



PONTIFICIA
ACADEMIA
SCIENTIARVM

STATO DELLA CITTÀ DEL VATICANO
Casina Pio IV, Tel. 06/6983195

November 28, 1988

Il Presidente

N. 2153

Dear Professor Kurenberg,

The great honour conferred on me by His Holiness Pope John Paul II, i.e. the task of guiding the Pontifical Academy of Sciences for the next four years, is a source of joy, but also a cause for concern, in view of the great responsibilities facing me.

I am deeply aware of the honour of being chosen to continue the work undertaken for the Academy by my distinguished predecessors, Father Agostino Gemelli, Monseigneur George Lemaitre and Father Daniel O'Connell, and continued during the last sixteen years by Professor Carlos Chagas, who has guided the Academy with enthusiasm, capability, authority and dignity during one of the most exciting and fascinating periods of our recent history, when science and its applications brought about the great changes which characterize our world today.

I hope that the Pontifical Academy of Sciences will continue to develop its activity at the same high level as in the past, with the participation and the active collaboration of the Academicians, and yours in particular, as well as the support of the Director of the Chancellery.

The directives for future action were clearly indicated by the Holy Father two years ago, on the occasion of the Solemn Plenary Session for the Fiftieth Anniversary of the Pontifical Academy, and again today proposed to our attention.

Three main points have been emphasized for our future action: the meaning of the universe, the relationships between man and nature, the new biological techniques and the dignity of the human person.

The daily advances in astronomy and astrophysics represent a challenge regarding their interpretation, and require the full attention of the Academy.

Progress in genetics, embryology, neurosciences, molecular biology and immunology should be examined also from an ethical point of view in order to defend the dignity of the human person.

Ecology should be based on an ethics aiming to indicate new relationships between man and nature, in order to protect our environment and promote the quality of life in a sustainable development.

We should also consider the unity of science, now split between the humanistic and the experimental, including mathematics. This will be possible through an interdisciplinary collaboration and a stimulating discussion between the scientists of the Pontifical Academy of Sciences and the distinguished

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theologians, philosophers, economists and sociologists of the Pontifical cultural institutions.

The Pontifical Academy of Sciences, which represents a significant sample of the world scientific community, will study these topics thoroughly and suggest the line to follow, bearing in mind that science is the search for the truth and that it should always be at the service of man and never against man.

We can now add to these indications those given by the Holy Father to the whole world in the Sollicitudo Rei Socialis which, in line with Populorum Progressio, calls all of us to the reality of a world divided among wealthy and poor people.

As scientists we have the moral obligation to eliminate, with the help of science and technology, the discriminations due to insufficient resources, severe environmental conditions, diseases, malnutrition and poverty.

It may be useful to this purpose to remember briefly the tasks assigned to the Academy since its foundation, in different historical and social periods, by the continuous and clear directives given by the reigning Popes.

The Academy was founded by Pius IX in 1847, over 140 years ago, with the name of Pontificia Accademia dei Nuovi Lincei. The name Lincei was a recognition of the merit of the work done by the Accademia dei Lincei, founded in 1603, the first Academy of Sciences of the world, where the experimental method was established, opening the way to modern science.

Pius IX had a clear idea about the role of science in his time -- having also a personal experience as a student when he published a monograph on optics -- and he established the functions of the Nuovi Lincei.

He proposed to the Academy three main tasks: "to study the progress and spreading of Science", "to promote the technical disciplines, the arts and industries which rely on 'Science'", and "to assess the Government and the society, when requested, on its works and with its wisdom".

This was the first model of institutions assessing the State in the field of science and technology which were established in the world a century later as National Research Councils.

The Academy was re-established in 1936 by Pius XI with the present name of Pontifical Academy of Sciences, becoming also an international Academy. The scope of its activity was given in the Pope's Motu Proprio announcing the event.

The Academy should be "the Senate of the Holy See in the field of sciences" and the "Pontifical Academicians should devote themselves more and more to the advancement of science. We do not require anything else from them because their noble work in the search for truth represents the contribution we expect from them". The Academy is formed by high level scientists from all over the world without any religious or ethnic discrimination,

and at this stage it is an Academy of prestige.

The Pontifical Academy of Sciences, the Catholic Church being present everywhere in the world, has no boundaries to its activity. Because of the fact that its members come from all over the world, a traditional academic activity is impossible. The only solution was to hold periodical Plenary Sessions.

Father Gemelli, in order to open a constructive dialogue with the world scientific community, after consultation with the Academicians proposed extraordinary meetings: the Study Weeks, with the aim of discussing particular topics with the participation of Academicians and invited scientists who were experts in the field under consideration.

In the years 1945-1970 the Academy thus became also an Academy of action. The subjects of the Study Weeks are focused not only on the findings of basic science, such as those on astrophysics or molecular forces, but also on problems of interest for humankind, such as agricultural production, world hunger, and even on questions at the interface of science and philosophy, such as that on the brain and conscious experience.

President Carlos Chagas since 1972 has developed these lines, increasing the role of an Academy of action. He has given, with his deep knowledge and sensibility, a new dimension to the problems of the Third World, of the environment and of the questions raised by the rapid evolution of biology at every level.

