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# MODERN SCIENCE.

## ADDRESS OF PRESIDENT J. L. SMITH AT PORTLAND.

DARWIN'S THEORIES COMBATTED—RELATIONS OF RELIGION AND SCIENCE—A TRIBUTE TO TYNDALL.

The address of J. Lawrence Smith, the retiring President of the American Association for the Advancement of Science, of which the following are the most significant portions, was read by Prof. Putnam, the Secretary, on Friday, the President being absent in Vienna :

DARWIN'S THEORIES.

It is not my object to criticise the speculations of any one or more of the modern scientists who have carried their investigations into the world of the imagination ; in fact, it could not be done in a discourse so limited as this, and one only intended as a prologue to the present meeting. But in order to illustrate this subject of method more fully I will refer to Darwin, whose name has become synonymous with progressive development and natural selection, which we had thought had died out with Lamark 50 years ago. In Darwin we have one of those philosophers whose great knowledge of animal and vegetable life is only transcended by his imagination. In fact, he is to be regarded more as a metaphysician with a highly-wrought imagination than as a scientist, although a man having a most wonderful knowledge of the facts of natural history. In England and America we find scientific men of the profoundest intellects differing completely in regard to his logic, analogies, and deductions ; and in Germany and France the same thing—in the former of these countries some speculators saying "that his theory is our starting-point," and in France many of her best scientific men not ranking the labors of Darwin with those of pure science. Darwin takes up the law of life and runs it into progressive development. In doing this he seems to me to increase the embarrassment which surrounds us on looking into the mysteries of creation. He is not satisfied to leave the laws of life where he finds them, or to pursue their study by logical and inductive reasoning. His method of reasoning will not allow him to remain at rest ; he must be moving onward in his unification of the universe. He started with the lower order of animals, and brought them through their various stages of progressive development until he supposed he had touched the confines of man ; he then seems to have recoiled, and hesitated to pass the boundary which separated man from the lower order of animals ; but he saw that all his previous logic was bad if he stopped there, so man was made from the ape (with which no one can find fault, if the descent be legitimate). This stubborn logic pushes him still further, and he must find some connecting link between that most remarkable property of the human face called expression ; so his ingenuity has given us a very curious and readable treatise on that subject. Yet still another step must be taken in this linking together man and the lower order of animals : it is in connection with language ; and before long it is not unreasonable to expect another production from that most wonderful and ingenious intellect on the connection between the language of man and the brute creation.

DARWIN'S METHODS APPLIED.

Let us see for a moment what this reasoning from analogy would lead us to. The chemist has as much right to revel in the imaginary formation of sodium from potassium, or iodine and bromine from chlorine, by a process of development, and call it science, as for the naturalist to revel in many of his wild speculations, or for the physicist who studies the stellar space to imagine it permeated by mind as well as light—mind such as has formed the poet, the statesman, or the philosopher. Yet any chemist who would quit his method of investigation, or marking every foot of his advance by some indelible imprint, and go back to the speculations of Albertus Magnus, Roger Bacon, and other alchemists of former ages, would soon be dropped from the list of chemists and ranked with dreamers and speculators.

What I have said is, in my humble opinion, warranted by the departure Darwin and others have made from true science in their purely speculative studies ; and neither he nor any other searcher after truth expects to hazard great and startling opinions without at the same time courting and desiring criticism ; yet dissension from his views in no way proves him wrong—it only shows how his ideas impress the minds of other men. And just here let me contrast the daring of Darwin with the position assumed by one of the great French naturalists of the present day, Prof. Quatrefages, in a recent discourse of his on the physical character of the human race. In referring to the question of the first origin of man he says distinctly that in his opinion it is one that belongs not to science ; these questions are treated by theologians and philosophers: "Neither here nor at the Museum am I, nor do I wish to be, either a theologian or a philosopher. I am simply a man of science ; and it is in the name of comparative physiology, of botanical and zoological geography, of geology and paleontology, in the name of the laws which govern man as well as animals and plants, that I have always spoken." And studying man as a scientist, he goes on to say : "It is established that man has two grand faculties of which we find not even a trace among animals. He alone has the moral sentiment of good and evil ; he alone believes in a future existence succeeding this natural life ; he alone believes in beings superior to himself, that he has never seen, and that are capable of influencing his life for good or evil ; in other words, man alone is endowed with morality and religion." Our own distinguished naturalist and associate, Prof. Agassiz, reverts to this theory of evolution in the same positive manner, and with such earnestness and warmth as to call forth severe editorial criticisms, by his speaking of it as a "mere mine of assertions," and "the danger of stretching inferences from a few observations to a wide field ;" and he is called upon to collect "real observations to disprove the evolution hypothesis." I would here remark, in defense of my distinguished friend, that scientific investigation will assume a curious phase when its votaries are required to occupy time in looking up facts, and seriously attempting to disprove any and every hypothesis based upon proof, some of it not even rising to the dignity of circumstantial evidence.

