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The Genus Quaternaria In India.

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The genus *Quaternaria* was erected by Tulasne (1803) with *Q. persooni* as the type species. Saccardo's Sylloge Fungorum (1882—1931) included 6 species. Ainsworth (1961) recorded 4 species for the world. However the genus remained unrepresented in the Indian mycological flora until now.

The genus is characterised by the stroma small, circular or cushion-shaped, immersed or embedded in the bark, containing 3—5 obliquely placed perithecia, whose ostioles converge and become erumpent in a small stromatic black disc, only the ostiolar disc erumpent, necks not extruding beyond the surface. Asci clavate, thin-walled, unitunicate, 8-spored, paraphysate; ascospores allantoid, much larger, biseriate, light brown to yellowish.

1. **Quaternaria anonae** sp. nov.

Stromata ambitu orbicularia, valsoidea, cortici innata, disco nigro, ostiolis 3—5 composito, erumpentia, 1500—1800×900—1100 μ; perithecia 3—5 in quoque stromate, aggregata, ellipsoidea vel ovoidea, in ostiolo cylindraceo conoideo attenuata, 570—630 × 450—500 μ; asci clavati, stipitati, tenuiter tunicati, 8-spori, 32—35 × 5—6 μ; sporae distichae, allantoideae, pallide brunneae, 8—9,6 × 3,2 μ; muco hyalino, tenuissimo, obvolutae; paraphyses filiformes.

Stroma circular, cushion-shaped, developed in the bark and erumpent, by slightly raising the bark, as a smooth black disc, bearing the slightly protruding ostioles, usually 3—5 in number; stroma measuring from 1500—1800 × 900—1100 μ.; perithecia black, in groups of 3—5, in a stroma, closely packed, flask-shaped, obliquely placed, short-necked, necks not extending beyond the ostiolar disc, measuring from 570—630 × 450—500 μ. Asci clavate, stalked, unitunicate, thin-walled, 8-spored, 32—35 × 5—6 μ., paraphysate, paraphyses filiform, tips of the asci thick and wide. Ascospores allantoid, light brown, biseriate, 8—9,6 × 3,2 μ with hyaline thin mucous sheath. Ascospores much larger when compared to the other members of this group.

Collected on dead stem of *Anona squamosa* L. at Aurangabad, in the month of July 1967 Leg. S. B. Kale and deposited in the herbarium of I. A. R. I. New Delhi.

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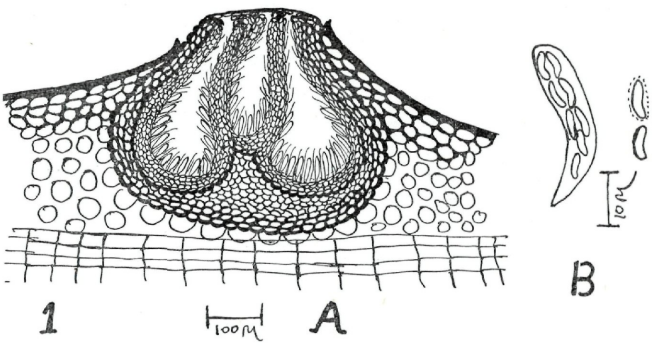
2. **Quaternaria clerodendrontis** sp. nov.

Stromata ambitu orbicularia, valsoidea cortici omnino innata, disco ostiolorum tantum erumpentia, 1100—1400 × 1125 μ; perithecia 3—5 in quoque stromate, ostiolis brevibus non prominulis praedita, 200—300 × 200—275 μ; asci numerosi, clavati, tenuiter tunicati, 8—spori, 35—40 × 6—7 μ; sporae distichae, allantoideae, pallide brunneae, 10—11,2 × 3,2—4 μ paraphyses filiformes.

Stroma black, cushion-shaped, circular, small, immersed in the bark, containing 3—5 obliquely placed perithecia, stroma erumpent



only with the ostiolar disc by raising the bark, 1100—1400 × 1125 μ. Perithecia black, flask-shaped, in groups of 3—5, obliquely placed, with short necks, ostiolate; necks not extruding beyond the surface. Perithecia measuring from 200—300 × 200—275 μ. Asci many, clavate, club-shaped, thin-walled, unitunicate, 8-spored, 35—40 × 6—7 μ., paraphysate; paraphyses filiform. Ascospores light brown, allantoid, larger, biseriate, 10—11.2 × 3.2—4 μ. with thin hyaline mucous sheath.

Collected on dead stem of *Clerodendron inerme* Gaert. at Takali (Kumbhakarn) in the month of January 1966 and 1968 Leg. S. B. Kale and deposited in the herbarium of I.A.R.I. New Delhi under No. 29368.

3. **Quaternaria munkii** sp. nov.

