soc. Jour. 18: 220–221.—Davis and Bequaert, 1922. Brooklyn Ent. Soc. Bul. 17: 24.
Taxonomy: W. M. Wheeler, 1910. N. Y. Ent. Soc. Jour. 18: 222–224, ☿ ♀ ♂.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 300, ☿.—Buren, 1944 Iowa State Col. Jour. Sci. 18: 293, ☿.

rasilis W. M. Wheeler, n. status. S. C. to Fla., west to Iowa, Kans., and Tex. An especially common form in the Gulf Coast States.
Camponotus fallax rasilis W. M. Wheeler, 1910. N. Y. Ent. Soc. Jour. 18: 222, 227. ☿ ♀ ♂
Biology: W. M. Wheeler, 1910. N. Y. Ent. Soc. Jour. 18: 228.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 302–303.
Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 300, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 293–294, ☿.

sayi Emery. Ariz., Calif., ?N. Dak.
Camponotus (*Camponotus*) *sayi* Emery, 1897. Zool. Jahrb., Abt. f. System, 7: 669, 679. ☿.
Biology: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 344.
Taxonomy: W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 90, ♀.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 300, 343–344, ☿.

schaefferi W. M. Wheeler. Ariz. (Huachuca Mts., approx. 5,000 ft.).
Camponotus schaefferi W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 88. ☿ ♀.
Biology: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 345.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 557.
Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 300, 344–345, ☿ ♀.

subbarbatus Emery. D. C. to Va., west to Iowa and Kans.
Camponotus (*Camponotus*) *marginatus subbarbatus* Emery, 1893. Zool. Jahrb., Abt. f. System, 7: 669, 676. ☿ ♀ ♂.
Camponotus (*Camponotus*) *marginatus subbarbatus* var. *paucipilis* Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 669, 677. ☿ ♂.
Biology: L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 90, 103.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 294–295.
Taxonomy: W. M. Wheeler, 1910. N. Y. Ent. Soc. Jour. 18: 222, 229–230, ☿ ♀ ♂.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 300, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 293, ☿.

texanus W. M. Wheeler. Tex. (canyons in Travis County). Nests in houses.
Camponotus texanus W. M. Wheeler, 1903. Psyche 10: 108. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 344.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 557.
Taxonomy: W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 90, ☿.—W. M. Wheeler 1910. N. Y. Acad. Sci. Ann. 20: 300, 344–345, ☿ ♂.

Unrecognized Forms of Subgenus Myrmentoma Forel

atra (Buckley). D. C.
Formica atra Buckley, 1866. Ent. Soc. Phila. Proc. 6: 159. ☿.

septentrionale (Buckley). Ill., Mich.
Formica septentrionale Buckley, 1866. Ent. Soc. Phila. Proc. 6: 161. ☿ ♀.

Subgenus COLOBOPSIS Mayr

Colobopsis Mayr, 1861. Die Europäischen Formiciden, pp. 25, 38.
Type: *Formica truncata* Spinola. Desig. by Bingham, 1903.
Revisions: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 139–158.—W M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 301, 352–353.

The Nearctic forms are confined mainly to the southern half of the United States with the most northern extension in the Mississippi Valley region. They nest in wood, branches of trees and shrubs, insect galls, and nuts. Their nests often are polydomus. The soldier uses its subcylindrical, truncate head for blocking the entrance hole to the nest.

cerberulus Emery. Ariz.; Mexico.
Camponotus (*Colobopsis*) *cerberulus* Emery, 1920. Soc. Ent. Ital. Bol. 52: 34. ♀.
Taxonomy: W. M. Wheeler, 1934. Harvard Univ., Mus. Compar. Zool. Bul. 77: 214–216, ♃ ♂.

etiolatus W. M. Wheeler. Tex.
Camponotus (*Colobopsis*) *abditus* var. *etiolatus* W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 150. ☿ ♃ ♀ ♂.
Biology: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 153–158.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 352–353.
Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 301, ♃.—W. M. Wheeler, 1934. Harvard Univ., Mus. Compar. Zool. Bul. 77: 216.

impressus (Roger). Fla., Ga., Tex.
Colobopsis impressa Roger, 1863. Berlin. Ent. Ztschr. 7: 160. ☿.
Biology: W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 16.
Taxonomy: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 144–146, ♃ ☿ ♀ ♂.–W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 301, ♃.

mississippiensis M. R. Smith. S. C., west to Ill. and Okla.
Camponotus (*Colobopsis*) *mississippiensis* M. R. Smith, 1923. Psyche 30: 83. ☿ ♃.
Biology: M. R. Smith, 1923. Ent. News 35: 127.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 303, 306.
Taxonomy: M. R. Smith, 1923. Ent. News 35: 127, ♃.

obliquus M. R. Smith. S. C., Miss.
Camponotus (*Colobopsis*) *obliquus* M. R. Smith, 1930. Ent. Soc. Amer. Ann. 23: 256. ♃.
Biology: M. R. Smith, 1931. Ent. News 42: 23.
Taxonomy: M. R. Smith, 1931. Ent. News 42: 23, ♃.

pylartes fraxinicola M. R. Smith. S. C. to Ark.
Camponotus (*Colobopsis*) *pylartes fraxinicola* M. R. Smith, 1923. Psyche 30: 86. ☿ ♃.
Biology: M. R. Smith, 1924. Ent. News 35: 127.
Taxonomy: M. R. Smith, 1924. Ent. News 35: 127, ♃.

pylartes pylartes W. M. Wheeler. N. C. to Fla., west to Okla. and Tex.
Camponotus (*Colobopsis*) *pylartes* W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 147. ☿ ♃ ♀.
Biology: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 153–158.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 353.
Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 120, ♃.—W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 301, ♃.

pylartes var. **hunteri** W. M. Wheeler. Tex. (Victoria).
Camponotus (*Colobopsis*) *pylartes* var. *hunteri* W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 301, 353. ☿ ♃.
Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 562.

Subgenus MYRMAPHAENUS Emery

Myrmaphaenus Emery, 1920. Rev. Zool. Bot. Africaines 8: 237.
Type: *Camponotus leydigi* Forel. Orig. desig.
Paracolobopsis Emery, 1920. Rev. Zool. Bot. Africaines 8: 249.
Type: *Camponotus salvini* Forel. Orig. desig.
Neomyrmamblys W. M. Wheeler, 1921. Psyche 28: 19.
Type: *Camponotus fastigatus* Roger. Desig. by Santschi, 1921.

Representatives of this Neotropical subgenus have been found in Texas and California.

bruesi W. M. Wheeler. Tex. (Ft. Davis); Mexico.
Camponotus (*Camponotus*) *bruesi* W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 299, 349. ☿.
yogi W. M. Wheeler. Calif. (San Diego).
Camponotus yogi W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 420. ☿.
Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 562.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 92.

Subgenus MANNIELLA W. M. Wheeler

Manniella W. M. Wheeler, 1921. Psyche 28: 19.
Type: *Camponotus sphaericus* Roger. Orig. desig.

This subgenus is known from the West Indies and southwestern United States. Some forms nest in the soil, others in wood.

ulcerosus W. M. Wheeler. Ariz. (Palmerlee). Nests under stones at 5,500–6,000 ft.
Camponotus (*Camponotus*) *ulcerosus* W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 351. ☿.
Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 562.

Subgenus MYRMOBRACHYS Forel

Myrmobrachys Forel, 1912. Soc. Ent. Belg. Mem. 20: 91.
Type: *Formica senex* F. Smith. Desig. by W. M. Wheeler, 1913.
Revision: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 300, 346–349.

This Neotropical subgenus extends into Florida, Arizona, and Texas. Our two forms nest largely under bark of trees and branches, and in logs and stumps.

mina zuni W. M. Wheeler. Ariz. (Tucson). From bark of mesquite. *C. mina mina* Forel occurs in Mexico (Baja Calif.).
Camponotus (*Camponotus*) *mina zuni* W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 300. ☿.
planatus var. **continentis** Forel. Fla., Tex. and Mexico to South America. *C. planatus* Roger occurs in the West Indies.
Camponotus planatus var. *continentis* Forel, 1901. Soc. Ent. Belg. Ann. 45: 371. ☿.
Biology: W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 15.—W. M. Wheeler, 1942. Harvard Univ., Mus. Compar. Zool. Bul. 90: 258.
Taxonomy: W. M. Wheeler, 1910. N. Y. Acad. Sci. Ann. 20: 301, 348–349, ☿ ♀ ♂.

Unrecognized Form of Camponotus Mayr

Formica lauta Say, 1836. Boston Jour. Nat. Hist. 1: 286. ♀ ♂.

Genus PARATRECHINA Motschoulsky

Subgenus PARATRECHINA Motschoulsky

Paratrechina Motschoulsky, 1863. Soc. Nat. Moscou Bul. 36: 13.
Type: (*Paratrechina currens* Motschoulsky)=*Formica longicornis* Latreille. Desig. by W. M. Wheeler, 1911.

The single known species, thought to be a native of India, has been distributed by commerce over the world. In the United States this ant is now well established in towns and cities of the Gulf and Atlantic States; farther inland its distribution is sporadic. In the more northern areas the species lives in greenhouses or apartment buildings.

longicornis (Latreille). Introduced into U. S. For distribution see remarks under the subgenus; especially common in Fla. An important house pest.
Formica longicornis Latreille, 1802. Hist. Nat. Fourmis, p. 113. ☿.
Biology: Phillips, 1934. (Hawaii Univ.) Expt. Sta. Pineapple Prod. Coop. Assoc. Bul. 15: 18, 19.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 869–870.—Turner, 1940. Conn. Agr. Expt. Sta. Bul. 434: 311–312.
Taxonomy: M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 865, 870, ☿.—Bingham, 1903. Fauna of British India, v. 2, pp. 326–327, ☿ ♀ ♂.
Economics: Marlatt, 1928. U. S. Dept. Agr. Farmers' Bul. 740: 6–7.—Phillips, 1934. (Hawaii Univ.) Expt. Sta. Pineapple Prod. Coop. Assoc. Bul. 15: 19.—M. R. Smith, 1936. Puerto Rico Univ. Jour. Agr. 20: 870.

Subgenus NYLANDERIA Emery

Nylanderia Emery, 1906. Soc. Ent. Belg. Ann. 50: 134.
Type: *Formica vividula* Nylander. Orig. desig.

In the northern sections ants of this subgenus occur in greenhouses; farther south they are capable of living outdoors. The native species nest in soil and rotting wood. Some forms infest human foods, showing an especial fondness for sweets. Although easily recognized generically the ants are difficult to determine specifically. Male genitalia are believed to offer the best characters for separating the species.

arenivaga (W. M. Wheeler). N. J. to Ga., west to Iowa and Tex.
Prenolepis arenivaga W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 391. ☿ ♂.
Biology: M. R. Smith, 1928. Ent. News 39: 278.
Taxonomy: Buren, 1944. Iowa State Col. Jour. Sci. 18: 295, ☿.

arenivaga var. **faisonensis** (Forel). N. C. (Faisons).
Prenolepis (*Nylanderia*) *arenivaga* var. *faisonensis* Forel, 1922. Rev. Suisse de Zool. 30: 98. ☿.

bourbonica (Forel). Fla., S. C. Introduced into U. S., presumably from the Orient on plants. Infests human foods.
Prenolepis nodifera bourbonica Forel, 1886. Soc. Ent. Belg. Ann. 30: 210. ☿ ♀ ♂.
Biology: M. R. Smith, 1930. Fla. Ent. 14: 23–24.
Historical: M. R. Smith, 1930. Fla. Ent. 13: 23–24.—W. M. Wheeler, 1932. N. Y. Ent. Soc. Jour. 40: 16.

bruesii (W. M. Wheeler). Miss., Tex.
Prenolepis bruesii W. M. Wheeler, 1903. Psyche 10: 106. ☿ ♀ ♂.
Biology: M. R. Smith, 1924. Ent. News 35: 122.

fulva pubens (Forel). D. C., N. Y. Introduced into U. S. Established in greenhouses. *P.* (*N.*) *fulva fulva* Mayr occurs in Mexico, Central and South America, West Indies.
Prenolepis fulva pubens Forel, 1893. Ent. Soc. London, Trans., p. 338. ☿ ♀ ♂.
Biology: Marlatt, 1922. U. S. Dept. Agr. Farmers' Bul. 740: 8–9.
Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 636–637, ☿ ♂.
Economics: Marlatt, 1922. U. S. Dept. Agr. Farmers' Bul. 740: 8–9.

parvula (Mayr). N. Y. to Fla., west to Nebr., Kans., and Tex. One of the commonest and most widely distributed forms of the subgenus. Lives in dry or moist habitats. Can be expected to infest houses.
Prenolepis parvula Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 947. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 390.—Talbot, 1934. Ecology 15: 420, 422.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 295, 306.

Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 636, ☿ ♂.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 100, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 295, ☿.

parvula var. **grandula** (Forel). N. C. (Morganton).

Prenolepis* (*Nylanderia*) *parvula var. ***grandula*** Forel, 1922. Rev. Suisse de Zool. 30: 98. ☿.

vividula guatemalensis (Forel). Ariz.; Central America.

Prenolepis vividula vividula var. ***guatemalensis*** Forel, 1884. Soc. Vaud. des Sci. Nat. Bul. 20: 348. ☿.

Biology: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 342.—Cole, 1934. Ent. Soc. Amer. Ann. 27: 401.

Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 392, ☿ ♂.

vividula melanderi (W. M. Wheeler). Kans., Tex.; Mexico.

Prenolepis melanderi W. M. Wheeler, 1903. Psyche 10: 104. ☿ ♀ ♂.

Biology: Mitchell and Pierce, 1912. Ent. Soc. Wash. Proc. 14: 74.

Taxonomy: Emery, 1906. Soc. Ent. Belg. Ann. 50: 132, ♂.

vividula vividula (Nylander). Canada, Fla., Miss., Tex. Widely distributed over the warm regions of the earth. The greenhouse infestations in Canada and northern areas are no doubt due to importation.

Formica vividula Nylander, 1846. Acta Soc. Fenn. 2: 900. ☿ ♀ ♂.

?***Formica perminuta*** Buckley, 1866. Ent. Soc. Phila. Proc. 6: 162. ☿.

?***Formica picea*** Buckley, 1866. Ent. Soc. Phila. Proc. 6: 163. ☿.

