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Scientific Exchange with Vietnam

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CATALYZING SCIENTIFIC EXCHANGE WITH VIETNAM

Science is a cooperative endeavor that knows no boundaries. In that connection, FAS, and all other scientific organizations we know, are committed to helping scientists everywhere maintain cooperation with one another.

We regret that world events have kept the scientists of Vietnam almost entirely out of contact with US scientists. Since 1954, when the Vietnamese in the North of their country defeated the French, the North Vietnamese have been isolated from the West. And since reunification, Vietnamese scientists in the South have been isolated as well.

As this trip report shows, the scientists of Vietnam have few textbooks, almost all of them in Russian. They have salaries that are far too low to consider buying Western textbooks or subscribing to Western journals. Needless to say, they lack xerox machines and computers. And, above all, they lack the personal contact with Western scientists that they need to keep themselves professionally up to date.

But it is also evident that they have high scientific potential. Educated, trained, and properly equipped, these 60,000,000 Vietnamese citizens can make important contributions to world science. And they are essential, in any case, to the growth and development of their own society.

Especially now, when relations between our countries are not normalized and when the US has placed an embargo on financial dealings with Vietnam, normal scientific relations are difficult. Perhaps with the upcoming withdrawal of Vietnamese forces from Cambodia, in September, the US and Vietnam will exchange Ambassadors with all that implies for scientific exchange.

But until then, and for some time after, FAS members are encouraged to think about the issue of improving scientific relations with Vietnam. Indeed, we would like to have members think and work on this issue in ways that could be generalized to other third world countries. Perhaps if methods can be found to supply countries with journals, or travel stipends, these same methods can be applied to other such countries.

Until this point, the major work in scientific relations with Vietnam has been done by the U.S. Committee for Scientific Cooperation with Vietnam, originated by Edward Coopersmith and now run by Dr. Judith Ladinsky. FAS has no intention of duplicating the work of this country-specific and long-standing operation. But we are looking for ways of catalyzing more interest in scientific relations with Vietnam and bringing more funding and more participating scientists into the field.

As an aid to helping both sides understand the problems better, we have invited a Vietnamese scientist-administrator, Nguyen Huynh Mai, to work with us for a year at our headquarters, improving her English, her understanding of American scientific structure, and laying a basis for scientific exchange. In addition, in the first week of October, we plan to host a visit by the President of Vietnam's Center for Scientific Research, Nguyen Van Hieu—thus to introduce him to parts of the American scientific establishment.

As members will remember, FAS played an historic role in catalyzing the first exchange of scientists between the People's Republic of China and the United States in 1972. Since then we have not given much attention to these problems of science in developing countries. We hope members will see this as an opportunity for all of us to do some more in this important area. (See page 12 for some further comments.) ■

Physicists Nguyen Van Hieu, President of the Center for Scientific Research, and Mrs. Nguyen Van Hieu

Joint Projects Proposed

As a typical project, the Institute of Mechanics wants to set up an "International Laboratory for Food Drying Process" to research the technology for the production of dried food such as fruit and making fruit powders and making equipment for the food industry for producing such powders. It would need about $500,000 from the U.S. to set up the laboratory and to pay for the industrial equipment. The Vietnamese would meet any other costs, would provide the labor, and would divide the profits accordingly.

In another project of the Research Institute of Machinery and the Institute of Mechanics, they would investigate and produce 250 to 500 tons of multilayer metal plates some of which would be exported. They need about $2 million in foreign capital, and, again, the profit would be divided according to the ratio of investment at home and from abroad.

Some other areas in which there might be U.S.-Vietnamese Joint Scientific Corporations or laboratories specifically mentioned by Nguyen Van Hieu were:

1). Rare Earth Materials (Luminophors, magnetic materials, glass, alloys, etc.)
2). Medical equipment
3). Natural substances (essential oils, bioactive substance, etc.)
4). Composite materials
5). Exploitation of biological resources through biotechnology
6). Exploitation of geothermal energy resources.

