



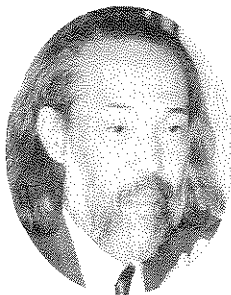
OCCASIONAL REPORT No. 25

THE TOYOTA FOUNDATION

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The Plan for a Museum of Natural History in Syria



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On August 28, 1993, a joint Japanese-Syrian excavation team discovered a fossilized Paleolithic human skeleton in the huge Dederiyeh Cave about 400

km north of the Syrian capital of Damascus.

The bones were those of a Neanderthal child who had lived in the Middle Paleolithic period (about 200,000 to 40,000 years ago). Many Neanderthal skeletons have been discovered already, but this was practically the first time that an almost complete child's skeleton was found in its original burial state. All the bones were so well-preserved that it was possible to accurately restore the entire skeleton to the state it had been in when the child was alive. The discovery has attracted the attention of researchers around the world.

When they were unearthed, the bones fell apart and were, moreover, very fragile. With the permission of the Syrian government, we borrowed the skeletal remains. Using organic solvents and other chemicals, anthropologists reconstructed the countless fragments, fitting them together like a jigsaw puzzle. They succeeded in restoring almost all the bones that had made up the child's body. A year later,

the reconstructed bones were carefully packed and returned to Syria. A year after that, I went to Syria to borrow the bones again for the next stage of research. When I opened the case, however, I was astounded to find that the bones were broken. I felt that the only solution was to create a natural history museum.

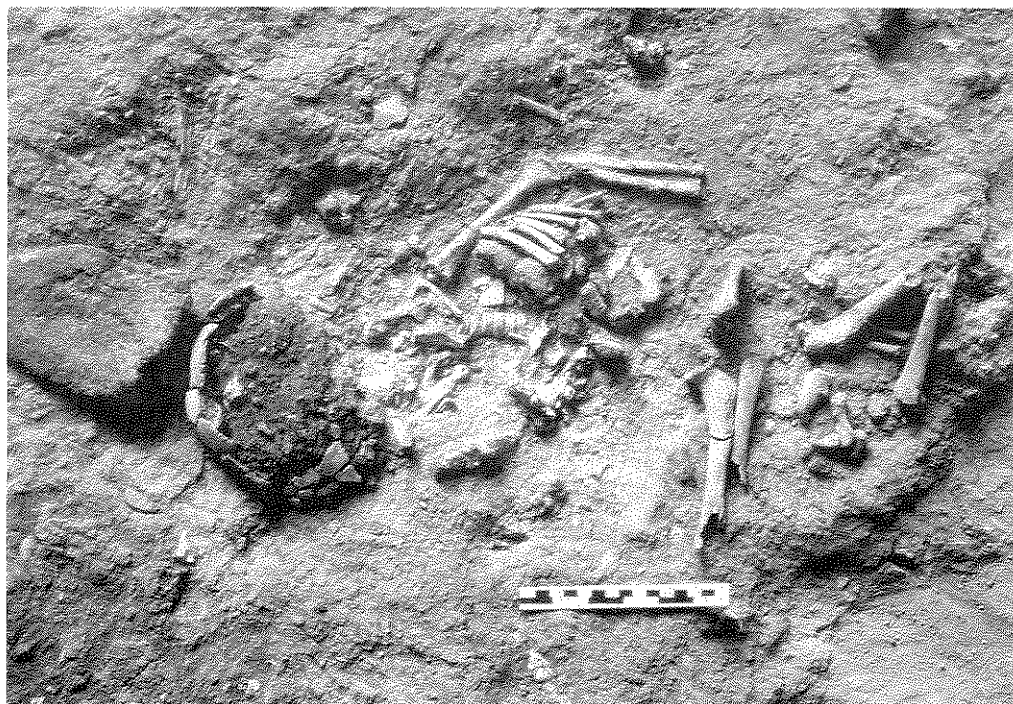
To permanently preserve this Paleolithic skeleton, which drew attention worldwide, and to utilize it for research and education in the future, a natural history museum or equivalent institution is indispensable. I immediately approached the Syrian government about establishing one. That was in the summer, just three years ago.

Why a Natural History Museum Now?

Recent anthropological and archaeological discoveries have made it clear that Syria has a long history and sophisticated ancient civilization. What is more, this area played an important role in the human expansion out of Africa into the Eurasian continent.

