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A REVISION OF *CONOMYRMA*
(HYMENOPTERA: FORMICIDAE)
FROM THE SOUTHEASTERN UNITED STATES,
ESPECIALLY FLORIDA, WITH KEYS TO THE SPECIES

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ABSTRACT

Workers of five new species of *Conomyrma* from Florida and other southeastern states are described, and 2 existing taxa are redescribed. Queens are described for most species. Males are not readily distinguishable, as far as known. Among the new species *C. elegans* n. sp. has slender, yellow workers and a very restricted range in the scrublands of Highlands Co., Florida; *C. bossuta* n. sp. is a variously colored, common though inconspicuous species of the xeric woodlands of Florida and southern Georgia; *C. bureni* n. sp. is the abundant, usually yellowish, roadside and old field *Conomyrma* of the southeastern and Atlantic coast states (but not Texas and the Midwest, where it is replaced by *C. flava*); *C. medeis* n. sp. is a densely pubescent, dark brown or black species of the *C. smithi* (Cole) complex and a temporary social parasite of *C. bureni* with approximately the same geographic range; and *C. reginicula* n. sp., known only from peninsular Florida, is a species morphologically similar to *C. medeis* but less pubescent and weakly bicolored, and is a temporary social parasite of *C. bureni* and probably *C. bossuta*. Among the described species, *C. flavopectus* (M. R. Smith) is dark brown with a striking yellow thorax, and is restricted to the sand pine—Florida rosemary scrublands of peninsular Florida; and *C. grandula* (Forel), originally described as a *Prenolepis*, is a small brown species of woodland openings from northern Florida to New Jersey.

RESUMEN

Se describen trabajadores de cinco especies nuevas de *Conomyrma* de la Florida y de otros estados del sudeste, y se redescubren 2 taxones existentes. Se describen las reinas de la mayoría de las especies. De lo que se conoce, los machos no se distinguen fácilmente. Entre las nuevas especies, *C. Elegans* n. sp., tiene trabajadores delgados y amarillos, y una extensión muy restringida en las tierras de maleza del Condado de Highland en la Florida; *C. bossuta* n. sp. es de varios colores, común, aunque es una especie inconspicua de los bosques xéricos de la Florida y del sur de Georgia; *C. bureni* n. sp. es la abundante, usualmente amarillenta, encontrándose al lado de caminos y en campos viejos *Conomyrma* del sudeste y de estados de la costa del Atlántico, pero no Texas y el Medio-Oeste, donde es reemplazada por *C. flava*. *c. medeis* n. sp. es una especie densamente peluda, de color pardo obscuro o negra, del grupo de *C. smithi* (Cole), que es un parásito social temporal de *C. bureni*, y con aproximadamente la misma extensión geográfica; *C. reginicula* n. sp., conocida solamente de la península de la Florida, es una especie morfológicamente similar a *C. medeis*, pero menos peluda y más ligeramente bicolor, y es un parásito social temporal de *C. bureni* y probablemente de *C. bossuta*. Entre las especies descritas, *C. flavopectum* (M. R. Smith) es parda oscura con un tórax amarillo llamativo, y está restringida a los pinos de arena—tierra de romeros en la península de la Florida; y de *C. gandula* (Forel), originalmente descrita como *Prenolepia*, es una especie pequeña, parda, y es de donde hay abertura en los bosques, desde el norte de la Florida hasta New Jersey.

INTRODUCTION

The ant genus *Conomyrma* Forel is often passed over by ant collectors who consider these rather abundant insects some sort of myrmecological "roadside weeds" of little biological or taxonomic interest. Biological notes included here demonstrate that *Conomyrma* in the southeastern United States, especially Florida, is an assemblage of species whose degree of endemism, specialized habitat preferences, varied population structure and potential as agents of biological control of annual crop pests are well worthy of further study.

This paper is intended primarily however, as an introduction to the taxonomy of 7 distinct Floridian *Conomyrma* species. The taxonomy of the described species is clarified, based on the study of type and other specimens, and original descriptions. Workers of 2 named species are redescribed and 5 new species are described and distinguished from the known forms. Queens of all species except *C. flavopectum* are described, but I have been unable to acquire sufficient males or to discover adequate discriminatory characters among those available to discern the species. This is not a complete revision of the North American species; not included are species found exclusively west of the Mississippi River, among them several undescribed ones. Indeed, I am aware of 2 possibly undescribed species from southeastern Florida and the Keys which are not treated for lack of sufficient material, and because of uncertainty about their affinities to the Caribbean fauna. *Conomyrma* is also well-represented in the Neotropics and the deserts of southern South America (Kempf 1972, Kusnezov 1952).

This study is based primarily on material in my own collection and that of William F. Buren, and to a lesser extent on material borrowed from the Los Angeles County Museum of Natural History; the United States National Museum; the collection of the Archbold Biological Station, Lake Placid, Florida. Buren's material is deposited at the Florida State Collection of Arthropods in Gainesville and at Los Angeles County Museum. Holotypes from this study will be deposited at the Florida State Collection of Arthropods, and paratypes will be distributed to the above-listed collections, to the

Museum of Comparative Zoology at Harvard University and to the American Museum of Natural History in New York.

It would be amiss if I failed to point out that Buren first recognized the forms treated here as 6 distinct species, including 3 undescribed forms. Unfortunately, the illness preceding his death in August, 1983 prevented him from producing a publishable account. The feeling that his scheme should not remain unpublished was the stimulus to carry out the measurements, morphological study, and preparation of illustrations resulting in this paper. This work resulted in the discovery that what Buren had planned to call *C. insana* in fact includes 2 undescribed sibling species.

Methods, Materials and Terminology

Measurements were converted to the nearest 0.01 mm from ocular micrometer readings taken at 40X on a Nikon SMZ-10 stereo dissecting microscope. The measurements and indices used in the species descriptions are defined below. Abbreviations for these used throughout the rest of the paper are in parentheses following the name of each item.

Measurements (Note: listed approximately anterior to posterior.)

Head length (HL)—Maximum length of head from apical border of clypeus to vertex ("occipital border") in frontal view.

Head width (HW)—Maximum width of head in frontal view.

Scape length (SL)—Length of antennal scape (basal knob and stalk not included).

Eye length (EL)—Maximum diameter of compound eye (pigmented facets only).

Femur length (FL)—(Workers) Length of fore femur.

Weber's length (WL)—Length of thorax from anterior portion of pronotum (exclusive of cervical flange which was not entirely visible on all specimens) to rear edge of metapleural flange.

Thorax width (TW)—(Queens) Maximum width of mesoscutum.

Indices (Note: grouped by denominator.)

Total length index (HTL)— $HL + TL$ (an "index" of total length independent of highly variable gaster length).

Cephalic index (CI) $HW \times 100 / HL$

Femoral index (FI) $FL \times 100 / HL$

Thorax length index (TI) $WL \times 100 / HL$

Scape index (SI) $SL \times 100 / HW$

Thorax width index (TWI) $TW \times 100 / HW$

Measurements and indices are listed with the species descriptions in the following format: lowest value measured or calculated—highest value (measurement or index of holotype or other type, where applicable). Measurements of nanitic workers are not reported.

Original sketches for the illustrations were prepared using a drawing tube attachment on the dissecting microscope, corrected for distortion and inked freehand.

I include only synoptic synonymies for each species.

