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Potamophylax horgos Coppa & Oláh, 2013 new to the Belgian fauna (Trichoptera: Limnephilidae)

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Abstract

What was previously known as *Potamophylax nigricornis* (Pictet, 1834) has recently been divided into 17 different species. The description of these species by OLÁH *et al*. 2013 was based on the fine structures of the phallic organ. The presence of two of these in Belgium is reported in this study: *Potamophylax nigricornis* occurs in the loamy region, the Condroz and the Famenne, while *Potamophylax horgos* Coppa & Oláh, 2013 is restricted to the Lorraine. Here, not only pictures of the male phallic organ are given, but also characteristics are illustrated to separate males as well as females based on externally visible morphological structures.

Keywords: *Potamophylax horgos*, *Potamophylax nigricornis*, identification, distribution.

Samenvatting

Wat voorheen bekend was als *Potamophylax nigricornis* (Pictet, 1834) werd recent gesplitst in 17 verschillende soorten. De beschrijving van deze soorten door OLÁH *et al*. 2013 was gebaseerd op de detailstructuur van het fallisch orgaan. De aanwezigheid van twee van deze soorten in België wordt gemeld: *Potamophylax nigricornis* komt voor in de leemstreek, de Condroz en de Famenne, terwijl *Potamophylax horgos* Coppa & Oláh, 2013 beperkt is tot de Lorraine. Hier worden niet alleen foto's van het fallisch orgaan gepresenteerd, maar ook worden kenmerken geïllustreerd om zowel mannetjes als vrouwtjes te onderscheiden op basis van extern zichtbare morfologische structuren.

Résumé

Ce qui était autrefois connu sous le nom *Potamophylax nigricornis* (Pictet, 1834) a récemment été divisé en 17 espèces différentes. La description de ces espèces par OLAH *et al*. 2013 a été basée sur la structure détaillée de l'appareil phallique. La présence de deux de ces espèces en Belgique est rapportée dans cette étude: *Potamophylax nigricornis* est présent dans la région limoneuse, le Condroz et la Famenne, tandis que *Potamophylax horgos* Coppa & Oláh, 2013 est seulement présent dans la Lorraine. Des photos des pièces génitales des mâles sont présentées et aussi des caractères macroscopiques externes permettant de différencier les mâles et les femelles sont proposés.

Introduction

Recently, *Potamophylx nigricornis* was separated into 17 different species based on the fine structures of the phallic organ (OLÁH *et al.*, 2013). During the present study, it was investigated which of these species are present in Belgium.

Material and methods

Males were identified based on the descriptions of OLÁH *et al*. (2013). Subsequently, new externally visible characteristics to separate the species occurring in Belgium were assessed. All examined material, except specimens collected by the author, belong to the collection of the Royal Belgian Institute of Natural Sciences.