Also of interest to the Center would be joint research programs and seminars in diverse areas (mathematics, mathematical physics, materials science, quantum electronics, solid-state optics, natural substances, and biotechnology, were among those specifically mentioned as examples.) ■

Mrs. Nguyen Thi Binh, Vice-President of the Foreign Affairs Committee

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THE TRIP TO VIETNAM

President Nguyen Van Hieu met the airplane. A Lenin Prize winner in elementary particle physics, he had been, in 1978, the first Vietnamese to get a visa to the United States under the new socialist Government. Now he was the President of the National Center for Scientific Research of Vietnam with 40 Research Institutes and 2,000 scientists. And as a full member of the ruling Central Committee of the Communist Party, he had a great deal of influence. Fifty-one years old, he could be President of the Center for four more years.

With him was Professor Dao Vong Duc, head of the Center for Physics. Both had been trained in the Soviet Union and had worked at Dubna. During the war Hanoi told the brightest young scientists simply to stay in Moscow until the war was over; they would be needed for reconstruction. In the afternoon meeting we met Nguyen Van Dao, the Vice President of the Center and its Secretary General; Trinh Quang, the Director of Foreign Relations; Dau Si Thai, the Deputy Director for Relations; and our guide, Viet-hung.

The hotel Hoa Binh was dingy, worse than a run-down college dormitory. The streets in Hanoi were so full of bicycles (cost $25 to $100) and motorbikes ($600) that it could be surprisingly difficult, even for an experienced jaywalker, to get across. And the bicycles have no lights, or even reflectors, so it can be especially difficult to see them at night. The occasional cars or trucks simply add to the confusion. But there are no private cars in Hanoi.

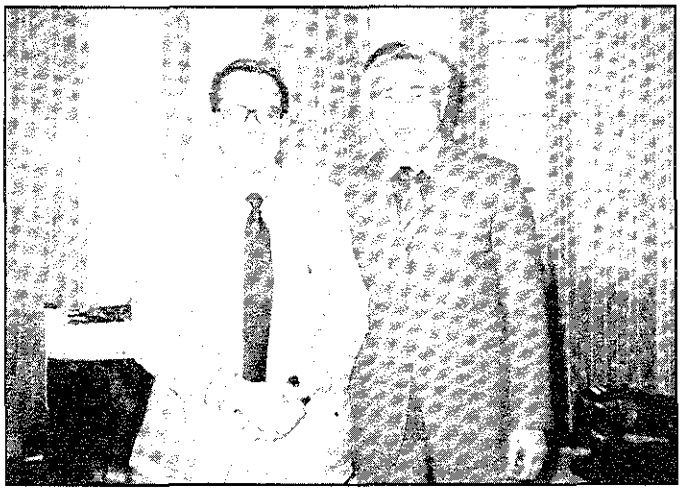
At the airport and at a meeting in the afternoon, one began to realize the extent of the difficulties of the scientists. They could not afford to subscribe to journals, which might cost a year's salary. And the few journals that were donated to them arrived so late that they could not respond in time to the vacancy notices for the fellowships in America for which they might otherwise have qualified. Few American foundations seem concerned about science in the developing world.

In the morning, Dr. Ha Vinh Tan of the Institute for Theoretical Physics, showed a visitor around Hanoi. He had recently written an article on the economic situation entitled: "The Market is the Plan." This contribution to the internal debate over planned versus free market argued, among other things, that a shift to an unplanned economy resulted in inflation, but that the inflation simply substituted for shortages. Inflation, he said, was about 600% a year and scientists only made $5 to $10 a month.

Dr. Ha was hoping to go to Princeton in April or May to work on high-temperature superconductors with an FAS sponsor, Philip Anderson. Everything was now changing and the scientists were happy about it.

