

**FLORISTIC COMPOSITION OF PLACES OF RELIGIOUS ACTIVITIES IN DEOGHAR, JHARKHAND INDIA**MOUSUMI BANERJEE<sup>1a</sup> AND AMBARISH MUKHERJEE<sup>b</sup><sup>ab</sup>CAS Department of Botany, Burdwan University, Burdwan, West Bengal, India**ABSTRACT**

Considering revelation of the man, plant and environment relationships sustained traditionally in different religious places as an important perspective in ethically strategizing plant-based optimization of environment, the present study site was undertaken in Deoghar, a place of immense religious significance as a Hindu pilgrimage. As a prerequisite to fulfillment of such an objective a taxonomic census of vascular plants was performed to determine diversity in species composing the community. The overall number of vascular plant species was recorded to be 188; species ratio of dicots, monocots and pteridophytes being 43: 3: 1. Family: genus: species ratio (on total basis) was found to be 1:3.16:3.48. At specific, generic and family levels, dicots scored higher prevalence percentages over monocots. The value of Coefficient of Generic Diversity (90.96) and high number of families with a low species quota indicate habitat heterogeneity contributing towards stability of the existing vegetation.

**KEYWORDS :** Man, Plant and Environment Relationship, Deoghar, Taxonomic Census, Vascular Plants.

Study of floristic composition of a place, whether natural or man-made, at periodic intervals proves essential in assessment of biodiversity in spatial and temporal scales since many of the constituent species perceive various degrees of threats of extinction. In view of this, the present authors prioritized identification and documentation of vascular plants in such areas where there is a perpetual man-plant relationship prevailing over the years for religious fulfillment and spiritual accomplishment. The present work also considers taxonomic documentation of plants sustained in the custody of the religious organizations like Sri Satsang Anukul Thakur Ashrama for their religious concern, aesthetic, nutritional and medicinal values. The present work is a part of the research

programme undertaken on study of man-plant-environment interrelationships in selected sacred places.

**Study Site**

Deoghar, the main city of Deoghar District of Jharkhand State (Figs. 1a & b), is located at 24.48°N and 86.7°E with an average elevation of 254 meters (833 feet). Deoghar is also familiar as "Baidyanath Dham" or "Baba Dham". It is a very important pilgrimage hub for Hindus for the Vaidyanath Temple which is one of the twelve Shiva Jyotirlingams and one of the 51 Shakti Peethas in India. In view of this the place is considered as the abode ('ghar') of the Gods and Goddesses ('deva').

The place has a very charming set-up with undulations, water courses and a number of small hills in the



**Figure 1a and 1b : Maps Showing Location of Study Site India**

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Table 1: An Enumeration of The Vascular Plants Recorded from the Places of Religious Activities in Deoghar