?***Formica* (*Tapinoma*) *terricola*** Buckley, 1866. Ent. Soc. Phila. Proc. 6: 168. ☿ ♀ ♂.

Biology: Mitchell and Pierce, 1912. Ent. Soc. Wash. Proc. 14: 74.—Marlatt, 1922. U. S. Dept. Agr. Farmers' Bul. 740: 7.

Taxonomy: Emery, 1906. Soc. Ent. Belg. Ann. 50: 130, ☿ ♀ ♂.—Emery, 1910. Deut. Ent. Ztschr., p. 131, ☿ ♀ ♂.

Genus PRENOLEPIS Mayr

Prenolepis Mayr, 1861. Die Europäischen Formiciden, pp. 26, 52.
Type: ***Tapinoma nitens*** Mayr. Desig. by Bingham, 1903.

Revisions: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 635–637.—W. M. Wheeler, 1930. Ent. Soc. Amer. Ann. 23: 1–26.

These ants usually nest in the soil openly or under cover in small to moderate-sized colonies. Workers feed on honeydew, secretions of floral and extrafloral nectaries, exudates from galls, earthworms and arthropods, and ripened or decaying fruits. The ants often invade houses in search of food, and they sometimes forage even at freezing temperatures. Repletes are common. Ants of this genus are among the first to take their nuptial flights in the spring, males and females having overwintered in their nests.

imparis (Say). Ont. to Ga., west to Nebr. and Tex.

Formica imparis Say, 1836. Boston Jour. Nat. Hist. 1: 287. ♀ ♂.

Formica* (*Tapinoma*) *Wichita Buckley, 1866. Ent. Soc. Phila. Proc. 6: 169. ☿.

Prenolepis nitens var. ***americana*** Forel, 1891. *In* Grandidier, Hist. Madagascar, v. 20, p. 94. ♂.

?***Tapinoma polita*** F. Smith, 1855. Ent. Soc. London, Trans. 3: 112. ☿.

Biology: Dennis, 1941. Ent. Soc. Amer. Ann. 34: 82–86.—Talbot, 1943. Ecology 24: 31–44.—Talbot, 1943. Ecology 24: 345–352.

Taxonomy: W. M. Wheeler, 1930. Ent. Soc. Amer. Ann. 23: 15–19, ☿ ♀ ♂.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 100, ☿.—Cole 1940. Amer. Midland Nat. 24: 66, 67, ☿.

Economics: M. R. Smith, 1924. Ent. News 35: 122.

Historical: W. M. Wheeler, 1930. Ent. Soc. Amer. Ann. 23: 12–15.

imparis var. **arizonica** W. M. Wheeler. Ariz. (Ramsay Canyon, Huachuca Mts., 5,800 ft.); Mexico (?).

Prenolepis imparis var. ***arizonica*** W. M. Wheeler, 1930. Ent. Soc. Amer. Ann. 23: 22. ☿ ♀ ♂.

imparis var. **californica** W. M. Wheeler. Oreg., Calif., Nev. Reported to feed on succulent tissue of fruit and on fruit buds, damaging these by eating out the centers and leaving only the scales.

Prenolepis imparis var. ***californica*** W. M. Wheeler, 1930. Ent. Soc. Amer. Ann. 23: 23. ☿ ♀ ♂.

Biology: Essig, 1926. Ins. West. No. Amer., p. 866.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 77–78.

Taxonomy: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Bul. 342: 27, ☿.

Economics: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 78.

imparis var. **coloradensis** W. M. Wheeler. Colo. (Colorado Springs).

Prenolepis imparis var. ***coloradensis*** W. M. Wheeler, 1930. Ent. Soc. Amer. Ann. 23: 22. ☿.

imparis var. **minuta** Emery. Conn. to N. C., west to Wis., Mo., and Okla.; Oreg. and ?Wash.

Prenolepis imparis var. ***minuta*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 636. ☿ ♂.

Taxonomy: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 591, ☿.—W. M. Wheeler, 1930. Ent. Soc. Amer. Ann. 23: 21, ☿ ♀ ♂.

imparis var. **pumila** W. M. Wheeler. N. Y. to N. C., west to Ind. and Ala.

Prenolepis imparis var. ***pumila*** W. M. Wheeler, 1930. Ent. Soc. Amer. Ann. 23: 21. ☿ ♂.

Biology: Cole, 1940. Amer. Midland Nat. 24: 67.

Taxonomy: Cole, 1940. Amer. Midland Nat. 24: 66, 67, ☿.

imparis var. **testacea** Emery. Pa. to Fla., west to Ill., Tex., and Ariz. W. M. Wheeler considers this a southern form which normally nests in sand or sandy soil at low elevations.

Prenolepis imparis var. ***testacea*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 636. ♀ ♂.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 390.—M. R. Smith, 1928. Ent. News 39: 278.

Taxonomy: W. M. Wheeler, 1930. Ent. Soc. Amer. Ann. 23: 20–21, ☿ ♀ ♂.—Cole, 1940. Amer. Midland Nat. 24: 66–67, ☿.

Genus LASIUS Fabricius

Subgenus LASIUS Fabricius

Lasius Fabricius, 1804. Systema Piezatorum, p. 415.

Type: ***Formica nigra*** Linnaeus. Desig. by Internatl. Comm. Zool. Nomencl. Op. 151, 1944.

Donisthorpea Morice and Durrant, 1914. Ent. Soc. London, Trans., p. 423. N. name.

Type: ***Formica nigra*** Linnaeus. Orig. desig.

Revisions: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 637–639.—W. M. Wheeler, 1916. Psyche 23: 168–173.

In the United States one or more forms occur in every state. These ants nest freely in the soil or under cover, also in rotting wood. Colonies are small to moderate in size. Workers not only attend honeydew-excreting insects but in some instances even foster them.

niger alienus var. **americanus** Emery. Labrador and Que. to Fla., west to B. C. and Calif. *L. niger alienus* Foerster occurs in Europe and Asia. One of the most common and widely distributed North American ants. Highly adaptable. Infests houses, makes objectionable nests on lawns and golf courses, and fosters subterranean plant lice on such crops as corn, cotton, and strawberry.

Lasius niger alienus var. ***americanus*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 639. ☿ ♀ ♂.

?***Formica pallitarsis*** Provancher, 1881. Nat. Canad. 12: 355. ☿ ♂.

Biology: Forbes, 1908. Ill. Agr. Expt. Sta. Bul. 131: 31–44.—Tanquary, 1913. Ill. State Lab. Nat. Hist. Bul. 9: 417–443.

Taxonomy: E. V. Gregg, 1945. Ent. Soc. Amer. Ann. 38: 529–546, ☿ ♀ ♂.

Economics: Metcalf and Flint, 1939. Destructive and Useful Insects, Ed. 2, p. 770.—Schread and Chapman, 1948. Conn. Agr. Expt. Sta. Bul. 515: 4–11.—Schread, 1949. Jour. Econ. Ent. 42: 501–502.

niger sitkaënsis Pergande. Alaska and Canada. Extreme north. and west. U. S. *L. niger niger* (Linnaeus) occurs in Europe and Asia. Common to Canad. and Huds. Zones. Recorded from cold bogs. Infests houses, sometimes nesting in them.

Lasius niger sitkaënsis Pergande, 1900. Wash. Acad. Sci. Proc. 2: 519. ☿.

Biology: W. M. Wheeler, 1915. Psyche 22: 206.—Cole, 1942. Amer. Midland Nat. 28: 374.

Taxonomy: W. M. Wheeler, 1917. Harvard Univ., Mus. Compar. Zool. Bul. 61: 18, 21, ☿.—Cole, 1942. Amer. Midland Nat. 28: 374, ☿.

niger var. **neoniger** Emery. From Que. and N. S. to Ga. to Alaska and Calif. Habits similar to those of *niger alienus* var. *americanus*.

Lasius niger var. ***neoniger*** Emery, 1893. Zool. Jahrb., Abt. f. System, 7: 637. ☿.

Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 295, 306.—R. E. Gregg, 1944. Ent. Soc. Amer. Ann. 37: 457–471.—E. V. Gregg, 1945. Ent. Soc. Amer. Ann. 38: 529–548.

Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 396, ☿ ♀ ♂.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 525, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 374, ☿.—E. V. Gregg, 1945. Ent. Soc. Amer. Ann. 38: 529–548, ☿ ♀ ♂.

Economics: Severin, 1920. S. Dak. State Ent. Cir. 20: 3.—Schread and Chapman, 1948. Conn. Agr. Expt. Sta. Bul. 515: 18–19.

Subgenus CHTHONOLASIUS Ruzsky

Chtonolasius (!) Ruzsky, 1912. Kasan Zap. Vet. Inst. 29: 630.

Chthonolasius Ruzsky, 1914. Arch. f. Naturgesch. 79, 27. Emend.

Type: ***Formica flava*** Fabricius. Orig. desig.

Revisions: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 637–641.—W. M. Wheeler, 1910. Psyche 17: 235–243.

Ants of this subgenus are more generally subterranean than those of the subgenus *Lasius*. Some forms build large earthen mounds. Food is largely honeydew derived from subterranean plant lice and mealybugs. Some forms are temporary parasites on ants of the subgenus *Lasius*.

brevicornis brevicornis Emery. N. S. and Que. to Fla., west to Alta., Wash., and Calif.

Lasius brevicornis Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 637. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 396.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 526.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 100.

Taxonomy: W. M. Wheeler, 1916. Conn. State Geol. and Nat. Hist. Survey Bul. 22: 592–593, ☿.—Cole, 1940. Amer. Midland Nat. 24: 68–69, ☿.—Buren 1944. Iowa State Col. Jour. Sci. 18: 296, ☿.

brevicornis microps W. M. Wheeler. Calif., N. Dak.

Lasius (Formicina) brevicornis microps W. M. Wheeler. 1917. Amer. Acad. Arts and Sci. Proc. 52: 526. ☿.

Biology: G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 253.

flavus claripennis W. M. Wheeler. Wash., Alta., Utah, Sask., Colo. *L. flavus flavus* (Fabricius) occurs in Europe and Asia Minor.

Lasius (Formicina) flavus claripennis W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 527. ☿ ♀ ♂.

Biology: Cole, 1942. Amer. Midland Nat. 28: 375.

Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 374, ☿.

flavus nearcticus W. M. Wheeler. Que. and Ont. to N. C., west to S. Dak., Utah, and Tex. Common in the Eastern and Middle States.

?Formica mellea Provancher, 1881. Nat. Canad. 12: 356. ☿. Preocc.

Lasius flavus nearcticus W. M. Wheeler, 1906. Psyche 13: 38. ☿.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 397.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 100.—Headley, 1943. Ohio Jour. Sci. 43: 29.

Taxonomy: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 592–593, ☿.—Cole, 1940. Amer. Midland Nat. 24: 68, 70, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 296, 297, ☿.

humilis W. M. Wheeler. Nev. (Pyramid Lake).
Lasius (*Formicina*) *humilis* W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 528. ☿ ♀.

pilosus M. R. Smith. Idaho (Moscow Mt.). This may be the worker of *vestitus* Whlr.
Lasius (*Chthonolasius*) *pilosus* M. R. Smith, 1934. Ent. Soc. Amer. Ann. 27: 384. ☿.

umbratus epinotalis Buren. Iowa (Bellevue). *L.* (*C.*) *umbratus umbratus* (Nylander) occurs in Europe, Asia, and Japan.
Lasius (*Chthonolasius*) *umbratus epinotalis* Buren, 1944. Iowa State Col. Jour. Sci. 18: 296, 297. ☿.

umbratus minutus Emery. "British America"; Maine to Va., west to Iowa. Probably a temporary parasite of *niger alienus* var. *americanus*. Commonly nests in bogs.
Lasius umbratus minutus Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 637, 641. ☿ ♀ ♂.
Biology: Gaige, 1914. Univ. Mich., Mus. Zool., Occas. Papers 5: 3, 4, 21, 23.—W. M. Wheeler, 1915. Psyche 22: 206.—Morris, 1943. Ind. Acad. Sci. Proc. 52: 215.
Taxonomy: W. M. Wheeler, 1910. Psyche 17: 237, 238, 241–242, ☿ ♀ ♂.

umbratus mixtus var. **aphidicola** (Walsh). Que. and Ont. to Fla., west to Idaho and Utah. *L. umbratus mixtus* (Nylander). Occurs in Europe and Asia. A common and widely distributed form. Occasionally makes large mounds. Of some economic importance because of its habit of fostering subterranean plant lice and mealybugs. A temporary parasite of *L.* (*L.*) *niger alienus* var. *americanus* Emery and *L. niger* var. *neoniger* Emery, and possibly *L.* (*C.*) *flavus nearcticus* W. M. Wheeler.
Formica aphidicola Walsh, 1862. Ent. Soc. Phila. Proc. 1: 310. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 397.—M. R. Smith, 1928. Ent. News 39: 277–278.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 90, 101.
Taxonomy: W. M. Wheeler, 1910. Psyche 17: 237–241, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 592, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 296, ☿.

umbratus speculiventris Emery. Conn., N. J., Ill., Tenn.
Lasius speculiventris Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 637, 641. ☿ ♂.
Biology: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 594.
Taxonomy: W. M. Wheeler, 1910. Psyche 17: 237, 242–243, ☿ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 592. ☿.

umbratus subumbratus Viereck. Que., N. S., Maine, Ont., Minn., Sask., Wyo., Colo., N. Mex., Ariz., Calif., Utah. Perhaps the most boreal form of the subgenus. Apparently a temporary parasite on colonies of *L.* (*L.*) *niger* var. *neoniger* Emery and *L.* (*L.*) *niger* var. *sitkaensis* Pergande.
Lasius umbratus subumbratus Viereck, 1903. Amer. Ent. Soc. Trans. 29: 73. ♀.
Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 528.—W. M. Wheeler, 1917. Psyche 24: 167–176.
Taxonomy: W. M. Wheeler, 1910. Psyche 17: 237–239, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 374, ☿.

umbratus vestitus W. M. Wheeler. B. C., Oreg., Idaho. Probably a boreal form.
Lasius umbratus vestitus W. M. Wheeler, 1910. Psyche 17: 238, 242. ♀. For possible synonymy under this form see remarks under *pilosus*.

