

RESEARCH NOTES

AN EXAMPLE OF ABNORMAL CARAPACO-ABDOMINAL FUSION IN *NEOBISIUM* AFF. *FUSCIMANUM* (ARACHNIDA, PSEUDOSCORPIONES, NEOBISIIDAE)

Teratological phenomena in various representatives of the pseudoscorpion family Neobisiidae are extremely diverse, as shown by Čurčić (1980, 1989a, b), Čurčić and Dimitrijević (1984, 1985, 1986, 1990) and Čurčić et al. (1981, 1983). The majority of the observed malformations affect the abdominal segmentation, thus causing either tergal or sternal deficiencies. However, a number of specimens have been found which exhibit various aberrations of the chelicerae, pedipalps, and walking legs (Čurčić 1980).

Records of carapacial deficiencies in the Neobisiidae are very sparse. Only recently, an abnormal carapaco-abdominal junction (fusion) was studied in a male of *Neobisium carpaticum* Beier (Čurčić and Dimitrijević 1984, 1986). To our knowledge, this is the only case of malformation affecting the carapace which has been discovered to date.

In a collection of pseudoscorpions made at Asanovac, near Žitoradja, Serbia (Yugoslavia) during March 1989, one anomalous deutonymph of *Neobisium* aff. *fuscimanum* (C. L. Koch) was found. The specimen was obtained by sifting humus in an oak forest. In the specimen, only the carapace and the anterior tergites were anomalous, while the sternites and the appendages were normal in all respects.

The purpose of this note is to describe the phenomenon of carapaco-abdominal fusion in the aberrant deutonymph. The carapace and the first two tergites of this specimen are anomalous (Fig. 1). The carapace lacks a chitinous section on the right posterior margin; instead a thin and transparent membrane is present in the area where the missing part of the carapace would otherwise be found. In addition, tergite I is fused with the carapace along its mid-anterior region. As a consequence of this deficiency, the carapacial setation in this specimen is significantly altered in relation to the normal setal complement for a deutonymph, $4 + 6 + 6 + (6-7) = 22-23$ (Čurčić

1982). The setation of tergite I has been drastically changed, since the number of setae is greatly increased and their distribution irregular. The deutonymph of *N. fuscimanum* normally carries 6-8 setae on tergite I (Čurčić 1982). Tergite II bears 3 small setae on the left, but is devoid of setae on the right. The tergal section with 6 setae otherwise found anterior to tergite II might represent a part of this tergite, which perhaps had been split originally into two transverse areas. However, it is also possible that this demi-tergite may represent a supernumerary sclerite, located between tergites I and II. This assumption is based on the presence of an additional row of setae on this isolated tergal section. A similar case has been noted in *N. sylvaticum* C. L. Koch (Čurčić and Dimitrijević 1985). Altogether, five types of abnormalities have been found to affect the carapace and abdominal tergites in this deutonymph: (1) partial atrophy of the carapace, (2) carapaco-abdominal fusion [symphysomery], (3) partial atrophy of tergite II, (4) the occurrence of a supernumerary sclerite and, (5) the alteration of setation in both carapace and tergites.

The segmental anomalies in neobisiid species mainly occur during the "maturation molt", or the transformation of tritonymph into adult (Čurčić 1989b). Considerably fewer specimens become aberrant when transforming from deutonymph into tritonymph, or from the proto-nymph into deutonymph, as was shown by Čurčić (1989a, b) and Čurčić and Dimitrijević (1986).

The origin of the malformations in this specimen of *N. aff. fuscimanum* is still unclear. We assume that the genesis of the drastically modified carapaco-abdominal junction in this example is provoked by genetic factors, especially those affecting the metamerization period, as was shown elsewhere by Gehring (1985) for representatives of various invertebrates.

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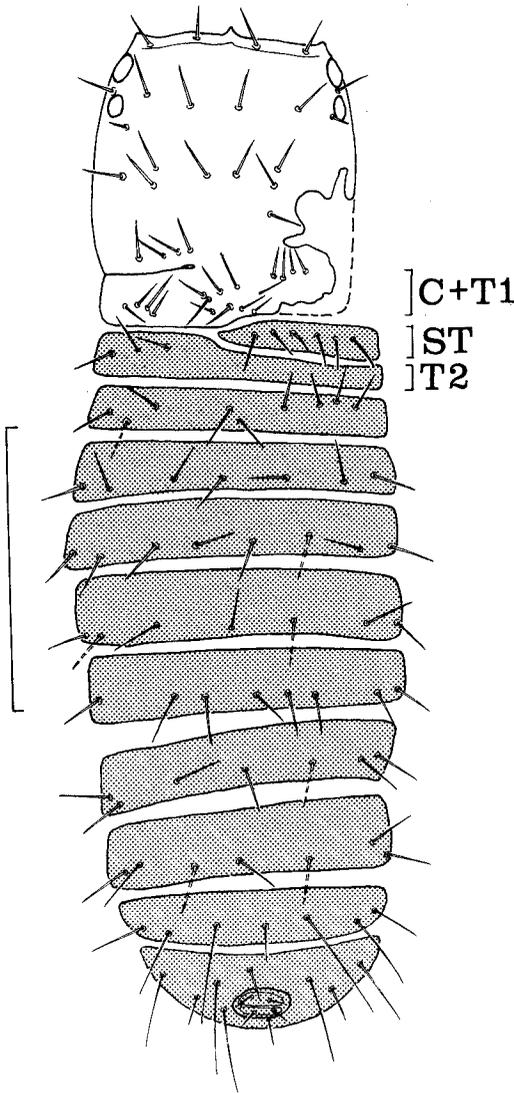


Figure 1.—*Neobisium* aff. *fuscimanum* (C. L. Koch). Scale line = 0.5 mm. C+T1 = carapace and tergite I, ST = supernumerary tergite (?), T2 = tergite II.

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