

PREFACE

Small beginnings are usually pleasant, especially when one senses that there is something new aborning. There is the excitement of something being created, but small enough as not to require the careful conformity with things past that big initiatives demand. Such, I believe, is what we present in this book. It may at first glance appear to be something big, a major new undertaking. After all, it contains a special message from Pope John Paul II in addition to significant contributions from major scholars. But it is still a small beginning whose full fruits lie in the future. Allow me briefly to record its history.

Three hundred years had passed since Sir Isaac Newton published his epoch-making book, *Philosophia Naturalis Principia Mathematica*. Pope John Paul II wished that the Holy See would remember that event in such a way that it would be not just a simple commemoration but rather a serious contribution to the efforts which He himself had already made to the dialogue between the culture of religious belief and the scientific culture. Therefore, in December 1986 the Vatican Observatory was asked to organize on behalf of the Holy See a conference on precisely that topic: the meeting of the two cultures.

We began with a great deal of enthusiasm, generated both by the topic itself and by the knowledge that the Holy Father himself was very interested. "We" means, besides myself, the Scientific Organizing Committee: Michael Heller, The Pontifical Academy of Theology of Cracow; Arthur R. Peacocke, Ian Ramsey Center, Oxford; Robert J. Russell (Chairperson), The Center for Theology and the Natural Sciences, Berkeley; and William R. Stoeger, S.J., Vatican Observatory.

It was decided among us from the very beginning that this would be a research Study Week, that is, one in which carefully prepared questions would be formulated, circulated to the invited participants in ample time for personal study and reflection, and addressed at the meeting through preliminary drafts of research papers, but without the requirement that these papers be *already* prepared for publication. We had decided, in fact, that, if there were to be a publication, it would reflect the result of the research and interaction carried out together during the week. Put briefly, publishable papers would be prepared after the meeting and not before. As to participation, limited in number because of the very nature of the meeting, it was decided that, in addition to the fundamental consideration of scholarly excellence, we wished the meeting to be *ecumenical* and *interdisciplinary*. The *ecumenical* dimension really posed no problem. In principle none of the three disciplines was allied to any one way of

believing nor, as a matter of fact, to unbelief. In practice we knew of scholars in all three disciplines who ranged over the whole spectrum of religious belief. However, to respect the *interdisciplinary* character, which was essential to the meeting, was not as easy a task. Scholarly expertise in more than one of the disciplines was, to the best of our knowledge, not very common. Nonetheless, we required that participants would be invited on the basis that they were established scholars in at least one of the three disciplines of physics, philosophy and theology, and that in at least one of the remaining disciplines they had a serious cultivated interest and knowledge. After exploratory conversations with various scholars preliminary lists of questions to be addressed and participants to be invited were formulated.

A separate meeting to commemorate the Newton tercentenary, held in Cracow in May 1987, offered the opportunity for the Organizing Committee together with a few other scholars to meet in order to finalize plans for the Study Week. The Cracow meeting, although focused in its content more directly on Newton (the book, "Newton and the New Direction in Science," eds. G.V. Coyne, M. Heller, and J. Życiński [Liberia Editrice Vaticana: Vatican City State] is the result of that meeting), served not only as a convenience for organization but also as a stimulus for the ideas that were to surface more clearly at the Vatican Study Week.

And so from 21 to 26 September 1987 in the bucolic setting of the Papal Summer Residence at Castel Gandolfo the twenty-one scholars whose names appear in the List of Participants met to study and discuss problems associated with "Our Knowledge of God and Nature: Physics, Philosophy and Theology" — the title of the Study Week. We gave specific attention to such issues as: historical and contemporary relations between religion and science; modes of reasoning and practice in religion and science; creation as understood in modern physics, in philosophy, and in biblical and systematic theology; the status of philosophical realism in science and religion; "fine-tuning" in the early universe, the anthropic principle, and corresponding arguments for the existence of God; philosophical and theological issues arising from cosmology and quantum physics; God's action in the world; the viability of natural theology today; metaphors and models which relate theology to science; viewpoints from physical cosmology about the long-term future of life and the meaning of God. Although this list of topics is quite substantial, there are still many topics that were not treated. One cannot do everything in an instant and yet one must begin somewhere. We have begun, but it is only that, a beginning.

This book is principally the result of that Study Week, although for various reasons it cannot be said in any way to be the "proceedings" of the Week. Among these reasons are the following: (1) the nature of the

meeting, as I have said, was research; these are not the proceedings of what happened there but the fruit in writing of what was undertaken there; (2) one entire paper and many of the ideas contained in the book are the outcome of a second meeting held at the Center for Theology and the Natural Sciences, Berkeley, on 15-16 January 1988, sponsored jointly by that Center and the Vatican Observatory as a continuance of the discussion held at Castel Gandolfo and concentrating on the possibilities for a natural theology today; (3) although in a solemn audience to commemorate Newton's *Principia* as a part of the Study Week and with the participants in attendance, the Holy Father did present a Discourse, the message of John Paul II published here is a later result of His study and reflections on the research completed that week; (4) several of the participants, including Arthur Peacocke, Charles Misner, and Christoph Wassermann have published or are planning to publish their papers elsewhere.

It is a small beginning, indeed, with more questions, the reader will note, than answers. It, therefore, leans into the future. It is a promise, a pledge and a challenge to continue the "Common Quest." We are, as a matter of fact, planning in a very concrete way to continue the quest by sponsoring, on the part of the Vatican Observatory, the Center for Theology and the Natural Sciences, and the Pontifical Theological Academy of Cracow, gatherings of small groups of scholars at Berkeley, Castel Gandolfo, Cracow, and elsewhere on some regular basis. For my part I know that the Holy See is as delighted to pursue these efforts as it was to have organized the Study Week which stimulated the research reported herein.

It is, I believe, only right and just, at the closing of this Preface and before you the reader enter into this book, to emphasize what has been alluded to in previous paragraphs and what will become quite obvious as one reads the book, namely, the exploratory nature of the research that is presented here. Certain circumstances of the book, namely, the sponsorship by the Vatican under the auspices of the Vatican Observatory, the publication of the Papal message, etc., might lead one to think that the contents of the book are intended as doctrinal statements or related, at least, to the development of doctrine leading even towards dogmatic formulations. The reality is quite the contrary. Each and every part of this book, including, in my opinion, the Papal message, is exploratory. With full respect for, and hopefully an adequate knowledge of, the rich traditions in each of the three disciplines, the attempt here is to explore, and to do so in an interdisciplinary area which is, to say the least, treacherous.

History bears witness to not a few great thinkers who have met unfortunate ends in their attempt to explore in this area. Waiting there for our exploration are inviting caverns, soaring peaks, enticing rich high

meadows. One can accept the invitation to explore moved by the sheer enjoyment and excitement of it all, or one can also view it as a serious venture, not thereby less enjoyable. On behalf of my fellow editors and the contributors we offer this volume in the spirit of an enjoyable exploration, undertaken seriously. We hope that we have made some small contribution, even where in exploring we may eventually be judged to have been misguided, even wrong. For us it has been enjoyable. We can only hope that it will be likewise for the reader. We wish to thank Rita Callegari and Suzanne Roth for their help in preparing this publication.

Finally I should mention in regard to the Holy See that the following were also sponsors of the Study Week: The Pontifical Theological Academy of Cracow, the Pontifical Academy of Sciences, the Pontifical Gregorian University, and the Pontifical Council for Culture.

31 July, 1988

George V. Coyne, S.J.