Mrs. Nguyen Thi Binh

Now the Vice-Chair of the Foreign Affairs Committee, Mrs. Binh said that the Vietnamese troops were now withdrawing from Cambodia, but that "in what manner the situation will be solved is another matter." She said that, therefore, the U.S. Government should have a wise



Stone and Nguyen Co Thach, Foreign Minister of Vietnam

policy once the troops are withdrawn because "Vietnam is important in this side of the world." As for what would be an "acceptable" settlement, she stated that "we want withdrawal, the right to self-determination and a guarantee of peace and security. But, as you say, we do not have the power to force all parties to get agreement. It would be good if they did reach agreement, but if not, we will withdraw by the end of 1990 anyway and the PRK will then, I think, stand firm."

She pointed out that "if there is no settlement and no ending of aid to the Khmer Rouge and others, then the danger will really be there. But we believe the situation can solve itself.

"For our part," she concluded,"we have done all in our capacity to help the Cambodians recover from the genocide. The international community has a responsibility now. Only Vietnam has helped Cambodia so far. Other countries, including the U.S., now have to help. We have done what we can. We have to help ourselves now. Independence means we have to have food and clothing."

Nguyen Co Thach

Nguyen Co Thach, the Foreign Minister and a Deputy Prime Minister, has been Vietnam's Foreign Minister since 1979. He is very well-known in Asian foreign policy circles and, even by his adversaries, admired for his presence and wit.

We discussed the American position and how it would normalize relations with Vietnam once its troops had been withdrawn from Cambodia. But what did he think of the increased U.S. emphasis on the condition that this withdrawal would have to be "in the context of an acceptable settlement"? He laughed and said, "The Americans are always rich in imagination. They change the conditions all the time. The China card is the problem."

In his view, Zbigniew Brzezinski and the Chinese shared an interest in playing the China card against the Soviets. And this card was "no longer useful."

In any case, Vietnam was ready for normalization without preconceptions. Vietnam, he said, was not following

the policy of "putting conditions on normalization." But he did not know whether the U.S. would follow its word. The question is, he felt, "are they interested in having good relations with us? That's the problem."

The Foreign Minister noted that Vietnam had had problems with every member of the U.N. Security Council except with the Soviet Union. But "even bombing could not destroy us." A visitor said that Vietnam had "faced them all down." He replied: "Anyway, we have survived."

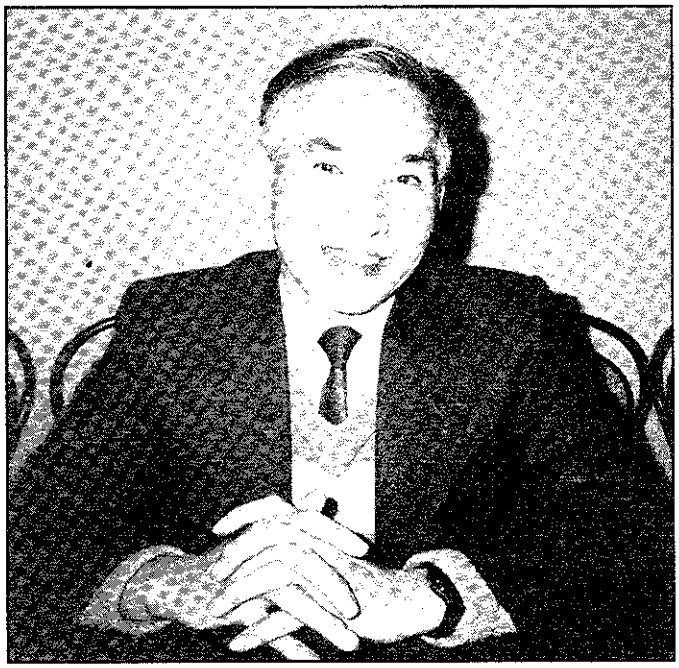
He complained that his representatives in the U.S. could not move around the country, but were restricted almost entirely to New York, whereas General John Vessey, former Chairman of the Joint Chiefs of Staff, had been able to travel freely in Vietnam. (General Vessey, we both agreed, was an especially honest soldier.)

