

EVALUATION OF FLORISTIC DIVERSITY OF DISTRICT AMRITSAR, PUNJAB

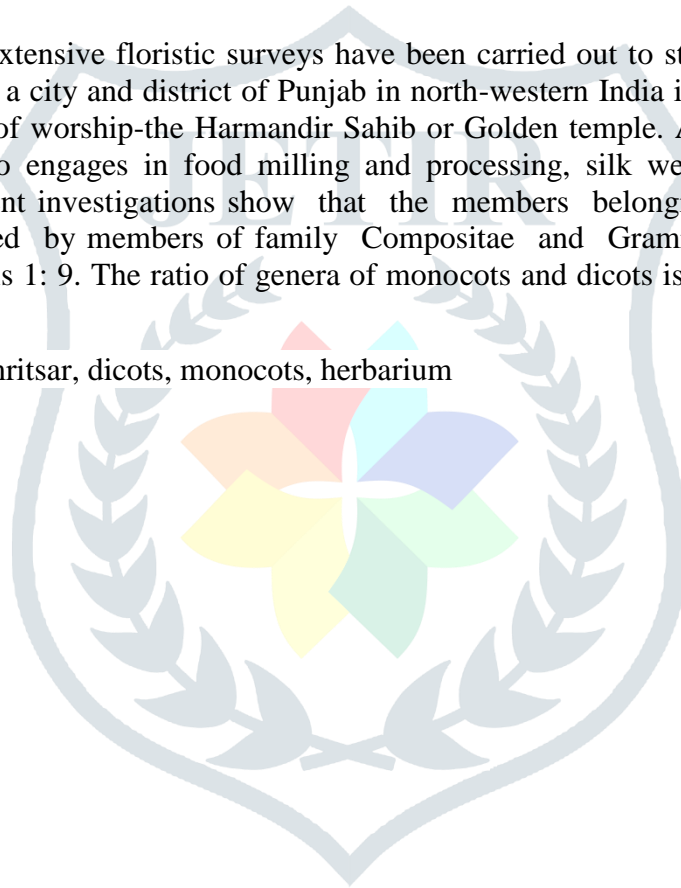
MANINDER*¹, MEERA¹

1 DEPARTMENT OF BOTANY, SRI GURU GRANTH SAHIB WORLD UNIVERSITY, FATEHGARH SAHIB, PUNJAB, INDIA

ABSTRACT

Presently, intensive and extensive floristic surveys have been carried out to study the floristic diversity of holy city Amritsar. Amritsar, which is a city and district of Punjab in north-western India is also a centre of Sikhism and the site of the Sikhs principal place of worship-the Harmandir Sahib or Golden temple. Amritsar is a centre for the textile and chemical industries and also engages in food milling and processing, silk weaving, tanning, canning, and the manufacture of machinery. Present investigations show that the members belonging to family Leguminosae are dominant in this area followed by members of family Compositae and Gramineae. The ratio of number of families of monocots and dicots is 1: 9. The ratio of genera of monocots and dicots is 1:11. The ratio of monocots and dicots species is 1: 11.3.

Keywords: Floristic diversity, Amritsar, dicots, monocots, herbarium



INTRODUCTION

Amritsar is a city and district of Punjab in north-western India. It lies about 15 miles east of the border with Pakistan. Amritsar is the largest and most important city in Punjab and is a major commercial, cultural, and transportation centre. It is also the centre of Sikhism and the site of the Sikhs principal place of worship-the Harmandir Sahib or Golden temple. A short distance away from the Golden temple complex is a spacious park, Jallianwalla Bagh, where on April 13, 1919, British colonial government troops fired on a crowd of unarmed Indian protesters, killing 379 of them and wounding many more. The site of the Massacre of Amritsar-as that incident came to be called –is a national Monument. Amritsar is a centre for the textile and chemical industries and also engages in food milling and processing, silk weaving, tanning, canning, and the manufacture of machinery.

India in its floristic composition represents world as India has varied ecological types of vegetation. The diversity of forms is one of the most important bases of life. Although, the study of biodiversity can be traced back as far as Aristotle but recent studies in loss of habitats revealed that extinction is going on all levels of biological organization from alleles to entire local ecosystems. The knowledge of vegetation and floristic composition of any region is a prerequisite to the study of various ecosystems. Species richness i.e. number of species present in a given area or country and finally in the whole world is still the most straight forward and most useful measure of biodiversity. It has been realized by many workers that the study of local or regional flora is of much more significance than those covering the bigger areas because explorations can be carried out intensively in smaller areas. Therefore, work was carried out on the species diversity of Distt. Amritsar Area of Punjab.

