cystidia (figure 2F) extending beyond the hymenial layer, hyaline, slightly thick-walled, swollen with rounded apex, 35–42 × 12–18 μ.

The voucher specimen has been deposited in the Mycological Herbarium of Burdwan Raj College (BRCMH 7911), Burdwan, West Bengal, India and the duplicate material in the herbarium of the Division of Mycology and Plant Pathology, Indian Agricultural Research Institute, New Delhi, India.

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SAPONINS AND LEUCOANTHOCYANINS IN *CASSIA* L.

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SAPONINS and leucoanthocyanins have been shown to be of great taxonomic interest in a wide variety of taxa[1–4]. The present article deals with the distribution of saponins and leucoanthocyanins in 21 species of *Cassia* L, and its systematic significance. Saponins were earlier detected in *C. auriculata*, *C. fistula*, *C. italica*, *C. occidentalis*, *C. sophera* and *C. nodosa*[5] and leucoanthocyanins only in *C. roxburghii*[6]. These species, except *C. italica*, have been reinvestigated here in view of the conflicting reports on the occurrence of saponins[5, 6].

The materials used in the present study (table 1) were collected in Bangalore. Voucher specimens are in the Herbarium of the authors' department.

Saponin Test A and Leucoanthocyanin Test A of Gibbs[7] were used to detect the respective compounds.

The distribution of saponins and leucoanthocyanins in different parts of the species studied is given in table 1.

The presence of saponins in the species reported to be positive earlier[5] is confirmed in the present study. There was no correlation between flower colour or habit and the presence of saponins. Since saponins were found in either the leaves or seeds in some species and in both in others, it is necessary to study different parts of the plant to determine their taxonomic distribution. In the present study, quantitative differences from sample to sample were noticed for most species. *C. auriculata* and *C. sophera* were reported[8] to be saponin-negative while these species were found to be saponin positive[5] as in the present study. This indicates that interpopulation variation in the presence of saponins does occur. The kind of variation found in the presence of saponins in *Cassia* is not uncommon for secondary compounds in plants[9]. Because of such variation, it is necessary to study several populations before the genetic potentialities for the synthesis of a

Table 1 *Distribution of saponins and leucoanthocyanins in Cassia species*

Species	Saponins: Leaves	Saponins: Seeds	Leucoanthocyanins: Leaves	Leucoanthocyanins: Flowers
1. *C. kleinii* W. & A.	–	+	–	–
2. *C. mimosoides* L.	–	+	–	–
3. *C. hirsuta* L.	+	+	–	–
4. *C. sophera* L.	+*	+	–	–
5. *C. tora* L.	+	–	–	–
6. *C. auriculata* L.	+*	+	–	–
7. *C. montana* Heyne ex Roth	–	–	–	–
8. *C. alata* L.	–	–	–	–
9. *C. occidentalis* L.	+*	+	–	–
10. *C. bicapsularis* L.	+	+	–	–
11. *C. fruticosa* Mill. (= *C. bacillaris* L.)	+	+	–	–
12. *C. carnaval* Spreng.	–	–	–	–
13. *C. fistula* L.	+*	+	–	–
14. *C. timorensis* DC.	–	–	–	–
15. *C. spectabilis* DC.	–	+	–	–
16. *C. siamea* Lam.	+	+	–	–
17. *C. nodosa* Buch.-Ham ex Roxb.	+*	+	+	+
18. *C. javanica* L.	+	+	+	+
19. *C. grandis* L.f.	+	+	+	+
20. *C. renigera* Wall. ex benth.	+	+	+	+
21. *C. roxburghii* DC. (= *C. marginata* Roxb.)	+	+	+*	+*

+: present; –: absent; *: reinvestigated

particular compound are inferred in a species since genetic potentialities alone should be considered as of taxonomic importance and not the variation which is often inconsistent[9].

Leucoanthocyanins were absent from the herbaceous and semi-woody species of *Cassia* studied here. This observation is in conformity with the earlier findings on other leguminous taxa[1,2]. Leucoanthocyanins were absent from the yellow-flowered species of *Cassia*, these are known to contain a large number of anthraquinones, xanthone, cassiaxanthone[4] or barakol[10]. The importance of leucoanthocyanins in the systematics of the genus is emphasized by their correlation with woodiness and pink to red flowers. The taxonomic importance of a character increases with its correlatability with other characters[11]. In the Fabaceae, the absence of leucoanthocyanins was also correlated with epulvinate condition and with affliction by *Uromyces*[12]. In the Caesalpiniaceae such information is yet unavailable.

C. montana, *C. alata*, *C. carnaval* and *C. timorensis* did not contain either saponins or leucoanthocyanins while *C. nodosa*, *C. javanica*, *C. grandis*, *C. renigera* and *C. roxburghii* were positive for both the compounds. Nevertheless, the rest of the data indicate that the occurrence of saponins and leucoanthocyanins in *Cassia* is independent of each other.

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STUDIES IN NEMATOPHAGOUS FUNGI. XI: *MERISTACRUM ASTEROSPERMUM*—A NEW RECORD FROM INDIA

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WHILE studying nematophagous fungi of Varanasi, a member of Zygomycetes was encountered attacking nematodes. A species of *Meristacrum* is reported for the first time from India as endoparasite of nematode. Only two species of *Meristacrum* are known to parasitize nematodes. *M. asterospermum* has been reported by Drechsler[1] and redescribed by Davidson and Barron[2]. McCulloch[3] has described *M. pendulatum* from soils of Queensland. The characters which differentiate the two speices are the division of the conidiophore into a number of cells and the shape of conidia. In *M. asterospermum*, only the terminal portion of the conidiophore is divided into cells whereas in *M. pendulatum*, the whole length of the conidiophore is divided into cells.

A detailed account of the chief structural features of *M. asterospermum* Drechsler has been given in this paper. The fungus was isolated using baited plates technique described by Barron[4]. Petri plates containing 2% maize meal agar were baited with heavy suspension of nematodes. Then soil samples were sprinkled on plates. After incubating for a week or so at 25 ± 2°C, the plates were examined. A large number of nematodes were found infected with the fungus.

Meristacrum asterospermum Drechsler: Primary infec-