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UNITED NATIONS EDUCATIONAL,
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Address
by
Mr Federico Mayor

Director-General
of the United Nations Educational,
Scientific and Cultural Organization
(UNESCO)

at the ceremony for the presentation of the :

1993 Kalinga Prize for the Popularization of Science

1993 UNESCO Science Prize

1993 Javed Husain Prize for Young Scientists

1993 Carlos J. Finlay Prize

1993 Sultan Qaboos Prize for Environmental Preservation

UNESCO, 8 November 1993

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Mr President of the General Conference,
Madam Chairperson of the Executive Board,
Distinguished Prize-winners,
Excellencies,
Ladies and Gentlemen,

It gives me great pleasure to open this ceremony for the presentation of the five UNESCO science prizes for 1993 - the Kalinga Prize for the Popularization of Science, the UNESCO Science Prize, the Javed Husain Prize for Young Scientists, the Carlos J. Finlay Prize for Microbiology and the Sultan Qaboos Prize for Environmental Preservation.

I extend a specially warm welcome to the prize-winners who are our guests at UNESCO this evening. I should also like to take the opportunity to pay tribute to all their fellow scientists throughout the world, who collectively deserve some of the credit whenever the frontiers of knowledge are pushed back a little further. As Claude Bernard once said : "Art is I; science is **we**".

I begin the presentations with the Kalinga Prize for the Popularization of Science which was established in 1951 through a generous gift from the Indian industrialist Mr Biju Patnaik. It is right that one of the UNESCO science prizes should honour the **popularizers** of science. As science grows more specialized and its language more abstruse, the task of those who interpret its findings for the non-specialist becomes ever more demanding. By the same token, scientific popularization has an increasingly important function in helping people to understand the world in which they live and to participate in shaping it intelligently.

Ladies and Gentlemen,

This year's Kalinga Prize winner is notable for the wide range of scientific subjects he has interpreted to the general public and for the variety of media he has employed for that purpose, including television, film, books and the press. He is Mr **PIERO ANGELA**, a citizen of Italy.

After working with the Radiotelevisione Italiano (RAI) from 1952 to 1968 as a radio journalist and newscaster, Piero Angela turned his attention to science popularization - mainly but not exclusively through television. His output as TV journalist over some 25 years has been as impressive in its quality as in its quantity (he has produced over 50 one-hour documentaries).

The name of Piero Angela is associated above all in Italy with the weekly television science programme called "QUARK". Through this very popular programme and its various offshoots such as "Quark Speciali" and "Il Mondo di Quark", Piero Angela has covered a large spectrum of scientific and technological subjects, ranging from biology to physics and psychology to ethnology. His recent work includes 8 one-hour programmes exploring the "marvellous machinery" of the human body and two

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documentaries on wild life and the origins of humanity made with his son in Africa. He has also produced 200 "Quark Pills" - 30-second educational spots on scientific and other topics broadcast simultaneously on the three national TV channels.

The scope of his interests, his technical command of the medium and the exceptional ability to communicate scientific facts have made Piero Angela one of the outstanding TV science popularizers of our time.

Piero Angela has also contributed regular articles on science to the newspaper **La Repubblica** since 1980, written many books and articles on scientific topics and is much in demand as a speaker and debater. He has received numerous national awards for his contribution to science popularization, is currently the scientific director of the Fondazione San Paola di Torino for art, science and culture, and is a member of the Italian Commission for UNESCO.

Mr Piero Angela,

In recognition of your outstanding contribution to the public understanding of science, I am very pleased to present you with the cheque, diploma and medal that go to make up the 1993 International Kalinga Prize. Many congratulations!

< PAUSE for acceptance speech by Piero Angela >

Ladies and Gentlemen,

I now turn to the **UNESCO Science Prize** which is awarded every two years to an individual or group of persons for an outstanding contribution to the progress of a developing Member State or region through the application of science and technology.

Following the recommendation of the international jury composed of six eminent scientists, it has been decided to award the 1993 UNESCO Science Prize to **Dr Octavio Augusto Novaro Peñalosa** of Mexico.

