# Notes on the Distribution of *Licea clarkii* B. ING (Myxomycetes)

G. ADAMONYTE & D. W. MITCHELL

Abstract

The first records of *Licea clarkii* B. ING outside British Isles, viz. from Lithuania and Germany, and new records from Great Britain and Ireland are presented. The species is illustrated by photographs, and general characteristics of substrates and distribution are discussed.

Key Words

*Licea clarkii*, myxomycetes, distribution, British Isles, Germany, Lithuania.

## Introduction

Most myxomycete species are considered to be cosmopolitan (MARTIN & ALEXOPOULOS 1969) with the exception of a few distinctive species that are restricted to and characteristic of tropical forests, deserts or high mountains. It has also been suggested that some endemic myxomycetes may exist in some parts of the world (ING 1999). On the other hand, despite active investigations of myxomycetes in many countries, their distribution still remains obscure and rather reflect the distribution of active myxomycologists (LADO 1993), thus making the interpretation of myxomycete biogeography and phylogeny a difficult task (LADO et al. 1999).

Stapfia 73,
zugleich Kataloge des OÖ. Landesmuseums,
Neue Folge Nr. 155 (2000), 77-80.

*Licea clarkii* B. ING was described from material collected by the late Malcolm Clark who first discovered this myxomycete in December 1975 on dead aerial stems of brambles (*Rubus idaeus* and *R. fruticosus* agg.) in Warwickshire, England (CLARK 1980), and he subsequently found the species on standing dead stems of Rosebay (*Chamerion angustifolium*). B. ING (1999) provided some general notes on the species distribution in southern Britain and added a single record from County Wicklow, Ireland, at the same time stating that the species was undoubtedly more common than records suggested. Nevertheless, there have been no published data of the occurrence of this species outside the British Isles.

This paper presents additional geographical distribution for *L. clarkii* with new records of the species in south-east England, Ireland, Germany and Lithuania.

## Materials and Methods

Samples for moist chambers – dead stems of *Rubus plicatus* and *R. nessensis* – were collected in Kintai Forestry, Silute district, Lithuania (55°25'N 21°15'E) on August 5, 1999. Moist chambers were prepared in the manner described by M. HÄRKÖNEN (1977). Cultures were kept in a refrigerator at +7°C for 3 months. *Licea clarkii* developed within 56-70 days on stems of both substrate species collected in the forestry quarter No 22.

Identification of Lithuanian material was carried out using the keys of ING (1999) and MITCHELL (2000). Photomicrographs were made with an Olympus camera SC 35 mounted on an Olympus CH 40 microscope (Vilnius University), magnification x 400.

## Results and Discussion

Since November, 1998, ample material of *L. clarkii* has been collected by the second author of the present paper in many localities from East and West Sussex, West Kent and Surrey in the Weald of south-east England. Material was collected in the field by the removal of 5-10 cm lengths of dead aerial stems of *Rubus fruticosus* agg. bearing axils or short of side-shoots and later scanned with a stereoscopic microscope at a magnification of x30-40. Most of the sites investigated revealed the presence of sporocarps of *L. clarkii* which were usually found at axils and along splits in the bark on hard stems which had not yet shown signs of decay and were without algal growth (Fig. 1). In many cases, the myxomycete was accompanied by ascomycetes such as *Pezicula rubi* (LIB.) NIESSL and *Rutstroemia rubi* VELEN. Thirty-seven localities in the Wealden area are recorded for *L. clarkii*, all as field material collected between early November and late March plus one in May (Fig. 2). Two additional localities of the species are recorded in Ireland (R. MCHUGH, pers. comm.).

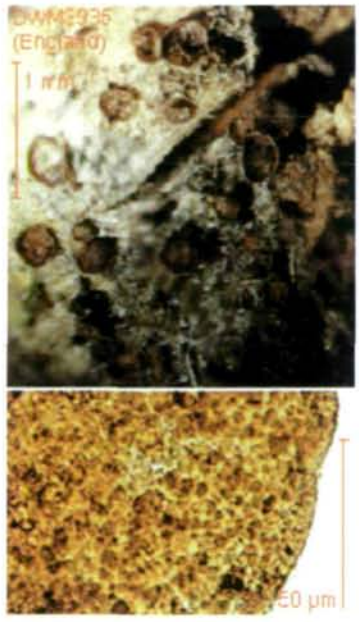


**Fig. 1: *Licea clarkii*: sporocarps.**

These numerous findings inspired the first author of the paper to search for this species in Lithuania. As the species demonstrated a certain specificity concerning sporulation substrates, a number of habitats with *Rubus* spp. were sampled in the Vilnius region of south-eastern Lithuania, and in the Šilute district and Curonian Spit of the western part of the country.

