

**FIRST RECORD OF THREE JUMPING SPIDERS (ARANEAE: SALTICIDAE)
IN MERGASOR (ERBIL-IRAQ)**

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ABSTRACT

During May through July 2012 many habitats in Mergasor locality were investigated for jumping spiders. Three species and three genera were recorded belonging to the family Salticidae which are *Philaeus chrysops*, *Plexippus paykulli* and *Saitis leighii*. *Philaeus chrysops* had height population in this area but further investigations are needed to clarify the distribution of other species of Salticidae in this region.

KEYWORDS: Araneae, jumping spider, Salticidae, *Philaeus*, *Plexippus*, *Saitis*,

INTRODUCTION

The Salticidae of Minor Asia and the Near East remain poorly studied (Logunov, 2009) and the arachnological investigations are still poor in Iraq. Family Salticidae which is known as jumping spiders are geographically cosmopolitan in distribution contains more than 500 described genera and about 5,000 described species (Maddison *et al.*, 2008) making it the largest family of spiders with about 13% of all species. Salticidae are among the easiest to distinguish from similar spider families because of the shape of the cephalothorax and their eye patterns (Ubick *et al.* 2005). The families closest to Salticidae in general appearance are the Corinnidae (distinguished also by prominent spines on the back four legs), the Oxyopidae (distinguished by very prominent spines on all legs), and the Thomisidae (the crab spiders, distinguished by their front four legs, which are very long and powerful), none of these families however, have eyes that resemble those of the Salticidae (Metzner, 2012). Conversely, the legs of jumping spiders are not covered with any very prominent spines. Their front four legs generally are larger than the hind four, but not as dramatically so as those of the crab spiders (Peng *et al.*, 2002).

MATERIALS AND METHODS

Study area:

The present study is based on the species which were collected from the Mergasor locality which is located in the north eastern of Erbil governorate/Iraq (figure 1). Mergasor (44.30' E, 36.45' N) is 1158meter above the sea level, maximum temperature in summer is 42C° and minimum temperature in winter is -11 C° (Joint Humanitarian Information Center 2004).

Spider collection:

Spiders were collected during May through July 2012 from different parts of Mergasor locality by visually searching and collected with beating sheet and hand collecting methods (Barth *et al.* 2000) from branches, on the ground and under stones and preserved in holding tubes which contain 75% ethanol by wet preservation method (Crews and Harvey, 2011).

Examination of specimens:

Fixed specimens were examined under Wild M5A dissecting microscope (12–100 magnification). Photo documentation of spiders was done by using Nikon (D-5000) and UCMOS digital camera attached to the dissecting microscope. Identifications made by numerous valid keys. The specimens were deposited in the Kurdistan Natural History Museum, Collage of Science,University of Salahaddin /Erbil.

RESULTS

In the present study a total of 26 male and female spiders were collected, three species and three genera belong to family Salticidae were identified. Characters of identified species were as follow:

Family Salticidae(Blackwall, 1841) (Jumping spiders):

Key to family: Family Salticidae identified by possessing eight eyes that anterior median eyes clearly larger than other eyes, field of eyes quadrangular in dorsal view(Metzner 2012).The posterior eyes of Salticidae may be difficult to recognize , due to their smallness, but they are always present.

Genus: *Philaeus*(Thorell, 1869)

Philaeus chrysops(Poda, 1761)



Figure 1: Site of spiders collection.