Generic Diagnosis

Conomyrma workers are members of the tribe Tapinomini in the subfamily Dolichoderinae, which have a greatly reduced sting apparatus; gastric apex with a conspicuous, transverse, slit-like cloacal orifice; 1-segmented, cuneate abdominal pedicel; relatively small (< 4mm) body size; and a smooth, flexible integument normally covered with fine, strongly appressed pubescence. Within the Tapinomini, *Conomyrma*

may be recognized by the following combination of characteristics: mandibular dentition reduced to 6 (rarely 5) teeth along the cutting margin, apical tooth long and sharp, and at least 2X the size of subapical tooth; minute denticles occasionally present along basal border of mandible; 3rd segment of maxillary palp at least 3X as long as any other palpal segment (this character also distinguishes the males and queens); propodeum always bears a distinct mid-dorsal protuberance in the form of a boss or cone; gaster of *Conomyrma* workers laterally compressed rather than dorsoventrally flattened or circular in cross-section (unique among North American dolichoderines); pilosity composed of a poorly-developed psammophore of 4-8 long curved setae extending ventrad about half way to oral cavity, and 0 to 4 shorter setae (psammophore better developed in the some Chilean species) a few long setae on the mandibles, clypeus, and frons; and several on the coxae and gastric venter; pilosity usually lacking on the thoracic and abdominal dorsa except for a few hairs near the gastric apex, and (rarely) on the pronotum. For characters distinguishing *Conomyrma* from its South American relative *Dorymyrma* Santschi see Snelling (1973) and Kusnezov (1952).

Key to workers of *Conomyrma*
of the southeastern United States

- 1a Mesonotal profile, in all or the great majority of workers of a series, either evenly convex (Figs. 9, 11), or flat to weakly concave (Fig. 10) 2
- 1b Mesonotal profile, in all or the great majority of workers of a series, angular, having distinct dorsal and declivous faces (Figs. 8, 12-14) 4
- 2a Promesonotal profile convex; base of propodeum at an angle of 145° or less to the plane of the posterior portion of the mesonotum (Figs. 9, 11), scape exceeding occipital margin by 1/3, or less, its length in frontal view (Figs. 2, 4); color variable 3
- 2b Thorax elongate, with promesonotal profile flattened and upward slope of base of propodeum at an angle of 165°, or more, to the plane of the mesonotal dorsum (Fig. 10); scape exceeding occipital margin by almost 1/2 its length (Fig. 3); color clear, weakly shining yellow, with at most a trace of darkening near gastric apex; a slender, long-legged form known only from the scrub and xeric woodlands of Highlands Co., Florida *elegans* n. sp.
- 3a Head broad (CI>87, less in minim workers); scape relatively short (SI<112); propodeal cone blunt, its posterior face straight or slightly convex (Fig. 9); color usually predominantly yellow, but if head and gaster extensively infuscated, thoracic dorsum also with at least faint brownish blotching; a common species in disturbed habitats, usually with sandy soils, from Mississippi to Maryland, especially abundant in Florida *burni* n. sp.
- 3b Head narrower (CI<87); scape longer (SI>112, as low as 109 in about 5% of workers); propodeal cone sharper, appearing faintly recurved because posterior face of propodeum slightly concave (Fig. 11); head dark brown, thorax clear yellow (never with faint, dorsal blotching), gaster dull brown; a locally abundant species in sand pine scrubland of central Florida *flavopectus* (M. R. Smith)
- 4a Gaster densely pubescent, pubescence closely spaced and at least partly obscuring sheen of gastric dorsum; angle between dorsal and declivous mesonotal faces broadly obtuse ($\theta \geq 140^\circ$); mesonotal declivity not unusually steep (Fig. 12, 14) 5
- 4b Gaster lacking pubescence, or at most with a few widely spaced, fine setae which do not obscure the sheen of the gastric dorsum; mesonotum more acutely angular, angle between dorsal and declivous mesonotal faces

- 90°-120°, mesonotal declivity steep (Fig. 8); a common but inconspicuous species of turkey oak savannas and oak scrubland in Florida and adjacent Georgia *bossuta* n. sp.
- 5a Head broad (CI>90); occipital border normally distinctly concave; propodeal cone large and prominent (Fig. 13, 14); larger species (HTL>1.95) 6
- 5b Head narrower (CI<88, rarely up to 90); occipital border weakly convex or straight; propodeal cone low and not as prominent (compare Figs. 12 and 13); smaller species (HTL<1.95); a species of openings in well-drained pine-oak woodland from northern Florida to New Jersey *grandula* (Forel)
- 6a Scape relatively long (SI 98-111, but >101 in 80% of workers measured); pubescence dense but very short, absent on sides of head; sides of head very shiny; front of head and dorsum of thorax only slightly dulled by pubescence; head and thorax, and often base of first tergite reddish; gaster dark brown; found within or near populations of *C. bureni* or *C. bossuta*; colonies small, inhabiting one or a few nests; queen small, HTL < 3 mm *reginicula* n. sp.
- 6b Scape short (SI 95-105, but <101 in over 80% of workers measured); pubescence dense, dulling front of head and thoracic dorsum; uniform brown to black; also found within or near populations of *C. bureni* in the Southeast, sometimes in huge polycalic colonies; queens larger, HTL > 3.25 mm *medeis* n. sp.

Key to Queens of *Conomyrma* of the Southeastern United States

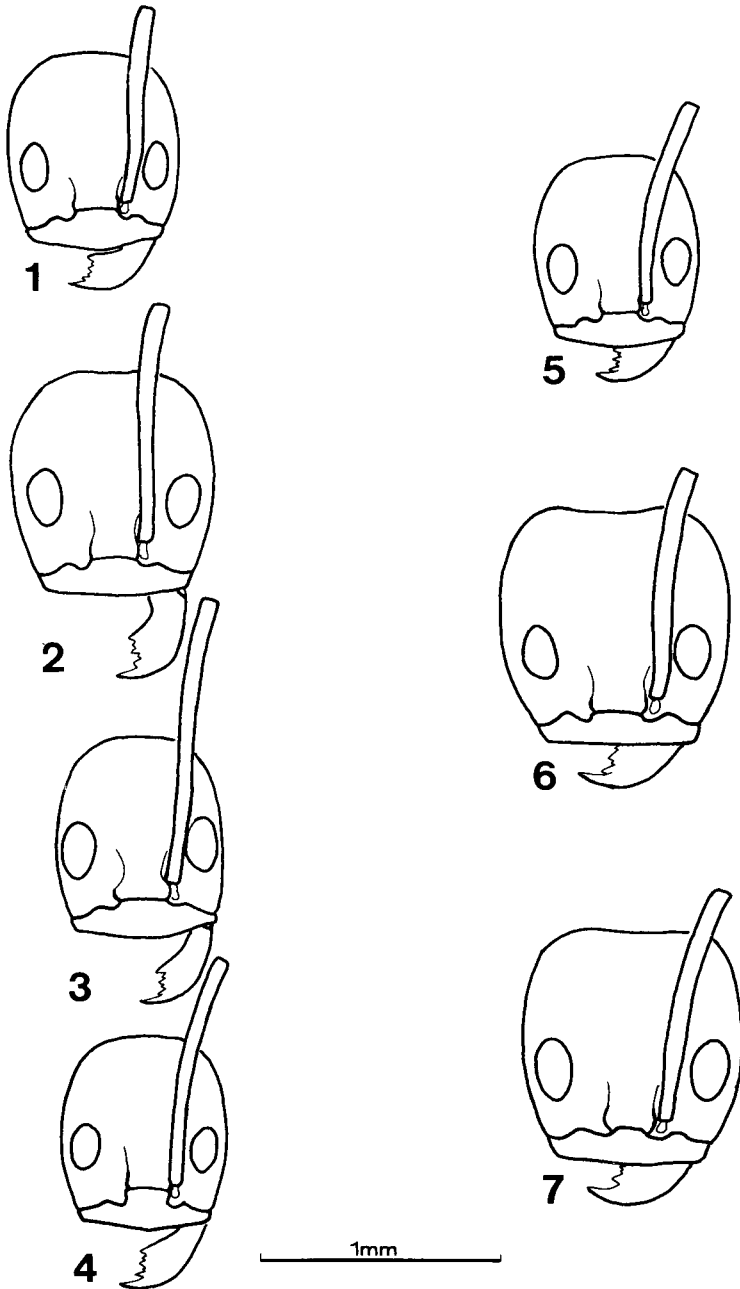
- 1a Occipital border convex 2
- 2b Occipital border concave 5
- 2a Head and thorax yellowish and most of gaster notably darker, or body uniform yellowish 3
- 2b Body uniform dark brown *grandula*
- 3a Larger species, HTL>3.50 mm 4
- 3b Smaller species, HTL<3.25 mm *bossuta*
- 4a Robust species, head as wide as long or a little broader; gaster notably darker than head and thorax *bureni*
- 4b Slender species, head notably longer than broad; gaster at most only faintly browner than head and thorax *elegans*
- 5a Larger species, HTL>3.25 mm *medeis*
- 5b Microgynous species, HTL 2.75-2.95 *reginicula*

