

## Descriptions of two new *Eudorylas* species and of the so far unknown female of *E. restrictus* Coe, 1966 (Dipt., Pipunculidae)

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### Zusammenfassung:

Die bisher unbekanntenen Weibchen von *E. restrictus* Coe, 1966, und Weibchen von zwei für Mitteleuropa neuen *Eudorylas*-Arten werden beschrieben. Außerdem werden 4 Neufunde zu den aus Bayern bisher bekannten 80 Arten der Fliegenfamilie Pipunculidae angeführt.

### Introduction

Studying pipunculid flies for several years, especially by determining Malaise trap catches, 1994 a list could be established containing 80 species known to occur in Bavaria (VON DER DUNK, 1995). Among the thousands of specimen investigated so far females of *Eudorylas restrictus* Coe, 1966, and the females of two obviously new species of *Eudorylas* appeared. As KOZÁNEK 1993 and DE MEYER 1993 pointed out, our knowledge of this large genus of Pipunculidae is still limited. This chapter of the new species, each illustrated with the main features, was separated from a comprehensive key to Central European Pipunculidae (VON DER DUNK, in preparation).

In addition the pipunculid fauna of Bavaria is updated with another four species.

### *Eudorylas restrictus* Coe, 1966 (Fig. 1)

While the female of this species was not yet known to science, I take the chance to describe this genus I found together with the unmistakable males.

Head: Third antennal segment yellow, long tapering, somewhat darker to its base. Other antennal segments dark brown. Arista black. Front facettes enlarged (contrary to male). Frons just before ocellar triangle constricted, otherwise equal wide, with a small median keel over the whole length. Upper half black shining, lower half as face grey-silvery dusted.

Thorax: Humeri yellow. Halteres with yellow knob, stem white, darkened to the base. Pleurae dark, weakly grey dusted. Mesonotum inclusively scutellum intensely brown dusted, the side margins more grey. Scutellum disc subshining, nearly bare, back margin with small black hairs.

Wings: Length 5.0-5.4 mm, longer than body (4.3-4.8). Third costal section 1.3-1.6 times longer than forth. Stigma complete, touching subcosta. Small crossvein r-m placed opposite to basal third of stigma. M1+2 last section undulating.

Legs: Coxae black, dusted, with small yellow outer margin. Trochanter black-brown, ventrally lighter. Femura base yellow, mean part black, and tip yellow in the relation of 1 5 1. f 1 and f 2 base only ventrally yellow. All femura ventrally shining and dusted dorsally. f 1 ventrally apical with 3-4 peg-like spines in a double row, f 2 with 7-9 peg-like spines in a double row, f 3 without any pegs. Dorsally f 1 and f 2 bare, f 3 with some short hairs. Tibiae infuscated yellow,

ventrally and apical somewhat more brown. Each tibia tip with two spurs, about as long as tibia tip is wide, yellow. Tibia 3 anterodorsal with 2-3 erect bristles. Tarsae yellow infuscated, last segment brown. Relation metatarsus to the rest tarsal segments 0.8 : 1. Metatarsus 3 outer side with brush of delicate short yellow hairs (more striking in male than in female). Relation of length of pulvilli : claws : last tarsal segment on all legs 1.6 : 1.8 : 1.

**Abdomen:** Thick, sharply bent as known from some *Dorylomorpha* species and from the *restrictus*-males as well. The bent is between tergum 2 and 3.  $t\ 1 - t\ 6$  dorsally intensely brown dusted, only apical side corners more grey. Terga 2 - 5 about of same length, seen from above, in profile with large sides, hiding sterna. Tergum 6 only about half a long as  $t\ 5$ , rapidly smaller to its end, anterior margin about 2 times longer than posterior, seen from above. Its surface with characteristic elevations: one hump left and one hump right. Between them a shining nearly flat space in the shape of a triangle to a trapezoid. This place backward closed by a small crest.

**Terminalia:** Ovipositor's base seen caudal somewhat semiglobular with very small median groove at junction with tergum 6. Ovipositor seen dorsal with relation along median longitudinal line of base : anal opening : piercer = 2 : 1 : 3. Outstanding is the triangle shape of the base. This forms a posterior cone. Base dark brown, nearly shining, space around anal opening yellow, piercer yellow with a clear darker median furrow along its length. In profile posterior cone of base clearly visible. The outline from the backside of the base lowering to anal opening. On this level continues the slender piercer, which is straight till the inward curved tip.

