Micronesica 39(2): 171-295, 2007

The ants of Micronesia (Hymenoptera: Formicidae)

RONALD M. CLOUSE
Department of Organismic & Evolutionary Biology, and
Museum of Comparative Zoology, Dept. of Invertebrates, Harvard University
16 Divinity Avenue, Cambridge, MA 02138, USA
clouse@fas.harvard.edu

Abstract—The ant fauna of Micronesia as determined from museum specimens and from collections mainly on Pohnpei Island is presented here. Around 111 species are found in the region, many of which appear to be island endemics. Palau, Pohnpei, and the Marianas rank the highest in species diversity, with Pohnpei and Palau being especially rich in apparent endemics. The Bonin Islands and Kiribati are poorly sampled, and our understanding of the ant fauna in the whole of Micronesia could benefit greatly from additional collections. Many new and interesting species are known from single collections or single specimens, even on Pohnpei, which is perhaps now the most thoroughly sampled large island in the region. The Marshall Islands contain mostly pan-Pacific and pantropical tramp species, but there do exist collections from the Marshalls (such as a series of *Pheidole* minors) that can only be clarified through further fieldwork. All data on specimens examined, collected, and reported, as well as a key to their identification and maps of their distributions are provided.

Introduction and Methods

This study began for me as a few informal collections on the island of Pohnpei. When I discovered that the *Insects of Micronesia* series (introduction by Gressitt 1954) was still missing a study of the formicids, I attempted to construct a study of just Pohnpei using Wilson and Taylor's *Ants of Polynesia* (1967) as a model. Many Micronesian specimens were available at the Museum of Comparative Zoology (MCZ), and I used that collection to check most of my initial identifications and record previous Pohnpeian collections. After learning that a large portion of the Micronesian specimens was sent to the Australian National Insect Collection (ANIC) in the late 1960s (by E. O. Wilson to R.W. Taylor), I traveled there in 2002. While there, I decided to examine and record all Micronesian specimens, and I did the same back at the MCZ.

In 2003, I retrieved from the Smithsonian archives a typewritten inventory of Micronesian ant specimens created by Marion R. Smith. Included with Smith's inventory (which I abbreviate as "MRSI" in species discussions and elsewhere) was a piece of correspondence dated from 1959 between Smith and E. O. Wilson concerning their plans to report on the ants of Micronesia. Many of the inventory's 1,915 collections I had already seen by that time. Of those remaining,

I report them here provided that they are suitably and reliably identified (that is, not species like *Cardiocondyla nuda* (Mayr), which was the default determination for many members of that genus before Seifert's revision in 2003) or, even if dubiously identified, they add important new localities or taxa. In the inventory, 66 collections by the botanist F. R. Fosberg deserve a special note in that they include no collecting information, just lot numbers. After examining Smith's inventory, I traveled to the National Museum of Natural History (NMNH) to examine their Micronesian specimens, many of which I had not seen but were listed by Smith.

Collections made during this study were primarily done on Pohnpei between June 1994 and January 1996, during a one-week stay in March 2000, and again while passing through the area in 2002. Most collections were made in Madolenihmw municipality around Ponape Agriculture and Trade School (PATS). This school (closed in 2005) had several acres of cultivated farmland and agroforest, and for 40 years it regularly received students, visitors, and shipments from all over the Western Pacific. Other collections were made on trips to the peak of Mt. Nahnalaud, walks along the rivers above the village of Mahnd, above Keprohi Waterfall, around Lehnpeinpohn Waterfall, in the forest above Salapuk, on road trips around the island, excursions into the mangroves around Nan Madol, and visits to Mall Island on the Pohnpei reef. A few collections were also made on three atolls within Pohnpei State: Ant, which is within sight of Pohnpei Island, Mokil (150 km away), and Pingelap (240 km away). Ant Atoll is only used by passing fishermen and tourists, and some of its islets have feral rats and pigs. Mokil and Pingelap have been inhabited since before European contact. Other collections were sent by friends traveling to the Phoenix Islands (part of Kiribati) and Enewetak Atoll (in the Marshall Islands). Most collections were made using soft forceps, fingers, and aspirators, but many important collections came from Berlese extractions of thick moss, wet leaf litter, rotten wood, and other habitats not easily searched by hand. The bulk of my specimens have been deposited in the American Museum of Natural History (AMNH); type series and problematic forms have been deposited at MCZ.

This report is based primarily upon the inspections of specimens found in museums ("Specimens Examined") and collected during the course of this study ("Specimens Collected"), although interesting reports of unseen specimens are also included. A number of early reports of specimens I did not find are included here where appropriate, but without the myrmecological resources available today, these reports are often unreliable. A review of previously reported species (as well as important reports on some modern collections I did not see) is summarized in Wetterer (in prep.). This is not to claim that my determinations are the final word; indeed I have tried to point out all cases where taxonomic ambiguity exists, or I had particular trouble distinguishing forms. However, my re-inspection of specimens led to some corrections, including identifying Swezey's (1942) black *Solenopsis* as *Monomorium*, the discovery of the only representative of the genus *Myrmecina* in Micronesia mixed in with *Cryptopone*

Table 1. Location spelling changes.

Area	Original spelling	New spelling
FSM: Chuuk	Truk	Chuuk
	Faup	Foup
	Moen I.	Weno I.
	Mt. Unip	Mt. Unibot
	Oleg	Olej
	Romayum	Romanum I.
	Tasatawan A.	Satawan A., Ta I.
	Toloas	Tonoas I.
	Wela I.	Weno I.
FSM: Kosrae I.	Kusai	Kosrae
	Metanluk (Yepan)	Mutunlik
	Mt. Fenkol	Mt. Fuinkol
	Mt. Matade	Mt. Mutunte
	Mt. Matante	Mt. Mutunte
FSM: Pohnpei	Ponape	Pohnpei
	Jokaj	Sokehs
	Mt. Dolennankap	Mt. Nankep
	Mt. Kubeysoh	Mt. Kupuriso
	Mt. Tamatamansakir	Mt. Temwetemwensekir
	Nipit	Nihpit
	Not Point	Nett Pt.
	Nunukita I.	Nunakita I.
	One	Wone
	Pelang	Pwel Weita
	S.E. Tolotom	S.E. Mt. Dolotomw
	Sankakuyama	Mt. Sankaku
	Tolenkiun	Mt. Kiepw
	Tolotom	Mt. Dolotomw
FSM: Yap	Dugoi	Dugor
	Guilifez	Gilifith
	Kanis	Kanif
	Rul	Ruul M.
	Rumu	Rumuu
Kiribati	Ocean I.	Banaba I.
	Sydney I.	Manra I.
	Tatawa, Gilbert Isl. (in MRSI)	Tarawa

Table 1 continued

Mariana Is.	Papago Area	Papako Area
	Saipan I., Chalan Canoa	Saipan I., Chalan Kanoa
	Saipan I., Fanagam	Saipan I., Mt. Fanaganan
	Saipan I., Matansha	Saipan I., Matansa
Marshall Is.	Alinglapalap A.	Ailinglaplap A.
	Jaluit A., Jabor I.	Jaluit A., Jabwor I.
	Kwajalein A., Ennylabegan	Kwajalein A., Enelapkan I.
	Wotja A.	Wotje A.
Palau	Arakabesan I.	Ngerkabesang I.
	Auluptagel I. / Aurapushekaru	Ulebsechel I.
	Koror, Arabaketsu / Ngarbaged	Koror, Arabaketsu
	Ngaingl A.	Kayangel A.
	Urukthapel I.	Ngurukdabel I.

specimens, and the identification of Micronesia's only *Tetramorium insolens* (Smith, F.) specimens among those of *T. bicarinatum* (Nylander). MRSI specimens not seen by me are noted in Table 4 and the distribution maps only if they add a new area for that species or are the only record in an area before my collections.

As with any examination of collections that span a wide swath of time and space, confusion over place names is inevitable. Table 1 lists changes I made to collection localities where the modern spelling could be reliably deduced; specimens have been left with their original labels, but the data below use new names. Table 2 lists place names that I could not resolve, and they appear with an asterisk (*) in the species discussions. Some of the more difficult names were clarified with the help of Bryan's (1971) guide, to which I was alerted by D. Buden: Netutu is the site of the Roman Catholic mission on Tol I. (Chuuk) and takes its name from the canal dug by the Japanese; Nofo is a village on Weno I. (Chuuk); Tolenot is a peak on Pohnpei I. and is alternatively spelled Torappennotto San, Pohnlehr, Mt. Not, and Tolenawak peak; and Sadog Tasi (or "Tase") is a beach on Saipan I.

My lists of specimens under each species are organized by current political units and arranged alphabetically. I have used abbreviations for the Federated States of Micronesia (FSM), Islands (Is.), Island (I.), Atoll (A.), the individual islets of atolls and associated reef islets of high islands (also I.), and Municipality (M.). The high island of Kosrae is its own state (thus "FSM Kosrae I."), but other areas, like Chuuk State and Palau have numerous associated atolls and small islands. The Commonwealth of the Northern Mariana Islands is grouped

Table 2. Problematic locations, marked with an asterisk (*) in specimen records.

Area	Locale	Comments and Suggestions
Unknown	Falalaulap A., Falalaulap I.	This name comes from a 1953 collection of *Iridomyrmex anceps*, similar to a collection from Elato A., Elato I. (FSM: Yap) of the same species. It does not name a collector but has a code number in the form of "M" followed by four digits, as with "Fuasuabukaru" (below). It is probably also in Yap (especially since the Marshalls have no Atolls beginning with "F"), but it is impossible to tell if it is a misunderstanding and misspelling of Falalis I. or Falulap I. of Woleai Atoll, Falalop I. of Ulithi Atoll, or Faraulep Atoll.
	Fuasuabukaru, Palulap A.	This name comes from a 1953 collection of *Pheidole umbonata* that has no collector but a similar code as with the "Falalaulap" collection (above).
	Lae Lae A.	This name comes from a collection of *Monomorium destructor* by Beardsley in 1953. It could be Lae Atoll in the Marshall Islands.
FSM Chuuk:	Dublon I., Kouhua	Kuchua?
	Moen I., Pei	Pei?
	Weno I., N. Basin of Mt. Chukumong; Weno I., Mt. Teroken	Mt. Chukumong and Mt. Teroken seen to be synonymous, but it is not clear to me if the two are the same as Mt. Tonoken
FSM Pohnpei	Pohnpei I., Mt. Tolomain	There is a "Tolomai," which is in the central highlands of Pohnpei (vicinity of Mt. Nahnalaud), but I cannot be sure if this refers to that place.
	Pohnpei I., Palang	?
FSM Yap	Dogor—Kanif—Rul	I am confused by this use of multiple municipalities on the same label, a system commonly used by Japanese collectors. Perhaps it means the locale is between these areas. In some cases, I have seen where one of the localities was crossed out, but, again, I am not sure what that means.

Table 2, continued.

Kiribati	Maroh	Beru? Makin? Marakei?
	Ngarard—Ngarasumao	?
	Tarawa A., Banraeaba	?
	Tarawa A., Eret I.	?
	Tarawa A., Marenanuka	?
	Tarawa A., Naanikai	?
	Tarawa A., Taborio	?
	Tarawa A., Teaoraereke	?
Mariana Is.	Guam I., Junction	?
	Guam I., Mata	Umatac?
	Guam I., Metizo	Merizo?
	Rota I., Sonson—Taipingot	Sonson = Songsong = "village"?
	Saipan I., Ants Valley	?
	Saipan I., Banaderu—Tanapak	Tanapak = Tanapag?
	Saipan I., Chanlan Lamlam	?
	Saipan I., Donni—Sadog Tasi	A. Kerr (pers. comm.) says that in Chamoru, donne = "river," saddok = "river," and tasi = "ocean," which makes this locale all the more incomprehensible.
	Saipan I., Papago	Papako area?
	Saipan I., Talofolo area	Talofofo?
	Saipan I., Tapocho	Mt. Tagpochau / Tapotchau?
	Saipan I., Tapochoa	Mt. Tagpochau / Tapotchau?
	Pagan I., Umatac	Not the “Umatac” on Guam?
Marshall Is.	Enewetak A., Bogombog	?
	Enewetak A., Igarin	?
	Jaluit A., Pinglep I.	?

Palau	Babelthuap I., Imeliik, Netkeng	Netkeng?
	Babelthuap I., Imeliik, Netkeng	?
	Babelthuap I., Kaishar—Ngardok—Ngiwal	Kaishar = Ngchesar or Enkassar?
	Babelthuap I., Ngardmau	Ngardmau?
	Babelthuap I., Ngardmau	?
	Babelthuap I., Ngardok—Colony	Nagardok Lake?
	Babelthuap I., Ngardok—Ngarmisukan	?
	Babelthuap I., Ngarekeai Airai	?
	Babelthuap I., Ngiwal—Ngarard	Between Ngiwal and Ngarard?
	Kayangel A., Ngajangel	Ngajangel?
	Malalai I.	?
	Ngarard—Ngarasumao	?
	Ngarekeai	?
	Ogiwal	Ngiwal?

Table 3. Collectors as abbreviated in specimen records.

Ad	Adams, P.A.	Dd	Davidson, J.M.	Ko	Kondo, Y.	Po	Potts, R.W.L.
An	Anderson, D.A.	Do	Dorsey, C.K.	Kr	Krauss, N.L.H.	Ru	Ruze, P.
Aq	Aquino	Dy	Dybas, H.S.	La	Lanford, S.C.	Sa	Sabrosky, C.W.
Ar	Arnaud, P.H.	Ed	Edgar, S.A.	Ln	Langford, D.B.	Sc	Schreiner
Ba	Baker, R.H.	Ek	Enke, J.W.	Le	Lee, M.	Sf	Snyder, F.
Be	Beardsley, J.W.	El	Enloe, J.	Lg	Lange, W.H.	Sm	Smith, M.R.
Bh	Bohart, R.M.	En	Enders, R.K.	Lr	LaRivers, I.	Sp	Snyder, P.M.
BhG	Bohart, G.E.	Ep	Eperiam, P.	Ly	Lyons, T.	St[2]	Stunts, J.R.
Bn	Benjamin, E.	Es	Esaki, T.	Ma	Maehler, K.	Su	Sumang, S.
Bq	Bourquin, O.	Fe	Fehlmann, H.A.	Mc	McCall, C.	Sw	Swezey, O.H.
Br	Borror, D.J.	Fo	Foster, A.R.	Md	McDaniel, B.	Ta	Talavera, T.
Bt	Bates, M.	Fs	Fosberg	Me	Mead, A.R.	Te	Teuriaria, N.
Bu	Butler, C.P.	Fu	Fullaway, D.T.	Mg	McGregor	To	Tompson, J.B.
Bw	Brown, E.S.	Gl	Glassman, S.F.	Ml	Moul	Tw	Townes, H.K.
By	Bryan, E.H., Jr.	Gr	Gressitt, J.L.	Mn	Martin, J.P.	Us	Usinger, R.L.
Ca	Catala, R.	Gs	Goss, R.J.	Mo	Morrison, J.P.E.	Va	VanderVelde, N.
Cf	Chaffee, R.	Ha[1]	Hathaway, N.H.	Mu	Murakami, S.	Vn	Vandenberg, S.R.
Cg	Clagg, C.F.	Hd	Hadden, F.C.	Na	Nafus, D.	Wa	Wallace, H.S.
Ck	Clarke, J.F.G.	Hg	Hagen, E.	Ne	Necker, W.C.	Wd	Wood, J.B.
Cl	Clegern, R.W.	Hl	Holder	Ni	Niering, W.A.	Wh	Wharton, G.W.
Cm	Cameron	Hn	Hansen, L.	Oa	Oakley, R.G.	Wi	Wilson, E.O.
Cu	Culliney, T.	Hr	Hornbostel, H.	Ok	Okihiro, M.M.	Ya	Yasumatsu, K.
Co	Corwin, G.	Hw	Haw	On	Ono, Z.	Yo	Yoshi, M.
Cs	Clouse, R.M.	Hy	Hawley	Os	Oshiro, Y.	Ys	Yoshino, G.
Cn	Coman	Ik	Ikeda, H.	Pa	Page, R.B.	Yu	Young, F.N.
Da	Davison, C.O.	Jo	Joyce, C.R.	Pe	Pelzer, K.J.		

[1]Also used for "Hathway, W.H.;" I am assuming one is a misspelling of the other by M.R. Smith

[2]Also spelled “Stuntz” in MRSI

with the U.S. Territory of Guam under "Mariana Is." The main areas of Micronesia are shown on a reference map (Fig. 16), which corresponds to the distribution maps for species. On the distribution maps, black fill indicates three or more collections seen, dark gray represents one or two collections seen, and light gray is used for certain reported collections I have not examined.

For Specimens Examined, in parentheses after each locale is the additional collecting information, with my comments in square brackets. Collectors' names have been given two-letter abbreviations detailed in Table 3. Collection dates are shown only as year (with the century removed, if the 20th), unless they are species described in Clouse (in press) or otherwise important specimens. Specimens in the National Museum of Natural History have "NMNH" at the end of the parentheses. For Specimens Collected, most of which were done in Pohnpei State, locales and associated habitat information, methods, collectors, and years are contained in parentheses after the island or atoll, unless new forms, in which case the date is more precise and associated with each area. A summary of the preferred habitat of the species is given in cases where sufficient habitat data are available.

Gressitt's (1954) introduction to the Insects of Micronesia, although over 50 years old, is still a very useful primer on the geology and ecology of the islands. Micronesia encompasses a wide variety of island types (flat atolls to lush mountains), climates (subtropical to equatorial), and vegetation (*e.g.*, deep rainforest, undisturbed mangroves, grasslands, pandanus forest, coconut stands). In addition, the interplay of island isolation, size, climate, and age creates expected patterns of diversity and endemicity. Palau is somewhat smaller, less mountainous and drier than Pohnpei but is closer to Southeast Asia, and thus Palau has a fauna that is overall more diverse than Pohnpei but without as large a proportion of endemics. Chuuk, which was clearly once a very large island but has progressed significantly toward becoming an atoll, has surely lost considerable terrestrial diversity and endemism as it has eroded and subsided. Chuuk is still more diverse than Kosrae, however, which is smaller, younger, and more isolated. The atolls are numerous and often enormous in Micronesia, especially in the Marshalls and Kiribati, which have no high islands; nonetheless, they have a fauna and flora only a few thousand years old. They stand as gravestones to sunken high islands in their lagoons, many of which were probably points of diversity and endemism like Pohnpei is today.

I identified ants mostly using keys found in Wilson and Taylor's study of Polynesian ants (1967), Wilson's studies of Melanesian ants (1958a, 1958b, 1959a, 1959b), and Mann's "Ants of the British Solomon Islands" (1919) and "Ants of the Fiji Islands" (1921). At the generic level, keys in Bolton (1995b), Hölldobler and Wilson (1990), and Shattuck (2000) were extremely useful. Other Pacific ant studies were also used for identifications (Wheeler 1934, Wheeler 1935, Wilson 1957, Brown 1960, Ettershank 1966), especially ant lists of Guam (Wheeler 1912, Swezey 1942), Saipan (Weber 1950), and Bikini Atoll in the Marshall Islands (Cole 1949). I also relied heavily on taxonomic revisions

of four groups: *Ponera* (Taylor 1967), the Dacitinae (Bolton 2000), *Pristomyrmex* (Taylor 1965, Wang 2003), and *Cardiocondyla* (Seifert 2003). Identifications for all species were checked against reference collections at Archbold Biological Station (ABS), MCZ, AMNH, and NMNH. All names follow the taxonomy used in Bolton (1995a). Unless of particular interest at the generic level or associated with workers, I did not examine alates.

Several specimens remain unidentified after this study. I have postulated that some are new species, and I have described them in a separate paper (Clouse, in press). The remaining unidentified specimens are mostly known from single or damaged specimens, and these have been given a code number based upon the date of their first or best collection. Color photos and preliminary descriptions of them are being posted on the Internet at antweb.org, and key features for identification are described and discussed here. Measurements (in mm) and indices are standard for myrmecological descriptions, as are their abbreviations:

TL = total length (when viewed from above)
PW = pronotal width (at widest point when viewed from above)
HL = head length (when viewed from the front, not including mandibles)
HW = head width (at widest point, including eyes)
CI = cephalic index = HW x 100 / HL
ML = mandible length (straight line from lateral mandibular insertion to apex)
SL = scape length
SI = scape index = SL x 100 / HW
PL = Petiole length (including peduncle)
PH = Petiole height (maximum)
DPW = Dorsal petiolar width
PWI = DPW x 100 / PL
PNI = DPW x 100 / PW
PPL = Postpetiole length
PPH = Postpetiole height (maximum)
PPW = Dorsal postpetiolar width
PPWI = PPW x 100 / PPL

To assist the identification of new Micronesian specimens, a taxonomic key for 107 species is provided. In the interest of utility, the subfamilies Formicinae and Dolichoderinae are combined in the key, although a good character for separating them is the hair-fringed nozzle at the apex of the rolled, last sternite of the Formicinae (Fig. 6D). Readers are advised to use the key as a starting point and continue their identifications with the genus write-ups, where more characters and difficult species groups are discussed. The key does not include all suspected Micronesian species, only those workers examined by me, so specimens that fail in the key may be new records. Ultimately, the key should be used to organize specimens until identifications can be confirmed against reference collections.

One collection of specimens labeled as being from Micronesia is not included here for the simple reason that, as suggested by M. Deyrup, it is more likely a labeling error than a true record. I was alerted by J. Wetterer to a vial of specimens supposedly collected by Dybas on Peleliu I. (Palau) in 1948 in which there were specimens of *Formica pergandei* Emery, as determined by S. Cover. Any *Formica* in the tropics is strange, and this one is particularly odd in not being one of the several species found in Japan (*F. pergandei* is from the NE U.S.). Its occurrence in Palau—especially Peleliu Island—right after the end of World War II is slightly believable given the massive influx of American soldiers and equipment with the battle of Peleliu. However, being a slave-making species of other *Formica*, it is hard to imagine how a Palauan population could make a living between its arrival (as soon as late 1944) and this collection. If *Formica* are found in Micronesia in the future, they will likely be a Japanese species in the Bonins or the Marianas. They can be recognized quite easily by the ocelli on workers.

Species discussions are arranged taxonomically, but figures are ordered alphabetically (as formatting permitted) and presented at the end of the article.

Results and Discussion

Three species recently collected by J. Czekanski-Moir and A. Olsen of Belau National Museum (Palau) were brought to my attention as this manuscript was going to press, and they highlight the incomplete nature of our understanding of the ant fauna of Micronesia and the exciting discoveries yet to be made in the area. They were examined (by the collectors, myself, S. Cover and G. Alpert) in an unmounted condition (in ethanol) and appear to be new records for Micronesia not incorporated in the key, reports, and statistics below; thus, they should be kept in mind when identifying new material and evaluating the nature of the Palauan fauna. The first species appears to be *Pheidole philemon* Forel 1910, which has not been collected elsewhere in Micronesia. It is very similar to *P. recondita* Clouse, in press, in that both have long frontal carinae. However, besides differences in sculpturing details, *P. philemon* is bicolorous, having a light orange head, mesosoma, dorsal petiole and dorsal postpetiole, the remainder being dark brown; *P. recondita* is overall blackish orange to blackish brown. The second species appears to belong to *Vollenhovia* except that the propodeum has small teeth. This may mean it is a member of the newly erected genus *Gauromyrmex* (Bolton 2003), although the antennae still resemble those of most *Vollenhovia* (12-segmented with a three-segmented or weakly four-segmented club). The third species strongly resembles *Solenopsis papuana* Emery 1900, a species previously collected only from Pohnpei Island. However, the antennae have 11 segments, which is wrong at the generic level. Like *Solenopsis*, the antennae have a strong two-segmented club, and the clypeus appears to be bicarinate and elevated medially, although the latter feature will have to be examined more closely. Some of the specimens identified as *S. papuana* from

Pohnpei we re-examined in light of the Palauan species, and their determination stands.

The distributions of all species (excluding the three recent additions mentioned above) are summarized in Table 4, and the frequencies of their known global distributions are in Table 5. I examined around 111 species (some genera have an ambiguous number of species) and 37 genera (including the undetermined Basicerotini-like alate). Comparing the number of species known from each area prior to my collections, Palau, Pohnpei and the Marianas are the most diverse and about equally so (59, 58, and 57 species, respectively). The Marshalls and Kosrae, each with 30 species, are probably truly less diverse that the remaining Carolines and the Marianas, but Kiribati and the Bonins, with 19 and 9 species respectively, are clearly just undersampled. The collecting efforts during this study added 14 species to Pohnpei's ant faunal list, bringing its total to 72.

Twenty-five percent (28 species) of the current Micronesian ant list are not known from other areas and thus potentially endemic to the region. Of these, those known from only a single island are predominantly found on Pohnpei (nine species). Expressed as a percentage of the known ant fauna on the island, Pohnpei still has the most endemics (13%), followed by Palau (seven species, 12%), Yap (four species, 9%), the Marianas (four species, 7%), and Chuuk (two species, 5%). There are no endemic genera.

One phenomenon that is clear from this study is that the Micronesian ant fauna resembles Polynesia's mainly through common origin, and there has been almost no direct flow of native species between Polynesia and Micronesia. Only two Micronesian species are shared exclusively with Polynesia: *Ponera loi* Taylor, known only from Guam, and *Prionopelta kraepelini* Forel, which may be synonymous with *P. opaca* Emery from Melanesia. This lack of strong biogeographic ties between Micronesia and Polynesia can also be seen in the Pohnpeian flora. Glassman (1952) recorded 80 endemic plants on Pohnpei, and the remainder had a notable Western, not Polynesian, origin. Not counting recent introductions or experimentals, his report shows a flora that is about 26% Micronesian (Pohnpei out to Palau, the Marianas and Marshalls), 18% Pan-Pacific, 17% Pantropical, 37% Asian, Melanesian, or Afro-Indian, and only 9% Polynesian.

As with the flora (above), around 36% of the Micronesian ant fauna appears to be the result of range extensions from the south and southwest, and Gressitt (1954) pointed out that the fauna (insect and otherwise) of Micronesia is so clearly southern or southwestern in origin, it could qualify the islands as a mere zoogeographical extension of New Guinea, Indonesia, and the Philippines. Moreover, he argued subsequently (1956) that the Polynesian Subregion (containing the Micronesian subdivision) of the Oriental Region is really just a "tapering fringe" of the Papuan Subregion with added elements from the Philippine Subregion. In light of the attention paid to the biogeography of the Malay Archipelago, it is interesting to note that Gressitt did not argue that Micronesia is an extension of an Australian region, even though it shares many

species with New Guinea; nor did he distinguish sharply between the Melanesian and Indonesian fauna. Gressitt has shown (1956, 1982) that the arthropod fauna of New Guinea is predominantly Eurasian ("Oriental") in origin and thus so is that of the outlying Pacific islands. Indeed, Micronesian species shared with Australia are usually also shared with Melanesia, suggesting a common origin, as with Polynesia; only one species, *Paratrechina minutula* (Forel), appears to have originated from mainland Australia and spread to Polynesia and Micronesia. Even this species, however, is in a genus with a worldwide distribution, and at the generic level no aspect of the Micronesian ant fauna appears to have an Australian origin.

Other than as a filter on this Oriental fauna (which has its uses and does give the islands some commonality), it is difficult to conceptualize Micronesia as a unified biogeographic zone. Only two species—*Metapone truki* Smith, M.R. and *Pheidole recondita* Clouse (in press)—seem to circulate exclusively among the Micronesian islands, and then only in certain areas. Although one can generally distinguish the faunas of Micronesia and Polynesia by the fact that the former has several more recently arrived species of a more diverse origin (Gressitt 1954), Micronesian islands are often as far apart or ecologically distinct from each other as they are from outside areas. As a result, their grouping often seems forced. More natural groupings based on the ant fauna might subdivide Micronesia thusly: (1) Palau, Yap, and Chuuk as a direct extension of Indonesia (including New Guinea and the Philippines), with high generic diversity, island endemics in *Camponotus* other than *maculatus*-group forms, and the presence of certain genera (*Calyptomyrmex*, *Metapone*, and *Polyrachis*) and species (*Pachycondyla luteipes* (Mayr), *P. atrata* (Karavaiev), and *Ponera incerta* (Wheeler, W.M.)) that may not extend east to Pohnpei or north to the Marianas; (2) Pohnpei by itself as an area containing nearly a full complement of Pacific tramps and pan-tropical invasives, several endemics, but no distinctively western genera; (3) the Marianas as a large, highly disturbed area containing common tramps and rare invasives (*Ponera loi* and *Brachymyrmex obscurior* Forel), but also endemics of a typically western nature (*Cerapachys*, *Romblonella*, and *Camponotus*); and (4) Kosrae and the Marshalls containing a wide variety of tropical and Pacific tramps but few if any endemics and low generic diversity. The Bonins and Kiribati are currently too poorly collected to be characterized, but key issues for them are (1) whether the Bonin Islands are strongly allied with the Marianas or better categorized as an extension of Japan, and (2) whether Kiribati will demonstrate a blend of Micronesian and Polynesian elements.

Even these characterizations of various areas within Micronesia should be taken as provisional due to the source area of its fauna and the patchiness of collecting efforts in the region. Supposed endemics could easily be found on neighboring islands (as was *Metapone truki* in Palau) or in the enormous, relatively unexplored ant fauna of New Guinea, Indonesia, and the Philippines. Because ants are "poor dispersers but excellent colonists" (Deyrup, pers. comm.), species that are relatively rare in their home territory can become major

components of island faunae. All species have an equally low chance of successful dispersal to distant islands, and by the time one does arrive, the island is unlikely to already be dominated by other species. Once successfully landed, the ability of ants to generate new colonies from a single inseminated female makes them effective colonists. Thus, the assemblage of apparently unique *Vollenhovia* species on Pohnpei could be the result of speciation by one or several ancient *Vollenhovia* colonists or merely range extensions of undiscovered species from New Guinea and the Malay Archipelago. Compounding this problem is the fact that not only is the fauna of this area poorly known, but some of its dominant genera are also poorly understood, with revisions badly needed in the genera *Paratrechina*, *Camponotus*, *Hypoponera*, and others.

The goal of this study was to record and, through limited collecting, augment what is known to date about the Micronesian ant fauna, but the completion of this task has revealed a great need for further collecting and museum work in the area. Many interesting forms are known from only a single specimen, and several of the most commonly collected forms have poorly understood variation. Additional collecting on Palau is already resulting in new locality records and species, as we would expect from the western islands near New Guinea and Indonesia, but even the heavily populated Marianas have yielded intriguing collections (*Romblonella*, *Pheidole recondita*, *Ponera loi*). My collecting on Pohnpei added several new records, but it also missed interesting forms collected previously. *Vollenhovia mwereka* Clouse (in press), *V.* sp. 23031948, and the unknown *Romblonella* would be important rediscoveries for future collectors there. Chuuk and Kosrae are still undersampled for high islands, and they may hold interesting species for different reasons: Chuuk due to its old age, and Kosrae due to its isolation. The large atoll groups of the Marshalls and Kiribati are, relative to their size, virtually uncollected. Although they are dominated by tramps, several of these species show intriguing distributions, such as *Monomorium destructor* (Jerdon), which has, oddly, not been collected on Pohnpei, and *Pheidole fervens* Smith, F., *P. megacephala* (Fabricius), and *P. oceanica* Mayr, which have quite patchy and perhaps somewhat mutually exclusive appearances. Some such widespread species also have the potential to be damaging invasives, and tracking their movement through the expanse of atolls in eastern and southeastern Micronesia is important. Indeed, these may be the first stops for *Wasmannia auropunctata* Roger (Wetterer & Porter 2003) and *Solenopsis invicta* Buren, should they invade Micronesia as they have so many other places. Hopefully the next phase of myrmecology in Micronesia will bring a new level of detail from modern collections, broad taxonomic revisions, and the use of molecular data.

Table 4. Distributions of species recorded from Micronesia: E = specimens examined, C = specimens collected, S = unexamined specimens in M.R. Smith's inventory from areas with no previous collections seen, and R = other specimens reported but not examined. The last column (Distribution) is coded as follows: SA = single area within Micronesia, MA = multiple areas within Micronesia, 1 = Worldwide, 2 = Pan-Tropical, 3 = Old World Tropics, 4 = Pan-Pacific (= 5,6,7), 5 = Polynesia, including Fiji, 6 = Melanesia and tropical Australia, 7 = Indonesia to the Andaman Islands, 8 = Sri Lanka and India, 9 = Southeast Asia, 10 = Subtropical and Temperate Australia, 11 = China, 12 = Japan, and n.a. = not applicable (species groups or otherwise undetermined).

