

With regard to the further subdivision of the Palæechinoidea, the subdivision proposed by Zittel into Cystocidaridæ, Bothriocidaridæ, and Perischoechinidæ, seems to represent well our present knowledge of the group. The further subdivision, however, of the Perischoechinidæ into Lepidocentridæ, Melonitidæ and Archæocidaridæ seems somewhat doubtful. The Archæocidaridæ, at any rate, and the Palæechinidæ (M'Coy) appear to form most natural subdivisions. The Melonitidæ and Lepidocentridæ hardly seem to be sufficiently distinct to be separated into different groups; and the Palæechinoidea, as a whole, can hardly be contrasted, after what has been said of the structure of the test, to all the remaining types of Echinoidea, as is proposed by Zittel and other palæontologists.

Both in the Desmosticha and in the Petalosticha the difficulties of properly combining the subdivisions adopted on the one side by palæontologists, and on the other by those who have mainly studied recent Echinids, are very great.

The groups recognised by both, and concerning which there seems to be but little question, are the Cidaridæ, the Salenidæ, and the Echinothuridæ. The other subdivisions, the Arbaciadæ, the Diadematidæ, the Echinometradæ, and the Echinidæ, which are in addition recognised by writers on recent Echinids, are by palæontologists limited to the Diadematidæ and the Echinidæ. This limitation seems scarcely warranted by our knowledge of the recent Echinids, while on the other hand our information regarding the structure of the apical and of the actinal systems of the greater number of the fossil genera is not accurate enough to enable us to place many of them with any certainty into the families adopted by those who have limited their studies to recent species. But such groups as the Arbaciadæ and Echinometradæ, if not of the same systematic value as the subdivisions Cidaridæ, Diadematidæ, and Echinidæ, are certainly as important as the Temnopleuridæ and Triplechinidæ.

As regards the Clypeastroids, the agreement is quite close. We have only to add to the families recognised by writers on recent species the Galeritidæ and the Conoclypeidæ, which are represented by a single recent species only in each group, leaving the following recognised among the Clypeastroids—the Galeritidæ, the Conoclypeidæ, the Euclypeastridæ, and the Scutellidæ. Among the Petalosticha the larger subdivisions of the recent species are the Cassidulidæ, still further subdivided into the Echinoneidæ and the Nucleolidæ; and the Spatangidæ, with the Ananchytidæ, the Spatangina, the Leskiadæ, and the Brissina. The separation of the Holasteridæ, as contrasting with the Spatangidæ as a distinct family by some palæontologists, seems hardly justified from our present standpoint, and it certainly seems more natural to consider the Dysasteridæ and the Ananchytidæ as sub-families of the Spatangidæ; the structure of the Pourtalesidæ and of other recent Ananchytidæ seeming to render a separation into Holasteridæ and Spatangidæ unadvisable.