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# **RESEARCH PAPER**

# **OPEN ACCESS**

# Four jumping Spiders (Araneae) record from Swat, Pakistan

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## Abstract

Spiders are group of organisms that belongs to phylum Arthropoda and order Araneae. Spiders were collected from January 2018 to January 2019 with hand collection method and were preserved in 80% ethanol. Preserved spiders were than studied and photographed under microscope. All the spiders belong to family Salticidae. The family has previous reports from the country but for the first time reported from district swat. This study will confirm the existence of the species from Pakistan and will extend its locality and habitat in Pakistan. Further exploration will add new data about spiders from the study area.

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## Introduction

The spider fauna of Pakistan is very diverse but no sterndevotion has been assumed to discover it. In the classical work of Pocock (1900) and in (1935) Dyal explored the few specimens of (Family Oxyopidae) genus *Oxyopes* Latreillebut no proper documentation is found for (Family Clubionidae) genus *Castianeira* Keyserling (Butt and Beg, 2001). Though some study is published from India on these genera by, Tikader and Biswas (1981) and Biswas (1984) Patel & Patel (1973), Patel (1978), Tikader (1981) (Butt and Beg, 2001). The current study contains the report of four species of salticidae collected from different localities of District Swat.

Spiders of the family Salticidae are also called as jumping spiders. They commonly kill insects for their food. They are diverse due to diverse habitat (Biswas and Raychaudhuri, 1997). The dorsal side of cephalothorax of spider is called carapace that is a most important characteristic of spiders. Chelicerae are the jaws of spiders having fangs which are used for injecting venom and piercing. Abdomen at posterior ventral side having silk production organs called spinnerets. In most of the spider species females' are larger in size than males. The reproductive organ of female is called Epigynum, and it is present on the ventral side of the abdomen. Trachea and book lungs are the organs used for respiration (Nieuwenhuys, 2008).

Mari and Lohar (2010) it is recorded in a previous study that white fly is the major pest in all six varieties of Brassica and they has a relation with other insect pests (Mari and Lohar, 2010). All stages of spider actively prey on all stages of plants insect pests. There population remained low in all varieties of *Brassica* plants during the months of December and January because of low abundance of prey (aphids) (Mukhtar *et al.*, 2012).

Pakistan is rich of spider fauna but very little attention has been given for its exploration (Butt and Beg, 2001). The fauna of spider family salticidae of Pakistan is studied little, there are only a few species described to date (Ali *et al.*, 2018). From Northern

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areas there are very few studies on spiders of to date in form of (Caporiacco, 1934, 1935; Logunov *et al.*, 2011 and Ali *et al.*, 2018).

Aims of the present study were to find out the diversity among spiders of the family Salticidae at District Swat and to find out the variations in habitat selection. Finding diversity among other families is also a part of the present study.

#### Materials and methods

## Study Area

Collection for the present study was done at district swat. The valley of Swat is situated in the north of Khyber Pakhtunkhwa, 35° North latitude and 72° and 30° East longitude, enclosed by the sky-high mountains 13. Chitral and Gilgit are situated in the north, Dir in the west, and Mardan in the south, while Indus separates it from Hazara in the east (Rasool *et al.*, 2018). On the basis of Physical Features, Swat is divided into two physical regions: Mountainous Ranges and Plains. Swat is divided into seven tehsils: Babuzai, Barikot, Kabal, Matta, Charbagh, Khwazakhela and Bahrain. Each tehsil (Rasool *et al.*, 2018)

## Collection and Preservation

Spiders were collected by various methods like pitfall trap, cryptic searching, hand collection and leaf letter searching methods. Spiders of the family Salticidae in present study were collected with cryptic searching and hand collection. After collection spiders were preserved in vials with 80% ethanol. The vials were labeled with a number and data (date, area, longitude, latitude and altitude) of the specimen were recorded.

#### Identification

Spiders were then studied under compound and stereomicroscope in Academic-Block College of Veterinary Sciences Faculty of Animal Husbandry and Veterinary Sciences Agriculture University Peshawar. Spiders were immersed in ethanol and photographed with help camera Olympus DP-71 attached to compound microscope Olympus CX-41. Identification was done with the help of available literature. Spiders were then carried to Museum of Zoology department Islamia College University Peshawar.