Species	Bonin Is.	Mariana Is.	Palau	Yap	Chuuk	Pohnpei	Kosrae I.	Kiribati	Marshall Is.	Wake A.	Johnston I. Palmyra A. Howland I.	Total areas per species	Distribution
Anochetus graeffei		E	S?	E	RE	C	S?	E				7	4
Anochetus splendidulus				E								1	SA
Anoplolepis gracilipes		E	E	E	E	EC	E		E			7	3
Aphaenogaster osimensis	E											1	12
Brachymyrmex obscurior		E										1	2
Calyptomyrmex			E		E							2	3
Camponotus chloroticus		E		E	E	EC	E		E			6	5, 6
Camponotus eperiamorum						EC						1	SA
Camponotus erythrocephalus				E								1	SA
Camponotus flavicomans			E									1	SA
Camponotus marianensis		E										1	SA
Camponotus peleliuensis			E									1	SA
Camponotus reticulatus/bedoti		E	E	E	E	EC	E		E			7	n.a.
Camponotus maculatus-group			E	R?			R		R			4	n.a.
Camponotus sp. 121958		E										1	SA
Cardiocondyla kagutsuchi		E	E	E				C				4	4, 8, 11, 12
Cardiocondyla minutior		E	E	E		E					E	5	2
Cardiocondyla nuda			E	E	E	EC		E		E		6	5, 6, 10
Cardiocondyla obscurior		E				EC	E					3	1
Cardiocondyla tjibodana		E	E	E		EC		E	E			6	2
Carebara atoma			E				E					2	5, 6

Table 4, continued

Species	Bonin Is.	Mariana Is.	Palau	Yap	Chuuk	Pohnpei	Kosrae I.	Kiribati	Marshall Is.	Wake A.	Johnston I. Palmyra A. Howland I.	Total areas per species	Distribution
Cerapachys biroi		E										1	2
Cerapachys sp. 91952			E									1	SA
Crematogaster cf. biroi		S			E	SC	S		S			5	n.a.
Crematogaster fritzi						C						1	6
Cryptopone butteli					E	EC						2	6, 7, 9
Cryptopone testacea			E	E	E	EC						4	4, 8
Eurhopalothrix procera			E			EC						2	5, 6, 9
Hypoponera confinis		E	E		E	EC	E		C			6	4, 7, 8
Hypoponera opaciceps			E			E						2	2
Hypoponera pruinosa		E	E			EC	E					4	6
Hypoponera punctatissima		E	E		E	EC	E		E			6	2
Iridomyrmex anceps		E	E	E	E	EC			E			6	4
Leptogenys falcigera		E	S	S		S						4	2
Metapone truki			E		E							2	MA
Monomorium australicum		E				EC						2	5, 6
Monomorium destructor		E	R		E		E	E	S? R	E		7	2
Monomorium floricola		E	E	E	E	EC	E	E	E	E		9	2
Monomorium pharaonis		E	E	E	E	EC	R	E	E	E		9	1
Monomorium sechellense		E				EC						2	4, 7, 8
Monomorium chinense-group	E	E	E	E		EC	E	E				7	n.a.
Myrmecina sp. 7121952			E									1	SA
Odontomachus simillimus		E	E	E	E	EC	E	E	E			8	4, 7, 8
Pachycondyla atrata				E								1	7
Pachycondyla luteipes	E		E	E	E							4	7, 9
Pachycondyla stigma			E	E	E	EC	E					5	2
Paratrechina bourbonica		E	E	E	E	EC	E		EC	E	E	9	2

Paratrechina clandestina						C			R			2	7	
Paratrechina longicornis		E	E	E	E	SC	E	E	E	E	S	10	2	
Paratrechina minutula		E			E	EC						3	5, 10	
Paratrechina vaga		E	E	E	E	EC	E		E			7	6, 9	
Pheidole fervens	E	E	E	E	E	EC		E				7	4, 9, 11	
Pheidole megacephala		E	E	E		SC		E	EC			6	2	
Pheidole nindi		E				EC						2	6	
Pheidole oceanica	S	E		E	E	EC		S	E			7	5, 6	
Pheidole recondita		E				C	E					3	MA	
Pheidole sexspinosa			E	E		SC			E			4	5, 6	
Pheidole umbonata		E	E	E	E	EC	E	EC	E			8	5, 6	
Pheidole sp. 24041958									E			1	SA	
Platythyrea parallela		E			E	C						3	4, 9	
Polyrachis dives		R										1	6, 7, 9	
Polyrachis sp. 91952			E									1	SA	
Unexamined *Polyrachis sp.*	S	S										2	n.a.	
Ponera clavicornis						E						1	6	
Ponera incerta			E	E	E							3	6, 7	
Ponera loi		R										1	5	
Ponera tenuis		E				C	E					3	6	
Ponera sp. 10091995						C						1	SA	
Prionopelta kraepelini			E	E	E							3	5	
Prionopelta opaca			E			EC	E					3	6	
Pristomyrmex largus						EC						1	SA	
Pristomyrmex levigatus					E							1	6	
Pristomyrmex minusculus			E	E		C						3	6	
Pristomyrmex punctatus	E											1	6, 7, 9, 11, 12	
Pristomyrmex quadridens			E			EC						2	6	
Pyramica karawajewi			E		E	R						3	6, 7, 9	
Pyramica membranifera		E				C						2	2	
Rogeria stigmatica				S		EC						2	5, 6	
Rogeria sp. 25111995						C						1	SA	
Romblonella palauensis			E									1	SA	
Romblonella townesi		E										1	SA	

Table 4, continued

Species	Bonin Is.	Mariana Is.	Palau	Yap	Chuuk	Pohnpei	Kosrae I.	Kiribati	Marshall Is.	Wake A.	Johnston I. Palmyra A. Howland I.	Total areas per species	Distribution
Romblonella yapensis				E								1	SA
Romblonella sp. 6051940		E										1	SA
Unexamined *Romblonella sp.* 1						R						1	SA
Unexamined *Romblonella sp.* 2				R?								1	n.a.
Solenopsis geminata		E	E			EC		E	E	E	E	7	2
Solenopsis papuana		E				EC						2	5, 6
Strumigenys frivaldskyi			E	E		E						3	6
Strumigenys emmae		E		E								2	2
Strumigenys godeffroyi		E	E		E	EC			E			5	4, 9
Strumigenys mayri					E							1	6, 7, 10
Strumigenys rogeri		E				C					E	3	2
Strumigenys szalayi						EC						1	5, 6, 9
Tapinoma		E	E	E	E	EC	E	E	E	E		9	2
Technomyrmex albipes		E	E	E	E	EC	E					6	2
Technomyrmex kraepelini		E	E	E	S	SC						5	7
Tetramorium bicarinatum	E	E	E	E	E	EC	E	E	E	E	E	11	5, 6
Tetramorium insolens			E									1	4, 8
Tetramorium lanuginosum		E	E	E	E	C		E	S			7	3 (to W. Mexico)
Tetramorium pacificum			S	S	E	EC	E					5	5, 6
Tetramorium simillimum	E	E	E	E	S	C		E	E		E	9	2
Tetramorium smithi		E				C			E			3	7, 8, 9
Tetramorium tonganum		E	E	E	E	EC	E					6	5, 6
Tetramorium sp. 14121952			E									1	SA
Vollenhovia kaselela						EC						1	SA
Vollenhovia mwereka						E						1	SA

Vollenhovia oblonga		E	S		E	EC	E		E			6	6, 9
Vollenhovia pwidikidika						C						1	SA
Vollenhovia sp. 6041940					E							1	SA
Vollenhovia sp. 23031948						E						1	SA
Unknown Basicerotini?					E							1	SA
Total species per area	9	57	59	45	44	72	30	19	30	9	7		

Table 5. Frequencies of distribution types, as coded in the last column of Table 4 ("Distribution").

Distribution Type	Number of Species	Distribution Type	Number of Species
SA	26	5	2
2	20	5, 6, 9	2
5, 6	11	6, 9	2
6	10	4, 8, 11, 12	1
3	3	4, 9, 11	1
4, 7, 8	3	5, 6, 10	1
6, 7, 9	3	5, 10	1
7	3	6, 7	1
MA	2	6, 7, 9, 11, 12	1
1	2	6, 7, 10	1
4	2	7, 8, 9	1
4, 8	2	7, 9	1
4, 9	2	12	1

Key to Species of Micronesian Ants

1 Body with two isolated segments (the petiole and postpetiole) between mesosoma and gaster (Fig. 1C) 2
1' Body with one isolated segment between mesosoma and gaster (the petiole), its separation from the gaster being a narrow constriction (Fig. 1A–B) 3
1" Body with one isolated segment between mesosoma and gaster that is broadly attached to the first segment of the gaster (Fig. 9B) ... 66 (Amblyoponinae)

2(1) Frontal carinae close and vertical, such that antennal insertions are completely visible from above; pygydium flattened and bordered by tiny denticles (Fig. 3B–C) ..... 4 (Cerapachyinae)
2' Frontal carinae usually covering antennal insertions such that they are at most only partly visible from above; pygydium simple ..... 5 (Myrmicinae)

3(1) Sting present ..... 67 (Ponerinae)
3' Sting absent 85

4(2) With prominent eyes (Fig. 3B) ..... *Cerapachys* sp. 91952
4' Without eyes ..... *Cerapachys biroi* Forel 1907

5(2) Antennae with 7 or fewer segments 6
5' Antennae with more than 7 segments 14

6(5) Antennae with 7 segments (Fig. 1C). *Eurhopalothrix procera* (Emery 1897)
6' Antennae with 6 or fewer segments 7

7(6) Mandibles compact and triangular; labial shield without extended lateral margins (never T-shaped); inner margins of mandibles lined with teeth (Fig. 11B) 8
7' Mandibles long and thin; labial shield with extended lateral margins, making the whole sclerite T-shaped; teeth only at ends of the mandibles (Fig. 11C) 9

8(7) Eyes present; head with a single, long hair projecting laterally from each side, immediately above end of the antennal scrobe (Fig. 11A) ..... *Pyramica karawajewi* (Brown 1948)
8' Eyes tiny, almost completely missing; head without single, distinct hair projecting laterally from each side.. *Pyramica membranifera* (Emery 1869)

9(7) Antennae with 4 segments ..... *Strumigenys emmae* (Emery 1890)
9' Antennae with 6 segments 10

10(9) When view from above, mandibles with 3 apical teeth, the middle one shorter than other two (Fig. 11C) ..... *Strumigenys rogeri* Emery 1890

10' Mandibles with 2 apical teeth 11

11(10) Posterior propodeum to anterior gaster covered with a light-colored, spongy substance (Fig. 11D) 12
11' Without spongy material (Fig. 11E) ..... *Strumigenys szalayi* Emery 1897

12(11) Combining the following: Mesosoma with little or no sponge, most sponge concentrated on the ventral side of the petiolar node and post-petiole; conspicuous standing hairs on the mesonotum consisting of a short pair on the pronotum and mesonotum ..... *Strumigenys mayri* Emery 1897
12' Not as above 13

13(12) HL around 0.7 mm; curved, erect hairs on head long and spaced about as far apart as their length; spongiform bodies on propodeum forming two distinct ridges from the propodeal spines down to the petiolar insertion; the inner margin of the mandibles straight, base of subapical tooth joining base of end tooth, with no straight section of mandible separating the two (Fig. 11E) ..... *Strumigenys godeffroyi* Mayr 1866
13' HL usually less than 0.5 mm; curved, erect hairs on head spaced closer together than their length; two pairs of extremely long hairs often missing; spongiform bodies on propodeum disorganized and not covering propodeal spines; inner margin of mandibles continuously curved, the subapical tooth separated from the base of the end tooth by a section of mandible longer than the subapical tooth's length ..... *Strumigenys frivaldskyi* Emery 1897

14(5) Postpetiole attached to dorsal surface of the gaster; small yellow ants 15
14' Postpetiole attached to anterior end of the gaster, the gaster not noticeably suspended below the postpetiole; size and color variable 16

15(14) Dorsal edge of each propodeal spine with a stout hair (Fig. 3D) ..... *Crematogaster cf. biroi* Mayr 1897
15' Dorsal edge of each propodeal spine without a stout hair (Fig. 3E) ..... *Crematogaster fritzi* Emery 1901

16(14) Pronotum, mesonotum, and propodeum each bearing a pair of long spines; workers distinctly dimorphic; ..... *Pheidole sexspinosa* Mayr 1870
16' Lacking spines on the mesosoma as described above; workers monomorphic, polymorphic, or dimorphic 17

17(16) Body surfaces, except for tarsi, funiculi, and mandibles covered with evenly spaced paddle-like hairs; antennae 12-segmented .... *Calyptomyrmex*
17' Paddle-shaped hairs usually absent, or, if present, not covering all body surfaces as described above; antennal segment number variable 18

18(17) Large, plate-like keel on the ventral surface of petiole; propodeum without spines (Fig. 15D) 19
18' Ventral petiole without a large, plate-like keel; propodeum often with spines or blunt projections 24

19(18) HW and HL more than 0.65 mm (up to 0.875 mm) 20
19' HW 0.37–0.55 mm, HL 0.47–0.62 mm 21

20(19) Head and mesosoma covered with thick, smooth, wavy, striate sculpture, giving a wrinkled appearance; HW 0.68 mm; HL 0.76 mm (Fig. 15A) ..... *Vollenhovia mwereka* Clouse (in press)
20' Head and mesosoma not sculptured as above (not wrinkled in appearance and with smooth patches on dorsum); head square in front view, both HW and HL about 0.8 mm ..... *Vollenhovia oblonga* Smith, F. 1860

21(19) Area behind eyes distincly striate (Fig. 14C); middle part of frons punctate; HW 0.42–0.45 mm; HL 0.52–0.55 mm, CI = 81–86 (Fig. 14D) 22
21' Area behind eyes smooth (Fig. 15C); middle part of fronts striate or smooth; head either smaller (and usually narrower) or larger and more square.....23

22(21) Mesosoma completely punctate (Fig. 15D); body dark brown ..... *Vollenhovia kaselela* Clouse (in press)
22' Central propodeal dorsum and anterior pronotum with smooth patches; body orangish brown ..... *Vollenhovia* sp. 6041940

23(21) Antennae 11-segmented; HW 0.37–0.41 mm (Fig. 15B); mesosoma mostly punctate, except for smooth patch on central anterior pronotum ..... *Vollenhovia pwidikidika* Clouse (in press)
23' Antennae 12-segmented; HW 0.55 mm (Fig. 14B); Mesosoma with smooth areas on dorsal and lateral propodeum and promesonotum ..... *Vollenhovia* sp. 23031948

24(18) Head with a prominent carina on each side that runs below eye from base of the mandibles to posterior corner of the head (Fig. 5C–D) ..... *Myrmecina* sp. 7121952
24' Head without such a carina 25

25(24) Antennae with 10 segments, with the last 2 forming a conspicuous club26
25' Antennae with 9, 11 or 12 segments 27

26(25) Eyes tiny; area around propodeal spiracle shining; workers monomorphic ..... *Solenopsis papuana* Emery 1900

26' Maximum eye diameter about equal to antennal club width; area around propodeal spiracle dull in larger workers; workers polymorphic ..... *Solenopsis geminata* (Fabricius 1804)

27(25) Clypeus forming a flange or shelf above the mandibles 28
27' Clypeus completing the overall curve of the head to the mouth 33

28(27) Mesosoma sculptured but lacking teeth, corners, or spines; anterior clypeal border extended forward as a distinctive, narrow, rectangular lobe; antennal scrobes large and deep, partly concealed by broad, downwardly-curving frontal carinae ..... *Metapone truki* Smith, M.R. 1953
28' Mesosoma glossy and with teeth, corners, or spines; clypeus projecting outward to form an acutely cornered shelf above the mandibles; antennal scrobes shallow, not concealed by carinae (Fig. 10A–C) 29

29(28) Head and mesosoma with strong, coarse, reticulate sculpture; propodeal spines as long as the petiole ..... *Pristomyrmex punctatus* (Smith, F. 1860)
29' Reticulate sculpture absent and propodeal spines shorter than the petiole ... 30

30(29) Sharp teeth on the pronotum 31
30' Sharp pronotal teeth absent 32

31(30) Pronotal spines nearly as large as the propodeal spines and clearly projecting upwards above the dorsal surface in side view (Fig. 10C) ..... *Pristomyrmex quadridens* Emery 1897
31' Pronotal spines notably shorter than the propodeal spines and projecting laterally, often not altering the outline of dorsal pronotum in side view ..... *Pristomyrmex minusculus* Wang 2003

32(30) Propodeal spines only about half length of postpetiole; deep, well-defined pits on head, especially laterally between eyes and mandibles; dark brown species (Fig. 10B) ..... *Pristomyrmex levigatus* Emery 1897
32' Propodeal spines about as long as length of postpetiole; head with shallow pits only; orange species (Fig. 10A) .....*Pristomyrmex largus* Wang 2003

33(27) Antennal insertions in deep pit, the walls of which are formed by the fused rear clypeus and frontal lobes (Figs. 12B, 12D, 13B, 14A) 34
33' Antennal insertions not in deep pit 41

34(33) Antennae 11-segmented 35
34' Antennae 12-segmented 36

35(34) Head and mesosoma with distinct, widely spaced, longitudinal and loosely reticulate sculpturing; frons and most of head with longitudinal

sculpturing only; petiolar node smooth, shiny, and nearly square in profile (Fig. 12B) ..... *Tetramorium* sp. 14121952

35' Mesosoma with deep reticulate sculpturing, head with reticulate sculpturing at vertex; petiolar node sculptured and rounded in profile (Fig. 13E, 14A) ..... *Tetramorium smithi* Mayr 1879

36(34) Anterior edge or the dorsal pronotum with four evenly-spaced, stout hairs that are shorter than the spaces between them (Fig. 13C) ..... *Tetramorium simillimum* (Smith, F. 1851)

36' Anterior dorsal pronotal hairs numbering more than four and longer than the spaces between them 37

37(36) Hairs plumose, giving mesosoma fuzzy appearance (Fig. 13A, B) ..... *Tetramorium lanuginosum* Mayr 1870

37' Mesosoma not fuzzy 38

38(37) Mandibles with longitudinal striations 39

38' Mandibles smooth or only weakly pitted 40

39(38) Petiolar node quadrate; sculptured middle ridge of the frons distinct and cleanly split into two ridges that run parallel to each other at a point even with eyes, then rejoining before clypeus (Fig. 12C); dorsal propodeal spines longer than the height of the median peduncle by about half this height, about twice as long as ventral propodeal spines. ..... *Tetramorium bicarinatum* (Nylander 1846)

39' Petiolar node rounded in profile; middle ridge of frons indistinct, mixed with dense reticulate sculpturing, not temporarily split at level of eyes; dorsal propodeal spines equal to height of median peduncle and only slightly longer than ventral propodeal spines (Fig. 13F) ..... *Tetramorium tonganum* Mayr 1870

40(38) First gastral tergite with basal costulae (rounded ridges) ..... *Tetramorium pacificum* Mayr 1870

40' First gastral tergite without basal costulae ..... *Tetramorium insolens* (Smith, F. 1861)

41(33) Combining the following: Clypeus with two longitudinal carinae; propodeum smoothly rounded lacking teeth or spines; last 3 segments of the antennae forming a distinct club 42

41' Not with the above combination of characters 47

42(41) Maximum diameter of the eyes more than half the width of the antennal club 43

42' Maximum diameter of the eyes less than half the width of the antennal club 46

43(42) Dorsal surface of head finely and evenly sculptured, dull ..... *Monomorium pharaonis* (L. 1758)
43' Head shiny 44

44(43) Terminal antennal segment about as long as preceding two combined; gaster dark brown to black, other parts of body yellow-brown ..... *Monomorium destructor* (Jerdon 1851)
44' Terminal antennal segment distinctly longer than the combined length of previous two; coloration variable 45

45(44) Petiole, including peduncle, longer than tall (Fig. 4F); dorsal pronotum distinctly lighter than the vertex of head ..... *Monomorium floricola* (Jerdon 1851)
45' Petiole, including peduncle, only about as long as tall (Fig. 4E); concolorous dark ..... *Monomorium chinense*-group

46(42) Mesepisternum smooth and shiny; propodeal angles broad, about 140 degrees (Fig. 5A) ..... *Monomorium australicum* Forel 1907
46' Mesepisternum with coarse, reticulate sculpturing that gives it a dull appearance; propodeal angles steep, about 100 degrees (Fig 5B) ..... *Monomorium sechellense* Emery 1894

47(41) Dorsal mesosoma without standing hairs 48
47' Dorsal mesosoma with standing hairs 52

48(47) Mesosoma in profile with distinct dorsal furrow separating propodeum from promesonotum; propodeal spines long and thin, about as long as the height of petiolar node peduncle (Fig. 3A); head and mesosoma yellow-orange, gaster dark brown....*Cardiocondyla obscurior* Wheeler, W.M. 1929
48' Mesosoma smooth and continuous or with only a hint of a metanotal groove; propodeal spines not as long; head and gaster dark brown 49

49(48) Postpetiolar sternite convex; maximum height of petiole about equal to maximum height of postpetiole ..... *Cardiocondyla nuda* (Mayr 1866)
49' Postpetiolar sternite nearly flat; maximum height of petiole greater than maximum height of postpetiole 50

50(49) Propodeal spines short and blunt; head, mesosoma, and gaster overall dark brown, the gaster only slightly darker ..... *Cardiocondyla kagutsuchi* Terayama 1999

50' Propodeal spines distinct and pointed; mesosoma clearly lighter than gaster and head 51

51(50) Metanotal groove absent but suggested by a slight impression in the mesosomal profile; mesosoma orange to warm yellow, and gaster black to dark brown ..... *Cardiocondyla tjibodana* Karavaiev 1936
51' Metanotal groove completely absent, dorsal mesosoma flat or convex in profile; mesosoma yellow to brown, but without an orange or warm hue, and gaster black to dark brown ..... *Cardiocondyla minutior* Forel 1899

52(47) Combining the following: Petiole lacking anterior peduncle; frontal carinae elongate; antennal scrobes present; propodeum with thick, long (0.3 mm or longer) spines 53
52' Petiole with anterior peduncle; frontal carinae indistinct and shorter than half the length of antennal scape; antennal scrobes weak or absent; propodeum with or without spines, but if with spines, less than 0.3 mm 56

53(52) Propodeal spines approximately 0.5 mm long; pronotum flattened and marginate anteriorly and laterally ..... *Romblonella palauensis* Smith, M.R. 1953
53' Propodeal spines 0.3 mm long; pronotum not marginate as described above 54

54(53) Mesosomal dorsum with fine, reticulate sculpturing 55
54' Mesosomal dorsum sculpturing predominately shallow longitudinal rugulae and coarse reticulations..... *Romblonella yapensis* Smith, M.R. 1953

55(54) Propodeal spines straight or very slightly curved at most; head dark brown, remainder of body light brown ..... *Romblonella townesi* Smith, M.R. 1953
55' Propodeal spines distinctly curved; coloration of head, mesosoma, petiole, postpetiole, and gaster black..... *Romblonella* sp. 6051940

56(52) Antennae nine-segmented and with a two-segmented club ..... *Carebara atoma* (Emery 1900)
56' Antennae 12-segmented, clubbing variable 57

57(56) Antennae lacking apical club or appearing to have an indistinct four-segmented club; mesosoma generally smooth and shiny except for strongly punctate mesopleuron ..... *Aphaenogaster osimensis* Teranishi 1940
57' Antennae with three-segmented apical club, indistinctly only in *Rogeria* sp. 25111995; mesosomal sculpturing variable 58

58(57) Mesosomal profile smooth and more or less evenly convex, interrupted only by a small, notch-like metanotal groove 59
58' Mesosomal profile concave in profile, dropping between pronotum and propodeum 60

59(58) Dorsal propodeum between and anterior to propodeal spines coarsely punctate ..... *Rogeria stigmatica* Emery 1897
59' Dorsal propodeum between and anterior to propodeal spines smooth and shining ..... *Rogeria* sp. 25111995

60(58) Pronotal dorsum sculptured, not smooth and shining 61
60' Pronotal dorsum smooth and shining 63

61(60) Entire mesosoma of minors with deep, reticulate sculpturing (Fig 7A, B); (majors unknown) ..... *Pheidole* sp. 24041958
61' Entire mesosoma of minors with punctate sculpturing (Fig. 8B); majors with mostly punctate sculpturing, except for small smooth areas 62

62(61) Majors: Frontal carinae short: punctate sculpturing near eyes blending with linear sculpturing between antennae; entire mesosoma mostly punctured, even under reticulate sculpturing, except for small patches under the pronotal protuberances; Majors and minors: entire body reddish brown to orange. Minors: dorsal propodeum fairly flat in profile ..... *Pheidole nindi* Mann 1919
62' Majors: Frontal carinae long, clearly separating punctate sculpturing near eyes from linear sculpturing between antennae; mesosoma mostly covered in punctate sculpturing, although reticulate sculpturing on pronotum and smooth patches on lateral pronotum and mesosoma distinct; Majors and minors: entire body blackish orange to ashy brown. Minors: dorsal propodeum convex in profile ..... *Pheidole recondita* Clouse (in press)

63(60) Pronotum and mesonotum fused to form the promesonotum; in minor workers, promesonotum shiny dorsally 64
63' Pronotum and mesonotum separated by an impression that causes the mesonotum to look distinctly humped in side view, forming a separate section from pronotum and propodeum; mesonotum dull and sculptured dorsally 65

64(63) Majors with a large, often blunt median hypostomal tooth, flanked closely by two teeth, one on each side (two lateral teeth, one each near the mandibular insertions, are also present but difficult to see); propodeal teeth of minors reduced to minute denticles ..... *Pheidole umbonata* Mayr 1870
64' Major with two lateral hypostomal teeth (one each next to the mandibular insertions) only; minors with short but distinct propodeal teeth (Fig. 8A)

..... *Pheidole megacephala* (Fabricius 1793)

65(63) Majors: Area between eye and the antennal insertion with at least some reticulate sculpturing (Fig. 7C); dorsum of postpetiole mostly smooth and shining; majors and minors: propodeal spine shorter than maximum width of propodeal spiracle (Fig. 7D) ..... *Pheidole fervens* Smith, F. 1858
65' Majors: Area between eye and antennal insertion with longitudinal sculpturing only (Fig. 7E); dorsum of postpetiole mostly punctate, weakly shining; majors and minors: propodeal spine longer than maximum width of propodeal spiracle (Fig. 7F) ..... *Pheidole oceanica* Mayr 1866

66(1) Entire body surface matte due to dense punctures ..... *Prionopelta opaca* Emery 1897
66' Body surface slightly shining due to weaker sculpturing ..... *Prionopelta kraepelini* Forel 1905

67(3) Mandibles long, falcate, and without teeth; pretarsal claws pectinate ..... *Leptogenys falcigera* Roger 1861
67' Mandibles and pretarsal claws not as above 68

68(67) Mandibles long, slender, straight, bent sharply at apex (Fig. 1A) 69
68' Mandibles short and more or less triangular 71

69(68) Petiolar node with a single, sharp, apical spine ..... *Odontomachus simillimus* Smith, F. 1858
69' Apex of petiolar node rounded or acute, but no spine present 70

70(69) Dorsal surface of head and pronotum largely smooth and shining; petiolar apex acute in profile; head notably darker than remainder of body ..... *Anochetus splendidulus* Yasumatsu 1940
70' Median dorsal surface of head and usually rest of pronotal dorsum with conspicuous sculpture; petiolar apex rounded in profile; body and head concolorous, usually dark brown, although many specimens orange ..... *Anochetus graeffei* Mayr 1870

71(68) Pretarsal claws with a single median tooth (Fig. 8C); petiolar node longer than wide when viewed from above; body nearly devoid of erect hairs; antennal insertions widely separated by broad clypeus; hind legs with 2 pectinate spurs at apex of tibia ..... *Platythyrea parallela* (Smith, F. 1859)
71' Pretarsal claws simple; petiolar node usually broader or nearly as broad as long when viewed from above; body with erect hairs; antennal insertions closely approximated; tibial spurs not as above 72

72(71) Apex of hind tibia with two spurs: a large pectinate spur behind a much smaller, simple spur 73
72' Apex of hind tibia with one large pectinate spur 75

73(72) Sides of pronotum with fine longitudinal striations ..... *Pachycondyla atrata* (Karavaiev 1925)
73' Sides of pronotum without striations 74

74(73) In profile, mesosoma flat or weakly convex, propodeum continuous with promesonotum; mesopleuron rough and dull with various degrees of pilosity ..... *Pachycondyla stigma* (Fabricius 1804)
74' Mesosoma when viewed in profile with a distinct drop from mesonotum down to propodeum; mesopleuron smooth and shining, without hairs or sculpturing ..... *Pachycondyla luteipes* (Mayr 1862)

75(72) Compound eyes absent (Figs. 1B, 3F) 76
75' Compound eyes present 77

76(75) In profile, anterior face of petiole strongly concave while posterior face slightly convex (Figs. 1B, 4A); head and gaster with blackish-orange coloration ..... *Cryptopone butteli* Forel 1913
76' In profile, petiole with anterior and posterior faces sloping upward at nearly equal angles (Fig. 4B); body concolorous orange or head and gaster slightly darker ..... *Cryptopone testacea* Emery 1893

77(75) Ventral keel of petiole with a small translucent "window" and with two small teeth projecting posteriorly (Fig. 9A) 78
77' Ventral keel of petiole simple, lobe-like, completely opaque 82

78(77) Mesometanotal suture distinctly visible on dorsal mesonotum; antennae with a weak, five-segmented club; HW 0.36–0.40 mm ..... *Ponera incerta* (Wheeler, W.M. 1933)
78' Mesometanotal suture absent from dorsal mesonotum; antennal club variable; HW usually larger or smaller 79

79(78) Large species (HW 0.51–0.58); mesosoma dorsum with numerous erect hairs; antennal club indistinctly four- or five-segmented ..... *Ponera loi* Taylor 1967
79' HW smaller; dorsal mesosoma lacking standing hairs; antennal club distinctly four-segmented 80

80(79) Tiny species (HW 0.325 mm in single specimen); antennae with four-segmented club; anterior gaster with distinct corners when viewed from above (Fig 8E); overall color light orange-brown ..... *Ponera* sp. 10091995

80' HW 0.39–0.48 mm; gaster and antennal club not as above (Fig 8F); color orangish brown to dark brown 81

81(80) Petiolar node wide (PNI 80–93); HW 0.43–0.48 ..... *Ponera clavicornis* Emery 1900
81' Petiolar node narrow (PNI 66–78), HW 0.39–0.45 ..... *Ponera tenuis* (Emery 1900)

82(77) Petiolar node tapering dorsally, and its height (not counting the ventral process) distinctly greater than length; mesepisternum usually smooth and outlined by a carina 83
82' Anterior and posterior faces of petiolar node parallel, or if tapering slightly, then the height (not counting ventral process) nearly the same as the length; mesepisternum usually sculptured and fused with mesonotum 84

83(82) Eyes with 6 or fewer ommatidia (average of 4) (Fig. 4C); petiolar node tapering, but not severely, its dorsal tip flattened; often orange-brown, although some specimens dark brown ....*Hypoponera confinis* (Roger 1860)
83' Eyes with 7 to 20 ommatidia (average of 12); petiolar node tapering significantly, often creating a narrow, rounded dorsal point in profile; color dark brown to black.....*Hypoponera pruinosa* (Emery 1900)

84(82) Petiole quadrate, its length at base about the same as petiole height, not counting ventral process (Fig. 4D) ..... *Hypoponera punctatissima* (Roger 1859)
84' Petiolar node tall and parallel-sided in profile ..... *Hypoponera opaciceps* (Mayr 1887)

85(3) Petiole and propodeum with a pair of spines 86
85' Petiole and propodeum without spines 87

86(85) Dorsal mesosoma bordered by a flange that starts behind the head and continues to the propodeal spines; flange forming distinct corners on anterior-lateral pronotum (Fig 8D) ..... *Polyrachis* sp. 91952
86' Dorsal mesosoma missing a flange; anterior-lateral pronotum with sharp spines..... ..... *Polyrachis dives* Smith, F. 1857

87(85) Antennae with 9 segments ..... *Brachymyrmex obscurior* Forel 1893
87' Antennae with 11 or 12 segments 88

88(87) Antennal sockets set back from rear border of clypeus; antennae 12-segmented; workers polymorphic 89

88' Antennal sockets located at rear border of clypeus; antennae 11- or 12-segmented; workers monomorphic 98

89(88) Petiolar node flattened (Fig. 2D) 90
89' Petiolar node a raised projection or point (Fig. 2A–C, E–F) 91

90(89) Clypeus wider than tall; head tapering toward mandibles in front view; head and mesosoma reddish orange ..... *Camponotus eryhtrocephalus* Clouse (in press)
90' Clypeus width and height nearly the same or slightly taller than wide; head nearly square in front view; body overall matte black ..... *Camponotus peleliuensis* Clouse (in press)

91(89) Propodeum with distinct dorsal and posterior faces, mesosoma almost squarish in profile (Fig. 2E) 92
91' Propodeum lacking distinct dorsal and posterior faces, sloping with varying degrees of smoothness 93

92(91) Dorsum of gaster with a shiny coat of gold hairs; mesosoma and petiole with silver hairs of various lengths covering both dorsum and sides; body color uniformly black ..... *Camponotus flavicomans* Clouse (in press)
92' Dorsum of gaster lacking coat of gold hairs: body overall mahogany to black and hairs silver and scattered.... *Camponotus marianensis* Clouse (in press)

93(91) Gastral tergites with orange-brown posterior margins and yellow coloration anteriorly, creating a gaster with distinct transverse stripes ..... *Camponotus variegatus* (Smith, F. 1858)
93' Gaster not as above 94

94(93) Heads of smaller workers about as wide as long (excluding mandibles); propodeum in profile not sloping smoothly (Fig. 2F); mesosoma and gaster equally black or deep brown, although can fade to lighter shades at joints 95
94' Heads of all workers, but especially small ones, much longer than wide (excluding mandibles); propodeum in lateral view sloping smoothly to petiolar insertion (Fig. 2A, B, C); mesosoma yellow-orange to reddish brown (at least posteriorly), head and gaster orange or dark brown to black 96

95(94) Mesosoma with long, recumbent, silver hairs which are especially abundant on the dorsal surface ..... *Camponotus* sp. 121958
95' Mesosoma with some long standing hairs and more numerous small, fine, recurved hairs ..... *Camponotus reticulatus* Roger 1863

96(94) Maximum HW 2.3 mm and maximum HL 2.6 mm in major workers; maximum total body length 6.5 mm 97
96' Maximum HW 2.8 mm and maximum HL 3.0 mm in major workers; maximum total body length exceeding 8.0 mm ..... *Camponotus* sp. 1945

97(96) Long, standing hairs lateral to eyes present in majors; head and gaster orange, mesosoma often more yellow ..... *Camponotus chloroticus* Emery 1897
97' Long, standing hairs absent in majors; head and gaster dark brown to black, mesosoma yellow to yellow-orange ..... *Camponotus eperiamorum* Clouse (in press)

98(88) HW < 0.4 mm and mesosoma without standing hairs ..... *Tapinoma* (all species)
98' HW > 0.5 mm, but if smaller (as in *Paratrechina minutula*, below), then mesosoma with standing hairs 99

99(98) Antennal scapes more than 1.5X length of head 100
99' Antennal scapes less than 1.5X length of head.....101

100(99) Dorsum without standing hairs... *Anoplolepis gracilipes* (Smith, F. 1857)
100' Dorsum with numerous standing hairs .....*Paratrechina longicornis* (Latrielle 1802)

101(99) Anterior clypeal border evenly rounded, straight, or slightly concave; dorsal mesosoma with pubescence and coarse, standing hairs 102
101' Anterior mid-clypeal border with distinct concavity that in some cases appears as an obvious notch (*Technomyrmex*), or clypeal border with a projection (*Iridomyrmex*) in the middle; dorsal mesosoma without coarse, standing hairs, although some fine standing hairs are visible 105

102(101) HW < 0.4 mm; black, coarse, standing hairs on mesosoma; overall yellow (except for population on Guam, which is dusky orange-brown) ..... *Paratrechina minutula* (Forel 1901)
102' HW > 0.4 mm; brown, black, or gray 103

103(102) Upper sides of propodeum glossy (above the spiracle); katepisternum dark brown, bulbous and glossy, without pubescence or sculpturing (Fig. 6A–C) ..... *Paratrechina clandestina* Mayr 1870
103' Sides of propodeum above the spiracle pubescent; katepisternum not as above 104

104(103) Katepisternum pubescent; significant pubescence between propodeal spiracle and dorsum which continues ventrally anterior to propodeal spiracle (Fig. 5E) ..... *Paratrechina bourbonica* (Forel 1886)

104' Katepisternum glossy and without hairs (a few isolated hairs may be present along posterior and ventral borders of both katepisternum and pronotum, and a few isolated hairs may appear at central portion of katepisternum); pubescence between propodeal spiracle and dorsum slight and lacking pubescence around spiracle and often anteriorly to border with katepisternum (Fig 5F) ..... *Paratrechina vaga* (Forel 1901)

105(101) Anterior clypeal border with projection in middle; petiole with distinct node that rises steeply to height more than half that of propodeum; dorsal mesosoma without standing hairs ..... *Iridomyrmex anceps* (Roger 1863)

105' Anterior clypeal border with notch in middle; petiole a flattened scale, often covered by gaster; dorsal mesosoma with standing hairs 106

106(105) Body length approximately 2 mm; antennal scapes barely extending beyond vertex; uniformly dark grey ..... *Technomyrmex albipes* (Smith, F. 1861)

106' Body length > 2 mm; antennal scapes clearly reaching beyond vertex by more than one fourth their length; uniformly brown ..... *Technomyrmex kraepelini* Forel 1905

Specimens Examined

SUBFAMILY CERAPACHYINAE

TRIBE CERAPACHYINI

Cerapachys

Specimens of this genus could be confused with *Prionopelta* due to the broad attachment of the petiole, postpetiole, and gaster; but the visibility of the antennal insertions when viewed from the front in *Cerapachys* makes it distinct from any other genera in Micronesia. Within the genus, the two Micronesian species can be identified by the size of the eyes.

