



Cranefly News

Dipterists Forum Cranefly Recording Scheme
For Superfamily Tipuloidea & Families Ptychopteridae & Trichoceridae

Newsletter No 29

Spring 2015

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Tipula trifasciculata (non-UK sp.)
(John Kramer)

Workshops in 2014

There were four Cranefly Recording Scheme workshops in 2014; at BENHS, Dinton Pastures, 22-23 March; at Pitsford, Northants, 25 May; at Yarner Wood, Devon 6-7 Sept; and with the Sorby Naturalists at Wardlow, Derbyshire on 27th September. We were able to do some fieldwork at Pitsford and at Yarner Wood.



Examining specimens at Yarner Wood, Devon
(L-R: Dave Boyce, John Kramer and Rob Wolton)

Recording

Thanks to recorders who sent in some interesting records during 2014. Martin Drake sent 880 records which included *Nephrotoma quadristriata* from Anglesey; *Tipula selene*, *T. pierrei*, *T. pruinosa* and a number of other Notable and RDB species. Phil Brighton sent nearly 500 records from his patch in Cheshire and South Lancashire, recording *Nephrotoma crocata* and *N. dorsalis* as well as the rare *Neolimnophila carteri* and *Molophilus bihamatus*. Both Martin and Phil sent in a good list of Trichoceridae and Ptychopteridae. Richard Dickson sent in an interesting list from South Hampshire, which included a specimen of *Geranomyia bezzii* from Fareham. The specimen was caught in a light trap situated about 200 yards from the upper tidal limit of the Wallington estuary. He also recorded *Tanyptera nigricornis* and *Tipula alpium*.

Any remaining records would be gratefully received.

John Kramer

Craneflies and Ecology

In the previous edition Alan Stubbs, with reference to our Caernarvonshire field meeting, referred to the paper published by Barnes in the Journal of Ecology 13, in 1926. Titled 'The ecological distribution of adult crane flies in Carnarvonshire', it was perhaps the first paper on the ecology of British Crane flies. Barnes worked in the Entomology Lab. at Bangor University.

He listed 16 different habitat types. Some of them like Coniferous Woods (4), Peat areas (13), Open mountain (a) bracken areas (8), are relatively uniform. However, type 1 was 'The immediate neighbourhood of lakes, streams and rivers ...' and each of these has a different range of environmental factors and consequently a different community of insects associated with it. Today we might want to separate out species found in each one of those type 1 habitats and even sub-divide according to the surrounding vegetation. Absence of a species may well correlate with the lack of a key habitat requirement.

In addition to features of the macrohabitat such as geology, soil type and plant cover, it is worth recording the wetness of the soil, the degree of shade, and the rate of flow of any water mass. Adult flies may disperse and so their presence may be misleading, but often they lay eggs near to where they emerged and indicate the habitat requirements of their larvae. This is indicated by both of the reports above.

Once larvae are found, some can be allowed to develop and others dissected to reveal the gut contents; this may reveal more detail about their ecological niche and the role they play in the soil community. High-resolution food webs can also be constructed.

John Kramer

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Field Work Reports

Craneflies in Moth Traps at Pitsford Water, 2013-2014

Pitsford Water Nature Reserve is managed by the Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire in Northamptonshire. The staff and volunteers run two MV moth traps throughout the year. Although the traps are set up to monitor moth presence at the site, there is a by-catch of other insects, including diptera. Amongst the diptera, craneflies form a significant component and this article summarises the findings over the past two years. The results cannot be claimed to represent all species occurring as the by-catch is not always collected by the volunteers, although the rate is improving. When collecting is carried out both traps are collected so comparisons between traps are feasible. However the collecting effort between years is different so comparisons cannot be made over time.

The two traps are placed within 100m of each other but in different biomes. Trap 1 is on the shore of the reservoir. To the North and West there is a substantial area of open water, making the trap visible from at least 1km away.



John Showers

Trap 1: Shore of the Reservoir

The extent of the draw-down is dependent on local Summer rainfall but also on topping up with pumped-in water by Anglian Water.

On the landward side is a grassy ride backed by mixed plantation woodland with dense bramble understory. The woodland was planted in the mid-1950s when the reservoir was constructed and forms a significant part of the site's land.

Continued.



John Showers

Trap 2: Woodland Clearing

Table showing numbers of cranefly species recorded at each MV trap in 2013 and 2014.

