THE PIERCER

A PIPUNCULIDAE NEWSHEET, NO 3 **February 2002**

Introduction

The last issue of The Piercer was almost exactly 10 years ago. The driving force behind a newsheet for the Pipunculidae was Alan Stubbs, as has been the case for so many worthy projects within the Dipterists Forum. In that issue (No 2) Alan expressed his relief that the newsheet had continued beyond the first issue (May, 1989), and included a large amount of data on species new to Britain, ecological data, and collecting techniques.

He pointed out that at that time it was a choatic period prior to his retirement from the NCC, and that I was also about to retire, with the hope that I should have more time to devote to entomology. We all know that since that date Alan has been fully occupied in updating his syrphid book, and producing the larger Brachycera volume (not to mention writing test keys for the crane-flies); I have also been fairly busy with the Anthomyiidae, both British and many other faunal areas. I hope that this 'resuscitated' newsheet will result in further issues.

In sorting out and identifying pipunculids for the Oxford University Museum collection (in conjunction with rehousing the Verrall-Collin Collection) I made many drawings of the genitalia of various genera for my own use, without any specific intention of publishing them in any serious revisions. I made use of some of these drawing when I had to describe the odd species that I came across. Recently I began to think that it would be useful to publish them, together with some notes, and incorporate any new work that had been published on the continent.

I decided that a further issue of the Piercer with some new test keys and comprehensive sets of genitalia drawings of the species of British Eudorylas might be of use to those who have already taken an interest in this family, and might even encourage others to collect and identify these flies, even if it is often necessary to dissect the genitalia to arrive at a definite conclusion in some cases.

I would like to dedicate this issue to Alan, for without his encouragement I am sure that there would be no Piercer. I have also received encouragement from Dr Marc De Meyer in Belgium, and Dr Jeff Skevington in Canada, who have done so much to raised the standard of pipunculid taxonomy in the last ten years, so that the world position is now such that real progress can be made with this family. I should not forget to mention Dr Albers Albert, whose revision of the world species of Dorylomorpha in 1990 set the standard, especially his detailed figures, and which was a spur to my own efforts in this field.

In a recent phylogenetic classification of the Eudorylini, Skevington & Yeates (2001) introduce some new morphological terminology, which I have followed. In the brachyceran antennae the enlarged flagellum (third antennal segment, first flagellomere) is now called the postpedicel. In the male genitalia, the aedeagus (aedeagal guide) is called the phallic guide, and the ejaculatory ducts (aedeagus, penis) are called the phallic ducts.

Many of the small external characters of use in identifying Eudoryline pipunculids are quite difficult to express in words or figures; these include colour and intensity of dusting, small differences in eye facet size, the shape and outline of the membranous area on syntegosternite 8. The latter can also be variable, and can change in appearance due to the way that dried material shrinks and warps. With fully hardened adults it should be possible to recognise the majority of the British males without dissection, except in some groups (*obscurus-longifrons-*

arcanus group, and *zonellus-zonata-inferus* group). Most of the figures of the synsternotergite are made from undissected specimens. It should be remembered that after maceration and clearing of the genital capsule, the shape and size of the membranous area is significantly changed; therefore it is a good idea to make a note or sketch of the dried condition of the syntergosternite 8 before dissection. Use of the keys should be combined with careful comparison of dissected genitalia with the figures at least initially. Some reliably named voucher specimens are also of value in the Pipinculidae

The tribe Eudorylini, as far as the British species are concerned, consists of the genera *Eudorylas*, *Claraeola*, and *Dasydorylas*, which were all previously species of *Eudorylas*. For a full diagnosis, see Skevington & Yeates, (2001: 427). In Britain, they are species with the propleural fan absent, mesonotal setae absent, mesonotal pilosity reduced to two dorsocentral rows of short setulae, pterostigma present, syntergosternite 8 and epandrium enlarged, and 6 sternite reduced. I include a key to British genera of Pipunculidae, which is adapted from Skevington & Yeates, 2001. I thank Dr Skevington and Blackwells Publishing for permission to use this key.

