

Ellipteroides Craneflies (Diptera: Limoniidae) in the Wyre Forest

MICK BLYTHE

Ellipteroides Becker is a genus of small craneflies belonging to the family Limoniidae. The older literature including the national status tables includes them in the genus *Gonomyia* and in the extended family Tipulidae. Three species of the genus have been recorded from the British Isles to date. One of them, *E. lateralis*, is widely distributed but local; the other two, *E. alboscuteatus* and *E. limbatus* have the national status of Endangered (ex-Red Data Book 1). The Wyre Forest has the unusual privilege of hosting all three of the British species.

The *Ellipteroides* craneflies are rather small, between 5 and 6 millimetres long, and appear blackish with the wings carried flat along the dorsal side of the abdomen. The body is black, the legs are dark and even the wings are lightly shaded with black veins. However under a lens two irregular yellow bands are visible along the sides of the thorax and single yellow stripe extends along each side of the abdomen on the soft cuticle between the dorsal and ventral sclerites. There is also a yellow spot dorsally on the scutellum, the small bulge near the rear of the thorax. The yellow markings tend to fade to cream and in dried specimens to darken to chestnut-brown.

All three species are associated with the wet habitats with which Wyre is well-endowed. *E. lateralis* is usually found in the vicinity of wet flushes. *E. alboscuteatus* is associated with flushes of calcium-rich water where tufa is present in the mud. *E. limbatus* appears to be restricted to deep, sheltered stream valleys.

E. lateralis is sufficiently distinct from the other two species to warrant a separate subgenus (subgenus *Ellipteroides*). The most obvious distinguishing character is the absence of the small discal cell in the outer part of the wing; this cell is present in the other two species (subgenus *Protogonomyia*). There are also conspicuous differences in the genitalia in both sexes.

Ellipteroides lateralis

This rather pretty species is generally distributed through England as far north as Yorkshire and there is an isolated record in NBN Gateway as far north as the west coast of Scotland. It is regarded as local, particularly associated with wet woodland.

In Wyre, *E. lateralis* is predominantly found in small numbers near wet flushes, both tufa flushes in company with *E. alboscuteatus* and non-tufa flushes such as Holy Well. It is found around shaded flushes, beneath the tree cover in Shelf Held Coppice, and unshaded flushes such as the "Great Bog". Our collection dates range from 14 June to 4 August. The absence of the discal cell in the wing is a poor field character as the cell is small and inconspicuous

and in the collecting tube the wings are either moving rapidly or resting flat against the black dorsal side of the abdomen. An examination of the tip of the abdomen is more convenient. In the male the genitalia are not swollen, the abdomen continuing the same width to the end, and the paired gonostyli are widely separated and projecting straight backwards as shown in Figure 1. In the males of the other two species the genitalia are swollen giving the end of the abdomen a clubbed appearance. The female ovipositor is longer than in the other two species and curves gracefully upwards to a fine point.



Fig 1: *Ellipteroides lateralis* male. There is no discal cell in the distal part of the wing and the gonostyli of the genitalia are widely separated and pointing straight backwards. Mick Blythe

Ellipteroides alboscuteatus

The male of *E. alboscuteatus* is easy to identify by the genitalia. These are shown in the inset in figure 2. The basal section (the gonocoxites) is very much dilated giving a "chubby-cheeked" appearance and the gonostyli of the distal section are paired and overlapping on the midline to form a composite central spoon-shaped structure. This projects straight behind in a fresh specimen and appears quite long, but tends to curl upwards especially in a dried specimen making it much less conspicuous. Three lobes extending from the base and sides of each gonostylus project upwards, their swollen tips giving the appearance of bunches of grapes. The six "grapes" and the swollen rim of the "spoon" are cream-coloured in a fresh individual but soon darken to black and the darkening can continue after death. The female ovipositor is shorter and straighter than that of *E. lateralis*. There are excellent illustrations of these in *Fauna Helvetica*.

NBN Gateway hold the records for thirteen sites for this species; with a concentration in the Welsh borders, a widespread scatter across the north of England and a small group in central Scotland. It has the national status of Endangered because almost all of its sites are small and potentially vulnerable, mostly in lowland woodland (Stubbs, 2010).