## A. Trees

Sl.No.	Name of plants(Species)	Common Name	Family
1.	<i>Acacia auriculiformis</i> L.	Akashmani, Bangali Babul	Mimosaceae
2.	<i>Acacia nilotica</i> (L.) Delile	Babul	Mimosaceae
3.	<i>Adenanthera pavonina</i> L.	Rakta kanchan, Saga, Ranjana	Mimosaceae
4.	<i>Aegle marmelos</i> (L.) Corrêa	Wood apple,Bel	Rutaceae
5.	<i>Albizia lebbek</i> (L.) Benth.	Siris	Mimosaceae
6.	<i>Albizia saman</i> (Jacq.) Merr.	Rain tree, Bilaiti Siris	Mimosaceae
7.	<i>Alstonia scholaris</i> (L.) R. Br.	Chatim, Chatian, Devil tree	Apocynaceae
8.	<i>Anacardium occidentale</i> L.	Cashew nut,Kaju badam	Anacardiaceae
9.	<i>Anthocephalus cadamba</i> (Roxb.) Miq.)	Kadam, Kadamb	Rubiaceae
10.	<i>Areca catechu</i> L.	Betelnut Palm, Supari kaa per	Arecaceae
11.	<i>Artocarpus integer</i> (Thunb.) Merr.	Jackfruit,Kathal, Kathar	Moraceae
12.	<i>Azadirachta indica</i> A. Juss.	Neem	Meliaceae
13.	<i>Bauhinia acuminata</i> L.	Camel's foot tree , Kachnar, Kanchan	Caesalpiniaceae
14.	<i>Bombax ceiba</i> L.	Semal, Shimul	Malvaceae
15.	<i>Borassus flabellifer</i> L.	Plamyra Palm, Tari, Tal	Arecaceae
16.	<i>Butea monosperma</i> (Lamk.)Taub.	Palas, Tesu, Dhak	Fabaceae
17.	<i>Callistemon linearis</i> (Schrud. & J.C.Wendl.)	Bottle brush tree	Myrtaceae
18.	<i>Calophyllum inophyllum</i> L.	Beach Mahogany, Surpunka, Sultanachampa	Clusiaceae
19.	<i>Cassia fistula</i> L.	Indian Labumum, Bandarlathi, Amaltas,	Caesalpiniaceae
20.	<i>Casuarina equisetifolia</i> L.	Jhau, Junglisaru	Casuarinaceae
21.	<i>Ceiba pentandra</i> (L.) Gaertn.	White Silk Cotton, safed simal, katan,	Malvaceae
22.	<i>Cinnamomum camphora</i> (L.) J.Presl.	Kapur, Karpur	Lauraceae
23.	<i>Cinnamomum verum</i> J.Presl	Cinnamon, Darchini, Dalchini	Lauraceae
24.	<i>Cocos nucifera</i> L.	Coconut Palm, Nariyal	Arecaceae
25.	<i>Dalbergia sissoo</i> DC.	Sissoo	Fabaceae
26.	<i>Delonix regia</i> (Hook.) Raf.	Gulmohar. <i>Royal Poinciana</i>	Caesalpiniaceae
27.	<i>Dimocarpus longan</i> Lour.	Ansfa	Sapindaceae
28.	<i>Erythrina variegata</i> L.	Coraltree,Madar	Fabaceae
29.	<i>Eucalyptus globulus</i> Labille	Blue Gum <i>Sugandhapatra</i>	Myrtaceae
30.	<i>Ficus bengalensis</i> L.	Banyan, Bot, Bargat	Moraceae
31.	<i>Ficus religiosa</i> L.	Peepal	Moraceae
32.	<i>Ficus elastica</i> Roxb. ex Hornem.	India Rubber	Moraceae
33.	<i>Ficus semicordata</i> Buch.-Ham. ex Sm.	Drooping fig, Khunia	Moraceae
34.	<i>Gliricidia sepium</i> (Jacq.) Walp.	Quickstick,	Fabaceae
35.	<i>Gmelina arborea</i> Roxb.	Gamhar	Lamiaceae
36.	<i>Grewia asiatica</i> L.	Phalsa	Malvaceae
37.	<i>Haldina cordifolia</i> (Roxb.) Ridsdale	YellowTeak, Haldu, Karam	Rubiaceae
38.	<i>Holarrhena pubescens</i> Wall. ex G.Don	Kurchi, Kutaja, Karva indrajau, Kud, Kudaiya	Apocynaceae
39.	<i>Holoptelea integrifolia</i> Planch (unresolved)	Chilbil, Kanju, Papri	Ulmaceae
40.	<i>Kleinhovia hospita</i> L.	Guest tree, Bhola	Sterculiaceae

cont.

