

## Darwinism: Past and Present.

BY THE REV. PROFESSOR ORR, D.D.

THIS year sees celebrated the centenary of the birth of Charles Darwin. Darwin was born on February 12, 1809; his "Origin of Species" was published in 1859; he died on April 19, 1882. Amidst tributes of respect from all ranks of society, and all sections of opinion, he was laid to sleep, as one of the most eminent men of science of his generation, in Westminster Abbey, a few feet from the grave of Sir Isaac Newton.

The centenary to be observed will be the occasion of the renewal of these tributes, and of eulogy, carried to its highest pitch, of the distinguished scientist and his work. Deserved honour will be paid to him as a naturalist of the first order, a keen and patient observer, a bold and original generalizer, a man of transparent sincerity and candour, above all as the brilliant thinker who, by his work on "The Origin of Species," first gave to the theory of organic evolution in Nature an assured place in modern scientific belief. The idea of evolution, we shall immediately see, was not of his creation. It was "in the air," and many, as Darwin himself tells us, had been working at it, and seeking to give it a scientific basis. But unquestionably it was Darwin who set it on its feet as a working theory, and secured for it an acceptance it would probably not otherwise have obtained.

Mingled with these eulogiums will be heard in the centenary proceedings, no doubt, much denunciation of theologians for their bigoted opposition to Darwinism—so characteristic, one will be told, of the species—and the triumph of Darwin's theory will be cited as a new proof of how science moves on its untroubled way to assured victory, while theology suffers, as it has always done, humiliating defeat. Darwinism to-day, we shall be reminded in tones of pride, has conquered all along the line, holds undisputed sway, and its conclusions now rank among the settled truths of science.

It might be pointed out, in mitigation of this censure, that there has been no objection to Darwin's theory ever made by theology which was not first, or as early, made by scientific men in the name of science itself. It is not the case that objection was taken to Darwinism *only* by theologians. Scientific men of the highest eminence entered the lists against the chief assumptions of the theory, and a large body of thinkers can be named who opposed it from the first.

Yes; but now, it will be said, see the beautiful illustration of the invincible power of truth in the fact that such thinkers have since been converted, or have been left hopelessly behind in the race, so that at length Darwinism has become practically the accepted creed of all sensible educated people!

Is it so? It is a pity to dispel illusions; but in the interests of truth a few things must be said, to set the facts in their right light, which go a great deal further than simply a plea for mitigation of censure. We venture calmly to assert—without the faintest tincture of the *odium theologicum*—(1) that there is hardly a single objection to Darwinism made by theological or scientific opponents which time has not amply justified; and (2) that Darwinism, as a theory of evolution, does *not* to-day hold the field, but is increasingly being departed from, in the scientific world itself.

A primary fallacy in the discussion of this subject lies in the confusion of evolution with Darwinism, as if the two were synonymous. They are far indeed from being so. Evolution, or the general doctrine of descent, has, within limits, received the assent of the bulk of people in this generation; Darwinism, as a theory of evolution, has *not* obtained general assent, and, in the multiplying schools of evolutionists, is rapidly losing what credit the genius of its author at first won for it.

It is, indeed, a curious irony which displays itself in the history of Darwinism. There was evolutionary theory in the world before Darwin wrote.<sup>1</sup> The facts on which the case for

<sup>1</sup> See the Historical Sketch prefixed to "The Origin of Species."

evolution mainly rests were for the most part known, and had been insisted on before his time. "A naturalist," as Darwin himself says, "reflecting on the mutual affinities of organic beings, on their embryological relations, their geographical distribution, geological succession, and other such facts, might come to the conclusion that species had not been independently created, but had descended, like varieties, from other species."<sup>1</sup> In point of fact, many had done so. But *then*—it was not satisfactorily shown how this result was brought about. Evolution cannot, Darwin held, be regarded as established till you can show the *how*. It was here that Darwin struck in. His special claim was that he had discovered the "how" of evolution in "Natural Selection." The title of his book is, "The Origin of Species by means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life." Subsidiary causes came gradually to be admitted, but "natural selection" remained the chief, and it is on the merit of this alleged discovery that Darwin's fame rests.

