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SOME NEW MICROFUNGI FROM INDIA

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Five Hyphomycetous fungi are described from India. Of which, *Pithomyces subramanianii* sp. nov. produces 1-3 beaks terminally, *Acrophragmis reisingeris* sp. nov. bears knob-like structures on middle and lobed apical cells and *Cirrenalia indica* sp. nov. is characterised by its curved helicoid conidia with conspicuously large apical cells. *Monodictys antiqua* (Corda) Hughes and *Spilodochium acaciae* Alcorn are new records to Indian mycoflora.

INTRODUCTION

Presently, some Hyphomycetous fungi of Orissa and Andhra Pradesh, India, are being described and discussed in this communiction. *Pithomyces subramanianii* sp. nov. produces 1-3 beaks terminally, *Acrophragmis reisingeris* sp. nov. bears knob-like structures on middle and lobed apical cells, and *Cirrenalia indica* sp. nov. is characterised by its curved, helicoid conidia with conspicuously large apical cells, therefore, these fungi are being described as new species. *Monodictys antiqua* (Corda) Hughes and *Spilodochium acaciae* Alcorn are recorded as new to Indian mycoflora.

Pithomyces subramanianii sp. Nov.

(Text-fig. I A)

Colonies effuse, blackish brown, coalescent, 1-2 cms on the substratum.

Mycelium superficial, creeping, branched, anastomosing, subhyaline to pale brown, smooth, septate, 3-5mμ wide. Conidiophores micronematus or semi-macronematous, mononematous, erect, simple, subhyaline to palebrown, 1–2 septate, smooth, 5-10 mμ long, 3-5mμ wide. Conidiogenous cells monoblastic, integrated, terminal, hyaline to subhyaline. Conidia holoblastic, acrogenous, solitary, muriform, transversely and longitudinally septate, septa thick rarely visible, oval to oboval, pyriform, obturbinate, tapering at apices, bark blackish brown, 40-60 mμ long, 9-18 μm broad at base, 20-35 mμ in the broadest and 3-9mμ broad at apex, apical part with one to three beak-like structures and bicornuate, beaks transversely septate, light brown, rarely catenate. Each conidium carries a part of the conidiogenous cell as frill.

Type material collected on unidentified wood, Balimela, Orissa, India, coll., K.A.N.R.Dec., 1977. V.M.R.L. No. 42.

Pithomyces subramanianii sp. nov.

Coloniae effusae, fusce brunneae, extensivae, 1-2 cms substrato. Mycelium superficiale, repentes, ramosis anastomosis, subhyalinis vel pallide brunneis. laevibus, septatis, 3-5 mμ latis. Conidiophora exhypharum apice vel lateribusque oriunda, recta, simplicia, subhyalina vel pallida brunnea, 1-2 septate, laevibus, 5-10 mμ longa, ad 3-5 mμ crasaa. Cellae conidiogenae monoblasticae, incorporate, terminales. Conidia producta singulariter e conidiophora vel bina, holoblastica, acrogena, muriformia, septa transversalibus vel longitudinalibus oriunda, septa crassa, ovalia vel pyriforma vel obturbinata, angustrum ad apicem, fusce atro brunnea, 40-60 mμ longa, 9-18 mμ crassa ad basim, 20-35 mμ lata ad medium et 3-9 mμ ad apicem, Conidia 2-3 rostrata, rostrum septatis transversalibus, rarior catenate, pallide brunneum.

Typus lectus in ligno in leco Balimela, Orissa, India, Dec, 1977, Coll. K.A N.R. ad positus V.M.R.L. No. 42.

