

2297 (9307) **Copper Underwing *Amphipyra pyramidea* (Linnaeus, 1758)**

2298 (9308) **Svensson's Copper Underwing *Amphipyra berbera* Rungs, 1949**

**ssp. *svenssoni* Fletcher, 1968**

Common

Common

### History and status

The existence of *berbera* as a species distinct from *pyramidea* and represented in Britain and Ireland by ssp. *svenssoni* was discovered in the 1960s (Fletcher, 1968). The name *berbera* was first used by Rungs in 1949 to describe what was then thought to be a sub-species of *pyramidea*, and under the conventions of nomenclature was the oldest available name for the newly separated species.

### Diagnostic external characters

Methods of determination are described by Goater and Christie (1969), Heath and Emmet (1983), Waring *et al.* (2009) and Skinner (2009). The underside of the hindwing is the most reliable feature, and should always be examined. In *pyramidea*, the discal area is straw-yellow and copper suffusion is limited to the distal third of the wing, ending abruptly at the dark sub-terminal band. In *berbera*, the discal area is brownish, and copper suffusion extends, albeit less strongly, to the wing base in the dorsal half.

With practice, the underside can be examined on live moths, without great loss of scales. With the moth in a convenient position (sometimes achievable by gentle prodding) grab it quickly by the thorax between index finger, first finger and thumb, approaching from the front. After establishing a firm but not damaging grip, the wings can be spread. Examination of a resting moth from underneath in a transparent pot can be misleading, as they normally sit with the hindwing creased so the full extent of the copper suffusion may not be visible. However, it may be possible to see if the moth is active with the wings horizontal and open, for example on a wine-rope, and is most easily seen on anaesthetised or set specimens.

Other external characters should be used only as a guide. In both species the ante-median line forms two distinct V-marks near the dorsum. In *pyramidea*, the tips of these are usually more or less level with one another, whereas in *berbera*, the V closest to the dorsum usually extends noticeably further distally, so that they are placed unevenly. Moths with a higher degree of contrast between the pale and dark markings are likely to be *pyramidea*, and those on which the contrast is less, are likely to be *berbera*. Winter (1988) notes that in *pyramidea* the palps tended to have a more well-developed whitish stripe anteriorly than in *berbera* (palps darker with whitish tip). This can easily be misinterpreted, especially when this area is worn and Plant (2008), for example, dismisses records based only on this character.

The hindwing underside is not totally reliable. On some *berbera* the discal area is quite pale, and the copper suffusion can be hard to see where it extends to the base, especially on worn moths. In such doubtful cases the moth should be dissected. The genitalia show clear differences.

### Diagnostic morphological characters of the males

Uncus (Fig 96, A) flattened laterally, its most apical area pointed and beak-like, situated ventrally.

Vesica when everted with 34-36 long, thin cornuti, these more scattered than in *pyramidea* (B).....*berbera*

Uncus (Fig. 98, A) flattened laterally, with a short sub-apical ventral tooth-like projection, and rounded dorso-apical bump. Vesica when everted shows a long row of 12-13 long, thin cornuti (B).....*pyramidea*

.....*pyramidea*

### Diagnostic morphological characters of the females

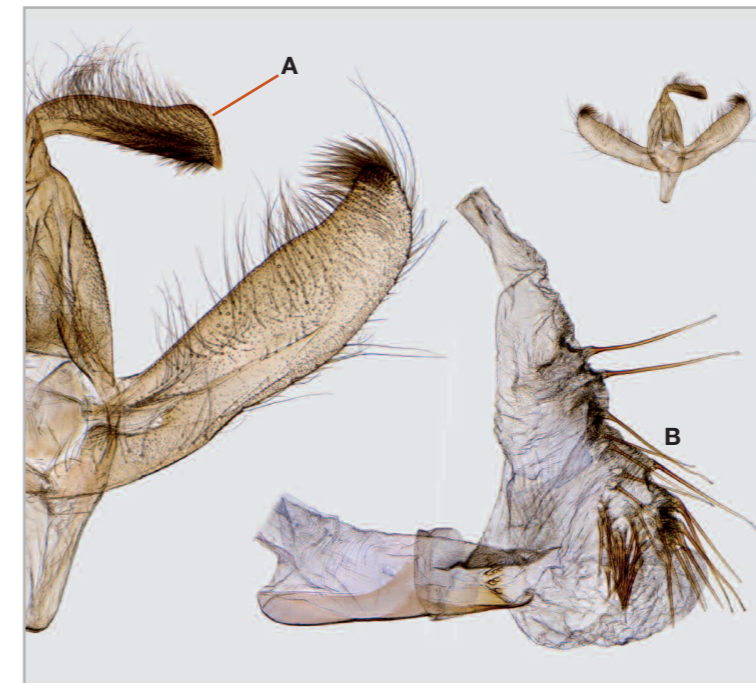
The bursa copulatrix can easily become misshapen and therefore great care should be taken when preparing and manipulating the specimen. If in doubt check for the position of the ductus seminalis.

