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Atrichops crassipes (Meigen, 1820) (Diptera, Athericidae), a species not so new for Switzerland

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The genus *Atrichops* Verrall, 1909, with the species *A. crassipes* (Meigen, 1820) is documented for the first time in Switzerland, although its first mention dates back to 1995, but remained unnoticed.

Keywords: new record, Switzerland, aquatic insect, Diptera.

INTRODUCTION

Athericidae (watersnipe-flies) is a small family of primitive Brachycera related to Tabanidae and Rhagionidae (Stuckenberg 1973; Rozkosny & Nagatomi 1997). The larvae are always aquatic and live in fast flowing streams or in more lentic habitats (Thomas 1981, 1997). They are top predators and feed on other invertebrates such as Diptera (Chironomidae), Ephemeroptera or Plecoptera (Thomas 1975).

Up to now, only two species, out of the 10 known to occur in Europe, have been reported from Switzerland (Merz 1998): *Atherix ibis* (Fabricius, 1798) and *Ibisia marginata* (Fabricius, 1781) which are both relatively common in stony streams. A third one, *Atrichops crassipes* (Meigen, 1820) has been mentioned by Merz (1998) as a potential candidate to live in Switzerland. In fact, we discovered during the writing of this note, that it has been already cited by Oertli (1995) in a species list of macroinvertebrates living in a pond near Geneva. This citation remained unnoticed up to now, although published in an entomological journal. Here we document further on the presence of this species in several Swiss streams and rivers, its most common habitat.

Atrichops crassipes (Meigen, 1820)

Material:

Geneva: **Seymaz**, embouchure, 502970/115070, 392 m, 1 larva; Claparede, 503220/116000, 403 m, 3 larvae; De Haller, 504095/117390, 417 m, 2 larvae, II. 2007. **Nant du Paradis**, embouchure, 507215/12065, 428 m, 3 larvae, II. 2007. **Hermance**, Pont de Bouringe, 508225/128395, 380 m, 1 larva, XI. 2007; Pont de

Crevy, 507695/126490, 415 m, 2 larvae, V. 2007. Marnot, embouchure, 508600/127400, 395 m, 1 larva, V. 2007. **Rhone**, Touvière, 488100/114740, 347 m, 1 larva, XII. 2008. **Arve**, Ecole-de-Médecine, 499440/116815, 375 m, 1 larva, V. 2008. All coll. SECOE.

Vaud: **Venoge**, Bussigny/Lausanne, 531710/ 155175, 375 m, 3 larvae; Vufflens-la-Ville, 530415/ 158980, 405 m, 2 larvae; Denges, 531505/152915, 380 m, 3 larvae, all coll. 16.II.2010 SESA. Denges, 1 larva, 16.IV.2011, coll. P. Derleth.

Jura: **Vendline**, Beurnevésin aval, frontière, 576345/261000, 419 m, 2 larvae, 31.III.2011, coll. P. Stucki.

Lucerne: **Suhre**, Oberkirch, 663459/225401, 506 m, 1 larva, 25. IV. 2007, 3 larvae, 28. VIII. 2007, 2 larvae, 16. IV. 2003, 3 larvae, 14. VII. 2003; Büron, 648740/228840, 487 m, 1 larva, 15. IV. 2003, coll. H. Vicentini. **Aabach**, Hitzkirch, 661390/230220, 473 m, 2 larvae, 15. IV. 2003, coll. V. Lubini.

A. crassipes is known from Western Europe, extending its range up to Poland and Romania (Roskosny 2011). It has been recently mentioned from Hungary for the first time (Muranyi *et al.* 2009). The larvae are psammophilous, living in sand and fine substrate deposited by the current in streams and rivers, where they feed largely on Chironomidae (Thomas 1975). They also colonize the deposits of some dam-lakes (Gagneur 1981) or ponds (Oertli 1995). The morphology of the larvae is very characteristic and cannot be confused with any other species, even among watersnipe-flies. Abdominal segments 6 and 7 bear each four tracheal projections, (two dorsal and two lateral), and the anal segment two more. They are oriented rearwards and upwards to the surface of sediments (Fig. 1).

This merolimnic species goes through five aquatic larval instars before pupation in the banks, and the single available study reports a semivoltine cycle, i.e. development lasts two years (Gerke & Böttger 2001). At the moment, no adults have been caught but according to Thomas (1981) adults fly between June and July. As for other Athericidae, females lay their eggs in batches on the underside of leaves above the watercourse (Gerke & Böttger 2001), and first instar larvae drop into the water shortly after hatching.

