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Article

Division, growth habit and ethnobotany of sanctified plants of the Shivalik Hills of Himachal Pradesh, India

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Abstract: Sanctified Plants are repositories of our rich biodiversity. Through which the indigenous people are still preserving their traditions, rich culture, and customs. Sanctified Plant diversity has been protected by the local ethnic or indigenous people and rural communities as an abode of deities, of special religious importance, and as natural vegetation on religious and cultural grounds. Sacred groves are an age-old tradition of environmental conservation, depending upon indigenous knowledge, cultural and religious beliefs. According to the religious belief, the indigenous people of Hamirpur District of Himachal Pradesh 'Sanctified Plants' from ages. This paper gives an overview of the division, growth habit, ornamental, medicinal, spiritual, material-culture, crop, edible, horticulture, and ethnobotanical status of sacred groves in Hamirpur District of Himachal Pradesh. The sacred groves shelter medicinal plants of great value not only for the primary health care of the villages, but also for the modern pharmacopoeia. The Sanctified Plant diversity is facing threats from the invasion of weeds. There is an urgent need to conserve these sacred groves.

Keywords: Biodiversity, Indigenous, Religious, Rural communities, Sanctified Plant

Introduction

Nature worship has been an ancient Indian tradition and all forms of life have been considered sacred. Further, there was a general conception among the early people that godly element was actively at work in places of natural beauty. Hence, trees have been sacred to the Himachal people and they considered that the trees are the abode of spirits and Gods. The ancient Himachal people believed that the sacredness attached to the living and nonliving objects ensured their safety and persistence. The objective of the present communication is to provide an overview of the spiritual, sociocultural, and ecological status of sacred groves in Himachal. Conservation of the sacred groves amounts to the preservation of the socio-cultural setup, which originated in the remote past. Several inscriptions refer

to the grant of land by rulers to maintain temple gardens. Great varieties of flowering plants are being cultivated and flowers from these gardens are offered to the deity to perform pujas. Sanctified Plant diversity occurs in almost every part of Himachal Pradesh. The village sacred groves are dedicated as God of food, the goddess of fertility and good health. Most of the sacred groves are dedicated with water tanks, ponds, springs or streams, which act as a micro watershed in the local area and meet the water needs of local communities. Sanctified Plant protects several valuable plant species of food, medicinal, socio-cultural and ornamental plants and animals (Ramakrishnan, 1998; Sukumaran and Raj, 1999). Sacred groves shelter several medicinal plants of great value not only for the primary health care of village communities, but also important in the modern system of medicine (Table 1). Moving towards history, indigenous people throughout the world, in general and particularly in India, with the inheritance of traditional and cultural legacy, were protecting the sacred groves and other natural resources with the practice of nature worship (Chanda and Ramchandra 2019). Sacred groves are believed to be a treasure house of rare, endangered, threatened and protected by the local people due to the belief in deities of the forest (Malhotra, 1998; Yadav et al., 2010).

Methodology

This paper is based on the methodology outlined by Jain (1987) and herbarium sheets of the plants were made as per the known herbarizing practices outlined by Jain and Rao (1977). Botanical identification of the collected species was done with the help of regional floras (Chauhan 1999; Chowdhery and Wadhwa, 1984; Collett, 1902; Dhiman, 1976; Polunin and Stainton, 1984; Stainton, 1988) and later carefully matched with the authenticated specimens at the herbarium of the Botanical Survey of India, Dehradun

Study area

The District Hamirpur is the smallest district and situated in the Shivalik range of the lower Himalaya between 76º18 ' to 76º44 ' East longitude and 31º25 ' to 31º51 ' North Latitude. The district shares geographical boundaries with Bilaspur, Mandi, Kangra and Una districts. 92% population residing in rural areas and living traditionally by using ethnobotanically and indigenously important plants. These traditional and indigenous people have been protecting the sacred groves and other natural resources for centuries.

Data collection

Extensive field surveys were conducted in various villages situated in the District Hamirpur of Himachal Pradesh during the study period. The information about the data has been collected from the elders and knowledgeable persons who are permanent residents of different villages and are making use of the plant diversity in the district. Before the visit to research sites, a questionnaire was designed. The traditional usage of plant resources was accumulated through the questionnaire and through participatory techniques. Participation was fascinated by how people utilize plant material. The ethno-medicinal importance of the collected plants containing the

Information about the vernacular name of the plants, part used and medicinal use was recorded through detailed discussion with local people and traditional healers.