The land that is now Syria first appeared on the stage of human history over one million years ago.

Among the *Homo erectus* that appeared in Africa



Dederiyeh Neanderthal child in situ. (Joint Japan-Syria team, August 1993).

about 1.7 million years ago, there appeared a group that made the first "Out of Africa." This was the start of human history on a global scale. The first corridor along which they moved was the Dead Sea Rift, which runs from north to south along the western edge of West Asia. These immigrant groups settled in the bountiful natural environment of this "Garden of Eden," then moved on into Europe and Asia after working out strategies for the move and devising a wide variety of new technologies and equipment.

West Asia again came into the limelight some 100,000 years ago, when *Homo sapiens*, the ancestors of modern humans, who appeared in Africa about 200,000 years ago, made a second "Out of Africa." When they moved to the Eurasian continent, the first place they stopped was, like the earlier *Homo erectus*, the Dead Sea Rift. And they too experimented with various strategies and new technologies and equipment that would enable them to move into new lands and settle there permanently.

West Asia next drew attention about 10,000 years ago, again in the area centered on the same Dead Sea Rift. During the period of Natufian culture that appeared there, people worked out new survival strategies making broad use of a wide variety of plants and animals. Out of this grew planned activity for food production based on the cultivation of wheat

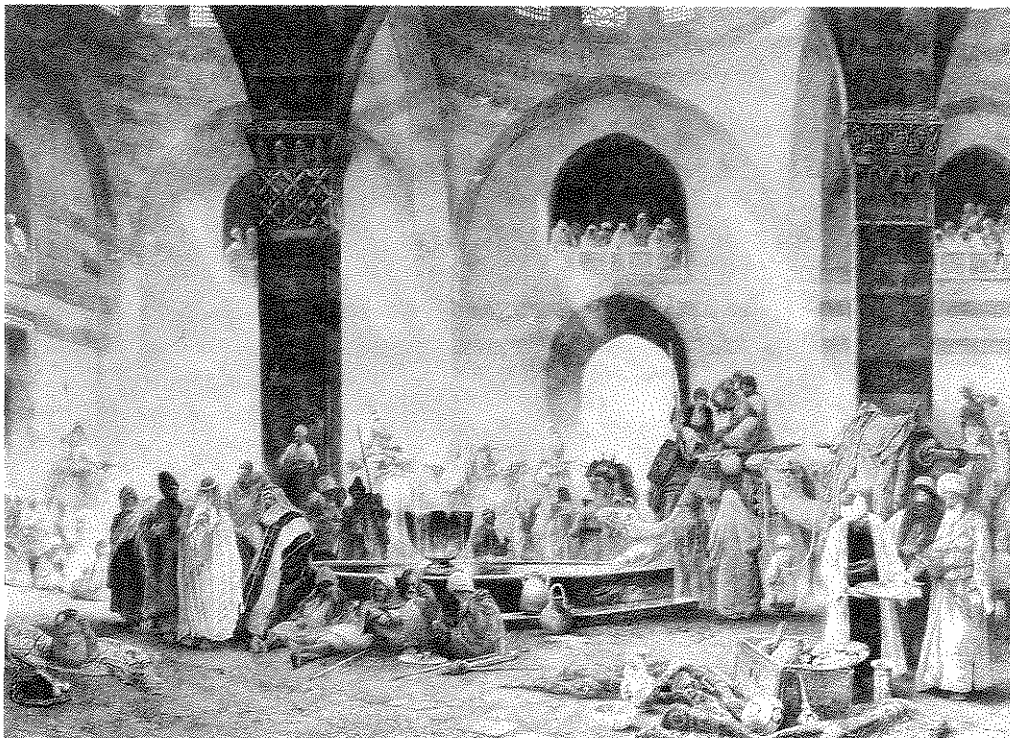
and other grains and of fruits like apples and grapes and on the domestication of sheep, goats, cattle, and other animals. West Asia was ahead of the rest of the world in making this agricultural revolution the basis for a stable way of life, population growth, and the birth of urban civilization.

