

**A SHORT NOTE:
LYCOGALA SPP. IN MANGROVES:
AN UPDATE AND AN INTRODUCTION TO
FOLIIMORTUOUS MYXOMYCETES**

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Received: 23.04.2015 / Accepted: 12.06.2015

Abstract: Two *Lycogala* species were reported for the first time in mangroves. *Lycogala conicum* was seen in the Philippine Mangrove forest and just recently, *Lycogala epidendrum* has been recorded in the Brazilian Mangrove Environment. Myxomycetes prefer natural substrates for growth and for those on dead leaves could be appropriately identified as Foliimortuous myxomycetes.

Keywords: dead leaves, first world report, Foliimortuous myxomycetes, *Lycogala* spp., mangrove forest

Introduction:

Myxomycetes have a limited presence in mangroves. A few of these have been seen among species of *Rhizophora* and *Avicennia*. These include species of *Stemonitis* in Puerto Rico (Nieves-Riviera and Stephenson 2004) and Brazil (Trierweiler-Pereira et al. 2008), *Physarum* (Trierweiler-Pereira et al. 2008) and *Lycogala* (Agra et al. 2010) in Brazil as well as *Lycogala* (Savillo 2007) in the Philippines. Mangrove forest consisting of *Conocarpus erectus* in Brazil has yielded numerous species of myxomycetes (Cavalcanti et al. 2014). This mangrove species is absent in the Philippine mangrove forest.

Materials and methods:

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Sampling for myxomycete started in March, 2007 and ended in June, 2007 in a mangrove forest in Iloilo, Philippines. Considering that this mangrove forest is maintained regularly for this serve as a sustainable project for edible crabs and molluscs, fallen dried leaves, dead twigs and dead branches of mangroves were removed from the area. Instead planks of coconut leaves were placed on the sand to secure the larvae of these crabs. Examination of trunks, stems and leaves at different canopy levels of mangrove trees using bamboo bridges which interconnected them was undertaken to find a mangrove myxomycete but to no avail. Until there was a surprising encounter of a living branch of a mangrove tree whose end had been partly ripped off and was still suspended or attached to the living portion. The dead portion of the branch was removed and was forcibly opened. Inside this suspended dead branch of a living mangrove tree there were specimens of *Lycogala conicum* (Fig. 1). At the eye level observation, this species features a small size

and it is very much conical in shape which satisfies the description. Microscopic analyses have shown that the spores were pale whitish yellow to pink. The pseudocapillitial threads were conspicuously horny and composed of flattened tubules (Stephenson and Stempen 2000).

Figure no. 1 Dead suspended branch of a mangrove tree forcibly opened to reveal specimens of *Lycogala conicum*. In the foreground, observe the thinner top whitish portion of the cortex in one aethalium



Results and discussion:

It is true that Myxomycetes are rare and very few in a Mangrove Forest especially among species of *Avicennia* and *Rhizophora*. The presence of *Lycogala* in a mangrove was first seen in the Philippine mangrove forest (Savillo 2007), followed by another species of *Lycogala* that was reported in a Brazilian mangrove environment (Agra et al. 2010). In these types of mangrove stands, additional myxomycetes such as *Stemonitis* and *Physarum* were also recorded but these are limited in number. Cavalcanti et al. (2014) have reported that in a Brazilian mangrove forest consisting of *Conocarpus erectus* many myxomycetes species have been seen. This mangrove shrub is not present in the Philippines. More surveys for the presence of fructification bodies of myxomycetes will be undertaken in the Philippine mangrove forests. Actual findings are much better rather than to gather dead samples of plant material and bring it to laboratory to

stimulate its fructification. At least ecologically speaking, it is easier to relate.

Taking into account the ecological characteristics of myxomycetes (Qi-Sha et al. 2015), which are being unraveled, as well as new knowledge being generated due to current observations and experimentation, it will be an excellent endeavor to identify them as to their substrate classification such as Foliimortuumous myxomycetes (from the Latin word - *Folii* which means leaf and Latin word - *mortuum* - which means dead). They can further be divided into subtypes - whether their presence (e.g. fruiting body) is accidental (Latin word for accidental - *per accidens*) for they may exist in other substrates or natural (Latin word for natural - *per naturalis*), where the dead leaves are their natural fructification niches.

General accidental fructification on living organisms may include fructification of myxomycetes on living leaves or on any living plant or part of it or other organisms such as mushrooms. Their abilities to form fructifications, even though their substrates are not dead plant materials, could be further analyzed whether they have enough pre formed mRNA to represent proteins and other byproducts or they have reserved foods for the development of matured fructification bodies, but how successful is the formation of spores? Can the spores germinate healthily and complete the complicated life cycle? It is believed that dead plant materials (Tran et al. 2014) are the regular as well as natural substrates for myxomycetes, probably for an enzymatically induced extracellular digestion, albeit until now no extensive enzymatic studies have been undertaken (Savillo 2007).

There are two prevailing descriptive names used in literature: Nivicolous myxomycetes (Ronikier and Ronikier 2009) and Corticolous myxomycetes (Clayton et al. 2014). Therefore, Foliimortuumous myxomycetes could further narrow species classification and would represent myxomycetes growing on dead leaves. Substrate classification is used in lichens where they are identified as corticolous

(bark), saxicolous (rock, stones or concrete) as well as foliicolous (leaf) lichens (Sipman 2005).

Rezumat:

O SCURTĂ NOTĂ:
LYCOGALA SPP. ÎN MANGROVE:
O ACTUALIZARE ȘI O INTRODUCERE
PENTRU FOLIIMORTUUMOUS
MYXOMYCETES

Două specii de *Lycogala* au fost semnalate pentru prima oară în mangrove. *Lycogala conicum* a fost observată în pădurea de mangrove din Filipine și recent, *Lycogala epidendrum* a fost înregistrată în zona mangrovelor din Brazilia. Mixomicetele preferă substraturi naturale pentru creștere și printre acestea, pe frunzele moarte ar putea fi identificate corespunzător ca Foliimortuumous myxomycetes.

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