

Medusa; and so on. Now it may be urged, against the system of classification proposed, that size sometimes means one thing, and sometimes the reverse, and there is here manifest indefiniteness and a chance for indefinite assumptions. Or, the charge may be made with more point, and much less truth, as follows: "Because great size is correlated with superiority in *Crustacea*, you [Mr. Dana] infer that it is so correlated everywhere throughout the Animal Kingdom; and when, as nobody can fail soon to do, you meet with examples where facts contradict your theory, you get over the difficulty by assuming gratuitously that size is there due only to what you call 'vegetative enlargement.' As I cannot find that you have anywhere laid down any definite rules by which this vegetative enlargement is to be distinguished from the normal enlargement, the distinction appears to be an empirical one."<sup>4</sup>

Now great size is not correlated with superiority in *Crustacea* any more than in the rest of the Animal Kingdom, and this I particularly illustrate in my first paper on the subject; for I there discuss at length the relations of rank to mean size, and of rank to size from overgrowth or vegetative enlargement. The facts in nature are always obscure of interpretation until thoroughly and properly studied; and if the relation of size to rank is among the things not understood, it is among the things to be investigated. I have endeavored to give some criteria for deciding on this point. Towards this end I have presented the consideration that where a structure is so large for the species that the animal is sluggish in its movements, or stupid in its senses, there is evidence in this that size is a mark of degradation. But I have shown, further, that where size is a mark of low grade, the low grade is also manifested in a multitude of other characters, so that we are not left to this one distinction alone. In fact, wherever size has been mentioned as one of the characteristics of an inferior group, I have rested mainly upon the others for proving the inferiority of the group.

Moreover, I have given illustrations explaining why size should be a mark of high grade, and also why in other cases a mark of low grade. I may add one or two comparisons in elucidation of this point. We all know that if a steam-engine of the size and strength for 100 horse-power has a working-force of 100 horse-power, it is an engine of respectable grade. But if, while thus large in its cylinder, beam, and other parts, it were furnished with the means of generating a force-system, as we may call it, of 1 horse-power, it would be a very feeble and worthless piece of machinery. Suppose, for closer parallelism with animal life, the engine to reach its size by a method of growth; and that

<sup>4</sup> From a recent letter of a critic.