Now I would like to look at the question of museums, the tools for learning about West Asia, the stage for epoch-making events that color human history, and about the drama that unfolded there. Throughout West Asia, there are many fine museums devoted to the history and culture of the countries in which they are located, including Syria. But the research activities and displays of museums that focus on social and cultural history deal exclusively with human behavior and activities. Almost no interest is shown in the natural history that provided the setting for the wonderful cultures and civilizations that grew out of the mutual interaction between humans and nature or in the history of that interaction. West Asia offers an unparalleled area for studying and considering, over a span of several hundred thousand or million years, urgent questions like how humans have interacted with the global environment up until now, how those interactions should be developed in the future, and what principles and methods should be employed in designing future relations between humans and the earth. Another,

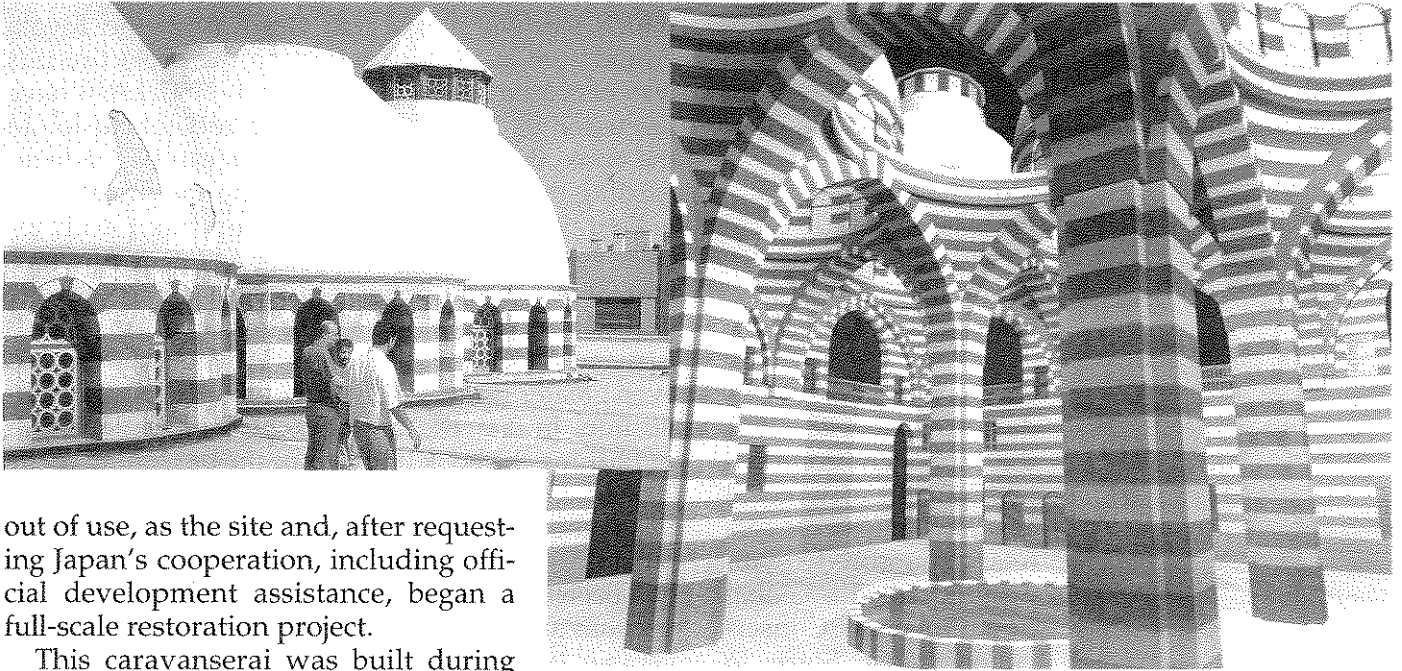
different, tool is needed to plan and carry out field studies and research relating to these questions, widely publicize and display the results, and, at the same time, create a new science of natural history. That tool is a natural history museum.

Caravanserai: Khan Asa'ad Bacha

The Syrian government responded promptly and appropriately. In the heart of the old city of Damascus, which has been designated a World Heritage city, stands West Asia's largest extant caravanserai, the Khan Asa'ad Bacha. The government designated this building, which had been



Caravanserai Khan Asa'ad Bacha (Charles Robertson, 1889)



out of use, as the site and, after requesting Japan's cooperation, including official development assistance, began a full-scale restoration project.

