



Figure 3. Petioles of (left): *D. pocahontas* “shiny” queen, field colony # 1 (1977); (right): worker of the same colony, which also contained 79 “shiny” gynes; (centre): “dull” gyne of field colony # 3 (cf. Fig. 2). Scale bar 0.5 mm

Mating and colony founding experiments

Alates of *D. pocahontas* left the nest chambers about one hour after morning temperature increase (during the 15/25 °C summer temperature rhythm). Sexual activity was highest when sunlight was shining into the laboratory. Temperatures in the flight cage raised slowly to 30 °C within two hours. Sexual activity lasted for about one hour. Gynes exhibited sexual calling behavior, similar to gynes of many species of *Leptothorax* (s. str.) and related social parasites (Franks et al. 1991). Copulations lasted typically for less than a minute, but occasionally were continued for up to 35 minutes. Gynes shed their wings between one and several hours after mating. Seven of 21 mated gynes were dissected, some only after colony founding experiments, and all had sperm in their spermathecae.

To study colony founding behavior of *D. pocahontas*, eight mated gynes of colony # 7 were placed into the foraging arenas of formicaries with small natural colonies of *Leptothorax* C. Most gynes were seriously attacked and pulled on legs and antennae by the workers and all died within three to eight days. Nine mated gynes were put into artificial colonies consisting of four workers from their maternal nest, eight *Leptothorax* C pupae, and seven *Leptothorax* C larvae. This “passive colony foundation” has been successfully used in a number of socially parasitic ants (Buschinger et al., 1990) and proved also effective with *D. pocahontas*. Colonies founded in this way survived for up to eleven breeding cycles and produced numerous sexual and worker offspring. Finally, field colony # 7 was split during the first laboratory summer. During the 3rd breeding cycle, a mated daughter was reintroduced into the orphaned branch of the nest, which then survived until the 9th cycle.

Most female sexuals reared in these ten laboratory-founded colonies were more or less “dull” gynes, though some typical “shiny” *D. pocahontas* gynes were also