Stromata ambitu orbicularia, valsoidea, cortici omnino innata, disco nigro tantum erumpentia, 750—900 × 900—1050 μ; perithecia 3—5 in quoque stromate, ellipsoidea, carbonacea, dense aggregata, in ostiola cylindraceo-conoidea edisco erumpentia, sed vix prominula con-

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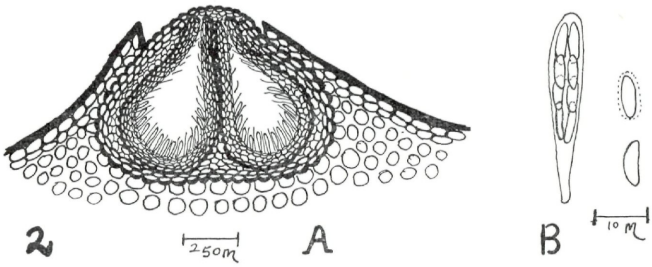
tracta, 450—525 × 270—300 μ; asci clavati, stipitati, tenuiter tunicati, 8-spori, 27—30 × 4—5 μ; sporae distichae, allantoideae, pallide brunneae vel subhyalinae 9—10 × 2—2,4 μ; paraphyses filiformes.

Stroma circular, cushion-shaped, developed in the bark, embedded, but only erumpent as a smooth black ostiolar disc by slightly raising the bark, 750—900 × 900—1050 μ. Perithecia flask-shaped, black, cabonacoeus, embedded, in groups of 3—5, compactly arranged with their distinct walls, obliquely placed, ostiolate, with short necks, ostioles convergent at the centre on the disc and slightly protruding but not extruding beyond the surface; perithecia measuring from 450—525 × 270—300 μ. Asci clavate, stipitate, thin-walled, unitunicate, 8-spored, 27—30 × 4—5 μ. paraphysate; paraphyses filiform. Ascospores allantoid, light brown to sub-hyaline, larger, biseriate, 9—10 × 2—2.4 μ.



Comparative table of the Indian species of *Quaternaria* Tulasne.

Species	Stroma	Perithecia	Asci	Ascospores
1. *Q. anonae* sp. nov. on *Anona squamosa* L.	1500—1800 × 900—1100 μ	570—630 × 450—500 μ	32—35 × 5—6 μ	8—9,6 × 3,2 μ
2. *Q. clerodendrontis* sp. nov. on *Clerodendron ineme* Gaert.	1100—1400 × 935—1125 μ	× 200—300 × 200—275 μ	35—40 × 6—7 μ	10—11 × 3,2—4 μ
3. *Q. munkii* sp. nov. on *Combretum* sp.	750—900 × 900—1050 μ	450—525 × 270—300 μ	27—30 × 4—5 μ	9—10 × 2—2,4 μ

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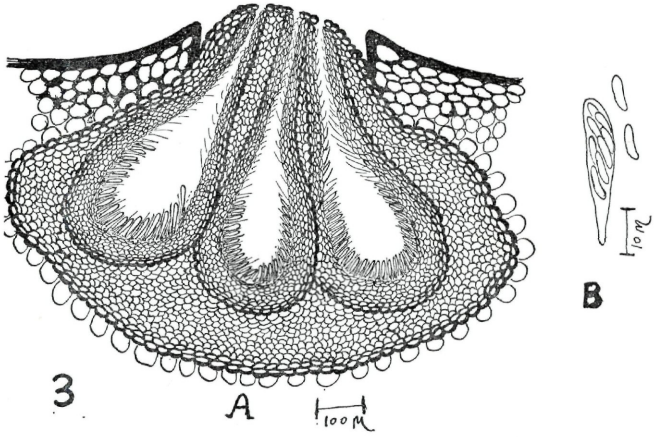
The species has been described after Dr. Munk for his valuable contribution to the ascomycetes.

Collected on dead and dried stem of *Combretum* sp. at Aalegaon in the month of February 1966 and 1968 Leg. S. B. Kale and deposited in the herbarium of I.A.R.I. New Delhi under No. 29369.

Key to the Indian species of *Quaternaria* Tul.:

A. Perithecia above 500 μ. . . . . *Q. anonae* sp. nov.
B. Perithecia less than 500 μ . . . . . .
  i. Less than 300 μ. . . . . *Q. clerodendrontis* sp. nov.
  ii. More than 300 but less than 500 μ. . . *Q. munkii* sp. nov.



Summary

The present paper deals with the genus *Quaternaria* Tul. Three new species have been described as new to science on the basis of comparative morphology and host relationship.

The genus is an addition to the generic list of India.

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References

Ainsworth B. B. 1961: Dictionary of Fungi.
Dennis R. W. G. 1960: British cup fungi and their allies.
Munk A. 1965: Danish pyrenomycetes.

Explanations of the Figures.

Fig. 1. *Quaternaria anonae* sp. nov. A. V. S. of stroma and perithecia. B. Ascus and ascospores. — 2. *Quaternaria clerodendrontis* sp. nov. A. V. S. of stroma and perithecia. B. Ascus and ascospores. — 3. *Quaternaria munkii* sp. nov. A. V. S. of stroma and perithecia. B. Ascus and ascospores.

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