

Preliminary Study of Spiders (Order: Araneae) from Taranga Hills

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Abstract: The present study was carried out from 2015 to 2017, Taranga hills located in Satlasana Taluka of North Gujarat. Spiders were collected in and around Taranga hills using Hand picking, Ground Hand Collecting, Aerial Hand Collecting and visual searching methods. Total 62 spider species identified were belonging to 42 genera and 15 families. The most dominant families are Araneidae and Salticidae, followed by Lycosidae, Tetragnathidae, and Thomisidae. The other families contribute to about less than 5% in the total collected species.

Keywords: Taranga hills, Spiders, diversity.

1. Introduction

Araneae order is one of the largest orders in class arthropoda of the animal kingdom. There are about 46,879 species of 3967 genera belonging to 114 families of spiders in the world [29] and about 1686 species belonging to 438 genera spread over 60 families in of spiders from India, [4]. There are about 266 species, 89 genera representing 28 families are recorded from Gujarat State [7]. Around 18 families belonging to 46 genera and 90 species have been recorded from Mahesana [5], which indicates the Spider fauna was highly diverse and rich.



Figure 1: Taranga hills

1.1 Study Area

Taranga hills are situated (23.540 N and 72.380 E) in Satlasana taluka of Mahesana district. Gujarat state total covers area 308.38 km². Day temperature ranges in study area around 38°C in summer and 20°C in winter. The mostly stony area with infertile soil structure and the large area of the forest have loose sandy soil. Main two rivers e.g. the Saraswati and the Sabarmati of which Sabarmati feeds Dharoi dam being the main source of irrigation in taluka. This area provides natural habitat forests where leopards, sloth bears, and hyenas are found.

2. Methodology

Samples collection required a combination of methods because of spiders have an extensive diversity in guilds and habitats, so four different collection techniques viz., Hand picking, Ground Hand Collecting, Aerial Hand Collecting and visual searching methods are employed. All methods are using during the morning, afternoons and night sampling. Collected samples are carried out in the laboratory and later transferred to 70% alcohol contain vial for later identification. In the laboratory, identification was done with morphological characters of the body with various keys and catalogues provided by arachnologist and other relevant literature of taxonomy.

3. Results

All 62 species (Table-1) were recorded and identified from study area during 2014 to 2017. The family Araneidae was dominant which had the highest number of species (15); followed by Salticidae (12), Lycosidae (08), and Tetragnathidae (7), other families had less than 5 species. Total seven guilds (Table-3) were documented during the observation in the study area. The orb weaving spiders with the highest number of total species with 24 species (38.70% of all species), followed by foliage runner spiders with 17 species (19.35%), Ground runner spiders with 12 species (19.35%), Ambusher spiders 4 species (6.45%), foliage hunter and Scattered line weaver spiders with 2 species (3.22%) and Snare/sheet web builder with single species (1.61%).

Table 1: Spiders list of Taranga hills

No	Family	species
1	ARANEIDAE	<i>Araneus mitificus</i>
2		<i>Argiope anasuja</i>
3		<i>Cyclosa bifida</i>
4		<i>Cyclosa confragra</i>
5		<i>Cyrtophora cicatrosa</i>
6		<i>Eriovixia excelsa</i>
7		<i>Eriovixia laglaizei</i>
8		<i>Larinia chloris</i>
9		<i>Larinia phthisica</i>
10		<i>Neoscona achine</i>