TIPULIDAE	2013 Trap 1	2014 Trap 1	2013 Trap 2	2014 Trap 2	LIMONIIDAE	2013 Trap 1	2014 Trap 1	2013 Trap 2	2014 Trap 2
<i>Nephrotoma appendiculata</i>	1	1	1	1	<i>Austrolimnophila ochracea</i>	1			
<i>N. flavescens</i>	25	2	2		<i>Helius pallirostris</i>		1		
<i>N. quadrifaria</i>	2		4	1	<i>Limonia nubeculosa</i>				1
<i>Tipula fascipennis</i>		1			<i>Molophilus appendiculatus</i>		1		
<i>T. lateralis</i>	5				<i>Ormosia nodulosa</i>			2	3
<i>T. lunata</i>	1		1		<i>Phylidorea ferruginea</i>	2	2		
<i>T. obsoleta</i>	3	7			<i>Pilaria discicollis</i>			1	
<i>T. oleracea</i>	9	3	2	1	<i>P. fuscipennis</i>			1	
<i>T. pagana</i>	1	2			<i>Rhipidia maculata</i>	1			2
<i>T. paludosa</i>	3	3			<i>Symplecta stictica</i>	1			
<i>T. scripta</i>			1		<i>Trimicra pilipes</i>		3		2
<i>T. subcunctans</i>		1							
<i>T. vittata</i>		1							

The shoreline consists of some areas of bare mud with other areas of dense reed and reed sweet grass. In late Summer/Autumn there can be a significant draw-down zone of mud populated by opportunistic plants, including mudwort (*Limosella aquatica*).

Trap 2 is situated further inland in a woodland clearing with little exposure to open countryside. The woodland is again mixed Scots Pine with Oak, Ash, Sycamore and Poplar nearby. Table 1 shows the numbers of species recorded at each trap in 2013 and 2014.

After only two years of intermittent recording it is too early to say whether there is a significant difference between the two traps. 19 species were recorded from Trap 1, and 12 species from Trap 2. This could be due to the greater visibility of Trap 1 but also to the wetter and more diverse surrounding habitats. Recording will continue in 2015.

I hope this short note will encourage other dipterists to contact local moth trappers about collecting the Diptera by-catch.

My thanks go to Sarah Gibbs, Senior Reserve Officer and Mischa Furfaro, Reserve Officer for supporting the recording of diptera at the site and to Mischa and the various volunteers who collected craneflies whilst checking the moth traps.

John Showers

Pitfall-trapping - a very productive collecting method for moorland crane flies

During 2013 and 2014 the author was contracted by Natural England to carry out a sample survey of invertebrates across the West Penwith Moors of

West Cornwall. Standardised sampling techniques were to be applied to predetermined sampling stations, the sites having been selected by David Heaver in consultation with Andrew McDouall. The techniques are detailed in Drake et al (2007 Natural England Research Report NERR005) and included pitfall trapping, sweep-netting and suction sampling. The objective was to collect standardised data on the species presence and abundance which can then be repeated periodically and provide an evidence base for monitoring. In reality, sweep-netting proved difficult to apply due to strong winds for part of the survey periods and was replaced by beating where feasible.

Although only a restricted range of crane fly species were found and the numbers taken are also relatively low, the data does provide some intriguing pointers. The most striking feature of the data set is the value of pitfall trapping for moorland crane flies, in comparison with more typical sweep-netting. The largest catches by far were from the lines of pitfall traps, and three limoniid species were detected solely by this methodology. I have never considered pitfall trapping as a useful technique for crane flies previously and I suspect that few readers will have either, so this is a very significant conclusion. In exposed moorland situations crane fly activity might be expected to keep low in order to avoid being swept away; also female activity will necessarily be low while seeking oviposition sites. The latter does seem to be the most likely explanation however as gross male numbers in pitfall traps were broadly comparable with those taken by sweep-netting – see table below:

Species	Pitfalls		Sweeping		Beating		Suction		Most productive
	f	m	f	m	f	m	f	m	
<i>Dicranophragma nemorale</i>	1								Pitfalls
<i>Euphyllidorea meigenii</i>	1		1						
<i>Limonia dilutior</i>	7	1							Pitfalls
<i>Molophilus occultus</i>				1				1	
<i>Phyllidorea fulvonervosa</i>			1	2					Sweeping
<i>Pilaria discicollis</i>	1								Pitfalls
<i>Tipula confusa</i>	1	1		4					Sweeping
<i>T. fulvipennis</i>			1	1					Sweeping
<i>T. melanoceros</i>	3	11	2	10				1	Pitfalls
<i>T. oleracea</i>				1					Sweeping
<i>T. paludosa</i>	81	21	3	7	1	1			Pitfalls
Totals by gender	95	34	8	26	1	1	0	2	
Grand Totals	129		34		2		2		

Table showing cranefly catches using various techniques

Of course one needs to bear in mind that the numbers across the various techniques are not directly comparable as the sampling effort varies considerably – the lines of 9 pitfalls each on the 26 sampled sites were operating 24 hours for seven days, whereas sweep-netting and suction sampling were carried-out

over about 30 minute periods during the warmer part of single days. The catches were also dominated by a single common species. The data is really only worth printing here to emphasise the curious pitfall-trapping results.