Results

The results of the study are presented in Table 1. The genera of plant species from the study area are arranged in alphabetical order. For each species, scientific name, family, traditional mode of its use as ornamental, edible, fodder, religious and medicinal, as well as diseases treated are provided. A total of 70 plant species in 35 families were documented for ornamental, edible, sacred, crop, material-culture, and horticulture from the studied area. The local people and traditional healers were using these plants to treat various diseases of human. The highest number of ethno-botanical plants was recorded from the families Asteraceae, Rosaceae, Solanaceae and Fabaceae, having 6, 5 and 4 plant species. Three families, namely Amaranthaceae, Cyperaceae, Malvaceae, contributed three plant species each. Three species each were contributed by six families, namely Convolvulaceae, Liliaceae, Myrtaceae, Nyctaginaceae, Poaceae and Verbenaceae. Asclepiadaceae, Cupressaceae, Euphorbiaceae, Lamiaceae and Malvaceae, two species each. Table 2 shows that total 70 plant species under 62 genera belonging to 35 families have been found to be common in use in the study area for different purposes. Table 2 shows that there are 70 species of sacred groves (59 dicots, 8 monocots, 3 gymnosperms) employed for ornamental, Sacred, edible, medicinal, fodder, crop, horticulture, and other purposes. Table 3 and Figure 1 Histogram showing that 70 species of sacred groves have growth habit like trees, 21 (30.00%), perennial, 17 (24.28%), shrub, 10 (14.28%), annual, 9 (12.85%), crop, 7 (10.00%), undershrub, 3 (04.28%) and Biennial, 3 (04.28%). Invasion of exotic weeds into sacred groves has become a serious problem in the ecological functioning of some sacred groves. Local biodiversity of the sacred groves is being depleted and further threatened by the domination of exotic weeds such as Eupatorium Odoratum, Lantana camara. All the delineated species hold great potential for overall exploration for the welfare of mankind.

Table 1: Division, growth habit and ethnobotanical uses of sanctified plant diversity of district Hamirpur, Himachal Pradesh

Botanical Name	Family	Growth Habit	Division	Importance / Purpose
Aloe vera (Linn.) Burm. f.	Liliaceae	P	M	Ornamental, medicinal
Althaea rosea (Linn.) Cav.	Malvaceae	B	D	Ornamental, sacred
Antirrhinum majus Linn.	Scrophulariaceae	P	D	Ornamental
Asclepias curassavica Linn.	Asclepiadaceae	U	D	Ornamental

Asclepias physocarpa (E. Mey.) Schiecht	Asclepiadaceae	S	D	Ornamental
Asparagus densiflorus (Kunth) Jessop	Liliaceae	P	D	Ornamental
Bougainvillea glabra Choisy	Nyctaginaceae	C	D	Ornamental
Bougainvillaea spectabilis Willd.	Nyctaginaceae	C	D	Ornamental, sacred, medicinal, material culture
Brassica oleracea Linn.	Brassicaceae	B	D	Ornamental
Bryophyllum calycinum Salisb.	Crassulaceae	P	D	Ornamental, medicinal
Calendula officinalis Linn.	Asteraceae	A	D	Ornamental, sacred
Callistemon lanceolatus DC.	Myrtaceae	T	D	Ornamental
Canna indica Linn.	Cannaceae	P	M	Ornamental, sacred
Capsicum annuum Linn.	Solanaceae	U	D	Edible, material culture, crop
Carica papaya Linn.	Caricaceae	T	D	Ornamental, edible, medicinal, horticulture
Chamaerops humilis Linn.	Arecaceae	S	M	Ornamental
Chlorophytum capense Kuntze	Liliaceae	P	M	Ornamental
Chrysanthemum indicum Linn.	Asteraceae	P	D	Ornamental, sacred
Chrysanthemum leucanthemum Linn.	Asteraceae	P	D	Ornamental
Cinnamomum camphora (Linn.) Nees & Eberm.	Lauraceae	T	D	Ornamental, sacred, medicinal
Citrus maxima (Burm. f.) Merrill	Rutaceae	T	D	Edible, horticulture