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41.	<i>Lagerstroemia speciosa</i> (L.) Pers.	Jarul	Lythraceae
42.	<i>Limonia acidissima</i> Groff	Kaith bel	Rutaceae
43.	<i>Litchi chinensis</i> Sonn.	Litchi, litchu	Sapindaceae
44.	<i>Madhuca longifolia</i> (Roxb.) A.Chev.	Mahwa, Mahula	Sapotaceae
45.	<i>Magnolia champaca</i> (L.) Baill. ex Pierre	Champak	Magnoliaceae
46.	<i>Mallotus repandus</i> (Willd.) Müll.Arg.	False white teak,	Euphorbiaceae
47.	<i>Mangifera indica</i> L	Mango, Am	Anacardiaceae
48.	<i>Manilkara zapota</i> (L.) P.Royen	Sabeda/Chikoo	Sapotaceae
49.	<i>Mesua ferrea</i> L	Nagkeshar	Calophyllaceae
50.	<i>Mimusops elengi</i> L.	Maulsari, Bakul	Sapotaceae
51.	<i>Morinda citrifolia</i> L	Bartundi, Noni, Indian mulberry	Rubiaceae
52.	<i>Moringa oleifera</i> Lam.	Sajihan, Munaga	Moringaceae
53.	<i>Morus indica</i> L.	Mulberry, Shahatut, Tit	Moraceae
54.	<i>Parkinsonia aculeata</i> L.	Jerusalem Thorn , Adanti, Sima tumma,	Caesalpiniaceae
55.	<i>Peltophorum pterocarpum</i> (DC.) K.Heyne)	Radhachura	Caesalpiniaceae
56.	<i>Phoenix sylvestris</i> Roxb.	Date Palm, Khajur	Arecaceae
57.	<i>Pithecelobium dulce</i> Benth.	Manila tamarind, Tamar, Jalebi, Amil, Dekhani	Mimosaceae
58.	<i>Plumeria rubra</i> L.	Sada Gulancha, Golenchi/Golachin	Apocynaceae
59.	<i>Polyalthia longifolia</i> (Sonn.) Thwaites	Debdaru	Annonaceae
60.	<i>Pongamia pinnata</i> (L.) Pierre	Karanja	Fabaceae
61.	<i>Psidium guajava</i> L.	Guava, Amrud, Piyara	Myrtaceae
62.	<i>Pterospermum acerifolium</i> (L.) Willd.	KanakChampa,	Malvaceae
63.	<i>Putranjiva roxburghii</i> Wall.	Putijia, <b>Putranjiva</b>	Euphorbiaceae
64.	<i>Saraca indica</i> L.	Ashoka	Caesalpiniaceae
65.	<i>Schleichera oleosa</i> (Lour.) Merr.	Kusum, kosum, gausam	Sapindaceae
66.	<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby	Kassod, Seemia,	Caesalpiniaceae
67.	<i>Sesbania grandiflora</i> (L.)Pers.	Agati, Bakful	Fabaceae
68.	<i>Spathodea campanulata</i> P.Beauv.	Rugtra, Rugtoora. Rudrapalash	Bignoniaceae
69.	<i>Spondias dulcis</i> Parkinson	Aura, Amra, Ambarella	Anacardiaceae
70.	<i>Sterculia foetida</i> L.	Wild almond tree, Jangli Badam.	Malvaceae
71.	<i>Swietenia mahagoni</i> (L.) Jacq.)	Mahogany	Meliaceae
72.	<i>Syzygium jambos</i> (L.) Alston	Plum rose, Jamoah, Jamrul	Myrtaceae
73.	<i>Syzygium samarangense</i> (Blume) Merr. & M.Perry	Jamrul	Myrtaceae
74.	<i>Tabebuia rosea</i> (Bertol. Bertero ex ADC.	Pink trumpet tree, Basant Rani	Bignoniaceae
75.	<i>Tamarindus indica</i> L.	Tamarind, Imli, Trentul	Fabaceae
76.	<i>Tectona grandis</i> L.	Teak, Sagan	Lamiaceae
77.	<i>Terminalia catappa</i> L.	Indian Almond, Kath Badam	Combretaceae
78.	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & rn.	Arjun	Combretaceae
79.	<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	Tulip tree, Gajadanda, Paras-pipal	Malvaceae
80.	<i>Trema orientalis</i> (L.) Blume	Charcoal-tree, Parvat, Jivanti	Cannabaceae