***Cerapachys biroi* Forel 1907**

Fig. 16

Specimens examined: Mariana Is.: Guam I., Piti (Sw, 26-VIII-36 NMNH); Guam I., Piti (Sw, 28-IX-36 NMNH)

***Cerapachys* sp. 91952**

Figs. 3B–C, 16

Specimen examined: Palau: Ulebsechel I. (Ks IX-52)

Unexamined MRSI specimens: Four collections of males identified only to genus: Palau: Peleliu I. (Dy Hg 45), Ulebsechel I. (Gr 52)

Taxonomic notes: The one available specimen was lost while taking electron micrographs, but I believe it is different from other *Cerapachys* species. It most closely resembles *C. salimani* Karavaiev 1925 in overall shape and puncturation; however, sp. 91952 is smaller, redder, and slightly hairier. The next closest species appears to be *C. dohertyi* Emery 1902, which is larger and has more distinct carina and punctures. Measurements estimated from the SEMs are as follows: HL 1.6, dorsal mesosoma length = 1.86, PL 1.0, anterior PH = 1.04, middle PH = 0.84.

SUBFAMILY DOLICHODERINAE

Iridomyrmex

This genus has only one species in Micronesia, but its overall appearance can lead it to be mistaken for members of *Technomyrmex* or *Paratrechina*. However, its small projection on the clypeal margin and lack of any standing hairs on the dorsal mesosoma distinguish it from both.

***Iridomyrmex anceps* (Roger 1863)**

Formica anceps Roger 1863

Fig. 17

Specimens examined: FSM Chuuk: Nomwin A., Fananu I. (Be 54); Satawan A., Ta I. (Be 52); Weno I., Civ. Ad. Area (Po 49); FSM Pohnpei: Pingelap A. (Gr 53); Pohnpei I., Kolonia (Ad 50); FSM Yap: Central Map I. (Gs 50); Central Yap I. (Gs 50); Elato A., Elato I. (M-6295, collector unknown 53); Fais I. (Ks 52); Faraulep A., Faraulep I. (Ks 52); Faraulep A., Pigue I. (Ks 52); Ifalik A., Ifalik I. (Bt 53); Ifalik A., Ifalik I. (at light, Bt 53); N. Map I. (Gs 50); S. Yap I. (Gs 50); Satawal I. (Ks 52); Ulithi A., Potangeras I. (Dy 47); Woleai A., Falalis I. (Ks 52); Woleai A., Woleai I. (Ks 52); Mariana Is.: Anatahan I. (grassy area, Bq 2002); Anatahan I. (sandstone capped ridge, Bq 2002); Saipan I., Papago* (weedy secondary area, grass and *Ipomoea*, Bq 2002); Saipan I., Papago* (house, Bq 2001); Saipan I., Papago* (on trunk of *Trema guineensis*, Bq 2001); Marshall Is.: Arno A., Ine I. (banana, Lr 50); Arno A., Ine I. (nite lite sea beach, Lr 50); Arno A., Ine I. (Lr 52); Kwajalein A. (collector unknown 67 NMNH); Kwajalein A. (By 44); Majuro A. (By 44); Palau: Ulebsechel I. (Ks 52); NW Ulebsechel I. (Gr 52); Tobi I. (Ks 52)

Specimens collected: FSM Pohnpei: Mokil A. (on airport runway; by hand; Ok; 95); Pohnpei I. (road to Lehnpeinpohn Falls: in short grass in clear area;

Nahnalaud cave: under moss on tree around camp, under dead leaves, under rotten leaves around camp; PATS: in room on bed; PATS farm: on leaves in swamp taro patch, under banana tree, in rotten twig; by hand; Cs Ep; 94 95 2000)

Unexamined MRSI specimens: Additional 26 collections, by Bt Be Fs Gr Kr Lr Po, 1949-53, from the following already-recorded areas: FSM Chuuk: Nama I., Weno I.; FSM Yap: Ifalik A.; Marshall Is.: Ailinglaplap A., Majuro A., Namu A.

Habitat: From inside buildings to native forest at all elevations

Tapinoma

Fig. 19 (distribution map for all species combined)

The *Tapinoma* in Micronesia are very small, grayish brown to yellow ants with thin exoskeletons devoid of standing hairs. They might be confused with small specimens of *Brachymyrmex*, but the latter has a fringe of hairs around the apex of the last sternite and only nine antennal segments.

Tapinoma is quite unresolved in the Indo-Pacific. At the beginning of this project, I followed Wilson and Taylor (1967) and their designation of two widespread species in the area: *T. melanocephalum* (Fab. 1793), which has a dark head, yellow antennae and gaster, and scapes that extend past the vertex by a length more than the length of the first segment of the funiculus; and *T. minutum* Mayr 1862, which is overall brown and has scapes that barely pass the vertex. (Wilson and Taylor also differentiated the species by the size of the petiolar node, but in many specimens the node was not visible and thus not useful.)

From the collections I made on Pohnpei, several specimens did not appear to be either species and were set aside for later work. After seeing many more specimens, I decided to make four groups: those that had a mixture of *melanocephalum-minutum* scape length and coloration (*Tapinoma A* or *B*, depending on which combination) and those I felt confident were one or the other species. Subsequently, work by S. Cover at MCZ reidentified some of the *minutum* specimens I had seen earlier, and he noticed three distinct morphologies in their reference collection (one form, from the Solomon Islands, has very small eyes and was not noticed among Micronesian specimens). Adding to this uncertainty has been the use by M. R. Smith and E. O. Wilson of what is apparently a manuscript name, *maculata*, for a small number of alates collected in Yap and Palau.

In addition, reports of *indicum* Forel 1895 from the Mariana and Marshall Islands (see Wetterer, in prep.) indicate that some collectors have felt this third species to be the best determination for forms that lie outside of *melanocephalum* and *minutum*. I have seen an *indicum* type, and indeed, its round, brown head and

short, yellow scapes give it a color-scape mixture that might ally it with my undetermined specimens. Still, this appearance is well within the range of specimens in *minutum* reference collections and most closely resembles some specimens from Ifalik Atoll specimens previously identified as *minutum*.

This collection from Ifalik (FSM Yap: Iflaik A., Ifalik I., Ks 25-IX-1952) is illustrative of *Tapinoma*'s problems in the Pacific. One specimen with extended, yellow scapes, dark head, and yellow pronotum was identified as *melanocephalum*; another, with short scapes and a brown pronotum was identified as *minutum*. If this collection was actually done in different areas and/or at different hours, then perhaps this little islet is home to two species of *Tapinoma*, but if these workers were pulled from the same foraging line, then completely different hypotheses about what is happening with *Tapinoma* in the Pacific are suggested.

I retained my original four-group arrangement but noted the determinations of M. R. Smith and S. Cover where, based on collecting information, it appeared I examined the same specimens. Various determinations of the same specimens are noted in superscript as follows: 1. in MRSI as "*melanocephalum*," 2. in MRSI as "*melanocephalum*-group," 3. in MRSI as *Tapinoma* only, 4. determined by Cover as *melanocephalum*, and 5. labeled by Cover as "*minutum*?" In general, Smith, and Cover, and I agree: few of what I called *melanocephalum* specimens were left as just *Tapinoma* by Smith or determined to be *minutum* by Cover, and likewise, none of my *minutum* were determined to be *melanocephalum* by Smith. For some exceptions, the collection labels were rather unspecific and could have encompassed several different collections (*e.g.*, Yap I. by Goss in 1950).

***Tapinoma A* (color like *minutum*, scapes like *melanocephalum*)**

Specimens examined: FSM Chuuk: Fefan I., Mt. Iron (Gr 53)[2,5]; FSM Pohnpei: Pohnpei I., Pwel Weita (15 m, Gr 53)[2,4]

Specimens collected: FSM Pohnpei: Pohnpei I. (Awak: in Okihiro-Ruze residence; road to Nett Point: roadside grasses; Nett Point: under bamboo; PATS; by hand; Cs Ok Ru; 96 and 96)

***Tapinoma B* (color like *melanocephalum*, scapes like *minutum*)**

Specimens collected: FSM Pohnpei: Ant A. (on vines at beach, foraging on coconut leaf; by hand; Cs; 94 95 2000); Pohnpei I. (wire fern patch on trail to Mt. Nahnalaud at 400 m: under dead grass; Nett Point: from old banana leaf, from car; PATS: in men's staff dorm (CLTC), on lime tree at farm, in and on rotten stick, in foraging trail on *Lantana* branches; Cs; 94 95 2000)

***Tapinoma melanocephalum* (Fab. 1793)**

Formica melanocephala Fabricius 1793

Fig. 19

Specimens examined: FSM Chuuk: Erin, Tonoas I. (Ya&Yo 40)[4]; Fefan I., Mt. Iron (Gr 53)[2]; Nama I. (Po 49)[1,4]; Tol I., Mt. Unibot (beating, Po 49); Weno I. (Es 39)[4]; Weno I., N. Basin of Mt. Chukumong* (Po 49)[2]; FSM

Kosrae I.: Malem River (Es 37)[4]; FSM Pohnpei: Kapingamarangi A., Touhou I. (Ni 54)[1]; Kapingamarangi A., Touhou I. (common on food fragments, Ni 54)[4]; Pingelap A. (Gr 53)[2]; Pohnpei I., Airport (1020, Na 86)[4]; Pohnpei I., Kolonia (Es 37)[4]; Pohnpei I., Mt. Temwetemwensekir (180 m, Gr 53)[2]; Pohnpei I., Nett M., Nanpil (Dy 48); Pohnpei I., Pwel Weita (15 m, Gr 53)[2,4]; FSM Yap: Gagil M. (Gs 50)[1,5]; Ifalik A., Ifalik I. (Ks 52)[2,4]; Ruul M. (Gs 50)[2,3]; S. Rumung I. (Gs 50)[2]; Satawal I. (Ks 52)[2]; Woleai A., Falalis I. (Ks 52)[2]; Yap I. (Gs 50)[2,4,5]; Kiribati: Tarawa A., Bairiki I. (Ks 57); Tarawa A., Bikenibeu I. (Ks 57)[5]; Tarawa A., Teaoraereke* (Ks 57); Mariana Is.: (coconut on stem, Hw 44 NMNH); Guam I., Agana Spring (sweeping, Bh&Gr 45)[2]; Guam I., Mt. Balanos (Ks 52)[2]; Guam I., Mt. Lamlam (Ks 58); Guam I., Pago Bay (Bh&Gr 45)[2]; Guam I., Pt. Oca (Bh&Gr 45)[4]; Guam I., Yona (Ks 52)[2]; Saipan I., Talufofo Valley (Bq 2001); Marshall Is.: Arno A., Ine I. (Us 50)[1,4]; Enewetak A., Engebi I. (Os 51); Enewetak A., Engebi I. (under dry leaves, Os 51)[2]; Palau: [no locale; prob. E. Ngatpang] (65 m, Gr 52); Babelthuap I. [no locale; prob. Ngaremeskang] (25 m, Gr 52); Wake A. (U.S.): Wake I. (sage fl., Os 59)[4]

Specimens collected: FSM Pohnpei: Pohnpei I. (above Keprohi falls at 250 m, Malen Pahnpe: on tree fern; along river above Mahnd: at top of living tree fern; Mall I.: on mangrove trunk, in ginger flower, on rotten log in mangroves, in leaf bases of newly fallen coconut tree; PATS: on taro leaf, in staff kitchen, on hibiscus, in men's staff dorm (CLTC) on wall; mangrove swamp around Nan Madol: on tree trunk; Mt Nahnalaud: extract of grass, mud, and moss, in wet leaves and wood; road to Nett Point: on roadside grasses; Pohlangas Lookout: on rotten log; in forest behind Salapuk: on rotting fruit, in leaf litter; Sapwehrik Falls at 50 m; Sokehs Ridge at top 200 m: on *Lantana* and other weeds; by Berlese and hand; Cs and Ok; 94 95 2000)

***Tapinoma minutum* Mayr 1862**

Fig. 19

Specimens examined: FSM Chuuk: Tol I., Mt. Unibot (Gr 52)[2]; Weno I., Mt. Teroken* (Gr 52)[2]; Weno I., N. Basin of Mt. Chukumong* (banana stub, Po 49); FSM Kosrae I.: Lelu M. (Es 37); FSM Pohnpei: Mokil A. (sweeping, Gr 53)[2]; Pingelap A. (Gr 53)[2]; Pohnpei I., Sokehs (2 m, Gr 53)[2]; Pohnpei I., E. Nanponmal (50 m, Gr 53); Pohnpei I., Kolonia (Ad 50)[2]; Pohnpei I., Kolonia, Ag. Station (Ad 50)[2]; Pohnpei I., Mt. Temwe-temwensekir (180 m, Gr 53)[2]; FSM Yap: Fais I. (Ks 52)[2]; Ifalik A., Ifalik I. (Ks 52)[2]; Satawal I. (Ks 52)[2,5]; Sorol A., Sorol I. (Ks 52)[2]; Colonia (Gr 50)[2,5]; Rumung I. (Kr 52)[2,5]; S. Yap Isl. (Gs 50 NMNH)[2]; Ulithi A., Asor I. (Ks 52)[2]; Ulithi A., Mogmog I. (Ks 52)[2]; Woleai A., Falalis I. (Ks 52)[2]; Woleai A., Woleai I. (Ks 52)[3]; Kiribati: Banaba I. (Ks 57)[5]; Butaritari A., Butaritari I. (Ks 57); Tarawa A., Bairiki I. (Ks 57); Tarawa A., Eret I.* (Ks

57)[4,5]; Tarawa A., Taborio* (Ks 57); Tarawa A., Teaoraereke* (Ks 57); Mariana Is.: Guam I., Anderson Air Force Base (Ks 52)[3]; Guam I., Barrigada Heights (attacking pupa and larva of *Hypolimnus anomala*, Na 87 NMNH); Guam I., Cocos I. (Ks 57); Guam I., Mt. Alifan (Ks 46)[2]; Guam I., Mt. Santa Rosa (Bh&Gr 45)[2]; Guam I., Potts Junction (Ks 52)[2]; Guam I., Yigo (Ks 57); Guam I., Yigo (Ks 58); Rota I., Sabanna monument (Bq 2002); Saipan I., Ants Valley* (coffee berry, Oa 46)[2]; Saipan I., As Palacios (15 m, Bn 2002); Saipan I., Matansa (Ks 46)[2]; Marshall Is.: Arno A., Ine I. (Lr 50)[2]; Arno A., Ine I. (sweeping *Wedelia biflora*, Lr 50); Jaluit A., Jabwor I. (Gr 58)[5]; Jaluit A., Mejrirok I. (Gr 58)[5]; Kwajalein A., Ebeye I. (Gr 58)[5]; Kwajalein A., Kwajalein Islet (Ks 58); Majuro A., Uliga I. (Lr 50)[2]; Palau: Babelthuap I., E. Ngatpang ([2 different collections], 65 m, Gr 52)[2,5]; Kayangel A., Ngajangel (sweeping, Gr 52)[2]; Koror I. (Kr 52)[2,5]; Koror I. (sweeping, Be 54)[2]; Ngulu A., Ngulu I. (Ks 52)[2]; Sonsorol I. (Ks 52)[2]; Tobi I. (Ks 52)[2]

Specimens collected: FSM Pohnpei: Ant A. (nest under coconut tree leaf bases by beach, foraging on rack at top of beach; by hand; Cs; 2000); Pohnpei I. (Dollekei: roadside grasses; between Mahnd and Sapwehrik at 80 m: in ginger flower; 0.4 km from Ace Commercial in Kolonia to Kitti: at edge of mangroves; Mall I.: on dead, mossy log in intertidal zone in mangroves; on rotten log in mangroves, in rotten log; mangroves around Nan Madol: on tree trunk; road to Nett Point: on roadside weeds and grasses; PATS: on taro leaf, on building; by hand; Cs Ok; 94 95 2000)

Unexamined MRSI *Tapinoma melanocephalum / minutum* specimens:

Additional 13 collections of workers, by Be Gr Gs Po 1949-53, from the following already-recorded areas: FSM Chuuk: Nomwin A.[1], Tol I.[2]; FSM Pohnpei: Pohnpei I.[2]; FSM Yap: Map I.[2], Yap I.[2]; Palau: Babelthuap I.[1]. Also in MRSI are over 30 collections of just alates.

Tapinoma maculata (not published, det: E. O. Wilson)

Specimens examined: Palau: Kayangel A., Ngajangel (light trap, queen, Gr 15-XII-52); S.W. Koror I. (25 m, light trap, queen, Gr 12-XII-52)

Unexamined MRSI specimens: FSM Yap: Yap I., Yap Hill, behind Yaptown (alate female, light trap, 60 m, Gr 52 MRSI)

Technomyrmex

Most easily confused with *Paratrechina* and *Iridomyrmex*, this genus is readily identified by the indentation or notch in its clypeal border and the presence of fine (but not stout) standing hairs. The two species of *Technomyrmex* in Micronesia can be distinguished by the lengths of their scapes, and if specimens of both species are obtained, relative body size and coloration.

***Technomyrmex albipes* (Smith, F. 1861)**

Formica (Tapinoma) albipes Smith, F. 1861

Fig. 19

Specimens examined: FSM Chuuk: Fefan I., Mt. Iron (Gr 53); Nomwin A., Fananu I. (Be 54); Nomwin A., Nomwin I. (Be 54); Tol I., Olej, Foup (Ya&Yo 40); Weno I., Civ. Ad. Area (Po 49); Weno I., Mt. Teroken* (25-50 m, Gr 53); FSM Kosrae I.: Mutunlik (Ck 53); FSM Pohnpei: Pohnpei I., Kolonia, Ag. Station (Ad 50); Pohnpei I., Mt. Temwetemwensekir (Gr 53); Pohnpei I., Mt. Temwetemwensekir (160 m, Gr 53); Pohnpei I., Mt. Temwetemwensekir (180 m, Gr 53); FSM Yap: Central Yap I. (Gs 50); Colonia (Gs 50); Dugor-Rumuu (10 m, Gr 52); Gagil M. (Gs 50); Kanif (Gs 50); Map I. (Ks 52); Rumung I. (Ks 52); Ruul M.—Nif* (Es 39); Ruul M. (Gs 50); S. Yap I. (Gs 50); Satawal I. (Ks 52); Tomil M. (Gs 50); Ulithi A., Fossarai I. (Ks 52); Woleai A., Falalis I. (Ks 52); Yap I. (Be 54); Yap I. (Gs 50); Yap I. (Gr 51); Yap I. (Ks 52); Yap I., Keng (Gs 50); Yap I., Yap Hill, behind Yaptown (60 m, Gr 52); Yap I.: Dugor (10 m, Gr 52); Yap I.: Kanif (Gs 50); Yap I., Mt. Gillifitz (150 m, Gr 62); Mariana Is.: Guam I. (collector unknown 71); Guam I. (Na&Sc 86-90); Guam I., Mt. Alifan (Ks 46); Guam I., Mt. Lamlam (Gr 52); Guam I., Libugon (Sw 36 NMNH); Guam I., Mt. Lamlam (Ks 57-8); Guam I., Mt. Lamlam (Ks 57); Guam I., Mt. Tenjo (Sw 36); Guam I., Nimitz Hill (Cg 56); Guam I., Pt. Oca (Gr 45); Guam I., Pt. Ritidian (Bh&Gr 45); Saipan I. (En 49); Tinian I. (Bq 2002); Palau: Ulebsechel I. (Ks 52); Babelthuap I., Airai (Dy 48); Babelthuap I., E. Ngatpang (Gr 52); Babelthuap I., Imeliik, Netkeng* (Sa 57); Babelthuap I., Imeliik, Netkeng* (jungle, Sa 57); Babelthuap I., Iwang (Gr 52); Babelthuap I., Ngarard—Ngarasumao*(Es 38); Babelthuap I., Ngardmau* (Sa 57); Babelthuap I., Ngarehelong (Sa 57); Babelthuap I., Ngerehelong (Sa 57); Babelthuap I., Ngerehelong (along streams, Sa 57); Babelthuap, Ngiwal (1m, Gr 52); Koror (40 m, Gr 52); (Ks 52); Koror (40 m, Sa 57); Koror (limestone ridge) (40 m, Gr 52); Koror I. (Ks 52); Koror I. (bamboo, Md 56); Koror I., Arumizu (Es 38); Koror I., Koror (Ys 38); Malakal I. (Sa 57); Malalai I.* (Sa 57); N.E. Koror I., limestone ridge (40 m, Bh&Gr 52); Kayangel A.(Sa 57); Ngarard—Ngarasumao* (Es 38); Peleliu I. (on shrubs, Dy 48); Peleliu I., Mt. Amiangal (Gr 52); S. Angaur I. (Es 38); S.E. Ulebsehel I. (Sa 57); S.E. Ulebsehel I. (Sa 57)

Specimens collected: FSM Pohnpei: Pohnpei I. (Kitti: in dead fern branch in high-elevation sakaw clearing, walking on dead palm branch; PATS: alate on computer screen; Pohlangas Lookout: on rotten log; by hand; Cs; 94 2000)

Unexamined MRSI specimens: Additional 116 collections, by Ba Bt Be Bh Ck Dy Fs Gs Gr Hg Kr Ln, 1944-54, from the following already-recorded areas: FSM Chuuk: Tol I., Tsis I.; FSM Kosrae I.; FSM Pohnpei: Pohnpei I.;

FSM Yap: Ifaluk A., Map I., Rumung I., Satawal I., Ulithi A., Woleai A., Yap I.; Mariana Is.: Guam I., Saipan I., Tinian I.; Palau: Angaur I., Babelthuap I., Kayangel A., Koror I., Peleliu I., Sonsorol I.

Habitat: Low- to mid-elevation, human-disturbed areas

***Technomyrmex kraepelini* Forel 1905**

Fig. 19

Specimens examined: FSM Yap: Central Yap I. (Gs 50); Colonia (Be 54); Colonia (Gs 50); Dugor—Rumuu* (Gr 52); E. Rumung I. (Gs 50); Gagil M. (Gs 50); Map I. (Ks 50); Rumung I. (Ks 52); S. Map I. (Gs 50); Yap I. (Gs 50); Yap I. (Ks 50); Mariana Is.: Guam I., Talofolo (Ks 50); Rota I. (litter, shaded valley, Bq 2002); Saipan I., Papago* (limestone forest litter, Bq? 2002); Tinian I. (at bait, Bq 2002); Palau: Babelthuap I., Ngaremeskang (Gr 52); Babelthuap I., Ngerehelong (along streams, Sa 57); Kayangel A., Ngajangel (Gr 52); Kayangel A.(Sa 57)

Specimens collected: FSM Pohnpei: Pohnpei I. (above Keprohi Falls at 350 m, Malen Pahnpe: on betelnut palm; road to Lehnpeinpohn Falls: in short grass in clear area; along river above Mahnd at 300-400 m: on fern leaves in sakaw patch; forest behind Salapuk: in ginger flowers; PATS: in elephant grass patch; Sokehs Ridge at top 200 m: on *Lantana* and other weeds; by Berlese funnel and hand; Cs; 94 95)

Unexamined MRSI specimens: Additional 31 collections, by Be Dy Gr Gs Kr, 1945-54, from the following already-recorded areas: FSM Pohnpei: Pohnpei I. (mostly males from light traps); FSM Yap: Map I., Yap I.; Mariana Is.: Guam I.; Palau: Babelthuap I., Koror I.; and the following new area: FSM Chuuk: Tol I., Mt. Unibot (male, native forest, Gr 53)

Habitat: Mid-elevation forests

SUBFAMILY FORMICINAE

TRIBE BRACHYMYRMECINI

Brachymyrmex

A rare invasive known from only a single specimen from Guam, this genus is most readily determined by its nine-segmented antennae. Other Formicinae and Dolichoderinae in Micronesia have 11- or 12-segmented antennae.

***Brachymyrmex obscurior* Forel 1893**

Brachymyrmex heeri var. *obscurior* Forel 1893; raised to species by Wilson and Taylor (1967)

Fig. 16

Specimens examined: Mariana Is.: Guam I., Mt. Lamlam (on plants, Ks 57)

Taxonomic notes: Native to Central America and widespread in the West Indies, this species is a reluctant and/or recent exotic in the Pacific. It is found rarely on the three islands in the Pacific with the most extensive human contact—Samoa, Hawaii, and Guam. The status of *obscurior* as a species distinct from *heeri* is by no means certain; *obscurior* is a small, dark, ground-dwelling form, and its designation as a species by Wilson and Taylor (1967) was a "…provisional measure, contingent upon a fuller revision of the large and difficult genus to which it belongs." That revision is still pending.

TRIBE CAMPONOTINI

Camponotus

Species of *Camponotus* are larger and more visible than most species, but they are often too agile to collect easily. The genus can be difficult to identify at first, for many species appear quite different from each other. Collections of several individuals may allow one to see the various sizes of the workers—polymorphism being a good character—but for single individuals, the 12-segmented antennae inserted away from the clypeal border and the protruding lip at the apex of the propodeum (appearing as a raised point when viewed laterally) are reliable characters in Micronesia. Within the genus, species can be best identified by the shape of the propodeum and petiole in profile, the shape of the head, the pilosity, and, in many cases, the coloration.

Although most species in this genus can be easily distinguished by profile shape, pilosity, and color, I have left two *Camponotus* species groups as unresolved: *reticulatus* and *maculata*. What has been called "*Camponotus reticulatus*" in Micronesian collections may in fact be *bedoti* (Wetterer & Bourquin, in prep). The latter species has types from a nearer and more similar locale (Indonesia versus Ceylon) than *reticulatus* but has also been synonymized with *reticulatus* and revived more than once. I have not seen type specimens of either, nor do I know the specific characters used by others to separate them. The specimens from Micronesia I examined appear to be conspecific, but a definite appraisal requires an extensive examination of specimens from the entire range.

As for the *maculatus* group, Wilson and Taylor (1967) drew attention to its problems while discussing *C. irritans chloroticus* (which they raised to species status) and *C. variegatus*. The history of this group can be reconstructed in detail from Bolton's (1995) catalog, but briefly, *irritans* has been a subspecies of *maculatus*, which has been a subspecies of *rubripes* and *sylvaticus*, the latter of which has been a subspecies of both the former and *maculatus*; *tinctus* has been a subspecies of *maculatus* and *irritans*, as has *pallidus*; *variegatus* was a variety of *sylvaticus* and *maculatus* until it, like all the forms mentioned in this group here, was raised to its present status as species. I am inclined to believe that

Sugarman's 1972 report of *C. variegatus* from Kwajalein Atoll (Marshall Is.) is likely a collection of the form with the distinctly marked gaster known from Hawaii, due both to its location and modern determination. However, it could easily be that the following reported specimens are various shades of *chloroticus*, *variegatus*, or some of the extremely large-headed forms like *C.* 1945 (below): Stitz's 1925 report of *C. tinctus* var. *volkensi* from the Caroline Islands (reported in Wheeler, 1935, as Yap (FSM Yap), although I believe that is a misunderstanding of Stitz's locale "Karolinen (Jap.)," the Japanese-controlled Carolines); Emery's 1914 report of *C. variegatus* var. *novae-hollandiae* (now raised to species) from Palau; and Ehrhorn's 1939 report of *C. maculatus* from Kosrae (FSM Kosrae I.).

After examining various forms while trying to determine *C.* sp. 1945 from Palau, my inclination is that the *maculatus* group may contain more good species (like *chloroticus* and *eperiamorum*) than synonymies. Head pilosity, head color, gastral markings, nodal shape, and mesosoma profile vary extensively but not always continuously. *Camponotus* sp. 1945 closely resembles specimens in the MCZ collection identified as *C. variegatus* var. *papuana*, except that sp. 1945 has a shinier, darker head, steeper propodeum, more pointed petiolar node, and, in the minors, less elongate mesosoma. MCZ specimens identified as *maculatus* have larger heads than sp. 1945, and they often have light spots on the dorso-lateral gaster, which sp. 1945 is missing. MCZ specimens identified as "*irritans* var. *tincta*" (now species *tinctus*) are very close to sp. 1945 in head shape and color but have dense pilosity on the head, which sp. 1945 lacks; conversely, an MCZ specimen labeled "*irritans* var. *pallida*" (now also raised to species) is very similar in head shape and pilosity to sp. 1945, but is entirely brown, contrasting sharply with sp. 1945's deep black.

Finally, there is *Camponotus schneei* Mayr 1903, the types of which are from the Marshall Islands. As a potential Marshall Islands endemic, this record is intriguing, and as a member of the subgenus *Colobopsis*, it is not a member of the *maculatus* group (subgenus *Myrmoturba*). However, Mayr reports that the head shape is different from most *Colobopsis*, and the description, while long, lacks figures. The color—major brown-black with a yellowish-red head, yellow-white gaster segment edges, and rust-red mandibles—is interesting, but given the collection locale, this could easily be an import from Asia, Polynesia or America and not a new species, and the types should be found and examined carefully.

***Camponotus chloroticus* Emery 1897**

Figs. 2B, 16

Camponotus maculatus subsp. *chloroticus* Emery 1897; raised to species by Wilson and Taylor (1967)

Specimens examined: FSM Chuuk: Dublon I. (decayed coconut, On 35); Param I. (decayed wood, On 36); FSM Kosrae I.: Lelu I. (Oa 45 NMNH); Mt. Buache (1500-1930 ft., Tw 46 NMNH); Mt. Tufuyat (800-1200 ft., Tw

46 NMNH); FSM Pohnpei: Kapingamarangi A. (Tw 46 NMNH); Pohnpei I., Kolonia (Oa 46 NMNH); FSM Yap: Ulithi A. (Oa 46 NMNH); Woleai A., Utagal I. (Tw 46 NMNH); Mariana Is.: Agiguan I. (Hy 2002); Anatahan I. (grassy camp area, Bq 2002); Anatahan I. (streambed edge, ferns, Bq 2002); Guam I. (Fu); Guam I. (Lot No. 37-24090, collector unknown, 26-VIII-37 NMNH); Saipan I., As Palacios (15 m, Bn 2002); Tinian I. (Bq 2002); Tinian I., beach S. of Gurgan Pt. (Dy 45); Marshall Is.: Bikini A. (Mo 46 NMNH); Enewetak A., Igurin I. (Oa 46 NMNH); Jaluit A., Imroj I. (Oa 46 NMNH); ([no locale], No. 9, lot 44-17317, N.M.Sch.Ser.30 44 NMNH)

Specimens collected: FSM Pohnpei: Ant A.: (foraging on rack at top beach, foraging on tree overhanging water, nest under husk of old coconut, nest in coconut shell, nest in rotten twig on tree, nest in rotting coconut husks on ground, on dead branch on ground; Cs Ok; 94 96 2000); Pohnpei I. (Awak: in house, queens at light; Malen Pahnpe above Keprohi Falls: nest in dead tree fern at 350 m; Nett Point: from old banana leaf; PATS: in and on rotten stick on farm, on computer screen in house; Pohlangas Lookout: on rotten log; between Wapar and Pohlangas: in chambers in rotten stem, in dead tree fern branch at 60 m; by hand; Cs Ok; 94 95 96 2000)

Habitat: Atoll habitat (coconut forests), human-disturbed areas, to mid-elevation forest

***Camponotus eperiamorum* Clouse (in press)**

Figs. 2C, 16

Holotype examined: FSM Pohnpei: Pohnpei I.: Mt. Nankep (1700-2000 ft., forest plants, Tw 10-VIII-1946 NMNH)

Paratypes examined (37): Pohnpei I.: Mt. Nankep (1700-2000 ft., forest plants, Tw 10-VIII-1946 NMNH)

Paratypes collected (49): FSM Pohnpei: Pohnpei I. (Awak: 4 queens and 1 male at light at residence; Ok; 9-VI-96); (Kitti: on dead fern branch in high-elevation sakau clearing; Cs; 24-III-2000); (on road to Lehnpeinpohn Waterfall: under dead leaves on ivory nut tree; Ok&Cs; 26-XI-95); (upland forest camp near river at 300 m carrying food up tree; Cs; 5-III-95); (along river above Mahnd: large nest inside dead ivory nut branch at 200 m; Cs; 29-X-94); (0.5 mile up river from Mahnd: large nest in dead tree fern branch leaning on ivory nut tree; Cs; 29-X-95); (Malen Pahnpe above Keprohi Falls: on ivory nut along river at 350 m; Cs; 9-VII-94); (to Mt. Nahnalaud, upland forest camp near river at elevation 300m, carrying food up tree; Clouse; 5-III-1995); (to Mt. Nahnalaud from Kitti: walking on dead log at 300 m; Cs; 8-IX-95)

Other specimens examined (3): FSM Pohnpei: Pohnpei I.: Mt. Nankep ([specimens on monocot midribs, possibly elephant grass, *Pennisetum purpureum* Schumach; clenching it with mandibles, covered with dried hyphae, large (max: 2.5 cm) fruiting body coming out of neck behind head] 1800 ft., Tw 13-VIII-46 NMNH)

Habitat: Mid- to high-elevation forest

***Camponotus eryhtrocephalus* Clouse (in press)**

Figs. 2D, 16

Holotype examined: FSM Yap: Yap I., Yaptown, Mt. Matade (No. 1087, Tw 12-VII-46 NMNH)

Paratypes examined (2): FSM Yap: Yap I. (Gs Jul-Aug, 50)

***Camponotus flavicomans* Clouse (in press)**

Fig. 16

Holotype examined: Palau: Babelthuap I., Ngiwal—Ngarard* (Es 6-II-38)

Paratypes examined (5): Palau: Babelthuap I. (Oa 22-VII-46 NMNH); Babelthuap I., Gakip (1256, Tw 19-VII-46 NMNH); NE corner of Koror (1260, Tw 22-VII-46 NMNH)

***Camponotus marianensis* Clouse (in press)**

Figs. 2E, 16

Holotype examined: Mariana Is.: Saipan I., Afetna Pt. (No. 1026, Tw 1-VII-46 NMNH)

Paratypes examined (11): Mariana Is.: Rota I., Sabanna Monument (Bq 2002); Saipan I., Afetna Pt. (No. 1026, Tw 1-VII-46); Tinian I. (No. 493, Tw 6-VI-46 NMNH)

***Camponotus peleliuensis* Clouse (in press)**

Fig. 16

Holotype examined: Palau: Peleliu I. (45-10658, Do, Summer 45 NMNH)

Paratypes examined (5): Palau: Peleliu I. (No. 1285, Tw 23-VII-46 NMNH)

***Camponotus reticulatus* Roger 1863 or *bedoti* Emery 1893**

Figs. 2F, 16

Specimens examined: FSM Chuuk: Dublon I. ([no collector or locale, date 35 or 55]); Dublon I. (On 35); Dublon I. (On 36); Dublon I. (Tw 46 NMNH); Fefan I., Mt. Iron (100 m, Gr 53); Fefan I., Mt. Iron (180 m, Gr 53); Tol I., Mt. Unibot (light trap, 390 m, native forest, Gr 53); FSM Kosrae

I.: Mt. Tufuyat (800-1200 ft., Tw 46 NMNH); Tahonsaku (Tw 46 NMNH); FSM Pohnpei: Pingelap A. (Gr 53); FSM Yap: Ifalik A., Ifalik I. (53); Ifalik A., Ifalik I. (Ks 52); Woleai A., Falalis I. (Ks 52); Woleai A., Utagal I. (Tw 46 NMNH); Mariana Is.: Anatahan I. (hollow dead twig of Nesiosperma, Bq 2002); Anatahan I. (rotten tree trunk, Bq 2002); Guam I., Pt. Ritidian (Ks 52); Marshall Is.: (Bu 56); Enewetak A., Igurin I. (Tw 46 NMNH); Jaluit A., Mejrirok I. (Gr 58); Kwajalein A. (By 44); Majuro A. (Tw 46 NMNH); Palau: Angaur I. (Gr 51); Babelthuap I., Ngiwal (Gr 51); Babelthuap I., Ulimang (Dy 47); Kayangel A. (Gr 51)

Specimens collected: FSM Pohnpei: Ant A.: (in sand and coral rubble at top of lagoon-side beach, on ferns on coconut tree, in rotting coconut leaves on ground, on dead leaves on pandanus tree, foraging on rack at top of beach, in rotten coconut tree roots, nest under leaf bases of coconut tree by shore, foraging on tree overhanging water; Cs Ok&students; 94 96 2000); Pohnpei I. (Awak: male in Okihiro-Ruze residence; Dollekei: roadside grasses; Malen Pahnpe above Keprohi Falls: on betelnut palm at 350 m, on ivory nut palm at 350 m; Lehnpeinpohn Falls: on rocks at base of waterfall; above Mahnd: quarter mile up river on rocks, gravel, and leaf litter at water's edge; Mt. Nahnalaud cave: in old tree fern stem around camp; Nan Madol: on coral and rock rubble, in rotten log, leaf litter on rock in mangrove swamp; Mall I.: in leaf bases of newly fallen coconut tree, on twigs and leaves of *Thespesia populnea*; Nett Point: under bamboo thicket; PATS: on roadside weeds at farm, on banana at farm, in rotten log in woods; Pohlangas: on rotten log; between Polahngas and Wapar: in chambers in stem at 60 m; Rohi Islet; Sapwehrik Falls: at 50 m; Sokehs Ridge: on *Lantana* and other weeds at top; by hand and Berlese funnel; Cs Ok&students; 94 95 96 2000)

Habitat: Beach and mangrove areas to mid-elevation forest

***Camponotus* sp. 121958**

Figs. 2A, 16

Specimens examined: Mariana Is.: Guam I., Yigo (Ks XII-58)

Taxonomic notes: This specimen was damaged in transit—losing its petiole and gaster—between the time notes had been made on its general appearance and the completion of measurements and photographs. Measurements: TL (estimated) 2.6, HL 1.02, HW 0.94, CI 92, SL 1.16, SI 123, PW 0.72, ML 0.38. Antennae 12-segmented, last segment shorter than preceding two. Scape extending beyond vertex by length equal to first two segments of funiculus. Node anterior face shorter but parallel to posterior face. Color: Head blackish brown, becoming orangish at mandibular insertions, mandibles and antennae orange, mesosoma black with orangish coloration around the legs and head, legs completely orange, forecoxae slightly brown basally, and gaster is black with grey stripes (caused by a

change in coloration of the gasteral tergites to whitish clear along their posterior third). Pilosity: Head is dominated by a large number of long, recumbent, silver hairs, especially between the eyes and antennal insertions and on the clypeus; long, standing hairs emerge on clypeus and frons; mesosoma also dominated by long, silver, recumbent hairs, especially dorsally; longer, standing, bristle-like hairs appear on the posterior propodeum; gaster also dominated by long, silver, recumbent hairs, and scattered, longer standing hairs. Similar Species: This species resembles the morphology of *Camponotus rotumanus* Wilson & Taylor 1967 but has a darker body and is more hirsute. It has a somewhat wooly appearance due to the large number of long, recumbent, silver hairs over its head, mesosoma, and gaster. The dorsal mesosomal profile is similar to *C. reticulatus* Roger 1863, but *reticulatus* does not have the light-colored appendages nor the thick pilosity. Among unidentified specimens examined in museum collections and from digital images, the contrasting orange appendages and black body of this species appear to be a unique feature among similarly shaped and sized species.

