Fungi Imperfecti From Madras—V

Curvularia

By C. V. Subramanian

(University Botany Laboratory, Madras)

Received March 30, 1953

(Communicated by Prof. T. S. Sadasivan, F.A.Sc.)

This paper is a systematic account of some species of Curvularia collected by me recently. Two new species, C. indica and C. palmarum are described. Eight other species are recorded: C. maculans, C. lunata, C. pallescens, C. andropogonis, C. trifolii, C. inaequalis, C. falcata and C. uncinata. Of these, all species except C. lunata are new records for India. The only other species known from this country is C. penniseti (Mitra) Boedijn.


Basinym: Spondylocadium maculans Bancroft (1913); see also Mason E. W., 1928, Annotated Account of the Fungi Received at the Imperial Bureau of Mycology, List II, Fascicle 1, p. 5.

Conidiophores brown, simple, unbranched, erect, straight or bent, septate, up to 5 μ broad, of variable length. Conidia borne in spirals towards the tip of the conidiophore, brown, barrel-shaped, broadest in the middle, 3-septate, the two middle cells concolorous with each other and darker than the apical and basal cells, the apical and the basal cells with broadly rounded outline, the basal cell with a distinct scar, 22×12·8 (17–26×11–16) μ.


Both collections agree well with the description given by Boedijn (1933).

Fig. 1. *Curvularia maculans* : from Herb. M.U.B.L. No. 848-III.

---


---

Fig. 2. *Curvularia lunaum* : from Herb. M.U.B.L. No. 174.
Conidiophores brown except towards the tip where they are paler, simple, unbranched, septate, 3–6 μ broad, of variable length, geniculate towards the tip. Conidia boat-shaped, brown, 3-septate, the third cell from the base conspicuously larger, broader and darker than the others, curved or sometimes straight, each with a subhyaline, rounded apical cell, and a subhyaline, somewhat obconical basal cell which bears a scar indicating the point of attachment to the conidiophore, 21×10 (17–24×8–12) μ.


All the three collections agree well with the description given by Boedijn (1933).


Conidiophores brown, simple, unbranched, septate, with geniculate tip, 3·2–5·6 μ broad, of variable length. Conidia produced in spirals.

![Fig. 3. Curvularia pallescens: from Herb. M.U.B.L. No. 91-II.](image-url)
towards the tip of the conidiophore, pale brown, somewhat cylindrical, mostly straight or only with a slight curvature, 3-septate, the middle two cells slightly darker in colour than the basal and apical cells, apical cell hyaline and with rounded tip, the basal cell subhyaline, shaped like a crucible and with a scar at the base indicating the point of attachment with the conidiophore, 22×9 (14–28×6–12) μ.

The majority of the conidia lack a distinct curvature, although the third cell from the base may be slightly larger than the others. The middle two cells are pale brown and concolorous with each other, whereas the basal and the apical cells are subhyaline.

Only one collection has been seen: on dead palm leaf, University Botany Laboratory campus, Madras, 22-2-1951, coll. C. V. S., Herb. M.U.B.L. No. 91-II.


---

Fig. 4. *Curvularia andropogonis*: from Herb. M.U.B.L. No. 94.
of the *Fungi Received at the Imperial Bureau of Mycology*, List II, Fascicle 1, p. 5.

Conidiophores brown, simple, unbranched, septate, geniculate and paler towards the tip, 3–4 μ broad, of variable length. Conidia pale brown in colour, somewhat ellipsoidal, 3-septate, constricted at the septa, the third cell from the base larger, broader and darker than the others, the apical cell with a broadly rounded tip, the basal cell elongate-obconical and with a prominent, small, short, hyaline pedicel at the base where it is attached to the conidiophore, 45×15.5 (40–53×14–18) μ.


The fungus agrees well with the description given by Boedijn (1933).


**Fig. 5. Curvularia trifolii**: from Herb. M.U.B.L. No. 851–1.

Fig. 6. *Curvularia indica*: A, from type specimen, Herb. M.U.B.L. No. 851-II; B, from Herb. M.U.B.L. No. 848-II.
Conidiophores brown, simple, unbranched, septate, geniculate and paler at the tip, 3·3–4·8 μ in diameter, of variable length. Conidia brown, unequally ventricose-fusiform, curved or sometimes somewhat straight, 3-septate, not constricted at the septa, the third cell from the base larger, broader and darker than the others, the apical cell with a smoothly rounded tip, the basal cell crucible-shaped with a distinct scar at the base indicating the point of attachment to the conidiophore, 28·8 × 13·4 (19–36 × 11–16) μ.