This caravanserai was built during the reign of the Ottoman governor of Damascus Asa'ad Bacha Al'Azem, who ruled between 1743 and 1757 A.D. (1156 and 1170 Hijri, or Moslem Era). He wanted it to be the greatest of all khans of that time, and it was just that. It was completed in 1753 A.D. (1167 Hijri), one year and two months after construction began. It is one of three large structures that still stand in the heart of the old quarter of Damascus, the others being the Kasr Al'Azem and the Ommayyad Mosque, located next to it on the north.

The Bacha is a nearly perfect square, measuring 50 meters on each side. It has a central courtyard surrounded by 40 rooms on the ground floor and 44 on the second floor. It was used as an inn by travelers on the Silk Road and pilgrims to Mecca. In particular, it became a base of operations for the merchant caravans that carried silk, spices, coffee, gems, and other goods for the bazaars in the region. The first floor was used as a warehouse and office and the second as lodgings. Outside the structure there were once stables for camels and horses. Stepping through the magnificently decorated entrance, one finds beyond the corridor a huge courtyard, in the center of which is a large pond, a regular polygon measuring 6.5 meters in diameter, with a fountain using water piped in from the Barada River, which waters the Damascus plain. Four square pillars tower around the pond, much the way date palms rise in an oasis.

The roof also presents an overwhelming sight, with eight enormous canopied domes, measuring 8 meters across and 16 meters high, in a symmetrical

Khan Asa'ad Bacha after restoration (Asia Air Survey computer graphics, 1997)

arrangement. In the center, directly above the pond, is a large hole that allows a view of the starry sky.

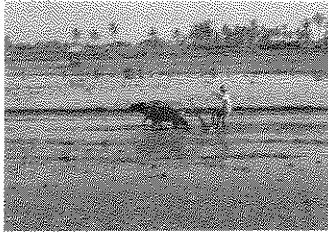
The Syrian government has come up with an attractive plan that, by using the Bacha as a natural history museum, allows this historical structure to be refurbished and preserved permanently. The repair work has been completed and the Khan Asa'ad Bacha of former times has again come to life in the heart of Damascus, the world's oldest city.

International Cooperation

To launch the first real natural history museum in West Asia, we have been conducting field studies since last year under a Foundation Initiative Grant Program from the Toyota Foundation. On the basis of these studies, in November 1997, we held a public symposium titled "A New Museum for the Oldest City in the World, Damascus" as part of the project to commemorate the 120th anniversary of the founding of the University of Tokyo. In addition to presenting the plan for the Damascus Museum of Natural History, there was also discussion of a new image for museums in the twenty-first century, in which the Syrian Minister of Culture and the General Director of the Ministry's Department of Antiquities and Museums, who were visiting Japan at the time, participated.

It is my earnest hope that the establishment of the Damascus Museum of Natural History will blossom as a new form of international cooperation.

The Environment in Asia: Publication and Future Goals



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On the afternoon of Friday, November 28, 1997, the Japan Environmental Council, of which I am deputy general secretary, sponsored a symposium titled "Global Environmental Conservation Must Start in

Asia!" Held at the Kobe International Exhibition Hall, the symposium commemorated the publication of *The Environment in Asia*.*

Frankly, I was somewhat worried about what kind of turnout we would get, because the symposium was scheduled for a weekday afternoon at a time when many related events were also taking place in preparation for the Third Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change that was to begin in Kyoto on December 1. We were fortunate to have over 130 participants (over 360 including those who attended the following day's symposium), more than I had expected, which, together with the content of the discussions, made the meeting quite successful. A total of six foreign researchers and nongovernmental organization representatives were invited from Korea, Singapore, Thailand, and the United Kingdom. The symposium was reported in the *Asahi Shimbun*, *Chunichi Shimbun*, *Kobe Shimbun*, and other papers, and drew a certain amount of attention.

The Significance of Publishing *The Environment in Asia*

The Environment in Asia, 1997-98 (Toyo Keizai Inc.), which we managed to get published just in time for the symposium, was prepared on the basis of the "International Joint Study of Environmental Issues towards the Preparation of *The Environment in Asia*,"

* Japan Environmental Council ed. Tokyo: Toyo Keizai Inc., 1997. 384 pp. ISBN 4-492-44215-4. In Japanese.

which received a Research Grant from the Toyota Foundation in 1994. (A report on the project results was prepared separately in March 1997.) As I have discussed in detail in the preface and conclusion to the book, the following two points can be made regarding the results achieved during the project.

