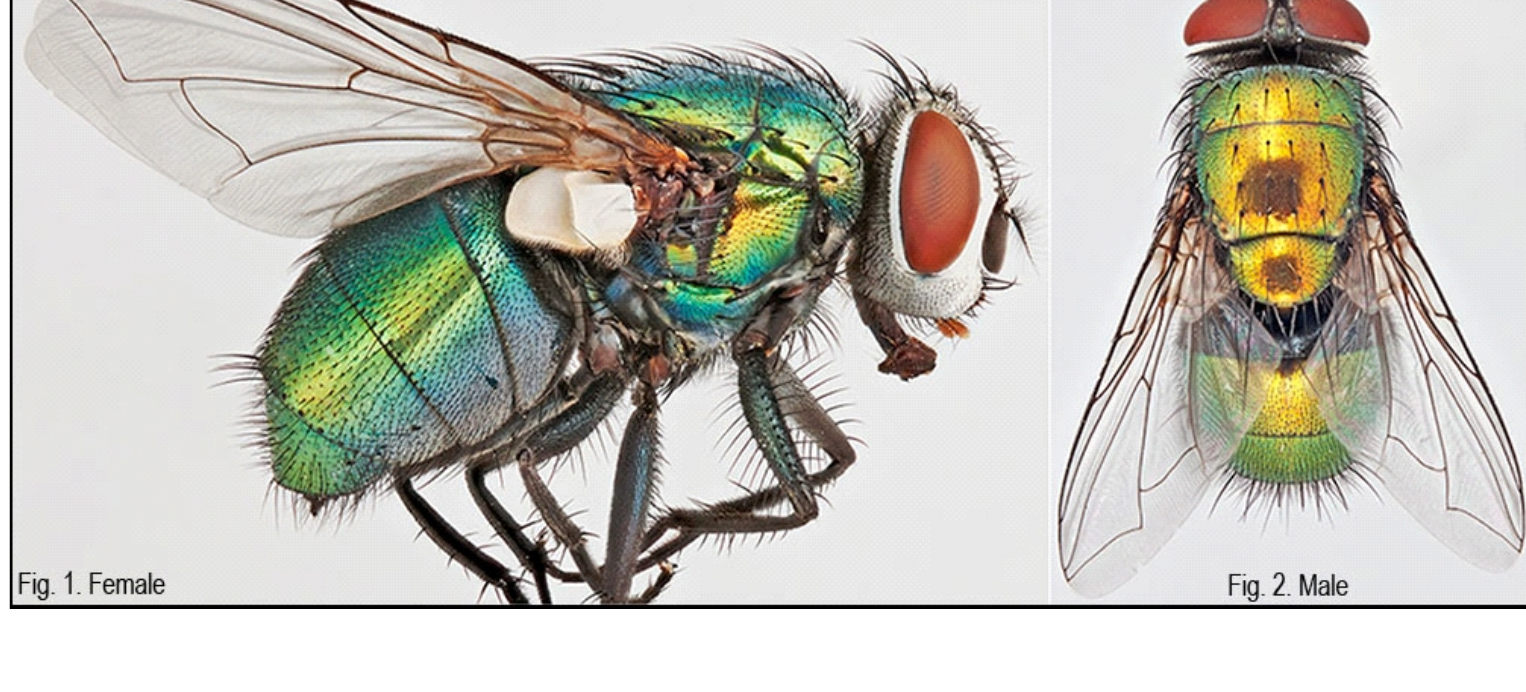


Metallic Flies in need of identification.

