

VII SYSTEMATIC POSITION OF PTERIS

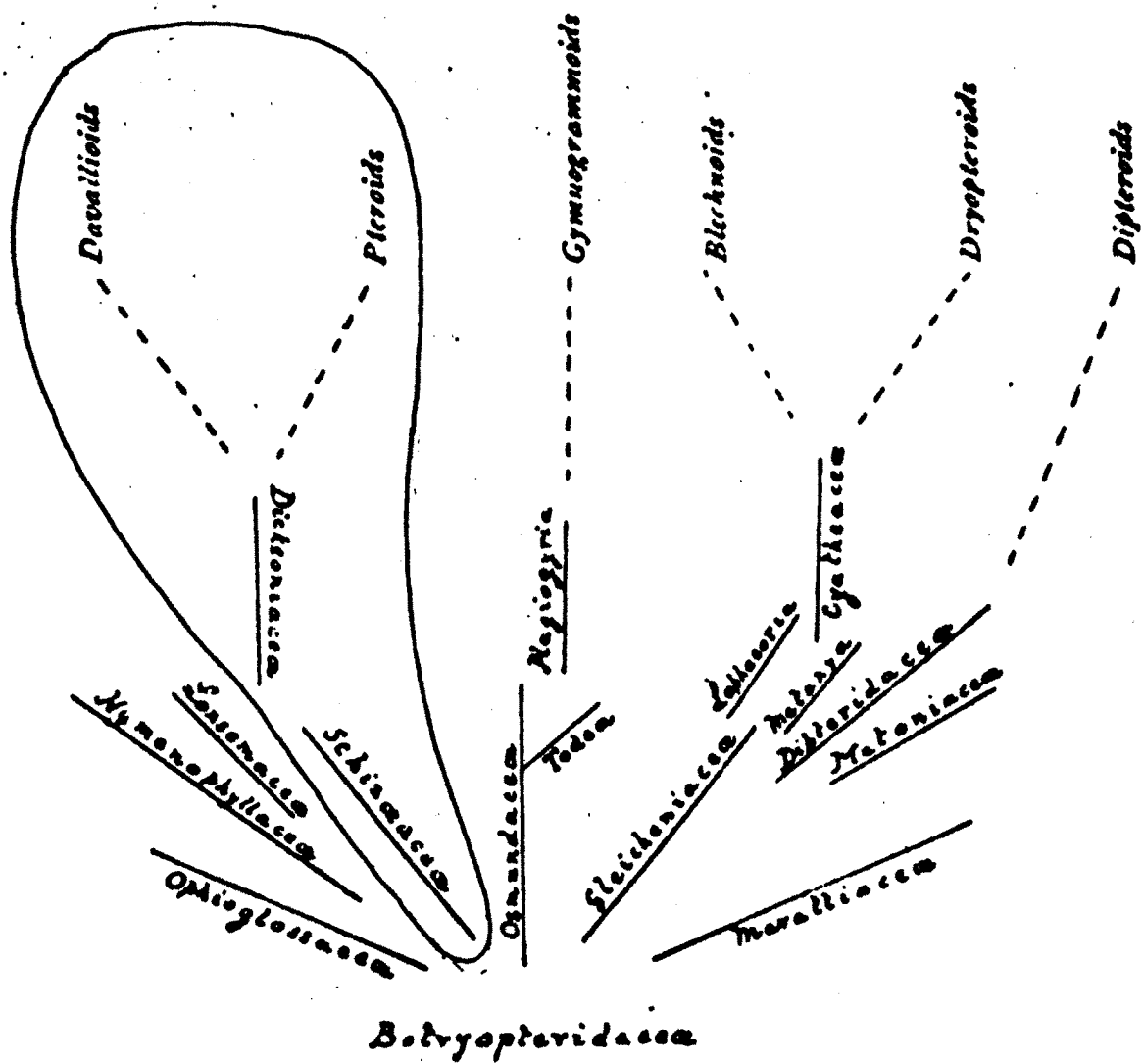
Systematic Position :

Pteris vittata is included in family Pteridaceae. Bower (1923) considered the Pteroids as the Dicksonoid derivatives, (Chart No.1), but they constitute a separate phylum distinguished from the later by prevalent soral fusion to form linear coenosori. The series starts from Pteridium and Paesia both of these genera have a marginal receptacle and a two lipped sorus, as in the Dicksonoids. As in these ferns genus Pteris also has sorus deflected downwards in the course of the individual development, while the lower indusium is inconstant. A very beautiful intermediate state is seen in Histopteris incisa : here the original relation of the receptacle to the margin is variable but with a strong initial bias towards the lower surface, and the lower indusium is abortive. In Pteris itself the lower indusium is again absent, but here the flattened receptacle is clearly intra-marginal. Thus the phyletic slide is again complete.

