

The Toyota Foundation
Report for Fiscal 1978

The Toyota Foundation is a private, nonprofit, grant-making organization established in 1974 by the Toyota Motor Company and the Toyota Motor Sales Company.

This annual report was compiled on the basis of the "Report of Activities for Fiscal 1978," which was approved at the seventeenth meeting of the Board of Directors, held June 20, 1979.

The information on the grants is current as of the date they were approved. Subsequent adjustments are not reflected; however, changes made in grant budgets are included separately in this report.

The descriptions of the grant projects are not reports of the project results but summaries of the project proposals submitted to the Foundation by the grantees, as edited by the Foundation staff for inclusion here. The Foundation is responsible for the content of the summaries.

The Japanese-language edition of the *Report for Fiscal 1978* is also available on request.

Report for Fiscal 1978

April 1, 1978 to March 31, 1979

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Tokyo, Japan

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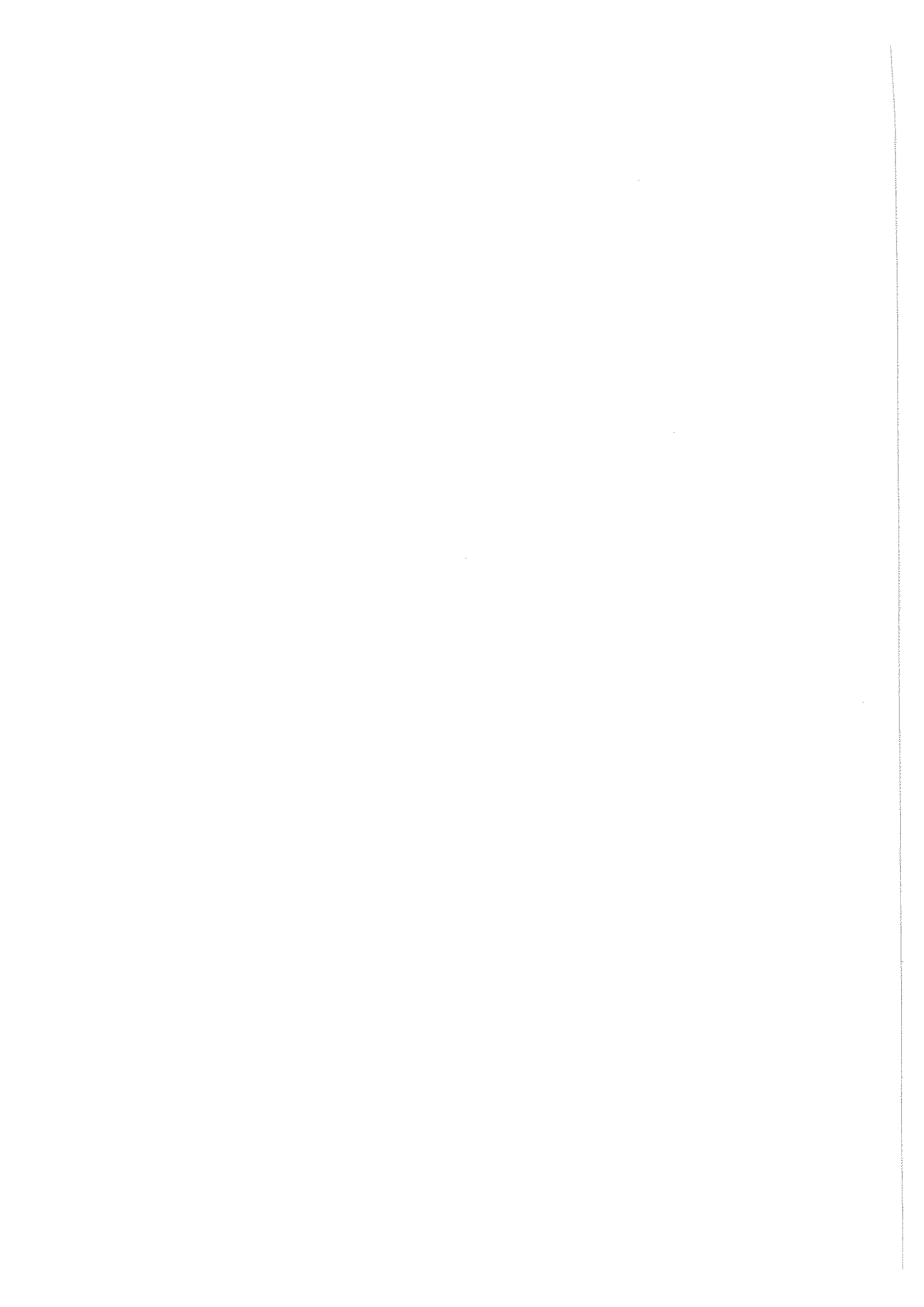
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Contents

The Executive Director's Report	5
Grant Program: National Division Grants	12
Human and Natural Environments	13
Social Welfare	19
Education and Culture	25
National Division Communications Supplements	31
International Grant Program	32
Communications Grant Program	37
Grants for International Conferences Convened in Japan	38
"Know Our Neighbors" Translation-Publication Program	39
Fellowship Program	40
Adjustments to Grant Budgets	41
Financial Report for Fiscal Year 1978	42
Chronological Data	44



The Executive Director's Report

Philanthropy as a Cultural Activity

I

The civilization of Japan today, the result of a determined effort initiated in the second half of the nineteenth century, has been built on industry and can therefore be called an industrial civilization. The parent of industrial civilization is modern science, which originated in Europe. Modern science—both natural and social—is characterized by searches for universals and objective common laws and efforts to verify these laws. Isaac Newton discovered the universally applicable law of gravity, and Adam Smith evolved generally applicable economic principles. The search for common laws and principles and the efforts to verify them that are the basis of European science are rooted in traditions that date back to the time of Aristotle and Plato. An unchanging characteristic feature of European science is objectification of the subject.

Technology, which evolved from practical application of the cause-and-effect relations existing among general principles, gave rise to industry; and from industry was formed a new civilization. Objectification of the subject is a basic characteristic of both this new, industrial civilization and of European culture, which fostered it.¹ European civilization

1. In anthropology, culture is defined as all the ways in which individuals relate with one another within the human group. Language, one of these ways, provides a good basis for cultural comparisons on a very broad level. Since language is the most widely used, most common, and most effective means of communication among individuals within a group, it is the most suitable possible symbol of the cultures of all peoples and societies. Of the many differences between European languages—for instance, English, French, or German—and Japanese the most salient is the frequent failure of Japanese to make clear distinctions by employing personal pronouns. (For example, it is commonly pointed out that many Japanese sentences lack grammatical subjects.) In reading their language, the Japanese people are able to infer from the context what in other languages is expressed by pronouns. Indeed, they tend to regard as dry and flat European languages in which these elements are always explicitly stated. Though Japanese is often vague, it has an extremely rich vocabulary for expressing courtesy and respect; for example, depending on the time and place and the person speaking, there are various ways of saying I and you in Japanese. Judging the appropriate usage for the time and place is of the greatest social importance. But vagueness in distinctions between subject and object is one of the most noticeable characteristics of Japanese. Though the Japanese usually know what they are talking or

and culture have a common foundation. Or perhaps it would be better to say that industrial civilization is the offspring of European culture.

But the worldwide diffusion of this industrial civilization sets it off sharply from all of its predecessors. The Egyptian and Mesopotamian civilizations and all others that have flourished in human history were local in nature. Modern industrial civilization, as the first ever to become global, has been the cause of discord between culture and civilization. There should be no strife of this kind among the Europeans, whose culture is the author of the industrial civilization. But things do not always go smoothly in other regions into which this civilization is imported, for example, in Japan.

Japanese culture is fundamentally different from European culture. Unlike the Europeans, the Japanese have always preferred to subjectify the object rather than to objectify the subject.² Nonetheless, even with thousands of years of culture transmitted on the basis of this attitude, they have adopted and generally developed industrial civilization.

II

After more than a century of extraordinary growth—since the late nineteenth century and the subsequent introduction of Western culture—Japan at last is moving in the direction of a period of maturity, characterized by cultural creativity.³ Transitions of this kind have taken place before in Japanese history.

writing about, foreigners frequently find this vagueness confusing; thus it is often said that Japanese is very difficult to master.

Music provides another instance of the difference in prevailing attitudes between the Japanese and Europeans. Whereas European music is preserved and handed down to posterity in the purely objective form of notation, until very recently Japanese music had no true notation system and was handed directly on from teacher to pupil. (Though musical notation as it is known today is not truly ancient in the West either, it is much older there than it is in Japan, where its use is a very recent development.)

Traditional Japanese education before the introduction of Western culture in the second half of the nineteenth century entailed schools that were very different from schools today and that, in place of modern textbooks, used such classic works as the Analects of Confucius, which students read through repeatedly without specific elucidation. Ordinarily teachers did not lecture. As an old saying has it, "If a book is read enough times, understanding will come of itself." And this was the principle whereby students in the past read books and, gradually, came to understanding on their own. In the case of the crafts, objective textbooks and teaching systems are also developments of the late nineteenth century, following the introduction of Western culture. The only traditional Japanese system was one in which pupils learned through experience and directly from teachers.

In light of such phenomena it is possible to say that Japanese culture is one of subjectification of the object whereas European culture is one of objectification of the subject.

2. At present, many different kinds of friction have arisen between industrial civilization and culture, even in Europe and in America—an extension of European civilization and culture—since, during the process of worldwide dissemination, industrial civilization has changed greatly from what it was at its inception. Still, in the lands of its origin, friction between the two, although growing more serious, is as of yet less grave than elsewhere.

Because of the diversity of its culture, it may be less than accurate to speak of Europe as if it were a homogenous entity. But, in the broadest sense and in comparison with the culture of Japan, the terms European civilization and European culture can be permitted.

3. I should like to explain the senses in which I am using the words growth and maturity. Whereas during a period of growth, entropy decreases and energy increases, in a period of ma-

From what is called the Age of the Warring Provinces (beginning in about the twelfth or thirteenth century) and into the early part of the Tokugawa period (1603–1868), until the 1630s, when the Tokugawa shogunate declared a policy of almost total seclusion from the rest of the world, Japan experienced a phase of rapid growth. After the institution of the seclusion policy and up to the end of the Tokugawa period, the nation underwent over two centuries of maturation and maturity. The beginning of the Meiji era (in the late nineteenth century) and of Westernization initiated a phase of growth that is now in transition. Until the beginning of the twenty-first century, the nation will probably go through another phase of maturity. Before the Meiji era, Japan was a pre-industrial society; after it, an industrial one. In the twenty-first century, the nation will probably enter a post-industrial phase. In the pre-industrial society, the cycle from growth to maturity was observed; and in the post-industrial phase, too, Japan will probably once again enter a phase of growth.

III

As examples of the way in which a phase of maturity becomes a period of cultural creativity, I should like to mention a few points about the Tokugawa period. It is true that many elements of traditional Japanese culture predate this age; however, many were developed during that time; and between the late eighteenth and the mid-nineteenth century many that are older in origin received the form in which they are known today. The culture formed then—which is called the Edo culture

turity, this relation reverses: entropy increases and energy decreases. Entropy here means disorder. When entropy decreases, disorder wanes and order is gradually established; likewise, as entropy increases, disorder increases. Energy means the vitality of a society or people. Therefore, when energy is increasing society tends to become expansive. When it decreases, however, society tends toward social isolation.

From the macroscopic viewpoint, Japan from the Age of the Warring Provinces (beginning in about the twelfth or thirteenth century) and up to the 1630s, when the Tokugawa shogunate closed the nation to almost all foreigners, resembles Japan since the late nineteenth century. It is possible to compare Japan's national experience in the time of the great general Toyotomi Hideyoshi (1536–98), when armed invasion of Korea was undertaken and when Japanese pirates freely roamed the seas of Korea and China, with the experiences since the late nineteenth century and including the Sino-Japanese War (1894–95) and the Russo-Japanese War (1904–5) and the period up to World War II.

The prosperous undertakings of Japanese merchants in the late sixteenth and early seventeenth centuries were so great a threat to the Dutch, themselves would-be conquerors of all the South Pacific, that history hints at a Dutch plot behind the Tokugawa government's seclusion policy. Matchlocks were introduced into Japan by the Portuguese in 1543; and by the early seventeenth century, shot and powder for such weapons figured prominently among Japanese exports. It is thought that Japan at one time was almost ready to export matchlocks as well. At any rate, the Japanese of those times were economically and technologically powerful. The way in which they quickly mastered techniques imported from abroad and then used those very techniques to elevate their own competitive economic power in relation to foreign countries bears a striking resemblance to the state of affairs prevailing in Japan today: the two illustrate a common feature of the stage of growth. After the institution of the policy of seclusion in the 1630s, however, the Japanese apparently changed into a peace-loving, mild, even elegant people. The Japanese of the late nineteenth and early twentieth centuries resemble their predecessors of the Age of the Warring Provinces more closely than the people of the period of seclusion and peace. And the nature of the Japanese people during the Tokugawa period (1603–1868) offers important suggestions about what the Japanese may become in the future.

—presupposed and was based on agricultural society.⁴ It is important to bear this in mind.

In the latter part of the period, the ordinary people began to want to enjoy the pleasures of life that had until then been reserved to the upper classes. For the commoners in cities, such as Edo, seasonal flower viewing became an important leisure activity: cherry blossoms in the early spring, followed by azaleas and irises; morning glories in the summer; chrysanthemums and maples in the autumn; and camelias in the winter. Gardening was one of the largest industries in the city. All feudal lords were required to maintain a residence in Edo. These residences naturally had gardens of one kind or another, and their designed gardens were the source from which the booming landscape business grew. But, as time went by, the ordinary people too began to want to enjoy gardens. The row houses in which most of them lived made the luxury of private gardens impossible. But the major landscapers often had spacious gardens that they opened to the public in the form of something like the modern public park. By the end of the Tokugawa period, there were more than a thousand of these public gardens in Edo, yet the Japanese language still had no word for public park.

Another favorite Japanese indulgence—visiting hot-spring resorts for therapy and pleasure—was popular long ago among the ordinary people during the slack farming season. Flower viewing and hot-spring bathing eventually became associated with other pleasures. For example, attending the Kabuki drama, more than mere theater-going, was intimately related with the life of the licensed pleasure quarters. Such amusements stimulated the increase in restaurants and teahouses and also provided stimulus for the development of *ukiyo-e* woodblock prints, which both depicted leisure pursuits and expressed an appreciation of nature. Thus one could say that the foundation of much of Edo culture was agriculture.

In both pre-industrial and industrial societies, the phase of growth is one of expansion and extension of frontiers. The rapid changes occurring in people's life styles leave no time for the creation of culture. The stability of living patterns of the phase of maturity, on the other hand, produces the conditions required for the creation of culture.⁵

Though now, after more than a century of development as an in-

4. The Tokugawa period is also known as the Edo period after the city Edo (present-day Tokyo), the seat of the Tokugawa government. Hence I use the term Edo culture in referring to the culture formed during the Tokugawa period.

5. For example, the trading settlements built in Southeast Asia by the energetic, economically powerful Japanese merchants of the Age of the Warring Provinces have all vanished, probably because the people living in them, though economically and militarily mighty, did not have their own culture. Japan of the late nineteenth and early twentieth centuries was similar. While growing economically to the point of being one of the leading industrialized nations—one of the Big Five or the Big Three—Japan had virtually no cultural influence on other industrialized nations. And that state of affairs has remained unaltered since the end of World War II. Though today much more economically influential than before the war, Japan continues to exert practically no cultural influence. There is a conspicuous imbalance between Japan's economic and cultural influence. Ironically, after losing military power at the conclusion of the war, Japan announced to the world intentions of becoming a cultural nation. Thirty years later, although having attained unimagined economic power, Japan still has not become a cultural nation. Probably this is inevitable because, until the present, Japan has been in the stage of growth.

dustrialized nation, Japan is about to enter a phase of maturity, the new culture that will be produced in that phase must inevitably be based on industrialized society. In contrast to the agricultural culture of the Tokugawa period, it will have to be an industrial culture.

Industrial civilization has worked extensive changes in all Japanese environmental conditions. Those changes demand a culture that conforms to them.⁶ One wonders what will be the relation between this new culture and the traditional Japanese culture, since the traditional culture, founded as it is in agriculture, is so very different from that of Europe, which is of course based on industrial civilization.

IV

Dramatically increased opportunities for mutual contact and exchange among individuals, groups, and societies are first among the many changes effected in the human environment by industrial civilization. The increase in opportunities for exchange has itself engendered the growing importance of such contacts. Whether we like it or not, it is no longer possible for a single person to go his own way alone. This means that the optimum way of life for individuals and whole peoples in an industrial society entails evolving optimum ways of relating to one another. If the stage of growth is one of development and expansion, the stage of maturity must be one of exchange and harmony.

In this connection, the Japanese should reconsider the way they have lived in the past. First, they have tended to be too self-centered. While ranking among the major industrialized countries of the world, Japan is much less skillful in international affairs than are comparable nations. And the Japanese people themselves are often criticized for clannishness and a reluctance to mix with other peoples. When Japanese products are known and accepted all over the world, why are the Japanese people so frequently the object of criticism? In the past, Japanese products had a reputation for cheapness and shoddiness; but such is not the case today. No longer do the Japanese upset markets by such practices as dumping. Their policy now is one of good merchandise at low cost delivered on time and followed up with faultless after-sale service. Not a few Japanese wonder why, despite the excellence of their manufactures, many people from other nations persistently find fault with the Japanese themselves. But their failure to understand is the heart of the problem. As long as they do not understand, fault-finding will continue.

