

Anthomyiidae Study Group

Newsletter 7

Spring 2009



The last newsletter for this study group was No 6 (February, 1998). Unfortunately since that date I have received few communications regarding the British species, and have myself been occupied with revisions of various genera of Anthomyiidae from other areas, mainly Afrotropical and European.

Reports of some interesting captures were sent to me by Ivan Perry. In Newsletter No 6 he recorded 2 males of *Paregle atrisquama* (Ringdahl) from the River Findhorn area and Bridge of Brown. The first British specimen of this little known species was recorded in the Entomologist's monthly Magazine, 1989, **125**: 220. This was based on the capture of a single male at Cwm Pydew, Merioneth, on 4 July 1987 by Jon Cole, whilst on his way to the Dipterists Forum summer field meeting in Bangor. Only a few male specimens of this species are known from Europe, and Griffiths in his Revision of the Nearctic Anthomyiidae, could only record in 2001 two male specimens from North America. In 2003 Ivan Perry found further males of *P. atrisquama* in the Cairngorms, Inverness-shire, Coire an t-Sneachda. Up to this time the females remained unknown.

When Judy Webb kindly offered to collect Anthomyiidae for me during the 2008 field meeting to Glenmore, I asked her if she would sweep vegetation and flowers in the area around the Cairngorm ski centre, and suggested that she put all the anthomyiids in alcohol. This would enable me to search through all the females in the catch, should any males be recognized. I was very pleased to find in this material two males and two females of *Paregle atrisquama*. The data is: Inverness-shire, Cairngorm ski centre, car park and under chairlift, NH989660, 4.vii.2008, J. Webb. Altogether Judy Webb collected 27 species of Anthomyiidae during the week, which will be added to the records for other families.

British Anthomyiidae study pack

These provisional identification keys to the British species, together with figures of almost all the male genitalia and some females, were originally available as hard copies. These proved to be difficult and expensive to distribute to interested parties. Later it became possible to put them onto a CD, which was available for a small postage charge. They are now available at no charge to download as PDF files, which are viewable using the free Adobe Acrobat Reader. To download the files, go to tachinidae.org.uk/ Under Tachinids on the dropdown menu click on Anthomyiids and download the keys etc. Then email me at mackland@btinternet.com with your name and address, and I will send the password to open the files. This enables me to keep a record of users, and the email will include any corrections and errata.

Recent work on Anthomyiidae

At present there are (excluding China) only four dipterists working on the taxonomy of the Anthomyiidae of various regions: Graham Griffiths has been revising the Nearctic species since 1982. This monumental work has now reached 2635 pages, with only the large genus *Botanophila* and a few small genera still to do. This revision has many implications for the Palaearctic region, as quite a number of species are common to both regions, and I have

found that several recently described Nearctic species also occur in Mongolia and Nepal. Verner Michelsen is currently publishing papers on new European species which have been overlooked due to rarity or confusion with already described species. Masaaki Suwa in Japan in 1974 produced the first authoritative work on Japanese Anthomyiidae, and has since then kept it up to date with many new species, and also revisions of Nepalese and Taiwanese species. I myself have published revisions (1995-2008) of the Afrotropical species of the genera *Emmesomyia*, *Anthomyia* and *Delia*. Some of the results of European investigations have still to be incorporated in the status of the British species.

Identification of Anthomyiidae

It is generally thought that species of Anthomyiidae are difficult to identify. This perception probably originated from the time when little consideration was given to the male genitalia. Schnabl and Dziedzicki were the first to figure the genitalia in 1911, followed by Collin in 1921 and Hockett in America in 1924. Previously it was common practice to group species into genera based on various chaetotactic characters; for example the common species now called *Pegoplata aestiva* (Meigen) was included in *Paregle* with other species possessing a strongly protruding mouth margin, such as *Paregle audacula* (Harris). But examination of the male genitalia shows that *aestiva* is clearly related to a monophyletic group which includes *infirma* (Meigen). The character of an anteroventral seta on the mid tibia, and a protruding mouth margin, which are present on *aestiva* but absent in *infirma* indicates that these characters are of no phylogenetic importance, at least in this instance.

I mention this because it explains why it is so difficult to write a satisfactory key to the genera of Anthomyiidae. In a sense one knows the genus when one recognizes the species! This is of little help to the beginner faced with an unknown species and a generic key which is difficult to use because the author has attempted to use external characters which are not unique to the genera. Emden's key to the British Tachinidae is a case in point, though one can understand his problem when one learns that he was required to write a phylogenetic key using 'artificial' characters. I have attempted to overcome this problem in my keys to genera by splitting some large genera into several artificial groups (for example *Delia* and *Botanophila*), which are listed as *Delia* 1 etc.

Initially I recommend dealing with males only, as females are somewhat more difficult, and attempt to run down the specimen in the keys, and if you arrive at what seems to be the correct result, examine the genitalia preferably by macerating the end of the abdomen until it is fairly transparent and transferring it to glycerol in a solid watch glass. With minuten pins mounted in wooden sticks (I use cocktail sticks), dissect the hypogygium and sternite V away from the other parts under the microscope. It should not be difficult to compare with the figures and check if you have arrived at the correct genus or even species. Once you have built up a reference collection of reliably named species, further study of the external characters of the species will make it much easier to recognize them without dissection.

Recording Scheme

There is no recording scheme for Anthomyiidae in operation at present. I have found that the entry of such data as I have into MapMate is a very time consuming process. No doubt this is the case for Recorder. In MapMate it is necessary to know the map reference, and in the majority of records taken from collections of Anthomyiidae which are reliably named, such as Assis-Fonseca's in the BMNH and the Verrall-Collin collection in Oxford, the data merely consists of a locality, date, and collector. The time taken in looking up the map reference, and then having to enter all sorts of other data such as status, determiner, habitat, administrative region etc, when all one wants to know is the approximate distribution of the species in the UK, is prohibitive. I would be interested to know how the existing recording

schemes manage this. If anyone is willing to undertake this work, I will send them all my MapMate records, and email them further records as they become available.

Acknowledgements

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Michael Ackland, 5 Pond End, Pymore, Bridport, Dorset, DT6 5SB
01308 420254
mackland@btinternet.com

