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A NOTE ON THE CHEMOTAXONOMY OF THE MENISPERMACEAE

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THE Menispermaceae are variously placed under Berberidales, Menispermiales, Ranales or Ranunculales by different taxonomists. But for the alkaloids, the chemotaxonomy of this family is little known¹. The present study on the chemotaxonomy of the two taxa viz. *Cocculus hirsutus* (L.) Diels and *Tinospora cordifolia* Miers representing the Cocculaceae and the Tinosporaceae tribes respectively, is taken up to fill up the gap.

The results of the standard tests with the fresh material and 80% methanolic extracts of the shade-dried material of the above two taxa, along with those

TABLE I

S. No.	Test/Taxon	<i>Cocculus hirsutus</i>	<i>Tinospora cordifolia</i>	Other Menispermaceae ¹
1.	Alkaloids	+	+	+ 40 genera
2.	Anthroquinones	-	-	..
3.	Cigarette test	+	+	..
4.	Ehrlich test	-	-	- 2 genera/3 species
5.	HCL/methanol test	-	-	- 1/2
6.	HCN test 'A'	+	-	- 5/6
7.	Hot water test	-	+	+ 5.6
8.	Hydroxyquinones	+	-	..
9.	Indoles	-	-	..
10.	Juglone test 'A'	-	-	- 1/1
11.	Labat test	-	-	..
12.	Leucoanthocyanins	-	-	- 2/2
13.	Leucoanthocyanin test 'A'	-	-	- 2/2
14.	Liebermann-Burchard test	+	+	..
15.	Lignans	-	-	..
16.	Maule test	-	-	..
17.	Phenols	+	+	+
18.	Raphides	-	-	-
19.	Salkowski test	+	+	..
20.	Saponins	-	-	+ 4/4; 15/17
21.	Saponin test 'A'	-	-	? 1/1; 1/1
22.	Shinoda test	-	-	..
23.	Syringin test	-	-	- 2/2
24.	Tannins	+ stem ? leaves	-	+ 3/3; 3/5

Positive; + Negative; ? doubtful; ... no record

of other menispermaceous members studied by Gibbs¹ are presented in table I. Uniformly positive results are obtained for alkaloids, cigarette test, hot water test, Liebermann-Burchard test, phenols and Salkowski test. Uniformly negative results are obtained for anthroquinones, Ehrlich test, HCl/methanol test, HCN test 'A', hydroxy quinones, indoles, Juglone test 'A', Labat test, lignans, leucoanthocyanins, Maule test, raphides, Shinoda test and Syringin test. The tests for anthroquinones, hydroxyquinones, indoles, lignans and triterpenoid/steroids and cigarette, Labat, Maule and Shinoda tests are unrecorded earlier, and the results of the rest of the tests are in conformity with those of Gibbs¹, on the taxa studied by him.

There are conflicting reports about the occurrence or absence of saponins and tannins. Earlier workers¹ reported the absence of saponins in several taxa and recorded their presence or probable presence only in a few. Using Saponin test 'A' on the leaves of *Cocculus carolinus* and *Menispermum canadense*, Gibbs¹ obtained doubtful and negative results respectively. The present observations indicate the absence of saponins in both the taxa. The earlier workers¹ also reported the probable presence (*Cocculus*) or absence (*Menispermum* and two species of *Cocculus*) of tannins. Using tannin test 'A' on the leaf material Gibbs¹ recorded the presence of tannins in *C. carolinus*, *C. trilobus* and *M. canadense*. In the present study, it is observed that the tannins are absent in *Tinospora* and present in the stem of *C. hirsutus* but their presence is doubtful in the leaves.

A perusal at the previous¹ and present chemical data suggests that the Menispermaceae fall in line with the other families of Buchheim's² Ranunculales and show several similarities in chemical characters with the Berberidaceae and the Lardizabalaceae. These three families resemble one another in the invariable absence of leucoanthocyanins, syringaldehyde, naphthoquinones and ellagic acid and in the presence of triterpenoids and similar phenolic compounds, such as kaempferol and caffeic acid. Further, the Menispermaceae resemble the Berberidaceae in the presence of similar group of alkaloids, and negative results for aucubin glycosides and HCl/methanol test. The Menispermaceae resemble the Lardizabalaceae in the absence of myricitin and delphinidin.

However, the menispermaceae strike a discordant note and stand apart from Ranunculales in the presence of indole-erythrinane and morphine alkaloids and viburnitol and quercitol cyclitols and absence of cyanidin, sinapic and ferulic acids¹.

Though the available chemical data derived from about 55 species out of a total of 350 species seem to support the affinities of the Menispermaceae with the Berberidaceae and the Lardizabalaceae as has been suggestive on anatomical^{3,4}, cytological⁵,

embryological⁶ and palynological⁷ grounds, a study of a large number of taxa is necessary to corroborate the same.

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OCCURRENCE OF LEAF BLIGHT ON GROUNDNUT

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GROUNDNUT (*Arachis hypogea* L.) is mainly grown as an unirrigated oilseed kharif crop in Rajasthan. There was a long dry spell during the monsoon season of 1979-80 and 1980-81 and the groundnut crop was observed to suffer from leaf blight disease caused by *Dreschlera spicifera*. (Bain.) van Arx.

The disease symptoms started with pale yellow area at the tip of leaf lamina where blackish brown lesion developed. The lesions spread in the form of V-shaped chlorotic zone towards petiole and gives blighted appearance (figure 1).

The pathogen has been identified as *D. spicifera* the state of *Cochliobolus spicifer* Nel. The conidiophores are dark, brown, septate, unbranched with scars of conidial attachment. The conidia were brownish, thick-walled, cylindrical to ovoid, 2-5 celled predominantly 4-celled, measuring 18-40.5 (30.9) μ in length and 7.5-16.5 (12.0) μ in width. The typical