In the modern world, in which mutual international contacts are growing steadily wider and deeper, it is no longer sufficient to do as the Japanese do when they examine their own actions and find themselves blameless. It is now essential not only to ensure that one's actions are right, but also to attempt to understand how another party will interpret and react to them. Failure to make these efforts is tantamount to failing to know how to live in an industrial society. And, no matter

6. If culture is defined—as in note 1—as all the ways individual human beings relate with one another within the human group, changes in human environmental conditions caused by civilizational developments inevitably bring about changes in the ways individuals living under those conditions relate to one another.

how outstanding they are in terms of industrial production, people who fail in this respect have not come to the stage where they can produce the kind of culture required by modern circumstances. At the height of the stage of growth, such an inability may have been inevitable; but now that they are about to enter a stage of maturity—a period of exchange and harmony—the Japanese cannot afford to overlook this issue.

Awareness of the nature of the times is of utmost importance in considering the role of Japanese private grant-making foundations, who must take the lead in developing a new culture suited to an industrial society.

Since its establishment, the Toyota Foundation has made grants internationally and nationally in three fields—environment, social welfare, and education and culture. But, if we acknowledge the kind of awareness of the times that I mentioned, all of our activities are cultural; that is, we must not think that cultural activities are limited to the field of education and culture.

One step we have taken to ensure such awareness is to institute the “Know Our Neighbors” Translation-Publication Program, as part of our 1978 international grant-making activities. This new program offers grants to assist in the translation into Japanese and publication of books that the peoples of our neighboring Asian nations read and want us to read. At present, Indonesia, Malaysia, the Philippines, Singapore, and Thailand are participating in this program. It is hoped that familiarity with such books will help the Japanese understand their Asian neighbors better, know how to relate to them, and gain some idea of ways to make contributions to their well-being. This is undeniably an important part of the formation of a new Japanese culture.

Today, many people in the industrialized nations—including Japan, unfortunately—make the serious mistake of believing that advanced and backward cultures exist.⁷ Although the terms advanced and backward can be used in connection with industrialization, the culture of any race or society is unique; and no one culture is more advanced, in the absolute sense, than any other. It is true that some nations have come under the influence of industrialization earlier than others and that some have been more influenced by industrial civilization than others (which may be the cause of the discord between civilization and culture). But all cultures are intrinsically on the same level.

V

Exchange and harmony are important on the national as well as the international level. Obviously, industrialized civilization has produced great amounts of wealth that have been widely distributed in society to

7. The 1972 report of the Hazen Foundation (New Haven, Conn.), entitled “Reconstituting the Human Community,” said that cultural exchanges have heretofore been cursed by the nightmare of dual interpretation, in which the world has been divided into such dualities as the strong and the weak, the givers and the receivers, and the rulers and the ruled. If mutual dependence among nations is to increase in the future, it is essential to conquer this nightmare of dualities. This same report has been highly praised the world over for its significant proposals for the promotion of desirable cultural exchanges.

produce a high mass-consumption society, a phenomenon that has wide-ranging merits and shortcomings. Since society is a conglomeration of large numbers of undifferentiated people and since all should share in the merits of the high mass-consumption society, it is no longer possible for any one individual to live in complete isolation. Egoism is no longer permissible. But at the same time, it is not permissible to condone invasion of privacy in order to further exchange and harmony.

Because the pace of industrialization and urbanization in Japan was so fast, not all Japanese have learned to cope with life in an industrialized society. This may mean that Japan has not yet succeeded in creating a culture suited to industrial civilization. In other words, though hardware—material wealth—has been rapidly produced and diffused in today's high mass-consumption society, the software that is essential if a culture suited to industrial civilization is to take root is still gravely inadequate. Though it will be made clearer in the individual descriptions of this year's grants, I should like to stress here the influence of considerations of this kind in all our selections of grantees. If our efforts can do even a little to help Japan and the Japanese people achieve the way of life suited to an age of exchange and harmony, this will surely contribute to the formation of a culture for the industrial society.⁸ It is in such efforts that I envision philanthropy as a cultural activity.

To commemorate the fifth anniversary of its establishment, the Toyota Foundation plans to initiate several new programs in 1979. I believe that these programs will further exemplify our aspirations.

Yujiro Hayashi
Executive Director

8. Earlier I described the characteristic of traditional Japanese culture as the subjectification of the object and that of European culture as the objectification of the subject. If this is true, the two are as incompatible as oil and water. One of the causes of this striking cultural disparity is the difference between conceptions of society in Japan and in Europe. Whereas Europeans consider society an aggregate body of a large number of undifferentiated people, the Japanese have tended to think of it in terms of membership in a defined group; that is, as an aggregate body of many specific people. Other peoples—including the Europeans—of course have a sense of membership in some group or another, but it is characteristic of the Japanese to have made it the whole basis of their concept of society. But, with the progress of industrialization, opportunities for encounters with non-group-members become both more numerous and more important. Furthermore, many of these nonmembers tend to be of nonspecific natures. This means that the Japanese must revise their old concept of society if they are to live in an industrialized society. Though this will mean alterations in life styles, I do not think it will hinder the further transmission of traditional Japanese culture.

Grant Program

National Division Grants

In 1978, the Foundation called for applications for the National Division grant program in the fields of human and natural environments, social welfare, and education and culture. The 632 applications accepted in April and May were reviewed by the Selection Committees at their meetings held from June through September, and at its meeting in October the Board of Directors awarded to seventy-three applicants grants totaling ¥265,160,000. The individual projects are summarized in the following pages; but this year's grants can be characterized as follows:

1. This year the range of activities is wider, since the issue of urbanization, which was prominent in all three fields in past years, has been de-emphasized.
2. Based on our observations on the previous grants, we have established a new grant category: grants for preliminary research being conducted to promote further research that is imaginative, adventurous, and experimental in nature but at the same time well-organized and comprehensive. Grants are available for preliminary research conducted to determine the feasibility of further research and to make full preparations for such research. The maximum amount available for a preliminary-research grant is ¥1.5 million.
3. Again this year, institutions receiving grants are widely scattered geographically; however, it should be noted that this year we have more grantees who are not affiliated with universities and who have more immediate contact with the real problems in social welfare and in education and culture.

Under the National Division communications-supplement grant program, which was established last year, thirteen grants were awarded as described on page 31.

In fiscal 1978 the Foundation sponsored three symposiums on themes covering a group of related fields of research. The value of these symposiums, which are listed below, was enhanced by the participation of the many people who attended them.

1. Solar Energy and Photochemistry (November 25, 1978)
2. Awareness and Behavior of Youth With Special Emphasis on the Contemporary State of Adolescent Social Deviancy (January 20, 1979)

3. Toward the Establishment of a New Educational System: Reviewing Post-Compulsory Education (March 20, 1979)

This year, the Foundation's staff continued to conduct interviews with grantees and also held five meetings with invited experts and learned people in the three fields of our interest in order to ask for advice and suggestions on our future grant-making activities and on the general activities of the Foundation.

Human and Natural Environments

A Comparative Study of the Methods of Disclosing Corporate Social Responsibility in America and Japan

Yasushi Yamagata, Professor

Faculty of Business Administration, Osaka City University

¥1.6 million

In the 1970s consideration of corporate responsibility to society began in the United States and also in Japan. But until now, discussion in Japan has focused primarily on the meaning and content of such responsibility; and little attention has been given to methods of disclosing the social responsibility of individual business firms. In the United States, however, some companies are already disclosing social performance in their annual reports.

This project will address the question of how corporate social responsibility, particularly in the area of environmental issues, can be disclosed most effectively and will pay special attention to any problems associated with disclosure. In the United States, where a pollution-monitoring system has been established, various corporations will be studied through interviews with the people directly involved with social performance and disclosure. These cases will be compared with similar past experiments in Japan in order to anticipate difficulties that might be encountered in employing American disclosure methods in Japan. This study is expected to result in the recommendation of a highly practical and effective method of disclosing corporate social responsibility in Japan.

A Study of Transport and Removal Mechanisms of Chemical Substances in the Atmosphere

Shizuo Tsunogai, Associate Professor (and four associates)

Faculty of Fisheries, Hokkaido University

¥3.95 million

In order to understand the behavior of chemical substances released into the atmosphere, it is necessary to investigate not only the physical movement of air currents but also the stability of each substance in the atmosphere, the types of aerosols these substances form, and the residence times of the aerosols.

By employing radioactive radon and its nuclides

released naturally from underground, this project aims at precisely estimating the residence time of aerosols, the origin of aerosol formation, the altitude through which aerosols pass undissipated in the atmosphere, and the mechanism of their removal. For this purpose, both inland and coastal monitoring stations will be established to measure radon nuclides and other chemical substances found in air, aerosols, and precipitation samples. Analyses of sulfur and nitrogen compounds, lead, mercury, fluorine, and organic compounds are expected to clarify the transport and removal mechanisms of pollutants, thereby providing basic information necessary to the preservation of our natural environment.

Experimental Studies on the Effects of Air Pollutants on Human Health: Studies on the Dose Response of the Respiratory System

Jun Kagawa, Associate Professor (and one associate)

Department of Environmental Medicine and Occupational Health, Tokai University

¥3.16 million

The major aim of medical research on atmospheric pollutants is to establish the Threshold Limit Values of these pollutants from dose-response relationships, so that governmental agencies can set air-quality standards to protect the populace from dangerous levels of exposure.

In this study, a continuation from last year, volunteers are exposed for two hours, either at rest or with intermittent exercise, to O₃, SO₂, and NO₂, alone or in combination, in densities recorded in the urban environment (0.15, 0.3, and 0.5 ppm). After the exposure, subjective symptoms and variation in respiratory function are evaluated. From the information thus obtained, various Threshold Limit Values can be established. In addition, following exposure to these pollutants subjects will inhale acetylcholine to determine whether exposure to pollutants causes bronchial hypersensitivity to acetylcholine and if so to what degree. This test will also be used to help determine the relationship between these atmospheric pollutants and the incidence of asthma.

In the first and second years of this project, observations were made on the effects of O₃ and SO₂. This year, the effects of NO₂ will be studied, and the results of the full three-year study will be integrated.

Analysis of Trace Halocarbons in the Atmosphere and Their Geochemical Behavior

Takeshi Tominaga, Professor (and two associates)
Faculty of Science, University of Tokyo

¥7.7 million

Recently great concern has been expressed over the environmental impact of halocarbons (particularly chlorofluoromethanes) released into the atmosphere. In the midstratosphere, chlorofluoromethanes are decomposed by solar radiation to release chlorine atoms, which in turn decompose ozone catalytically. Although global monitoring of atmospheric concentrations of halocarbons is necessary to make estimates of possible ozone depletion, no such measurements have been made in Asia.

The object of this study is to establish an analytical method of measuring trace amounts of halocarbons in the atmosphere, to make accurate measurements of their atmospheric concentrations in Japan, and thus to investigate the geochemical behavior and effect of such compounds on stratospheric ozone. Local atmospheric pollution in urban areas caused by short-lived halocarbons will also be studied in this project.

In seeking possible measures to minimize stratospheric pollution, laboratory experiments will be undertaken to elucidate the photochemical behavior of various halocarbons in the troposphere.

Preliminary Research for an International Comparative Study of Citizen Awareness of Forest Environment

Tsunahide Shidei, Leader of the Working Group on the Forest Environment (and eleven associates)
Japan Monkey Centre

¥1.5 million

There are remarkable differences among the forest-environment conservation systems adopted by individual countries. One reason for such differences is that each country's policy is based on its citizens' awareness of their forest environment. Thus, the introduction of another country's conservation systems without regard for differences in citizen awareness of the forest environment will not yield satisfactory results. When studying the conservation measures adopted in other countries, it is essential to understand not only the country's natural conditions but also its culture, its people's national character, and its people's environmental awareness.

From this point of view, this study intends to clarify the differences in general awareness of the forest environment in Japan, West Germany, and France, which are similar in natural and social conditions, and to investigate the relation of these differences to the conservation systems adopted in these countries. Comparison between nations with different languages and social backgrounds requires the establishment of close cooperation between researchers in participating countries and a careful organization of investigative methods.

This year, ample time will be scheduled for the preliminary investigations to ensure the successful completion of this project.

A Study for the Establishment of Health Indices Through Neutron Activation Analysis of Biological Materials

Ichiro Fukushima, Professor (and four associates)
Department of Public Health, School of Medicine, Juntendo University

¥6.02 million

Recently, community environmental pollution by metallic pollutants, such as mercury, cadmium, and chromium, and its effects on human health have become serious social concerns. To observe air-pollution levels nationwide, Japan's National Environmental Agency has established a monitoring program in which the national air-sampling network stations in fifteen major cities throughout the country collect suspended particulate matter to be analyzed for toxic metals. It is desired to establish a similar system for monitoring metal concentration levels through examination of human biopsy materials, in so far as such materials are available.

Among various biological materials to be considered, human hair will be studied in the initial phase of this project. Hair specimens will be collected from about 280 healthy male and female high school students living in seven selected areas of Japan with different community characteristics. Through nondestructive neutron activation techniques, the specimens will be analyzed for concentrations of various metals. This study aims at (1) developing a model for a trace-metal monitoring program utilizing biological materials and (2) investigating the significance of metal concentrations in human hair as a health index. For those metals for which neutron activation analysis is not appropriate, such as lead and cadmium, atomic absorption spectrometry will be employed.

Evaluation of the Role of Agriculture in Environmental Conservation

Natsuki Kanazawa, Professor (and five associates)
Faculty of Agriculture, University of Tokyo

¥3.5 million

The effect of agriculture on our natural environment is twofold: its destructive aspects, the so-called social cost—pollution by livestock wastes and pesticides, soil erosion, and so forth—attendant on agricultural production; and its positive aspects, the so-called social benefit—the conservation of an ecosystem, the providing of open spaces and green tracts in urban areas, and so forth. In the projected reorganization of Japan's agricultural industry, it will be most important to establish a regional agricultural structure that will ensure the maximum social benefit at the minimum social cost.

Examining livestock-waste pollution as the social cost and the maintenance of farm land around urban areas as the social benefit, this study aims at (1) clarifying the role of agriculture in environmental conservation and (2) investigating the national policy and local planning necessary to maximize the social benefit while minimizing the social cost. Studies will be conducted on the relationship of social benefit and social cost in hog raising, dairy farming, and animal-waste treatment in Akita, Kagawa, Kumamoto, and

Chiba prefectures, as well as in the agriculture around metropolitan areas.

The Effects of Environmental Change on the Stable Isotopic Ratio of Carbon and Sulfur and the Concentration of Atmospheric Carbon Dioxide and Sulfur Dioxide

Hitoshi Sakai, Professor (and four associates)

Institute for Thermal Spring Research, Okayama University
¥3.52 million

Humanity's massive consumption of fossil fuels and progressive deforestation have caused ecological changes and are beginning to seriously disrupt the CO₂-SO₂ geochemical balance. The speed with which this disruption is progressing and its influence on humanity and the environment are important concerns.

Under this project, twenty sampling stations were established in industrial zones and cities and in farmland, highland, coastal, and volcanic areas throughout Japan, as well as in Hawaii, New Zealand, and the Antarctic, to monitor changes in the stable isotope ratios of CO₂ and SO₂ in the atmosphere and thus to determine both the extent to which the atmosphere is polluted and nature's ability to restore its own natural balance. Work made possible by grants in the past two years included the establishment of firm basic methodology for analysis and for observation techniques, as well as systematic observation throughout Japan and in major locations in other countries. Further data will be accumulated and analyzed this year.

Study of Traffic-Assignment Models as the Basis for Road-Network Planning

Akira Katoh, Professor (and four associates)

Department of Civil Engineering, Gifu University
¥4 million

The most important basic data for road-network planning are the regional distribution of traffic volume and the traffic flow in each road section. Traffic assignment is an analysis of the distribution patterns of traffic volume, based on the conditions of the network links (road sections), network nodes (intersections and interchanges), and other network elements. Although the theory and methodology of such analysis are satisfactory, there still remain many unsolved problems in the more general traffic-assignment models, including future traffic conditions in which changes in traffic patterns are anticipated due to the possible adoption of new traffic policies. In addition, there is a need for a more efficient computation algorithm with higher accuracy for traffic-flow analysis.

The present study will concentrate on reexamining the existing traffic analysis approaches in order to develop a more practical application method and a more practical algorithm. A digital computer will be used for most analysis, but some simple network analysis will be treated with an analog simulator.

Research on Changes in the Natural Environment Caused by Dam Construction, Including Methods of Predicting Such Changes

Saburo Komura, Professor (and seven associates)

Department of Civil Engineering, Gifu University
¥3.06 million

The river bed below a series of large-capacity reservoirs constructed on the upper reaches of an alluvial river degrades due to the arrest of sediment transport, and the concomitant decrease in sediment transport from the river basin to the estuary results in beach erosion around the river mouth. Moreover, below the dams, water quality is degraded, and water temperatures are lowered. River-bed degradation below dams leaves bridge piers and abutments exposed, decreases water intake capacity because of stage degradation, and lowers ground-water levels.

