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Study on Ethnomedicinal, Dye Yielding and Endangered Angiospermic Floral Diversity and Ecorestoration of Gopegarh of Paschim Medinipur, West Bengal, India

Goutam Bhakta[1], Dr. Subrata Giri[2], Nabanita Paria Bhakta[3]
[1]*Rukminipur Kanailal Vidyapith, W.B, India*
[2]*Assitt. Prof. Midnapore College (Autonomous), W.B, India*
[3]*Lalat Gangadhar Pathsala, W.B, India*

Abstract: Gopegarh is a place of historic interest of Paschim Medinipur District of West Bengal, India had a fort – Gopegriha in the ancient past; now a part of it is a Eco Park under Govt. of West Bengal and had dense jungle having large floristic diversity. The elevation is 211 feet or 64.3 meter and it lies between 22^0 57' 10''North latitude and 87^{0}16'50''East longitude. Human population encroaches the forest range of Gopegarh and disturbing the floral development. In the present paper an attempt has also been made to enumerate the ethno medicinal plants, dye yielding plants, endangered plants and to know the causes of becoming rare or endangered of some plants.

Keywords: Gopegarh, floristic diversity, ethno medicinal plants, dye yielding plants, endangered plants.

I. INTRODUCTION

Flower, an essential part that comprises most of evolutionary alteration of flowering plants bearing special importance for perception the origin and diversification of angiosperm i.e Magnoliophyta. Gene and genome duplication mostly providing the abundant raw material for conservation and diversification. India has one of the richest floras in the world with over 2991 genera of flowering plants (Karthikeyan, 2009). The flora of Gopegarh is an immense bio-diversity area. In the Gopegarh the soil is laterite, the annual rain fall is 1500 mm to 1750 mm and temperature in winter 10^0 C, in the summer 43^0 C and in rainy season 32^0 C - 35^0 C. So changeable environmental factor, biotic factor, several other threats create a pressure on the flora resulting in the extinction of some species from this area. In the deciduous forest plenty of vegetation of the past becoming dry bare rocky area following year after year. The main objectives of my work are to take initiative to study the following –

1) To identify the habitats for local flora
2) To study the ecological status
3) To identify the floral which are ethno medicinal and dye yielding values
4) Study the different endangered plant species

II. MATERIALS AND METHODS

Investigation of various localities of Gopegarh of Paschim Medinipur district in the state West Bengal of India was explored during 2015-2016 in three particular seasons like monsoon, winter and summer. Collecting trips were planned in order to cover the diversity of various herbs, shrubs and tree taxa in relation to dye yielding, ethno medicinal and endangered criteria. Collecting the specimens from the studied area were processed for preparation of herbarium for identification of species. Oral interviews helped to know the local plant name, parts used for folk medicinal values and dye yielding value. But the careful study, critical investigation and cross checking were done with the specimen kept in CAL herbarium (CNH), BSI, Shibpore, Howrah. Relevant literature, publications, book by D. Prain, Vol-I, II, 1903 were consulted for the preparation of article.

III. RESULTS

Interesting floral diversity and vegetation due to its variable topography, Soil and climate were seen in the vegetation of Gopegarh

Table-1: Dye Yielding Plants

SL. No.	SCIENTIFIC NAMES	FAMILY	DYE TYPE
1	Indigoferatinctoria Linn.	Papilionaceae	Blue
2	Jatrophacurcas Linn.	Euphorbiaceae	Dark Blue
3	Acacia catechu(L.f)Willd	Mimosoideae	Reddish Brown
4	Aeglemarmelos (Linn.) Correaex.Roxb	Rutaceae	Yellow
5	Buteamonosperma (Lam.), Kuntze	Fabaceae	Blue
6	Clitoriaternatea Linn.	Fabaceae	Blue
7	PeristrophetinctoriaNees.	Acanthaceae	Red
8	Tectona grandis Linn.	Verbenaceae	Red

Table-2 Endangered Plants

SL. No.	SCIENTIFIC NAMES	FAMILY
1	Abutilon indicum (Linn.) Sweet	Malvaceae
2	Acalyphaindica Linn.	Euphorbiaceae
3	Helicteresisora Linn.	Sterculaceae
4	Hibiscus vitifolius Linn.	Malvaceae
5	Indigoferatinctoria Linn	Papilionaceae
6	Rauvolfiatetraphylla Linn	Apocynaceae
7	Sesbania grandiflora Pers.	Papilionaceae

