Abstract

Onychophorans, or velvet worms, are poorly known and rare animals. Here we report the discovery of a new species that is also the largest onychophoran found so far, a 22cm long female from the Caribbean coastal forest of Costa Rica. Specimens were examined with Scanning Electron Microscopy; Peripatus solorzanoi sp. nov., is diagnosed as follows: primary papillae convex and conical with rounded bases, with more than 18 scale ranks. Apical section large, spherical, with a basal diameter of at least 20 ranks. Apical piece with 6-7 scale ranks. Outer blade 1 principal tooth, 1 accessory tooth, 1 vestigial accessory tooth (formula: 1/1/1); inner blade 1 principal tooth, 1 accessory tooth, 1 rudimentary accessory tooth, 9 to 10 denticles (formula: 1/1/1/9-10). Accessory tooth blunt in both blades. Four pads in the fourth and fifth oncopods; 4th. pad arched. The previously unknown mechanism by which onychophorans weave their adhesive is simple: muscular action produces a swinging movement of the adhesive-spelling organs; as a result, the streams cross in mid air, weaving the net. Like all onychophorans, P. solorzanoi is a rare species: active protection of the habitat of the largest onychophoran ever described, is considered urgent. Rev. Biol. Trop. 58 (4): 1127-1142. Epub 2010 December 01.

Keywords

New species, net weaving mechanism, largest onychophoran, fossil and extant velvet worms, Peripatidae, taxonomy, Costa Rica, Peripatus.