

A Guide to Species Identification of New World Ants (Hymenoptera: Formicidae)

by

William P. MacKay and S. Bradleigh Vinson¹

ABSTRACT

Ants are an abundant and convenient group of organisms for use in studies in various branches of biology. Unfortunately identification is difficult as keys and taxonomic works are scattered throughout the literature and are published in several different languages. In this paper, we provide an annotated list of the taxonomic aids which are available for the ants of the New World and hints to the identification of the species in various genera. We also point out the genera of which keys are not available and for which revisions are desperately needed. We hope that this list will facilitate the identification of ants in order that their biology and behavior can be investigated to a further extent by non-specialists.

INTRODUCTION

Ants are among the most common and abundant animals in terrestrial ecosystems. Thus, they are convenient animals for ecological and behavioral studies. Unfortunately, identification is difficult, especially for the non-specialist. Keys are scattered throughout the literature and are often published in obscure journals. A literature search is often unsuccessful as specific genera, or the words "ant", "ants", or "Formicidae" are not in the title. Most ant researchers are reluctant to make identifications, unless the samples are small, well mounted and sorted. Thus, much interesting research on ants is simply not done, or the author lumps all of them into "Formicidae". We hope that providing such biologists with a current annotated list to the major taxonomic works on ants will make identification possible for non-specialists and thus stimulate further ecological and behavioral work on ants.

¹Dept. of Entomology, Texas A&M University, College Station, TX 77843

Ants are difficult to identify and without an extensive reference collection, correct identifications are often impossible. It is essential that clearly labeled voucher specimens from studies on ants be deposited in a major museum, in case there are misidentifications or that taxonomic changes occur after the study is published. Once an investigator is relatively sure of the identifications, he may contact specialists mentioned in this paper to get permission to send the specimens for verification.

GENERAL WORKS ON ANTS

There are a number of general works on ant biology. Wheeler (1910a) is still very useful as a review, even though it was published almost 80 years ago. Wilson (1971) is currently the most important work; an updated work, including keys to the genera of all biogeographic regions, is in preparation (Wilson, pers. comm.). Oster and Wilson (1978), Buckley (1982), Hermann (1979, 1981, 1982a,b), Jaisson (1982, 1983), Brian (1983) and Lofgren and Van der Meer (1986), are other important references.

There are numerous keys to the genera of the New World, especially those genera occurring in the United States. You may want to start with a key to the subfamilies. Wheeler and Wheeler (1972) is the easiest to use. Creighton (1950) is the standard work and is still useful for identification of ants, although it is somewhat out of date. There have been many taxonomic changes and the key is almost useless in the identification of some groups, especially the subfamily Ponerinae. *Cardiocondyla* and *Stenamamma* are missing in the key to the subfamily Myrmicinae, and there have also been major changes in the names of the genera. Smith (1947c) is easier to use and has exceptionally good illustrations of the genera. Smith also includes a description of each genus, which is very helpful for the verification of an identification. Unfortunately it is also out of date. Smith (1943c) also published a key to the genera, based on males. It is very helpful as one often has only the males for identification of a species. There is no key to the females (queens), but many of them can be identified using a worker key. Snelling and George (1979) is well worth the effort to obtain for biologists interested in the ants of deserts of southwestern United States. It also includes numerous helpful illustrations. There are fewer keys to the

Neotropical genera, which is an extremely rich fauna. Baroni Urbani (1983) published a key to the Neotropical genera. It is basically a translation (to Spanish) and update of an earlier key by Wheeler (1922). It is very difficult to use due to its brevity and lack of illustrations. It can be useful for the verification of a genus that has already been identified using another key. Weber (1972) provides a key for generic determinations of the fungus-growing ants. Kusnezov (1956) may be useful for the identification of the Ponerinae and Cerapachyinae, but is difficult to use and it is in German. The illustrations are clear and are interspersed within the key, which makes the key more convenient to use. There have been a number of taxonomic changes since it was published. Similar comments could be made about his keys to Dolichoderinae (1959b) and the genera related to *Solenopsis* (1957). Mexico has suffered by being at the edges of both the Nearctic and Neotropical regions, and containing endemic relatives of species from both regions. Therefore many of the Mexican genera and species are not included in taxonomic works. MacKay and Mackay (1989) published a key to the Mexican genera (in Spanish). Wheeler and Wheeler have published several works on the ants of various states of the United States, including North Dakota (1963, 1977), California (1973), and Nevada (1986). Their keys are the most "user friendly" keys available to ants, as they had the non-specialist in mind in their works. It is very unfortunate there is no complete generic key to the New World (possibly published in regional sections) written in the same manner. We will soon have new keys to the genera of the world (Wilson, in prep.). Snelling is working on a manual of Central American ants. Lattke and Jaffée are writing a key to the Neotropical genera, which contains numerous excellent colored plates. Hopefully generic identification will soon be possible for ants found anywhere in the New World.

It is advisable to use more than one key, if available. This is especially important in species identifications, although some keys should be avoided. We have mentioned a few of such works in this paper, but have ignored others in the hope they will be forever forgotten as they are completely unreliable. There are several regional papers on ants, and we have mentioned a few of these we consider most useful in the text.

A number of catalogs are very useful for ant identification.

Wheeler and Wheeler (1985) provide a recent list of the tribes and genera. They recognize Cerapachyinae as a valid subfamily and consider all of the army ants to be in the subfamily Dorylinae, which we consider to be the most conservative interpretation of the available data (see Gotwald 1988). There are several other interesting taxonomic changes in the paper.

Smith (1979) is an essential work for those dealing with North American ants (north of Mexico). It includes a list of the ants together with references to works on taxonomy, behavior, morphology and biology. Kempf (1972a) provides a complete list of Neotropical ants, and lists the major taxonomic works. It was published in Portuguese, but is easy to use as it is essentially a list. There are no specific references to biology, but there has been very little done on the biology of neotropical ants and most of it is included or cited in the taxonomic works. Emery (1910, 1911, 1912, 1922a, 1925) published world catalogs of the ants. Brown (1973) compiled a complete list of the world ant genera and the synonymies (some of which are incorrect in our opinion). It is a good place to look for a genus that you can not find anywhere else. It also includes the world distributions of all the genera and ecological data on tropical ants that will not be found elsewhere. Snelling (1981a) also lists all known ant genera. Wilson (1976) wrote an interesting paper on the most prevalent ant genera.

The terminology involved in ant identification will often stop the most enthusiastic non-specialist. Some of the publications which will be helpful include Torre Bueno (1937), Smith (1947c), Etter-shank (1966), Snelling (1981a), Harris (1979), Lincoln et al. (1982) and Wheeler and Wheeler (1986). Unfortunately ant specialists have not been consistent in names given to structures, and descriptions of surface sculpturing vary between writers. Harris (1979) is a very important work and has the potential of standardizing the terminology. Unfortunately it is difficult to obtain and a photocopy may not be completely useful because of the electron micrographs included in the text. If you are interested in the correct pronunciation of genera and species, consult Wheeler (1956, 1975). In practice, each ant specialist pronounces the words differently to some extent, making communication difficult at times.

KEYS AND MAJOR TAXONOMIC WORKS ON THE GENERA OF
NEW WORLD ANTS

In the following list, we refer to the distribution in the New World only, in many cases the genera are also found in the Old World. North America includes Mexico, if a genus is found only North of Mexico, we state USA or Canada or both. We have not included references on the biology or other topics. Such references can be obtained from Smith (1979) or in the taxonomic revisions. Only the extant ant species and genera are included.

**List of the genera of ants in the New World and a list
of the keys available for species identification.**

Acanthognathus (Myrmicinae) Honduras to Brazil.

Brown and Kempf (1969) present a key to the workers and females of this Neotropical genus.

Acanthomyops (Formicinae) North America

This genus is closely allied to *Lasius*, and was revised by Wing (1968). Wheeler and Wheeler (1986) will be helpful in confirming identifications.

Acanthoponera (Ponerinae) Mexico to Brazil

See *Ectatomma*.

Acanthostichus (Cerapachyinae) southwestern USA to Argentina

Kusnezov (1962) included a key based on an earlier key of Wheeler. It is not reliable and some corrections were made by Kempf (1964e). Brown (1975) discusses taxonomic characters and provides a list of species, but no key. MacKay (1985) described a new species from Colombia. There are two undescribed species in southwestern USA and may be other new species in the neotropics. MacKay could supply a provisional key to the species.

Acromyrmex (Myrmicinae) southwest USA to Argentina

Using a combination of Santschi (1925), Creighton (1950) and Gonçalves (1961) it is usually possible to identify these economically important leaf and grass cutters.

Acropyga (Formicinae) USA (AZ) south to Argentina

This is a difficult genus. Wheeler (1935) and Weber (1944) may be useful if species determinations are necessary.

Adelomyrmex (Myrmicinae) Central America

Smith (1946b, = *Apsychoomyrmex*, see Kempf 1972a for synonymy) includes a key to the ants of this rarely collected genus.

Allomerus (Myrmicinae) South America

Ettershank (1966) provides a generic revision and a list of species. There is no revision of the species or subspecies. See Kempf (1975a) for taxonomic notes.

Amblyopone (Ponerinae) Americas

Brown's key (1960) will be necessary for the identification of these ants. *Amblyopone tropicalis* from Panama has been described since the key was published (Brown 1962a).

Amyrmex (Dolichoderinae) Argentina

There is only a single species, *A. golbachi*, known only from the male (Kusnezov 1953).

Anergates (Myrmicinae) USA

A single species, *A. atratulus*, occurs in North America (Creighton 1950).

Anochetus (Ponerinae) Mexico to Argentina

Brown (1978) provided a revision of the genus with keys to the species and illustrations. Lattke (1986a) described two new species from Colombia.

Anoplolepis (Formicinae) Mexico to Chile

Only *A. longipes* occurs in the New World (Kempf 1972a).

Antichthonidris (Myrmicinae) Chile and Argentina

There are presently two species in the genus (Snelling 1975).

Aphaenogaster (Myrmicinae) Canada to Panama

This genus is in need of a thorough revision. Creighton (1950) includes the species in the United States, but there are undescribed species. MacKay (1988) described a new species from "

Mexico. No key exists to identify neotropical species. Wheeler and Wheeler (1986) present a key which would be useful for species in the western United States. Note that *Novomessor* is a synonym (Brown 1974a).

Apsychomyrmex = *Adelomyrmex*

Apterostigma (Myrmicinae) Central America to Argentina

Wheeler (1911b) and Weber (1958c) may be of some assistance in the identification of these ants.

Araucomyrmex (Dolichoderinae) Argentina, Chile

Kusnezov (1959a) may be useful, as well as Snelling and Hunt (1975) for species identification in this genus. Some *Dorymyrmex* (subgenus *Ammomyrma*) are members of this genus (Snelling 1975) and there are several recently described species (Snelling 1975). Snelling (1981a) considers this genus to be a synonym of *Conomyrma*.

Aspididris = *Basiceros*

Atta (Myrmicinae) Southern USA to Argentina

Borgmeier (1959b) provides a key to species of this economically important genus of leaf-cutting ants. Weber (1958a), Gonçalves (1963), Smith (1963) and MacKay and MacKay (1986) may be used for identifications.

Azteca (Dolichoderinae) Mexico to Argentina

Emery (1894a, 1896) includes keys, but they are difficult to use. Longino is presently revising the *Cecropia*-inhabiting species. Females are usually necessary for species identification (Longino, pers. com.).

Basiceros (Myrmicinae) Central America to Brazil

Brown and Kempf (1960) provide a key to these easily recognized, but rarely collected ants. Brown (1974b) described a new species and includes *Aspididris* as a synonym. He also includes keys to the workers, females and males.

Belonopelta (Ponerinae) Central America to Brazil

Longino (1975) includes keys to the species of *Belonopel-*

ers are in agreement with the synonymization of *Simopelta* (Longino, pers. com.). See Snelling (1971) for an additional species from Costa Rica. *Leiopelta* is a new genus described for what was previously known as *B. deletrix*. The illustrations are very nice and distributions are included. It may be difficult to use as it is in Italian. Gotwald and Brown (1966) is useful in identification; the key is good and the illustrations are excellent.

Biconomyrma = *Conomyrma*

Bisolenopsis = *Solenopsis*

Blepharidatta (Myrmicinae) Brazil, Argentina

There is no key to the two species (*B. brasiliensis* and *B. conops* (Wheeler 1915, Kempf 1967d). It could be a synonym of *Ochetomyrmex* (Brown 1973), although most workers, including Kempf (1975a) disagree. Kempf (1975a) also includes taxonomic notes and a description of the male.

Zorgmeierita (Myrmicinae) Nicaragua

A single species, *B. excisa*, occurs in Nicaragua (Weber 1934). It is probably a synonym of *Glamyromyrmex* (Brown 1973).

