

Despite the clear distinction drawn by Ljungman between *Amphiura*, *Amphipholis*, *Hemilepis* and *Ophiopelte* (laps. cal. for *Ophiopeltis* D & K), Lyman (1882) merged all four genera under *Amphiura*, and employed the distinctions merely to indicate sections of that genus. Verrill (1899) distinguished two other genera, *Amphioplus* and *Amphiodia* for species with 3 or more oral papillae, and revived *Amphipholis*. In his analysis of the species of these genera Verrill indicated the position of *Ophiopeltis* (misquoted as "*Ophiopelte*") and *Hemilepis*, but reduced both to synonymy by including their species in *Amphiura*. Verrill's keys can be briefly summarised as follows:—

Oral papillae 2 on each jaw-plate, with a diastema between them	<i>Amphiura</i> (including <i>Hemilepis</i> and <i>Ophiopeltis</i>)
Oral papillae 3 on each jaw-plate, no diastema—		
Outer papilla broadened	<i>Amphipholis</i>
Outer papilla not broadened	<i>Amphiodia</i>
Oral papillae 4 or 5 on each jaw-plate, the distal papilla or papillae sometimes placed on the adoral plate	<i>Amphioplus</i>

Verrill's classification is the one in use at the present time, and in most respects it has proved workable. Unfortunately, however, the subsequent work on regional faunas (without regard to the genera in their world context) has resulted in the gross overloading of these four genera, over 350 species having been assigned to them. A systematic review of their content, and their relation to *Ophionephthys* is urgently required, and the present contribution indicates a possible subdivision. Whether the divisions proposed here are natural ones is, of course, very uncertain, but it is believed that they have the merit of practical working units, with reasonably well-defined content.

Although the genera are obviously overloaded, and in need of subdivision, it would not be fair to say that the present classification is chaotic. Authors of new species have generally taken care to indicate the affinities of the species on the basis of the disc-clothing and tentacle-scales, and these important details have been utilized in the classification here proposed. However, as will be seen in the course of the discussion, many species have found their way into quite inappropriate association with forms not closely related, and some rearrangement of these is required. Further, a serious error resulted from the suppression of *Ophiopeltis* Düben & Koren in 1882, when Lyman reduced it to a synonym of *Amphiura*. The result of this has been that subsequently, as new species of *Ophiopeltis* have been discovered, some have been assigned to *Amphiura*, and others to the inappropriate genus *Ophionephthys*. This in turn has led to misgivings as to the validity of *Ophionephthys*, which, of course, lost its distinctive features once it began to encompass species unrelated to those originally included.

Some of the genera here proposed will comprise groups of species which other naturalists have no doubt recognized as convenient taxonomic assemblages, but which they have hesitated to erect into genera because a few transitional forms link the assemblages, and make it difficult to draw sharp boundaries between the groups. While such a cautious attitude may be justified so long as the number of species is not great, it becomes highly impracticable when the annual accretion of new forms results in genera achieving the high total of nearly 200 species. This has happened with *Amphiura*. The Linnean system of classification presumes that sharp breaks exist between taxa, whereas the evolution hypothesis implies that such sharp breaks will not occur unless major mutations, or extinctions, have taken place. The evidence suggests that in the Amphiuroidae there has been usually a gradual differentiation of species and genera, and intermediate forms still exist. In such circumstances the conservative taxonomist may be inclined