



Two Scorpion Species Similar in Appearance with Two Completely Different Treatments for Their Stings

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Dear Editor,

Scorpion stings are a prevalent medical issue across all provinces of Iran (1, 2). Each year, approximately 40,000 to 50,000 scorpion stings and 16 to 18 fatalities are reported in Iran, with the majority of deaths occurring in the southern regions of the country. The most lethal scorpion species in Iran are *Hemiscorpius lepturus* (commonly known as Gadim in Persian) and *Androctenus crassicauda* (3). Identifying the Gadim scorpion is relatively straightforward compared to other yellow scorpions. It features a tall, narrow tail and broad claws with dark tips (4, 5). Another species with a similar appearance is *Scorpio maurus*, but the treatment for stings from these two species differs significantly (5).

Hemiscorpius lepturus stings are often painless but can result in hemolysis and hemoglobinuria several hours to a week after the sting. Based on experience (unpublished data), *S. maurus* stings typically cause mild to moderate pain lasting 4 - 5 hours. For a long time, *S. maurus* has been excluded from the list of dangerous and medically significant scorpions in Iran. Furthermore, the anti-scorpion venoms available in Iran (produced by the government-owned Razi Institute and the private company Padra Serum) do not include antiserum targeting *S. maurus* (5).

Treatment for *S. maurus* stings primarily involves pain relief and, if necessary, injections of tetabulin and tetanus toxoid (5). Conversely, *H. lepturus* stings necessitate hospital admission and one or two doses of scorpion antivenom (5, 6). Additionally, urine analysis

should be performed every 4 - 6 hours on the first day and every 12 - 24 hours thereafter for up to a week to monitor for hemoglobinuria. If blood is detected in the urine, further doses of intravenous scorpion antivenom are administered (5, 6).

The clinical manifestations of *H. lepturus* stings typically appear late and may include cutaneous symptoms, systemic effects, and laboratory abnormalities (5). Therefore, if the scorpion responsible for the sting is brought in with the patient or if a photo of it is available, distinguishing between *H. lepturus* and *S. maurus* is essential. Figure 1 presents images of both species, highlighting the differences in claw size, body size, and tail size and shape. Paying close attention to these details is critical for ensuring proper treatment for their stings.

As shown in Figure 1, *S. maurus*, like Gadim scorpions, has very broad claws with dark tips. However, upon closer inspection, the claws and body of *S. maurus* are much broader than those of Gadim scorpions, and its tail is shorter and wider (5). *Scorpio maurus* is endemic to Iran, while *H. lepturus* is endemic to Iran, Iraq, Yemen, and Saudi Arabia (4).

Footnotes

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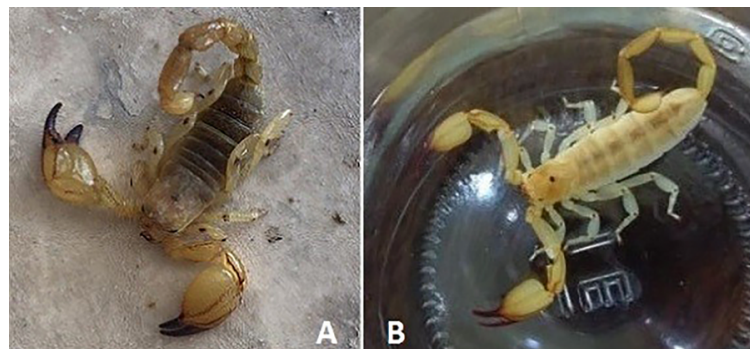


Figure 1. A: *Scorpio maurus*; B: *Hemiscorpius lepturus*. Both scorpion species have wide claws with dark tips, but the claws, body and tail of *S. maurus* are wider than those of *H. lepturus*. Additionally, its tail is shorter than that of *H. lepturus*. In other words, it could be said that *S. maurus* is plumper than *H. lepturus*. Photos are original.

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References

- Mohammadi Bavani M, Saeedi S, Saghafipour A. Spatial Distribution of Medically Important Scorpions in Iran: A Review Article. *Shiraz E-Med J.* 2020;**22**(5). <https://doi.org/10.5812/semj.102201>.
- Vazirianzadeh B, Alizadeh I, Taghavi Moghadam A, Rahdar M. Determination of scorpion venom LD50 of four species in Khuzestan province (Southwest of Iran). *Biochem Cell Arch.* 2019;**19**(Suppl 1):2351-4. <https://doi.org/10.35124/bca.2019.19.S1.2351>.
- Sanaei-Zadeh H, Marashi SM, Dehghani R. Epidemiological and clinical characteristics of scorpionism in Shiraz (2012-2016); development of a clinical severity grading for Iranian scorpion envenomation. *Med J Islam Repub Iran.* 2017;**31**:27. [PubMed ID: 29445656]. [PubMed Central ID: PMC5804458]. <https://doi.org/10.18869/mjiri.31.27>.
- Barahoei H, Navidpour S, Aliabadian M, Siahsharvie R, Mirshamsi O. Scorpions of Iran (Arachnida: Scorpiones): Annotated checklist, DELTA database and identification key. *J Insect Biodivers Sys.* 2020;**6**(4):375-474. <https://doi.org/10.52547/jibs.6.4.375>.
- Sanaei-Zadeh H. [*Diagnosis and Treatment of Acute Poisoning*]. 4th ed. Shiraz: Moalefan Farhikhteh; 2023. FA.
- Valavi E. [Step by Step Treatment of Scorpion Sting in South West of Iran]. *Jundishapur Sci Med J.* 2016;**15**(1):117-24. FA.