



Cacti Diversity in Chennai City, Tamil Nadu, India

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ABSTRACT

Cacti are fascinating group of succulents belonging to the family Cactaceae. A preliminary attempt has been made to document the cacti grown in and around the city of Chennai, the capital of Tamil Nadu state. As there is no comprehensive account on the diversity and distribution of cacti in India, this study has been conducted to find out the diversity of cactus in and around Chennai. Nearly, 151 taxa belonging to 53 genera have been documented from home gardens, parks and nurseries situated across Chennai. Of which 148 taxa have been grown/cultivated as ornamentals for their shapes, orientation of spines and for beautiful blooms and edible fruits. Apart from the exotic taxa, 3 species of naturalized cacti have been recorded throughout Chennai and also grown for fencing. The growth habit varies continuously due to environmental conditions and hence utmost attention has been given to describe and to enumerate them. As the present study on cacti in Chennai city is almost a pioneering attempt still more explorations are to be extended in future.

Keywords: Cactus, Chennai, Habit, Taxonomy

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INTRODUCTION

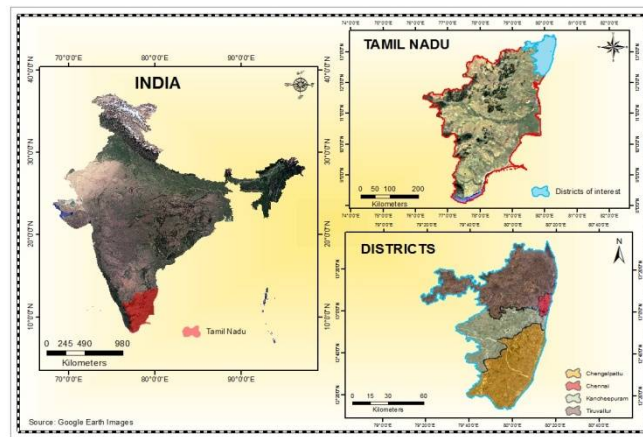
The family Cactaceae comprises large group of succulents with 144 genera [1] placed under the order Caryophyllales. The word cactus is derived from a Greek word 'kaktos'- spiny plant [2]. Members of this family are generally distributed in Neotropics and consist of small plants with single ball-like structure to larger trees including some of the parasitic and epiphytic forms. These members grow in xeric environment with a limited supply of water and can thrive well in deserts [3]. They are extremely variable in size, shape, colour, flowers and fruits with notable adaptations. Starting from Linnaeus to de Candolle most of the studies documented the diversity of cacti throughout the world. Many of the Cactaceae members have been studied in the horticultural perspective by the plant growers. Who made a comprehensive study on the cultivated plants recorded 37 genera worldwide [4]. Some of the extensive studies on Cactaceae in New World and a comprehensive checklist of Cactaceae of 35 countries documented the cacti diversity in the world [5]. Many of the cacti growers introduced cacti in different parts of the world including India. For the first time 33 *Opuntia* clones were introduced by Dr. Peter Felker, Texas, USA in 1987 at the Nimbkar Agricultural Research Institute at Phalton in Satara district of Maharashtra, from where the cultivation of Cactaceae (*Opuntia*) started in India documented about 130 genera and 1500 species in India and all are native to New World [6]. Central Arid Zone Research Institute (CAZRI) is an agency for cactus research in India supported by the International Centre for Agricultural Research in the Dry Areas (ICARDA) added 70 cactus species in 2012 and 15 species in 2013 to the existing members of family Cactaceae [7]. Cactus germplasm was maintained at Pune as part of the BAIF (Bharatiya Agro Industries Foundation) Development Research Foundation, which recorded 82 species as accessions during 2015-2017. A thorough study on the diversity of succulent plants in Ahmedabad, Gujarat listed 73 species, including 20 cacti [8]. There is no comprehensive study on Cactaceae in Chennai, except a few floristic studies conducted in private campus and reserve forest areas. For instance, reported 449 flowering taxa belonging to 353 genera [9], including 3 cacti taxa namely *Acanthocereus tetragonus*, *Opuntia ficus-indica* and *O. stricta* var. *dillenii* from Theosophical Society campus at Adyar, and the floristic study of Nanmangalam Reserve Forest recorded about 449 species belonging to 313 genera, which also includes 4 cacti namely *Cereus pterogonus* Lem., *Nopalea cochenillifera* (L.) Salm-Dyck., *Opuntia elatior* Mill. and *O. stricta* var. *dillenii* (Ker Gawl.) L.D. Benson [10]. Therefore, the present study documents the cacti diversity of the entire Chennai district.

MATERIAL AND METHODS

Study Area

The present investigation is carried out to evaluate the diversity of cacti found in and around Chennai (Map 1), the capital city of Tamil Nadu state. The Chennai city formerly known as Madarasapattinam is the third largest city in India and smallest district in the state lies between 13.0827° N and 80.2707° E. Most parts of the Greater Chennai come under the four major districts, viz. Chennai, Kancheepuram, Chengalpattu and Tiruvallur.

Map 1: Study area Chennai and its surrounding districts.

