A NOTE ON THE SYSTEMATIC POSITION OF CRESCENTIEAE

The circumscription of Crescentieae and affinities among their members are adumbrated in the light of the data on the distribution pattern of chemical constituents and those of the collateral disciplines.

The aerial parts of *Crescentia alata* H.B.K., *C. cujete* L., *Kigelia pinnata* (Jaq.) DC and *Phyllarthron comorense* DC were collected locally and from Chacko Gardens, Kakinada and screened following standard methods of detection of various secondary metabolites (including phenolic constituents) and free amino acids by qualitative tests, and uni and bidirectional paper Chromatography (Gibbs, 1974; Harborne, 1973).

There is uniformity in the incidence of aucubin compounds, ellagic acid, polyphenolase activity, syringyl radicals, p—OH—benzoic acid, caffeic acid, p—coumaric acid, gentisic acid, vanillic acid and two unknown phenolic acids A (hRf 27/26) and H (hRf 68/89) in all the members studied. As evident from Table 1 there is a restricted and to some extent overlapping occurrence

Table 1—Distribution pattern of different chemical constituents

Chemical constituents	*Crescentia alata*	*Crescentia cujete*	*Kigelia pinnata*	*Phyllarthron comorense*
1. SECONDARY METABOLITES				
Dihydronchalcones	+	+	+	
Flavanones				+
Indoles	+			
Iridoids		+	+	+
Juglone		+		+
Proanthocyanidins		+		
Syringin		+		
Triterpenoids/Steroids			+	
2. PHENOLIC CONSTITUENTS				
Gallic acid			+	
Salicylic acid				+
B (hRf 40/30)	+	+		+
C (hRf 52/12)	+	+		+
D (hRf 61/64)	+			
E (hRf 62/50)				+
F (hRf 66/82)				+
G (hRf 68/36)	+			
3. FREE AMINO ACIDS				
a (hRf 6)			+	+
b (hRf 8)			+	
c (hRf 15)	+			
d (hRf 28)		+	+	
e (hRf 42)	+	+		+
f (hRf 75)				+

of certain other compounds. From the quantified data on the districution pattern of the above constituents it is observed that there is a fair degree of similarity among the taxa. The distinctiveness of the taxa, as evidenced by their isolation values (Ellison *et al.*, 1962) is poor. It is evident that *Crescentia alata* and *C. cujete* are mutually closer to one another on this count, while the latter is equally closer (with 76% of similarity) to *Phyllarthron comorense* and slightly less similar (73% of similarity) to *Kigelia pinnata* and suggestive of close chemical ties. Further, in such morphological features as arborscent habit, alternate phyllotaxy, simple or palmately compound leaves, unilocular (basally bilocular) with parietal placentation, long idehiscent fruits and foliaceous cotyledons they resemble one another (Bentham & Hooker, 1862—1893). In the possession of glandular trichomes and spicular cells (Metcalfe & chalk, 1950), same haploid (n=20) number of chromosomes, 3—colpate pollen grains which are prolate in shape and reticulate sexine in pattern (Kanta, 1973), the above taxa resemble one another. Thus the totality of circumstantial evidence shows close ties among the members studied.

According to Bentham and Hooker (1862-1893) the tribe crescentieae has four genera, viz., *Crescentia, Kigelia, Phyllarthron* and *Schleglia.* Schumann (1894) and Gentry (1980) added *Parmentiera* to this list. Further, Gentry (1980) seggregated *Kigelia* and *Phyllarthron* and placed them in a separate tribe Coleae, retaining *Crescentia* and *Parmentiera* in Crescentieae.

The similarities in chemical constituents and other features are suggestive of coherence of Crescentieae and affinity among the above genera. A comparison of the chemical features indicate that *Parmentiera* could be included in the tribe. The study, however, does not support the disbandment of the taxon as done by Gentry (1980).

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