In April 1999, dead stems of *R. idaeus* remaining from the previous year were examined from the Žaliuju Ezerai Regional Park, near Vilnius, but *L. clarkii* was not found. The

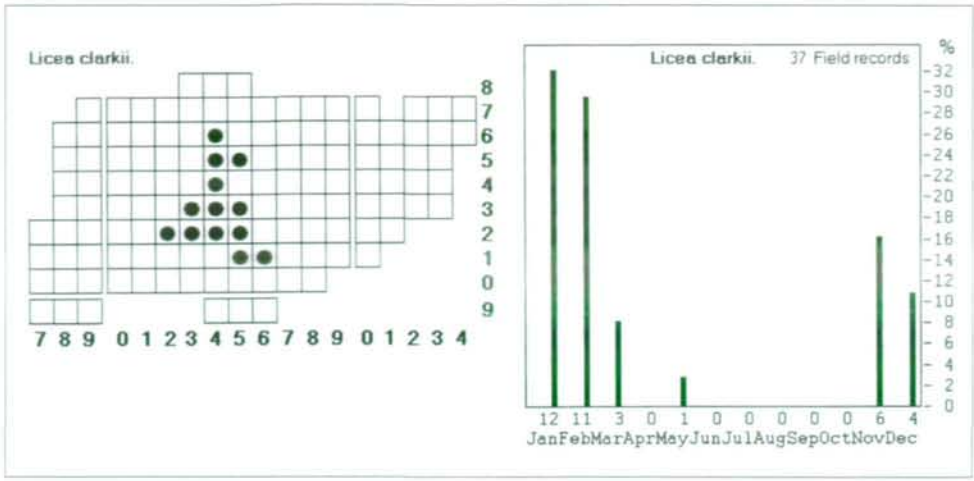


**Fig. 2: Distribution and seasonal occurrence of *Licea clarkii* in SE England, Wealden area.**

examination of several localities in the Curronian Spit on 25th May, 1999, resulted in finding this myxomycete on dead, upright and hard stems of *Rubus plicatus* (Fig. 3). Sporocarps were formed at the axils of the side branches of main stems and on an inner side of peeling bark of stems 0.7-1 cm in diam. The sporocarps were opened and devoid of spores but, nevertheless, were easily recognisable by the characteristic habit of the sporocarps and their yellow granular peridial deposits. The mean temperature in January in the coastal part of Lithuania is -2.5°C and permanent snow cover remains for approx. 75 days, which seems hardly favourable for the development of a myxomycete although, as discussed above, *L. clarkii* seems to be a "winter species". Sporocarps seemed to have been formed in the late autumn of the previous year or early in the spring.

Ample material of *Rubus plicatus* and *R. nessensis* was brought from the western part of Lithuania, Kintai forestry. Its stereomicroscopic examination was not successful, but after 56-70 days of running moist chambers, the stems from forestry quarter No. 22 yielded scattered sporocarps of *L. clarkii*, yet fully matured and with typical yellow granular material on the peridium and faintly warted spores with a paler area (Fig. 4). On 15th January, 1999, the myxomycete was collected by V. KUMMER on *Rubus armeniacus* at Brandenburg, Potsdam–Bornstedt, Germany. These are the first records made outside the British Isles (Fig. 5).