This project, a continuation from last year, studies the Tenryu River basin and investigates sediment-transport characteristics from the river source to the estuary, as well as water-temperature variations along the river channel and in reservoirs. The research is divided into three areas: (1) sediment deposition in reservoirs and river-bed degradation below dams, (2) beach erosion around the estuary, and (3) longitudinal variations of water temperature.

Basic Research on Biological Hazards and Pathogenetic Mechanisms of Environmental Chemicals

Kengo Nakai, Professor (and five associates)

Department of Pharmacology, School of Medicine, Akita University
¥6.7 million

The biological hazards of environmental chemicals have been well documented, but the complete mechanisms of the interaction of these chemicals with living organisms have not yet been fully explained. In order to derive the general principles governing these mechanisms, it is essential to accumulate information on the bio-influence of each chemical, to make a comparative analysis of the influences of these chemicals, and to investigate the nutritional effects of ingesting these chemicals.

For this purpose, a research team consisting of morphologists, biochemists, and biophysicists in the field of medical science, will investigate (at the molecular, cellular or organic, and whole-body levels) the relation of structural and functional changes in living organisms invaded by environmental chemicals. In the initial stage of this project, the behavior of ingested heavy metals and organic pollutants in the epithelial cells of small-intestine mucosa will be studied morphologically, using analytical electron microscopy, and biochemically and biophysically, using radio-tracer techniques, cell fractionation, and chromatography.

Research on Environmental Legislation and on Human Environmental Problems Caused by Development (Including Urbanization and Industrialization)

Ichiro Kato, Professor (and ten associates)

Japan Center for Human Environmental Problems
¥3.7 million

Development—including urbanization, industrialization, oil-field exploitation, intensification of the for-

estry industry, construction of oil reservoirs, and increased use of large tankers—is creating serious pollution and other environmental problems in Asia and the western Pacific. Though environmental-legislation and legal-study movements are under way in many of the countries affected, research into the legal aspects of the issue lags far behind that in the natural sciences and economics.

With the cooperation of local researchers, this project, a continuation from last year, examines environmental conditions in various countries; and the policies they have adopted will be studied, particularly from the legal standpoint, in an effort to contribute to solutions of environmental problems in this region, which is closely related to Japan. Further, it is hoped that this study will help lead to substantial international developments in environmental laws so that they no longer center entirely on the industrialized nations, but reflect conditions in the developing nations as well.

A Study of Organic Polymers in the Urban Aquatic Environment and Their Significance in Environmental Change

Ryoshi Ishiwatari, Associate Professor (and one associate)
Faculty of Science, Tokyo Metropolitan University
¥3.25 million

Human activities are responsible for the concentration of various organic compounds in the urban aquatic environment (both water and sediment) that has produced organic pollution. These compounds, including synthetic chemicals, react with natural organic compounds in the aquatic environment to form the dark-brown organic polymers called kerogens. Kerogens are believed to be nonbiodegradable and they show unique behavior in reactions with other aquatic organic compounds, reflecting their origins. In order to understand organic pollution in urban aquatic environments and to take appropriate action to reduce it, it is essential to clarify the chemical nature and the physical and chemical properties of these organic polymers.

The purpose of this study is to compare the kerogens present in polluted urban and nonpolluted, nonurban aquatic environments in terms of their chemical nature and their reaction with aquatic organic compounds, and to assess the role of kerogens in the degradation of the aquatic environment.

Fundamental Biology of Red-Tide Microflagellates in Japan, with Special Reference to Their Fine Structure and Taxonomy

Terumitsu Hori, Associate Professor (and three associates)
Institute of Biological Sciences, University of Tsukuba
¥5.28 million

Many studies on the generation of the red-tide blooms occurring in Japan's coastal areas have concentrated on analyses of inorganic environmental factors, but little attention has been paid to the constituent organisms themselves. Thus, our fundamental biological understanding of the microflagellates found in red-tide blooms (for instance, their taxonomy, physiology, and life cycle) is so meager that we often encounter

taxonomically confusing problems. Misidentification of the organisms, even at the levels of class, genus, and species, is common because all the constituent organisms are far too minute to be identifiable by optical microscopy.

This project will employ electron microscopy to investigate the morphology and fine structure of the red-tide microflagellates and through study of culture samples will clarify their physiological characteristics and life cycle. The findings of this project will contribute to a more accurate understanding of the red-tide microflagellates and will provide more complete information on their identification.

An Interdisciplinary Study of the Problem of Environmental Pollution in the Shiranuhi Sea Area: A Study of the Changes in Human Life and the Natural Environment as a Result of Modernization and the Minamata Disease

Daikichi Irokawa, Professor (and fourteen associates)
Department of Economics, Tokyo University of Economics
¥3.1 million

Pollution of the environment of the Shiranuhi Sea area, in Kyushu, is a tragic instance of the drastic change wrought by unplanned industrialization in a small area and a stark warning of what may happen to humanity in the future. Though the medical and biological aspects of the situation are partly understood and though the mass communication media have stimulated a certain amount of awareness among the general populace, as of yet, no comprehensive investigations of environmental pollution's sociological elements or impact on society have been undertaken.

Under this project, which began in 1976, numerous field trips have been made to the Shiranuhi Sea area to survey both individual villages afflicted with a high incidence of Minamata disease and the Minamata plant of the Chisso Corporation, the source of the mercury pollution that caused the disease.

In addition, local agriculture and the fishing industry in the Shiranuhi Sea have been studied. From this field work an understanding of the structure of the regional changes that have taken place over the past twenty years has been gained; and this project should yield an overall picture of the relation between modernization and environmental pollution in a specific area. The final report of this project will be compiled this year.

A Basic Study of the Environmental History of the Kurose River Drainage Basin and Use of Irrigation Ponds and Waterways

Shuichi Tsubata, Professor (and six associates)
Faculty of Integrated Arts and Science, Hiroshima University
¥4.65 million

In accommodating themselves to their physical environment, the residents of Japan's Inland Sea coastal area, where rainfall is not abundant, have long relied on irrigation ponds. A study of this area will prove useful in future community development because even though they altered their physical environment, the residents of the area have been successful in maintain-

ing harmony within the ecosystem. Many irrigation ponds are still in use today in the drainage basin of the Kurose River, near Hiroshima, where Kamo Academic Community is to be established.

The purpose of this project is to reevaluate the role of the irrigation ponds in the Inland Sea coastal areas, to clarify their benefits to the ecosystem, and to make clear the most effective means of preserving these ponds during the transition from agricultural to urban use of adjacent land. More specifically, this study aims to evaluate the water use around the river basin (including irrigation ponds); to trace the past changes in the cultural environment in the area; and from the cultural, psychological, and socioeconomic viewpoints to reexamine the pattern of a community centered on irrigation ponds and waterways.

Study of Wild Norway Rats as an Index Animal for Environmental Quality

Tatsuo Udagawa, Professor (and thirteen associates)
Department of Veterinary Medicine, Azabu Veterinary College

¥5.25 million

Although considered noxious animals because they destroy property and are disease carriers, wild Norway rats living in proximity to human settlements can be used as an index animal for environmental quality. Moreover, the rats commonly used as laboratory animals are domesticated Norway rats; hence data obtained from study of the wild Norway rats can easily be compared with data on similar animals raised in a controlled environment.

In this project, wild Norway rats will be captured quarterly in industrial, commercial, and residential areas and on islands. Tissue samples from these rats will be analyzed for contamination by heavy metals (such as cadmium, mercury, and lead) and coal-dust deposition in lungs and blood; sera, fungi, bacteria, parasites, chromosomes, skeletons, teeth, and so forth will also be analyzed. Seasonal and environmental difference in these data will be studied and compared in order to evaluate the usefulness of wild Norway rats as an index animal for environmental quality.

Human Contributions to the Eutrophication of Lake Oze

Atsuo Ujiye, Director (and thirteen associates)
Gumma Institute of Public Health

¥4.7 million

Lake Oze (and surrounding areas), designated as a Special Natural Asset by the Japanese government, is one of the most beautiful natural spots in Japan. It is also of geological and biological importance; however, eutrophication is progressing in this beautiful lake. This eutrophication is due to both natural and human spoliation, but the individual contributions of these two factors have not yet been estimated accurately.

Through both field surveys and extrapolation, this research will estimate the amounts of nutrients derived from each of the two sources. Since the human contributions to eutrophication are attributable to the vast number of visitors to this area (estimated at 500,000 every year), it is planned to calculate the

total influx of both nitrogen and phosphorus from the quantity of food waste deposited by the visitors. For the natural contributions to eutrophication, on the other hand, an exact estimate is difficult to make because of the great number of factors involved. Therefore, the natural organic compounds causing eutrophication will be estimated through a survey of nutrient release from forests, rain water, and the bottom mud of the lake. In 1976, in collaboration with Fukushima Prefecture, Gumma Prefecture initiated a three-year project to survey the water quality of Lake Oze. That research program will be extended to include geological surveys and ecological investigations of the habitats in the area, thereby contributing to the establishment of suitable measures to prevent further eutrophication.

Preliminary Study for the Synthesis of Nonpolluting, Thermally Stable Oil

Kazushi Arata, Associate Professor (and two associates)
Department of Chemistry, Hokkaido University of Education

¥1.4 million

Thermally stable oil, which is now used in various industries, is indispensable to our everyday lives, but such oils should be clean in order to prevent environmental pollution. Following the banning of the use of polychlorinated biphenyl (PCB), which was a widely used heat-resistant oil, it has become essential to develop a nonpolluting, thermally stable oil.

A polymer prepared by the polycondensation of a benzyl group to the para-position is known to be one of the thermally stable polymers, being stable up to 400°C. This material is considered to be thermally stable oil when polymerized to an oligomer. This project aims to synthesize nonpolluting, thermally stable oil by preparing para-substituted polybenzyls of low molecular weight from benzyl chloride, which is now supplied abundantly at a low price, followed by substituting other elements or groups for chloride at the end of the oligomers in order to prevent pollution. The researchers have found that the above-mentioned polymers are easily synthesized by using ferric oxides as the catalyst.

Fermentation of Cassava Starch Without Steaming

Seinosuke Ueda, Professor (and one associate)

Faculty of Agriculture, Kyushu University

¥5 million

In Brazil, the use of ethyl alcohol as an energy source (for example, as automotive fuel) has been encouraged by the government because of the depletion of fossil fuels. Native cassava starch is being tested as a raw material in the manufacture of ethyl alcohol. The raw starch has to be steamed and cooked to a paste before fermentation, a process that in itself consumes a great deal of energy. The researchers have found that raw cassava starch can easily be converted to glucose by black-koji amylase, thus conserving energy. Further, if the alcohol is distilled under reduced pressure, the amylase and yeast in the residue can be reused.

Japanese and Brazilian researchers will cooperate in a joint project to develop an industrial process for producing ethyl alcohol by this method.

A Study on the Development and Use of Satellite Monitoring Stations for Assessing the Effects of Air Pollution on Human Health

Kazuho Maeda, Professor (and one associate)
Department of Epidemiology, University of Tokyo
¥3.5 million

Surveys and studies on the effects of air pollution on human health, especially in epidemiology, have so far concentrated on the dose-response relationship between a particular index pollutant (for example, SO₂) and respiratory symptoms. Recently, however, it has become difficult to isolate specific index pollutants among the many combined in atmospheric pollution. As a result, concern is being directed toward determining the specific agents responsible for various symptoms related to air pollution.

Under this research project, a mobile satellite monitoring station will be developed to allow precise measurements of SO₂, NO_x, and O₃ in order to determine real personal-exposure doses. The data thus obtained will be compared with those from nearby ground pollution-monitoring stations to ensure accurate evaluation of pollutant exposure.

Measurement of Man-Machine System Performance and Traffic-Management Standards for Safe Driving

Takayuki Funatsu, Professor (and eight associates)
Faculty of Literature, Kyushu University
¥7.98 million

Traffic accidents are phenomena that occur at the boundary between a vehicle and the road environment. This suggests the importance of a safe-driving traffic-management plan based on the man-machine system, instead of on the generally accepted concept that safe driving can be accomplished by controlling drivers.

From that point of view, this research project aims at safe-driving control in which the frequencies of sudden acceleration, sudden deceleration, and sharp cornering are recorded in five hundred working taxis in order to establish a standard for the man-machine system required for safe driving. In the past three years, the researchers have devised a "safety meter" to measure and record these variables and have conducted preliminary studies in cooperation with the Taxi Service Association. If the results of this full-scale experiment are satisfactory, a new safe-driving management system will be established.

The Chemistry of Combustion: Free Radical Intermediates and the Mechanism of Atmospheric-Pollutant Generation

Hiroshi Yoshida, Professor (and three associates)
Faculty of Engineering, Hokkaido University
¥9.85 million

Studies of combustion, vitally important both for efficient utilization of energy resources and for prevention of air pollution, have long been conducted from the thermodynamic and thermochemical viewpoints. Although chemical-mechanistic studies of combustion have been rather limited because most aspects of combustion depend primarily on available enthalpy and on the physical natures of reactants, such studies are

now highly desirable to elucidate the full mechanism of the generation of atmospheric pollutants as by-products of combustion.

This study, a continuation from last year, aims to establish an experimental methodology for detecting free radicals in flames, using the electron-spin-resonance technique, and to clarify the elementary processes of the chemical reactions in the flame of methane, the simplest model of hydrocarbon flames.

Last year the researchers succeeded in detecting hydrogen radicals in a methane flame, and this year work will include efforts to measure the distribution density of hydrogen radicals and to develop a sampling technique for the detection of radicals other than hydrogen.

Studies on Photocatalytic Processing of Cyanide and Hexavalent Chromium in Waste Solutions into Nonpolluting Agents by Utilizing Solar Energy and Semiconductor Catalysts

Hideo Tamura, Professor (and one associate)
Faculty of Engineering, Osaka University
¥3.1 million

Increasing industrial activity aggravates environmental pollution and necessitates the consumption of huge amounts of natural resources and energy. But progressively greater consumption of energy resources makes it clear that, in the near future, humanity will be forced to find an alternative to the current energy system, based on petroleum. In this regard, effective utilization of solar energy is extremely important.

This research project attempts to put solar energy to effective use in environmental conservation by developing a process in which cyanide and hexavalent chromium ions in waste solutions are converted into nonpolluting agents by using solar energy and semiconductor catalysts.

Though, in principle, the researchers see a way to render cyanide and hexavalent chromium nonpolluting, they are still concerned by slow processing rates, which this project, a continuation from last year, aims to improve. Last year, it was demonstrated that the reaction can be accelerated by controlling the surface characteristics of the titanium oxide catalysts used. This year the study will be extended to examine other catalysts, such as iron oxides.

Land Evaluation for Multiple Cropping of Paddy Lands in the Tropics

Hayao Fukui, Associate Professor (and three associates)
The Center for Southeast Asian Studies, Kyoto University
¥4.1 million

The food-plant shortage is most acute in the Asian rice zone, where arable land cannot be expanded substantially. More effective utilization of the existing arable land and the introduction of multiple cropping of paddy lands in particular are the only possible solutions. Individual technologies for multiple cropping are being developed, but it is necessary to organize them for different localities with different physical conditions. To do this, both field experiments at different sites and the survey and evaluation of land are mandatory. The research network organized by

the International Rice Research Institute (IRRI), in the Philippines, is systematically conducting the required field experiments.

In cooperation with IRRI the members of this research group, who have been engaged in the regional assessment of paddy land in different areas of South and Southeast Asia, will undertake the evaluation of land for multiple cropping. The existing land-survey and classification methodology is more useful for the rain-fed, upland-field agriculture of the West than for paddy lands. Therefore, the main focus of the present study will be to establish a suitable methodology for surveying and classifying the hydrological conditions of paddy land.

Toward a Quantitative Understanding of the Change in the Natural Environment Using Moths as a Bio-indicator

Akira Miyata, Research Associate

Institute for Tropical Medicine, Nagasaki University

¥4.14 million

The speed of changes observed in the natural flora and fauna in the thousands of years since humanity began to engage in farming has increased markedly in recent years due to industrial development. In order to understand how much the present natural environment has been changed from its original pattern, it is necessary to determine what that pattern was and to establish a suitable measure for estimating the degree of change represented by the present state.

This study will divide the moths living in low-land forests of Kyushu into three groups: (1) the original moth population of the areas, (2) the species of moths disappearing due to deforestation, and (3) the species of moths inhabiting only the areas affected by human activities. Various data on moths collected with light-traps during a ten-year period will be analyzed in order to establish a suitable method for quantitative estimation of the changes in the natural environment.

A Preliminary Study of Irrigation-Water Use and Reorganization

Yoshio Kimoto, Research Associate

Faculty of Agriculture, Mie University

¥1.08 million

It is difficult to analyze the problems of effective management of Japan's limited water resources because: (1) the amount of water available is not constant because of yearly fluctuations in rainfall; (2) free-flowing surface water, the main source of available water during the dry season, is almost completely exhausted by irrigation requirements; and (3) it is difficult to estimate the water-use unit of individual consumers. It is impossible to establish any basic theory for reasonable allocation of water resources until the amounts of water actually used for different purposes (for example, agriculture or industry) are measured. It is extremely difficult to measure individual consumption of irrigation water because irrigation water is distributed through an intricate open-channel network managed by a large number of local irrigation associations, both official and private.

