

Some interesting Micro-Fungi from floodaffected Substrata in Poona, India.-II.

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With 7 Textfig.

This is a second contribution towards our knowledge of the micro-fungi collected by the writer from the floodaffected substrata at Poona during July 1961 and presents an account of eight more fungi belonging to the *Zygomycetes* and *Hyphomycetes*, two of which viz., the genera *Trichocladium* and *Monotospora* are new records to India and *Syncephalis* a new addition to the fungi of Bombay — Maharashtra.

The materials and methods employed in this study have been already described by the writer in a previous paper *).

1. *Circinella muscae* (Sorok.) Berl. & de Toni (Fig. 1).

Syn. *C. spinosa* van Tieghem & L. Monnier. — Saccardo, P. A.

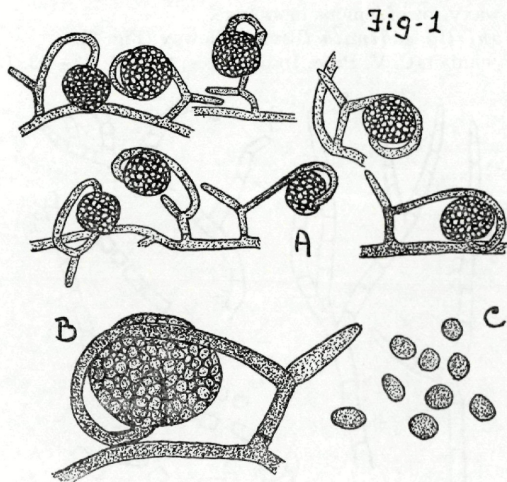


Fig. 1. *Circinella muscae* (Sorok) Berls & de Toni. — A. Mycelia with sporangiophores & sporangia $\times 100$. — B. Sporangiophore with sporangium & spine $\times 264$. — C. Sporangiospores or conidia $\times 440$.

*) Sydowia, Ann. Mycol. XVI 1962, p. 77—84.

Syll. Fung. 7: 216, 1888. — Hesseltine, C. W. et al. Mycol. 47: 193—213, 1955.

Colony grey to dull brown, spreading, 0,5—1,5 mm. Sporangio-phores circinate, with a sterile basal spine, bearing a single sporangium, 2—3 septate, $125-198 \times 8,5-10,5 \mu$. Sporangia globose to dorsiventrally flattened, collumellate, persistent cell wall, brown, $43-73 \mu$ diam. Spores ovoid to globose, smooth, light brown, $4,3-6,5 \times 4,3-5,5 \mu$.

On seed of *Sorghum vulgare* L. collected by S. Anantha Narayanan, 18th July 1961, Poona, India.

Rao (1962) has recently reported this fungus from Poona, India, inciting a storage rot of Jack fruit (*Artocarpus integrifolia* L.).
2. *Geotrichum candidum* Link (Fig. 2).

Saccardo, Syll. Fung. 4: 39, 1886. — Carmichael, J. W. Mycol. 49: 820—830, 1957.

Colony white, slimy, shining, raised, scattered, mycelium hyaline, closely septate, much branched, breaking up at septa into oidia. Oidia hyaline, barrel-shaped, in basipetal chains, $6,5-13,0 \times 4,3-5,3 \mu$.

On grains of *Oryza sativa* L. collected by S. Anantha Narayanan, 18th July 1961, Poona, India.

Rao, (1962) has recently reported the fungus from Poona, inciting a waxy rot of lemons in storage.

3. *Memnoniella echinata* (Riv.) Galloway (Fig. 3).

Subramanian, C. V. Proc. Indian. Aca. Sci. 36; 43—53, 1952.

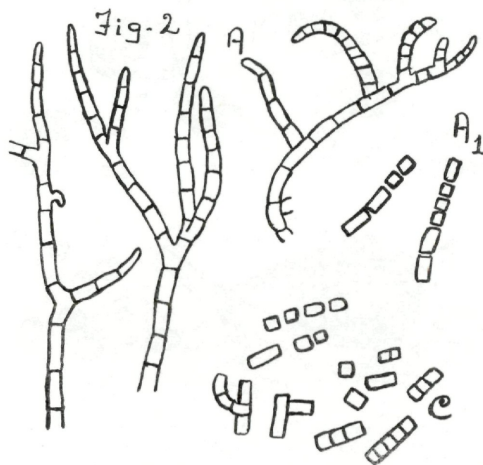


Fig. 2. *Geotrichum candidum* Link. — A. Mycelia $\times 440$. — A 1. Fragmenting mycelia $\times 440$. — C. Oidia $\times 440$.

Colony deep black, floccose, spreading, submerged. Conidiophores hyaline at base, brown at apex, simple, 1–2 septate, bearing a crown of phialides at apex, $52-78 \times 3,2-4,3 \mu$. Phialides subhyaline, simple, 1-celled, pyriform, 5–9 in number, $8,5-13,0 \times 3,2-4,3 \mu$. Conidia in persistent chains, (having 48–50 conidia in a chain) chains not branched, globose, dark brown, verrucose, $4,3-6,4 \mu$.

