

***Bittacus hageni* BRAUER, 1860 (Mecoptera: Bittacidae) – new to the fauna of Poland, with some remarks on Polish specimen of *Bittacus italicus* (O. F. MÜLLER, 1766)**

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**ABSTRACT.** *Bittacus hageni* BRAUER, 1860 is recorded for the first time from Poland. The species has been found in south Poland in the vicinity of Kraków. Diagnostic characters as well as some data on its distribution in Middle Europe are provided. Moravian Gate is considered as the possible rout of colonization of the Kraków region. Reexamination of the unique Polish specimen of *B. italicus* (O. F. MÜLLER, 1766) revealed that it is in fact a female not a male.

**KEY WORDS:** Mecoptera, Bittacidae, *Bittacus hageni*, first record, Poland, *Bittacus italicus*.

INTRODUCTION

The genus *Bittacus* LATREILLE, 1802 includes 124 species (PENNY 1997) distributed in tropical and subtropical regions all over the world, with concentration in the Ethiopian Region from which more than 50 species have been recorded. More to the north the number of species is quickly decreasing and only 2 species, *B. hageni* BRAUER, 1860 and *B. italicus* (O. F. MÜLLER, 1766), occur in the Europe. Distribution of both species is insufficiently known but *B. italicus* is collected more often than the second species. In Poland only *B. italicus* has been recorded so far (STROJNY 1955, DOBOSZ & HADAŚ 1999).

*B. hageni* was hitherto known from France, Belgium, Germany, Czech Republic, Austria, Italy, Slovenia, Hungary and Romania (RAINER 2004). It is a very rare species collected once a several years usually in single specimens. After 1990 *B. hageni* was recorded only from Hungary (LEVENTE 2000) and Slovakia (first record) (VIDLICKA & KMETOVA 2002).

*B. hageni* can be at once separated from *B. italicus* by the structure of the male genitalia (figs 4-5): prominent, broad and flat branches of epiandrium, spirally coiled penisfilum of penis, prominent penuncus and well developed appendix dorsalis and appendix ventralis. The characters distinguishing both species were listed and properly illustrated by BRAUER (1860) and TAJOVSKÝ & LAUTERER (1986). Characters of wing venation may be useful but usually are insufficient for correct determination. Position of the end of fore wing Sc in relation to the first bifurcation of Rs of Polish specimens is shown on Figs 1 and 2.

***Bittacus hageni* BRAUER, 1860**

(Figs 1-2, 4-7)

As a result of the field collecting in the vicinity of Kraków, *B. hageni* BR. has been recorded for the first time from the territory of Poland: Młodziejowice near Kraków [50°08'N 20°00'E], 30.08.2005., 1♂, 1♀, leg. Ł. PRZYBYŁOWICZ.

The specimens were collected on the edge of deciduous forest in the sunny, extremely warm day, in the afternoon (17.00). The specimens were spotted hanging on forelegs from the stems of lower vegetation about 50 cm above the ground. The new locality is situated at the foot of the small hills forming the south-west border of Dłubnia Valley. The surrounding area is dominated by the typical rural, antropogenically changed landscape with small fields, meadows, small fragments of forests and shrubs.

The record from Młodziejowice (Fig. 7) is possibly the evidence for the wider distribution of *B. hageni* in South Poland. The nearest localities from north Moravia (ŠEVČIK & HUDEČEK 1994) are situated approximately 100 km away from the southern border of Poland (Fig. 6). The possibility of using of the Moravian Gate as the colonization route is very probable and was supposed already by DOBOSZ & HADAŚ (1999). This hypothesis may be verified after discovery of additional localities of *B. hageni*. However the question, if the species colonized the Kraków region as a result of recent, northern migration or it inhabits this area much longer being overlooked due to its rarity is still open.

The rarity of both *Bittacus* species in Poland is probably caused by the lack of specialists and by their external similarity to Tipulidae (Diptera) which is also one of the most neglected faunistically groups of Diptera in Poland (PALACZYK pers. com.).

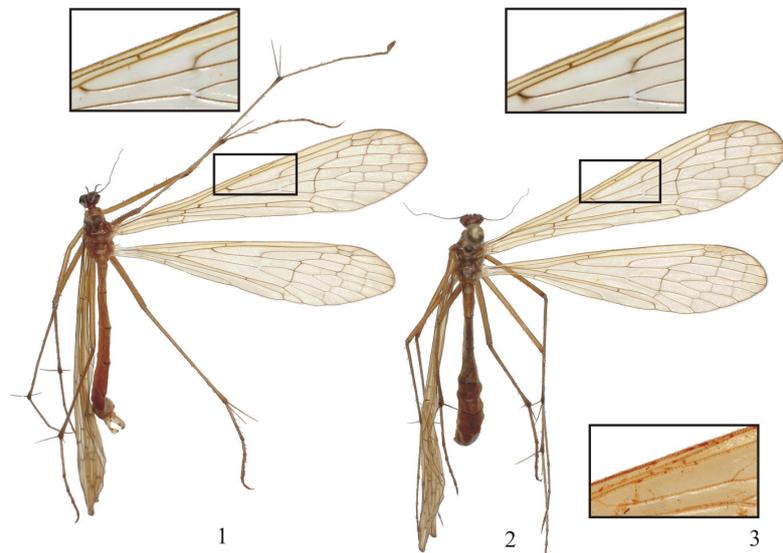
**Remarks on *B. italicus***

Examination of *B. italicus* collected by STROJNY (1955) in Zbylitowska Góra near Dunajec River (the only specimen known from Poland) revealed that it is in fact a female not the male as it is wrongly stated by DOBOSZ & HADAŚ (1999). STROJNY (1955) does not

