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Diversity of polypetalae plants in the Bodamalai Hills of Eastern Ghats, Tamil Nadu, India

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ABSTRACT

The diversity of polypetalae plants was studied in the Bodamalai Hills of the Eastern Ghats, Tamil Nadu, India. The results of the present study revealed that a total of 139 polypetalae plants from 41 families and 103 genera were documented in the current floristic exploration from the Bodamalai Hills. The dominant family in the study area is Fabaceae with 19 species, followed by Malvaceae (14), Rutaceae (11), Caesalpiniaceae (10), Mimosaceae (9), Combretaceae (5 species), Anacardiaceae, Apiaceae, Cleomaceae, and Rhamnaceae (4 each), Cactaceae, Capparidaceae, Meliaceae, and Menispermaceae (3 each), Burseraceae, Celastraceae, Molluginaceae, Myrtaceae, Passifloraceae, and Sterculiaceae (2 each), and other families with only one. The highest number of species was found in the genus *Cassia* (7), followed by *Acacia* (5), *Sida* and *Ziziphus* (4 each), *Terminalia*, *Citrus*, *Cleome*, *Desmodium*, and *Cissus* (3 each), *Cassine*, *Capparis*, *Indigofera*, *Mollugo*, and *Syzygium* (2 each), and the remaining 89 genera (1 each). The findings of this study revealed the diversity and significance of the polypetalae plants in the Bodamalai Hills for the native population's way of life. Furthermore, baseline data on plant checklists, polypetalae plant diversity status, and plant adaptation to the research area are provided by this study.

KEYWORDS: Diversity, Polypetalae plants, Bodamalai Hills, Eastern Ghats

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INTRODUCTION

India is a biodiversity-rich country that consists of four biodiversity hotspots, such as the Himalayas, Western Ghats, Indo-Burma, and Sundarbans, which are known for having a large number of endemic species and a higher priority for biodiversity conservation because of the significant threat to biodiversity (Reddy *et al.*, 2021). The flora of India has been estimated to have 55,048 plant species, whereas 21,984 flowering plant species have been documented (Singh *et al.*, 2023; Modi & Soni, 2024). The Eastern Ghats of India have a wide range of flora types that change significantly with elevation, including scrub jungles, dry deciduous, moist deciduous, semi-evergreen, evergreen, and sholas. The Eastern Ghats are endemic to around 4000 flowering plants, which are about 13% of the flowering plants of India. According to Singh *et al.* (2015), the Eastern Ghats are endemic to 166 flowering plant species.

Several floristic analysis studies were carried out in the Eastern Ghats of Tamil Nadu. Ranjitakani (1998) conducted a floristic survey in the Eastern Ghats of Kolli Hills, Tamil Nadu. He listed 854 angiosperm species. In the Shevaroy Hills of Eastern Ghats of Tamil Nadu, Senthil Kumar and Krishnamurthy

(1993) identified 1184 angiosperms in 674 genera and 150 families. Nair and Henry (1983) carried out a floristic analysis of Tamil Nadu. Ethnobotanical studies (Rajesh & Mathew, 2013; Sathiyaraj *et al.*, 2015) and documentation of bryophytes (Palani *et al.*, 2017) in the Bodamalai Hills of the Eastern Ghats, Tamil Nadu, have already been conducted by a few researchers. Therefore, the current study aims to provide a floristic analysis of the Bodamalai Hills in the Eastern Ghats, Tamil Nadu, with particular emphasis on polypetalae plants, as there have been very few documentation studies done in this area.

MATERIALS AND METHODS

Study Area

Bodamalai Hills, the research area, is located in Tamil Nadu's Southern Eastern Ghats (Figure 1). Its overall area is roughly 156 km², and its elevation varies between 300 and 1155 m above mean sea level. Its coordinates are 11° 18' 30" North latitude and 78° 38' 45" East longitude. The Bodamalai Hills have a humid subtropical climate. The Hindu Malayali tribe is the only group living in this area. There are four types of vegetation found in the

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Bodamalai hills: semi-evergreen, dry deciduous, scrub jungle, and mixed deciduous.