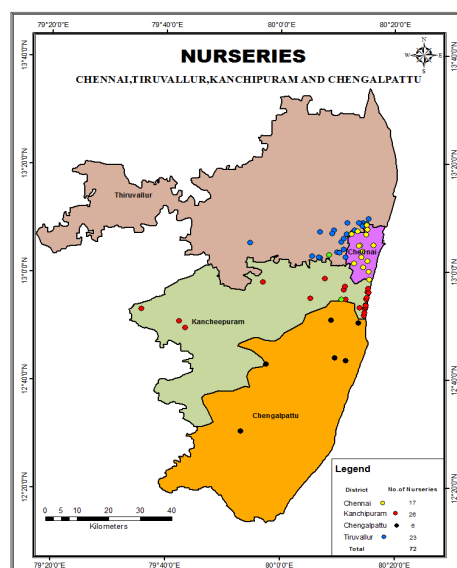


Taxonomic Study

Floristic Surveys conducted in Nurseries and local Gardens

Prior to commencement of the study, permission was obtained from the nursery owners and local gardeners in Chennai, Kancheepuram, Chengalpattu and Tiruvallur districts for surveying the diversity of cacti in different seasons. Subsequently, weekly field visits were conducted to different nurseries and gardens. A total of 72 nurseries dealing with cacti trade (Map 2) and 21 home gardens were visited during the study. The live plant specimens were collected systematically and also studied directly in the field. The growth habits were carefully examined as many of the cacti exhibit variations depending on differences in environmental conditions. Interesting cacti were photographed using DSLR camera (CANON -750 D) and Digital camera (CANON -IXUS 185).

Map 2: Locations of Nurseries visited in and around Chennai, Kancheepuram, Chengalpattu and Tiruvallur.



Identification, Nomenclature and Bibliographic Citations

The collected specimens were carefully studied and identified by using standard Floras, Monographs, research articles published in various journals and periodicals on cacti. All the taxa in Cactaceae are given in alphabetical order. Some of the doubtful plants were identified after consulting with experts. Bibliographic citations for all the taxa were given based on International Plant Names Index [11], Plants

of the World Online [12] and Tropicos [13] and other online resources such as eFloras [14] and Llife-Encyclopedia of living forms [15].

RESULTS AND DISCUSSION

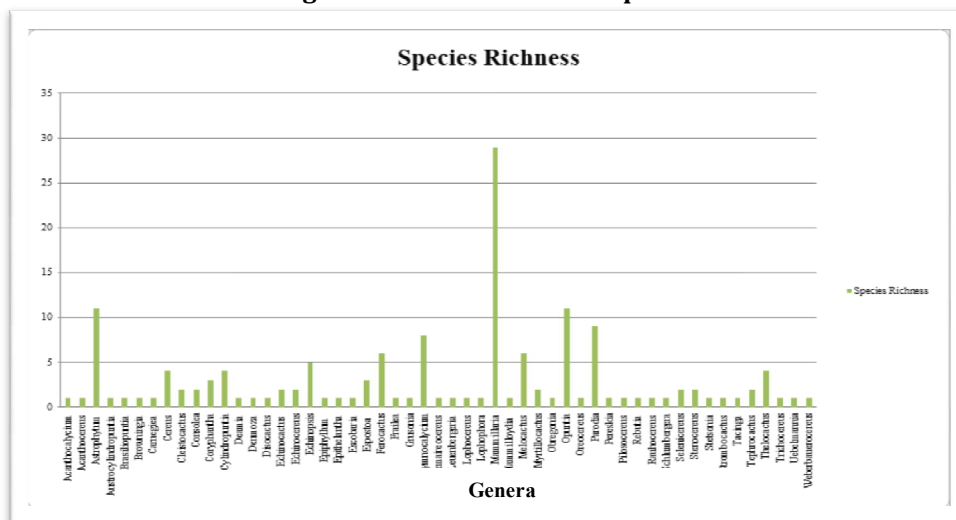
The present study enumerates 138 species, 4 subspecies and 9 varieties (Table 2) belonging to 53 genera (Table 1) that are grown in various nurseries and local gardens in and around Chennai (Plates 1–7).

