

In the study plot (about 50,184 sq. yds.) more than 60 nests were present. Distances between individual colonies ranged from 14 to 132 feet, the average being 49 feet. Of 42 colonies studied, 19 had asymmetrical entrance holes; the average east-west diameter was 1.30 in. and the average north-south diameter 0.92 in. The 23 with more symmetrical entrances averaged 0.93 and 0.84 in. respectively. Of those with measurable tumuli 10 of the asymmetrical nests had tumuli averaging 7.17 in. in diameter. The tumuli were found to be rounded craters consisting of small or medium sized pebbles and soil, surrounded by discarded bits of plants, insects and miscellaneous debris.

Maximum foraging activity during the observation period (2 Aug.–12 Sept. 1959) took place when there had been a rain on the preceding night and daytime temperatures were between 80° and 98° F. or on warm, overcast days threatening rain. Both individual wandering and directional column foraging were noted. Ants were not found visiting flowers for nectar during August and September, but were found to bring back large amounts of dead and living arthropods. By contrast, during October and November, they were seen to be "... feeding on or gathering the pollen and nectar from at least two plants, *Parthenium incanum* H.B.K. and *Euphorbia albomarginata* Englm. and may have been getting honey-dew from a species of Aphid ... on the latter plant."

These authors show that the scarabaeid beetle *Cremastocheilus stathamae* Cazier is regularly associated with this *Myrmecocystus*; and *C. constricticollis* Cazier was found once. Bombyliid flies were seen to apparently oviposit at the nest entrances and an unidentified dipterous larva was present in material excavated from a nest. Case-bearing chrysomelid beetle larvae, possibly of the genus *Saxinus*, were found just inside the nest entrance on 11 Sept.

Cazier and Statham found repletes present in the colonies which they studied. The author has collected them from a nest excavated 6.1 mi NE of Apache, Arizona. Known activity of the reproductive forms is summarized in Table 2.

Discussion. This ant has been repeatedly confused with *mimicus*. Curiously, Wheeler (1908) listed this as a variety of *mimicus*, although *depilis* had a priority of seven years! The two ants are superficially similar, but media and major workers of *depilis* always possess long, slender flexuous hairs on the pronotum, some of which equal or exceed EL. Also, the third gastric tergum usually has conspicuous appressed pubescence, except in the smallest workers. The minor workers are more difficult to separate, but those of *depilis* possess hairs of very variable length on the pronotal dorsum, a few of which are exceptionally long, about three times as long as the shortest hairs. In *mimicus* minors the pronotal hairs are uniform in length.

Much more vexatious is the problem of distinguishing between this and *nequazcatl* for the two appear to be closely related. The head and thorax are consistently and uniformly light ferruginous in *nequazcatl* workers, light to dark brownish in *depilis*. Erect hairs are less abundant on the scape of *depilis* workers, those of any row for the most part separated by more than their own lengths; the hairs are more numerous and closer in *nequazcatl*. The longest pronotal hairs are as long as, or exceeding, the eye length in *depilis*, about as long as the minimum eye diameter in *nequazcatl*.

The sexual forms of the two species are very similar, but those of *depilis* have shorter occipital hairs in the female and the mesoscutal hairs of both sexes are shorter. In females of *depilis* the eye is smaller, EL 1.00–1.27 × IF (EL 1.40 × IF in *nequazcatl*). Males of *depilis* also have somewhat smaller eyes, OMD 1.13–1.54 × EL (OMD 0.78–1.00 × EL in *nequazcatl*). These differences, although slight, appear to be consistent. The ranges of the two species become quite close in coastal areas of Sonora, Mexico, and there is no evidence to suggest that the characters tend to break down in these areas.

