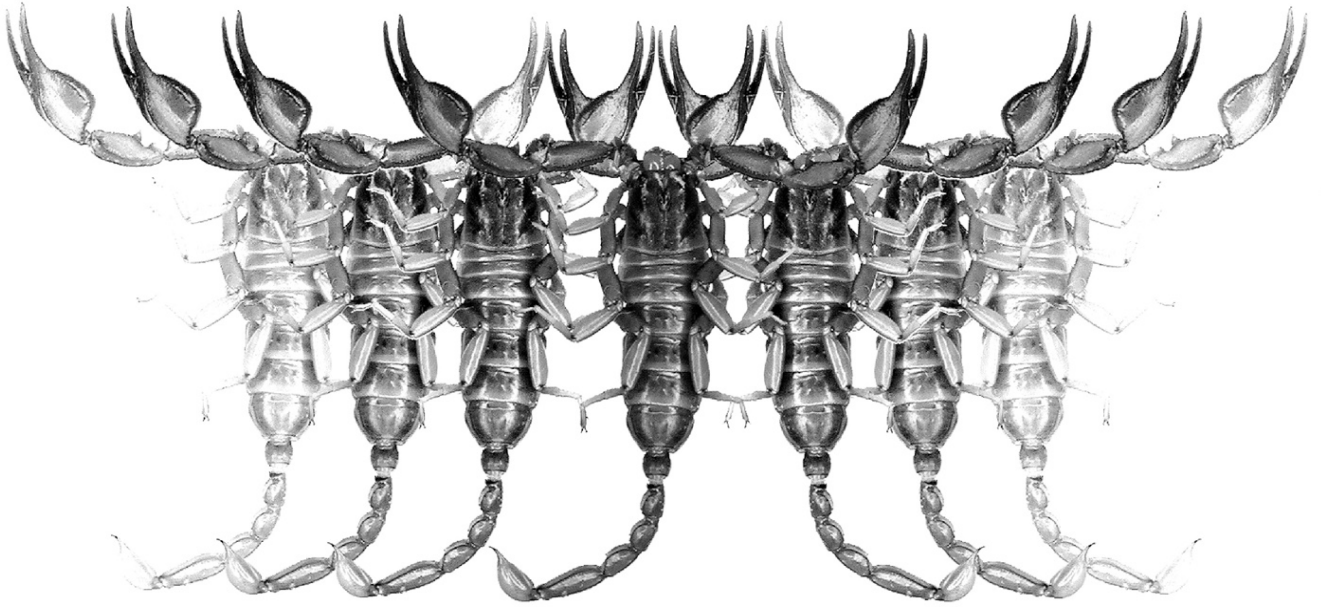


Euscorpium

Occasional Publications in Scorpiology



**Fusion of Pectinal Teeth in *Scorpio kruglovi*
Birula, 1910 (Scorpiones: Scorpionidae)**

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Fusion of Pectinal Teeth in *Scorpio kruglovi* Birula, 1910 (Scorpiones: Scorpionidae)

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<http://zoobank.org/urn:lsid:zoobank.org:pub:E9AA58E3-5AAF-4520-9340-D113A24F20B6>

Summary

A rare teratological anomaly of pecten is described and illustrated: a case of fusion in pectinal teeth in the scorpion *Scorpio kruglovi* Birula, 1910). It was observed that 7th and 8th teeth are fused in the right pecten. The resulting fused tooth is larger than other teeth. A smaller fulcrum located inside of the large, fused tooth whereas other fulcra are located between normally developed teeth.

Introduction

Numerous morphological abnormalities and teratological anomalies in scorpions have been documented up to now (Yağmur et al., 2021). These anomalies are mostly duplications in the body parts but deformations (malformations), division or fusion, or absence of scorpion body parts have also been reported.

Pectines are a couple of comb-like sensory organs that located on ventral side of scorpion prosoma (Gaffin & Walvoord, 2004). The organ consists of three marginal lamellae and a variable number of median lamellae, fulcra, and pectinal teeth (Hjelle, 1990).