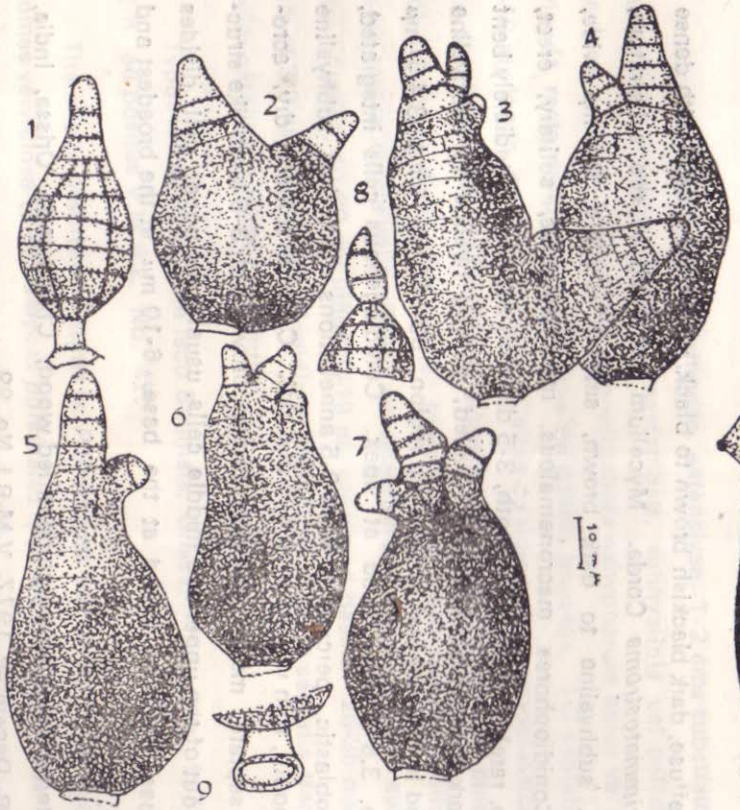
The above described fungus is *Pithomyces* Ber. & Br. In the classification it comes very close to *Pithomyces pulvinatus* (Cooke & Masse) Ellis (1965) and *Pithomyces ellisii* Vasant Rao & Chary (1972). However, it differs from them in

having conidia with two to three beak-like structures at apex or sometimes bicornuate. This fungus reminds *Petrakia* Sydow and *Pseudopetrakia* Ellis. However, these genera are distinct from one another in having stromatic and effused colonies, in common, they produce horn-like appendages, instead of small beak-like structures as encountered in the fungus under consideration, a character which is frequently seen at the base in *Teratosperma* Sydow. The anterior region of this fungus is also reminiscent of *Piricauda* Bubak and *Alternaria* Nees ex Fr. in which there is only one undivided apex and they are tretic hyphomycetes, whereas the new *Pithomyces* is holoblastic *sensu stricto*. Its usual 1-3 beak-like structures at apex and sometimes bicornuate nature demands a separate specific identity. Therefore, it is named as *P. subramanianii* in honour of Prof. C.V. Subramanian, Director, Centre for Advanced Studies in Botany, Madras and the President of International Mycological Society.

Acrophragmis reisingeris sp. nov.
(Text-fig. 1 B)

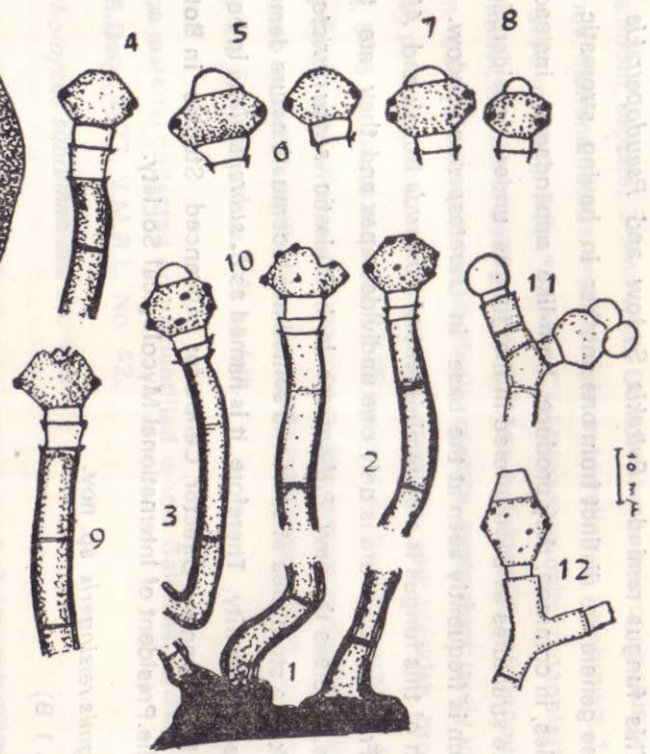
Colonies effuse, dark blackish brown to black, velvetty, immixed with dense colonies of *Trimmatostroma* Corda. Mycelium immersed in the substratum, rarely visible, subhyaline to dark brown, smooth, septate, 2-4 mμ wide, branched. Conidiophores macronemalous, mononematous, solitary, erect, curved, simple, rarely branched, smooth, 3-5 distantly septate, immediately bent at the base, dark blackish brown, thick walled, getting hyaline to subhyaline and thin walled in the terminal annellated region, 50-180 mμ long, 3-4.5 mμ broad at base, 3.5-5 0 mμ broad at apex. Conidiogenous cells integrated, terminal, monoblastic, percurrent with 3-5 annellations, cylindrical, subhyaline to hyaline, smooth, thin walled and 6-9 mμ tall. Conidia solitary, dry, acrogenous, 1-2 septate, median cell pale to dark brown with 3–6 knob-like structures coming out of the upper and middle cells, usually the upper cell divides into 2-3 lobes, 3-4.5 mμ broad at the base, 6-10 mμ at the broadest and 10-30 mμ tall.