## Results

Aelurillus logunovi



**Fig 1-10.** 1-2. Journal body and eyes, 3. Retrolateral view of palp, 4. Ventral view, 5. Prolateral view. 6-7. Female journal body, 8. Ventral view of epigyne, 9. Dorsal view of epigyne, 10. Habitat.

## Material Studied

Two males (SS 22, SS 24) and two females (SS 21, SS 237) Pakistan. Saidu Sharif District Swat, Khyber Pakhtunkhwa (KP), (Latitude: 34.7447 north and Longitude: 72.3546 east + 970m), hand collection, 18 June, 2018, Ikram Ullah. Three males and Four females (SH 101, SH 102, SH 107, SH 108, SH 103, SH 104 and SH 109) Pakistan, Shamozai District Swat, Khyber Pakhtunkhwa (KP), (Latitude:  $31^{\circ}24'30$  north, Longitude:  $70^{\circ}29'8$  east and 764m), hand collection 1 July, 2018, Ikram Ullah. One male and Two females (K 110, K 111, K 112 and K 113) Pakistan, Kabal District Swat, Khyber Pakhtunkhwa (KP), (Latitude:  $34^{\circ}$  46' 59.99" north, Longitude:  $72^{\circ}$  16' 60.00" east and 845m), hand collection 2 July, 2018-May 2, 2018, Ikram Ullah.

## Male Measurement

Carapace length 2.84, width 2.13, height 1.67. Ocular area widest at AER; ocular area length 1.68, width of PLE row 1.52, width of PME row 1.45, AER width 1.6 Abdomen: length 2.66, width 2.44. Leg I: (0.54 + 0.50 + 1.63 + 1.42 + 1.41 + 1.22 + 1.10). Leg II: (0.32 + 0.22 + 1.32 + 1.02 + 0.92 + 0.95 + 0.82). Leg III: (0.43 + 0.44 + 1.84 + 0.74 + 0.8 + 1.01 + 0.95). Leg IV: (0.52 + 0.44 + 1.98 + 1.14 + 1.01 + 1.14 + 1.0).

## Description

Carapace brown in color while ocular area dark brown. Anterior part with yellow brown hairs. Dorsum covered with numerous dark brown and black hairs. Clypeus covered with dens white hairs. Some white hairs are also present near eyes.

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Chelicerae are dark brown in color. Sternum, maxillae and labium are brown in color. Abdomen is brown to grey-yellow in color and oval in shape. Dorsum with some dark brown pattern. Legs are brown with dens ehairs and spines. Leg I, II, III and IV femur is yellow with some dense white hairs. Other parts are brown in color. Palp is yellow brown in color. Dorsum is densely covered with hairs. RTA is smaller. Tegulum is protruded forward.

#### Female Measurement

Carapace: length 2.86, width 2.08, and height 1.68. Ocular area widest at AER; ocular area length 1.68, width of PLE row 1.54, width of PME row 1.48, AER width 1.57 Abdomen: length 2.71, width 2.46. Leg I: (0.542 +0.43 + 1.53 + 1.32 + 1.22 + 1.21 + 1.02). Leg II: (0.31 + 0.26 + 1.28 + 0.92 + 0.82 + 0.99 + 0.92). Leg

Menemerus nigli

III: (0.42 + 0.43 + 1.81 + 0.71 + 0.79 + 1.02 + 0.92). Leg IV: (0.54 + 0.46 + 1.95 + 1.11 + 1.02 + 1.18 + 1.10).

#### Description

Female is greater in size. Carapace dorsum is brown in color. Some white scales are also present on dorsum. Brown and white hairs are present on carapace. Clypeus is high and brown light brown in color, densely covered with hairs. Chelicerae are yellow brown and covered with silvery hairs. Abdomen is flattened and brown in color. Dense hairs are present on dorsum. Venter is beige in color. Spinnerets are also beige in color. Legs are brown in color with many brown and white hairs also some black hairs and spines are present on legs. Palp and epigyne structures are given in fig.



**Fig. 11-20.** Male *Menemerus nigli*, 11-12. General body appearance, 13. Palp ventral view, 14. Retrolateral view, 15-16. Female general appearance, 17. Ventral view of epigyne, 18. Dorsal view, 19-20. Habitat.