Dicksonoid-----Pteridium,-----Histopteris-----Pteris.
Paesia incisa.

Copeland 1929 considered the monophyletic origin of the Polypodiaceous ferns and he has recognized several natural families within the large and internally diversified Polypodiaceae, Later in 1947 in his publication "Genera Filicum" he sub-divided Ferns into three orders; Ophioglossales, Marattiales and Filicales, the latter assembling all the Leptosporangiate ferns, both homosporous and heterosporous. He included the family Pteridaceae as one of the family in order Filicales.

Chart - I



Phyletic Scheme for the more Primitive Filicales.

by Bower (1923-28).

Chart-II

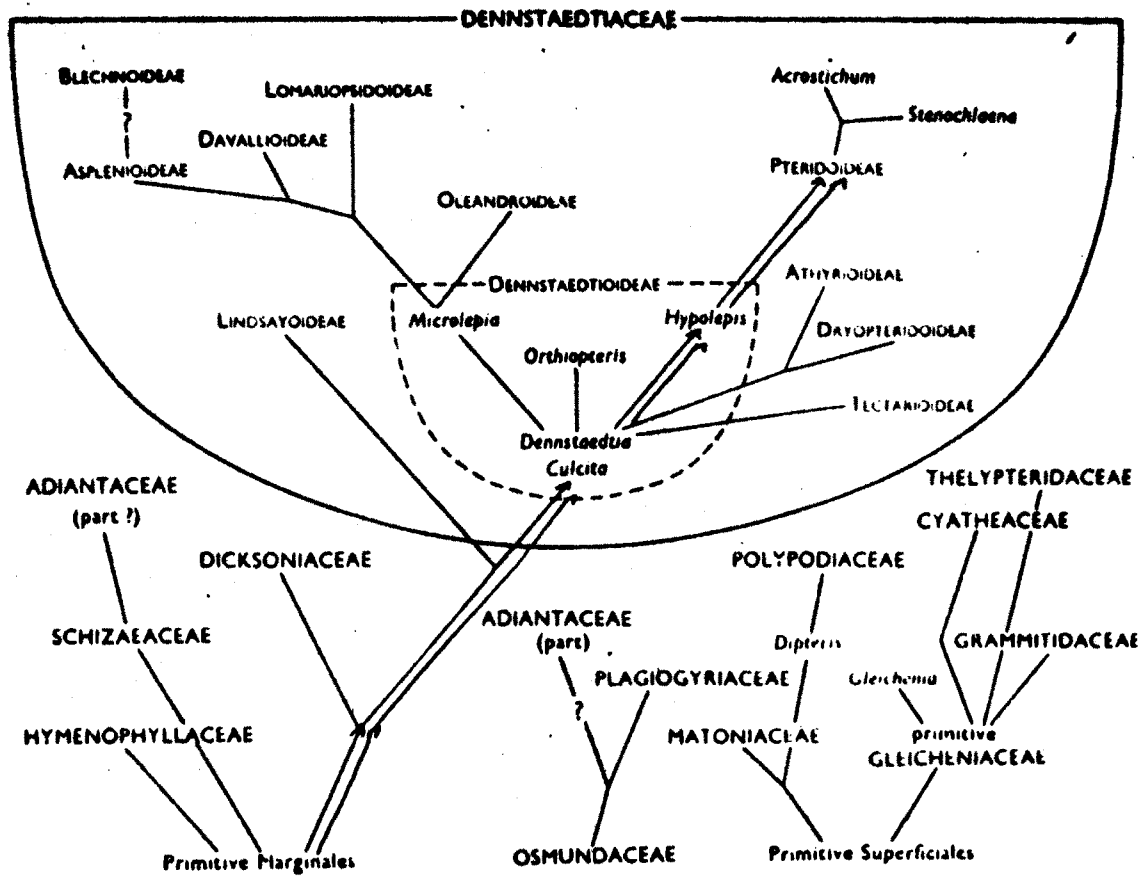
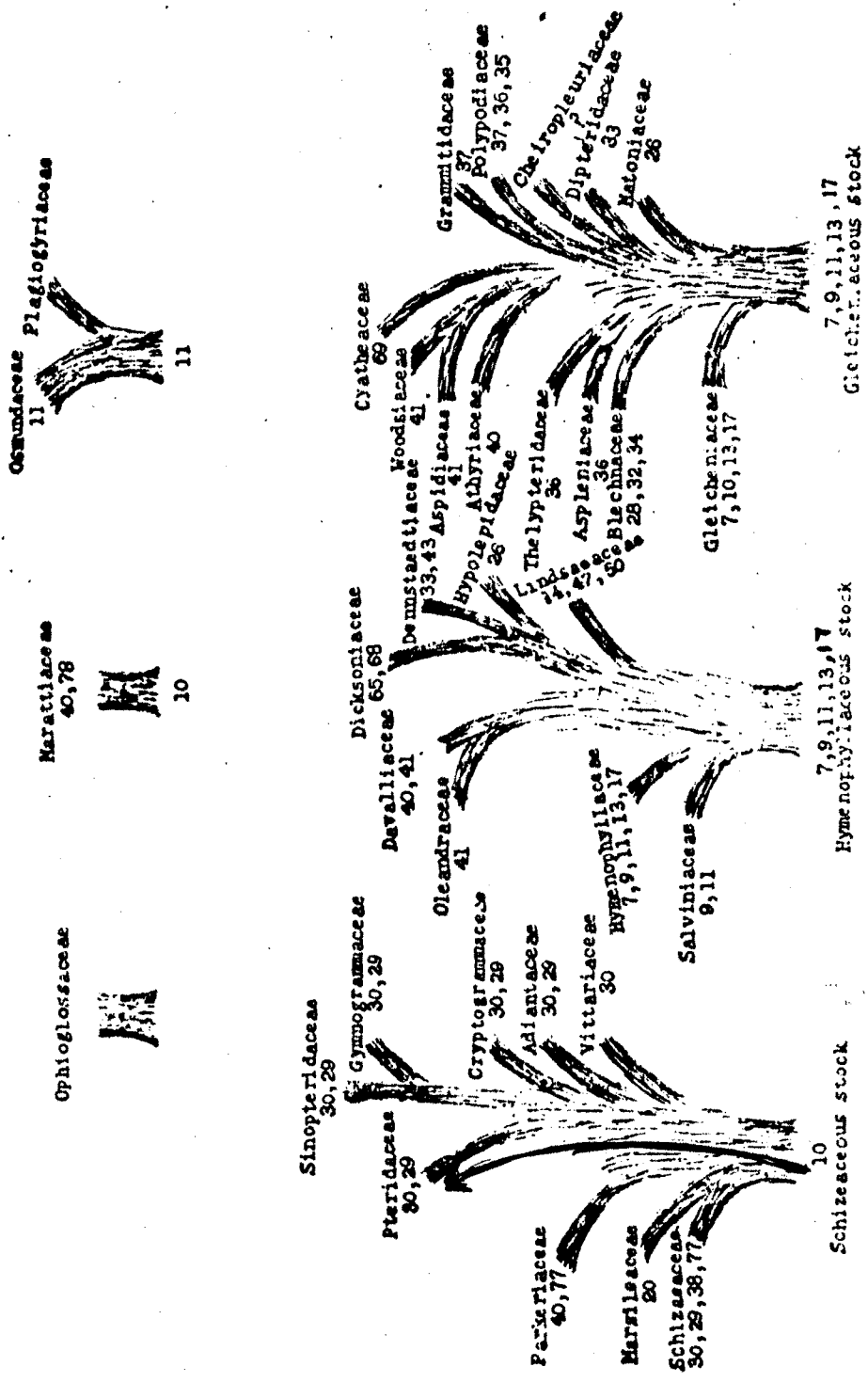


Diagram showing the interrelations of various groups by Holtum (1949).