Trachomyrmex (Formicinae) Americas

This is one of the most difficult genera for species identification. They are tiny, soft-bodied ants which become badly distorted when mounted, and there are probably numerous undescribed species in the United States (Deyrup et al. 1988, Trager pers. com.) and Mexico (MacKay pers. obs.). Santschi (1923) revised the genus, but his key is difficult to use and includes major contradictions. It is impossible to identify even the described species in this genus without an extensive reference collection, and a lot of patience. Creighton (1950) and Wheeler and Wheeler (1978) provide keys for the identification of the species which occur in the United States. These two publications are of little use as there are at least 5 species in Florida, including an inquiline (Deyrup et al. 1988, Trager pers. com.).

Bacchyponera (Ponerinae) Eastern United States

A single species *B. solitaria*, was accidentally introduced into eastern United States.

Brownidris = *Ochetomyrmex* and *Tranopelta*

Bruchomyrma = *Pheidole*

Camponotus (Formicinae) Americas

This is a large, complicated group in which species identification is almost impossible for species collected outside of North America. Species from the United States can be identified using Creighton (1950) and Snelling (1988). If it is necessary to identify Neotropical species, begin with Emery (1920a,b), Santschi (1921) and Wheeler (1921) to attempt to determine the subgenus. Then use any key available and/or species descriptions to identify the species. Mayr (1870a) may be useful for the identifications of some of the common species from Colombia and surrounding regions. Kusnezov (1951d) can be used for identification of the species in Argentina. After determination of the subgenus, use Kempf (1960c) for *Hypercolobopsis*, Mayr (1870b) for *Colobopsis*, Hashmi (1973) for *Myrmothrix*, Wheeler (1931b) for *Myrmepomis*, Wheeler (1934a) for *Myrmocladoecus* and Snelling (1988) for *Myrmentoma*. Revisionary work in this genus is badly needed. Snelling is currently revising *Colobopsis*, which he considers to be a separate genus (Longino pers. com.).

Cardiocondyla (Myrmicinae) Americas

Smith (1944a) includes the species in North America, with a key and excellent illustrations. Creighton (1950) includes most of the New World species except *C. ectopia*, which occurs in California and Arizona (Snelling 1974).

Carebara (Myrmicinae) Costa Rica to Argentina

There is no key (see *Solenopsis*).

Carebarella (Myrmicinae) Costa Rica to Argentina

There is no key (see *Solenopsis*), but identification is possible as there are only 3 species in the genus (Kempf 1975a).

Centromyrmex (Ponerinae) Costa Rica to Argentina

Kempf (1967a) includes a key to the 3 Neotropical species of the genus, including illustrations and species descriptions.

Cerapachys (Cerapachyinae) Americas

Brown (1975) provides a key to the genera and species of the tribe Cerapachyini (*Sphinctomyrmex*, *Leptanilloides* and *Cerapachys*) and taxonomic notes. The key to *Cerapachys* is preliminary. Smith (1942) characterizes the males of the two species (*C. augustae* and *C. davisii*) found in the United States. The excellent drawing and description will enable entomologists to identify one of the most widespread species of ants captured in blacklight traps in southwestern United States and northern Mexico (*C. davisii*).

Cheliomyrmex (Dorylinae) Mexico to Brazil

See *Neivamyrmex*.

Chelystruma (Myrmicinae) Argentina

There is a single species (*C. lilloana*) in the genus (Kempf 1960c).

Codiomyrmex (Myrmicinae) Trinidad to Brazil

There are two species in the genus (Brown 1953a).

Codioxenus (Myrmicinae) Cuba

There is a single species, *C. simulans* (Brown 1948, 1950).

Conomyrma (Dolichoderinae) Americas

This genus is in need of a thorough revision. *Biconomyrma* is a synonym (Snelling 1973a). Snelling (1973a) and Trager (1988a) will be useful for some United States species, Kempf (1975a) and Kusnezov (1952c) may be useful for South American species.

Creightonidris (Myrmicinae) Brazil

There is a single species (*C. scambognatha*) in the genus (Brown 1949b, Brown and Kempf 1960).

rematogaster (Myrmicinae) Americas

This is a very difficult group. Identifications of North American species are possible using Buren (1958) and Johnson (1988). Identifications of Neotropical species are difficult or impossible. Motschulsky (1818) is helpful for the identification of the subgenera. Mayr (1870b) provides a key which may be useful.

Cryptopone (Ponerinae) Eastern and southern USA to Nicaragua
Brown (1963) includes a partial revision of the genus.

Ctenopyga (Cerapachyinae) southwestern USA and northern Mexico

There is a single species, *C. townsendi* in the genus. See Smith (1955a) and Brown (1975) for a discussion of the species. Workers appear to not be distinguishable from those of *Acanthostichus* (MacKay pers. obs.), which suggest that this genus should be synonymized with *Acanthostichus*.

Cylindromyrmex (Ponerinae) Central America to Brazil

Brown (1975) provides a key which should be sufficient for the identification of these beautiful, but rarely collected ants.

Cyphomyrmex (Myrmicinae) Americas

Kempf (1964c, 1966) presents keys and illustrations to this genus of fungus-growing ants. He considers the common *C. rimosus* to be a polytypic species. Longino and Snelling are currently working on the taxonomy of the *C. rimosus* group. Kempf (1968) described a new species not included in the key.

Daceton (Myrmicinae) Colombia to Brazil

There is a single bizarre species in the genus: *D. armigerum* (Kempf 1972a).

Dendromyrmex (Formicinae) Honduras to Brazil

See Mann (1916) for a key to the species. Mayr (1877) may be of assistance in the identification of these ants.

Dinoponera (Ponerinae) Colombia to Argentina

Kempf's key (1971) is sufficient for the identification of the workers and males of these large (3 cm total length), impressive ants.

Discothyrea (Ponerinae) eastern USA to Brazil

See *Ectatomma*.

Dolichoderus (Dolichoderinae) Panama to Brazil

Kempf (1969) will be useful for the identification of most of the species, although there are synonyms and undescribed

species. Avoid Mann's (1916) key as it is incorrect and will result in misidentifications. One of us (MacKay) is revising the genus and can supply a preliminary key to the workers, females and males. Note that the North American "Dolichoderus" are all members of the genus *Hypoclinea*.

Doronomyrmex (Myrmicinae) USA

Buschinger (1979) described the species *pocahontas* from Canada. Francoeur has an undescribed species from Utah (pers. com.). This genus will probably not be retained in Francoeur's reclassification of the tribe Leptothoracini (pers. com.).

Dorisidris (Myrmicinae) Cuba

There is a single species in the genus (*D. nitens*) (Brown 1950, Brown and Wilson 1959).

Dorymyrmex (Dolichoderinae) Bolivia, Chile, Argentina

This is a difficult group which has been subjected to only partial revisions (Gallardo 1916a,b, 1930, Kusnezov 1952c, Snelling and Hunt 1975). All of the species north of Argentina that were previously considered to be members of this genus (e.g. Creighton 1950) are members of the genus *Conomyrma* (Kusnezov 1952c, Snelling 1973a). See Snelling (1975) for additional species.

Eciton (Dorylinae) Mexico to Argentina

See *Neivamyrmex*.

Ectatomma (Ponerinae) Mexico to Argentina

Brown (1958) provides keys to the genera and species of the tribe Ectatommini (*Paraponera*, *Discothyrea*, *Proceratium*, *Ectatomma*, *Gnamptogenys*, *Acanthoponera*, and *Heteroponera*). See Kugler and Brown (1982) for a recent key to *Ectatomma*.

Ephebomyrmex (Myrmicinae) Americas

Kusnezov (1949b, 1959a), Cole (1968), Snelling (1981b) and MacKay et al. (1985a) provide partial revisions of this genus. It is often considered a subgenus of *Pogonomyrmex*. Wheeler and Wheeler (1986) provide the most easily used key to the species in the United States.

***Epitritus* (Myrmicinae) Florida**

Epitritus hexamerus has been collected in Florida (Deyrup 1988).

***Erebomyrma* (Myrmicinae) Texas to Brazil**

This genus has been provisionally resurrected from synonymy under *Oligomyrmex* by Wilson (1986).

Eriopheidole* = *Pheidole***Eucryptocerus* (Myrmicinae) Colombia to Brazil**

As there are only 3 species in the genus, identifications are relatively easy using Kempf (1951, 1959a, 1964a).

***Euponera* (Ponerinae) Old World**

The three species of the New World which were previously considered as members of this genus (Creighton 1950) have been transferred to other genera: *gilva* to *Cryptopone*, *solitaria* to *Brachyponera* and *stigma* to *Pachycondyla*.

***Eurhopalothrix* (Myrmicinae) USA (FL) to Argentina**

Brown and Kempf (1960) described the genus and provided a key to the species. Snelling (1968a) described *E. apharagonia* from El Salvador.

***Forelius* (Dolichoderinae) Americas**

This is a large, difficult group in a taxonomic jumble. We are not even sure of which species are members of the genus. All *Iridomyrmex* spp. in the United States (except the introduced *I. humilis*, *I. glaber* and *I. iniquus*) belong to *Forelius* (Snelling and George 1975, Wheeler and Wheeler 1986, Trager pers. com., Shattuck pers. com.). Members of the genus are common and may even have pest status in some situations. The genus deserves a thorough revision.

***Formica* (Formicinae) North America**

This is a large, difficult group, but most species can be identified using available keys. Begin with identifications of the species groups using Wheeler and Wheeler (1986) or MacKay et al. (1988). Ants of the *fusca* group can be identified with Francoeur (1973) or Wheeler and Wheeler (1977) (there are differences

of opinion as to the validity of some of the species). Use Creighton (1950) or Wheeler and Wheeler (1986) for ants of the *microgyna* group. Letendre and Huot (1972) will be of assistance. Ants of the *neogagates* group can be most easily identified using MacKay et al. (1988). Ants in the *pallidifulva* group can be identified using the key to *Neoformica* in Creighton (1950), although there are more species in the group than Creighton (1950) recognizes, some very common (Trager pers. com.). Trager and Francoeur are working on a revision of this group (Trager pers. com.). Note that *F. occidua* (= *F. moki* in Creighton) and *F. xerophyla* (= *F. moki xerophyla*, = *F. moki grundmanni* in Creighton) are actually members of the *fusca* species group. Ants of the *rufa* group can be identified (with difficulty) using Creighton (1950) and Wheeler and Wheeler (1986). The *rufa* complex is most in need of revision and the most difficult for correct species identification. Wheeler and Wheeler (1986) include the *microgyna* species group as part of the *rufa* group, which at least on morphological basis has merit. Finally Snelling and Buren (1985) provide a key to the known species of the *sanguinea* group. These authors caution that there are several undescribed western species in this group, so be careful with the key. It takes time and practice to become proficient in the identification of members of this biologically fascinating and important genus, but at least for North American biologists it is worth the effort.

Formicoxenus (Myrmicinae) North America

Francoeur et al. (1985) revised the genus and include keys for the identification of the species. Members were previously included in *Leptothorax* and *Symmyrmica*.

Gallardomyrma (Myrmicinae) Argentina

There is a single species, *G. argentina*, in the genus (Bruch 1932).

Gigantiops (Formicinae) South America

There is a single extant species, *G. destructor*, in this highly distinctive genus (Kempf and Lenko 1968).

Lamyromyrmex (Myrmicinae) Mexico to Brazil, Cuba

Wheeler (1915) described the genus and included illustrations. Bolton (1984) discusses the taxonomy of the group. Kempf

(1960c) provided a key to the species.

Gnamptogenys (Ponerinae) USA (TX, LA) to Argentina

See *Ectatomma*. Although this is a large, complex genus, species identifications using Brown (1958) is relatively straightforward and ants can be identified in most cases. See Kempf (1967d) and Perrault (1986) for an additional species. *Gnamptogenys hartmani* is definitely a member of the United States fauna (MacKay and Vinson 1989a). Lattke is currently revising the genus in the New World (pers. com.).

Gymnomyrmex (Myrmicinae) Brazil

This is a small genus (6 species) whose members can be identified using Kempf (1959d, 1960c, 1962d).

Harpagoxenus (Myrmicinae) USA

There are only two species in the genus in the New World, which can be identified using Creighton (1950).

Heteroponera (Ponerinae) Panama to Chile

See *Ectatomma*. Species can be identified using Brown (1958), Kempf (1962c) and Kempf and Brown (1970).

Hylomyrma (Myrmicinae) Central America to Argentina

Ants of this genus are rarely collected. They are relatively easily identified using Kutter (1977) together with Brown (1953b) and Kempf (1960c, 1964d, 1973a). See Kempf (1975a) for corrections of his key.

