

SCIENCE REDEEMED

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A HUNDRED YEARS AGO, science thought it had pretty well disproven the existence of God, and was in a position to discard the Christian faith as a useless relic of the superstitious Middle Ages. Astronomers were content to explain the origin, design and working of the universe without any reference to an external Cause; mathematicians claimed for their science the place formerly occupied by philosophy and theology; evolutionists traced the origin of man to the lower animals without any recourse to a "special creation" of the incorporeal, human soul; anatomists simulated puzzlement at not being able to find the human soul in all their probings into the human body.

The Bible also came in for its share of adverse criticism. Errors beyond count were attributed to the sacred authors, thus throwing on the Sacred Scriptures a thick shadow of doubt and suspicion. The Book of Genesis seemed especially vulnerable. How could light have been created the "first day," if the sun, moon and stars didn't appear until the "fourth day?" The description of the four rivers of Paradise defied geographical verification. God was pictured as condemning the serpent to crawling on its stomach, and zoologists wondered how it was supposed to have gotten around before that. Cain and Abel, the immediate offspring of Adam and Eve, are listed as a tiller of the soil and a shepherd respectively, but anthropologists were sure that farming of whatever variety was a relatively late development in the history of mankind. Of course the longevity of the patriarchs had always been something of a problem, and modern investigations confirmed the opinion that ancient man had lived a far shorter life, in general, than his later progeny. Then, when archeologists began finding long-lost records of other Near East peoples adjacent to and contemporary with the Jews of the Old Covenant, and found many points of comparison between, for example, Babylonian myth-

ology and the Pentateuch, the "riddle" was solved: the Bible was just one more collection of fables and myths, the product of an imaginative, but crude, primitive mind. As a historical record, it was—they insisted—worthless; as a religious document, it was as significant as any other folklore of an unenlightened (i.e., "unscientific") age.

THE POPE SPEAKS

In the light of this science-sponsored criticism of a century ago, it is just short of amazing that the many statements and documents from the pontificate of Pius XII with reference to science and the scientists are filled with admiration and praise and encouragement. Again and again, the Pope alludes to scientific discoveries and inventions of the past century or so, and his astonishment and whole-hearted approval seem at times unable to express themselves adequately, so deep is his appreciation and enthusiasm. In 1948, addressing the Pontifical Academy of Science (!), he said in part: "Allow Us to express admiration for your work as students of nature, whether in the classroom, laboratory, workshop or factory. . . . We limit Ourselves to mentioning just a few of the milestones on the long road to deeper knowledge of the periodic system of the elements, such as: the discovery of radium by the Curies; the atomic model of Rutherford and the formulation of its laws by Bohr; the discovery of isotopes by Aston; splitting the nucleus by bombarding atoms with alpha particles; the discovery of the trans-uranium elements predicted by Fermi; the production of 'trans-uranics' in measurable quantity. . . . These are noteworthy triumphs of the human mind, which searches and studies the laws of nature, and beckons men to travel new roads." In 1952, addressing a large gathering of astronomers, the Pope invoked this "blessing" on their scientific endeavors: "May the modern conception of astronomical science, the goal of so many great men in the past, such as Copernicus, Galileo, Kepler and Newton, contrive to bear fruit and promote fresh advances in astrophysics. And may the astronomers' vision of the universe approach ever closer to completeness and perfection."

The Pope also finds that science itself has disproven former "scientific" denials of the existence of God. "According as it advances, and in flat contradiction to assertions made in the past, true science discovers God in an ever-increasing degree—as if God were waiting behind every new door opened by science." Again, "Providence has disposed that, just as the notion of God . . . can be gathered from a simple look at the world, . . . so also this same idea of God

finds confirmation in every new discovery and every fresh advance of science."

Deeper study of the science-religion conflict, on both sides of the familiar line of demarcation, had begun to suggest to scientists and churchmen that perhaps their differences were not so great as at first they appeared. The pronouncements of Pius XII came as a final and authoritative confirmation: science and the Church are not irreconcilable; science and the Church should be inseparable.

BASIS OF AGREEMENT

"Reading between the lines" of recent papal documents on science, we find a 20th-century reaffirmation of a truth long recognized and championed by the Church, which explains how, at bottom, there cannot be real opposition between natural science and supernatural religion. The God of religion is also the God of nature. The universe that scientists investigate happens to be God's universe. The Church is no more "afraid" of what scientists may discover or invent than is God himself.