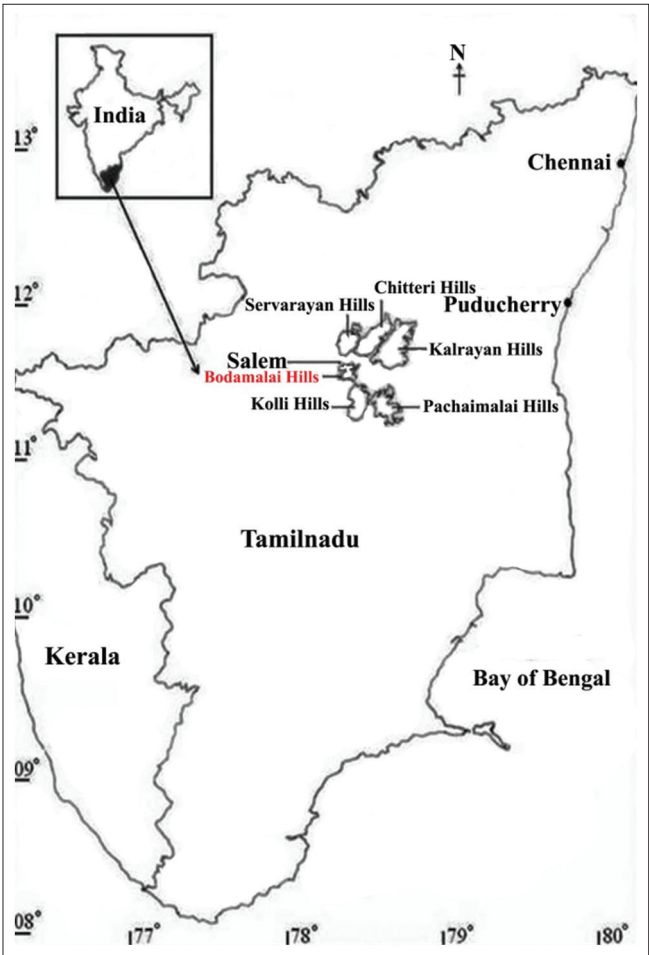


Figure 1: Location map of the Bodamalai Hills

Specimens Collection and Identification

Polypetalae plants were explored by frequently visiting the field during all seasons between May 2023 and April 2024. The identification of plant specimens was confirmed with the help of The Handbook of Flora of the Presidency of Madras (Gamble & Fischer, 1915-1936), The Flora of the Tamilnadu Carnatic (Matthew, 1983) and The Flora of Eastern Ghats Vol. I to IV (Pullaiah & Ramamurthy, 2001; Pullaiah & Rao, 2002; Pullaiah *et al.*, 2007; Pullaiah *et al.*, 2011). The Botanical Survey of India, Southern Circle, Coimbatore, later verified this identification. The voucher specimens were deposited at Kandaswami Kandar’s College’s Botany Department in Namakkal, Tamil Nadu.

RESULTS AND DISCUSSION

A total of 139 polypetalae plants from 41 families and 103 genera were identified in the current floristic exploration from the Bodamalai Hills (Tables 1 & 2). The dominant family, Fabaceae, had 19 species, followed by Malvaceae (14), Rutaceae (11), Caesalpiniaceae (10), Mimosaceae (9), Combretaceae (5), Anacardiaceae, Apiaceae, Cleomaceae, and Rhamnaceae (4 each), Cactaceae, Capparidaceae, Meliaceae, and Menispermaceae (3 each), Burseraceae, Celastraceae, Molluginaceae, Myrtaceae, Passifloraceae, and Sterculiaceae (2 each), and other families with only one (Table 2 & Figure 2). Packiaraj *et al.* (2023) also reported similar results, which are that Fabaceae and Malvaceae were found to be the most dominant families in the diversity of angiosperms in Thirukudder Hills.