First, we were able to obtain important leads for creating a new network relating to future environmental issues and policies in the Asian region, one that will include independent researchers, specialists, and NGO representatives. We feel that this has even greater significance than issuing a specific publication. In fact, those of us who were involved in publishing the book have, since the beginning of the 1990s, been making steady efforts to build a network that could lead to the formation of an Asian Environmental Council. Preparations for a fourth meeting had been interrupted temporarily, but now the prospect has arisen of holding it in Singapore in late November 1998.

Second, with the publication of this volume, definite prospects have also arisen for establishing a permanent organization of core members who will continue working toward publication of future volumes in the series. We plan to launch the editorial board for the 1999/2000 edition no later than January 1998.

Future Goals

Nonetheless, there are still many problems that must be addressed. The first is how to achieve widespread distribution and utilization of this publication. Particularly important in this regard is how to create an English edition, which has been a goal from the start, or editions in order Asian language. We have already learned that a cooperating member in Korea would like to publish a Korean edition, but we are faced with the vexing question of how to finance the translation and publication. The second problem is how to cover the costs of the joint studies and editing for the next edition. And a third major problem is how to establish a full-scale setup and to provide the financial foundations for creating the Integrated Environmental Database in Asia that we plan to make the basis for Part III (data and comments) of the series.

We would like to express our sincere, heartfelt appreciation to the Toyota Foundation for the invaluable support it has provided us, both the Research Grant for the joint study that provided the foundations for this volume and the Publication Grant for its compilation and publication. I can only hope that,

if there is an opportunity, the Foundation will give us further support and encouragement in realizing our future goals.

Content of *The Environment in Asia*

The book is organized in three parts. Part I addresses four specific topics: compressed industrialization and explosive urbanization; accelerating motorization; spreading environmental pollution and damage to health; and the loss and preservation of biodiversity. Part II discusses the situation in specific countries: Japan, Korea, Thailand, Malaysia, Indonesia, China, and Taiwan. Part III provides data and comments in the following areas: (1) Economic Indicators: External Debt and International Trade; (2) Economic Indicators: Official Development Assistance; (3) Occupational Injuries and Diseases; (4) Health and Human Settlement; (5) Situation of Agriculture and Food Production; (6) Pesticide and Fertilizer Use and Sustainable Ecological Agriculture; (7) Deforestation and Forest Conservation; (8) Regional Imbalance between Timber Production and Consumption; (9) Rapidly Rising Fish Catch; (10) Trends in Consumption and Trade of Fishery Commodities; (11) Wildlife Trade in Asia; (12) Biodiversity in Asia; (13) Urbanization in Asia; (14) Increasing Energy Use in Asia; (15) Air Quality in Major Asian Cities; (16) Imbalance in Water Resources Demand and Supply; (17) Crisis in the Aquatic Environment; (18) Wastes and Waste Treatment; (19) Transborder Movements of Hazardous Waste; (20) Greenhouse Gas Emissions; (21) Impact of and International Measures against Global Warming; (22) Environmental Law in Asian Countries; (23) Ratification of Environmental Conventions.

Report on the Project on Environmental Conservation of Lake Xi in China

by Masaaki Kusumi, Program Officer

A research gathering was held on April 2 and 3 at the Lake Biwa Museum in Shiga Prefecture to discuss the results of the project, "Joint Sino-Japanese Research on Environmental Conservation of Lake Xi, Near Hangzhou," and a "vision" for future activities. The two days were filled with earnest discussion by the participants, who included not only the Japanese

and Chinese researchers involved in the project but also representatives of the Japanese and Chinese foundations that have supported it, as well as people from Japanese nongovernmental organizations concerned with environmental issues and scholars from related fields.

