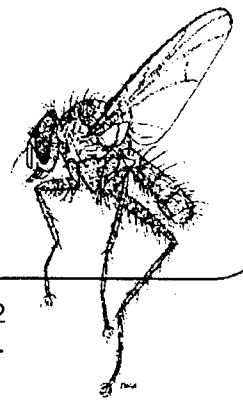
# ANTHOMYIIDAE NEWSLETTER



NOVEMBER 1996 NO 2

UPDATE NEWS

Since the initial despatch of the 'bumper fun parcel' (so called by one member of the study group) to the first eight interested parties, Martin Drake contacted me. He suggested that in future the newsletter could be sent out with the Dipterist's Forum Bulletin. He also suggested that he could place a note in the September issue to the effect that any one contacting me could receive the keys and genitalia figures for photocopying. I readily agreed, and as a consequence received a further ten applications. Some of these sent me the postage, as requested. This was asked for in the expectation that the parcel would vacillate from me to each recipient and back; but in the event I was able to start up another 'chain', which only entailed each recipent having to sent the parcel on to the next in the chain. I therefore returned the postage, which seemed the fairest thing to do,

At the moment the parcel should be somewhere near Dave Clements!

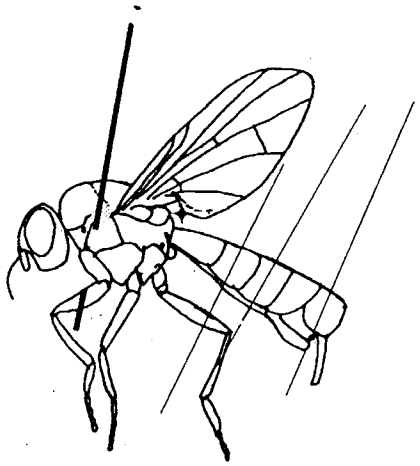
The first newsletter to be included in the Forum Bulletin should be in February. This will make it easier for me, because I only have to make a master copy, and it will be photocopied by Martin (I hope). My ink jet printer is beginning to complain that it is not a production printer.

This second issue (of which I hope to bring up 18 copies to the Dipterist's Meeting in November) contains details of a possible species of Anthomyiidae new to Britain, based on 2 females collected by Peter Skidmore in Yorkshire. I sent details of the locality, which Peter supplied, to Ivan Perry who was on the Yorks meeting, but no males turned up. There is also a new key to the genus *Anthomyia* (in the old sense of the three black and white species). As you will see from the new check list in the parcel, the species of *Craspedochoeta* are now included in *Anthomyia.* I have restricted myself to the three species in order to get it finished for this newsletter; it is also an easily recognised discrete group which has always given trouble until Verner Michelsen sorted them out. My key is based mainly on his (to whom give due acknowledgement) but I have rewritten it and added my figures. Since I wrote it, I have found several misdentified females of *Anthomyia imbrida* in my collection and in the Hope Collections.

I have included a labelled set of figures of the male genitalia of *Pegomya provecta* Vill. (the female of which has a very interesting laterally compressed ovipositor, and does not appear to have been recognised before, not known to Hennig or Michelsen. The ovipositor suggests egglaying in stems.

The note about pinning Anthomyiidae is to encourage the preparation of specimens to enable material to be named quickly. It takes me about six times as long to name material in the Natural History Museum which has been collected by non- dipterists. As you may be able to tell, I find that the the first structure I look at (males) is the 5th sternite. I am not too worried if the genitalia are not exserted, as they are often broken when so treated.

Michael Ackland



Pinning Anthomyiidae.

In order to facilitate identification, Anthomyiidae should be pinned through the side of the thorax, just below and in front of the point of wing insertion with a micro pin. If the specimen is then pinned into a shallow box lined with plastozote, further fine pins can be inserted below the abdomen, raising it up away from the hind legs. A further pin an be placed above the hind femora to pull them down away from the abdomen. This makes viewing the 5th sternite and other sternites relatively easy. It is also much easier to chop of the apical half of the abdomen in order to dissect the genitalia. Specimens which are pinned through the dorsum with a long contineltal pin generally have the abdomen drooping down onto the hind legs, and not only can one not see the 5th sternite, but dissection of the abdomen often damages the legs. If time permits, it is also helpful to place a small pin through the hypopygium between the surstyli and the epandrium, but this should be done under a microscope, otherwide the aedeagal complex will be damaged, or broken off. If no microscope is available, separation of the hind femora and abdomen, until the specimen is dry, is the best method. This applies also to the females, as it makes examination of the cerci in the dried specimen easier.

