

Identification and Nesting Sites of North American Species of *Dolichoderus* Lund (Hymenoptera: Formicidae)

Clifford Johnson
Department of Zoology
University of Florida
Gainesville, Florida 32611

Abstract

The identification of North American *Dolichoderus* species by-way-of existing keys is unnecessarily arbitrary and misdeterminations are likely between *D. mariae* and *D. pustulatus*, the latter species showing most morphological variation over its range. Diagnoses for the four described species and an undescribed form with a revised key and figures are given to aid entomologists working without identified voucher specimens. Nest data for species other than *D. pustulatus* in the Coastal Plain revealed below-ground nests or structures immediately at the ground surface. Colonies of *D. pustulatus* in Florida and southern Georgia have arboreal nests in the cavities of smaller limbs of hardwoods about swamps and marshes. No ground nests have been found and the species may occur in compound nests with another arboreal ant, *Camponotus (Colobopsis) impressus*. These observations identify several questions for further study.

Introduction

This paper provides a revised key to the known species of *Dolichoderus* Lund 1831 occurring in North America, and summarizes the data on both distributions and nest sites. An undescribed, northeastern species known by limited material is also briefly characterized and included in the key but not named. Four species have been described; namely, *D. mariae* Forel 1884, *D. plagiatus* Mayr 1870, *D. pustulatus* Mayr 1886 and *D. taschenbergi* Mayr 1866. These species were thus described by 1886 and 31 years later Wheeler (1905a, b, 1915, 1916, 1917) had revised the group, described several subspecific varieties and discussed their natural history. His principle change was to place *D. pustulatus* as a subspecies of *D. plagiatus* and his inter-

pretation remained intact for 43 years. Creighton (1950) synonymized Wheeler's subspecific forms into the four above species and again recognized *D. pustulatus* as distinct. The taxonomic scenario returned to the 1886 position and, for the above taxa, remains unmodified. The need for further literature on the identity of these species requires a brief explanation.

Wheeler's studies had accompanying descriptions and figures but are now largely unavailable and he employed a taxonomy no longer in use. Smith (1918) and Gregg (1944) gave non-illustrated keys and essentially followed Wheeler's work. Wheeler and Creighton in addition to having different taxonomic views used different diagnostic characters in large part. Creighton's key had no accompanying descriptions or figures and no later key exists. The Creighton key requires discrimination between degrees of sculptural development and, if unaccompanied by properly determined voucher specimens, is especially unclear in separating *D. mariae* and *D. pustulatus*. For sculpture of the propodeum and mesonotum, couplet three of the key uses "... coarse, deep, close-set foveolae" and "... foveolae, when present, shallow and obscure..." to depict *D. pustulatus* and *D. mariae* respectively. Actual differences between the species in sculpture of the propodeum or epinotum as named by Creighton, are less distinct than the couplet suggests. Further, the key appears to have been written using only northern specimens of *D. pustulatus* and southern specimens are somewhat different as noted below. The author earlier misidentified Florida specimens of *D. pustulatus* (Johnson, 1986), and other specimens in the Florida State Collection of Arthropods are similarly misnamed. The authority for those determinations is not given but doubtlessly arose from a similar confusion.