Type material collected on unidentified wood, Chitrakonda, Orissa, India, Coll. K.A N.R. December, 1977, V.M.R.L.No. 99.



Text-fig. 1A, *Pithomyces subramanianii* sp. nov. (from the type material *V*.M.R.L. No. 42)

1. Young conidim, 2&3. bicornuate conidia, 4—7. conidia with 1—3 beaks. 8—catenate beak, and 9— base of the conidiophore with conidial attachment at the apex.



Text-fig. 1B. *Acrophragmis reinsingeris* sp. nov. (from the type material V.M.R.L. No. 99)

1. Part of the colony, 2—4. Percurrent conidiophores with conidia, 5—8. Conidia, 9—10. apical cell of the conidia becoming lobed and 11 & 12. branched conidiophores with conidia.

Acrophragmis reisingeris sp. nov.

Coloniae effusae, fusce atro brunneae vel fuscae, sericusae, immixum ad coloniae e *Trimmatostroma* Corda. Mycelium immersum in subsmanifestus rarius, subhyalinis vel atro-brunneis, septatis, septa 2-4 mμ distantibus, laevibus, ramosus. Conidiophora recta vel curvata, simplicia vel ramosa rarius, 3-5 septata, fusce atro brunnea ad basim, hyalina vel subhyalina ad apicem annellatum 50-180 mμ longa, 3-4.5 mμ lata ad basim, 3.5-5.0 mμ crassa ad apicem. Cellae conidiogenae incorporatae, terminale, mobobisaticae, percurrentis, 3-5 annelatus, cylindrica, subhyalina vel hyalina, 6-9 mμ longa. Conidia producta singularis e conidiophora acrogena, 1-2 septata, cellae medius pallide vell fusce brunneae, cellae medius vel apicalis, gongylodes 3-6, cellae apicalis 2-3 lobus, 3-4.5 mμ lata ad basim, 6-10 mμ lata in maxima, 10-30 mμ longa.

Typus lectus in ligno in loco Chitrakonda, Orissa, India, Dec, 1977, coll. K.A.NR· ad positus V.M.R.L. No. 99.

The above described fungus is *Acrophragmis* Kiff & Reis. It differs from the type species viz. *Acrophragmis coronata* Kiff. & Reis. (1970) in having knob-like out growths on both middle and apical cells. Further, usually the apical cell divides to form lobe-like structures. Therefore, it is described as new viz. *Acrophragmis reisingeris* in honour of Dr. O. Reisinger, a well known French Mycologist.

Monodictys antiqua (Corda) Hughes, 1958, Can. J. Bot. 36 : 785 (Text-fig. 2A)

Colonies effuse, blackish brown or black, coalescent. Mycelium partly superficial, partly immersed, visible hyphae subhyaline to pale brown, smooth, branched, septate, 3-6 mμ wide. Conidiophores micronematous or semi-macronematous, mononematous, simple or branched, in clusters, concolorous with the hyphae, smooth, 10-20 mμ long, 3-6 mμ broad. Conidigenous cells monoblastic integrated, terminal determinate, cylindrical or doliiform. Conidia erect, variable in size and shape, mostly clavate, obclavate or palmate, 1-3 times lobed, lobes superimposed or branched, muriform, many celled, dark,

septate, jet-jar like black, smooth, 50-70 mμ long, 20-40 mμ broad.