On Cambodia, he felt that Vietnam had done what it could. If the Khmer Rouge were coming back, the international community, which had, after all, been pressuring Vietnam to leave Cambodia had a responsibility to step in.

Dang Huu, President of the Commission For Science and Technology

Later that afternoon, we met with the President of Vietnam's State Commission for Science and Technology, the ministry for the management of science. Its leader, Dang Huu, is an alternate member of the Central Committee. Its function is to set up science and technology policy and to submit it to the Council of Ministers.

The Committee manages research and development activities, evaluates the level of science and technology in production and puts new ideas into production. It seeks to encourage scientific and technological potential, through inventions and technological savings like standardizing and quality control. It also manages cooperation with foreign countries.



Dang Huu, President of the Commission for Science & Technology

There are 180 research institutes under the State Commission, of which 40 are under President Nguyen Van Hieu and 20 are under a commission of social scientists. In general, 30,000 persons are working in R&D. 400,000 of them have Bachelor degrees and 6,000 have PhDs. They are concentrating on about 50 state research programs including those on food production, consumer goods and export products.

The Commission was developing their relations with France, Poland, Sweden, and India, but cooperation with the U.S. was very limited. The Scientists Committee for Vietnam was useful but had only involved about 40 persons per year and a few delegations.

We discussed the problem of training scientists and not having them return—a problem with which they are not yet very familiar because so few have come to the U.S. They have a Union of Vietnamese Scientists in France composed of scientists who have immigrated to France, but no such organization exists in the U.S. It might be useful, we agreed.

Accident in the Streets

That evening, a hotel resident who worked for the Algerian Embassy was struck in the streets by a bicycle cart which had been side-swiped by another vehicle. It was no surprise.

In the morning, a Cambodian diplomat expressed the view that relations between Cambodia and Vietnam might not be friendly in the long run and he expressed some of the stereotypes which his country has about the Vietnamese (not frank, always looking for some advantage, burdened with their own problems since, after all, they had many people and not much arable land.) He thought that Khmer development would be quicker because they were friendlier. On the subject of deaths in Cambodia, he felt that as many had died through exhaustion as had through direct execution.

He felt that the Khmer always lost their wars with outside powers because they were "too gentle." He admired the Vietnamese for their skillful diplomacy.

Later, we met with the Vietnam Committee for Social Scientists which had been instrumental in linking us to President Hieu's Center. Phem Nhu Cuong, its chairman, noted that research and teaching were divided in Vietnam, unlike the situation in the U.S. and that his Committee was a research institution.

The social scientists and the natural scientists, under Cuong and Hieu respectively, had been thinking of merging their organizations into an "Academy of Science of Vietnam" but had not yet done so.

In the last few years, under the Doi Moi (the restoration which is the Vietnamese equivalent of *perestroika*), people had seen economic improvement and a more democratic atmosphere. In the past, they had "feared to be rich" and now they wanted to be. There were now many levels of the economy and not just a state economy. They had a new internal investment law coming and were moving toward a more sophisticated socialism.

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A PLACEMENT EXPERIMENT; 16 VIETNAMESE SCIENTISTS

As an experiment FAS brought back the vitae of 16 scientists whose names and principal interests are outlined below. FAS members are encouraged to investigate the possibility that these scientists might receive a fellowship permitting them to study in the United States somewhere. If you are interested in helping one or more of these scientists, please write us for a xerox copy of the resumes in question and we will send it to you along with instructions on how to proceed if you should find fellowships or positions for which these scientists might apply.