This project aims to establish a method for accurately estimating irrigation-water consumption. As the first step, fundamental surveys and case studies will be carried out in locations where the irrigation-water system has been reorganized.

A Preliminary Study of the Mineral Composition of Vegetables and Grasses as Affected by Sugar-Mill Wastes Used as Fertilizer

Kazuhiro Oya, Associate Professor (and one associate)

Department of Agricultural Chemistry, University of the Ryukyus

¥0.94 million

Modern agriculture has relied increasingly on chemical fertilizers; however, because fertility and ecological conditions of the soil are adversely affected by the continual application of inorganic fertilizers, the use of organic fertilizers is being reconsidered. In Okinawa, where sugar cane is grown extensively, much attention is being given to the bagasse and filter-press mud produced by sugar mills as valuable sources of organic fertilizers available in large quantities. Few studies have been made on these organic wastes, and in contrast to our knowledge of manure, very little is known about the properties and effects of these wastes when used as fertilizer.

Social Welfare

Research on Ainu Diseases and Traditional Medicine

Yoshihiro Kinoshita, Chief Researcher (and three associates)

Hokkaido Institute of Public Health

¥3.9 million

From the distant past, the Ainu—an indigenous race predating the modern Japanese people—have made their living in the harsh environmental conditions of northern Japan on Hokkaido as well as on Sakhalin and the Kurile Islands. The medical lore of the Ainu evolved in this severe habitat and has been handed down from generation to generation by word of mouth. Today, however, young Ainu who would normally carry on this oral tradition have never availed themselves of Ainu medicine, and comparatively few Ainu over the age of seventy who are thoroughly acquainted with it remain.

In a continuation of studies begun last year, the present research features interviews with Ainu in their seventies and older who have knowledge of and experience with their people's traditional medicine. A comparison of the effectiveness of Ainu medicine and modern medicine is being made to evaluate the efficacy of Ainu therapies, and newly discovered materials and references on Ainu medicine are being reviewed. As a cooperative project with the participation of a herbalist, a pharmacologist, an ethnologist, and a medical expert, the present research is valuable

as an attempt to take advantage of what may be the last opportunity to know Ainu medicine as it was actually practiced.

Cooperation Among Medical Professionals in the British Health-Care System

Shintaro Asakura, Professor (and four associates)
Department of Public Health, Osaka University Medical School

¥4 million

Countries around the world have recently begun to introduce comprehensive health-care systems, and in Japan as well the Health and Welfare Ministry has advanced a proposal for setting up four thousand community health centers in cities, towns, and villages. For the success of comprehensive health care, it is essential that there be smooth coordination between welfare and medical-care systems, between local government and the medical profession, and also among the respective medical disciplines. Above all, a system for mutual cooperation among doctors, nurses, and public-health specialists in primary health care is a prerequisite.

The present research is part of the attempt to elucidate the preconditions, methods, and systems necessary for the success of comprehensive health care in Japan. Drawing on the experience of Britain, where medical policies over the past decade have been formulated based on the health-center concept, the research makes use of interviews of medical professionals at British health centers and group-practice clinics, clarifying their day-to-day activities and the conditions under which team care is practiced.

Preliminary Research on Sensorimotor Coordination in Neonates

Teichi Mizuno, Associate Professor
Department of Child Study, Ochanomizu University

¥1.48 million

Although infant mortality has been sharply reduced due to progress in medicine, the incidence of handicaps in children has been gradually increasing. For infants with cerebral palsy or mental deficiencies, some success has been attained in diagnosing the problem and initiating remedial treatment as early as a few months after birth. But for infantile autism and other emotional disturbances, effective early remedies have yet to be found, since diagnosis is not possible until after three years of age.

The ultimate goal of the present research is to enable diagnosis of emotional disturbances at an early age—within a few months of birth—and to study effective treatment methods. At the present time, however, little is known about the pattern of body reaction among neonates to auditory stimuli. Accordingly, the preliminary research for the present year focuses on the process of reaction in normal infants to sound and light, with the objective of determining which stimuli are most effective in eliciting body movement. By this means analysis will be made of the process of sensorimotor coordination in neonates. Follow-up studies for high-risk infants will also be conducted.

Research on the Correspondence Between Household Social Security Premiums and Benefits, with Special Reference to the National Health Insurance System

Akiko Ito, Professor (and five associates)
Faculty of Home Economics, Ochanomizu University

¥4.1 million

The size of the burden on family budgets of social-insurance expenditures is an important aspect of social security systems. Increased medical expenditures are being projected for Japan due to the aging of the population, and revision of the health-insurance system is being demanded. A few studies from the macroscopic perspective have clarified the correspondence between insurance contributions and medical benefits as a whole, but an urgent task for the reform of the national health-insurance system is examination of the relationship between premiums and benefits from the point of view of the insured as opposed to the insurer.

The present research takes the insured, that is, the family or household, as its starting point in order to compare the insurance premiums paid per household with medical benefits received by all household members. Analysis is to be conducted by the type of community, the income level, and the type and life-cycle phase of the family. Studies will be carried out in both Iwate and Nagasaki prefectures to enable comparison between the communities of northeast and southwest Japan.

Study of Production Operations and Safety Among Middle-aged and Elderly Workers from the Viewpoint of Industrial Medicine

Kazuaki Iwata, Professor (and eleven associates)
Faculty of Engineering, Kobe University

¥4.5 million

In recent years workers in middle age and over have been rapidly increasing as a percentage of Japan's labor force. At the same time, however, workers with long years of experience are being gradually laid off due to reasons of physical strength, particularly in production sectors. One effective means to cope with this problem is to consolidate industrial and social environments in which older workers can continue to engage safely and meaningfully in production work.

For the creation of a suitable industrial environment, the present research has been initiated to investigate from both medical and engineering viewpoints the various factors that have a bearing on performance and safety in the work of older employees. In the first year of this research, studies were carried out to analyze operational movements and develop evaluation methods for visual-motion functions. Research this year focuses on the systematic compilation and detailed interpretation of data gathered to date. Studies are also being conducted to build a mathematical model of human motions as a theoretical foundation for motion analysis and to develop evaluation methods for synthetic reflex actions.

Work Attitudes Among Female College Graduates
Atsuko Fujitani, Chairperson (and eleven associates)

Women's Studies Society of Japan

¥1.7 million

With the recent changes in industrial structure brought about by economic growth, the life styles of women have been undergoing major changes and more women have been receiving higher education and entering the labor force. In the midst of such developments in the female employment situation, a number of problems peculiar to Japan among the advanced countries have come to the surface. In an endeavor to elevate the status of Japanese women, the Women's Studies Society of Japan has been conducting interdisciplinary research on topics concerning women in the fields of social and natural sciences and the humanities.

In the present research project a questionnaire survey is being conducted among graduates of universities and women's colleges, covering the five topics of career, attitudes toward work, improvement of working conditions for women, evaluation of noneconomic activities, and issues for the future. Through an analysis of the responses of the graduates of each type of school and a comparison of the replies of mothers raising young children and mothers with older children, an attempt will be made to clarify the needs of women with a higher education and the means to satisfy these needs.

Comprehensive Research on the Retarding of Aging Through Physical Exercise

Haruo Ikegami, Professor (and five associates)

Institute of Health and Sport Science, University of Tsukuba

¥7 million

Physical activity in daily life is declining in Japan with the modernization of the society, and impediments to health have begun to arise as a result. Lack of physical fitness has even become one of the major health risks among the contemporary generation. In the circumstances, medical treatment to cure disease is by itself inadequate for ensuring sound health; and a more constructive approach toward health improvement, focusing on the retarding of aging and on preventive medicine, is called for. The benefits of physical activity in daily life may be indispensable for this purpose.

The first objective of the present research is to establish criteria for evaluating the degree of aging. Using these criteria in a study of approximately three hundred normal adults (males and females aged from the twenties through the eighties), continuing physical strength and exercise endurance tests are being conducted to clarify quantitatively the medical and physiological effects of exercise. Among the abnormal symptoms uncovered by medical examination, hypertension, coronary insufficiency, obesity, cholesterosis, hyperglycemia, and arteriosclerosis will be studied for exercise-induced changes. The most reasonable exercise regimen for retarding aging and improving health will thereby be derived.

Legal Studies on Employment Security in Advanced Countries

Michihiro Hayashi, Professor (and five associates)

Department of Law, Kyushu University

¥2.6 million

Problems associated with employment are of serious social concern in Japan, as in other advanced nations. With the rapid aging of Japan's population, employment of middle-aged and older workers is becoming increasingly critical due to changes being wrought in traditional labor practices (for example, mandatory retirement systems, lump-sum retirement allowances, and seniority-based pay scales) premised on the widespread practice of lifetime employment with one firm.

The present series of studies is concerned with the new field of "employment-security legislation," that is, labor laws dealing with employment. Investigation is being made into the concept of employment security and the significance of the "right to work" provision in Article 27 of the Constitution of Japan as a normative standard for employment security; and basic and systematic research is being conducted on relevant issues, including employment references, vocational training, and employment insurance. Studies in comparative law on employment-security legislation in the advanced countries are also being carried out. By this means a basic theory of employment-security legislation will be formulated in an attempt to contribute theoretically and practically to employment legislation and administration now and in the future.

Assessment of Key Variables in Japanese-Style Management

Masumi Tsuda, Professor (and three associates)

Faculty of Social Studies, Hitotsubashi University

¥1.9 million

Research on corporate management as practiced in Japan has proliferated since around 1960, resulting in many excellent theoretical and empirical studies by scholars and business people in Japan and abroad. To the likely detriment of future research, however, past research has been beset by inconsistency in the terms used and the styles of analysis employed; even such institutions as lifetime employment and seniority-based wages have been comprehended in conflicting manners.

The concept of "Japanese-style management" implies that qualitative differences exist in the way management practices are handled in the West and in Japan. To provide a solid foundation for future studies into these differences, it is important that they be commonly understood with the use of a common language. For this purpose, the present study is intended to consolidate the results of past investigations into Japanese-style management and thereby to offer a general framework for its common understanding.

The Welfare State and Alienation: A Comparative Study of Sweden, West Germany, Canada, and Japan

Kaoru Ohashi, Professor (and three associates)

Department of Sociology, Meiji Gakuin University

¥3.4 million

In the course of industrialization, urbanization, and

technological innovation, phenomena of social maladjustment, or alienation, have become commonplace in all advanced countries regardless of their socioeconomic systems. Increased rates of alcoholism, drug abuse, suicide, delinquency, crime, and mental illness are among the major symptoms of the spread of alienation.

Although the hope had been entertained that alienation could be checked through improvement of social-welfare measures, the results have been less than satisfactory. Alienation phenomena have even become problems of serious social concern in "welfare states" like Sweden, West Germany, and Canada. In Japan, by contrast, the level of welfare is lower and the spread of such problems is less serious.

In a comparative international analysis, the present study will attempt to elucidate the state of alienation and the factors in its background in relation to industrialization, urbanization, and the level of welfare.

Research in Social Pathology: Clinical Studies in Suicide Prevention and Crisis Intervention

Hiroshi Inamura, Director (and twenty-two associates)
Psychiatric Services, Inochi no Denwa
¥4.2 million

With the development of urban society, people increasingly come to feel a keen sense of alienation, resulting in an ever greater number of sociopathological phenomena, including suicide, mental illness, crime, juvenile delinquency, drug abuse, alcoholism, and running away from home. Devising measures to cope with these problems is an urgent matter calling for society's attention.

The present research, continued from last year, seeks to develop concrete measures primarily for preventing suicides by thorough clinical analysis of Japanese sociopathological cases gathered through Inochi no Denwa (Lifeline Telephone). This year data on two thousand potential suicides that were gathered last year are being transferred to a multiscard-selector system and statistical information on suicides is being compiled. By this means it is hoped to provide valuable information for preventing suicides and furthering research on suicides in the future. It is also hoped to contribute to a theory of human crisis and a methodology for crisis intervention tailored to Japanese society.

Measurement of the Effects of Visual and Auditory Information in Medical-Data Transmission

Masanobu Fujikawa, Chief Researcher (and six associates)
International Medical Information Center
¥2.35 million

Scientific and technological progress in the fields of medicine and medical care has led to many new developments in data transmission, including the automatic processing of data. However, until now most computer information has been transmitted by visual means, such as the display units of computer systems and teaching machines. Although the importance of visual information to human thought processes and

decision making is evident, information provided by the other sensory organs also contributes to human cognizance.

The goal of this project is to further the development of data-transmission systems in medical training and routine medical care by designing a system that provides mutually complementary visual and auditory information. Information deemed essential to the fields of medicine and medical care is being divided into the two major categories of visual and auditory. The respective characteristics and mutually complementary functions of the two categories are being investigated and their effects measured.

Comparative Research on Attitudes Toward Equality in Advanced Nations: A Preliminary Study
Ichiro Miyake, Professor (and four associates)
Department of Political Science, Doshisha University
¥1.5 million

An important topic of debate in advanced industrial nations today concerns the meaning of social equality and justice. With the added factor of low-growth economies, the achievement of consensus on this topic is becoming more and more urgent. What are the points of agreement and conflict on this issue, and what measures is each country taking toward its solution?

The intention of the present research is to conduct a questionnaire survey on the attitudes of Japan's opinion leaders toward the merits of egalitarian and just policies in view of the policy options presently open to Japan. Comparative analysis will then be made with data from similar surveys conducted in the United States, Canada, Sweden, West Germany, France, Britain, and Italy. The objective at the present time is to frame the survey questions and select the survey sample.

This research will provide a comparison of worldwide views on social equality and justice, which are fundamental to how welfare is understood and which will establish how the Japanese stand comparatively in their attitudes toward these concepts.

Psychological Research on Adjustment to Urban Life by Youths from Rural Areas

Taketoshi Takuma, Professor (and five associates)
Department of Psychology, Tokyo Metropolitan University
¥3.94 million

Many young people born and raised in rural areas migrate to big cities, such as Tokyo, for purposes of study and work. Although some adapt very readily to urban life, others become neurotic from loneliness, apprehension, and the inability to adjust to their new surroundings. A few may even become desperate enough to turn to delinquency or contemplate suicide.

This research is a continuation of a 1975 project (in the education and culture field) on the psychological reasons for the "U-turn phenomenon" among rural youths, that is, returning to the countryside after having lived in cities. First, individual interviews are being conducted to clarify the differences that exist between rural youths who have adjusted and those who cannot adjust to urban life. Second, those char-

acteristics common to rural youth are being inferred by comparison with a questionnaire survey on attitudes toward urban life among youths born and raised in an urban area (Tokyo). In addition, there will be a follow-up survey of rural youths who returned home after living in an urban area for a period of time. This will determine the changes in their attitudes toward urban life and their lives after returning home.

A Comparative Ecological Study of the Health of Japanese and Americans

Mikio Yamamoto, Professor (and twelve associates)

School of Medicine, Teikyo University

¥6.2 million

Research on human-environment indices showing an intimate relationship with health is becoming very important for health administration. In ecological studies on the health of the Japanese under way since 1965, the present researcher and his colleagues have shown that urbanization accompanying the concentration of population has greatly influenced the health of the Japanese. They have also explored the interrelations between health and climate, nutrition, and other factors.

Drawing on past research as well as on similar studies conducted by Americans, the present study is designed to pursue ecologically the chief factors affecting health in both Japan and the U. S., to clarify the structure of these factors by comparing changes in them over a period of time, to discover overall health indices for both countries on the basis of this research, and to compose models for health planning in both countries. These results will contribute to devising health regimens not only in Japan and the U. S. but also in European countries where equivalent epidemiological phenomena occur.

Research for Increasing the Reliability of Technical Medical-Care Systems

Masao Saito, Professor (and three associates)

Institute of Medical Electronics, University of Tokyo

¥3.3 million

Introduction of new technology in the form of medical-care equipment and systems in order to improve the quality of medical care and extend treatment to all of Japan will become increasingly common. In spite of the necessity to adequately guarantee the effectiveness, safety, and reliability of new technology before introducing it, the present set-up for testing new technology is inadequate.

This research aims at a systems design that can improve the reliability of total medical-care systems, including their computer hardware, one that takes into account developments in other industrial countries but that is best suited to conditions in Japan. Focusing on the control of medical-care equipment, the research seeks to raise the reliability of such systems by ensuring that they are used correctly and to prevent accidents by seeing that they are used safely. The results will be useful as a reference for designing future medical-care systems.

Individual and Social Reactions to a Mandatory Retirement Age

Kazuo Aoi, Professor (and six associates)

Faculty of Letters, University of Tokyo

¥6.6 million

The issue of mandatory retirement systems is considered one of today's most pressing problems by individuals, companies, the state, and local governments alike. To solve the issue, it is first necessary to clarify who should be in charge of dealing with which aspects of this issue.

The present project, a continuation from last year, focuses on workers themselves, business enterprises, and administrative authorities. Last year, researchers began conducting surveys at four types of companies (classified according to mandatory retirement age and degree of economic guarantees) on awareness of what and how much should be done to ensure livelihood after retirement, completing the surveys at two types of companies. This year the survey of the remaining two types of companies will be completed.