***Camponotus* sp. 1945**

Fig. 16 (distribution combined with unexamined specimens reported—discussed above—in *C. maculatus*-group)

Specimens examined (3): Palau: Babelthuap I. (No. 1183, Oa 22-VII-46 NMNH, 1 specimen); Peleliu I. (45-10658, Do, Summer 45 NMNH, 2 specimens)

Taxonomic notes: Major 1: Measurements: TL 8.2, HL 3, HW 2.83, CI 94, SL 2.3, SI 81, PW 1.67, ML 1.27. Antennae 12-segmented, scape extending beyond vertex by a distance equal to first funicular segment. Node anterior face half the height but parallel to posterior face. Color: Head with orangish tinge on vertex but otherwise pure black, including clypeus and mandibles; scapes black, except yellow at insertions, funiculus mahogany. Black coloration of head extends to anterior dorsal midpoint of mesosoma, but fades to orange at propodeum. Petiolar node light orange (lightest part of body); gaster deep mahogany, with indistinct stripes caused by clear strips on posterior of each tergite. Legs yellow to yellowish orange, tarsi more orange, coxae light yellow (especially middle and posterior pairs). Pilosity: Long, standing, orange hairs on front of head from clypeus up to vertex, becoming less numerous but longer toward vertex and less numerous and shorter around sides of head. Extremely fine, recumbent, silver hairs scattered sparsely but evenly on head and mesosoma; mesosoma with about three dozen long, orange hairs on dorsum, and row of ten similar hairs across dorsal petiolar node. Gaster with numerous, scattered, long, standing, orange hairs. Major 2: Measurements: TL 7.9, HL 2.73, HW 2.63, CI 96, SL 2.07, SI 87, PW 1.5, ML 1.3. Minor: Measurements: TL 6.2, HL 1.77,

HW 1.33, CI 75, SL 1.77, SI 133, PW 1.07, ML 0.73. (Head is mounted separately and half-submerged in glue.) Although body size and mesosoma and petiole shapes of minor are similar to that of the majors, the head is much smaller and narrower. Coloration of the head, too, is distinct, being orange brown through to mandibles and lacking any black. Similar Species: This species is a member of the difficult *Camponotus maculatus* species-group and resembles several unidentified specimens from the Indomalay region. It appears to belong to a subset of this species complex in which the majors have very large heads, and among those, ones in which the heads are also mostly deep black.

Polyrachis

Few genera can be so easily identified as *Polyrachis*, even with the unaided eye. Although the behavior, size, and metallic pilosity of the species in Micronesia may make them similar to certain *Camponotus*, the large spines extending up from the petiole are unmistakable. I have not seen the Micronesian specimens of *P. dives*, but the confirmation of Hansen's determination by the pre-eminent authority on this genus (Dr. Kohout) makes my examination unnecessary.

***Polyrachis dives* Smith, F. 1857**

Unexamined Micronesian specimens reported: Mariana Is.: Guam I., Anderson Air Force Base (det. confirmed by R.J. Kohout, Hn 2003) (Hansen, pers. comm.)

***Polyrachis* sp. 91952**

Figs. 8D, 18

Specimen examined: Palau: Ulebsechel I. (Ks IX-52)

Taxonomic notes: Measurements: TL 4.6, HL 1.5, HW 1.45, CI 104, SL 1.63, SI 119, PW 1.4, ML 0.58. Antennae 12-segmented, scapes extending beyond vertex by more than half their length. Pronotum in profile triangular, bulbous dorsally. Mesonotum and propodeum rhomboidal, propodeal declivity longer than dorsal propodeum and mesonotum combined. Propodeum armed with two spines at dorso-lateral corners, as long as hind coxae and pointing perpendicular to posterior face. Propodeal spiracle halfway down posterior face at posterio-lateral corner. Mesosoma with outward-pointing flange that starts abruptly with a corner in lateral third of anterior dorsal pronotum, out to a sharp lateral corner (inner and outer pronotal flange corners 90 degrees when viewed from directly above), then angled in along dorso-lateral pronotum, breaking at the promesonotal suture, continuing along dorso-lateral mesonotum, breaking again at the metanotal groove, starting again on the dorso-lateral propodeum but almost immed-

iately ending at the start of the propodeal spines. Slightly more than middle third of anterior pronotum and posterior propodeum without flange and gently rounded. Node 4/5 height of propodeum, armed with two spines dorso-laterally almost equal in length to propodeal spines and pointing more dorsally. Color: Body mostly black, legs and gaster fading to dark brown, torulus and trochanter-femur joints orange. Pilosity: Entire body, legs, antennae, and mandibles covered in flattened layer of hair, becoming more dense on the head, dorsal mesosoma, and first gastral tergite; mostly silver but becoming golden in dense areas, especially first gastral tergite, thinning significantly on anterior and posterior node and after the first gastral sternite. Similar species: The lobes along the mesosomal margin place this species in the subgenus *Chariomyrma*, and the overall shape, size and pilosity of sp. 91952 most closely resemble *Polyrachis guerini* Roger 1863 and *P. foreli* Kohout 1989. All three species are black with a dense covering of silver hairs, and all three have a sharp flange along the sides of the dorsal mesosoma. Posteriorly, this flange ends with the propodeal spines; anteriorly, the flange continues along the anterior pronotum but for only about a third of the distance on each side. Where this flange stops on the anterior pronotum, sp. 91952 has its distinguishing character: it stops abruptly on each side, creating sharp corners and edges on either side of the rounded middle third. In other species, the flange diminishes gradually and blends with the rounded edge of the central anterior pronotum.

Unexamined *Polyrachis* sp.

Unexamined MRSI specimens, identified only to genus: Additional five collections, all workers, from Palau: Babelthuap I. (Dy 47 and Gr 52), Ngurukdabel I. (Ko 49), Ulebsechel I. (Gr 52); and the following new area: Bonin Is.: Chichi Jima, Omura (Ko 49)

TRIBE LASIINI

Paratrechina

Paratrechina specimens are much easier to determine at the generic level than among species. Thick, dark, standing hairs are present on the dorsal mesosoma regardless of whether they are small and yellow, like *P. minutula*, or spindly and dark gray, as with *P. longicornis*. The clypeal margin varies but never forms a notch or tooth. Between species, two are easily identified—*minutula* and *longicornis*—but *vaga*, *bourbonica*, and *clandestina* are best distinguished by the pilosity of their lateral mesosoma and propodeum, characters that require good magnification and lighting to see.

***Paratrechina bourbonica* (Forel 1886)**

Prenolepis nodifera r. *bourbonica* Forel 1886

Figs. 5E, 17

Specimens examined: FSM Chuuk: Erin, Tonoas I. (Ya&Yo 40); Nomwin A., Fananu I. (Be 54); Pis (pandanus, Po 49); Tol I., Mt. Unibot (Gr 52); Tol I., Mt. Unibot (1,200 ft., Po 49); Tol I., Olej (Ya&Yo 40); FSM Kosrae I.: Hill 1010 (300 m, Ck 53); Lelu (Es 37); Lelu I. (Gr 53); Mutunlik (22 m, Ck 53); FSM Pohnpei: Kapingamarangi A., Hare I. (*Vigna* and *Ipomoea* along lagoon shore, Ni 54); Kapingamarangi A., Nunakita I. (in grass *Stenotaphrum* and *Asplenium*, Ni 54); Kapingamarangi A., Ringutoru I. (*Nephrolepis* and grasses, Ni 54); Kapingamarangi A., Werua I. (ex grasses and low vegetation under breadfruit, Ni 54); Pohnpei I., Mt. Temwetemwensekir (180 m, Gr 53); Pohnpei I., Nanponmal (50 m, Gr 53); Pohnpei I., S.E. Mt. Dolotomw (1,700 ft., Ad 50); FSM Yap: Colonia (Gs 50); Faraulep A., Pigue I. (Ks 52); Gagil M. (Gs 50); Ngulu A., Ngulu I. (Ks 52); N. Map I. (Gs 50); N. Rumung I. (Gs 50); N. Yap I. (Gs 50); Ruul M. (Gs 50); S. Map I. (Gs 50); S. Yap I. (Gs 50); Tomil M. (Gs 50); Ulithi A., Potangeras I. (Dy 47); W. Map I. (Gs 50); Yap I. (Gs 50); Yap I. (Ks 52); Yap I., Mt. Matade (95 m, Gr 52); Yap I., Yap Hill, behind Yaptown (60 m, Gr 52); Kiribati: Tarawa A., Bairiki I. (Ks 57); Mariana Is.: (Fu NMNH); Agiguan I. (Bq 2002); Anatahan I. (trunk of fallen dead coconut, Bq 2002); Anatahan I. (*Barringtonia asiatica* leaf litter, dry streambed, Bq 2002); Guam I. (Fu date unknown); Guam I., Agana Spring (sweeping, Bh&Gr 45); Guam I., Barrigada Heights (Gr 52); Guam I., Mt. Alifan (Ks 46); Guam I., Mt. Alifan (Ks 52); Guam I., Mt. Balanos (Ks 52); Guam I., Mt. Lamlam (Gr 52); Guam I., Mt. Tenjo (Sw 36 NMNH); Guam I., Pago Bay (Bh&Gr 45); Guam I., Pilgo R. (Bh&Gr 45); Guam I., Piti (Sw 36 NMNH); Guam I., Pt. Oca (Bh&Gr 45); Guam I., S.E. Coast (Bh&Gr 45); Guam I., Talofolo (Ks 52); Pagan I., Laguna (Ya&Yo 40); Pagan I., Songsong (Ya&Yo 40); Rota I., Coral Gardens Hotel (Coral Gardens Hotel, Bq 2002); Saipan I., As Palacios (15 m, Bn 2002); Saipan I., Donni—Sadog Tasi (Ya&Yo 40); Saipan I., Susupe (Ks 46); Tinian I. (Bq 2002); Marshall Is.: Arno A., Ine I. (banana, Lr 50); Arno A., Ine I. (sweeping *Wedelia biflora*, Lr 50); Enewetak A. (Os 51); Enewetak A., Engebi I. (Os 51); Enewetak A., Engebi I. (under damp board on beach, Os 51); Palau: Angaur I. (Be 54); Merir I. (Ks 52); Sonsorol I. (Ks 52); Tobi I. (Ks 52); Palmyra I. (U.S.): (Ks 48 NMNH); Wake A. (U.S.): (Hd 37); (Jo 53); (Mn 47)

Specimens collected: FSM Pohnpei: Ant A. (foraging in rack at top of beach, foraging on tree overhanging water; by hand; Cs Ok; 96 2000); Pohnpei I. (Awak: in Okihiro-Ruze residence; Dollekei: roadside grasses; Malen Pahnpe above Keprohi Falls: in dead branch at elevation 350 m; Kolonia: inside Jesuit residence kitchen, in kitchen sink of Jesuit residence; between Kolonia and Kitti: 0.4 km from Ace Commercial into Kitti along mangrove forest; mouth of Lehn Mesi: 23.9 km from Ace Commercial into Kitti at base of Lehn Mesi River bridge; road to Lehnpeinpohn Waterfall:

short grass in clear area, under breadfruit tree, under dead leaves on ivory nut tree; Lehnpeinpohn Waterfall: on rocks at base of waterfall; above Mahnd: along river with aphids on herbaceous weed; Mall I.: on flower, on twigs and leaves of *Thespesia populnea*; Nahnalaud cave: under dead leaves on ground around camp; Nett Pt.: in roadside grasses, under bamboo thicket; PATS: on bed at night, in elephant grass patch; PATS farm: under banana tree, on roadside weeds, walking on rotten log, in rotten hibiscus branches, on leaves of bird's nest fern, on taro leaf, under thick layer of grasses, on hibiscus; Sokehs Ridge: on old Japanese gun at 200 m; Wone dispensary; by Berlese and hand; Cs Ok; 94 95 96 2000); Marshall Is.: Enewetak A. (El&Le; 2001); (Va; 2000)

Habitat: From beaches and inside houses to natural forest at all elevations

***Paratrechina clandestina* Mayr 1870**

Figs. 6A–D, 18

Specimens collected: FSM Pohnpei: Ant A.: (in coral rubble under breadfruit tree; Cs Ok&students; 94 96); Pohnpei I. (Mall I.: in leaf bases of newly fallen coconut tree, in coconut husk litter; Nan Madol: under rock in soil, in mangrove swamp; Cs; 94 2000)

Unexamined Micronesian specimens reported: Marshall Is.: (no locale data, Schnee 1904, reported in Wetterer, in prep.)

Habitat: Mangrove and atoll coconut forest

***Paratrechina longicornis* (Latrielle 1802)**

Formica longicornis Latrielle 1802

Fig. 18

Specimens examined: FSM Chuuk: Dublon I. (On 35); Erin, Tonoas I. (Ya&Yo 40); FSM Kosrae I.: Lelu (Es 37); FSM Yap: Ruul M. (Gs 50); Tomil M. (Gs 50); Kiribati: Banaba I. (Ks 52); Banaba I. (house, Ks 57); Butaritari A., Butaritari I. (Ks 57); Phoenix Is., Canton I. (Cl&Dd 73 NMNH); Tarawa A. (Bw 56); Mariana Is.: Guam I. (Fu NMNH); Guam I. (Oa 37 NMNH); Guam I., Pt. Oca (Bh&Gr 45 NMNH); Guam I., Yona (Ks 52); Rota I. (Stream farm, Bq 2002); Saipan I., native settlement (Oa 46 NMNH); Tinian I. (Tw 46 NMNH); Tinian I. (Bq 2002); Marshall Is.: Jaluit A., Imroj I. (Tw 46 NMNH); Jaluit A., Jabwor I. (Es 37); Kwajalein A., Gugeegue I. (By 44); Palau: Tobi I. (Ks 52); Wake A. (U.S.): Wake I. (Ks 57 NMNH)

Specimens collected: FSM Pohnpei: Ant A. (foraging on rack at top of beach, at canned tuna bait, on ferns on coconut tree; Cs; 94 2000); Pingelap A. (in house; Ok; 95); Pohnpei I. (Kolonia: from stones along walkway to Jesuit residence at night, inside kitchen of Jesuit residence; from Kolonia to

Kitti: 9 km from Ace Commercial towards Kitti in elephant grass thicket; mouth of Lehn Mesi: 23.9 km from Ace Commercial into Kitti at base of Lehn Mesi River bridge; PATS: on building wall; PATS farm: under swamp taro, under banana trees, from leaf base of coconut tree; Rohi Islet; by Berlese funnel and hand; Cs Wd Ok&students; 95 96 2000)

Unexamined MRSI specimens: Additional 69 collections by Ar Be Bh Cm Ck Dy Fs Fu Gs Gr Ha Jo Ko Kr Lr Mc Ne Ni Po St, 1938-54, from the following already-recorded areas: FSM Chuuk: Nomwin A., Pis I., Tol I., Weno I.; FSM Kosrae I.; FSM Pohnpei: Kapingamarangi A., Pingelap A., Pohnpei I.; FSM Yap: Fais I., Rumong I., Ulithi A., Yap I.; Kiribati: Tarawa A.; Mariana Is.: Alamagan I., Guam I., Rota I., Saipan I., Tinian I.; Marshall Is.: Arno A., Jaluit A., Ngulu A.; Palau: Babelthuap I., Sonsorol I., Toni I.; Wake A. (U.S.); and the following new area: Johnston I. (U.S.): (on hibiscus plant at shore, Gr 53)

Habitat: Beaches, atoll coconut forest, and human disturbed areas

***Paratrechina minutula* (Forel 1901)**

Prenolepis minutula Forel 1901

Fig. 18

Specimens examined: FSM Chuuk: Pata Sabote, Tol I. (Ya&Yo 40); FSM Pohnpei: Pohnpei I., Nett M., Nanpil (Dy 48); Mariana Is.: Guam I., Pt. Oca (Wh 45 NMNH); Guam I., Upi (Sw 36 NMNH)

Specimens collected: FSM Pohnpei: Pohnpei I. (Nett Pt.: roadside grasses; by hand; Cs; 2000)

***Paratrechina vaga* (Forel 1901)**

Prenolepis obscura r. *vaga* Forel 1901

Figs. 5F, 18

Specimens examined: FSM Chuuk: Fefan I., Mt. Iron (sweeping roadside vegetation, altitude 1 m, Gr 53); Fefan I., Mt. Iron (180 m, Gr 53); Nama I. (Po 49); Nomwin A., Nomwin I. (Be 54); Tol I., Mt. Unibot (native forest, 390 m, Gr 53); Tol I., Mt. Unibot (390 m, Gr 53); Tol I., Mt. Unibot (lower native forest, 25-50 m, Gr 53); Tol I., Mt. Unibot (beating, Po 49); Tol I., Mt. Unibot (beating, Po 52); Weno I., Mt. Teroken* (25-50 m, Gr 53); Romanum I. (Po 49); FSM Kosrae I.: Hill 1515 (330 m from forest leaf litter, Ck 53); Mt. Fuinkol (300 m, Gr 53); Mt. Fuinkol (600 m, Gr 53); Mt. Mutunte (forest floor, Ck 53); FSM Pohnpei: Kapingamarangi A., Hare I. (*Vigna* and *Ipomoea* along lagoon shore, Ni 54); Kapingamarangi A., Nunakita I. (in grass *Stenotaphrum* and *Asplenium*, Ni 54); Kapingamarangi A., Ringutoru I. (*Nephrolepis* and grasses, Ni 54); Kapingamarangi A., Werua I. (ex grasses and low vegetation under breadfruit, Ni 54); Mokil A. (sweeping, Gr 53); Pingelap A. (Gr 53); Pohnpei I., Kolonia (Ad 50);

Pohnpei I., Mt. Kiepw (1,200 ft., Ad 50); Pohnpei I., Mt. Temwetemwensekir (180 m, Gr 53); Pohnpei I., S.E. Mt. Dolotomw (1,700 ft., Ad 50); FSM Yap: Central Yap I. (Gs 50); E. Map I. (Gs 50); Fais I. (Be 54); Faraulep A., Pigue I. (Ks 52); Ifalik A., Ifalik I. (Bt 53); Ifalik A., Ifalik I. (Ks 52); Ngulu A., Ngulu I. (Ks 52); Ruul M. (Gs 50); Satawal I. (Ks 52); Sorol A., Sorol I. (Ks 52); Woleai A., Falalis I. (Ks 52); Woleai A., Woleai I. (Ks 52); Yap I. (Ks 52); Mariana Is.: Agrihan I. (Me 49); Anatahan I. (pitfall, forest, Bq 2002); Anatahan I. (pitfall, grass and ferns, 380 m, Bq 2002); Saipan I. (No. 1009, Tw 46); Marshall Is.: Arno A., Ine I. (Lr 50); Majuro A. (Lr 50); Palau: Merir I. (Ks 52); Sonsorol I. (Ks 52)

Specimens collected: FSM Pohnpei: Ant A. (on coral rubble, on vines at beach, nest under coconut leaf bases by the shore; Cs; 2000); Pohnpei I. (Malen Pahnpe above Keprohi Falls: in leaf litter, on tree fern, on betelnut palm, on ivory nut along river; Kitti: in chunk of rotten wood, on dead fern branch in high-elevation sakau clearing; mouth of Lehn Mesi: 23.9 km from Ace Commercial into Kitti at base of Lehn Mesi River bridge; above Mahnd: along river on dead and moss-covered log, quarter mile upriver on rocks, gravel, and leaf litter at water's edge; between Mahnd and Sapwehrik: in ginger flower at 80 m; Mall I.: on banana tree, in coconut husk litter; Mt. Nahnalaud: in branch of dead tree fern, in dead leaves in bird's nest fern; Mt. Nahnalaud cave around camp: under moss, under bark of rotten and soggy tree still standing, under dead leaves, under moss on palm, in rotten wood, foraging on leaves, under moss on tree; path to Mt. Nahnalaud: walking on moss on forest floor, nest under moss on tree; near Mt. Nahnalaud: in ivory nut in swampy highland forest, on surface of dead log near hilltop camp at 400 m, under base of ivory nut leaf near campsite; Nan Madol: being carried by *Tetramorium lanuginosum* on rotten coconut, under rock, on coral and rock rubble; Nett Pt.: under bamboo thicket; PATS: leaf litter in front of men's staff dorm (CLTC); PATS farm: leaf litter among swamp taro, leaf litter under pandanus tree, in rotten hibiscus branches, among swamp taro leaf bases, from rotten leaves on forest floor, under banana tree, leaf litter from bird's nest fern in forest; above Salapuk: in *Parinari laurina* nut; by Berlese funnel and hand; Cs Ok Ep; 94 95 2000)

Habitat: From beaches and inside houses to natural forest at all elevations

TRIBE PLAGIOLEPIDINI

Anoplolepis

One extremely common species of *Anoplolepis* lives in Micronesia, and it can be identified by its large size, orange color, long antennae, and absence of thick, standing hairs on the dorsal mesosoma. *Paratrechina longicornis* has similarly proportioned antennae but is smaller, gray, and has standing hairs on

the dorsum. Various species of *Camponotus*, *Iridomyrmex*, and *Technomyrmex* can be brownish gray but have much shorter antennae.

***Anoplolepis gracilipes* (Smith, F. 1857)**

Formica gracilipes Smith, F. 1857; *Anoplolepis longipes* in Wilson and Taylor (1967); resolved by Bolton (1995)

Fig. 16

Specimens examined: FSM Chuuk: Dublon I. (36); Dublon I. (35); Dublon I. (sweeping, On 35); Dublon I. (On 36); Nama I. (Po 49); Param I. (Po 49); Pis I. (Tw 46 NMNH); Tol I. (Gr 53); Tol I., Mt. Unibot (Gr 53); Tol I., Mt. Unibot (Tw 46 NMNH); Tol I., Olej, Foup (Ya&Yo 40); Udot I. (Tw 46 NMNH); Weno I. (25-50 m, Gr 53); Weno I. (100 ft, Pe 46 NMNH); Weno I. (Po 49); Weno I., S. Valley, Mt. Tonaachau (Po 49); Weno I. (0-400 ft., Tw 46 NMNH); Weno I. (600 ft., Tw 46 NMNH); FSM Kosrae I.: Mt. Tufuyat (1200 ft., Tw 46 NMNH); Mt. Tufuyat (500-800 ft., Tw 46 NMNH); Mt. Tufuyat (800-1200 ft., Tw 46 NMNH); [no locale] (Tw 46 NMNH); FSM Pohnpei: Nukoro A., Nukoro I. (Tw 46 NMNH); Pohnpei I., Mt. Pipilap (Ad 50); Pohnpei I., Mt. Temwetemwensekir (Gr 53); FSM Yap: Colonia (Gs 50); Elato A., Elato I. (Ks 52); Fais I. (Ks 52); Faraulep A., Pigue I. (Ks 52); Map I. (Gs 50); Map I. (Ks 52); Rumung I. (Hg 45); Rumung I. (Ks 52); Sorol A., Sorol I. (Ks 52); Ulithi A., Fossarai I. (Tw 46 NMNH); Woleai A., Woleai I. (Ks 52); Mariana Is.: Guam I. (Fu NMNH); Guam I. (Hr 23); Guam I. (Potts); Guam I., Agana (Gr 45 NMNH); Guam I., Agana (Ks 52); Guam I., Asan (Gr 45 NMNH); Guam I., Barrigada Heights (Bh&Gr 45 NMNH); Guam I., Cocos I. (Ks 57); Guam I., Junction* (Ks 52); Guam I., Machanao (*Piper guamensis*, Sw 36); Guam I., Mogfog (Gr 45 NMNH); Guam I., Mt. Alifan (Ks 46); Guam I., Mt. Alifan (Ks 52); Guam I., Mt. Lamlam (Ks 57); Guam I., Mt. Lamlam (Ks 58); Guam I., Nimitz Beach (Ks 52); Guam I., Pago Bay (Dy 45); Guam I., Pt. Oca (Dy 45); Guam I., Pt. Oca (Bh&Gr 45 NMNH); Guam I., Pt. Oca (light trap, Bh&Gr 45 NMNH); Guam I., Pt. Ritidian (Gr 45); Guam I., Talofolo (Ks 52); Guam I., Talofolo (Tw 46 NMNH); Guam I., Yigo (Ks 58); Pagan I. (Co 54); Rota I. ("Stream farm", Bq 2002); Saipan I. (En 49); Saipan I., Chanlan Lamlam* (Ks 46); Saipan I., Garapan (Ks 46); Saipan I., Garapan (Ya&Yo 40); Tinian I. (Hr 24); Tinian I. (Bq 2002); Marshall Is.: (Lr 50); (sweeping *Wedelia biflora*, Lr 50); Ailinglaplap A., nr. Airek (Tw 46 NMNH); Arno A., Ine I. (*Morinda citrifolia*, Lr 50); Arno A., Ine I. (Us 50); Jaluit A., Jabwor I. (Gr 58); Jaluit A., Kinijon I. (Gr 53); Majuro A. (By 44); Palau: Babelthuap I. (Fe 56); Babelthuap I., Airai (Fe 56); Babelthuap I., Kaishar*—Ngardok—Ngiwal* (Es 39); Babelthuap I., Ngarekeai Airai* (pandanus, Su&Fe 56); Babelthuap I., Ngaromlengul (Sa 57); Koror (Gr 51); Ngarekeai* (Fe 56); Peleliu I. (On 36); Peleliu I., Amingal (Gr 52); Pulo Anna I. (Ks 52); Sonsorol I. (Ks 52)

Specimens collected: FSM Pohnpei: Ant A. (by hand; Ok&students; 96); Pohnpei I. (trail to Nahnalaud: in coconut forest under old husks; Nan Madol: leaf litter on rocks in surrounding mangrove swamp, on coral and rock rubble; PATS: queen at light; Sokehs Ridge: elevation 200 m on old Japanese gun; by hand; Cs 94 95 2000)

Unexamined MRSI specimens: Additional 152 collections, including many male and female alates by Ad Ba Bt Be Bh Cf Ck Da Dy Ed Fs Fu Gs Gr Hg Hr Kr Lr Ne Po St Sw, 1936-54, from the following already-recorded areas FSM Chuuk: to 180 m, Dublon I., Nama I., Param I., Pis I., Tol I., Weno I.; FSM Kosrae I.; FSM Pohnpei: to 1500 ft., Mokil A., Pingelap A., Pohnpei I.; FSM Yap: Faraulep A., Ifaluk A., Map I., Ulithi A., Rumung I., Yap I.; Mariana Is.: to 400 m, Agiguan I., Guam I., pagan I., Rota I., Saipan I., Tinian I.; Marshall Is.: Arno A., Enewetak A.; Palau: Angaur I., Babelthuap I., Garakayo I., Kayangel I., Koror I., Ngerkabesang I., Ngulu I., Peleliu I., Ulebsechel I.

Habitat: All manner of natural and human-disturbed areas, from atolls to high mountains

SUBFAMILY MYRMICINAE

TRIBE BASICEROTINI

Eurhopalothrix

Although closely related to the Dacetini (*Pyramica* and *Stumigenys*), this genus is much larger and has seven (instead of six) antennal segments in Micronesia. The odd male from Chuuk requires any collection of Basicerotini from the area to be carefully determined.

***Eurhopalothrix procera* (Emery 1897)**

Rhopalothrix procera Emery 1897

Figs. 1C, 17

Specimens examined: FSM Pohnpei: Pohnpei I., Mt. Dolotomw (det. by W. L. Brown as "*Eurhopalothrix procera*?;" [heavily sculptured, but similar to some other specimens in MCZ collection], 2,100 ft., male, Ad 50); Palau: Babelthuap I., Airai, Ngarimal R. (sweeping tree fern, ravine, male, Sa 57)

Specimens collected: FSM Pohnpei: Pohnpei I. (hilltop campsite near Mt. Nahnalaud: on an old ivory nut at 400 m; by hand; Cs; 95)

Unexamined MRSI specimens: Two collections of males identified only as "*Rhopalothix*" from the following already-recorded area: Palau: Babelthuap I., E. Ngatpang (65 m, Gr 52)

Habitat: Mid- to high-elevation forest

Unknown genus

Unknown genus 11041940

Specimen examined: FSM Chuuk: Olej, Foup (male, Ya&Yo 11-IV-1940)

This male is not *Eurhopalothrix procera*, which is the only other Basicerotini in the region. It was examined by S. Cover at MCZ, who expressed some doubts that it was even Basicerotini.

TRIBE CREMATOGASTERINI

Crematogaster

The taxonomy of *Crematogaster* species in Micronesia is unclear, but their heart-shaped gasters with a dorsal petiolar attachment make this genus easy to identify, even in the field.

The *Crematogaster* specimens collected on Pohnpei appear to be only two species, both extremely small and yellow but readily distinguished by the presence or absence of a stout hair at the dorsal base of each propodeal spine. Based on museum collections and the original description (Emery 1901, which includes a figure), specimens without such a hair appear to be *fritzi*. As for the other, only comparison with types can resolve its identity, although I here offer thoughts on the two most promising possibilities, *biroi* Mayr 1897 and *emeryi* Forel 1907. Both species have been reported from Micronesia, but I have noticed that museum collections of both species contain mixtures of at least four small, yellow species with and without propodeal spine hairs. Adding to the confusion, *emeryi* was originally named as *biroi* by Emery in 1900. Although I found museum specimens labeled *emeryi* that match Micronesian ones, and despite seeing a propodeal spine hair in Emery's original figure of *emeryi*, I am inclined to consider the Micronesian specimens *biroi* based on the original descriptions: Mayr describes *biroi* as simply yellow, while Emery described *emeryi* as having, oddly, a black head and gaster ("*Flava, capite (exceptis mandibulis et antennis) gastereque nigris* …"), coloration possessed by none of the specimens I examined.

***Crematogaster cf. biroi* Mayr 1897**

Figs. 3D, 17

Specimens examined: FSM Chuuk: Romanum I. (dead tree, Po 49)

Specimens collected: FSM Pohnpei: Pohnpei I. (Nan Madol: in grass; PATS: leaf litter from bird's nest fern on farm, leaf litter under pandanus tree; road to Sapwehrik Falls: on rotten log at 50 m; by hand and Berlese funnel; Cs; 94 95 2000)

Unexamined MRSI specimens identified as *Cr. emeryi*: Additional ten collections, including males and dealate females, by Ad Be Ck Gr Po Us, 1945-53, from the following already-recorded areas: FSM Chuuk: Fefan I., Tol I., Weno I.; FSM Pohnpei: Pohnpei I.; and the following new areas: Mariana Is.: Guam I., Pt. Ritidian (male, Gr 45); Guam I., Potts Junction (Ks 52); Marshall Is.: Arno A., Ine I. (workers and dealate female, Us 50).

Unexamined MRSI specimens identified as *Cr. biroi*: Additional two collections, the latter from a new area: FSM Chuuk: Nomwin A., Fanunu I. (Be 54); FSM Kosrae I.: Hill 1010 (300 m, Ck 53)

Habitat: Mangroves to mid-elevation forest

***Crematogaster fritzi* Emery 1901**

Figs. 3E, 17

Specimens collected: FSM Pohnpei: Ant A. (nest between bases of newest leaves of young coconut with mealybugs, on coconut tree between leaf bases; by hand; Cs; 2000); Pohnpei I. (Mt. Nahnalaud cave: on dead palm branch around camp, under rotting leaves; hilltop campsite near Mt. Nahnalaud: on old ivory nut at 400 m; upland forest campsite near Mt. Nahnalaud: on tree at 300 m; Nan Madol: on tree trunk in mangrove swamp; road to Nett Point: in roadside weeds; PATS: between bases of new pandanus leaves on farm; forest behind Salapuk: in leaf litter, on rotting fruit; by hand; Cs Aq; 95 2000)

Habitat: Atoll coconut forest to high-elevation rain forest

TRIBE DACETINI

Pyramica

Miniscule species with heart-shaped heads and short antennae can readily be identified as the Dacetini, and distinguishing between *Pyramica* and *Strumigenys* can be done easily by noticing the mandibles: *Pyramica* have stout, triangular mandibles lined with teeth, while *Strumigenys* have long, thin mandibles with teeth only on the ends. With *Pyramica*, the size of the eyes and the large lateral hair on the head (reduced and missing, respectively, in *P. membranifera*) are good characters for identification.

