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Science and Religion: There Can Be No Conflict

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SCIENCE AND RELIGION

THERE CAN BE NO CONFLICT

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"What age," writes the Holy Father Pope Pius XII in his first encyclical letter to the Universal Church, "has been for all its technical and purely civic progress more tormented than ours by spiritual emptiness and deep-felt interior poverty." "Gone," he tells us, "are the proud illusions of limitless progress." In many other quarters also these sentiments find their echo and their confirmation. The late Professor A. A. Bowman begins, in his posthumous volume (*The Sacramental Universe*), which we may well receive as the last testament of a noble philosopher, with a cry, as it were, of anguish: "The age in which we live is notable for two things, man's progressive triumph over nature in the sphere of theoretical and applied science, and his tragic inability to order his own life. Every year adds appreciably to our knowledge of the physical world: every year brings home to us the baffling inscrutability of human nature as revealed in our disordered civilization." Thus have the experiences of the last three decades made of the fond optimism of the confident nineteenth century materialist a hollow mockery. The conviction slowly grows upon us that not by scientific bread alone can man live.

The phase through which we are passing is the inevitable swing of the pendulum back from a position of extreme that had in it little of sense and sensibility. It arose from an optimism engendered by an almost too rapid and too rich

* Excerpts from a speech delivered at St. John's University, Brooklyn, N. Y.

yield from the labors of the scientist. The scientific developments of the nineteenth and early twentieth centuries had outstripped the achievements of all the ages that had gone before. The telescope and spectroscope had brought the distant stars into the observatory for the most minute analysis. The physicist, with his electromagnetic theories, had made possible not only the age of electricity but had annihilated space by wireless waves with light's velocity. The engineer and the chemist had mechanized flight and propelled machines on land and sea and in the air with new and powerful fuels. The geologist had reconstructed the several ages of the earth and in independent ways had traced that history back through one thousand million years of time.

It was the tragedy of these splendid triumphs in the realm of the material world that they were by many regarded as scientific advances towards the truth against the "slowly succumbing theories of religion." This was especially true of the popular expositors of science. The scientist himself normally maintained a creditable reticence. Some saw, although many failed to see, and few proclaimed, that there were different levels of truth, different orders of thought. The truths revealed by microscope or spectroscope do not impinge on the truths of beauty, of justice and of love. Science seeks the truth concerning the natural order. But there is a science outside her scope, a higher physics, a metaphysics, the science of those things which *are*, disassociated from material things, which cannot only be conceived without matter but which can also exist without matter, the truths which man comprehends as the attributes of God.

It must not be forgotten in all discussion of the relation of science to moral and social welfare that, in the majority of the important scientific discoveries of the nineteenth and twentieth centuries the objective has rarely been the application but rather the yet unfathomed fundamental truth or law. Faraday and Joseph Henry in their studies of the relations between electricity and magnetism were not striving to establish an electrical era. Hertz was not seeking radio-transmission or television in his investigations of the Hertzian waves. Ramsay did not discover neon in a search for new methods of illumination for the Broadways of our cities nor Mme. Curie radium in a search for a cure for cancer. It is not in order to drive the Queen Mary across the Atlantic with the atomic energy in a quart of water that Rutherford or Lawrence have explored the nuclei of the atoms. In the majority of cases, it may be affirmed that the applications that have resulted from scientific research are the "accidents" and not the "substance" of the effort. "Science sitteth apart in her exile, attent upon her other own invisibles."

Nor should it be forgotten, to use the words of Christopher Dawson in *Progress and Religion* that "Science provides, not a moral dynamic, but an intellectual technique. It is entirely indifferent to moral considerations, and lends itself with sublime impartiality to any power which knows how to use it." The chemist who discovers a new method for converting the petroleum of nature into a modern aviation fuel cannot determine that his discovery shall be solely employed peacefully in widening the horizons of civil aerotransport. His process will facilitate equally the transportation of death-dealing bombs in the giant planes of the modern military and naval air services. The facilities which permit the manufacture of the necessary explosives for modern industrial life are equally available in the unhappy days that war may bring. Drugs which have a real value in the arts of medicine and surgery may be diverted to baser uses in the hands of the unscrupulous. Geophysical methods recently developed for the location of subterranean reservoirs of necessary raw materials such as petroleum can similarly be converted to the location of enemy batteries on either side of the battle lines. The amazing developments of physics, its refined optical apparatus, its techniques of light production, of power transmission, all are equally available to those who would use and those who would abuse them. Science during the last century, as Dawson adds, "has well served the cause of humanity in countless ways, but this is precisely because it has been the servant of the humanitarian spirit, which was not the product of science but of a distinctly religious tradition." One may well inquire what we may expect of science if the peoples whom it should serve become entirely divorced from such religious tradition.

It is significant that it is in the ranks of the mathematician and the mathematical physicist, dealing as they do with the most abstract and least concrete concepts of science, that there developed the first phases of doubt in the ultimate reality of the wholly materialistic attitude. As Eddington affirms: "Penetrating as deeply as we can into the nature of a human being, we only reach symbolic description. Far from attempting to dogmatize as to the nature or reality thus symbolized, physics insists that its methods do not penetrate behind the symbolism." Recognizing that behind the factors susceptible to the senses or to measurement there is a background of reality not so accessible, it has become evident that scientific investigation can only reach "a partial aspect of something wider." Thus far, the efforts of the scientist to interpret these wider realities have, in the main, been little better than guesses. This is indeed inevitable since the background involves aspects that, from traditional mechanistic training, the scientist

is but ill-equipped to analyze. This much he has gained, however, of aid for future progress, a deeper humility and a greater reverence for things that may transcend sense and sense-perception. This new phase of physical science has, unfortunately, barely touched, as yet, the biological scientists. In too many cases, still, these men are imprisoned within the confines of nineteenth century scientific thought. And this too in spite of the very trend of progress within their own field where it is being steadily revealed that the biological processes under study are more and more interpretable in terms of molecules and their reactions. Enzymes and hormones, viruses and vitamins continuously yield to chemical study, their properties identifiable in terms of ascertained molecular architectures. That trend, however, is away from materialism and towards the newer mysticism of the physicist.

It is perhaps from the modern scientist, familiar with apparent contradictions within his own science, that we must expect the frankest recognition that the apparent contradictions between the science of one generation and the religion of the Christian era, are to be ascribed not to any fundamental intrinsic opposition but to an inadequate appreciation that the focus in which the one is viewed will not suffice for the other. The wave theory of light can be utilized to explain a large group of optical phenomena. Early twentieth century science revealed a whole series of other phenomena for which a modification of the older corpuscular theory of light, the theory of light quanta, became the approved interpretation. What contradictions these two aspects of optics produced is familiar to every physicist of twenty or more years' acquaintance with the developing field.

A decade ago the mathematical formulation of the new wave mechanics mitigated if it did not resolve entirely the contradictions. But no scientist is pessimistic enough to believe that ultimately the differences will not all be resolved. Hence, too, he can be well content that in process of time, also, the apparent contradictions of science and religion will disperse, as do the mists in the morning sunshine, in the illumination that comes from more penetrating knowledge. There is no need for a divorce between his science and his religion. It has been so in the past and it will, yet oftentimes, occur again that in some men there will be perfect fusion of devotion both to scientific and Divine truth. In such men's lives the dilemma of rationalism and religion will be completely resolved as it must ever be in the Source of all truth. Such are the men

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