

# **New record of the Mediterranean Recluse Spider *Loxosceles rufescens* (Dufour, 1820) and its bite from Khorasan Province, northeast of Iran (Aranei: Sicariidae)**

Mirshamsi, O.<sup>a,b\*</sup>, Hatami, M.<sup>a</sup>, Zamani, A.<sup>c</sup>

<sup>a</sup>Department of Biology, Faculty of Sciences, Ferdowsi University of Mashhad, Mashhad, Iran

<sup>b</sup>Zoological Innovations Research Department, Institute of Applied Zoology, Faculty of Sciences, Ferdowsi University of Mashhad, Mashhad, Iran

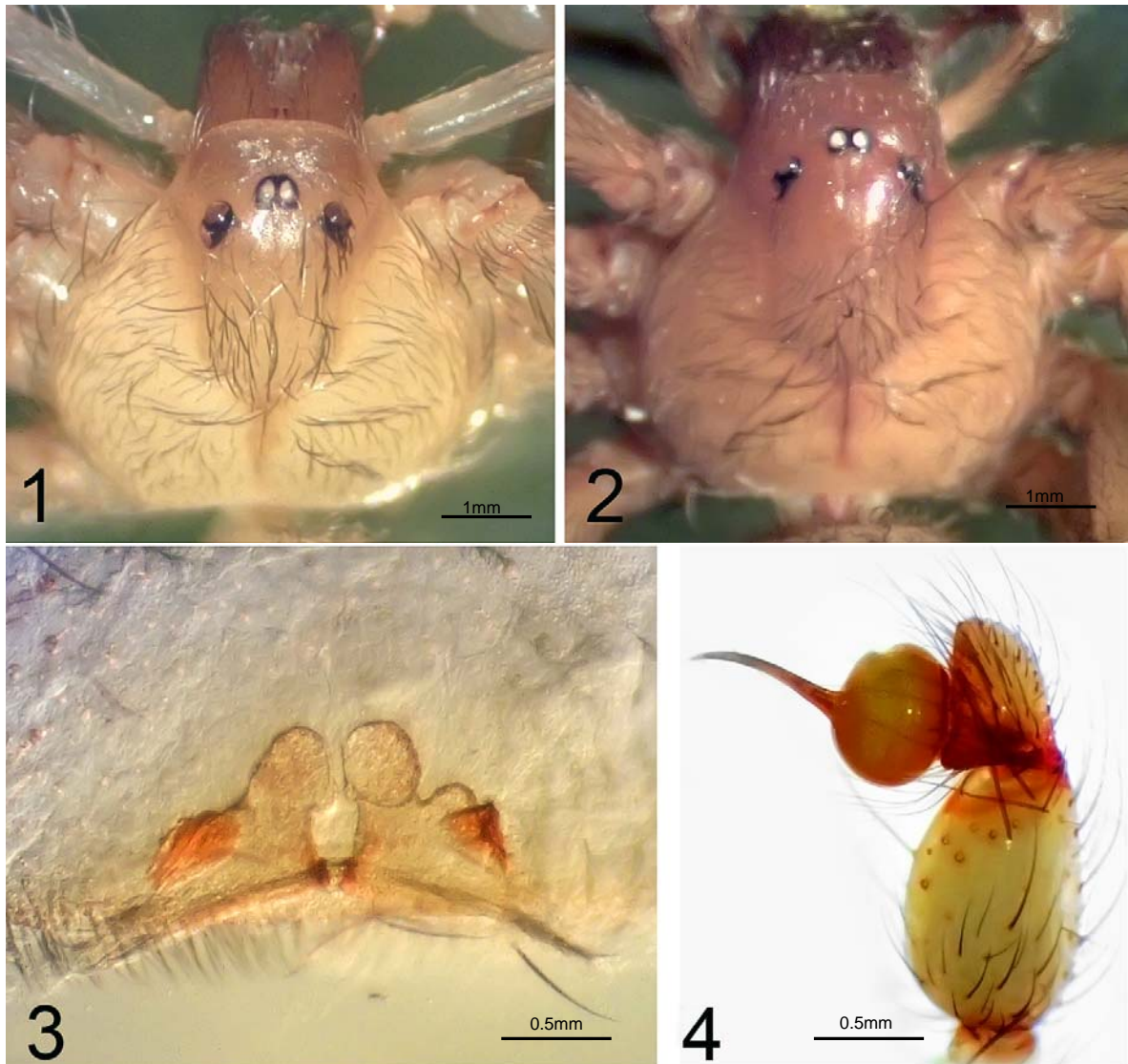
<sup>c</sup>Department of Animal Biology, School of Biology and Center of Excellence in Phylogeny of Living Organisms, College of Science, University of Tehran, Tehran, Iran