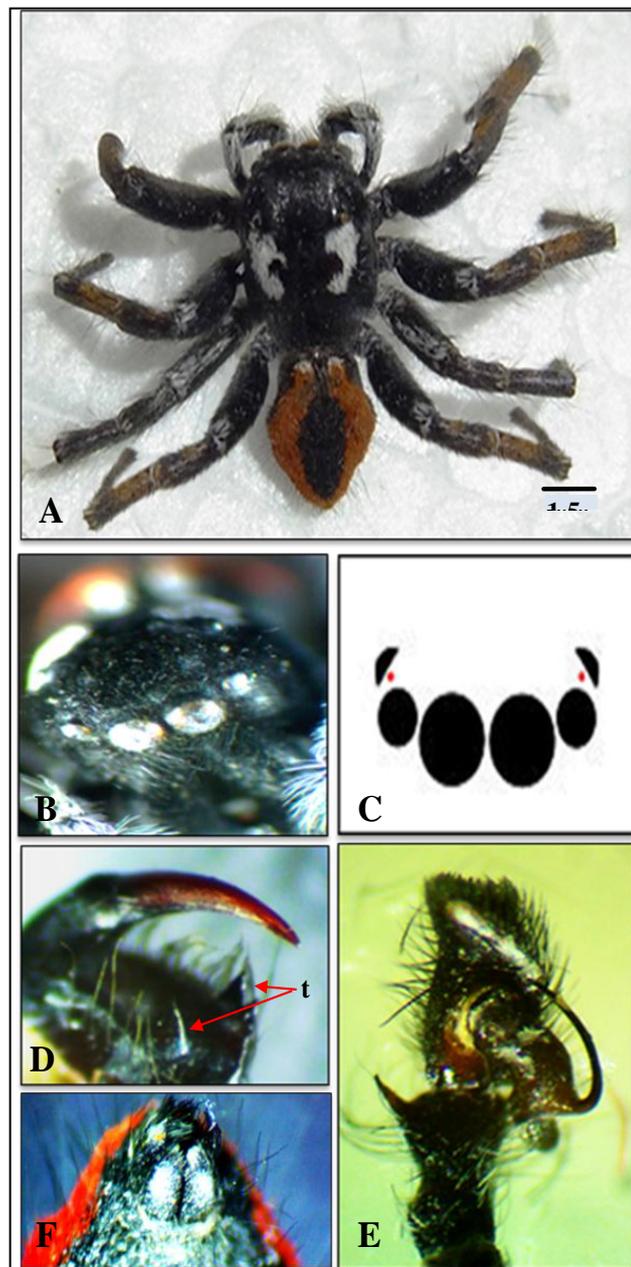


Figure 2: ♂ *Philaeus chrysops*, A, General habitus ,B and C, Arrangement of eyes, D, Unidentant cheliceral teeth (t), E, Pedipalp, F, Spinneret.

