A simple method for rearing larvae of the March flies *Dilophus segnis* and *D. nigrostigma* (Diptera: Bibionidae)

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On two occasions I have been required to rear large numbers of March fly larvae (Diptera: Bibionidae) to adult stage. In 1983, large, lidded boxes made of very strong cardboard, measuring 60 x 60 x 20 cm were half filled with moist earth. A 10 x 10 cm hole was cut in the lid of each box and covered with transparent Perspex. Second instar larvae of *Dilophus segnis* Hutton and *D. nigrostigma* (Walker) were placed on the moist soil and slightly damp, dead leaves were placed over them. These were left for over two months and adult flies were successfully reared from all boxes.

In 2005, when large numbers of *D. nigrostigma* larvae were reported damaging newly sown lawns in several Dunedin properties, larvae were unsuccessfully raised on live grass and soil in clear plastic containers with ventilation holes plugged with cotton wool. A high proportion of larvae were killed by mould. The following method proved successful.

Larvae were reared in 20 standard, two-litre plastic ice cream containers made of dark blue, opaque plastic, 17 x 17 x 8.5 cm deep. In all containers, ten 1 cm wide holes were drilled in a 7.5 x 5.5 cm area of the lid to provide ventilation, these holes being covered with a patch of muslin cloth. Two methods of collecting emerging adult flies were trialled. In one method, ten containers had two 7.5 mm wide holes drilled through the lid, and these holes were covered on the upper surface with an inverted, 8.5 cm wide Petrie dish. In the other method, 10 containers had a single 8 mm wide hole drilled through the lid, through which was placed an inverted specimen tube containing a twist of paper. Labels with details of capture and rearing, including locality and date, were stuck to the tops of the lids (Fig. 1).

To all ice cream containers was added a 25 mm deep layer of soil, moistened with water in which had been mixed 1 gram of "Nipagin M" (Methyl 4-hydroxybenzoate). This is a white powder, traces of which are often found in dispensary medicine bottles, which acts as a mould deterrent. Soil, grass, dead leaves and *Dilophus* larvae were then added and the containers left until adult flies emerged.

When, roughly two months later, adults emerged (more or less synchronously), they were attracted to light and entered the tubes, where some clung to the twists of paper within. However, some flies left the tubes and returned to the soil below. By contrast, most flies entering the inverted Petrie dishes via the two holes remained within the Petrie dishes, without returning to the soil, and consequently these proved more useful than the tubes.

The Petrie dishes and tubes on the lids gave immediate indication of adult emergence and enabled puparia and 4th instar larval exuviae to be retrieved.

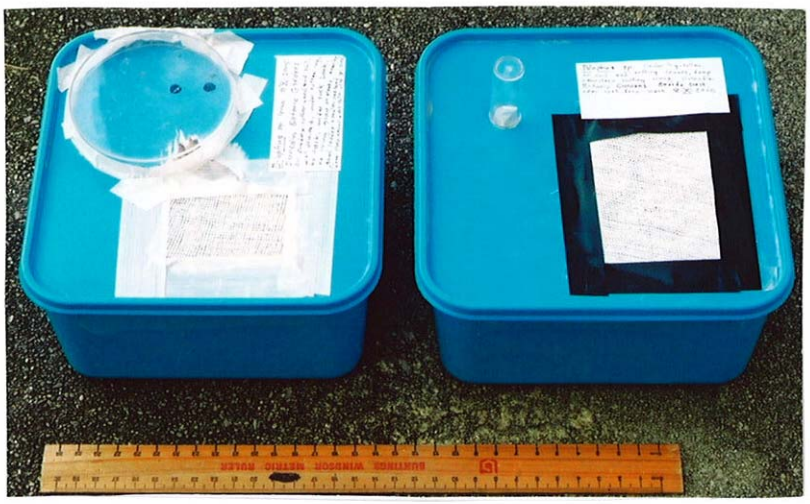

Figure 1. Left. Standard, 2-litre plastic ice cream container showing inverted Petrie dish stuck to lid, and below it, two holes for entry of emerging adult March flies. Right, container with inverted tube to retain emerging adult March flies. Scale: ruler marked in cm.