



Address to the Plenary Session and to the Study Week on the Subject 'Cosmology and Fundamental Physics'

with Members of Two Working Groups who had Discussed 'Perspectives of Immunisation in Parasitic Diseases' and 'Statement on the Consequences of the Use of Nuclear Weapons'



The Pope affirms that the Church 'esteems pure science'. He declares that the Bible discusses the origins of the universe not in the form of a scientific treatise but to bring out the relationship between man and God. Holy Scripture 'does not wish to teach how heaven was made but how one goes to heaven'. John Paul II goes on to say that all forms of scientific research and its application must respect 'the norms of morality' and the dignity of the human person. He adds that science must continue to combat illness and makes an appeal for the banishment of nuclear weapons and the upholding of the 'human right to justice and peace'.

Mr. President,
Members of the Academy,
Ladies and Gentlemen,

1. The programme of work which your President has presented, and with which I was already acquainted before this meeting, demonstrates the great vitality of your Academy, its interest in the most acute problems of modern science and its interest in the service of humanity. On the occasion of a previous solemn session I already had the opportunity to tell you how highly the Church esteems pure science: it is 'a good, worthy of being loved, for it is knowledge and therefore perfection of man in his intelligence ... It must be honoured for its own sake, as an integral part of culture'.¹

Before speaking of the questions which you have already discussed during these days and those

which you now propose to study, permit me to express my warm thanks to your illustrious President, Professor Carlos Chagas, for the congratulations which he kindly expressed in the name of your whole Assembly for my having regained my physical strength, thanks to the merciful Providence of God and the skill of the doctors who have cared for me. And I am pleased to avail myself of the occasion to express my particular gratitude to the Members of the Academy who from all parts of the world have sent me their good wishes and assured me of their prayers.

2. During this study week, you are dealing with the subject of 'Cosmology and Fundamental Physics', with the participation of scholars from the whole world, from as far away as North and South America and Europe and China. This subject is linked to themes already dealt with by the Pontifical Academy of Sciences in the course of its prestigious history. Here I wish to speak of the session on microseisms, stellar clusters, cosmic radiation and galactic nuclei, sessions which have taken place under the presidency of Father Gemelli, Monsignor Lemaître and also Father O'Connell, to whom I address my most fervent good wishes and whom I pray the Lord to assist in his infirmity.

Cosmogony and cosmology have always aroused great interest among peoples and religions. The Bible itself speaks to us of the origin of the universe and its make-up, not in order to provide us with a scientific treatise, but in order to state the correct relationships of man with God and with the universe. Sacred Scripture wishes simply to declare that the world was created by God, and in order to teach this truth it expresses itself in the terms of the cosmology in use at the time of the writer. The Sacred Book likewise wishes to tell men that the world was not created as the seat of the gods, as was taught by other cosmogonies and cosmologies, but was rather created for the service of man and the glory of God. Any other teaching about the origin and make-up of the universe is alien to the intentions of the Bible, which does not wish to teach how heaven was made but how one goes to heaven.

Any scientific hypothesis on the origin of the world, such as the hypothesis of a primitive atom from which derived the whole of the physical universe, leaves open the problem concerning the universe's beginning. Science cannot of itself solve this question: there is needed that human knowledge that rises above physics and astrophysics and which is called metaphysics; there is needed above all the knowledge that comes from God's revelation. Thirty years ago, on 22 November 1951, my predecessor Pope Pius XII, speaking about the problem of the origin of the universe at the study week on the subject of microseisms organised by the Pontifical Academy of Sciences, expressed himself as follows: 'In vain would one expect a reply from the sciences of nature, which on the contrary frankly declare that they find themselves faced by an insoluble enigma. It is equally certain that the human mind versed in philosophical meditation penetrates the problem more deeply. One cannot deny that a mind which is enlightened and enriched by modern scientific knowledge and which calmly considers this problem is led to break the circle of matter which is totally independent and autonomous – as being either uncreated or having created itself – and to rise to a creating Mind. With the same clear and critical gaze with which it examines and judges the facts, it discerns and recognises there the work of creative Omnipotence, whose strength raised up by the powerful *fiat* uttered billions of years ago by the creating Mind, has

spread through the universe, calling into existence, in a gesture of generous love, matter teeming with energy’.

