ANTS FEEDING DIRECTLY ON PLANT SAP

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In my small front garden, the large coltsfoot-shaped leaves of *Ligularia dentata* (Gray) Hara (Asteraceae, = formerly Compositae) became slightly damaged through being knocked by the wind against the adjacent garden wall. Some of the leaves showed small tears a few centimetres long, which quickly became browned along the ragged edges. The leaves of this large garden ragwort are tough and leathery, the damage was minor and the large yellow flowers were unharmed, so I ignored the insignificant cuts on a few of the leaves.

However, during several warm days in June, July and August 1993, I noticed that ants were congregating along the edges of these cuts. They were foraging workers of the extremely common 'pavement ant', *Lasius niger* (L.) and they appeared to be biting at the edges of the tears in the leaves. Each of several leaf abrasions had two or three ants, seeming to focus their attentions on particular points. Some of the longer tears (10 cm or so) had perhaps five or six ants both above and below the leaf surface, biting at particular points along the very edge of the leaf tear.

Examination of the leaf lacerations under a hand lens showed that when fresh, sap oozed from cut edges. A day later, a tear would be browned, and the sap appeared to have crystallized, giving the edge a glinting sugary appearance. The ants appeared to be feeding on this crystallized sap. It is possible that their feeding

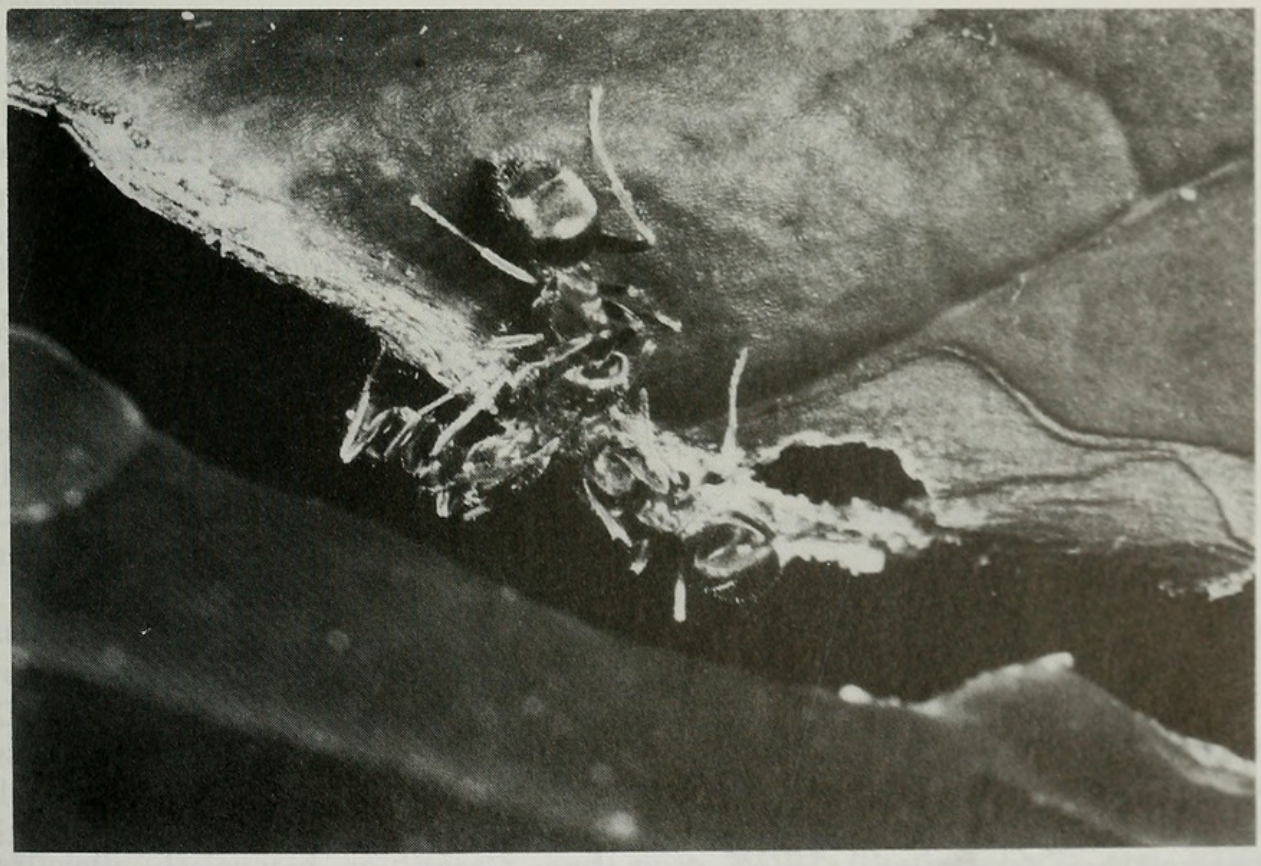

Fig. 1. Three ants (*Lasius niger*) intent on a particular spot along a tear in the leaf of *Ligularia dentata*, where they appear to be feeding on the crystallized sap of the plant. Photo: R. A. Jones.

points were associated with vein endings, as possibly shown in the photograph, and that they were feeding on flowing rather than crystallized sap.

That ants feed on plant secretions, in the form of nectar from flowers and extrafloral nectaries, is well known as is their indirect feeding on sap which has passed through the digestive tract of aphids and excreted in the form of honeydew (Kirby & Spence, 1818; Westwood, 1840; Brian, 1977; Collingwood, 1979; Gauld & Bolton, 1988). However, I am unable to find any reference to ants feeding directly on plant sap.

Mr A. J. Halstead informs me that there is a photograph in the archives of the R. H. S. Garden at Wisley showing an unnamed yellowish-brown ant damaging the leaf margins and petals of a glasshouse plant, *Cathyranthus roseus*, and he tells me that he has also seen large numbers of the ant *Lasius fuliginosus* (Latr.) nibbling the edge of flower petals on *Rosa* 'Maigold' at Wisley on 2.vii.1976. Interestingly, he found similar damage being caused to another specimen of this rose variety by the wasp *Vespula vulgaris* (L.) on 26.ix.1974, so it may have particularly sweet petals.

Ants are by no means unknown as herbivores (in the widest sense): in the New World, leaf-cutter ants (tribe Attini) eat the fungus that they culture on the cut leaves with which they stock their nests, and in the Old World, harvester ants (*Messor* spp.) feed on seeds. I am surprised, therefore, to find no reference to this behaviour anywhere in the literature, given that *Lasius niger* is so commmon a garden species and that horticulturalists are so aware of other minor pests on their plants.

Acknowledgements

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References

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BOOK NOTICE

The bee genera of North and Central America (Hymenoptera: Apoidea) by C. D. Michener, R. J. McGinley and B. N. Danforth. Smithsonian Institution Press, Washington and London, 1994, viii + 210pp, £34.95 ($53.95), hardback.—A highly illustrated book with bilingual (English and Spanish) text comprising mainly diagnostic keys and short descriptions. Generic check list and extensive references complete this very thorough taxonomic study. It is a shame that more biological and ecological details are not given.