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Diversity of spiders (*Arachnida: Araneae*) from district Udhampur, JK (UT), India

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Abstract
The present survey was conducted from April 2024 to March 2025 on arachnid diversity in the District Udhampur, J&K (UT) for the first time. A total of 124 arachnid species, including 122 spiders and 2 harvestmen species, were recorded from the study area. Order Araneae was represented by 69 genera, 22 families and order Opiliones represented by 1 family. Maximum spider species belongs to family Salticidae 20.1% (25) species, followed by Araneidae 14.5% (18) species, Lycosidae 12.9% (16) species, Oxyopidae 9.6% (12) species and Thomisidae 7.2% (9) species. Shannon-Wiener Diversity Index was found (4.45) highest in the study area. Species richness (3.61) and species evenness (0.92) were also found highest in the study area. The abundance status showed that out of 124 spider species sighted at the study area, 48 species were common, 23 species were frequent, 40 species were occasional and 13 species were rare. Spider species namely, *Crossopriza lyoni*, *Oecobius navus*, *Menemerus semilimbatus* and *Plexippus paykulli* were found to be the dominant spider species from study area. This preliminary data shows a rich diversity of arachnids, indication high potentiality of the study area for future faunal discoveries.

Keywords: Arachnids, Salticidae, diversity, udhampur, *Crossopriza lyoni*

Introduction
Spiders are one of the most prevalent group of arachnids. They are the most predominant predator of any terrestrial community. Spiders play a significant role in the life of every habitat including households (Gertsch, 1979; Turnbull, 1973) [10, 33]. They feed on insects which are harmful to humans and their livestock (Tikader, 1987) [30]. Households' spider feeds on insects such as cockroaches, houseflies and mosquitos, which are carriers/vectors of pathogens that cause acute and chronic infections in humans (Gajbe, 2004) [7]. Unlike household insect pests, household spiders do not contaminate human food, spoil clothing or ruin homes (Savory, 1928) [19].

There are currently 51,083 recognized spider species in the world (World Spider Catalogue, 2023) [34]. and a small portion of this diversity can be found living in close vicinity to humans. Spiders present inside and around human habitations have been studied by some arachnologists (Cutler, 2007; Smith *et al*., 2012; Rozwalka *et al*., 2017; Purgat *et al*., 2021 and Pupin & Brescovit, 2023) [6, 23, 18, 17, 16] however, more such studies need to be taken up. India represented 1977 spider species belonging to 514 genera and 63 families by Caleb & Sankaran (2025) [2]. Several undiscovered or unrecorded species exist, particularly in northwestern India including Jammu and Kashmir, where just a few studies have been conducted. Some of these studies by (Tikader, 1981; Zabka 1981; Tikader, 1982a, 1982b; Gajbe, 1988; Majumder & Tikader, 1991; Hormiga, 1994; Chakrabarti, 2013; Punjoo & Bhat, 2015; Shah & Buhroo, 2022; Singh *et al*., 2023; and Zehbi & Yousuf, 2023) [27, 34, 28, 29, 8, 13, 11, 4, 15, 21, 22, 35] are highly significant and taxonomic in nature. Only 15 species were collected from Udhampur district of JK, UT (Caporiacco, 1935) [3[. The current work was carried out because there hasn't been enough research done on the spider fauna in the selected study area of Udhampur district. This study is likely to be the first baseline data of this type for the spider fauna in the Udhampur district, which will support more research in this area and, on the other hand, help assess the spider biodiversity status in this region.

Materials and Methods

Study area

The present study was conducted from April 2024 to March 2025 in district Udhampur of JK (UT), which is a part of the Northwest Lower Himalayas (Fig. 1). Udhampur district is situated in south eastern part of Jammu & Kashmir (UT) and is bounded in the west by Reasi district, in the north by Ramban district, in the north east by Doda district, in the south east by Kathua & Samba district and in south west by Jammu district. The district headquarter at Udhampur town lies between 32°34' - 39° 30' N and 74°16' - 75°38' E and cover an area of about 2380 km^2. This diverse range provides a unique habitat for various flora and fauna. Spiders prefer vegetation that provides ample cover, attachment points for webs, and a suitable microclimate. The major shrubs found in the study area like, *Adhatoda vesica, Vitex negundo, Berberis lycium, Woodfordia, Carissa opaca, Colebrookea oppositifolia, Dodonaea viscosa.* Major herbs including, *Anagallis arvensis, Fumaria indica, Taraxacum officinale, Stellaria media, Polygonum, Mirabilis jalapa,* and *Oenothera, Capsella.*