Additionally, other research findings confirmed the current study. A remarkable collection of 294 plant species from 232 genera and 79 families, including angiosperms (288),

Table 1: A list of polypetalae plants documented from the study area of Bodamalai Hills

S. No.	Voucher No.	Species	Family	Habit
1	HKKCB37	<i>Abrus precatorius</i> L.	Fabaceae	Climber
2	HKKCB66	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Shrub
3	HKKCB107	<i>Acacia caesia</i> (L.) Willd.	Mimosaceae	Shrub
4	HKKCB84	<i>Acacia ferruginea</i> DC.	Mimosaceae	Tree
5	HKKCB141	<i>Acacia leucophloea</i> (Roxb.) Willd.	Mimosaceae	Tree
6	HKKCB183	<i>Acacia sundra</i> (Roxb.) DC.	Mimosaceae	Tree
7	HKKCB166	<i>Acacia tortilis</i> (Forssk.) Hayne.	Mimosaceae	Tree
8	HKKCB226	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	Tree
9	HKKCB265	<i>Aglaia elaeagnoidea</i> (A.Juss.) Benth	Meliaceae	Tree
10	HKKCB155	<i>Ailanthus excelsa</i> Roxb.	Simaroubaceae	Tree
11	HKKCB97	<i>Alangium salviolium</i> (L.f.) Wangerin	Alangiaceae	Tree
12	HKKCB40	<i>Albizia amara</i> (Roxb.) B.Boivin.	Mimosaceae	Tree
13	HKKCB2	<i>Albizia lebbbeck</i> (L.) Benth	Mimosaceae	Tree
14	HKKCB147	<i>Allophylus cobbe</i> (L.) Forsyth fil.	Sapindaceae	Tree
15	HKKCB195	<i>Allophylus serratus</i> (Roxb.) Kurz	Sapindaceae	Tree
16	HKKCB322	<i>Alysicarpus monilifer</i> (L.) DC.	Fabaceae	Herb
17	HKKCB60	<i>Ammannia baccifera</i> L.	Lythraceae	Herb
18	HKKCB114	<i>Ampelocissus tomentosa</i> (Heyne ex Roth) Planch.	Vitaceae	Climber
19	HKKCB55	<i>Anacardium occidentale</i> L.	Anacardiaceae	Tree
20	HKKCB212	<i>Anamirta cocculus</i> (L.) Wight & Arn.	Menispermaceae	Climber
21	HKKCB32	<i>Annona squamosa</i> L.	Annonaceae	Tree

(Contd...)

Table 1: (Continued)

