April 2000/Vol. 32, No. 4

Science Bulletin

National Science Council
Republic of China

Conference on "Women and Technology —Humanistic Concerns and Gender Issues in Science and Technology"

In honor of the Year 2000 Women's Day, the National Science Council (NSC), Executive Yuan, held the international conference "Women and Technology—Humanistic Concerns and Gender Issues in Science and Technology" at the Taipei International Convention Center on March 7th and 8th. Scholars and specialists from Taiwan, the United States, Canada, Finland, Japan, and the Philippines gave presentations at this conference, which also featured speeches by Liu Chao-shiuan, vice premier of the Executive Yuan, Dr. Cho-Yun Yen Koo, secretary general of National Women's League of ROC, and Ms Lin Cheng-chi, minister of the Council for Cultural Affairs.

The purpose of the conference was to address the gap between the two genders in the nation's sci-tech development, examine the social and institutional barriers and advantages they encounter, and exchange experience with United States, Canada, and Japan, etc., in order to understand how relevant policies are being devised and implemented in other countries. The approximately 200 participants included domestic scholars, experts, and the heads of government units, as well as such foreign guests as Professor Aili Nenola, the chair of Research Council for Culture and Society (Academy of Finland), Dr. Jennie S. Hwang, President of H-Technologies Group, Inc. USA, Dr. Amelia Anocq, professor of Uni-

Fig. 1 Executive Yuan vice premier Liu Chao-shiuan gave a speech at the conference's closing ceremony.

Fig. 2 NSC Chairman Jenn-tai Hwang gave a keynote speech at the conference.

Fig. 3 Many prominent scholars participated enthusiastically in the NSC's conference "Women and Technology—Humanistic Concerns and Gender Issues in Science and Technology."

versity of the Philippines and former undersecretary of the Philippines Department of Science and Technology, Dr. Meiko Oshima, president of Japanese Women Engineering Forum, and several prominent scholars from the US and Canada.

NSC Chairman Jenn-tai Hwang led off the two-day conference with a keynote speech. Huang pointed out that the arrival of a knowledge-based economy means that every country will need a highly-qualified, highly-creative citizenry to drive national progress by spreading innovation throughout every industry. In the face of this challenge, it will be vital to create an environment in which every citizen can fully realize their potential, regardless of their gender or ethnic group. Women must therefore awaken, men must show understanding, government policies must make allowances, and the social structure must change. Huang hoped that the conference would provide a forum for exchanging views, achieving a consensus, and making specific proposals that would provide women in Taiwan with more opportunities to participate in the knowledge economy and make an even greater contribution. Following the conclusion of the conference, the NSC will engage scholars to analyze and write up the results in the form of a recommendation report to be submitted to the Executive Yuan. Insofar as it is within its power, the NSC will strive to transform the recommendations into specific programs and implement them.

The conference's three main themes were "barriers to women's participation in sci-tech research and response measures," "gender issues in sci-tech and society," and "the role of government in women's participation in sci-tech development." The topics of some of the many papers issued on these themes included "every action by women in the world of science has its price," "gender-related policies and how to improve the working environment of female sci-tech professionals—the Japanese model," "how women can enter sci-tech and the job market," "policies for promoting women's involvement in science and technology—the Canadian model," and "women and sci-tech development."

Report on the "Dialog with Women Scientists" Seminar

With the aim of encouraging young people to study science, the NSC held the "Dialog with Women Scientists" seminar at 2:00 on the afternoon of March 4 in Room 201 of the Taipei International Convention Center. Hosted by Ms Yeh Shu-shan, the Chung Tien channel's lead news announcer, the seminar featured a number of outstanding local women working in the fields of science and technology. Dr. Chen Chin-lien, head of the Institute of Electronics and Computer Science at the National Taiwan University of Science and Technology, Dr. Liu Hsiao-ju, researcher at the Academia Sinica Institute of Zoology, Dr. Chung Pang-chu, researcher at the Academia Sinica Institute of Molecular Biology, and Dr. Su Tsung-tsan, deputy director of the Industrial Technology Research Institute's chemical engineering center, were among the distinguished figures invited to the seminar (Fig. 1). These women related how they got involved in scientific research, and the good and bad experiences they encountered along the way, to a group of young students, and made suggestions for young people who wish to pursue careers in science and technology.

The seminar proceeded in three stages. In the first stage the host asked a number of questions about the difficulties that the female scientists faced while at university, doing research, and in the work place, their responses to those difficulties, and

Fig. 1 A photograph of NSC Chairman Jenn-tai Hwang (third from right) with other notable participants at the NSC-sponsored "Dialog with Women Scientists" seminar. From left to right are: Dr. Su Tsung-tsan, deputy director of the Industrial Technology Research Institute's chemical engineering center, Dr. Chung Pang-chu, researcher at the Academia Sinica Institute of Molecular Biology, Ms Yeh Shu-shan, the Chung Tien channel's lead news announcer, Dr. Liu Hsiao-ju, researcher at the Academia Sinica Institute of Zoology, and Dr. Chen Chin-lien, head of the Institute of Electronics and Computer Science at the National Taiwan University of Science and Technology.

how the female scientists are preparing to meet the future challenges of sci-tech development. Each of the four distinguished participants was given a chance to answer these questions.