3. Members of the Academy, I am very pleased with the subject that you have chosen for your plenary session beginning on this very day: ‘The Impact of Molecular Biology on Society’. I realise the advantages that result – and can still result – from the study and applications of molecular biology, supplemented by other disciplines such as genetics and its technological application in agriculture and industry, and also, as is envisaged, for the treatment of various illnesses, some of a hereditary character.

I have firm confidence in the world scientific community, and in a very special way in the Pontifical Academy of Sciences, and I am certain that thanks to them biological progress and research, as also all other forms of scientific research and its technological application, will be carried out in full respect for the norms of morality, safeguarding human dignity, freedom and equality. It is necessary that science should always be accompanied and controlled by the wisdom that belongs to the permanent spiritual heritage of humanity and that takes its inspiration from the design of God implanted in creation before being subsequently proclaimed by his Word.

Reflection that is inspired by science and by the wisdom of the world scientific community must enlighten humanity regarding the consequences – good and bad – of scientific research, and especially of that research which concerns man, so that, on the one hand, there will be no fixation on anti-cultural positions that retard the progress of humanity, and on the other hand that there will be no attack on man’s most precious possession: the dignity of his person, destined to true progress in the unity of his physical, intellectual and spiritual well-being.

4. There is another subject which, during these days, has occupied the thoughts of some of you, eminent scholars from different parts of the world who have been brought together by the Pontifical Academy of Sciences: the question of parasitic diseases, diseases which strike the poorest countries of the world and are a serious obstacle to the development of man in the harmonious framework of his physical, economic and spiritual well-being. The efforts to eliminate, as far as possible, the serious harm caused by parasitic diseases to a considerable part of humanity are inseparable from the efforts which should be made for the socio-economic development of those same peoples. Human beings normally need a basic minimum of health and material goods in order to be able to live in a manner worthy of their human and divine vocation. It is for this reason that Jesus turned with infinite love to the sick and infirm, and that he miraculously cured some of the diseases with which you have been concerned in these past days. May the Lord inspire and assist the work of the scientists and doctors who dedicate their research and profession to the study and treatment of human infirmities, especially those which are the most grave and humiliating.

5. In addition to the question of parasitic diseases, the Academy has been studying the question of a scourge of catastrophic dimensions and gravity that could attack the health of humanity if a nuclear conflict were to break out. Over and above the death of a considerable part of the world’s

population, a nuclear conflict could have incalculable effects on the health of the present and future generations.

The multi-disciplinary study which you are preparing to undertake cannot fail to be for the Heads of State a reminder of their tremendous responsibilities, and arouse in all humanity an ever more intense desire which comes from the most profound depths of the human heart, and also from the message of Christ who came to bring peace to people of good will.

By virtue of my universal mission, I wish to make myself once more the spokesman of the human right to justice and peace, and of the will of God who wishes all people to be saved. And I renew the appeal that I made at Hiroshima on February 25 of this year: 'Let us pledge ourselves to peace through justice; let us now take a solemn decision, that war will never be tolerated or sought as a means of resolving differences; let us promise our fellow human beings that we will work untiringly for disarmament and the banishing of all nuclear weapons; let us replace violence and hate with confidence and caring'.

6. Among the efforts to be made in order to secure the peace of humanity, there is the effort to ensure for all peoples the energy needed for their peaceful development. The Academy concerned itself with this problem during its study week last year. I am happy to be able to award today the Pius XI Gold Medal to a scientist who has contributed in an outstanding way, by his research in the field of photo-chemistry, to the utilisation of solar energy: Professor Jean-Marie Lehn of the Collège de France and the University of Strasbourg, and I express to him my most cordial congratulations.

To all of you, I offer my sincere compliments on the work which you are doing in scientific research. I pray that Almighty God will bless you, your families, your loved ones, your collaborators, and the whole of humanity, for whom in diverse yet converging ways you and I are carrying out the mission which has been entrusted to us by God.

1 *Address to the Pontifical Academy of Sciences*, 10 November 1979.