***Pyramica karawajewi* (Brown 1948)**

Strumigenys (Trichoscapa) karawajewi Brown 1948

Figs. 11A, 19

Specimens examined: FSM Chuuk: Tol I., Mt. Unibot (Gr 53 NMNH); Tol I., Mt. Unibot (det. Bolton, 390 m, Gr 53); Palau: Koror I. (limestone ridge N. of inlet) (Dy 48); Koror I. (in and under palm log, Dy 47); Peleliu I., E.

Coast (in rotting wood, Dy 48); Peleliu I., E. Coast (in log; paratype, Dy August 4 45 NMNH)

Unexamined Micronesian specimens reported: FSM Pohnpei (Brown 1964)

***Pyramica membranifera* (Emery 1869)**

Strumigenys (Trichoscapa) membranifera Emery 1869

Figs. 11B, 19

Specimens examined: Mariana Is.: Guam I., Pt. Oca (light trap, alate, Bh&Gr 45); Guam I., Pt. Oca (sifting leaves and wood chips, Dy 45); Guam I., Pt. Oca (Lot 64 663, Wh 45 NMNH); Guam I., Pt. Oca (Lot 64 663, alate, Wh 45 NMNH)

Specimens collected: FSM Pohnpei: Pohnpei I. (PATS; in leaf litter mulch; by Berlese funnel; Cs; [label says 1993 but probably 1995])

Strumigenys

With long, thin mandibles, heart-shaped heads, reduced antennal segments, and overall tiny size, this genus is rather easily identified (the first character distinguishing it from *Pyramica*). Within the genus, the six species in Micronesia are not as difficult to determine as it might appear in the key. Mandibular tooth morphology, antennal segments, and presence, absence, and placement of spongy material separate most species, and then body size and pilosity can be used to distinguish *S. godeffroyi* from *S. frivaldskyi*.

***Strumigenys emmae* (Emery 1890)**

Epitritus emmae Emery 1890

Fig. 19

Specimens examined: FSM Yap: Gagil M. (Gs 50); Mariana Is.: Guam I., Pt. Oca (Lot 64 663, dealate, Wh 45 NMNH); Guam I., Pt. Oca (Lot 64 663, Wh 45 NMNH); Saipan I., Tapochoa* (pitfall 2002)

***Strumigenys frivaldskyi* Emery 1897**

Fig. 19

Specimens examined: FSM Pohnpei: Pohnpei I., Nett M., Nanpil (Dy 48 NMNH); FSM Yap: Kanif (Gs 50); Yap I. (Gs 50); N. Yap I. (Gs 50 NMNH); Palau: Peleliu I. (Dy 45)

***Strumigenys godeffroyi* Mayr 1866**

Figs. 11D, 19

Specimens examined: FSM Chuuk: (from coconut stump, Po 49); Pis I. (coconut stump, Po 49 NMNH); FSM Pohnpei: Pohnpei I., Kolonia (under

breadfruit bark, Dy 48); Pohnpei I.: Nett M., Nanpil (Dy 48 NMNH); Mariana Is.: Anatahan I. (pitfall, grass and ferns, 380 m, Bq 2002); Guam I., Pt. Oca (in dead pandanus leaves, Dy 46); Guam I., Pt. Oca (Wh 45 NMNH); Sarigan I. (45 m, Bq 2002); Marshall Is.: Arno A., Bikarej I. (under breadfruit bark, Lr 50); Arno A., Ine I. (Lr 50); Palau: Babelthuap I., wooded valley West of Ulimang (under bark, Dy 47 NMNH)

Specimens collected: FSM Pohnpei: Pohnpei I. (above Keprohi Falls at 350 m: in rotten log; upper forest above Mahnd: on dead, moss-covered log; Nett Pt.: under bamboo; PATS: from leaf litter under swamp taro; by Berlese funnel and hand; Cs; 94 95 2000)

Habitat: Low- to mid-elevation roadside areas, agroforest, and natural forest

***Strumigenys mayri* Emery 1897**

Fig. 19

Specimens examined: FSM Chuuk: Tol I., Mt. Unibot (det W. L. Brown 1955, Gr 4-II-53 NMNH)

***Strumigenys rogeri* Emery 1890**

Figs. 11C, 19

Specimens examined: Mariana Is.: Anatahan I. (pitfall, grass and ferns, 380 m, Bq 2002); Anatahan I. (pitfall, forest, Bq 2002); Saipan I., Kagman (alate, Bn 2001); Saipan I., Papago* (forest litter, Bq 2001); Saipan I., Papago* (litter, limestone forest, 220 m, Bq 2002); Tinian I. (litter, Bq 2002); Palmyra Is. (U.S.): (Ks 48 NMNH)

Specimens collected: FSM Pohnpei: Pohnpei I. (above Keprohi Falls at 350 m, Malen Pahnpe: on ivory nut along river, on tree fern; Pwodoi, 17.7 km from Ace Commercial in Kolonia to Kitti: in elephant grass; in leaf litter from under ivory nut tree; along road across from Lehnpeinpohn Falls: under royal palm-like trees; quarter mile upriver from Mahnd: nest in rotten tree stump; Nahnalaud cave: under moss on rock near camp; road to Nett Point: leaf litter; Nett Point: under bamboo; PATS: from rotten log on farm, under swamp taro, leaf litter on campus, in leaf litter, grass roots under ylang-ylang; lookout between Pohlangas and Wapar at 122 m: leaf litter; by Berlese funnel and hand; Cs Ok; 94 95 2000)

Habitat: Roadside grasses to high-elevation forests

***Strumigenys szalayi* Emery 1897**

Figs. 11E, 19

Specimens examined: FSM Pohnpei: Pohnpei I., Sokehs (Ad 50 NMNH); Pohnpei I., Mt. Nahnalaud (Ad 50); Pohnpei I.: Mt. Pipilap (Ad 50 NMNH); Pohnpei I., Mt. Temwetemwensekir (summit, alt. ca. 1,500 ft., Dy 48)

Specimens collected: FSM Pohnpei: Pohnpei I. (above Keprohi Falls at 350 m, Malen Pahnpe: on tree fern; by hand; Cs; 94)

Habitat: Mid- to high-elevation forests

TRIBE FORMICOXENINI

Cardiocondyla

The *Cardiocondyla* appear in the key above only after the elimination of various genera through the recognition of certain character combinations, so determining them to genus can be difficult. However, their lack of an antennal club distinguishes them quite readily from those with a distinct antennal club (*Monomorium*, *Solenopsis*, *Carebara,* and *Pheidole*), their lack of standing hairs on the dorsum separate them from *Tetramorium*, and their propodeal spines prevent confusion with *Vollenhovia*.

The taxonomy of Pacific *Cardiocondyla* has been greatly advanced by Seifert (2003), who included a number of Micronesian specimens in his revision of the genus, as well as determined specimens sent by me. Swezey (1942) was uncertain of his identification of certain specimens from Guam as *C. emeryi*, and it seems clear now that Micronesian determinations of *emeryi* are actually *tjibodana*, which is very similar. Important distinctions of *tjibodana* are that it has a flat postpetiolar sternum, a postpetiole with a maximum height less than that of the petiole, and stubby propodeal spines. One specimen that was not examined by Seifert was the *nuda* alate collected by Adams from Mt. Dolotomw on Pohnpei I. (below); it resembles *nuda* in most respects and was originally determined as such, but it is extremely dark and has a nearly flat postpetiolar sternite. About the post-petiolar sternite, couplet 49 will surely cause problems for those already familiar with *nuda*, since in the Pacific region, it bulges much more than in specimens from other regions (to a degree that it resembles *paranuda*, Seifert 2003). Consequently, specimens of *kagutsuchi* with slightly convex postpetiolar sternites can easily be keyed to *nuda*, and so the relative heights of the petiole and postpetiole should also be used.

***Cardiocondyla kagutsuchi* Terayama 1999**

Fig. 16

Specimens examined: FSM Yap: Satawal I. (Ks 52 NMNH); Mariana Is.: Anatahan I. (open ridge, under rock, Bq 2002); Guam I., Ylig Bay (Ks 58); Saipan I., Garapan (Ks 46 NMNH); Palau: Pulo Anna I. (Ks 52 NMNH); Sonsorol I. (Ks 52 NMNH)

Specimens collected: Kiribati: Enderbury A. (Ok; 2000)

***Cardiocondyla minutior* Forel 1899**

Cardiocondyla nuda var. *minutior* Forel 1899; synonymized with *nuda* by Wilson and Taylor (1967); recovered and raised to species by Seifert (2003)

Fig. 16

Specimens examined: FSM Pohnpei: Pohnpei I., Kolonia (Ad 50 NMNH); FSM Yap: Colonia (Gs 50 NMNH); Johnston I. (U.S.): (Ks 52 NMNH); Mariana Is.: Guam I., Mt. Alifan (Ks 46 NMNH); Guam I., Yigo (Ks 58); Palau: Islet near Koror I. (Ks 52 NMNH)

***Cardiocondyla nuda* (Mayr 1866)**

Leptothorax nudis Mayr 1866

Fig. 16

Specimens examined: FSM Chuuk: Dublon I. (1000-1200 ft., No. 403, Tw 46 NMNH); Nama I. (dead banana leaf, Po 49 NMNH); Toloas-Erin (Yo 40 NMNH); FSM Pohnpei: Pohnpei I., Kolonia (Ad 50 NMNH); Pohnpei I., Nett Point (Ad 50 NMNH); Pohnpei I., Nett Point (Ad 50 [second collection]); Pohnpei I.: S.E. Mt. Dolotomw ([black specimen with nearly flat postpetiolar sternite; determination tentative], alate, 1700 ft., Ad 50 NMNH); FSM Yap: Centr. I. (Gs 50 NMNH); Gagil M. (Gs 50 NMNH); N. Rumung I. (Gs 50 NMNH); S. Rumung I. (Gs 50 NMNH); S. Yap I. (Gs 50 NMNH); Ulithi A., Fossarai I. (No. 974, Oa 46 NMNH); Ulithi A., Potangeras I. (Dy 47 NMNH); Woleai A., Saliap I. (Ks 52 NMNH); Woleai A., Woleai I. (Ks 52 NMNH); Yap I. (Gs 50); Kiribati: Enderbury A. (unknown; 2000); Palau: Ngulu A., Ngulu I. (Ks 52 NMNH); Wake A. (U.S.): Peale I. (*Boerhaavia diffusa*, Ly 40 NMNH)

Specimens collected: FSM Pohnpei: Pohnpei I. (top of Sokehs Ridge at 200 m: on *Lantana* and other weeds; from Kolonia to Kitti: 9km from Ace Commercial towards Kitti in elephant grass thicket; on road to Lehnpein-pohn Waterfall: on short grass in clear area; Nett: roadside grasses at bridge; by hand; Cs Ok; 94 95 2000)

Habitat: Low-elevation roadside grasses

***Cardiocondyla obscurior* Wheeler, W.M. 1929**

Cardiocondyla wroughtoni var. *obscurior* Wheeler, W.M. 1929; raised to species by Seifert (2003).

Figs. 3A, 16

Specimens examined: FSM Kosrae I.: Mutunlik (light trap, Ck 53 NMNH); FSM Pohnpei: Pohnpei I.: Kolonia, Ag. Station (Ad 50 NMNH); Pohnpei I., Mt. Temwetemwensekir (500-1000 ft.; Dy; 48); Mariana Is.: Guam I., Mt. Lamlam (Ks 58); Saipan I., (hills East of Garapan; Dy; 44-45); Tinian I. (Bq 2002)

Specimens collected: FSM Pohnpei: Pohnpei I. (quarter mile upriver from Mahnd: on rocks, gravel, and leaf litter at water's edge; by hand; Cs; 94)

Habitat: Mid-elevation forest

***Cardiocondyla tjibodana* Karavaiev 1936**

Fig. 16

Specimens examined: FSM Pohnpei: Pohnpei I.: Nanponmal (50 m, Gr 53 NMNH); FSM Yap: Colonia (Gs 50 NMNH); Gagil M. (Gs 50 NMNH); S. Map I. (Gs 50 NMNH); Ulithi A., Fossarai I. (Ks 52 NMNH); Ulithi A., Mogmog I. (Ks 52 NMNH); Yap I. (Ks 52 NMNH); Kiribati: Tarawa A., Bairiki I. (Ks 57); Mariana Is.: Anatahan I. (ecotone between grassland and dense ferns, Bq 2002); Guam I. (Fu NMNH); Guam I., Port Ajayan (Lot 2252; on decayed fruit of breadfruit, Dy 45 NMNH); Guam I., Yigo (Ks 52 NMNH); Guam I., Yona (Ks 52 NMNH); Sarigan I. (secondary forest, Bq 2002); Marshall Is.: Jaluit A., Mejetto (Medyado) I. (Tw 46 NMNH); Palau: Ulebsechel I. (Ks 52 NMNH)

Specimens collected: FSM Pohnpei: Pohnpei I. (Nett Point: on roadside grasses; Wone Dispensary; by hand; Cs Ok; 95 96)

Habitat: Low-elevation disturbed areas

Romblonella

This genus is quite distinct in being rather large, having extremely long propodeal spines and standing hairs on the dorsal mesosoma, but lacking a petiolar peduncle and the distinct modification of the clypeus around the antennal insertions found in *Tetramorium*. Named for an island group in the Philippines between Luzon and Mindanao, this genus is represented by at least four species in Micronesia. Despite Marion Smith's work on this genus, especially in Micronesia, (1953b, c), uncertainties remain about the taxonomy of *Romblonella* in this area, and little progress will be made without more collections.

***Romblonella palauensis* Smith, M.R. 1953**

Fig. 19

Specimens examined: Palau: Ulebsechel I. (paratypes, Ks 52 NMNH); N.W. Ulebsechel I. (light trap, alt. 25 m, male, Gr 52); Babelthuap I., E. Ngatpang (65 m, light trap, male, Gr 52 NMNH)

Unexamined MRSI specimens: Additional 16 collections, mostly males, by Be Dy Gr, 1947-54, from: Palau: Babelthuap I., Koror I., Ulebsechel I.

***Romblonella townesi* Smith, M.R. 1953**

Fig. 19

Specimens examined: Mariana Is.: Tinian I., Marpo Valley (No. 517, Oa 46); Tinian I., Mt. Lasso (paratype, "No. 646," Tw 46 NMNH)

***Romblonella yapensis* Smith, M.R. 1953**

Fig. 19

Specimens examined: FSM Yap: Yap I., Yap Hill, behind Yaptown (60 m, Gr 52); Central Yap I. (paratype, Gs Jul-Aug, 50 NMNH); Dugor (Gs 50 NMNH); Kanif (Gs 50 NMNH); S. Yap I. (Gs 50 NMNH)

***Romblonella* sp. 6051940**

Fig. 19

Specimen examined: Mariana Is.: Saipan I., Tapocho* (Ya&Yo 6-V-40)

Taxonomic notes: Measurements: TL 2.63, HL 0.88, HW 0.9, CI 103, SL 0.53, SI 58, PW 0.63, ML 0.43. Antennae 12-segmented with distinct three-segmented club comprised of two segments of equal length and a final segment equal to the previous two combined. Color: Overall black, contrasting with brownish orange legs and antennae (including full scapes and coxae). Pilosity: Entire body except posterior propodeum, but including mandibles, clypeus, antennae, legs, propodeal spines, and gaster with fairly straight, evenly spaced, standing silver hairs; hairs spaced from 1/2 to slightly more than their length from each other, fewer on dorsal gaster, more on legs and antennae, becoming more depressed and furlike on funiculus, especially on club. Sculpturing: Head and mesosoma covered in irregular linear rugae and shallow punctures; punctures less visible on clypeus; rugae absent from scrobes; sculpturing more reticular on vertex, down sides of head, and between eyes and antennal insertions; mandibles with longitudinal grooves from insertions to apices. Rugae less distinct on mesosoma, more reticulate on pronotum, longitudinal laterally fading posteriorly; area directly under and between spine bases smooth. Dorsal gaster with fine punctures. Similar species: At first glance, sp. 6051940 appears to be a dark specimen of *Romblonella townesi* Smith M. R. 1953 (b) (*townesi* is light brown and sp. 6051940 is black), since they are nearly identical in size and sculpturing and are both from the Marianas (although *townesi* is from Tinian I. and sp. 6051940 from Saipan I.). However, the propodeal spines of sp. 6051940 are slightly twisted such that when viewed from a 45º angle from dorsal, they are clearly curved; *townesi*'s spines are straight when viewed at the same angle. This species does not closely resemble other Micronesian species: its spines are too short and sculpturing too fine for *R. yapensis* Smith M. R. 1953 (b), and it is too small and round, and its spines are too short to be *R. palauensis* Smith M. R. 1953 (c). It resembles *R. opaca* Smith, F. 1861, but sp. 6051940's sculpturing is not nearly as reticulate.

Unexamined *Romblonella* spp.

Unexamined MRSI specimens: FSM Pohnpei (identified as *R. yapensis*, but likely not): Pohnpei I., Kolonia, Ag. Station (1 male, light trap, cacao grove, Gr 53); Mt. Temwetemwensekir (6 males, 180 m, Gr 53); Mt. Temwetemwensekir (3 males, 180 m, Gr 53); Mt. Temwetemwensekir (1 worker, 180 m, Gr 53); Mt. Temwetemwensekir (1 worker, 500-1000 ft., Dy 48); Mariana Is. (identified as *R. yapensis*, but probably *R. townesi*, sp. 6051940, or another species): Rota I., (3 workers, 1 male, Bh 51); Saipan I., Hagman Pt Area (4 workers, Lot 814, beating vegetation, Dy 45); Saipan I., Hagman Pt Area (1 worker, Lot 816, beating vegetation, Dy 45); Saipan I., Kalabera area (1 worker, Lot 723, Dy 45); Saipan I., Papako Area (1 worker, Lot 598, beating vegetation, Dy 45); Saipan I., Papako Area (7 workers, Lot 508, beating vegetation, Dy 45); Saipan I., Mt. Magpi summit (1 worker, Lot 821, Dy 45); Tinian I. (1 worker, ridge SB section, Lot 884, beating vegetation, Dy 45); Tinian I., Tinian Harbor (1 worker, Lot 880, beating vegetation, Dy 45); Tinian I. (1 worker, Lot 905, Dy 45); Tinian I. (1 worker, Lot 907, Dy 45)

Unexamined Micronesian specimens reported: After describing *R. townesi* and *R. yapensis*, (Smith, M.R. 1953b), Smith reported (1953c) receiving an assortment of males from Palau, Yap (FSM Yap), and Ponape (FSM Pohnpei) that represented "several other species." The fates of these specimens are as follows: (1) Smith used the Palauan males to describe the male of *R. palauensis* (but did not include them in the type series; Smith, M.R. 1953c); (2) the Yapese males have not been found by me nor are mentioned in his inventory; (3) the Pohnpeian males (also unseen by me) may be the same males identified as *R. yapensis* in his inventory (above), but he makes no mention of the Pohnpeian workers listed in his inventory, one of which was collected five years earlier. It seems clear that in 1953, *Romblonella* specimens were in motion, both figuratively and literally, and M. R. Smith had specimens he could not assign to the three species he named. Although he implies his Yapese males were not *R. yapensis*, and he identifies Pohnpeian workers in his inventory as *R. yapensis*, it seems likely the opposite in both cases is true; I have left them here, though, as simply two potentially new *Romblonella* species.

TRIBE METAPONINI

Metapone

This genus can be readily identified by the presence of deep antennal scrobes hidden by wide, flange-like carinae which give the head a rectangular appearance from the front. The absence of propodeal spines and a flat dorsal

mesonotum give it an overall resemblance to *Vollenhovia*, but *Metapone* lacks the distinctive keel on the ventral petiole.

***Metapone truki* Smith, M.R. 1953**

Fig. 17

Specimens examined: FSM Chuuk: Dublon I. (worker and two queens, On 35); Palau: Koror I., limestone ridge S. of inlet (under dead bark, Sm 48)

Taxonomic notes: Originally named for Truk (now "Chuuk") (Smith 1953a) before the Palauan specimens had been identified, this species' distribution suggests it might also be found on Yap; in addition, R. W. Taylor believes it may be a subspecies of a widespread New Guinean species (pers. comm.).

Vollenhovia

This genus is identified quite early in the key by the presence of a medial flange on the ventral petiole (a "keel"), but in case that character is missed, it also lacks propodeal spines, has a flat dorsal mesosomal profile, and has shallow antennal scrobes (the latter distinguishing it from *Metapone*). The widespread species *V. oblonga* is found throughout the area, but there appear to be some endemic species on Pohnpei and one on Chuuk. The small ones (*kaselela*, sp. 6041940, and *pwidikidika*) resemble some Melanesian species, but their size and sculpturing are distinct, the latter being extremely small, and the other two having particular combinations of smooth and sculptured surface. The large new species on Pohnpei, *V. mwereka*, has been collected only once—over 50 years ago—but is quite easily recognized by its wrinkly appearance. The remaining new species on Pohnpei, *V.* sp. 23031948, resembles an orangish *V. oblonga* but is distinctly smaller.

***Vollenhovia kaselela* Clouse (in press)**

Figs. 14C–D, 15D, 20

Holotype collected: FSM Pohnpei: Pohnpei I., Nett M., Nanpil (Dy 25-II-48)

Paratype collected: FSM Pohnpei: Pohnpei I. (PATS, walking on rotten log; collected by hand; Cs; 21-III-2000)

***Vollenhovia mwereka* Clouse (in press)**

Figs. 15A, 20

Holotype and paratype examined: FSM Pohnpei: Pohnpei I., Mt. Nahnalaud (Ad June-Sept, 50)

***Vollenhovia oblonga* Smith, F. 1860**

Called *Vollenhovia pedestris* in Mann (1919), but *pedestris* had earlier been named a subspecies of *oblonga* (Emery 1914) and was returned there by Donisthorpe (1932)

Fig. 20

Specimens examined: FSM Chuuk: Nama I. (under bark, Po 52); FSM Kosrae I.: Lelu I. (Oa 46 NMNH); Lelu M. (Es 37); Malem (Es 37); FSM Pohnpei: Pohnpei I., Madolenihmw M.—Nihpit* (Es 38); Pohnpei I., Mt. Temwetemwensekir (summit, alt. ca. 1,500 ft., Dy 48); Marshall Is.: Ailinglaplap A., nr. Airek (Oa 46 NMNH); Jaluit A., Mejetto (Medyado) I. (Tw 46 NMNH); Jaluit A., Mejrirok I. (Gr 58); Mariana Is.: Saipan I. (En 49); Saipan I., Garapan—Sadog Tasi (Ya&Yo 40); Saipan I., Mt. Fanaganan (Ya&Yo 40); Jaluit A., Imej (Es 37)

Specimens collected: FSM Pohnpei: Pohnpei I. (forest above Keprohi Falls at 350 m, Malen Pahnpe: in leaf litter, in rotten log; Sapwehrik Falls at 70 m: in rotten log; camp on trail to Nahnalaud at 400 m: nest in old ivory nut; camp on trail to Nahnalaud at 400 m: three alates on tree; Cs; by Berlese funnel and hand; 94 95 2000)

Unexamined MRSI specimens: Additional 33 collections, by Ad Be Ck Dy Fs Gr Kr Lr Ln Ni Po Us, 1945-54, from the following already-recorded areas: FSM Chuuk: Nama I., Pis I.; FSM Kosrae I.; FSM Pohnpei: Kapingamarangi A., Pohnpei I.; Mariana Is.: Guam I., Saipan I.; Marshall Is.: Arno A., Ebon A., Wotje A.; and the following new area: Palau: Babelthuap I., E. Ngatpang (65 m, Berlese funnel, rotten wood, Gr 52); Babelthuap I., E. Ngatpang (Berlese funnel, debris, Gr 52); Koror I., limestone ridge S. of inlet (under bark, Dy 48); Sonsorol I. (Kr 52)

Habitat: Mid- to high-elevation forests

***Vollenhovia pwidikidika* Clouse (in press)**

Figs. 15B–C, 20

Holotype collected: FSM Pohnpei: Pohnpei I. (PATS: leaf litter among swamp taro; by Berlese funnel; Cs; 20-X-95)

Paratypes collected (2): FSM Pohnpei: Pohnpei I. (PATS; from leaf litter under pandanus tree; by Berlese funnel; Cs; 20-X-95)

***Vollenhovia* sp. 23031948**

Figs. 14B, 20

Specimen examined: FSM Pohnpei: Pohnpei I., Mt. Temwetemwensekir (summit, alt. ca. 1,500 ft., Dy 23-III-48)

Taxonomic notes: Measurements: TL 2, HL 0.62, HW 0.55, CI 89, SL 0.36, SI 69, PW 0.39, ML 0.28. Antennae 12-segmented, funicular segments lengthening rapidly, terminal segment more than half the length of remaining funiculus. Scapes not reaching lateral vertex by 1/3 their length. Color: Mostly brownish yellow or orange; area around mandibular insertions, clypeus, scapes, legs, mesonotum, posterior petiole, and anterior gaster yellow. Sculpturing: Head with fine striae among large punctures; striations starting immediately above median clypeus, puntures continuing to underside of head; area behind eyes smooth. Pronotum to anterio-dorsal propodeum with very fine, wandering striations; smoother centrally and smooth around propodeal declivity. Lateral pronotum with punctures but glossy. Dorsal petiole smooth, sides rough; postpetiole and gaster mostly glossy. Similar species: In striations and proportions, *Vollenhovia* sp. 23031948 closely resembles *V. oblonga* Smith, F. 1860, which is also found in Micronesia. However, sp. 23031948 is smaller and slightly less punctured, and (as usual with a decrease in size among *Vollenhovia*) it has a smaller CI than *oblonga*.

Vollenhovia sp. 6041940

Fig. 20

Specimen examined: FSM Chuuk: Tol I., Olej, Foup (Ya&Yo 6-IV-40)

Taxonomic notes: Measurements: TL 1.98, HL 0.52, HW 0.42, CI 81, SL 0.3, SI 71, PW 0.35, ML 0.25, PL 0.18, DPW 0.13, PWI 72, PPL 0.17, PPW 0.17, PPWI 100. Similar to *V. kaselela* (above) with the following exceptions: Antennal club more distinct, proximal segment of club 2.3 times larger than previous segment, middle segment of club 1.85 times larger than proximal, and apical segment 2.2 times larger than middle. Body color brownish orange, fading to light orange on funiculus, and tarsi. Striations on area behind eyes wide and bordered by smooth surface; central anterior dorsal pronotum with distinct smooth patch, puncturing weak anterior to propodeal spiracle; petiole and postpetiole with irregular rugae and puncturing dorsally.

TRIBE MYRMECININI

Myrmecina

In overall shape, pilosity and appearance of propodeal spines, this genus could easily be confused with *Rogeria* or *Tetramorium*, but its large groove along the lateral posterior of the head should eliminate any confusion.

***Myrmecina* sp. 7121952**

Figs. 5C–D, 17

Specimen examined: Palau: Babelthuap I., E. Ngatpang (65 m, Gr 7-XII-52)

Taxonomic notes: Measurements: TL 2.02, HL 0.64, HW 0.62, CI 97, SL 0.48, SI 78, PW 0.42, ML 0.35. Antennae 12-segmented, with prominent three-segmented club longer than the remaining funiculus, last segment larger than the previous two combined. Scapes curvaceous, thin and bent to the shape of the sides of the head proximally, extending to the vertex. Mesosoma gently curved to posterior dorsal propodeum, where armed with two sharp spines, each as long as postpetiole. Color: Head, mesosoma, petiole, and postpetiole dark orange brown; antennae, area around mandibular insertions below eyes, legs, lateral gaster, and posterio-ventral gaster brownish orange; coxae and remaining gaster with transitional coloration. Pilosity: Entire body with long, silver hairs, from apical margin of mandibles to antennal club, tarsi, and posterior gaster, covering almost all parts between; long, silver hairs missing or few on posterior propodeum, lateral coxae and mesosoma, and area between lateral head and cephalic groove. Sculpturing: Head to postpetiole with deep, rounded striae becoming more linear on front of head and dorsal mesosoma; posterior propodeum smooth but outlined with distinct ridge the extends down propodeal spines and continues between them; dorsal propodeum smooth to edge of mesonotum. Similar species: *Myrmecina* sp. 7121952 is smaller and lighter than other *Myrmecina* species I examined, except for *M. semipolita* Forel 1905, which is lighter than sp. 7121952. *M. semipolita* also differs in sculpturing, having smoother sculpturing on the head and deeper sculpturing on the mesosoma. The only other species examined that appears similar to sp. 7121952 in overall shape and sculpturing type is *modesta* Mann 1919, but it is larger, darker, and has much deeper sculpturing all over.

Pristomyrmex

Large and glossy, this genus is quite distinct, even in the field, where it can often be found moving rather slowly in small foraging lines. Under the microscope, the clypeus is unique, although difficult to describe in a key—in profile it extends sharply out over the mandibles, unlike any other genus in the area (Figs. 10A–C). Within the genus, identification requires a careful examination of the pronotal and propodeal spines, but spine lengths are conveniently distinct among the species of Micronesia.

***Pristomyrmex largus* Wang 2003**

Figs. 10A, 18

Specimens examined: FSM Pohnpei: Pohnpei I. (holotype, Mt. Kiepw, 1100 ft., Ad 50)

Paratypes collected (now at MCZ and AMNH): FSM Pohnpei: Pohnpei I. (Mt. Nahnalaud: under rotten leaves around camp, on old ivory nut; by hand; Cs; 95 2000)

Habitat: High-elevation forest

***Pristomyrmex levigatus* Emery 1897**

Figs. 9B, 18

Specimens examined: FSM Chuuk: Nama I. (Po 49)

***Pristomyrmex minusculus* Wang 2003**

Fig. 19

Specimens examined: FSM Yap: S. Yap I. (paratype, Gs 50); Tomil (paratype, Gs 50); Palau: Peleliu I. (Dy 48); Peleliu I. (holotype, Dy 48)

Specimens collected (examined by Wang but non-types): FSM Pohnpei: Ant A. (under coconut leaves; by hand; Cs; 94); Pohnpei I. (PATS: leaf litter under ylang-ylang trees; by Berlese funnel; Cs; 95)

Habitat: Low-to mid-elevation disturbed areas

Taxonomic notes: Palauan specimens are dark brown, while those from Yap are orange; *quadridens* shows a similar tendency to get darker on Palau. The Pohnpeian specimens have very weak pronotal teeth, the character best used to separate workers of this species from those of *levigatus* (Wang 2003).

***Pristomyrmex punctatus* (Smith, F. 1860)**

Myrmica punctata Smith, F. 1860

Fig. 19

Specimens examined: Bonin Is.: Chichi Jima (Ik 40); Chichi Jima, Miyanohama (Jack William's Beach) (Sp 58); Chichi Jima, Omura (Camp Beach) (Sp 58); Chichi Jima, Sakai-ura (Bull Beach) (Sp 58); Chichi Jima, Yatsuse R., (Minato ko, Gen.'s Beach) (Sp 58)

***Pristomyrmex quadridens* Emery 1897**

Figs. 10C, 19

Specimens examined: FSM Pohnpei: Pohnpei I., Mt. Kupuriso (1900 ft., Ad 50); Pohnpei I., Mt. Nankep (Tw 46); Pohnpei I., Mt. Nankep (1700-2000 ft., Tw 46); Pohnpei I., near Kolonia (Tw 46); Pohnpei I., Nett M., Nanpil (Dy 48); Pohnpei I., S.E. Mt. Dolotomw (1700 ft., Ad 50); Pohnpei I., S.E. Mt. Dolotomw (1900 ft., Ad 50); Palau: Ulebsechel I. (Kr 52)

Specimens collected: FSM Pohnpei: Pohnpei I. (above Keprohi Falls, Malen Pahnpei: on bracket fungus; quarter mile upriver from Mahnd: nest in rotten tree fern stump; Mall I.: in coconut litter; Nahnalaud cave: on log, under leaves, in rotten leaves in pandanus tree; under soggy bark on rotten standing tree; PATS: under bark of mossy log under swamp taro, walking slowly on rotten log, in leaf litter in bird's nest fern behind farm; by hand; Cs; 94 2000)

Habitat: Atoll, mid-, and especially high-elevation forests

Taxonomic notes: Palauan specimens are dark brown, while those from Pohnpei are orange; *minusculus* shows a similar tendency to be darker on Palau.

TRIBE PHEIDOLINI

Aphaenogaster

One of the more gangly Myrmicinae, this genus is distinct in having a four-segmented antennal club, and the club being similar in width as the remainder of the funiculus. Only one species is found in Micronesia, a predominantly Japanese species in the Bonin Islands; however, the genus does have representatives in the tropics and could turn up on other Micronesian islands.

***Aphaenogaster osimensis* Teranishi 1940**

Aphaenogaster famelica var. *osimensis* Teranishi 1940

Fig. 16

Specimens examined: Bonin Is.: Ani Jima, Sen-zan (NE Bay) (Sf 58); Chichi Jima, Omira (schoolhouse, under bark, Me 58); Chichi Jima, Tatsumi Wan SE (Sf 58)

Unexamined MRSI specimens: Additional collection of an alate female from the following already-recorded area: Bonin Is.: Chichi Jima, Sakai Ura (Me 49)

Habitat: Rocky shores, forest edges, and rocky inland areas (Japanese Ant Database Group 2003)

Pheidole

Pheidole is a large and speciose genus, and identifying them can be difficult. In keys *Pheidole* often appears in several places, as their individual characters can ally them with other genera. Moreover, one of their most distinct features—dimorphism—is of no use if only a minor worker has been collected (majors being so large-headed they should be recognizable as such). Nonetheless, having

sharp propodeal spines and a three-segmented antennal club should immediately suggest *Pheidole*, and this can be kept in mind while eliminating other possibilities in the key. *Solenopsis* has a two-segmented club, and *Monomorium* lacks propodeal spines.

Specimens reported in Swezey (1939) as "*Pheidole,* species near *philemon*" have been made the type series of *Pheidole recondita*, and those he identified as "*Pheidole* species … A light brown species" have been determined as *P. nindi*. I suspect, too, that Weber's (1950) specimens identified as "*Pheidole*, near *rinae tipuna*" from Saipan are also *nindi*. Weber describes this species as being much smaller than *javana* (now *fervens*), *oceanica*, and "*bolabolensis*" (surely *boraborensis*, now synonymized with *oceanica*) and close to *rinae* subsp. *tipuna*, but with a shorter head. This would be a close description of a *nindi* major, which lacks the elongate vertex of *rinae* and is similar in color and sculpturing; the only problem is that the minors of *rinae* are smooth on the head and promesothorax, whereas *nindi* minors are heavily sculptured there. Weber does not mention differences between the two casts, but he does write that this species is "less glabrous" than *fervens*, which strengthens the case that it is *nindi*.

