LEMAITRE FOLLOWS TWO PATHS TO TRUTH

The Famous Physicist, Who Is Also a Priest, Tells Why He Finds No Conflict Between Science and Religion

By DUNCAN AIKMAN

PASADENA.

"THERE is no conflict between religion and science," the Abbé Lemaitre has been telling audiences over and over again in this country and then proving it by explaining the aims of both. His view is interesting and important not because he is a Catholic priest, not because he is one of the leading mathematical physicists of our time, but because he is both. Here is a man who believes firmly in the Bible as a revelation from on high, but who develops a theory of the universe without the slightest regard for the teachings of revealed religion on genesis. And there is no conflict!

Such an attitude would have been preposterous to a Victorian physicist. Either you accept the whole Book of Genesis and therefore shut yourself out of the world of science, or you accept science and repudiate the prophets as expositors of the manner in which the universe began. Today the physicist is meeker. Behind his formulas there is something that is still veiled. He is half mystic and ready to admit that the universe may reveal itself in other ways than in mathematical equations or the bands and lines of a spectograph. The abbé, therefore, follows the trend of modern thinking and derives from it more than ordinary satisfaction because he happens to be trained in theology as well as in mathematical physics.

Lemaitre, like Eddington, finds that science and religion supplement each other. Science can never study the universe as a whole. It selects a small portion, as much as it can handle, and then makes deductions. To a cosmologist the earth and Mars are only planets wheeling around the sun. Are they inhabited? Are they washed by air and water? Why were they created? Is there purpose in the universe? Science is indifferent to such questions, but not religion.

The questions are just as legitimate as those that are asked by the physicist when he wonders what may be the meaning of a shift to the red in the spectra of distant nebulae. To search thoroughly for the truth involves a searching of souls as well as of spectra. And it is religion that satisfies the soul-searching instinct, according to Lemaitre. In fact, he goes so far as to recommend a course in theology to him a way of looking at the Bible to physicists and biologists who see in the Book of Genesis only an interesting piece of ancient folklore.

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LEMAITRE believes that if discussions could be carried on in a friendly, objective way, the church and the laboratory would find themselves closer together than they believe they are. Listen to him as he sits in a student's bare room in the atheneum of the California Institute of Technology, a stoutish young man of 38 who wears horn-rimmed glasses and the expected Roman collar of a secular Catholic priest.

"This conflict," he begins with a smile and a French inflection in his otherwise perfect English- "where is it? Here we have this wonderful, this incessantly interesting and exciting universe. When we try to learn more about it, learn how it began and how it is put together, to find what it is all about, as you say in America, what are we doing? Only seeking the truth. And is not truth-seeking a service to God? Certainly everything in the Bible and in all authoritative Christian doctrine teaches that it is. Has any logical religious thinker of any faith ever denied it?

"Do you know where the heart of the misunderstanding lies?' he asks. "It is really a joke on the scientists. They are a literal-minded lot. Hundreds of professional and amateur scientists actually believe the Bible pretends to teach science. This is a good deal like assuming that there must be authentic religious dogma in the binomial theorem. Nevertheless a lot of otherwise intelligent and well-educated men do go on believing or at least acting on such a belief. When they find the Bible's scientific references wrong, as they often are, they repudiate it utterly. Should a priest reject relativity because it contains no authoritative exposition of the doctrine of the Trinity?"

If the Bible does not teach science, among other things, what does it teach? you ask.

"The way to salvation," comes the reply. "Once you realize that the Bible does not purport to be a textbook of science, the old controversy between religion and science vanishes."

"But the Bible says that creation was accomplished in six days," you protest. "Isn't that a direct, literal statement?"

"What of it?" retorts the abbé. "There is no reason to abandon the Bible because we now believe that it took perhaps ten thousand million years to create what we think is the universe. Genesis is simply trying to teach us that one day in seven should be devoted to rest, worship and reverence—all necessary to salvation."

"And that story about Jonah and the big fish?

"I admit that a whale cannot swallow a man and that a whale could not survive the swallowing of a man whole. But what of it? The real lesson is that by faith and righteousness a good man may attain security and salvation whatever his perils may be."

Like Eddington, the abbé believes that some things are imparted to us by revelation. There is no reasoning about the process. There is a lifting of a veil. The means of expressing what is revealed are often faulty, but the truth is there for all that.