The cribellate haplogyne spiders of the genus *Loxosceles* Heineken & Lowe, 1832, known as recluse or violin spiders, are well known because of their ability to occasionally cause significant skin necrosis also known as loxoscelism (Vetter, 2008; Saupe et al., 2011). The venom of these spiders contains an unusual enzyme, sphingomyelinase D, which, when incorporated into the skin and subcutaneous tissues, ultimately causes platelet aggregation, endothelial hyperpermeability, hemolysis, and neutrophil-dependent skin necrosis (Saupe et al., 2011).

Based on the morphology of their spinnerets these spiders are now classified in the sub-family Loxoscelinae, in the Sicariidae (Gertsch 1949; Gertsch, 1967; Gertsch and Ennik 1983; Vetter, 2008). The family Sicariidae currently includes spiders of only two genera, *Loxosceles* with more than 100, and *Sicarius* Walckenaer, 1847 with more than 21 described species respectively (Platnick, 2013). The Mediterranean recluse, *L. rufescens* (Dufour 1820), is a widely distributed species, originating from somewhere in the circum-Mediterranean region but has been distributed to other regions by means of human activity (Harvey, 1996). This species is now reported from Mediterranean countries and other regions including Turkmenistan, East Asia, United States and Australia (Harvey, 1996; Yigit et al., 2008). There were unidentified records of the genus *Loxosceles* from Iran (Goodarzi, 1994; Moradmand and Jäger, 2011; Kashefi et al., 2013) but, the first record of the Mediterranean recluse spider, *L. rufescens*, was provided by Zamani and Rafinejad (in press) from Tehran Province.

This species is distinguished from its closely related species by the following characteristics: the tibia of male's palp is short, thick and not very prolonged. The embolus is about as long as the width of the globular bulb (Fig.1, 3); paired spermathecae, closed together at the midline, with single large and rounded lobe (Fig. 2, 4).