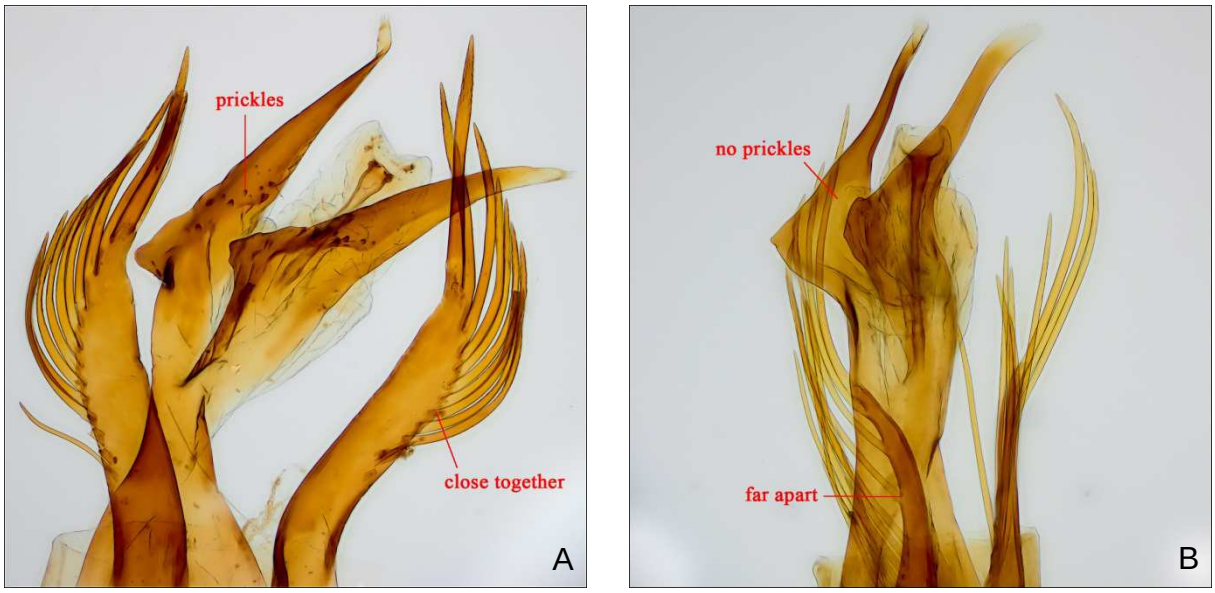

Fig. 1. Phallic organ of *Potamophylax horgos* Coppa & Oláh, 2013 (A) and *Potamophylax nigricornis* (Pictet, 1834) (B) (Photographs: Koen Lock).

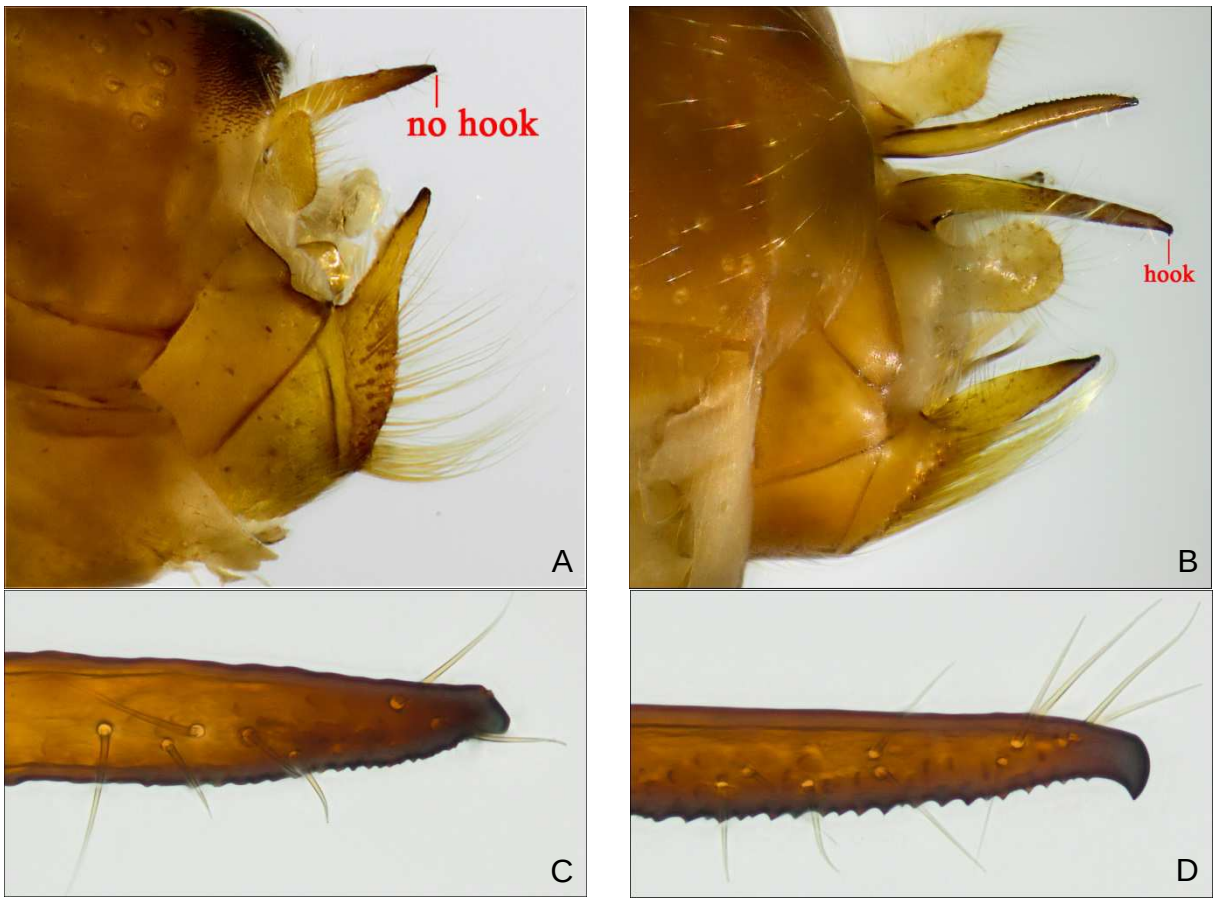

Fig. 2. Lateral view of the tip of the male abdomen of *Potamophylax horgos* Coppa & Oláh, 2013 (A) and *Potamophylax nigricornis* (Pictet, 1834) (B), with a detail of the tip of an upper genital appendage of *P. horgos* (C) and *P. nigricornis* (D) (Photographs: Koen Lock).

