

***Graphosoma melanoxanthum* (Hemiptera: Heteroptera: Pentatomidae)
new to Europe from Albania, with notes on its ecology and distribution**

**První evropský nález kněžice *Graphosoma melanoxanthum*
(Hemiptera: Heteroptera: Pentatomidae) z Albánie s poznámkami k její ekologii
a rozšíření**

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Abstract. *Graphosoma* (*Graphosoma*) *melanoxanthum* Horváth, 1903 is confirmed as a European species from Albania. Notes on its ecology and distributional range are provided.

INTRODUCTION

Graphosoma (*Graphosoma*) *melanoxanthum* Horváth, 1903 (Fig. 1) was described by Géza Horváth from specimens from Armenia (Horváth 1903). It has subsequently been recorded from the Asian part of Turkey, Azerbaijan, and Georgia, extending southwards to southern Iran, and has a restricted Transcaucasian range (Hoberlandt 1997, Rider 2006, Linnavuori 2008). It is a species which occurs in montane meadows (Golestan et al. 2010) and steppe (Linnavuori 2008) with a recorded altitudinal range between 1280 m (Golestan et al. 2010) to 2780 m (Hoberlandt 1997). It is part of a complex of species which have their centre of evolution around the Middle East, Anatolian and Transcaucasian regions, where seven of the nine recorded species of *Graphosoma* occur (Carapezza & Jindra 2008). Despite its widespread occurrence in montane habitats within its restricted global range it is rarely recorded and large scale recent surveys (e.g., Lodos et al. 1998 in central Turkey) have failed to detect it.

RESULTS

Critical examination of specimens standing under *G. melanoxanthum* in the Natural History Museum (= BMNH), London, UK revealed three examples labelled from Albania, a remarkable western extension of the known global range. All three specimens were collected in Çajup, western Albania on two separate occasions between 1933 and 1935. Two of the specimens were collected on 10.viii.1933 (Fig. 2), with a further specimen subsequently collected on 16.viii.1935. The specimens were collected by A. H. G. Alston (AHGA) and N. Y. Sandwith (NYS), who made two expeditions in 1933 and 1935 to the mountains of Albania to record and collect botanical specimens on behalf of the British Museum (Natural History) (AHGA) and Kew Botanical Garden (NYS) respectively (Barnes & Hoda 2001). Specimen identity was confirmed using Péricart (2010).

Material examined. The following examples of *G. melanoxanthum* are present in the BMNH: ALBANIA: 1 ♂ 1 ♀ (Fig. 2), with 3 labels: '48' [label in biro above two typewritten labels with pen annotations] / 'S. Albania, Çajup [40°11'31"N 20°11'09"E] 10.viii.1933.' / 'A.H.G. Alston & N.Y. Sandwith / B.M. 1932-383' [typewritten], *Graphosoma melanoxanthum* Horvath / Det. A. Ramsay, 2012 [handwritten]; 1 ♂, 'Albania: Çajup. 1,000m 16.viii. 1935. / A.G.H. Alston. / B.M. 1935-431'. [typewritten label with pen annotations]. *Graphosoma melanoxanthum* Horvath / Det. A. Ramsay, 2012 [handwritten]. TURKEY: 1 ♀, 'Ankara Karagol Lake [41°52'30"N 41°52'40"E] / 16.viii.1960 4,000' [= 1219 m a.s.l.] / Guichard & Harvey / B.M. 1960-364' [typewritten label] / *Graphosoma melanoxanthum* Horvath / Det. A. Ramsay, 2012 [handwritten]; 1 ♂, 'Erzincan Refahiye Erzincan [39°90'11"N 38°76'86"E] / 10.vii.1960 3000' [= 914 m a.s.l.] / Guichard & Harvey / B.M. 1960-364'; 1 ♂, 'Sarykamyš et vicina' [typewritten; = Sarikamyš env. in Kars Province; 40°20'17"N 42°34'23"E] / 'Mus. Caucas. 49-14. Poltoratski' [handwritten] / '*Graphosoma melanoxanthum* Horv. / Kiritschenko det.' [type+handwritten] / 'Brit. Mus. 1925-285' [typewritten], / *Graphosoma melanoxanthum* Horv / Det. A. Ramsay, 2012 [handwritten].

DISCUSSION

Details on the expedition during which the specimens were collected are recorded in Alston & Sandwith (1940), however the details recorded in this paper are not consistent with the data on specimens for 1933, as Çajup was visited on 11–14th June and 10–13th July 1933 according to Alston & Sandwith (1940). Relevant excerpts from Alston & Sandwith (1940) are as follows: 'June 11th–14th. Lunxheriës Range, Çajup and Zbej. The huge lush meadow of Çajup (c. 4000 ft.), forming a cup half a mile or so in length in the summit ridges of the Lunxheriës Range, was pale lilac and gold with the flowers of *Scorzonera rosea* and *Ranunculus velutinus*'. The meadow was hay cut in July, and a subsequent visit to the same site was in July 1933 as follows: 'July 10th–13th. Second expedition to Çajup, in the Lunxheriës Range. The great meadow had lost its fresh beauty and the hay was ready for cutting. Among other limestone species were *Minuartia stellata*, *Potentilla speciosa*, *Athamanta haynaldii*, *Pterocephalus perennis* ssp. *bellidifolius*, and *Rhinanthus hayekii*.' Given the recorded dates in Alston & Sandwith (1940) it suggests that the first two specimens of *G. melanoxanthum* were collected on the second visit to the Lunxheriës Range, Çajup on the 10th July, rather than 10th August as the specimen data suggests, as the first expedition was only conducted during June and July 1933 (Barnes & Hoda 2001).