Myrmecocystus (Endiiodictes) mimicus Wheeler

Figures 83–91, 159, 179, 183, 191

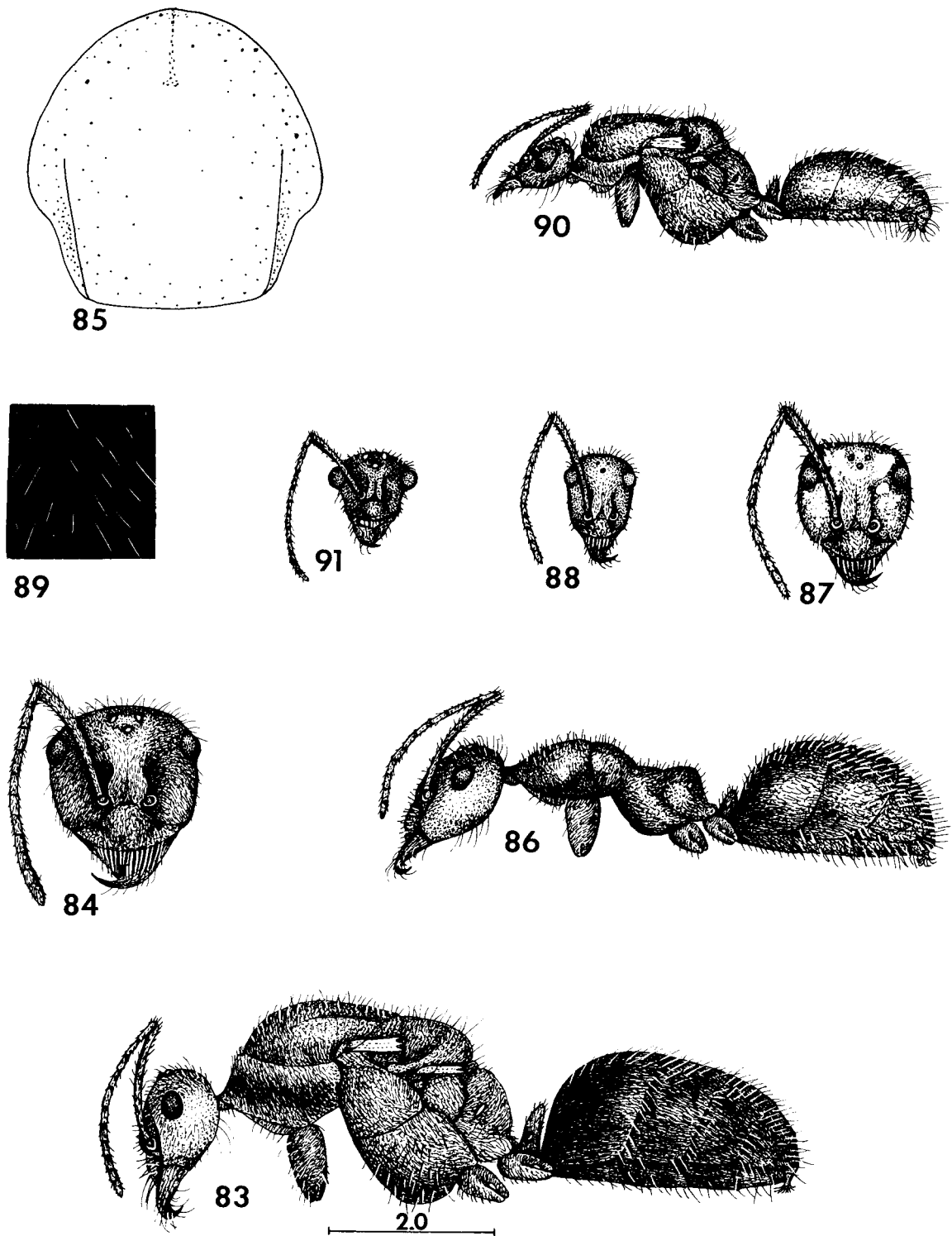
Myrmecocystus melliger subsp. *mimicus* Wheeler 1908. Bull. Amer. Mus. Nat. Hist. 24:353. ♀♀♂♂ (*in part*); Wheeler 1912. Psyche 19:174, 176 (*in part*); Wheeler 1917. *Ibid.* 24:180–132; Cole 1934. *Ibid.* 41:401–402; Smith 1936. Journ. N. Y. Entomol. Soc. 44:170; Mallis 1941, So. Calif. Acad. Sci., p. 20; Cook 1953. Ants of California, p. 344 (*in part*).

Myrmecocystus melliger mimicus var. *jesuita* Wheeler 1908. Bull. Amer. Mus. Nat. Hist. 24:354. ♀; Wheeler 1912. Psyche 19:174; Smith 1936. Journ. N. Y. Entomol. Soc. 44:170.

Myrmecocystus melliger subsp. *lomaensis* Wheeler 1912. Psyche 19:174, 175; Mallis 1940. Bull. So. Calif. Acad. Sci. 20; Cook 1953. The Ants of Calif., 343.

Myrmecocystus mimicus, Creighton 1950 Bull. Mus. Comp. Zool. 104:446–447. (*in part*); Cole 1954. Journ. Tenn. Acad. Sci. 29:285 (*in part*); Cole 1966. Sci. Bull., Brigham Young Univ. 7:22; Wheeler and Wheeler 1968. Ann. Entomol. Soc. Amer. 61:213 (larva); Wheeler and Wheeler 1973. Ants of Deep Canyon, pp. 124–125.