**Distribution:** Germany, Northern Bavaria, spruce forest North-East of Nuremberg, caught in a Malaise trap. Two females are deposited in the Zoologische Staatssammlung München. From the same place furthermore 9 females and 6 males were captured between 16.8.1991 and 4.9.1991. DEMPEWOLF & CÖLLN 1995 also reportet this species from the Eifel, W-Germany.



Fig. 1: *Eudorylas restrictus* Coe, 1966. Female. Scale line in  $a = 1$  mm, in  $b$  to  $g = 0.1$  mm  
 $a$  habitus in profile with the characteristic bent of the abdomen  
 $b$  ovipositor lateral  $c$  ovipositor caudal  $d$  ovipositor dorsal  $e$  antenna in profile  
 $f$  tarsus 3 in dorsal view  $g$  detail of wing venation

***Eudorylas fischeri* sp. nov.** (Fig. 2)

Three female specimen of this type are in my collection. Male unknown.

**Head:** Third antennal segment black, towards the long tapering tip yellowish. Other antennal segments and arista black. Front facettes enlarged. Frons a little bit widened in the middle, shining black, only 1/3 above antennal base silvery dusted. At the end of the silvery part in the middle one oval black shining spot. Face silvery, about as broad as frons above antennal base.

**Thorax:** Humeri yellow, though heavily dark grey dusted. Halteres knob dark, stem white with black base. Pleura black, grey dusted. Mesonotum brown dusted, anterior area and sides grey. Scutellum brown dusted, disc bare, hind rim with minute scattered hairs.

**Wings:** Length 3.6 mm. Third costal section as long as fourth. Stigma incomplete, not touching subcostal vein. Small crossvein r-m opposite to stigma base and meeting discal cell at the end of its basal third. M1+2 last section not really undulating, only in a gentle swing.

**Legs:** Coxae and trochanter black. Femura black with narrow yellow tip. Ventrally near tip f 1 and f 3 with weak hairs, f 2 with 5 - 6 peg-like spines in a double row. Tibiae black, basal 1/5 yellow. Tibia 3 widened in the middle. Final spurs yellow, about as long as tibia apical wide. Tarsae black. Relation of pubvilli : claws : last tarsal segment = 1 1.2 : 0.7 on all legs.

**Abdomen:** Tergum 1 totally grey dusted, terga 2 - 6 equal long and wide, in the middle subshining black, seen dorsally, more brown in profile. Terga sides brown at first, then more and more grey dusted. Tergum 6 in dorsal outline sudden to 1/4 constricted at the posterior margin.

**Terminalia:** Ovipositor very small. In dorsal view narrowly small semiglobular, because more ventrally inserted, without a median groove. Caudal shape of black base almost cylindrically, flattened above, piercer dark brown, slightly bent, with the tip pointing upward. Relation in length along a median line base : anal opening : piercer = 1 : 0.6 1.3. In lateral view one can recognize a remarkable angle from base to piercer, the latter directed ventrally.

