

SUPPLEMENTARY MATERIAL

Detailed description of study sites

LOWLAND TROPICAL DRY FOREST (LA MANCHA).--Centro de Investigaciones Costeras La Mancha is located on the coast of the state of Veracruz, México (19°36'N, 96°22'W; elev. < 100 m). The climate is warm and subhumid; a rainy season occurs between June and September, total annual precipitation is *ca* 1500 mm (1800 mm in study year), mean annual temperature is 24°-26°C, and minimum temperature is 15°C. The major vegetation associations in the area are: tropical deciduous forest [with *Brosimum alicastrum* Swartz, *Bursera simaruba* (L.) Sarg., *Cedrela odorata* L., *Enterolobium cyclocarpum* (Jacq.) Griseb., *Ficus cotinifolia* H. B. & K.], tropical dry forest [with *Acacia* spp., *Bursera fagaroides* (H. B. & K.) Engl., *B. simaruba*, *Plumeria rubra* L.], sand dune matorral [with *Acacia macracanta* Humb. & Bonpl., *Diphysa robinoides* Benth., *Randia laetevirens* Standl., *Tecoma stans* (L.) Juss. ex H. B. & K.], mangrove forest, freshwater marsh, freshwater lagoon and surrounding forest, and riparian vegetation (Moreno-Casasola *et al.* 1982, Novelo 1978; Rico-Gray 1993).

COASTAL SAND DUNE MATORRAL (SAN BENITO).--San Benito is located on the central coast of the state of Yucatán, México (21°20'N, 89°10'W; elev. < 3 m). The area is characterized as a narrow well developed calcareous sandy beach. The climate is dry, a rainy season occurs between June and September, total annual precipitation is *ca* 300 mm (320 mm in study year), mean annual temperature is 24°-26°C, and minimum temperature is 15°C. The dominant species are *Agave angustifolia* Haw., *Bravaisia tubiflora* Hemsl., *Bumelia retusa* Swartz, *Coccoloba uvifera* L., *Coccothrinax readii* Quero, *Gossypium hirsutum* L.,

Mammillaria gaumeri Orcutt, *Pithecellobium keyense* Britton ex Coker, *Scaevola plumierii* (L.) Vahl, *Schomburgkia tibicinis* Batem., *Suriana maritima* L., and *Tournefortia gnaphalodes* (L.) R.Br. ex Roem. & Schult. (Rico-Gray *et al.* 1987; Rico-Gray 1989).

SEMIARID HIGHLAND ENVIRONMENT (ZAPOTITLÁN).--The Valle de Zapotitlán is located in the Tehuacán-Cuicatlán valley system, located in the mountainous area in the southeast portion of the state of Puebla, close to the northeastern limits of the state of Oaxaca, México (18°20'N, 97°20'W; elev. 1450-1600 m). The climate is dry, a rainy season occurs between May and August (sometimes September), total annual precipitation is *ca* 300 mm (296 mm in study year), mean annual temperature is *ca* 20°C, and minimum temperature is 8°C (Valiente-Banuet 1991, Zavala 1982). The major vegetation associations, with no clear boundaries in many areas, are: thorny scrub or matorral [with *Acacia cochliacantha* Humb. & Bonpl. ex Willd., *Cercidium praecox* (Ruiz & Pavón) Harms, *Ipomoea pauciflora* Mart. & Gal., *Mimosa luisiana* Brandegee, *Prosopis laevigata* (Humb. & Bonpl. ex Willd.) M. C. Johnston], 'tetechera' [dominated by columnar cacti, like *Neobuxbaumia tetetzo* (F. A. C. Weber) Backeb.], 'cardonal' [dominated by cacti, like *Cephalocereus hoppenstedtii* (F. A. C. Weber) Schumann], 'izotal' (dominated by the Agavaceae *Yucca periculosa* F. Baker and the Nolinaceae *Beaucarnea gracilis* Lem.), and tropical dry forest (with *Bursera* spp., *Ceiba parviflora* Rose, *Lysiloma* spp., *Plumeria rubra*) (Dávila *et al.* 1993; Jaramillo & González-Medrano 1983; Villaseñor *et al.* 1990; Zavala 1982).

LOWER MONTANE HUMID FOREST (XALAPA).--Parque Ecológico Clavijero is located 2.5 km south of Xalapa, Veracruz (19°30'N, 96°57'W; elev. 1250 m). The climate is temperate humid with rain throughout the year, total annual precipitation is *ca* 1800 mm (2100 mm in

study year), mean annual temperature is *ca* 19°C, and minimum temperature is 6°C. The vegetation in the park is a fragment of lower montane forest, some dominant tree species are *Liquidambar macrophylla* Oersted, *Carpinus caroliniana* Walter, *Quercus germana* Schlecht. & Cham., *Q. xalapensis* Humb. & Bonpl., *Clethra mexicana* DC., *Ocotea psychotrioides* Kunth, *Turpinia insignis* (H. B. & K.) Tul., and *Eugenia xalapensis* DC. (Williams-Linera & Tolome 1996). Other species present are *Trema micrantha* (L.) Blume, *Meliosma alba* (Schlecht.) Walp., *Persea americana* L., *Oreopanax* spp., *Cnidioscolus aconitifolius* (Mill.) I. M. Johnst., *Piper auritum* H. B. & K., *Solanum* sp., *Cestrum nocturnum* L., and *Baccharis multiflora* H. B. & K. There are also many epiphytes and ferns.

Data collection - Modified from Rico-Gray (1993).

Biweekly field observations (three days per visit) were made for La Mancha, Zapotitlan and Xalapa, and monthly for San Benito along arbitrarily selected but representative 1 km trails that sampled different vegetation associations. We recorded all occurrences of ants collecting liquids from plants. On each visit we noted ant species, plant species, and food source or structure mediating the ant-plant interaction. Once an individual plant was marked as being visited by ants, it was subsequently re-checked throughout the study. Ants were considered to be feeding on nectar when they were immobile, with mouth parts in contact with nectar-secreting tissues, for periods of up to several minutes. Nectar-feeding ants often showed obviously distended gasters.

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