Clerodendrum phillippinum Schauer	Verbenaceae	S	D	Ornamental, sacred, medicinal
Clerodendrum splendens G. Don.	Verbenaceae	C	D	Ornamental
Convolvulus arvensis Linn.	Convolvulaceae	P	D	Ornamental, fodder
Cycas revoluta Thunb.	Cycadaceae	T	G	Ornamental
Cynodon dactylon (Linn.) Pers.	Poaceae	P	M	Sacred, medicinal, fodder
Cyperus flabelliformis Rottb.	Cyperaceae	P	M	Ornamental, material culture
Dahlia rosea Cav.	Asteraceae	P	D	Ornamental, sacred
Datura fastuosa Linn.	Solanaceae	S	D	Ornamental, sacred, medicinal
Datura innoxia Mill.	Solanaceae	S	D	Ornamental, sacred
Daucus carota Linn.	Apiaceae	B	D	Ornamental, medicinal, material culture
Duranta repens Linn.	Verbenaceae	S	D	Ornamental, medicinal, material culture
Eriobotrya japonica (Thunb.) Lindl.	Rosaceae	T	D	Ornamental, medicinal, material culture
Euphorbia pulcherrima Willd.	Euphorbiaceae	S	D	Ornamental, edible
Gomphrena globosa Linn.	Amaranthaceae	A	D	Ornamental, edible, horticulture
Helianthus annuus Linn.	Asteraceae	A	D	Ornamental, sacred, crop
Hibiscus rosa-sinensis Linn.	Malvaceae	S	D	Ornamental, sacred
Ipomoea cairica (Linn.) Sweet	Convolvulaceae	C	D	Ornamental

Ipomoea purpurea (Linn.) Roth.	Convolvulaceae	C	D	Ornamental, medicinal
Jacaranda acutifolia Humb. & Bonpl.	Bignoniaceae	T	D	Ornamental
Juglans regia Linn.	Juglandaceae	T	D	Sacred, edible, medicinal, material culture
Lagerstroemia indica Linn.	Lythraceae	T	D	Ornamental, medicinal
Litchi chinensis Sonn.	Sapindaceae	T	D	Edible, horticulture
Lonicera japonica Wall.	Caprifoliaceae	C	D	Ornamental, medicinal
Lycopersicum esculentum Mill.	Solanaceae	P	D	Edible, medicinal, crop
Magnolia grandiflora Linn.	Magnoliaceae	T	D	Ornamental, sacred
Mentha piperita Linn.	Lamiaceae	P	D	Ornamental, edible, medicinal
Mimosa pudica Linn.	Fabaceae	A	D	Ornamental, medicinal
Mirabilis jalapa Linn.	Nyctaginaceae	P	D	Ornamental, sacred, medicinal
Morus alba Linn.	Moraceae	T	D	Ornamental, sacred, edible, material culture, fodder
Ocimum kilimandscharicum Gurke	Lamiaceae	U	D	Ornamental
Papaver rhoeas Linn. var. *latiflolia* Prain	Papaveraceae	A	D	Ornamental
Phaseolus vulgaris Linn.	Fabaceae	C	D	Edible, crop
Pisum sativum Linn.	Fabaceae	A	D	Edible, crop
Prunus amygdalus Batsch	Rosaceae	T	D	Edible, medicinal, horticulture

Prunus persica (Linn.) Batsch	Rosaceae	T	D	Edible, medicinal, horticulture
Psidium guajava Linn.	Myrtaceae	T	D	Edible, medicinal, material culture, horticulture
Punica granatum Linn.	Punicaceae	T	D	Ornamental, sacred, edible, medicinal, horticulture
Pyrus malus Linn.	Rosaceae	T	D	Sacred, edible, horticulture
Ricinus communis Linn.	Euphorbiaceae	S	D	Medicinal, material culture
Rosa alba Linn.	Rosaceae	S	D	Sacred, edible
Saccharum officinarum Linn.	Poaceae	P	M	Sacred, edible, medicinal
Sesamum orientale Linn.	Pedaliaceae	A	D	Sacred, edible, medicinal
Solanum tuberosum Linn.	Solanaceae	P	D	Edible, crop
Syzygium jambos (Linn.) Alston	Myrtaceae	T	D	Edible, medicinal
Tagetes erecta Linn.	Asteraceae	A	D	Sacred, edible, medicinal
Tamarindus indica Linn.	Fabaceae	T	D	Ornamental, sacred, edible, medicinal, material culture
Thuja orientalis Linn.	Cupressaceae	T	G	Ornamental, sacred
Thuja plicata D. Don.	Cupressaceae	T	G	Ornamental
Zea mays Linn.	Poaceae	A	M	Edible, fodder, crop