Table 1: Diversity of Genera and Taxa

Sl. No.	GENERA	NUMBER OF TAXA
1	<i>Acanthocalycium</i>	1
2	<i>Acanthocereus</i>	1
3	<i>Astrophytum</i>	11
4	<i>Austrocylindropuntia</i>	1
5	<i>Brasilopuntia</i>	1
6	<i>Browningia</i>	1
7	<i>Carnegiea</i>	1
8	<i>Cereus</i>	4
9	<i>Cleistocactus</i>	2
10	<i>Consolea</i>	2
11	<i>Coryphantha</i>	3
12	<i>Cylindropuntia</i>	4
13	<i>Deamia</i>	1
14	<i>Denmoza</i>	1
15	<i>Disocactus</i>	1
16	<i>Echinocactus</i>	2
17	<i>Echinocereus</i>	2
18	<i>Echinopsis</i>	5
19	<i>Epiphyllum</i>	1
20	<i>Epithelantha</i>	1
21	<i>Escobaria</i>	1
22	<i>Espostoa</i>	3
23	<i>Ferocactus</i>	6
24	<i>Frailea</i>	1
25	<i>Grusonia</i>	1
26	<i>Gymnocalycium</i>	8
27	<i>Lemaireocereus</i>	1
28	<i>Leuenbergeria</i>	1
29	<i>Lophocereus</i>	1
30	<i>Lophophora</i>	1
31	<i>Mammillaria</i>	29
32	<i>Mammilloidia</i>	1
33	<i>Melocactus</i>	6
34	<i>Myrtillocactus</i>	2
35	<i>Obregonia</i>	1
36	<i>Opuntia</i>	11
37	<i>Oreocereus</i>	1
38	<i>Parodia</i>	9
39	<i>Pereskia</i>	1
40	<i>Pilosocereus</i>	1
41	<i>Rebutia</i>	1
42	<i>Rauhocereus</i>	1
43	<i>Schlumbergera</i>	1
44	<i>Selenicereus</i>	2
45	<i>Stenocereus</i>	2
46	<i>Stetsonia</i>	1
47	<i>Strombocactus</i>	1
48	<i>Tacinga</i>	1
49	<i>Tephrocactus</i>	2
50	<i>Thelocactus</i>	4
51	<i>Trichocereus</i>	1
52	<i>Uebelmannia</i>	1
53	<i>Weberbauerocereus</i>	1

A total of 151 taxa were documented, of which 148 are commercially important and being cultivated as ornamentals and a few species such as *Brasiliopuntia brasiliensis* (Willd.) A. Berger, *Cereus hexagonus* Mill., *C. pterogonus* Lem., *Cylindropuntia leptocaulis* (DC.) F.M. Knuth, *Opuntia dillenii* (Ker Gawl.) Haw., *O. elatior* Mill., *O. ficus-indica* (L.) Mill. and *Selenicereus undatus* (Haw.) D.R. Hunt were cultivated both as ornamentals as well as for their edible fruits. Three species such as *Acanthocereus tetragonus* (L.) Hummelinck, *Cereus pterogonus* Lem. and *Opuntia dillenii* (Ker Gawl.) Haw. have become naturalized in the wild and commonly planted as hedge plants. Most of the taxa are distributed only in 11 genera (Fig. 1): *Mammillaria* (29) followed by *Astrophytum* and *Opuntia* (11 each), *Parodia* (9), *Gymnocalycium* (8), *Melocactus* and *Ferocactus* (6 each), *Echinopsis* (5) and *Cereus*, *Cylindropuntia* and *Thelocactus* (4 each). *Coryphantha* and *Espostoa* (3 each) and 8 genera represented by 2 species each. Remaining 32 genera are represented only by single species.

Fig. 1: Distribution of Cacti species



The abundance of *Mammillaria* has taken over other genera due to its ornamental nature for their amazing array of shapes, sizes, texture and for their beautiful blooms. Apart from ornamentation, these genera are hardy and easy to grow in Chennai climate. The genera with single species may be sensitive to Chennai climate or due to rarity in collection or survival rate is less. Some genera such as *Brasiliopuntia*, *Carnegiea*, *Cereus*, *Consolea*, *Espostoa* and *Myrtillocactus* are grown for their gigantic tree-like appearance and a few genera namely *Echinocactus*, *Ferocactus* and *Melocactus* are being cultivated for their football-shaped barrel habit. *Disocactus* and *Schlumbergera* are commonly called Christmas cactus and are grown for their beautiful blooms during Christmas (December) season. The preliminary attempt that has been made to document the diversity of cacti in Chennai and its neighborhood districts resulted in reporting the cacti that are being grown or cultivated in gardens and nurseries for future references (Table 2).

Table 2: Cacti species that are documented in and around Chennai with their Botanical Name, Trade Name, Growth habit and Importance

Sl. No.	BOTANICAL NAME	TRADE NAME	GROWTH HABIT	IMPORTANCE and UTILITY
1	<i>Acanthocalycium spiniflorum</i> (K.Schum.) Backeb.	Spiny Flower Tube Cactus	Spherical to Cylindrical Herb	Cultivated as ornamental
2	<i>Acanthocereus tetragonus</i> (L.) Hummelinck	Sword-Pear Cactus	Columnar Shrub	Naturalized – Grown for fencing Fruits are edible
3	<i>Astrophytum asterias</i> Lem.	Sea Urchin Cactus	Flat Barrel Herb	Cultivated as ornamental
4	<i>Astrophytum asterias</i> Lem. var. <i>nudum</i> Y.Ito	Sand Dollar Cactus	Flat Barrel Herb	Cultivated as ornamental
5	<i>Astrophytum capricorne</i> (A. Dietr.) Britton & Rose	Goat's Horns Cactus	Columnar Herb	Cultivated as ornamental
6	<i>Astrophytum caput-medusae</i> D.R.Hunt	Medusa Cactus	Cylindrical Herb	Cultivated as ornamental
7	<i>Astrophytum myriostigma</i> Lem.	Bishop's Cap Cactus	Globular to Cylindrical Herb	Cultivated as ornamental
8	<i>Astrophytum myriostigma</i> Lem. var. <i>bicostatum</i> hort.	Two-ribbed Cap Cactus	Globular Herb	Cultivated as ornamental
9	<i>Astrophytum myriostigma</i> Lem. var.	Bishop's Hat Cactus	Globular to	Cultivated as ornamental