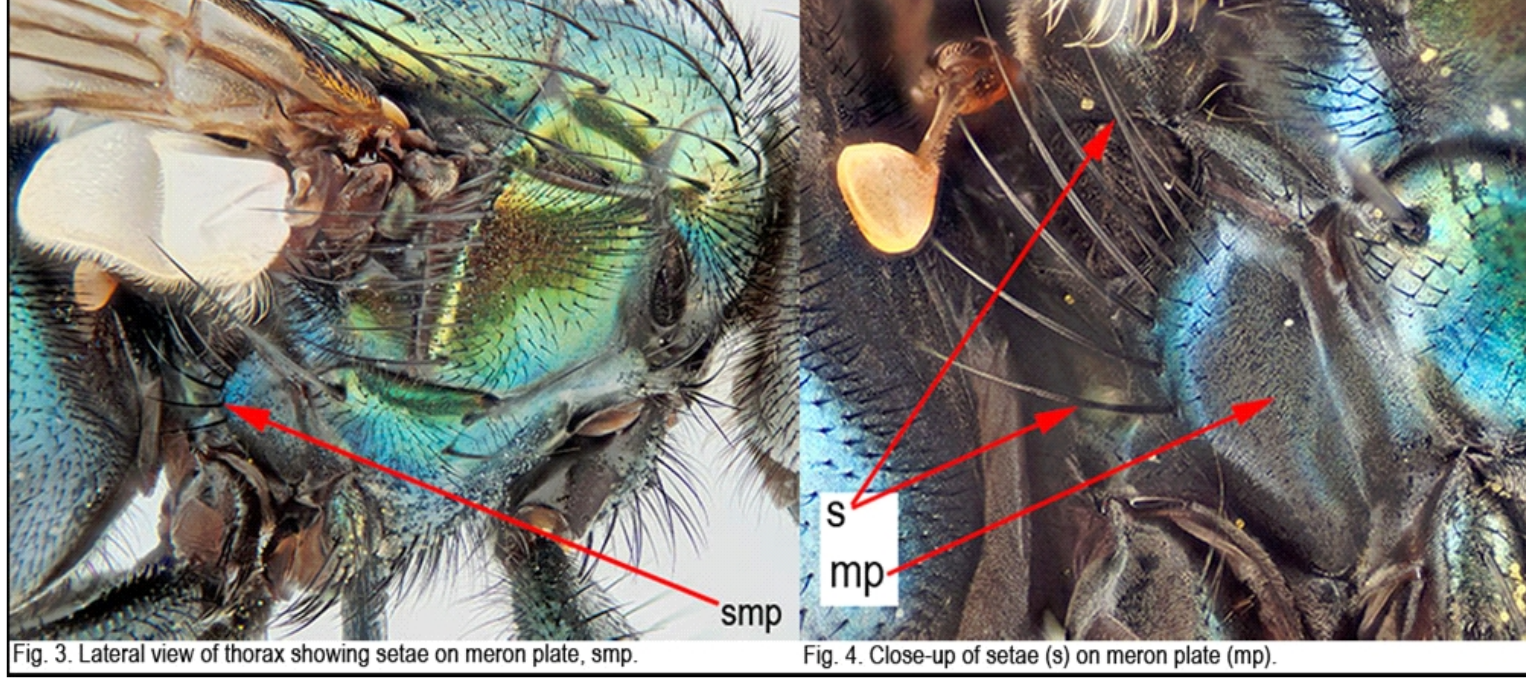
Anthony Thomas (Canada)

I caught a couple of shiny metallic flies recently and decided to try to get an identification to the species level. Most, but not all, of the medium-sized metallic flies, length about 10 mm, such as the two below (Figs. 1, 2) are blow flies in the family **Calliphoridae**.

