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An interesting symmetric palpal teratology in *Trochosa ruricola* (De Geer, 1778)

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Introduction

A male *Trochosa ruricola* (De Geer, 1778) with deformed palps (Fig. 1) was collected from a salt marsh along the Yser estuary at Nieuwport, Belgium, on May 13, 2011. It is described and illustrated here, with a discussion on possible interpretations.

Description

Distal to the tibia, the deformed "palp" is apparently composed of three sections that might be interpreted as the metatarsus and the two-pseudosegmented tarsus (Figs. 2–5). The two tarsal pseudosegments are clearly hairy. The three sections apparently emerge out of the "cymbium", which is recognized by the presence of a terminal claw. The last pseudosegment of the apparently two-pseudosegmented tarsus is bulbus-like: it bears the embolus and the median and terminal apophyses, both of which are clearly deformed.

Left and right palps are identical in structure. The modified palp is clearly longer than a normal palp, by one-third when viewed proportionally against leg I and the cephalothorax length of a normal male from the same population (Table 1).

Fig. 1: Symmetric palpal teratology in *Trochosa ruricola* (de Geer, 1778).

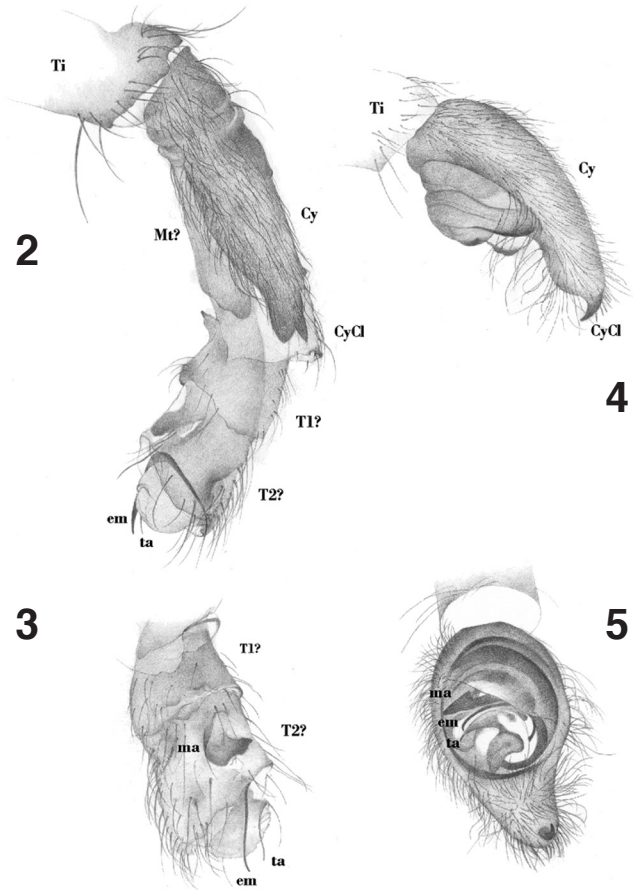
Discussion

The symmetry of the teratology makes the case even more interesting in that it is unlikely to be a meaningless developmental error. If this observed teratology is a reflection of the transformation of the distal segments of the first ambulatory appendage (comparable to the female palp) into the male copulatory organ, then this case might throw a new light onto the ontogeny of the male palpus in spiders.

It might suggest that the terminal palp structures, cymbium and bulbus, are possibly the result of a fusion of the metatarsus and the tarsus, and that the tarsus might even have been composed of two pseudosegments separated by a

	TP	NP		T1	N1
Femur	1.16	1.26	Femur	2.08	2.25
Patella	0.60	0.72	Patella	0.97	1.17
Tibia	0.54	0.74	Tibia	1.65	1.84
Mt?	0.95		Metatarsus	1.61	1.75
Cymbium	1.09	1.17			
T1?	0.45		Tarsus	1.30	1.38
T2?	0.39				
			Claw	0.13	0.14
TL	**5.18**	**3.89**		**7.74**	**8.53**
			CL	**3.14**	**3.25**
TL/CL	**1.65**	**1.19**			

Table 1: Length measurements (in mm) of the teratological palp (TP), a normal palp (NP), the teratological Leg I (T1), a normal Leg 1 (N1), total lengths (TL), cephalothorax lengths (CL), and TL/CL ratio.



Figs. 2–5: *Trochosa ruricola* (De Geer, 1778). **2** Retrolateral view of modified palp; **3** prolateral view of modified palp; **4** Retrolateral view of normal palp; **5** ventral view of normal palp. Cy = Cymbium; CyCl = Cymbial claw; em = embolus; ma = median apophysis; Mt = Metatarsus; T = Tarsus; ta = terminal apophysis; Ti = Tibia. Scale: length of normal cymbium = 1.17 mm.

pseudoarticulation, a situation found in the ambulatory legs of some lycosoids e.g. all the Pisauridae and in the lycosid genus *Evippa*.

This rather simple interpretation is in contradiction with the findings of Barrows (1925, p. 511): "…the palpal male organ is a hypertrophied palpal claw…", an idea later refuted by Nelson (1978), Patterson (1982), and Coddington (1990, p. 8): "…the palpal bulb arises from hypodermal cells (the "claw fundament"), which accumulate at the distal end of the tarsus before the molt."

This interpretation remains, however, very speculative without a thorough analysis made by an expert in the ontogeny of the Arachnida.

Acknowledgements

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