## Material Studied

Five males (IUCB 01, CB 02, CB 03, CB 04 and CB 05) and Three females (CB 07, CB 08 and CB 09) Pakistan. Charbagh District Swat, Khyber Pakhtunkhwa (KP), (Latitude: 34°50'0" north and Longitude: 72°26'30" east + 980m), hand collection from different home walls, 21 August, 2018-September 2, 2018, Ikram Ullah. Four males and One female (NG 10, NG12, NG 13, NG 14 and NG 11) Pakistan, Ningolai District Swat, Khyber Pakhtunkhwa (KP), (Latitude: 34°51′0″ north, Longitude: 72°25'0" east and 974m), hand collection from different home walls 21 August, 2018-September 2, 2018, Ikram Ullah. One male and Two females (KK 13, KK 14. And KK 15) Pakistan, Khawazakhela District Swat, Khyber Pakhtunkhwa (KP), (Latitude: 34°56'6 north, Longitude: 72°28'5 east and 1151m), hand collection from home walls. 13 May, 2018, Ikram Ullah. One male and One female (M 1 and M 2) Pakistan, Matta District Swat, Khyber Pakhtunkhwa (KP), (Latitude: 35°5'35" north, Longitude: 72°18'35" east and 1120m), hand collection from home walls. 09 May, 2018, Ikram Ullah.

#### Male Measurement

B.L 7, C.L. 2.8v- 3.6, C.W 2 - 2.7. A.L. 2.6 - 3.4. A.W. 2.9 - 3.8. Eye diameter: A.M.E. 0.6 - 0.8, P.L.E. 0.4 - 0.5, A.L.E. 0.4 - 0.5, P.M.E. 0.16 - 0.20. Eye Interdistance: A.M.E - A.M.E. 0.23 - 0.63, P.L.E - P.L.E. 1.4 - 1.8, A.M.E - A.M.E 0.3 - 0.6, A.L.E - A.M.E 0.23 - 0.5, A.L.E - P.L.E 0.9 - 1.3. Leg Measurement: Leg I: (0.5 - 0.8 + 0.3 - 0.46 + 1.4 - 1.7 + 0.6 - 0.9 + 0.7 - 2.0), Leg II: (0.3 - 0.6 + 0.3 - 0.5 + 0.9 - 1.5 + 0.6 - 0.8 + 0.7 - 1.0), Leg III: (0.5 - 0.59 + 0.4 - 0.38 + 0.10 - 1.7 + 0.69 - 1.1 + 0.8 - 1.2), Leg IV: (0.6 - 0.8 + 0.26 - 0.37 + 0.10 - 1.7 + 0.8 - 0.10 + 0.9 - 1.3)

## Description

Cephalothorax is flattened dorsoventrally, longer than wide and dorsum is dark in color. Ocular area is black with brown and grey-white hairs. Thoracic region has dense brown grey and some white hairs. Lateral margins of the carapace have a fringe of white hairs. Chelicerae are black to dark brown in color. Maxillae and labium are brown in color with brown hairs. Sternum is also brown to grey brown in coloration with sparse hairs. Clypeus is lower and brown in color with brown hairs. Abdomen is brown to dark in color with some uncertain transverse pattern of hairs on it.

Dorsum is covered with brown and white hairs and some sparse black hairs. Lateral sides are also brown. Venter is beige in color. Spinnerets are visible that are brown in color. Legs are stout and strong. Leg 1 and II are stronger and dark-brown in color. Leg III and IV are brown in color. They are covered with brown, white and black hairs. Some spines are also present on legs. Embolus as compare to other members are longer. Conductor is present beside the E. is separate both E and tegulum. RTA is somewhat pointed at tips and stronger. Dorsum of palp is covered with brown hairs.

#### Female Measurement

B.L 7, C.L. 2.8- 3.4, C.W 2.1 – 2.5. A.L. 2.2 – 2.8. A.W. 1.4 – 1.8. Eye diameter: A.M.E. 0.6 – 0.8, P.L.E. 0.4 – 0.5, A.L.E. 0.4 – 0.5, P.M.E. 0.16 – 0.20. Eye Interdistance: A.M.E – A.M.E. 0.4 – 0.6, P.L.E – P.L.E. 1.4 – 1.6, A.M.E – A.M.E 0.4 – 0.6, A.L.E – A.M.E 0.23 – 0.6, A.L.E – P.L.E 0.9 – 1.3. Leg Measurement: Leg I: (0.5 - 0.8 + 0.3 - 0.46 + 1.4 – 1.7 + 0.6 – 0.9 + 0.7 – 2.0), Leg II: (0.3 - 0.6 + 0.3 - 0.5 + 0.9 – 1.5 + 0.6 – 0.8 + 0.7 - 1.1), Leg III: (0.5 - 0.59 + 0.4 - 0.49 + 0.10 – 1.7 + 0.69 – 1.1 + 0.8 – 1.2), Leg IV: (0.6 - 0.8 + 0.26 – 0.37 + 0.10 – 1.7 + 0.8 – 1.10 + 0.9 – 1.3)