Subgenus ACANTHOMYOPS Mayr

Acanthomyops Mayr, 1862. Zool.-Bot. Gesell. Wien, Verh. 12: 699.
Type: ***Formica clavigera*** Roger. Monob.
Revisions: Emery, 1893. Zool. Jahrb., Abt. f. system. 7:638, 642.—W. M. Wheeler, 1916. Psyche 23: 170–172.—Buren, 1950. Ent. Soc. Wash. Proc. 52: 184-190.

Distributed from Canada to Mexico. The ants nest in the soil, usually beneath objects, and also in rotting logs and stumps, and are

subterranean in habit. The females and workers have a characteristic citronella or lemon-verbena odor which no other forms of *Lasius* possess. Species of *Acanthomyops* are of some economic importance because they foster honeydew-excreting insects and because of their objectionable habit of nesting around foundations of buildings and beneath basement floors. The winged forms are often mistaken for termites.

claviger claviger (Roger). Ont. to Fla., west to Wash., Utah, and N. Mex. Unusually common in the Eastern and Central States. Has dimorphic females.

Formica clavigera Roger, 1862. Berlin. Ent. Ztschr. 6: 241. ♀.

Acanthomyops claviger Mayr, 1862. Zool.-Bot. Gesell. Wien, Verh. 12: 700. Emend.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 398.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 296, 397.—Rau, 1945. Ent. News 56: 119.

Morphology: W. M. Wheeler and J. F. McClendon, 1903. Biol. Bul. 4: 149–155.

Taxonomy: Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 950, ☿ ♀ ♂.—Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 638, 642, ☿ ♀.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 296, ☿.

claviger subglaber Emery. Maine to D. C., west to N. Dak.

Lasius claviger var. ***subglaber*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 642. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 623.

Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 398, ☿ ♀ ♂.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 533, ☿ ♀.

clavigeroides Buren. Wis. (near Solon Springs). May be a temporary social parasite on one of the varieties of *Lasius niger* (Linnaeus).

Lasius* (*Acanthomyops*) *clavigeroides Buren, 1942. Iowa State Col. Jour. Sci. 16: 406. ☿ ♀ ♂.

interjectus arizonicus W. M. Wheeler. Ariz. (Huachuca Mts.).

Lasius* (*Acanthomyops*) *interjectus arizonicus W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 532. ☿.

interjectus californicus W. M. Wheeler. Calif. (vicinity of Claremont, 2,000 ft.).

Lasius* (*Acanthomyops*) *interjectus californicus W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 531. ☿ ♀.

interjectus coloradensis W. M. Wheeler. Colo., N. Mex. Common to Transit. Zone in Colo.

Lasius* (*Acanthomyops*) *interjectus coloradensis W. M. Wheeler, 1917. Amer. Acad. Arts. and Sci. Proc. 52: 532. ☿ ♀ ♂.

interjectus interjectus Mayr. Mass. to Fla., west to Wash., Utah, and N. Mex. One of the most common members of the subgenus, especially in the Eastern and Central States.

Lasius* (*Acanthomyops*) *interjectus Mayr, 1866. Zool.-Bot. Gesell. Wien, Verh. 16: 888. ♀.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 397–398.—Roger C. Smith, 1928. Kans. Ent. Soc. Jour. 1: 14–18.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 296, 306.

Taxonomy: W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 592, 594, ☿ ♀.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 296, ☿.

latipes (Walsh). Ont., Que. to S. C., west to Alaska, Wash. and Calif. Widely but apparently sporadically distributed; more common in the Eastern and Central States. General habits similar to other members of the subgenus. Has dimorphic females known as the alpha and beta forms.

Formica latipes Walsh, 1862. Ent. Soc. Phila. Proc. 1: 311. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 398.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 530–531.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 41: 79.

Morphology: W. M. Wheeler and J. F. McClendon, 1903. Biol. Bul. 4: 149–155.—W. M. Wheeler, 1903. Amer. Mus. Nat. Hist. Bul. 19: 650–651.

Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 638, 642, ☿ ♀.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 592, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 296, ☿.

murphyi Forel. Ont. to Ga., west to Mont. and Utah. According to W. M. Wheeler this form "appears to belong to dryer and warmer portions of the Transition Zone and to be rare in all parts of its range." Like other forms it nests occasionally beneath basement floors or around foundations of buildings.

Lasius (*Acanthomyops*) *Murphii* Forel, 1901. Soc. Ent. Belg. Ann. 45: 367. ☿ ♀ ♂.

Lasius (*Acanthomyops*) *murphyi* W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 398. Emend.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 398.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 530.

occidentalis W. M. Wheeler. Colo., N. Mex. Not known to occur east of Rocky Mts.

Lasius (*Acanthomyops*) *occidentalis* W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 83. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 530.

parvulus M. R. Smith. Ill. (Herrin). Associated with *L. niger* (Linnaeus) var.

Lasius (*Acanthomyops*) *parvula* M. R. Smith, 1934. Psyche 41: 213. ☿.

Lasius (*Acanthomyops*) *parvulus* M. R. Smith, 1947. Amer. Midland Nat. 37: 616. Emend.

plumopilosus Buren. Iowa (Backbone State Park). Probably a highly specialized parasite on some other form of *Lasius*, possibly *claviger*.

Lasius (*Acanthomyops*) *plumopilosus* Buren, 1941. Iowa State Col. Jour. Sci. 15: 231–235. ☿ ♀ ♂.

Biology: Buren, 1944. Iowa State Col. Jour. Sci. 18: 299.

Taxonomy: Buren, 1944. Iowa State Col. Jour. Sci. 18: 296, ☿.

pogonogynus Buren. Iowa, Colo.

Lasius (*Acanthomyops*) *pogonogynus* Buren, 1950. Ent. Soc. Wash. Proc. 52: 186. ☿ ♀.

pubescens Buren. Minn. (near Jenkins). May be parasitic on one of the varieties of *Lasius niger*.

Lasius (*Acanthomyops*) *pubescens* Buren, 1942. Iowa State Col. Jour. Sci. 16: 405. ☿ ♀.

Unrecognized Forms of Lasius Fabricius

Formica monticola Buckley, 1866. Ent. Soc. Phila. Proc. 6: 157. ☿ ♀ ♂.

Formica saxicola Buckley, 1866. Ent. Soc. Phila. Proc. 6: 166. ☿ ♀.

Genus MYRMECOCYSTUS Wesmael

Myrmecocystus Wesmael, 1838. Brussels Acad. Roy. Belg. Bul. de Cl. des Sci. 5: 769.

Type: *Myrmecocystus mexicanus* Wesmael. Monob.

Revisions: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 666–667.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 345–397.—W. M. Wheeler, 1912. Psyche 19: 172–181.

Native to Mexico and western United States; especially typical of the arid plains and deserts of the Western States. The ants nest in the soil, usually in small colonies of only a few hundred individuals. Some forms are apparently entirely predaceous or carnivorous; others live on honeydew and nectar obtained from plants or the secretions of galls. Some are diurnal, others nocturnal. Repletes are known to occur in many forms. These ants are called "honey ants" because of the honeylike substance stored in the gasters of the repletes. Owing to the high degree of polymorphism in many forms, these ants are not easily determined specifically without large series of workers, especially major ones.

hammettensis Cole. Idaho (Hammett).

Myrmecocystus hammettensis Cole, 1938. Amer. Midland Nat. 19: 678. ☿ ♀ ♂.

idahoensis Cole, n. status. Idaho (Hollister).

Myrmecocystus mexicanus idahoensis Cole, 1936. Ent. News 47: 118. ☿ ♀ ♂.

lugubris W. M. Wheeler. Calif. (Otis).
Myrmecocystus lugubris W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 98. ☿.
Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 403.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 20.
Taxonomy: W. M. Wheeler, 1912. Psyche 19: 174, 176, ☿.

melliger lomaënsis W. M. Wheeler. Calif. (vicinity of San Diego). Diurnal. Workers visit floral nectaries.
Myrmecocystus melliger lomaënsis W. M. Wheeler, 1912. Psyche 19: 174. ☿, replete ☿, ♀.
Biology: Leonard, 1911. San Diego Soc. Nat. Hist. Trans. 1: 96–97.—W. M. Wheeler, 1912. Psyche 19: 172.

melliger melliger Forel. Ariz., N. Mex., Tex.; Mexico. Used as food and medicine by Indians. Workers diurnal.
?*Formica melligera* Llave, 1832. Reg. Trim. o. Collect. Mem. Hist. Lit., p. 463. ☿.
Myrmecocystus melliger Forel, 1886. Soc. Ent. Belg. Ann. 30: 201. ☿.
Biology: W. M. Wheeler, 1907. Biol. Bul. 13: 199.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 346, 361–364.—W. M. Wheeler, 1926. Ants, pp. 10, 201, 366, 368.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 348–349, ☿, replete ☿.—W. M. Wheeler, 1912. Psyche 19: 173–175, ☿ ♀ ♂.

melliger mendax W. M. Wheeler. Utah, Ariz., Colo. Resembles *melliger orbiceps* in appearance and habits but is more northern in distribution. Predaceous and insectivorous. No repletes have been observed so far.
Myrmecocystus melliger mendax W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 351. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 366–367.—W. M. Wheeler, 1926. Ants, p. 376.—Cole, 1942. Amer. Midland Nat. 28: 386.
Taxonomy: W. M. Wheeler, 1912. Psyche 19: 173, ☿.—Cole, 1942. Amer. Midland Nat. 28: 385, ☿.

melliger mendax var. **comatus** W. M. Wheeler. Tex. (Ft. Davis). No repletes have been observed so far. Predaceous and insectivorous.
Myrmecocystus melliger mendax var. *comatus* W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 352. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 366–367.
Taxonomy: W. M. Wheeler, 1912. Psyche 19: 173, ☿.

melliger mimicus W. M. Wheeler. Ariz., Calif., N. Mex., Tex. Said to be the most abundant and widely distributed form of the genus from the Pecos River in Texas to the Mojave Desert. Habitat extremely arid.
Myrmecocystus melliger mimicus W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 353. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 367–368.—Cole, 1934. Ent. Soc. Amer. Ann. 27: 401–402.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 80.
Taxonomy: W. M. Wheeler, 1912. Psyche 19: 174, ☿.

melliger mimicus var. **californicus** Cole. Calif. (Weed).
Myrmecocystus melliger mimicus var. *californicus* Cole, 1936. Ent. News 47: 118. ☿.

melliger mimicus var. **depilis** Forel. Calif. (Needles).
Myrmecocystus melliger var. *depilis* Forel, 1901. Soc. Ent. Belg. Ann. 45: 135. ☿.
Biology: W. M. Wheeler, 1901. Soc. Ent. Belg. Ann. 45: 205.—W. M. Wheeler, 1912. Psyche 19: 176.—Cole, 1934. Ent. Soc. Amer. Ann. 27: 402.
Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 354, ☿.—W. M. Wheeler, 1912. Psyche 19: 173, ☿.

melliger mimicus var. **jesuita** W. M. Wheeler. Ariz., Tex.
Myrmecocystus melliger mimicus var. *jesuita* W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 354. ☿.
Myrmecocystus melliger semirufus var. *romainei* Cole, 1936. Ent. News 47: 120. ☿.
Taxonomy: W. M. Wheeler, 1912. Psyche 19: 174, ☿.

melliger orbiceps W. M. Wheeler. Ariz., N. Mex., Tex. For interesting information concerning this ant see remarks under biology.

Myrmecocystus melliger orbiceps W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 349. ☿ ♀.

Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 364–366.—Parks, 1929. Brooklyn Ent. Soc. Bul. 24: 32–34.

Taxonomy: W. M. Wheeler, 1912. Psyche 19: 173, ☿.

melliger semirufus Emery. Calif., Idaho, Utah, Ariz., Colo., N. Mex. One of the most common forms of desert ant in Arizona and the Mojave Desert. Colonies usually populous. Makes crater nests in the soil 3-6 inches in diameter each with a single entrance.

Myrmecocystus melliger var. ***semirufus*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 667. ☿ ♂.

Mrymecocystus melliger semirufus var. ***kennedyi*** Cole, 1936. Ent. News 47: 119. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 368–369.—W. M. Wheeler, 1912. Psyche 19: 176.—Mallis, 1941. South. Calif. Acad. Sci. Bul 40: 80.

Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 355, ☿ ♂.—W. M. Wheeler, 1912. Psyche 19: 174, 176, ☿.—Cole, 1938. Amer. Midland Nat. 20: 371–372, replete ☿.

melliger semirufus var. **testaceus** Emery. Calif., Ariz. Commonly nests in sandy, arid areas, more or less devoid of vegetation. Nests usually crater shaped. Colonies small. Workers forage at midday.

Myrmecocystus melliger var. ***testaceus*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 667. ☿.

Biology: W. M. Wheeler, 1926. Ants., p. 349.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 81.

Taxonomy: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 355–356, ☿.—W. M. Wheeler, 1912. Psyche 19: 174, ☿.

mexicanus Wesmael. Calif., Ariz., Mexico.

?***Formica melligera*** Llave, 1832. Reg. Trim. o. Collect. Mem. Hist. Lit., p. 463. ☿.

Myrmecocystus Mexicanus Wesmael, 1838. Brussels Acad. Roy. Belg. Bul. de Cl. des. Sci. 5: 770. ☿.

Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 361–364.—Leonard, 1911. San Diego Soc. Nat. Hist. Trans. 1: 92–96.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 81.

Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 666, ☿.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 356–358, ☿, replete ☿.—W. M. Wheeler, 1912. Psyche 19: 173, 178, ☿.

mexicanus var. **horti-deorum** McCook. Calif., Utah, Ariz., Colo., N. Mex. The citation of this form from Louisiana is undoubtedly incorrect. A typical inhabitant of the high plains of the Western States but occurring to a limited extent in deserts.

Myrmecocystus Melliger var. ***hortus-deorum*** McCook, 1881. Phila. Acad. Nat. Sci. Proc., pp. 65, 69. ☿, replete ☿, ♀ ♂.

Biology: McCook, 1881. Acad. Nat. Sci. Phila. Proc., pp. 17–77.—McCook, 1882. The Honey Ants of the Garden of the Gods and the Occident Ants of the American Plains, pp. 17–74.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 369–380.

