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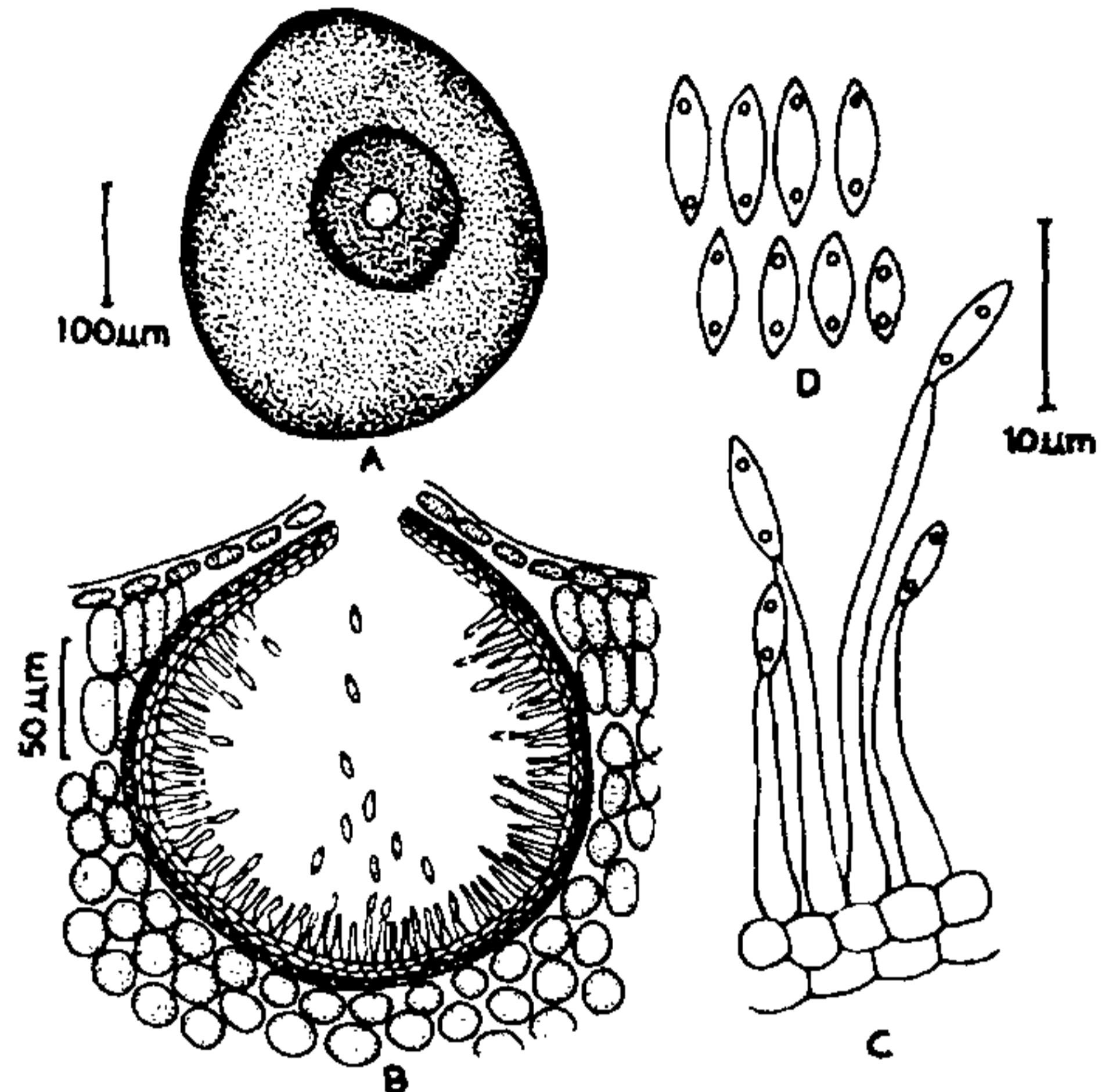


Figure 1. *Phomopsis crini* sp. nov. A. Pycnidium. B. V. S. through Pycnidium. C. Conidiophores. D. α -Conidia.

PHOMOPSIS CRINI SP NOV ON CRINUM ASIATICUM

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A NEW species of *Phomopsis* occurring on *Crinum asiaticum* L is described and illustrated. The type material has been deposited at *Herbarium Cryptogamiae Indiae Orientalis*, IARI, New Delhi.

Phomopsis crini sp nov

Leaf spots amphigenous, irregular, yellowish brown with brown margin extending from 8–90 mm in length and 5–15 mm in width. Pycnidia scattered or arranged in series, amphigenous, globose, blackish brown, darker round the ostiole, at first concealed by the epidermis, then raising it in a pustule and emerging by a circular opening of 20–50 μm in diam, unilocular, 150–300 μm in diam. Wall 2–3 cells (5–10 μm) thick, composed of thin walled, brownish, isodiametrical cells. Conidiophores densely clustered, persistent, hyaline, cylindrical, straight or bent, 12.5–27 \times 1.5–2 μm . α -Conidia oblong-ellipsoid, acute at both ends, usually biguttulate, hyaline, 7–10 \times 2–2.25 μm . β -Conidia are not seen (figure 1).

On living leaves of *Crinum asiaticum* L, Bhubaneswar (Orissa) 25.11.1977, D. Gupta, H.C.I.O. 32876 (Holotype).