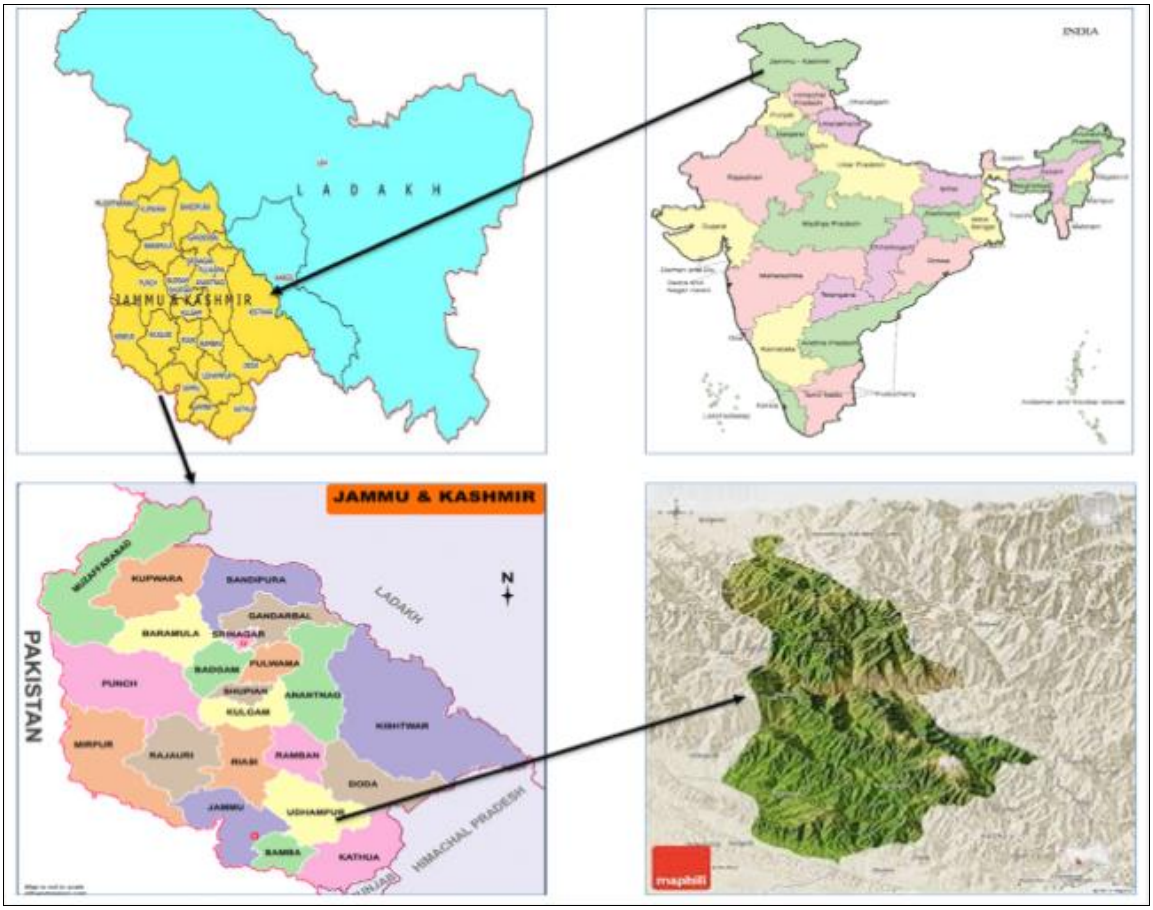

Fig 1: Location of study sites in J&K (UT), India. (Kumar and Kaur, 2023)

Methods

All possible habitats, viz., agricultural area, scrubby area, marshy area, coniferous forest area, mixed deciduous forest and human settlements were covered in the present study. Survey was conducted in three consecutive days alternately for 10 days per month during morning (6.30-8.30am) and evening hours (3.30-5.30pm) between April 2024 and March, 2025. While active searching for spiders a total of 480-man hours were spent on collecting spiders in the study area during the entire study period. Identification was done using different publications by (Tikader, 1980, 1982a, 1987; Tikader & Malhotra, 1980; Barrion & Litsinger, 1995; Song *et al*., 1999; Jocqué & Dippenaar-Schoeman, 2006; Gajbe, 2008; Sebastian & Peter, 2009; and Metzner, 2017) [26, 28, 30, 31, 1, 24, 12, 9, 20, 14]. Checklist of spiders of district Udhampur was prepared from the present study data and compiling the species from published literature (peer-reviewed journals) from the state on spiders. Shannon-Wiener Diversity Indices were used to calculate the spider faunal diversity from the study area by following formulas:

Shannon-Wiener's index

$$H' = -\sum_{i=1}^{S} (p_i \ln p_i)$$

Where, H' - Shannon- Wiener's diversity index.
S- the community's total species count.
P_i - Proportion of the i^{th} species to total abundance value.
ln - Natural log of the number.

Shannon Equitability index was calculated by the equation:
EH=H/Ln(S)
Where, H is Shannon-Wiener's diversity index
S is species richness.
Species richness was measured by Menhinick's index

$$D = \frac{S}{\sqrt{N}}$$

Where, S- total number of identified species.
N- total number of counted individuals.

During survey, following four different techniques (Coddington *et al*., 1991; Toti *et al*., 2000) [5, 32] were used for locating spider in different habitats.

1. **Aerial hand collection:** The spiders were searched from the knee height to the top of the vegetation cover and collected by a sweep net having diameter of 36 cm.
2. **Ground hand collection:** Spiders were searched on the surface of the ground, rock and plants below the knee level.
3. **Beat sheet method:** A light coloured cloth was kept under the vegetation and then the vegetation was shaken robustly to collect the spider.
4. **Household goods:** All the hideout areas inside the houses were thoroughly searched to locate the spider.

Once spider was sighted, photographs were taken at the field site for species identification and then released immediately in the same habitat.