Ten members of the audience were then allowed to ask oral questions during the second stage, and could also specify which participant should answer. After written questions were collected from the audience during the third stage, the four participants gave live collective responses to each one. More than 400 persons attended the seminar, and many young students asked questions. Approximately 80 persons asked written and oral questions, and the mood was one of enthusiastic discussion (Fig. 2). We believe that this type of NSC-organized event can stimulate increased public concern for the issue of "women and science."

Fig. 2 The enthusiastic young students attending the seminar were eager to ask questions.

Use of Localized Water Recycling and Reuse Technology in Ultra-intensive Aquaculture

The goal of research and development is to apply technology in industry and thereby spread prosperity. The NSC-funded industry-academic co-op project "Use of Localized Water Recycling and Reuse Technology in Ultraintensive Aquaculture" seeks to create a technology- and capital-intensive aquaculture industry framework. The project's goal is to develop new aquaculture systems by bringing together systems engineering and aquacultural knowledge and technology, and incorporating environmental engineering and aquacultural machinery.

Taking into consideration Taiwan's geographical environment, any effort to upgrade the aquaculture industry must start with the large-scale reduction of demand for land and water resources. Business efficiency must be improved, industrialization promoted, and the productivity per unit area increased. Water recycling and reuse, plus the automation of operations, will reduce water treatment costs and labor needs, and the use of environmental control engineering will allow planned production and a better balance between supply and demand.

Although significant domestic research results have been accumulated in all of the relevant areas, most results were derived from narrowly-focused individual projects. In conjunction with localization efforts, the implementation of the current industry-academic co-op project will better integrate past research findings and pave the way for the full-scale upgrading of upstream and downstream industries. This will lead to the emergence of a technology- and capital-intensive industrial framework, which will possess the scale and organization necessary to

Fig. 1 Water treatment facilities for an super-intensive aquaculture system that boasts stable water quality and low water consumption.

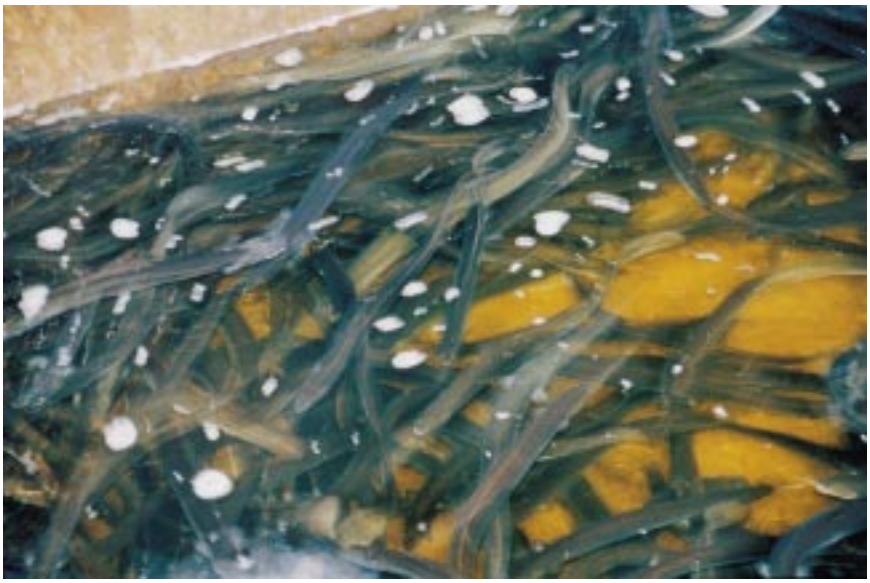

Fig. 2 The eels raised in this super-intensive aquaculture system grow fast and are of high quality.

expand local and overseas markets for relevant products.

The academic and industry organizations participating in this project include the Taiwan Fisheries Research Institute, which will contribute its fish-raising technology and its experience in the practical management of automated ultraintensive waterrecycling aquaculture systems; the Agricultural Machinery Graduate School of National Taiwan University, which will research and develop automation equipment and assist firms; and the King Car Biotechnology Co., Ltd. and the San Tsui Ent. Co., Ltd., which will contribute their expertise at systems and environmental engineering. Although the King Car Company actually specializes in the manufacture of foods and beverages, it is skilled at water treatment and food technology R&D and applications. For its part, the San Tsui Ent. Co. sells and installs automatic electrical apparatus and parts. San Tsui has plentiful experience in applications of industrial automation. This joint project is a milestone in applying technology to improving the livelihood of Taiwan's people.

The outdoor and indoor ultra-intensive aquaculture systems that have already been completed so far in this project are not inferior to existing systems in Taiwan or abroad. Since the new systems can greatly reduce investment cost (they may cut cost by one-third to one-half, depending on the number of systems), they are an ideal choice for future land aquaculture systems in Taiwan.

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國　外：Subscription price for each copy:US$1. Payment must be made in US dollars by a check payable to National Science Council.