An interesting new Species of Syncephalis from India

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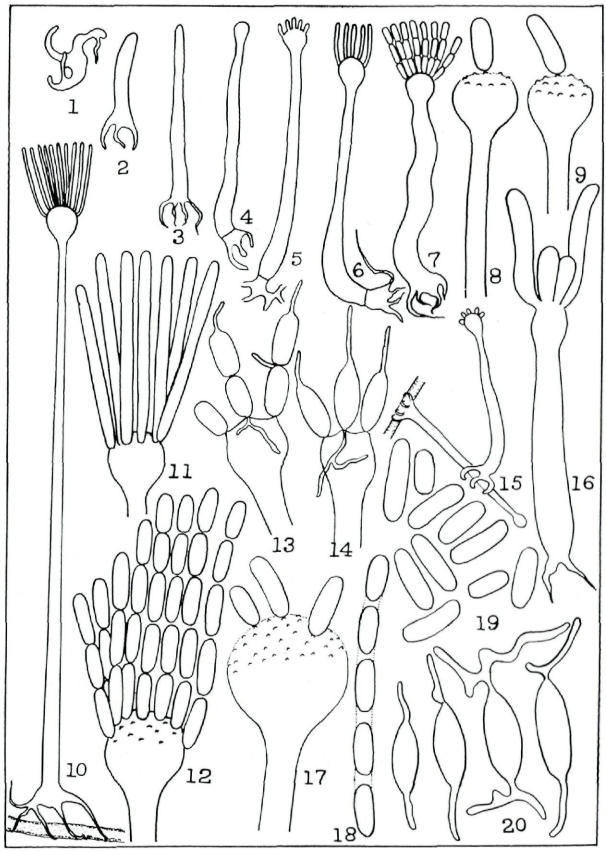
Figs. 1—32

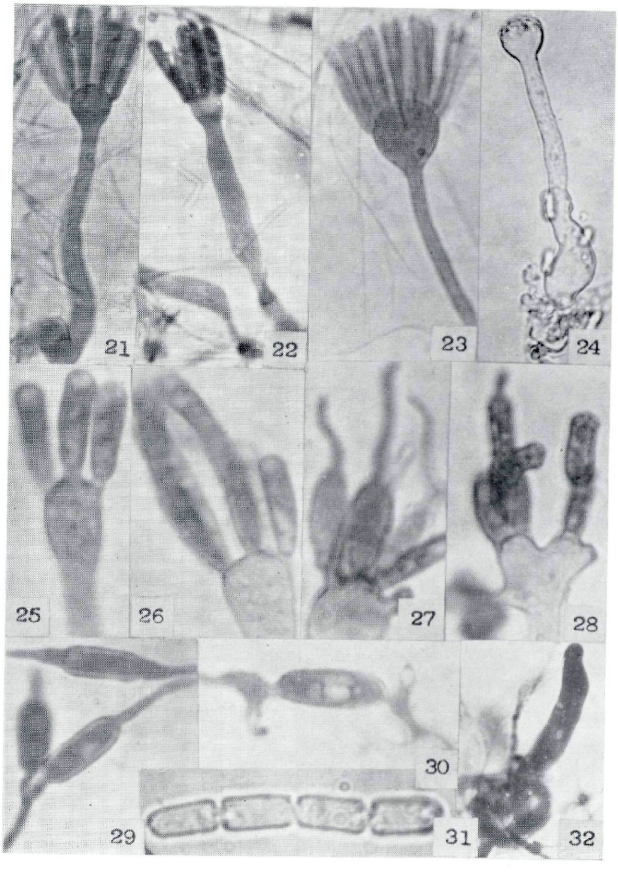
Fourteen species of *Syncephalis* have so far been reported from India, mostly from this laboratory (Mehrotra, 1959; Mehrotra and Prasad, 1967; Mehrotra and Prasad, 1967; the present species has some outstanding features not yet reported in any species of the genus. One of them is that the merosporangial fundaments are not of uniform size, they may form a single conidium, 2 conidia or upto 5 conidia in a chain. The conidiophores are of two size range, the smaller ones usually sinuate and vary from 60—180 μ in length, the longer ones erect and range 160—375 μ in length. The most astonishing thing is that the conidia germinate most readily even while they are attached at the apex of the conidiophore. It may also be noted that this species is the only one we have found in nature to parasitise a species of *Cunninghamella,* others were mostly found to parasitise *Mucor spp.* and rarely a species of *Mortierella.* The species is named *S. vivipera* because of the viviparous nature of the conidia.

Sincephalis vivipara sp. nov.