Hypoclinea (Dolichoderinae) Americas

Identification of ants in this genus is difficult at this time. Use of Creighton (1950) will usually result in correct identifications of the Nearctic species. Mayr (1870b) and Emery (1894b) provided keys to some of the Neotropical species together with those of *Monacis*. Neotropical species are very different from all the other species and may represent a separate genus. One of us (MacKay) is revising the group and can supply preliminary keys.

Hypocryptocerus = *Zacryptocerus*

Hypoponera (Ponerinae) Americas

This is a large, complex genus and species identifications are often impossible. Creighton (1950), Kempf (1962d) and Taylor (1967) may be of assistance in identifications.

Iridomyrmex (Dolichoderinae) Americas

This is a large, complex, difficult genus. There are no keys to the New World species, except Creighton (1950). Many of the New World species actually belong to *Forelius* (Snelling and George 1975, Snelling and Hunt 1975, Trager pers. com.). The remainder may not be congeneric with the Old World *Iridomyrmex* (Trager pers. com.).

Labauchena = *Solenopsis**Labidus* (Dorylinae) southern USA to Argentina

See *Neivamyrmex*.

Lachnomyrmex (Myrmicinae) Mexico south to Brazil

This is a small genus (4 species) in which species identifications are not difficult. Wheeler (1910b) provided a description of the genus and illustrations. Smith (1944b) and Weber (1950) are useful for identifications. See Borgmeier (1957) for a description of *L. plaumani* and good illustrations of the genus.

Lasiophanes (Formicinae) Chile and Argentina

Emery (1922b), Kusnezov (1951c, 1959a) and Snelling and Hunt (1975) are helpful for species identifications.

Lasius (Formicinae) North America

Wilson (1955) revised the genus. Wheeler and Wheeler (1986) is of assistance in identifications. There are several undescribed species, especially in Mexico (MacKay pers. obs.).

Leiopelta (Ponerinae) Mexico and Honduras

See *Belonopelta*. There is a single species, *L. deletrix*.

Leptanilloides (Dorylinae) Bolivia

There is a single rare species, *L. biconstricta*, in the genus (Borgmeier 1955).

Leptogenys (Ponerinae) USA to Argentina

Wheeler (1923) is of assistance in the identifications of the species in the subgenus *Lobopelta*. *Leptogenys manni* has been elevated to specific status (Trager and Johnson 1988).

Leptothorax (Myrmicinae) Americas

The most difficult part of identification of these ants is to determine the subgenera, as there are no keys to the subgenera or the closely related genera *Formicoxenus* and *Harpagonexus*. There is a single New World species, *L. pergandei* in the subgenus *Dichothorax* (MacKay and Vinson, in prep.). Creighton (1950) would be sufficient for the identification of most of the North American ants of the subgenus *Leptothorax*. Francoeur (1986) described two additional species. What is referred to in North America as *L. muscorum* consists of at least four separate species (Buschinger 1982, Heinze and Buschinger 1988). Baroni Urbani (1978) and Snelling (1986) would be helpful for the identification of ants in the primarily Neotropical subgenus *Macromischa*. Identification with Baroni Urbani's key is difficult due to the large number of species in the subgenus and because the key is in Italian. The illustrations are excellent and very helpful in identifications. Creighton (1950) includes many of the ants in the primarily Nearctic subgenus *Myrafant*. Cover, Francoeur and MacKay are currently revising the North American members of the subgenus and MacKay could supply a preliminary key. About half of the New World species in the subgenus are undescribed. Members of the primarily Neotropical subgenus *Nesomyrmex* are relatively easy to identify using Kempf (1959c, 1975a). Distinct morphological features of *L. wilda* suggest that the subgenus should be assigned full generic status (Francoeur and Loiselle 1988).

Lilidris = *Solenopsis**Linepithema* (Dolichoderinae) Peru, Brazil, Argentina

See Kusnezov (1958) for some assistance in the identification of the two species in this genus.

Liometopum (Dolichoderinae) North America

Creighton (1950) can be used for identification of ants of this

genus. Wheeler (1905) revised the North American species. *Liometopum luctuosum* was raised to specific status (MacKay et al. 1988).

Macromischa = *Leptothorax*

Manica (Myrmicinae) USA

Wheeler and Wheeler (1986) is the most easily used key. Note that *M. aldrichi* is a synonym of *M. hunteri*.

Megalomyrmex (Myrmicinae) Mexico to Chile

Identification is difficult. Wheeler (1909, 1925) and Kempf (1970) may be useful, Ettershank (1966) provides a generic revision and a list of species. A revision in English is in preparation (Brandão pers. com., Trager pers. com.).

Mesoponera (Ponerinae) = *Pachycondyla*

Messor (Myrmicinae) North America

Veromessor was synonymized with *Messor* by Bolton (1982). Cole (1966) provides a key to the species.

Monacis (Dolichoderinae) Mexico south to Argentina

Ants in this genus are relatively easily identified. Use Lattke (1986b) for species in which the petiolar scale is produced apically as a long, needle-like spine and Yoshi Harada (1986/87) for the others. Then double check identifications using Kempf (1959b). Kempf (1972c) will also be helpful. There are several undescribed species.

Monomorium (Myrmicinae) Americas

Although there are keys available, and only a few species in the New World, identification of these ants is difficult because of their small size. Ettershank (1966) includes a list of species, DuBois (1986) revises the *minimum* species group and described several new species. Kusnezov (1949a) revised the group in Argentina.

Mycetarotes (Myrmicinae) Brazil

There are only two species in the genus, use Kempf (1961a) for identification.

***Mycetophylax* (Myrmicinae) South America**

See Santschi (1922b), Weber (1958d) and Kempf (1962d) for assistance in the identification of ants of this genus.

***Mycetosoritis* (Myrmicinae) USA: TX, LA, and Brazil**

There is no key, but identification of these ants is possible as there are only 4 species in the genus. See Smith (1947c) for a description of the genus and illustrations.

***Mycocepurus* (Myrmicinae) Mexico to Argentina**

Use Kempf (1963b) for identifications of the four species in this genus.

***Myrmecina* (Myrmicinae) North America**

Identification is easy as there are only two species in the New World: *M. americana* in the USA and *M. harrisoni* from Mexico (Brown 1967). *Myrmecina texana* may be a valid species (Trager pers. com.).

***Myrmecocystus* (Formicinae) North America**

Snelling (1976, 1982) revised this genus of fascinating honey-pot ants and includes keys, illustrations and distribution maps.

***Myrmelachista* (Formicinae) USA (FL) to Chile**

Wheeler (1934b) provided a key to the subgenus *Myrmelachista*, which does not include *Hincksidris* or *Neaphomus* which were synonymized by Snelling and Hunt (1975). Kusnezov (1951e) included a revision of species in the Patagonian region.

***Myrmica* (Myrmicinae) North America**

This genus is currently under revision by Francoeur. Until a new key is available, use Creighton (1950) for tentative identifications. Illustrations accompanying keys to *Myrmica* in Wheeler and Wheeler (1963, 1986) are useful in interpreting the antennal structures useful for separating species. *Paramyrmica* is a synonym (Bolton 1988).

***Myrmicocrypta* (Myrmicinae) Mexico to Argentina**

There is no key available. The taxon is large, complex and species identification is very difficult.

Neaphomus = *Myrmelachista**Neivamyrmex* (Dorylinae) Americas

Watkins (1976) provides a key to *Neivamyrmex*, as well as *Eciton*, *Cheliomyrmex*, *Nomamyrmex* and *Labidus*. Identification of most species of army ants is relatively easy. Those of *Neivamyrmex* spp. are difficult due to the large number of species involved. Borgmeier (1955) is useful to verify identifications. Regional keys may be helpful, but can be misleading outside the area for which they were designed. Use Watkins (1982, 1989) and MacKay et al. (1985b) for Mexico and Watkins (1985) for the USA.

Neoforelius (Dolichoderinae) Argentina

There is a single species, *N. tucumanus* (Kusnezov 1953).

Neoponera = *Pachycondyla**Neostruma* (Myrmicinae) Central America to Brazil

See Brown (1959) for a revision of the genus.

Nomamyrmex (Dorylinae) southern USA to Paraguay

See *Neivamyrmex*. Watkins (1977) provides keys to the species and subspecies.

Vothidris (Myrmicinae) Chile, Argentina

Ettershank (1966) provides a list of species, Kusnezov (1959a) and Snelling and Hunt (1975) are helpful for identifications.

Xovomessor = *Aphaenogaster**Zylanderia* = *Paratrechina**Zyhetomyrmex* (Myrmicinae) Guianas and Brazil, Argentina

Kempf (1961c) may be helpful for the identifications of these difficult ants. The reproductives of *Brownidris* belong to this genus (Kempf 1975a).

Zyctostruma (Myrmicinae) Mexico to Argentina

Brown and Kempf (1960) include a key based chiefly on workers, with a description of the genus and illustrations.

Odontomachus (Ponerinae) southern USA to Argentina

Brown (1976, 1977) has revised this genus of beautiful ants. Deyrup et al. (1985) reinstate *O. ruginodis* as a species distinct from *O. brunneus*. Species identification in most cases is relatively easy. Kugler (1980) rediscovered *O. cornutus* in Colombia.

Oligomyrmex (Myrmicinae) southern USA to Argentina

This is one of the most difficult taxa for species identification. Ettershank (1966) includes a list of species. Kusnezov (1952b) may be helpful. Wilson (1986) has suggested that all of the New World species belong to the genus *Erebomyrma*.

Oxyepoecus (Myrmicinae) southern South America

Kempf (1974b) provides a characterization of the genus, illustrations, descriptions of several new species and keys to the workers and females. Other papers which may be helpful for species identifications include Borgmeier (1928), and Kusnezov (1952d).

Pachycondyla (Ponerinae) southern USA to Argentina

Genera including *Neoponera*, *Mesoponera*, *Termitopone* and *Wadeura* are synonymized with *Pachycondyla* (Brown 1973). Brown is currently revising the genus. Meanwhile, use Kempf (1962a) for most species, supplementing it with Emery (1890), Kempf (1958d) and finally Borgmeier (1959a) for the large, smooth ants which were previously considered to be in the genus *Termitopone*. Borgmeier (1959a) also provided a key to the males of *Termitopone* with illustrations.

Paracryptocerus = *Zacryptocerus**Paramyrmica* = *Myrmica**Paranamyрма* = *Solenopsis**Paraponera* (Ponerinae) Central America to Paraguay

See *Ectatomma*, there is only a single extant species in the genus: *P. clavata*.

Paraprionopelta (Ponerinae) Argentina

There is a single species in the genus: *P. minima* (Brown 1960).

***Paratrechina* (Formicinae) Americas**

These ants are in need of thorough revision. Trager (1984) provides a key to the species of the USA. They are especially abundant in Latin America, and except for *P. longicornis* (which fortunately is the most common species) and *P. burgessi* (Trager 1983), identification is nearly impossible.

***Perissomyrmex* (Myrmicinae) Guatemala**

There is a single species, *P. snyderi*, in this interesting, but very rarely collected genus (Smith 1947b).

***Phalacromyrmex* (Myrmicinae) Brazil**

There is a single species, *P. fugax*, in the genus (Kempf 1960b). Bolton (1984) provides taxonomic notes, characteristics and illustrations.

***Pheidole* (Myrmicinae) Americas**

This is a large, difficult genus that Wilson and Brown are presently revising. Synonyms include *Bruchomyrma*, *Epipheidole*, *Eriopheidole*, and *Sympheidole* (Brown 1973, Wilson 1984). Species in the USA can be identified using Gregg (1958). Kusnezov (1951b) revised the group in Argentina. Mayr (1870b, 1887); Kempf (1972b) and Brown (1981) are of some assistance in the identification of Neotropical species. Creighton and Gregg (1955), Wheeler and Wheeler (1973, 1986) and Snelling and George (1979) are useful for confirmation of identities of species in southwestern USA and northwestern Mexico. Naves (1985) revises the Florida species. There is no key available for the subgenus *Ceratopheidole*, for the subgenus *Decapheidole* see Smith (1947a). Gallardo (1932a) provides a partial key to *Elasmopheidole*, Smith (1955b, 1943b) provided keys to the subgenera *Hendecapheidole* and *Macropheidole* respectively. There is no key available at the present time for the subgenus *Pheidole*, the largest group in the genus. There are no keys for the subgenera *Scrobopheidole* and *Trachypheidole*, but as they are relatively small taxa, species identifications may be possible.

***Plagiolepis* (Formicinae) Tropical areas, introduced**

There is a single species, *P. alluaudi* in the New World (Smith 1957).

Platythyrea (Ponerinae) southern USA to Brazil, Bolivia

Brown (1975) revised the tribe and lists the characters which separate *Platythyrea* from *Probolomyrmex*. Kugler (1976) described an additional species.