## Description

Female carapace is also flattened. Carapace is brown in color with ocular area dark-brown to dark in color. Carapace has brown and white hairs, lateral margins are white with white fring of hairs, and chelicerae are stout and dark brown to dark min color. Sternum, labium and maxillae are brown in color. Abdomen is oval elongated and brown in color. Dorsum is covered with brown and white hairs. Spinnerets are visible from above and brown in color. Venter is brown with white and brown hairs on it. Legs are brown to yellow brown in color and are covered with brown and white hairs also sparsely black hairs are present on it. Some spines are also present on it. Epigyne has broad atria opening interiorly with inner folding. FD is long and ST is toward midline.

## Plexippuspaykulli



**Figs. 21-31.** Male *Plexippus paykulli* 21-22, general body and eyes, 23 ventral view of palp, 24. Retrolateral view, 25-26. General appearance of female, 27 dorsal view of female epigyne, 28. Ventral view of epigyne, 29,30,31. Habitat.

## Material Studied

Four males (IU 09, IU 156, IU 157 and IU 207) and Six females (IU 11, IU 23, IU 159, IU 202, IU 234 and IU 237) Pakistan. (Home) PashtonaiMatta District Swat, Khyber Pakhtunkhwa (KP), (Latitude: 35.0573° north and Longitude: 72.3125° east + 1510m), hand collection, 18 April, 2018-Auguest 2, 2018, Ikram Ullah. Two males and three females (IU 21, IU 24, IU 27, IU 28 and IU 29) Pakistan, Nalkot, Matta District Swat, Khyber Pakhtunkhwa (KP), (Latitude: 35.064352° north, Longitude: 72.306693° east and 1571m), hand collection 20 April, 2018-May 2, 2018, Ikram Ullah.

## Male measurement

B.L 3.8-6.6, C.L 1.99-3.5, P.W 1.23-2.2-2.05. Eye diameter: A.M.E. 0.12-.0.3, P.L.E. 0.2, A.L.E. 0.13, A.M.E. 0.05. Eye Interdistance: A.M.E-A.M.E. 0.63, P.L.E – P.L.E. 0.7, A.L.E – A.M.E, A.L.E – P.L.E 0.68. Leg Measurement: Leg I: 3.16 - 5.5(0.70 - 1.26 + 0.41 - 0.71 + 1.2 - 0.78 + 0.78 - 1.21 + 0.36 - 0.61), Leg II: 2.86 - 4.89(0.88 - 1.51 + 0.36 - 0.61 + 0.78 - 1.33 + 0.57 - 0.97 + 0.30 - 0.51), Leg III: 3.14 - 5.38 (1.10 - 1.80 + 0.35 - 0.58 + 0.77 - 1.33 + 0.63 - 1.08 + 0.35 - 0.61), Leg IV: 3.7 - 6.28 (1.15 - 2.01 + 0.40 - 0.70 + 1.04 - 1.81 + 0.69 - 1.21 + 0.34 - 0.60).

## Description male

## Description

Cephalothorax is longer than wide; a central longitudinal white stripe is present on dorsum of carapace that is surrounded by black broad longitudinal stripes. Three white stripes go downward to clypeus. Clypeus has alternate white and brown vertical stripes with brown and white hairs on it. Carapace is covered with white, black and brown hairs. Eyes surrounding is black. Chelicerae are dark brown in color. Labium and endite are brown in color with brown hairs. Sternum is also brown in color. Abdomen is also oval, longer than wide and has a longitudinal white stripe at centre surrounded by black longitudinal. Posterior end is somewhat brown in color. Two pairs of white spots at dorsum of posterior end. Spinnerets are visible from above and brown in color. Venter is grey. Cover with brown, black and white hairs.Legs are stout and strong. Leg I and II are stronger, brown in color, also observed with black stripe and covered with brown, black and

## Thyene imperialis

white hairs and spines, leg III and IV are brown with small black spots and hairs of same color.Palp dorsal side has numerous brown hairs. Ventral side is red brown in color. Embolus is of medium size. RTA is also of medium size that reaches to middle of bulbus. Tegulum is swollen.

