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NOTE

Palynotaxonomic Survey of Some Species of *Polygonum* L.

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Abstract

Three species of the genus *Polygonum* L. were studied in detailed including their external morphology with special emphasis on palynology of the three species, viz. *Polygonum chinense* L., *P. hydropiper* L., *P. hydropiper* var *flaccidum* (Meissn.) Steward. All the three species have similar type of pollen grains i.e. pantoporate, spheroidal but they show differences in pore size, pollen size, exine diameter. So these characters may be helpful in identifying the species of *Polygonum* L-acurately.
Key words : *Polygonum chinense* L., *P. hydropiper* L., P. hydropiper var flaccidum (Meissn.,Steward, Palynology, Morphology.

While undertaking the complex relationships between different plants and plant groups taxonomists have realized the immense and indispensable value of the contribution made in the field of palynology. The Indian works on the pollen morphology of the genus *Polygonum* L. of the family Polygonaceae is limited. However,some works on Palynotaxonomy of this genus were done earlier (1—3). The present study was undertaken during 2005—2007.Out of 38 species of *Polygonum* L. found in the state of Assam (4), 13 species are found in the district of Goalpara (5). This district is located in the extreme western part of Assam with an area of 1,958 sq km, lies between 26°15´—26°30´ N latitude and 90°12´—90°6´ E longitude.

In this work three species were collected and studied thoroughly including their external morphology with special emphasis on palynological aspect of these species namely *Polygonum chinense, P. hydropiper* and *P. hydropiper* var *flaccidum.* Pollen slides were made following the standard acetolysis method and observed thoroughly.

Morphology of Polygonum L.

1. *Polygonum chinense* L. Herb. Leaves variable, 12 × 1.9 cm, oblong lanceolate to ovoid oblong or elliptic. Stipules with an obliquely truncate tube and a long, pointed apical portion.Inflorescence in capitate cymes. Perianth segments 5, while or pink, subequal, yellowish glands on either side of the filaments; style 3 fid. Nutlets trigonous, fruiting perianth fleshy or dry. Flowering and fruiting : September—December.

2. *Polygonum hydropiper* L. Stem reddish, finely ribbed. Leaves lanceolate, acute, 6—7.5 cm, petioles pubescent. Stipules ochreate with cilia half as long as tube. Inflorescence a raceme. Perianth segments 3, reddish; ovary triangular. Nutlets trigonous. Flowering and fruiting : September—January.

3. *Polygonum hydropiper* var *flaccidum* (Meissn.) Steward. Stem greenish, ribbed. Leaves variable in length 1.5–4.5 cm. Ochrea with short cilia. Inflorescence a raceme with lateral scorpoid cyme. Perianth with 5 tepals, stamen 5 ; gynoecium with 3 fid stigma. Nutlets trigonous. Flowering and fruiting : November—February.

Identifying Characters of the Species

A_1. Inflorescence capitate...*P. chinense.*
A_2. Inflorescence raceme
B_1 Ochrea with cilia half as long as tube...*P. hydropiper.*
B_2 Ochrea with short cilia...*P. hydropiper* var *flaccidum.*

Polynological Description

1. *Polygonum chinense* L. Pollen pantoporate i. e. global simple circular aperture, spheroidal ; size 39—41 µm, pore diameter 7 µm. Exine diameter 4 µm, reticulate (Table 1).

Table 1. Pollen morphology of *Polygonum* L.

	Name of species	Pollen type	Pollen diameter (µm)	Diameter of pore (µm)	Diameter of exine (µm)	Ornamentation type
1	*Polygonum chinense* L.	Pantoporate	40	7	4	Reticulate
2	*Polygonum hydropiper* L.	Pantoporate	44	7	4	Reticulate
3	*Polygonum hydropiper* L. var *flaccidum* (Meissn.) Steward.	Pantoporate	58	2	5	Reticulate

2. *Polygonum hydropiper* L. Pollen pantoporate, spheroidal ; size 41—47 µm, pore diameter 7µm. Exine 4µm thick, reticulate.

3. *Polygonum hydropiper var flaccidum* (Meissn.) Steward. Pollen pantoporate, spheroidal : size 58µm, diameter of the pore is 2µm. Exine 5µm. thick, reticulate.

Thus the three species have almost similar type of pollen grains i. e. pantoporate, spheroidal (Table 1). But they differ in their pollen size, exine diameter and pore diameter. So palynological evidence does not favor the bifurcation of the species rather it indicates a specific generic character.

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