Oestridae Study Group

Newsletter 2 Spring 2013

The previous newsletter was published in Bulletin No. 69: Spring 2010. Regrettably, I have had precious little time to devote to Oestridae thereafter; however, some progress has been made on research, and I am grateful to the following gentlemen from whom I have received contributions of records and notes: Dr. A. A. Allen, Stuart Ball, Mike Bloxham, John Bratton, Don Cotton, John Deeming, Richard Dickson, Martin Drake, George Else, Martin Harvey, Martin Love, Mick Parker, Ivan Perry, Eric Philp and Malcolm Smart.

No sooner did I complete the last newsletter than I became aware of a splendid book on World Oestridae by Colwell *et al.* (2006). This book is not cheap, but would be a fine addition to anyone's library of natural history books.

In order to understand, as far as is possible, the historic distribution of Oestridae in Britain and Ireland; I intended to undertake both a search of the literature, and an examination of historic material [specimens]. To date, the literature search has barely commenced, but I have made some progress with investigation of material held in museums and other institutions.

Regarding modern [post 2000] records of Oestridae: I can currently report *Gasterophilus intestinalis* (De Geer) from Ireland; and the following six species from Britain: *Cephenemyia auribarbis* (Meigen), *Gasterophilus intestinalis* (De Geer), *G. nasalis* (Linnaeus), *G. pecorum* (Linnaeus), *Hypoderma diana* Brauer, and *Oestrus ovis* Linnaeus.

Gasterophilus intestinalis (De Geer) in *Historia Insectorum* [published in 1710]

I have no doubt that an insect described on page 273 of John Ray's posthumously-published *Historia Insectorum* was a male *Gasterophilus intestinalis* (De Geer). It was found near Settle in vice-county 64 [Mid West Yorkshire]; probably during 1660, and very probably at the locality marked on modern maps as Rye Loaf Hill [around SD864633]. The identity of John Ray's 'Hinckelhaugh insect' was subject to some discussion during the 19th century, *e.g*. by Dale (1852) and Bloomfield (1883); both of whom were perplexed as to what the species could be. There was much further discussion in Grayson (2005a, 2005b & 2010). Raven (1950) deduced where Ray's locality 'Hinckelhaugh' was, and stated it had been explored by John Ray (1628-1705) and Francis Willughby (1635-1672) during 1660.

Ray's polynomial scientific description of, and notes on, his 'Hinckelhaugh insect' on page 273 of *Historia Insectorum* were as follows:

Musca Apiformis montana, *corpore breviore*, *thorace nigro*, *abdomine annulis nigris et rubris alternis vario*. Ape vulgari mellifica paulò brevior est, thorace nigro, abdomine annulis nigris et rubris alternis composito. Alae cinereae transversa linea nigra prope imam partem notatae. In monte praealto *Hinckelhaugh* dicto prope *Settle* Comitatûs Eboracensis oppidulum, inveni.

Valdè importuna erat et molesta circa montis cacumen. Aculeum non habet, verum forcipes ad caudam iis quae in erucarum ore similes.

My late friend Philip O. Smiley translated this into current English as:

Bee-shaped mountain fly, shortish body, black thorax, abdomen marked with alternating black and red rings. It is a little shorter than the common honey-bee, with black thorax, and abdomen marked with alternating black and red rings. The wings are ash-coloured and marked near the end part with a black line across. I found one on a very high hill called *Hinckelhaugh* near the small town of *Settle* in the county of Yorkshire. It was a very aggressive nuisance near the top of the hill. It has no sting, but has pincers in the tail similar to those in the mouths of caterpillars.

Ray's description is compatible with a male *Gasterophilus intestinalis* (De Geer), and does not plausibly agree with any other insect. The 'pincers' are the genital appendages, the abdominal colour pattern is agreeable with some specimens.

Gasterophilus intestinalis (De Geer) from Dartmoor and Exmoor 2011

I collected 16 *Gasterophilus intestinalis* larvae or puparia from horse dung during the week of the Dipterists Forum Summer Field Meeting 2011, which was based at the University of Exeter between 2nd to 9th of July 2011. It was inevitable that I would spend some time investigating horse dung for the possibility of *Gasterophilus* larvae, investigating high points in the landscape for the possibility of adult Oestridae, and observing horses and sheep, and the immediate vicinities of those animals, for the possibility of Oestridae activity. My aforementioned activities proved fruitless, apart from the investigation of horse dung, which was carried out far more often than I anticipated, due to frequent inclement weather preventing other entomological studies.