Table-3: Ethno Medicinal PlantsDicot

Sl. No.	SCIENTIFIC NAME OF PLANTS	F A M I L Y	AILMENTS
1	Achyranthesaspera Linn.	Amaranthaceae	Fistula, Obesity
2	AdhatodaZeylanicaMedic	Acanthaceae	Blood purifier, Jaundice
3	Ageratum conyzoides Linn.	Asteraceae	Anti dysenteric
4	Aeglemarmelos	Rutaeae	Dysentery, Chronic diarrhoea
5	Alangiumsalvifolium (Linn.f) Wanger.	Alangiaceae	Arthritis, Loose stool
6	Alstoniascholaris (Linn.) R.Br.	Apocynaceae	Fever, Malaria, Ulcer
7	Ammaniabaccifera Linn.	Lythraceae	Rheumatic pain, Ring worm
8	Andrographisechioides (Linn.) Ness in Wall	Acanthaceae	Dysentery, Urinary tract infection
9	Andrographispaniculata(Burm.f.) Wall.ex Ness.	Acanthaceae	Diabetes, Leprosy Contraceptive, Sedative
10	AzadirachtaindicaA.Juss	Meliaceae	Tooth ache, Joint pain
11	Barleriapronitis Linn.	Acanthaceae	Bleeding piles, Burning
12	Bauhinia acuminata Linn.	Caesalpinaceae	sensation Ulcer, Healing wounds
13	Bauhinia purpurea Linn.	Caesalpinaceae	Headache, Swelling
14	Blumealacera (Burm.f) DC.	Asteraceae	Dysentery, Diarrhoea
15	Bombaxceiba	Bombacaceae	Hepato protective
16	Boerhaaviadiffusa	Nyctaginaceae	High blood pressure,
17	Bryophyllumpinnatum (Lam.) Kurz	Crassulaceae	Constipation Skin disease, Diabetes
18	Calotropisgigantia(Linn.)R.Br.ex Ait	Asclepiadaceae	Inflammatory disease, Ear
19	Cleome gygandra Linn.	Capparaceae	pain, Carminative

			Appetite, Dysentery
20	Cleome viscosa Linn.	Capparaceae	Diuretic, Eczema
21	Cocculushirsutus (Linn.) Diels	Menispermaceae	Asthma, Skin disease
22	Datura metal Linn.	Solanaceae	Opthalmic, Digestive
23	Eclipta alba (Linn.) Hassk.	Asteraceae	Urinary trouble, Increase
24	EmblicaofficinalisGaertn.	Euphorbiaceae	sperm count
			Skin wound, Common cold
25	Eupatorium odoratum Linn.	Asteraceae	Jaundice, Asthma
			Blood purifier
26	Euphorbia hitra Linn.	Euphorbiceae	Excessive sweating, Blood
27	Evolvulusnummularius(L.) L.	Convolvulaceae	sugar
28	Gymnema sylvestre (Retz.) R.Br. ex Schultes.	Asclepiadaceae	Amoebic dysentery, Liver disorder
29	Halarrhenaantidysenterica(Heyne ex Roth.)A.DC	Apocynaceae	Diuretic, Night blindness
			Gastritis, Asthma,
30	Heliotropiumindicum Linn.	Boraginaceae	Oligospermia
31	Hemidesmusindicus (Linn.)R.Br.	Asclepiadaceae	Paralytic affection, Rheumatism
32	Jatrophagossypifolia Linn.	Euphorbiaceae	Skin itches, Asthma, Leprosy
33	Lantana camara Linn. Var. aculeateMonldenke.	Verbenaceae	Appetite, Poultice Diuretic, Analgesic
34	LeucaslavandulaefoliaJ.E.Smith	Lamiaceae	TB, Low sperm count
35	Mikaniamicrantha H.B.K.	Asteraceae	Cough, Cold, Bronchitis
36	MadhucalatifoliaLinn.	Sapotaceae	Lever disorder, Anti
37	Ocimumbasilicum Linn.	Lamiaceae	helmintic
38	Pergulariadaemia (Forsk.) Choiv	Asclepiadaceae	Piles, Sterility in women
			Rheumatism, Worm
39	RauvolfiatetraphyllaLinn.	Apocynaceae	infestation
40	Ricinuscommunis Linn.	Euphorbiaceae	Measles, Blood purifier
			Asthma, Cough, Cold
41	Solanumnigrum Linn.	Solanaceae	Anaemia, Appetite, Erectile
42	SolanumsurattenseBurm.f.	Solanaceae	dysfunction
43	Strychnosnux-vomica Linn.	Lrganiaceae	Anti coagulant, Skin disease
			Asthma, Diuretic
44	Tridaxprocumbens Linn.	Asteraceae	Leprosy, Ulcer, Antipyretic
			Rheumatism, Fever
45	Terminaliaarjuna(Roxb.) Wight &Arn.	Combretaceae	Ear pain, Diabetes, Obesity
46	Tephrosiapurpurea (Linn.) Pers	Fabaceae	Sedative, Diuretic
47	Vernoniacinerea (Linn.) Less.	Asteraceae	
48	Vitexnegundo Linn.	Verbenaceae	
49	Xanthium strumarium Linn.	Asteraceae	

