

Science Bulletin

National Science Council
Republic of China
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Lithuanian Minister of Education and Science Visits the R.O.C.

Minister Kornelijus Platelis of the Lithuanian Ministry of Education and Science visited Taiwan on February 8-13 at the invitation of the NSC. Accompanying Mr. Platelis on this trip were Vice Minister Rimantas Slizys and Deputy Director Stanislovas Zurauskas.

Mr. Platelis paid a visit to NSC Chairman Jenn-Tai Hwang on February 8, and the two agreed to increase cooperation. Mr. Platelis stated that the oriental studies center at Lithuania's Vilnius University is very interested in research exchanges with the R.O.C. in the fields of Chinese culture and humanities. In the future Lithuania will help the R.O.C. strengthen scientific and technological cooperation with the neighboring countries of Latvia and Estonia.

In order to create a framework for mutual cooperation and express their sincere interest in working together, two parties signed an agreement of scientific cooperation on February 12. The terms of the agreement state that: (1)

the two parties will actively encourage cooperation in various fields of study, including the humanities, the social sciences, natural science, and engineering; and (2) each country will nominate scientific personnel for visits to the other country, with first precedence to be given to personnel who have collaborative counterparts in the other country.

The NSC also arranged other activities for its guests from Lithuania, including visits to the Ministry of Education, Ministry of Foreign Affairs, Council for Cultural Affairs, and Government Information Office, as well as a tour of the National Palace Museum. It is certain that on this trip Minister Platelis received a deeply favorable impression from the R.O.C.'s science, technology, politics, culture, and society.



Here NSC Chairman Jenn-Tai Hwang signs an agreement of scientific cooperation with Minister Kornelijus Platelis of the Lithuanian Ministry of Education and Science.

The NSC Signs a Memorandum of Cooperation with Canada's SSHRC



On March 15 the NSC signed a memorandum of cooperation with Canada's Social Sciences and Humanities Research Council (SSHRC), and in the future both parties will promote research cooperation in major fields of the humanities and social sciences.

The SSHRC is Canada's national organization for the promotion of research on the humanities and social sciences, and provides support to research projects, chiefly those performed by researchers at Canada's universities. Projects

NSC Vice Chairman Jin-Hu Chang (right) and Director Dr. Marc Renand of Canada's SSHRC sign and exchange memoranda of cooperation.

are categorized as individual or integrated types, and approximately US\$62 million in support was given out in 1997.

As stated in the memorandum, the two parties have chosen social welfare policies and systems, medical systems, social integration, technology and society, East Asian studies, the legal and ethical implications of genetic technology, cognitive science, educational reform policies,

and the realization of sustainable development as the major focal areas of cooperation. This memorandum is another important breakthrough that comes in the wake of agreements between the NSC and Canada's National Research Council and Natural Science and Engineering Research Council. It will have the effect of including the humanities and social sciences within the scope of research cooperation between Canada and the R.O.C.

Winner of 1998 Nobel Prize for Medicine Visits the R.O.C.

The winner of the 1998 Nobel Prize for medicine—Dr. Ferid Murad—and his wife visited Taiwan at the invitation of the NSC on April 9-14 to give a series of lectures. This visit was very enlightening for domestic researchers in the fields of molecular biology, biochemistry, pharmacology, toxicology, and pharmaceutical development.

The research for which Dr. Murad received the Nobel prize concerned the mechanism by which nitric oxide and cyclic GMP transmit signals to the cells of the coronary blood vessels. Murad's pioneering discoveries in this area led to the solution of many riddles concerning molecular signals in the human body. Murad found that nitric oxide signals relax smooth muscle cells in the walls of blood vessels, which causes the vessels to dilate. Nitric oxide signals are therefore able to regulate blood flow and blood pressure. This same effect is also present in the male genitalia, and is the principle behind the recent development of the anti-impotence drug Viagra. In addition, Murad's work spurred the development of drugs to prevent shock and arterial hardening.

Dr. Murad is a fellow of America's National Academy of Sciences, and is currently the director of the University of Houston's joint medical department of biology, pharmacology, and physiology.

