

PART I.

EVOLUTION, PAST AND PRESENT.

CHAPTER I.

NATURE AND SCOPE OF EVOLUTION.

Early Speculation Regarding Nature and Man.

FROM time immemorial philosophers and students of nature have exhibited a special interest in all questions pertaining to the origin of man, of the earth on which he lives and of the universe to which he belongs. The earliest speculations of our Aryan forefathers were about the beginnings of things. Questions of cosmology, as we learn from the tablets preserved in the great library of Assurbanipal in Nineveh, received their meed of attention from the sages of ancient Assyria and Babylonia. And long before Assyria, Babylonia and Chaldea had reached the zenith of their power, and before they had attained that intellectual eminence which so distinguished them among the nations of the ancient world, the peoples of Accad and Sumer had raised and discussed questions of geogony and cosmogony. They were a philosophical race, these old Accadians and Sumerians, and, as we learn from the records which are constantly being exhumed in Mesopotamia,

they had a breadth of view and an acuteness of intellect, which, considering their environment and the age in which they lived, were simply astonishing. Well have they been called "the teachers of Greece," for all the subtlety of thought and keenness of perception, all the love of science, art and letters, which were so characteristic of the Greek mind, were possessed in an eminent degree by those old pre-Babylonian masters who thought and taught and wrote many long generations before Abraham left Ur of the Chaldees, untold centuries before Thales taught and Homer sang. And the musings of the mystic Hindu along the banks of the Indus and the Ganges; the meditations of the Egyptian priest in the temples of Memphis and Heliopolis; the speculations of the wise men of Attica and Ionia, all turned more or less on the same topics which possessed such a fascination for the sages of old Chaldea, and which were discussed with such zest in the schools of Nineveh and Babylon.

Whence are we? Whither are we going? Whence this earth of ours and the plants and animals which make it their home? Whence the sun, and moon, and stars—those distant and brilliant, yet mysterious representatives of our visible universe? Did they have a beginning, or have they existed from all eternity? And if they had a beginning, are they the same now as they were when they first came into existence, or have they undergone changes, and, if so, what are the nature and the factors of such changes? Are the development and mutations of things to be referred to the direct and immediate

NATURE AND SCOPE OF EVOLUTION. 15

action of an all-powerful Creator, or are they rather to be attributed to the operation of certain laws of nature—laws which admit of determination by human reason, and which, when known, serve as a norm in our investigations and experiments in the organic and inorganic worlds? Are there special interventions on the part of a Supreme Being in the government of the universe, and are we to look for frequent, if not constant, exhibitions of the miraculous in the natural world? Has God's first creation of the universe and all it contains, of the earth and all that inhabits it, been followed by other creations at divers periods, and if so, when and where has such creative power been manifested?

These are a few of the many questions about the genesis and development of things which men asked themselves in the infancy of our race. And these are questions which philosophers are still putting to themselves, and which, notwithstanding the many thousands of years during which they have been under discussion, have to-day a greater and more absorbing interest than in any former period of human history.

It is beside my present purpose to enumerate the various theories in science to which the discussion of the questions just propounded have given rise, or to dwell on the divers systems of philosophy and religion which have been the natural outgrowth of such or similar discussions. Materialism, Pantheism, Emanationism, Hylozoism, Traducianism, Atheism and other isms innumerable have always been, as they are to-day, more or less closely identified with many

of the speculations regarding the origin and constitution of the visible universe. And despite the great advances which have been made in our knowledge of nature and of the laws which govern the organic and inorganic worlds, many of the questions which so agitated the minds of the philosophers of the olden time, are still as far from solution as they were when first proposed. New facts and new discoveries have placed the old problems in a new light, but have diminished none of their difficulties. On the contrary, the brilliant search-light of modern science has disclosed new difficulties which were before invisible, and proved that those which were considered before are in many respects far graver than was formerly imagined. With the advance of science, and the progress of discovery, many problems, it is true, find their solution, but others, hydra-like, arise in their place and obtrude themselves on the scientist and philosopher, and will not down until they have received due recognition.

Comprehensiveness of Evolution.

To answer some, if not all, of the questions just alluded to ; to explain the phenomena of the cosmos ; to solve the problems of life and mind, and throw light on the beginning and development of things, recourse is now had to a system of philosophy and science which, within the last few decades, has attained a special vogue under the name of Evolutionism, or, as its adepts prefer to call it, Evolution. Evolution, we are assured, is the magic word which explains all difficulties ; the “ open sesame ” which ad-

NATURE AND SCOPE OF EVOLUTION. 17

mits us into the innermost arcana of nature. We are told of the Evolution of the earth, of the Evolution of the solar system, of the Evolution of the sidereal universe. Men discourse on the Evolution of life, the Evolution of the organic and inorganic worlds, the Evolution of the human race. We have similarly the Evolution of society, government, religion, language, art, science, architecture, music, literature, chemistry, physics, mathematics, and the various other branches of knowledge as well. We now talk of the Evolution of the steamboat, the locomotive, the dynamo, the machine-gun, the telescope, the yacht and the bicycle. All that ministers to comfort, luxury and fashion are objects of Evolution. Hence it is that we hear people speak of the Evolution of the modern house-furnace and the cooking-stove; the Evolution of the coach and the dog-cart; the Evolution of seal-skin sacques, high-heeled shoes and of that periodically recurrent *bête noire* of fond husbands and indulgent papas—the latest pattern of a lady's hat. Anything which has developed or improved—and what has not?—is spoken of as having come under the great law of Evolution, and, presto! all is explained, and any little enigmas which before may have existed instantly vanish.

