



Plate I: Bunch of *Vitex negundo* L. leaves being swept over a crop of Paddy

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CHEMOTAXONOMIC STUDIES IN LYTHRACEAE

Recent studies in the members of the Lythraceae indicate that the compounds present in them show a wide spectrum of distribution, for example the restricted occurrence of naphthaquinones in species of *Lawsonia* and *Ammania*, C-flavonoids in *Lythrum*. This complex nature of the distribution pattern of chemical constituents

TABLE I

Sl. No.	Tests	<i>Ammania baccifera</i>	<i>Ammania salicifolia</i>	<i>Lagerstroemia flos-reginae</i>	<i>Lagerstroemia indica</i>	<i>Lawsonia inermis</i>	<i>Woodfordia floribunda</i>	Remarks
		r st lf fl fr	r st lf fl fr	r st lf fl fr	r st lf fl fr	r st lf fl fr	r st lf fl fr	
1. Molisch test		+	+	+	+	+	+	Sugars present
2. Froth test		+	+	+	+	+	+	Saponins absent
3. Ferric chloride test		+	+	+	+	+	+	Phenolic compounds present
4. Magnesium + HCl test		+	+	+	+	+	+	flavonoids absent
5. Walls test		—	—	—	—	—	—	alkaloids are absent except in <i>Lagerstroemia indica</i>
6. Ehrlich test		—	—	—	—	—	—	aucubin type of substances absent.
7. Keddes test		—	—	—	—	—	—	Cardiac glycosides absent
8. Borntrager's test		—	—	—	—	—	—	Anthraquinones absent
9. Lawsone test		+	+	+	+	+	+	1 : 4 dihydroxynaphthaquinone, (a lawsone) is present in <i>Lawsonia</i> , <i>Ammania</i> , <i>Woodfordia</i>
10. Ninhydrin test		+	+	+	+	+	+	Amino acids present
11. Millons test		+	+	+	+	+	+	Proteins present.
12. Cigarette test		+	+	+	+	+	+	Polyphenolases present
13. Hot water test		+	+	+	+	+	+	Polyphenolases present
14. Juglon test 'A'		—	—	—	—	—	—	Juglon absent.
15. HCl/Methanol test		—	—	—	—	—	—	Catechol tannins absent
16. HCN test		—	—	—	—	—	—	Cyanogenic glycosides absent
17. Syringin test		—	—	—	—	—	—	Absence of syringin.
18. Maules test		—	—	—	—	—	—	Lignins yielding Syringaldehyde absent
19. Leucoanthocyanin test		—	—	—	—	—	—	Leucoanthocyanines absent
		r = root st = stem lf = leaf		fl = flower fr = fruit		+	= present — = absent	

poses a problem as to the affinity of the members of this family. Though Lythraceae is a small taxon consisting of about 23 genera and 450 species occurring both in tropical and temperate climates it shows a wide range of variation of both morphological and ecological characters. It is, therefore, considered pertinent to investigate the chemical relationship among the species distributed in India by applying established chemical test-plan which elucidates a comparative phytochemical relationship.

The following six species namely *Ammania baccifera* Linn., *Ammania salicifolia* Monti, *Lawsonia inermis* Linn., *Lagerstroemia indica* Linn., *Lagerstroemia flos-reginae* Retz. and *Woodfordia floribunda* Salisb. were selected to find out whether a pattern of distribution of chemical constituents would give a primary indication of its chemical relationship. The material for the present study was collected from plants growing around Nagpur.

Both vegetative and reproductive organs namely root, stem, leaf, flower and fruits were studied as many a times these parts exhibit a variety of chemical characters. The tests have been carried out according to Gibbs (1974) and Trease and Evans (1972) (Table I).

It may be noted that though different species show a similar pattern of reactions,

Lagerstroemia indica shows presence of alkaloids while these are absent in *Lagerstroemia flos-reginae*. This difference being at species level is quite interesting. The presence of Lawsone is doubtful in *Lagerstroemia* species. This shows that the genus *Lagerstroemia* is not uniform as regards its chemotaxonomy, and justifies the separation of these two species into two different sections *Valage* and section *Adambea* (Hooker). In conclusion it may be observed that Lythraceae though appearing to be a homogenous taxon shows considerable chemical difference at the generic and specific levels which may lead to better delineation amongst its members.

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CRITICAL NOTES ON THE GENUS *CROTALARIA* L.—II*

While revising the genus *Crotalaria* L. for the Flora of India, it has been found that *C. capitata* Benth. ex Baker (1876), an Asiatic species is a later homonym of *C. capitata* Lamk. (1790), an African species. This has necessitated a new name for the Asiatic species. The specific epithet '*khasiana*' as suggested by Balakrishnan in 1962 on the specimens is adopted for this species. A collection from Burma (Maymyo, 1924. *Ing Kan* 592) which differs considerably from *C. khasiana* in the shape and size of leaf and other characters is described here as a new variety (*C. khasiana* var. *macrophylla*).

C. lanata Bedd, a distinct species, endemic to eastern and western ghats is again

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