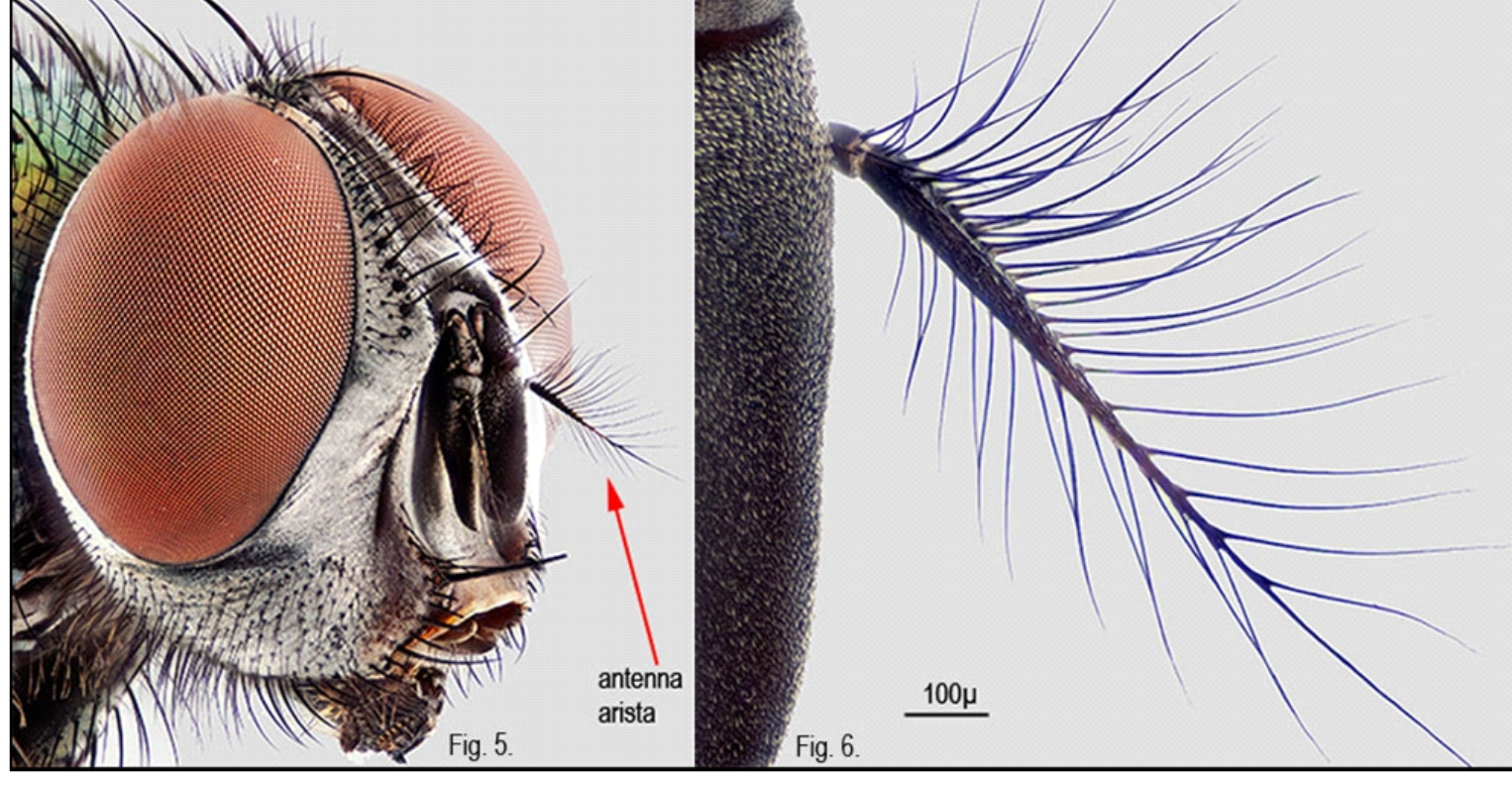


Family determination

The first step was to determine if these were blow flies and not in one of the other 4 families with similar-looking species. Checking Whitworth (2006) I found that the Calliphoridae can be identified by a combination of setae on the meron and setae on the arista of the antenna. The meron is a thoracic plate that lies above and between the bases of the 2nd and 3rd legs (Fig. 3). Figure 4 is a close-up of the meron plate (mp) showing the setae (s) in more detail.