S. No.	Voucher No.	Species	Family	Habit
22	HKKCB11	<i>Anogeissus latifolia</i> (DC.) Wall. Ex Guill. & Perr.	Combretaceae	Tree
23	HKKCB201	<i>Argemone mexicana</i> L.	Papaveraceae	Herb
24	HKKCB135	<i>Azadirachta indica</i> A. Juss.,	Meliaceae	Tree
25	HKKCB180	<i>Brassica nigra</i> (L.) Koch.	Brassicaceae	Herb
26	HKKCB151	<i>Buchanania axillaris</i> (Desr.) T.P. Ramamoorthy	Anacardiaceae	Tree
27	HKKCB204	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	Tree
28	HKKCB285	<i>Cadaba indica</i> Lam.	Capparidaceae	Shrub
29	HKKCB352	<i>Cajanus scarabaeoides</i> (L.) Thouars.	Fabaceae	Climber
30	HKKCB342	<i>Canavalia mollis</i> Wall. ex Wight & Arn.	Fabaceae	Shrub
31	HKKCB70	<i>Capparis divaricata</i> Lam.	Capparidaceae	Shrub
32	HKKCB132	<i>Capparis spinosa</i> L.	Capparidaceae	Shrub
33	HKKCB228	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Climber
34	HKKCB256	<i>Carica papaya</i> L.	Caricaceae	Tree
35	HKKCB357	<i>Cassia absus</i> L.	Caesalpinaceae	Herb
36	HKKCB282	<i>Cassia auriculata</i> L.	Caesalpinaceae	Shrub
37	HKKCB209	<i>Cassia fistula</i> L.	Caesalpinaceae	Tree
38	HKKCB189	<i>Cassia occidentalis</i> L.	Caesalpinaceae	Shrub
39	HKKCB153	<i>Cassia siamea</i> Lam.	Caesalpinaceae	Tree
40	HKKCB192	<i>Cassia tora</i> (L.) Roxb.	Caesalpinaceae	Herb
41	HKKCB240	<i>Cassine albens</i> (Retz.) Kosterm	Celastraceae	Tree
42	HKKCB316	<i>Cassine paniculata</i> (Wight & Arn.) Lobl.-Callen	Celastraceae	Tree
43	HKKCB236	<i>Cayratia pedata</i> (Lam.) Gagnep.	Vitaceae	Climber
44	HKKCB117	<i>Cereus peruvianus</i> (L.) Mill.	Cactaceae	Shrub
45	HKKCB93	<i>Chamaecrista mimosoides</i> (L.) Greene	Caesalpinaceae	Herb
46	HKKCB7	<i>Chloroxylon swietenia</i> DC.	Rutaceae	Tree
47	HKKCB110	<i>Cipadessa baccifera</i> (Roth) Miq.	Meliaceae	Tree
48	HKKCB143	<i>Cissus pallida</i> (Wight & Arn.) Planch.	Vitaceae	Shrub
49	HKKCB112	<i>Cissus quadrangularis</i> L.	Vitaceae	Climber
50	HKKCB72	<i>Cissus vitiginea</i> L.	Vitaceae	Climber
51	HKKCB56	<i>Citrus limetta</i> Risso	Rutaceae	Tree
52	HKKCB130	<i>Citrus limon</i> (L.) Osbeck	Rutaceae	Tree
53	HKKCB168	<i>Citrus sinensis</i> (L.) Osbeck	Rutaceae	Tree