Keith Alexander

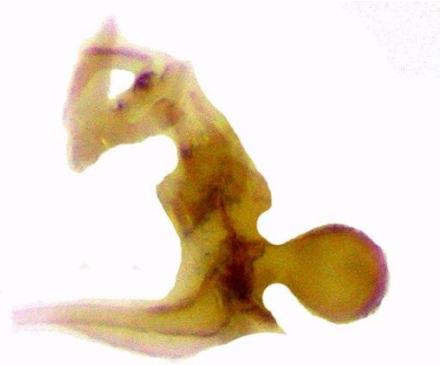
Species Notes

A new Species of limoniid crane fly, *Pilaria nigropunctata* (Agrell, 1945) added to British List

In *Dipterists Digest* 2014, Vol. 21 No. 2 184-88, there is an important paper by Martin Drake and Alan Stubbs: '*Pilaria nigropunctata* (Agrell) (Diptera, Limoniidae) in Britain.' It reports the addition to the British list of this species, with drawings of identifying features and details of its locations and habitat.

Photo (right): *P. nigropunctata* – Aedeageal Complex

John Kramer



John Kramer

New Papers in *Dipterists Digest*

A number of interesting papers relating to Crane flies have appeared in the *Dipterists Digest* during 2014.

In Vol. 21 No. 1 there were:

- Ian Sims: *Ctenophora ornata* Meigen (Diptera, Tipulidae) at Jealott's Hill, Berkshire.
- G. H. Green: Old traditional apple orchards as a development habitat for *Ctenophora pectinicornis* (Linnaeus) (Diptera, Tipulidae) in Worcestershire.
- David Heaver: Further observations on the ecology of *Ellipteroides alboscuteatus* (von Roser) (Diptera, Limoniidae) in England and Wales.
- John Kramer: A second record of *Tipula (Pterelachisus) trifasciculata* (Diptera, Tipulidae) Theowald in France.

The paper by Rob. Wolton *et al* on the Diversity of Diptera associated with a British hedge contained many references to crane flies. 70 species were recorded, including 26 species captured by simple emergence traps over soil. Seven of these species belong to the genus *Molophilus*, which gives some indication of the importance of this genus in the soil community.

In addition, the report of the 2013 *Dipterists Day Exhibits* contained many interesting records including *Tipula truncorum* from Sandwell Valley near West Bromwich. A total of 58 species of crane flies were recorded from Sot's Hole Local Nature Reserve in the Sandwell Valley (SP011923) by Mick Bloxham. There was also another display of interesting crane flies from Birmingham and the Black Country where a number of larvae were found by S. Falk and S. Lane. These included larvae of *Dicranomyia lucida*, in a rich mud seepage, the aquatic larvae of *Dicranota bimaculata* in stream beds and margins, and of *Metalimnobia bifasciata*, found in fungi in open woodland.

Martin Drake and Alan Stubbs's article (Vol. 21 (2)) '*Pilaria nigropunctata* (Agrell) (Diptera, Limoniidae) in Britain.' is discussed separately at the top of the page.

John Kramer

A New Fennoscandian Limoniid

Jukka Salmela in Finland has described a new species in the genus *Dicranomyia*, subgenus *Idiopyga*. Follow the link to read the very impressive paper. <http://bdj.pensoft.net/articles.php?id=4238>