Phomopsis crini sp nov

Maculae foliaries amphigenae, irregulares, fulvae margin cum brunneo, a 8–90 mm in longitude et 5–15 mm in latitudinem extendentes. Pycnidia disseminata vel in seriebus disposita, amphigena, plerumque epiphylla, aliquantulum depressa, globosa, furca, magis obscura circa ostiolum, primo abscondita a epidermide, deinde elevantes ea in pustula et emergentes a orificio rotundo de 20–50 μm in diametro, unilocularia 150–300 μm in diametro, Septum 2–3 cellae (5–10 μm) crassae, leptodermarum compositum, brunneolarum, cellarum isodiametralium. Conidiophora dense asociata, perseverantia, hyalina, cylindrica, recta vel tortiva, 12.5–27 \times 1.5–2 μm . α -Conidia oblongatae-ellipsoideae, acutae terminalibus ambobus, plerumque biguttulatae, hyalinae, 7–10 \times 2–2.5 μm . β -Conidia non sunt visae (figure 1).

In foliis vividis de *Crinum asiaticum* L, Bhubaneswar (Orissa), 25.11.1977, D. Gupta, H.C.I.O. 32876 (Holotypus).

Crinum asiaticum L belongs to the family *Amaryllidaceae* and the other eight members of this family do not host any other *Phomopsis* species except

one reported by Prasad *et al*¹ from Muzzaffarpur (U.P.) on *C. asiaticum* in which adequate morphological and taxonomical characters were not described.

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CHEMOTAXONOMY OF TWO GENERA OF CYNOMETREAE

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THE chemotaxonomy of the representatives of the tribes Amherstieae, Bauhinieae, Cassieae and Eucaesalpinieae of the Caesalpinaceae R Br has been studied earlier¹⁻⁴. The present note is on the chemotaxonomy of two hitherto uninvestigated taxa, *Cynometra* L and *Hardwickia* Roxb of the tribe Cynometreae *sensu* Benth and Hooker⁵. The former is represented by sixty species and the latter by two⁶.

The aerial parts consisting of branches and mature leaves of *Cynometra polyandra* Roxb and *Hardwickia binata* Roxb collected from the Indian Botanic Garden, Howrah, were analysed for the study of distribution pattern of various secondary metabolites, free amino acids and phenolic acids by standard phytochemical qualitative tests⁷, uni- and bidirectional ascending paper chromatographic techniques respectively.

In the distribution of the secondary chemical constituents, the two taxa resemble one another in the absence of alkaloids, aucubin compounds, cyanogenic glycosides, juglone, lignans, saponins and syringin and presence of catecholtannins, syringyl radicals and similar broad flavonoid patterns. However, *Cynometra* differs from *Hardwickia* in the possession of anthraquinones, indoles, leucoanthocyanins, steroids and tannins, absence of methylene dioxy compounds and in being positive to the activity of the enzyme polyphenolase.

Such free protein aminoacids as γ -aminobutyric acids, glutamic acid, threonine and tyrosin besides the unknown, presumably non-protein ones of hRf (hundred \times Rf) values 30 and 50 are found common to both the taxa studied. The aminoacids such as alanine, nor-leucine, lysin and tryptophan spotted in *Cynometra*, however, could not be found in *Hardwickia*. The unknown aminoacids of hRf 54 has been found exclusive to *Hardwickia*, besides leucine, phenyl alanine and serine. The apparent absence of otherwise ubiquitous protein aminoacids in the two taxa may be inferred due to their extreme low concentration in the free pool.

Of the several phenolic acids spotted, *p*-hydroxy benzoic and vanillic acids, besides the unidentified ones of hRf values 42/27, 42/55 and 66/70 are shared by both the taxa. While salicylic acid and an unknown phenolic acid of hRf value 52/50 are found in *Cynometra*, *Hardwickia* stands apart in possession of phenolic acids of hRf values 32/30, 68/25 and 68/50.

A numerical assessment of chemical characters is made according to the Jaccard coefficient of similarity⁸ (S_j) = $nJK/(nJK + u)$ where nJK = number of positive matches in both OTUs and u = number of characters unmatched in both OTUs. The data on the distribution of protein aminoacids in the free pool, are, however ignored since they are dependent upon the metabolic threshold of the tissue and environmental conditions⁹, unlike the other constituents studied, which accumulate in plant tissues, and remain stable under varied environmental conditions¹⁰. It has been found that this pair of taxa has only 0.43 similarity to each other and hence seem to be uneasy tribemates.

The taxonomic treatment of *Cynometra* and *Hardwickia* bracketed under Cynometreae by Benth and Hooker⁵ has been dispensed with by Hutchinson¹¹, who rearranged the members of Caesalpinaceae under five groups placing *Cynometra* in close association with such genera as *Bauhinia* L., *Trachylobium* Hayne and *Intsia* Thou in one group and *Hardwickia* with *Ceratonia* L and *Saraca* L etc in the other. The pattern of distribution of various chemical constituents in *Cynometra* and *Hardwickia* (present study) along with their putatively allied genera such as *Bauhinia* (17 species) *Intsia bijuga* (1 species) *Trachylobium hornemannianum* (monotypic) *Ceratonia siliqua* (monotypic) and *Saraca* (3 species) is presented in table 1.

The percentage of affinity of *Cynometra* with *Bauhinia*, *Intsia*, *Trachylobium* and *Hardwickia* calculated according to Ellison *et al*¹² is 70, 57, 75 and 43