Thomistic theology explains that *what* things are (their essence, or nature) depends, not on the divine Will, but on the divine Essence. Creatures are necessarily reflections—albeit very imperfect—of that Essence. To be a creature means to mirror God. Hence, to the extent to which scientists discover *truth* in their studies of the physical universe, to that extent they are uncovering hidden images of the one God, the same one God who has also made certain revelations of himself to man in a more intimate, more direct way—by supernatural revelation. Both orders of truth—scientific and religious—are then from and about God. He has revealed both of them. To suppose that science could disprove something revealed by God to his Church, is to suppose that God could oppose and contradict himself. In the ultimate analysis, as there is one God, the one supreme Truth, so all the various and multitudinous departments and subdepartments of human knowledge find in the divine Essence a perfect oneness, a perfect inner identity—the ultimate synthesis.

HARMONY

Yet the obvious fact with which we began is still with us: *de facto*, the history of science-religion conflicts is about as old as the human race itself, and has often been of a violent nature. If there cannot be conflict between science and revealed religion, how does it happen that there *is* conflict?

Since there cannot be *real* conflict, the only other possibility is

apparent conflict. In other words, there is a difference between science and a scientist, just as there is between theology and a theologian. While true science and true religion cannot disagree, their very human defenders obviously *can*, and rather frequently *do*. Incomplete knowledge, overconfidence, quick conclusions from unchecked premises, imperfect understanding of the other man's technical terminology or point of view, a touch of unjustifiable prejudice, and a host of other *subjective* conditions explain most of mankind's science-religion quarrels; for that matter, most quarrels between any two areas of human enterprise.

The case of evolution affords a good example. When the first theories of human evolution were being formulated, the enthusiasm of their proponents over the findings they had actually made generated too great an enthusiasm over the subsequent theories. Soon they were "proving" much more than the initial findings warranted: man had a completely terrestrial origin, just like all the other animals, and the Church's insistence on direct creation of man's immaterial soul **was paid little attention**. Evolutionists thought they had disproven Genesis, the Catholic Church, the Middle Ages, and anything else that dared speak of man except in terms of the materialistic science then in vogue.

Defenders of the Church, on the other hand, absolutely sure that some of the *conclusions* drawn from the various theories of evolution were erroneous, were often too quick to assume that the initial facts—the evidence from paleontology, embryology, etc.—were also erroneous, or erroneously interpreted. And the battle was on. Today, after several generations of evolutionary-theological controversy, it is coming to be generally admitted, now that certain inaccuracies and presuppositions on both sides have been reviewed and revised, that there never was any *real* basis for conflict. Proponents of evolution have retracted much of what their over-precipitous preceptors asserted, and have so modified their position that the very term "evolution" does not mean today what it meant 50 years ago. Conversely, the attitude of Catholic theologians and Scripture scholars towards evolution today would have been branded by their predecessors of just a few decades as "rash and temerarious." As a sign of the changing attitude, there is the unusual case of the book *Evolution and Dogma*, written by the American priest J. A. Zahm in 1896, in which he attempted a reconciliation between evolution and Catholic teaching. In 1899, the book was put on the Index; but in 1948, it was taken off the Index. Of course, it had never been condemned as *heretical*; but the circumstances of the times made it dangerous. For

a long time, evolution, in the minds of many, would continue to mean *materialistic, God-less* evolution. In such a context, any support of evolutionary theories was likely to give the wrong impression. But now, the situation has changed:

HELP FROM SCIENCE?

The transition from mutual antagonism to mutual harmony is now an accomplished fact, and universally agreed to—at least in the upper echelons of scholarship. But beyond mere non-incompatibility, may we say that modern science and revealed religion are, at least in some sense, *complementary*? In the practical order, or as regards “applied science,” there can be no legitimate doubt. To mention but one of a thousand examples, the efficiency of modern communications has greatly facilitated the establishment of a native clergy and hierarchy in mission lands.

In the speculative order, “pure science” has also made its contributions. This seems particularly striking in the field of Scripture studies. It is no exaggeration to say that there has been a greater advance in the solution of vexing biblical problems in the past 50 years than in the preceding 500; and much of this is due, directly or indirectly, to various modern sciences. For example, the objections raised against Genesis occasioned intensive study of that and other related books of the Old Testament. From this, and the invaluable assistance of modern archeology, there has developed an interpretation of the Pentateuch at once completely in line with what science has found or ever will find, and yet rich in religious significance as perhaps not even dreamed of by exegetes of preceding centuries.² The modern sciences, showing once and for all that these ancient books cannot be taken at their “face value,” far from “disproving” them or depreciating their religious importance, have opened the door to treasures of religious meaningfulness that might otherwise have remained hidden for 20 more centuries.