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Anthomyiidae Study Group.

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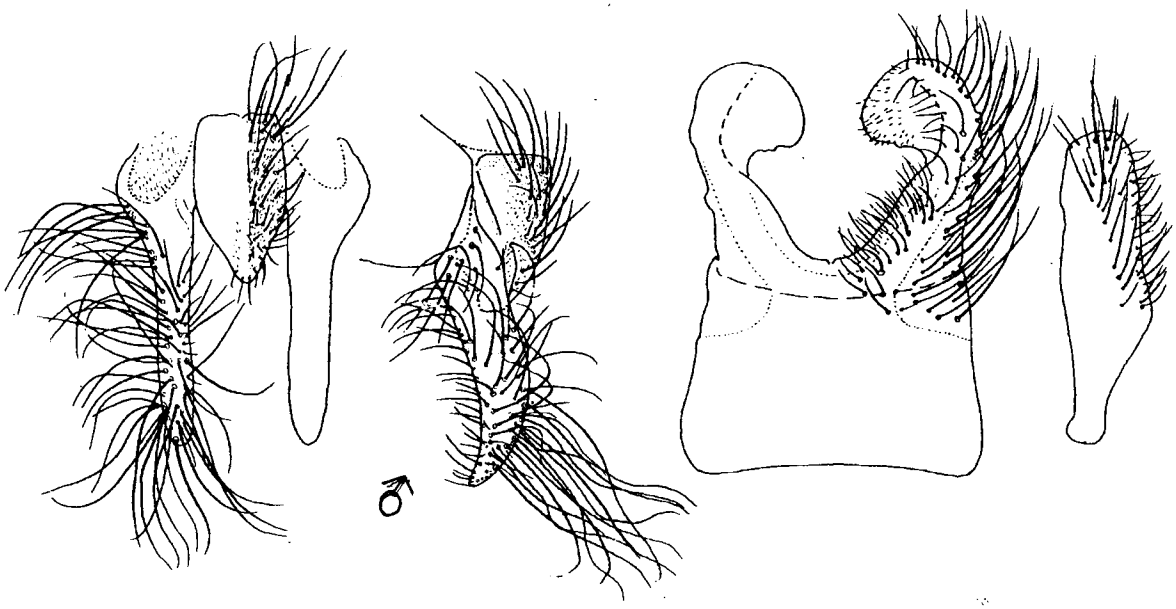
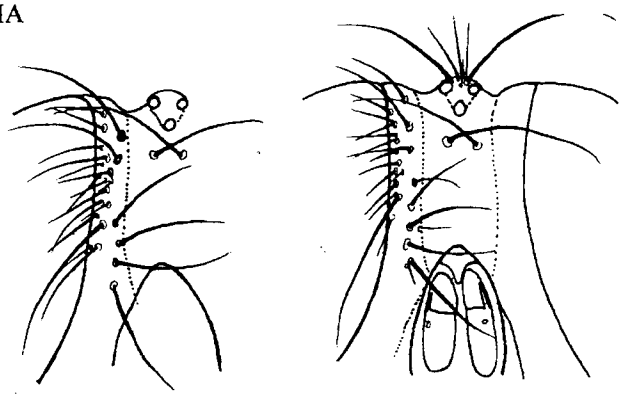



Zaphne proxima Mall N. Sweden , Lake Taurraure, nr. Kvikkjokk, 21.vii.1962 A.C. Pont, in coll DMA



? Zaphne proxima Mall female, N. YORKS: Thorne Moor, Site 3/7, SE 721142, 15.vii.1995, P. Skidmore

## ZAPHNE PROXIMA Mall.

2 ♀♀ from S. YORKS, Thorne Moor, site 7, SE 726149 and 721142, 15 July 1995, P. Skidmore.