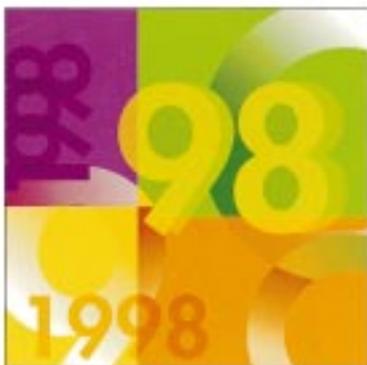


Dr. Ferid Murad

中華民國 科學技術統計要覽

Indicators of Science and Technology
Republic of China

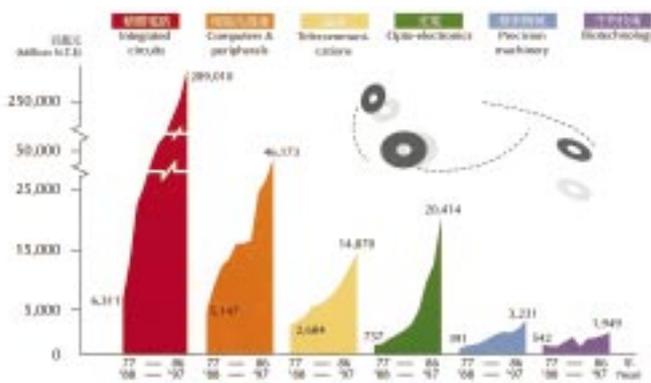
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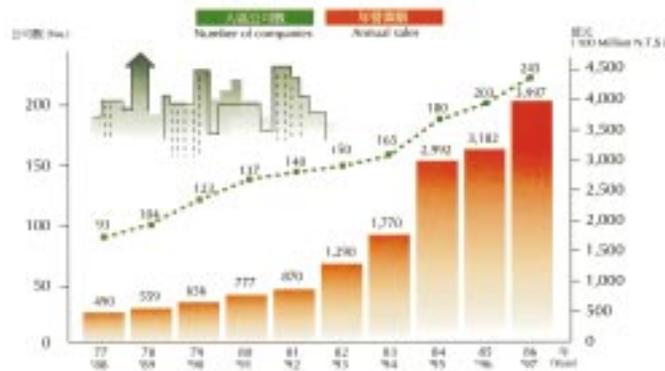
Publication of Indicators of Science and Technology

The 1998 edition of the *Indicators of Science and Technology*, R.O.C. has now been published, and its content includes the results of the "Nationwide Survey on Science and Technology Activities," scientific and technological



Cumulative Paid-in Capital by Industry Types

indicators, and an international comparison of R&D activities. This year's edition breaks new ground with a special chapter on the R.O.C.'s Hsinchu science-based industrial park; this chapter presents a summary of information concerning the size and R&D activities of high-tech industries located in the park. This edition also covers the chief economic indicators of the R.O.C. and major countries for reference. In addition, its appendices include definitions of statistical terms, chief domestic research institutions, principal government measures for encouraging private sector R&D, and an abstract of the R.O.C.'s *White Paper on Science and Technology*. The NSC hopes that this volume will prove widely useful.



Number of Park Companies and Combined Annual Sales

In conjunction with the statistical tables in the *Indicators of Science and Technology*, a separate volume of analytical charts has been published since 1995 as a means of adding a new dimension to scientific and technological statistics. The price of the volume containing statistical tables is NT\$450, and that of the analytical chart volume is NT\$550. Those who wish to obtain either volume may purchase them from the NSC Science and Technology Information Center (STIC; postal money transfer account no.01001541) or at the R.O.C. Administrative Agency Publication Display Center, which is located on the third floor of the Chungcheng Book Store at 20 Hengyang Rd., Taipei. To facilitate public queries, the NSC has already made the content of the *Indicators of Science and Technology* publicly available on the NSC website (<http://www.nsc.gov.tw>).