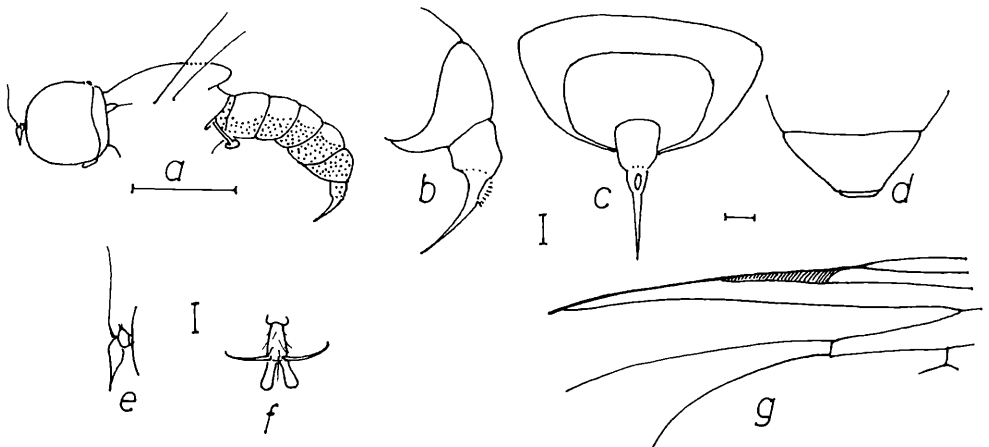


Fig. 2: *Eudorylas fischeri* sp. nov. Female. Scale line = 1 mm in a, in b to g = 0.1 mm  
 a habitus in profile    b ovipositor lateral    c ovipositor caudal    d ovipositor dorsal  
 e antenna in profile    f part of tarsus 3    g detail of wing venation

**Derivatio nominis:** Named after Dr. Heinz Fischer, whose large collection of various insects contained many pipunculid flies from the surrounding area of Augsburg, Southern Bavaria, Germany. Among these I found the first specimen of this new species. Because I have not collected it, I declare this as a paratype.- Dr. Fischer died several years ago. His collection is now cared for at the Naturmuseum Augsburg.

**Holotype:** Germany, Northern Bavaria, Middle Franconia, Oberndorf North of Erlangen. Female, caught on alder leaves at the edge of a pond. Date: 24.7.1995. This specimen is deposited in the Zoologische Staatssammlung München.

**Paratypes:** 1 female, Germany, Southern Bavaria, near Augsburg: Illasberg G 18.7.50, leg. Dr. H. Fischer; 1 female, Germany, Northern Bavaria, near Hemhofen, blackthorn hedge, 18.9.1995, leg. author. The paratypes are in the author's collection.

**Eudorylas aduncus sp. nov.** (Fig. 3)

One female specimen. Male unknown.

**Head:** Antennal segments 1-3 brown. Segment 3 pointed, but not tapering. Arista dark brown. Front facettes enlarged. Frons as wide as ocellar triangle till about to the middle, for this part shining black. Lower half narrower and grey-silvery dusted. Face silvery dusted, as wide as frons above antennae, widening towards the mouth.

**Thorax:** Humeri yellow. Halteres brown, stem in the middle lighter. Pleurae dark brown, sparsely grey dusted. Mesonotum brown dusted, anterior margin and sides more grey. Scutellum brown dusted, bare on the disc and with scattered minute hairs along posterior margin.

**Wings:** Length 3.7 mm. Relation of third costal section to fourth about 1.2 : 1. Stigma not reaching subcosta. Small crossvein r-m opposite to basal third of stigma. Vein r 3+4 meets costa under a loop. M 1+2 last section undulating.

**Legs:** Coxae and trochanter dark brown. Femura black with a dark brown base and a very narrow yellow tip. f 1 and f 3 ventrally in apical half without any peglike spines, f 2 with 4-5 pegs in a double row. Femura dull, dusted. Tibiae black, basal 1/5 yellow. Final spurs very minute, brown, as long as 1/3 of width of tibia's tip. Tarsae black. Relation of pulvilli : claws : last tarsal segment = 0.8 : 1 : 0.8.

**Abdomen:** Terga thin brown dusted, subshining, sides somewhat more grey. T 2-4 seen from above of the same median length, t 5-6 longer, but each other of the same length. Seen dorsally tergum 6 from front to posterior margin constricted to about the half.

**Terminalia:** The shape of the ovipositor is most striking with no parallel in the other *Eudorylas* species known to me. Base with a very shallow median furrow, therefore giving dorsally the shape of a flattened semiglobe. In caudal view the base is circular, dark brown, the area around the anal opening yellowish, and the piercer needle-like thin, whitish. Length relation along a median line base : anal opening : piercer = 1 : 0.6 : 2.5. Seen in profile there is the yellowish anus fixed at the globular base like a bay. From beneath arises the very thin white piercer, curved ventrally in a long strong bow.

**Derivatio nominis:** Because of this extraordinary ovipositor I choose the name 'aduncus' from the latin word for 'inward curved like a hook'.

**Holotype:** Germany, Northern Bavaria, Oberpfalz, near Berching at the Rhine-Main-Danube canal. Caught in a Malaise trap (Project Dr. K. Warncke) between 25.7. and 20.8.1988. This single female is deposited until further notice in the author's collection.