During their second expedition to Albania in 1935, Alston & Sandwith collected a further specimen of *G. melanoxanthum* from the same region. The collection site is however given as 'Çajup. 1,000m' the data on the specimen (16th August) is inconsistent with recorded visit to Çajup by Alston & Sandwith (1940), which was visited on August 6th–9th, suggesting a more likely date of capture as August 6th, as between August 15–17th Alston & Sandwith were collecting plants in Berat (Alston & Sandwith 1940) to the east. During August 6th–9th Alston & Sandwith (1940) recorded as follows: 'Aug 6th–9th. Third expedition to Çajup, in the Lunxheriës Range. The great meadow was still being cut, and among the hay were quantities of three interesting plants. *Filipendula ulmaria* ssp. *denudata*, *Cirsium tymphaeum* and *Rumex thyrsiflorus*, which is the counterpart here of *R. acetosa*. The object of this visit was to collect fruiting material of a curious *Athamanta*, allied to *A. macedonica*, which appears to represent a distinct new species and is described in this paper.' The flora of the Çajup Lunxheriës Range is sandstone, with a limestone summit, and amongst the most likely host plants for *G. melanoxanthum* in this region is the endemic *Athamanta albanica* Alston et Sandwith, 1940 (Apiaceae)



Fig. 1. *Graphosoma melanoxanthum* Horváth, 1903 from Albania, Çajup, 16.viii.1935. (Photo: Tristan Bantock).
Obr. 1. *Graphosoma melanoxanthum* Horváth, 1903 z Albánie, Çajup, 16.viii.1935. (Foto: Tristan Bantock).

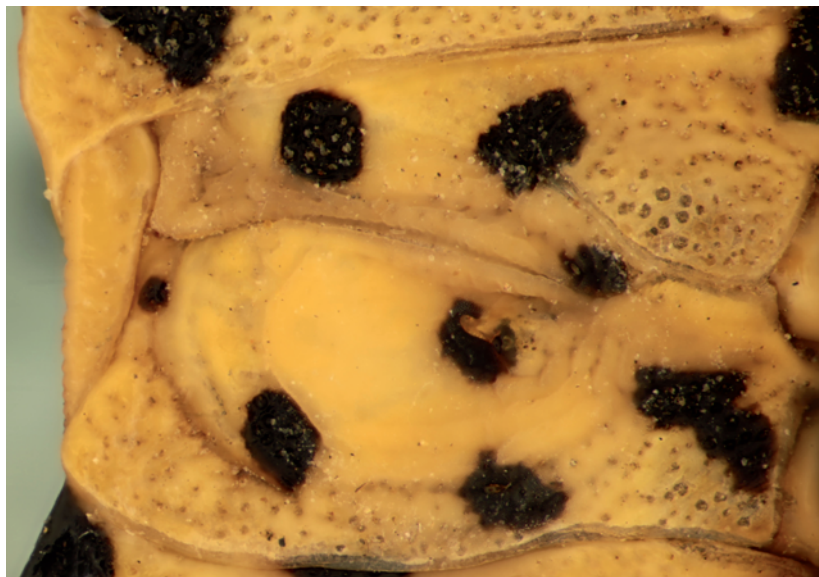


Fig. 2. Meso- and metapleuron of female *Graphosoma melanoxanthum* Horváth, 1903 from Albania, Çajup, 10.vii.1933. (Photo: Mick Webb).
Obr. 2. Meso- a metapleuron samice *Graphosoma melanoxanthum* Horváth, 1903 z Albánie, Çajup, 10.vii.1933. (Foto: Mick Webb).

described in the same paper as ‘on bare sandstone rocks at Çajup, fairly plentiful in one spot at about 4000 feet., fl. 10.vii.33; fr. 6.viii. 1935’. The Çajup locality described by Alston & Sandwith is likely to refer to a large montane meadow in the centre of the Lunxheriës Range, now apparently referred to as Fusha e Cajupit (Çajup field), Zagori in Gjirokastrë province, at an altitude of between 1200 m and 1300 m.

Elsewhere in its known range, *G. melanoxanthum* is associated with a range of Apiaceae (Linnavuori 2008, Golestan et al. 2010), including *Heracleum* spp. (Golestan et al. 2010). Other umbellifers recorded from the Lunxheriës Range by Alston & Sandwith (1940) include *Malabaila involucreta* Boiss et Sprun, *Peucedanum longifolium* W. et K. and *Torilis anthriscus* (L.), and it is possible that these may also be utilised as hostplants by *G. melanoxanthum*, as other species of *Graphosoma* feed on a range of Apiaceae, but switch to different species as the seeds ripen (Musolin & Saulich 2001). Adults of *G. melanoxanthum* have been recorded in March (Hoberlandt 1954) and between June and August (Hoberlandt 1997; Linnavuori 2008), with the majority of recorded specimens collected in July and August.

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SOUHRN

Kněžice *Graphosoma* (*Graphosoma*) *melanoxanthum* Horváth, 1903 je potvrzena jako zástupce evropské fauny na základě nových nálezů z Albánie. Příspěvek je doplněn poznámkami o ekologii a rozšíření tohoto druhu.