

Further insect aberrations and variations

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Introduction

Instances of variation in insects are not infrequent (Allen, 1995; Cockayne, 1937; Whitehead, 1988, 2007, 2015; Wood, 1965) but can be difficult to explain in some cases especially if the variation is not replicated through populations in both time and place. They may also confound the field worker who places reliance on the discipline of dichotomous keys.

Discussion

Variation may be chromatic and somewhat minor or more marked and less usual (e.g. Whitehead, 1991) and these may sometimes be so marked as to disrupt the process of identification. Access to a good image library or museum collections will help in this regard.

The malachiid beetles *Cordylepherus viridis* (Fabricius, 1787) illustrated here provide examples of both chromatic and structural variation. Male *Cordylepherus* do not demonstrate the same degree of antennal dimorphism as *Malachius*; the first antennomeres are simply enlarged (01). In this example however the other antennomeres are exclusively pale yellow instead of being largely darkened as is usual.



01. Prepared male *Cordylepherus viridis* with abnormally pale antennae, Bredon Hill, Westmancote, Worcestershire (VC33 SO93), 7 June 1996.

Adult beetles are not infrequently found damaged during the developmental process but even these may be difficult to explain. 02 shows a female *Cordylepherus viridis* in which the dorsal pronotum exhibits paired bilaterally symmetrical keeled pits. The

initiate may presume these to have some taxonomic significance but they are only structural infraspecific morphological anomalies.



02. Structurally aberrant female *Cordylepherus viridis*, River Avon floodplain, Birlingham, Worcestershire (VC37 SO94), 23 June 2014.

The grassland malachiids are more speciose in the southern Palaearctic Region but *Cordylepherus viridis* has for some time been extending its British range to the north with a particular affinity now for the brackish fringes of the larger north-western estuaries.

Occasionally, structural variation may be so marked that it poses identification problems and is hard to explain. *Brachypera zoilus* (Scopoli, 1763) [syn. *Hypera zoilus*] is a large widespread localised weevil of herb-dominated landscapes with Fabaceae, declining or declined possibly generally. Typically (03) it is invested in linear scales and setae of various shades of brown and has a conspicuous rostrum slightly dilated distally.



03. *Brachypera zoilus*, normal individual, Bredon Hill, Eckington, Worcestershire (VC37 SO94), 14 July 1989.

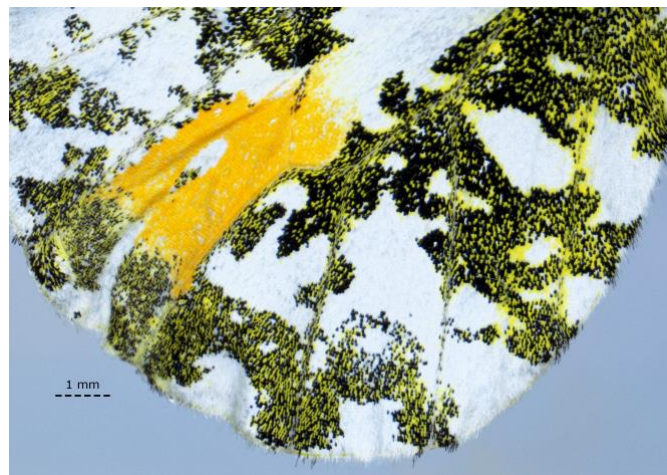
I run a humane beetle trap at Little Comberton (VC37 SO94) and during March 2018 a silver and grey-scaled form of *Brachypera zoilus* (04) was found in it with structural aberrations that invited a number of questions. The scape-stem of the single remaining antenna was rotated through about 90° and the rostrum was expanded medially on both sides behind the scrobes. In this case the anomaly involves both the rostrum and the antennae and presumably originated during the developmental process. I discussed this specimen with Dr Jiří Skuhrovec, the European authority on hyperines and he regarded this (*in litt.* April 2018) as unusual but probably developmental.



04. *Brachypera zoilus*, Little Comberton, Worcestershire, 29 March 2018. Foreparts showing aberrant laterally protruberant rostrum.

It is perhaps not everywhere understood that while *Brachypera zoilus* is wide-ranging in Europe and able to colonise the ‘culture-steppe’, it is also an indicator species of traditional agroecosystems. The extended history of the find-site in this case has been described (Whitehead, 2016) and *B. zoilus* has a confirmed presence there pre-agricultural intensification and probably for centuries prior to that. In this case the earlier origin of the population would be the Jurassic escarpment of Bredon Hill where it remains extant as it does also on the escarpment of the main Cotswold Hill *cuesta*.

Variations with a genetic basis are more difficult to explain. In the case of a male Orange Tip butterfly *Anthocharis cardamines* (Linnaeus, 1758) found dead at Little Comberton (VC37 SO94) during May 2018 (05) an irregular orange pigmentation streak was limited to the right hindwing only and cannot presently be regarded as a definable morph in any sense, unless the feature can be demonstrated more widely in a spatially defined population. Maybe this aberration results from ‘confused’ genetic alleles but I prefer to leave the matter open for specialist comment.



05. Orange Tip butterfly *Anthocharis cardamines*, underside male right hindwing with unilateral chromatic variation, Little Comberton, Worcestershire, 9 May 2018.

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