Few anomalies have been reported on fusion of scorpion body parts and malformations of pectines. Armas (1976) reported fusion on carapace and the first tergite in *Didymocentrus trinitarius* (Franganillo, 1930). Cao & Solórzano (1991) reported fusion of pedipalp patella and chela in *Centruroides gracilis* (Latreille, 1756). Mattoni (2005) reported fusion of divided tergite IV and tergite V in *Bothriurus coriaceus* Pocock, 1893. Teruel (2003) reported fusion of tergite VII and metasomal segment I dorsally in *Microtityus jaumei* Armas, 1974.

Very few studies present on anomalies on the pectines. Ayrey (2011) and Šarić & Tomić (2020) reported pectinal malformation and fusion in the teeth in *Vaejovis lapidicola* Stahnke, 1940 and *Euscorpius* cf. *carpathicus* (C. L. Koch, 1837), respectively. Yağmur et al. (2022) reported a case in which marginal and median lamellae and fulcrae were fused and the pecten was bent counterclockwise; however, the teeth were of normal size. In addition, Teruel & Baldazo-Monsivaiz (2015) reported pectinal duplication based on gynandromorphism.

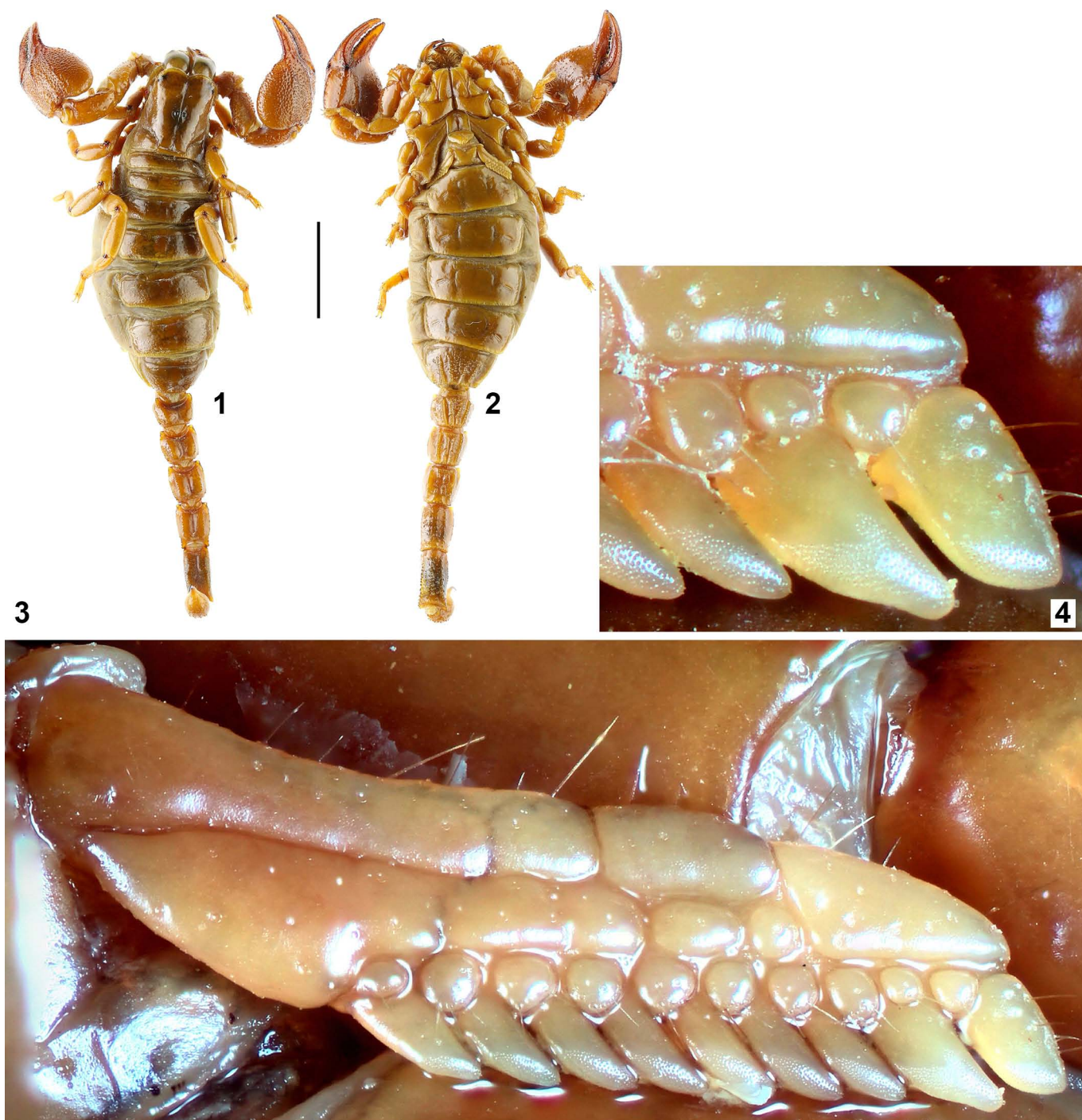
Pectinal teeth fusion was detected one of the female specimens in our study of the collection of Penther (1912). *Scorpio maurus kruglovi* was described by Birula (1910) from Deir ez-Zor, Syria (upper Euphrates). This subspecies was elevated to species level by Talal et al. (2015). Penther (1912) reported *Scorpio maurus* var. *testacens* C. L. Koch record from Hsitsche (Heseke) (=Al-Hasakah), Syria based on collected specimens by Dr. Viktor Pietschmann in 1910. The *Scorpio* specimens in the study of Penther (1912) examined herein and Al-Hasakah population is detected as *Scorpio kruglovi*.