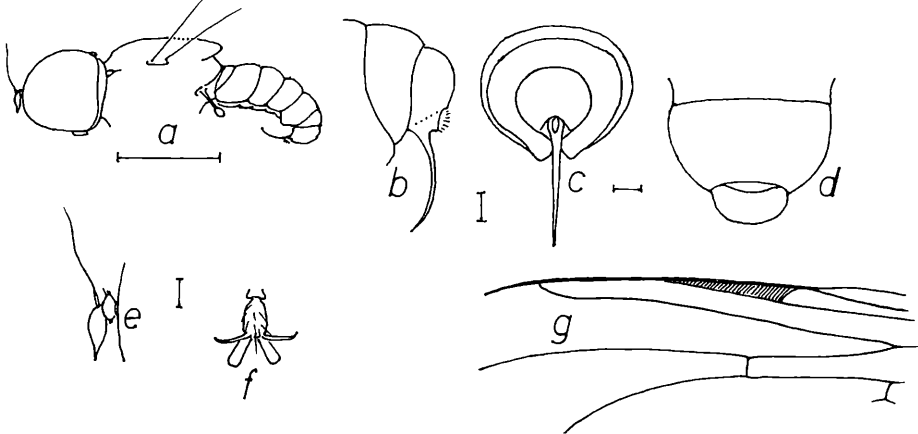


Fig. 3: *Eudorylas aduncus* sp. nov. Female. Scale line = 1 mm in a, in b to g = 0.1 mm  
a habitus in profile b ovipositor lateral c ovipositor caudal d ovipositor dorsal  
e antenna in profile f part of tarsus 3 g detail of wing venation

### Update to the Bavarian pipunculid fauna

As stated in the introduction for Bavaria 80 species could be testified. They are summed up here once more in a short survey (for more details see VON DER DUNK 1995):

*Cephalops* aneus, carinatus, obtusinervis, penultimus, perspicuus, semifumosus, signatus, subultimus, ultimus, vitipes;

*Cephalosphaera* germanica;

*Chalarus* basalis, brevicaudis, decorus, fimbriatus, gynocephalus, indistinctus, latifrons, pughi, spurius;

*Dorylomorpha* aczeli, albitarsis, confusa, extricata, hungarica, imparata, maculata, platystylis, praeternissa, rufipes, xanthocera, xanthopus;

*Eudorylas* elephas, fascipes, fuscipes, fusculus, halteratus, horridus, inferus, jenkinsoni, kowarzi, longifrons, melanostolus, montium, obliquus, obscurus, opacus, restrictus, ruralis, subfascipes, subterminalis, terminalis, unicolor, zonatus, zonellus;

*Jassidophaga* beatrix, pilosa, setosa, villosa;

*Microcephalops* vestitus;

*Nephrocerus* flavicornis, lapponicus, scutellatus;

*Pipunculus* calceatus, campestris, fonsecai, oldenbergi, spinipes, tenuirostris, thomsoni, varipes, zugmayeriae;

*Tomosvaryella* cilitarsis, coquillettii, geniculata, kuthyi, minima, palliditarsis, sylvatica;

*Verrallia* aucta.

The published list was finished at the end of 1994. So it does not contain new findings during 1995. Therefore the dates of another four species are given below, additional to the here described 2 new species:

*Beckerias pannonicus* Becker, 1898: Hem. 7.8.1995. 1 female. Apparently an open-land-species, lacking in the so far controlled Malaise-traps from mainly forest stands.

*Eudorylas demejeri* Kozánek, 1993: 2 males. Nürnberg Forst - Birkenlach 22.6.95, Hemhofen Garten 17.6.1995. The first one was caught on a light trap near midnight, the other one on a cherry tree in the afternoon.

*Eudorylas slovacus* Kozánek, 1993: 2 males. Malaise trap Beilngrieß, 9.-20.6.1988.

*Eudorylas zermattensis* Becker, 1898: 32 males, 6 females. Hemhofen, hedge with blackthorn, 24.7.-22.8.1995. This seems to be a typical habitat for this species. Repeated determinations of the Malaise trap material proved one of the published *E. unicolor* females to belong to *E. zermattensis*.

A correction must be given to the above mentioned Bavarian list: The only reported specimen of *E. obliquus*, a female, proved to be *E. subterminalis*.

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All drawings by the author (1995)

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