



New light on the nomenclature, taxonomy, and biology of *Hemipholis* species (Echinodermata: Ophiuroidea: Ophiactidae)

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Abstract

Hemipholis cordifera is the correct name for the only known Western Atlantic species of *Hemipholis*. *Hemipholis elongata*, a name which has been used in place of *H. cordifera*, is a *nomen dubium* that cannot unambiguously be assigned to any known species of brittle star. Evidence is presented that the genus *Hemipholis* presently comprises only *H. cordifera* and its geminate Eastern Pacific congener *Hemipholis gracilis*, and it is shown that the latter name has priority over *Hemipholis affinis*. *Hemipholis gracilis* and *H. cordifera* are illustrated and compared to show how mature individuals can be distinguished. However, small individuals of both species are extremely similar. The latitudinal distributions of *H. cordifera* and *H. gracilis* appear to be causally related to coastal water temperature, possibly in conjunction with divergent ocean currents, and the relatively broad range of *H. cordifera* compared to *H. gracilis* is attributed to its cold tolerance and to the influence of widespread warm-water boundary currents in the central Western Atlantic. As regards the two other congeners that have been described, *Hemipholis wallichii* is revealed to be a juvenile ophiuroid *incertae sedis*, and *Hemipholis microdiscus* was previously transferred to the Amphiuridae and assigned the *nomen novum*, *Amphiura microdiscoida*.

Key words: *Amphiura microdiscus*, *Amphiura microdiscoida*, *Amphiodia riisei*, brittle star, geminate species, *Hemipholis affinis*, *Hemipholis cordifera*, *Hemipholis elongata*, *Hemipholis gracilis*, *Hemipholis microdiscus*, *Hemipholis wallichii*, zoogeography

“...every working naturalist is painfully conscious of the great amount of time and labor that he is constantly obliged to spend in unraveling the intricate synonymy of well known genera and species, most of which has been caused by the careless or willful neglect of the salutary rules of nomenclature, in which *priority of publication* is one of the most fundamental principles. And whenever a naturalist, to save his own time, selfishly neglects to ascertain the correct synonymy of the species which he describes or mentions, he is merely heaping up labor for future naturalists, whose time might be better employed, than in correcting the imperfect work of their predecessors.” A.E. Verrill’s (1871:573) comments regarding the nomenclature of *Hemipholis*.

Introduction

A convoluted series of mistakes has led to the use of incorrect names for species of *Hemipholis*, and since the genus will continue to attract the attention of scientific investigators, the present contribution is intended to rectify nomenclatural and taxonomic errors and to provide new information about the species. The only known species of *Hemipholis* from the Western Atlantic is relatively well-studied in comparison with other brittle stars. It has repeatedly been cited in ecological, environmental, and biological studies owing to its abundance, broad geographic range, and its remarkable morphological and physiological specializations (selected references in Hendler *et al.* 1995). A principal objective herein is to show that although the Western Atlantic species is frequently called *Hemipholis elongata* (Say, 1825), *Hemipholis cordifera* (Bosc, 1802) is its correct name. In addition, evidence is presented that a geminate Eastern Pacific species, *Hemipholis gracilis* Verrill, 1867, is the sole congener of *H.*