

Another Azygosporic Species of *Mucor* from India

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The obligatory presence of azygospores in the complete absence of zygosporidia has been reported from time to time in the genus *Mucor*. BENJAMIN and MEHROTRA (1963) reviewed the literature regarding such reports and came to the conclusion that *M. azygospora* BENJAMIN, *M. bainieri* MEHROTRA & BAIJAL and *M. tenuis* BAINIER are the only three well established species. GAUGER (1965) found in *Mucor hiemalis* WEHMER, a number of exclusively azygosporic strains in germinations of single germ sporangiospores. According to him (GAUGER, 1975) such strains are typically diploid and somatic reduction in them may lead to aneuploidy and finally to haploids.

During our isolations of the members of the order Mucorales an azygosporic isolate of *Mucor* was found about a year ago. In spite of several transfers in a number of media during this period it has retained its azygosporic character. In size of the sporangiospores and nonbranching nature of sporangiophores this isolate comes close to *M. subtilissimus* OUDEMANS but differs from it in the shape of the sporangiospores, which in this isolate are ovoid or ellipsoid to reniform instead of cylindrical, and in the shape of columellae, which are mostly globose to subglobose instead of cylindrical to spherical. Further, azygosporic strains have never been reported in *M. subtilissimus*.

The azygosporic apparatus in this isolate is different from that known in the other three azygosporic species. The azygophores are roughened and have granular contents; the ones produced from surface hyphae enlarge gradually but those from aerial hyphae abruptly swell at the tip to form azygospores. The isolate is therefore, being described here as a new species, *Mucor ardhlaengiktus*, the name based on the Hindi word Ardhling, meaning incomplete sexuality.

Mucor ardhlaengiktus sp. nov.

Coloniae in agro SMA vel "oat meal agar" albae; sporangiophoris hyalinis, levibus, rectis vel ascendentibus, ad 2 cm altis 7 μ m diam.; sporangiis fuscis, globosis 28—72.6 μ m diam (med. 42 μ m), liquentibus; columellis globosis, subglobosis, hyalinis, levibus 7—40 μ m diam (med. 28 μ m); Collari manifesto; sporangiosporis hyalinis, levibus, ellipsoideis, ovoideis vel reniformibus, 5—8.4 \times 2—4.2 μ m (med. 7 \times 2.8 μ m); chlamydosporis in hyphis vegetantibus, numerosis, singulis vel in catenis gestis, intercalariis vel terminalibus, subglobosis vel cylindricis de muris tenuibus, 10—14 \times 5.6—6 μ m; zygosporis absentibus,

azygosporis terminalibus vel subterminalibus in azygophoris simplicibus vel ramosis, 600 μm altis, azygosporis globosis vel subglobosis, aurantio-fuscis vel fusco-nigris, 28–77 μm diam (med. 42 μm diam). Typus M-50, Bot. Dep., Univ. Allahabad, India.

Colonies on SMA and oat meal agar white even on maturity, with abundant aerial mycelium; sporangiophores hyaline, smooth, erect or

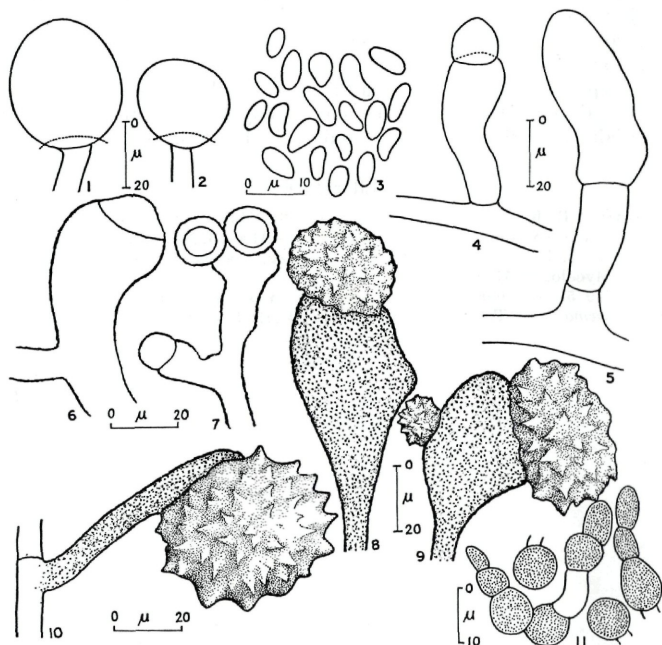


Fig. 1. *Mucor ardhlaengiktus* sp. n. (type). 1 & 2. Columellae. — 3. Sporangiospores. — 4–7. Different developmental stages of azygospores. — 8 & 9. Mature azygospores. — 10. Azygospores produced in aerial mycelium. — 11. Chlamydospores

ascending, generally unbranched, sometimes once branched, upto 2 cm in height, 7 μm in width; sporangia globose, 28–72.6 μm in diam (aver. 42 μm), brownish, wall smooth, rapidly deliquescent; columella usually globose or subglobose, hyaline, smooth, 7–40 μm in diam (aver 28 μm), collar well defined; sporangiospores hyaline, smooth, ellipsoid, ovoid or reniform, 5–8.4/2–4.2 μm (aver. 7 \times 2.8 μm); azygospores abundant, produced terminally and subterminally, some-

times one or more on the same swollen end (suspensor) of a simple or branched azygophore; azygophores up to 600 μm in length, roughened and with granular contents, those arising from the substrate hyphae gradually enlarging and the ones arising from the aerial hyphae generally abruptly enlarging at tip to form the gametangia; azygospores globose or subglobose, orange brown to brownish-black, 28—77 μm in diam. (aver. 42 μm) including the coarse conical exospore projections upto 5.6 μm in height; chlamydospores in substrate hyphae, intercalary or terminal, subglobose to cylindric, thick walled, 10—14 \times 5.6—6 μm .

Type (M—50) isolated from the garden soil in Allahabad, culture deposited in BSM culture collection, Botany Department, University of Allahabad, Allahabad, and also deposited at CBS, Baarn, Holland.

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