Some of the sites I investigated during the Dipterists Forum Summer Field Week had no suitable hosts for Oestridae, but horse [pony] dung was available for investigation in many areas, and was particularly abundant on Dartmoor. I also spent some time observing sheep, and walls in their vicinity, for the possibility of *Oestrus ovis*, but nothing was seen.

During the week, approximately 1,360 dung heaps were investigated, but only 16 *Gasterophilus* larvae or puparia were found. These were all found in dung at, or close to, high points in the landscape. The area around Saddle Tor proved particularly fruitful with 10 found on 8.7.2011, including three from a single dung-heap. Otherwise, no more than one *Gasterophilus* was found in any single dung-heap, many of which had been at least partially picked over by crows [Corvidae]. It is possible that the ponies in some areas investigated had been wormed to eradicate *Gasterophilus* infestations. Although many ponies appear to be free-ranging; in reality, walls and cattle-grids etc. retain groups of ponies within boundaries.

Table giving details of investigations of horse dung for *Gasterophilus* larvae and puparia

DATE	AREA AND NATIONAL GRID	APPROXIMATE	NO. OF	NOTES

	REFERENCE * = and surrounding hectads	NUMBER OF DUNG HEAPS INVESTIGATED	LARVAE OR PUPARIA FOUND IN DUNG	
3.7.2011	Dawlish Warren (SX988793*)	30	None	Only a few ponies present, and very little fresh dung
4.7.2011	Roadside east of Bel Tor (SX699731)	10	None	No ponies present, but some fresh dung
4.7.2011	Yar Tor (SX677740*), Sharp Tor (SX686729*) and Mel Tor (SX693724*)	150	None	Most of the ponies here seem in very good condition, often with recently-clipped coats, possibly all 'wormed'
5.7.2011	Haytor Rocks (SX756772*)	50	1	No ponies, but abundant dung, including fresh dung. A larva was found in dung that was a day or two old.
5.7.2011	Hemsworthy Gate (SX740761*), Top Tor and Pil Tor (SX735761*)	200	3	A few ponies, abundant dung
6.7.2011	Car park area close to Haytor Rocks (SX757766*)	50	None	A group of ponies with foals, abundant dung, including fresh dung
6.7.2011	Hemsworthy Gate car park area (SX740761*)	100	None	No ponies, but abundant dung, including fresh dung
6.7.2011	Car park area by crossroads at Buckland Common (SX739743*)	80	None	No ponies, but abundant dung, including fresh dung
7.7.2011	Yarner Wood (SX786790*)	50	None	Field with 5 ponies, plus abundant dung on adjacent
8.7.2011	Heathland between the main car park near Haytor Rocks (SX757766*) and the car park to the west.	120	None	A few ponies. Abundant dung, including fresh dung.
8.7.2011	Saddle Tor (SX749763*)	300	10	Several small groups of ponies, abundant dung, including fresh dung. All larvae and the puparium were found in dung around Saddle Tor.
9.7.2011	Countisbury Common (SS757494*)	120	2	About 20 ponies, abundant dung, some fresh
9.7.2011	Porlock Common (SS843462*)	80	None	A few ponies, abundant dung, including much fresh dung
9.7.2011	Porlock Common (SS862462)	20	None	No ponies, some fresh dung

The 16 *Gasterophilus intestinalis* which had been collected as larvae or puparia were all successfully reared to adults, 8 of each sex. Following their removal from dung, the larvae or puparia were placed on soil, sand and grass, in partitioned clear plastic boxes with breathing holes. All the larvae which had not commenced to pupariate, did so no more than a day after being collected. Larvae numbers 5 and 6 in the table below were commencing pupariation when they were removed from dung, and would have pupariated within the dung, as did

numbers 9 and 16. Puparium number 3 was found on top of old dried-out dung. All adults emerged during the early morning, and all but a couple were capable of very active flight before noon. The following were noted to be very active at the following times on their date of emergence from their puparia: 9.30 am; numbers 5 and 14: 10.00 am; numbers 1, 2 and 9; noon number 3. On one occasion, two males were noted side by side producing a piping noise.

