

**Haste Not! Rest Not!**

Without haste! without rest!
Bind the motto to thy breast;
Bear it with thee as a spell;
Storm or sunshine, guard it well!
Heed not flowers that round thee bloom,
Bear it onward to the tomb!

Rest not! Life is sweeping by,
Go and dare, before you die;
Something mighty and sublime
Leave behind to conquer time!
Glorious 'tis to live for aye,
When these forms have passed away.

—Goethe.

Evolution Before Darwin.

Professor Huxley, in an essay published in the "Life and Letters of Charles Darwin," says: "Within the ranks of the biologists at that time [1851-8], I met nobody except Dr. Grant, of University College, who had a word to say on Evolution, and his advocacy was not calculated to advance the cause. Outside these ranks, the only person known to me whose knowledge and capacity compelled respect, and who was, at the same time, a thorough-going evolutionist, was Mr. Herbert Spencer, whose acquaintance I made, I think, in 1853, and then entered into the bonds of friendship, which, I am happy to think, has known no interruption. Many and prolonged were the battles we fought on this topic. But even my friend's dialectic skill and copiousness of apt illustration could not drive me from my agnostic position. I took my stand upon two grounds: firstly, that up to that time, the evidence in favor of transmutation was wholly insufficient; and, secondly, that no suggestion respecting the cause of the transmutation assumed, was in any way adequate to explain the phenomena. Looking back at the state of knowledge at that time, I really do not see that any other conclusion was justifiable."

It was Darwin's "Origin of Species," which converted Professor Huxley to the doctrine of evolution. It was natural that he should think the evidence which had been adduced before he became acquainted with this work, "insufficient," and, of course, a man of his intellectual integrity, could not give adhesion to any theory until he was satisfied of its truth. But while Professor Huxley's statement, considered as an explanation why he and other men of science did not accept evolution earlier is unobjectionable, it does scanty justice to those who were evolutionists before Darwin made

his great contribution to the world's knowledge.

A thinker who reaches correct conclusions in regard to complex problems, under the disadvantage of having a small amount of data upon which to base his inductions, may thereby show a knowledge of the relations of things, an appreciation of the evidential value of known facts, and a comprehensiveness of view, which denote a high order of intellect. In the higher sense, the man of science is he who has not only powers of observation, but ability to take the facts which are known, and to arrange them so as to explain their meaning, by discovering the principles which underlie them, as Newton explained the cause of the fall of the apple, when he conceived that the same force which brought the apple to the ground, also held the planets in their orbits. Mere observation and collection of facts would never lead to a great discovery; there must be reason, imagination, and insight, power to understand the significance of groups of phenomena, and to think beyond what is actually known, as well as care and caution in verifying what is conceived and held tentatively until it is fully established by larger knowledge. Imagination, as some one has said, is to the scientist, what the lamp is on the cap of the miner, and it enables him to see a little beyond the position occupied.

The work of Darwin in laboriously collecting evidence of organic evolution, and in showing the natural selection was an important factor in the transmutation of species, was a stupendous work which cannot be overestimated. The "Origin of Species" was an epoch-making book, which has revolutionized zoology, and led to radical and wide-spread modifications and reconstructions of thought in every department of research. And for the work he did, Darwin has received his full meed of praise; has been honored as no other man of science in this age has for the work which his genius and labor accomplished. But Darwin was not the originator of the theory of evolution, which itself has been evolved through many centuries. Facts which were a matter of knowledge long before the "Origin of Species" appeared, had led many acute thinkers to believe that species came, not by special creation, but by gradual transmutation through natural agencies. Goethe, St. Hilaire, Lamarck, Erasmus Darwin, Herbert Spencer, Ralph Waldo

Emerson (who was acquainted with Lamarck's writings) Robert Chambers and many others, so believed, and their work and influence contributed to prepare the way for Darwin's success.

Years before the "Origin of Species" was published, Herbert Spencer brought forward some of the strongest evidences in support of evolution. His facts are incontestable, and his arguments are as valid today as they were then. The force of his reasoning, which failed at the time to convince men like Huxley, who required more evidence, is now acknowledged by them, showing that Spencer's earlier acceptance of evolution was owing to his true interpretation of natural phenomena and greater freedom from the influence of traditional beliefs and authorities, while their inability to accept the theory was due to their limitations, and not to their more correct judgment of what the evidence should be to render the theory probable.

Spencer conceived evolution, not merely as a transmutation of species, but as a universal process as presented in the system which he has since elaborately worked out in his voluminous works. In "Principles of Psychology," published before Darwin's "Origin of Species" appeared, Spencer assumes the truth of organic evolution, and applies himself to the task of showing how the mind has been developed from low and simple to high and complex conditions. Whether we accept all his views or not, as evolutionists, we must acknowledge the force of his arguments, based upon facts, for the doctrine of evolution, in distinction to the conception which prevailed when he began writing on this subject. Professor Huxley, after his acceptance of evolution, repeated many of these facts and arguments which before, though they had convinced others, had failed to convince him. Had he possessed that larger range of vision, that philosophic grasp, that synthetic power and that wonderful faculty of dealing with problems in the algebra and geometry of thought which distinguish Herbert Spencer among thinkers of this country, Professor Huxley would probably have accepted evolution prior to 1858, upon such evidence as was then accessible. I do not underestimate Professor Huxley. He was a man of scientific attainments and literary accomplishments of a high order, a careful investigator in several departments of knowl-

edge, brilliant and fearless expounder of scientific truth, and an admirable character, but this fact, with his tardy conversion to evolution, should not be construed to the discredit of those who accepted the doctrine upon evidence which he regarded as "insufficient." The facts of embryology, of homology, of rudimentary parts, etc., known before the publication of the "Origin of Species," were to some minds as strong indications as they are now of the transmutation of species; but to them had to be added more facts, and some method suggested by which species could have been changed, before men like Huxley could declare in favor of evolution. This shows how important and necessary was Darwin's work to the wider acceptance and progress of evolutionary thought, but it does not in the least abate from the soundness of the general reasoning of those who, from the facts known arrived at the conclusion which Professor Huxley reached, at a later date.

The "rigorous methods of science," which saves us from a priori speculation and many unwarranted inferences, may sometimes be applied in a way to delay the acceptance of a truth seen by a great thinker long before he can satisfy others that the objections are irrelevant or unsound, and that the evidence justifies his conclusions. Many scientific men, and teachers of science in the colleges, were very confident that Darwin's conclusions were not "justifiable" several years after Huxley accepted, and, like a brave knight, defended them against scientific and theological assailants.

Among observers and thinkers there are always some who are in advance of others in accepting or in anticipating newly announced truths. It is doubtless well that the majority, subject to the influence of custom, authority and associations, change slowly; for thereby is maintained that stability which is the safeguard of society and a condition of progress. But it is desirable that we recognize the merit and service of those who are the first to understand and assimilate a new idea or to adopt and work for a great principle, for they are the pioneers of these changes in thought and method, which are necessary to overcome the tendency to conformity, uniformity and conservatism which steal like a mist over a nation, resulting in "intellectual peace at the price of intellectual death."

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