

Paper Number: 3642

Onychophorans: a key role in understanding arthropod origins?

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Onychophorans have long been recognised as something akin to a missing link between arthropods and, at least historically [1], annelid worms. This has become known as the Articulata hypothesis [2], which at its core recognises that annelids, velvet worms and arthropods are all segmented. The alternative Ecdysozoa hypothesis (i.e. animals which moult) combines arthropods with cycloneuralians (e.g. worms such as priapulids, kinorhynchs and nematodes) and is discussed under the results of molecular analyses below. Despite being somewhat neglected as a 'minor' group throughout much of the twentieth century, the onychophorans' key role in understanding arthropod origins [3] has led to a flourishing literature in recent years, with numerous high-profile publications investigating their morphology and/or genetics. A goal of many of these studies has been to establish which characters are exclusive to Arthropoda – i.e. insects, myriapods, crustaceans and arachnids among the living taxa – and which belong to what some authors would call total group Arthropoda or Panarthropoda; a putative clade including arthropods, velvet worms and perhaps tardigrades, but excluding the cycloneuralian ecdysozoans.

References:

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