Taxonomy: McCook, 1882. The Honey Ants of the Garden of the Gods and the Occident Ants of the American Plains, pp. 75–76, ☿, replete ☿, ♀ ♂.—Forel, 1866. Soc. Ent. Belg. Ann. 30: 202, ☿ ♀ ♂.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 358–360, ☿, replete ☿, ♀ ♂.—W. M. Wheeler, 1912. Psyche 19: 173, ☿.

mojave W. M. Wheeler, n. status. Calif. Craterlike nests 4-8 inches in diameter with a central opening are constructed in dry, hard soil, especially in roads and paths where there is considerable vegetation such as chaparral, live oaks, and scrub oaks.

Myrmecocystus mexicanus mojave W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 360. ☿.

Biology: Leonard, 1911. San Diego Soc. Nat. Hist. Trans. 1: 87–92.—Cole, 1934. Ent. Soc. Amer. Ann. 27: 403.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 81.
Taxonomy: W. M. Wheeler, 1912. Psyche 19: 173, 179–181, ☿, replete ☿, ♀ ♂.

navajo W. M. Wheeler, n. status. Utah, N. Mex. Nests are inconspicuous and colonies small (100-150 workers). Said to be a nocturnal form. No repletes have been observed.
Myrmecocystus mexicanus navajo W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 360. ☿ ♀.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 381–382.—Cole, 1934. Ent. Soc. Amer. Ann. 27: 402.—Cole, 1942. Amer. Midland Nat. 28: 386.
Taxonomy: W. M. Wheeler, 1912. Psyche 19: 173, 179, ☿.—Cole, 1942. Amer. Midland Nat. 28: 385–386, ☿.

yuma W. M. Wheeler. Idaho, Ariz. Constructs small crater nests 3-4 inches in diameter. No repletes are known. Workers might be mistaken for the small, dark *Dorymyrmex pyramicus* var. *niger*.
Myrmecocystus yuma W. M. Wheeler, 1912. Psyche 19: 174, 176. ☿.
Biology: Cole, 1934. Psyche 41: 225.—Cole, 1934. Ent. Soc. Amer. Ann. 27: 403.—Cole, 1936. Canad. Ent. 68: 39.

yuma var. **flaviceps** W. M. Wheeler. Ariz. (Yuma). Constructs crater nests 6-8 inches across, with entrance nearly ½ inch in diameter. Nests are more populous than those of *yuma*. No repletes are known.
Myrmecocystus yuma var. *flaviceps* W. M. Wheeler, 1912. Psyche 19: 174, 177. ☿.

Genus FORMICA Linnaeus

One of the largest genera of ants. The genus includes the three subgenera *Proformica, Neoformica,* and *Formica*. For the sake of convenience the subgenus *Formica* has been split into five groups, called the fusca, rufa, microgyna, exsecta, and sanguinea groups. Ants of the genus *Formica* nest in both soil and rotting wood; they have an unusually wide distribution and occur in many diverse habitats. Their food is largely honeydew and small arthropods. Most forms are free living but some are temporary parasites; others are slave makers and still others are slaves.

Subgenus PROFORMICA Ruzsky

Proformica Ruzsky, 1903. Soc. Ent. Rossica Horae 36: 303.
Type: ***Formica nasuta*** Nylander. Desig. by W. M. Wheeler, 1911.
Revision: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 387, 399–400, 401–425.

These ants are distributed from Alaska to at least as far south as the 35th degree of latitude in the United States. The subgenus contains some of our smallest forms of *Formica*. The small colonies are usually constructed in the soil freely or under cover. The ants are timid and are enslaved by *Formica* of the sanguinea group.

neogagates lasioides Emery. Calif., Colo., N. Dak., S. Dak., Mass.
Formica lasioides Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 646, 664. ☿.
Biology: G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 268.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 400, 539–540, ☿.

neogagates lasioides var. **limata** W. M. Wheeler. Minn., N. Dak., Colo., N. Mex.
Formica (Proformica) limata W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 400, 541. ☿.
Biology: G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 268.—R. E. Gregg, 1946. Amer. Midland Nat. 35: 750.

neogagates lasioides var. **vetula** W. M. Wheeler. N. S., Que. to Conn., west to the Pacific Coast. Enslaved by *F. (F.) curiosa* Creight. and *F. (F.) sanguinea* subspp. *puberula* Emery and *subintegra* Emery.

Formica lasioides var. *picea* Emery, 1895. Zool. Jahrb., Abt. f. System. 8: 335. ☿. Preocc.

Formica lasioides var. *vetula* W. M. Wheeler, 1912. Psyche 19: 90. N. name.

Biology: Cole, 1942. Amer. Midland Nat. 28: 384.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 308.—G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 268–269.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 400, 540–541, ☿ ♀ ♂.—R. E. Gregg, 1944. Ent. Soc. Amer. Ann. 37: 472, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 299, ☿.

neogagates neogagates Emery. N. S., Que. to N. C., west to Alaska, B. C., and Oreg. Nests from sea level to approx. 8,000 ft. Enslaved by *Formica sanguinea* Latr. subspecies: *rubicunda* Emery, *subintegra* Emery, *emeryi* Whlr.

Formica fusca subpolita var. *neogagates* Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 646, 661. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 401.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 102.—G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 268.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul 53: 400, 536–538, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 596, ☿.

neogagates neogagates var. **morbida** W. M. Wheeler. Ill., Iowa, Nebr., S. Dak.

Formica (*Proformica*) *neogagates neogagates* var. *morbida* W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 400, 538. ☿ ♀.

Taxonomy: Buren, 1944. Iowa State Col. Jour. Sci. 18: 299, ☿.

neogagates neogagates var. **vinculans** W. M. Wheeler. Ill., Iowa, Nebr.

Formica (*Proformica*) *neogagates neogagates* var. *vinculans* W. M. Wheeler 1913. Harvard Univ., Mus. Compar. Zool. Bul 53: 400, 539. ☿ ♀.

Biology: Buren, 1944. Iowa State Col. Jour. Sci. 18: 309.

Taxonomy: Buren, 1944. Iowa State Col. Jour. Sci. 18: 299, ☿.

Subgenus NEOFORMICA W. M. Wheeler

Neoformica W. M. Wheeler. N. Y. Acad. Sci. Ann. 23: 82.
Type: *Formica pallide-fulva* Latreille. Desig. by W. M. Wheeler, 1913.

Revisions: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 645, 654–657.—W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 369–371.—W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 401, 548–560.

Distribution solely Nearctic. In the United States, ants of the pallide-fulva group have been recorded from New Mexico and Wyoming eastward to the Atlantic Ocean and those of the moki group from Arizona, Utah, and Washington. These ants form colonies of small or moderate size in the soil openly or under cover. Some forms nest in rotting wood. Their food is largely honeydew and the flesh of small arthropods. They are docile and are enslaved by ants of the genus *Polyergus* and by various forms of *Formica sanguinea* Latr.

moki grundmanni Cole. Utah (Parley's Canyon, Salt Lake County).

Formica moki grundmanni Cole, 1943. Amer. Midland Nat. 29: 184. ☿.

moki moki W. M. Wheeler. Ariz., Utah. Colonies are small to moderate in size. and occur in the soil under stones in open, arid regions.

Formica moki W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 343. ☿.

Biology: Cole, 1942. Amer. Midland Nat. 28: 385.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53:400, 558–560.—M. R. Smith, 1939. Ent. Soc. Amer. Ann. 32: 582–583, ☿.—Cole, 1943. Amer. Midland Nat. 29: 183, ☿.

moki xerophila M. R. Smith. Wash. (Leavenworth).

Formica (*Neoformica*) *moki xerophila* M. R. Smith, 1939. Ent. Soc. Amer Ann. 32: 583. ☿.

Taxonomy: Cole, 1943. Amer. Midland Nat. 29: 184, ☿.

pallide-fulva archboldi M. R. Smith. Ga., Fla. Soil-nesting. Workers bear a superficial resemblance to *Formica* (*F.*) *pallide-fulva nitidiventris* var. *fuscata* Emery.

Formica pallide-fulva archboldi M. R. Smith, 1944. Fla. Ent. 27: 16. ☿.

Biology: Schneirla, 1944. Amer. Mus. Novitates 1261: 1–2.

pallide-fulva delicata Cole. Wyo. (Ten Sleep).

Formica pallide-fulva delicata Cole, 1938. Amer. Midland Nat. 20: 369. ☿ ♀.

pallide-fulva nitidiventris Emery. Ont., Que., eastern half of U. S., Kans., Nebr., Colo., N. Mex. Enslaved by *Polyergus lucidus lucidus* Mayr and *Formica* (*F.*) *sanguinea* subspp. *puberula* Emery and *subintegra* Emery.

Formica pallide-fulva nitidiventris Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 645, 656. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 401.—W. M. Wheeler, 1917 (1916). Ind. Acad. Sci. Proc. 26: 465.—Rau, 1934. Acad. Sci. St. Louis Trans. 28: 211–212.—Talbot, 1948. Ecology 29: 316–325.

Taxonomy: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 370, ☿.—W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 401, 555–557, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 595, 598, ☿.

Economics: Schread and Chapman, 1948. Conn. Agr. Expt. Sta. Bul. 515: 18.

pallide-fulva nitidiventris var. **fuscata** Emery. Ont. to Ga., west to N. Dak. and N. Mex. Enslaved by *Formica sanguinea* subspp. *rubicunda* Emery and *subintegra* Emery.

Formica pallide-fulva fuscata Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 645, 656. ☿.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 401.—L. G., Jr. and R. G. Wesson, 1940. Amer. Midland Nat. 24: 102.—Cole, 1940. Amer. Midland Nat. 24: 82.

Taxonomy: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 370, ☿.—W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 401, ☿.—W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 401, 557, ☿ ♀.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 299, 310, ☿ ♀.

pallide-fulva pallide-fulva Latreille. N. Y. to Fla., west to Kans. and Nebr. Apparently enslaved by *Formica* (*F.*) *pergandei* Emery.

Formica pallide-fulva Latreille, 1802. Hist. Nat. Fourmis, p. 174. ☿.

Biology: Schneirla, 1944. Amer. Mus. Novitates 1261: 2–3.

Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 645, 656–657, ☿.—W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 369, ☿.—W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 401, 548–551, ☿ ♀ ♂.

pallide-fulva schaufussi Mayr. Ont. to Fla., west to Wis. and Miss.; Kans. Enslaved by *Polyergus lucidus lucidus* Mayr, *P. lucidus longicornis* Smith, and *Formica sanguinea* subspp. *rubicunda* Emery and *subintegra* Emery.

Formica Schaufussi Mayr, 1886. Akad. der Wiss. Wien, Math.-Nat. Kl. Sitzber. 53: 493. ☿.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 400.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 598.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 298, 306.

Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. Sytem. 7: 645, 654–655, ☿.—W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 370, ☿.—W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 401, 552–553, ☿ ♀ ♂.—Cole, 1940. Amer. Midland Nat. 24: 73, ☿.

pallide-fulva schaufussi var. **dolosa** W. M. Wheeler. N. C. to Ga., west to Iowa and Tex.

Formica pallide-fulva schaufussi var. ***meridionalis*** W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 370. ☿. Preocc.

Formica pallide-fulva schaufussi var. ***dolosa*** W. M. Wheeler, 1912. Psyche 19: 90. N. name.

Biology: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 370.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 299, 306.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 401, 554, ☿ ♀.—Cole, 1940. Amer. Midland Nat. 24: 73, 79, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 299, ☿.

pallide-fulva schaufussi var. **incerta** Emery. Ont. to Ga., west to Minn., Nebr., Colo., and N. Mex. Enslaved by *Polyergus lucidus lucidus* Mayr and *Formica* (*F.*) *sanguinea subintegra* Emery. Temporary host of *Formica* (*F.*) *difficilis*.

Formica pallide-fulva schaufussi var. ***incerta*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 645, 655. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 347–371.—Talbot, 1946. Ecology 27: 65–70.—Talbot, 1948. Ecology 29: 316–325.

Taxonomy: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 370–371, ☿.—W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 401, 554–555, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 595, 598, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 299, 309, ☿.

pallide-fulva var. **succinea** W. M. Wheeler. Tenn., Miss., Okla., Tex.

Formica pallide-fulva var. ***succinea*** W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 369. ☿.

Biology: Dennis, 1938. Ent. Soc. Amer. Ann. 31: 298, 306.—Cole, 1940. Amer. Midland Nat. 24: 81.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ. Mus. Compar. Zool. Bul. 53: 401, 551–552, ☿ ♀ ♂.—Cole, 1940. Amer. Midland Nat. 24: 73, 81, ☿.

Subgenus FORMICA Linnaeus

Formica Linnaeus, 1758. Syst. Nat., ed. 10, v. 1, p. 579.
Type: ***Formica rufa*** Linnaeus. Desig. by Curtis, 1839.

Formicina Shuckard, 1840. Hist. Nat. Ins. Hym., p. 172.
Type: ***Formica rufa*** Linnaeus. Desig. by W. M. Wheeler, 1911.

Serviformica Forel, 1913. Soc. Ent. Belg. Ann. 57: 361. N. syn.
Type: ***Formica fusca*** Linnaeus. Orig. desig.

Raptiformica Forel, 1913. Soc. Ent. Belg. Ann., p. 361. N. syn.
Type: ***Formica sanguinea*** Latreille. Orig. desig.

Coptoformica Mueller, 1923. Soc. Adriat. di Sci. Nat. Trieste, Bol. 28: 133. N. syn.
Type: ***Formica exsecta*** Nylander. Desig. by Donisthorpe, 1941.

Adformica Lomnicki, 1925. Polski Pismo Ent. 3: 164. N. syn.
Type: ***Formica exsecta*** Nylander. Desig. by Donisthorpe, 1927.

Revisions: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 643–654, 657–665, 663.—W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 387–399, 401–536, 560–565.—Creighton, 1940. Amer. Mus. Novitates 1055: 1–10 (*rufa* subspecies).

This subgenus is divided into 5 groups, namely, the fusca, sanguinea, exsecta, rufa, and microgyna groups. Members of the fusca group are timid or docile and some are enslaved by certain forms of *Formica* (*F.*). *sanguinea* and *Polyergus;* others are hosts of temporary parasites of the rufa, microgyna, and exsecta groups. Most of the forms of *sanguinea* enslave other ants belonging to the fusca group and to the subgenera *Proformica* and *Neoformica*. The best known form of the exsectoides group is the Allegheny mound ant, *Formica exsectoides exsectoides*, whose large mounds attract the attention of the most casual observer. The rufa group contains forms that make conspicuous nests in rotting wood or in soil, which they cover with vegetable detritus. Many are temporary parasites on members of *Neoformica* and of the fusca group of *Formica*. The habits of members of the microgyna group are somewhat similar to those of the rufa group. In these ants the females are exceptionally small; they are usually even smaller than workers.

aterrima Cresson. (In rufa group.) Colo.