As is evident from the foregoing, Evolution may mean a great deal, or it may mean little or nothing. It is manifestly a term of very general application and may often be very misleading. Properly understood it may be of signal service to the searcher after truth, while, on the contrary, if it is constituted an ever-ready *deus ex machina*, capable of solving all

difficulties, it may lead to inextricable confusion and tend to obscure what it was designed to illumine. It is obvious, too, that we must restrict the meaning of the word Evolution, for it does not come within the scope of our work to speak of Evolution in general. We have to consider only a particular phase of it, and for this purpose it is important to have a definition of what is meant by Evolution.

Evolution Defined.

Herbert Spencer, who is regarded by his admirers as the great philosopher of Evolution, defines it to be a "change from an indefinite, incoherent homogeneity, to a definite, coherent heterogeneity; through continuous differentiations and integrations.¹ And the operation of Evolution," continues the same authority, "is absolutely universal. Whether it be in the development of the earth, in the development of life upon its surface, in the development of society, of government, of manufactures, of commerce, of language, of literature, science, art, this same advance from the simple to the complex, through successive differentiations, holds uniformly. From the earliest traceable cosmical changes down to the latest results of civilization, we shall find that the transformation of the homogeneous into the heterogeneous, is that in which Evolution essentially consists."²

Spencer's definition, however, exact as it may be deemed, embraces far more than we shall have occasion to consider, for my task shall be confined

¹ "First Principles," p. 216.

² Id.—p. 148.

NATURE AND SCOPE OF EVOLUTION. 19

to the Evolution of the earth and its inhabitants, and only incidentally shall I refer to cosmic Evolution. Indeed, properly speaking, the Evolution of which I shall treat shall be limited almost entirely to organic Evolution, or the Evolution of the plants and animals which live or have lived on this earth of ours. All references, therefore, to the Evolution of the earth itself from its primeval nebulous state, and to the Evolution of organic from inorganic matter, will be mostly by way of illustration, and in order to show that there is no breach of continuity between organic Evolution, which is my theme, and inorganic or cosmic Evolution.

Literature of Evolution.

The subject is a vast one, and to treat it adequately would require far more space than I have at my disposal. It has indeed a literature and a bibliography of its own—a literature whose proportions are already stupendous, and are daily, and with amazing rapidity, becoming more colossal. For the past third of a century, since the publication of Darwin's "Origin of Species," it has been uppermost in the minds of everyone given to thinking on serious subjects. Everybody talks about Evolution, and more write about it than about any other one subject.

More than five thousand distinct works, relating to Goethe, who died in 1832, have, it is estimated, already been printed, and additions are continually being made to this enormous number. Peignot, who wrote in 1822, declared that up to his day more than eighty thousand distinct works had appeared on the

history of France. The number of volumes that have been written on our Civil War can soon be enumerated by myriads, and still other works on the same subject are being published in rapid succession. Startling, however, as these figures may appear, they are insignificant in comparison with those relating to the subject of Evolution. In every language of the civilized world, books, brochures, and magazine articles innumerable, have been written on Evolution, and the number of publications of various kinds specially treating of this topic is now almost beyond computation.

Such being the case, it will evidently be impossible for me to do more than give a brief sketch of the history of Evolution, and of its status to-day in the world of thought, religious, scientific and philosophic. It is something that one cannot develop *dans un mot*, as a certain French lady expected of a noted savant, when asking him to explain his system of philosophy. For a similar reason, also, I can discuss but briefly the bearings of Evolution on religion and Catholic dogma. I shall, therefore, have to limit myself to a few general propositions, and refer those who desire a more exhaustive treatment of the subjects discussed, to the many elaborate and learned works that have been given to the world during the past few decades.

Freedom From Bias in the Discussion of Evolution.

I may here be permitted, before going further, to remind the reader that it is of prime importance, in the discussion of the subject of Evolution, especially

NATURE AND SCOPE OF EVOLUTION. 21

in its relation to religion and dogma, for one to weigh fairly and dispassionately the arguments and objections of evolutionists, and to divest one's self of all bias that may proceed from prejudice or early education, to consider the question on its merits, and not to let one's mind be swayed by preconceived, or it may be, by erroneous notions. Let the value of the evidence adduced be estimated by the rules of logic and in the light of reason. This is essential. In the discussion of the subject during the past thirty and odd years much has been said in the heat of controversy, and on both sides, that had no foundation in fact. There have been much exaggeration and misrepresentation, which have given rise to difficulties and complications that might easily have been avoided if the disputants on both sides had always been governed by a love of truth, and the strict rules of dialectics, rather than by passion and the spirit of party. Misguided zeal and ignorance of the true teachings of the Church, always betray one into making statements which have no foundation in fact, but, in the discussions to which the subject of Evolution has given rise, there has often been exhibited, by both the defendants and the opponents of the theory, a lack of fairness and a bitterness of feeling that are certainly not characteristic of those whose sole desire is the attainment of truth. Such polemics have injured both parties, and have delayed a mutual understanding that should have, and would have, been reached years ago if the ordinary rules of honest controversy had always been inviolably observed.

Now that the smoke of battle is beginning to vanish, and that the participants in the contest have time to reckon results and to look back to the causes which precipitated the struggle, it is found, and I think generally conceded, that certain of the representatives of science were the ones who brought on an imbroglio for which there was not the slightest justification. But it is the old story over again—hatred of religion concealed behind some new discovery of science or enveloped in some theory that, for the nonce, was raised to the dignity of an indisputable dogma. It was not, it is true, so much the chief representatives of science who were to blame as some of their ill-advised *asseclæ*, who saw in the new teachings an opportunity of achieving notoriety, and, at the same time, of venting their spleen against the Church and casting obloquy on religion and Scripture.