## B. Herbs

Angiosperms			
1.	<i>Acalypha indica</i> L.	Indian acalypha , Khokali, Khokla	Euphorbiaceae
2.	<i>Achyranthes aspera</i> L.	Apamarga, Apang	Amaranthaceae
3.	<i>Ageratum conyzoides</i> L.	Goat weed , Visadodi, Semandulu	Asteraceae
4.	<i>Alternanthera sessilis</i> (L.) R.Br. ex DC.	Sessile joyweed , Garundi, Guroo	Amaranthaceae
5.	<i>Amaranthus spinosus</i> L.	Spiny amaranth , Kanta nutiya.	Amaranthaceae
6.	<i>Anaphalis subdecurrens</i> (DC.) Gamble	Western marshcudweed , Pamp kare	Asteraceae
7.	<i>Andrographis paniculata</i> (Burm.f.) Nees	Kalmegh	Acanthaceae
8.	<i>Anisomeles indica</i> (L.) Kuntze	Malabar catmint , Kala Bhangra	Lamiaceae
9.	<i>Argemone mexicana</i> f. <i>leiocarpa</i> (Greene) Ownbey	Prickly poppy, Satyanashi, Bharband	Papavaraceae
10.	<i>Blumea lacera</i> DC.	Janglimuli, kakronda, kukaraundha	Asteraceae
11.	<i>Boerhavia repens</i> L.	Creeping spiderling , Gadha-cand	Nyctaginaceae
12.	<i>Brachiaria reptans</i> (L) Gand et Habib	Running grass, Jangli ghas	Poaceae
13.	<i>Canscora diffusa</i> (Vahl) R.Br. ex Roem. & Schult.	Dhankuni, Bhui Nim	Gentianaceae
14.	<i>Catharanthus roseus</i> (L.) G.Don	Periwinkle, Sadabahar	Apocynaceae
15.	<i>Celosia argentea</i> L.	Cockscomb, Lalmurga	Amaranthaceae
16.	<i>Centella asiatica</i> (L.) Urb.	Ballari, Bheki, .	Apiaceae
17.	<i>Chenopodium album</i> L.	lamb's quarters , Chandril, Panshu	Amaranthaceae
18.	<i>Chrozophora tinctoria</i> (L.) A.Juss.	Giradol	Euphorbiaceae
19.	<i>Cleome viscosa</i> DC.	stickyspider-flower, Bagra, Hulhul.	Cleomaceae
20.	<i>Cleome gynandra</i> L.	Spider flower , Kavalia, Hurhur	Cleomaceae
21.	<i>Croton bonplandianus</i> Baill.	Ban Tulasi, Kala Bhangra	Euphorbiaceae
22.	<i>Cyanthillium cinereum</i> (L.) H.Rob.	Sahadevi, Sadodi, Ash/Purple Fleabane	Asteraceae
23.	<i>Cynodon dactylon</i> (L.) Pers.	Dhubghas,	Poaceae
24.	<i>Cyperus rotundus</i> L.	Mutha ghas	Cyperaceae
25.	<i>Dentella repens</i> (L.) J. R. Forst. et G.Forst.	Creeping lickstoop	Rubiaceae
26.	<i>Desmodium gangeticum</i> DC.	Shalpani	Fabaceae
27.	<i>Eclipta prostrata</i> (L.) L.	False Daisy , Bhringraj, Kesut	Asteraceae
28.	<i>Eleusine aegyptiaca</i> L.	Crowfoot Grass, Taruaghas	Poaceae
29.	<i>Evolvulus nummularius</i> L.	Morning glory, Musakani	Convolvulaceae
30.	<i>Fleurya interrupta</i> (Juss.) Gaudich	Wood nettle, Bichata	Urticaceae
31.	<i>Grangea maderaspatana</i> (L.) Poir.	Madras absinth , Mustaru, Bhediachim	Asteraceae
32.	<i>Heliotropium curassavicum</i> L.	Monkey Tail plant , Hathisoond, Hatisud	Boraginaceae

cont.