Collected on dead leaf bases of *Phoenix sylvestris* L. Zoo Park, Hyderabad, coll. V.R, V.M.R.L. No. 143. Nov. 1977.

Ellis (1976) illustrated *Monodictys antiqua* (Corda) Hughes. However in the above described fungus the conidia are variable in shape and are smooth. It is redescribed since it is the first record from this region.

Spilodochium acaciae Alcorn, 1974, Trans. Br. Mycol. Soc. 63 598-599.

(Text-fig. 2B)

Colonies amphigenous, punctiform, dark blackish brown, powdery. Mycelium immersed, visible hyphae subhyaline to pale brown, septate, incorporated to form pseudoparenchymatous, pulvinate, erumpent, stromatic body. Conidiophores micronematous, stromatic cells directly giving rise to conidiogenous cells and conidia. Conidiogenous cells spherical or oval, subhyaline, monoblastic or polyblastic, integrated and terminal, pale brown, smooth, in simple or branched, in chains, 3-6 mμ in diam. Conidia dry, acrogenous, in simple or branched chains, variable in shape, mostly oblong, cylindrical, rounded at ends, deeply constricted at the septa, 1-3 septate, the third septum may be vertical or oblique, thick walled, minutely verrucose, 9-15 mμ long, 6-12 mμ broad.

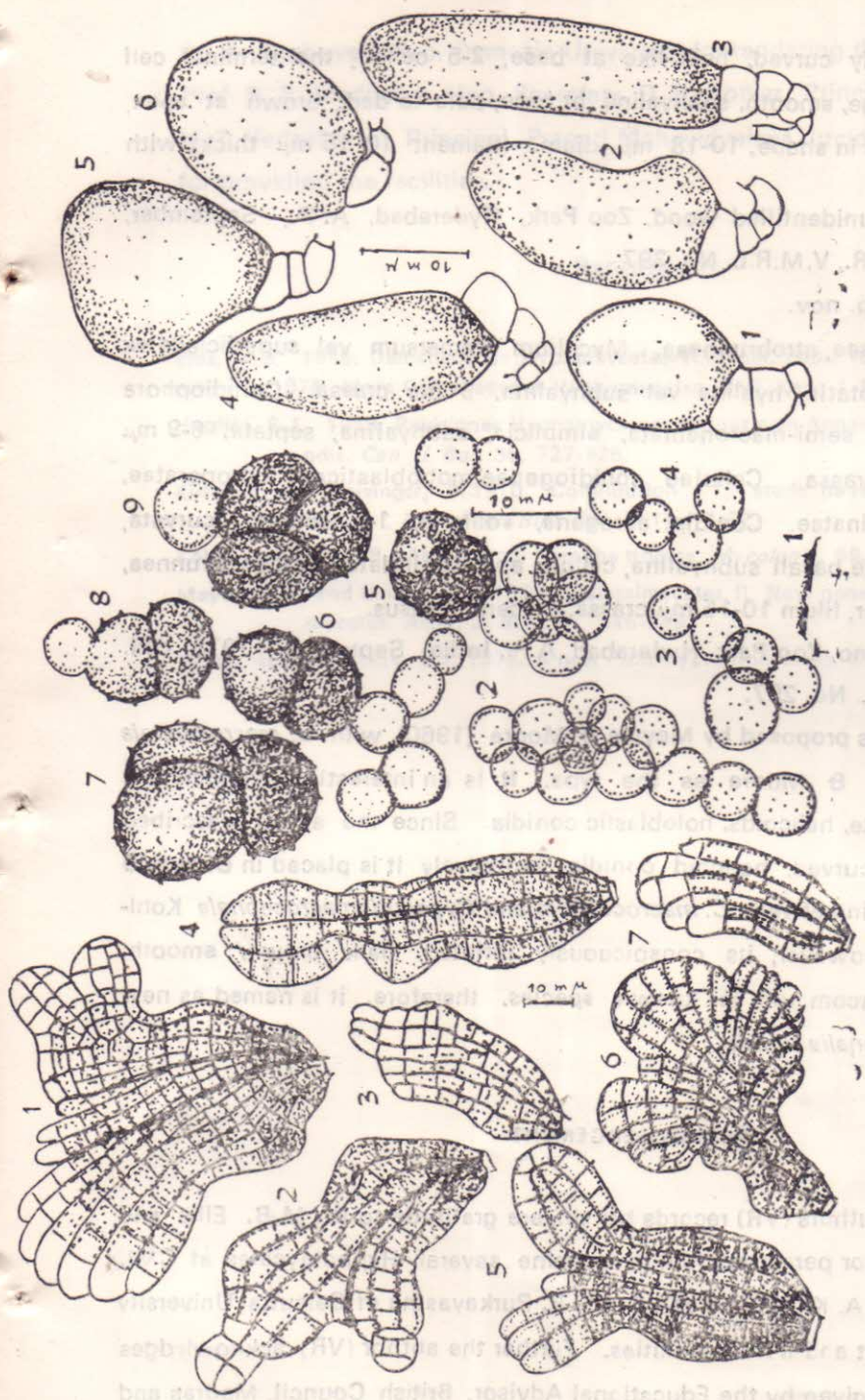
Collected on dead twigs of *Acacia arabica* Willd. Zoo Park, Hyderabad, Sept. 1978. coll. V.R, V.M.R.L. No. 296.