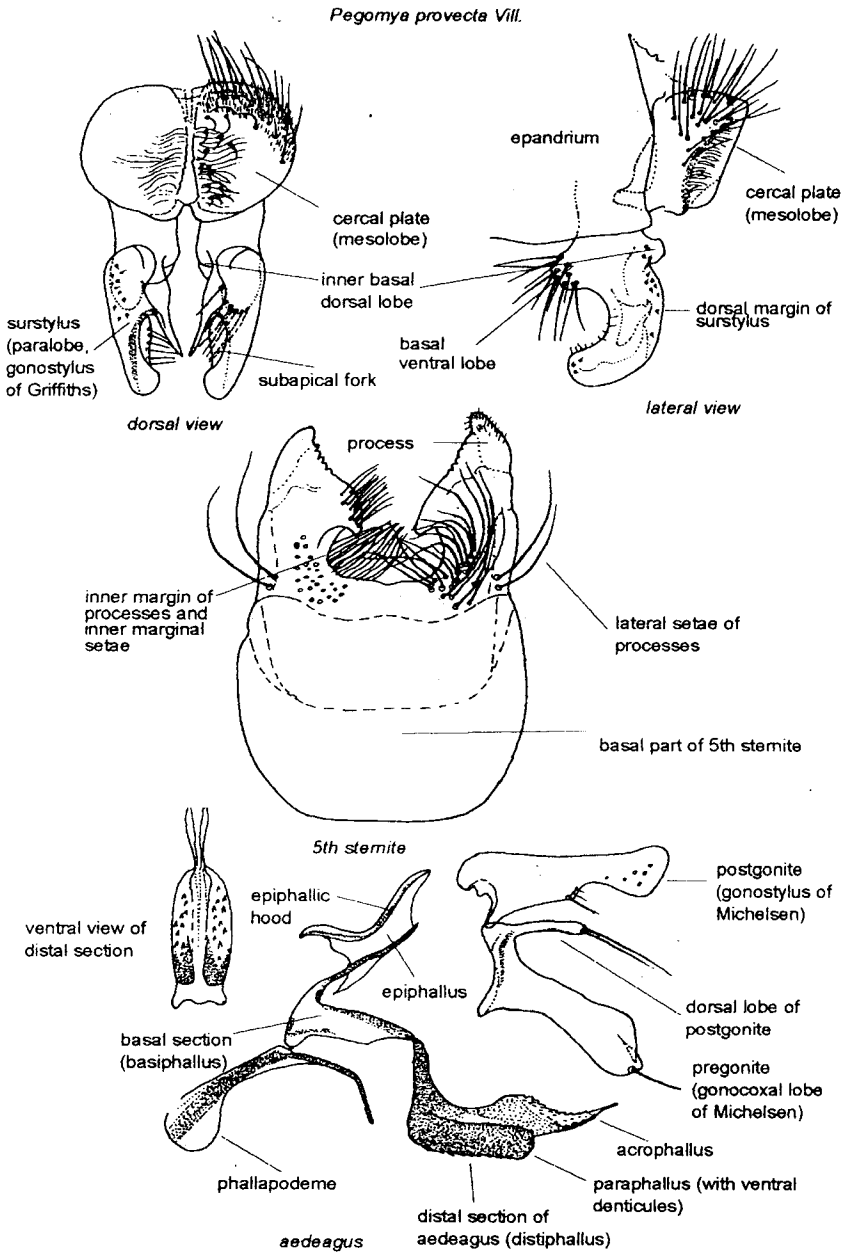
These ♀♀ appear to be *Zaphne proxima* Mall. I don't have any ♀♀, only males from Abisko. I did not catch this species on my two visits in 1993 and 1995.

Although Hennig keys the ♀ out in the section with bare hypopleuron. Huckett (1944) keys out the ♂ in both sections (hypopleura bare or with 1 or more hairs) but the ♀ only in the bare section. He explains this on p. 280 'this species usually has a single fine hair on upper margin of hypopleura. In case this character may be absent I have included it in both sections.'