In addition, an attempt will be made to investigate and organize from a sociopsychological viewpoint the criteria involved in attitudes believed to determine adaptability to life in old age, such as dissatisfaction, apprehension, perception of self, perception of generational differences, attitude toward a mandatory retirement age, degree of satisfaction with work, and perception of time.

Follow-up Study of the Long-term Prognosis for Mentally and Physically Handicapped Children

Teiju Kobayashi, Adviser (and two associates)

All Japan Association of Parents for Severely Handicapped Children

¥3.7 million

The problem of mentally retarded and physically handicapped children has now become, at long last, an important issue in Japan's welfare policy. Policy planners, however, are preoccupied with measures dealing with only the problems of the present, it being difficult to work out long-range policies for lifetime care of handicapped children. Up until now, in Japan and many other countries there have been many static research projects on the situation existing at a given point in time; but very few dynamic studies following the progress of the individual over time have been made. The scarcity of such studies may be cited as one of the causes thwarting the establishment of long-range policies.

This study follows up mentally and physically handicapped people ten to thirty years after they were first treated for pediatric problems. The study attempts to examine how these handicapped people have fared and how the physical or mental impediments of each person have changed in the intervening period, thereby clarifying the import of their handicaps in their growth process.

During the current year, records on some fifteen hundred cases are being compiled and classified to select an initial twenty to thirty cases for a follow-up survey.

Preliminary Study on the Structure, Functions, and Technology of Off-Season Craft Work in the Tohoku District

Yoshio Akioka, Professor (and six associates)
Department of Industrial Design, Tohoku Institute of Technology

¥1.5 million

People in farm and mountain villages used to enjoy life while working in the natural environment. Today's trend toward industrialization, however, has divided the villagers' lives between growing rice in the farming season and taking jobs as migratory workers during the nonfarming season. As a result, the village is disintegrating as an entity supporting the villagers' overall activities, and this has been thwarting the development of self-reliant and diversified rural life. This project seeks to introduce to farm and mountain villages that are idle in the off-season and winter secondary craft work that can be done by individuals on weekends, at night, and in retirement. By thus setting up a dual industrial structure of farming and craft work, it is hoped that the community functions of rural villages will be revived and that a positive contribution will be made to the welfare of these villages and to the creation of local culture.

The study this year features a preliminary survey on the feasibility of introducing off-season craft work to rural villages in the Tohoku district of northern Honshu, taking into consideration such aspects as (1) high added value, (2) establishment of an integral production process, from locally available materials to the finished product, (3) mobility of production technology (production without special equipment), (4) product diversification, and (5) work that can be done during the off-season and winter.

Preliminary Studies for a Comparison of Decision-Making Processes in Welfare Policies of Industrial States

Masataka Kosaka, Professor (and eight associates)
Faculty of Law, Kyoto University

¥1.5 million

Research on welfare policies has normally been relegated to sociologists specializing in welfare and economists interested in welfare administration. As welfare appropriations increase their weight in the national budget, however, the attention of political scientists is drawn on two counts. One is because there are political reasons for the expansion of welfare programs. The other is because the formative processes of welfare policy differ in some respects from those of other policies, such as urban affairs and economics.

To clarify the characteristics of the formative processes of welfare policies in the world's industrial states, this research focuses particularly on the second point above. In practice, this requires international comparison of welfare policy and comparison of the formative processes of welfare policy with those of other policies. Preliminary studies scheduled for this year include collecting welfare-research data accumulated in related fields, preparations for a survey to be undertaken beginning next year, analysis of how ordinary citizens and the political elite (primarily

members of the Diet) assess welfare in Japan, and coordination of research objectives with American counterparts.

Preliminary Research on Community Care for the Mentally and Physically Handicapped

Uichi Furukawa, Senior Researcher (and two associates)
Institute for Developmental Research, Aichi Prefectural Colony

¥1.5 million

Welfare systems for mentally retarded and physically handicapped people should ultimately be established within the local community in which these people live. Whatever the nature of their handicaps, these people should be allowed to go to school, to work, and to live just as others do from birth to death. In order to develop welfare policy in this direction, it is most necessary at this stage to strengthen home-care systems with firm roots in the local community.

This research project aims at laying the groundwork for community care of the handicapped through (1) development of a home-care program for the severely handicapped, with emphasis on instructing family members about caring for the handicapped at home; (2) development of toys for handicapped children and establishment of toy libraries as part of the home-care program; and (3) conducting field studies in Aichi Prefecture communities on existing organizations of parents with handicapped children, on administrative and educational facilities for the handicapped, and on volunteer groups dedicated to care for the handicapped. The schedule for this year calls for preliminary studies to prepare for a full-fledged research project.

Interpersonal Relations Among Infants: The Effects of Group Upbringing on Growth During Infancy

Mitsuko Ishimine, Psychologist (and three associates)
Miho Child Clinic

¥3.2 million

The rapid increase in the number of working mothers in recent years has resulted in an increase of children brought up in child-care centers from infancy. While some people argue that infants should be brought up by mothers at home and that having relations of dependency with many adults makes infants feel uneasy and confused, it behooves us to examine what "group upbringing" means to the children. How does it affect the growth of children to be brought up primarily with other children of their age and with child-care personnel who are not family members? This question requires long-term observation of the growth behavior of children at child-care centers and at home.

This study assesses interpersonal relations among children (both child-adult relations and child-to-child relations) who are brought up in groups, through continuous observation of their behavior starting from admission to a child-care center. By comparing such observations with observations of home-raised children, the meaning of group upbringing and its effects on growth will be elucidated, yielding data that can help improve child-care programs in practice today.

Education and Culture

Development of Standard Japanese-Language Proficiency Tests for Foreign Students

Kazuo Hara, Professor (and six associates)

College of Liberal Arts, International Christian University
¥2.3 million

With the recent proliferation in students of Japanology, there has been increasing awareness of the need for proper methods of teaching Japanese to foreign students and scholars. In connection with the necessity to develop new methods of teaching Japanese as a second language, it is essential first of all to assess correctly the student's basic ability in Japanese and to devise scientific teaching and learning methods that suit the student's language ability.

In this study, a standard scale for rating Japanese-language proficiency is being prepared by research of new topics and by analysis of teaching data accumulated by the Department of Japanese Language at International Christian University during more than twenty years of teaching Japanese to foreign students. At the same time, the study aims at developing a series of diagnostic tests to assess Japanese-language proficiency by field of specialization. More specifically, analysis is being made of the teaching materials and methods employed in Japanese-language teaching at Japanese and foreign universities, comparing the goals set at different levels of teaching. Standard criteria will be established to rate basic abilities in reading, hearing, writing, and understanding Japanese; parallel placement tests will be drafted; and comprehensive individual profiles for language-proficiency diagnosis will be developed.

Survey Tour to Assemble Photographs of Chinese Paintings in European Collections

Kei Suzuki, Professor (and ten associates)

Institute of Oriental Culture, University of Tokyo
¥12 million

The study of Chinese painting is not important only to the study of Chinese fine arts; it is also indispensable for researching Japanese painting, which has been strongly influenced by Chinese painting since the Nara period (710-94). Yet there is no center in Japan or elsewhere in the world that has a complete collection of research materials on Chinese painting. This has proved a major obstacle in the study of the history of Chinese and Japanese painting.

The purpose of the present project is to compile a complete list of extant Chinese paintings, gather a collection of their photographs, and make the photographs available in a photographic archive in order to further research on the history of Chinese and Japanese painting. This research group, working on materials collected over the past ten-odd years, has already collected photographs of Chinese paintings preserved in Japan, the U. S., Canada, and Southeast Asia and has sorted, preserved, and indexed the collection. The survey tour of Europe this year is expected to bring

closer to realization a complete center of reference material for Chinese paintings, which both Japanese and foreign scholars will be able to make profitable use of.

A Study of the Educational Reorganization of the Community

Yoshihiro Shimizu, Professor

Faculty of Humanities, Sophia University
¥1 million

It is said the 1980s will be an "age of localism," a time when it is increasingly important for the nation to improve living, welfare, and education so that they meet the needs and match the circumstances of the community concerned.

The present study, a continuation from last year, deals with the local community, a vital factor in the process of character formation among youths. Based on the twin concepts of converting the school into a larger community and the community into a school, the study attempts a sociological analysis of the school-community relationship (primary, middle, and high schools inclusive) in the field of educational activities, such as home education, social education, and private education, in quest of a means to organize "community education" along the lines of today's local communities.

The research conducted last year showed an increasing isolation of schools within communities and growing expectations among local citizens in regard to school education, signifying that schools and communities are generally bound only by formal ties. In some communities, however, school-community cooperation has reached a fairly advanced stage in such fields as youth guidance, adult sports, and community events. Through case studies of these new developments, research this year will be devoted to formulating policy proposals.

Bibliographical and Linguistic Investigations of Ancient Korean Books in Japanese Collections

Yukio Fujimoto, Associate Professor

Faculty of Humanities, Toyama University
¥1.7 million

Recent studies in archaeology, history, aesthetics, and the history of thought show that the role played by Korea in the evolutionary process of Japanese culture was more than that of a mere intermediary in introducing Chinese culture into Japan. The same thing is being shown by the study of ancient Korean books found in Japan. Of the great number of Korean books brought into Japan in ancient times, many, except for those in major libraries, are uncatalogued and their nature is unknown. Some are mistaken for Chinese books, and even the existence of others remains unconfirmed.

The present study, a continuation from last year, has as its objective to locate all ancient books produced in Korea that still survive in Japan and to examine them for bibliographic and linguistic purposes. Last year, the books preserved at the Nagoya City Hosa Library and several other libraries were exam-

ined. Also examined in the Republic of Korea were block-printed books that date back to the Koryo period (918-1392) and movable-type printed books from the early days of the Yi Dynasty (1392-1910), many of which were in good condition. This year the research at the Hosa Library will be completed, and a survey will be conducted in Taiwan. Based on the results of this research, the present project aims finally to compile a complete catalogue of all ancient Korean books in Japan and to facilitate the bibliographical study of Korean books as well as the study of Korean printing.

Mutual Understanding Between the Japanese and the Arabs

Shinji Maejima, Chairman (and eight associates)
Japan National Committee for the Study of Arab-Japanese Relations
¥3.48 million

Despite the need for Japanese-Arab relations based on mutual understanding, few studies have been conducted that would permit these peoples to perceive each other properly, which is a prerequisite to such relations.

The present study is part of a joint-research project being undertaken by the Japan and Arab National Committees for the Study of Arab-Japanese Relations on the perceptions that the Japanese and the Arabs have of each other. The initial objective for this year is for the Japanese and Arab researchers to gather relevant literature and reference materials covering the period from the 1868 Meiji Restoration to the present. The contents of the study include collection and analysis of academic papers and translations, official documents and government publications, educational materials, journalistic articles, and records of personal visits between Japan and the Arab countries. Along with the search for reference materials, interviews are being held with people who can provide information on Japanese-Arab relations. By means of this simultaneous investigation from both sides of the view each people has of the other, the study is hoped to contribute to deepening the mutual understanding between the Japanese and the Arabs.

Preliminary Research for a Study of Festivals in Traditional Cities

Makoto Matsudaira, Professor (and four associates)
Department of Social Relations, St. Paul's University
¥1.5 million

The evolution and preservation of culture is the work of human beings in social groups, and the relationship between culture and the groups dedicated to its preservation often is expressed vividly in the context of the local community and its distinctive cultural traditions. This research focuses on one basic complex of community relations—the social structure of urban groups and the festival as a representative expression of the urban groups' local culture. The urban groups to be considered are residential communities in old Japanese cities, particularly those with strong roots in the Edo period (1603-1868); the festival events to be

studied are those community activities conducted in association with shrine festivals.

The significance of perceiving traditional urban groups through their cultural activities is to be found in the elucidation it provides of the principles by which community culture is passed on and in the guidance it makes possible for the protection of that culture. Having completed initial studies in Kawagoe City, the researchers intend this year to establish a methodology and select subject communities for a nationwide research project.

Socio-anthropological Study of the Yuruks

Masatake Matsubara, Associate Professor
National Museum of Ethnology
¥2.33 million

The Yuruks live today in the Republic of Turkey and are said to be descended from the Oghuz, the branch of the Turkish peoples who played a central role in founding the Ottoman Empire. So far, there have been few attempts to make socio-anthropological studies of the Yuruk, a people who exhibit a varied mode of subsistence incorporating both farming and stock raising. It is hoped that the present study will yield information to enable the assembly of a theoretical model that will clarify the relationship between the Yuruk agricultural and nomadic lives.

While putting primary emphasis on conducting a field survey, this study attempts to delineate the characteristics of the Yuruk nomad community from the viewpoint of their culture, social structure, and history. The research will involve continuous firsthand observation of the nomadic life of the Yuruk people, following their migration and participating in their winter and summer camp life. Objectives of the study include gathering information on the organizational structure of the community and on interpersonal relations, studying stock-raising techniques, clarifying the characteristics of the Yuruks' structure of consciousness and of their culture as seen in daily life, building a theoretical model of the relationship between a farming and a nomadic life, and, on the basis of all this data, comparing the Yuruks with other nomadic peoples of Eurasia.

Research on the Influence of the Linguistic Environment on the Physiological Mechanisms of the Brain

Tadanobu Tsunoda, Professor
Medical Research Institute, Tokyo Medical and Dental University
¥4.86 million

When human beings hear sound, they process it in either the right or the left cerebral hemisphere, depending on the sound's nature, with the result that each hemisphere develops specialized functions at which it excels. A comparative study of cerebral-hemisphere dominance patterns involving speech, natural sounds (emotional utterances, animal sounds, the sound of wind, waves, and rain), and the sounds of musical instruments shows that the Japanese have a pattern that is distinctly different from non-Japanese. This dominance pattern of the Japanese is thought to

develop in any human being who has been brought up with the Japanese language as the mother tongue, regardless of ethnic origin.

The present researcher, having noted this distinctive feature of Japanese brain functioning, has postulated that the acquired linguistic environment may have influence on the physiological mechanisms of the brain. The present research explores the correlation between emotional laterality in the brain and the acquisition of language. Using a self-developed keyboard-punching method, this researcher hopes to clarify processes of mind and body that cannot be explained neurophysiologically in terms of their correlation with sensations, language, and the brain.

A Comparative International Study of Street Life

Hidetoshi Kato, Director (and one associate)

Research Institute for Oriental Cultures, Gakushuin University

¥2.94 million

Since ancient times, streets have been a place where people gather and interact. Metaphorically speaking, streets are the stage on which the urban population acts out the drama of life.

Under a fiscal-1976 grant, the present researcher conducted a comparative study of street life in New York, Manila, and Tokyo, publishing the findings in a research report (No. 5) of the Research Institute for Oriental Cultures, Gakushuin University. This year, with the collaboration of Professor Timothy Yu of Chinese University, Hong Kong, and his associates, a comparative study is under way of street vendors of Tokyo and Hong Kong. After classifying the street vendors of the two cities by type of trade, about ten street vendors in both Tokyo and Hong Kong will be selected for case studies of their life histories. By this means the sociological role played by street vendors in urban life and the administrative responses to the presence of vendors will be clarified in historical perspective.

The Role of Education in Social Change: A Case Study of Girls' High Schools

Reiko W. Sekiguchi, Associate Professor

Gifu College of Education

¥1 million

With a proclaimed goal of teaching their students to become good wives and wise mothers, so-called girls' high schools (which were in fact equivalent to junior colleges) played a central role in women's education in Japan up to World War II. It is also true that practically all women prominent in their work outside the home received education at these institutions.

This study, focusing on the prewar girls' high schools, attempts to clarify through a survey of the life histories of the schools' graduates how they were affected by the prevailing educational principles and the view of women as it was incorporated in education. Further, by inference from this survey, the research attempts to present a general theory of the role of education and the educational system in social change and its diffusion.

The present researcher has already conducted a questionnaire survey among thirteen hundred women graduating from girls' high schools between 1897 and 1926. The main work this year is an analysis of the responses to the questionnaire and collection of data in related fields of study. While most other studies on girls' high schools so far have concentrated on their educational system and their ideals and principles, the present study is noteworthy as an empirical investigation from the viewpoint of the lives of those educated within this educational institution.

Research on Eastern Polynesian Chants

Sachiko Hatanaka, Assistant Professor

Faculty of Law, Economics, and Letters, University of Kanazawa

¥1.69 million

In research on the Polynesians, especially when reconstructing their ethnic history, which has not been preserved in written records, one can only have recourse to their oral tradition, such as mythological tales and chants. Chants are ethnic epics; they are poems sung in praise of the tribal ancestors and heroes. Unfortunately, due to assimilation of Western cultural institutions by the Polynesians since the eighteenth century, their native cultural heritage has been largely lost, and its reconstruction was thought to be impossible. In 1976, however, the discovery was made that some chants still survive on Reao, a remote atoll in the Tuamotu Archipelago.

The prime purpose of this research is to record the chants still remembered by the elders of Reao. They then will be compared with chants collected from other islands, thereby gaining evidence on their antiquity and on inter-island migration within eastern Polynesia. This study, it is also expected, will contribute to establishing the linguistic genealogy of the Reaoan language, which today is spoken by few and is expected to soon become extinct.

