Two new *Harpactea* species from Bulgaria (Araneae: Dysderidae)

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**Two new *Harpactea* species from Bulgaria (Araneae: Dysderidae).** -  
Two new species of the genus *Harpactea*, *H. mentor* sp. n. (male and female) and *H. bulgarica* sp. n. (male and female) from Bulgaria are described and illustrated. Both species are very closely related to each other on the basis of morphological characters and belong to the *lepida* species group. Their distribution and habitat preferences are also discussed.

**Keywords:** Taxonomy - spiders - Araneae - Dysderidae - *Harpactea mentor* sp. n. - *Harpactea bulgarica* sp. n.

**INTRODUCTION**

The spider family Dysderidae C. L. Koch, 1837 is quite species-rich in the Mediterranean region. The genus *Harpactea* Bristowe, 1939 currently comprises 152 species (Platnick, 2009). Alicata (1966) separated the species of *Harpactea* into three phyletic lines. In line 2 are placed the *hombergi*-group, the *lepida*-group and the *hedschi*-group. Brignoli (1978) divided the genus *Harpactea* into two species groups (*corticalis* and *hombergi*) and ten subgroups. Both classifications are based mainly on the conformation of male palps. The most recent classification made by Deeleman-Reinhold (1993) arranged the species of *Harpactea* into four species groups (*corticalis, hombergi, lepida, rubicunda*) using characters of the female copulatory organs. In Bulgaria sixteen species of the genus are known (Blagoev et al., 2008; Deltchev & Blagoev, 2001; Lazarov, 2008a, b, 2009). In the last twelve years eight species were described from that country: *Harpactea strandjica* Dimitrov, 1997, *H. deltshevi* Dimitrov & Lazarov, 1999, *H. srednagora* Dimitrov & Lazarov, 1999, *H. alexandrae* Lazarov, 2006, *H. samuilii* Lazarov, 2006, *H. asparuhi* Lazarov, 2008, *H. kubrati* Lazarov, 2008 and *H. konradi* Lazarov, 2009 (Dimitrov & Lazarov, 1999; Lazarov, 2006a, b, 2008a, b, 2009). Three species groups *sensu* Deeleman-Reinhold (1993) have been recorded in the country: *hombergi*-group (1 species), *rubicunda*-group (14 species) and *lepida*-group (1 species). Here we describe two new species found in western Bulgaria (the Slavyanka, Lyulin and Osogovo mountains) and place them in the *lepida*-group.

**MATERIAL AND METHODS**

The spider material was collected by hand and by pitfall traps with 4% formalin, which were emptied once a month. Coloration is taken from formalin-preserved and
alcohol-preserved specimens. All measurements used in the description are given in millimeters. Measurements of the legs were taken from the dorsal side. Total length of the body is without the chelicerae. The vulvae were dissected off and mounted on an excavated slide in lactic acid (90%). The following abbreviations are used in the text and figures: AME - anterior median eyes; male palp: AA - accessory apophysis of bulb, CO - conductor, E - embolus; vulva: AC - anterior arc, PD - posterior diverticulum, S - spermatheca, SA - sclerotised area.

Coordinates of localities are given in UTM (10 x 10 km grid, MGRS: 34T). The spider material is deposited in: Muséum d’histoire naturelle, Genève, Switzerland (MHNG); Institute of Zoology, Sofia, Bulgaria (IZS); National Museum of Natural History, Sofia, Bulgaria (NMNHS).

TAXONOMY

FAMILY DYSDERIDAE C. L. KOCH, 1837

Genus Harpactea Bristowe, 1939

DIAGNOSIS (Deeleman-Reinhold, 1993): Chelicerae: 2 rows of 2 teeth: proximalmost tooth on retromargin situated opposite interspace of teeth on promargin. Leg spination: patellae and tarsi of anterior legs spineless. Male palp: bulb with embolus, conductor and accessory apophysis. Female genitalia: vulva consisting of an anterior basal arch, a chitinizes reverse T-shaped receptacle (anterior spermatheca) and a posterior diverticulum. Anterior spermatheca with anterior, rod-shaped part bearing a distal crest for attachment of muscles, the basal, transverse part fused with the arc.

Harpactea mentor sp. n.                                                                   Figs 1-9, 13-15


PARATYPES: 1 male, 1 female, same locality, date and collectors as for holotype (MHNG). – 1 male, above Paril Village, UTM GL18, 1300 m, hand collecting, 2.07.1937, leg. I. Tsonkov (IZS). – 1 male, Tsarev vrath Peak Post Ni, UTM GL18, 2000 m, hand collecting, 8.06.1936, leg. P. Drensky (IZS). – 1 male, Parilski dol Place, UTM GL18, 1000 m, pitfall traps, 14.05.-30.06.2008, M. Langourov & N. Simov (IZS).

