

3. *Coördinate grades and distinctions in Classification.*

X. The coördinate value of subdivisions in the system of classification is brought out to view in the parallel columns of the preceding tables, and evidence is thence afforded as to what groups are rightly designated, classes, orders, etc.

a. We thus learn that the subdivisions of the class of Mammals—Man, Megasthenes, Microsthenes,—are properly *orders*, if we so call the subdivisions Decapods and Tetracapods under Crustaceans, or Insects and Spiders under Insecteans.

b. Again, we have a solution of the question whether in each of the classes, Mammals, Birds, and Reptiles, the *hemitypic* division, as so-called on page 316, is a *subclass* coördinate with the *typical* division of the same, or whether it is an *order* coördinate with the three higher subdivisions of the class. The question appears to be decided, (contrary to former views of the writer,) that it is correctly made an *order*. These hemitypic divisions actually correspond severally to the degradational division in other columns of the different tables; and, therefore, if in the case of other classes, as those of Crustaceans, Insecteans, &c., they are *orders*, so are they in the three classes of Vertebrates mentioned. They have also a relation to the *hemitypic* divisions among Fishes, which are the first and second *orders* of the class.

XI. In an *inferior* or *degradational* group, the distinctions of the subdivisions included are generally much more strongly and obviously exhibited in the structure than among *typical* groups. Thus, the orders of Fishes are based on characters that have nearly a class-value among the higher Vertebrates. In the same manner, Amphibians, or hemitypic Reptiles, differ from true Reptiles more obviously than Oötocoids, or hemitypic Mammals, differ from other Mammals. So, the distinctions among the groups of Crustaceans are very wide compared with those among Insects; and those among degradational Crustaceans far wider than those among the typical subdivisions. The relative force of the life-systems is, in all probability, as great between Oötocoids and typical Mammals as between Amphibians and typical Reptiles, although so unequally expressed in the structure of the high or concentrated groups and the low or lax groups of species. Overlooking this principle has often led authors to allow too great importance to the structural differences among inferior or degradational groups.

XII. Under any class, order, tribe, the *typical* groups are often represented more or less clearly among the subdivisions of the *degradational*. Hence characteristics which separate the typical groups frequently separate only subordinate divisions under an inferior or degradational group. Examples occur in the class of Fishes under Vertebrates, in whose subdivisions the other classes of Vertebrates are partly represented; in the order