Conomyrma bossuta n. sp.
(Figs. 1 & 8)

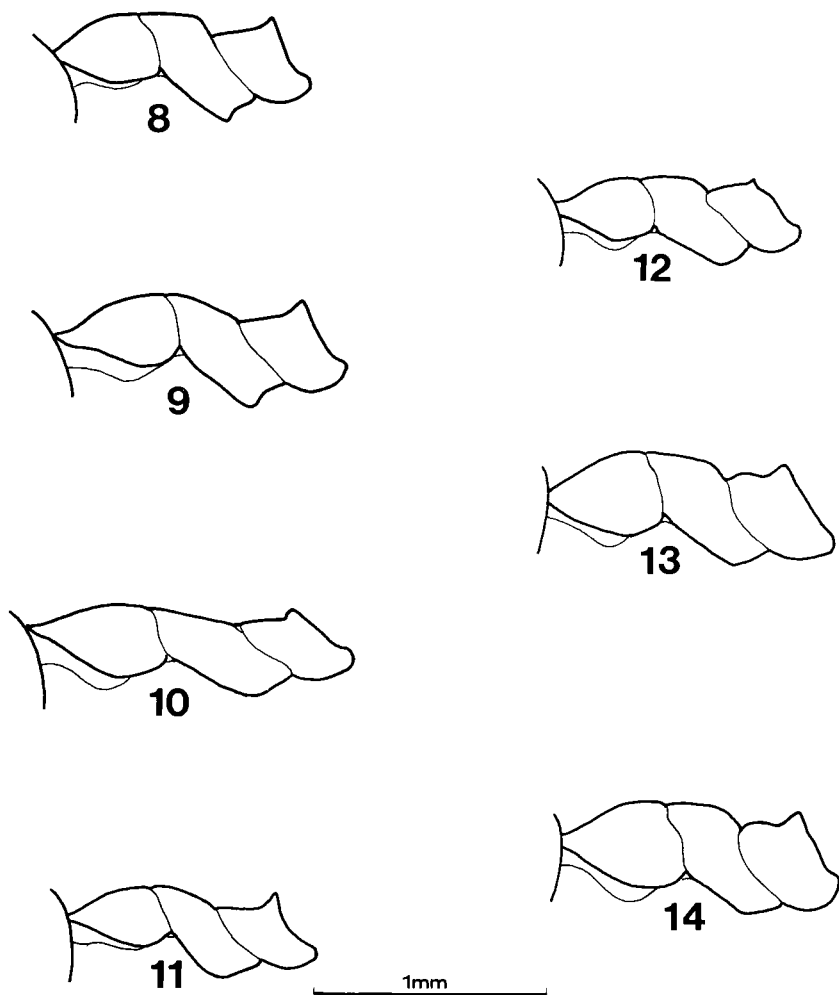
WORKER. Measurements and indices: HL 0.77-0.88 (0.80), HW 0.63-0.75 (0.69), SL 0.75-0.88 (0.80), EL 0.18-0.23 (0.21), FL 0.63-0.80 (0.73), WL 1.00-1.25 (1.10), HTL 1.73-2.13 (1.90), CI 82.7-88.2 (86.2), SI 110.7-124.3 (115.9), OI 23.7-27.5 (26.2), FI 86.3-94.0 (91.2), TI 127.1-144.9 (137.5). N = 25.

DIAGNOSIS. Worker small and shiny, particularly gaster which lacks or has at most very sparse pubescence; declivous face of mesonotum steep, often nearly vertical, giving a hunchbacked or strongly saddle-backed appearance.

FURTHER DESCRIPTION. General form and characters as in Figs 1 and 8, and in key. Head broadest across eyes, with convex sides and straight occipital border; in full face view, sides often weakly convergent toward occiput; in specimens from south-central Florida, mesonotum may bear a small hump at meeting of dorsal and declivous faces,



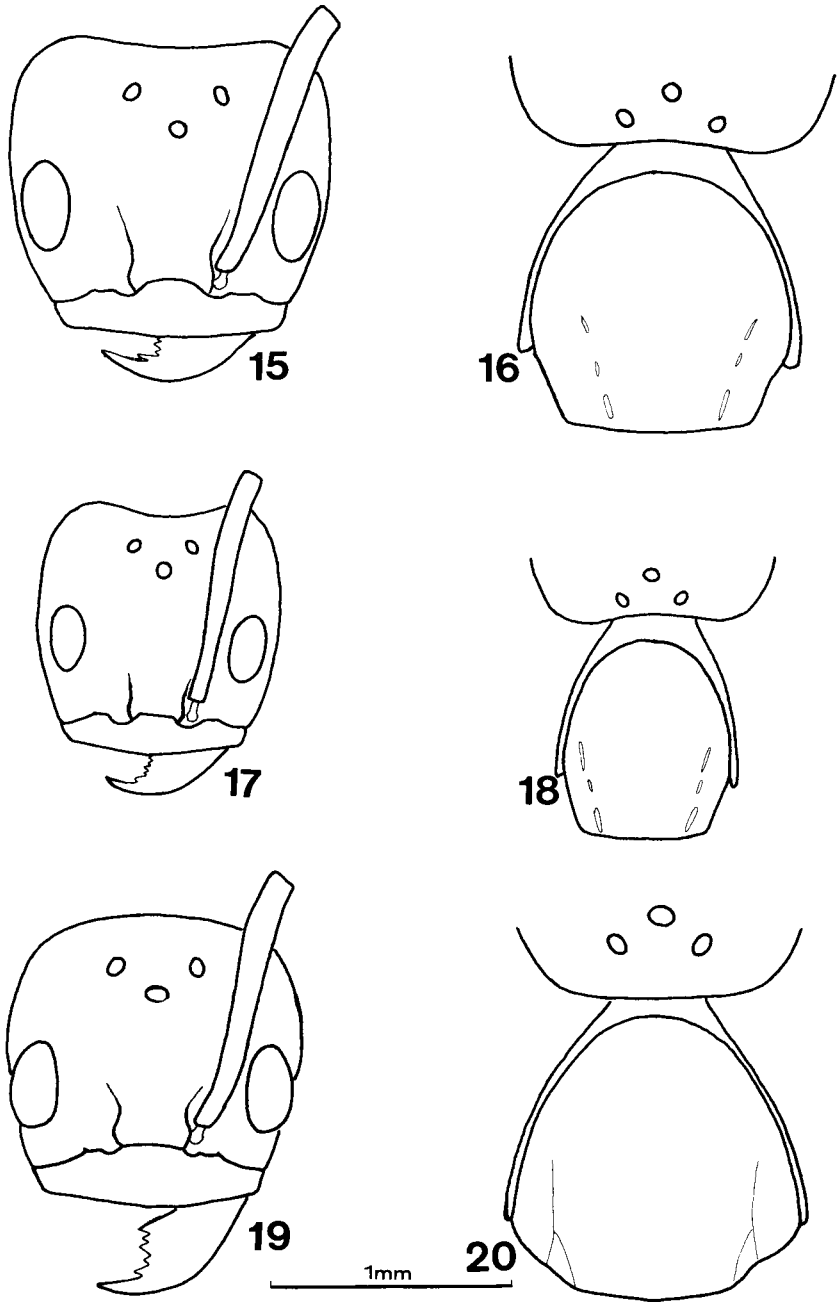
Figs. 1-7. Frontal view of heads of worker *Conomyrma*: 1) *C. bossuta*, 2) *C. bureni*, 3) *C. elegans*, 4) *C. flavopecta*, 5) *C. grandula*, 6) *C. medeis*, 7) *C. reginicula*.