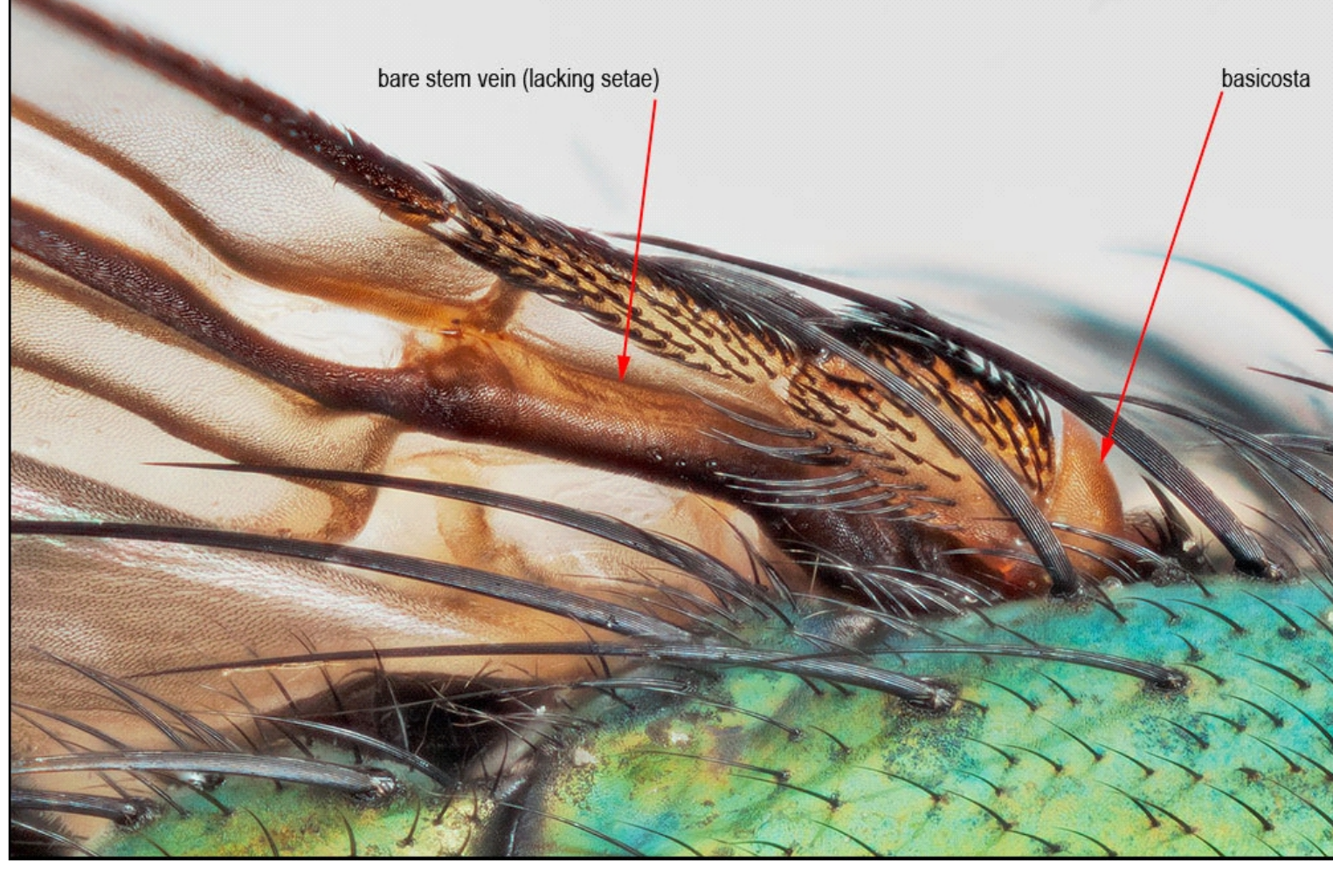
The arista is a long filament that arises on the dorsal surface of a segment, flagellomere, of the antenna. In the blow flies the arista has many long setae giving it a feather-like appearance (Fig. 5; close-up Fig. 6). In the other families the arista lacks these long setae.



Having established that both flies are Blow Flies it was time to turn to the keys in Whitworth (2006) and Marshall *et al.* (2011) to determine the subfamily, genus, and species for these two flies, assuming they were the same species. As I am in Eastern Canada Marshall *et al.* (2011) is more useful than Whitworth (2006) as the former deals with the species of eastern North America whereas the latter covers all the species in North America.

Subfamily determination

The first key couplet compares the stem vein at the base of the wings; it can be bare or have a series of setae (bristles) on the dorsal surface. In both these flies the stem vein is bare (Fig. 7); delete 1 subfamily.