So strongly is Lemaitre of this opinion that he is willing to attribute to the prophets all the powers with which they are credited in the Bible.

"If scientific knowledge were necessary to salvation," he says, "it would have been revealed to the writers of the Scriptures and they would have set it down in their verses. For instance, the doctrine of the Trinity is much more abstruse than anything in relativity or quantum mechanics. But, being necessary to salvation, the doctrine is stated in the Bible. If the theory of relativity had also been necessary to salvation it would have been revealed to St. Paul or Moses. Even though handicapped by the lack of a terminology and the necessary equations, all the result of an evolution that has been going on for centuries, either would have made some stumbling effort to expound it.

"As a matter of fact neither St. Paul nor Moses had the slightest idea of relativity. The writers of the Bible were illuminated more or less—some more than others—on the question of salvation. On other questions they were as wise or as ignorant as their generation. Hence it is utterly unimportant that errors of historic and scientific fact should be found in the Bible, especially if errors relate to events that were not directly observed by those who wrote about them. The idea that because they were right in their doctrine of immortality and salvation they must also be right on all other subjects is simply the fallacy of people who have an incomplete understanding of why the Bible was given to us at all."

Lemaitre tells of a classroom scene in which he figured. An old father was expounding at the desk. Before him sat the lad who was to discover the expanding universe and who, even then, was brimful of science. In his eagerness the lad read into a passage of Genesis an anticipation of modern science.

"I pointed it out," says Lemaitre, "but the old Father was skeptical. 'If there is a coincidence,' he decided, 'it is of no importance. Also if you should prove to me that it exists I would consider it unfortunate. It will merely encourage more thoughtless people to imagine that the Bible teaches infallible science, whereas the most we can say is that occasionally one of the prophets made a correct scientific guess.'"

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THERE is, the abbé admits, a varying sense of conflict between science and religion in the different branches of science. "The biologists seem to have peculiar difficulties," he reasons. "There is every reason for this. They have only recently discovered a few guiding laws and principles. Hence, in the past their studies have been confusing rather than enlightening. In a way their subject-matter has been gross.

"But give the biologist more laws like those of the Abbé Mendel and a new spirit is bound to awaken. The sense that this is a morally ordered universe will be inculcated. As soon as any science passes the mere stage of description it becomes a true science. Also it becames more religious. The mathematicians, the astronomers and the physicists, for example, have been very religious men, with a few exceptions. The deeper they penetrated into the mystery of the universe the deeper was their conviction that the power behind the stars and behind the electrons of atoms is one of law and goodness."

The real cause of conflict between science and religion is to be found in men and not in the Bible or the findings of physicists. "When men were told that they had the right to interpret the Bible's teachings according to their own lights," he holds, "naturally some were bound to decide that its science was infallible and others that it did not agree with modern instrumental measurements and was proof of opposite doctrines. The conflict has always been between those who fail to understand the true scope of either science or religion. For those who understand both, the conflict is simply about descriptions of what goes on in other people's minds."

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AS a priest Lemaitre bows to the Catholic principle of leaving the interpretation of the Bible to the church. But this is good science, too, in his view. "The church has always been aware that the Bible teaches salvation, not science," he insists again. "Although the church's sense of the separate fields of science and religion has unquestionably developed through the ages, its fundamental recognition of the separate but intrinsically harmonious objects of both science and religion has always spared Catholic scientists much confusion."

"And Galileo?" you hint in the hope of tripping him up.