Figs. 8-14. Lateral view of thoraces of worker *Conomyrma*: 8) *C. boszuta*, 9) *C. bureni*, 10) *C. elegans*, 11) *C. flavopecta*, 12) *C. grandula*, 13) *C. medeis*, 14) *C. reginicula*.

declivity usually steep, concave; steepness and concavity of mesonotal declivity less pronounced in holotype, and in general in specimens from northern and coastal parts of the species' range; propodeal cone proportionately higher in south-central Florida specimens.

Mandibles striate near base, striae becoming obsolete distally and replaced by smooth, elongate punctures; tessellation of head and thorax conspicuous, combining with very fine pubescence to offset the strong sheen of the intersculptural spaces; gastric sculpture shallow and inconspicuous and pubescence absent or composed of short, appressed setae separated by at least 2X their average length; gaster thus appearing very shiny.



Figs. 15-20. Frontal view of head, juxtaposed with dorsal view of promesothorax and occipital border of head, of queen *Conomyrma*: 15 & 16) *C. medeis*, 17 & 18) *C. reginicula*, 19 & 20) *C. bureni*.

Color ranging from head dark brown, thorax yellowish or reddish brown and gaster dark brown to nearly black (most common), to bicolored with thorax light reddish brown, head slightly darker, and gaster dark brown (occasional in northern part of range); to nearly uniform yellowish brown with infusate gastric apex (least common, known only from Highlands Co., and one isolated population in Alachua Co., Florida). QUEEN. Measurements and indices: HL 1.03-1.05, HW 1.03-1.04, SL 0.90-0.93, EL 0.35-0.36, TW 0.91-0.99, WL 2.08-2.18, HTL 3.11-3.25, CI 99.7-101.0, SI 87.4-90.3, OI 33.3-35.0, TWI 88.3-95.2, TI 201.9-211.7. N=3.

Smaller and shnier, especially on gaster, than any other *Conomyrma* queen reported here except *C. reginicula*; head about as long as broad; sides angulo-convex, convergent toward clypeus; eyes strongly convex, their outer margins reaching or falling just short of sides of head; occipital border convex, less clearly set off from sides of head by occipital lobes than in other species; thorax slender, narrower than head.

Sculpture as in worker, but shininess obscured by longer, denser pubescence; head and thorax brownish yellow; gaster shiny and rich brown, in some specimens with a yellowish patch near base.

NATURAL HISTORY. *C. bossuta* is widely distributed in the sandhills and fossil dunes of Florida and is often associated with the turkey oak, *Quercus laevis* Walter. The nest entrance is circular, surrounded by a 5-10 mm wide crater of excavated soil, and located in small, vegetation-free patches so common in the sparse sandhill vegetation. In nest excavations, several dozen workers and numerous larvae and pupae were unearthed between 15 and 25 cm deep, few individuals any deeper. This species tolerates cutting over of trees and foot traffic in its habitat, but does not withstand tilling. Workers forage singly, usually in the shade, and may bear a superficial resemblance to workers of *Pheidole dentata* or *P. morrissi* when seen in the field.

DISTRIBUTION. Holotype and 30 paratypes: FLORIDA, *Alachua Co.*: 3 mi. E Gainseville, San Felasco Hammock State Preserve.

18-26 June, 1987. James C. Trager leg.

Other specimens: FLORIDA, *Brevard Co.*: Indian Harbor Beach. *Gilchrist Co.*: Blue Springs Park. *Highlands Co.*: Archbold Biological Station. *Marion Co.*: Ocala National Forest, various localities 14-20 mi W Ocala. *Putnam Co.*: 5 mi. SE Melrose; *Wakulla Co.*: Ochlocknee River State Park. GEORGIA, *Seminole Co.*: 21st district, lot 172.

ETYMOLOGY. The name *bossuta* is a latinization (and presumably vulgar Latin form) of the French adjective *bossu*, meaning humpbacked.

Conomyrma bureni n. sp.

(Figs. 2, 9, 19, & 20)

Conomyrma pyramica (yellow form): Whitcomb *et al.* 1972: 137.

Conomyrma flavopecta (*sic!*): Snelling 1973: 5. Buren *et al.* 1975: 306-314. Nickerson, *et al.*, 1975a: 1083-1085. Nickerson, *et al.*, 1975b: 75-82 (misidentifications).

Conomyrma edeni Tryon, 1986: 340; **nomen nudum**.

WORKER. Measurements and indices: HL 0.85-1.05 (0.98), HW 0.71-1.00 (0.88), SL 0.90-1.10 (1.03), EL 0.23-0.28 (0.25), FL 0.80-1.00 (0.90), WL 1.08-1.40 (1.25), HTL 1.93-2.45 (2.23), CI 83.5-95.2 (89.8), SI 110.0-126.8 (117.0), OI 23.8-28.6 (25.5), FI 89.8-100.0 (91.8), TI 126.7-150.6 (127.6). N=25.

DIAGNOSIS. The common yellow *Conomyrma* of disturbed soils (especially in sandy areas) in the Southeast; convexity of pronotum forms a continuous curvature with mesonotal dorsum in profile; propodeal cone generally lower and blunter than that of *C. flavopectus* (compare Figs. 9 and 11).

FURTHER DESCRIPTION. General form and characters as in Figs. 2 and 9, and in key. Head widest above eyes, sides evenly convex or sometimes converging a little more

strongly toward mandibular bases; occipital border weakly concave in larger workers to weakly convex in smaller ones; promesonotal curvature usually as in Fig. 9, though less arched in some small workers and many specimens from the northwestern part of the species' range. *C. bureni* only rarely shows even a trace of distinct basal and declivous faces in mesonotal profile.

Mandibles striate from base nearly to teeth near inner border; striae becoming increasingly obsolete distally along outer border, yielding a shining subtriangular space subtending 3 or 4 most apical teeth; fine tessellation and short, dense, whitish pubescence yield a feebly shining front and dorsum of head, and thorax; sculpture weaker and pubescence less dense on sides of head and gula, rear face of propodeum, and petiole, but stronger and denser on gaster, the former parts correspondingly shinier, gaster duller.

Color ranging from clear orange-yellow with head slightly darker and posterior part of gaster brownish, to entire body mousy brown with thorax and base of gaster a little lighter and yellow; great majority of specimens lie near the lighter end of the spectrum with part of head and posterior 1/2 of gaster lightly infuscate; most darker specimens observed came from coastal areas of Georgia and northeastern Florida, while the yellowest specimens came from south-central Florida.

QUEEN. Measurements and indices: HL 1.19-1.25, HW 1.18-1.28, SL 1.08-1.15, EL 0.40-0.43, TW 1.18-1.38, WL 2.38-2.45, HTL 3.58-3.70, CI 99.2-106.7, SI 84.4-93.2, OI 32.0-34.4, TWI 93.8-107.8, TI 194.4-204.2. N = 10.

Head usually a little broader than long (Fig. 19), occasionally slightly longer; sides of head weakly angular, convex and subparallel above midlength of eyes, straighter and convergent below; eyes notably convex, their outer margin lying close to or even protruding beyond sides of head; occipital border about as broad as clypeus, weakly convex; thorax about equal to head in width (Fig. 20).

Sculpture as in worker; pubescence longer, thus queen a little less shiny; color of head, thorax and base of gaster usually a little darker and more reddish than in worker; remainder of gaster brown, fading to reddish near edges of tergites.

