

## *Lamproderma scintilans*, a myxomycete species new for Poland

WANDA STOJANOWSKA

Museum of Natural History, Wrocław University  
Sienkiewicza 21, PL-50-335 Wrocław

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*Lamproderma scintilans* (Berk. et Britzelm) Morgan, collected in the Botanical Garden of Wrocław University, is a new slime mould in Poland. Between 13 May and 23 May 2003, an abundant occurrence of the species was observed in the litter. In 2004, it was noted occasionally whereas *Didymium squamulosum* was numerous in the litter. Other myxomycetes accompanied *Lamproderma scintilans*. Consequently, the number of slime moulds in the Botanical Garden increased by 3 species, and a total number of 80 taxa has been recorded in this site.

**Key words:** Myxomycetes, slime moulds, *Lamproderma scintilans*, Botanical Garden of Wrocław University, Poland

### INTRODUCTION

According to Neubert et al. (2000), *Lamproderma scintilans* (Berk. et Britzelm) Morgan belongs to the class Myxomycetes, order Stemonitales, family Stemonitidaceae. 48 taxa of the genus *Lamproderma* have been recorded in the world. In Poland, 8 species are given in Krzemieniewska's (1960) monograph, and 9 species are specified in the checklist of Myxomycetes of Poland (Drozdowicz et al. 2003). The lists of species given in both studies differ. Five of the species recorded in the checklist, i.e. *Lamproderma atrosporum*, *L. carestiae*, *L. maculatum*, *L. ovioidium*, *L. sauteri*, are species found by Drozdowicz, new for Poland. *Lamproderma nigrescens* and *L. violaceum*, reported by Krzemieniewska (1960), are now considered to be synonyms of other taxa. *L. scintilans* and *L. echinulatum* were noted in areas outside the current territory of Poland.

## SPECIES DESCRIPTION

*Lamproderma scintilans* (Berk. et Britzelm) Morgan

syn.: *Stemonitis scintilans* Berk. et Britzelm

*Lamproderma arcyrroides* var. *iridea* Cooke

*Lamproderma irideum* (Cooke) Masee (Martin and Alexopoulos 1969)

Sporangia singly on the stalks, in smaller or greater groups. Nearly round, 1-1.5 mm high, diameter 0.3-0.6 mm. Sporangium wall metallic silvery, blue or bronze, iridescent. Stalks on a circular hypothallus. Stalk changes into a cylindrical columella (top obtuse or rounded). Columella reaches the centre of the sporangium. Stiff threads of capillitium deviate radially from the columella top; they are dichotomically ramificated making a net. Threads are colourless at the base, brown further up, with a sharpened top. Spores violaceous brown, 7-10  $\mu\text{m}$  in diameter, distinctly warted. Plasmodium watery white.

**Distribution.** According to Martin and Alexopoulos (1969), the type locality is Ceylon; the species occurs in: Southern and Eastern Asia; Southern Canada; south of Panama; West Indies; South America; Hawaii; in Europe (Great Britain, Germany); Krzemieniewska (1960) listed the species, according to Namysłowska, from Podkarpacie (Ukraine at present) and from Romania; Adamonyté (2001) - from SW Lithuania moist chamber. It is a cosmopolitan species (Neubert et al. 2000).

**Illustrations.** Colour drawings of sporangia, capillitium and spores are given in *Mycetozoa* (Lister A. and Lister G. 1929. Fig. 130). A colour drawing is also provided in Martin and Alexopoulos' (1969) monograph (Plate XXI, No 198); Neubert et al. (2000) give a colour photograph (3x) of sporangia (pages 221 and 223), and black and white drawings (3x) of sporangia, capillitium, spores and a columella top in the description of *Lamproderma scintilans* (pages 220 and 222); electronograms of sporangium, spores and capillitium are given on page 362.

## STUDY AREA

*Lamproderma scintilans* was collected in the Botanical Garden of Wrocław University in 2003 and 2004. It had not been recorded in Poland before, probably due to very small sporangia, difficult to find, and the time of its fruiting which coincides with early spring.

In 1992, a short study of Myxomycetes of the Botanical Garden of Wrocław University was published (Stojanowska 1992). A collective list of slime moulds, formerly noted by Schroeter (1873, 1889), Krzemieniewska (1957) was given, and supplemented with the results of the author's studies. The list of myxomycete species occurring in the Botanical Garden comprised 77 taxa. Observations were also carried out on leave compost where numerous aethalia of *Fuligo septica* and *Diachea leucopodia* were recorded, and *Didymium difforme* was observed on a dry leaf.