1) Ho Dang Phuc, Ph.D., Institute of Mathematics

Area of Interest: Theory of Probability (Limit Theorems on Abstract Spaces) and Mathematical Statistics (Data Analysis and Applications)

2) Nguyen Van Khai, Ph.D., Committee of Science and Technology—Hanoi

Area of Interest: Growth and parameters of Cd-Hg-Te by solid-state recrystallization and production of Photodectors

3) Le Van Sang, Ph.D., Committee of Science and Technology— Hanoi

Area of Interest: R&D of linear step motors, gear boxes, electro-mechanical scales; applications of quality control and international standards in production; computer programming

4) Pham Huy Diem, Ph.D., Institute of Mathematics—Hanoi

Area of Interest: Nonsmooth analysis, Mathematical programming, Optimal Control, and Applications of Optimization Theory

5) Le Van Cat, Ph.D. Institute of Chemistry—Hanoi

Area of Interest: Waste water treatment and water purification methods

6) Le Thi Muoi, Ph.D., Vice-Director of Institute of Biology

Area of Interest: Effects of phytohormones on growth and development of plants, production of homozygous lines of rice and tobacco, and protoplast culture in tobacco

Left to right, Chairman, Committee of Social Scientists, Phem Nhu Cuong, translator Ms. Fong, and archeologist.

7) Tran Van Sy, Ph.D., Institute of Biology

Area of Interest: Enzymology and enzyme engineering, fermentation, purification and immobilization of enzymes— applications in medicine and food production; gene mapping, gene cloning and sequencing; Microbial fermentation of biologically active compounds—applications in antibiotics, vitamins, and hormones

8) Tran Van Tran, Ph.D. Hanoi Institute of Mechanics

Area of Interest: Hydrodynamic instability and bifurcation of stratified flows and convectional motions; linear and non-linear stability problems of two-component Poiseuille flow

9) Dao Trong Lien, Ph.D., Institute of Mechanics

Area of Interest: Dynamic simulation and optimization of constrained mechanical systems (CMS)

10) Cao Dinh Trieu, Ph.D., Institute of Geophysics

Area of Interest: Forecast of earthquakes by geophysical data, seismic activity of Earth's crust, and studies of Earth's deep structure by geophysical and seismotectonics

11) Giang Cong The, Ph.D., Institute of Computer Science and Cybernetics

Area of Interest: Construction of standard software packets, office automation, and information management systems

12) Pham Ngoc Khoi, Ph.D., Institute of Computer Science and Cybernetics

Area of Interest: Software design for Artificial Intelligence applications; information management systems in industry and business

13) Do Huu Thu, Engineering degree in forestry, Center of Ecology and Biological resources

Area of Interest: Ecology research and forest restoration

14) Nguyen Dinh Guong, Ph.D., Geography and Natural Resources Center, Department of Remote Sensing

Area of Interest: Geometric correction of remote sensing data, calibration of photo and imagery systems, and automatization of imagery interpretations

15) Hoang Ngoc Anh, Ph.D. Institute of Chemistry

Area of Interest: Isolation and purification of biologically active polypeptides from natural resources (such as scorpion, snake, and bee venoms); studies of spatial structures of venoms and their structure-function relationship by physico-chemical methods

16) Hoang Thanh Huong, Ph.D., Center for Natural Products Chemistry

Area of Interest: Evaluation of Vietnam's natural resources—plants with interesting biological and pharmacological applications; extraction and structure elucidation of plant and marine organisms ■

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Their biggest problems were the imbalance between the need for research and the conditions of research. The facilities were poor and the Government budget was very low. Compared with natural science, they did not need equipment, but they really lacked for everything else. Their annual budget was about $400,000, which did not allow for travel costs involved in cooperation with other countries. The only foundation which they knew was supporting work in Vietnam through grants to interested Americans—the economic embargo prevents any grants to Vietnamese Scientists—was the Christopher Reynolds Foundation. But the Social Science Research Council was working to help them. So far they had worked with, or approached: Georgetown, Harvard, MIT, the University of Washington, and the University of Michigan at Ann Arbor as well as the Smithsonian Institution and the Library of Congress.

(They said General Vo Nguyen Giap, age 76, was chairing a meeting on Thursday on the strategy of economic development; when a visitor seemed surprised, they noted that he was a historian as well as a famous general and said his wife was a Professor of South Asian history.)