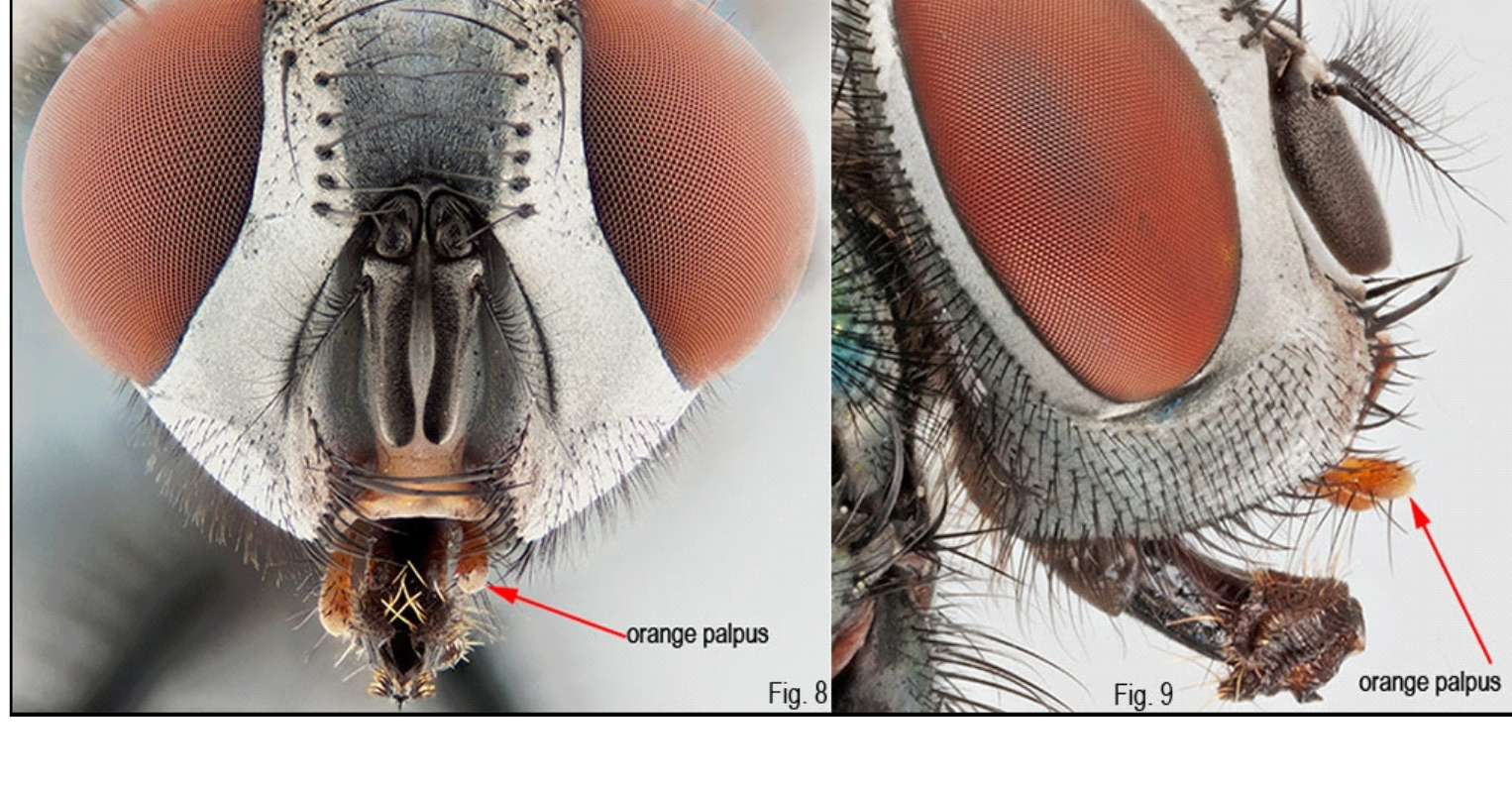
The next couplet compares body colour:- metallic green, purple, blue, or bronze versus dull coloured. These two flies are obviously metallic green and bronze (Figs. 1, 2). Delete 2 subfamilies, leaving 2 subfamily possibilities (Luciliinae and Calliphorinae). The Calliphorinae have a dull grey or black thorax; Luciliinae have a brightly metallic thorax. Thus these flies are in the Subfamily: Luciliinae.

Genus determination

In eastern North America there is only one genus in the Subfamily: Luciliinae, *Lucilia*, but with 5 species.

