

# Spider Fauna of Some Localities in and Around Ahmednagar City and Its Medical Importance

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## Abstract

Spiders are one of the most diverse and ubiquitous group of animals. Despite being one of the most diverse groups of animals existing in India, their study has remained largely neglected. The present research paper provides a preliminary report on spider fauna of Ahmednagar city, M.S. India. Spider specimen were collected from different localities in and around the city during July 2015 to March 2016. Total 25 spider species representing 9 families and 19 genera were recorded. Results obtained shows that the Araneidae is the most represented family with 11 species followed by Salticidae, Oxyopidae and Lycosidae (03 species each) and 01 species each from Hersilidae, Pholcidae, Eresidae, Tetragnathidae and Thomisidae. Araneidae is the most dominant family (44% of species) followed by Salticidae (12% of species), Oxyopidae (12% of species) and Lycosidae (12% of species). A note on medical importance of spiders was also added. The outcome of the present research work will update data on faunal resources of Maharashtra and will be helpful for future researchers working on the spiders of the area. The findings will also be helpful for taxonomic and phylogenetic studies on spiders.

**Keywords:** Spider, Fauna, Diversity, Ahmednagar.

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## INTRODUCTION

Spiders are one of the most diverse, abundant and ubiquitous groups of arthropods. Spiders are found worldwide and distributed over every continent except Antarctica. There are approximately 42,055 species of spiders reported globally [1, 2]. India has about 1520 spider species [3]. Spiders play important roles in terrestrial ecosystems; they prey upon many insect pests and other invertebrates. Despite having a great ecological importance, spiders are largely neglected and poorly studied group of invertebrates. An extensive literature is available on diversity and taxonomy of spider fauna of different states of India [4-14]. Some reports on spider diversity of Maharashtra are also available [15-19]. Even today, there is no published record on spider diversity of many areas of the Maharashtra.

Ahmednagar is area wise the largest district of Maharashtra and has a variety of habitats suitable for life of spiders. However, published data on diversity of spiders of Ahmednagar is largely unavailable and insufficient. Hence, extensive surveys on diversity and conservation of spiders from Ahmednagar are highly

needed. In view of this, a primary survey on diversity of spider fauna of Ahmednagar city was undertaken.

## MATERIALS AND METHODS

### Study Area

The present study was conducted from July 2015 to February 2016 at different study sites in and around Ahmednagar city. The spiders were collected from different sites at Ahmednagar city, District Ahmednagar, Maharashtra. Specimen were collected from Ahmednagar college campus, Belheshwar area (at Burhannagar and Kapurwadi, near Ahmednagar city). Some specimen were also collected from vegetation along Ghod river near Shirur.

### Sampling Method

Spiders were collected by adopting standard sampling techniques such as active searching, photographing and hand picking. All surveys were conducted in the morning hours between 8:00 am to 11:00 am. Collected spiders were photographed and preserved in 70% alcohol.

## Identification

Specimen were sent to ZSI, Western Regional Centre, Pune for identification by expert at ZSI (Zoological Survey of India). Keys by Tikader [8] were used for spider identification.

## RESULT AND DISCUSSION

Total 25 species representing 9 families and 19 genera were recorded during the period of the study (Table-1).