Results and Discussion

A total of 124 species of spider belonging to class Arachnida were found during the survey period in the study area of district Udhampur. However, 7 species among them were not identified (Table 1, Image 1 to 11). Out of 124 total species, order Araneae represented by 122 (98.3%) belongs to 22 families and order Opiliones represented by 2 (1.61%) species belongs to family Sclerosomatidae. The study revealed that maximum number of spider species belongs to family Salticidae 20.1% (25) species, Araneidae 14.5% (18) species, Lycosidae 12.9% (16) species, Oxyopidae 9.6% (12) species, Thomisidae 7.2 %(9) species and followed by Theridiidae 4.0% (5) species, Dolomedidae 3.2% (4) species, Philodromidae 3.2% (4) species, family Cheiracanthidae, Pisauridae, Sparassidae, Tetragnathidae, Uloboridae, Sclerosomatidae represented by 1.6% (2) each, family Clubionidae, Corinnidae, Filistatidae, Gnaphosidae, Hersiliidae, Nephilidae, Oecobiidae, Pholcidae, Sicariidae represented by 0.8% (1) species each (Fig. 2 & 3). Spider species namely, *Crossopriza lyoni, Oecobius navus, Menemerus semilimbatus Plexippus paykulli, Oxyopes birmanicus, Leiobunum sp., Leiobunum blackwalli, Menemerus fulvus, Nesticodes rufipes, Trichinephila clavate, Oxyopes hindostanicus, Hippasa agelenoides, Harmochirus brachiatus, Latrodectus geomatricus, Hogna radiata* and *Heteropoda venatoria* were found to be the dominant species from the study area.

Analysis of data showed that out of 124 spider species sighted at the study area, 48 species were common, 23 species were frequent, 40 species were occasional and 13 species were rare (Fig-4). Greater Shannon-Wiener Diversity Index (4.45) was found in the study area. Species richness (3.61) and species evenness (0.92) were also found highest in the study area (Table 2).

As per previous studies a total of 284 species of spiders described under 160 genera belonging to 34 families were recorded in both the territories (Jammu and Kashmir, and Ladakh) of northwest India. Out of 20 districts of JK (UT), most of the valid species of spiders were recorded (143 species) from Srinagar followed by (88 species) Anantnag, (67 species) Ganderbal, Baramulla (51 species), Pulwama (47 species), Budgam (44 species), Jammu (37 species), Shopian (34 species) and Udhampur (15 species). According to earlier records, the majority of the spider species described or documented in Jammu and Kashmir, belongs to the Areneidae family (36 species), which is followed by the Salticidae (30 species), Linyphiidae and Lycosidae (28 species each), Theriidae (22 species), Gnaphosidae (20 species), Tetragnathidae and Thomisidae (13 species each), Oxyopidae (11 species), and others (less than 10 species) (Singh *et al*., 2023) [22].

Most of the work on spider fauna diversity has been conducted in the Kashmir division, with comparatively less research in the Jammu division. The work of Thakur *et al*., (1995) [25] revealed the existence of 20 species of spiders belonging to12 genera under eight families in Jammu region.

The majority of spider species have been recorded from other districts of the Jammu and Kashmir UT (Singh *et al*., 2023) [22]. The present study was the first systematic documentation of arachnid fauna in district Udhampur, providing insights into its biodiversity.

Due to a scarcity of research in the study area, the records on spider fauna from district Udhampur are sketchy. Consequently, more field surveys are required in different habitats of the study area to have a true picture of the arachnid fauna of district Udhampur. This work is significant as it provides an up-to-date number of spider species found in study area and adds to the arachnid biodiversity of the district Udhampur. This will help researchers in proper identification and study of the spider fauna of district Udhampur, J&K (UT).

Table 1: List of Arachnida species recorded from district Udhampur of Jammu and Kashmir (UT), India

S.No	Common Name	Zoological Name	Remarks
	Order-Araneae		
	Family - Araneidae		
1	Joro spider	*Trichinephila clavata* (L. Koch, 1878)	Image 1, A
2	Hump Backed Araneid spider	*Eriovixia excelsa* (Simon, 1889)	Image 1, B
3	Araneid spider	*Eriovixia sp.*	Image 1, C
4	Grass Neoscona spider	*Neoscona moreli* (Vinson, 1863)	Image 1, D
5	Monkey orb weaver spider	*Neoscona punctigera* (Doleschall, 1857)	Image 1, E
6	Common web spider	*Neoscona theisi* (Walckenaer, 1841)	Image 1, F
7	Arabesque Orbweaver	*Neoscona arabesca* (Walckenaer, 1841)	Image 1, G
8	Bordered Orbweaver	*Neoscona adianta* (Walckenaer, 1802)	Image 1, H
9	Orb weaver spider	*Neoscona sp.*1	Image 1, I
10	Orb weaver spider	*Neoscona sp.*2	Image 1, J
11	Orb-weaver spider	*Guizygiella sp.*	Image 1, K
12	Orb weaver spider	*Hypsosinga sp.*	Image 1, L
13	Orb-weaver spider	*Gea spinipes* (C.L Koch, 1843)	Image 2, A
14	Missing sector orb weaver	*Zygiella x-notata* (Clerck, 1757)	Image 2, B