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33.	<i>Heliotropium indicum</i> L.	Indian heliotrope, Hatisud	Boraginaceae
34.	<i>Imperata arundinacea</i> Cyrill	Darbha, Ulu, Siru ghas	Poaceae
35.	<i>Justicia japonica</i> Thunb.	Phool jhar	Acanthaceae
36.	<i>Leucas aspera</i> (Willd.) Link	Dronapushpi,	Lamiaceae
37.	<i>Malachra capitata</i> (L.) L.	Yellow leafbract , Van Bhindi	Malvaceae
38.	<i>Nicotiana plumbaginifolia</i> Viv.	Tex-Mex Tobacco , Van Tamaku	Solanaceae
39.	<i>Ocimum tenuiflorum</i> L.	Kala Tulasi, Tulsi	Lamiaceae
40.	<i>Oldenlandia lactea</i> (Willd.) DC.	Diamond flower , khetpapra	Rubiaceae
41.	<i>Pennisetum glaucum</i> (L.) R.Br.	Pearl millet, bajara ghas	Poaceae
42.	<i>Pergularia daemia</i> (Forssk.) Chiov.	Phala-kantak	Apocynaceae
43.	<i>Persicaria barbata</i> (L.) H.Hara	Bekhanjabaj	Polygonaceae
44.	<i>Phyla nodiflora</i> (L.) Greene	Wild sage, Jalbuti	Verbenaceae
45.	<i>Ruellia tuberosa</i> L.	Waterkanon, Chatkani Phali	Acanthaceae
46.	<i>Rumex maritimus</i> L.	Golden dock, Jungli Palak	Polygonaceae
47.	<i>Rungia parviflora</i> (L.) Nees	Snapdragon Root , Pitta papada, Dham Gajara	Acanthaceae
48.	<i>Saccharum spontaneum</i> L.	Kash	Poaceae
49.	<i>Senna sophora</i> (L.) Roxb.	Kalkasunda, Kasaunda,	Caesalpiniaceae
50.	<i>Setaria glauca</i> Beauv.	Green foxtail	Poaceae
51.	<i>Sida cordifolia</i> L.	Bala, Flannel weed , Khareti, Bala, Kumghi	Malvaceae
52.	<i>Sida rhombifolia</i> L.	Atibala, Khiranti	Malvaceae
53.	<i>Solanum americanum</i> Mill.	Black Nightshade, Mokoi	Solanaceae
54.	<i>Solanum trilobatum</i> S. Schauer	Climbing Brinjal, Alarka,	Solanaceae
55.	<i>Spermocoe hispida</i> L.	Jointed Buttonweed , Madan ghanti	Rubiaceae
56.	<i>Suaeda maritima</i> Dumort.	Sea Blite, Alur	Amaranthaceae
57.	<i>Tridax procumbens</i> L.	Mexican Daisy, Ghamra	Asteraceae
58.	<i>Triumfetta rhomboidea</i> Jacq.	Burweed, Anduli, Chikti	Malvaceae
59.	<i>Xanthium strumarium</i> L.	Chotagokhru	Asteraceae
Pteridophytes			
60.	<i>Adiantum raddianum</i> C. Presl.	Delta maiden hair	Pteridaceae
61.	<i>Dryopteris pseudomas</i> (Woll.) Holubbis et Pouzar	Dheki sak	Dryopteridaceae
62.	<i>Marsilea quadrifolia</i> L.	Susunia, Chopatiya	Marsileaceae
63.	<i>Selaginella megaphylla</i> Baker	Bisalyakarani, Puttenjoory	Selaginellaceae

north- west, south-east, south and southwest most of which are covered with forests. The present work selected certain locations in and around Deoghar city, such as Satsanga Ashrama, Trikut Pahar (13 km from Deoghar), Tapovana (10 km from Deoghar).

## MATERIALS AND METHODS

Field work was performed during different seasons, viz. pre-monsoon, monsoon and post-monsoon in different areas of the study site. Specimens of the constituent species were collected some of which were processed for herbarium preservation (Jain and Rao, 1977)