***Pheidole fervens* Smith, F. 1858**

Figs. 7C–D, 18

Specimens examined: Bonin Is.: Chichi Jima, Omira (Me 49); Haha Jima (Me 49); FSM Chuuk: (Ks 52); Erin, Tonoas I. (Ya&Yo 40); Pata Sabote, Tol I. (Ya&Yo 40); Tol I., Pata Sabote—Epin* (Ya&Yo 40); FSM Pohnpei: Kapingamarangi A., Hare I. (Ni 54); FSM Yap: Ifalik A., Ifalik I. (Bt 53); Kiribati: Maroh* (Ca 51); Tarawa A., Bikenibeu I. (Ks 57); Mariana Is.: Guam I., Mt. Lamlam (Ks 58); Palau: Babelthuap I. (Gr 51)

Specimens collected: FSM Pohnpei: Ant A. (by hand; Ok&students; 96); Pohnpei I. (Nan Madol: on coral rubble; Nett Point: in roadside grasses; PATS: in leaf litter mulch, in leaf litter among swamp taro, from between banana leaves; Pwudoi: under ivory nut tree 17.7 km from Ace Commercial to Kitti; Wone dispensary; by Berlese funnel and hand; Cs Ok Wd; 95 2000)

Habitat: Low-elevation, human-disturbed areas

***Pheidole megacephala* (Fabricius 1793)**

Formica megacephala Fabricius 1793

Figs. 8A, 18

Specimens examined: FSM Yap: Central Map I. (Gs 50); E. Map I. (Gs 50); Map I. (Ks 52); N. Map I. (Gs 50); N. Yap I. (Gs 50); S. Map I. (Gs 50); S. Yap I. (Gs 50); Tomil M. (Gs 50); Yap I. (Gs 50); Yap I. (Gr 51); Yap I. (Ks 52); Yap I., Yap Hill, behind Yaptown (Gr 52); Kiribati: Abamama (Ek 44); Butaritari A., Butaritari I. (Ks 57); Tarawa A., Bairiki I. (Ks 57); Tarawa A., Betio I. (Ks 57); Tarawa A., Bikenibeu I. (Ks 57); Tarawa A., Eita I. (Ks

57); Mariana Is.: Guam I., Mt. Lamlam (Ks 57); Tinian I. (Hr 24); Marshall Is.: Jaluit A., Lejrok I. (*Anous* birdnest, Gr 58); Kwajalein A. (Cg 56); Kwajalein A. (Ks 58); Kwajalein A., Abege Islet (Ks 58); Kwajalein A., Ebeye I. (Gr 58); Majuro A., Uliga I. (Lr 50); Palau: Babelthuap I., Ngerehelong (along streams, Sa 57); Koror I., Koror (Ys 38)

Specimens collected: FSM Pohnpei: Pohnpei I. (Kolonia: Jesuit residence inside kitchen; by hand; Cs; 2000); Marshall Is.: Enewetak A. (on beach; Bijlie I.; Runit I.; Anianis I.; El&Le; 2000 and 2001)

Unexamined MRSI specimens: Additional five collections, by Be Gr Gs Ni 1950-54, from the following already-recorded areas: FSM Pohnpei: Kapingamarangi A.; FSM Yap: Map I., Yap I.; Marshall Is.: Majuro A.

Habitat: Atolls and human-disturbed areas

***Pheidole nindi* Mann 1919**

Fig. 18

Majors and minors examined: Mariana Is.: Guam I., Piti (in garden, Sw 36); Tinian I. (at bait, Bq 2002)

Collections of only minors examined: FSM Pohnpei: Pohnpei I., Nett M., Nanpil (Dy 48); Pohnpei I., S.E. Nanponmal (Gr 53); Mariana Is.: Saipan I., As Palacios (Bn 2002); Saipan I., Susupe (Ks 58); Tinian I. (Bq 2002); Tinian I. (litter, Bq 2002)

Minors collected: FSM Pohnpei: Pohnpei I. (PATS farm: under thin, rotten tree bark; Cs 2000)

***Pheidole oceanica* Mayr 1866**

Figs. 7E–F, 18

Specimens examined: FSM Chuuk: Dublon I. (Po 49); Fefan I. (180 m, Gr 53); Param I. (ex rotting breadfruit, Po 49); Pis I. (Po 49); Romanum I. (rotten log, Po 49); Tol I., Netutu (Po 49); Udot I. (aspirator nr. Seashore, Oa 46); Weno I., Nofo, Mt. Winifourer (Po 49); Weno I., Civ. Ad. Area (Po 49); Weno I., N. Basin of Mt. Chukumong* (dry leaves, Po 49); Weno I., S. Valley, Mt. Tonaachau (Po 49); FSM Pohnpei: Kapingamarangi A., Touhou I. (under decaying leaf and coconut debris at community disposal area, Ni 54); Pingelap A. (Gr 53); Pohnpei I., nr. Ronkiti (with Psychotrid, Gl 49); FSM Yap: Faraulep A., Aaraulep I. (Ks 52); Ifalik A., Ifalik I. (Ks 52); S. Map I. (Gs 50); Satawal I. (Ks 52); Woleai A., Falalis I. (Ks 52); Mariana Is.: Guam I., Agana (Bh&Gr 45); Marshall Is.: Arno A., Ine I. (Lr 50)

Specimens collected: FSM Pohnpei: Ant A. (nest in leaf bases at top of coconut tree, in leaf litter of bird's nest fern, on coral rubble, under bark, foraging on tree overhanging the water, under bark, foraging along rack at

beach, colony under husk of old coconut, under small coral rubble, in sand and coral rubble on upper beach on lagoon side; by hand; Cs Wd; 94 2000); Pohnpei I. (from Malen Pahnpe above Keprohi Falls: around tree roots at 350 m, in riverside moss at 350 m, in rotten log at 350 m; Kolonia: Jesuit residence inside kitchen; Lehnpeinpohn Falls: on rocks at base of falls; road to Lehnpeinpohn Falls: under breadfruit tree, in short grass in clear area; upper forest above Mahnd: along river in dead limb of tree fern, quarter mile upriver on rocks, gravel, and leaf litter at water's edge; Mall I.; Mt. Nahnalaud: on tree at upland forest camp at 300 m, under dead grass in wire fern patch at 400 m, in grass and ferns at 750 m; Nan Madol: in rotten log, on coral and rock rubble, on coral rubble; Nan Marid: in roadside weeds 23.6 km from Ace Commercial to Kitti; Nett: nest in tree fern, debris around banana trees; road to Nett Pt.: in roadside weeds; PATS: alates in men's staff dorm room on bedspread, alates in men's staff dorm room on wall, alates at light, alates on computer screen, PATS farm: under bark of rotten log in swamp taro patch, in rotten hibiscus branches, under swamp taro in leaf litter, nest inside rotten stick laying on log, on banana plants, on rotting twig on ground, among swamp taro leaf bases, between leaves of banana, on leaves of bird's nest fern, walking on rotten log, in leaf litter from bird's nest fern; Pwudoi: under ivory nut tree 17.7 km from Ace Commercial to Kitti; Sapwehrik Falls: leaf litter in bird's nest fern at 70 m; by Berlese funnel and hand; Cs Ok; 94 95 2000)

Unexamined MRSI specimens: Additional eight collections, by Bt Be Ca Gr Kr, 1935-53, from the following already-recorded areas: FSM Chuuk: Dublon I., Nomwin A.; FSM Yap: Ifaluk A.; Palau: Babelthuap I., Sonsorol I.; and the following new areas: Bonin Is.: Chichi Jima (Me 49); Haha Jima (Me 49); Kiribati: Tarawa A. (male and worker, Ca 51)

Habitat: Human-disturbed areas from beach to high-elevation forest

Taxonomic notes: Wilson and Taylor (1967) report that Micronesian specimens of this species more closely resemble Melanesian ones than those from other parts of the Pacific.

***Pheidole recondita* Clouse (in press)**

Figs. 8B, 18

Holotype examined: Mariana Is.: Guam I., Yigo (Sw, 18-X-36)

Paratypes examined (6): Mariana Is.: Guam I., Yigo (Sw, 18-X-36); Rota I. (litter, shaded valley, Br, 15-XI-2002)

Paratypes collected (10): FSM, Pohnpei: Pohnpei I. (Mt. Nahnalaud Cave: under moss on tree around camp; by hand; Cs; 24-III-2000)

Other minors examined: FSM Kosrae I.: Mt. Mutunte (580 m, duff from forest floor, KU 58 B, Ck 53); Mariana Is.: Anatahan I. (pitfall, mid-altitude

forest, Br, 2-IV-2002); Anatahan I. (pitfall, mid altitude forest, Br, 26-IV-2002)

Ogther minors collected: FSM Pohnpei: Pohnpei I., Mt. Nahnalaud (collected by Berlese funnel from moss; Cs; 10-IX-2000)

Habitat: Mid- to high-elevation forest

***Pheidole sexspinosa* Mayr 1870**

Fig. 18

Specimens examined: FSM Yap: Gilifith—Ruul M.* (Es 39); Marshall Is.: [no further collecting information]; Palau: Babelthuap I., Gakip (Tw 46 NMNH); Babelthuap I., Ngardok*—Colony* (Es 38)

Specimens collected: FSM Pohnpei: Ant A. (colony under husk of old coconut, in leaf litter in bird's nest fern, on ferns in coconut tree, in coral rubble under breadfruit tree, on coral rubble; Cs; 94 2000); Pohnpei I. (above Keprohi Falls: in rotten log at 350 m; Mall I.: in rotten log in mangrove area; Nan Madol: on coral rubble, leaf litter on rocks in mangrove swamp; Kitti: edge of mangrove forest 0.4 km from Ace Commercial to Kitti; Mt. Nahnalaud cave: under dead and rotten leaves; PATS farm: on lime tree; in rotten hibiscus branches; road to Nett: in roadside grasses at bridge to Nett; Cs Ok Wd; 94 95 2000)

Unexamined MRSI specimens: Additional six collections, by Kr Lr Gr, 1950-53, from the following already-recorded areas: FSM Pohnpei: Pingelap A., Pohnpei I.; FSM Yap: Map I., Yap I.; Marshall Is.: Arno A.; Palau: Babelthuap I.

Habitat: Wide range of vegetation and elevations

***Pheidole umbonata* Mayr 1870**

Fig. 18

Specimens examined: FSM Chuuk: (Po 49); Erin, Tonoas I. (Ya&Yo 40); Tol I., Pata Sabote—Epin* (Ya&Yo 40); FSM Kosrae I.: Funaunpes (1 m, shelf fungus, dead stump, KU 22B, Ck 53); Lelu M. (Es 37); Malem (Es 37); Malem River (Ck 53); Mt. Mutunte (580 m; duff from forest floor; KU 58 B, Ck 53); FSM Pohnpei: (Ck 53); Kapingamarangi A., Hare I. (on coconut; Att. mealybugs, Oa 46 NMNH); FSM Yap: Ifalik A., Ifalik I. (Bt 53); Satawal I. (Ks 52); Ulithi A., Potangeras I. (Dy 47); Yap I. (Gs 50); Kiribati: Butaritari A., Butaritari I. (Ks 57); Tarawa A., Eita I. (Ks 57); Tarawa A., Eret I.* (Ks 57); Tarawa A., Marenanuka* (Ks 57); Mariana Is.: Agrihan I. (Me 49); Anatahan I. (pitfall, fern and coconut forest, Bq 2002); Anatahan I. (*Barringtonia* litter, Bq 2002); Guam I., Mt. Lamlam (Ks 57); Guam I., Mt. Tenjo (under stones, Us 36); Guam I., Piti (Sw 36); Guam I., Tumon Bay (under bark, Us 36); Guam I., Yona (ex rotten cane, Us 36);

Pagan I., Laguna-Malas (Ya&Yo 40); Pagan I., Songsong (Ya&Yo 40); Rota I., Sabanna monument (Bq 2002); Rota I. (litter, shaded valley, Bq 2002); Saipan I., Donni—Sadog Tasi (Ya&Yo 40); Saipan I., Mt. Fanaganan (Ya&Yo 40); Saipan I., Papago* (limestone forest floor, Bq 2001); Saipan I., Kagman Station (Bn 2002); Tinian I. (Bq 2002); Marshall Is.: Jaluit A., Jabwor I. (Gr 58); Jaluit A., Mejetto (Medyado) I. (Tw 46 NMNH); Jaluit A., Mejrirok I. (Gr 58); Kwajalein A., Airfield (Tw 46 NMNH); Palau: Koror (Be 52)

Specimens collected: FSM Pohnpei: Ant A. (by hand; Ok&students; 96); Pingelap A. (inside dispensary; by hand; Ok; 95); Pohnpei I. (from Awak: in kitchen; Dollekei: roadside grasses, grass and leaf litter by road, leaf litter under bamboo thicket; Kitti: in different parts of rotten stump, 23.9 km from Ace Commercial to Kitti at base of Lehn Mesi R. Bridge; Kolonia: from under stones along walkway to Jesuit residence at night, Jesuit residence inside kitchen; Malen Pahnpe above Keprohi Falls at 350 m: in leaf litter, on tree fern, on bracket fungus, nest under leaf on rock in middle of river, on ivory nut along river, on ivory nut tree; Lehnpeinpohn Falls: on rocks at base of falls; above Mahnd at 300–400 m: on rocks along river at water's edge; Mall I.: in coconut husk litter; Mt. Nahnalaud peak at 750 m: under moss on rock, in grasses, in moss in pandanus marsh; hilltop camp to Mt. Nahnalaud at 400 m: in dead ivory nut branch, on surface of dead log, around fungus on log, in leaf litter; to Mt. Nahnalaud: walking on moss on forest floor; Mt. Nahnalaud cave camp: under leaves on rock, under and on rotting leaves, foraging around old rice, foraging on leaves, under moss on tree, under moss on rock, in old ivory nut, nest in dirt under roots, in extensive tunnels along 1 m of rotten tree branches under moss and bark, on log; Nan Madol: under rock in soil, under rock, on coral rubble, on coral and rock rubble; Nan Marid: in roadside weeds 23.6 km from Ace Commercial to Kitti; Nett Pt.: from stones and weeds, under bamboo thicket; road to Nett Pt.: in roadside grasses, leaf litter; Nett Pt.: under mangrove tree, on coral rubble beside road; PATS: in elephant grass, in leaf litter from campus, alate on computer screen, alates in room on bedspread at night, leaf litter from garden; PATS farm: in dry and dead stick under swamp taro on rock, in litter under swamp taro, under thin and rotten tree bark, on swamp taro leaves, in fern leaf litter in ylang-ylang grove, in pandanus leaf litter, in leaf litter mulch; Wone dispensary; Rohi I.; forest behind Salapuk: in kapok tree; by hand, Berlese, and aspirator; Aq Cs Ep Ok Ru Wd; 94 95 96 2000); Kiribati: Enderbury I. or Sydney I. [? label reads "Sydney Is. Enderbury"] (Ok 2000)

Unexamined MRSI specimens: Additional 99 collections, by Ad Bh Ck Dy Fs Gs Gr Kr Lr Ni Po Us, 1944-56, from the following already-recorded areas: FSM Chuuk: Fefan I., Nama I., Tol I., Weno I.; FSM Kosrae I.; FSM Pohnpei: Kapingamarangi A., Mokil A., Pingelap A., Pohnpei I.; FSM Yap:

Map I., Ulithi A., Woleai A., Yap I.; Mariana Is.: Guam I., Saipan I., Tinian I.; Marshall Is.: Arno A., Majuro A.; Palau: Babelthuap I., Garakayo I., Koror I., Merir I., Ngulu A., Peleliu I., Sonsorol I., Tobi I.

Habitat: Wide range of substrates at all elevations

***Pheidole* sp. 24041958**

Figs. 7A–B, 18

Specimens examined (15): Marshall Is.: Jaluit A., Jabwor I. (Gr 24-IV-58); Jaluit A., Jabwor I. (Gr 1-V-58); Majuro A. ("1991," Tw 28-VIII-46 NMNH)

Taxonomic notes: These specimens were kindly examined by K. Eguchi, but he could not identify them. They will have to remain undetermined until new collections are made with associated majors.

TRIBE PHEIDOLOGETONINI

Carebara

The only species in this genus in Micronesia is also one of the smallest ants known, which alone helps greatly in its identification in the fiield. However, its small size makes a final determination in the lab difficult without adequate magnification. Its two-segmented antennal club and lack of propodeal spines distinguishes it from the small *Pheidole nindi* and *P. recondita* (which have three-segmented clubs and propodeal spines), but *Solenopsis papuana* also has a two-segmented club, lacks propodeal spines, and is very small. However, the club of *Carebara* is huge, outsizing the remainder of the funiculus. *Carebara atoma* is also dimorphic, and a major worker can easily be identified by the small "horns" at its vertex.

***Carebara atoma* (Emery 1900)**

Oligomyrmex atomus Emery 1900

Fig. 16

Specimens examined: FSM Kosrae I.: Mt. Mutunte (580 m; duff from forest floor; KU 58 B, Ck 53); Mutunlik ([slightly larger than other queens in ANIC collection, but worker from Kosrae the same], 15 m, light trap, female, Gr 53); Palau: Babelthuap I., E. Ngatpang (65 m, light trap, female, Gr 52); Babelthuap I., Ngaremeskang (25 m, light trap, 2 males, Gr 52); Babelthuap I., Ngaremeskang (30 m, light trap, 3 males, Gr 52); Koror (at light, 1 male, Be 53)

TRIBE SOLENOPSIDINI

Monomorium

The genus *Monomorium* is most easily recognized by its combination of a three-segmented antennal club and lack of anything more than corners on the propodeum. The clypeus is also distinct, having two longitudinal carinae, but this is difficult to recognize in some species. In Micronesia this genus has at least six species, most of which are quite easily distinguished. However, determinations I made of *M. monomorium* (Bolton's 1987 replacement name for *M. minutum*) were done following Wilson and Taylor's (1967) combining of *javanum* and *liliuokalanii* under *minutum*. Bolton (1987), though, considered these species distinct from *minutum* and probably best combined under *chinense* Santschi 1925. Thus I leave them as "*chinense*-group" at this time. I also follow Heterick's (2001) synonymization of *talpa* Emery 1911 with *australicum* Forel 1907.

***Monomorium australicum* Forel 1907**

Figs. 5A, 17

Specimens examined: FSM Pohnpei: Pohnpei I., Nanponmal (*Exorrhiza* stump, Gr 53); Pohnpei I., Nett M., Nanpil (from Berlese of litter at base of ivory nut tree, Dy 48); Pohnpei I., S.E. Nanponmal (in *Exorrhiza* stump, Gr 53); Mariana Is.: Saipan I., Papago* (litter, limestone forest, Bq 2002); Tinian I. (Bq 2002)

Specimens collected: FSM Pohnpei: Pohnpei I. (road across from entrance to Lehnpeinpohn Waterfall: under banyan tree; Malen Pahnpe above Keprohi Falls: on ivory nut tree at 350 m; Mt. Nahnalaud cave: in rotten wood of standing tree near camp, moss on trees, under dead leaves around camp; near Mt. Nahnalaud: in ivory nut swamp; PATS farm: under banana tree, under swamp taro, on rotting twig, in leaf litter under ylang ylang grove; by Berlese funnel and hand; Cs; 94 95 2000)

Habitat: Mid- to high-elevation forest

***Monomorium chinense*-group**

Figs. 4E, 17

Specimens examined: Bonin Is.: Chichi Jima (Ik 40); FSM Kosrae I.: Malem (Es 37); FSM Pohnpei: Kapingamarangi A. (Tw 46 NMNH); FSM Yap: Central Yap I. (Gs 50); S. Rumung I. (Gs 50); Tomil M. (Gs 50); Kiribati: Butaritari A., Butaritari I. (Ks 57); Tarawa A., Bairiki I. (Ks 57); Mariana Is.: Guam I., Mt. Lamlam (Ks 57); Guam I., Pago Bay (Bh&Gr 45); Guam I., Upi Trail (Sw 36); Guam I., Yigo (Ks 57); Guam I., Yigo (Sw 36); Saipan I.; Palau: Koror (Ys 38)

Specimens collected: FSM Pohnpei: Pohnpei I. (from Kolonia to Kitti: 9 km from Ace Commercial towards Kitti in elephant grass thicket; Nett Point: in roadside grasses; PATS: in leaf litter in ylang-ylang grove; by hand and Berlese funnel; Cs Ok; 95)

Habitat: Low- to mid-elevation human disturbed areas

***Monomorium destructor* (Jerdon 1851)**

Atta destructor Jerdon 1851

Fig. 17

Specimens examined: FSM Chuuk: Weno I., Mt. Teroken* (underside of banana leaves by light at 90 m height, Gr 53); Tololas—Erin* (Ya&Yo 40); FSM Kosrae I.: Kosrai I. (Es 37); Kiribati: Tarawa A., Bairiki I. (Ks 57); Tarawa A., Bikenibeu (Ks 57); Mariana Is.: (Ks 58); Guam I. (Bh&Gr 45); Guam I. (Fu); Guam I. (Vn 26); Guam I., Agana (Wa 45); Guam I., Agana (Ks 57); Guam I., Agana (Ks 58); Guam I., Barrigada Heights (Ks 57); Guam I., Mt. Alifan (Ks 52); Guam I., Mt. Alifan (Ks 57); Guam I., Mt. Lamlam (Ks 58); Guam I., Mt. Santa Rosa (Bh&Gr 45); Guam I., Naval Air Station (Ks 57); Guam I., Orote Peninsula (By 36); Guam I., Pt. Oca (Bh&Gr 45); Pagan I., Laguna (Ya&Yo 40); Pagan I., Songsong (Ya&Yo 40); Saipan I. (En 49); Saipan I. (Ks 58); Saipan I. (Ya&Yo 40); Saipan I., Donni—Sadog Tasi (Ya&Yo 40); Saipan I., Garapan (Es 39); Saipan I., Garapan—Sadog Tasi (Ya&Yo 40); Saipan I., Matansa—Banaderu* (Es 39); Saipan I., Matansa (Ks 46); Saipan I., Matansa—Calabera* (Ya&Yo 40); Saipan I., Susupe (Ks 46); Tinian I. (No. 555, Oa 46); Tinian I., Camp Churo (No. 576, Oa 46); Tinian I., Marpo Valley (Dy 45); Wake A. (U.S.): Peale I. (Ks 57)

Unexamined MRSI specimens: Additional 23 collections, by Be Dy Fs Ml, 1944-53, from the following already-recorded areas: Kiribati: Onotoa A. (Gilbert Island Group); Mariana Is.: Guam I., Saipan I., Tinian I.; and possibly the following new location (see Table 2): Marshall Is.: Lae Atoll (from coconut, Be 53)

Unexamined Micronesian specimens reported: Marshall Is.: Bikini A., Namu I. and Eneu I. (Cole 1949); Palau: Helen Reef, Tobi I., Ngerkabesang I. (Olsen & Miles, 2005)

***Monomorium floricola* (Jerdon 1851)**

Atta floricola Jerdon 1851

Figs. 4F, 17

Specimens examined: FSM Chuuk: Tol I., Netutu (Po 49); Tol I., Pata Sabote—Epin* (Ya&Yo 40); FSM Kosrae I.: Lelu M. (Es 37); FSM Pohnpei: Pohnpei I., Kolonia, Ag. Station (Ad 50); Pohnpei I.: Nett M., Nanpil (Dy 48); Pohnpei I., Palakir (Es 37); FSM Yap: (Gs 50); Fais I. (Ks

52); Yap I. (Gs 50); Kiribati: Butaritari A., Butaritari I. (Ks 57); Tarawa A., Bairiki I. (Ks 57); Tarawa A., Eita I. (Ks 57); Tarawa A., Naanikai* (Ks 57); Tarawa A., Teaoraereke* (Ks 57); Mariana Is.: Anatahan I. (secondary edge old coconut plantation, Bq 2002); Guam I. (Hr 24); Guam I., Mt. Lamlam (Ks 58); Guam I., Pt. Oca (Gr 45); Guam I., Yigo (Ks 57); Pagan I., Songsong (Ya&Yo 40; Pagan I., Umatac* (Ks 58); Rota I. (litter, shaded valley, Bq 2002); Saipan I. (En 49); Saipan I. (Ks 58); Saipan I., Donni—Sadog Tasi (Ya&Yo 40); Saipan I., Garapan (Ya&Yo 40); Saipan I., Tapocho* (Ya&Yo 40); Tinian I. (Bq 2002); Marshall Is.: Jaluit A., Jabwor I. (Gr 52); Kwajalein A. (By 44); Palau: Koror (Es 38); Koror (Ks 52); Wake A. (U.S.): Peale I. (*Boerhaavia diffusa*, Ly 40); Peale I. (on dead rail (newly hatched chick), Ly 40); (Jo 53)

Specimens collected: FSM Pohnpei: Pohnpei I. (Mall I.: in rotten log; PATS: on building walls; Wone dispensary; by hand; Cs Ok; 94 96 2000)

Unexamined MRSI specimens: Additional 86 collections, by Ad Be Bh By Ck Dy Fs Gs Gr Hg Kr Ln Ni St, 1944-54, from the following already-recorded areas: FSM Kosrae I. to 30 m; FSM Pohnpei: Kapingamarangi A., Mokil A., Pohnpei I.; FSM Yap: Rumung I., Ulithi A., Yap I.; Mariana Is.: Guam I., Saipan I., Tinian I.; Marshall Is.: Ebon A., Enewetak A., Kwajalein A., Namu A.; Palau: Angaur I., Babelthuap I., Garakayo I., Koror I., Peleliu I., Sonsorol I., Tobi I.

Habitat: Human-disturbed areas

***Monomorium pharaonis* (L. 1758)**

Formica pharaonis Linnaeus 1758

Fig. 17

Specimens examined: FSM Chuuk: Weno, Pei* (Po 49); Nama I. (Po 49); Weno I. (Gr 53); FSM Pohnpei: Pohnpei I., Kolonia, Ag. Station (Gr 53); Pohnpei I., Mt. Temwetemwensekir (Gr 53); FSM Yap: Dogor—Kanif—Ruul M.* (Es 50); (Gs 50); Kiribati: Tarawa A., Bairiki I. (Ks 57); Mariana Is.: Guam I., Barrigada Heights (Ks 57); Guam I., Piti (Sw 36); Saipan I., Ants Valley* (on coffee berry, Oa 46); Saipan I., Matansa—Banaberu* (Es 39); Tinian I. (Bq 2002); Marshall Is.: Enewetak A., Engebi I. (Tw 46); Palau: (Dy 48); (dead orocytes, Gressitt); Airai—Gakip* (On 36); Ulebsechel I. (Dy 48); Babelthuap I. (Es 38); Babelthuap I., Airai (Dy 48); Babelthuap I., Ngardok—Ngarmisukan* (Es 38); Babelthuap I., Ngiwal (Gr 51); Koror (on yellow flowers of roadside legume, Dy 47); Koror (Gr 52); Koror, Arabaketsu (Mu 38); Wake A. (U.S.): (Jo 53)

Specimens collected: FSM Pohnpei: Pingelap A. (inside dispensary; Ok; 96); Pohnpei I. (Kolonia: inside kitchen of new Jesuit residence; PATS: in staff kitchen; Wone dispensary; by hand; Cs Ok; 95 2000)

Unexamined MRSI specimens: Additional 28 collections, by Ad Ck Dy Gs Gr Kr Po, 1920-53, from the following already-recorded areas: FSM Chuuk: to 390 m, Pis I., Tol I., Weno I.; FSM Pohnpei: Mokil A., Pohnpei I.; FSM Yap: Rumung I., Yap I.; Palau: Koror I.; and the following new area: FSM Kosrae I.: Pukusrik (Ck 53)

Unexamined Micronesian specimens reported: FSM: Kosrae: 1937 (Ehrhorn 1939)

Habitat: Human-disturbed areas, often indoors

***Monomorium sechellense* Emery 1894**

Monomorium fossulatum subsp. *seychellense* Emery 1894; raised to species by Wilson and Taylor (1967)

Figs. 5B, 17

Specimens examined: FSM Pohnpei: Pohnpei I., Kolonia (coconut debris, Gr 53); Mariana Is.: Guam I., Pilgo River (Bh&Gr 45)

Specimens collected: FSM Pohnpei: Pohnpei I. (road to Nett Point: on roadside grasses; by hand; Cs&Ok; 95)

Habitat: Low-elevation human-disturbed areas

Solenopsis

Their ten-segmented antennae ending in a distinct two-segmented club make this genus easy to identify. Still, their overall body shape and lack of propodeal spines has led to confusion with *Monomorium*. Specimens reported in Swezey (1939) as a black species of *Solenopsis* from Yigo, Guam, were found in ANIC and reidentified as *Monomorium chinense*-group. The little *S. papuana* could also be confused with *Carebara atoma*, which also has a two-segmented club and a lack of propodeal spines, but the latter's antennal club is larger than the remainder of the funiculus, which is quite different from that of *Solenopsis*.

Specimens of *Solenopsis geminata* were examined carefully for any individuals that might be *S. invicta*, as they are extremely close in appearance. *Solenopsis invicta* (the "red imported fire ant") can be distinguished from *geminata* by a small "tooth" out of which the central clypeal hair emerges; in *geminata*, the surface of the clypeus around base of the clypeal hair is not raised. Their behavior, however, is quite different: *invicta* is aggressive and noxious, while *geminata* is not.

***Solenopsis geminata* (Fabricius 1804)**

Atta geminata Fabricius 1804

Fig. 19

Specimens examined: FSM Pohnpei: Pohnpei I., Mt. Pipilap (Ad 50); Johnston I. (U.S.): (47); (Ks 52); Kiribati: Banaba I. (Ks 57); Tarawa A., Teaoraereke*, (Te 99); Mariana Is.: Agiguan I. (Ko 52); Guam I. (71); Guam I. (Cu 86); Guam I. (Fu); Guam I. (Hr 23); Guam I. (Me&Ko 49); Guam I. (Na 86); Guam I. (Ta 95); Guam I., Agana (Ks 52); Guam I., Agana (at light, Wa 45); Guam I., Anderson Air Force Base (Ks 52); Guam I., Barrigada Heights (Ks 57); Guam I., Barrigada Heights (Sw 36 NMNH); Guam I., Inarajan (Ks 57); Guam I., Mata* (with a Lewrodid on cane, Sw 36); Guam I., Mt. Alifan (Ks 46); Guam I., Mt. Alifan (Ks 52); Guam I., Mt. Alutom (Tw 46 NMNH); Guam I., Mt. Lamlam (Ks 57); Guam I., Pt. Manell, near Merizo (Bh&Gr 45); Guam I., Pt. Oca (Bh&Gr 45); Guam I., Pt. Oca (Gr 45); Guam I., Pt. Oca (Gr 52); Guam I., Talofolo (Ks 46); Guam I., Tutujan (Gr 52); Guam I., Yigo (Ks 57); Guam I., Yona (Ks 52); Rota I. (Hr 25); Rota I. (Sc 90); Rota I. ("Stream farm", Bq 2002); Rota I., Sonson*—Taipingot* (Es 37); Saipan I. (En 49); Saipan I. (at light; male and female alates, Lg 47 NMNH); Saipan I., As Palacios (15 m, Bn 2002); Saipan I., Banaderu—Tanapak* (Ya&Yo 40); Saipan I., Donni—Sadog Tasi (Ya&Yo 40); Saipan I., Garapan—Sadog Tasi (Ya&Yo 40); Saipan I., Matansa (Ks 46); Saipan I., Matansa—Calabera* (Ya&Yo 40); Saipan I., "native settlement" (Tw 46 NMNH); Saipan I., Papago* (garage floor, 2001); Saipan I., Susupe (Ks 46); Tinian I. (on okra, Hd 46); Tinian I. (Bq 2002); Tinian I. (Hr 24); Tinian I. (Ks 58); Tinian I.: Mt. Lasso (on sugarcane tending *Neomaskellia bergii*, Tw 46 NMNH); Marshall Is.: Kwajalein A. (Cg 53); Kwajalein A. (Ks 58); Majuro A. (Na 89); Palau: Babelthuap I., Ngiwal (Gr 51); Koror (Ys 38); Malakal I. (Ks 52); Melekeiok (sting ants in log with dead *Oryctes* (not common species?), Gr 50); Melekeiok (On 36); Ogiwal* (On 36); (On 36); Wake A. (U.S.): (Jo 53); Peale I. (Ks 57); Peale I. (Ilima, Os 59); Peale I. (in rotted wood tree, Os 59); Wilkes I. (Ks 57)

Specimens collected: FSM Pohnpei: Pohnpei I.: (Dollekei: from roadside grasses; Kolonia: inside kitchen at Jesuit residence; Uh M.: on old foil in grass and rubble at new dock; by hand; Cs; 95 2000)

Unexamined MRSI specimens: Additional 48 collections, by Ba Be Bh Ck Dy Fs Frey Fu Gr Hg Hr Me Ne St, 1944-53, from the following already-recorded areas: Mariana Is.: Agrihan I., Guam I., Saipan I., Tinian I.; Marshall Is.: Kwajalein A.; Palau: Angaur I., Babelthuap I., Koror I., Peleliu I.

Habitat: Human-disturbed, low-elevation areas

***Solenopsis papuana* Emery 1900**

Fig. 19

Specimens examined: FSM Pohnpei: Pohnpei I., Mt. Kupuriso (1,000-1,500 ft., Dy 48); Mariana Is.: Rota I. (litter, shaded valley, Bq 2002); Tinian I. (litter, Bq 2002)

Specimens collected: FSM Pohnpei: Pohnpei I. (Ivory nut forest swamp at 300 m: from swampy leaf litter; by Berlese funnel; Cs; 95)

Habitat: Mid- to high-elevation forest

TRIBE STENAMMINI

Calyptomyrmex

Fig. 16

This genus can be immediately recognized by its large size, extensive covering in paddle-like hairs, and unreduced antennal segmentation. *Eurhopalothrix* and the Dacetini have fewer such hairs and fewer antennal segments, and the Dacetini are very small. I am unable to determine the *Calyptomyrmex* specimens from Micronesia to species. Two of the three specimens I examined were identified as *beccarii* and *emeryi*, and the third was an undetermined alate. Having only about two dozen species in total, it seems unlikely the genus has two in Palau, and I could find no difference between *beccarii* and *emeryi* specimens in MCZ. Their descriptions offer little direction, but I did not examine types and am not synonymizing them here. The alate from Chuuk could easily be a reproductive of the species on Palau, but I have even less direction for alates and leave it as "undetermined" here.

Calyptomyrmex beccarii Emery 1887 or _emeryi_ Forel 1901

Specimens examined: Palau: Babelthuap I., Ngaremeskang ([det. by W. L. Brown as *emeryi*], in Pandanus (small), Gr 52 NMNH); Koror ([identified as *beccarii*] termite carton nest, Dy 47)

Undetermined _Calyptomyrmex_

Specimens examined: FSM Chuuk: Tol Oleg—Foup (dealate female, Ya&Yo 40)

Rogeria

This genus is best identified through a process of elimination, as it has an overall appearance that strongly resembles *Myrmecina* and certain *Tetramorium*. But it lacks the carinae on the head of *Mymecina* and the modified lateral clypeus of *Tetramorium*. It also lacks a distinct antennal club, distinguishing it from *Pheidole* and *Solenopsis*, although it does have propodeal spines (its large size alone distinguishing it from Micronesian *Monomorium*).

This highly elusive genus is, strangely, found in the New World Tropics and the Indo-Pacific. I used the revision by Kugler (1994) to attempt an identification of the species found on Pohnpei (and later destroyed in the SEM), what I call here *R*. sp. 25111995.

***Rogeria stigmatica* Emery 1897**

Fig. 19

Specimens examined: FSM Pohnpei: Pohnpei I. (Ko 36)

Specimens collected: FSM Pohnpei: Ant A. (with *Crematogaster emeryi / biroi* nest and mealybugs between new coconut leaf bases; by hand; Cs; 2000); Pohnpei I.: (Mt. Nahnalaud: under leaves on rock; PATS: under swamp taro and banana leaves; by Berlese funnel and hand; Cs; 2000)

Unexamined MRSI worker from the following new area: FSM Yap: Yap I., Tomil M. (Gs 50)

Habitat: Forest at all elevations

***Rogeria* sp. 25111995**

Figs. 12A, 19

Specimen collected: FSM Pohnpei: Pohnpei I.: (road to Nett Pt.: on roadside grasses; by hand; Ok&Cs; 25-XI-95)

Taxonomic notes: This specimen was lost in the process of making scanning electron micrographs. However, I feel that it is a unique species not yet described. *Rogeria* sp. 25111995 is darker, smaller, more evenly punctured, and hairier than most other species in the genus. Besides these overall features, sp. 25111995 is distinguished by a smooth and shining area between and anterior to the propodeal spines. Measurements estimated from photographs are as follows: HW 0.58, HL 0.6, SL 0.35, PL 0.4, PH 0.43, PPL 0.25, PPH 0.35, last three funicular segment lengths (going toward the last segment) = 0.05, 0.09, 0.2.

