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Ethno-medicinal uses of some plants of Potter's Hill in Shimla (Himachal Pradesh, India)

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ABSTRACT: The present study was undertaken to provide information about the medicinally important floral diversity of Potter's Hill in District Shimla Himachal Pradesh. Ethno-medicinal data on 25 plant species belonging to 20 families were reported after undertaking survey. It was found that dominated medicinal plants of this region are main source of primary health care. These plants are used in the forms of decoction, juice, powder, paste and whole plant extract. The popular use of herbal remedies among the rural people of Himachal Pradesh reflects the restoration of interest in the traditional medicine.

Keywords; Medicinal plants, Potter's Hill, Shimla.

INTRODUCTION

Among plant species medicinal plants play an important role not only in preserving human health but also by acting as curative as and when required. Ethno-botany is the study of relationship between plants and People. The total natural and traditional association and interactions between man and his surroundings environment are defined as ethno-botany. Since the beginning of human civilization man has been using many herbs and herbal extracts as medicine. The classical Indian texts Rig-Veda, Atharva-Veda, Charak samhita and Sushruta samhita are the evidences of the use of plants by our ancestors. It indicates that the herbal medicines have been derived from rich traditions of ancient civilization and scientific heritage. Among the ancient civilizations, India has been known to be rich repository of medicinal plants. The forests in India is the principal repository of large number of medicinal and aromatic trees, which are largely collected as a raw materials for manufacture of drugs and perfumery products. There are about 8,000 medicinal plants listed in different classical and modern texts on medicinal plants. About 960 medicinal plants are in active use in all India.

Himachal Pradesh is a hilly state situated in the Western Himalaya in India with an altitude ranging from 350m to 7000m above mean sea level and covers an area of 55,673 sq. km. This hilly state comprises a good heritage of ethno-botanical flora and natural wealth in the North Western Himalayan region between 30°22'44" N to 33°12'44" N latitude and 75°45'44" E to 79°04'20" E longitude. Geographically, the State is divided in to three distinct regions, the Shivalik or outer Himalaya, mid-hills and the greater Himalaya or high altitude zone. The mid hill region of Himachal comprises regions between the elevation range of 1500m to 3500m above mean sea level and includes Shimla district along with other districts. This district is a rich repository of medicinal and aromatic plants and traditional knowledge associated with these plants. Approximately 500 species of medicinal and 150 species of aromatic plants have been reported from the state. It represents quite a high percentage out of 3500 recorded plant species in Himachal Pradesh (Chauhan, 1999). Ethnobotanical work in Himachal Pradesh had been conducted by worker like Brij Lal and Singh (2008); Kaur *et al*. (2011) Sharma and Sood (2013) Kharwal *et al* (2014) Sood and Thakur (2004)

MATERIALS AND METHODS

Study Area

Potter Hill is located at an altitude of 2050 meters and it about 5 Kilometres west of Shimla. In Potters Hill plants observed between N 31°07'05.1"-31°07'18.9" latitudes and 77°08'03.6"-77°08'00.0" E longitudes. It is located in a place called "Van Vihar". Potters Hill covers 100 Hectares of prime Western Himalayan forest.

The hill once used by Potters to obtain clay has now been developed into a luxury camping resort that is one of its kinds in the state. Surroundings of Potters hill is abound with beautiful flora and fauna, offering ample opportunities to researchers, naturalists, trekkers, painters and bird watchers to try out their favorite adventure activity over here.

Fig. 1. Location Map of Potters Hill near Summer Hill Shimla, Himachal Pradesh, India.

METHODOLOGY

Frequent visits were carried out to Potters hill during different seasons from March 2015 to June 2015. The important biodiversity of medicinal and other useful plants of Potters hill was surveyed. The plants were collected from the area, identified by their local names with the help of villagers using semi structured, open ended questionnaire. The photographs of these plant species were taken during the field visits. The collected specimen were identified with the help of herbarium and taxonomic experts of the institute. Proper data regarding each plant species was collected by assigning botanical and local names along with part used, ethno-botanical remedies and uses. Secondary data has been used to support the primary data, major source of secondary data were reports of different department, journals, magazine, newsletter and various web sources etc.

ETHNO-BOTANICAL KNOWLEDGE

The plants after identification were searched for their ethno-botanical uses by consulting and interviewing knowledgeable persons/ medicine men and relevant literature for recording local name, part used and ethno-botanical usages. The following information was collected for each plant species.

1. Local/Vernacular name of plant
2. Scientific name of plant
3. Part used of plant
4. Name of ailment/other purposes in which plant part is used
5. Mode of preparation
6. Use (externally/internally)
7. Availability in natural habitat
8. Who knows best about plant and uses: vaids, shepherds, old people/new generation, and others.