**C.Shrubs**

Sl.No.	Scientific Name	Common Name	Family
1.	<i>Abutilon indicum</i> (L.)Sweet	Indian Mallow, Kanghi	Malvaceae
2.	<i>Acanthus illicifolius</i> L.	Hargoza	Acanthaceae
3.	<i>Annona squamosa</i> L.	Custard apple, Sharifa, Sitafal	Anonaceae
4.	<i>Barleria prionitis</i> L.	Jinti, Katsaryea, Vajradanti	Acanthaceae
5.	<i>Calotropis procera</i> (Aiton) Dryand.	Akada, Madar	Apocynaceae
6.	<i>Capparis spinosa</i> L.	Caper bush, Kabra	Capparaceae
7.	<i>Cestrum diurnum</i> L.	Day Jessamine, Din ka Raja	Solanaceae
8.	<i>Clerodendrum infortunatum</i> L.	Bhant, Ghentu	Lamiaceae
9.	<i>Datura metel</i> L.	Dhatura	Solanaceae
10.	<i>Duranta erecta</i> L.	Golden dewdrop, Nilkanta, Duranta	Verbenaceae
11.	<i>Glycosmis pentaphylla</i> (Retz.) DC.	Orange berry, Ban Nimbu, Ash sheora	Rutaceae
12.	<i>Hibiscus mutabilis</i> L.	Sthal padma, Sthalkamal	Malvaceae
13.	<i>Malpighia glabra</i> L.	Barbados Cherry, Jungli Cheri	Malpighiaceae
14.	<i>Hyptis suaveolens</i> (L.) Poit.	Bantulsi, Vilayati Tulasi	Lamiaceae
15.	<i>Ixora coccinea</i> L.	Rangan, Rugmini	Rubiaceae
16.	<i>Jatropha gossypifolia</i> L.	Lal pata, Ratanjoti	Euphorbiaceae
17.	<i>Justicia adhatoda</i> Nees.	Vasaka, Adosa, Arusha	Acanthaceae
18.	<i>Lantana camara</i> L.	Putus, Raimuniya	Verbenaceae
19.	<i>Leonurus sibiricus</i> L.	Mother wort, Guma	Lamiaceae
20.	<i>Mirabilis jalapa</i> L.	Gul Abbas	Nyctaginaceae
21.	<i>Murraya paniculata</i> (L.) Jack	Kamini	Rutaceae
22.	<i>Pluchea indica</i> (L.)Less	Indian camphorweed, Van Kapur	Asteraceae
23.	<i>Ricinus communis</i> L.	Castorbean, Arandi	Euphorbiaceae
24.	<i>Senna alata</i> (L.) Roxb.	Wild Senna, Dadmurdan	Caesalpiniaceae
25.	<i>Senna tora</i> (L.) Roxb.	Wild Senna, Chakvad, Charota	Caesalpiniaceae
26.	<i>Tabernaemontana divaricata</i> (L.) R.Br. ex Roem. & Schult.	Chandani, Tagar	Apocynaceae
27.	<i>Tecoma stans</i> (L.) Juss. ex Kunth	Chameli, Piliya	Bignoniaceae
28.	<i>Urena lobata</i> L.	Caesarweed, Bachita, Pathia,	Malvaceae
29.	<i>Vitex negundo</i> L.	Nirgundi, Nisinda, Sindvar	Lamiaceae
30.	<i>Ziziphus oenopolia</i> (L.) Mill.	Jackal Jujube, Makkay, Kokalber	Rhamnaceae

and the rest were dissected, described and identified with the help of pertinent taxonomic literature (Prain, 1903; Guha Bakshi, 1984; Bennet, 1987; Murti and Panigrahi, 1999) and authentic specimens preserved in the herbarium of Burdwan University (BURD).The specimens were identified and the coefficient of generic diversity (CGD) (Jacard, 1901) was calculated using the formula:

$CGD = 100 \times G/S$ , where G and S are genus and species respectively.]

**RESULTS**

A checklist of 188 species of common terrestrial plants growing in the study area could be prepared (Table1), a taxonomic analysis of which reveals the total number of

**D. Climbers and Lianas**

1.	<i>Antigonon leptopus</i> Hook & Arn.	Coral Vine, Baharilata	Polygonaceae
2.	<i>Bougainvillea spectabilis</i> Willd.	Paper flower, Booganbel	Nyctaginaceae
3.	<i>Cardiospermum halicacabum</i> L.	Balloon Vine, Kanphata, Kanphuti	Sapindaceae
4.	<i>Hiptage benghalensis</i> (L.) Kurz	Kampti Madhab lata	Malpighiaceae
5.	<i>Ipomoea wrightii</i> A. Gray	Morning glory, Kamalata	Convolvulaceae
6.	<i>Ipomoea quamoclit</i> L.	Sita Kesh	Convolvulaceae
7.	<i>Ipomoea pes-caprae</i> (L.) R. Br.	BeachMorning Glory, Dopatilata	Convolvulaceae
8.	<i>Ipomoea purpurea</i> (L.) Roth	Common Morning Glory, Ganthian	Convolvulaceae
9.	<i>Mikania micrantha</i> Kunth	Climbing hemp, Bhangarohi	Asteraceae
10.	<i>Momordica charantia</i> L.	Karela	Cucurbitaceae
11.	<i>Mucuna pruriens</i> (L.) DC.	Kiwach, Alkushi	Fabaceae
12.	<i>Mukia maderaspatana</i> (L.)M.Roem.	Ivygourd,Kanduri	Cucurbitaceae
13.	<i>Passiflora biflora</i> Lam.	Passion flower, Kasiabael	Passifloraceae
14.	<i>Pergularia daemia</i> (Forssk.)Chiov	Phala-kantak, Utranajutuka	Apocynaceae
15.	<i>Thunbergia grandiflora</i> Roxb.	Bengal clock vine, Neel lata	Acanthaceae

