

In an article in the *Encyclopædia Britannica* I proposed the following classification, which is based on differences in the characters of the desmas :—

Order Lithistida, O. Schmidt.

Suborder I. Tetracladina (Zittel). The desma is tetracrepid.

Family I. Tetracladidæ. With the characters of the suborder. Examples—*Theonella*, Gray; *Discodermia*, Bocage; *Siphonia*, Parkinson.

Suborder II. Rhabdorepida. The desmas are of various forms, founded on a monorepid basis.

Family I. Megamorinidæ (Zittel, *emend.*). The desmas are of comparatively large size; the ectosomal spicules are triænes and the microscleres are usually spirasters. Examples—*Corallistes*, O. Sch.; *Dorydermia*, Zittel; *Hyalotragos*, Zittel; *Lyidium*, O. Sch.

Family II. Micromorinidæ. The desmas are of comparatively small size, triænes and microscleres are absent. Examples—*Azorica*, Carter; *Verrucina*, Zittel.

Suborder III. Anomocladina. The desmas with a nucleate massive centrum from which a variable number of arms proceed radiately. Examples—*Vetulina*, O. S.; *Astylospongia*, Roemer.

On becoming convinced of the occurrence of the passage from the tetracrepid to the monorepid desma, discovered by O. Schmidt to occur in the case of *Macandrewia*; and further recognising the closeness of the affinity which exists between the Tetracladidæ, and Megamorinidæ (as defined above), I made a fresh attempt at classification, and this time based it on the presence and absence of triæne spicules; thus making primary use of the same character that is employed for the separation of the Choristida from the Monaxonida.

In this way the order Lithistida would be divided into two suborders, the Triænophora and Rhabdophora. The Triænophora would be distinguished not only by triænes but by the presence of microscleres and by the larger size of the desma.

Further investigation, however, revealed the presence of microscleres in two Rhabdophorous genera (*Scleritoderma* and *Neopelta*); in the latter an amphiaser is present, in the former a sigmaspire, precisely similar to the typical sigmaspire of the Tetillidæ.

These genera thus agree with the Triænophora in possessing microscleres, and with the Rhabdophora in the absence of triænes. They are truly annectant, or passage-forms through which the Triænophora pass into the Rhabdophora. If they are to be classed with either group it should be with the former since they further resemble them in possessing a special ectosomal spicule. Their inclusion however necessitates a change in the proposed classification, and I now offer the following, in which the presence or absence of special ectosomal spicules and of microscleres serves for the definition of two suborders—the Hoplophora and Anoplia; the Hoplophora are subdivided into two demi,