

FUNGI IMPERFECTI FROM MADRAS—VI

BY C. V. SUBRAMANIAN

University Botany Laboratory, Madras-5

(Received for publication on February 5, 1954)

IN this paper three new species of Fungi Imperfecti are described: *Actiniceps cocos* on *Cocos nucifera*, *Blodgettia indica* on dead stubble, and *Memmoniella levispora* on dead stems. Three other fungi, viz., *Antromycopsis broussonetiae* Pat. & Trab. v. *minor* Penz. & Sacc., *Chloridium schulzerii* Link., and *Volutina concentrica* Penz. & Sacc., are recorded for the first time from India.

29. *Actiniceps cocos* Subramanian sp. nov.

Stipes hyalinus vel subhyalinus, cylindricus, basi bulbosa vel plana, 500–980 μ longus, 42–56 (–140) μ crassus, 84–126 (–210) μ latus ad basim, ornatus globoso vel subgloboso et albido vel griseo capite; capitis altitudo 84–196 (–238) μ , diam. 112–294 (–364) μ . Projectiones setosæ capitis adsunt, 42–112 \times 3–4 μ . Hyphæ septatæ, hyalinæ, 3–4 μ latæ. Conidiophori septati, subhyalini. Conidia subhyalina vel pallide luteola colore, unicellulata, 4.9–6.6 \times 3.3–4.9 μ .

Typus lectus in spatha emortua *Cocos nucifera* Linn. in loco Tirukkuppam (Rice Research Station), in distri. Chingleput, in Statu Madras, die 10 aprilis anni 1953 a C. V. Subramanian et positus in Herb. M.U.B.L. sub numero 886.

Actiniceps cocos Subramanian sp. nov.

Stipe hyaline to subhyaline, cylindrical, with bulbous to flat base, 500–980 μ long, 42–56 (–140) μ thick, 84–126 (–210) μ broad at base, with terminal subglobose to globose, whitish or ash-coloured head; height of head 84–196 (–238) μ , diameter of head 112–294 (–364) μ . Setose projections from head present, 42–112 \times 3–4 μ . Hyphæ septate, hyaline, 3–4 μ broad. Conidiophores septate, subhyaline. Conidia subhyaline to pale yellowish in colour, one-celled, 4.9–6.6 \times 3.3–4.9 μ .

Habit.—On dead spathe of *Cocos nucifera* Linn., Tirukkuppam (Rice Research Station), Chingleput District, Madras State, 10–4–1953, coll. C. V. Subramanian, Herb. M.U.B.L. No. 886 (Type).

Three species of *Actiniceps* are known: *A. thwaitesii* B. & Br. (the type species), *A. besseyi* Macmillan, and *A. timmii* Eichelb. The length of the stipe and the diameter of the head are both very much greater in my fungus than in *A. thwaitesii* (Saccardo, 1886, p. 579). In the case of *A. besseyi* (Saccardo, 1895, p. 641) the stipe is described as 700 μ long and the spore size is 4.5 \times 2.2.5 μ . In *A. timmii* (Saccardo, 1913, p. 1443) the stipe is 3–4 mm. long, 30 μ thick and the conidia are 2 \times 1.5 μ . My fungus is obviously different from the above three species.

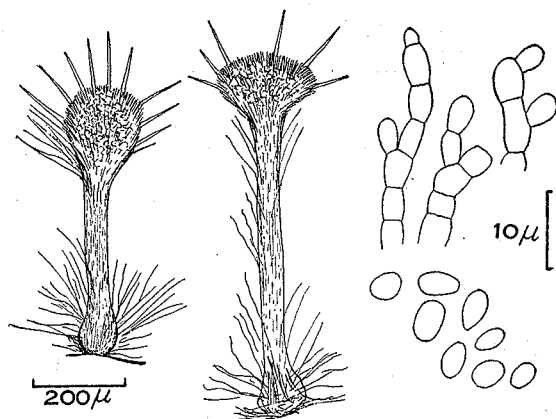


FIG. 1. *Actiniceps cocos*, from type specimen (Herb. M.U.B.L. No. 886).

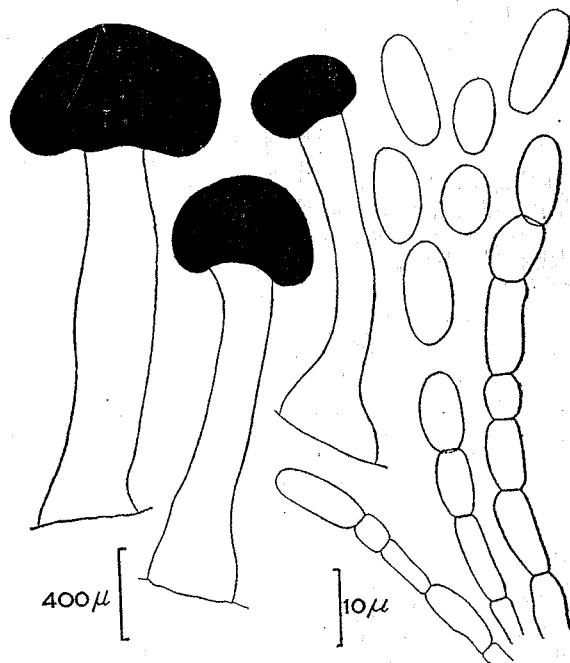


FIG. 2. *Antromycopsis broussonetiae* v. *minor*, from Herb. M.U.B.L. No. 872.