RESULTS AND DISCUSSION

Himachal Pradesh has very rich plant diversity and has a very rich ethno-medicinal flora due to its wide range of altitudes and climatic conditions. During survey ethnomedicinal data on 25 plant species was collected, information regarding their botanical name, vernacular name, family, part used and their ethnomedicinal uses are listed in table- 1.It was observed that most of the plants growing in Potters Hill were used as medicines and medicaments in one or the other form. Sometimes plant parts were dried and made in powdered form, stored and used when required. Beside this certain plant species were also used as food supplement. A few ethno-medicinal plants reported from Potters Hill are shown in plates (1-25). Almost all the aromatic and medicinal plants grow wild in valley, forest, pasture and occur as weeds in and around fields and village habitations. A list of some important plants documented from Potters Hill along with their ethno-medicinal importance is shown in the table 1. Similar studied was were carried out by Singh and Kumar 2000, Thakur *et.al* (2007), Thakur (2011) documented ethnomedicinal uses of 32 wild plant species from Sirmour district. She also observed that plant part most commonly used in the treatment of various diseases are roots, leaves, whole plant and bark.

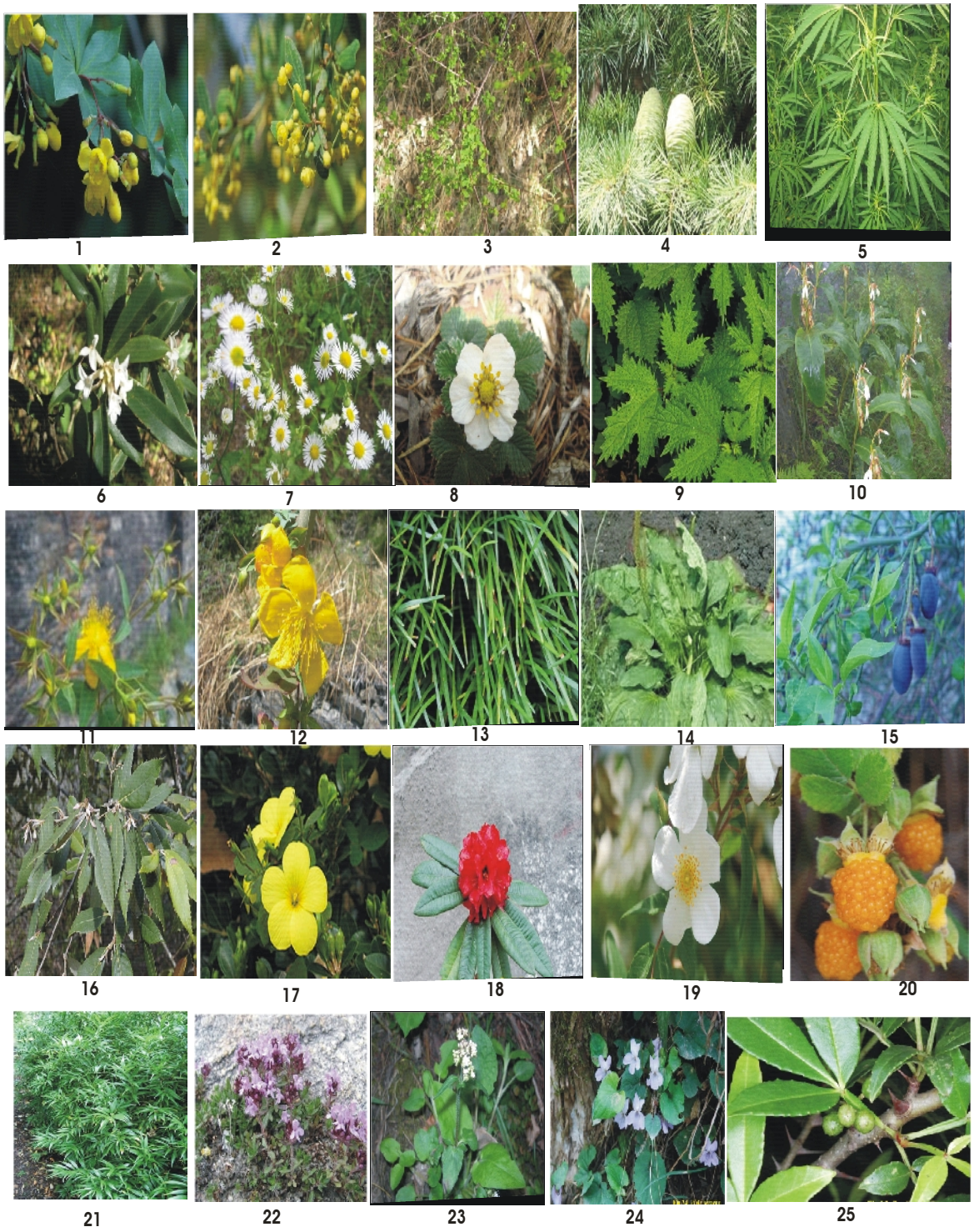
Traditional knowledge provides useful leads for scientific research, being the key to identify those plants which have high economic value and requires conservation in near future, thereby emphasizing the need for such studies. The reasons of the wide use of forest products may be many like lack of modern communications, poverty, ignorance and unavailability of modern health facilities etc. thereby, most people especially rural people are still forced to practice traditional medicines for their common day ailments. The results in context to the ethno-botanical survey showed that 25 plants of ethno-botanical uses were present in and around the Potters Hill. Table 1.