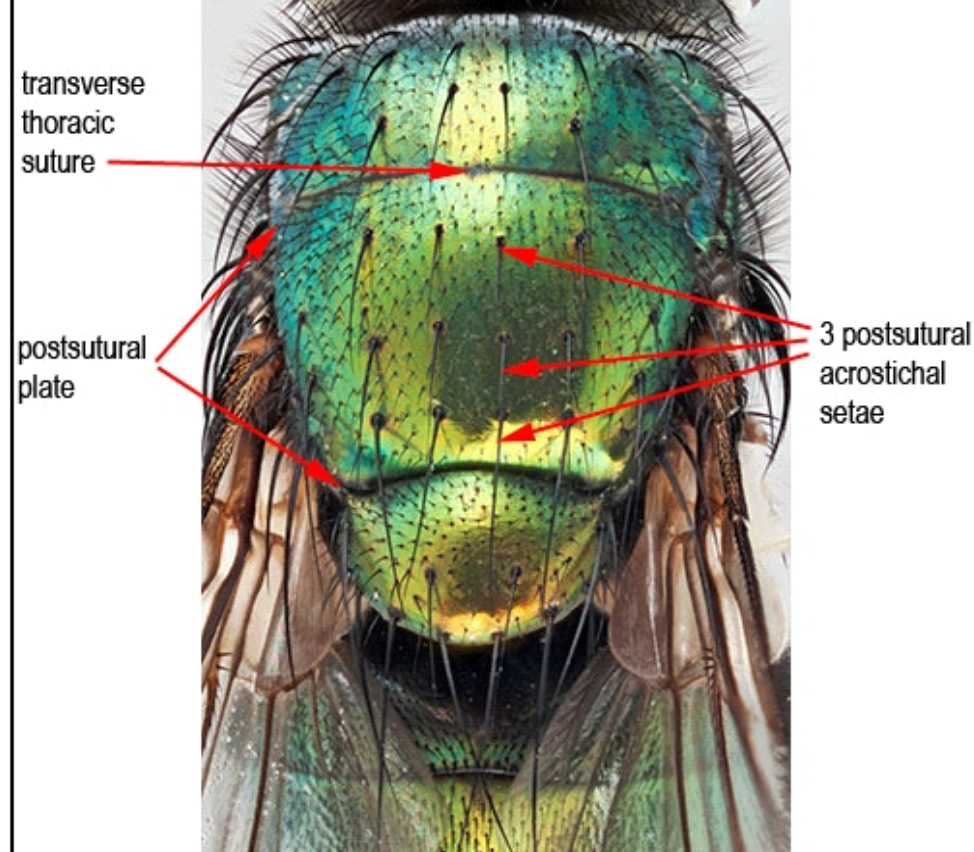
Species determination

Two of the species in the genus *Lucilia* can be eliminated as they have dark brown or black palpus leaving 3 species with orange palpus, seen best in this female (Figs. 8, 9).