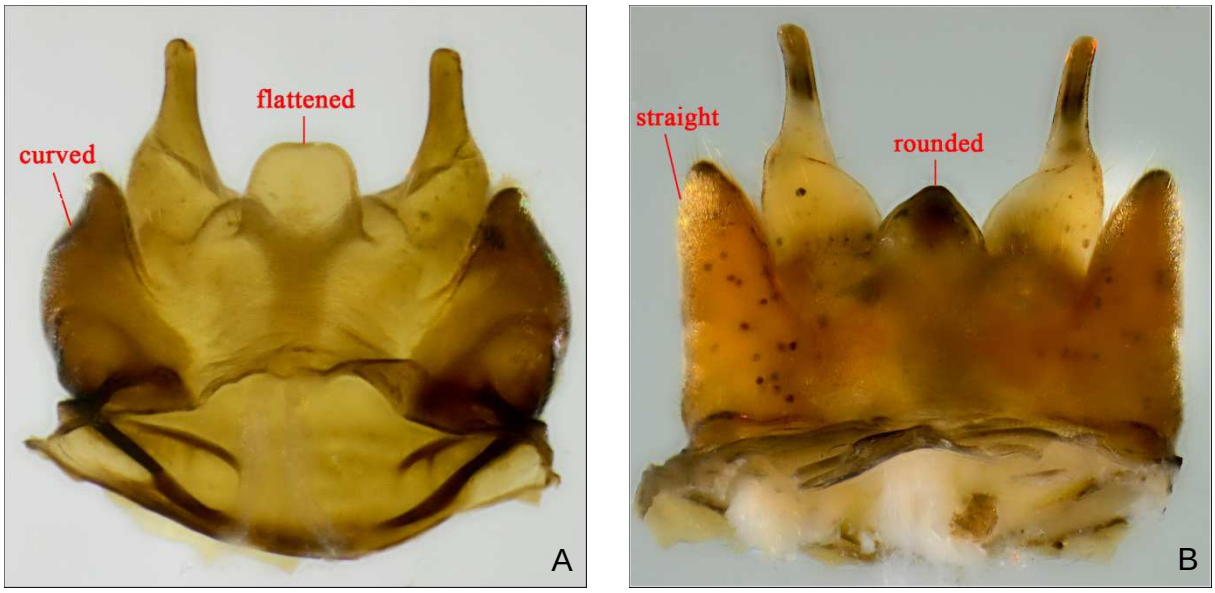

Fig. 3. Ventral view of the tip of the female abdomen of *Potamophylax horgos* Coppa & Oláh, 2013 (A) and *Potamophylax nigricornis* (Pictet, 1834) (B) (Photographs: Koen Lock).

Fig. 4. Habitus of *Potamophylax horgos* Coppa & Oláh, 2013 (A) and *Potamophylax nigricornis* (Pictet, 1834) (B) (Photographs: Koen Lock).

Results

Potamophylax horgos Coppa & Oláh, 2013

DESCRIPTION. Males possess setae on parameres that are packed very close together (Fig. 1A), the aedagus bears short peg-like prickles on the surface near the hooks (Fig. 1A), the upper genital appendages terminate in a hook that does not stick out beyond the edge of the appendage (Fig. 2A,C). Females have strongly curved lower genital appendages (Fig. 3A), the ventral lobe has a flattened top (Fig. 3A). The forewing pattern is very similar to that of *P. nigricornis* (Fig. 4).

MATERIAL EXAMINED. LUXEMBOURG: Buzenol, 11.III.1974 (2 males and 1 female reared from larvae), leg. G. Marlier; Lamorteau, Rau de Radru, 8.VII.2010 (1 male), 2.VII.2014 (1 male), leg. K. Lock; Ethe, Rau du Cron, 17.VII.2014 (1 male), leg. K. Lock.

Potamophylax nigricornis (Pictet, 1834)

DESCRIPTION. Males possess setae on parameres that are lying far apart (Fig. 1B), the aedagus bears no prickles near the hooks (Fig. 1B), the upper genital appendages terminate in a pronounced hook, which sticks out far beyond the edge of the appendage when seen under the right angle (Fig. 2B,D). Females have straight lower genital appendages (Fig. 3B), the ventral lobe is rounded (Fig. 3B). The forewing pattern is very similar to that of *P. horgos* (Fig. 4).