Sl. No.	BOTANICAL NAME	TRADE NAME	GROWTH HABIT	IMPORTANCE and UTILITY
	<i>columnare</i> Frič		Columnar Herb	
10	<i>Astrophytum myriostigma</i> Lem. var. <i>nudum</i> Frič	Bishop's Hat Cactus	Globular to Cylindrical Herb	Cultivated as ornamental
11	<i>Astrophytum myriostigma</i> Lem. var. <i>quadricostatum</i> (H. Moeller) Baum	Four-ribbed Bishop Cap Cactus	Globular to Cylindrical Herb	Cultivated as ornamental
12	<i>Astrophytum ornatum</i> (DC.) Britton & Rose	Monk's Hood Cactus	Short Cylindrical Herb	Cultivated as ornamental
13	<i>Astrophytum ornatum</i> (DC.) Britton & Rose var. <i>glabrescens</i> Frič	Star Cactus	Short Columnar Herb	Cultivated as ornamental
14	<i>Austrocylindropuntia subulata</i> (Muehlenpf.) Backeb.	Eve's Needle Cactus	Small Shrub	Cultivated as ornamental
15	<i>Brasiliopuntia brasiliensis</i> (Willd.) A.Berger	Brazilian Prickly Pear	Medium-sized Tree	Cultivated as ornamental Fruits are edible
16	<i>Browningia hertlingiana</i> (Rauh) Buxb.	Blue Cereus	Columnar Shrub	Cultivated as ornamental
17	<i>Carnegiea gigantea</i> Britton & Rose	Monument of the Desert	Columnar Tree	Cultivated as ornamental
18	<i>Cereus hexagonus</i> Mill.	Lady of the Night Cactus	Columnar Shrub	Cultivated as ornamental Fruits are edible
19	<i>Cereus jamacaru</i> DC.	Pleated Cactus	Columnar Tree	Cultivated as ornamental
20	<i>Cereus pterogonus</i> Lem.	Columnar Cactus	Columnar tree-like Shrub	Naturalized – Grown for fencing Fruits are edible
21	<i>Cereus spegazzinii</i> F.A.C. Weber	Moonlight Cactus	Slender Shrub	Cultivated as ornamental
22	<i>Cleistocactus ritteri</i> Backeb.	White-hairy Spine Cactus	Columnar Shrub	Cultivated as ornamental
23	<i>Cleistocactus winteri</i> D.R. Hunt	Golden Rat Tail Cactus	Pendant Herb	Cultivated as ornamental
24	<i>Consolea falcata</i> (Ekman & Werderm.) F.M.Knuth	Caribbean Tree Cactus	Small Tree	Cultivated as ornamental
25	<i>Consolea rubescens</i> Lem.	Road Kill Cactus	Small Tree	Cultivated as ornamental
26	<i>Coryphantha cornifera</i> Lem.	Rhinoceros Cactus	Globose to Cylindrical Herb	Cultivated as ornamental
27	<i>Coryphantha elephantidens</i> Lem.	Elephant's Tooth	Depressed- globular Herb	Cultivated as ornamental
28	<i>Coryphantha maiz-tablasensis</i> Fritz Schwarz	Beetroot Cactus	Depressed-globular Herb	Cultivated as ornamental
29	<i>Cylindropuntia fulgida</i> (Engelm.) F.M.Knuth	Boxing Glove	Shrub	Cultivated as ornamental
30	<i>Cylindropuntia leptocaulis</i> (DC.) F.M.Knuth	Pencil Cactus	Shrub	Cultivated as ornamental, Fruits are edible
31	<i>Cylindropuntia molesta</i> (Brandeggee) F.M.Knuth	Cane Cactus	Shrub	Cultivated as ornamental
32	<i>Cylindropuntia tunicata</i> (Lehm.) F.M.Knuth	Sheathed Cholla	Shrub	Cultivated as ornamental
33	<i>Deamia testudo</i> Britton & Rose	Dog Tail Cactus	Climbing Herb	Cultivated as ornamental
34	<i>Denmoza rhodacantha</i> Britton & Rose	Red-spined Columnar Cactus	Columnar Herb	Cultivated as ornamental
35	<i>Disocactus anguliger</i> (Lem.) M.A.Cruz & S.Arias	Fish Bone Cactus	Leaf-like Herb	Cultivated as ornamental
36	<i>Echinocactus grusonii</i> Hildm.	Golden Barrel Cactus	Barrel Herb	Cultivated as ornamental
37	<i>Echinocactus platyacanthus</i> Link & Otto	Candy Barrel Cactus	Barrel Herb	Cultivated as ornamental
38	<i>Echinocereus pentaloophus</i> (DC.) Engelm. ex Haage	Devils Finger	Finger-like Herb	Cultivated as ornamental
39	<i>Echinocereus viereckii</i> Werderm. subsp. <i>morricallii</i> (Riha) N.P.Taylor	Star Fruit Cactus	Clustering Columnar Herb	Cultivated as ornamental
40	<i>Echinopsis ancistrophora</i> Speg.	Easter Lily Cactus	Globose Herb	Cultivated as ornamental
41	<i>Echinopsis calochlora</i> K. Schum.	Ball Cactus, Sea-Urchin Cactus	Globular Herb	Cultivated as ornamental
42	<i>Echinopsis chamaecereus</i> H.Friedrich & Glaetzle	Peanut Cactus	Clustering Herb	Cultivated as ornamental
43	<i>Echinopsis mirabilis</i> Speg.	Flower of Prayer	Cylindrical Herb	Cultivated as ornamental
44	<i>Echinopsis oxygona</i> (Link) Zucc. ex Pfeiff.	Easter Lily Cactus	Globular to Cylindrical Herb	Cultivated as ornamental