Table giving details of *Gasterophilus intestinalis* larvae and puparia reared to adults

No.	Stage Collected from Horse Dung	Date of Collection	Locality	National Grid Reference	Date of Pupariation	Date Imago Emerged	Sex of Imago
1	Larva	5.7.2011	Haytor Rocks	SX756772	6.7.2011	4.8.2011	Male
2	Larva	5.7.2011	between Pil Tor and Top Tor	SX735761	6.7.2011	4.8.2011	Female
3	Puparium	5.7.2011	between Pil Tor and Top Tor	SX735761	Not known	30.7.2011	Female
4	Larva	5.7.2011	between Hemsworthy Gate and Top Tor	SX740761	6.7.2011	2.8.2011	Female
5	Larva	8.7.2011	Saddle Tor	SX749763	9.7.2011	5.8.2011	Female
6	Larva	8.7.2011	Saddle Tor	SX749763	9.7.2011	7.8.2011	Female
7	Larva	8.7.2011	Saddle Tor	SX751763	9.7.2011	7.8.2011	Male
8	Larva	8.7.2011	Saddle Tor	SX751763	9.7.2011	7.8.2011	Male
9	Puparium	8.7.2011	Saddle Tor	SX751763	Not known	4.8.2011	Male
10	Larva	8.7.2011	Saddle Tor	SX750764	9.7.2011	8.8.2011	Female
11	Larva	8.7.2011	Saddle Tor	SX750764	9.7.2011	8.8.2011	Male
12	Larva	8.7.2011	Saddle Tor	SX750764	9.7.2011	8.8.2011	Male
13	Larva	8.7.2011	Saddle Tor	SX749763	9.7.2011	8.8.2011	Female
14	Larva	8.7.2011	Saddle Tor	SX749763	9.7.2011	9.8.2011	Female
15	Larva	9.7.2011	Countisbury Common	SS757494	10.7.2011	11.8.2011	Male
16	Puparium	9.7.2011	Countisbury Common	SS757494	Not known	7.8.2011	Male

Specimens in collections

I am grateful to Pip Strang for facilitating access to the collections in The Yorkshire Museum.

The Yorkshire Museum, York

3 adult Oestridae are contained in a 12-drawer cabinet containing British list dry Diptera material.

Material With Locality Data

Cephenemyia auribarbis (Meigen)
Scotland: Westerness (vc 97): 1♀, Corrour, 1918, altitude over 1000 feet, leg. W. E. Clarke, det. P. H. Grimshaw [sub nom. *rufibarbis* (Meigen) = *auribarbis* (Meigen)].

Gasterophilus intestinalis (De Geer)

England: West Kent (vc 16): 1♀, Isle of Grain, "pupa found in fresh horse droppings 15.6.1924, imago 30.7.1924", det. D. H. Smith, 4.1993.

Hypoderma diana Brauer
Scotland: Westerness (vc 97): 1♀, Corrour, 1918, leg. W. E. Clarke, [det. P. H. Grimshaw].

Contact List

OESTRIDAE STUDY GROUP ORGANISER:
Andrew Grayson, 56, Piercy End, Kirkbymoorside, York, North Yorkshire, YO62 6DF, ENGLAND. E-mail: andrewgrayson1962@live.co.uk

OESTRIDAE STUDY GROUP MEMBERS:
John Bratton, 18, New Street, Menai Bridge, Anglesey, LL59 5HN.
Stuart Campbell, 4, The Laurels, Moreton, Wirral, CH46 3SU, ENGLAND. E-mail: stuartcampbell4@tiscali.co.uk
Charles Dewhurst FRES, E-mail: charles.dewhurst@pngopra.org.pg
Martin Love FRES FLS AIEEM, E-mail: martin@halburnecology.co.uk

Please inform the Oestridae Study Group Organiser if you would like to be added to the Contact List as a 'Group Member'.

References

Bloomfield, E.N. (1883) An Undetermined Yorkshire Insect. *In* Short Notes and Queries. *The Naturalist* **8**: 93-94.
Colwell, D.D., Hall, M.J.R. & Scholl, P.J. [Editors] (2006) The Oestrid Flies: Biology, Host-Parasite Relationships, Impact and Management. Wallingford [UK] & Cambridge [USA]: CABI Publishing.
Dale, J.C. (1852) An Inquiry as to a Species of Fly. *The Naturalist* [edited by B. R. Morris] **2**: 177-178.
Grayson, A. (2005a) The Hinckelhaugh insect in John Ray's posthumous work, *Historia Insectorum*, 1710. *The Naturalist* **130**: 33-36.
Grayson, A. (2005b) John Ray's journeys in Yorkshire between 1660 and 1671. *The Naturalist* **130**: 108.
Grayson, A. (2010) A plausible identity for the 'Hinckelhaugh insect' of John Ray's *Historia Insectorum*, 1710. *The Naturalist* **135**: 127-128.
Raio [Ray] & Lister, M. (1710) *Historia Insectorum*. London: Regiae Societatis [Royal Society], A. & J. Churchill.
Raven, C.E. (1950) *John Ray: Naturalist: His life and works.* Cambridge: Cambridge University Press.

Andrew Grayson 10.12.2012