Dr Octavio Novaro is a distinguished physicist who graduated and received his doctorate in physics from the National Autonomous University of Mexico (UNAM). His scientific work, which is unusually broad in scope, is characteristically situated at the interface of such interdisciplinary areas as theoretical catalysis, physical chemistry, biophysics and geophysics. By tackling problems seldom addressed by other scientists and through his use of rigorous theoretical calculation and sophisticated experimental techniques, he has opened up new research fields and helped to give a fresh dimension to scientific research in Mexico. It would take too long to list in detail all the achievements of Dr Novaro and his research group, and I shall limit myself to a few.

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One of his main interests has been in studying the phenomenon of catalysis. Using quantum mechanics, Dr Novaro has helped to analyse and explain this important and intriguing process. This, his work on photochemical reactions and other discoveries made by Dr Novaro and his group have great economic potential as regards the use of natural gas as a fuel or the storing of hydrogen in palladium hydrogen cells. The most recent work of Dr Novaro and his collaborators is related to a project for developing catalysts to render less harmful the exhaust fumes from car engines and other air pollutants. This has led to the creation of new ruthenium catalysts that show promise for the reduction of car-engine pollution.

Dr Novaro is a gifted educator as well as a brilliant scientist. He has trained and supervised a large number of scientists, at foreign universities as well as in Mexican institutions. He is the author (or co-author) of over 150 original research papers, many of which have become classics. The pioneering nature of his work has been recognized by a number of national awards and distinctions, and he is currently Director of the Physics Institute of UNAM, one of the most prestigious scientific research institutions in Latin America.

Dr Octavio Novaro,

In recognition of your outstanding contribution to scientific and technological development, I have much pleasure in awarding you the 1993 UNESCO Science Prize, together with the corresponding diploma, medal and cheque. Many congratulations!

< PAUSE for acceptance speech by Dr Octavio Novaro >

Ladies and Gentlemen,

The **Javed Husain Prize for Young Scientists** was established in 1984 on the basis of a generous grant by Professor Javed Husain of India. It is awarded biennially in recognition of outstanding pure and applied research by young scientists.

The distinguished recipient of the 1993 Javed Husain Prize for Young Scientists is **Dr Paul Derek Beer** of the United Kingdom, who was nominated for the award by the International Council of Scientific Unions (ICSU).

Dr Beer is a chemist who graduated and received his doctorate from King's College in the University of London. During his relatively short but brilliant career, Dr Beer has worked at one of the frontier areas of chemical research. His research concerns the synthesis, co-ordination chemistry and electro-chemical properties of ligand molecules. He is considered a world leader in demonstrating the principle of redox-active host-guest electrochemical recognition. He has contributed significantly to developing this field of research, to the design and synthesis

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of the molecules concerned and to the exploration of possible applications. The implications for environmental control and biological studies are potentially very important indeed.

The pioneering and important nature of Dr Beer's work has been recognized by his colleagues in the United Kingdom and abroad and is reflected in the numerous invitations he has received to address major scientific conferences. In 1987 he was awarded the prestigious Meldola Medal and Prize by the Royal Society of Chemistry. He has published a large number of papers in the major scientific journals, is a member of the Royal Society of Chemistry and is currently Fellow and Tutor in Inorganic Chemistry at Wadhan College, Oxford.

Dr Paul Beer,

I congratulate you most warmly on having been awarded the 1993 Javed Husain Prize for Young Scientists in recognition of your outstanding achievements in the field of co-ordination chemistry and electrochemistry, and I am happy to present you with the corresponding cheque, diploma and medal.

< PAUSE for acceptance speech by Dr Paul Beer >

Ladies and Gentlemen,

I now pass on to the **Carlos J. Finlay Prize**. Created by UNESCO in 1977 on the basis of a generous donation from the Government of Cuba, this international award commemorates the eminent Cuban microbiologist - Dr Carlos Juan Finlay. It is awarded every second year to a person or a group of persons in recognition of an outstanding contribution to the field of microbiology (including immunology, molecular biology and genetics) and its applications.

On the recommendation of the International Panel comprising four eminent scientists, it has been decided that the **Carlos J. Finlay Prize for 1993** should be awarded to a group of three scientists :

Professor J.M. Lynch (United Kingdom)
Professor J.M. Tiedje (United States of America) and
Professor J.A. van Veen (Netherlands).

They were nominated for the award by the International Society of Soil Science (ISSS), making this the first time that the laureates of the Carlos J. Finlay prize have been nominated by a non-governmental organization having consultative status with UNESCO.

