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THE FIRST RECORDED OCCURRENCE OF *HIRUDO VERBANA* CARENA, 1820 (HIRUDINEA: ARHYNCHOBDELLIDA: HIRUDINIDAE) IN ROMANIA

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Abstract. In 2005, a *Hirudo verbana* specimen was observed in Stracoș Valley, within the Tășad Reserve (Bihor county, north-western Romania). Since the coloration pattern of this once forgotten species matches its genetic differentiation, the identification of the specimen as belonging to the south-eastern European *H. verbana* appears plausible. The species was previously cited in southern, central and eastern Europe, but not in Romania. Therefore, the present observation might be its first recognized occurrence in the country. As recently pointed out, *H. verbana* is one of the three species commonly known as the European medicinal leech and the most abundant as such. Most international and national conservation legislation containing only *H. medicinalis* (including IUCN, CITES, Berne Convention) needs completion, according to the new taxonomy.

Résumé. Un spécimen d'*Hirudo verbana* a été observé en 2005 dans la vallée Stracoș de la réservation naturelle Tășad (Bihor, dans le nord-ouest de la Roumanie). Lorsque le modèle de la coloration de cette espèce récemment révalidée correspond à sa caractérisation génétique, l'identification du spécimen observé est plausible. L'aréal connu d'*Hirudo verbana* comprend le sud, le centre et l'est de l'Europe, mais pas la Roumanie, donc cette obsérvation est la première occurence documentée dans ce pays. Récemment a été démontré que *H. verbana* est une des trois espèces de sangsues médicinales européennes et la plus utilisée. En conséquence, la plupart des législations internationales et nationales mentionnant seulement *H. medicinalis* (y compris IUCN, CITES, Convention de Berne) nécessitent des complétements en accord avec la nouvelle taxonomie du genre *Hirudo*.

Key words: *Hirudo verbana*, first recorded occurrence, Romania, conservation.

INTRODUCTION

Since the ancient times, the hematophagous European leeches were used in medicine for bloodletting as a panacea. Nowadays, their anticoagulant and anti-inflammatory substances are of medical and pharmaceutical attention, and the direct therapeutic application of the now commercially bred leeches is revived, e. g. for restoring blood circulation and ameliorating congestion after reconstructive surgery (Siddall et al., 2007; Sket & Trontelj, 2008). Only recently it was proved that most commercially available leeches are not *Hirudo medicinalis* Linnaeus, 1758, but the long-neglected, more colourful and thermophilic *H. verbana* Carena, 1820, or sometimes *H. orientalis* Utevsky & Trontelj, 2005 (Trontelj et al., 2004; Trontelj & Utevsky, 2005; Kutschera, 2006; Siddall et al., 2007).

The distribution for *H. verbana* known from recent data includes southern, central and eastern European countries (Utevsky et al., 2010), though for Romania it was not cited, yet. The available literature on Romanian Hirudinidae is very sparse, and even a synthetic study on Romanian Hirudinea mentioned only *H. medicinalis*, listing for that species some of the distribution areas and morphological characters of *H. verbana* (Cristea & Manoleli, 1977).

MATERIAL AND METHODS

During a field trip within the ROSCI0240 "Natura 2000" site near Tăşad (Bihor county, north-western Romania) in April, 2005, a colourful leech was observed and photographed in a small pond near Stracoş Valley, close to the reserve limit (46°55'28,20"N, 22°08'46,34"E, in Stereo 70). The pond had muddy bottom on a clay substrate, no other fauna and nearly no aquatic vegetation, but dried stems of grass. In summer it is being used for bathing by the livestock of local people while grazing on the pastures nearby. During further trips in the area, no other leeches were observed in the pond.

RESULTS

The animal had a strikingly more colourful appearance than common *H. medicinalis* individuals, due to its broader orange, longitudinal dorsal stripes (Fig. 1). The ventral side was not examined, since at that time the distinctive morphological characters and the validity of *H. verbana* were not known to us yet, but a black marginal stripe seemed apparent.

DISCUSSIONS

The *H. verbana* specimen observed in the pond near Stracoş Valley may have been introduced in the Tăşad area by cattle, since *"H. medicinalis" sensu lato* prefers the proximity of pastures with livestock and, being an ectoparasite, it dispersing itself by staying attached to mobile vectors like mammals for a considerable time (Trontelj & Utevsky, 2005). Since semiaquatic leeches do not tolerate low oxygen levels, as it may be the case in a small pond with no aquatic vegetation, the observed animal may have migrated then from the site and therefore no other leeches were found there afterwards.