Diagnosis. Worker: Malar area with fewer than ten erect hairs, usually on lower half only; frons and vertex smooth, shiny, with little or no pubescence; third tergum with sparse pubescence only; pronotal hairs short, stiff, blunt. *Female.* Malar area with few or no standing hairs; first three terga uniformly, densely micropunctate; parapsis variably bipunctate; punctures of vertex sparse; alitrunk brownish ferruginous. *Male.* First three terga smooth, shiny, without conspicuous pubescence; mesoscutum polished and shiny, at least



FIGURES 83-91. *M. mimicus*. 83, female, lateral view; 84, head of female, frontal view; 85, mesoscutum of female, distribution of punctures; 86, major worker, lateral view; 87, head of major worker, frontal view; 88, head of minor worker, frontal view; 89, major worker, vestiture of third tergum; 90, male, lateral view; 91, head of male, frontal view.

in part; parapsis densely shagreened and micropunctate; pleural hairs at least 0.11 mm long; wings without fringe hairs.

WORKER. Measurements. HL 0.95–1.67 (1.20); HW 0.80–1.57 (1.20); SL 1.03–1.70 (1.30); WL 1.5–2.6 (1.8); PW 0.6–1.2 (0.8).

Head: Longer than broad to as broad as long, CI 82–100 (100), slightly shorter than to distinctly longer than scape, SI 97–118 (108); in frontal view, margins straight and slightly convergent toward mandibular base (smaller workers) to distinctly convex and abruptly narrowed below (largest workers); occiput, in frontal view, gently convex in smallest, to flattened in largest, workers, broadly rounded laterally. Eye small, 0.9–1.1 \times first flagellomere; OMD 1.34–1.90 (1.83) \times EL. Mandible with seven teeth.

Thorax: Moderately robust, PW 0.39–0.47 (0.46) \times WL. Propodeum, in profile, higher than long, basal face short and moderately to broadly rounded into posterior face.

Petiole: Scale thick, weakly cuneate, summit broadly rounded, rarely distinctly wedge-shaped; crest, in frontal view, usually evenly rounded, but may be flattened or with a narrow, shallow median notch.

Vestiture: Pubescence sparse to scattered on head, but often noticeable on vertex and occiput; light to moderately abundant on alitrunk; abundant on first two terga, scattered or absent on third; rarely conspicuous on third, but if so, much less dense than on second.

Malar area, in frontal view, with 2–4 erect hairs near base of mandible, occasionally 2 or 3 more hairs between this group and lower eye margin; longest occipital hairs little, if any, more than 0.5 \times MOD; pronotal hairs usually slightly shorter; shorter hairs conspicuous on rest of dorsum; sides and crest of petiolar scale with numerous short, erect hairs; discs of terga with abundant short, erect hairs, uniform in length on first three terga, longer beyond; sterna with hairs long, sparse. Scape, femora (including extensor surface) and tibiae with abundant short, erect hairs.

Integument: Head shiny, lightly to hardly shagreened; frontal lobe with fine punctures separated by a diameter or more; frons and vertex with scattered fine punctures; malar area more distinctly shagreened, with scattered fine punctures. Thorax moderately shiny, lightly shagreened and closely micropunctate. First two terga moderately shiny, lightly shagreened, closely micropunctate; third tergum shinier, more lightly shagreened, nearly impunctate, often polished.

Color: Head, alitrunk and appendages light to dark brownish ferruginous, rarely pale ferruginous; gaster blackish-brown.

FEMALE. Measurements. HL 1.80–2.00; HW 1.90–2.05; SL 1.60–1.90; WL 3.5–4.4; PW 2.3–2.7.

Head: Sides straight, slightly convergent toward mandibular insertions; head slightly longer than broad

to slightly broader than long, CI 97–110; slightly to distinctly longer than scape, SI 84–98. Occiput, in frontal view, evenly arched, without, or with barely perceptible, lateral angle. Eye moderately large, 1.17–1.45 \times first flagellomere; OMD 1.10–1.58 \times EL; OOD 3.0–5.8 \times OD; IOD 2.2–4.0 \times OD. Penultimate segment of maxillary palp slightly wider at base than at apex, margins evenly convergent from base to apex. Mandible with seven teeth.

Thorax: Moderately to very robust, PW 0.58–0.69 \times WL. Scutum and scutellum strongly flattened. Propodeum with well-defined horizontal basal zone.

Petiole: In profile, compressed-cuneate, apex narrowly rounded; crest, in frontal view, weakly to strongly angularly incised in middle.

Vestiture: Pubescence very diffuse on front of head, denser on occiput and malar area, distinctly longer on malar area than elsewhere on head. On thoracic dorsum, pubescence sparse, conspicuous only on parapsis and scutellum; longer and denser on sides and propodeum. Dense on first four terga, imparting distinct sheen.