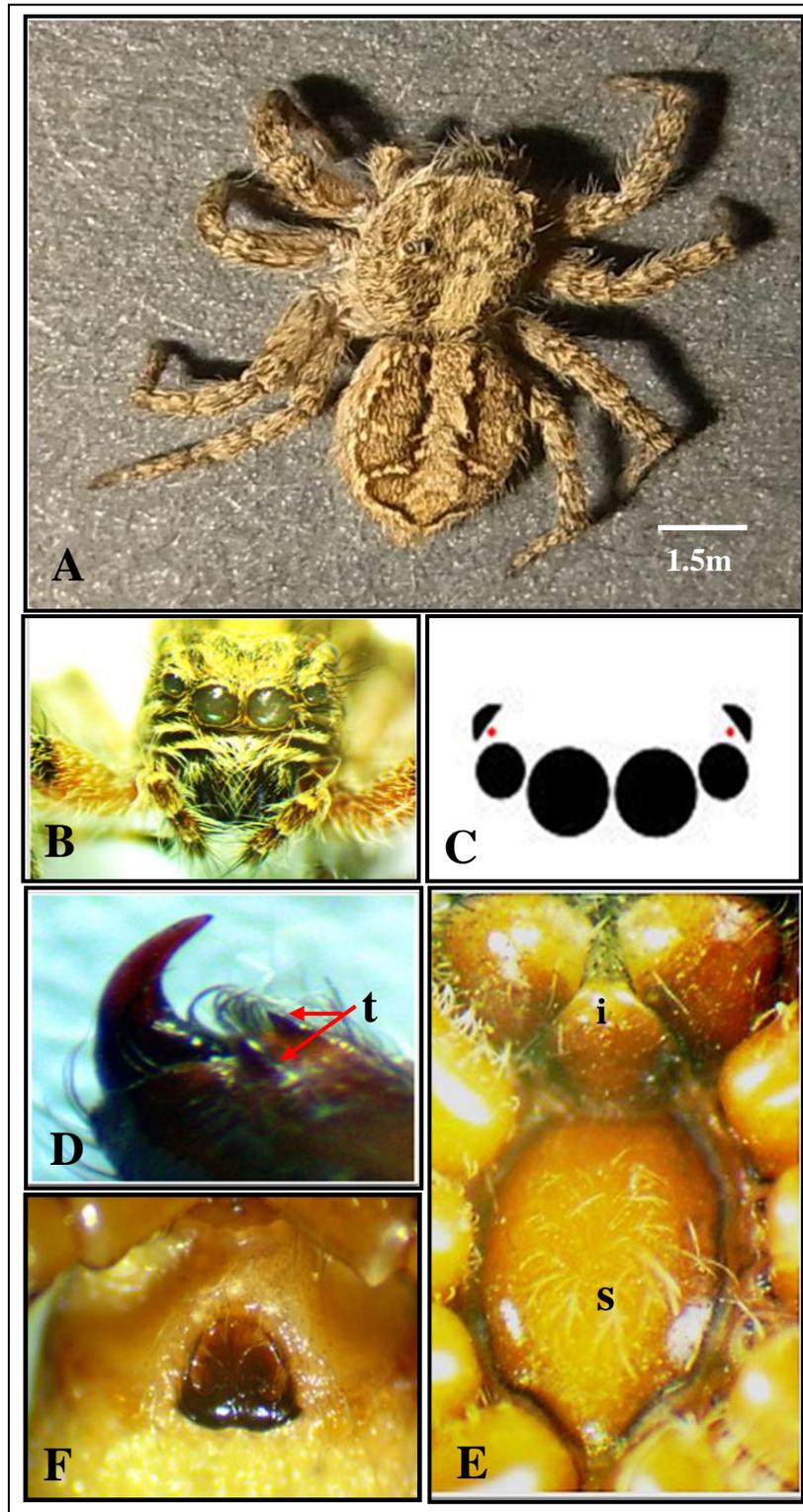


Figure 3: ♀ *Plexippus paykulli*, A, General habitus, B and C, Arrangement of eyes, D, Unidentant cheliceralteeth (t), E, Sternum (s) and labium (i), F. Epigynum.