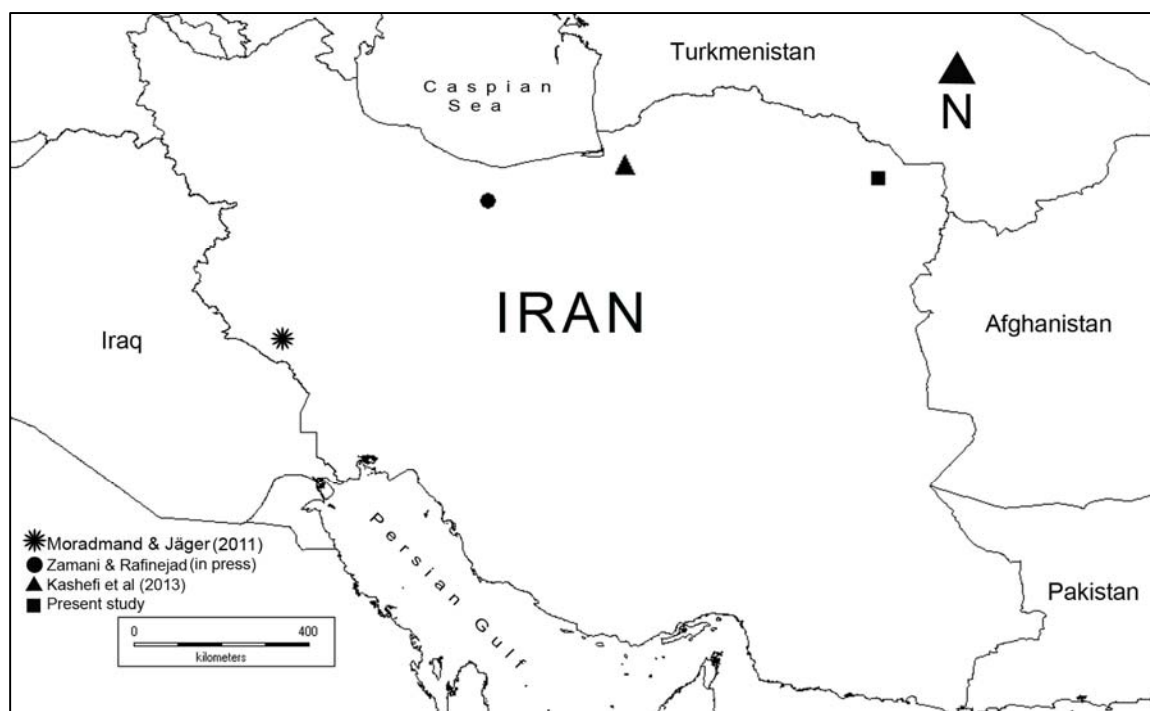
In this paper we provided a new data on the geographic distribution of *L. rufescens* and its envenomation from northeast of Iran (Fig. 5). All specimens were collected in daytime from houses. The examined specimens are preserved in the Zoological Museum, Ferdowsi University of Mashhad, Mashhad, Iran (ZMFUM). Whole specimens, male palps and vulva were photographed using an Olympus DP-71 camera connected to an Olympus SZH-10 stereomicroscope. The vulvas were macerated either with KOH or lactic acid.



**Figures 1-4.** *Loxosceles rufescence*. 1) Male prosoma; 2) Female Prosoma; 3) Spermathecae, dorsal view; 4) Lateral aspect of right palp.

**Material:** 3♀, 1♀ subadult (ZMFUM), Iran, Khorasan Razavi Prov., Mashhad, (36°16'24.95"N, 59°34'36.75"E), 01.viii.2013, M. Hatami; 1♂ (ZMFUM), Iran, Tehran Prov., Tehran (35°43'N, 51°25'E), iv.2012, A. Zamani; 1 subadult♀ (ZMFUM), Golestan Prov., Gorgan (36°50'19"N, 54°26'05"E), 5.vi.2011, R. Kashefi.

**Case study:** We recorded the history of a 40-years old woman from Mashhad with moderate necrosis probably due to a spider bite. On 12 August 2012, she felt a pain like a mosquito bite on the back of the right leg which followed by a red papule, mild pain and erythema in the area of bite. After four days the purpuric erythema and edema had developed and accompanied by fever, nausea and sweating. Seven days later the lesion changed to a serious 5x5 cm necrotic wound. The lesion on the day 11 was a clear necrotic plaque with perilesional erythma, the characteristic clinical presentation of loxoscelism. According to the medical test results, pathogenic organisms



**Figure 5.** Recorded occurrence of the genus *Loxosceles* Heineken & Lowe, 1832 in Iran.

were not observed in the lesion. On the basis of the patient's medical documents, the case has been considered undiagnosed. Although spider bite was not observed by the patient, based on the symptoms, the characteristics of the lesion and its development should be considered as a Recluse spider bite. In addition, all of the *L. rufescens* specimens recorded in the present study were collected from neighbouring houses.

The presence of this species in northeast Iran suggested that *L. rufescens* is a widely distributed spider in Iran. Despite its wide distribution, it seems that bites from these spiders are either very infrequent or misdiagnosed and further studies are needed to reveal the medical importance of this species in Iran.

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