



Survey of wall flora in Gingee fort and uncared gopuras in Gingee taluk, villupuram district

S.Rajalakshmi, Dr. K . Shanthi.

P.G & Reasearch Department of Botany Govt Arts College, Thiruvannamalai,
Tamil nadu, India.

In order to study the diversity of fort wall and temple tower, a survey has been under taken at three different temples, Gingee fort . from Gingee Taluk, Villupuram Dt., A total available (56) species are Herbs, shrubs, Trees and Climbers were identified from the temple towers and gingee fort walls maximum number of 56 species was recorded at gingee fort walls. minimum number of 7 species was recorded at Sri Ranganatha Temple, Kamalakanniamman temple and Pattabiraman Temple. belong to the family, Moraceae, Meliaceae, Rubiaceae, Capparidaceae, Rubiaceae,Areaceae Malvaceae, Amarantheaceae Verbenaceae,Astraceae and Euphorbiaceae dominated on the wall of the gingee fort and temple towers . The abundance of flora in these temples might be due to favourable PH, macro and micro nutrients prevailing on the templs. To avoid such a situation a wise step is follow the principle prevention is better than cure control methods of the wall flora comprises mechanical and chemical methods.

Key words : Survey of flora, Temple Towers wall flora of gingee fort.

INTRODUCTION

Tamilnadu has a great tradition of history and culture. In ancient, early medieval and medieval period, a number of dynasties ruled over the Tamil Nadu. Many towns and cities of Tamil Nadu are associated with beautiful monuments. Gingee is one of those places in Tamil Nadu. GingeeFort also known as Chenji or Jinji or Senchi in Tamil Nadu.

The Gingee Ranganathan is ranked as one of the most beautiful Vishnu idols anywhere. The naturally strong rock where the fortress is is further strengthened by the construction of embrasure walls and gateways along all possible shelves and precipitous edges. It forms the principal fortification. Seven gates have to be traversed before reaching the citadel. This citadel contains many important buildings apart from the living quarters of the royalty, like the stables, granaries, and meeting halls for the public, temples, mosques, shrines and pavilions jostling each other. After the fort passed into British hands, it did not see any further action.

The fort at Gingee was declared a National Monument in 1921 and was under the Archeological Department. Recently, the Tourism Department of India has tried to popularise this remote and oft-forgotten fort. Gingee today, with its ruined forts, temples and granaries, presents a different picture from the glorious splendor of its bygone days. But the remains of that glorious past speak volumes about the numerous invasions, warfare and bravery that it witnessed. The fort is well maintained by the Archeological Department, the surrounding looks clean and good, and it's a must-visit place in Tamil Nadu.(Jinji 2002).

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The walls under investigation host vegetation of different growth forms, ranging from mosses and lichens, to ferns and herbs, and to shrubs and trees. The wall plants are the result of spontaneous colonization unassisted by human actions. Since the walls are situated within the urban and rural landscape, the composition of the wall flora is strongly influenced by the surrounding ornamental, ruderal, and semi natural vegetation types. These results are in accordance with already published data on the central European and the Mediterranean wall flora (Woodell 1979, Krigas et al. 1999, Brandes 2002, Pavlova and Tonkov 2005, Cheshmedzhiev and Vassilev 2009, Altay et al. 2010, Kelcey and Müller 2011). The number of annual species is bigger at the top of the wall and on the vertical wall surface and there are fissures and white perennials which are typical for the wall base and the surrounding area. The species diversity decreases and the percentage of typical rock xerophytes rise from the base to the top of the walls. This is due to the favourable environmental conditions in the basal zone (more humidity and nutrients are available there). The northern exposure of the walls leads to more affluent flora and vegetation Brandes D.1996,Darlington A.1981. . The old walls actually serve as a seed bank of alien plants. This data shows a similarity to the data about the wall flora of Central and Eastern Europe (Duchoslav 2002).

Deep rooted plants can be destructive. Although their roots are weak at the beginning of growth, they become stronger in time and cause widening of cracks. Most of these plants absorb little water from the substrate, but absorb it from the air . Although wall plants are often aesthetically appealing, the local municipalities occasionally clean up the walls to prevent damage by the plants. It would be more preferable if the clean-up was more selective by allowing for plant type and degree of damage.

Materials and methods

This present investigation comprises

- (1) To find out wall florals which growing on the Temle towers, Fort rock walls
- (2) To find out what are the herb, shrub ,Climbing shrub and tree species as wall florals.
- (3) How to eradicate wall flora from the walls of fort, temple towers.