Because of varied altitudinal gradients and climatic conditions, the state harbors rich plant diversity, which includes around 3400 species of flowering plants (Uniyal and Chauhan, 1972) ranging from tropical-subtropical to temperate alpine floral elements. Documentation of traditional knowledge on the utilization of plants has been initiated by several workers during last two decades. Due to increased demand for pharmaceutical industries and various other factors, many important plant species are under threat and even some are at the edge of extinction (Kumar, 2014; Meena *et al*., 2009; Rawat *et al*., 2013). The selected study areas show great medicinally important floral diversity. So, there is need to explore and collect the information of medicinally important floristic diversity of unexplored areas to conserve biodiversity. A systematic enumeration of the plant species is given in alphabetical order of their botanical names along with their families. Besides this, information on local names and the uses in available literature are given in table 1.

Table 1.

S.No.	Botanical Name	Family	Local Name	Part Used	Uses
1.	*Berberis aristata*	Berberidaceae	Kashmal	Flower	Plants are reported to be blood purifier, cooling, laxative, diaphoretic, stomachic, tonic and for affections of the eye. Also useful in cholera, diarrhea, dyspepsia, enlargement of spleen, intermittent fevers, piles, rheumatism, skin diseases, stomach disorders, ulcers and vomiting during pregnancy also used in acidity.
2.	*Berberis lycium*	Berberidaceae	Kashmal	Tender Shoot, Fruits	Ripe fruits edible. Tender shoots chewed for curing skin diseases and as a blood purifier. Plants are used as an antidote for poisoning, antimalarial, antiseptic, blood purifier, carminative and febrifuge. Also used in bleeding, chronic diarrhoea, ear problems, enlargement of liver and spleen and urogenital disorders.
3.	*Boenninghausenia albiflora*	Rutaceae	Pissumar Booti	Arial Plant Parts, Leaf	Aerial plant parts good for healing wounds. Leaf juice used as antiseptic on wounds, externally applied to forehead to relieve headache. The leaves are also applied externally in the treatment of scabies.
4.	*Cedrus deodara*	Pinaceae	Devdaru, Devdar	Wood	Wood is carminative, diaphoretic and diuretic. Also given in fever, flatulence, heart palpitation, paralysis, pulmonary troubles and urinary diseases.
5.	*Cannabis sativa*	Cannabaceae	Bhang	Leaf, Seed, Bark	Seeds edible, used in chronic pain and muscles spasms, reduce eye pressure in people who have glaucoma.
6.	*Daphne papyracea*	Thymelaeaceae	Gandari	Leaf	Considered laxative and helps in reducing fever.
7.	*Erigeron canadensis*	Asteraceae	Choproo	Flower	Flower used to stop bleeding and for diarrhea and dysentery.
8.	*Fragaria nubicola*	Rosaceae	Aakhe	Fruit	The juice of the plant is used in the treatment of profuse menstruation. The unripe fruit is chewed to treat blemishes.
9.	*Girardinia diversifolia*	Urticaceae	Jarahan, Bichhu buti	Fruit, Root	Root juice used to treat constipation; fresh leaf juice applied externally in the treatment of headaches and swollen joints.