**Table-1: List of spider species reported from study area**

<b>Family Araneidae</b>
• <i>Argiope anasuja</i> Thorell, 1887
• <i>Araneus sp.</i> Clerck, 1757
• <i>Chorizopes sp.</i> Cambridge, 1870
• <i>Cyrtophora cicatrosa</i> (Stoliczka, 1869)
• <i>Cyrtophora citricola</i> (Forsskal, 1775)
• <i>Cyclosa hexatuberculata</i> Tikader, 1982
• <i>Cyclosa moondensis</i> Tikader, 1963
• <i>Eriovixia excelsa</i> (Simon, 1889)
• <i>Gibbaranea bituberculata</i> (Walckenaer, 1802)
• <i>Neoscona mukerjei</i> Tikader, 1980
• <i>Neoscona punctigera</i> (Doleschall, 1857)
<b>Family Salticidae</b>
• <i>Marpissa sp.</i> Koch, 1846
• <i>Plexippus paykulli</i> Audouin, 1826
• <i>Telamonia dimidiata</i> (Simon, 1899)
<b>Family Oxyopidae</b>
• <i>Oxyopes chitrae</i> Tikader, 1965
• <i>Oxyopes pankaji</i> Gajbe & Gajbe, 2000
• <i>Peucetia viridana</i> (Stoliczka, 1869)
<b>Family Lycosidae</b>
• <i>Hippasa madraspatana</i> Gravely, 1924
• <i>Hippasa olivacea</i> (Thorell, 1887)
• <i>Hippasa pisaurina</i> Pocock, 1900
<b>Family Hersiliidae</b>
• <i>Hersilia savignyi</i> Lucas, 1836
<b>Family Pholcidae</b>
• <i>Crossopriza lyoni</i> (Blackwall, 1867)
<b>Family Eresidae</b>
• <i>Stegodyphus sarasinorum</i> Karsch, 1892
<b>Family Tetragnathidae</b>
• <i>Leucauge celebesiana</i> (Walckenaer, 1842)
<b>Family Thomisidae</b>
• <i>Henriksenia hilaris</i> (Thorell, 1877)

Of the 25 spider species, 11 species represent Family Araneidae, followed by families Salticidae, Oxyopidae and Lycosidae each represented by 3 species. Families Hersilidae, Pholcidae, Tetragnathidae and Thomisidae are each represented by 1 species.

Similar results with Araenidae being the most dominant family, were reported earlier [16, 17, 19]. Total 71 species were reported by Maheshwari et al., [19] from Jalgaon region of Maharashtra. Wankhade and Manwar [17] reported 42 species of spiders from Amravati district of Maharashtra. Wankhade et al. [16]

reported 32 spider species from Pune, Maharashtra. The genus *Neoscona* seems to be widely distributed in Maharashtra as two species representing genus *Neoscona* were recorded from present study. Chapke and Raja [20] reported 12 species under genus *Neoscona* from Akola district of Maharashtra.

Spiders are widely feared animals, however, only a few of them are dangerous to people [21]. Although all spiders can bite humans in self-defense and inject some venom, only a few can produce worse effects than bee-sting. The two genera *Loxosceles* and *Latrodectus* are reported for most spider bites in the World, however, spider bites were not verified in most cases [22]. The spider species recorded in the present study have not been reported for medically serious bites from study area.

There is no published or confirmed report of lethal venomous bites of spiders from study area. There are some investigations reporting possible use of spider venoms for treatment of human diseases such as erectile dysfunction, strokes, Alzheimer's disease and cardiac arrhythmia [23, 24]. The spider species reported from the present study may be medically important, however further studies are needed to investigate possible medical importance of them.

The outcome of the present research work will update data on faunal resources of Maharashtra and will be helpful for future researchers working on the spiders of the area. The findings will also be helpful for taxonomic and phylogenetic studies on spiders.

## CONCLUSIONS

The present research paper presents a preliminary report on spider fauna of Ahmednagar city. Spider specimen were collected from different localities in and around the city during July 2015 to March 2016. Total 25 spider species representing 9 families were recorded. Results obtained shows that the Araneidae is the most represented family with 11 species followed by Salticidae, Oxyopidae and Lycosidae (03 species each) and 01 species each from Hersilidae, Pholcidae, Eresidae, Tetragnathidae and Thomisidae. Araneidae is the most dominant family (44% of species) followed by Salticidae (12% of species), Oxyopidae (12% of species) and Lycosidae (12% of species). 01 species each from families Eresidae, Hersilidae Pholcidae Tetragnathidae Thomisidae were also recorded. The spider species recorded in the present study have not been reported for medically serious bites from study area. The spider species recorded may be medically important, however further studies are needed to investigate possible medical importance of them.

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