

Soldiering on

YES!!! I cried with relief, bringing four hours of suffering to an end. The architect of my torment had been sitting innocently on my lab bench, unfazed by the piercing beam of the microscope light, like a hardened soldier trained to withstand relentless interrogation.

The soldier in question was of the entomological variety, a larva of the family Stratiomyidae, or soldier flies- so named because of the resemblance of their dorsal patterning to military camouflage, and of the fearsome spines present on certain adults. The eccentric military naming theme is more than skin-deep: common names for UK species include the Long-horned General (*Stratiomys longicornis*), the Ornate Brigadier (*Odontomyia ornata*) and the Twin-spotted Major (*Oxycera leonina*). Three hours into identifying my specimen and I would have happily settled for a lesser-warted Lance Corporal.

I should point out at this stage that insect identification is not my background. I am a physical geographer by training, more comfortable measuring river flow than picking through invertebrates. My PhD- examining the impacts of drought on chalk stream insects- has forced me to adapt quickly and pushed me out of my depth numerous times. 'Soldierflygate' was just one instance.

My identification breakthrough came when I stumbled across a website dedicated to dipterology (the study of flies and midges), where users can post their dipterological conundrums on an online forum. Here was a fly enthusiast's haven; a dipterist's mecca; a sanctum for the proprietors of very bountiful specimen collections and very bare social calendars. I had found my calling.

After examining the photos of the offending specimen I had posted an expert on the forum informed me that I had a common or garden *Oxycera*. The spidery coronet of float-hairs was the initial clue, and the ventrally emarginate apex of the last abdominal segment the confirmation. Apparently. Roughly translated it had a hairy backside with a notch in it.

At the time, my identification of a single specimen did not seem much to show for four hours' work. However, six months on and with my dataset taking shape, that initial investment has paid dividends. My samples have revealed *Oxycera* as a recurring denizen of drying streambeds, to the extent that it represents a statistically significant indicator species (taxon) of these habitats. The resistance of *Oxycera* to drought stress is consistent with its reputation as a habitat generalist, able to tolerate steep moisture, salinity and temperature gradients (Rozkošny, 1997) owing to a thick, calcareous cuticle (Lock *et al.*, 2013). If, as predicted, climate change increases the prevalence of

Thomas Aspin

intermittently dry freshwater habitats, it may be species like *Oxycera*, thick-skinned in both morphology and character, that hold the blueprint for success at this land-water interface.

As generalists become more dominant among the insect life of streams, so they may become more prominent among entomologists. Specialising in either obligate aquatic or obligate terrestrial species may be of little use when semi-aquatic habitats are the order of the day. However, as I learnt six months ago, a paucity of published information on semi-aquatic taxa makes them a challenging prospect. To continue to work with them I'll need a thick skin. Luckily I know an old soldier who might be able to offer some inspiration.

Lock, K., T. van Haren, D. Tempelman, F. Cherot and T. Adriaens (2013). Distribution and ecology of soldier fly larvae captured in Flemish waters (Diptera: Stratiomyidae). *Bulletin de la Société royale belge d'Entomologie*, 149, 150-159.

Rozkošný, R. (1997). Diptera Stratiomyidae, Soldier Flies. In: *Aquatic Insects of North Europe- A Taxonomic Handbook, Vol 2* (Ed Nilsson, A.N.), pp 321-332. Apollo Books, Vester Skerninge, Denmark.