Sl. No.	BOTANICAL NAME	TRADE NAME	GROWTH HABIT	IMPORTANCE and UTILITY
45	<i>Epiphyllum oxypetalum</i> (DC.) Haw.	Queen of the Night	Shrub	Cultivated as ornamental
46	<i>Epithelantha micromeris</i> (Engelm.) Britton & Rose	Button Cactus	Small Cespitose Herb	Cultivated as ornamental
47	<i>Escobaria hesteri</i> (Y.Wright) Buxb.	Hester's Foxtail Cactus	Spherical to Ovoid Herb	Cultivated as ornamental
48	<i>Espostoa blossfeldiorum</i> (Werderm.) Buxb.	Columnar Cactus	Columnar Shrub	Cultivated as ornamental
49	<i>Espostoa lanata</i> (Kunth) Britton & Rose	Peruvian Old Man Cactus	Columnar Tree	Cultivated as ornamental
50	<i>Espostoa melanostele</i> (Vaupel) Borg	Peruvian Old Lady	Columnar Shrub	Cultivated as ornamental
51	<i>Ferocactus glaucescens</i> Britton & Rose	Blue Barrel Cactus	Globose Barrel Herb	Cultivated as ornamental
52	<i>Ferocactus hamatacanthus</i> (Muehlenpf.) Britton & Rose	Texas Barrel Cactus	Globular to Oblongoid Herb	Cultivated as ornamental
53	<i>Ferocactus latispinus</i> Britton & Rose	Crow's Claw Cactus	Hemispherical Herb	Cultivated as ornamental
54	<i>Ferocactus peninsulæ</i> Britton & Rose	Large-ribbed Barrel Cactus	Clavate to Cylindrical Herb	Cultivated as ornamental
55	<i>Ferocactus townsendianus</i> Britton & Rose	Townsend Barrel Cactus	Globular Herb	Cultivated as ornamental
56	<i>Ferocactus wislizeni</i> Britton & Rose	Arizona Barrel Cactus	Globular to Cylindrical Herb	Cultivated as ornamental
57	<i>Frailea mammiifera</i> Buining & Brederoo	Purple Cactus	Subglobose to Columnar Herb	Cultivated as ornamental
58	<i>Grusonia invicta</i> (Brandeggee) E.F.Anderson	Rat House	Herb	Cultivated as ornamental
59	<i>Gymnocalycium anisitsii</i> (K. Schum.) Britton & Rose subsp. <i>damsii</i> (K. Schum.) G.J. Charles	Chin Cactus	Small Globose Creeping Herb	Cultivated as ornamental
60	<i>Gymnocalycium baldianum</i> Speg.	Dwarf chin	Depressed-globose Herb	Cultivated as ornamental
61	<i>Gymnocalycium denudatum</i> (Link & Otto) Pfeiff. ex Mittler	Spider Spine Cactus	Globular Herb	Cultivated as ornamental
62	<i>Gymnocalycium horstii</i> Buining	Spider Cactus	Small globose Herb	Cultivated as ornamental
63	<i>Gymnocalycium hossei</i> A.Berger	Bird's Nest Cactus	Globose Herb	Cultivated as ornamental
64	<i>Gymnocalycium mihanovichii</i> Britton & Rose	Red Cap Cactus	Globose Herb	Cultivated as ornamental
65	<i>Gymnocalycium monvillei</i> Pfeiff. ex Britton & Rose	Geophytic Chin Cactus	Globular Herb	Cultivated as ornamental
66	<i>Gymnocalycium saglionis</i> (F. Cels) Britton & Rose	Giant Chin Cactus	Solitary Barrel Herb	Cultivated as ornamental
67	<i>Lemaireocereus hollianus</i> Britton & Rose	Columnar Cactus	Small Tree	Cultivated as ornamental
68	<i>Leuenbergeria bleo</i> (Kunth) Lode	Leaf Cactus	Herb	Cultivated as ornamental
69	<i>Lophocereus schottii</i> (Engelm.) Britton & Rose	Whisker Cactus	Columnar Shrub	Cultivated as ornamental
70	<i>Lophophora williamsii</i> (Lem. ex Salm-Dyck) J.M. Coult.	Dry Whiskey	Globular Herb	Cultivated as ornamental
71	<i>Mammillaria baumii</i> Boed.	Baumi's Cactus	Short Globose Herb	Cultivated as ornamental
72	<i>Mammillaria beneckeii</i> Ehrenb.	Benecke's Nipple Cactus	Globose Herb	Cultivated as ornamental
73	<i>Mammillaria blossfeldiana</i> Boed.	Hook Cactus	Cylindric Herb	Cultivated as ornamental
74	<i>Mammillaria bombycina</i> Quehl	Silken Pincushion	Club-shaped Herb	Cultivated as ornamental
75	<i>Mammillaria boolii</i> G.E. Linds.	Phoenix Cactus	Depressed-conical Herb	Cultivated as ornamental
76	<i>Mammillaria compressa</i> DC.	Compressed Nipple Cactus	Globose Herb	Cultivated as ornamental
77	<i>Mammillaria decipiens</i> Scheidw.	Golden Bird's Nest Cactus	Flat Clumping Herb	Cultivated as ornamental
78	<i>Mammillaria duwei</i> Rogoz. & P.J. Braun	Yellow Hook Spined Cactus	Globose to Short Cylindrical Herb	Cultivated as ornamental
79	<i>Mammillaria elongata</i> DC.	Lady's Finger Cactus	Cylindrical Herb	Cultivated as ornamental