NATURAL HISTORY. *C. bureni* is the characteristic yellow *Conomyrma* of roadsides, planted and fallow fields, pastures, lawns and parks throughout Florida and the Southeast, especially in areas with sandy soils. It occurs naturally in coastal dunes, and near seasonal ponds among *Andropogon* and other clumping grasses in "fossil" dunes. This species may be favored by appropriate cultural practices in crop systems to provide biological pest control. It is an avid predator of small arthropods in citrus and soybeans [Whitcomb *et al.* 1972, Elvin *et al.* 1983 (*Conomyrma* sp.), Tryon 1986 (*C. edeni*, nomen nudum)] is non-noxious to humans and their crop plants, and is quick to colonize newly-tilled ground. Foraging occurs in all but the hottest portion of the day in the warmer seasons and even on warm, sunny days in winter. Workers from incipient colonies are reported to be mostly nocturnal (Buren *et al.* 1975). Colonies normally inhabit only one nest at a time, but during the fall and spring, when nest emigrations are frequent, a colony may temporarily inhabit 2 or 3 nests.

Mating flights occur on warm nights after or even during rain from spring through fall. Peak flight activity occurs at dusk, but I have observed copulating specimens flying in low numbers to a blacklight throughout the night and even at dawn.

DISCUSSION. *C. bureni* is structurally very close to *C. flavopectus*. It seems certain, in view of the biologies of the 2 species, that much of the literature referring to "*C. flavopecta*" in fact concerns *C. bureni*, following the lead of Creighton (1950) who, apparently incognizant of the ecology of Smith's species, played down the difference in color pattern of the 2 species and expanded the taxon to include any *Conomyrma* with the appropriate thoracic structure. The shorter scapes and monocalic colonies of *C. bureni* are the good features for distinguishing *C. bureni* from *C. flavopectus*, and the

striking contrast of the clear yellow trunk and dark brown head and gaster of *C. flavopectus* is not seen in *C. bureni*.

C. flava was recently reported as species distinct from *C. insana* (Cokendolpher & Francke 1984), with which it had been synonymized by Snelling (1973). It is a Texas and southern plains-state species very similar to *C. bureni* in gross worker morphology and in its ecology. The angularity of the mesonotum of this similarly yellowish western species is variable, but in most workers of any nest series, the mesonotum has distinct dorsal and declivous faces. The few males of *C. flava* I have seen have the small ocelli characteristic of day-flying species, which may consistently distinguish them from males of the night-flying *C. bureni*, when males of both are better collected.

DISTRIBUTION. Holotype and 32 paratypes: FLORIDA, *Alachua Co.*: Gainesville. Emerging for mating flight from nest in lawn. 15 June 1987. James C. Trager leg. Other specimens: FLORIDA, *Alachua Co.*: Gainesville. *Brevard Co.*: Cocoa Beach. *Dade Co.*: Miami Beach. *Franklin Co.*: causeway to St. George Island. *Gadsden Co.*: Quincy Agricultural Research Station. *Highlands Co.*: Archbold Biological Station. *Leon Co.*: Tall Timbers Research Station. *Monroe Co.*: Big Pine Key; Key Largo; Key West. *Palm Beach Co.*: Jupiter. *Polk Co.*: Lake Alfred. *St. Johns Co.*: Anastasia State Recreation Area; St. Augustine Beach. *Wakulla Co.*: Ochlocknee State Park. GEORGIA, *Bibb Co.*: Macon. *Fulton Co.*: Atlanta. *Lowndes Co.*: Valdosta. MARYLAND, *Worcester Co.*: Assateague Island. MISSISSIPPI, *Franklin Co.*: Roxie. SOUTH CAROLINA, (no locality given). VIRGINIA, *Northampton Co.*: Hog Island, Kiptopeke Point.

ETYMOLOGY. *C. bureni* is named after the late William F. Buren, who first recognized it as a species distinct from *C. flavopectus* and *C. flava*.

Conomyrma elegans, n. sp.
(Figs. 3 & 10)

WORKER. Measurements and indices: HL 0.79-0.95 (0.88), HW 0.61-0.80 (0.70), SL 1.10-1.30 (1.20), EL 0.19-0.23 (0.21), FL 0.95-1.17 (1.05), WL 1.23-1.50 (1.36), HTL 2.02-2.45 (2.24), CI 77.2-84.2 (79.5), SI 162.5-180.3 (171.4), OI 22.7-25.3 (23.9), FI 115.8-123.5 (119.3), TI 131.0-158.0 (154.5). N = 22.

DIAGNOSIS. Worker clear yellow, slender, elongate, with proportionally small, narrow head and long, slender appendages; trunk narrow flattened, mesonotum flat or weakly concave in profile.

FURTHER DESCRIPTION. General form and characters as in Figs. 3 and 10, and in key. Head broadest across upper 1/3 to 1/2 of eyes, straight-sided to weakly convex-sided both above and below eyes but a little more strongly convergent toward occiput; posterior dorsum of pronotum weakly convex and at low angle to mesonotal dorsum, or flatter and forming nearly flat plane with latter in profile; propodeum, except for cone, always low and at most weakly sloped upward from metanotal impression; gaster relatively small and compressed; head and trunk flattened and compressed relative to other species, and scapes and legs very long and slender, yielding a generally elongate, delicate appearance.

Sculpture as in *C. bureni* but pubescence shorter and more widely spaced; thus a little shinier than most *C. bureni*. Color without exception in several hundred live or pinned workers studied, clear yellow with last two gastric tergites weakly infuscated; head never infuscated.

QUEEN. Measurements and indices: HL 1.20, HW 1.13, SL 1.34, EL 0.39, FL 1.13, TW 2.63, HTL 3.83, CI 94.2, SI 118.6, OI 32.5, TWI 100.0, TI 219.2. N = 1.

Slender and long-limbed as in workers; head notably longer than broad; sides nearly evenly convex; outer margin of eyes protruding well beyond sides of head; occipital border clearly narrower than clypeus, weakly convex; thorax as wide as head.

Sculpture coarser and pubescence longer than in worker, thus queen notably less shiny; color clear yellow as in worker.

NATURAL HISTORY. *C. elegans* is a crepuscular-nocturnal species which also emerges on cool or overcast days. It nests in xeric woodlands and later post-fire successional stages of scrub vegetation. Nests are often located near clumps of the scrub hickory, *Carya floridana* Sargent. The nest entrance is usually surrounded by a small crater of subsoil of strikingly yellower color than the whitish sand of the surface. Workers have a peculiar slow, jerky gait, quite unexpected considering the length of their legs, but they run in unbroken dashes when threatened. This species has low tolerance for disturbance of its habitat, though it sometimes nests in footpaths. Males were aspirated from the nest entrance in early October, but flight habits are unknown.

DISCUSSION. This species is endemic to the scrubland of south-central Florida, exemplifying (in perhaps its most restricted form in animals) a distributional pattern well known in plants, but also seen in reptiles, and even in some other insects (Deyrup & Trager 1986).

It seems unlikely at first glance that this species is closely related to any sympatric forms, and the only species similar to it in proportions and thoracic profile known to me is *C. goeldii* (Forel), a Brazilian species. Based on biogeographic and other considerations, the two species are probably independent derivations of the slender, elongate form. Occasional flattened, elongate, and lightly infuscated and sculptured series of *C. bureni* can be difficult to distinguish from *C. elegans* until one examines the scapes, and it may be significant that such samples of *C. bureni* are often found near the range inhabited by *C. elegans*. Comparative studies of allozyme, nucleic acid, or secondary products chemistry, or cytotaxonomy of Florida *Conomyrma* could be interesting and illuminating.

DISTRIBUTION. Holotype and 119 paratypes: FLORIDA. Highlands Co.: Archbold Biological Station. Nest in opening in scrub on Red Hill. Other specimens: Archbold Biological Station, Lake Placid, Sebring. The great majority of specimens are from Archbold Biological Station. Though the known range is of *C. elegans* is restricted to a few square miles, it is abundant within this area. Since much of the area will be preserved indefinitely in its pristine state at Archbold Biological Station, the species does not seem to be in danger of extinction, though virtually the entire surrounding area is being converted to citrus groves, cattle pastures, or housing projects.