Formica aterrima Cresson, 1865. Ent. Soc. Phila. Proc. 4: 426. ♂.

Taxonomy: Brown, 1947. Ent. News 58: 8–9. ♂.

bradleyi W. M. Wheeler. (In sanguinea group.) N. Dak. and Kans. to Alta. and Colo. Commonly lives in arid, sandy areas. Attends honeydew-excreting insects. This may be a *Proformica*.

Formica bradleyi W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 389, 423. ☿ ♂.
Biology: G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 258–259.
Taxonomy: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 535, ♀.

ciliata Mayr. (In rufa group.) Colo., Minn., Mont., Utah, Wyo. Temporary host: Probably some form of *Formica* (*F.*) *fusca* L.
Formica ciliata Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 428. ☿.
Biology: W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 88.—W. M. Wheeler, 1926. Ants, pp. 114, 120, 205, 351, 444–445, 450.
Taxonomy: W. M. Wheeler, 1903. Amer. Mus. Nat. Hist. Bul. 19: 639–643, ☿ ♀ ♂. —W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 392–393, 452–454, ☿ ♀ ♂.

cinerea var. **altipetens** W. M. Wheeler. (In fusca group.) B. C., Rocky Mt. States and Mexico. Also N. Dak. *Formica* (*F.*) *cinerea cinerea* Mayr, 1853, occurs in Europe and Asia. Enslaved by *Polyergus rufescens breviceps* Emery, *Formica* (*F.*) *sanguinea puberula* Emery, and an alpine form of *sanguinea*. Sometimes nests in cold bogs.
Formica cinerea cinerea var. ***altipetens*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 399, 523. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1915. Psyche 22: 206.—G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 259.
Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 377, 383, ☿.

cinerea var. **canadensis** Santschi. (In fusca group.) Idaho, Sask., Wyo.
Formica cinerea var. ***canadensis*** Santschi, 1913. Soc. Ent. Belg. Ann. 57: 435. ☿ ♀.
Taxonomy: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 550–551, ☿ ♀.

cinerea var. **lepida** W. M. Wheeler. (In fusca group.) Wash., Calif.; Mexico.
Formica cinerea cinerea var. ***lepida*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 399, 526. ☿.
Taxonomy: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 551, ☿ ♀.

cinerea var. **montana** Emery, n. status. (In fusca group.) Nebr., Ohio (?).
Formica fusca subpolita var. ? ***montana*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 646, 663. ☿.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 399, 529–530, ☿.

cinerea var. **neocinerea** W. M. Wheeler. (In fusca group.) Ohio, Ind., No. Cent. States, Rocky Mt. States, and Pacific Coast States. A common ant in bogs and meadows, especially of Illinois. Enslaved by *Formica* (*F.*) *sanguinea* subspp. *puberula* Emery, *rubicunda* Emery, and *subintegra* Emery, and *Polyergus rufescens breviceps* Emery. Infests houses.
Formica cinerea var. ***neocinerea*** W. M. Wheeler, 1910. Ants, p. 571. *Nom. nud.*
Formica cinerea var. ***neocinera*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 524. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1902. Amer. Nat. 36: 948–952.—W. M. Wheeler, 1915. Psyche 22: 206.—W. M. Wheeler, 1926. Ants. pp. 201, 203, 460–461, 475.—R. E. Gregg, 1948. Ent. Soc. Wash. Proc. 50: 183–186.
Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 377, 383, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, ☿.

cinerea var. **rutilans** W. M. Wheeler. (In fusca group.) Idaho, Ill., N. Dak., Ohio.
Formica cinerea cinerea var. ***rutilans*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 399, 525. ☿.
Biology: Amstutz, 1943. Ohio Jour. Sci. 43: 172.

comata W. M. Wheeler. (In rufa group.) S. Dak. and Rocky Mt. States. Temporary host probably a form of *fusca*.
Formica comata W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 85. ☿ ♀ ♂.
Biology: Cole, 1942. Amer. Midland Nat. 28: 379.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 392, 393, 454–456, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 376, 379, ☿.

criniventris W. M. Wheeler. (In rufa group.) N. Dak., S. Dak., Mont., Wyo., Colo., Utah. Temporary host, probably same as for *comata*.

Formica crinita W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 87. ☿ ♀. Preocc.

Formica criniventris W. M. Wheeler, 1912. Psyche 19: 90. N. name.

Biology: W. M. Wheeler, 1926. Ants, pp. 114, 444–445, 450.—G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 260.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 392, 393, 457–458, ☿ ♀.—Cole, 1942. Amer. Midland Nat. 28: 376, 379, ☿.

curiosa Creighton. (In sanguinea group.) Mont. (Lake McGregor). Slave, *F.* (*Proformica*) *neogagates lasioides* var. *vetula* Whlr.

Formica curiosa Creighton, 1935. Amer. Mus. Novitates 773: 5. ☿ ♀.

dakotensis Emery. (In rufa group.) N. S., Ind., Minn., S. Dak., Colo., Alta., B. C. The female is very probably a temporary parasite on some form of *fusca*.

Formica dakotensis Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 644, 652. ☿.

Biology: W. M. Wheeler, 1926. Ants, pp. 113, 205, 445.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 391, 394, 462–463, ☿ ♀.

dakotensis var. **montigena** W. M. Wheeler. (In rufa group.) Iowa, Minn., N. Dak., and Rocky Mt. States. Temporary hosts, *F.* (*F.*) *fusca* var. *subsericea* Say and *F.* (*Neoformica*) *pallide-fulva schaufussi* var. *incerta* Emery.

Formica montigena W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 374. ☿ ♀ ♂.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 391, 394, 463–464, ☿ ♀ ♂.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 299, ☿.

dakotensis var. **saturata** W. M. Wheeler. (In rufa group.) Mont. (Helena).

Formica dakotensis var. ***saturata*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 542. ☿.

dakotensis var. **specularis** Emery. (In rufa group.) Wis. Temporary host, *F.* (*F.*) *fusca* var. *subsericea* Say.

Formica fusca subpolita var. ?***specularis*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 663. ♀.

Formica dacotensis var. ***Wasmanni*** Forel, 1904. Soc. Ent. Belg. Ann. 48: 153. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 364–365.—W. M. Wheeler, 1926. Ants, pp. 444–445.—Abbott, 1926. Ent. News 37: 210–211.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 391, 393, 464–465, ☿ ♀ ♂.

Physiology: Abbott, 1937. Ent. Soc. Amer. Ann. 20: 117–122.

difficilis Emery. (In microgyna group.) Mass. to Ga., west to Iowa. Temporary host, *F.* (*Neoformica*) *pallide-fulva schaufussi* var. *incerta* Emery.

Formica rufa difficilis Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 645, 651. ☿ ♀ ♂.

Formica difficilis var. ***consocians*** W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 371. ☿ ♀ ♂.

Formica habrogyna Cole, 1939. Amer. Midland Nat. 22: 413. ☿ ♀.

Biology: W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 347–373.—W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 50–64.—W. M. Wheeler, 1926. Ants, pp. 113–114, 205–206, 441–444.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 395, 477–480, ☿ ♀ ♂.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, ☿.

dirksi Wing. (In microgyna group.) Maine (Daigle in Aroostok County). Temporary host, *F.* (*F.*) *fusca* var. *subaenescens* Emery.

Formica dirksi Wing, 1949. Canad. Ent. 81: 13. ♀.

emeryi W. M. Wheeler. (In sanguinea group.) Colo., ?Minn. Slave, *F.* (*Proformica*) *neogagates neogagates* Emery.

Formica emeryi W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 389, 419. ☿ ♀.

exsectoides exsectoides Forel. (In exsecta group.). N. S. to Ga., west to Ont., Wis., and Iowa. Builds conspicuous mounds. Damages bark and

cambium of small tress and shrubs. Temporary parasite of *F.* (*F.*) *fusca* var. *subsericea* Say.

Formica exsectoides Forel, 1886. Soc. Ent. Belg. Ann. (C. R.) 30: 38. ☿ ♀.
Biology: McCook, 1877. Amer. Ent. Soc. Trans. 6: 253–295.—Andrews, 1926. Psyche 33: 127–150.—Andrews, 1929. Ent. Soc. Amer. Ann. 22: 369–391.—Andrews, 1929. Quart. Rev. Biol. 4: 248–257.
Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 643, 653, ☿ ♂.—W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 396, 481–483, ☿ ♀ ♂.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, ☿.
Economics: Peirson, 1922. Jour. Forestry 20: 325–336.—Manter, 1925. Jour. Econ. Ent. 18: 348–351.—Haviland, 1947. Jour. Econ. Ent. 40: 413–418.—Schread, 1949. Jour. Econ. Ent. 42: 501.

exsectoides opaciventris Emery. (In exsecta group.) Mont., Wyo., Colo.
Formica exsectoides var. ***opaciventris*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 643, 653. ☿.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 484–485, ☿ ♂.

exsectoides var. **davisi** W. M. Wheeler. (In exsecta group.) Mass., N. J., Md., Ill.
Formica exsectoides exsectoides var. ***davisi*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 396, 484. ☿ ♀.

exsectoides var. **hesperia** W. M. Wheeler. (In exsecta group.) Colo. (Chéyenne Canyon near Colo. Springs).
Formica exsectoides exsectoides var. ***hesperia*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 396, 484. ☿.

ferocula W. M. Wheeler. (In rufa group.) Ill. (Rockford). Constructs crater nests about the roots of weeds in dry, open fields.
Formica ferocula W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 392, 461. ☿.

foreliana W. M. Wheeler. (In rufa group.) Ariz., Utah.
Formica foreliana W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 391, 451. ☿.
Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 541.—Cole, 1942. Amer. Midland Nat. 28: 380.

fossaceps Buren. (In rufa group.) Iowa (Winterset). Temporary host, probably *F. fusca* var. *subsericea* Say.
Formica fossaceps Buren, 1942. Iowa State Col. Jour. Sci. 16: 402. ☿ ♀ ♂.
Biology: Buren, 1944. Iowa State Col. Jour. Sci. 18: 302.
Taxonomy: Buren, 1933. Iowa State Col. Jour. Sci. 18: 300, ☿.

fusca densiventris Viereck. (In fusca group.) N. Mex. (Beulah).
Formica fusca var. ***densiventris*** Viereck, 1903. Amer. Ent. Soc. Trans. 29: 74. ☿.
Taxonomy: Brown, 1947. Ent. News 58: 6–8, ☿.

fusca fusca Linnaeus. (In fusca group.) Holarctic. Que., Newfoundland, N. C., west to Tenn. to Alaska, Calif., and Ariz. Apparently absent from most of the Southern States and from Kansas, Missouri, and Oklahoma. Enslaved by *F.* (*F.*) *sanguinea* subspp. *aserva* Forel, *subintegra* Emery, and *subnuda* Emery.
Formica fusca Linnaeus, 1758. Syst. Nat., ed. 10, v. 1, p. 580.
Formica fusca var. ***glacialis*** W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 624. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1915. Psyche 22: 206.—W. M. Wheeler, 1917. Harvard Univ., Mus. Compar. Zool. Bul. 61: 19.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 83.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 397, 494–497, ☿ ♀ ♂.—Cole, 1940. Amer. Midland Nat. 24: 73, 77, ☿.

fusca pruinosa W. M. Wheeler. (In fusca group.) B. C., Wash., Alta., Mont.
Formica fusca pruinosa W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 548, ☿ ♀ ♂.

fusca pruinosa var. **lutescens** W. M. Wheeler. (In fusca group.) Wash. (Wawawai).
Formica fusca pruinosa var. ***lutescens*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 549. ☿.

fusca var. **algida** W. M. Wheeler. (In fusca group.) Labrador to Mass., west to Minn. Occurs at low elevations. Common in peat bogs but not limited to them. Confused by W. M. Wheeler and possibly others with *fusca* var. *subaenescens* Emery.

Formica fusca var. ***algida*** W. M. Wheeler, 1915. Psyche 22: 205. ☿ ♀.

fusca var. **argentea** W. M. Wheeler. (In fusca group.) Northeastern, Midwestern, and Western States; B. C. Widely distributed in the Transition Zone especially the colder regions; common in the mountains of western United States between 7,000–11,000 ft., more scattered in the Eastern States. Enslaved by *Polyergus rufescens breviceps* Emery and *F.* (*F.*) *sanguinea* subspp. *subnuda* Emery and *puberula* Emery.

Formica fusca var. ***argentata*** W. M. Wheeler, 1902. Amer. Nat. 36: 952. ☿. Preocc.

Formica fusca var. ***argentea*** W. M. Wheeler, 1912. Psyche 19: 90. N. name.

Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 625.—W. M. Wheeler, 1926. Ants, pp. 204, 205, 460, 475, 477.

Taxonomy: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 344, ☿.—W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 398, 501–503, ☿ ♀ ♂.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, ☿.

fusca var. **blanda** W. M. Wheeler. (In fusca group.) Calif., Wash. May be a very pale form of var. *marcida* Whlr.

Formica fusca fusca var. ***blanda*** W. M. Whéeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 398, 510. ☿.

Taxonomy: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 548, ☿.

fusca var. **gelida** W. M. Wheeler. (In fusca group.) Alaska, B. C., Sask., and Western States. A common alpine form which nests in woody or shady canyons just below the timber line. Often confused with the variety *neorufibarbis*. Enslaved by *F.* (*F.*) *sanguinea subnuda* Emery var.

Formica fusca fusca var. ***gelida*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 399, 505. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1915. Psyche 22: 206.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 546.

Taxonomy: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 546.

fusca var. **marcida** W. M. Wheeler. (In fusca group.) Alaska, B. C., Wash., Calif., Alta., Idaho, Man. A small, depauperate, alpine form.

Formica fusca fusca var. ***marcida*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 398, 503. ☿ ♀.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 546.