15	Nocturnal orb-weaver spider	*Araneus ventricosus* (L.Koch, 1878)	Image 2, C
16	Orb-weaver spider	*Araneus sp.*	Image 2, D
17	Orb-weaver spider	*Pronous sp.*	Image 2, E
18	Tropical tent-web spider	*Cyrtophora sp.*	Image 8, L
Family -Cheiracanthidae			
19	Northern yellow-sac spider	*Cheiracanthium mildei* (L. Koch, 1864)	Image 2, F
20	Black-footed yellow sac spider	*Cheiracanthium inclusum* (Hentz, 1847)	Image 2, G
Family -Clubionidae			
21	Patchy Sac spider	*Clubiona drassodes* (O. Pickard-Cambridge, 1874)	Image 2, H
Family-Corinnidae			
22	Antmimic spider	*Castianeira sp.*	Image 2, I
Family-Dolomedidae			
23	Dark fishing spider	*Dolomedes sp.* 1	Image 2, J
24	Fishing spider	*Dolomedes sp.* 2	Image 2, K
25		*Dolomedes sp.* 3	Image 2, L
26		*Dolomedes sp.* 4	Image 3, A
Family-Filistatidae			
27	Crevice weaver	*Filistata sp.*	Image 3, B
Family-Gnaphosidae			
28	Mouse spider	*Scotophaeus domesticus* (Tikader, 1962)	Image 3, C
Family-Hersiliidae			
29	Two-tailed spider	*Tamopsis sp.*	Image 3, D
Family-Lycosidae			
30	Wolf spider	*Wadicosa fidelis* (O. Pickard-Cambridge, 1872)	Image 3, E
31	Spotted wolf spider	*Pardosa amentata* (Clerck, 1757)	Image 3, F
32	Shore spider	*Pardosa milvina* (Hentz, 1844)	Image 3, G
33	Wolf spider	*Pardosa pseudoannulata* (Bosenberg & Strand, 1906)	Image 3, H
34	Wolf spider	*Pardosa distincta* (Blackwall, 1846)	Image 3, I
35	Wolf spider	*Allocosa sp.*	Image 3, J
36	Wolf spider	*Pardosa sp.* 1	Image 3, K
37	Wolf spider	*Pardosa sp.* 2	Image 3, L
38	Wolf spider	*Pardosa sp.* 3	Image 4, A
39	Wolf spider	*Pardosa sp.* 4	Image 4, B
40	Wolf spider	*Pardosa sp.* 5	Image 4, C
41	Wolf spider	*110rctos asp.*	Image 4, D
42	Common funnel web spider	*Hippasa agelenoides* (Simon, 1884)	Image 4, E
43	Lanceolate Wolf Spiders	*Schizocosa sp.*	Image 4, F
44	Wolf spider	*Hogna radiata* (Latreille, 1817)	Image 4, G
45	Wolf spider	*Trochosa aquatica* (Tanaka, 1985)	Image 4, H
Family-Nephilidae			
46	Black Wood spider	*Nephilia kuhlii* (Doleschall, 1859)	Image 4, I
Family-Oecobiidae			
47	Baseboard spider	*Oecobius navus* (Blackwall, 1859)	Image 4, J
Family-Oxyopidae			
48	Burmese Lynx spider	*Oxyopes birmanicus* (Thorell, 1887)	Image 4, K
49	Orange Backed Lynx spider	*Oxyopes kohaensis* (Bodkhe & Vankhede, 2012)	Image 4, L
50	Lynx spider	*Oxyopes hindostanicus* (Pocock, 1901)	Image 5, A
51	Striped Lynx spider	*Oxyopes Javanus* (Thorell, 1887)	Image 5, B
52	Striped lynx spider	*Oxyopes salticus* (Hentz, 1845)	Image 5, C
53	Stripted lynx spider	*Oxyopes sertatus* (L. Koch, 1878)	Image 5, D
54	Lynx spider	*Oxyopes bharatae* (Gajbe, 1999)	Image 5, E
55	Lynx spider	*Oxyopes sp.* (1)	Image 5, F
56	Lynx spider	*Oxyopes sp.* (2)	Image 5, G
57	Bark Lynx spider	*Hamataliwa grisea*	Image 5, J
58	Lynx spider	*Hamataliwa sp.* 1	Image 5, K
59	Lynx spider	*Hamataliwa sp.* 2	Image 5, L
Family-Philodromidae			
60	Running crab spider	*Paracleocnemis sp.*	Image 5, H
61	Running crab spider	*Philodromus sp.*1	Image 5, I
62	Running crab spider	*Philodromus sp.*2	Image 6, A
63	White running crab spider	*Psellonus sp.*	Image 6, B
Family-Pholcidae			
64	Daddy-long legs	*Crossopriza lyoni* (Blackwall, 1867)	Image 6, C
Family-Pisauridae			
65	Nursery Web spider	*Perenethis venusta* (L. Koch, 1878)	Image 6, D
66	Nursery Web spider	*Pisaurina sp.*	Image 6, E
67	Nursery Web spider	*Polyboea sp.*	Image 6, F