Fig 2: *Ellipteroidea alboscuteallatus* male. There is a very small discal cell in the distal part of the wing. The gonostyli of the genitalia are approximated on the midline forming a composite spoon-shaped structure with a black swollen margin. Three processes at its base on each side have black swollen tips like bunches of black grapes.
Mick Blythe

The ecology of the species has been excellently covered by David Heaver in his 2006 paper in *Dipterist's Digest*. He associates the species with perched tufa flushes where the tufa-forming moss species of the genus *Palustriella* form extensive lawns. The stems of these moss plants are frequently gritty with tufa. *E. alboscuteallatus* was first recorded from the Wyre Forest by Colin Plant in 1987 on a field meeting of the British Entomological and Natural History Society. Then Peter Chandler took a single male from near Park Brook in Shelf Held Coppice on 7 August 1988. In 2000 David Heaver recorded the species from the Great Bog of Wyre. He noted adult flies walking over the surface of moss lawns in the Great Bog and considers it probable that the eggs are laid amongst the moss plants.

Our records for adult flies captured in Wyre over the last three years range between 29 June and 16 August. Currently we have six locations, but all but two are small. The greatest concentration of adult flies has been found in the tufa rich flush in the Lords Yard section of Shelf Held Coppice. Shelf Held Coppice has an extensive line of flushes breaking out along the slope beneath the sandstone shelves and flowing downhill towards Park Brook. One approximately 10 metre stretch has a significant buried tufa deposit and this is the only section which has so far been found to support a population of *E. alboscuteallatus*. It is an extremely

wet, muddy, grassy flush which does not dry up during the summer. It is fringed on the south side by a tree-covered, non-calcareous flush and on the north by a tiny rivulet trickling down the slope towards Park Brook. The creamy tufa layer is buried 15 cm deep in mud near the top of the slope as described by Susan Limbrey in her paper in the current issue. The flush is without tree cover



Fig 4: The Shelf Held tufa flush, 22 July 2010. *E. alboscuteallatus* was most numerous in the grass clumps in the upper part of the site.
Mick Blythe



Fig 3: *Ellipteroides limbatus* male. There is a very small discal cell in the distal part of the wing. The genitalia are more mace-shaped than *E. alboscuteclatus* without the central "spoon" or clustered swollen processes like black grapes. Mick Blythe

save for one dead tree, but numerous rotted stumps show that tree cover was present at some time in the past. Bracken edging the flush gives some shade and shelter. The sodden tree stumps are coated in mosses including *Palustriella* and *Sphagnum*, and more of these mosses are present bordering the tiny rivulet. The adult



Fig 5: The stream between Town Coppice and Hitterhill Coppice on 7th July, not far from the first *E. limbatus* location. R. Winnall

flies are most abundantly found sheltering amongst the tall, coarse grasses in the upper part of the flush though they occasionally stray into the shaded flush to the south.

The Great Bog of Wyre is another complex series of flushes. Again, relatively few of them have water which is sufficiently calcium-rich to support tufa deposits and so far our records of adult *E. alboscuteclatus* have been restricted to these. It is a weakly flying species and probably does not spread far from its breeding habitat.

Our other sites are small patches of mud high on the sloping sides of stream valleys, and each has yielded only one or two individuals. In two of the locations the mud contained tiny flecks of tufa. The third is more difficult to explain. Moss was present but in very small amounts. The sites were on the edge of wooded areas but were not in significant shade.

The Shelf Held tufa flush has yielded other interesting calcicole flies over the last three years. *Molophilus corniger* (Limoniidae; Nationally Notable) and at least three species of *Paradelphomyia* including *P. ecalcarata* (Limoniidae; Vulnerable) have been regularly found under cover of the trees fringing the flush to the south. These species have not been found on the open calcareous grassy areas of the flush. Two small hairy-moth-fly species, *Tonnoiriella pulchra* and *Paramormia decipiens* (Diptera: Psychodidae) have been found at the lower end of the flush near the Park Brook. Both species have associations with tufa, and *P. decipiens* larvae are often found to be encrusted with lime (Withers, 1989).