Nature has provided needs with a number of devices that help them to be disseminated widely. The agencies says that facilitate the dispersal of weed seeds far and wide are water ,wind and animals, including man. They have the remarkable capacity to germinate undervaried condition ,but very characteristically .They are seasons in regular succession year after year. To avoid such a situation a wise step is to follow the principal prevention is better than cure.

Control methods of wall flora

Measure against wall flora comprise mechanical and chemical means.

Mechanical or Physical methods

Hand pulling ,hoeing burning ect., are example of physical methods of weed (wall flora) control ,involving the use of physical energy through implements.

Chemical methods

Chemical weed (wall flora) control can be adopted quite in time and in situation and under conditions which make manual or mechanical weeding difficult .Chemical weed

control is an important alternative. This method is quite effective and efficient (Salarzai,2001). A weedicide / herbicide is a the chemical that kills the plants or habits their growth . The selective herbicides are classified into foliage application and soil fumigants. In our study focuses the removal of wall flora (as weed) from the fort. So we can the foliage application type of herbicides .The are further divided into contact herbicides and translocated herbicides.

OVER VIEWS OF GINGEE FORT TEMPLE TOWERS

Fig-A



Fig-B



Fig-C



Fig-D



Fig-E



Fig-F



Fig-G



Fig-H



FIELD OBSERVATION

S.no	Botanical Name	Vernacular Name	Family	Habit
1.	<i>Pavonia odorata</i>	Kurunthotty	Malvaceae	Herb
2.	<i>Sida acuta</i>	Arivalmanaipoondu	Malvaceae	Herb
3.	<i>Phoenix syvertris</i>	Eechamaram	Areaceae	Tree
4.	<i>Boerhaavia diffusa</i>	Mukkirattai	Nyctaginaceae	Herb
5.	<i>Sesamum indicum</i>	Elluchedy	Pedaliaceae	Herb
6.	<i>Aerva lanta</i>	Perumpoozhi	Amaranthaceae	Herb
7.	<i>Tridax procumbens</i>	Vettukayapoondu	Asteraceae	Herb
8.	<i>Lantana camera</i>	Unnichedy	Verbenaceae	Shrub
9.	<i>Coccinia india</i>	Kovaikkay	Cucurbitaceae	Climbing
10.	<i>Sesbania grandiflora</i>	Akathikirai	Fabaceae	Tree
11.	<i>Caesalpinia bunducella</i>	Kazharchikkay	Caesalpinaceae	Herb
12.	<i>Acalypha indiaca</i>	Kuppaimeni	Euphorbiaceae	Herb
13.	<i>Pongmia glabra</i>	Ponkam	Fabaceae	Tree

14.	Merremia emarginata	Elikkathilai	Convolvulaceae	Herb
15.	Cynodon dactylon	Arukampul	Poaceae	Herb
16.	Ipomoea staphylina	Oonankody	Convolvulaceae	Climbingshrub
17.	Trichodesma indica	Kavizhthumpai	Boraginaceae	Herb
18.	Cleome viscosa	Naykaduku	Capparidaceae	Herb
19.	Mullugo puntaphylla	Mullugo	Aizoaceae	Herb
20.	Memordica charantia	Paavai	Cucurbitaceae	Climber
21.	Azadirachta indica	Veppamaram	Meliaceae	Tree
22.	Anisomeles malabarica	Peyverutty	Lamiaceae	Herb
23.	Passiflora edulis	Passiflora	Passifloraceae	Climber
24.	Chloris barbata	Pul	Poaceae	Herb
25.	Imperata cylindrica	Tharuppai	Poaceae	Shrub
26.	Abutilon indicum	Thuthi	Malvaceae	Shrub
27.	Calotropis gigantea	Erukku	Asclepiadaceae	Shrub
28.	Ricinus communis	Aamanakku	Euphorbiaceae	Herb
30.	Euphorbia hirta	Ammanpacharisi	Euphorbiaceae	Herb
31.	Cassia angustifolia	Nilavarai	Caesalpiniaceae	Tree
32.	Thamarindus indica	Puliyamaram	Caesalpiniaceae	Herb
33.	Lipia nodiflora	Podulthalai	Verbenaceae	Herb
34.	Leucas aspera	Thumpai	Lamiaceae	Herb
35.	Tribulus terrestris	Nerinchmul	Zygophyllaceae	Herb
36.	Ageratum conyzoides	Mukkuthipoo	Astraceae	Herb
37.	Solanum nigrum	Manathakkali	Solanaceae	Climber
38.	Clitoria ternatea	Sagkupoo	Fabaceae	Climber
39.	Cocculus hirsutus	Kattukkody	Menispermaceae	Climber
40.	ipomoea staphylina	Oonankody	Convolvulaceae	Climber
41.	Prosopis chinensis	Velikathan	Mimosaceae	Tree
42.	Morinda tinctoria	Nunamaram	Rubiaceae	Tree
43.	Madhuca indica	Illuppai	Sapotaceae	Tree
44.	Ficus religiosa	Arasamaram	Moraceae	Tree
45.	Phyllanthus amarus	Kizhanelli	Euphorbiaceae	Herb
46.	Mullugo nudicaulli	Parpadakam	Aizoaceae	Herb
47.	Enicostemma littorale	Vellaruku	Gentianaceae	Herb
48.	Cleome viscosa	Naykaduku	Capparidaceae	Herb
49.	Cassia angustifolia	Nilavarai	Caesalpiniaceae	Herb
50.	Alternanthera sessilis	Ponnagkanni	Amaranthaceae	Herb
51.	Achyranthes aspera	Nayyiruvu	Amaranthaceae	Herb
52.	Cynopsis axillaris	Kanaguzhal	Commelinaceae	Herb
53.	Ocimum sanctum	Thulasi	Lamiaceae	Herb
54.	Borassus flabellifer	Panai	Arecaceae	Tree
55.	Celosia argentea	Pannaikirai	Amaranthaceae	Herb
56.	Chrysanthemum			
57.	Crotalaria retusa	Kiluliluppai	Fabaceae	Herb