Monocot

SL. No.	SCIENTIFIC NAME OF PLANTS	FAMILY	AILMENTS
1	Aloevera (Linn.) Burm.f.	Liliaceae	Constipation, UV radiation protection
2	AsperagusracemosusWilld	Liliaceae	Urine output
3	Cynodondactylon (Linn.) Pers.	Poaceae	Immunity
4	Cyperusbrevifolius (Rottb.) Hassk	Cyperaceae	Stomach disorder
5	Cyperusrotundus Linn.	Cyperaceae	Vomiting,Diarrhoea, Piles
6	DioscoreabulbiferaLinn.	Dioscoreaceae	Leprosy, Tumour
7	Dioscoreaoppositifolia Linn.	Dioscoreaceae	Lower blood sugar
8	PandanusfasicularisLamk.	Pandanaceae	Diabetes
9	Smilax zeylanica Linn.	Smilaceae	Syphilis, Blood purifier, Skin disease

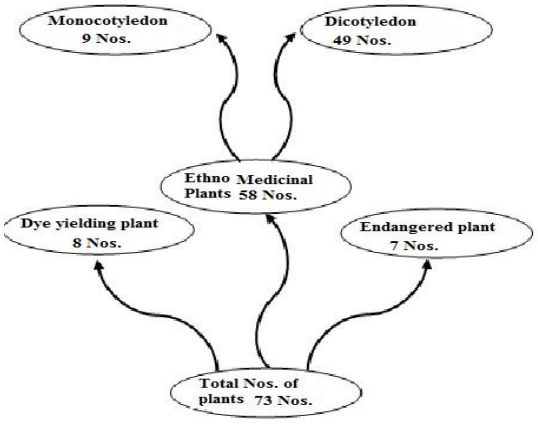

Figure : Numerical Representation of Angiospermic Floral Diversity

Discussion: This review focuses on the recent status of diversity of flowering plants in relation to the major threats to its continued persistence and the priority action for its conservation. The angiosperm diversity was studied in this area total no. of 64 species belonging to 27 families under dicotyledon and total no. 9 species belonging to six family of monocotyledon were recorded during this study. Table-1 showed the selected dye yielding plants(8 nos.) under 6 families which are less known in this Gopegarh can be efficiently use as sources of dye for colouring cotton clothes. In the table-2 it is studied that 7 species under 6 families

Are being rare or endangered. From table-3 it is studied that the 49 species belong to dicotyledons and 9 species belong to monocotyledons are of diverse medicinal importance to local people.

IV. CONCLUSION

Gopegarh locality is under the East Midnapore Forest Division, Paschim Medinipur District which is mainly forest dominated. Vegetation is the result of interaction various biotic and climatic as well as edaphic factors. Some trees are dominant forming the canopy and others are exploited or eliminated due to environmental barrier or by animal including human beings. From the above floristic study it is recorded that 58 species belong to 29 families are ethno medicinal, 8 species belong to 6 families are dye yielding and 7 species belong to 5 families are endangered. In the present day situation medicinal plants as well as vegetable drug are available as cheap and accessible source for developing countries. From this study people of this are more conscious about herbal drug and also noted that immediate action is required to conserve the floristic diversity because less attention for the conservation of plant diversity and animals.