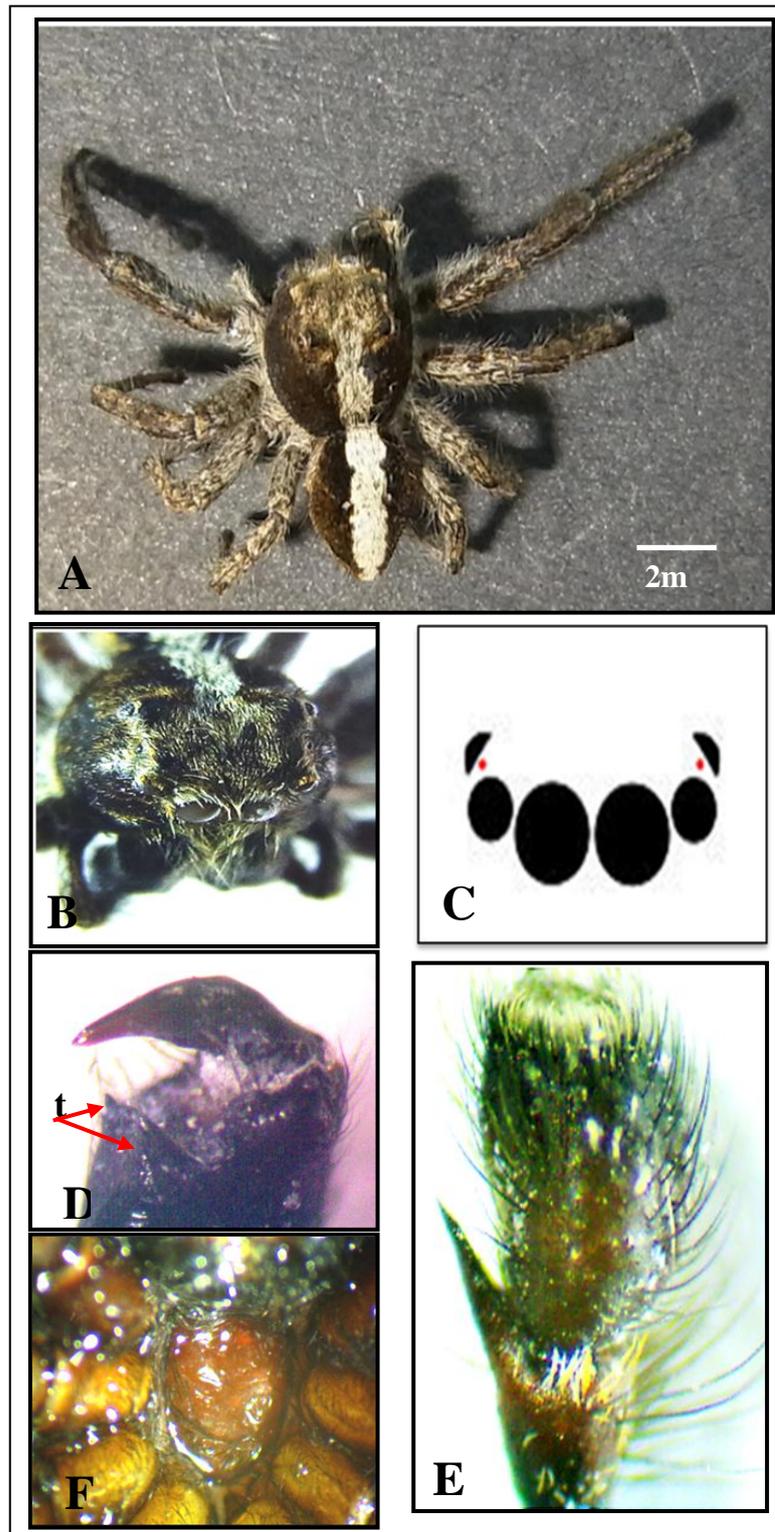


Figure 4: ♂ *Saitis leighii*, A, General habitus, B and C, Arrangement of eyes, D, Unidentant cheliceral teeth (t), E, Pedipalp, F, Sternum.

Diagnosis: Male, body length about 8mm, normal spider-like habitus (no ant- like or beetle-like)with orange habitus coloration, unidentant cheliceral teeth. The ratio of length: width of sternum is greater than 2:1, and first legs are longer than the second legs .Striking white haired pedipalps, the spinnerets are long and hairy at the tips and equal in size and not observe from dorsal view (figure 1). No females of this spider were collected.

Genus: *Plexippus* (Koch 1846)
Plexippus paykulli (Audouin 1825)

Diagnosis: Female, body length about 7 mm, Normal spiders like habitus with dark and bright vertical strips coloration, unidentant cheliceral teeth, sternum length: width ratio is greater than 2:1, labium longer than wide, border of sternum greater than labium. Epigynum appears with a transverse base and a median upward canal (figure 2). No male of this spider were collected.

Genus: *Saitis* (Simon 1876)
Saitis leighii (Peckham & Peckham 1903)

Diagnosis: Male, body length about 9mm, normal spiders like habitus with black and white vertical strip coloration, unidentant cheliceral teeth, sternum length: width is lesser than 2:1, labium wider than long , border of sternum narrower than labium. The palpus is brown with black hairs and has retrolaterally tibial apophysis (figure 3)..No mature females of this species were collected.

DISCUSSION

There are no noticeable studies about distribution of spiders in Iraq and the current study may be the first detailed study about jumping spiders in which carried out to show their distribution in this part of Iraq. In this study three species belong to jumping spiders were identified, all species approximately were adult. *Philaeus chrysops* is an epilithobiont, a species associated with open, stony and rocky habitats. The spider has only been widely recorded in the Mediterranean region, although there are records from eastern Europe and through Asia to Japan (Ubick *et al.*, 2005). Male *Philaeus chrysops* identified by Bolu *et al.*, (2008) are often bigger than females and are very colorful with a glaringly red opisthosoma. The abdomen is bright orange-red on the back and the sides, with a longitudinal black stripe in the center and black shoulders. The long, slender legs are dark with the patellae and most of the tibiae of the first two pairs bright orange-red. Male *Philaeus chrysops* identified in present study resemble individuals described above especially in the color pattern but unfortunately no adult females were collected in the study period this may be due to their maturation in late summer. Regarding *Plexippus paykulli*, this species is native to south East Asia but has spread to other parts of the world (Komnenov, 2005). *Plexippus paykulli* is cosmopolitan in distribution, with a high carapace, and are covered with short greyish hairs. The female identified in present study was brownish grey, the carapace being darker especially around the eyes, with a broad tan stripe that extends onto the abdomen where it breaks into two chevrons. Female morphology of this species which collected in Mergasor is similar with a wide spread specimen observed in numerous localities of Iran (Logunov, 2004). The black and white strip on the dorsal surface is a distinguishable feature of *Saitis leighii*, which collected in Mergasor region, and their pedipalps less complex than *Philaeus chrysops*. This species has been associated recently with the genus *Saitis* Simon 1876 (Proszynski, 2009a; 2009c, Platnick, 2011; Metzner, 2012).

CONCLUSIONS

Jumping spiders were observed in many habitats in Mergasor locality; on ground, under stone, on branches and between grasses. Three species belong to family Salticidae were identified from the study area, *Philaeus chrysops*, *Plexippus paykulli* and *Saitis leighii* respectively.

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