54	HKKCB105	<i>Clausena dentata</i> (Willd.) Roem.	Rutaceae	Shrub
55	HKKCB28	<i>Clematis gouriana</i> Roxb. ex DC.	Ranunculaceae	Climber
56	HKKCB101	<i>Cleome aspera</i> J. König ex DC.	Cleomaceae	Herb
57	HKKCB124	<i>Cleome felina</i> L.f.	Cleomaceae	Herb
58	HKKCB164	<i>Cleome viscosa</i> L.	Cleomaceae	Herb
59	HKKCB262	<i>Cocculus hirsutus</i> (L.) Diels	Menispermaceae	Climber
60	HKKCB327	<i>Cochlospermum religiosum</i> (L.) Alston	Cochlospermaceae	Tree
61	HKKCB223	<i>Combretum ovalifolium</i> Roxb.	Combretaceae	Climber
62	HKKCB149	<i>Commiphora berryi</i> (Arn.) Engl	Burseraceae	Tree
63	HKKCB273	<i>Commiphora caudata</i> (Wight & Arn.) Engl.	Burseraceae	Tree
64	HKKCB340	<i>Corchorus aestuans</i> L.	Malvaceae	Herb
65	HKKCB181	<i>Corchorus trilocularis</i> L.	Malvaceae	Herb
66	HKKCB221	<i>Coriandrum sativum</i> L.	Apiaceae	Herb
67	HKKCB122	<i>Crotalaria hebecarpa</i> (DC.) Rudd	Fabaceae	Herb
68	HKKCB19	<i>Cuminum cyminum</i> L.	Apiaceae	Herb
69	HKKCB232	<i>Cylindropuntia ramosissima</i> (Engelm.) F.M.Knuth	Cactaceae	Shrub
70	HKKCB133	<i>Dalbergia latifolia</i> Roxb.	Fabaceae	Tree
71	HKKCB129	<i>Daucus carota</i> Schubl. & G. Martens	Apiaceae	Herb
72	HKKCB191	<i>Desmodium repandum</i> (Vahl) DC.	Fabaceae	Herb
73	HKKCB244	<i>Desmodium scalpe</i> DC.	Fabaceae	Herb
74	HKKCB296	<i>Desmodium triflorum</i> (L.) DC.	Fabaceae	Herb
75	HKKCB335	<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	Mimosaceae	Tree
76	HKKCB178	<i>Dodonaea viscosa</i> Jacq.	Sapindaceae	Shrub
77	HKKCB217	<i>Erythrina variegata</i> L.	Fabaceae	Tree
78	HKKCB150	<i>Erythroxylum monogynum</i> Roxb.	Erythroxylaceae	Tree
79	HKKCB325	<i>Feronia elephantum</i> Correa	Rutaceae	Tree
80	HKKCB162	<i>Flacourtia indica</i> (Burm.f.) Merr.	Flacourtiaceae	Shrub
81	HKKCB337	<i>Foeniculum vulgare</i> Mill.	Apiaceae	Herb
82	HKKCB257	<i>Grewia hirsuta</i> Vahl	Tiliaceae	Tree
83	HKKCB190	<i>Gynandropsis gynandra</i> (L.) Briq.	Cleomaceae	Herb
84	HKKCB69	<i>Hardwickia binata</i> Roxb.	Caesalpinaceae	Tree
85	HKKCB350	<i>Helicteres isora</i> L.	Malvaceae	Shrub
86	HKKCB291	<i>Hibiscus micranthus</i> L.f.	Malvaceae	Shrub