The present observations, conducted along the wall separating the Botanical Garden from the theological seminary, were carried out in compost consisting of litter of trees growing in the area (*Quercus robur*, *Acer platanoides*, *Metasequoia glypto-*

*stroboides*, *Taxus baccata* and numerous *Rhododendron* sp.), leaves of neighbouring trees and shrubs (*Platanus acerifolia*, *Tilia cordata*, *Aesculus hippocastanus*, *Taxodium distichum*, *Pinus strobus*, *Gingko biloba*, *Betula pendula*), as well as cut grasses, mosses and small twigs.

After the dry and cold winter of 2003, April and May were warm and dry. First observations were conducted on 9 May, when no sporangia of slime moulds were found. After 3 days of torrential rain, sporangia of *Lamproderma scintilans* occurred abundantly (on dry leaves of *Taxodium*, *Quercus*, *Aesculus*, *Pinus* and mosses) and *Didymium squamulosum* (on leaves of *Taxodium*, *Platanus*, *Quercus*) on 13 May. Both species covered a large area on the substrate. It rained on the same day, and new sporangia of these two species were observed over the next 10 days. Moreover, *Didymium minus* was collected on leaves of *Pinus strobus* and in the moss on 20 May, while *Stemonitis fusca* was found on a fallen twig on 23 May. Also on 23 May, numerous sporangia of *Craterium minutum* (on the bark of *Betula*, on leaves of *Pinus*, *Quercus* and *Platanus*) and *Didymium melanospermum*, which was also noted on 28 May, were recorded in one place. On 13, 20 and 23 May, *Lamproderma scintilans* and *Didymium squamulosum* occurred abundantly.

Observations in the Botanical Garden on the final day of the study, 3 June 2003, did not yield substantial further findings. Few sporangia of *Didymium squamulosum* were found, and the end of the spring as well as the summer that year were hot and dry.

To ensure the accuracy of the study on slime moulds, a greatly ephemeral group of organisms, observations were conducted in the same area in the spring 2004, starting from 29 March 2004. The winter was long but it became suddenly warm. On the first day of the study, numerous sporangia of *Didymium squamulosum* and an abundant distribution of net plasmodium were noted, in different layers of the litter. *Didymium squamulosum* produced single sporangia standing on stalks or sitting and plasmodiocarps also on 1 April. The species was collected on leaves of *Quercus*, *Taxodium*, *Betula*, and living (cut) branches of *Taxus baccata* lying on the ground on 1<sup>st</sup> April.

At the time, numerous sporangia of *Lamproderma scintilans* were found on a leaf of *Platanus acerifolia*. No leaves with sporangia were noted until 21 May 2004. Only *Didymium squamulosum* was observed in the period, and *Didymium melanospermum* was additionally observed on 4 June. The period of observations came to an end on that day.

As a result of the investigations in the Botanical Garden, the following 3 new slime moulds have been added to the list of myxomycetes: *Lamproderma scintilans*, *Didymium minus*, *D. melanospermum*, making the total number of species 80. Other myxomycete species, i.e. *Didymium squamulosum* and *Craterium minutum*, were noted by Schroeter 1889. *Stemonitis fusca* was observed in all the earlier studies (Schroeter 1873; Krzemieniewska 1957; Stojanowska 1992). Myxomycetes whose abundant occurrence has been recorded lately are included in *Flora Silesiaca Exsiccata. Plantae Cryptogamae. Myxomycetes II* (Stojanowska 2004).

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*Lamproderma scintilans* nowy dla Polski gatunek słuźowca

## Streszczenie

*Lamproderma scintilans* (Berk. et Britzelm) Morgan słuźowiec zebrany na terenie Ogródu Botanicznego Uniwersytetu Wrocławskiego, jest nowym gatunkiem dla terenu Polski. Krzemieniewska w monografii słuźowców Polski z 1960 roku podaje za Namysłowską jego występowanie na Podkarpaciu. Teren ten obecnie leży poza granicami Polski. Zbierano go w okresie od 3 do 23 maja 2003 we Wrocławskim Ogródku Botanicznym na ściółce, gdzie występował masowo. Sporadycznie pojawił się również w 2004 roku. *Lamproderma scintilans* notowano w towarzystwie *Didymium squamulosum* (masowo), *D. melanospermum*, *D. minus*, *Craterium minutum* (licznie) i *Stemonitis fusca*. Z Ogródu Botanicznego U. Wr. znanych jest 77 gatunków słuźowców (Stojanowska 1992), a ostatnie obserwacje wzbogacają listę gatunków o 3 nowe i w sumie liczba ta wzrasta do 80 gatunków.