Next was a visit with the Mayor of Hanoi, Mr. Tran Tan. Hanoi had 150,000 people under the French and now 1,000,000 with 3,000,000 counting the suburbs. The city had many problems and needed city planners. There was strong interest in having Western city planners come there and, also, in sending their students of city planning to Western schools.

Hanoi has city-to-city relations with Moscow, Sofia, Budapest, Warsaw and Stockholm, but nothing with American cities. A visitor suggested Seattle might have many Vietnamese immigrants and might be interested. He went on to suggest that, if the Mayor could solve a divided family problem which he had with him, the visitor would write and inform the Mayor of Seattle of this humanitarian act and recommend closer dealings.

Vietnam and the Mothers and Children: UNICEF

Twenty-five percent of the Vietnamese population are under 15 years of age explained Mr. Tarique Faroqui, the UNICEF director. Their main problem is malnutrition, primary health care and school drop-outs. But 90% of school-age children are enrolled and the government cooperates well with UNICEF. There is a well-integrated family tradition in Vietnam, with considerable warmth, and the people are not starving although progress is "not so good as it should be."

Compared to other underdeveloped countries, Vietnam has a stable government with national priorities aimed at education and health. The party is not dictatorial. And the people are extremely intelligent and kind. There is no anger about history and they accept their own mistakes and the mistakes of others with equanimity. The people are hungry for more exposure to the world. They are not in an adversarial state of mind, but are more characterized by love than hate.

There is a large population probing for its identity and looking forward to progress. The people are very industrious and there is a sleeping army of technocrats who were well-trained abroad—engineers serving as doormen. They are short of capital. But they can certainly be players in the ASEAN scene.

Wednesday: The Institutes

A visitor can only get the flavor of the large number of Institutes run by Nguyen Van Hieu's Center. On the whole, they function without state support by selling their services to other parts of the government or to the public, and with the money they pay for their own research. A good deal of entrepreneurship is involved and there is considerable autonomy.

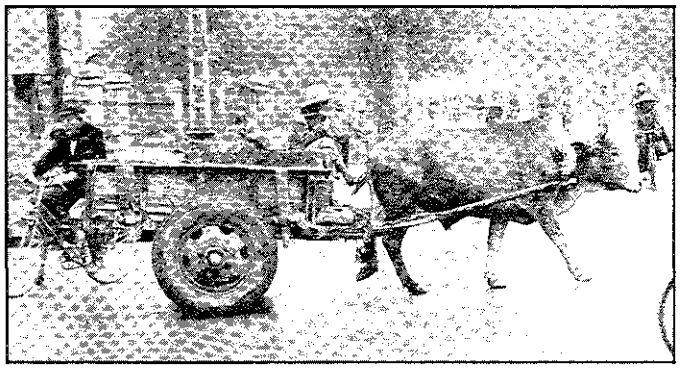
At the Institute of Physics, for example, they had built a Nitrogen TEA Laser used in optical laboratories and they made 10 each year which they sold for $5,000 each. In an optics center they had developed a Co2—Wave Guide laser which they demonstrated for its use in laser acupuncture.

Dr. of Science Dang Van Luyen demonstrated their ability to make liquid natural rubber by oxidation by a reduction system. Thus, from natural latex, they were making rubber artificially for medical adhesives and composite materials.

The Institute for Computer Science and Cybernetics was selling programs and working as a service organization for UNICEF. It had microcomputers but no minicomputers. Some kind of contact with American mathematicians and, in particular, short-, medium-, and long-term visits in the U.S. would be especially helpful.

The Institute of Theoretical Physics was one of the few Institutes not selling services. Founded five years ago by Professor Duc, it had no European journals and no American journals. What it needed most was free journals. Its scientists needed an exemption from the publication charges in the journals without which they could not get

From the Institute of Physics, the Nitrogen TEA Laser



Bullock and bicycles

articles published in the West. (Journals may charge $85 per page in physics to publish articles and, since this amount represents a year's salary, they could not publish a page.) This issue seemed to merit discussion with the Forum on Physics and Society. There was also a dire need for photocopying machines.