Taxonomy: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 546, ☿.—W. M. Wheeler, 1917. Harvard Univ., Mus. Compar. Zool. Bul. 61: 19, ☿ ♀.

fusca var. **neoclara** Emery. (In fusca group.) ?Iowa, N. Dak., Colo., N. Mex., Utah, Wash., Oreg. In Colorado occurring at altitudes below 7,000 ft., usually in the sandy soil of river valleys. Enslaved by *F.* (*F.*) *sanguinea puberula* Emery.

Formica fusca var. ***neoclara*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 646, 661. ☿.

Biology: W. M. Wheeler, 1926. Ants, pp. 201, 460–461, 463.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 398, 509–510, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 377, 383, ☿.

fusca var. **neorufibarbis** Emery. (In fusca group.) ?Alaska, B. C., Wash., Oreg., Calif., Alta., Idaho, Mont., Wyo., Utah, N. Dak., S. Dak. A member of the Hudsonian and Canadian Zones. Often confused with var. *gelida* W. M. Wheeler but occurs at lower elevations. Enslaved by *Polyergus rufescens breviceps* Emery and *Formica sanguinea* subspp. *rubicunda* Emery and *subnuda* Emery.

Formica fusca var. ***neorufibarbis*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 646, 660. ☿.

Biology: W. M. Wheeler, 1915. Psyche 22: 206.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 546–547.

Taxonomy: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 547, ☿ ♀ ♂.

fusca var. **subaenescens** Emery. Labrador, Canada, and most of the U. S. except the extreme South. States. Apparently a boreal form which is rare and at lower altitudes and latitudes in the Transition Zone. Enslaved by *Polyergus rufescens* subspp. *breviceps* Emery and *bicolor* Wasm. and *F.* (*F.*) *sanguinea* subspp. *subintegra* Emery, *rubicunda* Emery, *puberula* Emery, and *subnuda* Emery. (In fusca group.)

Formica fusca var. ***subaenescens*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 646, 659–660. ☿ ♀.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 401.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 599.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 300–301.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 399, 504–505, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 596, 599. ☿.

fusca var. **subsericea** Say. (In fusca group.) Canada and all the U. S. except perhaps Fla. and Tex. Enslaved by *Polyergus rufescens* subspp. *bicolor* Wasm., *breviceps* Emery, *breviceps* var. *fusciventris* Whlr. and *F.* (*F.*) *sanguinea* subspp. *aserva* Forel, *rubicunda* Emery and var. *sublucida* Whlr., *subnuda* Emery, *subintegra* Emery and var. *gilvescens* Whlr., *pergandei* Emery, *puberula* Emery.

Formica subsericea Say, 1836. Boston Jour. Nat. Hist. 1: 289. ☿ ♂.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 401.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 625.—Dennis, 1938. Ent. Soc. Amer. Ann. 31: 299, 306.—L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 102.

Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 646, 659, ☿ ♀ ♂.—W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 398, 499–501, ☿ ♀ ♂.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, ☿.

Economics: Schread and Chapman, 1948. Conn. Agr. Expt. Sta. Bul. 515: 18.

hewitti W. M. Wheeler. (In fusca group.) Alta., B. C., Mont. Commonly nests beneath stones.

Formica hewitti W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 552. ☿ ♀ ♂.

impexa W. M. Wheeler. (In microgyna group.) Mass., Mich. Temporary host, probably *F.* (*F.*) *fusca* var. *subsericea* Say.

Formica impexa W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 273. ☿.

Biology: W. M. Wheeler, 1906. Psyche 13: 40.—W. M. Wheeler, 1926. Ants, pp. 113, 444.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 395–396, 472–473, ☿ ♀.

indianensis Cole. (In microgyna group.) Ind., Iowa. Temporary host probably *F.* (*F.*) *fusca* var. *subsericea* Say.

Formica indianensis Cole, 1940. Amer. Midland Nat. 23: 224. ☿ ♂.

Biology: Buren, 1944. Iowa State Col. Jour. Sci. 18:306.

Taxonomy: Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, 306, ☿.

knighti Buren. (In microgyna group.) Iowa (Bonaparte).

Formica (Formica) knighti Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, 303. ☿.

lecontei Kennedy and Dennis. (In fusca group.) N. C., Ohio, Tenn., at elevations of 1,000-5,250 ft. Very closely related to, if not identical with, *fusca* var. *subaenescens* Emery.

Formica lecontei Kennedy and Dennis, 1937. Ent. Soc. Amer. Ann. 30: 542. ☿ ♀ ♂.

Biology: Cole, 1940. Amer. Midland Nat. 24: 78–79.

Taxonomy: Cole, 1940. Amer. Midland Nat. 24: 73, 78, 79, ☿ ♀ ♂.

manni W. M. Wheeler. (In sanguinea group.) Wash., Calif., Idaho, Nev., Utah. Commonly occurs in dry, hot, often sandy desert country.

Formica manni W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 389, 420. ☿ ♀.

Biology: Cole, 1942. Amer. Midland Nat. 28: 379.

Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 376, 378, ☿.

microgyna californica W. M. Wheeler. (In microgyna group.) Calif. (Lake Tahoe). Temporary host unknown.

Formica microgyna californica W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 543. ☿.

microgyna californica var. **hybrida** W. M. Wheeler. (In microgyna group.) Calif. (Lake Tahoe). Temporary host unknown.

Formica microgyna californica var. ***hybrida*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 543. ☿.

microgyna microgyna W. M. Wheeler. (In microgyna group.) Colo. Temporary host *F.* (*F.*) *fusca* var. *argentea* Whlr. and *F.* (*Proformica*) *neogagates neogagates* Emery.

Formica microgyna W. M. Wheeler, 1903. Amer. Mus. Nat. Hist. Bul. 19: 645. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 542.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 395–396, 465–467, ☿ ♀ ♂.

microgyna rasilis W. M. Wheeler. (In microgyna group.) Ohio, Colo., N. Mex., Utah, Wash. Temporary hosts, *F.* (*F.*) *fusca* vars. *argentea* Whlr. and *subsericea* Say. Enslaved by *F.* (*F.*) *sanguinea puberuls* Emery.

Formica microgyna var. ***rasilis*** W. M. Wheeler, 1903. Amer. Mus. Nat. Hist. Bul. 19: 648. ☿ ♀ ♂.

Biology: L. G., Jr., and R. G. Wesson, 1940. Amer. Midland Nat. 24: 101.—Cole, 1942. Amer. Midland Nat. 28: 381.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 395–396, 468–469, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 376, 381, ☿.

microgyna rasilis var. **pinetorum** W. M. Wheeler. (In microgyna group.) Calif. (Lake Tahoe). Temporary host unknown.

Formica microgyna rasilis var. ***pinetorum*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 542. ☿.

Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 85.

microgyna rasilis var. **pullula** W. M. Wheeler. (In microgyna group.) Mont. (Flathead Lake). Temporary host unknown.

Formica microgyna rasilis var. ***pullula*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 562. ☿ ♀.

microgyna rasilis var. **spicata** W. M. Wheeler. (In microgyna group.) Colo. (Florissant). Temporary host unknown.

Formica microgyna rasilis var. ***spicata*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 395, 469. ☿ ♀ ♂.

microgyna scitula W. M. Wheeler. (In microgyna group.) Ga. (Clayton). Temporary host unknown.

Formica microgyna scitula W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 395, 470. ♀.

microgyna spatulata Buren. (In microgyna group.) Iowa, Minn. Temporary host *F.* (*F.*) *fusca* var. *subsericea* Say.

Formica* (*Formica*) *microgyna spatulata Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, 305. ☿ ♀ ♂.

microgyna var. **recidiva** W. M. Wheeler. (In microgyna group.) Colo., N. Mex. Temporary host unknown.

Formica microgyna microgyna var. ***recidiva*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 395, 467. ☿ ♂.

morsei W. M. Wheeler. (In microgyna group.) Mass. (So. Natick). Buren has suggested that *morsei* may be only badly faded or callow specimens of *difficilis*. Temporary host unknown.

Formica morsei W. M. Wheeler, 1906. Psyche 13: 39. ☿.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 394, 480–481, ☿.

nepticula W. M. Wheeler. (In microgyna group.) Mass., Conn., Ill., Iowa. Nests in open woods under stones, the edges of the stones banked with vegetable detritus. Temporary host probably *F.* (*Proformica*) *neogagates neogagates* Emery.

Formica nepticula W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 270. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 64.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 597.—W. M. Wheeler, 1926. Ants, pp. 113, 205, 444.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 394, 396, 475–477, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 595, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, ☿.

nevadensis W. M. Wheeler. (In microgyna group.) Nev. (Ormsby County). Temporary host unknown.
Formica microgyna var. ***nevadensis*** W. M. Wheeler, 1904. Amer. Mus. Nat. Hist. Bul. 20: 373. ☿.
Biology: W. M. Wheeler, 1926. Ants, pp. 113, 444.
Taxonomy: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 272, ♀.—W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 396, 470–472, ☿.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 544, ☿.

obtusopilosa Emery. (In sanguinea group.) Minn., Nebr., N. Dak., S. Dak., Colo., N. Mex., Alta., Mont., Utah. Doubtfully referred to the sanguinea group.
Formica sanguinea obtusopilosa Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 643, 648. ☿.
Formica munda W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 267. ☿ ♀.
Biology: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 417–418.—Cole, 1942. Amer. Midland Nat. 28: 378.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 389, 414–418, ☿ ♀.—Cole, 1942. Amer. Midland Nat. 28: 376–378, ☿.

obtusopilosa var. **alticola** W. M. Wheeler. (In sanguinea group.) Colo. (Jefferson County). An alpine form, doubtfully placed in the sanguinea group. No slaves have been recorded for this form.
Formica munda var. ***alticola*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 534. ☿.

oreas W. M. Wheeler. (In rufa group.) Colo., N. Mex., Utah.
Formica oreas W. M. Wheeler, 1903. Amer. Mus. Nat. Hist. Bul. 19: 643. ☿ ♀ ♂.
Biology: W. M. Wheeler, 1926. Ants, pp. 114, 205, 351, 444.—Cole, 1942. Amer. Midland Nat. 28: 379.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 391, 393, 458–460, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 376, 379, ☿.

oreas var. **comptula** W. M. Wheeler. (In rufa group.) Wash., Idaho, Sask., Mont., Utah, Wyo.
Formica oreas var. ***comptula*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 391, 393, 460. ☿ ♀.
Biology: Cole, 1934. Psyche 41: 227.—Cole, 1942. Amer. Midland Nat. 28: 380.
Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 376, 380, ☿.

oregonensis Cole. (In sanguinea group.) Oreg. (Pendleton). Collected in an alpine meadow. Doubtfully referred to the sanguinea group. No slaves have been found.
Formica oregonensis Cole, 1938. Amer. Midland Nat. 20: 368. ☿.

parcipappa Cole. (In sanguinea group.) Idaho (near Nampa). Slave unknown.
Formica parcipappa Cole, 1946. Ent. Soc. Amer. Ann. 39: 616. ☿.

pergandei Emery. (In sanguinea group.) Mass., D. C. Apparently enslaves *F.* (*Neoformica*) *pallide-fulva* Latr.
Formica pergandei Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 643, 646. ☿.
Biology: W. M. Wheeler, 1901. Amer. Nat. 35: 722.—R. E. Gregg, 1946. Amer. Midland Nat. 35: 752.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 389, 418–419, ☿.

perpilosa W. M. Wheeler. (In sanguinea group). Okla. and Tex., west to Calif.; Mexico. Doubtfully referred to the sanguinea group. No indication that

this form is a slave maker or a temporary parasite. Peculiar to the irrigated lands and river bottoms in the deserts of the Southwest.

Formica fusca subpolita var. ***perpilosa*** W. M. Wheeler, 1902. Soc. Cient. "Antonio Alzate" Mem. y Rev. 17: 141. ☿ ♀.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 534.—Cole, 1934. Ent. Soc. Amer. Ann. 27: 401.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 85.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 389, 421–423, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 376, 378, ☿.

pilicornis Emery. (In fusca group.) Calif. Peculiar to low elevations on the slopes of the Coast Range in California. Infests houses.

Formica pilicornis Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 646, 664. ☿ ♀ ♂.

Biology: Cole, 1934. Ent. Soc. Amer. Ann. 27: 401.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 85.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 399, 527–529, ☿ ♀ ♂.—Eckert and Mallis, 1937. Univ. Calif. Agr. Expt. Sta. Cir. 342: 7, 29, ☿.

Economics: Eckert and Mallis, 1937. Univ. Calif. Agr. Expt. Sta. Cir. 342: 29.

postoculata Kennedy and Dennis. (In microgyna group.) Ind. (Aurora). Temporary host unknown.

Formica postoculata Kennedy and Dennis, 1937. Ent. Soc. Amer. Ann. 30: 540. ☿.

prociliata Kennedy and Dennis. (In rufa group.) Ohio, Wis., Iowa.

Formica prociliata Kennedy and Dennis, 1937. Ent. Soc. Amer. Ann. 30: 531. ☿ ♀ ♂.

Biology: Buren, 1944. Iowa State Col. Jour. Sci. 18: 303.

Taxonomy: Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, ☿.

querquetulana Kennedy and Dennis. (In microgyna group.) Ohio (Holland). Temporary host unknown.

Formica querquetulana Kennedy and Dennis, 1937. Ent. Soc. Amer. Ann. 30: 536. ☿ ♀.

reflexa Buren. (In microgyna group.) Iowa, Minn. Host: *F.* (*F.*) *fusca* var. *subsericea* Say.

Formica reflexa Buren, 1942. Iowa State Col. Jour. Sci. 16: 399. ☿ ♀ ♂.

Biology: Buren, 1944. Iowa State Col. Jour. Sci. 18: 303.

Taxonomy: Buren, 1944. Iowa State Col. Jour. Sci. 18: 299, ☿.

rufa clivia Creighton. (In rufa group.) Man., Wis., and Iowa to B. C. and Utah. *F.* (*F.*) *rufa rufa* Linnaeus occurs in Europe and Asia.

Formica rufa clivia Creighton, 1940. Amer. Mus. Novitates 1055: 8, 9. ☿ ♀ ♂.

Biology: Cole, 1942. Amer. Midland Nat. 28: 380.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 302.

Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 377, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, 302, ☿.

rufa coloradensis W. M. Wheeler. (In rufa group.) Idaho, Utah, Colo., N. Mex. Common to mountainous regions. Nests in areas of moderate to heavy cover. Makes extensive use of thatching.