(Contd...)

Table 1: (Continued)

S. No.	Voucher No.	Species	Family	Habit
87	HKKCB45	<i>Hugonia mystax</i> L.	Linaceae	Shrub
88	HKKCB100	<i>Hybanthus enneaspermus</i> (L.) F.V.Muell.	Violaceae	Herb
89	HKKCB156	<i>Indigofera colutea</i> (Burm.f.) Merr.	Fabaceae	Shrub
90	HKKCB238	<i>Indigofera cordifolia</i> B.Heyne ex Roth	Fabaceae	Herb
91	HKKCB241	<i>Lablab purpureus</i> (L.) Sweet	Fabaceae	Climber
92	HKKCB288	<i>Malvastrum coromandelianum</i> (L.) Garcke	Malvaceae	Herb
93	HKKCB320	<i>Mangifera indica</i> L.	Anacardiaceae	Tree
94	HKKCB250	<i>Melochia corymbifolia</i> L.	Malvaceae	Shrub
95	HKKCB128	<i>Mimosa pudica</i> L.	Mimosaceae	Herb
96	HKKCB267	<i>Mollugo nudicaulis</i> Lam.	Molluginaceae	Herb
97	HKKCB205	<i>Mollugo pentaphylla</i> L.	Molluginaceae	Herb
98	HKKCB321	<i>Moringa concanensis</i> L.	Moringaceae	Tree
99	HKKCB333	<i>Mukia maderaspatana</i> (L.) M.Roem.	Cucurbitaceae	Climber
100	HKKCB82	<i>Naringi crenulata</i> (Roxb.) Nicolson	Rutaceae	Tree
101	HKKCB6	<i>Opuntia dillenii</i> (Ker Gawl.) Haw.	Cactaceae	Shrub
102	HKKCB89	<i>Pamburus missionis</i> Swingle	Rutaceae	Tree
103	HKKCB231	<i>Passiflora calcarata</i> Mast.	Passifloraceae	Climber
104	HKKCB5	<i>Passiflora foetida</i> L.	Passifloraceae	Climber
105	HKKCB177	<i>Pavonia odorata</i> Willd.	Malvaceae	Herb
106	HKKCB287	<i>Pavonia zeylanica</i> (L.) Cav.	Malvaceae	Shrub
107	HKKCB106	<i>Phaseolus vulgaris</i> L.	Fabaceae	Climber
108	HKKCB158	<i>Pleiospermium alatum</i> (Wight & Arn.) Swingle	Rutaceae	Tree
109	HKKCB348	<i>Polycarpaea corymbosa</i> (L.) Lam.	Caryophyllaceae	Herb
110	HKKCB224	<i>Polygala arvensis</i> Willd.	Polygalaceae	Herb
111	HKKCB165	<i>Portulaca oleracea</i> L.	Portulacaceae	Herb
112	HKKCB31	<i>Pterocarpus marsupium</i> Roxburgh	Fabaceae	Tree
113	HKKCB113	<i>Pterolobium hexapetalum</i> (Roth) Santapau & Wagh.	Caesalpiniaceae	Shrub
114	HKKCB301	<i>Sapindus emarginatus</i> Vahl	Sapindaceae	Tree
115	HKKCB331	<i>Schleichera oleosa</i> (Lour.) Oken	Sapindaceae	Tree
116	HKKCB146	<i>Semecarpus anacardium</i> L.f.	Anacardiaceae	Tree
117	HKKCB303	<i>Cassia obtusifolia</i> (L.) H.S. Irwin & Barneby	Fabaceae	Shrub
118	HKKCB152	<i>Sida acuta</i> Burm.f.	Malvaceae	Herb
119	HKKCB290	<i>Sida cordata</i> (Burm.f.) Borss. Waalk.,	Malvaceae	Herb
120	HKKCB336	<i>Sida cordifolia</i> L.	Malvaceae	Herb
121	HKKCB202	<i>Sida rhombifolia</i> Roxb. ex Fleming	Malvaceae	Shrub
122	HKKCB239	<i>Sterculia urens</i> Roxb.	Sterculiaceae	Tree
123	HKKCB75	<i>Syzygium aromaticum</i> (L.) Merr. & L.M.Perry	Myrtaceae	Tree
124	HKKCB323	<i>Syzygium cumini</i> (L.) Skeels.	Myrtaceae	Tree
125	HKKCB103	<i>Tamarindus indica</i> L.	Caesalpiniaceae	Tree
126	HKKCB160	<i>Tephrosia purpurea</i> (L.) Pers.	Fabaceae	Herb
127	HKKCB252	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.	Combretaceae	Tree
128	HKKCB297	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	Tree
129	HKKCB25	<i>Terminalia chebula</i> Retz.	Combretaceae	Tree
130	HKKCB111	<i>Tetragium nilagiricum</i> (Miq.) B.V. Shetty	Vitaceae	Liana
131	HKKCB276	<i>Tinospora cordifolia</i> (Thunb.) Miers	Menispermaceae	Climber
132	HKKCB54	<i>Toddalia asiatica</i> (L.) Lam.	Rutaceae	Shrub
133	HKKCB295	<i>Triumfetta rhomboidea</i> N. Jacq.	Malvaceae	Shrub
134	HKKCB18	<i>Vigna trilobata</i> (L.) Verdc.	Fabaceae	Climber
135	HKKCB62	<i>Waltheria indica</i> L.	Sterculiaceae	Shrub
136	HKKCB167	<i>Ziziphus glabrata</i> Heyne	Rhamnaceae	Tree
137	HKKCB48	<i>Ziziphus jujuba</i> Mill.	Rhamnaceae	Tree
138	HKKCB280	<i>Ziziphus oenopolia</i> (L.) Mill.	Rhamnaceae	Tree
139	HKKCB261	<i>Ziziphus rugosa</i> Lam.	Rhamnaceae	Tree

Table 2: Family-wise distribution of polypetalae plants in the study area, Bodamalai Hills

S. No.	Family	No. of Genera	No. of Species	No. of Species/No. of Genera	No. of Species/Total No. of Species (%)
1	Alangiaceae	1	1	1.00	0.72
2	Anacardiaceae	4	4	1.00	2.88
3	Annonaceae	1	1	1.00	0.72
4	Apiaceae	4	4	1.00	2.88
5	Brassicaceae	1	1	1.00	0.72
6	Burseraceae	1	2	2.00	1.44
7	Cactaceae	3	3	1.00	2.16
8	Caesalpiniaceae	5	10	2.00	7.19

(Contd...)