In one specimen there is a very fine hair on one side on the upper ridge. Huckett gives the following characters for the ♀: anal palpi have recurrent spinules, parafrontals not as broad or as densely setulose as in *brunneifrons* [the same would apply to the *frontata* group, with *spiniclunis* as the only British species at present], no developed upper mesopleural setulae, and only 2 setae on pv surface of f3. Arista long haired.

In 1965 Huckett in the key says: 'Hypopleura with 1 or more hairs on upper border or if absent, caudal half of parafrontals broad, brown, profusely setulose...' and then keys out *proxima* as t2 with av, t3 with only 2 pd, marginal bristles of 5th tergite weak, middle bristles in series scarcely longer than adjacent setulae. The specimens from Thorne Moors agree with all these characters.

There is no other as yet recorded British species of *Zaphne* s.l. ♀ with arista plumose, frons with extra setulae outside the orbitals, no hairs on notopleural area.


Pegomya provecta Vill.
epandrium
cercal plate (mesolobe)
cercal plate (mesolobe)
inner basal dorsal lobe
surstylus (paralobe, gonostylus of Griffiths)
basal ventral lobe
dorsal margin of surstylus
subapical fork
dorsal view
lateral view
process
inner margin of processes and inner marginal setae
lateral setae of processes
basal part of 5th sternite
5th sternite
ventral view of distal section
epiphallic hood
epiphallus
postgonite (gonostylus of Michelsen)
dorsal lobe of postgonite
basal section (basiphallus)
pregonite (gonocoxal lobe of Michelsen)
acrophallus
phallapodeme
paraphallus (with ventral denticules)
distal section of aedeagus (distiphallus)
aedeagus

## ANTHOMYIA Meigen

The genus *Anthomyia* originally encompassed a large number of species of Anthomyiidae (and other calypterates), but gradually became restricted to those species with a black and white pattern, related to the type-species *pluvialis* L. There are three British species, *pluvialis* L., *procellaris* Rond. and *imbrida* Rond. These species have been variously treated as synonyms, and although Rondani described the last two species as early as 1866, his opinion was not accepted by many subsequent specialists. Keilin (1924) gave details of the larvae of *procellaris* (and possibly *pluvialis)* and added comments by Collin on the characters which separate the species.

*Anthomyia* now includes *Craspedochaeta,* on the basis of the possession of several apomorphic characters in the genitalia. In the following key I include only the three black and white patterned species as a matter of convenience only, and a future key will include all the species presently in *Anthomyia.* They can be recognised from all other British Anthomyiidae by the black and white pattern of thorax and abdomen in conjunction with the presence of numerous hairs on the proepisternum (propleuron). This latter character distinguishes them from the superficially similar species of *Eustalomyia.*

The larvae of the British species (and presumably all other species of *Anthomyia)* are saprophagous and strictly adapted to a life in bird's nests (see Keilin, 1924, Parasitology, 16(2): 150–IS9).

### Key to British *Anthomyia* ♂♂ (Black/white species)

1 Scutum with lateral postsutural black spot separated from the small spot above wing base, with the upper border of the latter ventral to the supra-alar seta (Fig.21). Arista with very short pubescence, longest hairs hardly 0.5 times basal diameter of arista. Parafrontals generally separated on frons by a narrow black interfrontalia (width equal to diameter of anterior ocellus). 5th sternite in ventral view with the basal inner margin of processes dilated and bearing multiserial rows of setae (Fig. 3); in profile with a small rounded ventral membranous lobe, and a space between the basal setae and the longer apical setae of the processes (Fig. 4). Genitalia as in Figs 1–6. ..... *pluvialis* L.