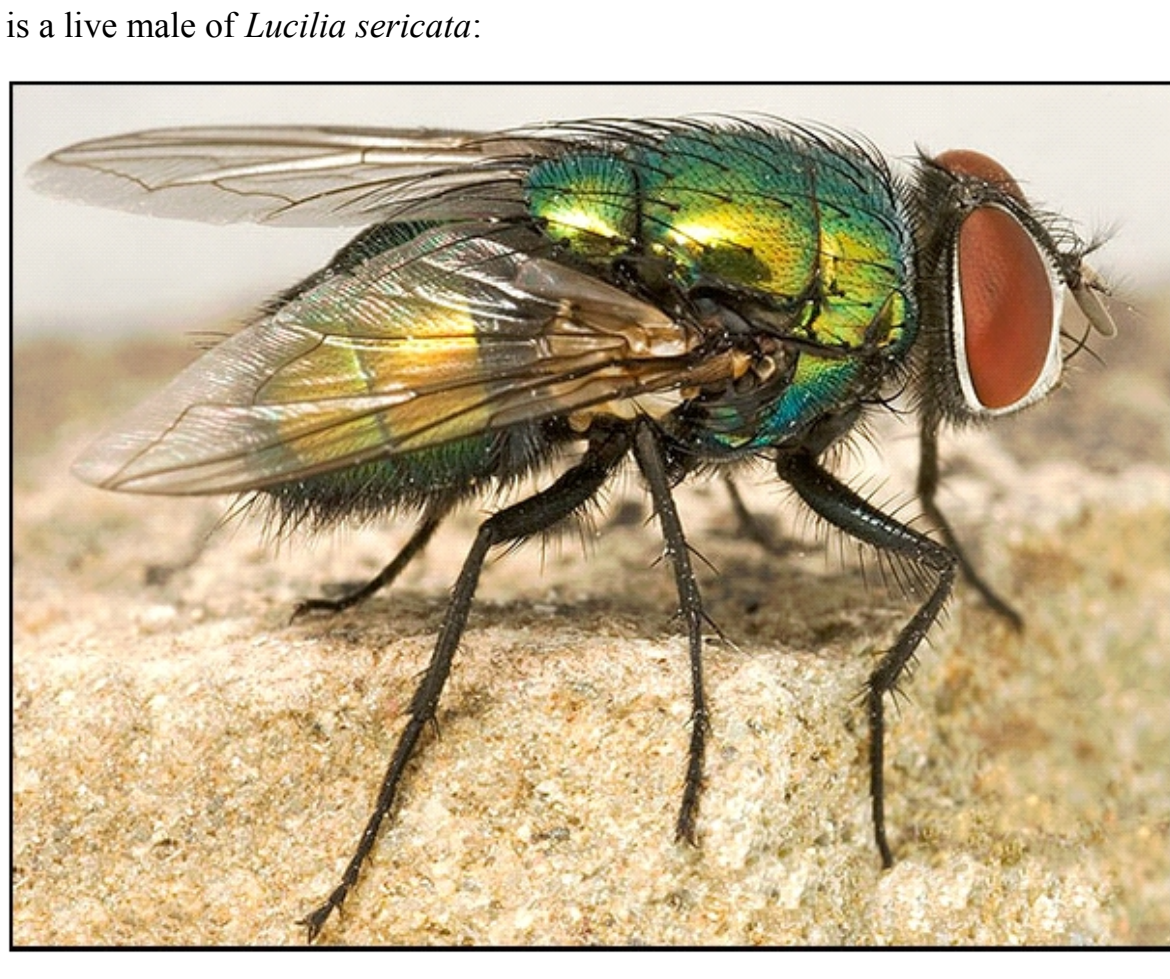


I am now down to the penultimate couplet, an easy one that needs only low magnification:- is the sclerite at the base of the wing (the basicosta) dark brown/black or yellow/orange? In these two flies the basicosta is orange (Fig. 7). One species deleted (black basicosta) and just two possibilities remaining.

The final key couplet separates two very similar species but they can be distinguished by the setae arrangement on the dorsal thorax. The dorsal thorax has a transverse suture dividing it into an anterior plate occupying about one-third and a posterior plate occupying about two-thirds of the thorax (Fig. 10). The most central set of setae on these plates are termed the acrostichal setae. In *Lucilia sericata* there are 3 postsutural acrostichal setae (Fig. 10); in the other species (*L. coeruleviridis*) the anterior pair is absent. Thus, these two flies are *Lucilia sericata*.



Final image is a live male of *Lucilia sericata*:



References

Marshall, S.A., Whitworth, T. and Roscoe, L. 2011. Blow flies (Diptera: Calliphoridae) of eastern Canada with a key to Calliphoridae subfamilies and genera of eastern North America, and a key to the eastern Canadian species of Calliphorinae, Luciliinae and Chrysomyiinae. Canadian Journal of Arthropod Identification No. 11, 11 January 2011, available online at http://www.biology.ualberta.ca/bsc/ejournal/mwr_11/mwr_11.html. doi: 10.3752/cjai.2011.11

Whitworth, T. 2006: Keys to the Genera and Species of Blow Flies (Diptera: Calliphoridae) of American North of Mexico. Proceedings of the Entomological Society of Washington 108(3): 689-725

Photographic Equipment

The basic set up was a Nikon D90 with various lenses attached via a Nikon PB6 bellows. Images of the entire flies were with a 105mm Micro-Nikkor; the more detailed close up shots were with a reversed 50 mm El Nikkor enlarger lens, a 4x Nikon CF N Plan objective and an ELWD 20x Nikon CF M Plan objective. Flies were mounted on a Nikon focus block capable of 1µ increments. All images were stacks of several frames processed by Zerene Stacker.

Contact author, email: mothman AT nbnet DOT nb DOT ca

Published in the September 2011 issue of Micscape Magazine, www.micscape.org.