Table 2: (Continued)

S. No.	Family	No. of Genera	No. of Species	No. of Species/No. of Genera	No. of Species/Total No. of Species (%)
9	Capparidaceae	2	3	1.50	2.16
10	Caricaceae	1	1	1.00	0.72
11	Caryophyllaceae	1	1	1.00	0.72
12	Celastraceae	1	2	2.00	1.44
13	Cleomaceae	2	4	2.00	2.88
14	Cochlospermaceae	1	1	1.00	0.72
15	Combretaceae	3	5	1.67	3.60
16	Cucurbitaceae	1	1	1.00	0.72
17	Erythroxylaceae	1	1	1.00	0.72
18	Fabaceae	16	19	1.19	13.67
19	Flacourtiaceae	1	1	1.00	0.72
20	Linaceae	1	1	1.00	0.72
21	Lythraceae	1	1	1.00	0.72
22	Malvaceae	9	14	1.56	10.07
23	Meliaceae	3	3	1.00	2.16
24	Menispermaceae	3	3	1.00	2.16
25	Mimosaceae	4	9	2.25	6.47
26	Molluginaceae	1	2	2.00	1.44
27	Moringaceae	1	1	1.00	0.72
28	Myrtaceae	1	2	2.00	1.44
29	Papaveraceae	1	1	1.00	0.72
30	Passifloraceae	1	2	2.00	1.44
31	Polygalaceae	1	1	1.00	0.72
32	Portulacaceae	1	1	1.00	0.72
33	Ranunculaceae	1	1	1.00	0.72
34	Rhamnaceae	1	4	4.00	2.88
35	Rutaceae	9	11	1.22	7.91
36	Sapindaceae	5	6	1.20	4.32
37	Simaroubaceae	1	1	1.00	0.72
38	Sterculiaceae	2	2	1.00	1.44
39	Tiliaceae	1	1	1.00	0.72
40	Violaceae	1	1	1.00	0.72
41	Vitaceae	4	6	1.50	4.32