30. *Antromycopsis broussonetiae* Pat. & Trab. v. *minor* Penz. & Sacc., 1901, in *Malpighia*, p. 254, *Icon. Fung. Java*, t. LXXVI, f.4. Saccardo, 1906, *Sylloge Fungorum*, 18: 652.

Stipe white in colour, thick, firm, 1.5–2.0 mm. long, 280–420 μ broad at the base, 182–294 μ broad towards the tip. Head brownish

when young, becoming black at maturity, somewhat hemispherical, 280–504 μ in diameter, 462–840 μ in diameter, composed of compacted, septate, filaments producing conidia. Conidia mostly ovoid, brownish, non-septate, catenate, 9–19 \times 4.9–8.3 μ .

Habit.—On dead wood, University Botany Laboratory campus, Madras, 10–3–1953, coll. C. V. Subramanian, Herb. M.U.B.L. No. 872.

My fungus agrees closely with the variety described by Penzig and Saccardo (*loc. cit.*).

31. ***Blodgettia indica*** Subramanian sp. nov.

Hyphæ subhyalinae, septatae, 4–7 μ crassæ. Conidiophori simplices, hyalini vel subhyalini, septati, longitudinis variabilis, 3–5 μ lati. Conidia acrogena, torulosa, 5–8-septata, distincte constricta ad septa, cellulis mediis latioribus atque brunneis vel rubro-brunneis, cellula apicali triangulari apice rotundato, cellula vero basali ut plurimum catino simili, 44–96 \times 16–23 μ .

Typus lectus in culmis emortuis submersis aqua in testis, in loco University Botany Laboratory Campo, in urbe Madras, mense aprili 1952 a C. V. Subramanian et positus in Herb. M.U.B.L. sub numero 839.

Blodgettia indica Subramanian sp. nov.

Hyphæ subhyaline, septate, 4–7 μ thick. Conidiophores simple, hyaline to subhyaline, septate, of variable length, 3–5 μ broad. Conidia acrogenous, torulose, 5–8-septate, markedly constricted at the septa, the middle cells broader and brown to reddish brown, basal and apical cells progressively narrower and paler in colour, the apical cell triangular with a rounded tip, the basal cell mostly crucible-shaped, 44–96 \times 16–23 μ .

Habit.—On dead stubble submerged in water in flower pots, University Botany Laboratory campus, Madras, April 1952, coll. C. V. Subramanian, Herb. M.U.B.L. No. 839 (Type).

The genus *Blodgettia* Wright (Saccardo, 1892, p. 664) is monotypic and the type species *B. borneti* Wright was collected on the alga, *Cladophora*. Clements & Shear (1931, p. 216), in their key to the Dematiaceæ-Phragmosporæ-Macronemæ, have characterised the genus as having hyphæ which are "intracellular, algicole" and the conidia as "torulose". My fungus is easily placed in the Dematiaceæ and comes closest to the genus *Blodgettia* in that it produces solitary, coloured phragmospores which are torulose. The conidia of my fungus resemble those of *B. borneti* as figured in Engler & Prantl's *Die natürlichen Pflanzenfamilien*, I Teil, 1 Abteilung†, 1900, p. 479, Fig. 249 H. Some of the conidia in Fig. 249 H appear to be intercalary; but in my fungus the conidia are produced singly and acrogenously at the tip of the conidiophore, which itself is apparently not distinct from the vegetative hyphæ of the fungus. I do not consider that undue importance should be attached to the nature of the substratum in delimiting genera and, since in other characteristics it comes