S.No.	Botanical Name	Family	Local Name	Part Used	Uses
10.	*Hedychium spicatum*	Zingiberaceae	Kapurkachri	Rhizomes	The rhizomes are aromatic, anti-arthritic, appetizer, cardiac stimulant, carminative, deodorant, hair tonic and stomachic. Also useful in cough, asthma, diarrhoea, dropsy headache, hair falling, liver complaints, rheumatism and skin diseases. Grounded rhizomes given with milk to purify the blood.
11.	*Hypericum cernuum*	Hypericaceae	Suchi	Seed	Seeds used for flavoring curries. Seed oil massaged for quick relief of rheumatism.
12.	*Hypericum oblongifolium*	Hypericaceae	Basanti	Root, Fruit	Paste applied on wounds for quick healing.
13.	*Ophiopogon intermedius*	Haemodoracea e	Kakroo ghas	Fruit	Grounded fruits applied on injuries for fast relief.
14.	*Plantago tibetica*	Plantaginaceae	Isabgol	Seed	Medicine to treat constipation. Decoction of the plant is useful in the normal medicinal ailments.
15.	*Prinsepia utilis*	Rosaceae	Bhekal	Fruit, Seed	Seed oil used for massaging rheumatic joints. Oil is employed in rheumatism and pain due to fatigue. The oil from the seed is applied to the forehead and temples in the treatment of cough and cold.
16.	*Quercus leucotrichophora*	Fagaceae	Ban	Seed	Decoction of seeds given for checking dysentery and diarrhoea.
17.	*Reinwardtia indica*	Linaceae	Piyan, Basanti	Stem, leaves	Stem paste is applied on wounds infected with maggots in cattle. Leaves are used in the treatment of paralysis.
18.	*Rhododendron arboreum*	Ericaceae	Burans, Brass	Flowers	Flowers used to make juice. They are useful in amoebic dysentery, diarrhea, fever, rheumatism, wounds healing, headache and none bleeding.
19.	*Rosa brunonii*	Rosaceae	Karer, Kuji, Kunja, Kuja, Kwiala	Flowers, Roots	Considered useful in eye troubles and perfumery. Poultice of roots is useful against joint pains.
20.	*Rubus ellipticus*	Rosaceae	Anehhu, Hinsalu, Aakhe	Fruit	Fruits are edible and mild laxative. Wood is suitable for gun- powder.
21.	*Sarcococca saligna*	Buxaceae	Rawal	Leaf	Leaves used as laxative, blood purifier and muscular analgesic . It has cardio-suppressant, vasodilator and tracheal relaxant effects.
22.	*Thymus linearis*	Lamiaceae	Jangli ajwain	Leaf, Fruit, Root	It contains essential oils including thyme having strong antiseptic properties. It is considered to be an excellent expectorant, antispasmodic and carminative. It has been used to treat gastrointestinal problems, respiratory disorders and against hookworm. Paste of whole plant applied for skin problem.
23.	*Valeriana jatamansi*	Valerianaceae	Mansi, Tagar, Sug andhbala, Mushakbala	Root	It is considered useful in diseases of eye, blood and liver. It is also used as a remedy for hysteria, nervous unrest and emotional stress. Also considered useful in clearing voice and acts as a stimulant in fever and nervous disorder. The paste of its roots is applied on wounds for better healing.
24.	*Viola serpens*	Violaceae	Banafsha	Flowers, leaf	Flowers eaten as such for irritating throat and also for flavoring tea. Leaf decoction given to cure fever and stomach ache, decoction prepared from leaves and flowers is effective against sore throat.
25.	*Zanthoxylum armatum*	Rutaceae	Tirmir	Wood, Fruit	Twigs used as tooth cleaner. It is used in curing various common ailments such as toothache, common cold, cough, and fever. It gives warmth to the body.



1. *Berberis aristata*, **2.** *Berberis lyceum*, **3.** *Boenninghausenia albiflora*, **4.** *Cedrus deodara*, **5.** *Cannabis sativa*, **6.** *Daphne papyracea*, **7.** *Erigeron Canadensis*, **8.** *Fragaria nubicola*, **9.** *Girardinia diversifolia*, **10.** *Hedychium spicatum*, **11.** *Hypericum cernuum*, **12.** *Hypericum oblongifolium*, **13.** *Ophiopogon intermedius*, **14.** *Plantago tibetica*, **15.** *Prinsepia utilis*, **16.** *Quercus leucotrichophora*, **17.** *Reinwardtia indica*, **18.** *Rhododendron arboretum*, **19.** *Rosa brunonii* , **20.** *Rubus ellipticus*, **21.** *Sarcococca saligna*, **22.** *Thymus linearis*, **23.** *Valeriana jatamansi*, **24.** *Viola serpens*, **25.** *Zanthoxylum armatum.*

CONCLUSION

The present study shows that Potters Hill is rich with valuable medicinal flora and people are enriched with folk traditional knowledge about these herbs and trees. It can be concluded from the study that documentation of this knowledge is novel information from the area of Potters Hill, Himachal Pradesh, The plant biodiversity, traditional knowledge and cultural practices of the rural people are facing threat due to rapid urbanization and uncontrolled grazing in these study areas. Our attempts for this research work will not only provide recognition to this treasure, but also help in the conservation of these medicinal plants for further researchers worldwide. Ethno-botanical studies have a major role to play in modern drug development programmes from plant resources. The information on therapeutic uses of plants may provide a great potential for discovering new drugs and promoting awareness among the people to use them as remedy in health care system with supreme accuracy and knowledge.

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