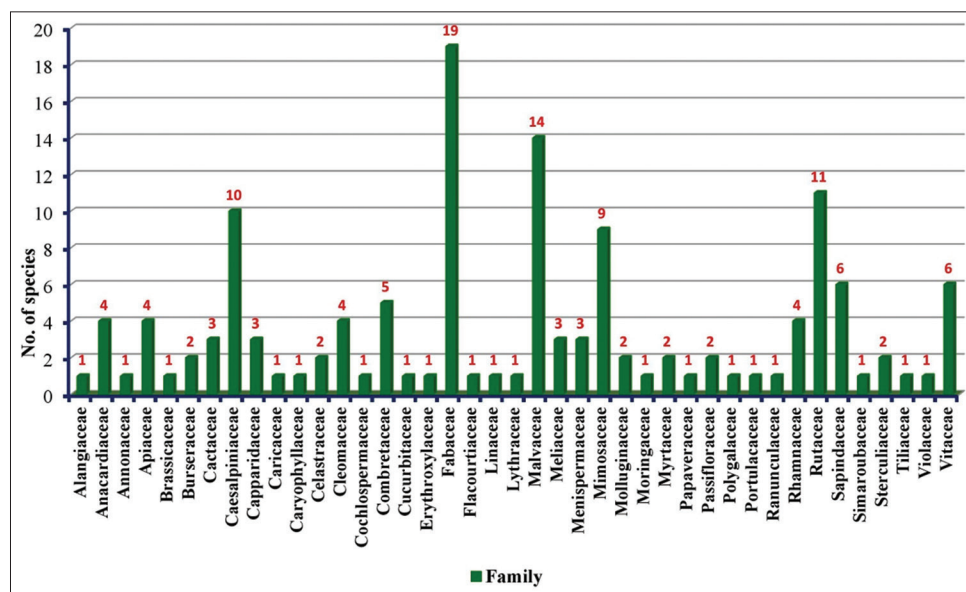


Figure 2: Family-wise distribution of polypetalae species in the study area, Bodamalai Hills

gymnosperms (3), and pteridophytes (3), was reported by Kaur & Thakur (2020) from the Bhunga block in the district of Hoshiarpur, Punjab. They were reported that the most dominant family was Fabaceae, which was followed by other dominant families including Solanaceae, Poaceae,

Asteraceae, and Cucurbitaceae. Manjunatha *et al.* (2019) also reported that, among the 253 species found in 71 genera under 51 families, the family Fabaceae represented the highest number of 42 species in the Kukkarahalli Lake of Mysuru, Karnataka.

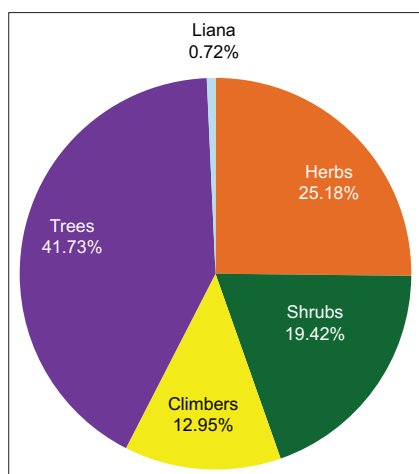


Figure 3: Habit wise distribution of polypetalae plants in the study area

Fabaceae has the highest number of species per number of genera (1.19), followed by Rutaceae (1.22) and Malvaceae (1.56). Fabaceae, the same family, has the highest percentage of species among all plant species (13.67%), followed by Rutaceae (7.91%) and Malvaceae (10.07%). The lowest species percentage (0.72%) of all plant species was found in Alangiaceae, Annonaceae, Brassicaceae, Caricaceae, Caryophyllaceae, Cochlospermaceae, Cucurbitaceae, Erythroxylaceae, Flacourtiaceae, Linaceae, Lythraceae, Moringaceae, Papaveraceae, Polygalaceae, Portulacaceae, Ranunculaceae, Simaroubaceae, Tiliaceae, and Violaceae (Table 2). The high level of habit and habitat variability within the Fabaceae family may be the reason for its dominance in the study area. In addition, all life forms, including trees, shrubs, climbers, and herbs, were found in this family. Kaur *et al.* (2017) also noted that the most dominant family is Fabaceae, with 60 species out of 464 species found in 337 genera under 99 families from the Doaba region of Punjab, India. The highest number of species was found in the genus *Cassia* (7), followed by *Acacia* (5), *Sida* and *Ziziphus* (4 each), *Terminalia*, *Citrus*, *Cleome*, *Desmodium*, and *Cissus* (3 each), *Cassine*, *Capparis*, *Indigofera*, *Mollugo*, and *Syzygium* (2 each), and the remaining 89 genera (1 species each) (Table 1).

The percentage of habit-wise distribution of polypetalae plants in the study area (Figure 3) shows that trees registered the highest percentage (41.73%) with 58 species, followed by herbs (25.18%) with 35 species, shrubs (19.42%) with 27 species, climbers (12.95%) with 18 species, and lianas (0.72%) with one species. The results of the investigation revealed the polypetalae plants' diversity and importance to the native population's way of life in the Bodamalai Hills. Additionally, this study provides baseline data on plant checklists, the diversity status of polypetalae plants, and plant adaptation to the research region.

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