STUDIES ON *LACELLINOPSIS* SUBRAM.

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**ABSTRACT**

This communication is a systematic account of species of *Lacellinopsis* collected and studied by the author. Observations on morphology of setae and conidiophores have been presented. For ease of identification a key to known species is provided and further, their substrates and distribution is indicated.

*Lacellinopsis* based on *L. sacchari* Subram. (1953) produces effuse, grey olive to blackish brown, superficial colonies on the substratum in which apically vesicular conidiophores are intermixed with setae. It is close to *Haplobasidion* Eriksson, and *Laellina* Sacc., but differs from the former in having setae and from the latter by the vesicular conidiophores. In recent years Subramanian (1954), Ellis (1957), Roy and Dwivedi (1961) and Satyanarayana and Dev Rao (1965) added *L. levispora*, *L. spiralis*, *L. desmostachyae* and *L. osmaniae* respectively. The morphology of setae, conidiophores, key to the known species and their distribution with the substrates forms the subject of this communication.

The setae in *Lacellinopsis* are erect or flexuous, dark brown, smooth with broad swollen base, gradually become paler in the subulate to pointed anterior region and originate from the mycelium or sometimes from the flat plate like cells representing the stroma. They are usually unbranched but just occasionally become branched. In *L. desmostachyae* some setae proliferate into (i) sterile seta or (ii) the apex of the newly constituted part after proliferation becomes vesicular like a conidiophore and produces conidia (Roy and Rai, 1968) which was observed during the present study. Roy and Dwivedi (1961) described some setae with cupulate apices and their proliferation through the cupulate apex which the author did not observe.

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The conidiophores are macro- and mononematous with an apical vesicle (ampulla, Ellis, 1971) bearing acropetal chains of spherical to subspherical dry conidia (blastoconidia). The conidia are produced directly or on polyblastic, terminal and intercalary, discrete conidiogenous cells borne on the pale upper fertile part of the ampulla while its dark lower part is sterile. Erect to flexuous, unbranched conidiophores are found in *L. sacchari*, *L. levispora*; spirally twisted (torsive) in *L. spiralis* and branched in *L. desmostachyae* and *L. osmaniae*. The conidiophores proliferate through the vesicle to form another vesicle at a higher level and by this process the vesicle which was originally terminal becomes intercalary. The newly formed apex after proliferation becomes vesicular. In *L. desmostachyae* the sporophore occasionally proliferates into seta and becomes sterile. The branches of the branched conidiophore either originate from the lower sterile part (axis) of the sporophore (*L. desmostachyae*) or both from the sterile part and through the proliferated vesicle (*L. osmaniae*). The conidiophores in *L. sacchari*, *L. levispora* and *L. spiralis* even after 3–4 successive proliferations remain unbranched. The author feels that the conidiophores can be grouped into (i) simple and (ii) branched which appears to be highly characteristic for a species and as such this has been incorporated in the proposed key.

Species of *Lacellinopsis* grow saprophytically and during the present study they have been collected on *Saccharum officinarum* and *Typha elephantina* (cf. Table I). However, the type of *L. levispora* and of *L. desmostachyae* were collected on a member of Lauraceae (?) and *Desmostachys bipinnata* respectively.

Sreeramulu and Vittal (1970) reported that the spores of *L. sacchari* constitute the major component of the airspora of sugarcane fields in Andhra Pradesh State (India), and in addition they recorded the existence of a distinct forenoon pattern of diurnal periodicity. During the present study *L. sacchari*, *L. levispora*, *L. desmostachyae* and *L. osmaniae* were collected from the same locality and on the same host (cf. Table I). The classification of the trapped spores is difficult for the practising taxonomist since the sporoderm is not characteristic for a species. Therefore, it is apparent that the trapped airspores may not only belong to *L. sacchari* but to other species too. The rupture of the vesicle during the spore liberation to become cupulate or rarely calyciform is undoubtedly suggestive of the water rupture spore liberation mechanism (Meredith, 1963) as reported by Sreeramulu and Vittal (1970).
KEY TO THE SPECIES OF Lacellinopsis

Conidiophores unbranched

Straight or slightly flexuous
- conidia 5–10 μ diam., verruculose .. sacchari
- conidia 3–5 μ diam., finely verrucose .. levispora

Spirally twisted
- conidia 7–12 μ diam., smooth to verruculose .. spiralis

Conidiophores branched

Branches from the lower sterile part
- conidia 5–9 μ diam., finely verrucose .. desmostachyae

Branches from the lower part and through the vesicle on its proliferation
- conidia 7–11 μ diam., warty .. osmaniae

TABLE I
The distribution of species of Lacellinopsis and substrates

<table>
<thead>
<tr>
<th>Species</th>
<th>Substratum</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>L. sacchari</td>
<td>Oryza sativa, Saccharum officinarum, Borassus aethiopium, Andropogon sp., Cymbopogon sp., Erianthus sp., Gynetrum sp., Rottboellia sp., Sorghum sp., Typha and grass culms</td>
<td>India, Cuba, Ghana, Jamaica, Java, Pakistan, Tanzania, Venezuela, and Zambia</td>
</tr>
<tr>
<td>L. levispora</td>
<td>Lauraceae (?) member Saccharum officinarum</td>
<td>India</td>
</tr>
<tr>
<td>L. desmostachyae</td>
<td>Desmotachyss bipinnata Saccharum officinarum Saccharum munja</td>
<td>India</td>
</tr>
<tr>
<td>L. osmaniae</td>
<td>Typha elephantina Saccharum officinarum</td>
<td>India</td>
</tr>
<tr>
<td>L. spiralis*</td>
<td>Pennisetum purpureum</td>
<td>Hohoc, Ghana and Togolard</td>
</tr>
</tbody>
</table>

* Has not been collected or reported from India.
ACKNOWLEDGEMENTS

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REFERENCES


