

LESS KNOWN ETHNIC USES OF PLANTS OF SOUTH SIKKIM

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The present paper deals with the less known ethnic uses of 14 angiosperm & recorded during floristic exploration of Tendong Reserve Forest and its surrounding areas of south district of Sikkim. Sikkim (27°05' - 28°08' N and 88°0'58" - 88°55'25"E), a small state located in Eastern Himalaya with only 0.2% of the geographical area (7096 sq km) of the country, harbours c.5000 species of flowering plants including numerous endemics and potentially useful plants. During 2003 - 2006, botanical exploration of Tendong Reserve Forest (South Sikkim) was taken up and efforts were made to record the traditional uses of plants as practiced by the ethnic communities like Lepchas, Bhutias, rural Nepalese, etc. residing in remote pockets, villages and valleys of south district. The data on uses have been recorded with the help of local medicinal practioners, traditional healers and as observed in the field. These ethnobotanical data on comparison with relevant literature (Ambasta, 1986; Jain, 1991; Kirtikar & Basu, 1935; Wealth of India 1952-73) have been found to be of less known or new uses. The voucher specimens collected during the field tours have been documented as herbarium specimens and are deposited in the herbarium of Botanical Survey of India, Sikkim Himalayan Circle, Gangtok (BSHC). For collector's name please read A.K. Sahoo. Herbarium specimens of the other collector, if any, in BSHC have been specified. The species recorded for less known ethnic uses are *Dichroa febrifuga* Lour. "Basak" (Stem bark extract to reduce fever), *Geranium nepalense* Sweet (Plant extract to cure Dysuria), *Hemiphragma heterophyllum* Wall. "Malajhar" (Raw fruits and leaves to cure Dyspepsia), *Holboellia latifolia* Wall. "Bagul" (Ripe fruit, pulp to cure Dyspepsia), *Houttuynia cordata* Thunb. (Green leaves to recover from weakness and for healing wounds), *Hydrangea aspera* D. Don ssp. *robusta* (Hook. f. & Thoms.) Mc Clintock (Leaf and root extract to reduce Fever), *Lyonia ovalifolia* Wall. (Young leaf exudates to cure Blisters), *Mahonia napaulensis* DC. "Kesri" (Inflorescence extract to cure Diarrhoea and stem pith to cure Jaundice), *Parochetus communis* Buch.-Ham. ex D. Don (Young leaf extract to cure Flatulence of baby), *Peperomia heyneana* Miq. (Inflorescence extract to cure Cough & Cold), *Pratia nummularia* (Lam.) A. Br. & Aschrs., (Fruit and young leaf extract to cure Asthma), *Rhododendron arboreum* Smith "Guras" (Dried flower dust to cure Dysentery), *Rubia manjith* Roxb. ex Fleming "Manjito" (Root extract to cure Diarrhoea) and *Rumex nepalensis* Spreng. "Halhale" (Leaf paste to relieve Muscular pain).

ENUMERATION

1. ***Dichroa febrifuga*** Lour. in Fl. Cochinch. 1:301. 1970; C.B. Clarke in Hook. f., Fl. Brit. India 2:406. 1878. (Hydrangeaceae). "Basak".

Fl. & Fr. : Apr.-Aug.; Common (20385).

Distribution : India (N.E. States, Assam, Meghalaya, Sikkim), Nepal, Bhutan, Myanmar, Eastern Central China, Taiwan and Malaysia at 1000 - 2800 m.

Uses : Stem bark is crushed and made into paste in water is given orally to reduce high fever. It is given thrice a day for 3 days for complete cure of fever. The fresh preparation of drug for each dose is effective. This is used to cure malaria (Kirtikar & Basu, 1935).

2. ***Geranium nepalense*** Sweet, Geraniaceae 1:t. 12. 1820; Edgew. in Hook. f. Fl. Brit. India 1:430. 1874; Malhotra in Fl. India 4:75. 1993. (Geraniaceae).

Fl. & Fr.: June - Aug.; Uncommon (26302).

Distribution : India (Eastern Himalaya & Sikkim), Afghanistan, Tibet, Myanmar, China and Nepal at 2000 - 3000 m.

Uses : Fresh plant extract in water is given twice daily in the morning and evening to cure Dysuria. Fresh prepared drug is given for two weeks for complete cure. This is used in renal complaints (Ambasta, 1986).

3. Hemiphragma heterophyllum Wall. in Trans Linn. Soc. 13:612. 1822; Hook. f., Fl. Brit. India 4:289. 1884; Burkill in Rec. Bot. Surv. India 4:123. 1910. (Scrophulariaceae). "*Malajhar*".

Distribution : India (Garhwal Himalaya, Assam and Sikkim), Bhutan, Nepal, Myanmar, China, Taiwan and Philippines at 1800 - 3600 m.

Fl. & Fr.: Apr.-Aug.; Common (26415).

