CHOROLOGY OF *STIGMIDIUM* GENUS IN ROMANIA

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The research activity based on identification of lichen species tabulated in *Stigmidium* genus was performed between 2009-2015 especially in forestry areas. Only one species of this genus, namely *Stigmidium microspilum* (Körb.) D. Hawksw was found in Botoșani and Suceava counties within Crujana and Tudora reserves. Moreover, future researches on chorology of *Stigmidium* genus are of a great importance for the lichen flora of Romania.

Keywords: chorology, *Stigmidium*, Romania.

INTRODUCTION

In Romania *Stigmidium* genus is represented by three species, namely *Stigmidium microspilum* (Körb.) D. Hawksw., *Stigmidium cerinae* Cl. Roux et Triebel and *Stigmidium rouxianum* Calatayud and Triebel. Species of this genus are lichenicolous fungi known as parasites on other lichen species (Alstrup and Olech, 1993; Calatayud and Triebel, 2003; Khodosovtsev *et al.*, 2013). The investigated genus comprises over 90 taxa based on a species type termed *Stigmidium schaereri* A. Massal. (Kocourková and Knudsen, 2012). *Stigmidium* genus is represented by lichenicolous ascomycetes and a lot of species belong to a distinctive phylogenetic group (Zhurbenko and Triebel, 2008).

The aim of this study is based on the knowledge of the *Stigmidium* genus chorology on the Romania territory. The objective of the study consists in the mapping of *Stigmidium* distribution in Romania.

MATERIALS AND METHODS

The researches regarding the distribution of *Stigmidium* genus on the Romania territory were performed from 2009 (March) till 2015 (December). The chorology of *Stigmidium* genus and taxonomy are based on Ciurchea (2004) work and informations from a database found to following link: www.mycobank.org.

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RESULTS AND DISCUSSION

General distribution of *Stigmidium microspilum*

In Europe *S. microspilum* is widely distributed as a parasite specimen (Kocourková and van den Boom, 2005; Motiejūnaitė *et al.*, 2012). Thus it was found within the following countries: **Czech Republic**, Bohemia region, on *Graphis scripta* whose host trees were *Pinus* and *Fraxinus excelsior* (Kocourková and van den Boom, 2005), **Denmark**, Northeast Zealand district, Jægerspris Nordskov, on *G. scripta* and East Jutland district, Gydelløkke, on *G. scripta* (Alstrup *et al.*, 2004), **France**, Ardennes Department, on *G. scripta* found on corticolous substrata (Diederich *et al.*, 2006), **Germany**, Lower Saxony, on *G. scipta* (Otte *et al.*, 2006), Swabia, on *G. scripta*, Upper Bavaria and Lower Bavaria, on *G. scripta* (Triebel and Scholz, 2001; von Brackel, 2009), **Estonia** without any indication of locality and its host (Motiejūnaitė *et al.*, 2012), **Lithuania**, Asveja Regional Park, on *G. scripta*, **Spain**, Navarra Province, on *G. scripta* (Etayo and Diederich, 1998), **Sweden**, Skåne Province, on *G. scripta* hosted by *Fraxinus* (Santesson, 1986), **Switzerland**, Swiss Alps, Jura Mountains, on *G. scripta* growing on beech (von Brackel, 2013).

Distribution of *Stigmidium microspilum* in Romania

Old Literature Data

Caraş-Severin County, the Banat Mountains, Domoglet Mountain, Băile Herculane (Ciurchea, 2004).

Original data

Suceava County, Crujana Forest Natural Reserve, on *G. scripta* sampled on *Fagus sylvatica* L., leg. Vicol Ioan, 27.06.2013, det. Vicol Ioana, 02.07.2013, [BUCM L2033].

Botoşani County, Tudora Forest Natural Reserve, on *G. scripta* sampled on *Quercus* sp., leg. Vicol Ioan, 19.08.2013, det Vicol Ioana, 16.09.2013 [BUCM L2122].

Taxonomy

Stigmidium microspilum syn. *Arthopyrenia microspila* Körb., *Pharcidia microspilum* Körb., *Pharcidia microspila* (Körb.) G. Winter, *Pyrenula rhyponta* Hepp non Ach., *Arthopyrenia rhyponta* Mass., *Arthopyrenia rhyponthella* Lojka, *Pyrenula rhyponta* Trevis. non Ach., *Verrucaria microspila* (Körb.) Harm. This genus is tabulated within Ascomycota Class, Pyrenocarpeae Series, Dothideales Order, Arthopyreniaceae Family, Fungi non-lichenized (Ciurchea, 2004).

Thallus morphology

Stigmidium microspilum is a parasitic species on *Graphis scripta* (L.) Ach. The thallus is recognized as grayish or blackish spots on host thallus. This species has 1-septate ascospores, with a median constriction, thin septa, thin mucous coating, ascospores contain oil drops. Ascospores have the following dimensions: (13) 14 – 19 (20) × (3) 4 – 5 μm (Ciurchea, 2004).

New records for Romania

Two other lichen species such as: *Stigmidium cerinae* Cl. Roux and Triebel identified on *Lecanora epibryon* (Ach.) Ach., in Hunedoara County, Retezat Mountains (Vondrák and Liška, 2013) and *Stigmidium rouxianum* Calatayud and Triebel found on *Acarospora cervina* A. Massal. in Caraș-Severin County, Banat Mountains, Domoglet Mountain, Băile Herculane (Vondrák and Šoun, 2008).

As distribution, on the one hand *S. cerinae* is found in Austria, Germany, Swizerland and Italy (Roux and Triebel, 1994), and one the other hand *S. rouxianum* was identified in several countries such as: France, Italy, Spain, Switzerland, Czech Republic, Ukraine, Russia (Calatayud and Triebel, 2003; Urbanavichus *et al.*, 2011; Vondrák and Šoun, 2008).

CONCLUSIONS

Although a lot of trees with smooth rhytidome such as: beech, cherry and hornbeam were sampled within natural and seminatural forest habitats (com. pers.), no chorological data about *Stigmidium* genus were obtained, with the exception of Crujana and Tudora forest natural reserves. *S. microspilum* is easy to see on its host, thereby it cannot be overlooked. A plausible explanation consists in that it is rather uncommon in Romania; therefore, further investigations are needed.

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