The background of the project

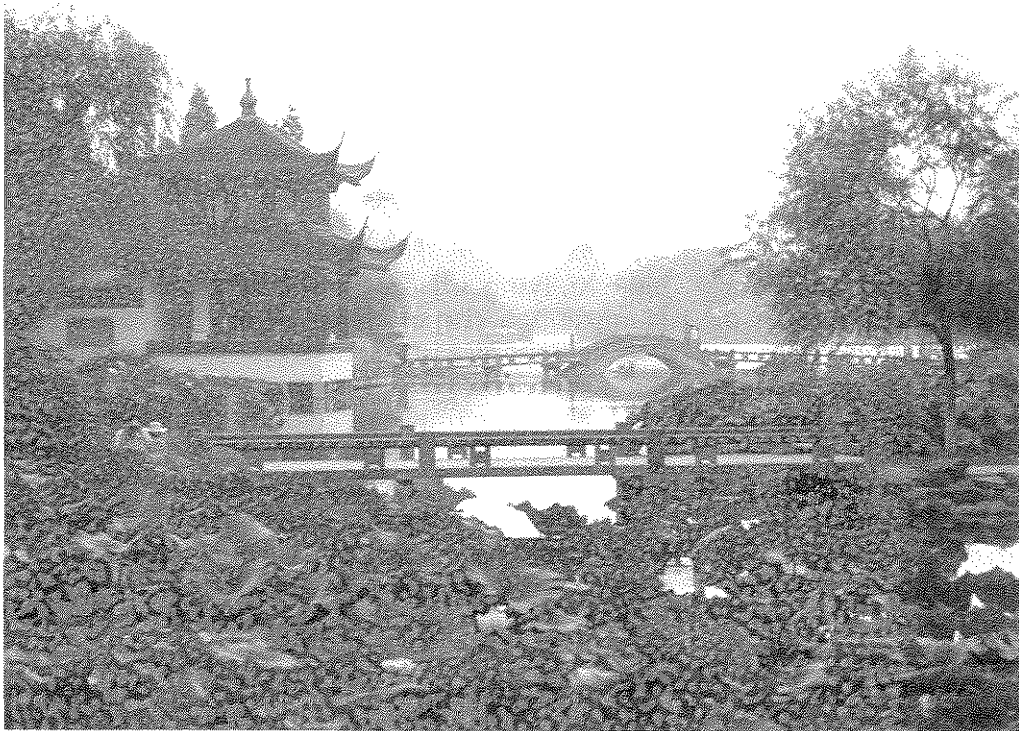
Lake Xi, lying adjacent to the urbanized section of Hangzhou, a city of about 1.2 million people, has been famous as a historical scenic spot since ancient times. In recent years, however, eutrophication has led to the appearance of colonies of microcystis algae, significantly deteriorating the water quality. In the past, the Lake Xi Administrative Office in Hangzhou and Hangzhou University have taken the lead in working out measures to purify the water, but their efforts have not met with adequate success.

Since 1986, when the National Natural Science Foundation of China came into being, however, exchange with Japanese foundations has been in progress. Within the context of this exchange, the Chinese requested that water purification at Lake Xi be made the subject of a joint Sino-Japanese research project. Japan's foremost authority on lakes and marshes, Yatsuka Saijo, professor emeritus of Nagoya University, visited as an advisor to a foundation mission to China, which led to the launching of a joint project that brought together leading Japanese researchers of lakes and marshes and Chinese researchers, who had accrued a wealth of experience locally.

In 1994 an agreement on joint research was concluded, and the study was carried out from 1995 through 1996. Research funds were provided by the National Natural Science Foundation of China, the Zhejiang Provincial Natural Science Foundation, and by Japanese foundations, including the Iwatani Naoji Foundation, the Kajima Foundation, the Sumitomo Foundation, the Toyota Foundation, and the Japan Fund for Global Environment of Japan Environmental Corporation.

Overview of the meeting

The first day's topic was "Report on Research Results and Case Studies in Japan." Opening remarks were made by Professor Tokio Okino of Shinshu University, leader of the Sino-Japanese Council for Environmental Research on Lakes; Yatsuka Saijo, who serves as advisor to the group; Professor Chang Qing, deputy director of the Bureau of International Cooperation of the National Natural Science Foundation



Lake Xi: a focus of environmental concerns in China.

of China; and Chen Youngguang, deputy director of the Zhejiang Provincial Natural Science Foundation. From their respective standpoints, the speakers confirmed the significance of this joint research.

Pei Hongping, associate professor at Hanzhou University, and Professor Okino reported on the results of the research. As one measure for dealing with eutrophication, they proposed creating a sediment basin at the end of the channel used to divert water from the nearby Qian Tang River.

Following the break, Sumiko Hasuo reported on the results achieved by the Gyotoku Bird-Watching Station Friendship Society in Chiba Prefecture as a case study of experimental ecology conducted by local residents. In 1988 this team received the Most Outstanding Research Award in the Toyota Foundation's Fourth Research Contest on "Observing the Community Environment." The group installed waterwheels of the kind used at eel farms in a severely polluted river in front of the bird-watching station. The aerated water was then diverted into an artificial pond, where it revitalized the food chain, involving everything from bottom life to birds; purified the water; and brought back birdlife.