Formica truncicola integroides var. ***coloradensis*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 393, 440. ☿ ♀.

Biology: Creighton, 1940. Amer. Mus. Novitates 1055: 6.—Cole, 1942. Amer. Midland Nat. 28: 381.

Taxonomy: Creighton, 1940. Amer. Mus. Novitates 1055: 7, ☿.—Cole, 1942. Amer. Midland Nat. 28: 377, ☿.

rufa gymnomma W. M. Wheeler. (In rufa group.) South. New England to S. Dak., with a southern extension in the Appalachian region. Nests in areas of moderate to sparse cover. Makes moderate use of thatching.

Formica dryas var. ***gymnomma*** W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 269. ☿.

Biology: Creighton, 1940. Amer. Mus. Novitates 1055: 6.—Buren, 1941. Iowa State Col. Jour. Sci. 15: 115.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 392, 448, ☿.—Creighton, 1940. Amer. Mus. Novitates 1055: 8, ☿.

rufa haemorrhoidalis Emery. (In rufa group.) N. Dak. to Colo., west to Wash. and Nev.

Formica rufa integra var. ***haemorrhoidalis*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 644, 652. ☿.

Biology: W. M. Wheeler, 1926. Ants, pp. 206, 444.—Creighton, 1940. Amer. Mus. Novitates 1055: 6.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 392, 394, 441–442, ☿ ♀ ♂.—Creighton, 1940. Amer. Mus. Novitates 1055: 7, ☿.—Cole, 1942. Amer. Midland Nat. 28: 376, ☿.

rufa integra Nylander. (In rufa group.) N. S. to Ga., west to Mich., Ill., Miss. Nests in areas of sparse to moderate cover. Colonies huge. Temporary host, *F.* (*F.*) *fusca* var. *subsericea* Say.

Formica integra Nylander, 1856. Ann. des Sci. Nat., Zool. 5: 62. ☿.

Formica integra var. ***similis*** Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 425. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 399.—Davis and Bequaert, 1922. Brooklyn Ent. Soc. Bul. 17: 18–19.—W. M. Wheeler, 1926. Ants, pp. 204–206, 222, 351, 444.—Creighton, 1940. Amer. Mus. Novitates 1055: 6.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 392, 394, 444–445, ☿ ♀ ♂.—Creighton, 1940. Amer. Mus. Novitates 1055: 7, ☿.

rufa integroides Emery. (In rufa group.) Wash., Oreg., Calif. Common to the Coastal Mountains and western slopes of the Sierras in Calif. Temporary host unknown.

Formica rufa obscuriventris var. ***integroides*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 644, 649. ☿.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 537:—Creighton, 1940. Amer. Mus. Novitates 1055: 6.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 393 394, 438–439, ☿ ♀.—Creighton, 1940. Amer. Mus. Novitates 1055: 7, ☿

rufa laeviceps Creighton. (In rufa group.) Utah (La Sal Mts.). Nests in area of sparse to moderate cover.

Formica rufa laeviceps Creighton, 1940. Amer. Mus. Novitates 1055: 7, 9, ☿ ♀.

Biology: Cole, 1942. Amer. Midland Nat. 28: 380.

Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 377, ☿.

rufa melanotica Emery. (In rufa group.) Canada, Wis., and Ind. to Wash. and Oreg., south to Colo. and Utah. Habitats diverse and nesting habits extremely varied.

Formica rufa obscuriventris var. ***melanotica*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 644, 650. ☿.

Biology: A. C. Burrill and M. R. Smith, 1919. Ohio Jour. Sci. 19: 286.—Creighton, 1940. Amer. Mus. Novitates 1055: 6.—Cole, 1942. Amer. Midland Nat. 28: 380.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 392, 394, 432–433, ☿ ♀ ♂.—Creighton, 1940. Amer. Mus. Novitates 1055: 7, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, ☿.

rufa mucescens W. M. Wheeler. (In rufa group.) Colo., Utah. In Colorado nests at altitudes of approximately 5,000-7,000 ft. in open places under stones banked with vegetable detritus.

Formica truncicola mucescens W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 392, 394, 442. ☿ ♀ ♂.

Biology: Creighton, 1940. Amer. Mus. Novitates 1055: 6.—Cole, 1942. Amer. Midland Nat. 28: 380.

Taxonomy: Creighton, 1940. Amer. Mus. Novitates 1055: 7, ☿.—Cole, 1942. Amer. Midland Nat. 28: 376, ☿.

rufa obscuripes Forel. (In rufa group.) Alaska to Oreg., east to Man. and N. Dak., with a southern extension in the Rocky Mt. region. Nesting site open areas devoid of cover.

Formica rufa obscuripes Forel, 1886. Soc. Ent. Belg. Ann. (C. R.) 30: 39. ☿.

Formica rufa obscuriventris var. ***rubiginosa*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 644, 650. "♀"=☿. Preocc.

Formica rufa aggerans W. M. Wheeler, 1912. Psyche 19: 90. N. name.
Biology: Cole, 1932. Psyche 39: 30–33.—Weber, 1935. Ecol. Monog. 5: 165–206.—Weber, 1941. Canad. Ent. 73: 140–141.—G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 263–266.
Taxonomy: Creighton, 1940. Amer. Mus. Novitates 1055: 1–7, ☿.
Economics: Treherne, 1915. Canad. Ent. 47: 104.—Essig, 1926. Ins. West. No. Amer., p. 867.—Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 30.

rufa obscuriventris Mayr. (In rufa group.) Northeastern Canada and U. S. west to Wis. Nests in areas of moderate to sparse cover. Temporary host *F.* (*F.*) *fusca* var. *subsericea* Say.
Formica truncicola var. ***obscuriventris*** Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 951. ☿.
Formica dryas W. M. Wheeler, 1905. Amer. Mus. Nat. Hist. Bul. 21: 268. ☿ ♀.
Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 623.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 597.—Creighton, 1940. Amer. Mus. Novitates 1055: 6.
Taxonomy: Wheeler, 1917. (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 595, ☿.—Creighton, 1940. Amer. Mus. Novitates 1055: 8, ☿.

rufa planipilis Creighton. (In rufa group.) Nev. (Mt. Wheeler).
Formica rufa planipilis Creighton, 1940. Amer. Mus. Novitates 1055: 7, 9. ☿.

rufa propinqua W. M. Wheeler. (In rufa group.) Calif. (near Lake Tahoe). Nests in areas of moderate to heavy cover.
Formica truncicola integroides var. ***propinqua*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 538. ☿.
Biology: Creighton, 1940. Amer. Mus. Novitates 1055: 6. — Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 88.
Taxonomy: Creighton, 1940. Amer. Mus. Novitates 1055: 7, ☿.

rufa ravida W. M. Wheeler. (In rufa group.) Mont. (Elkhorn).
Formica truncicola integroides var. ***ravida*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 560. ☿ ♀.
Biology: Creighton, 1940. Amer. Mus. Novitates 1055: 6.
Taxonomy: Creighton, 1940. Amer. Mus. Novitates 1055: 7, ☿.

rufa subcaviceps W. M. Wheeler. (In rufa group.) B. C., Wash., Oreg. High plateaus east of the Cascades in Oreg. and Wash. Nesting site in open areas devoid of cover.
Formica truncicola integra var. ***subcaviceps*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 540. ☿ ♂.
Biology: Creighton, 1940. Amer. Mus. Novitates 1055: 6.
Taxonomy: Creighton, 1940. Amer. Mus. Novitates 1055: 7, ☿.

rufa subfasciata W. M. Wheeler. (In rufa group.) Calif. (Mill Creek Canyon, Wilson Peak, 7,500 ft., San Bernardino Mts.).
Formica truncicola integroides var. ***subfasciata*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 539. ☿.
Taxonomy: Creighton, 1940. Amer. Mus. Novitates 1055: 7, ☿.

rufa subnitens Creighton. (In rufa group.) Oreg. (Bly). Probably distributed along foot of eastern slope of Cascade Mountains. Nests in open areas devoid of cover. Nests in the soil with no covering mound of detritus.
Formica rufa subnitens Creighton, 1940. Amer. Mus. Novitates 1055: 7, 10. ☿.

rufa tahoensis W. M. Wheeler. (In rufa group.) Calif., Nev. Nests in areas of moderate to sparse cover.
Formica truncicola integroides var. ***tahoënsis*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 538. ☿ ♀.
Biology: Creighton, 1940. Amer. Mus. Novitates 1055: 6.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 88–89.
Taxonomy: Creighton, 1940. Amer. Mus. Novitates 1055: 7, ☿.

rufibarbis var. **gnava** Buckley. (In fusca group.) Ariz., Calif., Colo., N. Mex., Tex., Utah; Mexico. *F. rufibarbis* Fabricius occurs in Europe and Asia.
Formica gnava Buckley, 1866. Ent. Soc. Phila. Proc. 6: 156. ☿ ☿ ♂.

Biology: W. M. Wheeler, 1902. Tex. Acad. Sci. Trans. 4: 20.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 550.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 86.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 390, 518–521, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 377, 383, ☿.

rufibarbis var. **occidua** W. M. Wheeler. (In fusca group.) Calif., Wash. Nests under stones at low altitudes in the open live-oak groves on the warm slopes of the Pacific Coast Range.

Formica rufibarbis var. ***occidentalis*** W. M. Wheeler, 1910. Ants, p. 570. *Nom. nud.* Preocc.

Formica rufibarbis var. ***occidua*** W. M. Wheeler, 1912. Psyche 19: 90. N. name. *Nom. nud.*

Formica rufibarbis var. ***occidua*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 398, 517. ☿ ♀.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 550.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 86.
Taxonomy: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 7. 30, ☿.
Economics: Eckert and Mallis, 1937. Calif. Agr. Expt. Sta. Cir. 342: 30.

sanguinea aserva Forel. (In sanguinea group.) N. B. to Mass., west to N. Dak. A boreal species. *F.* (*F.*) *sanguinea sanguinea* Latreille occurs in the Palearctic Region.

Formica sanguinea aserva Forel, 1901. Soc. Ent. Belg. Ann. 45: 395. ☿ ♀.

Biology: W. M. Wheeler, 1906. Amer. Mus. Nat. Hist. Bul. 22: 85.—W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 623, 631–633.—W. M. Wheeler, 1926. Ants, pp. 458–460, 468.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 389, 404–406, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 595, ☿.

sanguinea puberula Emery. (In sanguinea group.) B. C. and western half of U. S. Also reported from Ind., Ill., Mo. In the Western States this form occurs at lower altitudes and warmer situations than *sanguinea subintegra*. Slaves: *F. subpolita* Mayr; *F. fusca* vars. *argentea* Whlr., *subaenescens* Emery, *subsericea* Say, and *neoclara* Emery; *F. cinerea* vars. *neocinerea* Whlr. and *altipetens* Whlr.; *F.* (*Neoformica*) *pallide-fulva nitidiventris* Emery; *F.* (*Proformica*) *neogagates lasioides* var. *vetula* Whlr.; *F.* (*Formica*) *microgyna rasilis* Whlr.

Formica sanguinea puberula Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 643, 648. ☿.

Biology: W. M. Wheeler, 1926. Ants, pp. 458–460.—Cole, 1942. Amer. Midland Nat. 28: 378.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 390, 413–414, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 376, ☿.

sanguinea rubicunda Emery. (In sanguinea group.) Labrador and Ont. to N. C., west to Mont. and Colo. A boreal and alpine form. Nests in the soil freely or under cover, also in logs. Female establishes colony with *F. fusca* var. *subsericea* Say workers in a manner similar to *aserva* but as the workers make slave raids also, mixed colonies are the result. Slaves: *F. fusca* vars. *subsericea* Say, *subaenescens* Emery, *neorufibarbis* Emery; *F.* (*Proformica*) *neogagates neogagates* Emery; *F. cinerea* var. *neocinerea* Whlr.; *F.* (*Neoformica*) *pallide-fulva schaufussi* var. *incerta* Emery and *pallide-fulva nitidiventris* var. *fuscata* Emery.

Formica sanguinea rubicunda Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 643, 647. ☿ ♀.

Biology: W. M. Wheeler, 1926. Ants, pp. 458–470.—M. R. Smith, 1928. N. Y. Ent. Soc. Jour. 26: 327–329.—Talbot, 1934. Ecology 15: 421, 430–434.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 390, 406–408, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 595, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 299, ☿.

sanguinea rubicunda var. **sublucida** W. M. Wheeler. (In sanguinea group.) Mass. (near Boston). Slave: *F.* (*F.*) *fusca* var. *subsericea* Say.

Formica sanguinea rubicunda var. ***sublucida*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 390, 408. ☿ ♀.

sanguinea subintegra Emery. (In sanguinea group.) Newfoundland, N. S. to S. C., west at least to Nebr., Kans. Common in Eastern States and Canada at low elevations. Slaves: *F. (F.) fusca* L. and vars. *subsericea* Say, *subaenescens* Emery; *F. (F.) cinerea* var. *neocinerea* Whlr.; *F. (Proformica) neogagates neogagates* Emery; *F. (Proformica) neogagates lasioides* var. *vetula* Whlr.; *F. (F.) subpolita* Mayr; *F. (Neoformica) pallide-fulva schaufussi* and var. *incerta* Emery; *F. (Neoformica) pallide-fulva nitidiventris* Emery and var. *fuscata* Emery.

Formica sanguinea rubicunda var. ***subintegra*** Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 643, 648. ☿.

Biology: W. M. Wheeler, 1908. Amer. Mus. Nat. Hist. Bul. 24: 624, 627–631.—M. R. Smith, 1928. N. Y. Ent. Soc. Jour. 36: 323–327.—Talbot and Kennedy, 1940. Ent. Soc. Amer. Ann. 33: 560–577.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 390, 410–412, ☿ ♀ ♂.—W. M. Wheeler, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 595, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 299, ☿.

sanguinea subintegra var. **gilvescens** W. M. Wheeler. (In sanguinea group.) N. Y., Ohio, Wis. Slave: *F. (F.) fusca* var. *subsericea* Say.

Formica sanguinea subintegra var. ***gilvescens*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 390, 412. ☿.

sanguinea subnuda Emery. (In sanguinea group.) Alaska, Labrador, Newfoundland, Canada, and all of U. S., exclusive of states from Va. to Kans. southward. A boreal and alpine form which is largely confined to the Northern and Western States. Widely distributed in the Canadian and Transition Zones. Slaves: *F. (F.) fusca* and vars. *subsericea* Say, *argentea* Whlr., *gelida* Whlr., *subaenescens* Emery, *neorufibarbis* Emery; *F. subpolita* Mayr.

