OBSERVATIONS ON THE REPRODUCTION BEHAVIOUR OF CRABRO PELTARIUS (SCHREBER) (HYMENOPTERA, SPHECIDAE)

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I. INTRODUCTION

The form of the burrows of several species of Sphecidae as well as the number of breeding-cells have been studied by several investigators (LINSLEY & MACSWAIN, 1956; EVANS, 1966). As all these data were obtained by excavation of the burrows, only an incomplete picture of the building of the burrow and the behaviour of the females underground could be formed. BAERENDS (1941) introduced a system by which the inside of the breeding-cell of Ammophila campestris Latreille could be observed. A method developed at our laboratory now enables us to obtain more information about the digging and filling of the burrows of digger wasps. The present article deals mainly with the behaviour of the female of Cabro peltarius (Schreber) in its burrow.

II. MATERIAL AND METHODS

In 1969–1972 the digger wasp Crabro peltarius (Schreber) was collected in Amsterdam, Weesp, Noordwolde and Kralo, during the month of June. The females were captured in the afternoon in the neighbourhood of the burrows or dug out when inside. Moreover males as well as females were collected from plants and flowers.

In the laboratory the wasps were placed in breeding-cages measuring 18 by 25 cm with a height of 30 cm. The cages are placed on glass containers (18 by 25 cm, deep 22 cm) filled with rather coarse white sand (SIMON THOMAS, 1966).

To observe the behaviour of C. peltarius underground observation-cages were used as shown in Fig. 1. In these cages the container in
which the female digs a burrow, consists of two parallel sheets of glass or perspex, 35 cm high and 25 cm wide and about 1 cm apart (Fig. 1C). This enables us to observe the wasp's activities underground at any time from at least one side and sometimes from both sides. Sloping glass-sheets (Fig. 1B) connect the digging area with the flying area which measures 18 by 25 cm with a height of 30 cm (Fig. 1A). Through a cylindrical tricot sleeve the observer can put his hand inside the cage to supply water, food, etc.

In the field C. peltarius catches many species of Diptera. BERLAND (1925) mentions 30 species, belonging to various families. In our laboratory the wasps were fed with honey and water. They were given exclusively houseflies (*Musca domestica* L., Diptera, Muscidae) as prey. Depending on the experiment either an excess of prey-animals or a known number were supplied.

**III. OBSERVATIONS**

**Females**

Females bred in the laboratory do not start immediately with repro-