All three professors of the triumvirate are internationally recognized scientists in the field of soil microbiology. **Prof. J.M. Lynch's** main contribution has involved the use of microorganisms to improve plant growth and soil

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structure, as well as the protection of plants against microbial diseases. **Prof. J.M. Tiedje** is a leading specialist in the deployment of micro-organisms for degrading pesticides and other chemicals which might damage the soil and the environment. **Prof. J.A. van Veen** is working on the effective and safe use of soil fertilizers and on nutrient cycling. The overlapping of their scientific interests has enabled the three prizewinners to co-operate to their mutual benefit. Each, with his team, has used molecular biological techniques (marker genes and DNA probes) to track organisms in the environment and deployed mathematical models to predict the general applicability of their observations. In this respect they are among the leaders in establishing the role of the microbiota in ecosystem dynamics and stability. They have prepared the ground for modifying the population balance of soil to the benefit of man.

All three have published their findings extensively and are actively involved in developing microbial ecology nationally and internationally. The International Society of Soil Science has recognized their achievements by naming them, on successive occasions, as keynote speakers at the World Congress of Soil Science.

In selecting this group as the recipient of the **1993 Carlos J. Finlay Prize**, the international jury is paying tribute to the laureates' outstanding contribution to the field of modern microbiology and its applications.

It gives me great pleasure to invite their representative, **Professor J.M. Lynch**, to receive on behalf of all of them the cheques, diplomas and medals that go with the Carlos J. Finlay Prize.

< PAUSE for acceptance speech by Dr Lynch >

Ladies and Gentlemen,

We come finally to the **Sultan Qaboos Prize for Environmental Preservation**. This Prize was awarded for the first time in 1991 and is made possible by a generous donation from His Majesty Sultan Qaboos of Oman.

This Prize is intended to honour outstanding contributions by individuals, groups of individuals, institutes or organisations to the study and conservation of natural resources and the environment, especially in relation to UNESCO's Man and the Biosphere Programme and the World Heritage Convention.

The Bureau of the Council of the Man and Biosphere Programme, which serves as jury for this prize, examined no less than 45 candidatures from all over the world before making its recommendation. I am very glad to announce that the winner of this Prize for 1993 is **Professor Jan Jenik of the Czech Republic**.

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Jan Jenik is a botanist who is currently Professor at the Institute of Botany at Charles University in Prague. His outstanding professional competence, dedication and personal integrity have earned him international renown and respect.

After studying botany and forestry in Prague, Jan Jenik was given special leave from 1964 to 1967 to lecture and undertake botanical research in Africa. His experience there stimulated his interest in tropical ecosystems, which he was subsequently able to communicate very successfully to his colleagues and students. In 1970 he had to leave Prague for political reasons and continued his work in the south of the country in the region of Trebon, where he began his long association with the Man and Biosphere programme. In 1976, the Trebon Biosphere Reserve was officially designated and heralded a new type of protected area characterised by its emphasis on human-made landscapes and the sustainable use of natural resources. Jan Jenik participated actively in MAB activities on wetland ecology, mountain systems, links between ecology and economics, and the development of the international biosphere reserve network. In 1990, following the political changes in the former Czechoslovakia, Jan Jenik was invited to return to the Charles University in Prague as head of the Department of Botany and became a Member of the Coordinating Council of the Academy of Sciences. His enthusiasm to share and communicate knowledge led him to expand his purely scientific work with a multitude of activities for popularising ecology and the conservation of nature, always paying special attention to the need to provide well-written material in local languages. In sum, the cause of ecology throughout the world, and not least through UNESCO's MAB programme, owes a great deal to Jan Jenik.

It is now my great pleasure to present to **Professor Jan Jenik** the cheque, certificate and medal that go with the **1993 Sultan Qaboos Prize for Environment and Preservation**.

< PAUSE for acceptance speech by Professor Jenik >

Your Excellencies,
Ladies and Gentlemen,

I would like, in conclusion, to express my deep gratitude to the benefactors who have enabled these prizes to be established, to pay a special tribute to the members of the international panels for their valuable work performed in close collaboration with the Secretariat and to reiterate my heartiest congratulations to the prize-winners.

I now declare this ceremony closed.