

These reports collectively reveal some flexibility in both nest site and general habitat; however, all studies specifically discussed nests as structures below ground or immediately at the surface. No author cited above suggested an arboreal nest site but no nests were examined in the southern Coastal Plain. Among authorities on North American ants, M.R. Smith contributed most extensively in documenting southeastern faunas. In a generic synopsis of United States ants, he also gave brief notes on their natural history (Smith, 1947). For *Dolichoderus*, he cites ground nests and also adds "...nests in hollow stems." No further elaboration was given nor the specific species identified; however, the observation is the only suggestion of arboreal nests for the U.S. species of *Dolichoderus*, and likely reflects his experience in the southern Coastal Plain. The author has located nests of *D. pustulatus* in Alachua, Levy, St. Johns and Columbia Counties of Florida and Ware County of southern Georgia. These nests were all in cavities of living limbs from hardwood trees about swamps or inland marshes and no lower than 1.37 m. (4.5 ft.) above ground level, usually at higher levels. Most nests were in willows (*Salix* sp.) and sweetgums (*Liquidambar styraciflua*), though other hardwoods are utilized. The ant has only been collected by locating foragers on the limbs, by beating or opening the arboreal nests. A specimen has never been taken on the ground. In fact, the species was unrecognized in the field for some time as foraging workers superficially resemble the non-major worker of the formicine ant, *Camponotus (Colobopsis) impressus*, well known for its arboreal habits and nests in tree limbs. Only after collecting a series of that ant and examining specimens in the laboratory was the *Dolichoderus* recognized. On several days in December, 1985, when ambient temperature was around 4.5° to 10.5° C (40° to 50°F) and no ant activity existed, a number of limbs suspected of containing nests were cut from sweetgum trees bordering a swamp in Alachua County, Florida. The limbs were taken indoors and slit lengthwise exposing the cavities. Within these cavities were adults of both *C. impressus* and *D. pustulatus* together with brood of each species. Both species were attempting to carry brood to safety. No partitions separated the cavities into chambers. The rapid escape behavior of the ants, now at room temperature, did not allow any judgment on how the species may have been grouped within a continuous cavity, though clearly they shared a compound nest. Both male and female alates of *D. pustulatus* were also present suggesting that reproductives of this species fly early in the year in Florida. Two to three delate females were also

found within a single limb cavity. No alates of *C. impressus* were present though both majors and workers were abundant. The two species were in approximately equal numbers in the shared cavities; however, *C. impressus* is encountered more frequently in general collecting experience. Also, pure nests of both species have been examined, all in stems as described, so the association is not obligatory.

The limbs were 8 to 15 mm. (0.3 to 0.6 inches) in diameter and the cavities were approximately 3 to 5 mm. (0.1 to 0.2 inches) in diameter with a few wider regions. Entrance to these cavities consists of circular openings about 1.5 to 2.0 mm. (< 0.1 inch) in diameter and spaced about 23 to 38 cm. (9 to 15 inches) apart. Each cavity had two or more entrances. If a nest cavity is bisected when cutting the limb in the field, the number of entrances can not be determined.

The enlarged, truncated heads of majors in *Colobopsis* species presumably function to close the openings to nest cavities, a behavior described as phragmosis in ant literature (Wilson, 1971). Foraging *Colobopsis* workers, on returning to the nest, use tactile stimuli for identifying themselves to the major guarding the entrance. That ant then moves aside allowing the worker to enter (Wilson, 1971). Could a behavioral association between these species result in the *Colobopsis* major opening the entrance on stimulation from a *Dolichoderus* worker? If they use the same nest cavity, some accommodation along this line is necessary. No physical barriers separated the nesting cavity and an interesting line of inquiry exists here in insect behavior.

Forel (1874, 1901) made early observations on the European arboreal species, *D. quadripunctatus*, in association with *Camponotus (Colobopsis) truncata* Spinola, on walnut trees. He noted the close similarity in body shape between workers of the two species and speculated that mimicry was involved.

The general similarity of body shape also exists between *C. impressus* and *D. pustulatus*, see Fig. 3, though no direct support of mimicry exists. These two species are found moving together along the tree limbs in columns toward foraging areas. Forel also found several different limbs on the same tree occupied by *D. quadripunctatus* and suggested only one colony existed with several nests. The same suggestion can be made for *D. pustulatus*. Torossian (1960) more recently confirmed this dispersed colony structure for *D. quadripunctatus*. Forel made no reference to compound nests for the two European species, but later noted that while they never fight, they avoid each other at close quarters (Forel,