But what has happened? Lifted into favour by Darwin's theory, evolution has come to be generally accepted, but the theory which has had this magical effect has itself come to be increasingly doubted. Its sufficiency has been riddled by facts and arguments which leave little of it standing. It certainly no longer holds the field as it did. The *fact* of evolution is regarded as established; the *factors* in the process—the *how* of the process—are declared to be still to seek. That such should be the case may seem strange, but it is true that it is so. Those who doubt it should consult the chapters on the subject in R. Otto's book "Naturalism and Religion" (a translation of a German work with a much longer title), in the "Crown Theological Library." There the extraordinary change in opinion which has taken place in Germany and elsewhere on the Darwinian hypothesis is emphasized with ample learning and incisive remark.<sup>2</sup>

<sup>1</sup> Cf. Introduction to "The Origin of Species."

<sup>2</sup> "We have for the moment," says this author, "provisionally admitted the theory of natural selection. . . . But in reality such an admission is not

It is not the object here to attempt to show the various scientific grounds on which the Darwinian theory is challenged. They touch every point in the system—indefinite variation, transformation by “infinitesimal” changes, the struggle for existence (the newer evolution declares that severity of struggle *hinders* evolution), the capacity of natural selection to pick out and retain infinitesimal variations for long periods (possibly “millions of generations,” says Darwin), and the like. On the other side is urged the absence of clear evidence of transition, the flaws in the geological evidence, the fact of abrupt transitions, the proofs of changes caused by internal conditions, the need of recognizing a “teleological” (purposeful) principle in development. The difficulties arising from these and other considerations have been pressed against Darwinism from the beginning. Owen, Lewes, St. Mivart, Spencer, Lyell, Romanes (latterly), urged them with effect. Even the defenders and “trumpeters” of Darwin’s hypothesis<sup>1</sup> did not, with all their zeal, surrender themselves wholly to it. Lyell, *e.g.*, clung to a modified creationism, and viewed with repugnance the “pithecoïd” descent of man. Huxley had difficulties about sterility, and doubted the soundness of Darwin’s principle, *Natura non facit saltum*. He rather thought that Nature did make “jumps” now and then. But if once “jumps” are admitted, Darwinism is gone.

The “struggle for existence” in Nature—an idea borrowed from Malthus—is a pillar of Darwin’s hypothesis, but it is now a question whether this “struggle” exists in anything like the degree supposed, or has the relation to evolution that the Darwinian theory imagines. In the pictures given of the pro-

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to be thought of, in face of what is at present so apparent—the breaking down of this hypothesis, which has been held with so much persistence. . . . If we can rid ourselves of the peculiar fascination which this theory exercises, we soon begin to discover what extraordinary improbability and fundamental artificiality it implies” (pp. 154, 158).

<sup>1</sup> How much the success of Darwin’s book owed to the well-concerted measures for having it brought before the public is well brought out in the searching chapters of Dr. J. H. Stirling’s “Darwinianism: Workmen and Work.” See especially part ii., chapters ii. and iii.

digious fecundity of the lower organisms, one is reminded of Sir Archibald Alison's statement, *a propos* of the British Sinking Fund, that "a penny laid out at compound interest at the birth of our Saviour would in the year 1775 have amounted to a solid mass of gold 1,800 times the whole weight of the globe." The penny was not laid out in the way imagined. So the enormous increase in animal life in geometrical ratio is not realized; but the elimination is not, for the most part, through internecine struggle—indeed, takes place before the stage of struggle is reached<sup>1</sup>—and survival or fatality has little to do with the infinitesimal advantages of individuals. The verdict of the newer evolution is that, where struggle occurs, "it prevents the establishment of new variations, and in reality stands in the way of new developments. It is rather an unfavourable than an advantageous factor."<sup>2</sup>

Darwin himself very considerably modified his theory as time went on. This is commonly, and very justly, cited as proof of his candour. But his admissions on certain points are really the giving up of his theory in principle. *E.g.*, in the third edition of his "Origin of Species" he wrote: "If it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down."<sup>3</sup> In his "Descent of Man" he writes: "I now admit that in the earlier editions of my 'Origin of Species' I probably attributed too much to the action of natural selection or the survival of the fittest. . . . I had not formerly sufficiently considered the existence of many structures which appear to be, as far as we can judge, neither beneficial nor injurious; and this I believe to be one of the greatest oversights as yet detected in my work."<sup>4</sup> In the fifth edition of his "Origin" he says: "Until reading an article in the *North British Review*, I did not appreciate how rarely single variations, whether slight or strongly marked,

<sup>1</sup> A homely book called "No Struggle for Existence," by George Paulin (T. and T. Clark, Edinburgh), has good remarks on this head. See Stirling, as above, part ii., chapters v. and vi.

<sup>2</sup> Cf. Otto, p. 184.

<sup>3</sup> Third edition, p. 208.