Urban Environment as a Place for Children: The After-School Life of Children

Nobuko Ogawa, Professor (and four associates)

Department of Home Economics, Japan Women's University

¥1.97 million

In the past most Japanese spent their childhood in farm villages, but now most children are raised in cities. Moreover, the urban style of living has pervaded the countryside to such an extent that even underpopulated villages are building urban-style playgrounds for their children. The creation of an urban environment suitable for children has thus become an urgent requirement.

This study focuses on activities of children after school, thereby enabling a comprehensive view of children's life to be ascertained by combining the three aspects of home, school, and nonschool activities. By this means an attempt is being made to clarify the effect of urban environment on children's daily life. The findings from this study will enable proposals to be made on cultural and physical management of the urban environment, and they will also

help clarify the conditions of the "community," an entity frequently made mention of but not well understood, from the perspective of the life of children.

Preliminary Study on Life Histories of Japanese-Americans in Hawaii

Takashi Nakano, Professor of Sociology (and two associates)
Faculty of Humanities and Social Sciences, University of Chiba

¥1.5 million

One effective way of assessing the capabilities of the Japanese is to investigate the life histories of Japanese who emigrated abroad, clarifying how they interacted with and adapted to the new culture and what contributions to the culture they may have made in this process.

The purpose of the present study is to compile personal histories of first-generation Japanese (Issei) in Hawaii by taped interviews. Analysis of the histories will be made in comparison with studies completed earlier on individuals in Japan and Brazil. The study focuses on ordinary and not necessarily "successful" Japanese immigrants in the new and changing social and cultural environment around them, analyzing in dynamic terms the process by which they set goals, sought to attain the goals, in some cases failed to attain the goals, and then redefined the goals. The study thus attempts to clarify with the tools of sociology and social anthropology the personal histories of these Japanese as determined by their life domains and social personalities.

Many Issei in Hawaii are advanced in age, and unless their personal histories are investigated now, they may be lost to posterity forever. Accordingly, this year a preliminary survey will be conducted to select subjects for the taping of their personal histories.

Reorganization and Study of the Library of the Temple Shogo-in

Keiki Yamazaki, Professor (and seven associates)
Faculty of Literature, Ryukoku University

¥2.2 million

The temple Shogo-in, in Kyoto, is one of the few sectarian headquarters of *shugendo*, an eclectic form of Esoteric Buddhism. The treasures and old manuscripts stored at the temple have long been suspected to be of considerable historical value; but no inventory of their contents existed, since they had not been made available for study by academic researchers.

The present research, a continuation from last year, is conducted by separate teams studying documents in the areas of Buddhism, classical Japanese literature, and Japanese history. Last year the Buddhism and classical-Japanese-literature teams completed cataloguing of the relevant documents and microfilming of those deemed to be extremely precious. The Japanese-history team completed a rough classification of some fifteen thousand old documents and a catalogue of the bound books. This year the Japanese-history researchers are cataloguing the remaining manuscripts. Studies of the documents have also been initiated by all three teams.

It is hoped that the present research will (1) contribute to bibliographical studies in the fields of Buddhism, Japanese literature, and Japanese history; (2) throw light on *shugendo* practices in the Edo period (1603-1868); (3) clarify the organization of Shogo-in and its relationship with branch temples in the Edo period; (4) contribute to an understanding of Edo-period cultural activity; (5) clarify the relationship between the imperial household and the Buddhist clergy; and (6) lead to the discovery of valuable works of art.

Compilation of a General Bibliography of Old Japanese and Chinese Books: A Critical Bibliography of Specific Texts

Ryuichi Abe, Professor (and fourteen associates)
Institute of Oriental Classics, Keio University

¥9.35 million

Existing bibliographies of classical Japanese and Chinese literature have for the most part been compiled without actually studying the books involved by merely listing information in library catalogues, which is often inaccurate. Such bibliographies are not adequately suited for use in academic studies.

The present research is designed to compile an accurate general bibliography of old Japanese and Chinese books by examining those books existing in Japan for the dates of their publication or transcription and other bibliographic information (such as the process through which the books became available in Japan), by researching the relations existing among these books, and by listing their present locations. The ultimate objective is to compile a complete general bibliography by a process of sector-by-sector compilation over several years. This year the researchers have selected the following resources for bibliographical study:

I. Japanese Works

(1) Japanese Confucian studies: Writings by Yamazaki Ansai and his followers; (2) Classical Japanese literature: Writings by Tachibana Moribe; (3) *Waka*: *Hachidai-shu* (the eight principal collections of *waka* poems compiled by imperial decree); (4) Medieval Japanese literature: *Muromachi Monogatari*; *Hogen-Heiji Monogatari* and *Taiheiki*; (5) Early modern Japanese literature: *Ukiyo-zoshi*; (6) Topographies: Those printed earlier than the last year of the Shotoku era (1715).

II. Chinese Works (including works by Japanese)

(1) Sung and Yuan editions; (2) *Ssu shu* (the Four Books of Confucianism) and *Hsiao Ching* (Classic of Filial Piety); (3) Chronicles of history compiled by imperial decree; (4) Bibliographies and bibliographical catalogues; (5) Classified collections of T'ang authors' works; (6) novels and dramas (including works by Japanese authors completed prior to the 1868 Meiji Restoration).

A Cultural-Anthropological Study of the Patterns of Cultural Adaption of Japanese Families Overseas: With Special Reference to the Education of Japanese Children Living in Southeast Asia

Kazuhiro Ebuchi, Professor (and one associate)
Faculty of Education, Fukuoka University of Education

¥1.56 million

In recent years, Japanese business activity overseas has resulted in a rapidly increasing population of Japanese living abroad, and in many cities Japanese communities are being formed. The environment in which overseas Japanese live and in which their children are raised is bicultural in many respects, exhibiting aspects of both Japanese culture and the culture of their host country. In this day of internationalization, many of the problems faced by Japanese in their attempt to internationalize can be observed most clearly in the lives of these overseas Japanese.

The present study, a continuation from last year, aims to clarify the process of formation and development of Japanese communities in Southeast Asian nations and to examine the life of the children of overseas Japanese. Last year two field studies of overseas Japanese in both Thailand and Malaysia were conducted from the cultural-anthropological viewpoint. Research this year focuses on analysis of the data collected and statistical compilation of the results of a questionnaire survey conducted last year. Also, a follow-up study will investigate people who have returned to Japan after being involved overseas in the founding of Japanese associations, chambers of commerce, or schools. The present study project is to be concluded when the findings from this year's research are combined with the results of the fieldwork conducted last year.

A Practical Study on the Formation of Concepts of Energy in High School Science Education

Hideo Uchikawa, Associate Professor (and ten associates)
Faculty of Education, Tottori University

¥2.51 million

The energy problem is becoming more and more serious for Japan, a country poor in natural resources. As shown by divided public opinion over the desirability of nuclear power, it is important for each citizen not only to be acquainted with the relevant information on the energy problem in the domain of the social sciences but also to understand correctly the concepts of energy in terms of natural science. In present-day high school science education, which is the final stage of general education, energy concepts are taught in fragments in physics, chemistry, biology, and geography courses, making it difficult for students to acquire a full grasp of the concepts of energy.

To facilitate the student's acquisition of the concepts of energy, this researcher, in cooperation with local high school science teachers, will attempt (1) to develop a curriculum for studying energy concepts, (2) to develop new demonstrations and student experiments, and (3) to give and evaluate a concentrated course in energy. The findings of this study are expected to be useful as a reference for planning Science I, a course required under the new high school curriculum guide, and as a reference in local high school education.

Contemporary Topics for the Education of Urban School Children: Research on the Educational Effect of Studying in Mountain Villages

Takayasu Aoki, Chairman (and three associates)
Sodateru-kai (Society for Bringing Up Children)

¥2.52 million

City children in Japan are educated in an alienating urban environment due, among other things, to endless days of study to pass university entrance examinations. Since 1976, Sodateru-kai (Society for Bringing Up Children) has been running a village school for children. The school is the first project in Japan to send urban schoolchildren to the natural climate of a mountain village over an extended period for developing sound minds and bodies.

This research attempts to assess the effect that a long stay in a rural environment has on children, both mentally and physically, through investigations of children's personalities, parent-child relations, the development of the children's awareness of nature, and the development of the children's physical abilities through tests of athletic ability and physical strength. A follow-up study will be made of the children after they return to their homes in the cities. The educational results of this research will be presented for providing concrete suggestions relevant to the present educational system in Japan.

A Comparative Study of Japanese and American Legal Provisions to Protect the Children of Divorced Parents

Minoru Ishikawa, Professor (and one associate)
Faculty of Law, Seikei University

¥1.4 million

The increase in the divorce rate in Japan has made it necessary to institute studies on how divorce cases involving couples with minor children are handled and how the children are legally protected after divorce. In Japan, ninety percent of all divorces are "mutual consent" divorces, a divorce procedure in which the interests of the children tend to be neglected. After the divorce, claims over their custody are not infrequently contested in court. In contrast, divorce proceedings in the United States, a country known for its high divorce rate, take place in courts, and matters concerning custody and care of children are considered before the divorce is granted. Therefore, any serious disagreements concerning children arise during the divorce procedure.

The present project intends to use pertinent literature and data to investigate the Japanese and American legal provisions protecting children whose parents divorce. The aim of this study is to offer practical suggestions for establishing fairer standards of divorce settlement and application of the law for the legal protection of children after divorce.

Research on Arithmetic and Mathematics Curricula Tailored to the Student's Level of Achievement

Hideo Kondo, Chief (and four associates)
Kobe Municipal Institute for Educational Research

¥1.57 million

Poor scholastic achievement among some elementary- and middle-school students has become a frequently discussed problem in recent years. An important task in arithmetic and mathematics classes is guaranteeing

not merely that all students grasp the essentials but that they extend their abilities beyond that level as far as possible.

The coverage of the present research is confined to the subjects of numbers and arithmetical operations in elementary school and numbers and algebraic formulas in middle school. At schools cooperating in this research, a survey is being made of classroom teaching, and comprehensive achievement tests designed for each grade are being given to the students. Through analysis of the results, the structure of scholastic ability will be clarified. By noting which types of questions students tend to answer incorrectly and classifying these types in conceptual categories, the underlying hindrances to students' comprehension may be uncovered. Once the structure of scholastic ability from the fundamental to the applied level has been elucidated, the development of new courses and the discovery of more effective teaching methods tailored to the level of the student's achievement will be enhanced.

Nationwide Survey of Existing Small Japanese-Style Wooden Boats

Shun'ichi Majima, Director (and eleven associates)

TEM Research Center

¥12.26 million

Due to Japan's being an island nation, the seas and rivers have played a vital role in the transport of people and cargo, and many villages and towns developed where there was access to waterborne transportation. During this time, it was *wasen*, or Japanese-style wooden boats, that took on the long-haul service. The woodworking techniques of shaping and joinery developed in the course of *wasen* building were used widely in many areas of the people's daily life. Westernization, however, began to threaten the role of *wasen*. Only small *wasen* have survived to this day because of their usefulness in some local communities, and they, too, are fast disappearing, being replaced mainly by fiberglass-reinforced plastic boats.

The main purpose of this project is to conduct a nationwide survey of small *wasen* concerning their design and usage and to catalogue them by type, thereby contributing to comparative studies of *wasen*, to activities for the preservation of *wasen*, and to research on the characteristics of Japan's material civilization. In the survey, to be conducted the length of Japan's shores, (1) craft that still retain a typical *wasen* appearance are being sought out, photographed or sketched, and catalogued for entry in a basic list; (2) measurements are being taken of the basic designs and records are being kept on the methods of operation; and (3) the processes and tools used in building *wasen* are being investigated.

Comprehensive Research on Folk Music in Kitashitara County, Aichi Prefecture: Its Actual State and the Structure of Its Transformation

Tomoaki Fujii, Associate Professor (and five associates)

National Museum of Ethnology

¥2.72 million

In Kitashitara County, Aichi Prefecture, a number of

traditional performing arts and religious ceremonies have been handed down orally and in written form from generation to generation. They include *hanamatsuri* (flower festival), *dengaku* (dances performed during rice-planting festivities), *kagura* (sacred Shinto dances), *nembutsu odori* (dances to chants of Buddhist sutras), *bon odori* (summer dances), and *jikyogen* (local comic dances). The region also has a rich heritage of folk songs, including work songs, festival songs, summer-dance songs, popular songs, and children's songs. There have been many excellent studies of the performing arts in this region. Most, however, were historical and literary studies that concentrated on individual performing arts. Virtually no research has been done from a comprehensive standpoint extending to the field of music. Today, documentation of the region's orally transmitted arts is an urgent task because the flow of young people to urban areas threatens these traditions with extinction.

In the present research, a new field survey in the Kitashitara-County area will be made using data that the project leader has collected over ten-odd years of study on this subject. By taking advantage of its being a joint project, the research will record the comprehensive aspects of the region's folk music and at the same time clarify the structure of its transformation, thereby attempting an unprecedented overall study of the community's culture.

Preliminary Research on Linguistic Acquisition and Adaptability of Japanese Children Educated in Foreign Countries

Tamotsu Fujinaga, Professor (and four associates)

Department of Education and Psychology, Ochanomizu Women's University

¥1 million

Japanese children who have gone abroad when very young and attended foreign schools for a fairly long period of time are required to adapt to a foreign environment before they have gained fluency in Japanese, and since their education is in a foreign language, they often come home with that foreign language as their dominant means of communication. When they start going to Japanese schools, these children have difficulty readjusting themselves linguistically, and there have been many cases where such linguistic difficulties cause difficulty in overall readjustment.

This study attempts to clarify, through surveys and by experimental methods, the process by which these children acquire language and, in particular, the factors involved in bilingualism. On the basis of this information, children will be categorized and analyzed by category in terms of the various factors concerned, such as home environment, school environment, and the age at which their second language was acquired.

A follow-up study will identify the types of readjustment problems for children in each category. The ultimate objective is to develop an effective battery of diagnostic tests from which the category and aptitude for readjustment of a child can be identified. The study also aims to investigate the relationship between linguistic readjustment and cultural readjustment.

National Division Communications Supplements

Project on Mobile Health Clinics (printing costs)

Susumu Tsukahara, Professor

Department of Physiology, Fukushima Medical College

¥1,000,000

A Multidimensional Analysis of Causative Factors in Urban Accidents Involving Schoolchildren (printing costs)

Tsuneyoshi Ishida, Professor

Department of Education, Bunkyo University

¥450,000

Research on the Preservation and Restoration of Regional Cultural Properties in the Light of Urbanization (printing costs)

Koji Nishikawa, Professor

Department of Architecture, Kyoto University

¥1,000,000

Measurement of the Efficiency of In-Company Training (printing costs and symposium)

Yoko Sano, Professor

Faculty of Business and Commerce, Keio University

¥430,000

Development of a Simulation Model for the Optical Allocation of Educational Resources (printing costs)

Shogo Ichikawa, Chief

Educational Administration and Finance Section, National Institute for Educational Research

¥490,000

Observation and Simulation of Urban Weather Phenomena (printing costs)

Itaru Shionoya, Managing Director

Chubu Region Development Research Center, Inc.

¥453,000

A Study of the Development of Remote Areas in Conformity with Environmental Conservation—in Search of Principles: Case Studies of Some Nepalese Hill Villages (printing costs)

Jiro Kawakita, President

Association for Technical Cooperation in the Himalayan Area

¥840,000

Research on the Effects of Urbanization on Child Education (printing costs)

Mamoru Sato, Professor

Department of Education, Akita University

¥3,029,500

Comparative Research on the Creativity and Personality of Japanese and American University Students (printing costs)

Jun'ichi Kobayashi, Professor

Department of Psychology, Sophia University

¥1,350,000

Changes in the Distribution of Income and Wealth Through Economic Growth and Urbanization in Developing Countries (printing costs)

Toshiyuki Mizoguchi, Professor

Institute of Economic Research, Hitotsubashi University

¥600,000

A Comparative Study of Paddy-Growing Communities in Southeast Asia and Japan: A Basic Study of Modernization in Paddy-Growing Societies (printing costs and symposium)

Masuo Kuchiba, Professor

Department of Sociology, Ryukoku University

¥3,975,000

Comparative Study of the Function and Structure of a Postsecondary Education System (printing costs)

Shigeru Nakayama, Chairman

Association for the Comprehensive Study of Higher Education

¥804,200

Study of Ideas and Policies on Urban Open Spaces (printing costs)

Hikoe Shirai, Research Associate

Faculty of Horticulture, Chiba University

¥374,200

International Grant Program

The Toyota Foundation received roughly one hundred applications for international grants during fiscal 1978, of which seventeen were approved for grant awards by the Board of Directors. Some of the many fields covered by the projects in the international grant program, which was conducted on an experimental basis in 1976 and 1977 before becoming an established program in 1978, are listed below; however, it should be noted that applications in other fields are also reviewed for acceptance.

1. The environment (environmental protection, legal aspects of environmental problems, environmental-quality indices, waste disposal, and so forth).
2. Social development (rural-urban relations, urban poverty, development of less developed regions, and so forth).
3. Education and culture (review and reassessment of history, textbook preparation, youth education, research on cultural heritage and its preservation, and so forth).