ETYMOLOGY: Named in honour of our mentor and friend, the Bulgarian arachnologist Dr Christo Deltchev.

DIAGNOSIS: The new species corresponds well to the lepida species group and its copulatory organs differ from all other species of the genus. In its body shape H. mentor sp. n. resembles H. lepida (C. L. Koch, 1838), H. thaleri Alicata, 1966 and H. bulgarica sp. n. It can be distinguished from H. lepida and H. thaleri by its male bulb with a thin embolus, with the lamellar part of the conductor resembling an asymmetric fish tail, and with a long, curved and apically truncated accessory apophysis. Harpactea mentor sp. n. differs from H. bulgarica sp. n. by the bigger size of its body, greater distance between the AME, by the leg spination and by the male bulb with curved embolus and longer, apically truncated accessory apophysis (Figs 1-3). The female can be recognised mainly by the anterior vulval arc with sharp lateral edges (Figs 5-6).

Male: Measurements of the holotype: total length 5.43; prosoma length 2.64, width 1.72; sternum length 1.49, width 1.07; opisthosoma length 2.79; chelicerae...
length 0.88, width 0.33. Legs measurements in Table 1. Anterior cheliceral teeth equal in size and larger than the posteriors; distal posterior tooth larger than proximal ones. AME larger than other eyes. Distance between AME approximately half of their diameter (Fig. 4). Labium length two times its basal width.

Leg spines: Coxae I-IV without spines. Femora I, II with 3 prolateral, III with 4 prodorsal and 4 retrodorsal, IV with 2 dorsal. Patellae I-IV without spines. Tibiae I, II without spines, III, IV with 3 prodorsal, 3 retrodorsal, 3 proventral and 3 retroventral. Metatarsi I, II without spines, III with 3 prodorsal, 3 retrodorsal, 3 proventral and 3 retroventral, IV with 4 prodorsal, 4 retrodorsal, 4 proventral and 4 retroventral. Tarsi without spines.

**TABLE 1. Harpactea mentor** sp. n., leg measurements [mm] of male holotype and of one female paratype (separated by a stroke).

<table>
<thead>
<tr>
<th>Legs</th>
<th>Femur</th>
<th>Patella</th>
<th>Tibia</th>
<th>Metatarsus</th>
<th>Tarsus</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>2.00/2.02</td>
<td>1.35/1.01</td>
<td>1.63/1.18</td>
<td>1.53/1.33</td>
<td>0.56/0.43</td>
<td>7.07/5.97</td>
</tr>
<tr>
<td>II</td>
<td>1.81/1.44</td>
<td>1.21/0.72</td>
<td>1.44/0.95</td>
<td>1.40/1.21</td>
<td>0.60/0.55</td>
<td>6.46/4.87</td>
</tr>
<tr>
<td>III</td>
<td>1.53/1.30</td>
<td>0.84/0.69</td>
<td>1.07/0.87</td>
<td>1.35/1.27</td>
<td>0.51/0.40</td>
<td>5.30/4.53</td>
</tr>
<tr>
<td>IV</td>
<td>2.19/1.79</td>
<td>1.12/0.90</td>
<td>1.63/1.73</td>
<td>2.00/1.24</td>
<td>0.65/0.69</td>
<td>7.59/6.35</td>
</tr>
</tbody>
</table>


**Female**: All characters as in male except for measurements and leg spination. Measurements of one female paratype: total length 4.71; prosoma length 2.11, width 1.24; sternum length 1.44, width 1.16; opisthosoma length 2.60; chelicerae length 0.81, width 0.29. Legs measurements in Table 1.

Leg spines: Coxae I-IV without spines. Femur I with 2 prodorsal and 2 retrodorsal, II with 3 prolateral, III with 2 dorsal, 2 prodorsal and 2 retrodorsal, IV with 2 dorsal. Patellae I-IV without spines. Tibiae I, II without spines, III with 4 prodorsal, 4 retrodorsal, 4 proventral and 4 retroventral, IV with 3 prodorsal, 3 retrodorsal, 3 proventral and 3 retroventral. Metatarsi I, II without spines, III with 4 prodorsal, 4 retrodorsal, 4 proventral and 4 retroventral, IV with 5 prodorsal, 5 retrodorsal, 5 proventral and 5 retroventral. Tarsi without spines.