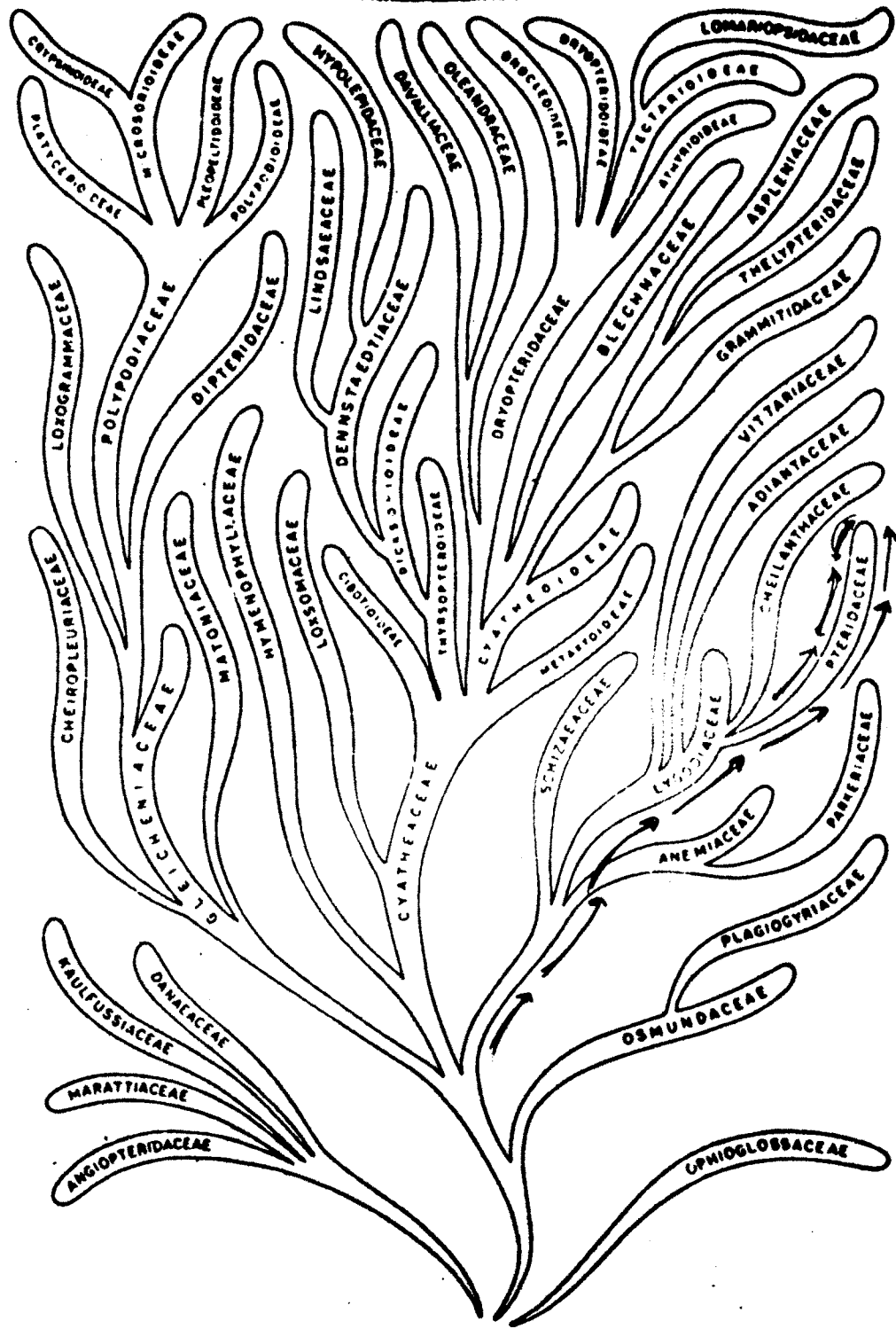
Chart - III



Phyletic scheme of Filicopsida by Mehra (1961)

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Chart - IV



8 Scheme of the interrelations of the homosporous ferns by Nayar (1970).

Order ----- Filicales

Family ----- Pteridaceae

Holtum 1949 has established a large central family Dennstaedtiaceae with eleven sub-families. Pteridaceae, he included as a subfamily under the family Dennstaedtiaceae. In his phyletic scheme he derived Pteridoidae from Dennstaediaceae through Hypolepis (Chart No.2)

Pichi Sermolli 1958 classified the living Filicopsida into six subclasses and included order Pteridales and family Pteridaceae in the subclass Filicidae.

Mehra in 1961 published a phylogenetic scheme of ferns primarily based on cytological evidence. It represents a good proof of the importance of cyto-taxonomy. According to him, the Pteridaceae (30,29) is derived from Schizeaceous stock (10). (Chart No.3).

Finally in 1970 Nayar published a paper in which he proposed a new classification of the homosporous ferns, giving also a schematic representation of the interrelationships of them (Chart No. 4). He classified these ferns into three sub-classes (Ophioglossidae, Marattiidae, Filicidae), the later consisting ^{of} four orders and included Pteridaceae in order Schizaeales.