68	Nursery Web spider	*Euprosthenops sp.*	Image 9, A
Family-Salticidae			
69	Two-stripted Jumper spider	*Telamonia dimidiata* (Simon, 1899)	Image 6, G
70	Adansons house jumper	*Hasarius adansoni* (Audouin, 1826)	Image 6, H, I
71	Ant mimicking jumping spider	*Myrmarachne melanocephala* (MacLeay, 1839)	Image 6, J
72	Ant-mimicking jumping spider	*Myrmarachne plataleoides* (Pickard-Cambridge, 1869)	Image 6, K
73	Banded Phintella	*Phintella vittata* (C.L.Koch, 1846)	Image 6, L
74	Phintella Jumping spider	*Phintella piatensis* (Barrion and Litsinger, 1995)	Image 7, A
75	Boreal jumping spider	*Bianor sp.*	Image 7, B
76	Common Housefly catcher	*Plexippus petersi* (Karsh, 1878)	Image 7, C
77	Pantropical Jumping Spider	*Plexippus paykulli* (Audouin, 1826)	Image 7, D, E
78	Hairy-armed Jumper	*Harmochirus brachiatus* (Thorell, 1877)	Image 7, F
79	Half-edged Wall jumping spider	*Menemerus semilimbatus* (Hahn, 1829)	Image 7, G
80	Wall jumping spider	*Menemerus fulvus* (L. Koch, 1878)	Image 7, H
81	Gray wall jumper	*Menemerus bivittatus* (Dufour, 1831)	Image 7, I
82	Heavy-bodied jumper	*Hyllus sp.*	Image 7, J
83	Heavy-bodied jumper	*Hyllus semicupreus* (Simon, 1885)	Image 7, K
84	Imperial Jumping spider	*Thyene imperialis* (Rossi, 1846)	Image 7, L & Image 8, A
85	White-jawed jumping spider	*Hentzia sp*1	Image 8, B
86	Jumping spider	*Hentzia sp*2	Image 8, C
88	Jumping spider	*Menemerus nigli* (Wesolowska & Freudenschuss, 2012)	Image 8, D
89	Jumping Spider	*Rhene albigera* (C.L Koch, 1846)	Image 8, E
90	Jumping Spider	*Rudakius ludhianaensis* (Tikader, 1974)	Image 8, F, G
91	Jumping spider	*Marpissa sp.*	Image 8, H
92	Jumping spider	*Evarcha sp.*	Image 8, I
93	Jumping spider	*Cyrba ocellata* (Kroneberg, 1975)	Image 8, J, K
94	Jumping spider	Unidentified	Image 11, A
Family-Sicariidae			
95		*Loxosceles sp.*	Image 9, B
Family-Sparassidae			
96	Pantropical huntsman spider	*Heteropoda venatoria* (Linnaeus 1767)	Image 9, C
97	Golden Huntsman spider	*Olios sp.*	Image 9, D
Family-Tetragnathidae			
98	Stretch spider	*Tetragnatha extensa* (Linnaeus, 1758)	Image 9, E
99	Decorative silver orb spider	*Leucauge decorata* (Blackwall, 1864)	Image 9, F
Family-Theridiidae			
100	Brown widow spider	*Latrodectus geomatricus* (C.L. Koch, 1841)	Image 9, G
101	Ant eating spider	*Euryopis scripta* (Simon, 1881)	Image 9, H
102	False widow spider	*Steatoda grossa* (C.L Koch, 1838)	Image 9, I
103	False widow spider	*Steatoda cingulata* (Thorell, 1890)	Image 9, J
104	Red House spider	*Nesticodes rufipes* (Lucas, 1846)	Image 10, A
Family-Thomisidae			
105	Crab spider	*Runcinia yogeshi* (Gajbe & Gajbe, 2000)	Image 10, B
106	Crab spider	*Runcinia sp.*	Image 10, C
107	Crab spider	*Thomisus okinawensis* (Strand, 1907)	Image 10, D
108	Flower crab spider	*Thomisus sp.*	Image 10, E
109	Common crab spider	*Xysticus cristatus* (Clerck, 1757)	Image 11, I
110	Crab spider	*Xysticus sp.* 1	Image 10, F
111	Ground crab spider	*Xysticus sp.* 2	Image 10, G
112	White-banded crab spider	*Misumenoides formosipes* (Walckenaer, 1837)	Image 10, H
113	Crab spider	*Ozyptila confluens* (C.L Koch, 1845)	Image 10, I
Family-Uloboridae			
114	Feather-legged spider	*Uloborus sp.*	Image 10, J
115	Ninja-star ceiling spider	*Zosis geniculate* (Olivier, 1789)	Image 10, K
	Unidentified spider species		
116	Unidentified species 1		Image 11, B
117	Unidentified species 2		Image 11, C
118	Unidentified species 3		Image 11, D
119	Unidentified species 4		Image 11, E
120	Unidentified species 5		Image 11, F
121	Unidentified species 6		Image 11, G
122	Unidentified species 7		Image 11, H
Order-Opiliones			
Family-Sclerosomatidae			
123	Harvestman spider	*Leiobunum blackwalli* (Meade, 1861)	Image 11, J
124	Harvestman spider	*Leiobunum sp.*	Image 11, K