ETYMOLOGY. *C. elegans* (Latin for exquisite or graceful) was the name originally selected for this by Buren (personal communication), referring to the elegant appearance of this gracile, yellow ant, especially when alive.

Conomyrma flavopectus (M. R. Smith)

(Figs. 4 & 11)

Dorymyrmex pyramicus flavopectus M. R. Smith, 1944: 27: 15 ♀.

Conomyrma flavopectus: Kusnezov 1952 (raised to species).

Conomyrma flavopecta (sic!): Deyrup and Trager, 1986: 219.

WORKER. Measurements and indices: HL 0.78-1.00, HW 0.63-0.90, SL 0.88-1.14, EL 0.18-0.24, FL 0.80-1.03, WL 1.00-1.43, HTL 1.78-2.43, CI 80.8-90.0, SI 126.4-142.0, OI 21.2-24.5, FI 96.4-106.3, TI 128.2-143.0. N=26. (Holotype not measured, see discussion.)

DIAGNOSIS. An attractive species of the highly drained, infertile rosemary scrub and open sand pine woodlands of peninsular Florida. Head, except near base of mandibles, and gaster uniform dark brown; thorax clear orange-yellow; slenderer and with somewhat longer legs and scapes than *C. bureni* (compare indices): colonies polycalic, interconnected by trails.

FURTHER DESCRIPTION. General form and characters as in Figs. 4 and 11 and in key. Head broadest at or slightly below midpoint of eye, converging more strongly toward mandibles; occipital border straight to weakly convex; promesonotal curvature as in Fig. 11, generally less arched than that of *C. bureni*, though variable in both species; propodeal cone a little higher and sharper than in *C. bureni* (compare Figs. 11 and 9) and apparently deflected to rear in most specimens.

Mandibular striae as in *C. bureni*; tessellation of body surface of larger "mesh" than that of *C. bureni*, so *C. flavopectus* shinier overall, in spite of having longer, more conspicuous pubescence on head and gaster.

Color pattern unique; mandibles, clypeus, and thorax, especially the latter, clear uninfuscated orange-yellow, or rarely there is faint infuscation near lower lateral edges of pronotum; underside and coxae dark brown, at some viewing angles showing through edges of nota giving illusion of infuscation; head and gaster piceous brown; gaster appears grayer because of long whitish pubescence; legs dark brown. Among sympatric species, only *C. bossuta* may approximate this color pattern, but is smaller, shinier and with thorax browner than *C. flavopectus*.

NATURAL HISTORY. *C. flavopectus* is restricted to stands of Florida rosemary, *Ceratiola ericoides* Michaux, including those in early stages of succession to sand pine woodland in the sterile, highly drained, white "sugar sands" of central Florida. The only other *Conomyrma* likely to be encountered in such habitats is *C. bossuta*, though of course *C. bureni* is found along roads through such areas. *C. flavopectus* is spottily distributed, and though much apparently suitable habitat is not occupied, where found it is conspicuous by its polycalic colonies; the several nests occupied by each colony are interconnected in clement conditions by well-travelled trails of the strikingly colored workers. Nests are difficult to excavate in the fine, crumbly sand, but are apparently shallow and many-branched. Queens have never been taken.

DISCUSSION. In the literature, only Smith (1944), Kusnezov (1952) and Deyrup & Trager (1986) refer to this species. Other references seem to apply to *C. bureni* or *C. flava*.

C. flavopectus workers from the Ocala National Forest are notably larger than those from Highlands Co., where the types were collected. Northern specimens have HTL 1.90-2.25 mm, while Highlands Co. specimens have HTL 1.70-.2.00. Specimens from the 2 localities are alike in all other respects.

Smith (1944) lists a holotype and 12 paratypes as the material upon which he based his description. Only 5 specimens from the type series are now found at the U. S. National Museum, none of them labeled as a holotype. I have not chosen a lectotype, since the holotype may be rediscovered. These specimens have slightly different collection data than those listed in Smith's description; details are listed below.

DISTRIBUTION. Five paratypes: Archbold Biological Station, Lake Placid, Florida. Aug. 24 1943. #35. T. C. Schnierla. (at U. S. National Museum). Other specimens: FLORIDA, *Highlands Co.*: Archbold Biological Station, near Josephine Creek S of Lake Placid, Lake Placid; *Lake Co.*: Astor Park; *Marion Co.*: Ocala National Forest, 17.7 mi. E of Ocala on Hwy. 40.

ETYMOLOGY. *C. flavopectus* derives from Latin *flavus* (yellow) plus *pectus* (chest) referring to the striking yellow thorax of workers of this species. The name is a noun in apposition, and is not modified to agree in gender with *Conomyrma*.

Conomyrma grandula (Forel)
(Figs. 5 & 12)

Prenelepis parvula var. *grandula* Forel 1922: 98; ♀.

Conomyrma grandula: Trager, 1984: 64 (change of subfamily, new generic combination, raised to species).

WORKER. Measurements and indices: HL 0.63-0.90 (0.82), HW 0.53-0.75 (0.67), SL 0.63-0.91 (0.85), EL 0.16-0.23 (0.22), FL 0.55-0.80 (n.a.), WL 0.83-1.18 (1.13), HTL 1.46-2.08 (1.95), CI 80.0-87.3 (82.0), SI 110.3-130.0 (126.9), OI 22.7-28.6 (26.8), FI 80.8-93.6 (n.a.), TI 124.0-140.0 (138.0). N=21. Lectotype selected and measured by Roy R. Snelling, LACM; deposited in Forel collection Muséum d'Histoire Naturelle, Geneva, Switzerland.)

DIAGNOSIS. A small dusky yellowish brown to dark brown species of Alabama, northern Florida, and the eastern seaboard states north at least to the New Jersey Pine Barrens. Superficially, *C. grandula* resembles a depauperate *C. medeis*, but has proportionately smaller and narrower head with occipital border weakly convex and propodeal cone sharp with narrow base.

FURTHER DESCRIPTION. General form and characters as in Figs. 5 and 12, and in key. Head shape variable, ranging from that shown in Fig. 5 to more nearly straight-sided and convergent toward occipital border (this variation may be found in any large nest series of *C. grandula* and has no relationship to overall body size); head usually widest across eyes; promesonotal profile often as in Fig. 12, but often contiguous faces of pronotum and mesonota higher and more arched; rarely mesonotal profile strongly arched, obliterating usual angle (one will not be able to take such specimens through key but other specimens from same series will have the normal conformation); propodeal profile reminiscent of that of *C. medeis*, but basal face of propodeum 2 or more times as long as base of propodeal cone (only 1 to 2 times as long in *C. medeis*) and cone is generally sharper-tipped than in *C. medeis*; propodeal cone often appears inclined forward.

Mandibular striation similar to that of *C. bureni* in extent, but consisting of 3 or 4 coarser striae with 1-2 finer striae adjacent to each of these; tessellation coarser than in *C. bureni*, thus cuticle shinier, but this obscured by longer pubescence.

Color of *C. grandula* varying from piceous to yellowish brown; often clypeus and thorax a little yellower, and occasionally (teneral?) both head and thorax yellowish; mandibles yellow to brown; legs about the color of gaster; *C. grandula* usually has a "mousy" color due to the obscuring of the cuticle by longer than average (for the genus), grayish pubescence.

QUEEN. Measurements and indices: HL 1.20-1.25, HW 1.23-1.28, SL 1.09-1.15, EL 0.40-0.43, TW 1.18-1.30, WL 2.38-2.45, HTL 3.58-3.70, CI 95.4-103.7, SI 84.4-93.2, OI 32.0-34.4, TWI 93.8-107.8, TI 194.4-204.2. N=6

Head a little broader than long; sides weakly convex or faintly angular, converging slightly toward occipital border, more strongly so toward clypeus; outer margin of eyes close to or reaching sides of head; occipital border about as broad as clypeus; thorax usually notably broader than head.