– Scutum with the large lateral postsutural black spot broadly confluent with the small black spot above wing base (Fig. 19, 23) (if separated then the upper margin of the black spot above wing base is larger and reaches the point of insertion of the supra-alar seta (as ♀ in Fig. 24). Arista with longer hairs (longest hairs equal to or longer than the basal diameter of arista). Parafrontals generally contiguous on frons. 5th sternite in ventral view with the inner margins of processes more or less concave (Figs 9. 15) ..... .2

2 Posterior margin of the lateral postsutural black spot on scutum more or less straight just below level of the posterior intra-alar seta (Fig. 19). Arista with longer hairs (longest slightly longer than the basal diameter of arista). Hind tibia with about 5–9 ad setae. 5th sternite in ventral view with shorter setae on inner margin of processes basally, outer lateral setae also shorter (Fig. 9); in profile the ventral setae are continuous, and the angle between the narrower ventral membranous lobe and base is obtuse (Fig. 10)

..... *procellaris* Rond.

– Posterior margin of the lateral postsutural black spot on scutum distinctly indented just below the posterior intra-alar seta (Fig. 23). Arista with longest hairs equal to basal diameter of arista. Hind tibia with more numerous ad setae (generally from 9–I5, occasionally more). 5th sternite in ventral view with the setae on inner margin of processes basally with longer uni- to biserial setae (Fig. I5); in profile with wider membranous ventral lobe (somewhat square ended) and base forming a right angle with the 5th sternite process, and longer) lateral setae at base of processes (Fig. 16) ..... *imbrida* Rond,

Key to British *Anthomyia* ♀♀

1 Scutum with the lateral postsutural black spot confluent with the small black spot above wing base (Fig. 20). Arista with longest hairs distinctly longer than aristal diameter at base. ..... *procellaris* Rond.

– Scutum with the lateral postsutural black spot broadly separated from the black spot at wing base (Figs 22, 24). Arista with longest hairs not longer than aristal diameter at base .....2

2 Black spot at wing base small; dorsal margin not reaching insertion point of supra-alar seta (Fig. 22). Arista with longest hairs clearly shorter than aristal diameter at base. Hind tibia with 2-6 ad setae ..... *pluvialis* L.

Black spot at wing base larger, dorsal margin reaching insertion point of supra-alar seta (Fig. 24). Arista with longest hairs equal to diameter of aristal base. Hind tibia generallywith 8-11 ad setae. ..... *imbrida* Rond.

♂ genitalia

The main differences in the ♂ genitalia are as follows:

*A. pluvialis.* Cercal plate in dorsal view hardly produced apically (Fig. 1). Surstyli in dorsal view with an incision at base on inner margin (Fig. 1); in profile strongly downcurved in apical part (Fig. 2). Postgonite with a widely expanded seta on posterior margin. Pregonite constricted at base on dorsal margin (Fig. 5). Distal sectian of aedeagus strongly concave on dorsal margin (Fig. 6).

*A. imbrida* Rond. Cercal plate in dorsal view with a prominent apical projection (Fig. 13). Surstyli without a basal incision on inner margin (Fig. 13); in profile with a narrow apical part (Fig. 14). Postgonite with 2-3 short unmodified setulae on posterior margin (Fig. 17). Pregonite not constricted basally. Distal section of distiphallus with dorsal margin more or less straight, and with the basal dorsal process curved towards base.

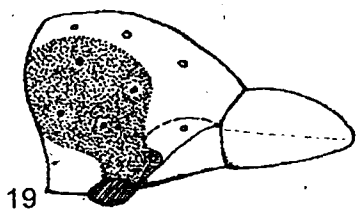
*A. procellaris* Rond. Cercal plate in dorsal view similar to *pluvialis.* Surstyli without basal incision on inner margin (Fig. 7); in profile less curved than *pluvialis,* apical part wider (Fig. 8). Postgonite with a slightly expanded setulae on posterior margin (Fig. 11); pregonite with the setulae on posterior margin not so close together as in *pluvialis* or *imbrida.* Distal section of aedeagus with dorsal margin very slightly concave (Fig. 12), dorsal process at base upright.

Notes and distribution

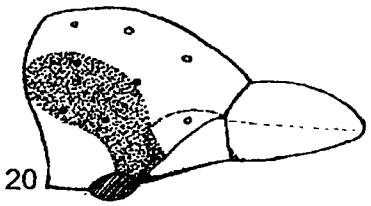
*A. pluvialis* L. Generally smaller than the other species. Wing length 3.2–4.4 mm. Tibial, acrostichal and prealar setae shorter and finer. Probably widely distributed, but appears to be less common than *procellaris.* My records are: W. Corn, S. Devon, N. Som, S. Hants, W. Kent, Berks, Oxon, Cambs, E. Glos, Dorset, N. Essex.