Hyphae vegetae tenuissimae, hyalinae, numerosae, rhizoideis male evolutis matricis hyphas penetrantes vel ambientes; conidiophora plerumque simplicia, raro etiam subramulosa, pallide lutea, brevia, interdum parum longiora; conidiophora breviora ad basim curvula, 60—180 μ longa, inferne 6—13.5 μ, superne 2.2—4.5 μ lata, longiora recta, tenuiter tunicata, 160—375 μ longa, in apice subito in vesiculam subglobosam vel obovoideam, 5.2—12 × 7.5—13.5 μ vel 10—19.5 × 10.5—21 μ dilatata; initia merosporangialia 22.5—45 × 2.2—3.2 μ, plerumque 20—40 μ in superiore dimidio vesiculae dispersa vel in annulo disposita, quoad forman in quaque vesicula variabilia, breviora conidium unum, longiora 3—5 conidia catenata gerentia; conidia tenuiter tunicata, levia, pallide lutea, in cumulo ochracea, cylindracea, oblongo-ovoidea, raro reniformia, 6—12 × 2.2—3.2 μ; germinatio bipolaris; zygosporae ignotae.

Fungus growing luxuriantly as a parasite on *Cunninghamella sp.*, vegetative hyphae thin delicate, colourless and forming numerous,





poorly developed rhizoids either penetrating or encircling the host hyphae; conidiophores developing above the rhizoids, rarely parasitising each other, mostly simple, occasionally showing a tendency to branch, light yellow, small, sometimes a bit longer also; smaller conidiophores sinuate near base, 60—180 μ in length, 6.0—13.5 μ broad near base and 2.2—4.5 μ near apex, longer conidiophores straight, thin walled 160—375 μ in length; tip of conidiophores finally enlarging into a subglobose to obconical vesicle, vesicles of smaller conidiophores 5.2—12 × 7.5—13.5 μ while that of longer conidiophores 10.0—19.5 × 10.5—21 μ; merosporangial fundaments 22.5—45.0 × 2.2—3.3 μ, mostly 20—40 in number, developing directly either in a ring or scattered over the upper half of visicle, variable in size over the same vesicle, smallest forming a single conidium only, some fragmenting into 2 conidia and others forming 3—5 conidia in a chain; often the longer conidiophores having conidial chains with 3—5 conidia; conidia 6—12 × 2.2—3.2 μ, thin and smooth walled, light yellow to ochraceous in mass, cylindrical oblong-oval to somewhat kidney-shaped, immersed under water drops at maturity, conidia germinating even while attached to the vesicle, germination bipolar. Zygospores not seen.

Type: M—41, deposited in BSM Culture Collection, Botany Department, University of Allahabad. A culture of the same will also be deposited at CBS, Baarn, Holland.

Isolated from the soil, pH 7.0 of Sarnath (India).

Acknowledgements

Thanks are due to Dr. F. Petrak for the Latin diagnosis of the new species.

Literature cited

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Legends

Figs. 1—20: *Syncephalis vivipara* (camera lucida drawings).

1—6: Developmental stages of a short conidiophore, × 580. 7: A mature short and sinuate conidiophore, × 580. 8—9: Vesicles of short conidiophores with wart like projections arranged in a ring and scattered over its upper half showing the attached of conidia, × 1450. 10: A young long and erect conidiophore, × 580. 11—12: Young and mature heads of a long conidiophore,

× 1450. 13—14: Mode of conidial germination over the vesicle, × 1450. 15: A young conidiophore parasiting another conidiophore, × 145. 16: Short conidiophore with unequal merosporangial fundaments over its vesicle, × 1450. 17: An old head of a long conidiophore with warts scattered and few attached conidia, × 1450. 18: A mature merosporangial fundament with five conidia in a chain, × 1450. 19: Conidia, × 1450. 20: Stages in germination of conidia, × 1450.

Figs. 21—32: *Syncephalis vivipara* (photomicrographs).

21—22: Young and mature short conidiophores with merosporangial fundaments arranged in a ring, × 640. 23: Upper portion of a long conidiophore with merosporangial fundaments arranged over the upper half of vesicle, × 640. 24: An old short conidiophore with vesicle showing minute warts where chains of conidia were attached, × 640. 25: Three smallest merosporangial fundaments, each forming a single conidium over the vesicle, × 1600. 26: Unequal merosporangial fundaments over the vesicle, × 1600. 27: Conidia germinating while attached to the vesicle, × 1600. 28: Tip of a conidiophore showing tendency of branching and germinating conidia, × 1600. 29—30. Stages in the germination of conidia, × 1600. 31: A mature merosporangial fundament with 4 conidia in a chain, × 1600. 32: Development of a conidiophore above the rhizoid, × 640.