

Observations of a Rare Anomaly in *Cheyletiella parasitivorax* (Acarina: Cheyletelliidae): Atrophy of the Third Right Leg

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ABSTRACT Herein is described the atrophy of the third right limb in a *Cheyletiella parasitivorax* (Acarina: Cheyletelliidae). Such a rare anomaly may have had a traumatic origin.

KEY WORDS Arachnida, mites, appendage, traumatic injury

MORPHOLOGICAL ALTERATIONS in arthropods have been the subject of much research. Gaud & Mouchet (1957) describe a case of physiological asymmetry in a mite of the superfamily Analgesoidea. Nuttal (1914), Brumpt (1934), Pavlovsky (1940), Santos Dias (1948a,b), and many others describe numerous cases of anomalies in ticks. Campana-

Rouget (1959) reports on natural and experimental teratology. Kostrzewski et al. (1986) describe a case of gynandromorphism in *Hyalomma truncatum*. As far as we know, however, cases of morphological anomaly in mites of the family Cheyletelliidae have never been reported.



Fig. 1. Female of *Cheyletiella parasitivorax* having atrophy of the third right leg.



Fig. 2. Detail of the idiosoma of *Cheyletiella parasitivorax* showing the atrophic third right leg.

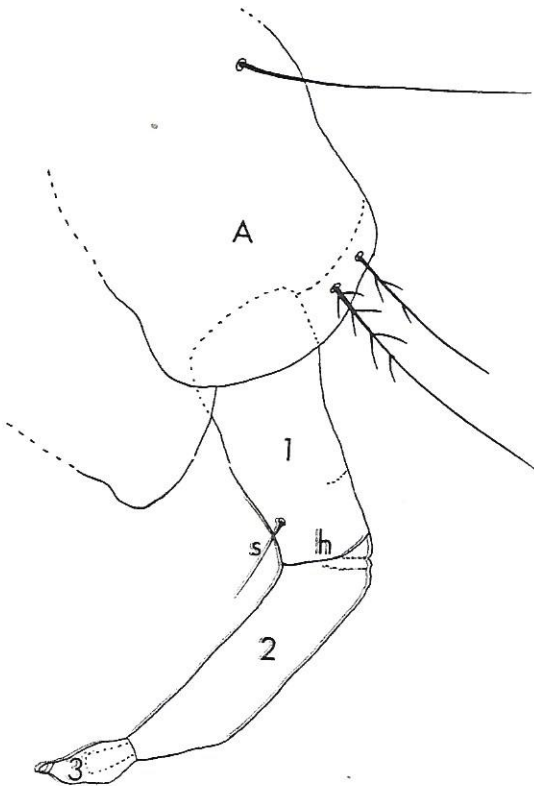


Fig. 3. Drawing of the atrophic third right leg of *Cheyletiella parasitivorax*: A, coxal plate; 1, proximal segment; 2, medial segment; 3, distal segment; s, nude bristle; h, line of demarcation between proximal and medial segments.

Described herein is the natural atrophy of the third right limb of *Cheyletiella parasitivorax*. It is a unique case of deformation found among 1,500 mites of the same species taken from rabbits, *Oryctolagus cuniculus*.

The subject was a female mite that had atrophy of the third right limb and a fusion of the various segments of the leg. From this, a deformed and nonfunctional appendage is derived (Fig. 1-3). Only the coxal plate (Fig. 3, A) appeared normal in size, but it was fused to the trochanter. It is difficult to identify the other segments by structure.

A long nude bristle remained dorsally (Fig. 3, s), which makes one think of the fusion of the femur with the knee. The medial segment (Fig. 3, 2) is indicated by a distinct line (Fig. 3, h). It is thinner and is about the same length as the first segment. Finally, the distal segment (Fig. 3, 3) is distinctly deformed and has no claws or bristles.

The mite had the following dimensions: total length, 395 μm ; gnathosoma, 105 μm long; idiosoma, 290 μm long; propodosoma, 245 μm wide; hysterosoma, 210 μm wide; atrophic leg, 128 μm long: coxa and trochanter, 46 μm wide, 48 μm long; proximal segment (Fig. 3, 1), 34 μm long; medial segment (Fig. 3, 2), 32 μm long; distal segment (Fig. 3, 3), 14 μm long.

Cases of atrophy of the limbs of mites are described by Campana-Rouget (1959), who observed the atrophy of the third right limb in *Amblyomma hebraeum*. In addition to describing the many anomalies, he describes the plural atrophy of the limbs in three specimens of *Dermacentor marginatus*. He attributes the alteration to a mechanical factor; the mutilation of a leg often results in the regeneration of a smaller, sometimes incomplete leg.

It is possible that the deformity described here had the same cause. The presence of a normal coxa with a completely atrophic limb suggests that this malformation had a traumatic origin and that there was a subsequent anomalous regeneration of the limb.

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