*A. procellaris* Rond. Generally larger than *pluvialis.* Wing length 3.4–4.9 mm. Tibial, acrostichal and prealar setae stronger and longer than pluvialis. Appears to be the commonest species of *Anthomyia.* My records are: S. Devon, N.Devon, N. Wilts, Dorset, E. Kent, Berks, Oxon, Bucks, Cambs, Hunts, Northants, W.Glos, Heref, Worcs, Glam.

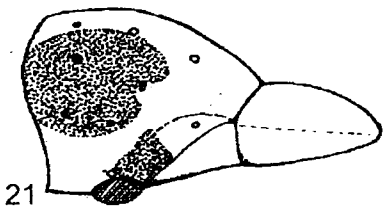
*A. imbrida* Rond. Normally the largest British species, though I have seen a few examples as small as *pluvialis* (depends on availability of food in the larval stage). Tibial setae generally short, hind tibia with very numerous ad setae and setulae, especially in the male. (if in doubt with females, where this character is not always expressed, the lateral black spot at wing base is always separated from the larger dorsal spot, and its upper margin reaches the insertion point of the supra-alar seta. (Fig. 24) . *A. imbrida* appears to be much less common than the other two British species, though widely distributed, My records are: S. Devon, N, Som, Dorset, E. Kent, Berks, Oxon, Suffolk, Cambs, Caern, Middlsx, Sussex, S. Lancs..



