

Natural history and distribution of the enigmatic southern Appalachian opilionid, *Fumontana deprehendor* Shear (Laniatores: Triaenonychidae), with an assessment of morphological variation

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Abstract

The opilionid species *Fumontana deprehendor* Shear, 1977 (Laniatores: Triaenonychidae) represents a monotypic genus, previously known from only four specimens collected at two published localities, both old-growth forest sites in the southern Appalachian mountains. In an effort to increase the biogeographic and taxonomic information available for this phylogenetically and morphologically unique opilionid, we undertook a focused sampling effort throughout the southern Appalachians. These field efforts uncovered both more individuals (n = 141) and a broader distributional range (22 newly-discovered populations) for this monotypic genus. Examination of both somatic and penis morphology reveals little geographic variation across spatially disjunct populations. Our results provide a new perspective on conservation priorities for *F. deprehendor*. Rather than representing a single, hyper-rare taxon of limited distribution, our data suggest a broader distribution across the uplands of the southern Appalachians. We recommend that conservation attention be focused on learning more about the distribution, biology and relative rarity of *F. deprehendor* in the smaller, geographically isolated units.

Key words: Appalachian mountains, Opiliones, cryophilic arthropod, cryptic species

Introduction

The opilionid species *Fumontana deprehendor* (Laniatores: Triaenonychidae) was once believed to be one of the rarest opilionids in North America (Shear 1977, 1978). The monotypic genus *Fumontana* was originally described from single adult male (holotype) and female (paratype) specimens, collected in Greenbrier Cove, Great Smoky Mountains