Malar area with 1–4 suberect to erect hairs on lower half in frontal view, rarely 1 or 2 on upper half; longest occipital hairs 0.5 or less \times MOD, rarely slightly longer. Longest mesoscutal hairs much less than 0.5 \times MOD (eastern populations) or exceeding 0.5 \times MOD (western populations); longest scutellar hairs subequal to MOD; pleural hairs less than 0.5 \times MOD (eastern populations) or about equal to 0.5 \times MOD (western populations). Propodeum with numerous erect hairs on base and side, longest in western populations. Crest and side of petiole with numerous short, erect hairs. First four terga with numerous fine erect hairs, on second segment up to 0.16 mm in eastern populations and up to 0.12 mm in western populations; longer on last segments and on sterna. Appendages with numerous decumbent to fully erect, short hairs, usually absent from posterior surface of scape; inner face of fore femur with short, suberect hairs abundant on distal half only. Wings without marginal fringes.

Integument: Clypeus slightly to moderately shiny, with sparse, coarse punctures; frontal lobes finely punctate in middle, conspicuously more coarsely and sparsely punctate toward margins; malar area with coarse, close, ovoid punctures; front of head coarsely, sparsely punctate, but with narrow to broad impunctate (or nearly so) band between eye and ocellar area; occipital punctures fine, dense. Disc of scutum shiny, with scattered coarse punctures, parapsis finely and densely punctate (punctures may be more separated adjacent to parapsidal line); scutellum uniformly closely and finely punctate. Anepisternum dull to moderately shiny, with close, coarse, ovoid punctures and scattered coarser, round punctures. Katepisternum usually duller, more finely and closely punctate. Propodeum dull, minutely roughened, closely and very finely punctate. Summit of

first tergum densely micropunctate; discs of second and third terga similar to first.

Color: Head and thorax dark reddish brown to medium brownish, gaster blackish; appendages lighter. Wings slightly whitish, veins and stigma yellowish to light brownish.

MALE. Measurements. HL 0.80–1.00; HW 0.77–0.97; SL 0.87–1.07; WL 1.7–2.2; PW 1.1–1.3.

Head: A little longer than broad to a little broader than long, CI 95–104, shorter than scape, SI 104–112; in frontal view, occiput evenly convex, without perceptible lateral angle; sides straight, evenly and distinctly convergent toward mandibular bases. OMD 0.70–0.84 × EL; OOD 2.0–3.2 × OD; IOD 1.7–2.8 × OD. Mandible without pre-apical notch, usually without pre-apical teeth, but rarely with one or two low denticles.

Thorax: Robust, PW 0.55–0.64 × WL. Propodeum, in profile, strongly sloping and without discrete basal face.

Petiole: In profile, cuneate, summit sharp; in frontal view, crest distinctly notched.

Vestiture: Pubescence everywhere sparse and inconspicuous, a little more abundant on pleurae and across base of propodeum.

Erect hairs sparse and short on head, those of occiput less than 0.5 × MOD. Scutal hairs even in length, longest less than 0.5 × MOD; scutellar hairs a little longer than those of scutum. Pleural hairs conspicuously longer, many exceeding 0.5 × MOD. Propodeum with short, erect hairs on side and across base. Petiole with short, erect hairs on crest and sides. Terga with hairs short and sparse on basal four segments, longer and more abundant on remaining; longer on sterna. Scape, femora and tibiae with numerous short, suberect to erect hairs. Forewing without fringe hairs; hind wing with fringe hairs on posterior margin.

Integument: Head moderately shiny, lightly shagreened, more densely so on malar area, with scattered fine, obscure punctures. Disc of mesoscutum shiny, lightly shagreened, with subpolished area on posterior portion on either side of midline; parapsis less shiny, more distinctly shagreened, punctures scattered, minute. Scutellum shiny to polished, with scattered fine punctures. Pleura moderately shiny, densely shagreened and with scattered fine, obscure punctures. Propodeum moderately shiny and densely shagreened, but may have subpolished median area. First three terga shiny and lightly shagreened to subpolished and barely shagreened and with scattered micropunctures.

Color: Blackish brown, appendage lighter. Wings whitish, veins and stigma yellowish to brownish yellow.

Terminalia: Figures 171, 183, 191.

Type Material. *M. melliger* subsp. *mimicus*: Lectotype worker, by present designation and agreeing with

above general description and parenthetical data: Albuquerque, New Mexico, May 1905 (W. M. Wheeler) in AMNH. Lectoparatypes in AMNH, LACM, MCZ and USNM.

M. melliger mimicus var. *jesuita*: Lectotype worker, by present designation, agreeing with above general description (HL 1.50; HW 1.40; SL 1.55; WL 2.3; PW 1.0; CI 93; SI 102): Ft. Davis, Texas, 8 June 1902 (W. M. Wheeler) in AMNH. Lectoparatypes in AMNH, LACM, MCZ and USNM.