<sup>4</sup> Vol. i., p. 152.

could be perpetuated."<sup>1</sup> Yet the whole theory rests on such perpetuation.

The fundamental objection to Darwin's theory, however, is that, in abandoning the principle of intelligent design, it hands over the whole work of producing the organic adaptations in which Nature abounds to causes acting fortuitously. This, in the eyes of its foremost adherents, is its supreme merit, that it gives the "death-blow" to what is called teleology, by showing that the fine adaptations in organisms are not "ends," but "results," and can be accounted for, without intelligence, on purely mechanical principles. "Chance variations," blind "struggle for existence," a "natural selection" which operates without forethought or prudence—this explains it all! Professor Huxley has, indeed, observed that, even on this showing, no one can prove that it was not *intended* that these results should be brought about; hence teleology in a wider sense is not excluded. Possibly not; but the essence of the theory is, that intelligent purpose is not *needed* to explain even the most complex and beautiful of organic structures; that it can be wholly dispensed with. Why, then, should it be postulated? Like La Place, with his mechanical theory of the heavens, we can say: "I have no need of that hypothesis." Multiply what evidences you may of plan, co-ordination, wisdom, final cause, they furnish no proof of an intelligent Creator. His existence and action, therefore, may be dismissed as superfluous.

It could easily be shown by detailed instances that this is no misinterpretation of the meaning of Darwin's theory. Theologians were, therefore, right in denying its sufficiency as an explanation of the facts of Nature, and in pointing out its shortcomings. For as an explanation of Nature it does break down in the most vital point. The decisive objection to it may be stated in a sentence: *It invokes fortuity to do the work of mind.* David Hume undertakes in one place to show that the Epicurean "fortuitous concourse of atoms" is quite a reasonable hypothesis. Given an infinite number of atoms and

<sup>1</sup> Fifth edition, p. 104.

an eternity for them to tumble about in, they must enter into all possible combinations and permutations; why, then, not into this one among the rest? The fallacy lies in the assumption that atoms colliding and interlacing without end *will* enter into all possible combinations. There are certain combinations into which they will *never* enter—those, namely, which depend on arrangement by a guiding intelligence. A world will not arise from chance any more than the shaking of printer's types together for eternity will produce an "Æneid" or a "Hamlet." Is it otherwise with the casual operations of Nature in unguided, sporadic variations, and selection among these by unintelligent natural forces? Plan, design, adaptation of minute parts to defined ends, will not arise from unthinking mechanism. It is always open to someone to say that he does not see this—that he does not admit it. G. H. Lewes tells of a man who could never be brought to admit the principle that all changes imply a cause. The common intelligence will judge differently. It will be found impossible to banish ends, plan, design, will, intelligence, from the interpretation of Nature.

When the evolutionist turns round and says, "I do not deny God; I see Him as the Cause in all causes, the Law in all laws, the Will whose ends all things work out, the hidden Agent in all the subtlest processes of Nature," the simple answer to be made is, "This is not Darwinism." It is a form of theistic evolution, of which Darwin's theory, rightly construed, is the negation. To set such a theory to Darwin's credit is to confuse the issues hopelessly. As said at the beginning, Evolution is one thing, and Darwinism is another, and it is with the latter only we are at present concerned.

With a scientific theory of evolution which has God at the heart of it, and sees His manifested will and purpose in the processes of Nature, there need be no quarrel. The difficulties that attend such a theory, even in the most modest statement of it, are not to be underrated. They are very great, and teach caution in making assertions too large for the facts. Evolution, as science knows it, is not an all-embracing principle. It has

its limits—its initial limit as regards origins, its later limits in the rise of new orders and kingdoms in Nature, its last limit in explaining the origin of a rational and moral intelligence like man's. But, kept within its limits, it is a valuable, if not a necessary, hypothesis, and conflicts with nothing that theism or Christianity affirms.



"Now Abideth These Three."

BY THE REV. J. S. CRISALL, M.A.

FAITH is a tiny palm,  
 Raised at New Birth,  
 To catch the Hand stretched out  
 From Heav'n to earth ;  
 Faith fears not, knows that doubt  
 Is nothing worth.

Hope is a shining star  
 'Mid clouds of night,  
 When darkness plays the king  
 With pompous might ;  
 Hope doth not cease to sing  
 " Soon 'twill be light."

Love is a life laid down,  
 Gift of the best,  
 Seed of the thorn-crown'd Man,  
 Fruit ever blest ;  
 Love's God's foundation plan,  
 Faith, Hope, the rest.

