SPENCER AND DARWIN

hypotenuse is equal to the sum of the squares on the two opposite sides; he honestly believes it when he sees it tried a hundred and twenty times by careful measurement, and still more when he finds that engineering works, which take it for granted as a basis, succeed in paying a satisfactory dividend. Proof that in the nature of triangles this truth is involved he does not regard; experimental verification, or what seems to be such, in a few concrete cases, amply satisfies him. Hence it came about that a world which would have listened coldly to Herbert Spencer's à priori reasonings or splendid generalisations was converted at once when Darwin brought up, with inexhaustible patience and extraordinary keenness of insight, his profound array of confirmatory facts about bees and cuckoos, about the fertilisation of orchids and the movements of tendrils.

Nobody has better summarised than Mr. Clodd the exact point which evolutionary theory had reached as regards plants and animals *before* the publication of *The Origin of Species*. Whoever wishes to learn just how much was surmised by the predecessors of Darwin, and just how much Darwin added to their ideas, cannot do better than consult his luminous exposition.

Once, indeed, no less than seven years before the publication of *The* Origin of Species, Mr. Spencer even trembled for a moment on the verge of the actual discovery of Natural Selection. This was in the essay on Population in the Westminster Review in 1852. The passage at full is too long to extract, but I will quote the last words of it :--

All mankind subject themselves more or less to the discipline described; they either may or may not advance under it; but in the nature of things only those who do advance under it eventually survice. For, necessarily, families and races whom this increasing difficulty of getting a living which excess of fertility entails does not stimulate to improvements in production.....are on the high road to extinction; and must ultimately

be supplanted by those whom the pressure does so stimulate.....And here, indeed, it will be seen that premature death, under all its forms, and from all its causes, cannot fail to work in the same direction. For, as those prematurely carried off must, in the average of cases, be those in whom the power of self-preservation is the least, it unavoidably follows that those left behind to continue the race must be those in whom the power of self-preservation is the greatest, must be the select of their generation.

Now, this is the doctrine of Natural Selection, or, as Mr. Spencer himself afterwards called it, Survival of the Fittest. Only, it is limited to the human race; and it is not recognised as an efficient cause of specific differen-As Mr. Spencer himself tiation. remarks, the passage "shows how near one may be to a great generalisation without seeing it." Moreover, Mr. Spencer here overlooks the important factor of spontaneous variation, which forms the cornerstone of Darwin's discovery, and which was also clearly perceived by Mr. Wallace. In short, in Mr. Spencer's own words, the paragraph "contains merely a passing recognition of the selective process, and indicates no suspicion of the enormous range of its effects, or of the conditions under which a large part of its effects are produced."

It is thus obvious, not only that Mr. Spencer was a believer in Organic Evolution long before the publication of Darwin's first utterance on the subject, but also that he almost succeeded, like Wallace, Wells, and Patrick Matthew, in anticipating the discovery of Naturai Selection.

But besides the misconception about Mr. Spencer's relation to Darwin, as regards Organic Evolution, there remains the far deeper and more fatal misconception about his relation to Darwin as regards Evolution in General, viewed as a Cosmical Process. Most people imagine, I gather, that Mr. Spencer is a philosopher who has put

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