angiosperms and pteridophytes with their percentage values at the levels of family, genus and species (Table2). An analysis of their habits was also made in the same table to reveal the structural/growth-form heterogeneity.

**DISCUSSION**

Taxonomic census of vascular plants was performed to determine diversity in species composition which is necessary to characterize community structures. The total number of vascular plant species that could be recorded for the pilgrimage-hub is 188, species ratio of dicots, monocots and pteridophytes is 43: 3: 1. Values of species quota were 3.48 and 1.10 per family and genus respectively, the genus quota for each family being 3.17 (Table 1& 2).

Family: genus: species ratio, considering angiosperms as well as pteridophytes, is 1:3.16:3.48. At all

specific, generic and family levels, dicots scored higher percentages over monocots. Incidentally no gymnosperm could be recorded from the area. The value of Coefficient of Generic Diversity (90.96) and high number of families, most of which were with few species, give an indication of habitat heterogeneity.

Observed ratio of tree : shrub : herb and vine was: 5.3:2:4.2:1 and their relative percent values (partial abundance) were Trees: 42.55 %, Shrubs : 15.95 %, Herbs: 33.51% & Vines: 7.97 % (Table 2)the ratio niches for vine and on other hand presence of herbs indicated discontinuous canopy allowing sunlight for herbal growth. Since as many as 112 ligneous species composed by 80 trees, 30 shrubs and 2 lianas could be recorded it would be logical to infer regarding the availability of richness indicated in woody plants in general and tree diversity in particular. Value of vines and herbs speak of the fact that at

**Table 2 : Analysis of Habits of The Concerned Plant Species**

Habit Analysis									
Tree: Shrub: Herb : Vines :: 80:30:63:15 :: 5.3:2:4.2:1 % values – Tree:42.55 %,Shrub15.95 %,Herb 33.51% & vines 7.97 %									
Taxonomic Analysis									
Total No. Of plant family: 55 {48 Dicot + 3 Monocot +4 pteri}, Total no. of plant genera: {188 -18=170, (170-16) =154 dicot+12mono+ 4 pterido}, Total no. of plant sp:188 {188-(12+4)=172 dicot +12monocot+4pteri}									
Total no.of plant species:188	family:genus:species:: 54:171:188::1:3.16:3.48				Coefficient of Generic diversity(total basis)  =100*G / S = 100 * 171 / 188 = 90.96				
Dicotyledonous species 172	family: genus : species:: 47:155:172::1:3.3:3.7								
Monocotyledonous species:12	family:genus:species :: 3:12:12::1:4:4								
Pteridophyte:4	family:genus:species ::4:4:4::1:1:1								
Dicot: monocot ratio	dicot fam : monocot fam::47:3::15.7:1		Species quota for each family (total basis)		Species quota for each genus (total basis)		Genus quota for each family (total basis)		
	dicot genus : monocot genus :: 155:12::1:12.9								
	dicot sp : monocot sp :: 172:12::14.3:1								
	Total angiosperms	Dicot		Monocot		Pteridophyte	188/54=3.48	188/171=1.10	171/54=3.17
	Family : 50	47	94.11%	03	6%	4			
	Genus : 167	155	92.81%	12	7.18%	4			
	Species : 184	172	93.47%	12	6.52%	4			

some sites canopy is dense to provide resources optimum for their sustenance. Heterogeneity in habits reflects a configuration sustained by self designing capacity of nature. However appreciable representation of herbs in the vegetation is indicative of preponderance of wastelands in the study site. Wherever diverse vines are present in good number it can be presumed to have, if not at present, restoration of vegetation with a good canopy to provide them support for harvesting sunlight. As such 15 species of vines in the study site may comply with such a view.

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