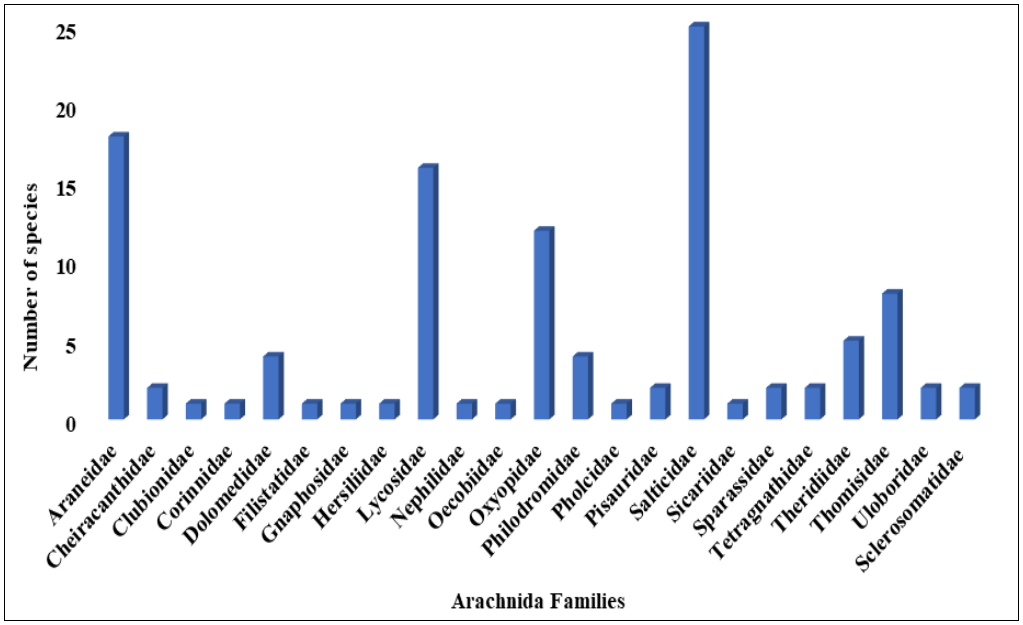

Fig 2: Bar Chart showing the number of species belongs to different Arachnida families.

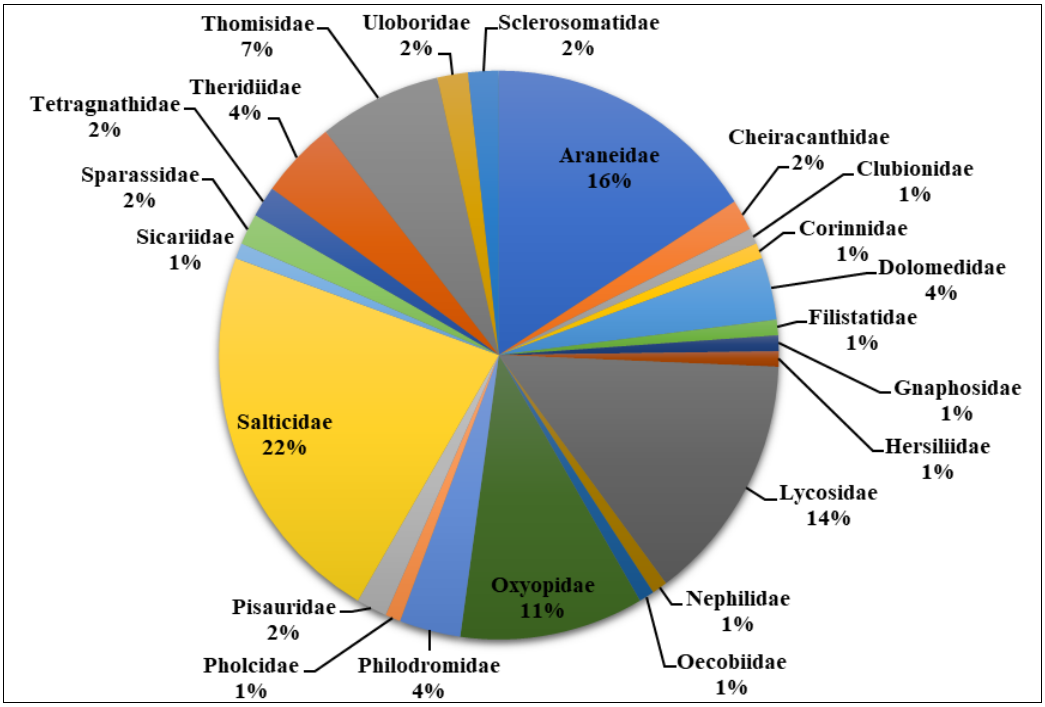

Fig 3: Pie chart represented the comparative density (percentage) of spider families recorded during the study period

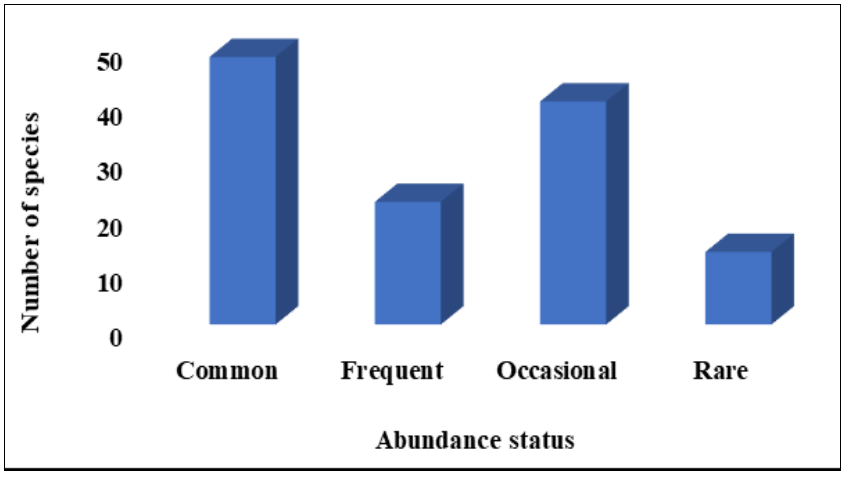

Fig 4: Bar Chart showing the abundance status of species in the study area

Table 2: Shannon-Weiner diversity indices in the study area

Shannon-Weiner Species Diversity Index	Menhinick's index	Pielou's Evenness Index (J)
4.45	3.61	0.92

Fig 1: A- *Trichonephila clavata* | B- *Eriovixia excelsa* | C-*Eriovixia sp* | D- *Neoscona moreli* | E-*Neoscona punctigera* | F-*Neoscona theisi* | G-*Neoscona arabesca* | H- *Neoscona adianta* | I- *Neoscona sp*1 | J-*Neoscona sp*2 | K-*Guizygiella sp* | L- *Hypsosinga sp*.