RELATIONS OF SCIENCE AND RELIGION.

I now come to the last point to which I wish to call the attention of the members of the association in the pursuit of their investigations, and the speculations that these give rise to in their minds. Reference has already been made to the tendency of quitting the physical to revel in the metaphysical, which, however, is not peculiar to this age, for it belonged as well to the times of Plato and Aristotle as it does to ours. More special reference will be made here to the proclivity of the present epoch among philosophers and theologians to be parading science and religion side by side, talking of reconciling science and religion, as if they have ever been unreconciled. Scientists and theologians may have quarreled, but never science and religion. At dinners they are toasted in the same breath, and calls made on clergymen to respond, who, for fear of giving offense, or lacking the fire and firmness of St. Paul, utter a vast amount of platitudes about the beauty of science and the truth of religion, trembling in their shoes all the time, fearing that science falsely so-called may take away their professional calling, instead of uttering in a voice of thunder, like the Boanerges of the gospel, that "the world by wisdom knew not God." And it never will. Our religion is made so plain by the light of faith that the wayfaring man, though a fool, cannot err therein.

No, gentlemen ; I firmly believe that there is less connection between science and religion than there is between jurisprudence and astronomy, and the sooner this is understood the better it will be for both. Religion is based upon revelations as given to us in a book, the contents of which are never changed, and of which there have been no revised or corrected editions since it was first given, except so far as man has interpolated ; a book more or less perfectly understood by mankind, but clear and unequivocal in all essential points concerning the relation of man to his Creator ; a book that affords practical directions, but no theory ; a book of facts, and not of arguments ; a book that has been damaged more by theologians than by all the Pantheists and Atheists that have ever lived and turned their invectives against it—and no one source of mischief on the part of theologians is greater than that of admitting the profound mystery of many parts of it, and almost in the next breath attempting some sort of explanation of these mysteries. The book is just what Richard Whately says it is, viz. : "Not the philosophy of the human mind, nor yet the philosophy of the divine nature in itself, but (that which is properly religion) the relation and connection of the two beings—what God is to us, what he has done and will do for us, and what we are to be in regard to him." * * * Let us stick to science, pure, unadulterated science, and leave to religion things which pertain to it ; for science and religion are like two mighty rivers flowing toward the same ocean, and before reaching it they will meet and mingle their pure streams, and flow together into that vast ocean of truth which encircles the throne of the great Author of all truth, whether pertaining to science or to religion. And I will here in defense of science assert that there is a greater proportion of its votaries who now revere and honor religion in its broadest sense, as understood by the Christian world, than that of any other of the learned secular pursuits.

A GLOWING TRIBUTE TO TYNDALL.

But before concluding, I cannot refrain from referring to one great event in the history of American science during the past year, as it will doubtless mark an epoch in the development of science in this country. I refer to the noble gift of a noble foreigner to encourage the poor but worthy student of pure science in this country. It is needless for me to insist on the estimation in which Prof. John Tyndall is held among us. We know him to be a man whose heart is as large as his head, both contributing to the cause of science. We regard him as one of the ablest physicists of the time, and one of the most level-headed philosophers that England has ever produced—a man whose intellect is as symmetrical as the circle, with its every point equidistant from the center. We have been the recipient of former endowments from that land which, we thank God, was our mother country, for from it we have drawn our language, our liberty, our laws, our literature, our science, and our energy, and without whose wealth our material development would not be what it is at the present day. Count Rumford, the founder of the Royal Society of London, in earlier years endowed a scientific chair in one of our larger universities, and Smithson transferred his fortune to our shores to promote the diffusion of science. Now, while these are noble gifts, yet Count Rumford was giving to his own countrymen—for he was an American—and they were posthumous gifts from men of large fortune. But the one I now refer to was from a man who ranks not with the wealthy, and he laid his offering upon the altar of science in this country with his own hands ; and it has been both consecrated and blest by noble words from his own lips, all of which makes the gift a rich treasure to American science ; and I think we can assure him that as the same Anglo-Saxon blood flows in our veins as does in his (tempered, it is true, with the Celtic, Teutonic, Latin, etc.), that he may expect much from the American student in pure science as the offspring of his gift and his example.

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