Bursa copulatrix (Fig. 97, A) rounded, narrowed to distal end.

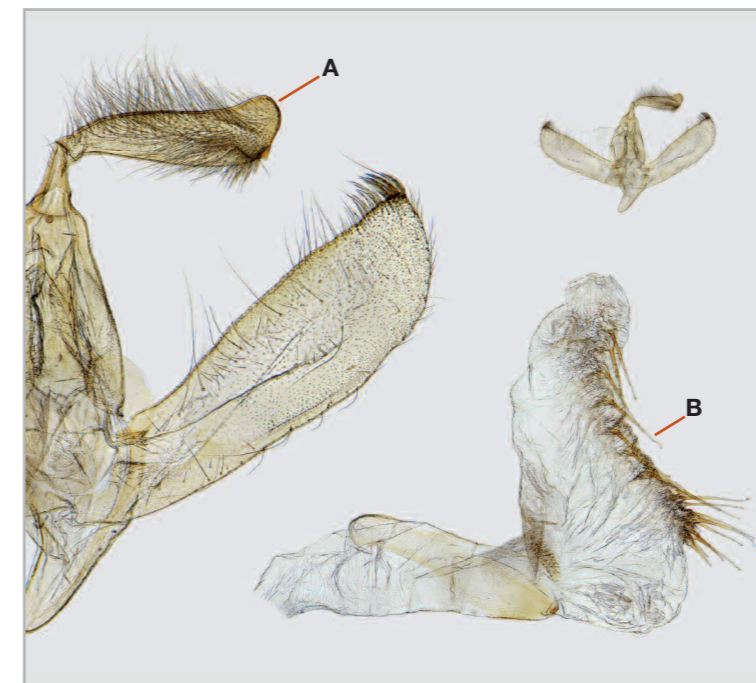
Ductus seminalis (B) arises from distal end.....*berbera*

Bursa copulatrix (Fig. 99, A) broad and rather square when seen in two dimensions.

Ductus seminalis (B) arises at two thirds from proximal end.....*pyramidea*



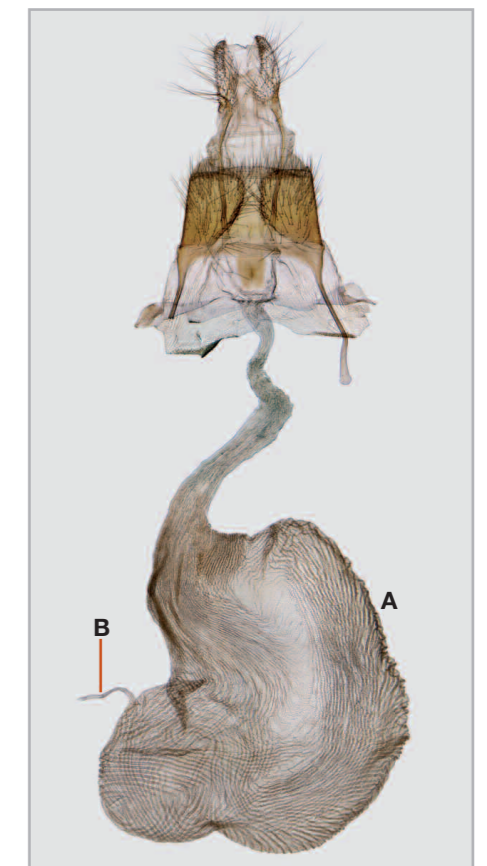
96. *Amphipyra berbera* male



98. *Amphipyra pyramidea* male



97. *Amphipyra berbera* female



99. *Amphipyra pyramidea* female