M. melliger subsp. *lomaensis*: Lectotype worker, by present designation, agreeing with above general description (HL 1.60; HW 1.55; SL 1.55; WL 2.4; PW 1.1; CI 97; SI 97): Point Loma, Calif. (P. Leonard) in AMNH. Lectoparatypes in AMNH, MCZ, USNM.

Distribution. Southwestern Kansas south to Big Bend region of Texas and north-central Mexico, west to Baja California and California (Fig. 364).

Localities. UNITED STATES. Kansas: Kearny Co.: no further locality, July 1962 (M. H. Bartel; USNM). Morton Co.: no further locality, 2800', 5 Aug. 1911 (F. X. Williams; KU). Oklahoma: Texas Co.: no further locality, 14 June 1935 (C. T. Brues; MCZ). Texas: Upton Co.: Rankin, 10 Apr. 1949 (M. H. Michener; KU). Jeff Davis Co.: Ft. Davis, 8 June 1902 (W. M. Wheeler; cotypes of *M. melliger mimicus* var. *jesuita*; AMNH, LACM, MCZ, USNM); Hospital Cyn., Ft. Davis, same date and collector (GCW); Ft. Davis Natl. Mon., 4900', 20 Aug. 1967 (R. R. Snelling, No. 67–257; LACM). Culberson Co.: Fay, 8 July 1917 (CU). Brewster Co.: Alpine, 4 June 1902 (W. M. Wheeler; AMNH, GCW); 5 mi E Alpine, 15 May 1965 (A. E. Lewis; LACM); 15.6 mi S Alpine, 4200', 19 Aug. 1967 (R. R. Snelling, No. 67–251; LACM). Presidio Co.: Alamito, 19 Dec. 1901 (W. M. Wheeler; AMNH); W of Marfa, 16 June 1964 (C. D. Johnson; CIS). El Paso Co.: 9 mi E El Paso, 4000', 28 July 1953 (KU). New Mexico: Rio Arriba Co.: Alcalde, 1 Aug. 1950 (W. S. Creighton, LACM); Embudo, Sept. (T. D. A. Cockerell; AMNH). Bernalillo Co.: Albuquerque, May 1905 (W. M. Wheeler, cotypes of *M. melliger* subsp. *mimicus*; AMNH, LACM, MCZ, USNM); same locality and collector, 28 May 1905 (GCW). Santa Fe Co.: 10 mi S Santa Fe, 6500', 10 Sept. 1951 (A. C. Cole; LACM). Guadalupe Co.: Cuervo, 23 June 1940 (L. J. Lipovsky; KU); 0.6 mi S Cuervo, 4700', 21 Aug. 1967 (R. R. Snelling, No. 67–261; LACM). Otero Co.: Alamogordo, no date (G. von Krockow; AMNH, USNM). Doña Ana Co.: Jornada Experimental Range, 4000', various dates (C. A. Kay; CAK, LACM); same locality, 6 Sept. 1972 (R. R. Snelling, No. 72–64, 65; LACM); 28.8 mi W Las Cruces, 4200', 18 Aug. 1967 (R. R. Snelling, No. 67–247; LACM). Luna Co.: 23 mi E Deming, 24 Aug. 1959 (G. C. & J. N. Wheeler, No. N. Mex. 2; GCW); 6 mi NW Deming, 4550', 20 Aug. 1952 (A. C. Cole, No. H–462; LACM). Grant Co.: 7.5 mi W Hachita, 4600', 17 Aug. 1967 (R. R. Snelling, No. 67–242; LACM). Hidalgo Co.: 1 mi W Rodeo, 3 Aug. 1961 (J. G. Rozen; AMNH); Peloncillo Mts., 29 July 1970 (V. Roth; LACM); "Las Truches," 1903 (L. Gerhardt; AMNH). Arizona: Coconino Co.: entrance Wupatki Natl. Mon., 5000', 21 Aug. 1964 (G. C. & J. N. Wheeler, No. Ariz. 46; GCW); Oak Creek Cyn., near Sedona, 22 Aug. 1964 (G. C. & J. N. Wheeler, No. Ariz. 53; GCW). Yavapai Co.: Jerome, 9 May 1905 (W. M. Wheeler; AMNH). Maricopa Co.: Phoenix, May 1905 (W. M. Wheeler; AMNH); Tempe, May 1905 (W. M. Wheeler; AMNH); 13 mi S Aguila, 2300', 1 Apr. 1967 (R. R.