Moreover, with the aim of obtaining the direct opinion of experts on specific questions arising from the most recent scientific advances, he established a new type of meeting, the Working Groups, restricted to the participation of a few scientists and experts.

The horizon of the Academy's scope was broadened by the new Statutes, issued in 1976: the Academy should promote not only "the progress of the mathematical, physical and natural sciences" but also "the study of the related epistemological problems".

The results of basic and applied research in the last fifty years have meanwhile influenced, through the new technologies, the present society. They have made possible the exploration of outer space and even of the planets, but have also opened up new possibilities to manipulate embryos, perform fecundation processes in vitro and to realize incredible graftings in man.

In the unrestricted use of scientific progress and new technologies, society may lose the sense of moral and ethical limits. Even the results of scientific advances in basic research, i.e. the laws governing the universe, the origin of life, the evolution of humans, require special attention by the Holy See, which has to be duly and timely informed and provided with documentation.

If you read with attention the discourse addressed to you by

John Paul II at the Plenary Session of 28th October 1986, you will find not only the guidelines for our future activity but also the indication of a new interdisciplinary effort in the search for truth as stated in the following words: "Philosophical and theological studies of man and nature need your contribution, so that the common knowledge of the inanimate world, of the living universe, and of the human being may advance".

These words invite the Academy to open a new direction in its activity. It will be another step out of the ivory tower of pure research that will give to our work a new dimension. I wish to remind you that in many countries in the last few years a discussion with philosophers and humanists on the impact of science and technology on our society has also been sought by agnostic and free-thinking scientists. The object of these discussions was the concept of the knowledge of truth, the ethical consequences of the indiscriminate use of scientific discoveries, from cosmology to the origin of life, from the use of destructive weapons to the manipulations of the human person.

I wish to recall that in these years groups and associations of scientists, philosophers and jurists have been formed spontaneously all over the world in order to discuss the self-control and the limits that scientists, on a general ethical basis, should establish for their research.

The recent discoveries need a continuous rethinking by philosophers and scientists for the implications they may have on our present knowledge of matter, from sub-nuclear particles to the universe, of the fundamental laws, of the questions arising from the relationship between brain and mind, matter and spirit.

The Pontifical Academy of Sciences must play its role not only in science but also in the present culture. We are a part of it and we cannot ever forget the responsibilities of the misuse of science, always bearing in mind that science should always be at the service of man.

The first steps in this direction have already been taken by President Chagas, who a few years ago had the merit to abandon agnostic science and the purely academic debates, moving towards a brighter concept of science at the service of man. I am sure to have also your full collaboration in this particular task.

Your suggestions for the Academy's activity will always be very useful. I also rely on you for the participation when necessary on committees and in assessing the Academy's general or particular problems related to science and its applications. I think that closer contacts should be maintained by you with the Academy on several issues: e.g. submitting every year the names and the curricula of scientists to be considered for election to the Academy, and sending in your more relevant publications.

Last year at the Synod of Bishops the Academy presented some considerations about the role of science as the main factor of the present progress, but also about the fear of the

extraordinarily destructive power acquired (weapons, degradation of the environment, uncontrolled use of natural resources, etc.), and its capacity to act on the human person.

I may now ask: is science becoming, as anticipated three centuries ago by Sir Francis Bacon, only power? Scientia est potentia. Perhaps so, if we consider the present capacity of self-destruction of humankind. We can stop this issue if we succeed in giving a human and a moral dimension to science.

The Holy See needs to be continuously and precisely informed and assessed regarding the evolution of science and its impact on our world.

No single scientist can cope with this task, but a body of scientists of different countries and disciplines, such as our Academy, is in a position to give this contribution.

I believe that for us it is a great honour and even a great challenge in our work, as well as a recognition of our scientific skill and also of our wisdom. It also represents a further engagement for us in the work of the Academy as a collective body. It may require closer and more frequent contacts among us, and I am sure that the Academy can rely on your full collaboration in the accomplishment of our duties as Scientific Senate of the Holy See in promoting science and assessing the impact of scientific advances on humankind.

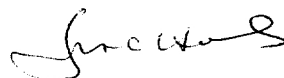
I am grateful to President Chagas, to all of you, and to the Director of the Chancellery, Ing. Dardozzi, for what has been done so far for the progress of science, the use of its results for developing a world without inequalities, for a better understanding among the world scientific community of the great problems of the future world.

I apologize for the length of this letter, but at the beginning of my work at the Pontifical Academy of Sciences I thought it most important to let you know my ideas. As I am asking for your collaboration, I hope to continue in the future to maintain with you frequent contacts, not only through correspondence but also, when possible or necessary, by direct talks with you. On the other hand you will be informed in advance if I plan to travel to your country. Therefore please inform me whenever you are coming to Italy and to Rome, in order that I may arrange to meet with you. I trust in your advice, collaboration and support for the Academy's future activity.

Now let me send to you personally and to your family, also on behalf of Ing. Dardozzi and the personnel of the Academy, best wishes for a Merry Christmas and a Happy New Year.

With best regards, I am

Sincerely yours,



G.B. Marini-Bettòlo