Pogonomyrmex (Myrmicinae) Americas

This is a common, abundant group with most species in North America and in Argentina. Cole (1968), Snelling (1981b) and MacKay et al. (1985a) are sufficient for identification of known species in North America. See Shattuck (1987) for a revision of the *occidentalis* species group. Gallardo (1932b) and Kusnezov (1951a) can be used to identify most of the Latin American species. *Forelomyrmex* is tentatively considered as a member of *Pogonomyrmex* (single species *mayri* from Colombia), although if *Epehebomyrmex* is ultimately regarded as a valid genus, *Forelomyrmex* definitely deserves generic status (Kugler 1978).

Polyergus (Formicinae) North America

Creighton (1950), Wheeler (1968) and Wheeler and Wheeler (1986) will be sufficient for the identification of these ants. Trager is currently preparing a revision of the *lucidus* group.

Ponera (Ponerinae) USA

Taylor (1967) revised the genus. They are easily identified as there are only two species in the New World: *exotica* and *pennsylvanica*.

Prenolepis (Formicinae) North America, Cuba

Creighton (1950) provides a key to subspecies of *P. imparis* in the United States. It is a small group in the New World, the status of whose members are not clear.

Prionopelta (Ponerinae) Mexico, Antilles to Argentina, introduced into central Florida

The four Neotropical species in this genus are relatively easy to identify using Brown (1960). Note that *P. marthae* is a synonym of *Typhlomyrmex rogenhoferi* (Brown 1953c).

Probolomyrmex (Ponerinae) Panama to Bolivia

See *Platythyrea*. Taylor (1965) can be used to identify all of the members of this rarely collected group, except *P. boliviensis*,

which is known from only the female.

Proceratium (Ponerinae) USA to Brazil

See *Ectatomma*. Ward's key (1988), based on earlier revisions of Snelling (1967) and Brown (1979) is the latest work available on the genus. *Sysphincta* is a synonym (Brown 1958).

Procryptocerus (Myrmicinae) Mexico to Argentina

These rarely collected ants can be identified using Kempf (1951, 1957, 1964a,b).

Protalaridris (Myrmicinae) Colombia and Ecuador

There is a single species, *P. armata* in the genus (Brown 1980).

Pseudoatta (Myrmicinae) Argentina

There are 2 New World taxa in this genus: *P. argentina* (Gallardo 1916c) and *P. argentina platensis* (Santschi 1926).

Pseudomyrmex (Pseudomyrmicinae) southern USA south to Argentina

This is a large group of common ants, at least in tropical areas. Species in the United States can be identified using Ward (1985). Some of the Mexican species can be identified using Aleman Castrejón (1985). Kempf (1958c, 1960a, 1961b, 1967b) provided taxonomic notes, but must be used with caution as there are several taxonomic errors, some of which were corrected in the later papers. Mayr (1870a) could be useful for species identification. Ward is continuing revision on this genus (pers. com.).

Quadristruma (Myrmicinae) Tropical and subtropical areas throughout the world (introduced into New World)

There is a single species, *Q. emmae*. Brown (1949a) described the genus and provided taxonomic notes.

Rhopalothrix (Myrmicinae) Mexico to Argentina

Brown and Kempf (1960) have revised the New World species of this genus of rarely collected ants.

Rogeria (Myrmicinae) southern USA to Argentina

Kempf (1962b, 1962d, 1963a, 1965) and Snelling (1973b) may be helpful for the identification of these beautiful, but rarely collected ants. Kugler is currently revising the genus, which contains

Sericomyrmex (Myrmicinae) Mexico to Brazil

This is a large, difficult group of interesting ants. Wheeler (1916) may be helpful for species identification.

Simopelta* = *Belonopelta***Smithistruma*** (Myrmicinae) USA to Brazil

These ants are difficult to identify due to their small size. Brown (1953a, 1964) can be used for identifications. Ward (1988) includes keys to the species of the western Nearctic region.

Solenopsis (Myrmicinae) Americas

This is a large, difficult group, especially the smaller species in the subgenus *Diplorhoptrum*. *Bisolenopsis*, *Synsolenopsis*, *Paranomyrma* and *Labauchena* are all synonyms (Ettershank 1966, Trager pers. com.). Ettershank (1966) provides a generic revision with a species list, Creighton (1930) is somewhat useful for the larger, polymorphic species in the subgenus *Solenopsis*. Kempf (1973b) described an additional species. Trager (in prep.) is currently writing a revision of the *S. geminata* group ("fire ants and relatives") in which he presents evidence for the synonymization of all of the subgenera of *Solenopsis*. There are several undescribed species; 2 new species were recently described by MacKay & Vinson (1989b).

Sphinctomyrmex (Cerapachyinae) Brazil

See *Cerapachys*. There is a single species in the New World: *S. stali* (Borgmeier 1957).

Stegomyrmex (Myrmicinae) Panama, Peru, Brazil

Smith (1946a) can be used to identify the 2 species in this genus.

Stenamma (Myrmicinae) USA to Colombia

Creighton (1950), Smith (1962a,b), Snelling (1973c) and Wheeler and Wheeler (1986) will be useful for the identification of ants in this genus. The taxon is currently under review by DuBois.

***Strumigenys* (Myrmicinae) Americas**

These ants are very beautiful, but somewhat difficult to identify due to their small size. Brown has completely revised the genus in a series of papers. Brown's 1961 & 1962b papers contain keys and useful commentary that would serve for those who want to tackle the genus. Kempf and Brown (1969) described two new species and Kempf (1976) described a new species and revised Brown's key.

Symmyrmica = *Formicoxenus*

Sympheidole = *Pheidole*

Synsolenopsis = *Solenopsis*

Sysphincta = *Proceratium*

***Talaridris* (Myrmicinae) Trinidad, Guianas**

There is a single species (*T. mandibularis*) in the genus (Weber 1941). This genus is probably a synonym of *Rhopalothrix* (Brown 1973).

***Tapinoma* (Dolichoderinae) Americas**

This genus needs a thorough revision. There are no keys and until the group is revised, it is almost impossible to correctly identify the species, especially in Latin America. Yoshi Harada is working on a revision of the Tribe Tapinomini (pers. com.). Some of the New World species apparently do not belong in *Tapinoma* (Snelling and Hunt 1975). *Neoclystopsenella* (Bethyridae) is a synonym (Brown 1987).

***Tatuidris* (Myrmicinae) Mexico to El Salvador**

There is a single species, *T. tatusia* in the genus (Brown and Kempf 1967).

Termitopone = *Pachycondyla*

***Tetramorium* (Myrmicinae) Americas**

This is a relatively easy group for species identifications as there are only a few species in the New World. Bolton (1979) includes

keys for species identification of most species. The genera *Xiphomyrmex* (Bolton 1979) and *Triglyphothrix* (Bolton 1985) are synonyms.

Thaumatomyrmex (Ponerinae) Central America to Brazil

Kempf (1975b) can be used for the identification of these fascinating, but relatively rarely collected ants. The *ferox* species group of the genus has been recently revised by Longino (1988). *Thaumatomyrmex paludis* is a synonym of *T. ferox*, *T. manni* and *T. zeteki* are synonyms of *T. atrox*.

Tingimyrme (Myrmicinae) Bolivia

There is a single species, *T. mirabilis* in the genus (Mann 1926).

Trachymesopus = *Pachycondyla*.

Trachymyrme (Myrmicinae) Americas

This is a large, difficult group in need of revision. Wheeler (1911a), Weber (1958b, 1967) and Creighton (1950) are of some assistance in species identification. Fowler (1982) described a new species from Paraguay.

Tranopelta (Myrmicinae) Central and South America

There is no key to the five species in this genus. Ettershank (1966) provides a generic level revision and a list of species. The workers of *Brownidris* belong to this genus (Kempf 1975a).

Trichoscapa (Myrmicinae) southern USA, Pantropical

There is a single species (*T. membranifera*) in the New World (Emery 1869). Brown (1948, 1949c) presents taxonomic notes. Ward (1988) is useful for identifications.

Triglyphothrix (Myrmicinae) = *Tetramorium*

Typhlomyrmex (Ponerinae) Mexico to Argentina

Brown (1965) presents a review of the genus as well as keys for identifications of the species.

Veromessor = *Messor*

Wadeura = *Pachycondyla*

Wasmannia (Myrmicinae) Americas

These ants are common in tropical areas, especially *W. aur-opunctata*. Kusnezov (1952a) presented a partial revision. These ants have been considered to be members of *Ochetomyrmex* (Brown 1973), but see Kempf (1975a).

Xenometra (Myrmicinae) US Virgin Is. (St. Thomas)

A single species, *X. monilicornis* is found in the New World (Emery 1917). Emery (1922a) includes further taxonomic notes on the genus. It is probably a member of *Cardiocondyla* (Brown 1973, Trager pers. com.).

Xenomyrmex (Myrmicinae) USA (FL) to Panama

Wheeler (1931a) and Creighton (1957) provide revisions of the genus, Ettershank (1966) includes a list of species. As there are only 4 species in the New World, identifications are not difficult.

Xiphomyrmex = *Tetramorium**Zacryptocerus* (Myrmicinae) southern USA to Argentina

This is a group of arboreal ants with distinctive morphology. They are relatively easily identified, although the synonymy of *Paracryptocerus* and *Hypocryptocerus* has made the keys somewhat difficult to use. Keys and papers necessary for identification include Kempf (1951, 1952, 1958a,b, 1959a, 1960c, 1964a,b, 1967c, 1973c, 1974a) and Snelling (1968b).

ACKNOWLEDGMENTS

We would like to thank Drs. James Trager, Steve Shattuck, Charles Kugler, Roy Snelling, John Longino, Andre Francoeur, Philip Ward, Fernando Fernandez, and John Lattke for detailed revisions of the manuscript. Approved as #TA-23913 by the Texas Agricultural Experiment Station.

REFERENCES

- Alemán Castrejón, G. 1985. Contribución al conocimiento del género *Pseudomyrmex* Lund (Hymenoptera: Formicidae) en el estado de Morelos. Unpublished thesis, Universidad Autónoma del Estado de Morelos [México].

- Baroni Urbani, C. 1978. Materiali per una revisione dei *Leptothorax* neotropicali appartenenti al sottogenere *Macromischa* Roger, n. comb. (Hymenoptera: Formicidae). Entomol. Basiliensia 3:395-618.
- Baroni Urbani, C. 1975. Contributo alla conoscenza dei generi *Belonopelta* Mayr e *Leiopelta* gen. n. (Hymenoptera: Formicidae). Bull. Societe Entomol. Suisse 48:295-310.
- Baroni-Urbani, C. 1983. Clave para la determinación de los géneros de hormigas neotropicales. Graellsia 39:73-82.
- Bolton, B. 1979. The ant tribe Tetramoriini. The genus *Tetramorium* Mayr in the Malagasy region and in the New World. Bull. Brit. Mus. Nat. Hist. (Entomol.) 38:129-181.
- Bolton, B. 1982. Afrotropical species of the myrmicine ant genera *Cardiocondyla*, *Leptothorax*, *Melissotarsus*, *Messor*, and *Cataulacus*. Bull. Brit. Mus. Nat. Hist. (Entomol.) 45:307-370.
- Bolton, B. 1984. Diagnosis and relationships of the myrmicine ant genus *Ishakidris* gen.n. (Hymenoptera: Formicidae). Syst. Entomol. 9:373-382.
- Bolton, B. 1985. The ant genus *Triglyphothrix* Forel a synonym of *Tetramorium* Mayr. (Hymenoptera: Formicidae). J. Nat. Hist. 19:243-248.
- Bolton, B. 1988. A new socially parasitic *Myrmica*, with a reassessment of the genus (Hymenoptera: Formicidae). Syst. Entomol. 13:1-11.
- Borgmeier, T. 1928. Algumas novas formigas brasileiras. Arch. Mus. Nac. Rio de Janeiro 29:55-65.
- Borgmeier, T. 1955. Die Wanderameisen der neotropischen Region. Studia Entomol. 3:1-720 + 87 plates.
- Borgmeier, T. 1957. Myrmecologische Studien. I. An. Acad. Brasil. Cien. 29:103-128.
- Borgmeier, T. 1959a. Myrmecologische Studien. II. An. Acad. Brasil. Cien. 31:309-319.
- Borgmeier, T. 1959b. Revision der Gattung *Atta* Fabricius. Studia Entomol. (new series) 2:321-390.
- Brown, W. L. 1948. A preliminary generic revision of the higher Dacetini. Trans. Amer. Entomol. Soc. 74:101-129.
- Brown, W. L. 1949a. Revision of the ant tribe Dacetini: III. *Epitritus* Emery and *Quadristuma* new genus. Trans. Amer. Entomol. Soc. 75:43-51.
- Brown, W. L. 1949b. Revision of the ant tribe Dacetini: IV. Some genera properly excluded from the Dacetini, with the establishment of the Basicerotini, new tribe. Trans. Amer. Entomol. Soc. 75:83-96.
- Brown, W. L. 1949c. Revision of the ant tribe Dacetini: I. Fauna of Japan, China and Taiwan. Mushi 20:1-25.
- Brown, W. L. 1950. Revision of the ant tribe Dacetini: II. *Glamyromyrmex* Wheeler and closely related small genera. Trans. Amer. Entomol. Soc. 76:27-36.