Spilodochium Sydow is the first record to Indian Mycoflora. It agrees with *A. acaciae* Alcorn, which was earlier recorded on phyllodes of *Acacia aulacocarpa* (Ellis, 1976) and now it is being reported on stems of *Acacia arabica* Willd., from India.

Cirrenalia indica sp. nov.

(Text-fig. 2C)

Colonies effuse, thin, granular, blackish brown. Mycelium partly superficial, partly immersed, visible hyphae subhyaline, smooth, septate, branched, upto 3 mμ wide. Conidiophores micronematous or semi-macronmatous, with 0-3 septate, smooih, subhyaline, simple, 6-9 mμ long, 3-6 mμ thick. Conidiogenous cells monoblastic, integrated terminal, determinate. Conidia acrogenous,



Text-fig 2A. *Monodictys antiqua* (Cord) Hugges. (from the type material V.M.R.L. No. 143.)
1—7. Short conidiophores with variable shaped conidia.

Text-fig. 2B. *Spilodochium acaciae* Alcorn. (from the type material V.M.R.L. No. 296.)
1. Colony as seen in stereo binocular microscope, 2—4. conidiogenous cells, 5—9. young and mature conidia.

Text-fig. 2 C. *Cirrenalia indica* sp. nov. (from the type material V.M.R.L. No. 297)
1—6. Conidiophores and conidia with characteristically inflated apical cell.

solitary, dry, mostly curved, helic-like at base, 2-5 celled, the terminal cell conspicuously large, smooth, subhyaline at base, pale to dark brown at apex, apical cell variable in shape, 10-18 mμ diam. filament 10-15 mμ thick, with obtuse apex.

Collected on unidentified wood, Zoo Park, Hyderabad, A. P., September, 1978, coll. K.A.N R., V,M.R.L. No. 297.

Cirrenalia indica sp. nov.

Coloniae effusae, atrobrunneae. Mycelium immersum vel superficiaile ex hyphis ramosis septatis, hyalina vel subhyalina, 3 mμ crassa. Conidiophora micronemata vel semi-macronemata, simplicia, subhyalina, septata, 6-9 mμ longa, 3-6 mμ crassa. Cellulae conidiogenae moboblasticae, incroporatae, terminales determinatae. Conidia acrogena, solitaria, 1-5 septata, curvata, helicoidea, cellulae basali subhyalina, cellula apicale inflata, pallide brunnea, 10-18 mμ diameter, filum 10-15 mμ crassa, apicem obtusus.

In emortio ligno, Zoo Park, Hyderabad, A.P., India, September, 1978. coll. K.A.N.R., V.M R.L. No. 297.

Cirrenalia was proposed by Meyers & Moore (1960) with *C. macrocephala* (Kohlm.) Meyers & Moore as the type. It is an interesting hyphomycete producing circinate, helicoids, holoblastic conidia. Since the above described fungus produces curved, holicoid conidia, tentatively it is placed in *Cirrenalia* Meyers & Moore in between *C. macrocephala* and *C. pseudomacrocephala* Kohlmeyer (1968). However, its conspicuously inflated, dark brown, smooth, terminal cell is uncommon in known species, therefore, it is named as new species, viz. *Cirrenalia indica*.

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