Sculpture coarser and pubescence longer than in worker, thus queen notably duller; color uniform dark brown or with head and thorax a little lighter and more reddish.

NATURAL HISTORY. Until I serendipitously discovered the types of *C. grandula*, Buren had intended to describe this species as new with a name referring to its frequent occurrence in woodland openings. Specimens from Georgia are labeled "pine-oak on clay"; however most series have been collected in sandy soils. One series was from sand dunes, and the level of development of the vegetation was not indicated, and I made one collection of this species at the edge of a temporary pond in full sun, many meters from the nearest tree. The types were collected by Forel without a habitat notation, but he also collected *Paratrechina faisonensis* at the type locality; the latter is a species of mesic woodlands.

DISCUSSION. This species has been ignored since it was originally described by Forel (1922) as a variety of what is now known as *Paratrechina parvula*, and subsequently synonymized with the latter by Creighton (1950). In the course of revising the nearctic *Paratrechina* (Trager 1984), I encountered *C. grandula* among Forel's types and Buren confirmed that they were the same as his "woodland species".

The true range of this ant may be much more extensive than that indicated below. I have seen similar *Conomyrma* specimens collected in Michigan and New York, but have not had the opportunity to study them carefully. Buren (personal communication) felt that Michigan specimens he saw were "probably different", but sensing his caution, I prefer to leave open the question of their conspecificity with *C. grandula*.

DISTRIBUTION. Lectotype and 1 paratype: NORTH CAROLINA, *Duplin Co.*: Faison, A. Forel, 1921.

Other specimens: ALABAMA, Kushla (county unknown). FLORIDA, *Alachua Co.*: San Felasco Hammock State Preserve; *Leon Co.*: Tall Timbers Research Station; *Putnam Co.*: Katharine Ordway Preserve 3 mi. E Melrose; *Saint Johns Co.*: Anastasia State Recreation Area; *Santa Rosa Co.*: Pensacola Beach. GEORGIA, *Decatur Co.*: 21st Dist., Lot 381. NEW JERSEY, *Ocean Co.*: Island Heights. SOUTH CAROLINA, *Barnwell-Aiken Co.'s.*: Savanna River Ecology Laboratory.

ETYMOLOGY. The adjective *grandula* is the diminutive form of Latin *grandis* (large). Dr. Forel (1922) noted that this species was somewhat larger than the species with which he mistakenly believed *C. grandula* to be conspecific, *Paratrechina parvula*.

Conomyrma medeis n. sp.
(Figs. 6, 13, 15 & 16)

Conomyrma pyramica (black form): Whitcomb, *et al.*, 1972: 137.

Conomyrma insana: Snelling, 1973: 5, in part; Buren, *et al.*, 1975: 306-314, in part; Nickerson, *et al.*, 1975a: 1083-1085, in part; Nickerson *et al.*, 1975b: 75-82, in part; Nickerson, 1976, in part; Nickerson and Whitcomb, 1988(?): in press (misidentifications).

Conomyrma smithi Deyrup and Trager, 1986: 219 (misidentification).

WORKER. Measurements and indices: HL 0.97-1.08, HW 0.80-1.03, SL 0.83-1.00, EL 0.22-0.28, FL 0.74-0.93, WL 1.10-1.33, HTL 1.98-2.38, CI 90.9-98.0, SI 95.1-104.9, OI 24.1-27.3, FI 84.1-93.0, TI 118.5-134.1. N=25. Holotype a queen; see measurements, etc. below.

DIAGNOSIS. A robust species, worker dark brown or blackish, sometimes with head and thorax a little lighter than gaster; head broad, usually with concave occipital border; often lives in large polycalic colonies interconnected by trails of aggressive workers.

FURTHER DESCRIPTION. General form and characters as in Figs. 6 and 13, and in key; head convex-sided, rarely more or less parallel-sided; scapes short, exceeding occipital corners by about 2 maximum scape widths or slightly more, scapes and femora relatively short and thick; thorax short, WL only 1.25 to 1.3X HL; base of propodeal cone thick, at least 1/2X as broad as that part of propodeal profile anterior to it; considerable minor variation in head shape and thoracic profile occurs but this apparently without regional or taxonomic basis.

Mandibular striation denser and more extensive than in *C. bureni*, with 3 or 4 striae slightly coarser than 1 or 2 finer striae between each of coarser ones; mandibles not shining; tessellation of dorsal and, to a lesser extent, lateral surface somewhat dulling these surfaces, this accentuated by dense grayish pubescence, including on front and dorsal portions of head, sides of pronotum, and pleura.

QUEEN. Measurements and indices: HL 1.14-1.20 (1.20), HW 1.23-1.33 (1.30), SL 1.03-1.13 (1.12), EL 0.35-0.39 (0.38), TW 0.88-1.15 (1.15), WL 2.10-2.30 (2.13), HTL 3.24-3.50 (3.33), CI 104.2-111.3 (108.3), SI 80.5-89.4 (86.2), OI 29.2-33.0 (31.7), TWI 70.4-88.5 (88.5), TI 177.5-191.7 (177.5). N=12.

Head subtrapezoidal (Fig. 15), conspicuously broader than long; sides convex, strongly convergent toward clypeus; outer margin of eyes separated from sides of head by 0.75-1.10 ocellus widths; occipital border nearly as broad as clypeus and notably

concave, though somewhat less so than in *C. reginicula* (compare Figs. 15 and 17); thorax with highly variable, but always noticeably narrower than the unusually broad head (Fig. 16). (All specimens with very narrow thoraces were queens from a mature colony, while those with broader thoraces were alates. It seems likely that resorption of wing muscles as a queen ages reduces thoracic volume.)

Sculpture and investiture as in workers; distinctly bicolored; head, thorax and anterior half of first gastric tergite yellowish red; remainder of gaster dusky reddish brown.

NATURAL HISTORY. Due largely to the work of Whitcomb and Nickerson (Whitcomb *et al.* 1972, Nickerson 1976, Nickerson *et al.* 1975a, 1975v, 1976, Buren *et al.* 1975, Nickerson & Whitcomb, in press.) *C. medeis* (which has gone by the name *C. insana* since Snelling's 1973 paper) is biologically the best known *Conomyrma*. The following is summarized from these authors' work, plus more recent observations of my own.

Populations of *C. medeis* are found in those habitats preferred by their host species, *C. bureni*, *i.e.*, dunes, old fields, roadsides, lawns, pastures, and unpaved roadbeds. A mature colony typically occupies multiple nests. Nickerson *et al.* (1975a) counted up to 400 nest entrances, up to a meter or more apart, occupied by one unusually large colony. In that study, the queens and eggs were found in only one or a few adjacent nests, and the remaining nests contained only workers and more mature brood. However, Buren *et al.* (1975) presented evidence that queens may be more dispersed within nest-clusters.

Colonies are thought to be founded by temporary social parasitism, in which newly mated queens of *C. medeis* enter (weak?) colonies of *C. bureni* and become accepted by the workers of that colony, who then rear out her offspring. A colony with a mixed worker population ensues. This was first reported by Buren *et al.* (1975), and I have since observed such mixed colonies on several occasions. I once reared a small mixed colony by introducing a *C. medeis* queen into a group of about 50 *C. bureni* workers and brood. The workers accepted the new queen without aggression and reared out about 20 *C. medeis* workers in a few weeks. Shortly thereafter, the queen was found dead. Apparently, this mixed population stage in the development of a young *C. medeis* colony is a treacherous one in the life cycle, for the three such colonies I have observed in the field disappeared within a few weeks of their discovery, apparently never reaching maturity.