Material and Methods

The adult female of *Scorpio kruglovi* (Figs. 1–2) was collected from Al-Hasakah Province, Syria (16–19 June 1910, leg. Viktor Pietschmann) and it is deposited in the Natural History Museum Vienna, Austria (NHMW 1806). Details of collection on the examined specimen are taken from Penther (1912). Identification of specimen was done after Birula (1910) and Talal et al. (2015).

Results and Discussion

The examined specimen has a fusion on 7th and 8th teeth in the right pecten. Therefore, the right pecten has 9 teeth while the left pecten is normal and has 10 teeth. It is observed that both pectines are of same length and the pecten that includes the anomaly is not shorter, although it includes a fusion of two teeth. The fused tooth is wider and longer than normally developed teeth, and it has the same size as the distal tooth. The tip of this fused tooth is partly pointed, and the tooth is elongated. While in normal teeth peg sensilla cover an ovoidal area, in the fused tooth this area is broader and “V”-



Figures 1–4: *Scorpio kruglovi*, female. **Figures 1–2.** Dorsal (1) and ventral (2) views. **Figures 3–4.** Right pecten (3), fused 7th and 8th teeth in the right pecten (4). Scale bar: 10 mm (1–2).

shaped (Figs. 3–4). Although the 7th and 8th teeth are fused, the fulcrum is normally developed; however, this fulcrum is smaller than other fulcra and circular in shape. Besides, other fulcra are located between the pectinal teeth whereas the smaller fulcrum is located inside of the fused tooth.

Ayrey (2011) observed an abnormal pecten in *Vaejovis lapidicola* Stahnke, 1940. In his case both pectines had anomalies. Besides, pectines were shorter and shriveled; their fulcra were less developed, and pectinal teeth were mostly fused and less developed. In the study of Šarić & Tomić

(2020), four teeth were fused and one was malformed; fused teeth were less developed. As opposed to these two cases, in our specimen only two teeth were fused, and the resulting fused tooth was larger than other teeth.

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