Legends to Figures

Male

A	Syntergosternite 8, caudal view	K	Ejaculatory apodeme
B	Syntergosternite 8, dorsal view	L	Sternite 5
C	Syntergosternite 8, lateral view		
E	End of abdomen, dorso-ventral view	Female	
F	Epandrium and surstyli, dorsal view		
G	Surstyli, lateral view	M	Ovipositor, dorsal view
H	Phallic guide, ventral view	N	Ovipositor, lateral view
I	Phallic guide, lateral view	O	Base of abdomen, dorsal
J	Phallic ducts	P	End of abdomen, dorsal view

Key to genera of British Pipunculidae

(adapted from Skevington, 2001)

1 Hind margin of eye deeply incised medially ..... **Nephrocerus**
_ Hind margin of eye straight or nearly so 2
2 Ocellar setae distinct; occiput very narrow, scarcely projecting behind eyes; head hemispherical; margin of mesonotum and scutellum with strong setae. (Chalarinae)..... 3
_ Ocellar setae reduced or absent; occiput swollen and plainly visible in lateral view; head spherical; margin of mesonotum and scutellum without strong stae. (Pipunculinae)..... 5
3 Wing venation incomplete, cell M open, cross-vein dm-cu absent, vein m reduced ..... **Chalarus**
_ Wing venation complete, m and dm-cu present, cell M closed..... 4
4 Vein M2 present; femora without ventral protuberances ..... **Verrallia**
– Vein M2 absent; femora usually with ventral protuberances ..... **Jassidophaga**
5 Propleuron with a fan of setae 7
– Propleuron bare 9
6 Frons swollen; face narrowed; discal median cell not expanded medially. (Microcephalopsini) .....**Microcephalops**
– Frons not swollen; face not narrowed; discal median cell expanded medially 7
7 At least anterior portion of scutum evenly setulose. (Pipunculini)..... **Pipunculus**

– Setae on thorax restricted to 2 dorsocentral rows and scattered setae along margins. (Cephalopsini) 8

8 Vein M2 present ..... **Cephalosphaera**

– Vein M2 absent. (Cephalops) 13

9 Abdominal tergites (except tergite 1) shining, entirely undusted; abdomen elongate and clavate, widening distally. (Tomosvaryellini in part) ..... **Dorylomorpha**

– Abdominal tergites usually with at least some grey or brown dusting laterally; abdomen shorter and not distally clavate, usually widest at middle 10

10 Wing without coloured pterostigma; cross-vein r-m usually situated at about middle of cell M. (Tomosvaryellini in part) ..... **Tomosvaryella**

– Wing usually with coloured pterostigma, if coloured pterostigma absent than cross-vein r-m in basal third of cell M. (Eudorylini) 11

11 Hind tibia with erect anteromedial setae over half length of tibia; lateral fan of tergite 1 expanded into a patch of setae; phallus of male with subapical protuberance covered with specialised scale-like setae ..... **Claraeola**

– Hind tibia with 0-4 erect anteromedial setae only; lateral fan of tergite 1 restricted to one row of setae; phallus of male without subapical protuberance and without specialised scale-like setae 12

12 Hind tibia with erect anteromedial setae ..... **Dasydorylas**

– Hind tibia with no outstanding anteromedial setae ..... **Eudorylas**

13 Anal vein missing; ejaculatory apodeme bottle-shaped ..... **Cephalops** (Beckerias)

– Anal vein present; ejaculatory apodeme not as above 14

14 Tibiae with strong median and apical spines; abdomen long and narrow ..... **Cephalops** (Cephalops)

– Tibiae lacking strong medial and apical spines; abdomen broad and shortened 15

15 Male with membranous area not enlarged; apical part of phallic guide strongly broadened ..... **Cephalops** (Parabeckerias)

– Male with membranous area of sternite 8 reaching epandrium; phallic guide not as above ..... **Cephalops** (Semicephalops)