Formica sanguinea rubicunda var. ***subnuda*** Emery, 1895. Zool. Jahrb., Abt. f. System. 8: 335. ☿.

Biology: W. M. Wheeler, 1917. Harvard Univ., Mus. Compar. Zool. Bul. 61: 19.—W. M. Wheeler, 1926. Ants, pp. 458–460.—Cole, 1942. Amer. Midland Nat. 28: 378.—R. E. Gregg, 1947. Colo. Univ. Studies 2: 393.

Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53:389, 409–410, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 376, 378, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 299, 308, ☿.

sibylla W. M. Wheeler. (In fusca group.) Oreg., Calif., Nev.

Formica sibylla W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 399, 530. ☿ ♀.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 551.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 87.

Taxonomy: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 551, ☿.

subpolita Mayr. (In fusca group.) Pacific Coast, Rocky Mts. and Southwest. States. Enslaved by *Polyergus rufescens laeviceps* Whlr.; *F. (F.) sanguinea* subspp. *puberula* Emery, *subintegra* Emery, and *subnuda* Emery.

Formica fusca var. ***subpolita*** Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 426. ☿ ♀.

?*Formica rufiventris* Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 665. ♂. Preocc.

Formica flammiventris W. M. Wheeler, 1912. Psyche 19: 90. N. name.

Biology: W. M. Wheeler, 1926. Ants, pp. 201, 460.—Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 87.

Taxonomy: Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 646, 661, ☿ ♀.—W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 399, 532–535, ☿ ♀ ♂.—Cole, 1942. Amer. Midland Nat. 28: 383–384, ☿.

subpolita var. **camponoticeps** W. M. Wheeler. (In fusca group.) B. C., Wash., Calif., Idaho, Utah.

Formica subpolita var. ***camponoticeps*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 399, 535. ☿.

Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 553.—Cole, 1942. Amer. Midland Nat. 28: 384.

Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 377, ☿.

subpolita var. **ficticia** W. M. Wheeler. (In fusca group.) Mont., Colo.

Formica subpolita var. ***ficticia*** W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 561. ☿ ♀ ♂.

Taxonomy: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 554, ☿.

ulkei Emery. (In exsecta group.) N. S., Ont. and Ohio to Man., N. Dak., S. Dak. Peculiar to the Canadian but rare in the Transition Zone. Nests are flattened mounds a foot or more in diameter and made of earth and vegetable detritus.
Formica ulkei Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 643, 653. ☿.
Biology: Holmquist, 1928. Ecology 9: 70–87.—Holmquist, 1928. Physiol. Zool. 1: 325–357.—Park, 1929. Psyche 36: 195–215.—Dreyer and Park, 1932. Psyche 39: 127–133.—Park, 1936. Psyche 42: 216–231.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 396, 485–487, ☿ ♀ ♂.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 300, ☿.—R. E. Gregg, 1944. Ent. Soc. Amer. Ann. 37: 472, ☿.

ulkei var. **hebescens** W. M. Wheeler. (In exsecta group.) N. S., Ind.
Formica ulkei var. *hebescens* W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 396, 487. ☿.

wheeleri Creighton. (In sanguinea group.) Utah (La Sal Mts.). Slave: *F.* (*Proformica*) *neogagates lasioides* var. *vetula* Whlr.
Formica wheeleri Creighton, 1935. Amer. Mus. Novitates 773: 1–5. ☿ ♀.
Biology: Cole, 1942. Amer. Midland Nat. 28: 378.
Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 376, 378, ☿.

whymperi Forel. (In microgyna group.) B. C. Colonies small. Temporary host unknown.
Formica rufa obscuripes var. *whymperi* Forel, 1904. Soc. Ent. Belg. Ann. 48: 152. ☿.
Biology: W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 544.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 392, 434, ☿.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 544, ☿.

whymperi var. **adamsi** W. M. Wheeler. (In microgyna group.) Mich., Minn.
Formica adamsi W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 84. ☿.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 395, 473–474, ☿.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 544, ☿.

whymperi var. **alpina** W. M. Wheeler. (In microgyna group.) Colo., ?Idaho, ?N. S. Temporary host unknown.
Formica adamsi var. *alpina* W. M. Wheeler, 1909. N. Y. Ent. Soc. Jour. 17: 85. ☿.
Taxonomy: W. M. Wheeler, 1913. Harvard Univ., Mus. Compar. Zool. Bul. 53: 395, 475, ☿.—W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 544.

Unrecognized Forms of Formica Linnaeus

connecticutensis Buckley. Conn., N. Y., D. C.
Formica Connecticutensis Buckley, 1866. Ent. Soc. Phila. Proc. 6: 154. ☿ ♀.

nortonii Buckley. Conn.
Formica Nortonii Buckley, 1866. Ent. Soc. Phila. Proc. 6: 153. ☿ ♀.

nova-anglae Buckley. Maine.
Formica Nova Anglae Buckley, 1866. Ent. Soc. Phila. Proc. 6: 153, ☿ ♀.

politurata Buckley. Mich.
Formica politurata Buckley, 1866. Ent. Soc. Phila. Proc. 6: 160. ☿.

virginiana Buckley. D. C.
Formica Virginiana Buckley, 1866. Ent. Soc. Phila. Proc. 6: 159. ☿.

Genus POLYERGUS Latreille

Polyergus Latreille, 1804 Nouv. Dict. Hist. Nat., v. 24, p. 179.
Type: *Formica rufescens* Latreille. Monob.
Revision: M. R. Smith, 1947. Amer. Midland Nat. 38: 150–161.

These obligatory or true slave-making ants occur throughout the United States, except possibly the extreme southern states.

lucidus longicornis M. R. Smith. S. C. (Florence). Slave: *Formica* (*Neoformica*) *pallide-fulva schaufussi* Mayr.

Polyergus lucidus longicornis M. R. Smith, 1947. Amer. Midland Nat. 38: 155. ☿.

lucidus lucidus Mayr. Mass. to S. C., west to Kans. and Iowa. Slaves: *Formica* (*Neoformica*) *pallide-fulva schaufussi* Mayr and var. *incerta* Emery and *F.* (*N.*) *pallide-fulva nitidiventris* Emery.

Polyergus lucidus Mayr, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 952. ☿.

Biology: McCook, 1880. Acad. Nat. Sci. Phila. Proc. 32: 376–384.—Burrill, 1908. N. Y. Ent. Soc. Jour. 16: 144–151.—W. M. Wheeler, 1926. Ants, pp. 482–486.—M. R. Smith, 1934. N. Y. Ent. Soc. Jour. 42: 360–361.

Taxonomy: Mayr, 1886. Zool.-Bot. Gesell. Wien, Verh. 36: 424, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 310, ☿.—M. R. Smith, 1947. Amer. Midland Nat. 38: 152–155, ☿.

lucidus montivagus W. M. Wheeler. Colo. Slave: *Formica* (*Neoformica*) *pallide-fulva schaufussi* var. near *incerta* Emery.

Polyergus lucidus montivagus W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 419. ☿ ♀ ♂.

Taxonomy: M. R. Smith, 1947. Amer. Midland Nat. 38: 152, 156, ☿.

rufescens bicolor Wasmann. Ont., Mich., and Ill., west to Mont. *P. rufescens rufescens* Latreille occurs in Europe and Asia. Slaves: *Formica* (*F.*) *fusca* vars. *subaenescens* Emery and *subsericea* Say.

Polyergus rufescens bicolor Wasmann, 1901. Allg. Ztschr. f. Ent. 6: 369. ☿ ♀ ♂.

Biology: W. M. Wheeler, 1926. Ants, pp. 477–482.—G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 269.

Taxonomy: Buren, 1944. Iowa State Col. Jour. Sci. 18: 310, ☿.—M. R. Smith, 1947. Amer. Midland Nat. 38: 152, 159, ☿.

rufescens breviceps Emery. B. C. to Calif., east to N. Dak. and Kans.; Ill., Ind. One of the most common and widely distributed forms of *Polyergus*. Slaves: *Formica* (*F.*) *cinerea* var. *neocinerea* Whlr.; *F.* (*F.*) *fusca* vars. *argentea* Whlr., *neorufibarbis* Emery, *subaenescens* Emery, and *subsericea* Say.

Polyergus rufescens breviceps Emery, 1893. Zool. Jahrb., Abt. f. System. 7: 666. ☿.

Biology: W. M. Wheeler, 1916. N. Y. Ent. Soc. Jour. 24: 107–118.—W. M. Wheeler, 1926. Ants, pp. 475–477.—M. R. Smith, 1928. N. Y. Ent. Soc. Jour. 36: 329–333.

Taxonomy: Cole, 1942. Amer. Midland Nat. 28: 385, ☿.—Buren, 1944. Iowa State Col. Jour. Sci. 18: 310, ☿.—M. R. Smith, 1947. Amer. Midland Nat. 38: 152, 157–158, ☿.

rufescens breviceps var. **fusciventris** W. M. Wheeler. Minn., Man., N. Dak., Colo. Slaves: *Formica* (*F.*) *fusca fusca* L. and *F.* (*F.*) *fusca* var. *subsericea* Say.

Polyergus rufescens breviceps var. ***fusciventris*** W. M. Wheeler, 1917. Amer. Acad. Arts and Sci. Proc. 52: 555. ☿.

Biology: G. C. and E. W. Wheeler, 1944. N. Dak. Hist. Quart. 11: 269.—R. E. Gregg, 1946. Amer. Midland Nat. 35: 754.

Taxonomy: M. R. Smith, 1947. Amer. Midland Nat. 38: 152, 161, ☿.

rufescens breviceps var. **silvestrii** Santschi. Calif. (Yosemite). Slave not recorded.

Polyergus rufescens breviceps var. ***Silvestrii*** Santschi, 1909. Soc. Ent. Ital. Bol. 41: 7. ☿ ♂.

Taxonomy: M. R. Smith, 1947. Amer. Midland Nat. 38: 161, ☿.

rufescens breviceps var. **umbratus** W. M. Wheeler. Calif. (Brookdale). Slave, a small form of *Formica* (*F.*) *fusca* near var. *argentea* Whlr.

Polyergus rufescens breviceps var. ***umbratus*** W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 419. ☿.

Biology: Mallis, 1941. South. Calif. Acad. Sci. Bul. 40: 82.

Taxonomy: M. R. Smith, 1947. Amer. Midland Nat. 38: 152, 160, ☿.

rufescens laeviceps W. M. Wheeler. Calif. (Mt. Tamalpais). Slave: *Formica* (*F.*) *subpolita* Mayr.

Polyergus rufescens laeviceps W. M. Wheeler, 1915. Amer. Mus. Nat. Hist. Bul. 34: 420. ☿.
Taxonomy: M. R. Smith, 1947. Amer. Midland Nat. 38: 152, 160, ☿.

Unrecognized Forms of Subfamily Formicinae

Formica arenicola Buckley, 1866. Ent. Soc. Phila. Proc. 6: 160. ☿.

Formica occidentalis Buckley, 1866. Ent. Soc. Phila. Proc. 6: 157. ☿ ♀.

Formica tenuissima Buckley, 1866. Ent. Soc. Phila. Proc. 6: 162. ☿.

Unrecognized Forms of Formicidae

Formica dislocata Say, 1836. Boston Jour. Nat. Hist. 1: 288. ♀ ♂.

Formica Lincecumii Buckley, 1866. Ent. Soc. Phila. 6: 163. ☿ ♀ ♂.

Polyergus Texana Buckley, 1866. Ent. Soc. Phila. Proc. 6: 170. ♀.

Formica triangularis Say, 1836. Boston Jour. Nat. Hist. 1: 288. ♀ ♂.

Superfamily VESPOIDEA

Taxonomy: Ashmead, 1902. Canad. Ent. 34: 163–166, 203–210, 219–221.—Dalla Torre, 1904. *In* Wytsman, Gen. Ins., Fasc. 19, pp. 1–108, 6 pls.

Family VESPIDAE[30]

Subfamily VESPINAE

Nests consist of several to many tiers of hexagonal paper cells, the whole generally enclosed in a paper envelope. Larvae are fed chiefly on food of animal origin. The nests are annual; queens hibernate. Species of the subfamily are indigenous to the Northern Hemisphere. A common parasite is *Sphecophaga burra* (Cresson).

Revision: Bequaert, 1932. Ent. Amer. (n. s.) 12: 71–138.—Duncan, 1939. Stanford Univ., Pubs., Univ. Ser. Biol. Sci. 8 (1): 1–272.

Genus VESPA Linnaeus

Vespa Linnaeus, 1758. Syst. Nat., ed. 10, v. 1, p. 343.
Type: ***Vespa crabro*** Linnaeus. Desig. by Lamarck, 1801.
Macrovespa Dalla Torre, 1904. *In* Wytsman, Gen. Ins., v. 19, p. 64.
Type: ***Vespa crabro*** Linnaeus. Desig. by Bequaert, 1930.

crabro germana Christ. N. Y., Pa., N. J., Conn., Del., Md., D. C., Va. Introduced from Palearctic Region, where it occurs south of 62° latitude.
Vespa crabro germana Christ, 1791. Naturgesch. Insekt. Bienen, Wespen u. Ameisengeschl., p. 215.

Genus VESPULA Thompson

Subgenus VESPULA Thompson

Vespula Thomson, 1869. Opusc. Ent., v. 1, p. 79.
Type: ***Vespa austriaca*** Panzer. Desig. by Ashmead, 1902.
Pseudovespa Schmiedeknecht, 1881. Ent. Nachr. 7: 314.
Type: ***Vespa austriaca*** Panzer. Monob.
Paravespula Bluethgen, 1938. Konowia 16: 271.
Type: ***Vespa vulgaris*** Linnaeus. Orig. desig.
Allovespula Bluethgen, 1943. Stettin. Ent. Ztg. 104: 149.
Type: ***Vespa rufa*** Linnaeus. Orig. desig.

Nests are usually underground or close to it in hollow logs or stumps. Combs, except for a small conical area around the main suspensorium, are usually essentially plane. Colonies usually last until late fall.

[30]By Richard M. Bohart, University of California, Davis, Calif.