Table 2: Statistical Data of Sanctified Plant diversity of District Hamirpur, Himachal Pradesh

Plant Group	No. of Families	No. of Genera	No. of sp.	Percentage of sp. (%)
Dicotyledons	28	52	59	84.28
Monocotyledons	5	8	8	11.28
Gymnosperms	2	2	3	04.44

Total	35	62	70	100

Table 3: Table Showing Growth habit of Sanctified Plant diversity of District Hamirpur, Himachal Pradesh

Growth Habit	No. of species	Percentage (%)
Tree	21	30%
Perennial	17	24.28%
Shrub	10	14.28%
Annual	9	12.85%
Crop	7	10%
Undershrub	3	04.28%
Biennial	3	04.28%

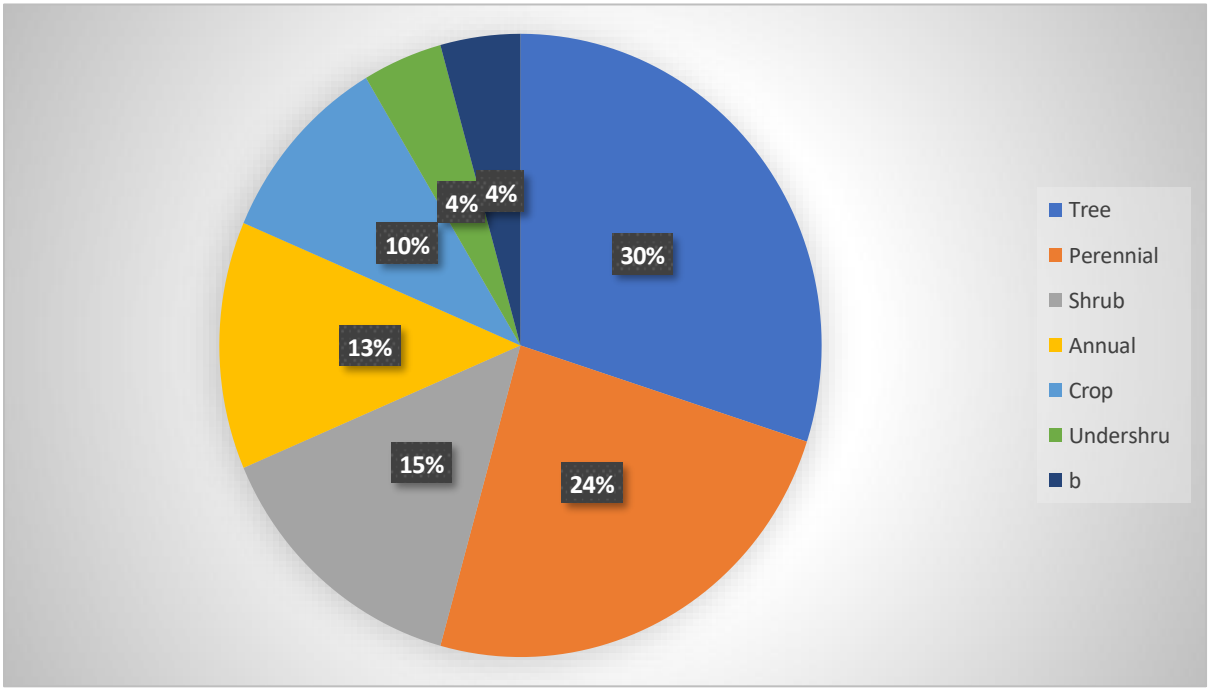

Figure 1: Histogram showing %age of growth habits of the Sanctified Plant diversity of District Hamirpur, Himachal Pradesh

Conclusion

Sacred groves of Hamirpur, Himachal Pradesh, represent a unique blend of spiritual belief, cultural heritage, and ecological conservation. The documented 70 plant species across 35 families highlight their immense value in ornamental, edible, medicinal, sacred and livelihood uses. These groves serve as reservoirs of biodiversity, micro-watersheds and living repositories of indigenous knowledge preserved by rural communities for generations. Their protection reflects the deep-rooted tradition of nature worship and ensures the survival of rare and useful plant species. However, increasing threats from exotic invasive weeds demand urgent conservation measures to protect their ecological balance and socio-cultural significance for future generations.

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