Folia faunistica Slovaca, 2011, 16 (2): 71–72 ISSN 1335-7522

FIRST RECORD OF THE MYRMECOPHILOUS FUNGUS *RICKIA WASMANNII* (ASCOMYCETES: LABOULBENIALES) IN SLOVAKIA

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Abstract: We report here the first record of the myrmecophilous fungus *Rickia wasmannii* Cavara, 1899 in Slovakia. The fungus was found in the ant species *Myrmica scabrinodis* Nylander, 1846 in the Ondavská vrchovina Mts. *R. wasmannii* does not appear to be very abundant in Slovakia. Nevertheless, intensive research might reveal additional localities where it occurs.

Key words: Laboulbeniales, *Rickia wasmannii*, ants, Hymenoptera, Formicidae.

INTRODUCTION

The Laboulbeniales are a peculiar group of fungi growing out of the cuticle of arthropods, particularly insects (Tavares 1985; Weir & Beakes 1995; Santamaria 2001; Espadaler & Santamaria 2003; Santamaria 2003; Rossi & Máca 2006; Herraiz & Espadaler 2007). They occur mostly on beetles (80 %) and flies (10 %), less on mites, millipedes and other groups, showing rather high host specificity (Tavares 1985; Herraiz & Espadaler 2007). Laboulbeniales do not seem to damage their hosts very much, if at all (Espadaler & Lodos 1983; Espadaler & Santamaria 2003).

In the order Hymenoptera, only ants are known as hosts of certain species of Laboulbeniales, especially of the genera *Rickia* Cavara, *Dimorphomyces* Thaxter, and *Laboulbenia* Mont. et C. P. Robin, (Espadaler & Santamaria 2003). The myrmecophilous fungus *Rickia wasmannii* Cavara, has been until recently reported from Spain, Italy, France, Germany, Switzerland, former Yugoslavia, Romania, Hungary, Austria, and the Czech Republic (Espadader & Suněr 1989; Santamaria et al. 1991; Tartally et al. 2007; Tartally 2008, 2009; Bezděčková & Bezděčka in press). It is obligately found in ants of the genus *Myrmica* Latreille, 1804, parasitizing all parts of the ant cuticle.

MATERIALS AND METHODS

To reveal the occurrence of *R. wasmannii* we checked 2500 specimens of the genus *Myrmica* from various parts of Slovakia (Slovak Karst National Park, Záhorie Protected Landscape Area, Ondavská vrchovina Mts) during 2007–2010. We examined *M. rubra* (Linnaeus, 1758), *M. ruginodis* Nylander, 1846, *M. rugulosa* Nylander, 1849, *M. sabuleti* Meinert, 1861, *M. scabrinodis* Nylander, 1846, *M. schencki* Viereck, 1903, and *M. specioides* Bondroit, 1918. The research was carried out using the publications by Cavara (1900), Thaxter (1908) and Tartally et al. (2007).

RESULTS

We found five colonies of *M. scabrinodis* parasitized by *R. wasmannii* at one site in the Ondavská vrchovina Mts. The fungus grew from the cuticle, everywhere on the bodies of majority of workers in each colony (Fig. 1). Infested ants were active, without any behavioural changes. No infested queen, male or brood was found. All det. Bezděčka & Bezděčková.

Material examined: Slovakia, Hostovice (co-ordinates of the centre 49° 7’ 46” N, 22° 6’ 49” E, max. altitude 320 m), 7 Aug 2010. In five colonies of *M. scabrinodis*.

DISCUSSION

The myrmecophilous fungus *R. wasmannii* was first collected by Wasmann in *M. rubra* in Linz on the Rhine (Germany) and subsequently described by Cavara (cf. Cavara 1900). Later it was found in *M. sabuleti*, *M. salina* Ruzsky, 1905, *M. scabrinodis*, *M. specioides*, and *M. vandeli* Bondroit, 1920 (Espadal-

er & Suněr 1989; Santamaria et al. 1991; Tartally et al. 2007; Tartally 2008, 2009; Bezděčková & Bezděčka in press).

Although we examined seven species of the genus *Myrmica* in Slovakia, we recorded *R. wasmannii* only in *M. scabrinodis*. Infestation of this species is reported also from Hungary and Romania, where it is the most common host of *R. wasmannii* (Tartally et al. 2007), and from Italy (Spegazzini 1914). Also Tartally et al. (2007) recorded parasitization only in a limited number (four) of the 11 checked *Myrmica* species in the Carpathian Basin. Similarly to the Czech Republic (Bezděčková & Bezděčka in press) we recorded *R. wasmannii* in Slovakia only in workers. In contrast, Tartally et al. (2007) report parasitization of both workers and dealate queens in material from the Carpathian Basin. Consistently with previous observations (Tartally et al. 2007; Bezděčková & Bezděčka in press), the infected ants seemed to be indifferent to the presence of *R. wasmannii* on their cuticules. However, Spegazzini (1914) observed behavioural changes, mainly slow movements, in parasitized workers.

Recently, *R. wasmannii* has been discovered in Hungary, Romania (Tartally et al. 2007) and in the Czech Republic (Bezděčková & Bezděčka in press). Its find in Slovakia represents a further extension of its recently known distribution area. The fact that we found *R. wasmannii* only at one site in Slovakia suggests that *R. wasmannii* is not very abundant in this country. Nevertheless, intensive research might reveal additional sites where it occurs. Similar situation may be in other European countries.

Figure 1. The fungus *Rickia wasmannii* in the ant species *Myrmica scabrinodis*.

ACKNOWLEDGEMENTS

We are very grateful to W. Rossi and J. Máca for valuable information and J. W. Jongepier for language correction.

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Submitted: 29.4.2011
Accepted: 15.7.2011
Published online: 3.8.2011