Fig 2: A- *Gea spinipes* | B- *Zygiella x-notata* | C- *Araneus ventricosus* | D- *Araneus sp.*| E- *Pronous sp* | F- *Cheiracanthium mildei* | G-*Cheiracanthium inclusum* | H- *Clubiona drassodes* | I- *Castianeira sp* | J- *Dolomedes sp*1 | K- *Dolomedes sp*2 | L- *Dolomedes sp*3.

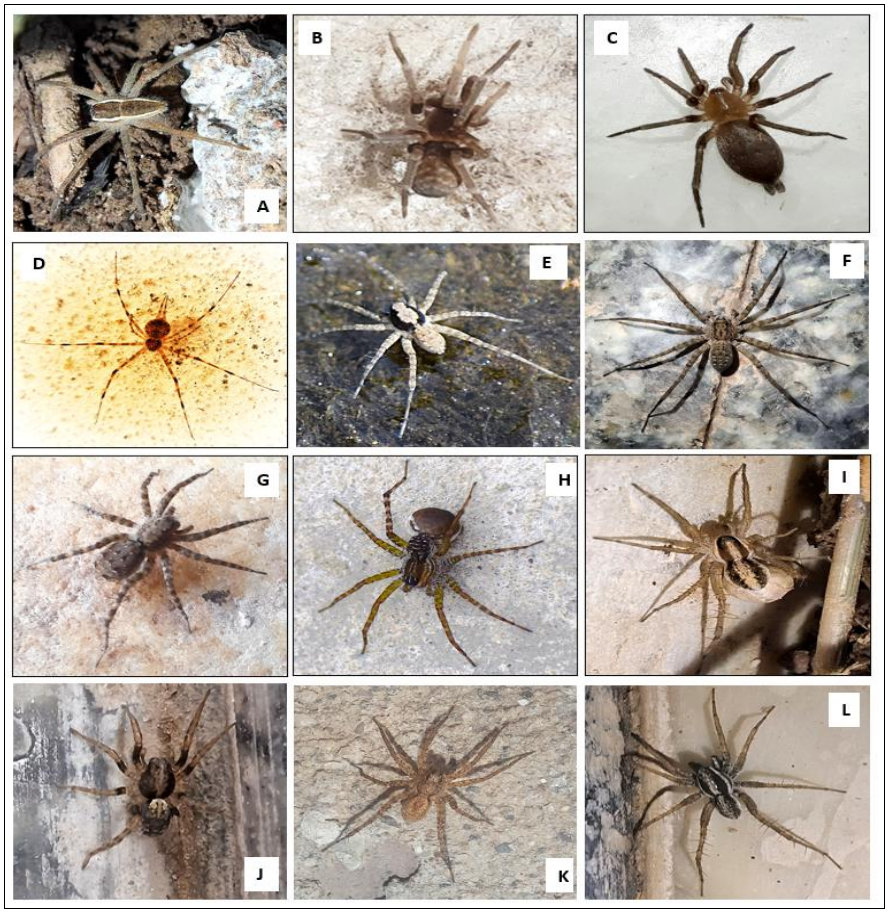

Fig 3: A - *Dolomedes sp*4 | B- *Filistata sp* | C- *Scotophaeus domesticus* | D-*Tamopsis sp* | E- *Wadicosa fidelis* | F-*Pardosa amentata* | G-*Pardosa milvina* | H-*Pardosa pseudoannulata* | I- *Pardosa distincta* | J- *Allocosa sp* | K- *Pardosa sp*1 | L- *Pardosa sp*2.

Fig 4: A-*Pardosa sp*3 | B-*Pardosa sp*4 | C-*Pardosa sp*5 | D-*Arctosa sp.* | E-*Hippasa agelenoides* | F-*Schizocosa sp.* | G-*Hogna radiata* | H-*Trochosa aquatica* | I-*Nephilia kuhlii* | J-*Oecobius navus* | K-*Oxyopes birmanicus* | L- *Oxyopes kohaensis*.

Fig 5: A- *Oxyopes hindostanicus* | B- *Oxyopes Javanus* | C-*Oxyopes salticus* | D- *Oxyopes sertatus* | E-*Oxyopes bharatae* | F-*Oxyopes sp*.1 | G-*Oxyopes sp*.2 | H-*Paracleocnemis sp* | I-*Philodromus sp*1 | J- *Hamataliwa grisea* | K- *Hamataliwa sp*1 | L- *Hamataliwa sp*2

Fig 6: A-*Philodromus sp*2 | B-*Psellonus planus* | C-*Crossopriza lyoni* | D-*Perenethis venusta* | E-*Pisaurina sp.* | F-*Polyboea sp.* | G-*Telamonia dimidiata* | H-*Hasarius adansoni* (♂) | I- *Hasarius adansoni* (♀) | J-*Myrmarachne melanocephala* | K-*Myrmarachne plataleoides* | L-*Phintella vittate*

Fig 7: A-*Phintella piatensis* | B-*Bianor sp* | C-*Plexippus petersi* | D-*Plexippus paykulli* (♂) | E-*Plexippus paykulli* (♀) | F-*Harmochirus brachiatus* | G-*Menemerus semilimbatus* | H-*Menemerus fulvus* | I- *Menemerus bivittatus* | J-*Hyllus sp* | K-*Hyllus semicupreus* | L-*Thyene imperialis* (♂).

