

will be grouped at greater or less distances. These two attributes, simplicity and completeness, are evidently appropriate to an ancestral form. To begin with, each part of an organism will, by inheritance, resemble the part from which it has budded out. Successive variations introduce distinctions between the parts of an organism, just as they introduce distinctions between one organism and another. At the same time the simplicity sought for must be limited by some standard of completeness, otherwise we should be looking for the origin of things in general, not the ancestry of a particular group. In the structure of an Amphipod we may recognize simplicity in the segments of the peræon, where, as a rule, each segment is to a certain extent free from its neighbour and closely resembles it, and we may recognize it also in the flagella of the antennæ and branches of the pleopods, in which, commonly, numerous joints exhibit one and the same pattern. The theoretical completeness of the appendages rests to some extent on a comparison with other groups of Crustacea, but the limits either of completeness or simplicity which are to be expected in the special group are soon arrived at. If, then, by comparing not only one but every available character in all the families, we at length make some approach to a complete set of ancestral characteristics, we shall be able to construct an ideal Amphipod, with no parts degraded and none exaggerated. And if further, by comparing this ideal with existing species, we find one among them bearing an exceptionally close resemblance to it, such a species will have some claim to stand, not perhaps at the head, but in the centre of our classification, as most directly representing the type or original from which the other Amphipoda have in various degrees more widely diverged. As a matter of fact, in the genus *Gammarus* the well known species *Gammarus pulex* and *Gammarus locusta* are very much of the commonplace facies desired. They are naturally chosen for explanatory purposes and as representative species. They have the requisite completeness; the secondary flagellum of the upper antennæ is not wanting as in *Amphithoë*, nor the mandibular palp as in *Dexamine* and the Orchestidæ; the palp of the first maxillæ is not degraded as in *Orchestia*, nor the maxilliped palp curtailed as in *Lafystius*; no segments of the peræon are coalesced as in *Dulichia*, nor of the pleon as in *Atylus* and *Goplana*; the third uropods are not uniramous as in *Metopa*, nor the second as in *Cerapus*. They have also the requisite simplicity, as could easily be shown by a detailed comparison with other species. The distribution of these two species lends an additional probability to the view that they represent an ancestral form. Far more than any other Amphipod *Gammarus pulex* appears to have spread itself over the fresh-water streams of the world, and *Gammarus pulex* is connected by the very closest ties with *Gammarus locusta*. It is clear from the general distribution of the Gammarina that the chief nurseries whence they issue are the weeds of the coast. From these the rivers are accessible as well as the ocean, yet in the rivers the species of Amphipoda are few, while in the ocean they are multitudinous. This admits of a simple explanation, if we accept *Gammarus locusta* as representing the ancestral form which at one time occupied the