

**Proboscis ornamentation as a diagnostic character for  
the *Anoplodactylus californicus-digitatus* complex  
(Arthropoda: Pycnogonida) with an example  
from the *Anoplodactylus eroticus* female**

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**Abstract**

Females of the Indo-Pacific species *Anoplodactylus eroticus* (Arthropoda: Pycnogonida: Phoxichilidiidae) are described for the first time. The presence of peculiar ventral outgrowths or protuberances on the female proboscis of *A. eroticus* and 13 other *Anoplodactylus* species motivates an evaluation of a *californicus-digitatus* complex, based on external morphology and species distribution. The anatomy and development of proboscis protuberances is assessed using scanning electron microscopy (SEM), Nomarski optics, and fluorescence microscopy. External morphology of *A. eroticus* is compared to that of apparently related species. An identification key for the 14 species of *Anoplodactylus* with females bearing a proboscis with ventral protuberances is provided here as an identification tool.

**Key words:** Pycnogonida, *Anoplodactylus*, proboscis, dimorphism, Indo-Pacific, Phoxichilidiidae, sea spiders

**Introduction**

The genus *Anoplodactylus* Wilson, 1878 (Phoxichilidiidae, Pycnogonida) is one of the most diverse and widespread genera of sea spiders. It includes tiny to medium-sized species ranging between 0.6 mm and 6 mm in body length. *Anoplodactylus* is a cosmopolitan genus of approximately 150 species, predominantly dwelling in shallow waters in tropical or temperate habitats, although some have been found in Antarctic waters or collected below 1000 meters depth. Adults are recognized by the presence of