- Brown, W. L. 1953a. Revisionary studies in the ant tribe Dacetini. *Amer. Midl. Nat.* 50:1-137.
- Brown, W. L. 1953b. Characters and synonymies among the genera of ants. Part II. *Breviora* (Mus. Comp. Zool., Harvard), n. 18:1-8.
- Brown, W. L. 1953c. Composition of the ant tribe Typhlomyrmicini. *Psyche* 59:104.
- Brown, W. L. 1958. Contributions toward a reclassification of the Formicidae. II. Tribe Ectatommini. *Bull. Mus. Comp. Zool., Harvard* 118:171-362.
- Brown, W. L. 1959. A revision of the Dacetine ant genus *Neostruma*. *Breviora* (Mus. Comp. Zool., Harvard) n. 107:1-13.
- Brown, W. L. 1960. Contributions toward a reclassification of the Formicidae. III. Tribe Amblyoponini. *Bull. Mus. Comp. Zool., Harvard* 122:143-230.
- Brown, W. L. 1961. The Neotropical species of the ant genus *Strumigenys* Fr. Smith: Miscellaneous concluding studies. *Psyche* 68:58-69.
- Brown, W. L. 1962a. A new ant of the genus *Amblyopone* from Panama. *Psyche* 69:73-76.
- Brown, W. L. 1962b. The Neotropical species of the ant genus *Strumigenys* Fr. Smith: Synopsis and keys to the species. *Psyche* 69:238-267.
- Brown, W. L. 1963. Characters and synonymies among the genera of ants. Part III. Some members of the tribe Ponerini (Ponerinae, Formicidae). *Breviora* (Mus. Comp. Zool., Harvard) 190:1-10.
- Brown, W. L. 1964. The ant genus *Smithistruma*: a first supplement to the world revision. *Trans. Amer. Entomol. Soc.* 89:183-200.
- Brown, W. L. 1965. Contributions to a reclassification of the Formicidae. IV. Tribe Typhlomyrmecini. *Psyche* 72:65-78.
- Brown, W. L. 1967. Studies on North American ants. II. *Myrmecina*. *Entomol. News* 78:233-240.
- Brown, W. L. 1973. A comparison of the Hylean and Congo-West African rain forest ant faunas. In: *Tropical Forest Ecosystems in Africa and South America: A Comparative Review*. E. J. Meggers, A. S. Ayensu and W. D. Duckworth (eds.). Smithsonian Institution Press, Washington, D. C. pp 165-185.
- Brown, W. L. 1974a. *Novomessor manni* a synonym of *Aphaenogaster ensifera* (Hymenoptera: Formicidae). *Entomol. News* 85:45-47.
- Brown, W. L. 1974b. A supplement to the revision of the ant genus *Basiceros* (Hymenoptera: Formicidae). *J. New York Entomol. Soc.* 82:131-140.
- Brown, W. L. 1975. Contributions toward a reclassification of the Formicidae. V. Ponerinae, tribes Platythyreini, Cerapachyini, Cylindromyrmecini, Acanthostichini and Aenictogitini. *Search* 5:1-116.
- Brown, W. L. 1976. Contributions toward a reclassification of the Formicidae. Part VI. Ponerinae, Tribe Ponerini, subtribe Odontomachiti, Section A. Introduction, subtribal characters, genus *Odontomachus*. *Studia Entomol.* 19:67-171.

- Brown, W. L. 1977. A supplement to the world revision of *Odontomachus* (Hymenoptera: Formicidae). *Psyche* 83:281-285.
- Brown, W. L. 1978. Contributions toward a reclassification of the Formicidae. VI. Ponerinae, tribe Ponerini, subtribe Odontomachiti. Section B. Genus *Anochetus* and bibliography. *Studia Entomol.* 20: 549-638 + 12 plates.
- Brown, W. L. 1979. A remarkable new species of *Proceratium* with dietary and other notes on the genus (Hymenoptera: Formicidae). *Psyche* 86:337-346.
- Brown, W.L. 1980. *Protalaridris* genus nov. Pilot Register of Zoology, Card No. 36, 4 p.
- Brown, W. L. 1981. Preliminary contributions toward a revision of the ant genus *Pheidole* (Hymenoptera: Formicidae). Part I. *J. Kans. Entomol. Soc.* 54:523-530.
- Brown, W. L. 1987. *Neoclystospesella* (Bethyridae), a synonym of *Tapinoma* (Formicidae). *Psyche* 94:337.
- Brown, W. L. and W. W. Kempf. 1960. A world revision of the ant tribe Basicerotini. *Studia Entomol.* (New series) 3:161-250.
- Brown, W. L. and W. W. Kempf. 1967. *Tatuidris*, a remarkable new genus of Formicidae. *Psyche* 74:183-190.
- Brown, W. L. and W. W. Kempf. 1969. A revision of the Neotropical Dacetine ant genus *Acanthognathus*. *Psyche* 76:87-109.
- Brown, W. L. and E. O. Wilson. 1959. The evolution of the Dacetine ants. *Quart. Rev. Biol.* 34:278-294.
- Bruch, C. 1932. Descripción de un género y especie nueva de una hormiga parásita. *Rev. Mus. La Plata* 33:271-275.
- Buckley, R. C. (ed.) 1982. Ant-plant interactions in Australia. Dr. W. Junk, The Hague.
- Buren, W. F. 1958. A review of the species of *Crematogaster* s. str., in North America. Part II. Descriptions of new species. *J. Georgia Entomol. Soc.* 3:91-121.
- Buschinger, A. 1979. *Doronomyrmex pocahontas* n. sp., a parasitic ant from Alberta, Canada (Hym. Formicidae). *Insectes Sociaux* 26:216-222.
- Buschinger, A. 1982. *Leptothorax faberi* n. sp., an apparently parasitic ant from Jasper National Park, Canada (Hymenoptera: Formicidae). *Psyche* 89:197-209.
- Cole, A. C. 1966. Ants of the Nevada test site. *Brigham Young Univ. Sci. Bull., Biol. Ser.* 7:1-27.
- Cole, A. C. 1968. *Pogonomyrmex* Harvester Ants, a study of the Genus in North America. Univ. Tenn. Press, Knoxville.
- Creighton, W. S. 1930. The New World species of the genus *Solenopsis*. Part I. *Proc. Amer. Acad. Arts Sci.* 66:39-151.
- Creighton, W. S. 1950. The ants of North America. *Bull. Mus. Comp. Zool., Harvard* 104:1-585 + 57 plates.
- Creighton, W. S. 1957. A study of the genus *Xenomyrmex*. *Amer. Mus. Novit.* n. 1843:1-14.

- Creighton, W. S. and R. E. Gregg. 1955. New and little-known species of *Pheidole* (Hymenoptera: Formicidae) from the southwestern United States and northern Mexico. Univ. Colo. Stud. Ser. in Biol. 3:1-46.
- Deyrup, M. 1988. First record of *Epitritus* from North America (Hymenoptera: Formicidae). Fla. Entomol. 71:217-218.
- Deyrup, M., N. Carlin, J. Trager, and G. Umphrey. 1988. A review of the ants of the Florida Keys. Fla. Entomol. 71:163-176.
- Deyrup, M., J. Trager and N. Carlin. 1985. The genus *Odontomachus* in the southeastern United States. Entomol. News 96:188-195.
- Du Bois, M. 1986. A revision of the native New World species of the ant genus *Monomorium* (minimum group) (Hymenoptera: Formicidae). Univ. Kans. Sci. Bull. 53:65-119.
- Emery, C. 1869. Enumerazione dei Formicidi che rinvenngonsi nei contorni di Napoli, con descrizioni di specie nuove o meno conosciute. Ann. Acc. Aspir. Nat. Napoli 2:26 pp.
- Emery, C. 1890. Voyage de M. E. Simon au Venezuela. Formicides. Ann. Soc. Entomol. France 59:55-76.
- Emery, C. 1894a. Studio monografico sul genere *Azteca* Forel. Mem. Accad. Sci. Ist. Bologna 3:319-352.
- Emery, C. 1894b. Studi sulle formiche della fauna neotropica. VI-XVI. Bull. Soc. Entomol. Ital. 26:137-242.
- Emery, C. 1896. Alcune forme nuove del genere *Azteca* For. e note biologiche. Boll. Mus. Zool. Anat. Comp. Univ. Torino 11:1-7.
- Emery, C. 1910. Subfam. Dorylinae. Gen Insect. fasc. 102:1-34.
- Emery, C. 1911. Subfam. Ponerinae. Gen Insect. fasc. 118:1-125.
- Emery, C. 1912. Subfam. Dolichoderinae. Gen Insect. fasc. 137:1-50.
- Emery, C. 1917. Questions de nomenclature et synonymies relatives à quelques genres et espèces de Formicides. Bull. Soc. Entomol. France pp. 94-97.
- Emery, C. 1920a. Le genre *Camponotus* Mayr. Nouvel essai de sa subdivision en sous-genres. Rev. Zool. Afric. 8:229-266.
- Emery, C. 1920b. Studi sui *Camponotus*. Bull. Soc. Entomol. Ital. 52:1-49.
- Emery, C. 1922a. Subfam. Myrmicinae. Gen. Insect. fasc. 174:1-397.
- Emery, C. 1922b. Le specie americana del genere *Melophorus* (*Lasiophanes*). Rend. Accad. Sci. Ist. Bologna, pp. 90-96.
- Emery, C. 1925. Subfam. Formicinae. Gen. Insect. fasc. 183:1-302.
- Hattershank, G. 1966. A generic revision of the world Myrmicinae related to *Solenopsis* and *Pheidologeton*. Aust. J. Zool. 14:73-171.
- Howler, H. 1982. A new species of *Trachymyrmex* fungus growing ant (Hymenoptera: Myrmicinae: Attini) from Paraguay. J. New York Entomol. Soc. 90:70-73.
- Lacroix, A. 1973. Revision taxonomique des espèces néarctiques du groupe *fusca*, genre *Formica* (Formicidae, Hymenoptera). Mém. Soc. Entomol. Quebec. No. 3:1-316.

- Francoeur, A. 1986. Deux nouvelles fourmis néarctiques: *Leptothorax retractus* et *L. sphagnicolus* (Formicidae, Hymenoptera). *Can. Entomol.* 118:1151-1164.
- Francoeur, A. and R. Loiselle. 1988. The male of *Leptothorax wilda* with notes on the subgenus *Nesomyrmex* (Formicidae, Hymenoptera). In: J. Trager, ed. *Advances in Myrmecology* E. J. Brill, New York pages 43-54.
- Francoeur, A., R. Loiselle, and A. Buschinger. 1985. Biosystématique de la tribu Leptothoracini (Hymenoptera, Formicidae) 1. Le genre *Formicoxenus* dans la région Holarctique. *Natur. can. (Rev. Ecol. Sys.)* 112:343-403.
- Gallardo, A. 1916a. Las hormigas de la República Argentina. Subfamilia Dolichoderinas. *An. Mus. Nac. Hist. Nat. B. Aires* 28:1-130.
- Gallardo, A. 1916b. Notas complementarias sobre las Dolichoderinas Argentinas. *An. Mus. Nac. Hist. Nat. B. Aires* 28:257-261.
- Gallardo, A. 1916c. Notes systématiques et éthologiques sur les fourmis Attines de la République Argentine. *An. Mus. Nac. B. Aires* 28:317-344.
- Gallardo, A. 1930. Sobre el género *Dorymyrmex* Mayr en la Argentina. *Rev. Chil. Hist. Nat.* 34:143-148.
- Gallardo, A. 1932a. El subgénero *Elasmopheidole* en la Argentina. *Rev. Chil. Hist. Nat.* 36:178-182.
- Gallardo, A. 1932b. Las hormigas de la república de Argentina. *Pogonomyrmex*. *Ann. Mus. Nac. Hist. Nat.* 37:89-169.
- Gonçalves, C. R. 1961. O gênero *Acromyrmex* no Brasil. *Studia Entomol.* 4:113-180.
- Gonçalves, C. R. 1963. Nota sobre a sistemática de *Atta sexdens* (L. 1758) e de suas subespecies. *Bol. Fitossanit.* 9:1-3.
- Gotwald, W. H. 1988. On becoming an army ant. In: J. Trager, ed. *Advances in Myrmecology* E. J. Brill, New York pages 227-235.
- Gotwald, W. H. and W. L. Brown. 1966. The ant genus *Simopelta*. *Psyche* 73:261-277.
- Gregg, R. E. 1958. Key to the species of *Pheidole* (Hymenoptera: Formicidae) in the United States. *Proc. New York Entomol. Soc.* 66:7-48.
- Harris, R. A. 1979. A glossary of surface sculpturing. State of Calif., Dept. Food Agricult. Occasion. Papers Entomol. No. 28:1-31.
- Hashmi A. A. 1973. A revision of the Neotropical ant subgenus *Myrmothrix* of genus *Camponotus* (Hymenoptera: Formicidae). *Studia Entomol.* 16:1-140.
- Heinze, J. and A. Buschinger. 1988. Electrophoretic variability of esterases in the ant tribe, Leptothoracini. *Biochem. Syst. Ecol.* 16:217-221.
- Herman, H. R. (ed.) 1979. *Social Insects*, Vol.1. Academic Press.
- Herman, H. R. (ed.) 1981. *Social Insects*, Vol.2. Academic Press.
- Herman, H. R. (ed.) 1982a. *Social Insects*, Vol.3. Academic Press.
- Herman, H. R. (ed.) 1982b. *Social Insects*, Vol.4. Academic Press.