Only one collection has been seen: on dead culms of *Scirpus* sp., Poonamallee (Chingleput District, Madras State), 24–2–1953, coll. C. V. S., Herb. M.U.B.L. No. 851–I.

The fungus collected by me comes nearest to *C. trifolii*, as re-described by Groves and Skolko (1945, pp. 101–102, ic.) after examining the type specimen. The measurements of the conidia of the type specimen as given by Groves and Skolko are: 25–35–(38) × 11–15 μ, and the measurements of the conidia in my collection are similar. It is true that my fungus has a substratum different from that on which the species was originally described, but this is of not much importance in a genus like *Curvularia*, species of which have been reported on diverse substrata.

![Image of *Curvularia inaequalis* from Herb. M.U.B.L. No. 104.](image-url)
24. *Curvularia indica* Subramanian sp. nov.

Conidiophori simplices, brunnei, erecti, recti vel curvati, septati, 4·8–8·3 μ lati, longitudinis variabilis. Conidia spiraliter infixa apicibus conidiophororum, ellipsoidea, ut plurimum recta, raro curvata, brunnea, 3-septata, tenuiter constricta ad septa, vel nullo modo constricta, cellula tertia supra basim ampliori et latrior caeteris, cellula apicali lavi, rotundata ad apicem, cellula basali catino simili, insignita cicatrice infra, 24–47×8–16 μ.


*C. indica* Subramanian sp. nov.

Conidiophores brown, simple, erect, straight or bent, septate, 4·8–8·3 μ broad, of variable length. Conidia borne in spirals towards tip of the conidiophore, ellipsoidal, mostly straight, seldom curved, brown, 3-septate, slightly constricted at the septa or not at all, the third cell from the base larger and broader than others, the apical cell with a smoothly rounded tip, the basal cell crucible-shaped with a scar at the base, 24–47×8–16 μ.


![Diagram of *Curvularia indica*](image-url)

**Fig. 8.** *Curvularia falcata* : from Herb. M.U.B.L. No. 91–III.
Fungi Imperfecti from Madras—V

The measurements of the conidia in the two collections are:

Herb. M.U.B.L. No. 851-II: $39 \times 13.1 \ (25-47 \times 9-16) \mu$;

" 848-II: $33 \times 11.4 \ (24-40 \times 8-13) \mu$.

My fungus has 3-septate spores and is easily placed in the Lunata group. Amongst the seven known species of this group, it comes nearest to *C. stapeliae* (du Plessis) Hughes and du Plessis (Hughes, 1951, p. 28), originally described from South Africa by du Plessis as *Triposporium stapeliae* du Plessis. The measurements of conidia in *C. stapeliae* are given by Hughes (1951) as: 26-41 × 10-15 μ. The size of the conidia of my fungus falls largely within the range covered by *C. stapeliae*, despite the fact that a few conidia were longer (up to 47 μ). The conidia of my fungus, however, differ from those of *C. stapeliae* in the following features: (i) the conidia are not conspicuously curved as in *C. stapeliae*, but the majority of them are straight; (ii) in the case of conidia of *C. stapeliae* the third cell from the base alone is the darkest, but in my fungus the two middle cells are concolorous with each other and are darker than the apical and the basal cells.

On the basis of these differences, my fungus has been described as a new species.

![Diagram of Curvularia uncinata](image)

**Fig. 9. Curvularia uncinata**: from Herb. M.U.B.L. No. 848-I.


Conidiophores brown, simple, unbranched, septate, up to 5 μ broad, of variable length, geniculate towards the tip. Conidia borne in spirals, brown, 4-septate, the middle cell the broadest and the darkest, lower and upper

Fig. 10. *Curvularia palmarum* : from type specimen, *Herb. M.U.B.L.* No. 132.
cells progressively paler in colour, the two basal cells longer than the two apical ones, apical cell with a smoothly and broadly rounded tip, the basal cell obconical with a scar indicating the point of attachment to the conidiophore, 29·4×13·6 (27–37×11–18) μ.