The coloration morphs of the European medicinal leech have been considered a morphological variety of *H. medicinalis* or a mere case of intraspecific variability for a long time, though geographically localized to a considerable extent. Only in 1999, the species status was re-established for the forgotten *H. verbana* (Nesemann & Neubert, 1999), which corresponds morphologically to the south-eastern *H. medicinalis* f. *officinalis*, yet that view was not generally accepted. By means of the random amplified polymorphic DNA technique and the analysis of nuclear and mitochondrial gene sequences and nuclear microsatellites, *H. verbana* was proved to be a distinct species from *H. medicinalis* (Trontelj et al., 2004; Trontelj & Utevsky, 2005; DeSalle et al., 2005; Siddall et al., 2007). The two species interbreed in captivity, but some degree of reproductive isolation has been found (Petrauskiené et al., 2009). Therefore, pigmentation is not at all misleading as in other cases, but on the contrary, it is the most useful character in identifying *Hirudo* species in the field, *H. verbana* having two characteristic broad, diffuse, pale orange paramedian stripes and a unicoloured, greenish to yellow venter, with a pair of black ventrolateral stripes (Utevsky & Trontelj, 2005).

The distribution of *H. verbana*, recognized as such or inferred from literature citing the coloration types and forms of *"H. medicinalis"*, includes southern and central Europe (Italy, Switzerland, Germany, Austria, „rare" in Hungary), the eastern Mediterranean region (Turkey), the Balkans (Slovenia, Croatia, FYR Macedonia, Serbia, Montenegro, Greece), Ukraine, the Republic of Moldova, the Krasnodar Territory in south-western European Russia, Armenia and Uzbekistan,

Fig. 1 - *Hirudo verbana* individual observed in Stracoş Valley, Tăşad Reserve, Bihor county, Romania (Photos: M. Venczel).

while *H. medicinalis* is distributed from Britain and southern Norway to the southern Urals and probably as far as the Altai Mountains (Jueg, 1999; Moog et al., 2001; Juhász et al., 2002, 2006, 2008; Nieuwenhuis, 2005; Utevsky & Trontelj, 2005; Kutschera, 2006; Minelli, 2007; Utevsky et al., 2010). The new find of *H. verbana* confirms to the species range inferred by Utevsky et al. (2010). Most of Romania's territory seems to be within the range of *H. verbana*.

Because of heavy collecting for medical purposes especially during the 19th century, but also in present day Turkey and other south-eastern European countries, and because of the general decreasing, fragmentation and pollution of wetland habitats, the populations of European medicinal leeches suffered a decline in all their geographic range. Both *H. medicinalis* and *H. verbana* are considered Near Threatened (Utevsky et al., 2010), but only the first species is listed in nature conservation international conventions (IUCN, CITES Appendix II, Berne Convention) and national legislations. Little is known about the distinct distribution, ecology and endangerment of the two species and about the anthropic influence on them respectively, yet the *"H. medicinalis"* samples from the southern Balkan Peninsula and Turkey, cited in literature, and the majority of commercially, exploited medicinal leeches from the same regions were actually *H. verbana* (Trontelj et al., 2004; Trontelj & Utevsky, 2005; Siddall et al., 2007; Laufer et al., 2008). Accordingly, appropriate taxonomic correction of international and national conservation conventions and legislation is a necessity.

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PRIMA SEMNALARE A PREZENȚEI SPECIEI *HIRUDO VERBANA* CARENA, 1820 (HIRUDINEA: ARHYNCHOBDELLIDA: HIRUDINIDAE) ÎN ROMÂNIA

REZUMAT

Un exemplar de *Hirudo verbana* Carena, 1820 a fost observat și fotografiat în 2005 în valea Stracoș (rezervația de la Tășad, jud. Bihor). Colorația acestei specii recent revalidate în literatură (propusă în 1999 și confirmată pe baze genetice în 2004 și 2005) corespunde cu caracterizarea ei genetică față de celelalte specii ale genului, astfel că identificarea ulterioară a exemplarului observat apare ca fiind plauzibilă. Specia a fost citată anterior în sudul, centrul și estul Europei, inclusiv în Ungaria și Ucraina, dar nu și în România. *H. verbana* e una dintre cele trei specii cunoscute în Europa drept lipitoarea medicinală, fiind cel mai intens folosită ca atare. De aceea, datele faunistice privind România, precum și legislațiile și reglementările de mediu internaționale și naționale, care se referă doar la *H. medicinalis* (IUCN, CITES, Convenția de la Berna), necesită corecții și completări conform taxonomiei actualizate a genului Hirudo.

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