John Kramer

Pedicia (Crunobia) littoralis



Andrew Cunningham

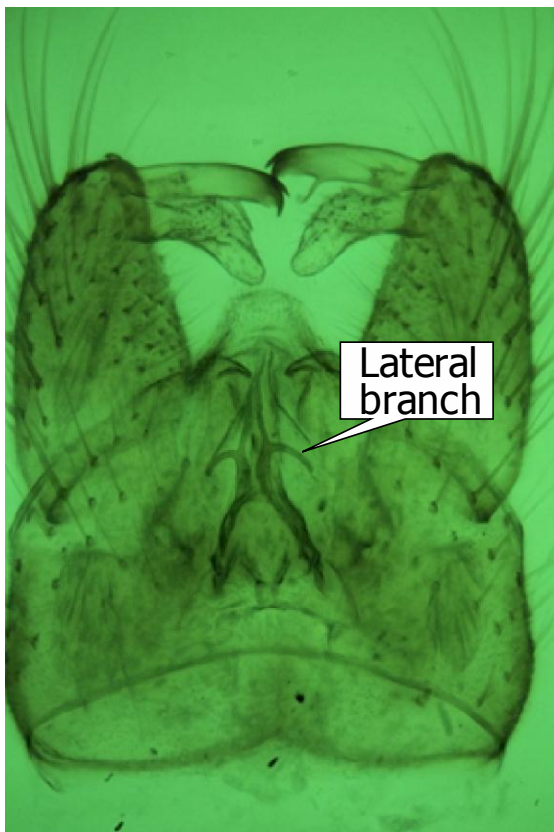
This photo was sent to me by Andrew Cunningham. The specimen was captured from the margin of a small river in North Devon. I have never seen a specimen of *P. littoralis* with such short wings and, without any indication of scale, it has the proportions of a mycetophilid.

John Kramer

The Genus *Paradelphomyia*

Small limnophiline crane flies belonging to the genus *Paradelphomyia* are relatively easy to identify due to the dark pleural stripe and hairs on the wings. Identification to species level however has been more problematic, especially for the rarer ones.

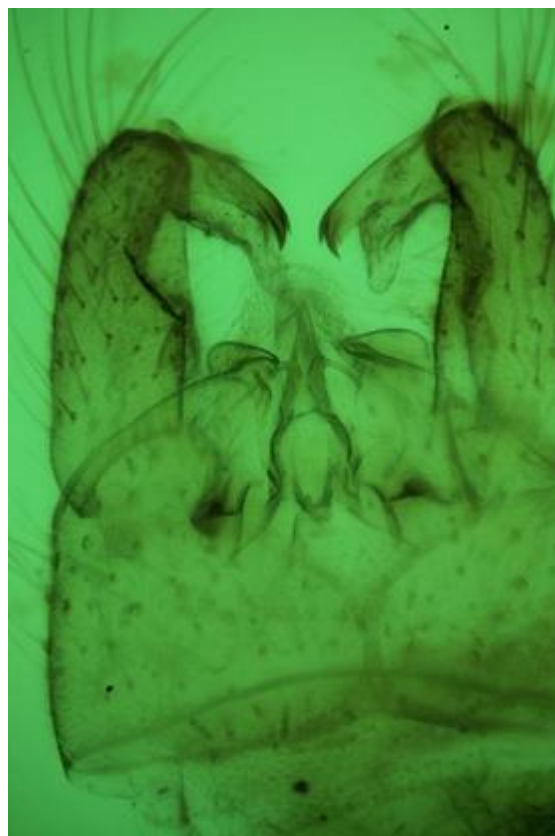
Problems with the identification of *Paradelphomyia dalei* (Edwards, 1939) have been caused mainly by lack of illustrations. Firstly, the genital apodeme is similar to that of *P. ecalcarata*. Edwards (1939) writes: 'A small species resembling *O. ecalcaratus* Edw (*P. ecalcarata*) in [...] the presence of a pair of sharp-pointed processes extending laterally about the middle of the ventral fork of the male hypopygium. (See photos on p. 5).



Mick Blythe

Photo 1: *P. ealcarata* Edwards

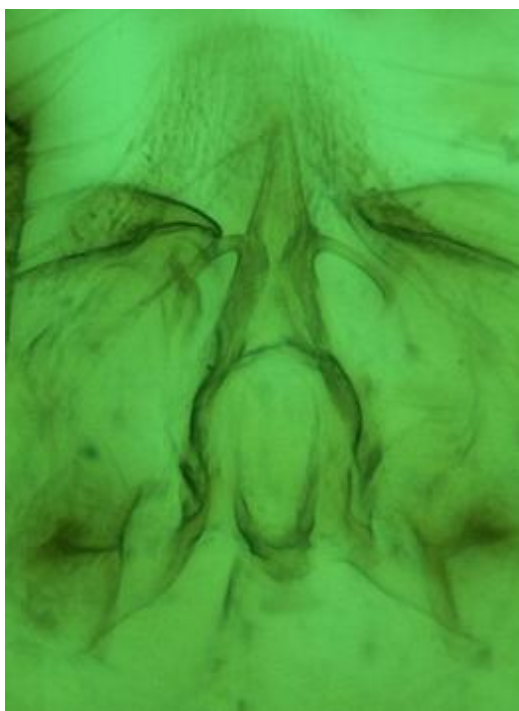
Ventral view to show the genital apodeme.



