The Norwegian species of *Villa* Lioy, 1864 (Diptera, Bombyliidae)

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The Norwegian fauna of the genus *Villa* Lioy, 1864 is reviewed. Eight species have been found in Norway. The first valid records of the following species are given: *V. halteralis* (Kowarz, 1883), *V. longicornis* Lyneborg, 1965, *V. modesta* (Meigen, 1820), and *V. panisca* (Rossi, 1790). *V. occulta* (Wiedemann in Meigen, 1820) is reported new to Norway. A key to the Norwegian species is provided, as well as photographs of each species and maps showing the known distribution within Norway.

Key words: Diptera, Bombyliidae, Villa, Norway.

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Introduction

The genus *Villa* Lioy, 1864 consists of medium-sized flies with a short proboscis. They are covered in hairs and scales that vary from golden yellow to black and white, often with bands of bright scales on the abdominal tergites and with tufts of black and white or yellowish hairs at the end of the abdomen. The wings are mostly hyaline, only more or less darkened along the front edge. The morphological characters used for identification are vague and often easily destroyed, as the scales and hairs easily drop off or get damaged. Identification of the species is notoriously difficult, and the genus was left out when the family was reviewed by Falck & Greve (1999).

The genus is present on all continents except Antarctica, and comprises more than 260 described species (Evenhuis & Greathead 1999); 36 of these have been found in Europe (http:/faunaeur.org). The Norwegian fauna comprises eight species. Thus *Villa* is the most numerous genus of Norwegian Bombyliidae, almost containing half the Norwegian species of the entire family.

The genus belongs to the part of the family in which the females have got a sand chamber, and it can be observed that the females are filling this chamber with sand, dust, saw-dust or other fine particles. This activity may be mistaken for ovipositing. It is supposed that it is undertaken to prevent the eggs from sticking together, as they are dropped one by one to the ground, presumably in the vicinity of a reasonably high density of suitable host individuals.

The first instar larva is inquiline, and is left to find it's host by itself. The larvae parasitizes the larvae of Noctuid moths (Lepidoptera, Noctuidae), but the host species are poorly known. Thus we do not know whether the *Villa* species are dependent of specific hosts, or can parasitize a number of species. The fact that several of the *Villa* species are connected with very specific habitats, like calcareous bare rock ground, sand dunes, or bogs, seems, however, to indicate the same in the host species. The pupa has thorns and hooks that enable it to break free from the host pupa. The adult flies visit flowers for nectar, but are most often sighted when they are resting on the ground in sun-exposed places. The males of some species