- Jaisson, P. (ed.) 1983. Social Insects in the Tropics. Vol. 2. Université Paris Nord.
- Johnson, C. 1988. Species identification in the eastern *Crematogaster* (Hymenoptera: Formicidae). J. Entomol. Soc. 23: 314-332.
- Kempf, W. W. 1951. A taxonomic study on the ant tribe Cephalotini. Rev. Entomol. 22:1-244.
- Kempf, W. W. 1952. A synopsis of the *pinelii*-complex in the genus *Paracryptocerus*. Studia Entomol. n. 1:1-30.
- Kempf, W. W. 1957. Sobre algumas espécies de *Procryptocerus*, com a descrição duma espécie nova. Rev. Brazil. Biol. 17:395-404.
- Kempf, W. W. 1958a. New studies of the ant tribe Cephalotini. Studia Entomol. (new ser.) 1:1-168.
- Kempf, W. W. 1958b. Synonymic note on ants of the genus *Paracryptocerus* Emery. Entomol. News 69:108-110.
- Kempf, W. W. 1958c. Estudos sobre *Pseudomyrmex* II. Studia Entomol. (new ser.) 1:433-462.
- Kempf, W. W. 1958d. Discovery of the ant genus *Wadeura* in Brazil. Rev. Brazil. Entomol. 8:175-180.
- Kempf, W. W. 1959a. Sobre algumas formigas Cephalotini do Museu de Oxford. Rev. Brasil. Biol. 19:91-98.
- Kempf, W. W. 1959b. A revision of the Neotropical ant genus *Monacis* Roger. Studia Entomol. (new ser.) 2:225-270.
- Kempf, W. W. 1959c. A synopsis of the New World species belonging to the *Nesomyrmex*-group of the ant genus *Leptothorax* Mayr. Studia Entomol. (new ser.) 2:391-432.
- Kempf, W. W. 1959d. Two new species of *Gymnomyrmex* Borgmeier, 1954, from southern Brazil with remarks on the genus. Rev. Brasil. Biol. 19:337-344.
- Kempf, W. W. 1960a. Estudo sobre *Pseudomyrmex* I. Rev. Brasil. Entomol. 9:5-32.
- Kempf, W. W. 1960b. *Phalacromyrmex*, a new ant genus from southern Brazil. Rev. Brasil. Biol. 20:89-92.
- Kempf, W. W. 1960c. Miscellaneous studies on Neotropical ants. Studia Entomol. (new ser.) 3:417-466.
- Kempf, W. W. 1961a. A review of the ant genus *Mycetarotes* Emery. Rev. Brasil. Biol. 20:277-283.
- Kempf, W. W. 1961b. Estudos sobre *Pseudomyrmex* III. Studia Entomol. 4:369-408.
- Kempf, W. W. 1961c. A survey of the ants of the soil fauna in Surinam. Studia Entomol. 4:481-524.
- Kempf, W. W. 1962a. As formigas do gênero *Pachycondyla* Fr. Smith no Brasil. Rev. Brasil. Entomol. 10:189-204.
- Kempf, W. W. 1962b. Remarks on the ant genus *Irogera* Emery, with the description of a new species. Rev. Brasil. Biol. 21:435-441.

- Kempf, W. W. 1962c. Retoques à classificação das formigas neotropicais do gênero *Heteroponera* Mayr. Pap. Avuls. Zool. São Paulo 15:29-47.
- Kempf, W. W. 1962d. Miscellaneous studies on Neotropical ants. II. Studia Entomol. 5:1-38.
- Kempf, W. W. 1963a. Additions to the Neotropical ant genus *Rogeria* Emery, with a key to the hitherto recorded South American species. Rev. Brasil. Biol. 23:189-196.
- Kempf, W. W. 1963b. A review of the ant genus *Mycocephurus* Forel. Studia Entomol. 6:417-432.
- Kempf, W. W. 1964a. Nota sinônímica acerca de formigas da tribo Cephalotini. Rev. Brazil. Biol. 23:435-438.
- Kempf, W. W. 1964b. Additions to the knowledge of the Cephalotine ants. Pap. Avuls. Zool. São Paulo 16:243-255.
- Kempf, W. W. 1964c. A revision of the Neotropical fungus-growing ants of the genus *Cyphomyrmex* Mayr. Part I: Group of *strigatus* Mayr. Studia Entomol. 7:1-44.
- Kempf, W. W. 1964d. Miscellaneous studies on Neotropical ants. III. Studia Entomol. 7:45-71.
- Kempf, W. W. 1964e. A propósito de um estudo sobre as formigas do gênero *Acanthostichus* Mayr. Pap. Avuls. Zool. São Paulo 16:263-266.
- Kempf, W. W. 1965. Nota preliminar sobre algumas formigas neotrópicas, descritas por Frederick Smith. Rev. Brasil. Biol. 25:181-186.
- Kempf, W. W. 1966. A revision of the Neotropical fungus-growing ants of the genus *Cyphomyrmex* Mayr. Part II: Group of *rimosus* (Spinola). Studia Entomol. 8:161-200.
- Kempf, W. W. 1967a. A synopsis of the Neotropical ants of the genus *Centromyrmex* Mayr. Studia Entomol. 9:401-410.
- Kempf, W. W. 1967b. Estudos sobre *Pseudomyrmex*. IV. Rev. Brasil. Entomol. 12:1-12.
- Kempf, W. W. 1967c. A new revisionary note on the genus *Paracryptocerus* Emery. Studia Entomol. 10:361-368.
- Kempf, W. W. 1967d. Three new South American ants. Studia Entomol. 10:353-360.
- Kempf, W. W. 1968. A new species of *Cyphomyrmex* from Colombia, with further remarks on the genus. Rev. Brasil. Biol. 28:35-41.
- Kempf, W. W. 1969. Miscellaneous studies on Neotropical ants. V. Studia Entomol. 12:273-296.
- Kempf, W. W. 1970. Taxonomic notes on ants of the genus *Megalomyrmex*, with description of new species (Hym. Formicidae). Studia Entomol. 13:353-394.
- Kempf, W. W. 1971. A preliminary review of the Ponerine ant genus *Dinoponera* Roger. Studia Entomol. 14:369-394.
- Kempf, W. W. 1972a. Catálogo abrevindo das formigas da região neotropical (Hym. Formicidae). Studia Entomol. 15:1-344.

- Kempf, W. W. 1972b. A study of some Neotropical ants of the genus *Pheidole* Westwood. I. (Hym. Formicidae). *Studia Entomol.* 15:449-464.
- Kempf, W. W. 1972c. A new species of the Dolichoderine ant genus *Monacis* Roger, from the Amazon, with further remarks on the genus (Hymenoptera, Formicidae). *Rev. Brasil. Biol.* 32:251-254.
- Kempf, W. W. 1973a. A revision of the Neotropical Myrmicine ant genus *Hylomyrma* Forel. *Studia Entomol.* 16:225-260.
- Kempf, W. W. 1973b. Uma nova *Solenopsis* do Rio Grande do Sul, Brasil (Hymenoptera, Formicidae). *Rev. Brasil. Entomol.* 17:29-32.
- Kempf, W. W. 1973c. A new *Zacryptocerus* from Brazil, with remarks on the generic classification of the Tribe Cephalotini. (Hymenoptera, Formicidae). *Studia Entomol.* 16:449-462.
- Kempf, W. W. 1974a. Taxonomic and faunistic notes on some neotropical Cephalotini ants (Hymenoptera, Formicidae). *Rev. Brasil. Entomol.* 18:67-76.
- Kempf, W. W. 1974b. A review of the Neotropical ant genus *Oxyepoecus* Santschi (Hym., Formicidae). *Studia Entomol.* 17:471-512.
- Kempf, W. W. 1975a. Miscellaneous studies on Neotropical ants. VI. (Hymenoptera: Formicidae). *Studia Entomol.* 18:341-380.
- Kempf, W. W. 1975b. A revision of the Neotropical Ponerine ant genus *Thaumatomyrmex* Mayr (Hymenoptera: Formicidae). *Studia Entomol.* 18:95-126.
- Kempf, W. W. 1976. A new species of *Strumigenys* from the lower Amazon, Brazil (Hym., Formicidae). *Studia Entomol.* 19:39-44.
- Kempf, W. W. and W. L. Brown. 1969. Two new *Strumigenys* ants from the Amazon valley in Brazil. *Rev. Brasil. Biol.* 29:17-24.
- Kempf, W. W. and W. L. Brown. 1970. Two new ants of the tribe Ectatommini from Colombia (Hym.:Formicidae). *Studia Entomol.* 13:311-320.
- Kempf, W. W. and K. Lenko. 1968. Novas observações e estudos sobre *Gigantiops destructor* (Fabricius). *Pap. Avuls. Zool. São Paulo* 21:209-230.
- Kugler, C. 1976. A new species of *Platythyrea* (Hymenoptera, Formicidae) from Costa Rica. *Psyche* 83:216-221.
- Kugler, C. 1978. Description of the ergatoid queen of *Pogonomyrmex mayri* with notes on the worker and male (Hym., Formicidae). *Psyche* 85:169-182.
- Kugler, C. 1980. *Odontomachus cornutus* rediscovered (Hymenoptera: Formicidae: Ponerinae). *J. Kans. Entomol. Soc.* 53:225-229.
- Kugler, C. and W. L. Brown. 1982. Revisionary and other studies on the ant genus *Ectatomma*, including descriptions of two new species. *Search* 24:1-18.
- Kusnezov, N. 1949a. El género *Monomorium* en la Argentina. *Acta Zool. Lilloana* 7:423-448.
- Kusnezov, N. 1949b. *Pogonomyrmex* del grupo *Ephebomyrmex* en la fauna de la Patagonia. *Acta Zool. Lilloana* 8:291-307.

- Kusnezov, N. 1951a. El género *Pogonomyrmex* Mayr. Acta Zool. Lilloana 11:227-333.
- Kusnezov, N. 1951b. El género *Pheidole* en la Argentina. Acta Zool. Lilloana 12:5-88.
- Kusnezov, N. 1951c. *Lasiophanes* Emery en la Patagonia. Acta Zool. Lilloana 12:89-100.
- Kusnezov, N. 1951d. El género *Camponotus* en la Argentina. Acta Zool. Lilloana 12:183-252.
- Kusnezov, N. 1951e. *Myrmelachista* en la Patagonia. Acta Zool. Lilloana 11:353-365.
- Kusnezov, N. 1951f. Un caso de evolución eruptiva, *Eriopheidole symbiotica* n. gen., n. sp. Mem. Mus. Entre Rios, Zool. No. 29:1-31.
- Kusnezov, N. 1952a. El género *Wasmannia* en la Argentina. Acta Zool. Lilloana 10:173-182.
- Kusnezov, N. 1952b. El género *Oligomyrmex* Mayr en la Argentina. Acta Zool. Lilloana 10:183-187.
- Kusnezov, N. 1952c. El estado real del grupo *Dorymyrmex* Mayr. Acta Zool. Lilloana 10:427-448.
- Kusnezov, N. 1952d. Acerca de las hormigas simbióticas del género *Martia* Forel. Acta Zool. Lilloana 10:717-722.
- Kusnezov, N. 1953. Lista de las hormigas de Tucumán con descripción de dos nuevos géneros. Acta Zool. Lilloana 13:327-339.
- Kusnezov, N. 1956. Südamerikanische Ameisengattungen (Cerapachyinae und Ponerinae). Zool. Anz. 158:196-208.
- Kusnezov, N. 1957. Die Solenopsidinen-Gattungen von Südamerika. Zool. Anz. 158:266-280.
- Kusnezov, N. 1958. Nota sobre la sinonimia de *Linepithema* Mayr. Acta Zool. Lilloana 16:273.
- Kusnezov, N. 1959a. La fauna de hormigas en el Oeste de la Patagonia y Tierra de Fuego. Acta Zool. Lilloana 17:321-401.
- Kusnezov, N. 1959b. Die Dolichoderinen-Gattungen von Süd-Amerika. Zool. Anz. 162:38-51.
- Kusnezov, N. 1962. El género *Acanthostichus* Mayr. Acta Zool. Lilloana 18:121-138.
- Kutter, H. 1977. Zur Kenntnis der Gattung *Hylomyrma* Forel (Hym. Formicidae, Subf. Myrmicinae). Bull. Soc. Entomol. Suisse 50:85-89.
- Lattke, J. E. 1986a. Two new species of Neotropical *Anochetus* Mayr (Hymenoptera: Formicidae). Insectes Sociaux 33:352-358.
- Lattke, J. E. 1986b. Notes on the ant genus *Hypoclinea* Mayr, with descriptions of three new species (Hymenoptera: Formicidae). Rev. Biol. Trop. 34:259-265.
- Letendre, M. and L. Huot. 1972. Considerations préliminaires en vue de la révision taxonomique des fourmis du groupe *microgyna* genre *Formica* (Hymenoptera: Formicidae). Ann Soc. Entomol. 17:117-132.