**Fig. 3: Habitat of the species, W Lithuania.**

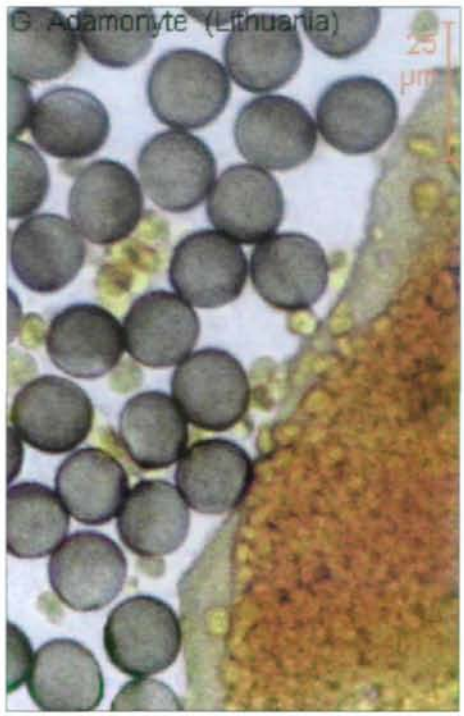


**Fig. 4: *Licea clarkii*: peridium and spores.**

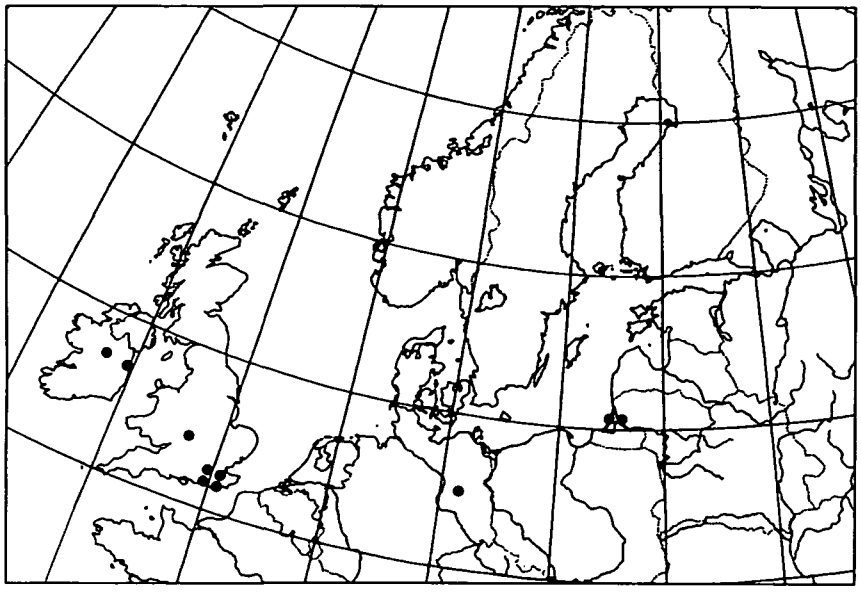

**Fig. 5: New records of *Licea clarkii* in Europe.**

It is quite obvious that the material presented here is not sufficient for drawing conclusions on distribution patterns. The current pattern reflects the activities only of those myxomycologists who have examined the restricted habitat of this apparently common species. Nevertheless, the recent findings provide evidence that the species has a wide distribution. The Lithuanian records are the most north-western ones made so far; the myxomycete has been recorded in two sites in the western part of the country where the climate is more oceanic than in the eastern region. The species may be quite common in coastal areas in Lithuania, and the most probably, in neighbouring territories where *Rubus* spp. grow. It appears that *L. clarkii*, in contrast to many other myxomycetes, seems to be substrate-specific on dead, but not rotten, standing stems of *Chamerion* and especially black-fruited *Rubus*. It is difficult to say why such a restricted range of substrates is necessary for the species' development, but aerial stems of the appropriate type provide the necessary ecological conditions and probably offer the myxomycete a particular set of microbial decomposers on which to feed. The phenology and known localities suggest that *L. clarkii* may be found during a season of low positive temperatures in other areas where *Rubus* spp. form part of the vegetation. The species may possibly also occur on stems of *Epilobium* spp. but this substrate has not been investigated by us. There is little doubt that the distribution of *L. clarkii* could be significantly extended by further investigation of its microhabitats.

## Acknowledgements

The authors are indebted to Dr. Roland McHugh and Dr. V. Kummer for permission to publish their data. The first author is grateful also to Mgr. Sigitas Kavaliauskas for providing *Rubus* spp. material from Silute distr., W Lithuania.

## References

Clark M. C. (ed.)(1980): A fungus flora of Warwickshire. — British. Mycological Society, Birmingham.

Härkönen M. (1977): Corticolous myxomycetes in three different habitats in southern Finland. — Karstenia 17: 19-32.

Ing B. (1982): Notes on myxomycetes III. — Trans. Br. mycol. Soc. 78 (3): 439-446.

Ing B. (1999): The myxomycetes of Britain and Ireland. An identification handbook. — The Richmond Publishing Co., England._

Lado C. (1993): Myxomycetes of mediterranean woodlands. — In Pegler D. N., Boddy L., Ing B., Kirk P. M. (eds.): Fungi of Europe: Investigation, recording and conservation. Royal Botanical Gardens, Kew: 93-114.

Lado C., Rodriguez-Palma M. & Estrada-Torres A. (1999): Myxomycetes from a seasonal tropical forest on the Pacific coast of Mexico. — Mycotaxon,71: 307-321.

Martin G. W. & Alexopoulos C. J. (1969): The myxomycetes. — University of Iowa.

Mitchell D. W. (2000): Myxomycetes 2000 – Software on CDROM for the personal computer. — Private publication by the author.

Addresses of the authors:
Dr. Grazina Adamonyte
Institute of Botany
Žaliuju ezeru 49
LT-2021 Vilnius
Lithuania

David W. Mitchell
Walton Cottage
Upper Hartfield
East Sussex
England, TN7 4AN