Sl. No.	BOTANICAL NAME	TRADE NAME	GROWTH HABIT	IMPORTANCE and UTILITY
80	<i>Mammillaria geminispina</i> Haw.	Twin-spined Cactus	Cylindrical to Columnar Herb	Cultivated as ornamental
81	<i>Mammillaria grahamii</i> Engelm.	Graham's Fish-hook Cactus	Globose to Cylindric Herb	Cultivated as ornamental
82	<i>Mammillaria guezowiana</i> Werderm.	Pincushion Cactus	Globose Herb	Cultivated as ornamental
83	<i>Mammillaria hahniana</i> Werderm.	Birthday Cake Cactus	Globular to Cylindric Herb	Cultivated as ornamental
84	<i>Mammillaria klissingiana</i> Boed.	Snow-coloured Spine Cactus	Globular to Short Cylindrical Herb	Cultivated as ornamental
85	<i>Mammillaria longimamma</i> DC.	Finger Cactus	Tuberculate Herb	Cultivated as ornamental
86	<i>Mammillaria muehlenpfordtii</i> C.F. Först.	Golden Pincushion Cactus	Globose to Cylindrical Herb	Cultivated as ornamental
87	<i>Mammillaria nivosa</i> Link ex Pfeiff.	Woolly Nipple Cactus	Globose Herb	Cultivated as ornamental
88	<i>Mammillaria plumosa</i> F.A.C. Weber	Feather Cactus	Clumping Dense Mounds Herb	Cultivated as ornamental
89	<i>Mammillaria pringlei</i> (J.M. Coult.) K.Brandege	Lemon Ball Cactus	Globose Herb	Cultivated as ornamental
90	<i>Mammillaria prolifera</i> (Mill.) Haw.	Grape Cactus	Globose Cluster Herb	Cultivated as ornamental
91	<i>Mammillaria prolifera</i> (Mill.) Haw. subsp. <i>texana</i> (Engelm.) D.R. Hunt	Texas Nipple Cactus	Low growing cluster habit	Cultivated as ornamental
92	<i>Mammillaria rhodantha</i> Link & Otto	Rainbow Pincushion	Short Columnar Herb	Cultivated as ornamental
93	<i>Mammillaria schumannii</i> Hildm.	Grey Green Cactus	Globose Herb	Cultivated as ornamental
94	<i>Mammillaria spinosissima</i> Lem.	Rust Spine Cactus	Cylindrical Herb	Cultivated as ornamental
95	<i>Mammillaria standleyi</i> Orcutt	Sierra Canelo Pincushion Cactus	Flattened Globose Herb	Cultivated as ornamental
96	<i>Mammillaria vetula</i> Mart.	Thimble Cactus	Clustering Herb	Cultivated as ornamental
97	<i>Mammillaria voburnensis</i> Scheer	Pincushion Cactus	Short Columnar Clustering Herb	Cultivated as ornamental
98	<i>Mammillaria winterae</i> Boed.	Spherical Cactus	Hemispherical to Globose Herb	Cultivated as ornamental
99	<i>Mammillaria zeilmanniana</i> Boed.	Rose Pincushion Cactus	Short Cylindric to Columnar Herb	Cultivated as ornamental
100	<i>Mammilloidya candida</i> (Scheidw.) Buxb.	Snowball	Spherical to Cylindrical Herb	Cultivated as ornamental
101	<i>Melocactus azureus</i> Buining & Brederoo	Brazilian Melon Cactus	Globose Herb	Cultivated as ornamental
102	<i>Melocactus bahiensis</i> Luetzelb.	Melon Cactus	Globose Herb	Cultivated as ornamental
103	<i>Melocactus curvispinus</i> Pfeiff.	Turk's Cap Cactus	Depressed-globular Herb	Cultivated as ornamental
104	<i>Melocactus ernestii</i> Vaupel	Melon Cactus	Spherical to Short Cylindrical Herb	Cultivated as ornamental
105	<i>Melocactus matanzanus</i> León	Melon Cactus	Solitary Globose Herb	Cultivated as ornamental
106	<i>Melocactus pruinosus</i> Werderm.	Turk's Cap Cactus	Globose Herb	Cultivated as ornamental
107	<i>Myrtillocactus cochal</i> Britton & Rose	Candelabra Cactus	Sprawling Columnar Tree	Cultivated as ornamental
108	<i>Myrtillocactus geometrizans</i> Console	Blue Candle	Columnar Shrub/Tree	Cultivated as ornamental
109	<i>Obregonia denegrii</i> Frič	Artichoke Cactus	Rosette Globular Herb	Cultivated as ornamental
110	<i>Opuntia cochenillifera</i> (L.) Mill.	Cochineal Cactus	Shrub	Cultivated as ornamental
111	<i>Opuntia dillenii</i> (Ker Gawl.) Haw.	Coastal Prickly Pear	Shrub	Naturalized – Grown for fencing, Fruits are edible
112	<i>Opuntia elatior</i> Mill.	Prickly Pear	Shrub	Cultivated as ornamental, Fruits are edible
113	<i>Opuntia ficus-indica</i> (L.) Mill.	Barbary Fig	Herb	Cultivated as ornamental, Fruits are edible
114	<i>Opuntia fragilis</i> (Nutt.) Haw.	Brittle Prickly Pear	Clustering Herb	Cultivated as ornamental
115	<i>Opuntia microdasys</i> (Lehm.) Pfeiff.	Bunny Ear Prickly Pear	Small Dense Shrub	Cultivated as ornamental