Geographically, Southeast Asia will continue to be the priority area for some time to come, although applications from semideveloped countries in the area that are already successfully industrializing will not be favored. For applications in fields given priority by other funding sources, and for applications from international organizations, the prospective applicants would be best advised to seek assistance from funding sources other than this Foundation.

The Foundation has no standard application form but asks that all prospective applicants address their inquiries directly to the Foundation and be prepared to submit all materials necessary for a decision by the Foundation. The review process normally takes six months to a year. The volume of applications, which are accepted and reviewed throughout the year, has been increasing steadily.

An International Division seminar series was initiated in fiscal 1978, the seminars serving as forums for interchange between interested Japanese and the recipients of International Division grants on the occasion of visits to Japan by the grantees. The grantees are asked to brief the assembled Japanese on the research work for which the grant has been given, the topics involved in the research, and the outlook for the future, after which views are exchanged. Three seminars were held in 1978.

Seminar 1: "Development of Plant Resources and International Joint Research"
(May, 1978)

This seminar featured the research into underexploited plant resources of Southeast Asia funded by the Foundation in 1977 and 1978 and conducted by Dr. Tetsuo M. Koyama of the New York Botanical Garden.

Seminar 2: "Uneven Development and Rural-Urban Transformation in Asia"
(October, 1978)

This seminar also featured research given financial assistance in 1977 and 1978—the case studies on "Rural-Urban Relations: Asian Perspectives on Theory and Strategy of Regional Development" undertaken by researchers at the Universiti Sains Malaysia, the Marga Institute of Sri Lanka, and the National Economic and Social Development Board of Thailand.

Seminar 3: "Efforts in Environmental Protection in Japan and Thailand"
(November, 1978)

This seminar was devoted to a presentation by Thai environmental-management researchers, grant recipients at the Institute of Environmental Research, Chulalongkorn University. The researchers had come to Japan for a month of on-site observation of Japan's environmental-protection efforts.

Colloquium on Oral History

Mrs. Zakiah Hanum Nor, Acting Director General
National Archives of Malaysia

¥0.5 million

This conference, the first of its kind to be opened on the international level, is being cosponsored by the National Archives of Malaysia and the Universiti Sains Malaysia.

The paucity of written records is a serious stumbling block whenever researchers of Southeast Asia try to investigate their countries' histories. To compensate for this gap in documented history, oral history can be used to considerable advantage. The present colloquium is intended to serve as a forum for the countries concerned to exchange information and engage in cooperation on oral history. In attendance will be scholars from universities, academic societies, libraries, museums, and other institutions not only in Southeast Asia but also in the United States, Australia, and Canada.

Discussion will focus on the historical periods for which oral history can be compiled, the methods for data collection, and the uses of oral history in teaching. Also to be heard at the colloquium are reports from each country on the current status of oral-history research.

Study of Indians in Southeast Asia

Professor Kernial S. Sandhu, Director
Institute of Southeast Asian Studies

¥6.16 million

Racial pluralism is one of the characteristics of the countries of Southeast Asia. Voluminous research surveys and studies on the Chinese communities in

Southeast Asia have been published over the past several decades, but little research work on Indian communities has been carried out.

Policies and projects for economic development, social unification, and regional cooperation in the countries of Southeast Asia have tended to give relatively little consideration to racial pluralism. If these policies and projects are to be of greater practical value, a better understanding of the ethnic communities in the areas involved will greatly help. Singapore's Institute of Southeast Asian Studies has already conducted many studies in this field. Serving as a working base for research and exchange among outstanding Southeast Asian scholars, the institute is well qualified to undertake the present study.

Treatment and Utilization of Effluents from Palm-Oil Processing Mills

Professor Augustine S. H. Ong, Dean
School of Chemical Sciences, Universiti Sains Malaysia

¥3 million

Palm oil, which is used as a raw material for margarine and soap, is an important Malaysian product. The wastes produced in the course of palm-oil processing are at present released into rivers. Since these wastes are flowing into rivers in greater quantity than the rivers can naturally decompose, they form into tarry substances and seriously damage fish and other aquatic life. The contaminated water not only is unfit for drinking by local residents but also is destroying fishing resources.

The present project is designed to develop treatment techniques for the effluents using solar energy. The equipment under study will be easily installed

even at small mills. The treated wastes, moreover, will be recycled as feed for livestock.

Rural-Urban Relations: Asian Perspectives on Theory and Strategy of Regional Development—Case Study in Malaysia

Dr. Kamal Salih

Centre for Policy Research and School of Comparative Social Sciences, Universiti Sains Malaysia

¥0.69 million

First awarded a grant in June, 1977, the present project is in its second year. The project focuses on the following three points: (1) assessment of agricultural and industrial policies from the standpoint of their influence on urban and rural development patterns; (2) reevaluation of the roles of large, medium-sized, and small cities as suitable linkage within and among regions; and (3) clarification of issues related to the flow of people into cities and the employment opportunities there.

During the first year, the scheduled major surveys were carried out. This year revised investigations, detailed analyses, and study of subtopics are being carried out and a final report is being drafted.

This project is one of three selected case studies, coordinated by the United Nations Centre for Regional Development, that are being conducted in Southeast Asia.

Rural-Urban Relations: Asian Perspectives on Theory and Strategy of Regional Development—Case Study in Sri Lanka

Dr. Earle Wanigesekera

Marga Institute, Sri Lanka Centre for Development Studies

¥0.69 million

This is one of the three case studies being conducted in the above-described project coordinated by the United Nations Centre for Regional Development.

Rural-Urban Relations: Asian Perspectives on Theory and Strategy of Regional Development—Case Study in Thailand

Dr. Phisit Pakkasem, Director

Economic and Social Planning Division, National Economic and Social Development Board

¥0.69 million

This is one of the three case studies being conducted in the above-described project coordinated by the United Nations Centre for Regional Development.

Seminar on "The Urban Poor in Southeast Asian Countries"

Dr. William S. W. Lim

Southeast Asia Study Group

¥0.69 million

This seminar is an international academic gathering organized by the Southeast Asia Study Group, a body composed of scholars from Indonesia, Malaysia, the Philippines, Singapore, and Thailand. The seminar has the following three objectives: (1) to provide an occasion for exchange of views on theoretical,

analytical, and practical studies of problems relating to the urban poor; (2) to clarify the effects of rapid urbanization on both the rural and the urban poor and to generate an atmosphere conducive to greater attention to the socioeconomic conditions and living environment of the poor; and (3) to find new policies for urban development and elimination of rural poverty, and to investigate how these policies can be promoted.

Established in 1970, the Southeast Asia Study Group is engaged in independent studies and exchange of information.

Research on Environmental Management and Modern Technology in Environmental Protection

Dr. Twesukdi Piyakarnchana, Director

Institute of Environmental Research, Chulalongkorn University

¥3.59 million

The Institute of Environmental Research, newly established at Chulalongkorn University, has initiated an active research program. In the present project, a team composed mainly of the institute's researchers observed environmental-management and pollution-control technologies in Japan at firsthand for suggestions that may be of help to Thailand. The team's survey in Japan covered the offices of central and local governments charged with environmental affairs, environmental-research institutes, corporations, and private environmental organizations. The team studied a wide range of environmental issues, such as the structure and activities of environmental-management organs; the facilities and research for environmental protection and pollution control; the recognition by government, corporations, and consumers of environmental problems; environmental laws and their enforcement; and the adjustment of environmental policy with economic policy.

The Institute of Environmental Research raised \$5,000 on its own for this project, and the Foundation provided supplemental funds.

Studies on Water Pollution Trends of the Rivers Ciliwung and Cisadane

Dr. R. T. M. Sutamihardja, Program Manager

Center for Natural Resource Management and Environmental Studies, Bogor Agricultural University

¥7.05 million

Of the environmental changes being brought about in Indonesia by rapid economic development and population increase, water pollution is the most conspicuous. Research on water pollution in the tropical zone, with its special ecological conditions, is far behind similar studies in the temperate zone. In the present project, field studies are being made of water quality and water utilization for two rivers in northwestern Java, monitoring the water all the way from the upper reaches past farm areas, industrial zones, and cities until the rivers eventually empty into ports. The results will serve as basic data for guidance in governmental development projects and environmental regulations.

The Center for Natural Resource Management

and Environmental Studies of Bogor Agricultural University became active in 1977. Its research program focuses on water quality in connection with regional development plans, water control in coastal areas, and utilization of water resources in upland areas. The center is actively cooperating in governmental development programs.

European, British, and Japanese Perception of International Economic Development in the 1980s: A Comparison of Policy Models

Dr. David Watt, Director

The Royal Institute of International Affairs

¥4.94 million

The Royal Institute of International Affairs (Chatham House) has been engaged since 1974 in preliminary studies of Japanese policies. The present project is intended to bring together and build upon this research. It has the following objectives: (1) to build a model of the international political and economic conditions that are likely to influence the thinking and the priorities of Japan's policy makers; (2) to clarify the existing and potential points of conflict between this model and similar models built for continental Europe and Britain; and (3) to formulate policy proposals designed to minimize points of conflict or, failing that, to prevent conflict from surfacing unexpectedly.

Chatham House is a research institute that wields considerable influence in British policy making. The present project is being carried out with the assistance of a Japanese researcher, financially assisted jointly by the Toyota Foundation and the Japan Foundation.

A New Approach to Regional Planning: Application of "Micropolis" to the Eastern Region of Thailand

Dr. Anan Sangtherapitikul

Faculty of Economics, Chulalongkorn University

¥1.36 million

The present project considers the feasibility of "micropolis" (small-city) policy as a technique for rural development that can satisfy basic human needs while improving the pattern of income distribution. Beginning from the supposition that a cluster of small cities is to be built in the fast-urbanizing eastern region of Thailand, the project assesses present circumstances and simulates desirable future conditions in terms of residents' sense of belonging, pattern of distribution of income and wealth, and the accelerator effect of social interaction.

The researchers are mainly scholars at Chulalongkorn University, assisted by experts from other universities in a joint-research network. This project is also intended as a preparatory step to forming an independent research framework for the future of the social sciences in Thailand.

A Study of Current Efforts for the Development of the Social Sciences in Indonesia: From the Viewpoint of International Scientific Exchange and Technical Assistance

Dr. James Fox, Professional Fellow

Department of Anthropology, The Research School of

Pacific Studies, The Institute of Advanced Studies, The Australian National University

¥7.8 million

The present project, initially awarded a grant in October, 1977, is in its second year. The research focuses on the following three points: (1) to prepare a detailed ethnographic record of the experiences of Japanese researcher Mitsuo Nakamura in a training program carried out under the auspices of the Indonesian Social Science Foundation; (2) to compare and evaluate this and other programs assisted by foreign aid (including Japanese aid) for the development of the social sciences in Indonesia; and (3) to offer suggestions concerning assistance to developing countries.

In the first year of the project, the ethnographic record was essentially completed as scheduled; this year work focuses on the second and third research objectives.

Survey of Unexploited or Underexploited Food-Plant Resources in Asia, Leading to the Effective Utilization, Conservation, and Future Introduction of Asian Food-Plant Resources

Dr. Tetsuo M. Koyama, Curator

The New York Botanical Garden

¥11.69 million

The present project, initially awarded a grant in October, 1977, is in its second year. The project focuses on the following points: (1) to conduct field surveys of insufficiently exploited plant resources in Thailand and Indonesia; (2) to submit samples collected in the field for studies and breeding research in the United States, Taiwan, and elsewhere; (3) to prepare an academic manual on plant resources in the Asian region; (4) to train experts in the Asian region in how to carry out research in this field; and (5) to establish a cooperative research system for plant resources in the Asian region.

The major work in the first year of the project was research in Thailand. Emphasis for the second year is on field surveys in Indonesia and training of researchers in Indonesia and Sri Lanka.

International Conference on the Teaching-Learning Process and the Use of Educational Technology in Universities: With Special Reference to ASEAN Countries

Tan Sri Datuk Haji Hamdan Sheikh Tahir, Vice-Chancellor
Universiti Sains Malaysia

¥0.47 million

The present international academic research forum is being sponsored by the Universiti Sains Malaysia. The agenda concentrates on the following topics: (1) to review and reassess the curricula of university education and the means of attaining the intended educational results at this time, when the purpose of university education is shifting from education of the elite to education of the public in general; (2) to enhance awareness of the current status and problems of the teaching-learning process at universities in both developing and developed countries; and (3) to discuss means of enhancing the effectiveness of the teaching-learning

process, such as by use of educational technology, in the participating countries.

The participating countries in the present conference include Japan, the United States, Britain, Canada, and Australia in addition to the five ASEAN countries.

Asian Theater for Children: Its Role in the Education and Development of the Asian Child

Dr. Amelia Lapeña-Bonifacio, Professor and Artist-in-Residence

University of the Philippines

¥3.52 million

Stage performances that children can relate to exert important influences on their growth and emotional development. The present project is an attempt to investigate whether modern theatrical activities evolved from traditional theater forms are being effectively utilized today for education of children, and also to clarify what these activities imply for the development of children's theater in the future. Resource materials in this field are extremely scarce in the countries of Southeast Asia, but the present researcher has studied Asian performing arts in depth at the University of the Philippines and is herself a playwright leading a volunteer performance team. It is hoped that her studies will stimulate interest in Southeast Asian countries and lead to a foundation for exchange and development in children's theater.

The Structure of Northern Thai Mural Paintings

Dr. Sone Simatrang, Lecturer

Faculty of Decorative Arts, Silpakorn University

¥2.59 million

The murals in the temples of northern Thailand are both works of art that represent the culture of northern Thailand and a priceless cultural heritage recording for posterity the life style and religious ceremonies of old northern Thai communities. For all their importance, however, these paintings have not been subjected to serious study. Moreover, since they are one to two hundred years old, the murals have suffered serious damage and will be lost through destruction if nothing is done to preserve them.

Mural paintings of nine northern Thai temples are being photographed and reproduced in the present study, with analyses of their designs, styles, and production techniques. By this means it is hoped to preserve Thai cultural assets and record traditional Thai culture.

Publication of the Youth Magazine *Semangat Remaja*

Dr. Lim Teck Ghee, Chairman

Institut Masyarakat

¥8 million

The present project involves the publication of a magazine for Malaysian youths and future leaders, now fourteen to eighteen years of age (numbering about two million). The magazine will attempt to impart knowledge to youths about development, changes that accompany development, examples of responses to change, and information on the tradi-

tions and cultures of Malaysia and its neighboring countries. The magazine is to be a monthly, issued in both Malaysian and English. A first year circulation of five thousand has been scheduled, with an ultimate goal of making the magazine a commercially paying venture.

In Malaysia at present, there are virtually no educational magazines motivating youths to participate constructively in national development, and the publication of this magazine may have great social significance. The Institut Masyarakat is a private research institute with a young research staff. (The grant for this project will be made available upon receipt of Malaysian governmental approval for publication of *Semangat Remaja*, or Youth Spirit.)

Communications Grant Program

This year's communications grant program included grants for international conferences convened in Japan, which were begun last year, and grants for the "Know Our Neighbors" Translation-Publication Program, which was inaugurated this year.

Grants amounting to ¥19.5 million for international conferences convened in Japan were awarded to eight of the nineteen applications submitted. Of the fifty-six participants in the conferences, ten were from Thailand; seven from the Philippines; five each from India and Malaysia; four from Indonesia; three each from Pakistan, the Republic of Korea, and Sri Lanka; two each from Afghanistan, Bangladesh, Burma, and Taiwan; and one each from Brazil, China, Iran, Mexico, Nepal, Nigeria, Singapore, and Vietnam.

The "Know Our Neighbors" Program, planning for which began last year, aims to better acquaint Japanese with the culture, society, history, and other aspects of their neighbors in Southeast Asia and to facilitate a deeper awareness of the ways of thinking and social trends in neighboring countries. To this end, the program selected from among Indonesian, Malaysian, Philippine, Singaporean, and Thai books on culture, society, history, and other topics (including fiction) those deemed suitable for introduction to the Japanese public; and the Foundation awards grants to assist with the translation of these books into Japanese. By this means an effort is made to promote the publication of books in this subject area, encouraging both publishers who have already begun introducing books from Southeast Asia and publishers who are thinking of doing so.

Advisory groups of learned people from these Southeast Asian nations were formed last year, and a coordinating committee of experts on Southeast Asia was set up in Japan. The Southeast Asian and Japanese bodies exchanged opinions while considering about seventy books recommended from the various countries, and the first compilation of recommendations was prepared. In October, 1978, the Foundation called for applications from publishers desiring to undertake translation and publication of those works. Applications were received for thirteen books, and before the fiscal year had ended the seven described below were awarded grants amounting to ¥15.3 million.

This was the fourth year for the International House of Japan's Fellowship Program for Japanese Social Scientists, and it was also the fourth year for the Toyota Foundation to provide grant aid to the program, bringing to one hundred million yen the total awarded so far.