This was followed by a report on the activities of an NGO called Amenity Meeting Room delivered by its leader, Ken'ichi Sakai, and general secretary Katsuhiko Takahashi. In 1996 and 1997, with

grants from the Japan Fund for Global Environment of Japan Environmental Corporation, this group held successful round-the-clock events in which local junior high school students participated in monitoring the water quality of Lake Xi.

The second day was devoted to the topic "Future Prospects." First, Professor Norio Ogura of Tokyo University of Agriculture and Technology and Associate Professor Pei Hongping of Hangzhou University each presented a proposal for a field museum at Lake Xi. Although they differed as to where the museum should be located, their

proposals shared the concepts of using the ecosystem to purify the water and of linking this with educating local citizens. The activities of the two Japanese groups that had made presentations on the previous day offered clues to considering the possibilities for realizing one of these proposals.

In response to these proposals, Hiroya Kawanabe, director general of the Lake Biwa Museum, raised some issues based on the experiences of his museum, which has aimed to become a participation-type outdoor museum. Stressing that the Lake Biwa Museum is truly supported by people, he related how professional curators had been involved from the conceptual stage and taken ten years to refine the plan, and how even now that the museum has gotten started, the plan is constantly being reworked with a view to the next stage.

This presentation was followed by a lively discussion among all participants that produced a succession of constructive proposals, including practical problems and ideas for overcoming them, as well as dreams for the possibilities of a field museum.

Prior to this meeting, the Chinese participants, AMR representatives, and Japanese researchers joined in a field trip to Gyotoku, which seems to have helped put both sides on the same footing for the discussions. Viewed objectively, creation of the field museum is probably a decade in the future, but that

both the Japanese and Chinese participants could talk about the same dream was a major step forward.

Plans for 1998

by Chimaki Kurokawa, Managing Director

As its eighty-third meeting, held on March 19, the Board of Directors approved grants for citizen activities in fiscal 1997 and program plans for fiscal 1998.

Outline of Fiscal 1998 programs

Although the total value of grants awarded in fiscal 1998 will be exactly the same as last year, ¥459 million, adjustments have been made in the amounts allotted to individual programs. The Research Grant Program remains unchanged at ¥200 million. The Grants for Citizen Activities have been increased by ¥5 million to ¥35 million. The amount for programs related to Southeast Asia has been cut back by ¥10 million to ¥154 million. Foundation Initiative Grants have been kept the same, ¥50 million. And Communications-Supplement Grants have been upped by ¥5 million to ¥20 million.

With regard to programs related to Southeast Asia, in particular, in view of the confusion in the financial markets and economic situations of countries in the region, we will try to respond flexibly, taking into account the local economic situation at the time budgets go into effect.

On the whole, the details of each program are pretty much the same as last year, but this year Incentive Grants for Young Indonesian Researchers will be limited to grants for those doing research toward masters or doctoral degrees; awards will not be made for key themes. This decision has been made in conjunction with an overall review of the program. All program committees have seen a change of personnel as terms of office have expired, and the Research Grant Program, in particular, has new heads for all committees.

Priority Activities of the Secretariat

A main pillar of our activities this year will be an exhibition titled "A Mysterious World of Ancient Designs: Lacquerware from the Tombs of Hubei, China," to be held from July through October in Tokyo and Nagoya. The exhibit, to focus on a lacquered wooden coffin excavated from the tomb of Zeng Hou Yi in Hubei Province, China, will include over 100

lacquered items from the Warring States, Ch'in, and Han periods. It will be sponsored jointly by Hubei Provincial Museum and the Tokyo National Museum.

For many years after its exhumation, the casket was preserved by keeping it wet. Under a Foundation Initiative Grant from the Toyota Foundation, Hubei Provincial Museum removed the water and treated the casket with plastic resin, successfully preserving it permanently. The museum's desire that the results be seen in Japan prior to going on display in China led to this exhibit. It is scheduled to be held from July 21 to August 30 at the Tokyo National Museum in Ueno and from September 23 to October 25 at International Design Center Nagoya, Ltd.