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11		<i>Neoscona biswasi</i>
12		<i>Neoscona mukerjei</i>
13		<i>Neoscona nautica</i>
14		<i>Neoscona odites</i>
15		<i>Neoscona theisi</i>
16	CLUBIONIDAE	<i>Clubiona Drassodes</i>
17	ERESIDAE	<i>Stegodyphus sarasinorum</i>
18	EUTICHURIDAE	<i>Cheiracanthium sp.1</i>
19		<i>Cheiracanthium sp.2</i>
20	GNAPHOSIDAE	<i>Poecilochroa sp.</i>
21	HERSILIIDAE	<i>Hersilia savignyi</i>
22	LYCOSIDAE	<i>Acantholycosa sp.</i>
23		<i>Arctosa indica</i>
24		<i>Hippasa agelenoides</i>
25		<i>Lycosa poonaensis</i>
26		<i>Lycosa tista</i>
27		<i>Lycosa sp.</i>
28		<i>Pardosa birmanica</i>
29		<i>Pardosa pseudoannulata</i>
30	NEPHILIDAE	<i>Nephila pilipes</i>
31	OXYOPIDAE	<i>Oxyopes bharatae</i>
32		<i>Oxyopes javanus</i>
33		<i>Peucetia elegans</i>
34	PHOLCIDAE	<i>Artema atlanta</i>
35		<i>Crossopriza lyoni</i>
36	SALTICIDAE	<i>Chrysilla lauta</i>
37		<i>Epeus indicus</i>
38		<i>Menemerus bivittatus</i>
39		<i>Menemerus fulvus</i>
40		<i>Myrmarachne plataleoides</i>
41		<i>Myrmarachne sp.1</i>
42		<i>Phintella vittata</i>
43		<i>Phlegra dhakuriensis</i>
44		<i>Plexippus paykulli</i>
45		<i>Stenaclurillus lesserti</i>
46		<i>Telamonia dimidiata</i>
47		<i>Thyene imperialis</i>
48	SPARASSIDAE	<i>Heteropoda bhaikakai</i>
49		<i>Olios iranii</i>
50		<i>Olios milleti</i>
51	TETRAGNATHIDAE	<i>Guizygiella indica</i>
52		<i>Guizygiella melanocrania</i>
53		<i>Leucauge decorate</i>
54		<i>Tetragnatha extensa</i>
55		<i>Tetragnatha mandibulata</i>
56		<i>Tetragnatha maxillosa</i>
57		<i>Tylorida ventralis</i>
58	THOMISIDAE	<i>Oxytate sp.</i>
59		<i>Synema decoratum</i>
60		<i>Thomisus lobosus</i>
61		<i>Thomisus projectus</i>
62	ULOBORIDAE	<i>Uloborus krishnae</i>

Table 2: Species contribution percentage

No	Family	No of genus	No of species	Percentage %
1	ARANEIDAE	7	15	24.19
2	CLUBIONIDAE	1	1	1.61
3	ERESIDAE	1	1	1.61
4	EUTICHURIDAE	1	2	3.22
5	GNAPHOSIDAE	1	1	1.61
6	HERSILIIDAE	1	1	1.61
7	LYCOSIDAE	5	8	12.90
8	NEPHILIDAE	1	1	1.61
9	OXYOPIDAE	2	3	4.83

10	PHOLCIDAE	2	2	3.22
11	SALTICIDAE	10	12	19.35
12	SPARASSIDAE	2	3	4.83
13	TETRAGNATHIDAE	4	7	11.29
14	THOMISIDAE	3	4	6.45
15	ULOBORIDAE	1	1	1.61
Total		42	62	100%

Table 3: Family wise guilds

No	Family	Common name	Guild
1	Araneidae	Orb- Weavers	Orb web builder
2	Clubionidae	Leaf-curling sac spiders	Foliage hunter
3	Eresidae	Velvet Spiders	Snare/sheet web builder
4	Eutichuridae	Long-Legged Sac Spiders	Foliage runner
5	Gnaphosidae	Flat-bellied Ground Spiders	Ground runner
6	Hersiliidae	Two-Tailed Spiders	Foliage hunter
7	Lycosidae	Wolf spiders	Ground runner
8	Nephilidae	Golden Orb Weavers	Orb web builder
9	Oxyopidae	Lynx Spiders	Foliage runner
10	Pholcidae	Cellar spiders or Daddy long legs	Scattered line weaver
11	Salticidae	Jumping spiders	foliage runner
12	Sparassidae	Huntsman spiders	Ground runner
13	Tetragnathidae	Long jawed orb weavers	Orb web builder
14	Thomisidae	Crab Spiders	Ambusher
15	Uloboridae	Hackled-Orb-web spiders	Orb web builder

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