Grants for International Conferences Convened in Japan

Conference	Organizing Committee Coordinator	Grant Amount	Number of Participants Supported
Meeting on the Flora of Thailand	Editorial Board, <i>Flora of Thailand</i> Kunio Iwatsuki	¥ 660,000	2
The Workshop for Ancillary-Firm Development in Asian Countries	The Coordination Committee for Ancillary-Firm Development in Asian Countries Konosuke Odaka	¥ 1,920,000	6
International Workshop on Selected Topics of Magnetospheric Physics	Japan IMS Committee Tatsuzo Ohbayashi	¥ 1,930,000	4
International Symposium on Elementary-School Science Education	Japan Elementary-School Science Teachers Association Naoyuki Iguchi	¥ 4,520,000	12
Asian Symposium on Edogenous Intellectual Creativity	United Nations University Kinhide Mushakoji	¥ 4,400,000	11
Symposium on the Future of Education in Theoretical Chemistry in Asia	Research Group on Education in Theoretical Chemistry Tomohiko Sakaki	¥ 2,020,000	6
Animal Genetic-Resources Workshop	SABRAO Takane Matsuo	¥ 2,220,000	8
Cross-Cultural Workshop on Personality Development	Study Group on Personality Development in Asia Tsune Shirai	¥ 1,830,000	7
Total		¥19,500,000	56

Meeting on the Flora of Thailand

The flora of Thailand until now have mainly been the subject of joint international studies by European specialists. This meeting aims to invite the active participation of Japanese researchers and to discuss the current status and problems of research on tropical Asian flora, the education of young researchers, and international cooperation.

The Workshop for Ancillary-Firm Development in Asian Countries

This conference will hear an interim report on a two-year international research project and discuss the

future prospects. Survey results on the automobile and related industries will serve as a basis for discussion on the development and promotion of Asia's machinery industry and smaller ancillary firms.

International Workshop on Selected Topics of Magnetospheric Physics

In 1976 several countries, including Japan, began work on a project to observe the earth's magnetosphere in order to promote research on the magnetic properties of the space around the earth. The conference will hear reports on the condition of the earth's spatial environs based on terrestrial and satellite ob-

servations of the magnetosphere carried out by Japan and other countries.

International Symposium on Elementary-School Science Education

Since 1962 a nationwide research council on elementary-school science education has worked toward the improvement of science education in Japanese elementary schools.

The symposium aims to extend the sphere of academic interchange in this field overseas, particularly to the educators of other Asian countries, discussing ideas on science education and the environment that children live in, the problems of teacher training, and the development of educational materials and equipment.

Asian Symposium on Endogenous Intellectual Creativity

In order to encourage development of their societies, Asian countries must foster the endogenous creativity of their own peoples rather than depend solely on knowledge from the West. This conference is being held in conjunction with a United Nations University program that examines the development of human beings and society.

Symposium on the Future of Education in Theoretical Chemistry in Asia

This meeting will investigate the problems of modern chemistry and the present state of theoretical chemistry education in Asia. Proposals will be heard on the future prospects for education in theoretical chemistry and the means by which educational development can be attained.

Animal Genetic-Resources Workshop

Animals that have played a beneficial role for the societies in their native Asian-Pacific habitats display wide genetic variation and retain genetic constitutions well adapted to their respective local environments. However, recent diffusion of intensive agriculture threatens the existence of many of these useful animal breeds. This conference will consider methods of preserving the genetic resources of domestic animals.

Cross-Cultural Workshop on Personality Development

This meeting will hear the final results of a four-year international joint-research project on parent-child relations in Japan, the Philippines, and Thailand. One item of comparison in the research is phenomena of rebellion during childhood and adolescence.

“Know Our Neighbors” Translation-Publication Program

Title	Author	Translator	Publisher	Grant Amount
<i>Tagalog Short Stories</i>		Motoe Terami	Imura Cultural Enterprise Co., Ltd.	¥ 1,500,000
<i>Soi Thong and Other Stories</i>	Nimit Phumthaworn	Koichi Nonaka	Imura Cultural Enterprise Co., Ltd.	¥ 2,160,000
<i>The Ethnographical Essays of Phraya Anuman Rajadhon (Satheankoset)</i>	Satheankoset	Mikio Mori	Imura Cultural Enterprise Co., Ltd.	¥ 2,340,000
<i>The Philippines: A Past Revisted</i>	Renato Constantino	Setsuho Ikehata and Yoshiko Nagano	Imura Cultural Enterprise Co., Ltd.	¥ 1,060,000
<i>The Philippines: The Continuing Past</i>	Renato Constantino and Letizia R. Constantino	Yoshiyuki Tsurumi	Imura Cultural Enterprise Co., Ltd.	¥ 2,100,000
<i>Khru Bannok</i> [Country Teacher]	Khamman Khonkai	Takejiro Tomita	Imura Cultural Enterprise Co., Ltd.	¥ 2,040,000
<i>Chodmai Chak Muang Thai</i> [Letters from Thailand]	Bo-Tan	Takejiro Tomita	Imura Cultural Enterprise Co., Ltd.	¥ 4,080,000
Total				¥15,280,000

Tagalog Short Stories

This is the first full-fledged translation into Japanese of literature written in Tagalog, an indigenous language of the Philippines. With the cooperation of specialists in the Philippines, thirteen short stories by eleven authors were selected for inclusion in this volume. All depict aspects of the lives of people struggling to survive on the lower rungs of the social order. Complemented by translator's notes and bibliographical annotations including interviews with the authors, the book will also serve as a useful guide to literary trends in the Philippines.

Soi Thong and Other Stories

The three novelettes comprising this anthology make a literary appeal on the many problems confronting contemporary Thai society by realistically portraying traditional farm life in Thailand. The book is extremely helpful in bringing about an understanding of the rural society that forms the basis of the Thai nation. The quality of the Japanese version attests to the translator's long experience of living in Thailand and more than ten years of research on Thailand's rural economy. *Soi thong* means "gold necklace."

The Ethnological Essays of Phraya Anuman Rajadhon (Satheankoset)

Satheankoset was the pseudonym of the late Professor Anuman Rajadhon, a famous scholar of ethnology. This book is a collection of his works on the Thai people's way of life and is of interest not only for its insights into Thai ethnology but also for its wealth of knowledge of the Thai view of the world, outlook on life, and sense of values. The translator's long familiarity with Anuman's works qualifies him as the best person for the job.

The Philippines: A Past Revisited

This first volume of Renato Constantino's history of the Philippines covers the period up through the nineteenth century. Besides including the results of recent historical findings, the book attempts to reconstruct Philippine history from an ethnohistorical viewpoint centering on the people, bringing into fresh perspective the colonial structure, popular uprisings, and class structure. The translators are both young researchers of Philippine history, and their Japanese rendition of the text as well as their accompanying notes are excellent.

The Philippines: The Continuing Past

Treating the period of World War II and the establishment of the republic after the nation gained its independence, this third volume of the above-mentioned series presents a detailed discussion of U. S. policy toward the Philippines, Japanese sympathizers, and the resistance movement. It contends that because the anti-Japanese movement did not evolve on a higher plane into an anticolonial movement, the Philippines' liberation from Japanese occupation resulted in resubordination to the United States. The account of con-

ditions experienced under Japanese occupation and their significance to Philippine history given from a Philippine viewpoint make this volume recommended reading for Japanese, who have not had access to this viewpoint previously.

Khru Bannok [Country Teacher]

This social novel about a country teacher (*khru bannok*), whose life of struggle against social evil and zeal for education finally ends in tragedy, is an acclaimed best seller that has also been made into a motion picture. Northeastern Thailand, where the story takes place, is the nation's poorest area as well as the center of communist guerrilla activity. The translator, who happens to be Japan's foremost scholar of the Thai language, has transformed this realistic portrayal of rural life into superb Japanese prose.

Chodmai Chak Muang Thai [Letters from Thailand]

This book takes the form of "letters from Thailand" (*chodmai chak muang Thai*) sent to his mother back home by a young overseas Chinese trying to adapt to Thai society. The story eloquently depicts the problems encountered by overseas Chinese living in Thailand. This winner of the SEATO prize for literature is beneficial to an understanding of both the Thai society and the problems of overseas Chinese. The translator, who is fluent in both Thai and Chinese, has succeeded in bringing out in Japanese all the intricate nuances of the original.

Fellowship Program

Fellowship Program for Japanese Social Scientists
Yoichi Maeda, Managing Director
International House of Japan
¥30 million

This program, initially awarded a grant in October, 1975, in the program's first year, is now in its fourth year. The purpose of the program is to encourage international participation on the part of young Japanese social scientists by providing them with fellowships for research of their choosing for a fixed period (two years as a rule) in overseas universities and other academic research institutes. The initial goal is to extend fellowships to a total of one hundred fellows. To date twenty-one fellowships have been awarded, six in the first year of the program, nine in the second, and six in the third. Fellows do research in many parts of the world, including Eastern and Western Europe, Asia, and the United States.

This program, which receives the cooperation of the Social Science Research Council of the United States and other organizations throughout the world, is jointly supported by the Toyota Foundation, the Ford Foundation, and the Japan Foundation.

Adjustments to Grant Budgets

(as of March 31, 1979)

Period	Grantee Type of Grant	Organization	Date Grant Approved	Grant Amount Approved Grant Amount Returned Final Grant Amount
Fiscal 1976	Hiroko Kageyama National Division Grant	Study Group for Women's Journal- ism	October 4, 1976	¥5,400,000 1,498,044 ¥3,901,956
Fiscal 1977	Saburo Kawai Grants for International Con- ferences Convened in Japan	International Development Center of Japan	October 5, 1977	¥1,660,000 1,008,271 ¥ 651,729
	Koichi Mera Grants for International Con- ferences Convened in Japan	Regional Development Associ- ation	October 5, 1977	¥1,080,000 600,680 ¥ 479,320
	Nobuo Kumamoto Grants for International Con- ferences Convened in Japan	Japan Center for Human Envi- ronmental Problems	October 5, 1977	¥1,310,000 188,600 ¥1,121,400
	Masahiko Honjo Grants for International Con- ferences Convened in Japan (grant returned)	United Nations Centre for Re- gional Development	October 5, 1977	¥2,220,000 2,220,000 0
Fiscal 1978	William Lim International Grant Program	Southeast Asia Study Group	June 14, 1978	¥ 690,000 250,000 ¥ 440,000
	Kinhide Mushakoji Grants for International Con- ferences Convened in Japan	United Nations University	October 4, 1978	¥4,400,000 24,400 ¥4,375,600

Financial Report for Fiscal Year 1978

Settlement of Accounts (April 1, 1978 — March 31, 1979)

	Fiscal 1978	Fiscal 1977	Fiscal 1976	Unit: Yen Fiscal 1975
INCOME				
Balance brought forward from the previous year	40,669,467	138,095,340	108,153,416	78,936,538
Interest from the principal endowment	308,616,264	383,923,429	283,879,508	286,571,296
Interest on working endowment	563,067,959	437,914,676	189,253,000	63,355,309
Miscellaneous income	2,287,324	—	—	—
Donations	1,800,000,000	1,800,000,000	1,000,000,000	2,000,000,000
Total Income	<u>2,714,641,014</u>	<u>2,759,933,445</u>	<u>1,581,285,924</u>	<u>2,428,863,143</u>
EXPENDITURES				
Grants and program expenses	490,769,708	452,909,725	382,031,196	266,376,269
Administrative expenses	67,900,978	65,452,653	59,132,308	54,333,458
Purchase of fixed assets	3,078,300	901,600	2,027,080	—
Income transferred to reserve for retirement allowance	1,000,000	—	—	—
Income transferred to working endowment	<u>1,800,000,000</u>	<u>1,800,000,000</u>	<u>1,000,000,000</u>	<u>2,000,000,000</u>
Total Expenditures	<u>2,362,748,986</u>	<u>2,319,263,978</u>	<u>1,443,190,584</u>	<u>2,320,709,727</u>
Excess of Income over Expenditures	<u>351,892,028</u>	<u>440,669,467</u>	<u>138,095,340</u>	<u>108,153,416</u>

Note: Of the surplus funds for the current fiscal year ¥350,000,000 has been transferred to the working endowment, and the balance has been carried over to the income budget of the following fiscal year.

Balance Sheet (as of March 31, 1979)

	Unit: Yen			
	Fiscal 1978	Fiscal 1977	Fiscal 1976	Fiscal 1975
ASSETS				
Cash	140,672	25,508	15,835	25,469
Bank accounts	3,623,643	26,575,755	36,845,358	35,945,495
Marketable securities	10,520,448,364	8,342,893,746	6,196,265,833	5,115,009,180
Prepaid expenses	1,790,378	1,622,828	1,622,828	1,420,120
Advance (disbursement)	288,767	4,832,436	9,340,600	8,322,192
Suspense payments	—	1,033,263	—	—
Fixed assets	<u>47,155,697</u>	<u>46,653,463</u>	<u>48,422,407</u>	<u>49,535,125</u>
Total Assets	<u>10,573,447,521</u>	<u>8,423,636,999</u>	<u>6,292,512,861</u>	<u>5,210,257,581</u>
LIABILITIES				
Accounts payable	132,222,314	105,328,936	85,168,744	41,847,490
Deposits received	1,177,482	985,133	826,370	721,550
Reserves	—	30,000,000	20,000,000	10,000,000
Reserve for Toyota Foundation prize	40,000,000	—	—	—
Reserve for retirement allowances	1,000,000	—	—	—
NET ENDOWMENT				
Principal endowment	3,000,000,000	3,000,000,000	3,000,000,000	3,000,000,000
Working endowment	<u>7,399,047,725</u>	<u>5,287,322,930</u>	<u>3,186,517,747</u>	<u>2,157,688,541</u>
Total liabilities	<u>10,573,447,521</u>	<u>8,423,636,999</u>	<u>6,292,512,861</u>	<u>5,210,257,581</u>

Endowment Status

	Unit: Yen				
	End Fiscal 1978	End Fiscal 1977	End Fiscal 1976	End Fiscal 1975	End Fiscal 1974
Principal endowment	3,000,000,000	3,000,000,000	3,000,000,000	3,000,000,000	3,000,000,000
Working endowment	<u>7,399,047,725</u>	<u>5,287,322,930</u>	<u>3,186,517,747</u>	<u>2,157,688,541</u>	<u>133,057,559</u>
Total	<u>10,399,047,725</u>	<u>8,287,322,930</u>	<u>6,186,517,747</u>	<u>5,157,688,541</u>	<u>3,133,057,559</u>

Note: The working endowment at the end of fiscal 1978 includes ¥47,155,697 of fixed assets.

Chronological Data

- 1978 *Apr. 3*: Acceptance of grant applications for fiscal 1978 National Division Grant Program; acceptance of grant applications for fiscal 1978 Grants for International Conferences convened in Japan
- May 23*: First International Division Seminar
- May 31*: Final acceptance of grant applications; total: 253 for Human and Natural Environments; 177 for Social Welfare; 202 for Education and Culture; final acceptance of grant applications for Grants for International Conferences Convened in Japan; total: 19
- June 14*: Thirteenth meeting of Board of Directors; approval of the appointment of members of Board of Trustees; approval of the appointment of members of Selection Committees; fiscal 1978 grants decided: for International Division Grants, 8 recipients, ¥16,010,000; third meeting of Board of Trustees; approval of the appointment of members of Board of Directors
- July 1*: Fourteenth meeting of Board of Directors; approval of the appointment of Chairman of Board of Directors and the Executive Director
- Oct. 4*: Fifteenth meeting of Board of Directors; fiscal 1978 grants decided; for National Division: Human and Natural Environments, 28 recipients, ¥115,730,000; for Social Welfare, 22 recipients, ¥74,070,000; for Education and Culture, 23 recipients, ¥75,360,000; for International Division Grants, 4 recipients, ¥21,150,000; for International Conferences Convened in Japan, 8 recipients, ¥19,500,000; for Fellowship Program for Japanese Social Scientists, ¥30,000,000
- Oct. 9*: Acceptance of grant applications for "Know Our Neighbors" Translation-Publication Program
- Oct. 10*: Publication of Toyota Foundation Report No. 3
- Oct. 12*: Fiscal 1978 grants awarded
- Nov. 11*: Second International Division Seminar
- Nov. 25*: Fourth National Division Symposium
- Nov. 30*: Third International Division Seminar
- 1979 *Jan. 18*: Publication of Toyota Foundation Report No. 4
- Jan. 19*: Final acceptance of grant applications for "Know Our Neighbors" Translation-Publication Program; total: 13
- Jan. 20*: Fifth National Division Symposium
- March 15*: Sixteenth meeting of Board of Directors; fiscal 1978 grants decided: for International Division Grants, 5 recipients ¥26,270,000; for "Know Our Neighbors" Translation-Publication Program, 7 recipients, ¥15,280,000; activity program and budget established for fiscal 1979
- March 20*: Sixth National Division Symposium
- March 30*: Publication of Toyota Foundation Report No. 5

The Staff of the Foundation

(as of March 31, 1979)

Executive Director
Yujiro Hayashi

Secretary of the Foundation
Iwao Aida

General Affairs and Accounting Division

Division Manager
Naomichi Kamezawa
Assistants
Katsuyoshi Ito
Motoko Takeda
Takatoshi Ando

National Division

Program Officer
Yoshinori Yamaoka
Program Assistants
Yoshiaki Kusumi
Gen Watanabe

International Division

Program Officer
Kazue Iwamoto
Program Assistant
Yoshiko Wakayama

THE TOYOTA FOUNDATION

Shinjuku Mitsui Building 37F, 2-1-1 Nishi-Shinjuku, Shinjuku-ku, Tokyo 160, Japan
Tel: (03)344-1701, -1702, -1703