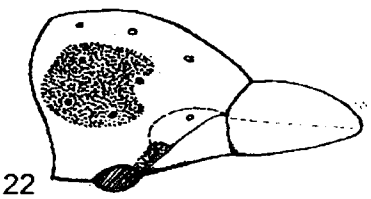
19 Anthomyia procellaris Rond. male



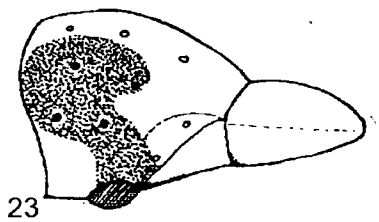
20 Anthomyia procellaris Rond. female



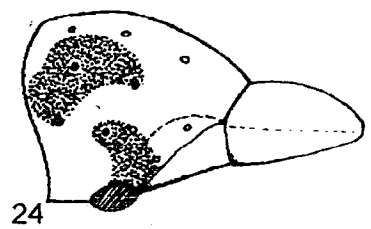
21 Anthomyia pluvialis L. male



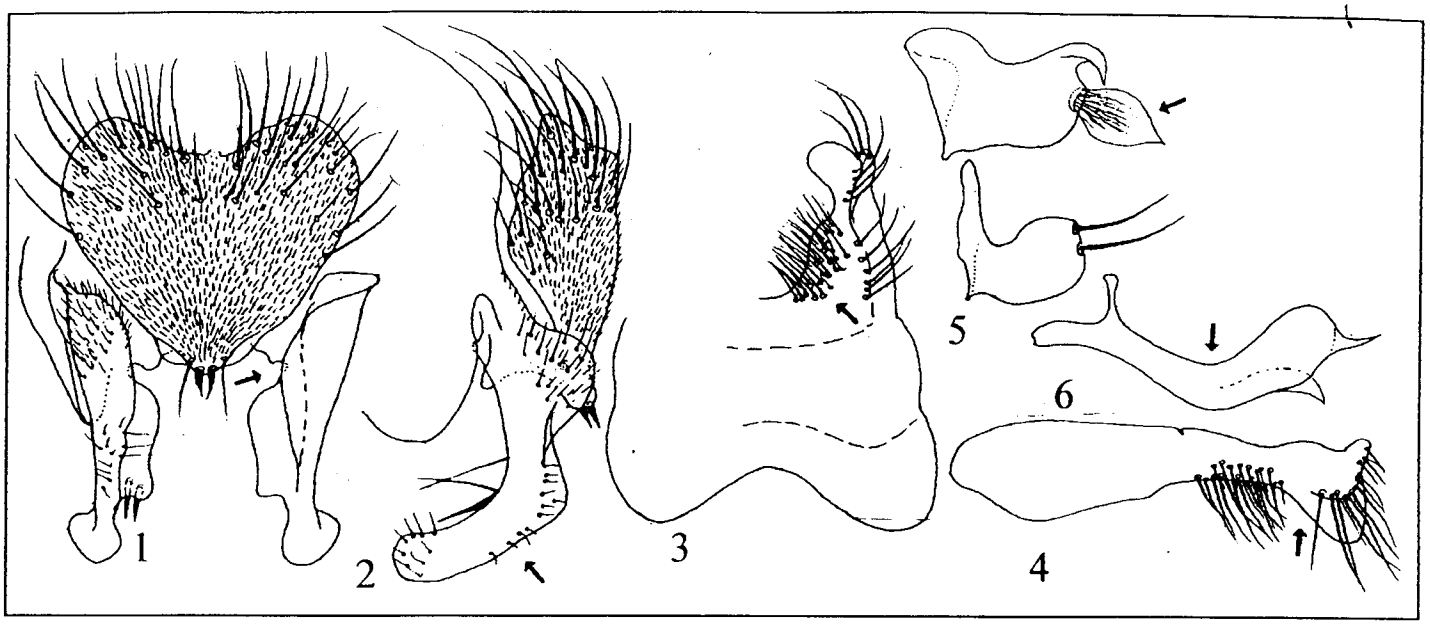
