

even the names of tribe and family have been applied by some to what others call sub-genera; some have called families what others have called orders; some consider as orders what others have considered as classes; and there are even genera of some authors which are considered as classes by others. Finally, in the number and limitation of these classes, as well as in the manner in which they are grouped together, under general heads, there is found the same diversity of opinion. It is, nevertheless, possible, that under these manifold names, so differently applied, groups may be designated which may be natural, even if their true relation to one another have thus far escaped our attention.

It is already certain that most, if not all investigators agree in the limitation, of some groups at least, under whatever name they may call them, and however much they would blame one another for calling them so, or otherwise. I can therefore no longer doubt that the controversy would be limited to definite questions, if naturalists could only be led to an agreement respecting the real nature of each kind of groups. I am satisfied, indeed, that the most insuperable obstacle to any exact appreciation of this subject lies in the fact, that all naturalists, without exception, consider these divisions, under whatever name they may designate them, as strictly subordinate one to the other, in such a manner, that their difference is only dependent upon their extent; the class being considered as the more comprehensive division, the order as the next extensive, the family as more limited, the genus as still more limited, and the species as the ultimate limitation in a natural arrangement of living beings, so that all these groups would differ only by the quantity of their characters, and not by the quality, as if the elements of structure in animals were all of the same kind; as if the form, for instance, was an organic element of the same kind as the complication of structure, and as if the degree of complication implied necessarily one plan of structure to the exclusion of another. I trust I shall presently be able to show that it is to a neglect of these considerations that we must ascribe the slow progress which has been made in the philosophy of classification.

Were it possible to show that all these groups do not differ in quantity, and are not merely divisions of a wider or more limited range, but are based upon different categories of characters, genera would be called genera by all, whether they differ much or little one from the other, and so would families be called families, orders be called orders, etc. Could, for instance, species be based upon absolute size, genera upon the structure of some external parts of the body, families upon the form of the body, orders upon the similarity of the internal structure, or the like, it is plain that there could not be two opinions respecting these groups in any class of the animal kingdom. But as the problem is not so simple in nature, it was not until after the most extensive investigations, that I seized the clue to