Snelling; LACM); Oracle, 24 July 1917 (CU). *Pima Co.*: Tucson, and "desert east of", May 1905, 21–22 Nov. 1910 (W. M. Wheeler, AMNH), 7 mi E Robles Jct., 24 Feb. 1968 (G. C. & J. N. Wheeler, Nos. Ariz. 85, 87, 88; GCW); mouth, Madera Cyn., Santa Rita Mts., 4800', 24 June 1951 (W. S. Creighton; LACM). *Cochise Co.*: Willcox, 4100', 6 July 1950 (W. S. Creighton; LACM); Texas Pass [Canyon], 20 July 1917 (W. M. Wheeler; CU, GCW); same locality, 4800', 11 Aug. 1967 (R. R. Snelling, No. 67–209; LACM); 4.5 mi N Paradise, 5100', 15 Aug. 1967 (R. R. Snelling, No. 67–231; LACM); 2–5.3 mi NE Portal, various dates (M. Cazier; AMNH); Dry Cyn., 5000', Whetstone Mts., 21 Aug. 1951 (W. S. Creighton; LACM). *Santa Cruz Co.*: Peña Blanca Spgs., 3800', 13 June 1951 (W. S. Creighton; LACM); Ruby, 4600', 25 June 1951 (W. S. Creighton; LACM). *California: Sacramento Co.*: Sacramento, 13, 27 Sept. 1944 (C. A. Hamsher; USNM). *San Joaquin Co.*: Lodi, 18 Aug. 1929 (H. H. Keifer; CDA); Lathrop, 9 Apr. 1968 (R. A. Taylor, *et al.*, CDA). *Stanislaus Co.*: Keyes, 9 Apr. 1970 (R. Vermeulen & T. R. Haig; CDA); Turlock, 25 June 1952, 4 Nov. 1951 (R. R. Snelling; LACM). *Merced Co.*: 12 mi S Merced, 7 Aug. 1967 (R. R. Snelling, No. 67–208; LACM). *Fresno Co.*: Mendota, 20 Mar. 1957 (R. R. Snelling; LACM); 13 mi W of mouth, Panoche Cyn., 5 Mar. 1957 (R. R. Snelling; LACM); Big Panoche Cr., 5 Feb. 1970 (P. A. Opler; UCB); 8 mi SE Huron, 21 Nov. 1955 (R. R. Snelling; LACM); 2 mi E Coalinga, 24 Sept. 1959 (R. R. Snelling; LACM). *San Benito Co.*: 33 mi SE Paicines, 9 June 1971 (R. R. Snelling, No. 71–3; LACM). *Tulare Co.*: Goshen, no date (J. C. Bradley; AMNH). *Kings Co.*: Hanford, 27 Apr. 1965 (D. Taylor; CDA); 7 mi S Armona, 200', 5 Aug. 1967 (R. R. Snelling, No. 67–204; LACM); Corcoran, 16 Sept. 1955 (R. R. Snelling; LACM); 5.8 mi W Kettleman City, 950', 25 Mar. 1967 (R. R. Snelling; LACM). *Kern Co.*: 12 mi W McKittrick, 2 May 1952 (S. F. Bailey; UCD); Fellows, 24 Feb. 1965 (F. C. Raney; UCD). *Santa Barbara Co.*: Ventucopa, 2 Mar. 1960 (R. P. Allen; CDA). *Los Angeles Co.*: 1.5 mi S Little Rock, 3500', 21 Apr. 1969 (R. R. Snelling, No. 69–119; LACM); Pasadena, 29 Mar. 1918 (CU); Whittier, no date (H. J. Quayle; AMNH); Monterey Park, 28 Mar. 1945 (C. A. Hamsher; UCD). *San Bernardino Co.*: Cajon Cyn., 4000', 7.7 mi NW Cajon, 13 Mar. 1972 (R. R. Snelling, No. 72–4; LACM); Morongo Valley, 11 Apr. 1952 (G. I. Stage; LACM); same locality, 7 Apr. and 13 Oct. 1963 (R. R. Snelling; LACM). *Riverside Co.*: Riverside, no date (H. J. Quayle; AMNH); Black Hill, 3000', 9 Mar. 1970 (G. C. & J. Wheeler, No. Calif. 859; GCW); 8.6 mi E Temecula, 7 Mar. 1973 (R. M. Duffield, No. A–126; LACM); 9 mi E Temecula, 1200', 20 Apr., 30 May 1969 (R. R. Snelling, Nos. 69–114, 120; LACM). *Orange Co.*: Silverado Cyn., 1650', 20 Mar. 1971 (R. J. Hamton; LACM, RJH); El Toro, 31 Oct. 1931 (CDA). *San Diego Co.*: 1 mi N Warner Spgs., 28 Mar. 1963 (R. R. Snelling; LACM); same locality, 3 May 1969 (R. R. Snelling, No. 69–120; LACM); Jacumba, 3000', 18 June 1952 (W. S. Creighton; LACM); El Cajon, 4 May 1962 (Rinder & Schwege; CDA); San Diego, 1–15 Aug. 1967 (N. Lewis; LACM); Pt. Loma, no date (P. Leonard; cotypes of *melliger* subsp. *lomaensis*, AMNH, AMNH, MCZ, USNM). *MEXICO. Chihuahua*: Samalayuca, 8 Aug. 1950 (R. F. Smith; UCB); 5 mi N Ojo Laguna, 4800', 6 May 1953 (W. S. Creighton; LACM); Villa Ahumada, 3700', 28 July 1953 (KU); El Pueblito, 4900', 3 May 1953 (W. S. Creighton; LACM); 7 mi N Chihuahua, 4700', 5 May 1953 (W. S. Creighton; LACM); Rio Parral, 3800', 5 mi S Camargo, 6 May 1953 (W. S. Creighton; LACM); 3 and 6 mi S Gallego, 5100', 6 May 1953 (W. S. Creighton; LACM). *Morelos*: 6 km E Cuernavaca, 2 Aug. 1963 (P. D. Hurd; UCB). *Sonora*: 20 mi E Altar, 18 Apr. 1957 (W. S. Creighton; LACM); Punta Peñasco, 1 Nov. 1952 (W. S. Creighton; LACM); same locality, 11 Nov. 1966 (R. J.

