

sary to define somewhat more clearly what those units or gemmules are. This has accordingly been attempted in several other hypotheses put forward about the same time or somewhat later; each thinker having elaborated, when so inclined, his own fanciful picture, following consciously or unconsciously in the line of Spencer's physiological units. We have in Germany Nägeli's micellar theory, Haeckel's kinetic hypothesis, Prof. Weismann's idioplasma theory, and Prof. Pflüger's theory of the compound organic molecule. All these theories attempt to bring biological phenomena into closer connection with the firmly established conceptions current in physics and chemistry, where atomism and kinetics have been so successfully used in analysing and, to a smaller extent, in putting together the complex processes of nature. Of this I treated in former chapters. But the hypothesis of Darwin is capable of another treatment. Wherever we have to deal with a large, an immense number of single elements or units, which in their totality form certain phenomena, there

39.
Lends itself
to statistical
treatment.

for the general facts of physical and mental heredity. Not to mince matters, it was his one conspicuous failure, and is now pretty universally admitted as such. Let not the love of the biographer deceive us; Darwin was here attempting a task *ultra vires*. As already observed, his mind, vast as it was, leaned rather to the concrete than to the abstract side: he lacked the distinctively metaphysical and speculative twist. Strange to say, too, his abortive theory appeared some years later than Herbert Spencer's magnificent all-sided conception of 'Physiological Units,'

put forth expressly to meet the self-same difficulty. But while Darwin's hypothesis is rudely materialistic, Herbert Spencer's is built up by an acute and subtle analytical perception of all the analogous facts in universal nature. It is a singular instance of a crude and essentially unphilosophic conception endeavouring to replace a finished and delicate philosophical idea" (*loc. cit.*, p. 126). See also many references to the unfavourable criticisms of Pangenesis in the third volume of the 'Life of Charles Darwin.'