Sl. No.	BOTANICAL NAME	TRADE NAME	GROWTH HABIT	IMPORTANCE and UTILITY
116	<i>Opuntia microdasys</i> (Lehm.) Pfeiff. var. <i>albispina</i> Fobé	White Bunny Ear	Small Shrub	Cultivated as ornamental
117	<i>Opuntia monacantha</i> Haw.	Drooping Prickly Pear	Small Shrub	Cultivated as ornamental
118	<i>Opuntia polyacantha</i> Haw. var. <i>erinacea</i> (Engelm. J.M. Bigelow) B.D. Parfitt	Grizzly Bear Prickly Pear	Shrub	Cultivated as ornamental
119	<i>Opuntia robusta</i> H.L. Wendl. ex Pfeiff.	Wheel Cactus	Shrub	Cultivated as ornamental
120	<i>Opuntia rufida</i> Engelm.	Cinnamon Bunny Ears	Small Dense Shrub	Cultivated as ornamental
121	<i>Oreocereus celsianus</i> (Salm-Dyck) A. Berger ex Riccob.	Old Man of the Andes	Columnar Shrub	Cultivated as ornamental
122	<i>Parodia concinna</i> (Monv.) N.P. Taylor	Sun Cup	Spherical Herb	Cultivated as ornamental
123	<i>Parodia haselbergii</i> (Rumpler) F.H. Brandt	Scarlet Ball Cactus	Spherical Herb	Cultivated as ornamental
124	<i>Parodia lenninghausii</i> (F. Haage) F.H. Brandt ex Egli & Hofacker	Golden Ball	Short Columnar Herb	Cultivated as ornamental
125	<i>Parodia magnifica</i> (F. Ritter) F.H. Brandt,	Balloon Cactus	Globular Herb	Cultivated as ornamental
126	<i>Parodia mammulosa</i> (Lem.) N.P. Taylor	Lemon Ball	Globular Herb	Cultivated as ornamental
127	<i>Parodia microsperma</i> (F.A.C. Weber) Speg.	Tom Thumb	Spherical to Cylindrical Herb	Cultivated as ornamental
128	<i>Parodia mueller-melchersii</i> (Frič ex Backeb.) N.P. Taylor	Lavender Colour-flowered Cactus	Globose to Columnar Herb	Cultivated as ornamental
129	<i>Parodia ottonis</i> (Lehm.) N.P. Taylor	Indian Head Cactus	Dwarf flat globose Herb	Cultivated as ornamental
130	<i>Parodia scopa</i> (Spreng.) N.P. Taylor	Snow Ball Cactus	Globular to Columnar Herb	Cultivated as ornamental
131	<i>Pereskia aculeata</i> Mill.	Barbados Gooseberry	Shrub	Cultivated as ornamental
132	<i>Pilosocereus pachycladus</i> F. Ritter	Miniature Blue Saguaro	Columnar Tree	Cultivated as ornamental
133	<i>Rebutia canigeralii</i> Cardenas	Fishbone Spine Cactus	Clustering Herb	Cultivated as ornamental
134	<i>Rauhocereus riosaniensis</i> Backeb.	Russell's Cactus	Columnar Shrub	Cultivated as ornamental
135	<i>Schlumbergera truncata</i> (Haw.) Moran	Christmas Cactus	Leaf-like Drooping Herb	Cultivated as ornamental
136	<i>Selenicereus grandiflorus</i> (L.) Britton & Rose	Vanilla Cactus	Climber	Cultivated as ornamental
137	<i>Selenicereus undatus</i> (Haw.) D.R. Hunt	Dragon Fruit	Sprawling Herb / Climber	Used as an ornamental vine and fruit crop
138	<i>Stenocereus beneckeii</i> (Ehrenb.) A. Berger & Buxb.	Bronze green Columnar Cactus	Columnar Shrub	Cultivated as ornamental
139	<i>Stenocereus thurberi</i> (Engelm.) Buxb.	Organ Pipe Cactus	Tree-like Shrub	Cultivated as ornamental
140	<i>Stetsonia coryne</i> (Salm-Dyck) Britton & Rose	Toothpick Cactus	Columnar Tree	Cultivated as ornamental
141	<i>Strombocactus disciformis</i> Britton & Rose	Fir Cone Cactus	Flattened Geophytic Herb	Cultivated as ornamental
142	<i>Tacinga inamoena</i> (K. Schum.) N.P. Taylor & Stuppy	Matweed Cactus	Shrub	Cultivated as ornamental
143	<i>Tephrocactus aoracanthus</i> Lem.	Brittle Cactus	Ovoid Herb	Cultivated as ornamental
144	<i>Tephrocactus articulatus</i> (Otto) Backeb.	Paper Spine Cactus	Herb	Cultivated as ornamental
145	<i>Thelocactus bicolor</i> (Galeotti ex Pfeiff.) Britton & Rose	Glory of Texas	Globular Herb	Cultivated as ornamental
146	<i>Thelocactus hexaedrophorus</i> Britton & Rose	Flat Stem Cactus	Globose Flattened Herb	Cultivated as ornamental
147	<i>Thelocactus hexaedrophorus</i> subsp. <i>lloydii</i> (Britton & Rose) N.P. Taylor	Hexagonal Tuberculate Cactus	Globose Herb	Cultivated as ornamental
148	<i>Thelocactus setispinus</i> (Engelm.) E.F. Anderson	Fish Hook Cactus	Globose to Cylindrical Herb	Cultivated as ornamental
149	<i>Trichocereus macrogonus</i> Riccob. var. <i>pachanoi</i> (Britton & Rose) Albesiano & R. Kiesling	San Pedro Cactus	Columnar Tree	Cultivated as ornamental
150	<i>Uebelmannia pectinifera</i> Buining	Lizard Skin Cactus	Fusiform Herb	Cultivated as ornamental
151	<i>Weberbauerocereus winterianus</i> F. Ritter	Columnar Cactus	Columnar Shrub	Cultivated as ornamental