Another pillar of our activities for the fiscal year will be setting up a home page. Focusing on the information pertaining to more than 4,000 grant-receiving projects that has accumulated in our administrative database, we are currently working to create a system that will make it possible to search and read in Japanese and English the catalogue of results achieved by well over 1,000 projects that have funded by the Toyota Foundation. The Foundation is preparing most of the contents, while management of the Web server will be commissioned outside. We expect to open our home page in mid-October.

Among other things, the secretariat also wants to give priority this year to organizing and cataloguing the results achieved in various languages under the International Grant Program and to hold a liaison meeting of foundations in Asian countries.

Also, in April this year we hired four new staff members. Because of the Foundation's budgetary limitations, secretariat personnel mobility tends to be low, but recruiting young people is indispensable to maintaining the Foundation's vitality over the long term. We are very happy to be able to welcome new, youthful vigor to our staff despite the continuing stringency of our fiscal situation.

Recent Publication

Based on Foundation-Supported Research

Daijiko no Yocho o Saguru—Jiko ni Itaru Michisuji o Tatsu Tame ni (Tracing the Precursors of Major Accidents: Stopping Accidents in Their Tracks). Masako Miyagi. Tokyo: Kodansha Ltd. Blue Backs, 1998. 304 pp. ISBN 4-06-257209-5. In Japanese.

H.W. Heinrich's 300-29-1 Ratio Opportunity Law is a law of probability relating to safety. In short, it says that on average, for every major accident, there are 29 minor accidents and 300 incidents that do not on their own lead to major accidents. On the whole, a single major accident occurs through an unbelievable chain of events, and it is very difficult to clarify just what happened through ex post facto investigations of the accident. The author proposes an incident reports analyzing system (IRAS) to get a grasp of the 300 incidents that occur for every major accident and work out measures for preventing an accident before it happens.

Underlying this work is a voluminous study based on well over a thousand incident reports from airplane pilots, control tower personnel, and ground crews. From these reports she extracted causes in over 100 categories and, employing the type III quantification method, analyzed the interrelation-

ships among the causative factors. These results came out in a three-part work on the airline business that was published by Yuhikaku Publishing between 1986 and 1995. The Foundation has continued to support this project from the basic research through publication.

Daijiko no Yocho o Saguru is a completely new work based on the author's earlier research. In it, she cites not only airline accidents but also accidents at atomic power stations and chemical plants, presenting a detailed picture of the human error aspect that is the greatest weakness of high-tech systems.

The author stresses the need to establish a neutral organization to handle IRAS. Truthful reporting of incidents can hardly be expected from the national government or corporation directly involved. IRAS, which is based on the premise that to err is human, seems to be the best way to free humans from the grip of Heinrich's law.

About the Foundation

The Toyota Foundation, a private nonprofit, grant-making organization dedicated to the goals of realizing greater human fulfillment and contributing to the development of a human-oriented society, was endowed in October 1974 by the Toyota Motor Corporation.

The Foundation's total endowment is approximately ¥21.4 billion (roughly \$165 million). Chartered by the Prime Minister's Office, the Foundation relies on its endowment income. The decision making of the Foundation, governed by its Board of Directors, is independent of the corporate policies of the subscribing corporation or of any other institution.

Through various programs the Foundation provides grants for research and projects related to the human and natural environments, social welfare, education and culture, and other fields. Among these programs is the Research Grant Program, which supports projects that try to identify and solve problems faced by contemporary society and that focus on the following four priority areas: mutual understanding and coexistence of diverse cultures, proposals for a new social system—building a civil society, the global environment and the potential for human

survival, and science and technology in the age of civil society.

The International Grant Program awards grants for projects that address various cultural issues in contemporary Southeast Asian society and are conducted by indigenous researchers. The Southeast Asian Studies Regional Exchange Program provides grants to Southeast Asian researchers in order to cultivate Southeast Asian studies by Southeast Asian researchers. The "Know Our Neighbors" Programs support the translation and publication of Southeast and South Asian works in Japanese and vice versa, and of Southeast and South Asian works in other Southeast and South Asian languages.

The Toyota Foundation welcomes response from readers of the *Occasional Report*. Comments and questions should be addressed to the International Division, The Toyota Foundation, Shinjuku Mitsui Building 37F, 2-1-1 Nishi-Shinjuku, Shinjuku-ku, Tokyo 163-0437, Japan. The articles in the *Occasional Report* reflect the authors' opinions and do not necessarily represent the opinions of the Foundation.

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