

## RESEARCH NOTES

### AN UNUSUAL DEVELOPMENTAL ANOMALY IN SCORPIONS (SCORPIONES, BUTHIDAE)

Developmental anomalies, including duplication of body parts, are known to occur in two families of scorpions. In the family Chactidae, Pavesi (1881) reported a specimen of *Euscorpium germanus* (C. L. Koch) with distal symmetrical duplication of the body starting from mesosomal segment IV.

Most reports of body duplication, however, are for members of the family Buthidae. Shulov and Amitai (1955), reported on a specimen of *Leiurus quinquestriatus* H. et E. with two stingers. A similar case was reported by the author in *Tityus serrulatus* Lutz e Mello (Matthiesen, 1978). Vachon (1972) illustrated an adult *Isometrus maculatus* (Geer) with partial duplication of the venom vesicle, and a short, partly atrophied second stinger. Williams (1971) described an adult *Centruroides sculpturatus* Ewing with two fully formed, functional telsons. Distal duplication of the metasoma from segment II is reported by Berland (1913) for *Centruroides infamatus* (C. L. Koch); and from segment I for *Centruroides noxius* Hoffman by Briseño (1963), for *Centruroides margaritatus* (Gervais) by Campos (1918), for *Androctonus crassicauda* (Oliver) by Millot and Vachon (1949), Vachon (1952, 1953), for *Centruroides sculpturatus* Ewing by Williams (1971), and for *Buthotus alticola* (Pocock) by Vachon and Serfaty (1950). Distal duplication

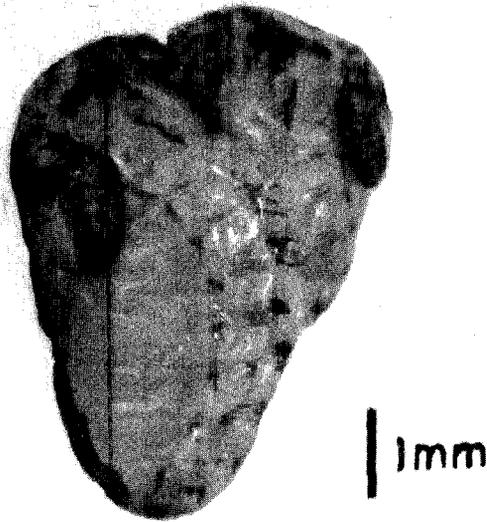


Fig. 1.—Embryo of *Tityus cambridgei* Pocock, with duplication of anterior body parts.

starting on mesosomal segment IV has been reported for *Buthacus leptochelys* H. et E. by Sergent (1946) and Vachon (1952), and duplication from mesosomal segment III in *Centruroides gracilis* (Latreille) by Franganillo (1937 apud de Armas, 1977).

Duplication of the anterior region of the body is not as common as duplication of the posterior region. Brauer (1917) reported several embryos of *Euscorpium carpathicus* L. in which he observed duplicated prosomas, including on some duplication of some of the anterior segments of the mesosoma.

In Brazilian species of the genus *Tityus* Koch (Buthidae), I observed many cases of teratological embryos of different kinds (Matthiesen 1970). The one described below represents the first known case of duplication of anterior body parts in buthids. The embryo (Fig. 1) was found in a female *Tityus cambridgei* Pocock from Belem, State of Para, Brazil (26 May 1967), collected and dissected by Prof. Maria M. Telles. It's anterior end is clearly double, showing two carapaces each with a complete set of eyes, and four pedipalps. The embryo is asymmetrical, with the right side being smaller than the left one. The single metasoma, which in normal embryos is folded ventrally, in this case is folded dorsally, obscuring the location where the two anterior halves come together.

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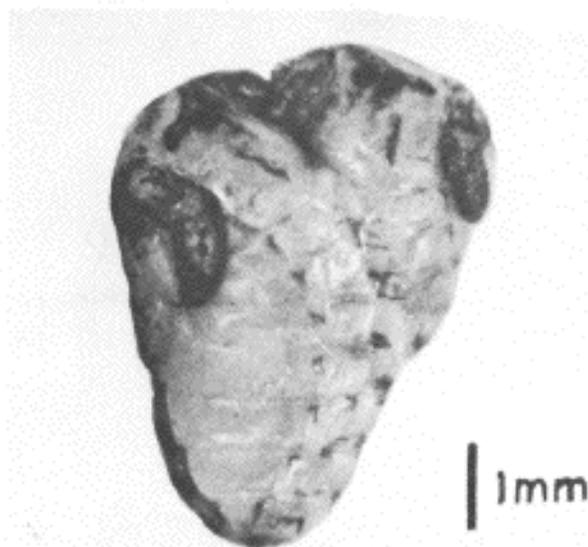


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