Uses : Rawfruits (8-10) and fresh leaves (3 - 4) are chewed and the juice taken in morning and evening to cure throat infection, Tonsillitis, cough and cold. It is continued for a couple of days for complete cure. This is a new use & not recorded earlier.

4. Holboellia latifolia Wall. Tent. Fl. Nepal. 24. t. 16. 1824; Hook. f. & Thom. in Hook. f. Fl. Brit. India 1:108. 1872; Nayar & Paul in Fl. India 1:423. 1993. (Lardizabalaceae). "*Bagul*".

Fl. & Fr. : Feb.-July; Uncommon (26436).

Distribution : India (E. Himalayas, Kumaon Himalaya and Sikkim) Myanmar, China and Nepal at 1500 - 4000 m.

Uses : Ripe fruit pulp is taken in morning to cure Dyspepsia and Flatulence. It is taken initially for one week or may be extended few more days, if required. This is a new use & not recorded earlier.

5. Houttuynia cordata Thunb. in Vet. Akad. Stockh. Handl. 4:149, t. 5. 1783; Hook. f., Fl. Brit. India 5:78. 1886. (Saururaceae). "*Rakatejhar*".

Fl. & Fr. : May-Sept.; Common (26308).

Distribution : India (Himachal Pradesh, Punjab Himalaya and Sikkim) Thailand, China, Japan, Myanmar, Nepal and Tibet at 1500 - 4000 m.

Uses : i. Green leaves are boiled or fried and eaten to regain physical strength after illness and Weakness.

This is a new use & not recorded earlier.

ii. Paste or crushed green leaves applied on Cuts and Wounds for healing. It is applied once in a day for a week for complete cure. This is a new use & not recorded earlier.

6. Hydrangea aspera D. Don subsp. **robusta** (Hook. f. & Thoms.) Mc Clintock in J. Arn. Arb. 37:373. 1956. *Hydrangea robusta* Hook. f. & Thoms. in J. Linn. Soc. Bot. 2:76. 1857; C.B. Clarke in Hook. f. Fl. Brit. India 2:404. 1878. (Hydrangeaceae).

Fl. & Fr.: Apr.-Aug.; Uncommon (96531).

Distribution : India (Kumaon Himalaya and Sikkim) Nepal, N. Myanmar, China and Bhutan at 1800-2700 m.

Uses : Fresh leaves and roots are crushed in water and the extract is given four times a day to cure fever. It is continued with fresh preparation for 4 days to cure. This is a new use & not recorded earlier.

7. Lyonia ovalifolia (Wall.) Drude in Engler & Prantl. Pflanzenfam. 4(1): 44. 1889. *Andromeda ovalifolia* Wall. in Asiat. Res. 13:391. 1820. *Pieris ovalifolia* (Wall.) D. Don in Edinb. Phil. J. 17:159. 1834; C.B. Clarke in Hook. f., Fl. Brit. India 3:460. 1882. (Ericaceae).

Fl. & Fr.: Apr.-Aug.; Uncommon (23601).

Distribution : India (Assam, Punjab Himalaya and Sikkim), Pakistan, Nepal, Myanmar, China, Malaya Peninsula, Tibet and Bhutan at 1500 - 3000 m.

Uses : Exudate of young leaves (after plucking) is directly applied 3 - 4 times a day on the affected portion of skin to cure Blisters. The blisters are curable in 3 - 4 days. This is a new use & not recorded earlier.

8. Mahonia napaulensis DC., Syst. Nat. 2:21. 1821 & Prodr. 1:109. 1824. *Berberis nepalensis* (DC.) Spreng., Sys. Veg. 2:120. 1825; Hook. f., & Thom. in Hook. f., Fl. Brit. India 1:109. 1872, *p.p.*; Guhabakshi in Fl. India 1:41. 1993. (Berberidaceae). "*Kesri*".

Fl. & Fr. : Jan.-June; Common (26653).

Distribution : India (Eastern Himalaya and Sikkim), Nepal and Bhutan at 2000 - 2900 m.

Uses : All the uses recorded are new.

- i. Young inflorescence is made into pickle and eaten.
- ii. Inflorescence is crushed and the extract is taken to cure Diarrhoea. This is taken twice a day for two days to cure.
- iii. Pith of old stem is crushed and made into paste in water. The juice extract thus obtained is taken 3 times a day for one week to cure Jaundice.

9. *Parochetus communis* Buch.-Ham. ex D. Don in Prodr., Fl. Nepal. 240. 1825; Baker in Hook. f. Fl. Brit. India 2:86. 1876. (Fabaceae).

Fl. & Fr.: Apr.-Aug.; Common (26438).

Distribution : India (Himachal Pradesh & Sikkim), Nepal, Africa and continental Asia at 1000 - 4300 m.

Uses : Young leaves are crushed and the juice extract is given as a baby tonic to cure Flatulence. The extract is given daily before feeding the baby and continued for two weeks to cure. It is reported in N.E. India, i.e. Meghalaya (Jain 1991) and is a new use record for Sikkim.