"Oh, Galileo was mildly disci-

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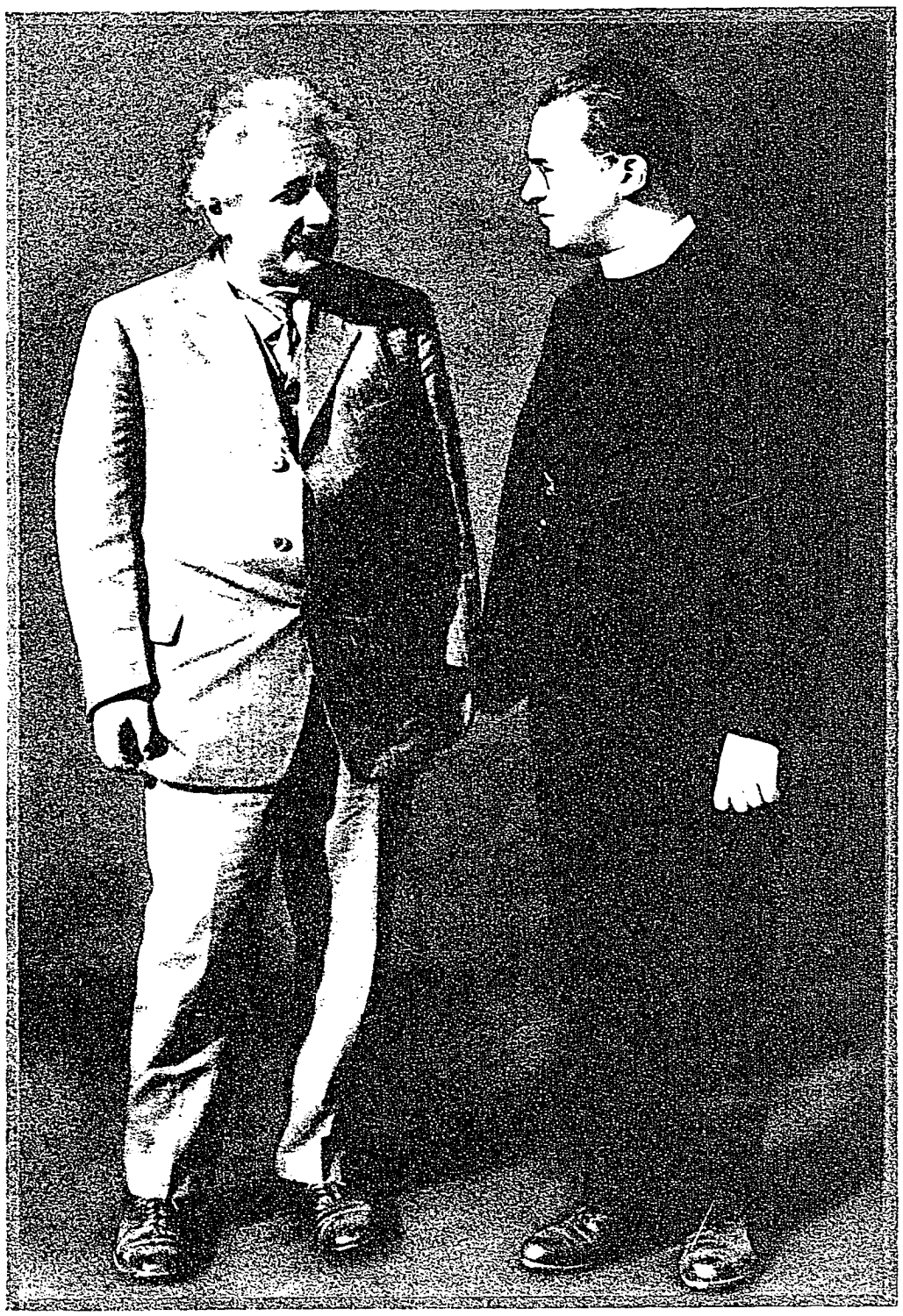

Associated Press Photo.

Einstein and Lemaitre—"They Have a Profound Respect and Admiration for Each Other."

ABBE LEMAITRE'S TWO PATHS

The Famous Physicist Tells Why He Finds No Conflict Between Science and Religion

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plined for being an indiscreet reporter of private conversations in the Pope's household and for using some of his scientific findings to promote a veiled attack on the teachings of the church. In a word, he was another scientist who did not understand the limitations of science or the purpose of the Bible. Still, I will not deny that his case clearly defined the fields that science and religion should occupy. Both profited by his mistakes."

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THE abbé proceeds to illustrate by his own life how it is possible for a priest to be a scientist and to believe both in the lessons of Scripture and of relativity. He takes you back to a time when he was 9 years old, because it was then, when most boys are interested only in games, that he decided to become a scientist.

"There was nothing at all dramatic about it," he comments. "I was a good student, especially so in dull, hard subjects like mathematics, and fascinated with the smattering of knowledge I picked up in elementary schools. So I naturally followed my bent.