On decaying cotton fabric, paper and wood, collected on 21st July 1961, Poona, India.

This is a 2nd record from Bombay-Maharashtra, first being *M. zingiberiae* Rao reported by Rao (1962) causing dry rot of ginger (*Zingiber officinale* Rose.) in storage.

4. *Trichocladium opacum* (Crd.) Hughes (Fig. 4).

Hughes, S. J. Trans. Brit. Mycol. Soc. 35: 153–156, 1952.

Colony black, effuse, submerged, 3–5 mm diam. scattered. Conidiophores arising as lateral short knobs, non-septate or 1–2 septate, sub-hyaline. Conidia ellipsoid to clavate, straight to slightly bent, 2–5 septate, generally 3–5 celled, dark brown, thick-walled, constricted at septa, straight to oblique, formed singly, $13-30 \times 5,3-10,8 \mu$.

On paper and cotton cloth, collected on 21st July 1961, Poona, India.

Hughes (1952) has collected this fungus from decaying wood of *Fagus sylvatica* and *Quercus* sp. and also from soil.

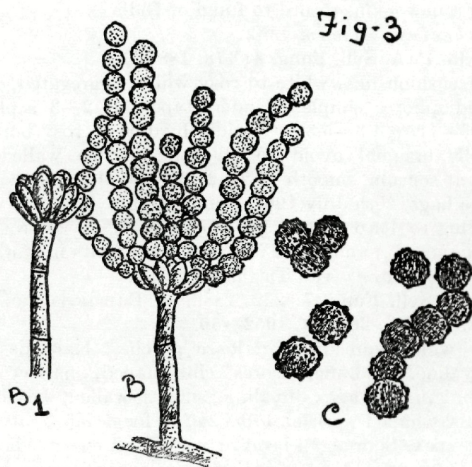


Fig. 3. *Memnoniella echinata* (Riv.) Galloway. — B. Conidiophore with chains of conidia $\times 440$. — B 1. Apex of conidiophore $\times 440$. — C. Conidia $\times 792$.

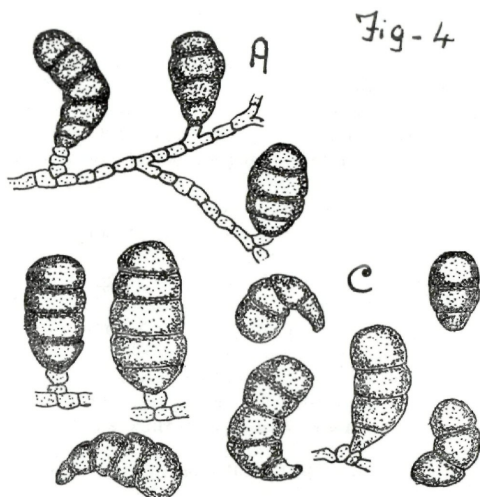


Fig. 4. *Trichocladium opacum* (Crd.) Hughes. — A. Mycelium with conidia $\times 792$. — C. Conidia $\times 792$.

This is a new genus record to fungi of India.

5. *Trichothecium roseum* Link.

Saccardo, P. A. Syll. Fung. 4: 178, 1886.

Colony cushion like, white to rosy white, aggregated, 1–3 mm. diam. Conidiophores simple, stender, tapering, 2–3 septate, sub-hyaline, $103-125 \times 4,3-5,3 \mu$. Conidia hyaline to rosy borne singly, 2-celled cells unequal ovoid to ellipsoid, double walled, slightly constricted at septum, smooth $17,2-21,3 \times 8,6-10,8 \mu$.

On jute bags, 20th July 1961, Poona, India.

According to Rao (1962), this fungus incites a soft-rot of guava (*Psidium guajava* L.) and fig. (*Ficus carica* L.) fruits in storage.

6. *Syncephalis cornu* van Tiegh. (Fig. 5).

Saccardo, Syll. Fung. 7: 232, 1888. — Ramakrishnan K. et al. J. Madras Univ. 26: 374, 1952–56.

Colony white, spreading, in loose patches. Rhizoids branched slender, hyaline. Sporangioophores club-shaped, narrow at base gradually bulging at apex, hyaline, smooth-walled, bearing apical recurved, disk-shaped vesicle, $176-240 \mu$ long, $8,6 \mu$ at base and $20-22 \mu$ at apex. Sporangial head or vesicle, globose to disk-shaped, $17-29 \mu$ diam. bearing tufts of sporangioles on its upper side. sporangioles cylindrical, hyaline, borne in tufts of 20–30 in number over the vesicle. $21,5-30 \times 2,15-4,3 \mu$. Conidia borne in a line (3–4),

