

this could be satisfactorily accomplished the all-important analytical method would not overwhelm the synthetical, as it has been too often allowed to do by systematic zoologists. The forms which are associated with the names of *Acanthopleura picea*, *Acanthopleura spiniger*, and *Acanthopleura incana*, illustrate this point very forcibly.

The critical study of local varieties will lead to valuable results, and is a vastly better employment than the indiscriminate description of so-called "new species."

Various conchologists have attempted to collect the species of Chitons into consistent genera and greater groups, the last and best essay in this direction being that of the late Dr P. P. Carpenter of Montreal, who unfortunately died before he was able to publish his monograph. The more salient features of Dr Carpenter's system have been given by Mr W. H. Dall of Washington, in two valuable papers On the Scientific Results of the Exploration of Alaska, Article IV., Report on Chitons,<sup>1</sup> and On the Genera of Chitons.<sup>2</sup>

It would necessitate the comparison of a greater range of species than occurs in the collection to enter into a profitable critical discussion concerning the correctness of the main ideas in Carpenter's classification. It should be remembered that as a systematic conchologist he regarded the classification of Mollusca from a somewhat different standpoint from that of the modern school of morphologists, and his aim was to frame a scheme which would indicate the general relationship of forms, and which was based upon characters readily observed even in dried specimens. Although this necessarily limits the field of comparison, a great deal can be said in its favour for practical purposes, as, to take a definite example, it is manifestly impossible for those who have charge of public collections to dissect or mutilate specimens for an anatomical investigation, even had they the time or did the material permit of it. The systematic zoologist can only take certain patent characters for taxonomic purposes; it is the duty of the morphological zoologist to test these eclectic characters by all the means of his research. A true conception of the affinity of forms can only be reached by a nicely balanced appreciation of all the characters, and it is upon such that any classification must be based which will have any permanent value.

I had hoped to include in this report a sufficient account of the anatomy of the group which would enable us to test the value of Carpenter's classification. Although I have made some progress towards this end, various circumstances have prevented it from being here carried out. The species collected by the Challenger Expedition are not sufficiently representative for that purpose, and I have not yet had time to work out the supplementary material kindly placed at my disposal by Mr Dall. In the meantime, I adopt in the main Carpenter's classification and terminology.

In this report the species will be treated from a purely systematic point of view, and only those characters which are of ordinary taxonomic importance will be noted.

I have employed the terminology in general use, and have added but one new term.

<sup>1</sup> *Proc. U.S. Nat. Mus.*, 1878.

<sup>2</sup> *Proc. U.S. Nat. Mus.*, 1881.