MATERIAL AND METHODS

The plants were collected while they were in the flowering stage or the fruiting stage. The plants were so collected that as far as possible all morphological details including the flower/fruit are retained in the specimen. Specimen number, date of collection, locality of collection, habit, habitat, flower colour and any special feature of the plant if present, were noted.

To protect them infection or attack by insects and fungi, specimens were sprayed with 10% formaldehyde and then specimens were placed in polythene bags. After this, the specimens were sealed air-tight with cellophane in the same polythene bags. This process also reduces the plant parts falling down during drying, because almost immediate death of plants does not allow the formation of abscission layer in deciduous plants.

The collected specimens were taken out from the polythene bags usually after 20-24 hours. These specimens were then replaced in new blotting sheets and placed one above the other in wooden plant press to apply a uniform pressure to the material. After the process was completed, the plants were kept in dry blotting sheets and sealed in the polythene envelopes to save them from moisture.

The identification of the specimens collected was done with the help of available literature. The field notes regarding the particular specimens were also consulted for this purpose.

The collected and processed plants were mounted on standard sized herbarium sheets. These sheets were properly labelled with the species names as followed in the description of this work.

RESULTS**SYSTEMATIC TREATMENT****List of total plants:-****DICOTYLEDONS**

Family

Plant

Ranunculaceae	<i>Ranunculus scleratus</i>
Papaveraceae	<i>Argemone mexicana</i>
Cruciferae	<i>Coronopus didymus</i> <i>Sisymbrium irio</i>
Caryophyllaceae	<i>Stellaria media</i>
Malvaceae	<i>Abutilon indicum</i> <i>Malvestrum coromandalianum</i> <i>Sida cordifolia</i>
Zygophyllaceae	<i>Tribulus terrestris</i>
Leguminosae	<i>Sisbania indica</i> <i>Trifolium fragiferum</i> <i>Melilotus indica</i> <i>Cassia occidentalis</i> <i>Medicago indica</i>
Cucurbitaceae	<i>Cucumis melo</i> <i>Coccinia indica</i>
Compositae	<i>Sonchus arvensis</i> <i>Ageratum conyzoides</i> <i>Tridax procumbens</i>
Primulaceae	<i>Anagallis arvensis</i>
Convolvulaceae	<i>Convolvulus arvensis</i>
Solanaceae	<i>Solanum nigrum</i> <i>Petunia hybrida</i>
Acanthaceae	<i>Ruellia simplex</i>
Nyctaginaceae	<i>Boerhaavia diffusa</i> <i>Boerhaavia chinensis</i> <i>Mirabilis jalapa</i>
Amaranthaceae	<i>Amaranthus viridis</i> <i>Achyranthus aspera</i> <i>Chenopodium album</i> <i>Digera muricata</i>
Polygonaceae	<i>Polygonum plebium</i>



Rumex dentatus

Euphorbaceae

*Euphorbia hirta***MONOCOTYLEDONS**

Graminae

*Cyanodon dactylon**Dactyloctenium aegyptium**Phalaris minor***DISCUSSION**

The monocots and dicots that have been collected from this area are present in the ratio of 1:9. There are 34 species of dicotyledons belonging to 33 genera and 3 species of monocots. The research that we have gone through shows that the members belonging to family Leguminosae are dominant in this area followed by members of family Compositae and Gramineae. Statistical analysis of no. of families no. of genera, no. of species is shown in the table given below :-

S.No	CATEGORY	No. of GENERA	SPECIES
1	DICOTYLEDONS	33	34
2	MONOCOTYLEDONS	3	3

The ratio of no. of families of monocots and dicots is 1: 9. The ratio of genera of monocots and dicots is 1:11. The ratio of monocots and dicots species is 1: 11.3.

Nair (1978) observed that in the flora of Punjab, monocots are poorly represented for the families Gramineae and Cyperaceae. According to him, of the 177 species of monocots, 103 species are belonging to the family Graminae and 35 species are belonging to the family Cyperaceae. Jain & Verma (1982) observed that in the flora of Haryana state, 81 and 45 species of monocots are belonging to the families Gramineae and Cyperaceae. In the present study, also of the eight species, 5 belong to the family Gramineae and from family Cyperaceae, Liliaceae and Commelinaceae are represented by 1 species each. This study supports the observation of Nair (1978) that monocots are poorly represented in this region.

In all earlier works such as Duthie (1903-1929), Maheshwari (1963) and Nair (1978), family Gramineae ranked first followed by family Leguminosae. However, Jain & Verma (1982), observed that in the Haryana state, family Leguminosae ranked first followed by family Gramineae. In the present study, the first position is occupied by family Leguminosae followed by family Compositae and Gramineae. This observation is somewhat similar to Main (1947), who

showed the dominant families in the Indian flora in the order: Leguminosae, Graminae, Euphorbiaceae followed by families like Acanthaceae, Compositae, Cyperaceae and Labiatae.

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