22 Anthomyia pluvialis L. female

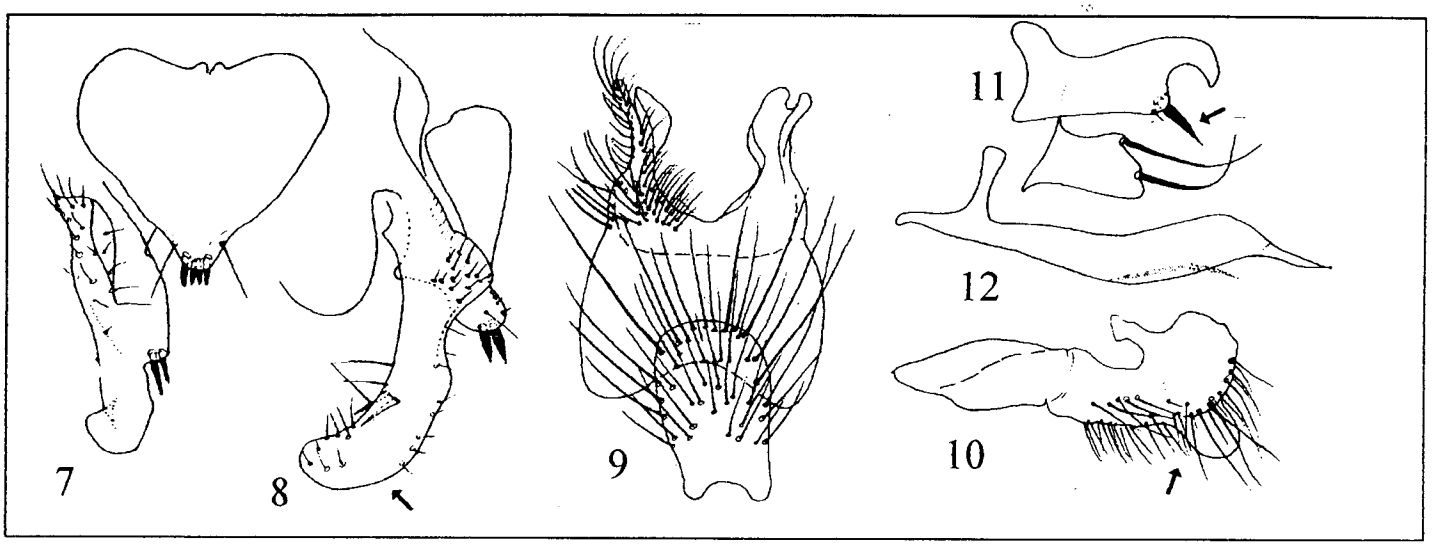


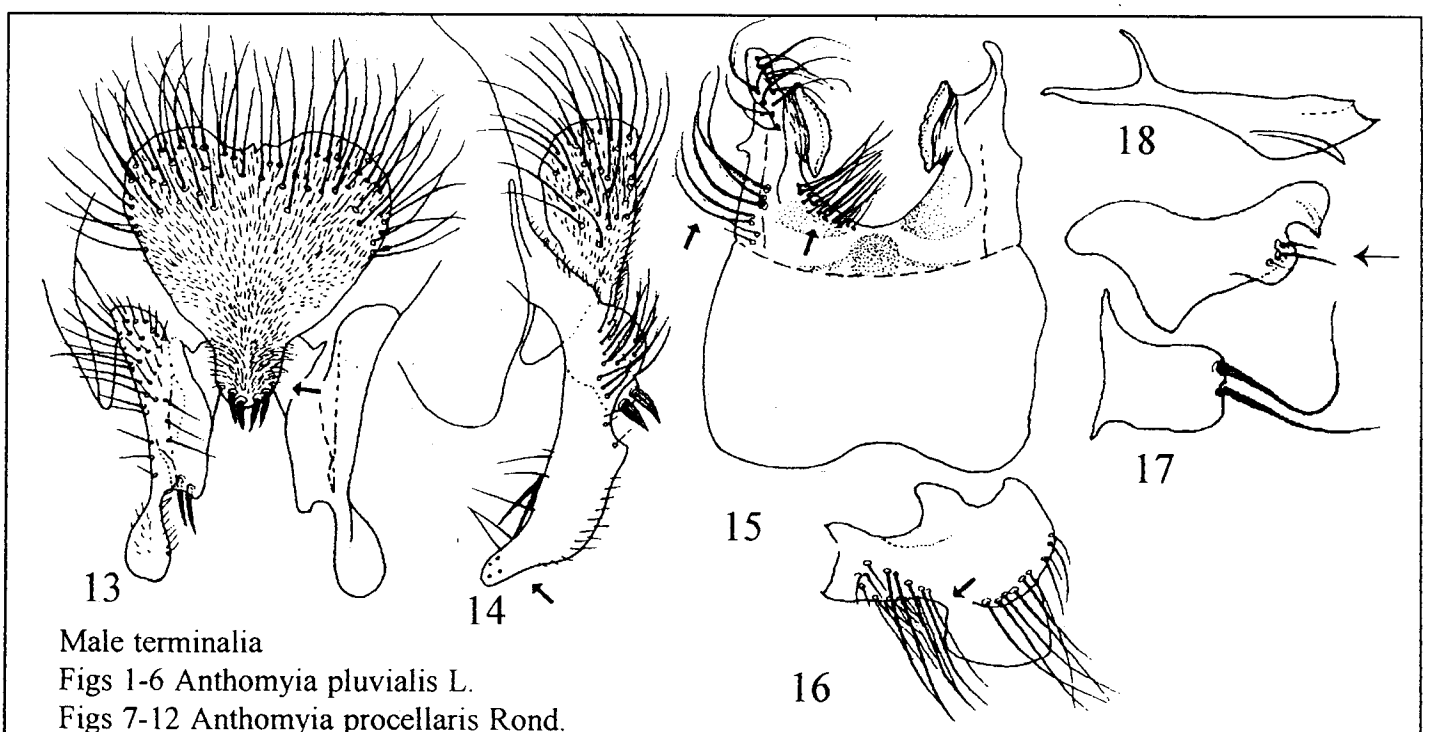
23 Anthomyia imbrida Rond. male



24 Anthomyia imbrida Rond. female




Male terminalia
Figs 1-6 Anthomyia pluvialis L.
Figs 7-12 Anthomyia procellaris Rond.
Figs 13-18 Anthomyia imbrida Rond.