NSC Sponsors “Digital Museum Project”

The NSC is sponsoring a “digital museum” project as part of the “Greeting a New Millenium—A 21st Century Science Development Program with Concern for the Humanities as a Main Theme.” With this project the NSC hopes establish a model website featuring culture, art, science, and technology, and stimulate a trend towards placing content consisting knowledge and cultural materials on the Internet, so that it is accessible to all regardless of time, distance, culture, or physical ability. It is hoped that this content will enrich people’s lives, promote a global outlook, and allow everyone to enjoy the fulfillment of lifelong learning. The NSC also hopes that the promotion of a “digital collections” will encourage the development of domestic multimedia and a content industry. The “Digital Museum” project was inaugurated in July 1998, and it can be divided into the **topic system pioneer project** and **development environment/cooperation mechanism** project described below:



Tracing the Tamsui River to its Source.

A. Development Environment and Cooperation Mechanisms

A task force has already been established for this portion of the project, and a series of tasks have been carried out. The task force’s main jobs include: (1) establishing a development environment and development mechanisms; (2) implementing technical standards and guidelines for system development; (3) establishing guidelines for expressing and marking the content of computerized documents; (4) establishing common coordinates for time, space, and

characters in order to provide a comprehensive framework for information use, retrieval, browsing, transmission, and sharing; and (5) planning, implementing, and managing pioneer systems.

In addition, an “**extension education project**” will use workshops and extension classes to train a crop of skilled digital collection personnel. The results of the project will be disseminated throughout society by means of seminars and symposia.

At present the task force is actively promoting cooperative international projects. It is planned that international digital museum/digital library research projects will be conducted in conjunction with APEC or America’s NSF. International cooperation will allow the sharing of each nation’s cultural heritage and related information technology, and will improve and expand channels of cultural exchange between the R.O.C. and other nations. Moreover, the NSC will actively participate in relevant international organizations such as the Consortium for the Computer Interchange of Museum Information (CIMI) in order to obtain international systems development standards, guidelines, and other information.

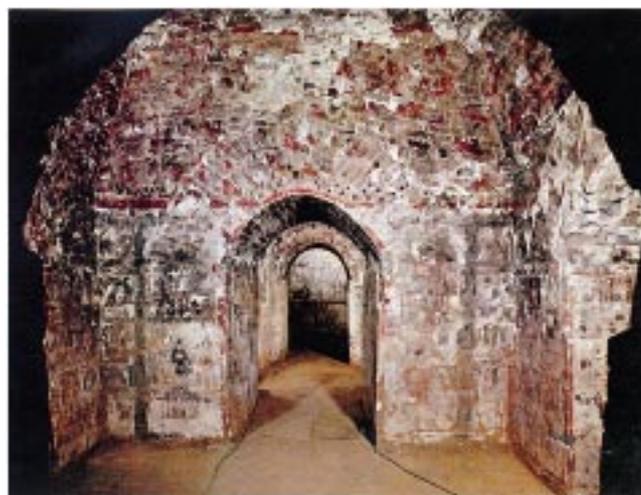
B. Implementation of Topic System Pioneer Projects

The topic systems projects consist of demonstration websites with content of an artistic/cultural or scientific/technological nature. Besides the features of the topic itself, whether or not there currently exists a foundation of digitized material is also taken into consideration when topics are selected. Based on the digital collections of the Academia Sinica, National Taiwan University, the National Museum of Natural Science, and other organizations, specialists have been invited to write scenarios and compose web pages with substance and popular appeal. The selected topic system pioneer project include: **Tracing the Tamsui River to Its Source, Taiwanese Aborigines—The Pingpu Group, Butterfly Ecology from Every Angle, Native Plants and Fishes of Taiwan, Understanding Ancient Texts—The Written Knowledge Network, An Immortal Palace—Han Dynasty Culture and Burials, Firearms and Ming-Qing Dynasty Warfare.** (<http://www.nsc.gov.tw/Y2K/dml/index.html>)

The content of the above topic systems can be roughly divided into **popular natural science** (such as the butterfly and native plant topics) and **history/culture**; the latter category can be further subdivided into **local color** and **traditional culture**. In addition, the “Digital Museum” project also includes the support projects “Maps of Culture and Natural Resources” and “Digital Library System Technology Development.”



Native Plants and Fishes of Taiwan.



An Immortal Palace — han Dynasty Culture and Burials

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