CONCLUSION

A preliminary attempt has been made to document the cacti diversity in and around Chennai locality. As there is no any comprehensive study on the family Cactaceae in India, the present study has been chosen to document the diversity of cactus in Chennai city. During the present study, 151 taxa belonging to 53 genera have been recorded from the study area, of which 148 are cultivated/grown as ornamentals or for their edible fruits in local gardens and 3 species namely *Acanthocereus tetragonus* (L.) Hummelinck, *Cereus pterogonus* Lem. and *Opuntia dillenii* (Ker Gawl.) Haw., have become naturalized and grown as hedge plants. It is believed that almost all useful and ornamental cacti that are being grown in Chennai city have been enumerated during the present study. It is also strongly felt that this study on cactus in Chennai city is almost a pioneering attempt but yielded a very fruitful result and also signifies research on cactus could be a promising one and still more explorations on various aspects on cactus may be extended.

REFERENCES

1. POWO, (2020). Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Retrieved from :<http://www.plantsoftheworldonline.org>.
2. Britton, N.L. & Rose, J.N. (1931). *The Cactaceae*, Carnegie Institution, Washington.
3. Cutak, L. (1956). Cactus guide. D. Van Nostrand Company, Canada.
4. Bailey, L.H. (1968). *Manual of Cultivated Plants*. The MacMillan Company, New York.
5. Hunt, D.R., (Compiler) .(1992). *CITES Cactaceae Checklist*. Royal Botanic Gardens, Kew.
6. Singh, G. (2003). General review of Opuntias in India. *Journal of the Professional Association for Cactus Development* 5: 30-46.
7. Kauthale, V., Aware, M. & Punde, K. (2017). Cactus an emerging Fodder Crop of Arid and semi Arid India. BAIF Development Research Foundation. Central Research Station, Urulikanchan, Pune.
8. Patel, R.M., Qureshimatva, U.M., Maurya, R.R. & Solanki, H.A. (2016). A checklist of succulent plants of Ahmadabad, Gujarat, India. *Tropical Plant Research* 3(3): 686–693.
9. Irwin, S.J., Thomas, S., Pauline, R. & Narasimhan, D. (2015). Angiosperm diversity of the Theosophical Society campus, Chennai, Tamil Nadu, India. *CheckList* 11(2): 1579.
10. Nehru, P., Gnanasekaran, G., Karthick, N.M. & Narasimhan, D. (2012). Angiosperms of Nanmangalam Reserve Forest, an urban forest in Metropolitan Chennai, India. *Check List* 8(1): 057–076.
11. IPNI, 2020. The International Plant Names Index. <http://www.ipni.org>.
12. Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; <http://www.plantsoftheworldonline.org/>
13. Tropicos, (2020). Missouri Botanical Garden, Shaw Boulevard, St. Louis, Missouri. <http://www.tropicos.org>.
14. eFloras, (2011). Published on the Internet, [http:// www.efloras.org](http://www.efloras.org) by Missouri Botanical Garden, St. Louis, Missouri & Harvard University Herbaria, Cambridge.
15. LLIFLE, (2020). Llife-Encyclopedia of living forms. <http://www.llifle.com>.

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