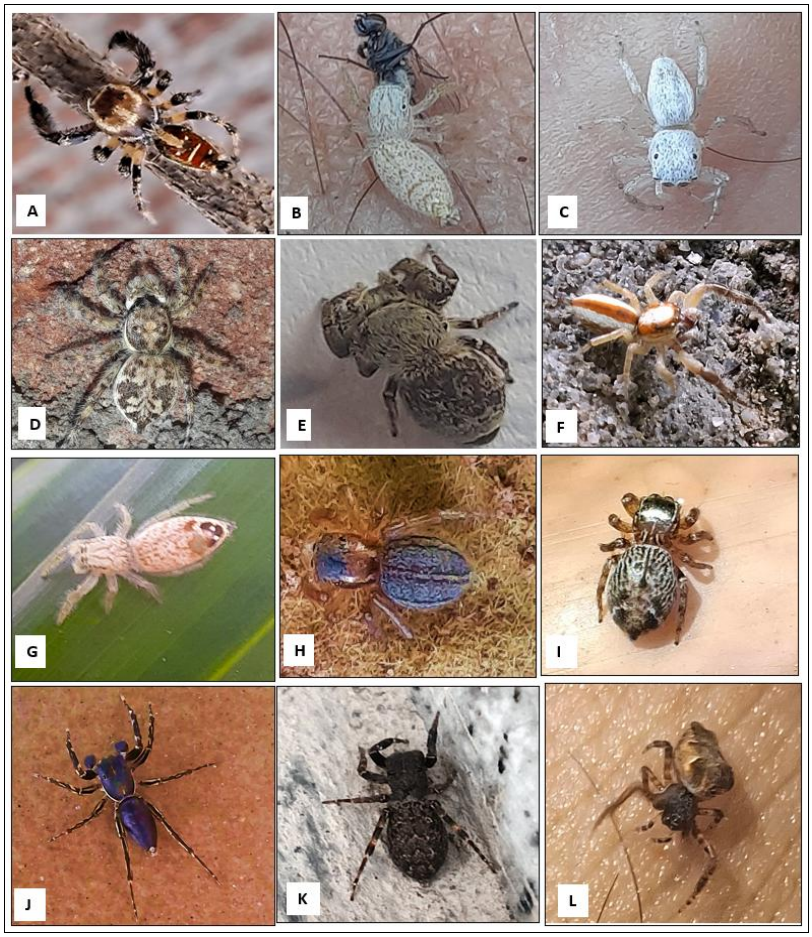

Fig 8: A-*Thyene imperialis* (♂) | B- *Hentzia sp*1| C- *Hentzia sp*2 | D-*Menemerus nigli* | E-*Rhene albigera* | F-*Rudakius ludhianaensis* (♂) | G-*Rudakius ludhianaensis* (♀) | H- *Marpissa sp* | I-*Evarcha sp* | J- *Cyrba ocellata* (♂) | K- *Cyrba ocellata* (♀) | L-*Cyrtophora sp.*

Fig 9: A-*Euprosthenops sp* | B-*Loxosceles sp* | C-Heteropoda venatoria | D-*Olios sp* | E-*Tetragnatha extensa* | F-*Leucauge decorata* | G-*Latrodectus geomatricus* | H-*Euryopis scripta* | I-*Steatoda grossa* | J-*Steatoda cingulate*.

Fig 10: A-*Nesticodes rufipes* | B-*Runcinia yogeshi* | C-*Runcinia sp* | D-*Thomisus okinawensis* | E-*Thomisus sp* | F-*Xysticus sp*1 | G-*Xysticus sp*2 | H-*Misumenoides formosipes* | I-*Ozyptila confluens* | J-*Uloborus sp*. | K-*Zosis geniculate*.

Fig 11: A- Jumping spider | B-Unidentified sp1 | C-Unidentified sp2 | D-Unidentified sp3 | E-Unidentified sp4 | F-Unidentified sp5 | G-Unidentified sp6 | H-Unidentified sp7 | I- *Xysticus cristatus* | J-*Leiobunum blackwalli* | K-*Leiobunum sp.*

Conclusion

The Arachnida fauna of district Udhampur is represented by 124 species belongs to Order Araneae (122 sp.) and 2 species belongs to order Opiliones. This was the first systematically study of spider fauna from the study area. There are diverse habitats found in the study area, the actual number of Arachnida species found in the district Udhampur could be much more. considering their wide distribution and unique adaptations among arthropods, Arachnida warrant greater research attention, particularly regarding their diversity, distribution, biology, behavior, and potential role in biocontrol.

Conflicts of Interest

The authors declare no conflict of interest regarding the publication of this manuscript. This research was conducted independently, with no financial or commercial relationships that could be construed as potential conflicts impacting the results or interpretations presented.

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