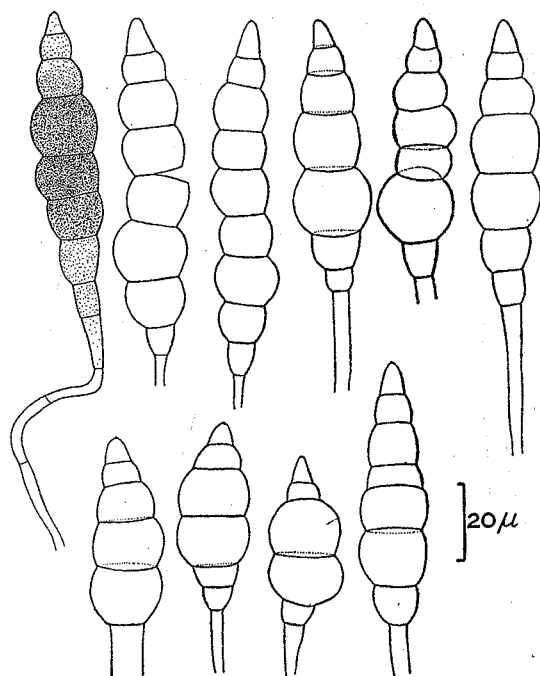


FIG. 3. *Blodgettia indica*, from type specimen (Herb. M.U.B.L. No. 839).

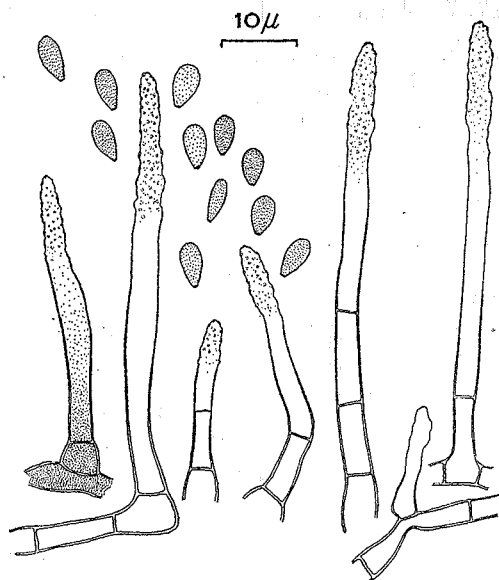


FIG. 4. *Chloridium schulzerii*, from Herb. M.U.B.L. No. 846.

closest to *Blodgettia*, I have ventured to place my fungus in that little known genus. The description of *B. borneti* (Saccardo, 1892, p. 664) itself is meagre and not of much help in identification. The conidia in this species are stated to be 2-5-septate, but no conidial measurements are available. In my fungus the conidia are 5-8-septate. In contrast to *B. borneti*, my fungus is not algicole but has been collected on dead stubble submerged in water; there was no evidence to indicate that the fungus was on an algal substratum. I have, therefore, assigned my fungus to a new species of the genus *Blodgettia* Wright.

32. *Chloridium schulzerii* Link, Saccardo, 1886, *Sylloge Fungorum*, 4: 322.

Colonies effuse, brownish. Hyphæ branched, septate, brown, 3.2-4.8 μ broad. Conidiophores arising from repent hyphæ, simple, unbranched, 1-3-septate, usually with a somewhat flattened and broader basal cell, thicker-walled and darker towards the base, becoming progressively paler and thinner towards the tip, fertile towards the apex, the fertile region subhyaline and producing conidia all over, up to 130 μ long, 3-4 μ broad above, the basal cell being 4-7 μ broad. Conidia simple, subhyaline to pale brown in colour, 1-celled, sessile, non-catenate, somewhat elliptical to oval with a pointed base and basal scar indicating point of attachment to the conidiophore, 4.8-6.4 \times 2.4-3.2 μ .

Habit.—On dead stem, Government House estate, Triplicane, Madras, 27-1-1953, coll. C. V. Subramanian, Herb. M.U.B.L. No. 846.

33. *Memnoniella levispora* Subramanian sp. nov.

Coloniæ nigræ, holosericæ vel floccosæ, tandem pulverulentæ magnitudinis variabilis. Hyphæ hyalinæ vel subhyalinæ, septatæ, 2-4 μ crassæ. Conidiophori erecti, recti vel curvati, hyalini and basim, et viridiscetes vel viridi-nigri supra, ut plurimum 2-3-septati, 20-50 \times 3.2 μ , 4-5 μ lati ad basim, apice inflato 5-7 μ lato; phialides apici inflato insidentes, hyalinæ, forma characteristicæ præditæ, 4-8 \times 3-5 μ . Conidia nigra, globosa, levibus parietibus prædita, ut plurimum 5 (3-7) μ diam., basipetaliter evoluta ex apicibus phialidum catenata, catenis constantibus ex condiis usque novem numero, rumpendis in singula conidia vel in breves conidiorum catenas.

Typus lectus in caule emortuo quodam, in loco Thanthipandal, in Distr. Chingleput, in Statu Madras, die 3 februarii anni 1952, a C. V. Subramanian et positus in Herb. M.U.B.L. sub numero 725.

- Memnoniella levispora* Subramanian sp. nov.

