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Classification And Evolutionary Biology Of Solifugids By Rostrum

Solifugids (Arachnida, Solifugae) are known for their powerful chelicerae, voracious appetite, and tremendous speeds, yet very little is known about their evolutionary history. Solifugids have unique morphological characteristics, one of which is the rostrum, a part of the mouth structure. The relationship between the rostrum of a solifugid to the 12 different Solifugae families was investigated to determine if the rostrum could be used to classify Solifugae by family. In each solifugid, the dorsal and ventral plates of the rostrum were compared as was the placement and size of the plumose bristles. Nine of the 12 families were examined, with one to five species per family. All of the genera and species from a specific family shared similar characteristics regarding the rostrum, though differences between families were present, with the exception of *Hemerotrecha californica* and the Family Solpugidae. *Hemerotrecha californica* belongs to Family Eremobatidae, yet its structure was opposite of what was found in all the other Eremobatidae solifugids. This may indicate a misplacement or the need for the erection of a new Family. In the Family Solpugidae, no consistency among the species could be found regarding the dorsal and ventral plates and the plumose bristles, also perhaps indicating misplacements. For the rest of the examined solifugids, it was determined that the rostrum could be used to help classify solifugids for eight out of the nine examined families and might provide information regarding evolutionary relationships among solifugid families and species.