#### Female measurement

B.L 3.3 - 6.33, C.L. 1.72 - 3.40, C.W 1.12 - 2.16. A.L. 1.47 - 3.0. A.W. 1.10 - 2.18. Eye diameter: A.M.E. 0.1- .0.2, P.L.E. 0.06 - 0.2, A.L.E. 0.07 - 0.13 - 0.06, A.M.E. 0.32 - 0.63. Eye Interdistance: A.M.E- A.M.E. 0.23 - 0.63, P.L.E - P.L.E. 0.31 - 0.7, A.L.E - A.M.E 0.31 - 0.7, A.L.E - P.L.E. 0.35 - 0.69. Leg Measurement: Leg I: 2.1 - 4.03 (0.90 - 1.81 + 0.31 - 0.63 + 0.15 - 0.4 + 0.35 - 0.71 + 0.30 - 0.61), Leg II: 2.52 - 4.97 (0.87 - 1.71 + 0.44 - 0.87 + 0.61 - 1.21 + 0.36 - 0.71 + 0.26 - 0.51, Leg III: 2.81 - 5.55 (1.1 - 2.1 + 0.26 - 0.51 + 0.68 - 1.35 + 0.51 - 1.1 + 0.36 - 0.71), Leg IV: 2.84 - 5.7 (0.91 - 1.81 + 0.26 - 0.51 + 0.71 - 1.41 + 0.61 - 1.3 + 0.36 - 0.71)



**Figs. 32-41.** Male Thyene imperialis, 32-33. General body, 34. Ventral view of palp, 35. Retrolateral view, 36. Prolateral view of palp, 37-38 general body of female, 39,40,41. Habitat.

## Description

Cephalothorax is longer than wide; a central longitudinal brown stripe arises from thoracic end to pedicel on dorsum of carapace that is surrounded by brown broad longitudinal stripes. Ocular area is greybrown. Clypeus is brown with brown and white hairs on it. Carapace is covered with white, black and brown hairs. Chelicerae are dark brown in color. Labium and endites are brown in color with brown hairs. Sternum is also brown in color. Lateral margins of carapace are umber in color. Abdomen is oval, longer than wide and has a longitudinal brown stripe at centre surrounded by dark brown longitudinal stripes. Posterior end is somewhat brown in color. Two to three pairs of white spots at dorsum of posterior end. Spinnerets are visible from above and brown in color. Venter is grey and Covered with brown, black and white hairs. Legs are stout and strong. Leg I and II are stronger, brown in color, and covered with mostly brown and sparsely black and white hairs and spines, leg III and IV are brown with small black spots and hairs of same color. Epigyne is V shaped, longer and medium sized insemination duct. Central pocket at anterior end.

## Material Studied

Two males (TS 01, TS 02) and Four females (TS 03, TS 04, TS 05, and TS 06) Pakistan. Township Kanju Kabal District Swat, Khyber Pakhtunkhwa (KP), (Latitude: 34°47'59.99" north, Longitude: 72°20'59.99" east + 900.3792m), hand collection, 21 April, 2018, Ikram Ullah. Onemale and one female (BB 01, and BB 02) Pakistan, Bara Bandai District Swat, Khyber Pakhtunkhwa (KP), (Latitude: 34°82'44.98" north, Longitude: 72°39'47.44" east and 1020m), hand collection 26 April, 2018, Ikram Ullah.

## Male Measurement

B.L 7, C.L. 4, C.W 3. A.L. 4. A.W. 1.6. Eye diameter: A.M.E. 0.7, P.L.E. 0.3, A.L.E. 0.4, P.M.E. 0.16. Eye Interdistance: A.M.E - A.M.E. 0.23 - 0.63, P.L.E -P.L.E. 1.3, A.M.E - A.M.E 0.26, A.L.E - A.M.E 0.23, A.L.E - P.L.E 0.9. Leg Measurement: Leg I: (1.7 + 2 + 1.4 + 0.8 + 0.7), Leg II: (1.26 + 0.7 + 0.9 + 0.6 + 0.5), Leg III: (1.6 + 0.7 + 0.8 + 0.69 + 0.56), Leg IV: (1.6 + 0.7 + 0.9 + 0.8 + 0.6).