MATERIAL EXAMINED. BRABANT WALLON: Braine-le-Château, Blanche Maison, 11.V.1975 (2 females reared from larvae), 18.V.1975 (1 female reared from larva), 30.V.1975 (1 female reared from larva), leg. G. Marlier; Gistoux, 11.XI.1977 (2 males and 2 females reared from larvae), 26.II.1978 (3 males and 1 female reared from larvae), leg. G. Marlier; Rixensart, 10.VI.1902 (1 male), leg. G. Severin; Sart-Moulin, La Tour, 31.III.1979 (2 males reared from larvae), leg. G. Marlier; Wauthier-Braine, 12.III.1981 (1 male reared from larva), leg. G. Marlier; HAINAUT: Mont-Saint-Aubert, 10.VI.1982 (1 male and 1 female reared from larvae), leg. P. Stroot; LIMBURG: Krindaal, 30.VI.2012 (1 female), leg. K. Lock; Mabroek, 1.VII.2012 (1 male), leg. K. Lock; LUXEMBOURG: Mirwart, 16.I.1975 (1 male reared from larva), 19.IV.1975 (1 male reared from larva), 16.V.1975 (1 male reared from larva), 30.V.1975 (1 female reared from larva), leg. G. Marlier; NAMUR: Wavreille, Ri d'En Faule, 10.V.1975 (1 male reared from larva), leg. G. Marlier; OOST-VLAANDEREN: Kwaremont, 19.VI.2014 (1 female), leg. K. Lock; VLAAMS BRABANT: Dworp, 3.VI.1962 (1 female); Forêt de Soignes, Rouge Cloître, 2.VI.1942 (1 male), 24.VI.1942 (1 female), 29.VI.1942 (1 male), 1.VII.1942 (1 female), leg. A. Collart.

Discussion

OLÁH *et al.* (2013) described that the forewing of *P. horgos* is paler and that the longitudinal stripes in the apical cells are more obsolete than in *P. nigricornis*. However, during the present study, it was observed that longitudinal stripes could be present as well as absent in *P. nigricornis*, while the color of the forewing was similar for *P. horgos* and *P. nigricornis* (Fig. 4). The forewing pattern can therefore not be used to separate them and both species can thus also not be identified based on photographs.

Both species were found in calcareous springs. *P. nigricornis* was found in the loamy region, the Condroz and the Famenne, whereas *P. horgos* was only found in the Lorraine (Fig. 5). It seems that the Ardennes region, which has an acid substrate, separates the distribution areas of both species in Belgium. Material from the Netherlands and Luxembourg has not been examined yet, but the results from the present study suggest that probably only *P. nigricornis* is occurring in the Netherlands, while probably only *P. horgos* can be found in Luxembourg. In Northern France, only *P. horgos* has been reported from the departments Ardennes and Vosges (OLÁH *et al.*, 2013) and the department Meuse (COPPA, pers. comm.), while *P. nigricornis*, which has not yet been observed in France, can be expected from the departments Nord and Pas de Calais.

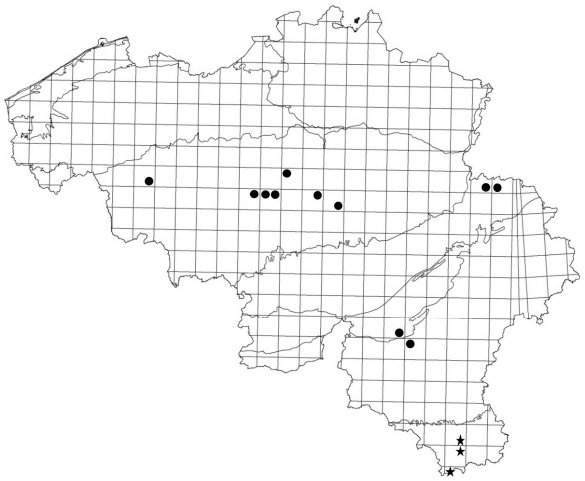

Fig. 5. Distribution of *Potamophylax horgos* Coppa & Oláh, 2013 (★) and *Potamophylax nigricornis* (Pictet, 1834) (●) in Belgium, with indication of the ecoregions.

On 2.VII.2014, I tried to collect larvae of *P. horgos* in Lamorteau, however, all sampled specimens belonged to the species *Potamophylax cingulatus* (Stephens, 1837), which only becomes adult from August onwards. In Belgium, adults of both *P. nigricornis* and *P. horgos* were only found from May till July, larvae of these species should therefore be searched during spring. In a followed-up study, it will be investigated how larvae of both species can be recognised.

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References

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