As for New Testament studies, the 1948 discovery of the Dead Sea scrolls of the 1st century Qumran community of Essenes represents a brilliant example of science-religion cooperation that has already thrown much light on the Scriptures, especially the Johannine writings. Here again, rash “scholarship” thought it had found a weapon for debunking and debasing the New Testament and the Church of the New Testament; but on the contrary, even within ten years of their discovery, the Qumran scrolls have proved a great blessing to scholars very much a part of that Church.

So also, Church-psychiatry relations, which started out on such

an unhappy basis, have by no means remained so. To date, only a token of the immense possibilities psychiatry has ultimately to offer has come to the surface, and yet the benefit to humanity has been considerable. Catholic theologians predict much help from psychiatry and its allied sciences, again on both the speculative and practical level.³

THE CATHOLIC SCIENTIST

Pius XII has supplied the initial impulse and direction for spotlighting the role of the scientist in contemporary society from a religious point of view: "We are humble servants, pilgrims to God through nature and truth, the agents of a joyous adventure. Your task (scientists') is to know and to increase humanity's treasures of knowledge. It is a work of love, not of dissension, *akin to the work of the Church.*"

In outlining the vocation of the Catholic scientist, we can do no better than quote Father L. J. McGinley, S.J., President of Fordham University: ⁴ "In the unceasing quest for truth, the religious scientist finds his vocation. The facts he discovers are as truly 'of God' as those mediated by God's Church. In fact, were science not existent the Church would eventually have to invent it, so that the full Christian mission of penetrating reality to the last iota of created perfection might be accomplished. It is the unique vocation of the religious scientist to share in this sacred task."

He points out a further prerogative of the scientist: ". . . to share in the redemptive mission of the Christian Church toward the created universe. . . . However much the world may be regarded as a stranger and an enemy in other philosophies and creeds, to the Church it is a helpmate, in travail and bondage until it too shares in Christ's redemption. . . . It is the Christian's co-redemptive task to give to every bright new creature man can fashion or uncover that commitment to Christ which only man can give, and to do this by an ever deeper knowledge of created nature and an ever more disciplined dedication of its use. This is the meaning of the role 'to restore all things in Christ.' This is most especially and most sublimely the redemptive vocation of the religious scientist."

FOOTNOTES

¹ For a succinct, yet complete, summary of the present state of evolutionary theory, from both a scientific and religious point of view, cf. J. Franklin Ewing, S.J., "Human Evolution—1956," in the *Anthropological Quarterly*, Vol. 29, No. 4, Oct. 1956, pp. 91-139. The Appendix, "The Present Catholic Attitude towards

Evolution," was also reprinted in the *Catholic Mind*, Vol. 55, April 1957, pp. 120-30.

² While we cannot go into this matter more deeply here, reference should be made to three recent, outstanding books on the subject, all written at the "popular" level: *A Path Through Genesis*, by Bruce Vawter, C.M. (Sheed & Ward, 1956), provides an "easy" commentary on the whole book, incorporating the results of recent scholarship on its many difficulties; *Beginnings*, by Charles Hauret (Priory Press, 1955), digs more deeply into the first 11 chapters, and is especially valuable for religion teachers; *The Two-Edged Sword*, by John L. McKenzie, S.J. (Bruce, 1956), provides an extensive background for an intelligent appreciation of the whole Old Testament.

³ Already, the Catholic literature on this subject is very extensive; suffice it to cite but one outstanding representative: *God and the Unconscious*, by Victor White, O.P. (Regnery, 1952).

⁴ Excerpts from a sermon delivered at the "Science Mass" in St. Patrick's Cathedral, New York, Dec. 30, 1956. The complete text may be found in *Thought*, Vol. 31, No. 123, Winter 1956-57, pp. 487-94; or in the *Catholic Mind*, Vol. 55, No. 1132, July-Aug. 1957, pp. 298-304.



"Now even though the truth of the Christian faith exceeds the capacity of human reason, still those things which reason does know by its natural endowment can in no wise be contrary to the truths of faith. For on the one hand those principles which are in the reasoning power by its very nature are so obviously true that we cannot possibly think them to be false. Nor is it possible, on the other hand, to believe that the tenets of the faith are false, since these are so evidently confirmed by God. Therefore, since only the false is contrary to the true—as is clear from the very definition of the two—it is impossible that the aforesaid truths of faith should be opposed to the naturally known principles of reason.

"From this we may conclude of any arguments whatsoever that may be posed against the teachings of faith, that these arguments have been incorrectly deduced from the self-evident principles of reason, which are the basis of all natural knowledge. Hence such arguments lack demonstrative force; they are sophistical, or at best probable. Which certainly leaves room for answering them."

Summa Contra Gentiles I, 7