

This large and widely distributed genus was subjected a few years ago to a critical revision by Professor F. Jeffrey Bell,¹ who carefully investigated the claims of the large number of forms referred to *Asterias* to be ranked as distinct species. All workers at the group owe a debt of gratitude to the author of this admirable and useful memoir. Professor Bell divided the genus into artificial sections, and systematised the recognised species by means of easily observed characters, which will afford great help in the determination of specimens.

The number and the great variety of the species of *Asterias* make the genus a very difficult one to deal with, and its subdivision into natural groups has been a long felt desideratum. Professor Bell's scheme is, however, essentially a systematic key, mainly artificial in character, rather than a natural arrangement by affinities; it not unfrequently results that species which are nearly related, and present a close similarity of habit, are widely separated and placed in sections wherein they stand isolated. For a table of specific differences, this perhaps may in some cases be an advantage, though it is decidedly unnatural from a taxonomic point of view.

Whilst fully recognising the excellence and utility of Bell's classification, I venture to think that the two methods—the artificial and the natural—may advantageously be combined, and for the species with which the present Report is concerned, I have formulated a scheme which seems to fulfil these requirements. To discuss the partition of all the species of *Asterias* would demand more space than I should be justified in occupying in this place, and would introduce too large an amount of matter foreign to the Challenger Report.

The groups or alliances of species which I have proposed, may, in my opinion, be regarded as of subgeneric rank. I further believe that some of them may ultimately stand as independent genera, but until more is known of the special anatomy of the species, I refrain from so classifying them.

Synopsis of the Species of Asterias herein mentioned.

- A. *Asterias rubens* group: Abactinal spinelets numerous, but not arranged in definite order, usually small and often more or less grouped. Papulæ numerous, in groups ASTERIAS.
- a. Heteractinid: Having six rays.
- a. Diplacanthid: Armature of the adambulacral plates consisting of two spines.
- a. Rays long and tapering, spinulation characteristically vesiculated. No spinelets between the parambulacral series of papulæ *vesiculosa.*
- β. Rays much shorter and less tapering. Spinulation not specially vesiculated. Occasional spinelets between the parambulacral series of papulæ *meridionalis.*

¹ *Proc. Zool. Soc. Lond.*, 1881, pp. 492-515.