Vulva (Figs 5-6): Spermatheca long and sclerotised, pointed in its anterior part. Anterior arc with sharp lateral edges. Posterior diverticulum unintentionally removed during dissection and indistinguishable (or broken off).

**ECOLOGY**: The new species occurs in the leaf litter of forests between 1000 and 2000 m altitude. Matures males were captured from May to September, the single female in August-September.

**DISTRIBUTION**: Only known from the Slavyanka Mountain in south-western Bulgaria.
Harpactea bulgarica sp. n.                                                             Figs 10-12, 16-24

HOLOTYPE: Male; Bulgaria, Lyulin Mts, Bonsovi Polyani Place, UTM FN82, 890 m, pitfall traps, 1.02-1.03.2002, leg. M. Naumova (MHNG).

PARATYPES: 1 female, same locality, collector and date as for holotype, pitfall traps (MHNG). – 2 males, 1 female, same locality and collector as for holotype, pitfall traps, 1.03-1.04.2002 (NMNHS). – 1 male, same locality and collector as for holotype, pitfall traps,

Harpactea mentor sp. n. (7-9) and H. bulgarica sp. n. (10-12). (7, 10) Left palp, prolateral view. (8, 11) Left palp, retrolateral view. (9, 12) Left palp, detail of tip, anterior view. Scale line 0.2 mm.

Harpactea bulgarica sp. n.

HOLOTYPE: Male; Bulgaria, Lyulin Mts, Bonsovi Polyani Place, UTM FN82, 890 m, pitfall traps, 1.02-1.03.2002, leg. M. Naumova (MHNG).

PARATYPES: 1 female, same locality, collector and date as for holotype, pitfall traps (MHNG). – 2 males, 1 female, same locality and collector as for holotype, pitfall traps, 1.03-1.04.2002 (NMNHS). – 1 male, same locality and collector as for holotype, pitfall traps,
1.06-28.06.2002. – 1 male, 1 female, near Dupevitsa Peak, UTM FN82, 1010 m, pitfall traps,
23.12.2001-28.02.2002 (MHNG). – 1 male, near Dupevitsa Peak, UTM FN82, 1010-1130 m, same collector as for holotype, pitfall traps, 1.06-28.06.2002 (IZS). – 1 male, west of Cherniya Kos, UTM FN82; 1010 m, same collector as for holotype, pitfall traps, 1.06-28.06.2002 (IZS).
– 1 male, 1 female, same locality and collector as for holotype, pitfall traps, 1.02-1.03.2002 (MHNG). – 4 females, same locality and collector as for holotype, pitfall traps, 1.02-1.03.2002 (IZS). – 1 male, same locality and collector as for holotype, pitfall traps, 1.02-1.03.2001 (IZS). – 1 female, same locality and collector as for holotype, pitfall traps, 2.06-31.07.2000 (IZS). – 2 females, same locality and collector as for holotype, pitfall traps, 1.09-1.10.2000 (IZS). – 2 males, Osogovo Mts, Bogoslov Village, UTM FM37, 950 m, hand collecting, 31.05.1995, leg. G. Tsoniev & B. Georgiev (IZS).

**Figs 13-18**

*Harpactea mentor* sp. n. (13-15) and *H. bulgarica* sp. n. (16-18). (13, 16) Eyes. (14, 17) Vulva, ventral view. (15, 18) Vulva, dorsal view. Scale line 0.2 mm.
ETYMOLOGY: The specific name refers to Bulgaria.

DIAGNOSIS: The new species resembles other species of the lepida group, *H. lepida*, *H. thaleri* and especially *H. mentor* sp. n., and it differs from them by the following characters: smaller size of body; smaller distance between AME; different leg spination; male bulb with a thin and less curved embolus, with the lamellar part of the conductor resembling a fish tail, and with a shorter, slightly curved and apically

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pointed accessory apophysis (Figs 19-21). The female can be recognised mainly by the anterior vulval arc with rounded lateral edges and by the well visible separate posterior diverticulum with an oval shape (Figs 23-24).

**DESCRIPTION**: Species of small size. Carapace with smooth surface, yellow to yellow-brown. Chelicerae and sternum light brown. Sternum with hairs on periphery. Abdomen light grey to grey, long and slender. Legs yellow to yellow-brown.

**Male**: Measurements: total length 3.73; prosoma length 1.68, width 1.35; sternum length 1.16, width 0.93; opisthosoma length 2.05; chelicerae length 0.58, width 0.23. Leg measurements in Table 2. Promargin of chelicerae with two teeth of equal size close to each other. Retromargin with two teeth of equal size but smaller than those on promargin. Distance between AME about a quarter of their diameter (Fig. 22). Labium length two times its basal width.