It turns out that nests with mixed *C. medeis*-*C. bureni* populations have two distinct origins. One is that described above: new colony foundation. The second method by which mixed nest may arise is by invasion of *C. medeis* workers from mature colonies into *C. bureni* nests near the periphery of their nest clusters. I have twice seen known *C. bureni* nests near *C. medeis* colonies become mixed nests during a period of a few days when they went unobserved. Trails of *C. medeis* workers connected these mixed nests to pure *C. medeis* nests nearby. A few weeks later, all the *C. bureni* workers had disappeared. Mapping of ant populations in a pasture over a period of nearly 3 years in north central Florida (Stimac, Trager & Wood, unpublished observations) indicates that *C. medeis* colonies extend their territories pseudopodium-like into surrounding *C. bureni* populations, at least in part by invasion of the nests of the latter and temporary mixed colony formation. This seems to be a new variation on the recurrent theme of slave-taking in ants. Since mixed colonies are temporary in nature, the *Conomyrma* situation does not fit neatly under the term dulosis, but bears significantly on the hypothesis of Darwin (1859), and modifications thereof by Buschinger (1986), on the origins of dulosis. This is the first report of what might be called incipient dulosis in the Dolichoderinae.

C. medeis is a highly aggressive ant which allows few other ants to nest within its territories. Nickerson *et al.* (1975b) showed that only 3% of newly mated *Solenopsis invicta* queens alighting within *C. medeis* populations were able to escape predation. Nickerson & Whitcomb (in press) also report that *C. medeis* visits and protects at least

27 species of honeydew secreting Homoptera in 7 families, and may locate new nests near plants infested with these insects. The presence of Homoptera appears to increase protection of soybeans by *C. medeis* from folivores. Nickerson's work was initiated to determine suitability of *C. medeis* for biological control of soybean pests.

Mating flights of this species occur on warm, humid overcast afternoons virtually year-round. Collections of sexuals taken outside the nest span the months of February to October.

DISCUSSION. *C. medeis* and the next species (*C. reginicula*) are closely related and nearly similar species heretofore lumped with the enigmatic *C. insana* (Buckley 1866) and its supposed synonym *C. smithi* (Cole 1936). See discussion of *C. reginicula* for separatory characters distinguishing the two Florida species.

C. insana and *C. smithi* are western species, while *C. medeis* and *C. reginicula* are apparently strictly southeastern. The revision of these four species and their relatives is beyond the scope of this paper, but suffice it to say here that while the workers of these four species are often difficult to distinguish (especially *C. reginicula* and *C. smithi*) the queens are separated by consistently distinctive morphological and metric characteristics, and I do not hesitate to state that they are all good species.

DISTRIBUTION. Holotype and 11 paratypes: FLORIDA, *Alachua Co.*: Gainesville. USDA Laboratory, several nest entrances in lawn. Emerging for mating flight. 12 Aug 1980. J. C. Trager, leg.

Other specimens: FLORIDA, *Alachua Co.*: Gainesville; *Orange Co.*: Winter Park; *Leon Co.*: Tall Timbers Research Station; *Palm Beach Co.*: Palmetto Beach; *Polk Co.*: Lake Alfred; *Santa Rosa Co.*: Pensacola; *St. Johns Co.*: Crescent Beach. GEORGIA, *Decatur Co.*: south of Bainbridge; *Fulton Co.*: Atlanta; *Thomas Co.*: Thomasville; *Ware Co.*: Laura Walker State Park. NORTH CAROLINA, *Robeson Co.*: St. Pauls; *Buncombe Co.*: Black Mountain.

ETYMOLOGY. The adjective *medeis* derives from a sorceress in Greek mythology, Medea, who successively dominated several households, sometimes killing their head persons, to serve her own selfish ends. The figurative analogy of Medea's behavior to the social parasitic behavior of this ant lead to the choice of this name.

Conomyrma reginicula n. sp.

(Figs. 7, 14, 17 & 18)

Conomyrma insana, Buren *et al.*, 1975: 306-314, in part (misidentification).

WORKER. Measurements and indices: HL 0.95-1.05, HW 0.86-0.98, SL 0.89-1.00, EL 0.24-0.28, FL 0.80-0.95, WL 1.13-1.28, HTL 2.08-2.29, CI 89.9-95.1, SI 100.0-111.4, OI 24.5-28.0, FI 80.8-92.2, TI 115.0-128.1. N = 25. Holotype a queen; see measurements below.

DIAGNOSIS. Worker strongly resembling *C. medeis* (compare Figs. 7 and 14 to those of *C. medeis* Figs. 6 and 13); distinguished by slightly longer scapes, somewhat narrower, shiny, reddish head, and reddish thorax; if queens present, their small size and narrow head are definitive (queens large with very broad head in *C. medeis*).

FURTHER DESCRIPTION. General form and characters as in Figs. 7 and 14, and in key; head convex-sided to more or less parallel-sided; scapes short, exceeding occipital corners by 2-3 maximum scape widths, scapes and femora relatively short and thick; thorax short, WL only 1.25 to 1.3X HL; base of propodeal cone thick, at least 1/2X as broad as that part of propodeal profile anterior to it; head shape and thoracic profile less variable than in *C. medeis*. Mandibular striation as in *C. medeis*, with 3 or 4 striae slightly coarser than the 1 or 2 finer striae between each of coarser ones; mandibles not shining; tessellate sculpture of integument barely dulling the surface; pubescence very fine and only weakly dulling sheen of cuticle, especially on head and sides of thorax.

QUEEN. Measurements and indices: HL 1.03-1.10 (1.03), HW 0.98-1.08 (0.98), SL 0.98-1.00 (0.98), EL 0.33 (all four), TW 0.73-0.83 (0.73), WL 1.73-1.83 (1.73), HTL 2.76-2.94 (2.76), CI 95.1-99.1 (95.1), SI 92.6-100.0 (100.0), OI 30.0-32.0 (32.0), TWI 69.5-80.6 (74.5), TI 166.4-168.0 (168.0). N=4.

Much smaller than any other *Conomyrma* queen among species considered here, but always somewhat larger than even largest workers; head (Fig. 17) slender, longer than broad; sides faintly convex, convergent toward clypeus; eyes more mesal than in other slender-bodied species, their outer margin $\frac{3}{4}$ -1 ocellus width from sides of head, never reaching or protruding beyond; occipital border narrower than clypeus, strongly concave; thorax very slender, much narrower than head (Fig. 18).

Color, sculpture and investiture as in workers, except reddish head and thorax brighter than normally seen on workers.

NATURAL HISTORY. Little is known about the habits of this species. It has been widely confused with *C. medeis*, and presumably has a similar biology, but its collections are far fewer. As far as can be determined, *C. reginicula* has never been found living in a supercolony with hundreds of nests as has been reported for *C. medeis*, *C. reginicula* has been collected several times with *C. bossuta* and small, pale workers of *C. reginicula* may superficially closely resemble those of *C. bossuta*. Collection notes do not clearly state that the mixed sample originated from mixed colonies, but these may have been difficult to recognize, heretofore. There is also one collection from a mixed *C. reginicula*-*C. bureni* colony.

Collections of sexuals were made in October, November and December, the first of these indicating the alates were preparing to take flight.

DISCUSSION. *C. reginicula* workers differ from those of *C. medeis* in that the sides of the head lack pubescence or it is notably thinned, even above the level of the eye, while the pubescence normally extends down the sides of the head nearly or indeed to the eye in *C. medeis*. In addition, the narrower head, longer scapes, weak, but distinct red and black bicoloration, overall greater shininess of the workers and diminutive, slender-headed queens of *C. reginicula* will normally distinguish this species from *C. medeis*, though occasional individual workers may cause difficulty.

DISTRIBUTION. Holotype and 29 paratypes: FLORIDA, *Alachua Co.*: Gainesville. November, 1975. W. F. Buren leg.

Other specimens: FLORIDA, *Alachua Co.*: Gainesville, Newberry; *Hendry Co.*: southwest of Clewiston; *Highlands Co.*: Archbold Biological Station.

ETYMOLOGY. The specific name of this species is a diminutive form of Latin *regina* (queen), referring to its unusually small queen.

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