This species, originally placed in the Lunata group by Boedijn (1933), has been transferred to the Geniculata group by Groves and Skolko (1945) after a study of the type specimen, and my fungus agrees with the description given by Groves and Skolko.


Conidiophores brown, simple, unbranched, septate, 3–5 μ broad, variable in length, geniculate towards the tip. Conidia brown, unequally ventricose-fusiform, conspicuously curved, rarely otherwise, 4-septate, the middle cell the broadest and the darkest of all, the lower and the upper cells becoming progressively paler, the apical cell somewhat conical and with a rounded tip, the basal cell obconical and narrowing below to a basal scar indicating the point of attachment to the conidiophore, 25×10·4 (22–29×9–12) μ.

Only one collection has been seen: on dead palm leaf, University Botany Laboratory campus, Madras, 22–2–1951, coll. C. V. S., Herb. M.U.B.L. No. 91–III.

This fungus comes nearest to *C. falcata* amongst the species belonging to the Geniculata group. A re-description of the species based on a study of the type specimen is given by Groves and Skolko (1945) and the conidial measurements given by them are: (22)–24–28–(31)×(10)–12–13–(14) μ.


Conidiophores brown, simple, unbranched, septate, up to 5 μ broad, of variable length. Conidia brown, 4-septate, the middle cell the largest, broadest and darkest of all, conspicuously bent at an angle of 90° or more.
and hence shaped like a hammer or markedly uncinate, the lower and
the upper two cells becoming progressively paler, the two apical cells
shorter than the two basal cells, the apical cell with a smoothly rounded
tip, the basal cell somewhat obconical and with a prominent scar at
the base indicating the point of attachment to the conidiophore, \(24 \times 12.6\)
\((20-29 \times 9-15) \mu\).

Only one collection has been seen: on dead culms of \textit{Scirpus} sp.,
Poonamallee (Chingleput District, Madras State), 24–2–1953, coll. C. V. S.,
Herb. M.U.B.L. No. 848–I.

This species was first described on \textit{Oryza sativa} L. from Indo-China
by Bugnicourt (1950) and my fungus agrees well with the description given
by Bugnicourt. Bugnicourt's description indicates the following range in
size for the conidia: \(18-32 \times 8.6-12.7 \mu\). In my fungus some conidia are
up to \(15 \mu\) broad. The middle cell in my fungus is somewhat verrucose and,
although Bugnicourt’s description does not indicate any such peculiarity
for his fungus, his photograph of the spores of the species suggests a some-
what verrucose middle cell. I have, therefore, placed my fungus in
\textit{C. uncinata}.

28. \textit{Curvularia palmarum} Subramanian sp. nov.

Conidiophori brunnei, simplices, erecti, recti vel curvati, septati, 3–5 \(\mu\)
lati, variabilis longitudinis. Conidia spiraler inixa apicens conidi-
phorum, fusiformia vel falcata, vel inaequaliter fusiformi-ventricosa,
brunnea, 4-septata, cellula media omnium maxima, latissima atque obscu-
rissima, cellulis superioribus atque inferioribus pallidoribus atque angustio-
ribus, cellula apicali laxi atque rotundata ad apicem, cellula basali
late rotundata vel obconica, insignita cicatrice distincta, \(37.6 \times 14.2\)
\((27-48 \times 11-20) \mu\).

Habitat in foliis emortuis \textit{Cocos nuciferae} L., Luz, Mylapore, Madras,

\textit{Curvularia palmarum} Subramanian sp. nov.

Conidiophores brown, simple, erect, straight or bent, septate, 3–5 \(\mu\)
broad, of variable length. Conidia borne in spirals towards tip of
the conidiophore, fusiform or falcate or unequally fusiform-ventricose, brown,
4-septate, the middle cell the largest, broadest and darkest, the upper and
lower cells paler and narrower, apical cell with smoothly rounded tip, basal
cell broadly rounded or obconical with a distinct scar, \(37.6 \times 14.2\)
\((27-48 \times 11-20) \mu\).

This fungus is easily placed in the Geniculata group. The measurements of the conidia are different from those of any species in this group so far known and I, therefore, consider my fungus as a new species.

I am grateful to Prof. T. S. Sadasivan for critically reading the manuscript and to Prof. H. Santapau for the Latin diagnoses of the two new species.

REFERENCES


