

Biodiversity and Traditional Knowledge of *Bergenia* spp. in Kumaun Himalaya

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Abstract: Kumaun Himalaya is rich in biodiversity and home of several medicinal plants. Our ancestors were aware of the medicinal values of Pashanbheda and proves are our ancient literatures like Ayurveda, Charaka Samhita, Susrata Samhita and Vagbhata which were known as divine truth of this plant. *Bergenia ligulata* is a well known Indian drug, referred to as PASHANBHEDA or STONE BREAKER. In this paper, an attempt has been made to collect traditional data of total diseases from tribes of Kumaun Himalaya on the ailments cured by Pashanbheda (*B. ligulata*). [New York Science Journal. 2009;2(6):105-108]. (ISSN: 1554-0200).

Key Words: *Bergenia ligulata*, Stone Breaker.

Introduction

The objective of present study is to reveal traditional knowledge and biodiversity of *Bergenia* spp. (Saxifragaceae). It is an important medicinal plant of temperate Himalaya between 4,000 and 12,000 feet. Hooker (1888) has reported three species of this plant from India in The Flora of British India. Wehmer (1948) reported three species of *Bergenia* from India in The Wealth of India. Pande (1984) has observed one species, i.e., *Bergenia ligulata* (**Plate-1**) from Almora district in his Ph.D. thesis. Recently, Gaur (1999) also reported only *Bergenia ciliata* syn. *B. ligulata* from North-West Himalaya in The Flora of the District Garhwal, North-West Himalaya. Sharma (2003) observed two species, i.e., *Bergenia ligulata* and *Bergenia stracheyi* (**Plate-2**) from India in Medicinal Plants of India. Recently, Pangtey (2005) reported two species (*Bergenia ligulata* from lower altitude and *Bergenia stracheyi* from higher altitude) from Kumaun Himalaya.

Traditional information of several medicinal plants from tribes of Kumaun Himalaya was already documented and some are being currently used as drugs. Farooq (2005) has reported several plants from Kumaun Himalaya which is being currently used as drugs. The plant *Bergenia ligulata* is chief botanical source of 'Pashanbheda', drug used in indigenous system of medicine and incorporated in medical texts and material media (Pandey, 1995). Already, this plant has been recognized for its role in dissolving kidney stone. It is also effective in fever, eye ailments, dysentery and diarrhoea, piles, inflammation, chronic ulcers etc. The traditional data of Pashanbheda is limited and more information will help in discovering new drugs for several diseases. Beside, *Bergenia stracheyi* is also used in curing several ailments like old wounds, kidney stones, ophthalmia etc.

Methodology

Extensive survey in and around Kumaun Himalaya revealed this plant found in mixed vegetation on rocky slopes in moist and shady habitats, predominantly on northern and western slopes. Plant specimens of *Bergenia ligulata* were collected from Almora at 4,500 feet, at 5,000 feet height along the road side of Bhowali, at 5000 to 6000 feet on the western slopes of Binsar forest. *Bergenia stracheyi* was collected along the Pindari Glacier route from 7,000 to 12,000 feet height (Prakash, 2004).

Interviews were carried out of the tribes of different age groups and different gender to get information on medicinal uses of Pashanbheda (*Bergenia ligulata*) by them. Firstly, information were

considered only after interacting with two or more tribal families. Secondly, the information given by the tribes was compared with standard literature (Farooq, 2005; Singh and Jain, 2003).

Results and Discussion

Traditional Knowledge of medicinal plant – Pashanbheda was gathered from various tribal families of different areas of Kumaun Himalaya. The results of traditional experiences are given in **table – 1**. As the name implies, it is considered a specific remedy against kidney and bladder stones. Rhizome is the officinal part and is light, cool, bitter, astringent, useful in cough and cold, cardiac problems, piles, fever, ulcers, swellings, old wounds, cuts and burns, septic, laizi, gastro-intestinal problems, eye problems, colitis etc. Leaves of *Bergenia ligulata* and *Bergenia stracheyi* are also used in treatment of several diseases like wounds, cough and cold, tonsils etc.

Plate-1: *Bergenia ligulata*



Plate- 2 : *Bergenia stracheyi*



Table 1: Traditional Remedies Prepared From Rhizome and Leaves of Pashanbheda to Cure Certain Diseases

S.No.	Ailments	Plant Parts Used	Method Used	Community Reported Used
1	Kidney and Gall bladder stone	Rhizome	Dried powder is used	Local knowledgable person, Van Rawat, Bhotiya and illiterate local people.
2	Wound / old wounds	Leaves and Rhizomes	Powder of dried leaves and rhizome are applied to heal old wounds.	Local illiterate people, Buxa and Van Rawat
3	Septic	Rhizome	Paste of rhizome used as	Locals and Van Rawat

			antiseptic.	
4	Cough and cold	Leaves and Rhizome	Leaves and rhizome boiled with water and given in cold and cough.	Bhotiya
5	Cut and Burns	Rhizome	Crushed rhizome mixed with curd and applied on burns.	Bhotiya and Van Rawat
6	Dysentery and Diarrhoea	Rhizome	Infusion of rhizome is taken orally for diarrhoea and dysentery.	Locals, Van Rawat and Bhotiya
7	Fever	Rhizome	Dried powder is given in fever.	Buxa
8	Asthama	Rhizome	Rhizome juice is given in acute asthma	Van Rawat and Buxa
9	Gasto-intestinal problems	Rhizome	All kinds of intestinal problems are cured by chewing fresh rhizome	Local literate and illiterate people
10	Eye ailments	Rhizome	Crushed rhizome sap is applied in eye diseases.	Local knowledgeable people, Van Rawat and Bhotiya.
11	Septic pimples developed on the head of new born baby (Laizi)	Rhizome	Rhizome paste is applied	Local people, Bhotiya and Van Rawat.
12	Chronic ulcers	Rhizome	The rhizome is crushed and used in all kinds of ulcers.	Van Rawat and Bhotiya
13	Cutaneous infections	Rhizome	Rhizome paste is effective in cutaneous diseases.	Local people
14	Inflammation	Rhizome	Paste of fresh rhizome is used.	Local people
15	Rheumatic	Rhizome	Rhizome paste is anti-rheumatic.	Local people
16	Helmintic	Rhizome	Fresh & dried rhizome extract is used orally.	Bhotiya
17	Piles	Rhizome	Fresh & dried rhizome extract is used orally.	Buxa, Bhotiya and Local people
18	Tonsils	Leaves and Rhizomes	Rhizome & leaves paste is applied externally.	Bhotiya and Van Rawat
19	Cardiac problems	Rhizome	Rhizome powder is given.	Bhotiya
20	Colitis	Rhizome	Rhizome paste cure internal wounds including colitis.	Bhotiya
21	Aphrodisiac	Rhizome	Rhizome powder is given to increase spermatozoa.	Bhotiya
22	Urinary diseases	Rhizome	Rhizome sap is taken orally in all kind of urinary problems.	Locals, Van Rawat, Bhotiya and Buxa

Conclusion

It is concluded that *Bergenia ligulata* or Pashanbheda possesses considerable medicinal properties which need to be exploited by the scientists. Based on traditional knowledge, verification of various diseases and their control measures by alkaloids and steroids present in Pashanbheda and *Bergenia stracheyi* shall be worked out in future.

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