Hamton; LACM, RJH); 4 mi S Sasabe, 3300', 13 Sept. 1951 (W. S. Creighton; LACM); 6 mi S Sasabe, 3200' (LACM); 11 mi S Sasabe, 3000' (LACM); 12 mi S Benjamin Hill, 11 Sept. 1966 (R. J. Hamton; LACM, RJH). *Baja California: Descanso*, 20 May 1952 (W. S. Creighton; LACM); San Vicente, 8 July 1963 (R. L. Langston; UCB); 5 mi S Rosarito, 50', 14 May 1952 (W. S. Creighton; LACM); 1 mi S Pozo Alemán, 1000', 23 Feb. 1969 (R. R. Snelling, No. 69–22; LACM).

Ecology. This widely distributed species occurs in a variety of habitats, including the following: Piñon-Juniper Woodland, Oak-Juniper Woodland, Coastal Sagebrush Shrub, Great Basin Sagebrush Shrub, Saltbush-Greasewood Shrub, Creosote bush-Bur sage Grassland, Creosote bush-Tarbrush Grassland, California Steppe, Grama-Galleta Steppe, Grama-Tobosa Shrubsteppe, Trans-Pecos Shrub Savannah, and Grama-Buffer grass Grassland. In southern California the altitudinal range is from sea level to about 4,000 feet.

Mating flights most frequently take place in late afternoon following a soaking rain, but morning flights do occur. Seasonal occurrence of the sexual forms is tabulated in Table 3. According to Wheeler (1917) incipient colonies of this species are pleometrotic, an observation I have never been able to confirm. Although I have discovered numerous founding females, all were in individual burrows. Nor, in the many nests studied, have I ever discovered more than a single fertile female in any of these. Pleometrosis, if it does occur in this species, must be very uncommon.

The brief notes published by Wheeler (1908) are based on more than one species, as he had confused *depilis* and *romainei* with *mimicus*. The nests are commonly located in pebbly or clayey soil, with the latter apparently preferred. Although Wheeler described the tumuli as ". . . regular craters 10–15 cm. across at the base and 3–4 cm. high . . ." his Fig. 13 shows a simple hole in adobe soil with the excavated material thrown out in a low, irregular crescent. In my own experience the usual condition is well illustrated in that photograph. Regularly crateriform tumuli sometimes are constructed, but they are rare. Often, the entrance is concealed in a dense clump of grass (Fig. 354), with the excavated soil cast up about the clump in a manner reminiscent of the irregular superstructures of some *Lasius* and *Formica*. This is the only *Myrmecocystus* studied which commonly has the entrance concealed in a grass clump.

This is a diurnal species, foraging most actively during the middle part of the daylight hours. As with all species of *Endioidictes*, *mimicus* is a general scavenger. It avidly visits flowers for nectar and has been observed in attendance on aphids. Repletes of this ant were recorded (as *lomaensis*) by Wheeler (1912) from Pt. Loma, California, and I have taken them from nests in various states.

Discussion. The type series of this ant, from Albuquerque, New Mexico, is mixed. It includes workers

here referred to *mimicus* and females and workers of *romainei*. I have seen none of the six males mentioned by Wheeler as part of the type series; the brief description of that caste would apply equally well to either species.