- Lincoln, R. J., G. A. Boxshall and P. F. Clark. 1982. A dictionary of ecology, evolution and systematics. Cambridge Univ. Press, 298 pp.
- Lofgren, C. S. and R. K. Van der Meer (eds.) 1986. Fire Ants and Leaf-cutting Ants, Biology and Management. Westview Press.
- Longino, J. 1988. Notes on the taxonomy of the neotropical ant genus *Thaumatomyrmex* Mayr (Hymenoptera: Formicidae). In: J. Trager, ed. Advances in Myrmecology. E. J. Brill, New York, pages 35-42.
- MacKay, W. P. 1985. *Acanthostichus sanchezorum* (Hymenoptera: Formicidae), una nueva especie de Colombia. Sociobiology 11:127-131.
- MacKay, W. P. 1989. A new *Aphaenogaster* (Hymenoptera: Formicidae) from southern New Mexico. J. New York Entomol. Soc. 97: 47-49.
- MacKay, W. P. and E. MacKay. 1986. Las hormigas de Colombia: arrieras del género *Atta* (Hymenoptera: Formicidae). Revista Colombiana Entomol. 12:23-30.
- MacKay, W.P. and E. MacKay 1989. Clave de los géneros de hormigas en México (Hymenoptera: Formicidae). 2nd Simposio Nacional de Insectos Sociales [México], pp. 1-82.
- MacKay, W.P. and S.B. Vinson. 1989a. The rediscovery of the ant *Gnamptogenys hartmani* (Hymenoptera: Formicidae) in eastern Texas. Proc. Entomol. Soc. Wash. 91:124.
- MacKay, W.P. and S.B. Vinson. 1989b. Two new ants of the genus *Solenopsis* (*Diplorhoptrum*) from eastern Texas (Hymenoptera: Formicidae). Proc. Entomol. Soc. Wash. 91: 175-178.
- MacKay, W. P., E. MacKay, J. P. Pérez, L. I. Valdez and P. Vielma. 1985a. Las hormigas del estado de Chihuahua, México: El género *Pogonomyrmex*. Sociobiology 11:39-54.
- MacKay, W. P., J. F. Pérez D. and L. I. Valdez S. 1985b. The army ants of the state of Chihuahua, México. Southwest. Natur. 30:611-612.
- MacKay, W. P., D. Lowrie, A. Fisher, F. Barnes, E. MacKay and D. Lowrie. 1988. The ants of Los Alamos County, New Mexico. In: J. Trager, ed. Advances in Myrmecology E. J. Brill, New York pages 79-130.
- Mann, W. M. 1916. The ants of Brazil. Bull. Mus Comp. Zool., Harvard 60:399-490.
- Mann, W. M. 1922. Ants from Honduras and Guatemala. Proc. U. S. Nat. Mus. 61:1-54.
- Mann, W. M. 1926. Some new Neotropical ants. Psyche 33:97-107.
- Mayr, G. L. 1870a. Formicidae novogranadenses. Sitzb. Akad. Wiss. Wien 61:370-417.
- Mayr, G. L. 1870b. Neue Formiciden. Verh. zool.-bot. Ges. Wien 20:939-996.
- Mayr, G. L. 1877. Formiciden gesammelt in Brasilien von Professor Trail. Verh. zool.-bot. Ges. Wien 27:867-878.
- Mayr, G. L. 1887. Südamerikansche Formiciden. Verh. zool.-bot. Ges. Wien 37:511-632.

- Naves, M. 1985. A monograph of the genus *Pheidole* in Florida (Hymenoptera: Formicidae). *Insecta Mundi* 1:53-90.
- Oster, G. F. and E. O. Wilson. 1978. Caste and Ecology in the Social Insects. Princeton Univ. Press.
- Perrault, G. H. 1986. *Gnamptogenys falcifera* Kempf, 1967 description de l'ouvrière et levée d'un doute [Hymenoptera, Formicidae]. *Revue fr. Entomol. (N.S.)* 8:157-159.
- Santschi, F. 1918. Sous-genres et synonymies de *Crematogaster*. *Bull. Soc. Entomol. France*. pp 182-185.
- Santschi, F. 1921. Retouches aux sous-genres de *Camponotus*. *Ann. Soc. Entomol. Belg.* 61:310-312.
- Santschi, F. 1922a. Description de nouvelles fourmis de l'Argentine et pays limitrophes. *An. Soc. Cien. Argent.* 94:241-262.
- Santschi, F. 1922b. Myrmicines, Dolichodérines et autres Formicides néotropiques. *Bull. Soc. Vaud. Sc. Nat.* 54:345-378.
- Santschi, F. 1923. Revue des fourmis du genre *Brachymyrmex* Mayr. *An. Mus. Nac. Hist. B. Aires* 31:650-678.
- Santschi, F. 1925. Revision du genre *Acromyrmex* Mayr. *Rev. Suisse Zool.* 31:355-398.
- Santschi, F. 1926. Deux nouvelles fourmis de l'Argentine. *Folia Myrm. Term.* 1:6-8.
- Shattuck, S. 1987. An analysis of geographic variation in the *Pogonomyrmex occidentalis* complex (Hymenoptera: Formicidae). *Psyche* 94:159-179.
- Smith, D. R. 1979. Superfamily Formicoidea, Family Formicidae. In: *Catalog of Hymenoptera in America North of Mexico*. K. V. Krombein, P. D. Hurd, D. R. Smith and B. D. Burks (eds.). Smithsonian Inst. Press, Washington D.C. 2:1323-1467.
- Smith, M. R. 1942. The males of two North American Cerapachyine ants. *Proc. Entomol. Soc. Wash.* 44:62-64.
- Smith, M. R. 1943a. Ants of the genus *Tetramorium* in the United States, with the description of a new species. *Proc. Entomol. Soc. Wash.* 45:1-5.
- Smith, M. R. 1943b. *Pheidole (Macropheidole) rhea* Wheeler, a valid species. *Proc. Entomol. Soc. Wash.* 45:5-9.
- Smith, M. R. 1943c. A generic and subgeneric synopsis of the male ants of the United States. *Amer. Midl. Nat.* 30:273-321.
- Smith, M. R. 1944a. Ants of the genus *Cardiocondyla* Emery in the United States. *Proc. Entomol. Soc. Wash.* 46:30-41.
- Smith, M. R. 1944b. The genus *Lachnomyrmex*, with the description of a second species. *Proc. Entomol. Soc. Wash.* 46:225-228.
- Smith, M. R. 1946a. A second species of *Stegomyrmex*, and the first description of a *Stegomyrmex* worker. *Rev. Entomol.* 17:286-289.

- Smith, M. R. 1946b. Ants of the genus *Apsychoformica* Wheeler. Rev. Entomol. 17:468-473.
- Smith, M. R. 1947a. Notes on *Pheidole* (*Decapheidole*) and the description of a new species. Rev. Entomol. 18:193-196.
- Smith, M. R. 1947b. A new genus and species of ant from Guatemala. J. New York Entomol. Soc. 55:281-284.
- Smith, M. R. 1947c. A generic and subgeneric synopsis of the United States ants, based on the workers (Hymenoptera: Formicidae). Amer. Midl. Nat. 37:521-647.
- Smith, M. R. 1955a. *Acanthostichus* (*Ctenopyga*) *townsendi* (Ashm.), a synonym of *Acanthostichus texanus* Forel (Hymenoptera: Formicidae). Bull. Brooklyn Entomol. Soc. 50:48-50.
- Smith, M. R. 1955b. Ants of the genus *Pheidole*, subgenus *Hendecapheidole*. Proc. Entomol. Soc. Wash. 57:301-305.
- Smith, M. R. 1957. A contribution to the taxonomy, distribution and biology of the vagrant ant, *Plagiolepis alluaudi* Emery. J. New York Entomol. Soc. 63:195-198.
- Smith, M. R. 1962a. Revision of the genus *Stenammas* Westwood in America north of Mexico (Hymenoptera, Formicidae). Amer. Midl. Nat. 57:133-174.
- Smith, M. R. 1962b. A remarkable new *Stenammas* from Costa Rica, with pertinent facts on other Mexican and Central American species. J. New York Entomol. Soc. 70:33-38.
- Smith, M. R. 1963. Notes on the leaf-cutting ants, *Atta* spp. of the United States and Mexico. Proc. Entomol. Soc. Wash. 65:299-302.
- Snelling, R. R. 1967. Studies on California ants. 3. The taxonomic status of *Proceratium californicum* Cook (Hymenoptera: Formicidae). Contrib. in Sci., Los Angeles Co. Mus. Nat. Hist. No. 124:1-10.
- Snelling, R. R. 1968a. A new species of *Eurhopalothrix* from El Salvador. Contrib. in Sci., Los Angeles Co. Mus. Nat. Hist. No. 154
- Snelling, R. R. 1968b. Taxonomic notes on some Mexican Cephalotine ants (Hymenoptera: Formicidae). Contrib. in Sci., Los Angeles Co. Mus. Nat. Hist. No. 132:1-10.
- Snelling, R. R. 1971. A new species of *Simopelta* from Costa Rica (Hymenoptera: Formicidae). Bull. South. Calif. Acad. Sci. 70:16-17.
- Snelling, R. R. 1973a. The ant genus *Conomyrma* in the United States (Hymenoptera: Formicidae). Contrib. Sci. Los Angeles Co. Mus. Nat. Hist. #238: 6 pages.
- Snelling, R. R. 1973b. Two ant genera new to the United States (Hymenoptera: Formicidae). Contrib. in Sci., Los Angeles Co. Mus. Nat. Hist. No. 236:1-8.
- Snelling, R. R. 1973c. Studies on California ants. 7. The genus *Stenammas* (Hymenoptera: Formicidae). Contrib. in Sci., Los Angeles Co. Mus. Nat. Hist. No.245:1-38.
- Snelling, R. R. 1974. Studies on California ants. 8. A new species of *Cardiocondyla* (Hymenoptera: Formicidae). J. New York Entomol.

