

Material and methods

Ten colonies of *Doronomyrmex pocahontas* were collected in 1977 (A. B.), 1979 (A. B. and K. Fischer), and 1988 (J. H. and S. Kauffmann) at the type locality, Maligne Canyon. Numerous colonies of the presumptive host *Leptothorax* C and of syntopic *L. retractus* were collected at the same site. A large black *Leptothorax* (s. str.) (*Leptothorax* D, Heinze, 1989), which is the host of *L. faberi* Buschinger 1982, was not found at the type locality of *D. pocahontas*, but was collected in areas nearby (Maligne Lake, Mt. Edith Cavell).

Colonies collected in 1979 and 1988 were kept in laboratory conditions according to Buschinger (1974), with shortened annual cycles and daily light and temperature rhythms. Ants were fed three times a week with diluted honey and insect pieces (cockroaches, mealworm pupae).

For mating experiments, sexuals were kept in flight cages of about 15 cm × 20 cm × 30 cm (w × d × h). To study colony founding behavior of *D. pocahontas*, mated gynes were I) placed into small colonies of the presumptive host species, II) put into experimental colonies consisting of four workers from the maternal nest and some larvae and worker pupae of the "host species" ("passive colony founding" of social parasites, Buschinger et al., 1990), and III) returned into a large, queenless fraction of the maternal colony.

Results

Composition of field colonies

Though several hundred colonies of various *Leptothorax* (s. str.) were examined in numerous sites throughout the Rocky Mountains from southern Arizona to central Alaska (S. P. Cover and D. Ortius pers. comm.; A. B. and J. H. unpubl. results; Heinze, 1989), *D. pocahontas* is as yet known only from the type locality. In coniferous forests, colonies of *Leptothorax* (s. str.) typically nest in dead branches or tree stumps, but occasionally nests are found also under flat stones on the layer of pine needles covering the forest floor (Buschinger, 1979). At least seven of ten colonies of *D. pocahontas* were collected from under stones.

Only the three colonies collected on July 28–29, 1977 were directly preserved and thus could be completely censused. They contained a single *D. pocahontas* queen each and 158, 107, 199 workers respectively. Six of the colonies collected in 1979 and 1988 had a typical *D. pocahontas* queen each, one colony was collected without queen but produced *D. pocahontas* sexuals in the laboratory.

D. pocahontas colonies collected in July, 1977 did not contain sexual pupae, but adult males (5, 2, 62 resp.) and winged gynes (79, 2, 39 resp.). The 39 gynes of colony # 3 closely resembled host gynes (see below). In 16 colonies of *Leptothorax* C from the same site, sexual offspring was still in the pupal instar, mostly even not yet pigmented, and very few males and gynes had just eclosed (Buschinger, 1979). *D. pocahontas* colonies collected in August, 1979 and August, 1988 did not contain sexual pupae or winged sexuals. However, winged males and gynes were present in