#### Description

Carapace is Round in shape; eye field has 2 divided parts. Eyes except AME surroundings are brown while that of AME are white. Eyes having a white stripe. A brown color island is present on left over cephalothorax. Lateral sides of carapaceare yellowish or white in color. Upright bunch of Setae (white) in color present below eyes II. A yellow (white in some species)stripe extends from behind of eye field to posterior end of carapace. Length of eye is lesser as compare to length of carapace. Clypeus is high with black just beneath AME and white to yellowish just above the cheliceral end. Chelicerae color is dark brown to yellowish. Leg I stout and stronger that is covered with black and brown hairs. Also some blackish setae are present. As compare to leg I other legs are smaller. The legs femur and patella were darkbrown in color covered with beige hairs. Metatarsus and tarsus brown to dark in coloration. Palpalcymbium dorsum is brown with numerous hairs on it. Bulbus of palp is dark to red- brown. Embolus longer that encircles 2 times around the bulbus.

Abdomen is elongated and oval in shape while metallic luster of the dorsal side on abdomen. Different pattern of colorsare seen on abdomen. Lateral sides of abdomen are of Maroon color while at and a white-yellow stripe runs posteriorly. Three transverse small yellow stripes are present on posterior of abdomen.

## Female Measurement

B.L 8, C.L. 5, C.W 4. A.L. 5. A.W. 1.7. Eye diameter: A.M.E. 0.8, P.L.E. 0.4, A.L.E. 0.6, P.M.E. 0.17. Eye Interdistance: A.M.E - A.M.E. 0.24 - 0.64, P.L.E -P.L.E. 1.4, A.M.E - A.M.E 0.27, A.L.E - A.M.E 0.24, A.L.E - P.L.E 1.0. Leg Measurement: Leg I: (1.8 + 2.1 + 1.5 + 0.9 + 0.8), Leg II: (1.27 + 0.8 + 1.0 + 0.7 + 0.6), Leg III: (1.7 + 0.8 + 0.9 + 0.7 + 0.57), Leg IV: (1.7 + 0.8 + 1.0 + 0.9 + 0.7).

#### Description

Carapace is yellow to beige in color with dark yellow at ocular area. AME surrounded by white circles. Clypeus is yellow to white-yellow and higher. Behind of Eye II is a characteristic black hairs look like erect

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horn tufts. Chelicerae are yellow-brown in color. Parsthoracica having black hairs. Lateral sides dim yellow in color. Sternum, maxillae and labium are yellow brown in color. Palps are yellow brown with yellowish hairs. Abdomen is oval and elongated in shape. Color is yellow and brown, having three transverse white belts and one central longitudinal stripe on abdomen. Lateral sides of abdomen having alternative white and yellow brown narrow stripes. Abdomen having brown, white and black hairs. Dark thick spots are visible on abdomen. Spinnerets are visible from above that are yellow brown in color. All the legs with yellow-brown colors. They are completely covered with white and brown hairs. 1<sup>st</sup> leg is thick and stout.

## Discussion

Present study was done to find out the unknown fauna of spiders in District Swat. The study reveals that the area is good spot for spiders due to rich diversity in habitats. The spiders in present study are already reported from Pakistan but this is addition of new locality. This study also confirms the presence of these species from District Swat. Though some of these species has an ambiguous existence in the country previously with no known study report. Present study confirms the existence of the species from Pakistan and provides a first report of the species from the study area. This study will provide a platform for further studies as well.

Family Salticidae is most diverse family worldwide. Spider fauna is explored by many authors previously like (Daya, 1935; Simon 1880, 1901, 1906; Qadir, 1997; Ghafoor and Beg, 2002; Butt and Beg, 2001; Mukhtar, 2004; Tahir and Butt 2009; Azarkina, 2004, 2006; Tahir *et al.*, 2016; Ali *et al.*, 2018) Genera like *Aelurillus*, *Menemerus Plexippus* and *Thyene*, are already described by (Azarkina, 2004: Simon, 1901). These genera were recorded for the 1<sup>st</sup> time from study area. The present study reveals that study area is rich of family Salticidae, diverse fauna of the family was recorded and will be published.

## Acknowledgment

We are greatly thankful to chairman geology Department University of swat Pakistan for proving us facilities for this study. I am also thankful to Muhammad Sajid and Riaz Ahmad for helping me in collection. RTA= retrlateraltabialapophyasis, E=embolus, FD= fertilization duct, CO= copulatory opening, ST= spermatheca

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