In selecting a Lectotype for this species I have been guided by expediency. The use of this name has been more or less uniformly applied since 1908. In 1950 Creighton placed var. *jesuita* and *melliger* subsp. *lomaensis* in synonymy with *mimicus*. I have chosen as Lectotype, therefore, a specimen which supports these interpretations. The alternative would have been to transfer the name to a wholly different species (*romainei* of this revision) and to resurrect *jesuita* for the species long known as *mimicus*. The former choice is least confusing.

The synonymy of *jesuita* was adequately discussed by Creighton. It is sufficient here merely to state that *jesuita* is the same as *mimicus* in the sense of the present study. When Wheeler (1912) described *lomaensis* he treated it as a subspecies of *melliger*. The characteristics by which it was to be separated from *mimicus*, also regarded as a subspecies of *melliger*, will not hold, as correctly noted by Creighton. However, it should be observed that there are differences between the California form and that of New Mexico and Texas. In both males and females of the eastern populations, the hairs of the mesopleura are uniformly quite short and well separated. The mesopleural hairs in the California populations are variable in length, many hairs up to 0.23 mm long, about twice the length seen in specimens from New Mexico and Texas.

Also noticeable in the sexual forms is relatively smaller eye size. Among the western females the malar area is 1.50–1.58 × the EL; in females from Arizona and New Mexico, the range is 1.10–1.43. A similar situation exists among the males studied: 0.78–0.84 in those from California, 0.70–0.75 in those from eastern parts of the range.

The population differences noted are not confined to the males and females, but they are more obvious in these castes. Western workers (*lomaensis*) do differ from their eastern counterparts. In these, the frontal lobes are more extensively and more abundantly punctate; the punctures extend well up onto the frons and they are mostly separated by two puncture diameters or less. In specimens from New Mexico and Texas the punctures do not extend onto the frons and the intervals between punctures are three to six times a puncture diameter. There is also a tendency among larger workers, in some California samples, to possess more abundant pubescence on the third tergum than is normal. Some samples from the area around Rodeo, New Mexico, are similar.

These differences are interesting, but difficult to interpret. They may represent another example of character displacement. In this case the species displacing

against *mimicus* may be the closely related, and broadly sympatric, *depilis*. Over the broad area of sympatry, from southern Arizona to western Texas, both sexes of *depilis* are recognizable from those of *mimicus* by the much longer pleural hairs, up to 0.25 mm long in the females.

It is also possible that the western populations may represent a very closely related species, or, less likely, a subspecies. Before any conclusion can be reached, much additional material, with particular emphasis on the sexual forms, will have to be studied. Such material is not now available.

KENNEDYI GROUP

Myrmecocystus (Endiodioctes) kathjuli new species

Figures 92–99, 160, 172, 185, 193

Diagnosis: *Worker:* Malar area with few erect hairs; pronotal hairs short, stiff; third tergum with abundant appressed pubescence; gaster black, but with mediobasal yellow blotches on first and second terga; CI usually (over 80%) less than 90; mandible octodentate. *Female:* penultimate segment of maxillary palp more than twice as wide in basal third as at apex; malar area with numerous very long, flexuous hairs; gaster ferruginous; thorax black with extensive ferruginous markings. *Male:* Ventral lobe of aedeagus convex in profile; mesoscutum uniformly tessellate, moderately shiny; petiolar node sharply cuneate, crest, from front, deeply incised; first three terga with abundant pubescence in middle; longest occipital hairs at least 0.75 × MOD; wings without fringe hairs; some mesoscutal hairs exceeding EL.

WORKER. *Measurements.* HL 0.95–1.23 (1.23); HW 0.77–1.17 (1.17); SL 1.17–1.53 (1.53); WL 1.5–2.2 (2.2); PW 0.60–0.90 (0.90).

Head: Distinctly longer than broad in all sizes, CI 82–95 (95) much less than SL, SI 115–132 (124); in frontal view, broadest below level of eyes, sides straight or very slightly convex, hardly narrowed toward mandibular insertions. Occiput, in frontal view, slightly convex, evenly rounded into sides through barely perceptible corners. Eye small, 0.98–1.00 (1.00) × first flagellomere; OMD 1.53–1.89 (1.89) × EL. Mandible with eight teeth.

Thorax: Slender, PW 0.36–0.44 (0.41) × WL. Mesonotum evenly sloping to metanotum. Propodeum higher than long; in profile, wholly convex from base to apex, without defined basal and posterior faces.

Petiole: In profile, broadly cuneate, with rounded crest; from behind, crest flat or gently convex, without median notch.

Vestiture: Cephalic pubescence reduced, sufficiently dense to impart a sheen only on occiput; pubescence moderately dense on thorax and first three terga.