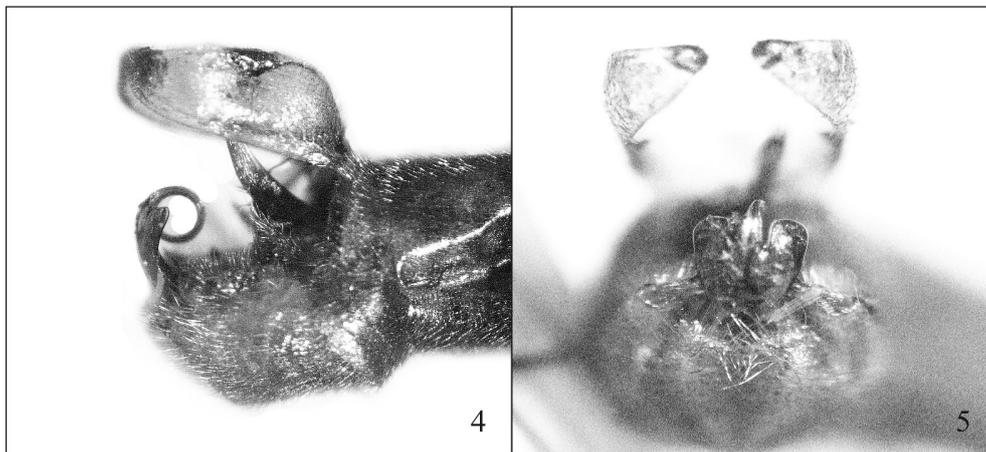
mention the sex of collected specimen but shape of the abdomen of the individual on published by him photograph may suggest it is a female. The separation of the females of both European *Bittacus* species is much more difficult than males therefore the characters on which determination of Polish specimen is based should be pointed out. There are: absence of antecosta on abdominal terga, 7<sup>th</sup> sternum large, almost as wide as long, termination of fore wing  $A_1$  before the half of the fore wing length, longer and narrower wings without yellow-brownish tinge as in *B. hageni*. Fore wing Sc terminates equally to the first bifurcation of Rs (Fig. 3) what is often treated as a feature characteristic for *B. italicus*. This character is very variable and alone can not be treated as credible in differentiating of two European *Bittacus* species. Genitalia of the specimen are partly damaged and hidden in the terminal segments of abdomen.

#### Acknowledgements

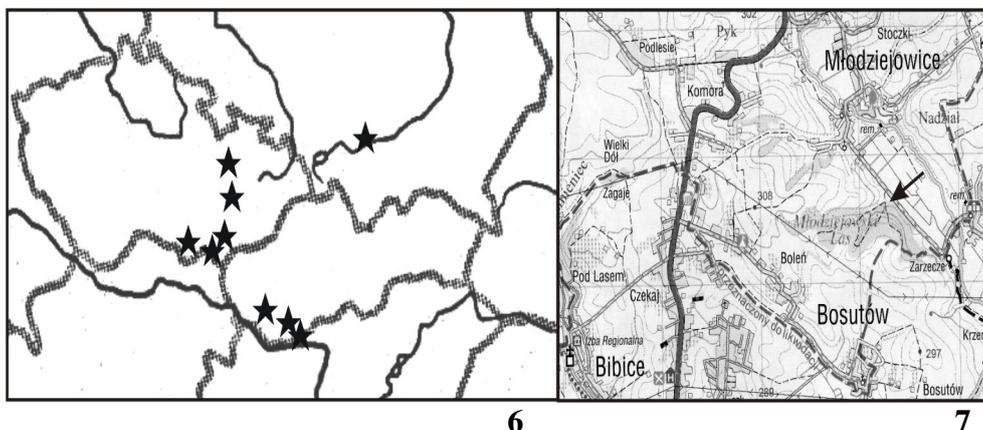
I would like to express my sincere thanks to Roland DOBOSZ (Upper Silesian Museum, Bytom) and Wiesław KRZEMIŃSKI (ISEA, Kraków) for the loan of specimens of *B. italicus* to my study. I am greatly indebted to Krzysztof FIOŁEK and Marek KOPEĆ (both ISEA) for help in preparing the maps and illustrations respectively and to Dušan DEVETAK (University of Maribor, Slovenia), Abraham LEVENTE (Somogy County Museum, Kaposvár, Hungary) and Lubomir VIDLIČKA (Institute of Zoology SAS, Bratislava) for providing me with some necessary literature.



**Figs 1-3.** Habitus of *Bittacus hageni* collected in Młodziejowice with enlarged middle part of costal area of fore wing, 1 - male, 2 - female; 3. *Bittacus italicus* from Zbylitowska Góra, enlarged middle part of costal area of fore wing.



**Figs 4-5.** Male genitalia of the specimen collected in Młodziejowice, 4 - lateral view, 5 - distal view.



**Figs 6-7.** Distributional maps, 6 – records of *B. hagenii* from Czech, Poland and Slovakia, 7 – Polish locality.

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Received: January, 25

Accepted: March, 20