TRIBE TETRAMORIINI

Tetramorium

A large genus in Micronesia—both in species and individuals—*Tetramorium* specimens are difficult to identify to genus without a clear understanding of the flange that surrounds the antennal insertions. Often described as a shelf formed by the fused frontal lobes and clypeus, the character is a common point of confusion for beginners, and I have provided illustrations of it here. As an aid to identifying *Tetramorium*, it should be noted that they lack a distinct antennal club, have propodeal spines, and are monomorphic.

Species are not as difficult to identify as the key implies. The antennal segments, shape of the petiolar node, relative sizes of propodeal spines, and (at least in Micronesia) color are the most useful features, and misidentifications are usually easy to recognize. In addition, I used the pronotal hairs, especially as they appear from the front. *Tetramorium lanuginosum* and *T. simillimum* can be quickly identified from their pilosity, which is, respectively, very thick and very sparce. The other four species with 12-segmented antennae usually have a row of six long hairs along their anterior pronotum which descend in neatness from *bicarinatum* (Fig. 12E), to *insolens*, which has a small pair of crossing hairs in front of the row (Fig. 12F), to *tonganum*, which tends to have several distinct, recurved hairs in front of the row of six, to *pacificum*, where the long hairs are usually more scattered and variable in number.

Tetramorium insolens is an odd species that deserves some special discussion. Common in the Philippines, Melanesia, and Polynesia, it is strangely absent from all of Micronesia, except for its westernmost tip (Palau). The Palauan specimens were found mixed with *T. bicarinatum* ones (an unsurprising occurrence, considering the two species were synonymized by Wilson and Taylor in 1967, when many of the Micronesian specimens were first determined (Ward and Wetterer 2006)), and thus a hypothesis for their apparent absence in Micronesia immediately suggests itself, which is that they were missed by me while collecting and examining *bicarinatum*. However, *insolens* looks quite out of place among *bicarinatum* specimens, as its size and shape are much closer to *pacificum*, and it lacks the fine split of the ridge down the middle of the frons (an easily checked feature on *bicarinatum* identifications). Specimens of *insolens* are also unlikely to be mixed with *pacificum* collections, though, since the two differ noticeably in color. Thus, it seems that *insolens* is truly absent from much of Micronesia. It should be added that the Palauan specimens of *insolens* were believed by me to be a distinct species, but this was due to my lack of experience with the variation of *insolens*, which is considerable when one looks at color, size, and pilosity. These features can be misleading among *bicarinatum*, *insolens*, and *pacificum*, and my key relies on the sculpturing characters of Bolton (1979).

***Tetramorium bicarinatum* (Nylander 1846)**

Myrmica bicarinata Nylander 1846; called *Tetramorium guineense* in Wilson and Taylor (1967) and other texts due to an early misidentification (Bolton 1995).

Figs. 12C, 12E, 19

Specimens examined: Bonin Is.: Chichi Jima group, Ototo Jima, Kammuri-iwa (SW Bay) (Sp 58); Chichi Jima, Okimura (Sp 58); FSM Chuuk: Erin, Tonoas I. (Ya&Yo 40); Nomwin A., Nomwin I. (Be 54); Pis I. (pandanus, Po 49); Pis I. (Tw 46 NMNH); Weno I. (Tw 46 NMNH); Weno I., Civ. Ad. Area (Po 49); FSM Kosrae I.: Mutunlik (Ck 53); Pukusrik (mangrove, light trap, Ck 53); FSM Pohnpei: Napali I. (Pohnpei I. reef) (Ad 50); Pohnpei I.,

Kolonia, Ag. Station (Ad 50); Pohnpei I., Mt. Pipilap (Ad 50); Pohnpei I., Palakir (Es 39); Pohnpei I., Pwel Weita (alt. 15 m; low hill near mangrove, Gr 53); FSM Yap: Colonia (Gs 50); Colonia (swept grass, Ma 49 NMNH); Gagil M. (Gs 50); Kanif (Gs 50); Lamotrek A. (Ks 52); Ruul M. (Gs 50); Ulithi A., Asor I. (Ks 52); Ulithi A., Fossarai I. (Ks 52); Ulithi A., Mogmog I. (Ks 52); Woleai A., Falalis I. (Ks 52); Woleai A., Utagal I. (Tw 46 NMNH); Woleai A., Woleai I. (Ks 52); Yap I. (Gs 50); Yap I. (Ks 52); Johnston I. (U.S.): (Ks 52); Kiribati: Butaritari A., Butaritari I. (Ks 57); Phoenix Is. (By 24); Phoenix Is., Canton I. (Wi 54); Canton I. (Ks 58); Tarawa A., Betio I. (Ks 57); Tarawa A., Naanikai* (Ks 57); Mariana Is.: Anatahan I. (open sandstone ridge cap, steep slope, Bq 2002); Guam I. (Fu); Guam I. (Sw); Guam I., Agat (Bh&Gr 45); Guam I. (Cf 45); Guam I., Barrigada Heights (Ks 57); Guam I. (decayed papaya stem, Guam No. 746, Lot No. 38-12641, Oa 38); Guam I., Cocos I. (Ks 57); Guam I., Dededo (nest under bark, Sw 36); Guam I., Inarajan (Ks 57); Guam I., Inarajan (Sw 36); Guam I., Metizo* (Ks 57); Guam I., Mt. Alifan (Ks 46); Guam I., Mt. Lamlam (Ks 57); Guam I., Mt. Lamlam (Ks 58); Guam I., near Merizo (Bh&Gr 45); Guam I., nr. Yona (Ks 46); Guam I., Palm Beach (Ks 58); Guam I., Pilgo R. (Bh&Gr 45); Guam I., Piti (Sw 36); Guam I., Pt. Oca (light trap, Bh&Gr 45); Guam I., Talofolo (Ks 46); Guam I., Talofolo (Ks 52); Guam I., Tumon Bay (Ks 46); Guam I., Tutujan (Gr 52); Guam I., Yigo (Ks 57); Guam I., Yigo (Ks 58); Pagan I., Songsong—Regusa (Ya&Yo 40); Saipan I. (Bh 51); Saipan I. (En 49); Saipan I., Achugau (Dy 45); Saipan I., As Lito (Bn 2001); Saipan I., As Mahetog (at light, Ed 44); Saipan I., Banaderu—Tanapak* (Ya&Yo 40); Saipan I., Garapan—Sadog Tasi (Ya&Yo 40); Saipan I., Matansa (Ks 46); Saipan I., Mt. Fanaganan (Ya&Yo 40); Saipan I., Mt. Tagpochau (at light, Ed 44); Saipan I., Papago* (house, Bq 2002); Saipan I., Susupe (Ks 46); Tinian I. (Bq 2002); Marshall Is.: Arno A., Ine I. (Lr 50); Jaluit A., Jabwor I. (Crotalaria, Gr 58); Jaluit A., Pinglep I.* (in dead breadfruit bark, Gr 58); Jaluit A., Sydney Pier (Oa 46 NMNH); Jaluit A., Sydney Pier (Tw 46 NMNH); Kwajalein A. (Ks 52); Kwajalein A. (Ks 58); Kwajalein A., Airfield (Tw 46 NMNH); Kwajalein A., Gugeegue I. (By 44); Kwajalein A., Meck I. (By 44); Majuro A. (Lr 50); Ujelang A., Bikom (Pyokon) I. (An 76 NMNH); Palau: Babelthuap I., Iwang (Gr 52); Babelthuap I., Ngerehelong (along stream, Sa 57); Kayangel A. (Gr 51); Koror I. (Oa 46 NMNH); Ngesebus I. (Sa 57); Sonsorol I. (Ks 52); Tobi I. (Ks 52); Palmyra I. (U.S.): (Ks 48 NMNH); Wake A. (U.S.): Peale I. (in green house light, Ly 40); Peale I. (most common sp. in houses, Ly 40); Peale I. (on dead rail (newly hatched chick), Ly 40); Peale I. (raiding insect collection, Ly 40); Peale I. (Os 59)

Other specimens examined: Honolulu, HI: "on coconut debris from Marshall I S Sea (cargo) intercepter at Honolulu, Hawaii" (32 NMNH); San Francisco: on coconut palm frond from Guam I. (La 24 NMNH)

Specimens collected: FSM Pohnpei: Pohnpei I. (Dollekei: roadside grasses; above Keprohi Falls at 350 m, Malen Pahnpe: on bracket fungus, between outer leaves of banana tree, in rotten log; road to Lehnpeinpohn Falls: short grass in clear area; quarter mile upriver from Mahnd: Lehnpeinpohn Falls: on rocks at base of falls; on moss-covered log in river; upriver from Mahnd at 300-400 m: on rocks at river's edge; Mall I.: in leaf bases of newly fallen coconut tree, on banana tree, on underside of midrib of *Thespesia populnea* leaves in mangroves; PATS: alate on computer screen; Pohlangas Lookout: on rotten log; forest behind Salapuk: in hibiscus flowers; between Wapar and Pohlangas at 60 m: in rotten stem; Cs Ok; by hand; 94 95)

Unexamined MRSI specimens: Additional 64 collections, by Ad Be Bh&BhG Ck Dy Fs Fu Gs Gr Hg Kr Lr Ly, from the following already-recorded areas: FSM Chuuk: Nama I., FSM Kosrae I.; FSM Pohnpei: Kapingamarangi A., Pohnpei I.; FSM Yap: Rumung I., Woleai A., Yap I.; Mariana I.: Guam I., Saipan I., Tinian I.; Marshall Is.: Kwajalein A., Majuro A.; Palau: Babelthuap I., Peleliu I.; Wake I. (U.S.)

Habitat: Low- to mid-elevation forests and human-disturbed areas

***Tetramorium insolens* (Smith, F. 1861)**

Myrimica insolens Smith, F. 1861

Figs. 12D, 12F, 20

Palau: Babelthuap I., E. Ngatpang (65 m, sweeping, Gr 52); Babelthuap I., Iwang (Gr 52); Koror I. (limestone ridge S. of inlet, in old log, Dy 48)

***Tetramorium lanuginosum* Mayr 1870**

Figs. 13A–B, 20

Specimens examined: FSM Chuuk: Nama I. (Po 49); Tol I., Pata Sabote—Epin* (Ya&Yo 40); Pis I. (coconut stump, Po 49); Tol I., Olej, Foup (Ya&Yo 40); FSM Yap: Colonia (Gs 50); E. Rumung I. (Gs 50); Gagil M. (Gs 50); S. Yap I. (Gs 50); Kiribati: Fanning I., (Fo 20); Tarawa A., Eita I. (Ks 57); Tarawa A., Teaoraereke* (Ks 57); Mariana Is.: Agrihan I. (Br 45 NMNH); Agrihan I. (Br&Hl 45 NMNH); Alamagan I. (Me 49); Anatahan I. (Bq 2002); Guam I., Mt. Santa Rosa (Bh&Gr 45); Guam I., Mt. Alifan (Ks 57); Guam I., Mt. Tenjo (Us 36 NMNH); Guam I., near Merizo (Bh&Gr 45); Guam I., Pt. Oca (light trap, Bh&Gr 45); Guam I., Pt. Oca (Bh&Gr); Guam I., Pt. Oca (Lot #2000, Dy 45); Guam I., Pt. Oca (Wh 45 NMNH); Guam I., Pt. Pati (Dy 45); Pagan I., Songsong (Ya&Yo 40); Saipan I., Donni—Sadog Tasi (Ya&Yo 40); Saipan I., Garapan—Sadog Tasi (Ya&Yo 40); Tinian I. (at bait, Bq 2002); Tinian I. (by hand, Bq 2002); Tinian I. (litter, Bq 2002); Palau: Babelthuap I., E. Ngatpang (65 m, light trap, Gr 52)

Specimens collected: FSM Pohnpei: Pohnpei I. (Nan Madol: under leaves on rock, on coral and rock rubble, in rotten log, in moss between two large

stones; Wone dispensary; by Berlese funnel and hand; Cs Ok Wd; 95 96 2000)

Unexamined MRSI specimens: Additional 13 collections, by Bh&Gr Dy Gr Ks Me, 1944–52, from the following already-recorded areas: Mariana Is.: Alamagan I., Guam I., Saipan I., Tinian I.; Palau: Angaur I., Babelthuap I., Koror I.; FSM Yap: Ulithi A.; and the following new area: Marshall Is.: Ebon A., Ebon I., (from rotten wood [of] Pandanus, Be 53)

Habitat: Low-elevation, human-disturbed areas

***Tetramorium pacificum* Mayr 1870**

Figs. 13D, 20

Specimens examined: FSM Chuuk: Tol I., Mt. Unibot (1,200 ft., Po 49); FSM Kosrae I.: Mt. Tufuyat (500-800 ft., Tw 46 NMNH); Mt. Tufuyat (800-1200 ft., Tw 46 NMNH); FSM Pohnpei: Pohnpei I., Nett M., Nanpil (Dy 48)

Specimens collected: FSM Pohnpei: Ant A. (mangrove and coconut leaf litter; by hand; Cs; 2000); Pohnpei I. (Kitti: walking on dead palm branch; road across from entrance to Lehnpeinpohn Waterfall; quarter mile upriver from Mahnd: on rocks, gravel, and leaf litter at water's edge; under palm; Nahanalaud cave: chambered nest in ~7 mm –thick bark of fallen tree, in rotten leaves around camp, foraging on old rice; hilltop camp to Nahnalaud at 400 m: in and under moss on tree; road to Nett Point: in roadside grasses; PATS: on pandanus, in rotten twig; Sokehs Ridge at 200 m: on old Japanese gun; Sapwehrik Falls at 50 m; by Berlese and hand; Cs Ep Ok; 94 95 2000)

Unexamined MRSI specimens: Additional 14 collections, by Ad Dy Gr, 1947-53, from the following already-recorded areas: FSM Kosrae I.; FSM Pohnpei: Pohnpei I.; and the following new areas: FSM Yap: Yap I., Mt. Matade (worker, light trap, 95 m, Gr 52 MRSI); Palau: Babelthuap I., Ulimang (wooded peak, beating vegetation, Dy 47); Ulebsechel I. (beating vegetation, Dy 48)

Habitat: Atoll forest to high-elevation forests

***Tetramorium simillimum* (Smith, F. 1851)**

Myrmica simillima Smith, F. 1851

Figs. 13C, 20

Specimens examined: Bonin Is.: Chichi Jima, Omura (Camp Beach) (Sp 58); FSM Yap: Gagil M. (Gs 50); N. Yap I. (Gs 50); S. Yap I. (Gs 50); Howland I. (U.S.): (Cn 35); Kiribati: Manra I. (By 24); Marakei A. (Ks 57); Tarawa A., Eita I. (Ks 57); Mariana Is.: Pagan I., Songsong (Ya&Yo 40); Saipan I., As Lito (Bn 2001); Saipan I., As Lito (60 m, Bn 2002); Saipan I.,

Garapan—Sadog Tasi (Ya&Yo 40); Marshall Is.: Jaluit A., Mejrirok I. (Gr 58); Kwajalein A. (Ks 58); Palau: Babelthuap I. (65 m, Gr 52)

Honolulu, HI: "on coconut debris from Marshall I S Sea (cargo) intercepter at Honolulu, Hawaii" (32 NMNH)

Specimens collected: FSM Pohnpei: Ant A. (foraging at wrack at top of beach, colony in open and grassy area; by hand; Cs; 2000); Pohnpei I. (Awak: in Okihiro-Ruze residence; Kolonia: from stones along walkway to Jesuit residence at night; Mall I.: in leaf bases of newly fallen coconut tree; Nan Madol: in grass; by Berlese funnel, aspirator and hand; Cs Ok Wd; 94 95 2000)

Unexamined MRSI specimens: Additional eight collections, by Dy Gr Gs Kr, 1945-53, from the following already-recorded areas: FSM Yap: Map I., Woleai A.; Mariana Is.: Guam I., Saipan I.; Palau: Pulo Anna I.; and the following new area: FSM Chuuk: Tol I., Mt. Unibot (breadfruit compost, Berlese funnel, Gr 53); Tol I., Mt. Unibot (breadfruit compost, Gr 53)

Habitat: Low-elevation, human-disturbed, grassy, and beach areas

***Tetramorium smithi* Mayr 1879**

Figs. 13E, 14A, 20

Specimens examined: Mariana Is.: Guam I., Yigo (Ks 58); Marshall Is.: Jaluit A., Jabwor I. (Gr 58)

Specimens collected: FSM Pohnpei: Pohnpei I. (road to Lehnpeinpohn Falls: in short grass in clear area; Nan Marid, 23.6 km from Ace Commercial in Kolonia to Kitti: in weeds at roadside; Wone dispensary; by Berlese and hand; Cs Ok; 95 96)

Habitat: Roadside grasses

***Tetramorium tonganum* Mayr 1870**

Figs. 13F, 20

Specimens examined: FSM Chuuk: Tol Oleg*—Faup* (Ya&Yo 40); Weno I., Mt. Teroken* (Gr 53); FSM Kosrae I.: Mutunlik (Gr 53); FSM Pohnpei: Pingelap A. (Gr 53); Pohnpei I., Nett M., Nanpil (Dy 48); Pohnpei I., Tolenot Pk. E461 (660 ft., Ad 50); FSM Yap: (Gr 51); Dugor (Gs 50); Ifalik A., Ifalik I. (beating ferns, Bt 53); Mt. Matade (95 m, Gr 52); N. Yap I. (Gs 50); S. Yap I. (Gs 50); Yap I. (Gr 51); Yap I., Yap Hill, behind Yaptown (60 m, Gr 52); Mariana Is.: Anatahan I. (pitfall, forest, Bq 2002); Guam I. (Cu 86); Guam I., Pilgo R. (Bh&Gr 45); Guam I., Yigo (Ks 58); Palau: Babelthuap I., Ngaremeskang (Gr 52)

Specimens collected: FSM Pohnpei: Ant A. (foraging on coconut leaf, in leaf litter of bird's nest fern; by hand; Cs; 94 2000); Pohnpei I. (Kitti: in

different parts of rotten stump; near Nahnalaud in ivory nut forest swamp: in ivory nut; road to Nett Point: in roadside weeds; PATS: walking on rotten log, under bark of mossy log under swamp taro; forest behind Salapuk: in coconut tree; top of Sokehs Ridge at 200 m: on *Lantana* and other weeds; by hand; Aq, Cs Ep; 94 95 2000)

Unexamined MRSI specimens: Additional seven collections, by Bh Dy Gr Kr, 1945-53, from the following already-recorded areas: FSM Pohnpei: Pohnpei I.; FAM Yap: Ulithi A.; Mariana Is.: Guam I., Saipan I.; Palau: Babelthuap I.

Habitat: Low- to high-elevation forests and weeds

***Tetramorium* sp. 14121952**

Figs. 12B, 20

Specimen examined: Palau: Koror (N.E.), limestone ridge (40 m, Gr 14-XII-52)

Taxonomic notes: Measurements: TL 3.5, HL 0.97, HW 0.92, CI 95, SL 0.92, SI 100, PW 0.68, ML 0.5. Antennae 11-segmented with three-segmented club about half as long as remaining funiculus; scape extending beyond vertex by a quarter of its length; eyes at mid-level of head, slightly in front of lateral, and bulging, creating the widest section of the head. Dorsal mesosoma in profile sloping down slightly to dorsal propodeum, then with vertical declivity; dorsal profile uneven due to deep, wide rugae. Dorsal propodeal spine as long as 80% the distance between its tip and the tip of the ventral propodeal spine; ventral spine about half the length of dorsal but almost completely hidden by bulla in side view. Petiole with stalk-like, slightly downwardly curving peduncle longer than length of remaining petiole by about 1/6 the peduncle length; node rising abruptly, its anterior and posterior faces parallel and perpendicular to ventral; node as long as maximum height, dorsal surface bulging slightly, overall square in profile, slightly wider posteriorly in dorsal view; petiolar spiracle indistinct and located on lateral node near peduncle. Postpetiole similar in height to petiole but contrasting in shape, rounded dorsally and broadly attached to gaster; postpetiolar sternite swollen, especially anteriorly. First gastral tergite covering 90% of gaster in dorsal view, second tergite filling remainder of view. Color: Body, except for dorsal propodeal spines, concolorous dark reddish brown with black sculpturing. Mandibles, antennae, legs, and dorsal propodeal spines light orange. Pilosity: Head, mesosoma, and gaster with sparse, long, standing silver hairs, especially long on vertex, shorter on gaster, often further from each other than their own length, missing from central gastral tergite and posterior propodeum. Legs, mandibles, and especially antennae with denser covering of similar hairs, although more reclined. Sculpturing: Head with widely spaced,

sharp, sweeping, linear ridges; mesosoma with deep, disorganized rugae; mandibles, petiole, postpetiole and gaster smooth. Linear sculpturing on head as far apart as maximal width of scape at vertex, narrowing toward clypeus, becoming loosely reticulate between eyes and antennal insertions and around back of the head, circling around eyes and remaining fairly unbroken by clypeal border. Mesosoma glossy with highly disorganized rugae, more or less longitudinal on dorsal pronotum and transverse on epinotum. Sculpturing less distinct on mesepisternum and metepisternum, becoming irregular bumps. Hints of sculpturing on peduncle extending to lower petiolar node but remainder of body mostly smooth and almost glossy. Similar species: *Tetramorium* sp. 14121952 most closely resembles the *T. turneri* Forel 1910 in overall shape, color, sculpturing and size, but important differences are as follows: Unlike *turneri*, sp. 14121952 has an almost completely unsculptured, nearly glossy, petiolar node and more linear than reticulate sculpturing on the head.

SUBFAMILY AMBLYOPONINAE

TRIBE AMBLYOPONINI

Prionopelta

Prionopelta are the only members of the Amblyoponinae in Micronesia, and they are readily identified by the mere constriction separating their petiole and gaster. Otherwise, they appear quite ponerine, which was their original subfamily placement before Bolton (2003) raised their tribe to subfamily, a move supported by the molecular phylogeny of Moreau *et al*. (2006).

Wilson and Taylor (1967) commented that *opaca* and *kraepelini* are morphologically very similar to each other in Micronesia, and they echo doubts that the two are truly separate species. I did not change determinations, despite some dubious specimens, as I did agree that *kraepelini* appeared shinier. If *kraepelini* is a separate species, then it would be odd in being both (1) widespread but restricted to Micronesia and (barely) Polynesia (perhaps by human introduction (Wilson and Taylor 1967)), and (2) overlapping with its sister species, *opaca*, on the same remote islands.

***Prionopelta kraepelini* Forel 1905**

Fig. 18

Specimens examined: FSM Chuuk: Tol I., Mt. Unibot (450 m, Gr 53); Weno I., Mt. Teroken* (Gr 52); FSM Yap: Dugor (Gs 50); Ifalik A., Ifalik I. (Ks 52); Kanif (Gs 50); N. Yap I. (Gs 50); Yap I., Yap Hill, behind Yaptown (Gr 52); Palau: N.W. Ulebsechel I. (25 m, Gr 52)

***Prionopelta opaca* Emery 1897**

Figs. 9B, 18

Specimens examined: FSM Kosrae I.: (rotten wood breadfruit, Gr 53); Hill 1010 (300 m, Ck 53); Hill 1515 (330 m, Ck 53); Mt. Mututne (580 m, ex forest floor, Ck 53); Mt. Tufuyat (518 m, Ck 53); Mutunlik (22 m, rotten palm, Ck 53); FSM Pohnpei: Pohnpei I., Kolonia (Ck 53); Pohnpei I., Kolonia (wet compost B, Gr 53); Pohnpei I., Kolonia, Ag. Station (trash B, Ck 53); Pohnpei I., Kolonia, Ag. Station (compost, Gr 53); Pohnpei I., Kolonia, Ag. Station (in compost, trash, and leaf mold, Gr 53); Pohnpei I., Madolenihmw M. (Ad 50); Pohnpei I., Mt. Kiepw (1,200 ft., Ad 51); Pohnpei I., Mt. Pipilap (Ad 50); Pohnpei I., Mt. Temwetemwensekir (180 m, Gr 53); Pohnpei I., Mt. Temwetemwensekir (80 m, *Asplenium*, Gr 53); Pohnpei I., Nett M., Nanpil (Berlesed litter at base of ivory nut palm, Dy 48); Pohnpei I., S.E. Nanponmal (*Exorrhiza* stump, Gr 51); Palau: Peleliu I., E. Coast (Ba 48)

Specimens collected: FSM Pohnpei: Pohnpei I. (ivory nut forest at 300 m: swampy leaf litter; Mt. Nahnalaud: from moss on trees; roadside to Nett Pt.: leaf litter; PATS: under swamp taro, under banana trees, in fern leaf litter under ylang-ylang trees; by Berlese funnel; Cs; 95 2000)

Habitat: Very wet areas in mid- to high-elevation forest

SUBFAMILY PONERINAE

TRIBE PLATYTHYREINI

Platythyrea

Platythyrea are best distinguished by the small tooth on the pretarsal claws, but absent a good microscope, they are also recognizable by their lack of erect hairs and long, rectangular body shape. Wilson and Taylor (1967) noted that *Platythyrea parallela* is widespread but not abundant in Polynesia, and indeed my only collection of it in Micronesia was when a specimen fell on me in a restaurant.

***Platythyrea parallela* (Smith, F. 1859)**

Ponera parallela Smith, F. 1859

Figs. 8C, 18

Specimens examined: FSM Chuuk: Tol I., Pata Sabote—Epin* (Ya&Yo 40); Mariana Is.: Anatahan I. (stream bank, alate, Bq 2002); Guam I., Yona (dealate female, Ks 52); Guam I. (Fu [no date]); Sarigan I. (disturbed forest, 320 m, Bq 2002)

Specimens collected: FSM Pohnpei: Pohnpei I. (The Village Restaurant, Uh M.: fell on arm from roof; Cs; 2002)

Unexamined MRSI specimens: Additional two collections from the following already-recorded area: Mariana Is.: Agrihan I. (Me 49); Guam I. (Bh 45)

TRIBE PONERINI

Anochetus

With long, thin, trap-like mandibles, these ponerines resemble *Odontomachus* and *Strumigenys* (although the latter should not be confused with *Anochetus*, as they have two segments between the mesosoma and gaster and are much smaller). There is only one species of *Odontomachus* in Micronesia, and it is larger and darker than either of the two *Anochetus*, but to be sure, one should notice the petiolar node, which is not pointed in *Anochetus*. An additional character is the ridge along the back of the head, which forms a V-shape in *Odontomachus* but a continuous curve in *Anochetus*.

***Anochetus graeffei* Mayr 1870**

Figs. 1A, 16

Specimens examined: FSM Chuuk: Nama I. (Po 49); FSM Yap: Ulithi A., Feitabul I. (Yu 45 NMNH); Woleai A., Woleai I. (Ks 52); Kiribati: Butaritari A., Butaritari I. (Ks 57); Tarawa A., Marenanuka* (Ks 57); Tarawa A., Banraeaba* (Ks 57); Mariana Is.: Agiguan I. (Acacia forest, Hy 2002); Anatahan I. (Bq 2002); Saipan I., As Palacios (15 m, Bn 2002); Saipan I., Papago* (litter, limestone forest, Bq 2002); Tinian I. (by hand, Bq 2002)

Specimens collected: FSM Pohnpei: Pohnpei I. (road to Lehnpeinpohn Waterfall: short grass in clearing; Mt. Nahnalaud cave: in standing, termite-infested rotten log near camp, under rotten leaves around camp; Nan Madol: under coral rubble, under rock in soil, in grass; Nett: from coral rubble beside road; PATS: in leaf litter in swamp taro; by Berlese funnel and hand; Cs Ep; 95 2000)

Unexamined MRSI specimens: Additional collection from the following already-recorded area: FSM Yap: Gagil M. (Gs 50); and specimens identified only to genus, from the following new areas (Given the distinct coloration of *A. splendidulus*, these are probably *graeffei*.): FSM Kosrae I.: Hill 541 (males, light trap, 165 m, Ck 53); Mt. Mutunte (males, light trap, 380 m, Ck 53); Mutunlik (males, light trap, 22 m, Ck 53); Palau: Babelthuap I., Ngaremeskang (males, light trap, 25 m and 30 m, Gr 52); SW Koror I. (males, light trap, 25 m, Gr 52).

Unexamined Micronesian specimens reported: Yasumatsu (1940) reports on a collection of *A. minutus* Karawajew 1925 from Tol I. (FSM Chuuk), a species that has since been synonymized with *graeffei*.

Habitat: Variable, including mangroves, disturbed and agricultural areas, and high rain forest

***Anochetus splendidulus* Yasumatsu 1940**

Figs. 16

Specimens examined: FSM Yap: Yap I., Ruul M. (holotype, queen, Es 39)

Unexamined MRSI specimens: Additional two collections of workers: FSM Yap: N. Yap I. (Gs 50); Ruul M. (Gs 50)

Cryptopone

Members of the genus *Cryptopone* are easily recognized by their lack of eyes, a trait shared by no other ponerines in Micronesia.

***Cryptopone butteli* Forel 1913**

Figs. 1B, 3F, 4A, 17

Specimens examined: FSM Chuuk: Dublon I. (Tw 46); Tol I. (Oa 46); Tol I., Mt. Unibot (Tw 46); FSM Pohnpei: Pohnpei I., Kolonia, Ag. Station (rotten rood, Gr 53); Pohnpei I.: Nett M., Nanpil ([Brown: compared to type *Cryptopone mayri* Mann], Dy 48)

Specimens collected: FSM Pohnpei: Pohnpei I. (Mt. Nahnalaud cave: in leaves around camp; Mt. Nahnalaud: muddy grass and moss, from moss in pandanus marsh, water-soaked wood and grass, under moss at peak elevation of 750 m; highland swamp forest near Mt. Nahnalaud: in ivory nut; by hand and Berlese funnel; Cs; 95 2000)

Habitat: High-elevation rain forest

***Cryptopone testacea* Emery 1893**

Figs. 4B, 17

Specimens examined: FSM Chuuk: Dublon I. (Tw 46 NMNH); Tol I. (Gr 53); Tol I. (Oa 46 NMNH); Tol I., Mt. Unibot (Tw 46 NMNH); Weno I., N. Basin of Mt. Chukumong* (Po 48); FSM Pohnpei: Pohnpei I., Mt. Temwetemwensekir (summit, alt. ca. 1500 ft., under bark, Dy 48); Pohnpei I., Nett M., Nanpil (Dy 48); Pohnpei I.: Nett M., Nanpil (Brown: compared to type *Cryptopone mayri* Mann, Dy 48 NMNH); Pohnpei I., Ronkiti—Wone* (Es 39); Pohnpei I., S.E. Nanponmal (Gr 53); FSM Yap: Kanif (Gs 50); Ruul M. (Gs 50); S. Yap I. (Gs 50); Palau: Ulebsechel I. (under bark,

Dy 48); Ulebsechel I. (Ks 52); Babelthuap I., E. Ngatpang (65 m, *Exorrhiza* stump, Gr 52); Babelthuap I., Ngaremeskang (Gr 52); E. Koror (25 m, Gr 52); Koror (limestone ridge N. of inlet) (in old palm log, Dy 48); Peleliu I., Amingal (Gr 52); Peleliu I., E. Coast (in coconut axils, Dy 45); Peleliu I., E. Coast (Dy 48); Peleliu I., E. Coast (under bark, Dy 48)

Specimens collected: FSM Pohnpei: Pohnpei I. (Mt. Nahnalaud cave: in rotten wood around camp, under moss on fallen log near camp, under bark and moss along 1 m of extensive tunnels on fallen tree branches; Mt. Nahnalaud: in moss; by hand and Berlese funnel; Cs Ep; 95 2000)

Habitat: High-elevation rain forest

Hypoponera

Hypoponera are easily confused with *Ponera* and *Pachycondyla*; the characters separating them are distinct but small, and the overall body shape and appearance of all three genera are very similar. *Hypoponera* are distinguished most readily by the absence of both *Ponera*'s small translucent area on the ventral petiolar process and *Pachycondyla*'s small simple spur in front of the large pectinate spur on the hind tibiae. In Micronesia, *Ponera* are also smaller and more variable than *Hypoponera*, and *Pachycondyla* species are usually larger and have larger eyes.

For determining species, few genera can be as confounding as *Hypoponera*. For Micronesian specimens, this is aggravated by the fact that I found no discussions or keys which simultaneously treat *confinis*, *opaciceps*, and *pruinosa*. So the tapering petiolar node and clearly defined mesepisternum—good for separating *confinis* from *opaciceps* in Polynesia—are alone not enough when *pruinosa* (which shares these characters) is present. However, *confinis* has remarkably small eyes, and, after examining enough specimens, one can recognize the more severe tapering of *pruinosa*'s petiolar node.

Unfortunately, the eyes alone cannot be used to separate these three species, since the number of ommatidia for *opaciceps* overlap with those of the other two. A survey of already-determined ANIC specimens gave the following results: *confinis* (2–6, avg. = 3.8 ± SD 1.1, N = 25), *opaciceps* (5–12, avg. = 8.0 ± SD 1.9, N = 25), *pruinosa* (7–20, avg. = 12.1 ± SD 2.7, N = 20). Interestingly, the two *pruinosa* specimens with fewer than 10 ommatidia (7 and 8) also had sculpturing between and katepisternum and anepisternum, a character more commonly seen in *opaciceps*, so it may be that these were simply *opaciceps* specimens with ambiguous petiolar nodes. In any case, these three species and even the fairly easily recognized *punctatissima* are suspected of hiding taxonomic surprises behind their small collection of rather variable characters.