"What is more significant," he continues, "is that exactly at the same time, actually in the same month as I remember it, I made up my mind to become a priest. I was interested in truth from the standpoint of salvation, you see, as well as in truth from the standpoint of scientific certainty. There were two ways of arriving at the truth. I decided to follow them both. Nothing in my working life, nothing that I have ever learned in my studies of either science or religion, has ever caused me to change that opinion. I have no conflict to reconcile. Science has not shaken my faith in religion, and religion has never caused me to question the conclusions I reached by strictly scientific methods."

Although the abbé is so original and daring a theoretical physicist that he was bound to have attracted the attention of his peers sooner or later, it was Eddington who discovered him. That was six years ago. Before that the abbé had been simply an obscure professor in the University of Louvain. But afterward—? Afterward the universe assumed a new aspect, and it was the aspect given to it by the abbé in a modest paper that fired the keen intellect of Eddington. In a word, the abbé had discovered mathematically that the universe is expanding like a colossal soap bubble.

What attracted Eddington to the young priest's theory was the fact that it reconciled two diametrically opposing conceptions of the universe. First there was Einstein's—a universe which was curved and so static that it would collapse if it were disturbed. And then there was de Sitter's—a universe which was empty but expansive. Both were impossible. They represented two extremes. In between, a huge number of universes was possible.

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WHICH is our universe? Lemaitre gave us the one in which cosmologists believe at present—the unstable universe, which began to expand as soon as it was created and which will some day be a de Sitter universe, because all its matter will have been dissipated in the process of inflation. This is a relativistic universe, of course, in which space is curved and time is welded to space. Although relativity is retained, the universe of Einstein is now as obsolete as the quill pen.

This is not mere mathematical moonshine on Lemaitre's part. Out on the top of Mount Wilson Dr. Hubble and Dr. Humason have actually photographed the expansion. They have detected a reddening of the outermost nebulae. The reddening means that the universe is indeed expanding, just as the equations demand. For the reddening is like the whistling of a receding locomotive. The whistle howls down as the engine rushes away. Light also howls down as it speeds away. Its pitch changes, which means that it reddens. So precise is this method of measurement that the Mount Wilson observers are able to say that some of the outer nebulae are rushing away at the rate of 12,000 miles a second, compared with which the most violent explosion on earth seems snail-like.

If scientists were like prima donnas, Einstein and Lemaitre would not speak when they met. As it is, they have a profound respect and admiration for each other. Each views his own work with the utmost detachment. Science, especially mathematics, brooks no jealousies. An equation is right or wrong; it either fits the observed phenomena or it does not.

So, while these men may take a certain delight in puncturing each other's arguments and formulas, it is not because of a desire to triumph in a scientific debate or to demonstrate a superiority of intellect but to reach the truth. Einstein has had more universes overthrown than any god, but the world still regards him as the greatest mind it has produced since Newton. In fact, he enjoys the process of having his conclusions disproved, only to bob up serenely a few months later with a new one that seems proof against any attack.

As for the abbé—was not Einstein himself just such a lively, daring, imaginative youngster when he promulgated his special theory of relativity over a quarter of a century ago? It was characteristic of Einstein that, after hearing Lemaitre expound his theory of genesis, according to which the universe expanded from a single, massive super-radioactive atom, he rose before a gathering of mathematicians and physicists at Pasadena to say: "This is the most beautiful and satisfactory explanation of creation to which I have ever listened."

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LIKE other great mathematicians, Einstein included, Lemaitre is puzzled by what ought to be simple mechanism to him. "My brother's scientific knowledge is beyond me," he says. "He is a successful engineer who has designed some improvements in locomotives. I have never been able to understand his inventions. For that matter I don't know what locomotives are all about, scientifically speaking."

But for all that he makes nothing of expanding and contracting the universe. After Eddington popularized the Lemaitre view in his dramatic way it became part and parcel of current scientific thinking.

The abbé confesses that his ability to think of science and religion as separate and yet coordinate interests may come from his ancestry and early training. His parents and grandparents were earnestly religious people. There were no scientists or ecclesiastics among them, yet the family history almost called for a priest. His religious bent, he feels, comes from the sincerity with which the line embraced the faith and from the control that faith exercised over their lives. His scientific bent, he reasons, comes from their conscientiousness, and from their personal honesty and sense of social obligation.

America has a sentimental interest in the abbé and his expanding universe. Through the commission for the relief of Belgium he received a scholarship at Harvard. There during 1924 and 1925 he specialized in the application of the theory of relativity to astronomy and there the germ of the expanding universe may have begun to sprout.