

single character, but on an assemblage of characters ; in this respect the genera of Tetillidæ are very excellent genera, but in several of the other families they are not so ; thus I have separated the genus *Myriastræ* from *Anthastræ* among the Stellettidæ on account of the presence of two forms of aster in the latter, the former possessing only one, but this may possibly be justified by the great importance of the microsclere as a character in classification. The existence of a difference in the number of distinct kinds of spicules present in different species or the replacement of one distinct form of spicule by another, as an aster by a microrabd, frequently enables us in the absence of associated differences to group species together into assemblages, which are of great convenience, and which might perhaps be termed, as they have been by previous describers, subgenera ; certainly if the presence or absence of spines over the surface of a spicule is a character of specific value, the absence of a distinct form of aster, or the substitution of a toxa or a microstrongyle for an aster, is of something more than specific value ; whether we call it generic or subgeneric does not signify. Passing from genera to families it may be expected that here at all events we shall stipulate for the absence of intermediate forms as a condition to their separation ; to this again I respond "No." So long as we admit the persistence of genera and species through long intervals of time, so long does it appear to me must we admit the possibility of transitional forms occurring between groups of all orders of rank, though, it need hardly be said, that the higher the rank of the group the less likely are such transitions to occur, and the more primitive the group, other things being equal, the less likely are they to occur, for the simple reason that divergence between the groups of higher rank and primitive forms took place at a much more ancient date than that between groups of lower rank and higher forms.

But we shall justly expect to find families defined rather by an assemblage of characters than by any single one, though naturally some single character will be more useful than others, and we find in the Sponges, as in so many other instances, that this is not usually the most physiologically important character, but rather the least so ; owing possibly its preservation to this very fact, which has put it beyond, or almost beyond, the scope of selective influences.

Having formed our families on a consideration of the sum total of their differences and resemblances, we shall be in a position to judge of what are the most constant characters, and a knowledge of these will help us in the formation of higher groups, and in the investigation of the family relationships of other Sponges which are not so well known as the Tetractinellids. While the characters found to be constant in one group may thus serve as guides to the classification of another, they are merely guides, and so treacherous that they must be "followed with a loaded pistol at their heads" ; in other words, a character, which may be constant enough in one family, may be a notorious example of variability in another. We shall now attempt to discover what are the most constant characters in the families of the Choristida.