In the Canton de Vaud, no specimens have been caught before 2010. Up to now, the Venoge River is the only watercourse to be colonized by *A. crassipes*. At the mentioned localities, the river is between 8 and 10 m wide, the current speed is around 0.2 and 0.4 m/s. Substrate composition and bank vegetation strongly vary between localities, suggesting that the availability of adequate fine substrate is the main parameter for its setting up.

It has been reported that *A. crassipes* belongs to species on which global climate change has a positive impact (Daufresne *et al.* 2003). This could explain the actual scarcity of data for this species in Switzerland, its low altitudinal range (all localities below 510 m), and the fact that it could be a new immigrant, as documented for instance for the mayfly *Habrophlebia eldae* (Wagner *et al.* 2007).

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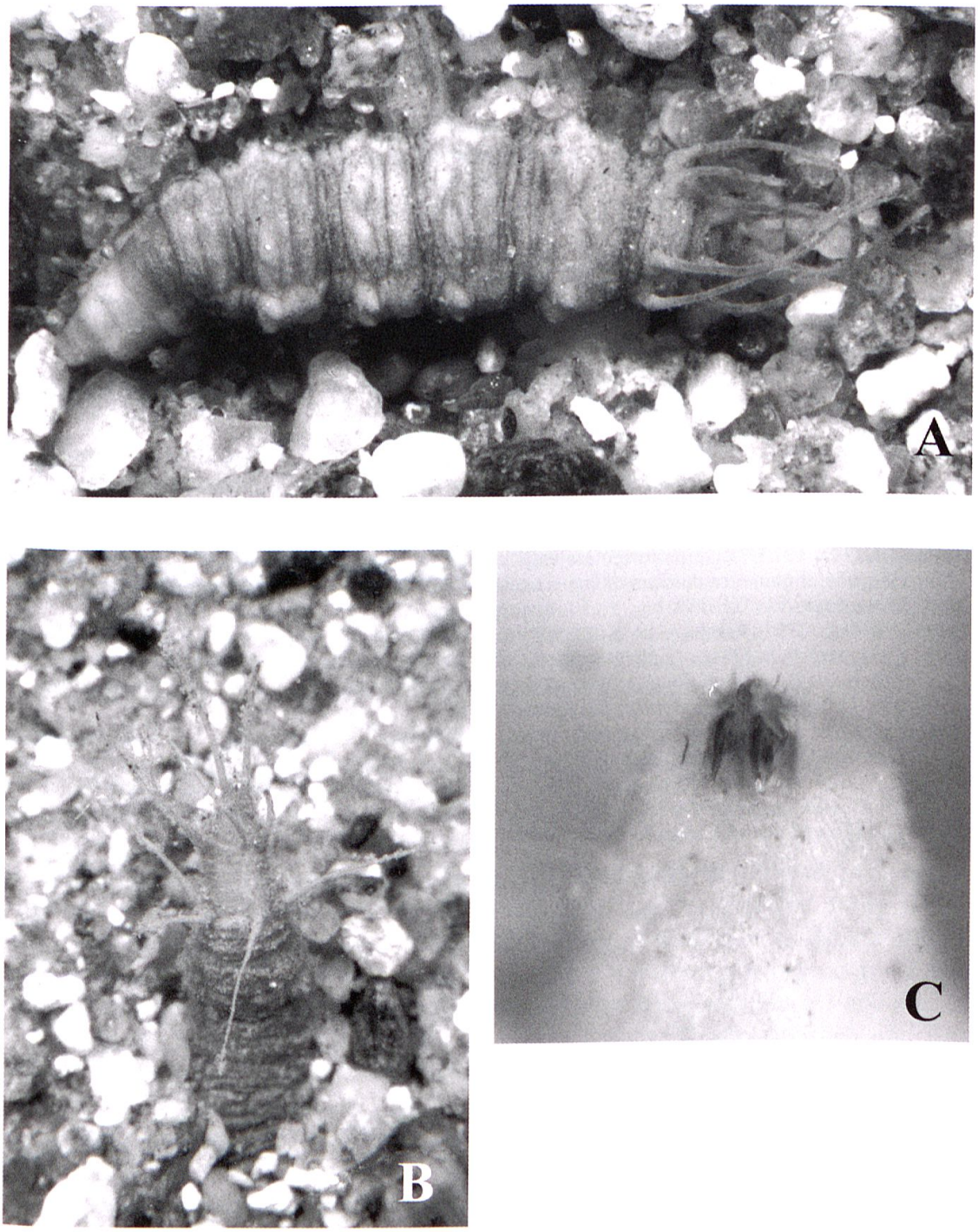

Fig. 1 : *Atrichops crassipes* (Meigen, 1820), larva. A: general habitus, B: Larva digging in the sediment, C: close view of the mouthparts, especially the mandibles.

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