Mick Blythe

Photo 2: *P. dalei* Edwards

Ventral View to show the genital apodeme.



Mick Blythe

Photo 3: *P. dalei* Edwards

Magnified view of genital apodeme (ventral).

Apodemes are internal skeletal components, and the genital apodemes are involved in the function of the genital muscles which are attached to them. In the males this has to do with the expulsion of sperm from the sperm sac during copulation. In females, the genital apodemes, or genital plates, have to do with egg-laying and perhaps with the transfer of stored sperm from spermatheca to eggs.

NB. These fine lateral branches can be missed with poor lighting, poor resolution, or a poor specimen. Since the genital apodemes are so similar, how can we distinguish *P. dalei* and *P. ealcarata*?

Edwards lists a number of ways:

1. The top of the thorax (prescutum) of *P. dalei* has four darker longitudinal stripes when viewed from above, more obvious in life.
2. Hairs on wings almost confined to the part beyond the discal cell. None in the discal cell or basal cells of *P. dalei*.
3. Hypopygium differing from *P. ealcarata* chiefly in the length of the penis, which in *P. dalei*, is almost twice as long as the ventral fork, and bent instead of straight.

Criterion 2 has been found not to hold true since hairs have been found in the discal cells of specimens with prescutal stripes and the *dalei*-type genital apodeme.

So two features are needed; if you have a *Paradelphomyia* with 4 prescutal stripes and a genital apodeme with lateral processes, call it *dalei*.

Preserving specimens of *Paradelphomyia* in ethanol causes contraction of the thoracic muscles so that a pale median line of transparent cuticle appears down the thoracic dorsum. This is an artefact and not useful for identification. It is hoped to present a paper on the Genus *Paradelphomyia* in the next Dipterists Digest.

John Kramer

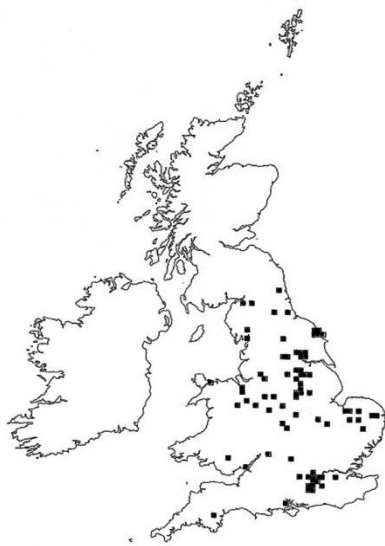
Next Copy Deadline

The author's deadline for the Autumn 2015, issue 30, of Crane-fly News is **17 July 2015**

Distribution Maps for Species discussed in Cranefly News 29, Spring 2015 © NBN

Distribution maps of the following species appear in earlier editions of Cranefly News:

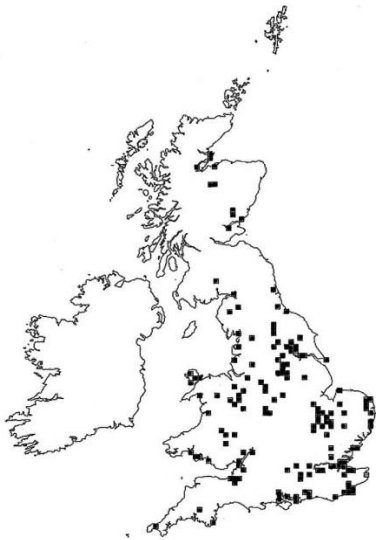
Neolimnophila carteri (27, Spring 2014), *Nephrotoma quadristriata* & *Molophilus bihamatus* (28, Autumn 2014). No map is available for *Pilaria nigropunctata*.



Nephrotoma crocata



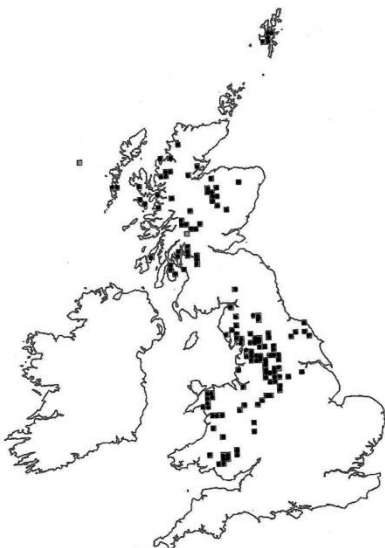
Nephrotoma dorsalis,



Tipula pierrei



Tipula selene



Tipula alpium



Gonomyia bezzii