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Pollen Morphology of Some Apiaceae

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(Accepted February 1988)

The pollen morphological characters of Hydrocotyle javanica belonging to the subfamily Hydrocotyloideae, Bupleurum mucronatum, Trachyspermum ammi, Pimpinella monoica, Seseli indicum and Coriandrum sativum belonging to subfamily Apioideae were investigated. The pollen grains were isopolar, sub-prolate to per-prolate, 3-zonocolpotate and tectate. The ora was circular and the exine was granular.

Key Words - Apioideae Circular Granular Hydrocotyloideae Pollen

Apiaceae is one of the most economically important families of the angiosperms on account of its extensive use as spices and medicine. Our knowledge on the pollen morphology of the Indian species of Apiaceae is very scanty. Therefore it is felt worth-while to study the pollen morphology of genera in the 2 subfamilies of Apiaceae. The pollen morphology of Bupleurum mucronatum, Trachyspermum ammi, Pimpinella monoica, Seseli indicum and Coriandrum sativum belonging to subfamily Apioideae and H. javanica of the subfamily Hydrocotyloideae was investigated.

MATERIALS & METHODS *H. javanica* Thunb and *B. mucronatum* Wet. A were collected from Nilagiri Hills and Araku Valley respectively, and the other materials were collected; *S. indicum* Wet. A from Calcutta, *P. monoica* Dalz., *C. sativum* L. and *T. ammi* (L.) spraque (= *Carum copticum* Clarke) at Botanical Gardens of Andhra University, Waltair. The materials were fixed in F.A.A. The grains were acetolysed (Erdtman 1969).

OBSERVATIONS & DISCUSSION The various characters and measurements of different parameters of the 6 members are given in Table 1. The pollen grains are exclusively isopolar, 3-zonocolporate and exhibit $N_3P_4C_5$ character.

The exine is uniformly granular and confines to tectate nature. However, the shape of the pollen grains manifests some variation.

H. javanica, a member of the subfamily Hydrocotyloideae, shows subprolate pollen grains as recorded by Erdtman (1952) in H. vulgaris. The hitherto investigated members of the subfamily Mulinum hallei, Trachymene caerules, Xanthosia ciliata, X. rotundifolia and Azorella penduncularis by Erdtman (1952) show prolate pollen. From this, it may be concluded that the genus Hydrocotyle is characteristic in having sub-prolate pollen.

In the subfamily Apioideae the shape of the pollen grains ranges from prolate to perprolate of which prolate condition seems to be predominant as exhibited by *B. mucronatum*, *P. monoica*, *S. indicum* (Fig. 1, present investigation) and *Heracleum spondelium* (Erdtman, 1969). The perprolate nature is seen in the grains of *T. ammi* (Fig. 2), *Coriandrum sativum* (Figs. 3, 4; present study) and *Caucalis daucoides* (Erdtman, 1952).

It is evident that the pollen in the family Apiaceae shows greater uniformity but for slight change in their shape. The pollen in this family is characteristically stenopalynous.

Subfamily / Species	Pola- ritv	Aper- ture condi-	N.P.C.	P.A.	E.D.	P.A./	Shape	C. Len-	olpus Brea-	M.C.D.	ORA	Exi-	Nature
		tion						gth	dth				
Subfamily: Hydrocotyloideae													
1. Hydrocotyle javanica (Thunb)	Iso- polar	3-zona colpo- rate	$N_3P_4C_5$	33	25	1,3	Sub- pro- late	27	3.4	18	Cir- cular	3.4	Granu- lar
Sub-family; Apioideae													
2. Bupleurum mucronatum (Wet. A)	6. 6.	۹. ۴	6	31	22	1.4	Pro- late	26	3.4	17	66	3.4	66
3. Trachyspermum ammi (L.)	٠	6 5	66	36	17	2.1	Per- pro late	28	3.4	12	° 6 C	3.4	ç
4. Pimpinella monoica (Daltz)	:	66	"	33	18	1.8	Pro- late	28	3.4	14	6.6	3.4	66
5. Seseli indicum (Wet. A)	66	•	•	32	19	1.7	32	26	3.4	13	6 6	3.4	66
6. Coriandrum sativum (L.)	5 6	"	6	44	20	2.2	Per- pro- late	38	3.4	13	6 6	3.4	6

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Fig. 1. Seseli indicum equatorial view X 1000; Fig. 2. Trachyspermum ammi equatorial view X 1000; Figs. 3, 4. Coriandrum sativum X 1000. Fig. 3. Equatorial view showing colporate aperture. Note granular exine and circular ora. Fig. 4. Equatorial view showing colporate aperture.

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Acknowledgement I thank Prof. H. Maheswari Devi for guidance, Dr. A. Shanta Ram and Sri D.C.S. Raju for collecting the material, and to UGC for the award of a Senior Research Fellowship.

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