- Snelling, R. R. 1975. Descriptions of new Chilean ant taxa (Hymenoptera: Formicidae). Contrib. in Sci., Los Angeles Co. Mus. Nat. Hist. No. 274:1-19.
- Snelling, R. R. 1976. A revision of the honey ants, genus *Myrmecocystus* (Hymenoptera: Formicidae). Bull. Nat. Hist. Los Angeles Co. Mus. Nat. Hist. 24:1-163.
- Snelling, R. R. 1981a. Systematics of the social Hymenoptera. pp.370-453 in Herman 1981.
- Snelling, R. R. 1981b. The taxonomy and distribution of some North American *Pogonomyrmex* and description of two new species (Hymenoptera: Formicidae). Bull. South. Calif. Acad. Sci. 80:97-112.
- Snelling, R. R. 1982. A revision of the honey ants, genus *Myrmecocystus*, first supplement (Hymenoptera: Formicidae). Bull. South. Calif. Acad. Sci. 81:69-86.
- Snelling, R. R. 1986. New synonymy in Caribbean ants of the genus *Leptothorax*. Proc. Entomol. Soc. Wash. 88:154-156.
- Snelling, R. R. 1988. Taxonomic notes on Nearctic species of *Camponotus*, subgenus *Myrmentoma* (Hymenoptera: Formicidae). In: J. Trager, ed. Advances in Myrmecology E. J. Brill, New York. pages 55-78.
- Snelling, R. R. and W. F. Buren. 1985. Description of a new species of slave-making ant in the *Formica sanguinea* group (Hymenoptera: Formicidae). Great Lakes Entomol. 18:69-78.
- Snelling, R. R. and C. D. George. 1979. The taxonomy, distribution and ecology of California desert ants (Hymenoptera: Formicidae). Report published in fulfillment of Bureau of Land Management contract No. CA-060-CT8-000007.
- Snelling, R. R. and J. H. Hunt. 1975. The ants of Chile (Hymenoptera: Formicidae). Rev. Chil. Entomol. 9:63-130.
- Taylor, R. W. 1965. A monographic revision of the rare tropicopolitan ant genus *Probolomyrmex* Mayr. Trans. Royal Entomol. Soc. London 117:345-365.
- Taylor, R. W. 1967. A monographic revision of the ant genus *Ponera* Latreille. Pacif. Insect. Monog. 13:1-112.
- Torre-Bueno, J. R. de la. 1937. A glossary of Entomology. Brooklyn Entomol. Soc. 336pp + 9 plates (+ 36 page supplement in third printing).
- Trager, J. C. 1984. A revision of the genus *Paratrechina* of the continental United States. Sociobiology. 9:49-162.
- Trager, J. C. 1988. A revision of *Conomyrma* (Hymenoptera: Formicidae) from the southeastern United States, especially Florida, with keys to the species. Fla. Entomol. 71:11-29.
- Trager, J. C. and C. Johnson. 1988. The ant genus *Leptogenys* (Hymenoptera: Formicidae, Ponerinae) in the United States. In: J. Trager, ed. Advances in Myrmecology. E. J. Brill, New York. pages 29-34.
- Ward, D. 1985. The Nearctic species of the genus *Pseudomyrmex*

- Ward, P. 1988. Mesic elements in the western Nearctic ant fauna: taxonomic and biological notes on *Amblyopone*, *Proceratium* and *Smithistruma* (Hymenoptera: Formicidae). J. Kans. Entomol. Soc. 61:102-124.
- Watkins, J. F. 1976. The identification and distribution of New World army ants (Dorylinae: Formicidae). Baylor Univ. Press.
- Watkins, J. F. 1977. The species and subspecies of *Nomamyrmex*. J. Kans. Entomol. Soc. 50:203-214.
- Watkins, J. F. 1982. The army ants of Mexico (Hymenoptera: Formicidae: Ecitoninae). J. Kans. Entomol. Soc. 55:197-247.
- Watkins, J. F. 1985. The identification and distribution of the army ants of the United States of America (Hymenoptera, Formicidae, Ecitoninae). J. Kans. Entomol. Soc. 58:479-502.
- Weber, N. A. 1934. Notes on Neotropical ants, including the descriptions of new forms. Rev. Entomol. 4:22-59.
- Weber, N. A. 1941. Four new genera of Ethiopian and Neotropical Formicidae. Ann. Entomol. Soc. Amer. 34:183-194.
- Weber, N. A. 1944. The Neotropical coccid-tending ants of the genus *Acropyga* Roger. Ann. Entomol. Soc. Amer. 37:89-122.
- Weber, N. A. 1950. New Trinidad Myrmicinae, with a note on *Basiceros* Schulz. Amer. Mus. Novit. #1465:6 pages.
- Weber, N. A. 1958a. Nomenclatural notes on *Proatta* and *Atta*. Entomol. News 69:7-13.
- Weber, N. A. 1958b. Nomenclatural changes in *Trachymyrmex*. Entomol. News 69:49-55.
- Weber, N. A. 1958c. Synonymies and types of *Apterostigma*. Entomol. News 69:243-251.
- Weber, N. A. 1958d. Some Attine synonyms and types. Proc. Entomol. Soc. Wash. 60:259-264.
- Weber, N. A. 1967. Synonyms of *Trachymyrmex bugnioni* Forel and *Trachymyrmex diversus* Mann. Proc. Entomol. Soc. Wash. 69:273-274.
- Weber, N. A. 1972. Gardening Ants, The Attines. Amer. Phil. Soc., Philadelphia.
- Wheeler, G. 1956. Myrmecological orthoepy and onomatology. Univ. N. Dakota Press, 22 pages.
- Wheeler, G. 1975. Myrmecological orthoepy and onomatology: 1974 supplement. (1 page) Published privately by author.
- Wheeler, G. and J. Wheeler. 1963. The Ants of North Dakota. Univ. N. Dak. Press.
- Wheeler, G. and J. Wheeler. 1972. The subfamilies of Formicidae. Proc. Entomol. Soc. Wash. 74:35-45.
- Wheeler, G. and J. Wheeler. 1973. The Ants of Deep Canyon. Univ. of Calif.
- Wheeler, G. and J. Wheeler. 1977. North Dakota ants updated. Desert Research Institute, Univ. Nevada.

- Wheeler, G. and J. Wheeler. 1978. *Brachymyrmex musculus*, a new ant in the United States. Entomol. News 89:189-190.
- Wheeler, G. and J. Wheeler. 1985. A simplified conspectus of the Formicidae. Trans. Amer. Entomol. Soc. 111:255-264.
- Wheeler, G. and J. Wheeler. 1986. The ants of Nevada. Nat. Hist. Mus. Los Angeles Co. 138 pp.
- Wheeler, J. 1968. Male genitalia and the taxonomy of *Polyergus* (Hymenoptera: Formicidae). Proc. Entomol. Soc. Wash. 70:156-164.
- Wheeler, W. M. 1905. The North American ants of the genus *Liometopum*. Bull. Amer. Mus. Nat. Hist. 21:321-333.
- Wheeler, W. M. 1909. Ants collected by Prof. F. Silvestri in Mexico. Boll. Generale e Agraria Naples Universita, Facolta de Science Agrarie, Portici 3:228-238.
- Wheeler, W. M. 1910a. Ants: Their Structure, Development and Behavior. Columbia Univ. Press, New York.
- Wheeler, W. M. 1910b. Three new genera of Myrmicine ants from tropical America. Bull. Amer. Mus. Nat. Hist. 28:259-265.
- Wheeler, W. M. 1911a. Descriptions of some new fungus-growing ants from Texas with Mr. C. G. Hartman's observations on their habits. J. New York Entomol. Soc. 19:245-255.
- Wheeler, W. M. 1911b. Three new ants from Mexico and Central America. Psyche 18:203-208.
- Wheeler, W. M. 1913. The ants of Cuba. Bull. Mus. Comp. Zool., Harvard 54:477-505.
- Wheeler, W. M. 1915. Two genera of Myrmicine ants from Brazil. Bull. Mus. Comp. Zool., Harvard 59:483-491.
- Wheeler, W. M. 1916. Ants collected in British Guiana by the expedition of the American Museum of Natural History during 1911. Bull. Amer. Mus. Nat. Hist. 35:1-14.
- Wheeler, W. M. 1919. The ants of the Galapagos Islands. Proc. Calif. Acad. Sci. 2:259-297.
- Wheeler, W. M. 1921. Professor Emery's subgenera of the genus *Camponotus* Mayr. Psyche 28:16-19.
- Wheeler, W. M. 1922. Keys to the genera and subgenera of ants. Bull. Amer. Mus. Nat. Hist. 45:631-710.
- Wheeler, W. M. 1923. The occurrence of winged females in the ant genus *Leptogenys* Roger, with the description of new species. Amer. Mus. Novit. #90:16 pages.
- Wheeler, W. M. 1925. Neotropical ants in the collections of the Royal Museum of Stockholm. Ark. f. Zool. 17A:1-55.
- Wheeler, W. M. 1931a. Neotropical ants of the genus *Xenomyrmex* Forel. Rev. Entomol. 1:129-139.
- Wheeler, W. M. 1931b. The ant *Camponotus* (*Myrmepomis*) *sericeiventris* Guerin and its mimic. Psyche 38:86-98.

- Wheeler, W. M. 1934a. Some aberrant species of *Camponotus* (*Colobopsis*) from the Fiji Islands. Ann. Entomol. Soc. Amer. 27:415-424.
- Wheeler, W. M. 1934b. Neotropical ants collected by Dr. Elisabeth Skwarra and others. Bull. Mus. Comp. Zool., Harvard 77:157-240.
- Wheeler, W. M. 1935. Ants of the genus *Acropyga* Roger, with description of a new species. J. New York Entomol. Soc. 43:321-329.
- Wilson, E. O. 1955. A monographic revision of the ant genus *Lasius*. Bull. Mus. Comp. Zool., Harvard 113:1-201.
- Wilson, E. O. 1971. The Insect Societies. Harvard Univ. Press.
- Wilson, E. O. 1976. Which are the most prevalent ant genera. Studia Entomol. 19:187-200.
- Wilson, E. O. 1984. Tropical social parasites in the ant genus *Pheidole*, with an analysis of the anatomical parasitic syndrome (Hymenoptera: Formicidae). Insectes Sociaux 31:316-334.
- Wilson, E. O. 1986. Caste and division of labor in *Erebomyrma*, a genus of dimorphic ants. Insectes Sociaux 33:59-69.
- Wing, M. W. 1968. Taxonomic revision of the Nearctic genus *Acanthomyops* (Hymenoptera: Formicidae). Cornell Univ. Agric. Exp. Station Memoir 405:1-173.
- Yoshi Harada, A. 1986/87. Uma nova especie do género *Monacis* Roger, da Amazonia (Hymenoptera: Formicidae). Acta Amazonica 16/17:599-606.



SPECIES INDEX FOR IDENTIFICATION OF NEW WORLD ANTS

- aldrichi*, *Mannica*, 20
alluaudi, *Plagiolepis*, 24
americana, *Myrmecina*, 21
apharagonia, *Eurhopalothrix*, 15
argentina, *Gallardomyrma*, 16
argentina, *Pseudoatta*, 26
armata, *Protalaridris*, 26
armigerum, *Daceton*, 13
atratus, *Anergates*, 8
atrox, *Thaumatomyrmex*, 29
augustae, *Cerapachys*, 12
auropunctata, *Wasmannia*, 29
biconstricta, *Leptanilloides*, 18
boliviensis, *Probolomyrmex*, 25
brunneus, *Odontomachus*, 23
burgessi, *Paratrechina*, 24
cornutus, *Odontomachus*, 23
davisi, *Cerapachys*, 12
deletrix, *Leiopelta*, 10
deletrix, *Leiopelta*, 18
destructor, *Gigantiops*, 16
ectopia, *Cardiocondyla*, 11
emmae, *Quadristruma*, 26
excisa, *Borgmeierita*, 10
exotica, *Ponera*, 25
ferox, *Thaumatomyrmex*, 29
fugax, *Phalacromyrmex*, 24
fusca, *Formica*, 15, 16
geminata, *Solenopsis*, 27
gilva, *Cryptopone*, 15
glaber, *Iridomyrmex*, 15
golbachi, *Amyrmex*, 8
grundmanni, *Formica*, 16
harrisoni, *Myrmecina*, 21
hartmani, *Gnamptogenys*, 17
humilis, *Iridomyrmex*, 15
hunteri, *Mannica*, 20
imparis, *Prenolepis*, 25
iniquus, *Iridomyrmex*, 15
lilloana, *Chelystruma*, 12
longicornis, *Paratrechina*, 24
longipes, *Anoplolepis*, 8
lucidus, *Polyergus*, 25
luctuosum, *Liometopum*, 20
mandibularis, *Talaridris*, 28
manni, *Leptogenys*, 19
manni, *Thaumatomyrmex*, 29
membranifera, *Trichoscapa*, 29
minima, *Paraprionopelta*, 23
minimum, *Monomorium*, 20
mirabilis, *Tingimyrme*, 29
moki, *Formica*, 16
monilicornis, *Xenometra*, 30
muscorum, *Leptothorax*, 19
occidua, *Formica*, 16
pallidifulva, *Formica*, 16
paludris, *Thaumatomyrmex*, 29
pennsylvanica, *Ponera*, 25
platensis, *Pseudoatta*, 26
plaumanni, *Lachnomyrmex*, 18
rimosus, *Cyphomyrmex*, 13
rufa, *Formica*, 16
ruginodis, *Odontomachus*, 23
sanguinea, *Formica*, 16
scambognatha, *Creightonidris*,
 12
simulans, *Codioxenus*, 12
solitaria, *Brachyponera*, 10, 15
stali, *Sphinctomyrmex*, 27
stigma, *Pachycondyla*, 15
tatusia, *Tatuidris*, 28
texana, *Myrmecina*, 21
townsendi, *Ctenopyga*, 13
tropicalis, *Amblyopone*, 8
tucumanus, *Neoforelius*, 22
wilda, *Leptothorax*, 19
xerophyla, *Formica*, 16
zeteki, *Thaumatomyrmex*, 29