***Hypoponera confinis* (Roger 1860)**

Ponera confinis Roger 1860

Figs. 4C, 17

Specimens examined: FSM Chuuk: Tol I., Pata Sabote (Ya&Yo 40); Pis (Po 49); Romanum I. (Po 49); Tol I., Mt. Unibot (Gr 53); Weno I. (Dy 48); Weno I. (under bark of dead breadfruit tree, Dy 48); Weno I., Civ. Ad. Area (Po 49); Weno I., Mt. Teroken* (germinating ivory nut, Gr 53); Weno I., N. Basin of Mt. Chukumong* (Po 49); (Berlese funnel, Gr 52); FSM Kosrae I.: Hill 750 (230 m, rotten wood, Ck 53); Funaunpes (Ck 53); Funaunpes (1 m, shelf fungus, dead stump, KU 22B, Ck 53); Mt. Mutunte (rotting wood, KU 32B, Ck 53); Yela Cave (from swift's nest (2) in rear of cave, KU 86B, Ck 53); FSM Pohnpei: Pohnpei I., Kolonia—Mt. Sankaku* (Es 39); Pohnpei I., Mt. Temwetemwensekir (180 m, rotten log, Gr 53); Pohnpei I., S.E. Nanponmal (*Exorrhiza* trunk, Gr 53); Mariana Is.: Tinian I. (Bq 2002); Tinian I. (by hand, Bq 2002); Tinian I. (at bait, Bq 2002); Palau: Babelthuap I., E. Ngatpang (Gr 52); Babelthuap I., Gakip (Tw 46 NMNH); Babelthuap I., Ngaremeskang (Gr 52); Babelthuap I., Ulimang (Dy 47); Babelthuap I., Ulimang (under bark, Dy 47); Koror (Dy 47); Koror (under banyan bark, Dy 47); Koror I. (Dy 47); Peleliu I., E. Coast (under bark, Lot #2534, Dy 45); Peleliu I., E. Coast (Dy 48); Peleliu I., E. Coast (under bark, Lot #2534, Dy 48)

Specimens collected: FSM Pohnpei: Ant A. (leaf litter in bird's nest fern; by hand; Cs; 94); Pohnpei I. (Dollekei: moss on log; PATS farm: under bark of rotten branch, under thin rotten tree bark, under swamp taro, from rotten log, in rotten hibiscus branches, under bark of mossy log in swamp taro patch; Lehnpeinpohn Waterfall: on ivory nut tree; Sapwehrik Waterfall: leaf litter in bird's nest fern at 70 m; between Wapar and Pohlangas: in leaf litter; by hand and Berlese funnel; Cs Ok; 94 95 2000); Marshall Is.: (Va; 2000)

Habitat: Atoll to mid-elevation forest, including agricultural areas

***Hypoponera opaciceps* (Mayr 1887)**
Ponera opaciceps Mayr 1887

Fig. 17

Specimens examined: FSM Pohnpei: Pohnpei I., Mt. Temwetemwensekir (summit, alt. ca. 1500 ft.) (Dy 48); Palau: Babelthuap I., E. Ngatpang (65 m, Gr 52)

Habitat: Mid- to high-elevation forest

***Hypoponera pruinosa* (Emery 1900)**
Ponera pruinosa Emery 1900

Fig. 17

Specimens examined: FSM Kosrae I.: Mt. Mutunte (breadfruit stump, Ck 53); Mutunlik (22 m, Ck 53); Mutunlik (rotten wood, Ck 53); FSM Pohnpei:

Pingelap A. (Gr 53); Mariana Is.: Saipan I., Papago* (limestone forest, Bq 2002); Tinian I. (litter, Bq 2002); Palau: Koror (Gr 52); Koror (Berlese funnel, Gr 52)

Specimens collected: FSM Pohnpei: Pohnpei I. (Kitti: in different parts of rotten stump; hilltop camp near Mt. Nahnalaud: in and under moss on tree at 400 m; Mt. Nahnalaud cave: under dead leaves around camp, in old ivory nut around camp; PATS: leaf litter in front of men's staff dorm (CLTC); PATS farm: on swamp taro, under banana trees, under bark of rotten log in swamp taro patch, in grass roots and leaf litter in ylang ylang grove; Sapwehrik Waterfall: in rotten log at 70 m; by hand and Berlese funnel; Cs Aq Ep; 94 95 2000)

Habitat: Forest (natural or agroforest) and wet, human-disturbed areas at all elevations.

***Hypoponera punctatissima* (Roger 1859)**

Ponera punctatissima Roger 1859

Figs. 4D, 17

Specimens examined: FSM Chuuk: Erin, Tonoas I. (Ya&Yo 40); FSM Kosrae I.: Malem ([This specimen is an intermorph, det. S. Cover.], Es 37); FSM Pohnpei: Pohnpei I., Kolonia (coconut debris, Gr 53); Mariana Is.: Guam I., Amantes Pt. (under bark, Lot #2032, Dy 54); Guam I., Pago Bay (in dry coconut frond on ground, Lot #2166, Dy 59); Guam I., Pt. Oca (under bark of breadfruit, Lot #2000, Dy 45); Guam I., Yona (on ground under board, Ks 52); Pagan I., Songsong (Ya&Yo 40); Saipan I. (Lot #333, Dy 44); Saipan I. (Lot #750, Dy 45); Saipan I. (Ed 44); Saipan I. (under decaying veg., Ed 44); Saipan I., Achugau (under bark of breadfruit tree, Lot #256, Dy 44); Saipan I., Achugau (under bark of log, Lot #798, Dy 45); Saipan I., As Mahetog (under bark, Lot #222, Dy 44); Saipan I., Chalan Kanoa (Ya&Yo 40); Saipan I., Garapan—Sadog Tasi (Ya&Yo 40); Saipan I., Mt. Fanaganan (Ya&Yo 40); Saipan I., near Garapan (in wood of coconut log, Lot #336, Dy 44); Saipan I., Papago area* (under bark, Lot #513, Dy 45); Saipan I., Talofolo area* (Lot #768, Dy 45); Saipan I., Talofolo area* (on decayed pandanus fruit, Lot #697, Dy 45); Saipan I., Talofolo area* (under rocks and leaves along stream, Dy 45); Tinian I., Mt. Marpo (Dy 45); Tinian I., N.W. slope of Mt. Lassa (Lot #879, Dy 45); Marshall Is.: Jaluit A., Mejrirok I. (Gr 58); Palau: Koror I. (Dy 47)

Specimens collected: FSM Pohnpei: Pohnpei I. (PATS: from leaf litter; by Berlese funnel; Cs; 95)

Habitat: In wood, under logs and rocks, and in moist leaf litter and bark at low- to mid-elevations

Leptogenys

Leptogenys are easily recognized by their toothless, sickle-shaped mandibles that close with a space between them and the clypeus. Within the genus, there appears to be only one species in Micronesia, but its identity is unclear. Although Wilson and Taylor (1967) discussed the possibility that *L. falcigera* is a junior synonym of *maxillosa* (Smith, F. 1858), I have left previous determinations of *falcigera* as such, and I tentatively assume that those specimens (mostly males) identified only to genus by Smith are the same. I did not see the morphological differences between *falcigera* and *maxillosa* reported by Wilson and Taylor from W. L. Brown's notes, but I relied on previously identified collections, which could be wrong.

***Leptogenys falcigera* Roger 1861**

Fig. 17

Specimens examined: Mariana Is.: Guam I. (gift of Wheeler, W.M., To [no date]); Saipan I. (En 49); Saipan I., Garapan—Sadog Tasi (Ya&Yo 40); Saipan I., Mt. Fanaganan (Ya&Yo 40)

Unexamined MRSI specimens: Collections identified only to genus from the following new areas: FSM Pohnpei: Pohnpei I., Mt. Kiepw (males, 1500 ft., Ad 50); FSM Yap: Yap I., Colonia (males, Gs 50); N. Yap I. (males, Gs 50); Yap I., Gagil M. (males, Gs 50); Yap I., Kanif (males, Gs 50); Yap I., Mt. Matade (male, 95 m, Gr 52); S. Yap I. (males, Gs 50); Yap I., Tomil M. (males, Gs 50); Yap I. (males, Gs 50); Yap I., Yap Hill, behind Yaptown (50 m, Gr 52); Yap I., Yap Hill, behind Yaptown (60 m, Gr 52); Yap I.: Dugor (males, Gs 50); Palau: Babelthuap I., Ngaremeskang (25 m, light trap, males, Gr 52); Babelthuap I., Ngaremeskang (30 m, light trap, males, Gr 52); Babelthuap I., Ngiwal (males, light trap, 1 m, Gr 52); Kayangel A., Ngajangel* (males, light trap, Gr 52); NW Ulebsechel I. (25 m, males, light trap, Gr 52); SW Koror I. (males, light trap, 25 m, Gr 52)

Odontomachus

The one species of *Odontomachus* in Micronesia most closely resembles *Anochetus*, but *O. simillimus* is larger, darker, has a spine-like petiolar node, and has the ridge at the back of the head forming a V-shape at the vertex.

***Odontomachus simillimus* Smith, F. 1858**

Fig. 17

Specimens examined: FSM Chuuk: Dublon I. (Be 52); Dublon I. (On 35); Dublon I., Kouhua* (Me 49); Nama I. (Be 52); Nama I. (Po 49); Tarik I. (On 36); Tol I., Mt. Unibot (Gr 53); Tol I., Mt. Unibot (native forest, Gr 53); Weno (Be 52); Weno I. (Be 52); Weno I., Nofo Mt. Winifourer (Po 49);

Weno I., Civ. Ad. Area (Po 49); Weno I., Mt. Teroken* (Gr 53); Weno I., S. Valley, Mt. Tonaachau (Po 49); FSM Kosrae I.: (Tw 46 NMNH); Hill 541 (165 m, Ck 53); Funaunpes (1 m, Ck 53); Malem River (90 m, Ck 53); Mutunlik (Gr 53); Mt. Tufuyat (500-800 ft., Tw 46 NMNH); Mutunlik (22 m, Ck 53); FSM Pohnpei: Kapingamarangi A., Touhou I. (Ni 54); Nukoro A., Nukoro I. (Oa 46 NMNH); Pingelap A. (Gr 53); Pohnpei I., Mt. Temwetemwensekir (summit, alt. ca. 1500 ft., Dy 48); Pohnpei I., S.E. Mt. Dolotomw (1700 ft., Ad 50); Pohnpei I., Nett M., Nanpil (Dy 48); Pohnpei I., Mt. Tolomain* (On 36); FSM Yap: Colonia (Gs 50); Elato A., Elato I. (Ks 52); Ifalik A., Ifalik I. (Bt 53); Ifalik A., Ifalik I. (Ks 52); Kanif (Gs 50); N. Yap I. (Gs 50); Ruul M. (Gs 50); S. Map I. (Gs 50); S. Yap I. (Gs 50); Satawal I. (Ks 52); Sorol A., Sorol I. (Ks 52); Ulithi A., Falalop I. (Ks 52); Ulithi A., Mogmog I. (Ks 52); Ulithi A., Mogmog I. (Oa 46 NMNH); Ulithi A., Mogmog I. (Yu 45 NMNH); Woleai A., Falalis I. (Ks 52); Woleai A., Utagal I. (Tw 46 NMNH); Woleai A., Woleai I. (Ks 52); Yap I., Yap Hill, behind Yaptown (50 m, male, Gr 52); Kiribati: Banaba I. (Ks 57); Tarawa A. (Ca 51); Tarawa A., Banraeaba* (Ks 57); Tarawa A., Marenanuka* (Ks 57); Mariana Is.: Agrihan I. (Bh&Gr 51); Agrihan I. (Br&Hl 45 NMNH); Agrihan I. (Me 49); Alamagan I. (Me 49); Anatahan I. (secondary coconut plantation, Bq 2002); Guam I. (Hr 23); Guam I. (Mg 11); Guam I., Apra Heights (Ks 58); Guam I., Dededo (Sw 36); Guam I., N.W. Airfield (Ks 52); Guam I., Potts Junction (Ks 52); Guam I., Pt. Ritidian (Bh&Gr 45); Guam I., Yigo (Ks 57); Pagan I. (Co 54); Rota I. (Bh&Gr 51); Rota I., Sabanna monument (Bq 2002); Saipan I. (En 49); Saipan I. (Hg 44); Saipan I., As Mahetog (Dy 45); Saipan I., Mt Tagpochau, 1 mi NNE of summit (Dy 44); Saipan I., Susupe (Ks 58); Tinian I., beach S. of Gurgan Pt. (Dy 45); Marshall Is.: Ailinglaplap A. (Be 53); Arno A., Ine I. (Lr 50); Arno A., Ulien I. (Lr 50); Bikini A.; Bikini A. (Mo 46 NMNH); Enewetak A. (boating, Os 50); Enewetak A., Bogombog* (*Tournefortia*, Os 50); Enewetak A., Igarin* (Tw 46); Jaluit A. (Mc 38); Kwajalein A. (Ks 58); Kwajalein A., Ebeye I. (Gr 58); Kwajalein A., Enelapkan I. (By 44); Majuro A. (Lr 50); Majuro A., Uliga I. (Lr 50); Namorik A. (Be 53); second island north of Ebeye [N. Loi I.?] (Wa 44); Palau: Angaur I. (Dy 48); Ulebsechel I. (Dy 48); Ulebsechel I. (Ks 52); Babelthuap I., Ngiwal (Gr 51); Babelthuap I., Ulimang (Dy 47); Babelthuap I., Ulimang (Dy 47); Garakayo I. (Pa&Dy 45); Kayangel A. (Gr 51); Kayangel A., Ngajangel* (Gr 52); Kayangel A., Ngajangel* (light trap, Gr 52); Koror (Dy 47); Koror (Be 52); Koror (Be 52); Koror (at light, Dy 47); Koror (Ks 52); N.W. Ulebsechel I. (25 m, Gr 52); Ngulu A., Ngulu I. (Ks 52); Peleliu I. (Do, Summer 45 NMNH); Peleliu I. (Hg 45); Peleliu I., W. Coast (Dy 48)

Specimens collected: FSM Pohnpei: Ant A. (in leaf litter and rotting coconut tree, nest in coconut shell, mangrove and coconut leaf litter, under coral rubble; by hand; Cs Ok&students; 94 96 2000); Pohnpei I. (Awak: in Okohiro-Ruze residence; Dollekei: in roadside grasses; Kolonia: from

stones along walkway to Jesuit residence at night; Mall I.: in coconut husk litter; Nahnalaud cave: foraging on leaves around camp, foraging on mossy rock around camp; Nett Pt.: in roadside grasses, from stones and weeds; PATS farm: in black pepper field, under banana trees; PATS: queen on window; Rohi Islet; Temwen: on road at 20 m; by Berlese funnel, aspirator, and hand; Cs Ok Wd; 94 95 96 2000)

Unexamined MRSI specimens: Additional two collections from the following already-recorded area: Mariana Is.: Agiguan I. (male, Ko 52) and Garakayo I. (Hg 45)

Habitat: Human-disturbed and native forests at all elevations

Pachycondyla

Although identifying *Pachycondyla* at the genus level can be difficult (see the first paragraph under *Hypoponera* above), the three species found in Micronesia are fairly easy to distinguish. I key them above such that *luteipes* is segregated first due to its striations on the lateral pronotum, but *luteipes* and *atrata* are generally more similar to each other than to *stigma* in having a significant drop in the mesosomal profile before the propodeum. *Stigma* is also different in its distribution: it is a New World tramp that has spread worldwide; *luteipes* and *atrata* are from the Malay Archipelago and appear not to extend east of Chuuk.

The streamlined morphology of *Pachycondyla* lends itself to ambiguities, and a clearer understanding of what I call here *luteipes* requires additional comparisons to types. Wilson (1958b) raised *croceicornis*, the Melanesian variety *luteipes*, to species status based on an examination of specimens from New Guinea and the Solomon Islands, but he did this provisionally pending a more detailed examination of specimens from Indo-Malaysia (*Pachycondyla luteipes* types are from the Nicobar Islands—the extreme North West of the Indonesian archipelago.). The distributional boundaries of the two species are not known, and Indonesia and Melanesia are equally apt to have species which extend into Micronesia. An additional complication has been related to me by S. Shattuck: B. Brown's unpublished key used *obscurans* (Walker 1859) instead of *luteipes*, saying they are synonymous. At the moment I report Micronesian specimens as they were originally determined at ANIC.

***Pachycondyla atrata* (Karavaiev 1925)**

Euponera (Brachyponera) atrata Karavaiev 1925

Fig. 17

Specimens examined: FSM Yap: Central Map I. (Gs 50); Gagil M. (Gs 50); Nif—Gilifith* (Es 39)

***Pachycondyla luteipes* (Mayr 1862)**

Ponera luteipes Mayr 1862

Fig. 17

Specimens examined: Bonin Is.: Chichi Jima (Ik 40); FSM Chuuk: Nama I. (rotting wood, Po 49); Tol I., Mt. Unibot (breadfruit bark, Gr 52); Tol I., Mt. Unibot (Gr 53); Tol I., Olej (Ya&Yo 40); Tol I., Olej, Foup (Ya&Yo 40); Tol I., Oleg*—Faup* (Ya&Yo 40); FSM Yap: Central Yap I. (Gs 50); Colonia (Gs 50); Gagil M. (Gs 50); Kanif (Gs 50); N. Yap I. (Gs 50); N. Yap I. (Gs 50); Ruul M. (Gs 50); S. Map I. (Gs 50); S. Yap I. (Gs 50); Tomil M. (Gs 50); Yap I. (Gs 50); Yap I., Yap Hill, behind Yaptown (50 m, Gr 52); Yap I.: Dugor (Gs 50); Palau: Angaur I. (Dy 45); Babelthuap I., E. Ngatpang (65 m, Gr 52); Garakayo I. (in *Nasutitermes* carton nest, Dy 45); Koror (25 m, Gr 52); Peleliu I., E. Coast (Lot #2402, Dy 45); Peleliu I., E. Coast (Lot #2402, Dy 45); Peleliu I., E. Coast (sitting [on?] dead Pandanus leaves on ground, Lot #2400, Dy 45); Peleliu I., E. Coast (in rotting wood, Dy 48); Peleliu I., Mt. Amiangal (Gr 52)

***Pachycondyla stigma* (Fabricius 1804)**

Formica stigma Fabricius 1804

Fig. 17

Specimens examined: FSM Chuuk: Tol I., Mt. Unibot (1,100 ft., in rotten log, Po 49); Tol I., Mt. Unibot (sweeping, Po 49); FSM Kosrae I.: Malem (Es 38); Mt. Fuinkol (600 m, Gr 53); FSM Pohnpei: Pohnpei I., E. Nanponmal (banana, Gr 53); Pohnpei I., Kolonia (Ad 50); Pohnpei I., Madolenihmw M.—Nihpit* (Es 38); Pohnpei I., Mt. Kupuriso (N. Slope) (under bark, Dy 48); Pohnpei I., Mt. Temwetemwensekir (N. Slope) (Ck 53); Pohnpei I., Nett M., Nanpil (Dy 48); FSM Yap: Elato A., Elato I. (Ks 52); Ifalik A., Ifalik I. (Ks 52); Map I. (Ks 52); Ruul M. (Gs 50); Yap I. (Ks 52); Palau: Angaur I. (under bark, Dy 48); Ulebsechel I. (under bark, Dy 48); Babelthuap I., E. Ngatpang (Gr 52); Babelthuap I., Ngaremeskang (Gr 52); Babelthuap I., Ngiwal (Gr 51); Babelthuap I., Ulimang (Dy 47); Babelthuap I., Ulimang (in mango bark, Dy 47); Koror (feeding on dead *Oryctes* larvae and live Rutelid larvae, Gr 51); Koror (Gr 52); Koror I. (with Rutelid larvae in old coconut log, Gr 51); Koror I., limestone ridge S. of inlet (in old log, Dy 48); N.W. Ulebsechel I. (at light trap, Gr 52); Ngulu A., Ngulu I. (Ks 52); Peleliu I., E. Coast (Dy 48); Peleliu I., N. central section (Lot #2326, Dy 45); Peleliu I., N. central section (Lot #2443, Dy 45)

Specimens collected: FSM Pohnpei: Pohnpei I.: (Mt. Nahnalaud cave: in rotten wood of standing tree near camp, in termite-infested rotten tree still standing near camp, under moss and bark in extensive tunnels along 1 m of rotten fallen tree branches; by hand; Cs; 2000)

Unexamined MRSI specimens: Additional two collections from the following already-recorded areas: FSM Kosrae I.: Mutunlik (male, light trap, 22 m, Ck 53); Palau: Babelthuap I., Ngaremeskang (male, light trap, 25 m, Gr 52)

Habitat: Found inside dead wood at all elevations

Ponera

Recognizing the genus *Ponera* is difficult (see the first paragraph under *Hypoponera* above), and in most areas the species are equally challenging. Although my key relies on certain measurements and indices, the *Ponera* fauna of Micronesia is mercifully small and readily identified with well-mounted material and a good microscope.

***Ponera clavicornis* Emery 1900**

Fig. 18

Specimens examined: FSM Pohnpei: Pohnpei I., Mt. Temwetemwensekir (summit, alt. ca. 1500 ft., dealate, Ad 50); Pohnpei I., S.E. Nanponmal (*Exorrhiza* stump B, Gr 51)

***Ponera incerta* (Wheeler, W.M. 1933)**

Pseudocryptopone incerta Wheeler, W.M. 1933

Fig. 18

Specimens examined: FSM Chuuk: Tol I., Mt. Unibot (Gr 53); FSM Yap: Yap I., Yap Hill, behind Yaptown (50 m, Gr 52); ([paratype, no locale] Gs 50); Palau: Angaur I. (Dy 48); Babelthuap I., E. Ngatpang (Gr 52)

***Ponera loi* Taylor 1967**

Fig. 18

Unexamined specimens reported: Wetterer and Bourquin (in prep) report this determination (by S. Cover at MCZ or R. Snelling at the Natural History Museum of Los Angeles County, I am not sure which) of Terayama et al.'s (1994) "Ponera sp. A" from the Mariana Is. This species has been found in Hawaii and New Zealand, outside of its original range of just Samoa as reported by Wilson and Taylor (1967), so it seems likely to become established in small numbers on the most visited islands in the Pacific.

***Ponera tenuis* (Emery 1900)**

Cryptopone tenuis Emery 1900

Figs. 8F, 9A, 18

Specimens examined: FSM Kosrae I.: Mt. Tufuyat (518 m, under rotting breadfruit, Ck 53); Mariana Is.: Guam I., Pt. Ritidian (Bh&Gr 53)

Specimens collected: FSM Pohnpei: Pohnpei I. (Mt. Nahnalaud: from muddy, wet grass and moss, on loose rocks in pandanus marsh, dead leaves in bird's nest fern; by Berlese funnel; Cs; 95)

***Ponera* sp. 10091995**

Figs. 8E, 18

Specimen collected: FSM Pohnpei: Pohnpei I. (Mt. Nahnalaud: in moss; by Berlese funnel; Cs; 10-IX-95)

Taxonomic notes: Measurements: TL 1.7, HL 0.45, HW 0.33, CI 72, SL 0.3, SI 92, PW 0.27, ML 0.2, PH 0.27. Antennae 13-segmented, final four segments forming a thick club; club longer than preceding funiculus; scapes extending just to vertex. Dorsal mesosoma flat in profile; distinct promesonotal suture; propodeal declivity about 140 degrees. Node height same as mesosoma, anterior face vertical, posterior face sloping slightly. Mesosoma in dorsal view tapering but nearly parallel, petiole as wide as mesonotum, anterior gaster with rounded corners narrower than gastral constriction. Color: Concolorous orange. Pilosity and Sculpturing: Body, antennae, and legs with silvery sheen from depressed hairs and fine punctures; long hairs on clypeus, mandibles, and posterior gaster; mandibles glossy, without both punctures and thick layer of depressed pilosity. Similar species: Although *P. tenuis* from the same island has similar head proportions (CI = 73) and overall shape and color, sp. 10091995 is much smaller, has a distinct four-segmented, prominent antennal club, and has the distinguishing feature of narrow corners on its anterior gaster when viewed from above.

Acknowledgements

This report would have been impossible without the help of the following people. Foremost is Dr. Mark Deyrup of Archbold Biological Station (ABS), who nurtured my efforts from the very beginning with encouragement, instruction, thoughtful guidance, and a detailed editing of the first draft. Dr. Betty Ferster, then of ABS, initiated my collecting efforts by sending the necessary equipment to Micronesia. Dr. E. O. Wilson of Harvard University laid much of the foundation for this project by concentrating specimens, identifying difficult species, segregating strange forms, and working with Drs. Robert W. Taylor and Marion R. Smith on their initial study; he also encouraged me to expand the study beyond just Pohnpei Island. Mr. Abram Eperiam and his family of Einpein Village in Kitti Municipality on Pohnpei Island were generous and enthusiastic about guiding trips to Mt. Nahnalaud. Drs. May Okihiro and Patty Ruze of the Medical Officers Training Program on Pohnpei collected ants from unique sites

on Pohnpei Island and from Pingelap and Mokil Atolls; they also provided transportation for collecting trips from Kolonia to Kitti. Mr. Kevin Healy of PATS helped build Berlese funnels, and Mr. Fred Loher of ABS helped locate key literature. Species determinations and specimen loans were done with the help of Mr. Stefan Cover at the MCZ, Dr. Steve Shattuck at ANIC, and Dr. Ted Schultz at NMNH. Dr. Shattuck also arranged for lodging in Canberra and provided workspace at ANIC. Dr. James Carpenter of AMNH kindly provided workspace and access to collections there. Mr. Don Buden of the College of Micronesia-FSM clarified several place names and completed a careful reading and editing of the first draft. Messrs. Jesse Czekanski-Moir and Alan Olsen at the Belau National Museum tested the key and found several points in need of correction and clarification. Mr. S. Cover also transformed an earlier draft of the key into something that actually identified test specimens. Dr. Jim Wetterer of Wilkes Honors College, Florida Atlantic University, generously shared specimens and draft manuscripts that alerted me to several new records. Dr. James Woods made important collections on Pohnpei, and Dr. Dan Janies took me to the restaurant where I found *Platythyrea parallela*. Ms. Joyce Friedenberg, Messrs. Eoin Treacy, Dan Corrou, Mike Brady, and other PATS staff joined collecting trips and helped in numerous ways. Tracy Robinson at the Smithsonian archives sent me a copy of Marion Smith's inventory. Ms. Kristin Muse (*née* Landauer) did a flawless retyping of Smith's inventory into a searchable spreadsheet, and Mr. Seth Muse arranged that project. Ms. Patricia Wynne at the AMNH made the drawings of *Ponera* and *Vollenhovia* (Figs. 8E–F & 15C–D), and Dr. Mark Deyrup created the drawings of *Anochetus*, *Cryptopone*, *Eurhopalothix*, *Ponera*, and *Pristomyrmex* (Figs. 1, 9, 10). Dr. Brian L. Fisher of the California Academy of Sciences is kindly photographing new and undetermined species and displaying the images on AntWeb. Mr. Edward Smith, Dr. John-Peter Pham, and Dr. Alex Kerr assisted with Latin names. Dr. Katsuyuki Eguchi inspected my specimens of *Pheidole* and offered many useful observations. SEMs were made possible by the assistance of Mr. Kevin Frischmann and Dr. Angela Klaus at AMNH. Dr. Gary Alpert assisted in numerous ways during my visits to MCZ. Finally, two anonymous reviewers and this journal provided the final dose of encouragement and support to bring these observations to publication.

Publication of this study was generously funded by a Robert G. Goelet Award from the Museum of Comparative Zoology, Harvard University, the coordination of which was kindly managed by Dr. James Hanken. I am thankful for additional publication support from this journal and Harvard University's Department of Organismic and Evolutionary Biology.

References

Bolton, B. 1979. The ant tribe Tetramoriini (Hymenoptera: Formicidae). The genus *Tetramorium* Mayr in the Malagasy region and in the New World.

Bulletin of the British Museum (Natural History) (Entomology) 38: 129-181.
Bolton, B. 1987. A review of the *Solenopsis* genus-group and revision of Afrotropical *Monomorium* Mayr. Bulletin of the British Museum (Natural History) (Entomology) 54: 263–452.
Bolton, B. 1995a. A New General Catalog of the Ants of the World. Harvard University Press, Cambridge, MA, 504 pp.
Bolton, B. 1995b. Identification Guide to the Ant Genera of the World. Harvard University Press, Cambridge, MA, 224 pp.
Bolton, B. 2000. The ant tribe Dacetini. Memoirs of the American Entomological Institute 65: 1–1028.
Bolton, B. 2003. Synopsis and Classification of Formicidae. Memoirs of the American Entomological Institute, Vol. 71. Gainesville, FL, 370 pp.
Brown, W. L. 1960. Contributions toward a reclassification of the Formicidae, III: Tribe Amblyoponini (Hymenoptera). Bulletin of the Museum of Comparative Zoology 122: 144–230.
Brown, W. L., Jr. 1964. The ant genus *Smithistruma*: A first supplement to the World revision (Hymenoptera: Formicidae). Transactions of the American Entomological Society 89: 183–200.
Bryan, E. H., Jr. 1971. Guide to place names in the Trust Territory of the Pacific Islands (the Marshall, Caroline and Mariana Islands), Pacific Scientific Information Center.
Clouse, R. M. (in press) New Ants (Hymenoptera: Formicidae) from Micronesia. Zootaxa.
Cole, A. C. 1949. The ants of Bikini Atoll, Marshall Islands. The Pan-Pacific Entomologist 25: 172–174.
Ehrhorn, E.M. 1939. Caroline and Marshall Island Insects. Proceedings of the Hawaiian Entomological Society. 10: 190–1.
Emery, C. 1901. Formiciden von Celebes. Zoologische Jahrbücher. Abteilung für Systematik, Geographie und Biologie der Tiere. 14: 565–580.
Emery, C. 1914. Les fourmis de la Nouvelle-Calédonie et des îles Loyalty. *In* F. Sarasin & J. Roux (eds) Nova Caledonia Zoologie, 1, Wiesbaden, pp. 393–437.
Ettershank, G. 1966. A generic revision of the world Myrmicinae related to *Solenopsis* and *Pheidologeton* (Hymenoptera: Formicidae). Australian Journal of Zoology 14: 73–171.
Glassman, S. F. 1952. The Flora of Ponape. Bernice P. Bishop Museum Bulletin 209: 1–152.
Gressitt, J. L. 1954. Insects of Micronesia: Introduction. Insects of Micronesia 1. Bernice P. Bishop Museum, Honolulu, HI.
Gressitt, J. L. 1956. Some distribution patterns of Pacific island faunae. Systematic Zoology 5: 11–47.
Gressitt, J. L. 1982. Pacific-Asian biogeography with examples from the Coleoptera. Entomologia Generalis 8: 1–11

Heterick, B. E. 2001. Revision of the Australian ants of the genus *Monomorium* (Hymenoptera: Formicidae). Invertebrate Taxonomy 15: 353–459.

Hölldobler, B. & E. O. Wilson. 1990. The Ants. Belknap Press, 746 pp.

Japanese Ant Database Group. 2003. The Ants of Japan. Gakken Co., Ltd., Tokyo.

Kugler, C. 1994. Revision of the ant genus *Rogeria* (Hymenoptera: Formicidae) with descriptions of the sting apparatus. Journal of Hymenoptera Research 3: 17–89.

Mann, W. M. 1919. The ants of the British Solomon Islands. Bulletin of the Museum of Comparative Zoology 63: 273–391.

Mann, W. M. 1921. The ants of the Fiji Islands. Bulletin of the Museum of Comparative Zoology 64: 401–499.

Moreau, C. S., C. D. Bell, R. Vila, S. B. Archibald & N. Pierce. 2006. Phylogeny of the Ants: Diversification in the Age of Angiosperms. Science 213: 101–104.

Olsen, A. R. & J. E. Miles. 2005. New records of the ant *Monomorium destructor* (Jerdon 1851), in Palau. The Pan-Pacific Entomologist 8: 101–102.

Seifert, B. 2003. The ant genus *Cardiocondyla* (Insecta: Hymenoptera: Formicidae) — a taxonomic revision of the *C. elegans, C. bulgarica, C. batesii, C. nuda, C. shuckardi, C. stambuloffi, C. wroughtonii, C. emeryi,* and *C. minutior* species groups. Annalen des Naturhistorischen Museums in Wien 104B: 203–338.

Shattuck, S. O. 2000. Australian Ants: Their Biology and Identification. CSIRO Publishing, Collingwood, Australia, 226 pp.

Smith, M. R. 1953a. A new *Metapone* from the Micronesian islands (Hymenoptera, Formicidae). Journal of the New York Entomological Society 61: 135–137.

Smith, M. R., 1953b. A revision of the ant genus *Romblonella* W.M. Wheeler. Proceedings of the Hawaiian Entomological Society. 15: 75–80.

Smith, M. R., 1953c. A new *Romblonella* from Palau and the and the first description of a *Romblonella* male. Journal of the New York Entomological Society. 61: 163–167.

Stitz, H. 1925. Ameisen von den Philippinen, den malayischen und ozeanischen Inseln. Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin. Jahrgang 1923: 110–136.

Sugerman, B. B. 1972. Insects and other arthropods from Kwajalein Atoll (Marshall Islands). Proceedings of the Hawaiian Entomological Society 21: 271-286

Swezey, O. H. 1942. Formicidae of Guam. Bernice P. Bishop Museum Bulletin 172: 175–183.

Taylor, R. W. 1965. The Australian ants of the genus *Pristomyrmex*, with a case of apparent character displacement. Psyche 72: 35–54.

Taylor, R.W. 1967. A monographic revision of the ant genus *Ponera* Latreille. (Hymenoptera: Formicidae). Pacific Insects Monograph 13: 1–112.

Terayama, M., S. Miyano, and T. Kurozumi. 1994. Ant fauna (Insecta: Hymenoptera: Formicidae) of the northern Mariana Islands, Micronesia. *In* A. Asakura & T. Furuki (eds), Biological Expedition to the Northern Mariana Islands, Micronesia, Natural History Research Special Issue No. 1, Natural History Museum and Institute, Chiba, Japan, pp. 231–236.

Wang, M. 2003. A monographic revision of the ant genus *Pristomyrmex* (Hymenoptera: Formicidae). Bulletin of the Museum of Comparative Zoology 157: 383–542.

Ward, D. F., and J. K. Wetterer. 2006. Checklist of the ants of Fiji (Hymenoptera: Formicidae). *In* N. L. Evenhuis & D. J. Bickel, D.J. (eds) Fiji Arthropods III. Bishop Museum Occasional Papers 85: 23–47.

Weber, N. A. 1950. Ants from Saipan, Marianas Islands. Entomological News 61: 99–102.

Wetterer, J. K., & S. D. Porter. 2003. The little fire ant, *Wasmannia auropunctata*: distribution, impact, and control. Sociobiology 42: 1–41.

Wetterer, J.K. & Bourquin, O. (in prep.) Ants of the Mariana Islands, Micronesia

Wetterer, J.K. (in prep.) Ants of Eastern Micronesia (Marshall Islands, Banaba, and Gilbert Islands)

Wheeler, W. M. 1912. The ants of Guam. Journal of the New York Entomological Society 20: 44–48.

Wheeler, W. M. 1934. Revised list of Hawaiian ants. Bernice P. Bishop Museum Occasional Papers (Honolulu) 10: 3–21.

Wheeler, W. M. 1935. Check list of the ants of Oceania. Bernice P. Bishop Museum Occasional Papers (Honolulu) 11: 3–56.

Wilson, E. O. 1957. The *Tenuis* and *Selenophora* groups of the ant genus *Ponera* (Hymenoptera: Formicidae). Bulletin of the Museum of Comparative Zoology 116: 355– 386.

Wilson, E. O. 1958a. Studies on the ant fauna of Melanesia, I: The tribe Leptogenyini; II: The tribes Amblyoponini and Platythyreini. Bulletin of the Museum of Comparative Zoology 118: 98–153.

Wilson, E. O. 1958b. Studies on the ant fauna of Melanesia, III: *Rhytidoponera* in western Melanesia and the Moluccas; IV: The tribe Ponerini. Bulletin of the Museum of Comparative Zoology 119: 300–371.

Wilson, E. O. 1959a. Studies on the ant fauna of Melanesia, V: The tribe Odontomachini. Bulletin of the Museum of Comparative Zoology 120: 483–510.

Wilson, E. O. 1959b. Studies on the ant fauna of Melanesia, VI: The tribe Cerapachyini. Pacific Insects 1: 39–57.

Wilson, E. O. & R. W. Taylor. 1967. The ants of Polynesia (Hymenoptera: Formicidae). Pacific Insects Monograph 109: 1–109.

Yasumatsu, K. 1940. Beiträge zur Kenntnis der Ameisenfauna Mikronesiens. I. Die Ameisengattung *Anochetus* Mayr der Karolinen. Annotationes Zoologicae Japonensis 19: 312-315.

Received 28 Aug. 2006, revised 19 Dec.