Leg spines: Coxae I-IV without spines. Femora I, II with 1 prolateral; III, IV with 3 prolateral and 2 retrolateral. Patellae I-IV without spines. Tibiae I, II without spines; III, IV with 3 prodorsal, 3 retrodorsal, 3 proventral and 3 retroventral. Metatarsi I, II without spines; III with 3 prodorsal, 2 retrodorsal and 2 ventral; IV with 3 prodorsal, 3 retrodorsal, 4 proventral and 4 retroventral. Tarsi without spines.

**Female**: All characters as in male except for sizes and leg spination. Measurements: total length 5.54; prosoma length 2.28, width 1.49; sternum length 1.3, width 1.02; opisthosoma length 3.26; chelicerae length 1.21, width 0.51. Leg measurements in Table 2.

Leg spines: Coxae I-IV without spines. Femur I with 1 prolateral, II with 2 prolateral; III with 3 prodorsal and 3 retrodorsal, IV with 3 dorsal. Patellae I-IV without spines. Tibiae I, II without spines; III with 3 prodorsal, 3 retrodorsal, 3 proventral and 3 retroventral; IV with 3 prodorsal, 3 retrodorsal, 3 proventral, 3 retroventral, 2 prolateral and 2 retrolateral. Metatarsi I, II without spines; III with 4 prodorsal, 4 retrodorsal and 4 ventral; IV with 4 prodorsal, 4 retrodorsal, 8 ventral. Tarsi without spines.

**Vulva** (Figs 23-24): Long sclerotised apically truncated spermatheca with broad dorsal base. Anterior arc with rounded lateral edges.

**ECOLOGY**: The new species occurs in the leaf litter of forests between about 900 to 1200 m altitude. Matures males and females were captured from January to September.

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**TABLE 2. *Harpactea bulgarica* sp. n., leg measurements [mm] of male holotype and of one female paratype (separated by a stroke).**

<table>
<thead>
<tr>
<th>Legs</th>
<th>Femur</th>
<th>Patella</th>
<th>Tibia</th>
<th>Metatarsus</th>
<th>Tarsus</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1.49/1.49</td>
<td>0.93/1.07</td>
<td>1.67/1.49</td>
<td>1.16/1.63</td>
<td>0.60/0.65</td>
<td>5.85/6.33</td>
</tr>
<tr>
<td>II</td>
<td>1.35/1.44</td>
<td>0.84/0.93</td>
<td>1.07/1.21</td>
<td>1.16/1.26</td>
<td>0.47/0.60</td>
<td>4.89/5.44</td>
</tr>
<tr>
<td>III</td>
<td>1.24/1.26</td>
<td>0.56/0.65</td>
<td>0.88/0.88</td>
<td>1.12/1.16</td>
<td>0.47/0.51</td>
<td>4.66/4.46</td>
</tr>
<tr>
<td>IV</td>
<td>1.77/1.77</td>
<td>0.74/0.79</td>
<td>1.44/1.44</td>
<td>1.58/1.77</td>
<td>0.65/0.70</td>
<td>6.18/6.47</td>
</tr>
</tbody>
</table>
DISTRIBUTION: Only known from the Lyulin and Osogovo Mountains in western Bulgaria.

DISCUSSION

Deeleman-Reinhold (1993) defined the lepida species group as having “vulva: posterior diverticulum wider than long, with lightly chitinised button. Bulb with lamellate conductor, embolus apical, reflexed. Coxae and patellae spineless”. As defined by Deeleman-Reinhold, the group included Alicata’s lepida-group of the phyletic line 2 (Alicata, 1966) and Brignoli’s “subgroup lepida” (Brignoli, 1978), except H. saeva (Herman, 1879) and H. henschi (Kulczyński, 1915). Harpactea lepida (Europe to Moldavia), H. grisea (Canestrini, 1868) (Switzerland, Austria, Italy, Slovenia) and H. thaleri (Switzerland, Italy) were put in this group by Deeleman-Reinhold (1993). Harpactea bulgarica sp. n. and H. mentor sp. n. can also be placed there. There are additional species described only from males or females, e.g. Harpactea apollinea Brignoli, 1979 (female unknown) living in continental Greece (wrong record from Bulgaria), which can be included here too. Harpactea apollinea resembles the newly described species by its characteristic lamella-shaped conductor and thin curved embolus.

Since Bulgaria has been quite well sampled for spiders, H. mentor sp. n. and H. bulgarica sp. n. can be considered as endemics of the Slavyanka, Lyulin and Osogovo Mountains.

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REFERENCES