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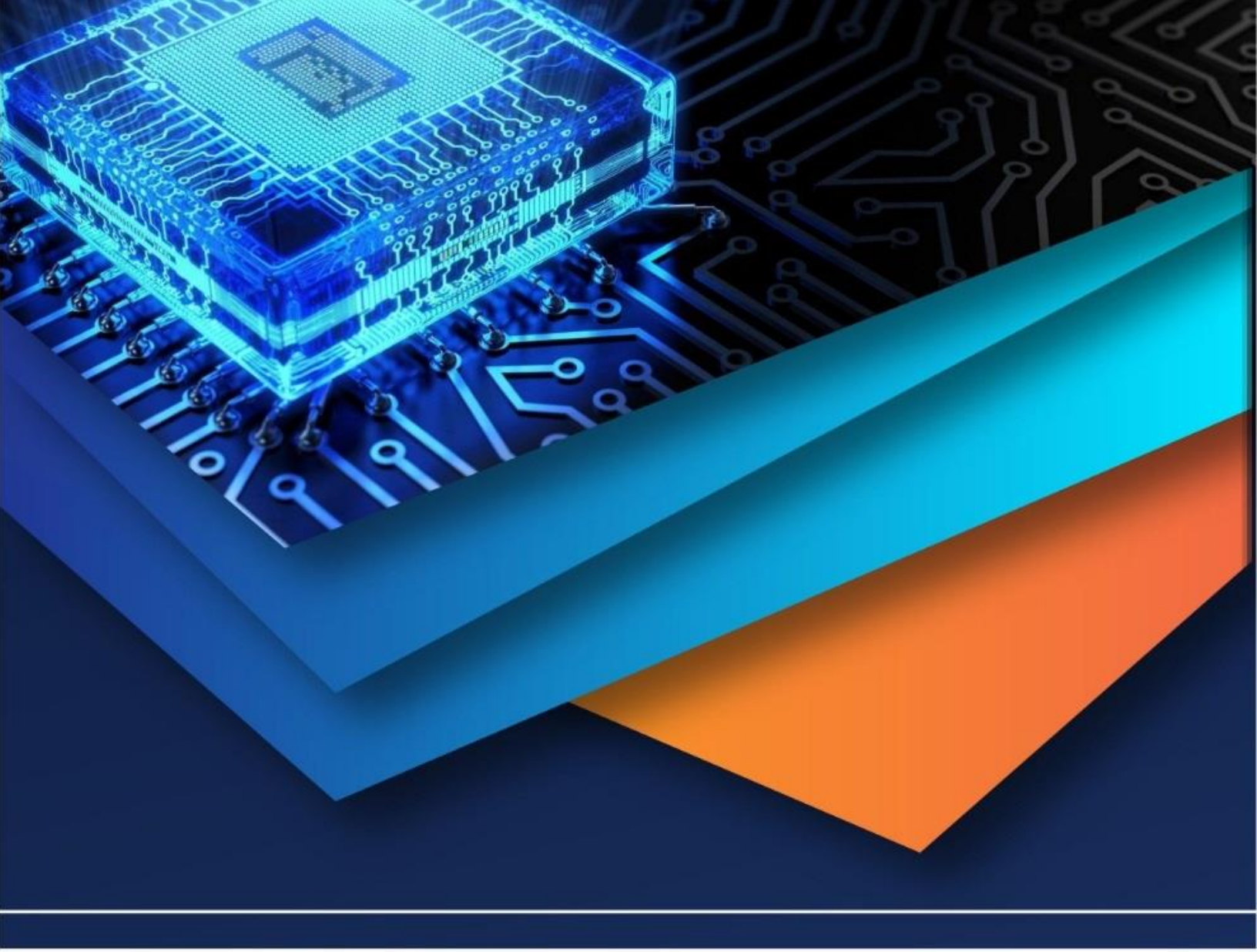

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