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A RAPID METHOD FOR DETECTING THE PRESENCE OF POLLEN GRAINS ON SMALL ANTHOPHILOUS ANTS

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A rapid method to establish the presence or absence of pollen on ant bodies was developed which in many cases also enables the identification of the pollen source and a rough count of the number of pollen grains attached to an ant examined in this way. The size of the ants suitable for examination by means of this method must not exceed 4–5 mm. All objects used must be clean and handled with clean hands so as to avoid contamination with pollen from other sources. For the same reason each individual ant to be studied must be put into a small, clean jar or glass tube and killed in there with a minute droplet of ethyl acetate or another suitable killing agent. The animal can be kept in the closed jar until further treatment, but the sooner the following operations are carried out the better.

The ant is transferred to a small droplet of liquid gelatin-fuchsin on a microscope slide. The size of the droplet must be adapted to the size of the insect. A cover-glass is placed on top of the droplet and a second slide is placed on top of the cover-glass. The second slide is pressed firmly down vertically to squeeze the ant. If the pressure is adequate the ant will be totally squashed, the pollen grains remaining unimpaired. A firm but vertical pressure prevents the shifting of the cover-glass over the object during the squeezing operation (which is likely to occur especially when the press-slide is dirty of sticky), which may result in a grinding action by which sometimes pollen grains get damaged. After the slide used for squeezing has been taken away, the preparation can at once be examined under not too high a magnification (which may set a limit to the possibility of identification, but since the pollen is most likely to have originated from the flowers of the plant visited, this usually does not cause problems).

When this method was applied to ants collected when they were foraging on *Ephedra* (MOHR, in prep.) it appeared that pollen grains of *Ephedra* stain a pomegranate pink, which is useful for the identification because the pollen of most other species do not absorb so much of the dye and light up brightly against a dark field under the microscope.

Pollen grains of *Ephedra* did not all stain to the same extent and conceivably both grains capable of germinating and more or less degenerated or underdeveloped ones were present. This may be a way to assess the rate of variation of the percentage of viable pollen of a given sample (and of the species as a whole), perhaps also applicable to pollen of other plant species.

It is thought that the squashing method described above may also be useful to detect the presence of pollen on other small insects (such as Thysanoptera, small Diptera and Hymenoptera, etc.).