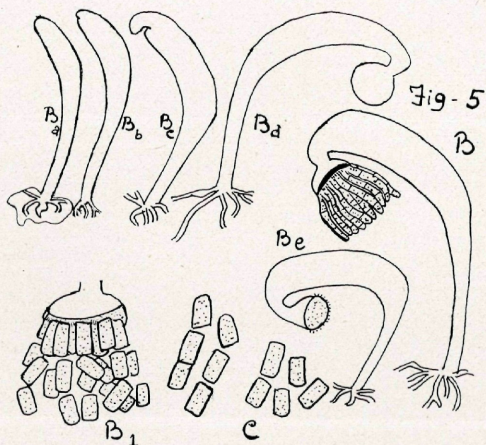


Fig. 5. *Syncephalis cornu* Van Tiegh. — Ba-Be developmental stages of sporangiophore $\times 180$. — B. Sporangiochore $\times 180$. — B 1. Head or vesicle $\times 950$. — C. Sporangiospores or conidia $\times 950$.

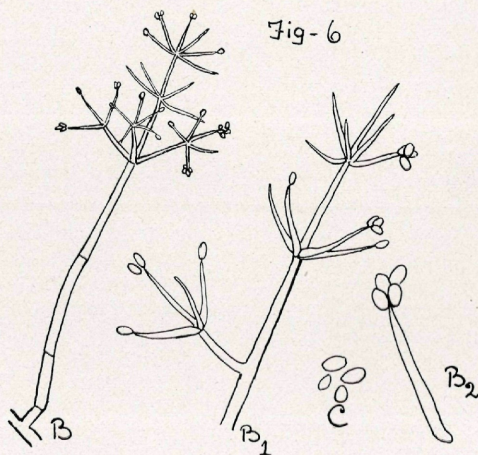


Fig. 6. *Verticillium dahliae* Kleb. — B. Conidiophore $\times 264$. — B 1. Apex of conidiophore $\times 440$. — B 2. Phialide with conidia $\times 950$. — C. Conidia $\times 950$.

1-celled, hyaline, ellipsoid to cylindrical, readily breaking away, $4,3-6,5 \times 2,15-4,3 \mu$.

On grains of *Oryza sativa* L., 18th July, 1961, Poona, India.

Ramakrishnan et al. (1952-56) have collected this fungus from soil growing as a hyperparasite on *Cunninghamella echinulata* Thaxt. The fungus is a new genus record for Bombay-Maharashtra.

7. *Verticillium dahliae* Kleb. (Fig. 6).

Saccardo, Syll. Fung. 25: 706, 1931. — Patel, M. K. et al. Ind. Phytopath. 2: 245-46, 1949.

Colony white, effuse, 1-3 mm. Conidiophores erect, acicular with verticillate branching, hyaline, 2-3 septate, $194-352 \times 2,1-5,3 \mu$. Phialides hyaline, acicular bearing 3-4 conidia in clusters, $20-25 \times 2,3-3,5 \mu$. Conidia hyaline ellipsoid, smooth, thin-walled, in groups of 3 to 4, $3,5-4,3 \times 2,15 \mu$.

On dead bark, 20th July 1961, Poona, India.

According to Patel et al. (1949), this fungus is a virulent pathogen inciting a root rot of *Solanum melongena* L. in Bombay.

8. *Monotospora cuneiformis* (Rich) Sacc. (Fig. 7).

Saccardo, Syll. Fung. 4: 299-301, 1886.

Colony black, effuse, cushion-like, circular, 3-4 mm. Conidiophores simple, uniformly thick, 2-3 septate, brown, erect, $116-223,5 \times 4,3-6,4 \mu$. Conidia deep brown at periphery light at centre,

Fig-7

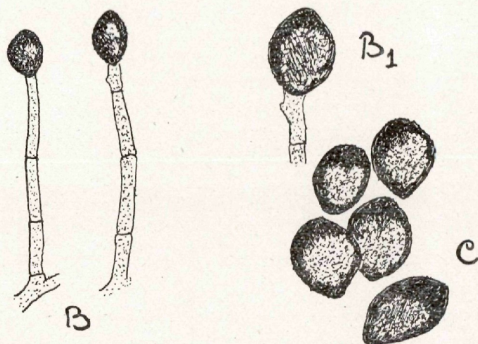


Fig. 7. *Monotospora cuneiformis* (Rich.) Sacc. — B. Conidiophore $\times 440$. — B1. Apex of conidiophore $\times 792$. — C. Conidia $\times 792$.

1-celled, smooth, thick-walled, solitary, apical, cunei-formed, 6,5—13,0×4,3—10,5 μ .

On wood and paper, 18th July 1961, Poona, India.

The fungus is a new genus record for India.

Summary.

This paper presents an account of eight fungi belonging to the *Zygomycetes* and *Hyphomycetes*, and collected from floodaffected substrata at Poona, India. Two of which namely the genera *Trichocladium* and *Monotospora* are new records to India and *Syncephalis* a new addition to the fungi of Bombay — Maharashtra.

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3. — Sydowia, Ann. Mycol. 1962 (in press).

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