Colonies black, velvety to floccose, later powdery, of variable size. Hyphæ hyaline to subhyaline, septate, 2-4 μ thick. Conidiophores erect, straight, or bent hyaline at the base and greenish to greenish black above, mostly 2-3 septate, 20-50 \times 3.2 μ , 4-5 μ broad at the base, the swollen apex 5-7 μ broad; phialides arising from the

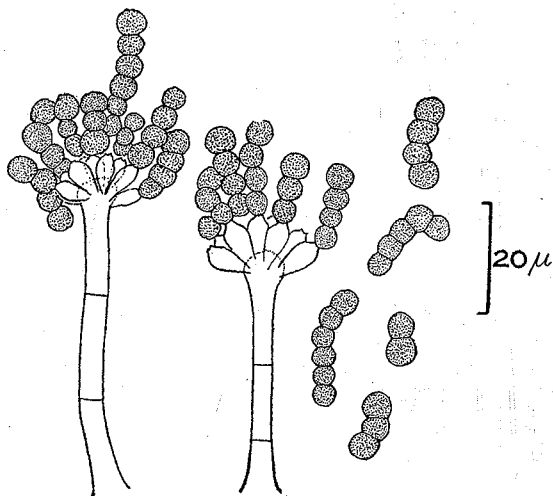


FIG. 5. *Memnoniella levispora*, from type specimen (Herb. M.U.B.L. No. 725).

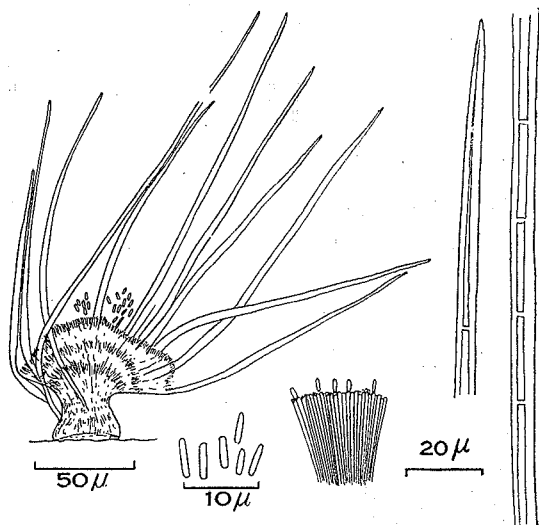


FIG. 6. *Volutina concentrica*, from Herb. M.U.B.L. No. 862.

swollen apex, hyaline, with characteristic shape, $4-8 \times 3-5 \mu$. Conidia black, globose, smooth-walled, mostly $5 (3-7) \mu$ in diameter, produced basipetally from the tips of phialides in chains, chains with up to nine conidia, breaking up into single conidia or short chains of conidia.

Habit.—On dead stem, Thanthipandal, Chingleput District, Madras State, 3-2-1953, coll. C. V. Subramanian, Herb. M.U.B.L. No. 725 (Type).

My fungus is clearly a *Memnoniella*. It has, however, conidia with smooth walls in contrast to the type species, *M. echinata* (Riv.) Galloway (Galloway, 1933) which has echinate conidia. I have, therefore, described my fungus as a new species.

34. *Volutina concentrica* Penz. & Sacc., 1901, in *Malpighia*, p. 257. *Icon. Fung. Java*, t. LXXIX, f.2. Saccardo, 1906, *Sylloge Fungorum*, 18: 668.

Sporodochia sparse or gregarious, obconical to hemispherical, pale in colour, setose, up to $300\ \mu$ broad, $180\ \mu$ tall. Setæ hyaline, with very thick walls and little or no contents when mature, thin-walled with protoplasmic contents when young, septate, subulate, with blunt tips, up to $520\ \mu$ long, $3-7\ \mu$ broad at the base. Hyphæ in sporodochia radiating, forming concentric strata one over another, and composed of conidiophores. Conidiophores thin and cylindrical compacted together, hyaline, up to $30\ \mu$ long, $1-2\ \mu$ broad. Conidia simple, one-celled, hyaline, cylindrical, with blunt ends, catenate, $4.9-6.7 \times 1-2\ \mu$.

Habit.—On dead straw, University Botany Laboratory campus, Madras, 28-2-1953, coll. K. Ramakrishnan, Herb. M.U.B.L. No. 862.

I am grateful to Professor T. S. Sadasivan for critically reading the manuscript and to Professor H. Santapau for translating into Latin the diagnoses of the three new species.

REFERENCES

- CLEMENTS, F. E. AND SHEAR, C. L. 1931. The Genera of Fungi, 496 pp. The H. W. Wilson & Co., New York.
- GALLOWAY, L. D. 1933. Note on an unusual mould fungus. *Trans. Brit. mycol. Soc.* 18: 163-66.
- SACCARDO, P. A. 1886. *Sylloge Fungorum*, 4.
- . 1892. *Ibid.*, 10.
- . 1895. *Ibid.*, 11.
- . 1913. *Ibid.*, 22.