

DISTINGUISHING 'MIDRIFTED' WHITE-TAILS AND THEIR DARK FORMS

(tergite 2 mostly or entirely black-haired)

Queens (large, robust, antennae relatively short)



Typical *Bombus ruderatus* (left), semi-melanic (middle), all-black var. *perniger* (right).



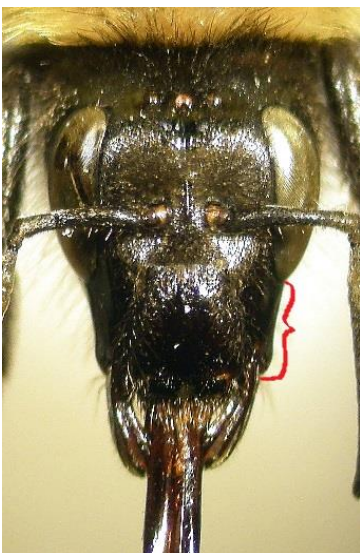
Typical *Bombus hortorum*



Darker *B. hortorum*



B. jonellus



Faces of *Bombus hortorum/ruderatus* (left) and *B. jonellus* (right) showing the much shorter face and especially cheeks of the latter.

Typical queens of these three species have a yellow collar and scutellum. Queens of *B. ruderatus* are typically huge (size of *B. terrestris* but slimmer) and even the palest ones rarely have many yellow hairs on tergite 1. They show a continuous gradation through semi-melanic forms to a fully black form (var. *perniger*). Queens of *B. hortorum* are about 10% smaller and usually have tergite 1 conspicuously yellow-haired to create a complete midriff band. Both of these species have a very long face and black-haired hind tibiae. *Bombus jonellus* resembles *B. hortorum* but is smaller still, has a very short face and lots of pale hairs on the hind tibiae. The bands tend to be buffish-yellow. I have never seen a fully melanic queen *B. hortorum* or *B. jonellus* and when these two species become semi-melanic, they retain some yellow hairs on tergite 1 and keep a white tail.

Workers (resemble small queens, antennae also relatively short, often with a pollen load on hind legs)



Bombus ruderatus showing progression from fully-banded worker (left) to all-black var. *perniger* worker (right).



B. hortorum

B. jonellus

Workers of *B. jonellus* are readily separable through the much shorter face. All-black 'perniger' workers and darker workers of *B. ruderatus* are also fairly distinctive and have a velvety-black hair pile that is more even-lengthed than that of *B. hortorum*. But separating fully-banded *B. ruderatus* from *B. hortorum* in the field can be very challenging and at times impossible. But as a rule of thumb, banded *B. ruderatus* workers have a crescent-shaped collar that is a similar width to the scutellum band whereas *B. hortorum* workers have a broader, straighter collar that is wider than the scutellum band and the bands are more lemon-yellow.

Males (worker-sized or slightly larger, slimmer, antennae longer, never carry a pollen load)



Banded *Bombus ruderatus*

Typical *Bombus hortorum*

Bombus jonellus



Bombus ruderatus var. *perniger*

Semi-melanic *B. hortorum*

B. jonellus males are small, fluffy, short-faced, and have yellow hairs on the face and top of head. Males of *B. ruderatus* have a neat velvety hair pile (less even & fluffier in *B. hortorum*) and are mostly either fully-banded or all-black. *B. hortorum* males are occasionally semi-melanic. The best way to separate the two is checking the mandibular 'beard' which is yellow-haired in *B. ruderatus* and black-haired in *B. hortorum*.