SRI RANGANATHA TEMPLE

S.No	Botanical Name	Vernacular Name	Family	Habit
1.	Ficus religiosa	Arasamaram	Moraceae	Tree
2.	Ficus benghalensis	Aalamaram	Moraceae	Tree
3.	Azadirachta indica	Veppamaram	Meliaceae	Tree
4.	Morinda tinctoria	Nunamaram	Rubiaceae	Tree
5.	Cleome viscosa	Naykaduku	Capparidaceae	Herb
6.	Coccinia indica	Covaikkay	Cucurbitaceae	Climber
7.	Randia spinosa	Mathukkarai	Rubiaceae	Shrub

KAMALAKANNIAMMAN TEMPLE

S.no	Botanical Name	Vernacular Name	Family	Habit
1.	Ficus religiosa	Arasamaram	Moraceae	Tree
2.	Ficus benghalensis	Aalamaram	Moraceae	Tree
3.	Azadirachta indica	Veppamaram	Meliaceae	Tree
4.	Morinda tinctoria	Nunamaram	Rubiaceae	Tree
5.	Cleome viscosa	Naykaduku	Capparidaceae	Herb
6.	Coccinia indica	Covaikkay	Cucurbitaceae	Climber
7.	Randia spinosa	Mathukkarai	Rubiaceae	Shrub

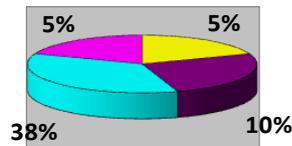
PATTABIRAMAN TEMPLE

S.no	Botanical Name	Vernacular Name	Family	Habit
1.	Ficus religiosa	Arasamaram	Moraceae	Tree
2.	Ficus benghalensis	Aalamaram	Moraceae	Tree
3.	Azadirachta indica	Veppamaram	Meliaceae	Tree
4.	Morinda tinctoria	Nunamaram	Rubiaceae	Tree

RESULT AND DISCUSSION

SHOWING THE PIE DIAGRAM

A Total number of 57 plants species were observed on fort walls and temple towers.



Herb	38%
Shurbs	5%
Climber	5%
Trees	10%

A total number of 57 plants species were observed on walls their surrounding area fort wall and temple towers. Fifty four Species are belongs Dicotyledons and Six Species are belongs Monocotyledons. Thirty eight Species Herb plant are available in the fort wall and Five Speices Shurb plant are available in the fort wall campus. Besides, Tree plant Species are also available in the rock fort wall, Climber Six Species are available in the fortwall.

Temple towers Trees are most commonly occupies the temple towers. Specially Moraceae family apart from that some Herb, Shurb and Climbers are available in the temple towers. 53 species have been recorded on the fort walls area, 7 Species have been found on temple towers.

CONCLUSION

The archeological monuments speak the Indian culture. Among the monuments Gingee is important one, because it is the sign of victory. So, to avoid or control the wall floras we can us the need to control measures i.e., mechanical or chemical methods of weed control. In that way to eradicate the wall floras on the fort walls and towers. In the mechanical method small herbaceous plants are easily pulled out from the walls. But the woody species are not pulled out easily and their roots are remains in the walls. In that situation the chemicals which can effectively control the wall flora.

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