10. *Peperomia heyneana* Miq. in Syst. 123. 1845. *p.p.*; Hook. f., Fl. Brit. India 5:99. 1886.

Fl. & Fr.: Apr.-Aug.; Uncommon (26461).

Distribution : India (Kumaon and Sikkim Himalaya), Bhutan and Nepal at 2000 - 3000 m.

Uses : A bunch of inflorescence is crushed in water and the juice extract is taken to cure Cough & Cold. It is taken twice a day and continued for 4 - 5 days to cure. This is a new use & not recorded earlier.

11. *Pratia nummularia* (Lam.) A. Br. & Aschrs. in Ind. Sem. H. Beral 1861. app. 6. 1861. *Lobelia nummularia* Lam., Encycl. 3:589. 1791. *Pratia begonifolia* (Wall.) Lindl. in Bot. Reg. 16. t. 1373. 1830; C.B. Clarke in Hook. f., Fl. Brit. India 3:422. 1881. (Lobeliaceae).

Fl. & Fr.: Apr.-Aug.; Uncommon (26544).

Distribution : India (Assam, Eastern Himalaya and Sikkim), China, Nepal, Malaysia and Myanmar at 2000 - 3000 m.

Uses : Fruits (10-15) and young leaves (5-10) are crushed and the extract is given orally to cure Asthma. It is given twice a day for two weeks. Fresh preparation of extract is always effective. This is reported earlier (Wealth of India 1973).

12. *Rhododendron arboreum* Smith in Exot. Bot. 1:9. t. 6. 1805; C.B. Clarke in Hook. f. Fl. Brit. India 3:465. 1882. (Ericaceae). "*Laligurash*".

Fl. & Fr.: Jan.-May; Common (29546).

Distribution : India (Kashmir Himalays, Eastern Himalaya, Arunachal Pradesh and Sikkim), Pakistan, Sri Lanka, Nepal, Myanmar & South Tibet at 1500 - 3500 m.

Uses : Fresh powder prepared by crushing the dried flowers is given to cure Dysentery. It is given four times a day and dysentery is checked in two days. The fresh preparation is much effective. This use is recorded earlier (Ambasta, 1986).

13. *Rubia manjith* Roxb. ex Fleming in As. Res. 11:177. 1810. *R. cordifolia* auct. non L., D. Don Prodr. Fl. Nepal. 133. 1825; Hook. f. Fl. Brit. India 3:202. 1881. (Rubiaceae). "*Manjitho*".

Fl. & Fr.: Apr.-Aug.; Common (26645).

Distribution : India (Himachal Pradesh, Eastern Himalaya and Sikkim) Pakistan, Nepal, Bhutan and Tibet at 1000 - 2700 m.

Uses : i. Dried root are crushed in water and the extract is given thrice a day to cure Diarrhoea. it is continued for three days to cure. This use is recorded earlier (Ambasta, 1986).

ii. The plant yields dye and it is commercially used for dyeing. It is recorded earlier (Wealth of India, 1972).

14. *Rumex nepalensis* Spreng. in Syst. Veg. 2:159. 1825; Hook. f., Fl. Brit. India 5:60. 1886. (Polygonaceae). "*Halhale*".

Distribution : India (Eastern Himalayas and Sikkim) Afghanistan, Nepal, China, Java and Europe at 1200-4500 m.

Fl. & Fr.: Apr.-Aug.; Common (26451).

Uses : Fresh leaves are crushed and made into paste which is massaged twice a day on affected portion of body to get relief of Muscular pain. It is continued to about a week for complete cure. This is reported earlier (Jain, 1991).

CONSERVATION STRATEGIES

An analysis on ethnobotanical uses reveal that while single species of *Geranium nepalense*, *Lyonia ovalifolia* and *Pratia nummularia* are used to cure dysuria, blisters and asthma; two or more species *i.e.* *Dichroa febrifuga*, *Hydrangea aspera* var. *robusta* are used to reduce fever; *Hemiphrgma hetrophyllum* and *Peperomia heyneana* to cure tonsillitis and cough; *Holboellia latifolia* and *Parochetus communis* to cure dyspepsia and flatulence; *Houttyunia cordata* and *Rumex nepalensis* to recover from weakness and muscular pain; as well as *Mahonia napaulensis*, *Rubia manjith* and *Rhododendron arboreum* to cure diarrhoea and dysentery. The plant resources in wild habitat maintains the gene pool of a particular species. The genetic resources sometimes treated as standardized material to monitor the plant variants. The species and generic diversity either in original habitat (*in-situ*) or in specially designed facilities out side natural habitat (*ex-situ*) by establishing botanic gardens are required to be maintained in an ecosystem for future reference material. The collection of rare and endangered species of medicinal plants from wild must be restricted and discouraged. Such plants should be cultivated in their areas of occurrence and nearby localities. Judicious collection of other medicinal plants from wild must be regulated and monitored. Efforts should be made to cultivate these plants.

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