Ellipteroides limbatus

On 7th July 2010 the Wyre Forest Study Group was investigating a stream running north-east between Hitterhill Coppice and Town Coppice towards the Dowles Brook (Figure 5). The stream had rocky areas with small cascades, basins of deposition, pebbly stretches with numerous White-clawed Crayfish and localised dams of small timber. The valley was mostly deep and fairly steep-sided. A small number of *Ellipteroides* were captured at a point where a small tributary entered from the south and two were retained. At the time of capture I assumed they were males of *E. alboscuteclatus* although the genital club of the abdomen was unusually mace-shaped, but under the microscope the genitalia, without "chubby-cheeked" gonocoxites, "spoon" or "black grapes" proved to be those of *E. limbatus* (see Fig. 3).

This is a little-known species, added to the British list by Alan Stubbs in 1977 from a site near Brecon. NBN Gateway has only the original record, but since then it has also been found in two sites in Yorkshire (Stubbs, pers. comm.). It has the national status of Endangered. It is interesting that the Welsh borders and Yorkshire are also the main strongholds of *E. alboscuteclatus* in the UK.

On 17th July the Group was exploring Seckley Ravine in Seckley Wood, two kilometres to the north, flowing steeply down into the River Severn (Figure 6). The little valley was steep-sided and in some places the sides were smooth wet sandstone. The stream floor was rocky with numerous small cascades and depositional basins. The ravine was criss-crossed with fallen timber of various

sizes making ascent difficult. From our experience of 7th of July it looked promising as another *E. limbatus* site. Four *Ellipteroides* were captured, regularly spaced along the length of the little ravine and all proved to be males of *E. limbatus*. None were found beyond the end of the ravine where the valley walls opened out and became less steep. A tributary stream flowing down the hillside at this point was calcium rich. Two *Ellipteroides* taken from a small patch of bare mud high on the hillside above turned out to be, as expected, males of *E. alboscuteallatus* and another was collected from another mud patch further up. The mud in both these patches was sparsely flecked with tufa.

Our two Wyre sites for *E. limbatus* – steep-sided, stony stream valleys, are rather at odds with the Brecon and Yorkshire site habitats which were flushes (Alan Stubbs, pers. comm.). It will be necessary to search other streams and flushes in Wyre for *Ellipteroides* species to see if this distinction is maintained.

No females of *E. limbatus* have been found to date in Wyre. It is distinguished from the female of *E. alboscuteallatus* by its extremely short ovipositor.

Accompanying the *Ellipteroides* in the gorge section of the stream were *Lonchoptera tristis* (Lonchopteraidae)

and *Hilara anglodanica* (Empididae). The mouth of the little valley at the junction with the Severn yielded a specimen of *Fannia ringdahlana* (Fanniidae), a Nationally Notable species, but one which occurs regularly around the Wyre flushes, particularly Holy Well. The specimen was necessarily a male; the female of the species has yet to be described.

Acknowledgements

I would like to thank Alan Stubbs for kindly confirming the identification of *E. alboscuteallatus* and *E. limbatus* and Rosemary Winnall for indefatigably organising the collecting trips without which these investigations would never have happened.

REFERENCES

- HEAVER, D. (2006) The ecology of *Ellipteroides alboscuteallatus* (von Roser, 1840) (Diptera, Limoniidae) in England. *Dipterists Digest, (Second series)*, **13**: 67-86.
- PODENAS, S., GEIGER, W., HAENNI, J and GONSETH, Y. (2006) Limoniidae & Pediciidae de Suisse. *Fauna Helvetica* **14**.
- STUBBS, A. (1977) *Gonomyia (Protogonomyia) limbata* (Ros) and *Molophilus variispinus* Starý (Dipt: Tipulidae) new to Britain from Wales. *Proceedings and Transactions of the British entomological and natural history Society* **10**: 100-103.
- STUBBS, A. (2010) Flies, beetles and bees, wasps and ants (Diptera, Coleoptera and aculeate Hymenoptera). in *Silent Summer: the State of Wildlife in Britain and Ireland*. ed Norman Maclean. Cambridge University Press, 2010.
- WITHERS, P. (1989) Moth Flies, Diptera: Psychodidae. *Dipterists Digest*: **4**: 1..83.



Fig 6: Seckley Ravine on 17th July. The second *E. limbatus* location. The four flies were all taken from along the narrow rocky zone at the base of the ravine.

Rosemary Winnall