

surveyed the Hobhole Drain north of Boston, the South Holland Main Drain, south of Spalding, on both of which we already had some information, and started from scratch on the Isle of Axholme, first checking if the pumping station roost was still in use, plus a little bit of work also on the River Ancholme at its northern end. This was a completely new technique which had never been tried before, as all the work on Daubenton's bats so far has been carried out in the Yorkshire Dales! Surveys were carried out mostly in July, with a few going on into August, but by then many parts of the drains were becoming clogged with algae, meaning the bats were dispersing elsewhere.

The results were impressive, producing two potential roosts in bridges, with a third in a tunnel on the Hobhole Drain, and two on the South Holland Main Drain. They also updated information on a known roost in a culvert there, first recorded in 1987 and in continual occupation since. The results for the Isle of Axholme were much less clear-cut. The arrangement of bridges there is not so regular as on a lot of the drains, and we established that the roost at the pumping station was no longer in use. Indeed by the end of the surveying season we still didn't know whether there were any Daubenton's Bats there! The River Ancholme was more productive, but a paucity of bridges and access was a problem there too.

With the exception of the tunnel all the potential roosts were in modern concrete bridges, and the intention in 2015 is to continue with this work to see if it is possible to confirm the presence of the suspected roosts, and also investigate other watercourses, time and personnel allowing, including following up on early records on the Louth canal. The full report on the project so far is available from myself via info@lincsbatgroup.co.uk.

***Elenchus tenuicornis* (Kirby, 1815) (Strepsiptera: Elenchidae):
AN ORDER OF INSECTS NEW TO LINCOLNSHIRE.**

Dr. David Sheppard

During the on-going survey of the insects in Snipe Dales (TF32-68-), a male specimen of a stylopid, *Elenchus tenuicornis* (Kirby, 1815) was taken in a malaise trap during May 2014. At about the same time, a male specimen was taken in a malaise trap at Epworth Turbary (SE75-04-). More male specimens were taken in a malaise trap at Snipe Dales in July and August 2014, and at Epworth Turbary in June 2014. A leafhopper *Criomorpha albomarginatus* (Homoptera: Delphacidae) host with an adult female stylopid was taken at Sotby Meadows (TF20-77-) on 29th June 2014 and another at Deeping Lakes (TF18-08-) on 29th July 2014. The nymphal host of the latter was not identifiable but resembled a species of *Javesella* Fennah, 1963. Although these are the first records of *E. tenuicornis* in Lincolnshire, it is clearly not a rare animal.

Stylopid develops within the bodies of a host insect. The first instar nymphs burst out of the body of the host, probably through the thin intersegmental membranes. The nymphs are free-living triungulinids, which cling to vegetation until they can attach themselves to the body of a potential host. Each nymph burrows into the body of a host, in the case of *E. tenuicornis* into the body of a leafhopper nymph, probably through an intersegmental membrane when this is still soft after shedding of the exoskeleton. Development continues within the body of the host, eventually distorting the abdominal segments and causing malformations of the reproductive organs. The female stylopid matures within the skin of its last larval instar with only the cephalothorax protruding between the abdominal segment of the host. When adult, the female is about 2mm long and occupies almost all of the host's abdomen. The head-end of the male puparium similarly protrudes between the abdominal segments of the host's body and from which the winged adult emerges. The males are free-living with only a hind pair of wings which are characteristically twisted but flatten out to a petal shape. These males live for only a short time, mating

with the females which never leave their host's body. The host leafhopper nymphs never mature to an adult, dying shortly after the male *E. tenuicornis* emerges or the triungulinid nymphs emerge and disperse.

The absence of earlier records for Lincolnshire is probably because only the male is free-living, is short-lived and is very small, about 1.5mm long. The leafhopper hosts have been little-studied in Lincolnshire and are only visibly parasitized during the brief period when the female cephalothorax or male puparium of *E. tenuicornis* protrude between their abdominal segments. The taxonomy of the order has only recently been revised and keys to the British fauna have been difficult to locate. Older classifications of the Strepsiptera considered each species to be host-specific. More recent revisions, such as that of Kathirithamby (1989) have reduced the number of accepted species, recognising that some stylopids can develop in a range of host species. *Elenchus tenuicornis* is recorded as a parasite of some 42 species in 23 genera of leafhoppers (Kathirithamby, 1989). The British list of Strepsiptera has been reduced from 18 species (Kloet & Hincks, 1945) to 15 species (Pope, 1977) to 10 species (Fauna Europaea checklist, accessed 2014). The Lincolnshire specimens were identified using Kinzelbach (1969).

Although I claim this as the first record of a Stylopid in Lincolnshire, both Alan Philips and John Flynn tell me that they have both found stylopised specimens of solitary bees (*Andrena* spp.) in Lincolnshire in the past. However as neither could provide me precise details of these captures and no other records are held in the GLNP database, I have taken the liberty of claiming the glory. Should these specimens be found, they will most probably prove to be *Stylops melittae* Kirby, 1802, which would also be a new record for Lincolnshire.

My thanks go to Alan Philips and John Flynn for providing information on their captures of stylopised bees.

References.

- FAUNA EUROPAEA CHECKLIST OF STREPSIPTERA OF BRITAIN AND NORTHERN IRELAND. www.nhm.ac.uk/research-curation/scientific-resources/biodiversity/uk-biodiversity. Accessed 10/6/2014.
- KATHIRITHAMBY, J., 1989. Review of the Order Strepsiptera. *Systematic Entomology* 14:41-92.
- KINZELBACH, R.K., 1969. *Familie: Stylopidae, Fächerflügler (=Ordnung: Strepsiptera)*. In: Freude, H., Harde, K.W. & Lohse, G.A. (Eds) *Die Käfer Mitteleuropas*. Bd. 8: 139-159.
- KLOET, G.S. & HINCKES, W.D., 1945. *A Check List of British Insects*. Kloet & Hincks, Stockport.
- POPE, R.D., 1977. *A Check List of British Insects. Part 3: Coleoptera and Strepsiptera. Handbooks for the Identification of British Insects Vol XI, Part 3*. Royal Entomological Society of London, London.

OBITUARY

Frank Lammiman 1915-2014

Christine Rieser

Frank Raymond Lammiman was born in Lincolnshire on April 8th 1915 and lived in Ludborough from the age of 3 until he died on Jan 24th 2014. His father had been an agricultural worker and Frank left school at 14 to start work in farming, all aspects of which he enjoyed. Later, after the arrival of his family, he went to work with Fisons where his work included helicopter spraying. After 20 years, Fisons pulled out of the local branch and Frank was made redundant. He then worked for 10 years as manager of Vergettes Granary. He retired in 1980.

With this background he naturally acquired a wide knowledge of soils and habitats for wildlife. He was very observant and had an excellent memory for wild flower species and could remember for many years where an uncommon species had been seen. He kept a ledger of plant records from 1968 -1986 and