At the Institute of Biology, Vice-Director Le Thi Muoi was selling improved strains of rice plants for one-half kilo of rice each. The Institute earned $3,000 a year this way. They were also working, it seemed, to give potato plants some of the disease resistance found in tobacco plants.

The Institute of Mechanics was working with various provinces on coastal engineering. They would negotiate a price for their work and were functioning really as 20% socialist and 80% capitalist. Some projects involved hydrodynamic vibrations and the mechanics of continuous media. They said that South Vietnam had only one-fourth as many scientists but was able to earn the same amount of money as the institutes in the North because the South was more prosperous. One reason was that the Southern scientists fled the country when the war ended. And many Northern scientists had been trained in the socialist countries. Their biggest problem was finding capitalist investment. They needed equipment and information in the guise of journals and books.

Deputy Prime Minister Nguyen Giap: Victor at Dien Bien Phu

General Giap observed that scientists always stuck together and that the arrival of foreign scientists often signified normalization of relations; they were, he said, the "first birds of spring." He said the Vietnamese people always felt friendly to the American people and that the Vietnamese people were "always very optimistic."

On the return of the Khmer Rouge, he felt there would be "an important role [for] the international community." But he did not think that the Khmer Rouge could come back because "I have never seen the criminals make a successful comeback. The will of the people is the strongest element in these matters. And they know about the Khmer Rouge." He said that he had been in Kampuchea and had seen the torture chambers and the killing fields. After seeing that, he said, he could not sleep.

As Deputy Prime Minister, General Giap was in charge of scientific development. A visitor raised the question of getting help from Vietnamese emigres in America and observed that reunification of families was important to win their good will. He said: "It is true, but we are handling this in our own way. In any case, it is said, 'even while sleeping, the birds are facing their homes.' Vietnam is always open."

A visitor suggested that capitalists might find interesting the combination of low wages and high skills in Vietnam. He said: "You are right. The capitalists should have relations with fundamental science and they are always welcome." But when a public relations firm was suggested as appropriate for Vietnam, he said, "But how to pay them to explain to the U.S. people what is happening in Vietnam?"

What about the Vietnam Veterans? "Some of them," he felt, "would be useful." In discussing regional problems, he foresaw a long period of peace in the region and the world situation was good. He said he was a "general of peace" and that the American scientists and American people should know that the Vietnamese people were one of the most peace-loving. He said: "We want peace but whenever we compromise, they take advantage of our compromises. We can never lose our country and will never be slaves."

The Flight To Nha Trang

In a packed plane, President Nguyen Van Hieu and I flew from Hanoi 700 miles south to the coastal city of Nha Trang in about 90 minutes. From the air, Nha Trang is beautiful with blue harbors, white beaches, clean air and warm sunshine. It is perfect for tourism and, indeed, the Government is looking for funding for hotels and is planning a casino. This province is one of ten designated for tourism. Except for October and November, when typhoons may occur, there is little rain. And there are 80 kilometers of beaches.

Before the road winds up into the hills, we pass Cam Ran Bay, this unique, protected harbor, which was developed into the greatest port west of the Philippines by the Americans and then left to the Vietnamese. In return for backing against the Khmer Rouge, the Vietnamese had permitted the Soviets to use it as a fueling station and minor base. And we pass the monuments left by the Champs, who were gradually overrun by the Vietnamese in the 11th-17th centuries.

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THE EUCALYPTUS PROJECT

According to studies, which FAS has in its files for seriously interested parties, the investment costs for planting one hectare of Eucalyptus would be $1,150 (including $375 for transportation) and this hectare would yield 150 cubic meters of wood providing $4,892 in each six-year period from chips, chemical pulp and paper.

The Vietnamese have planned to cultivate 786,000 hectares (1,942,206 acres) in a total of 8 provinces that are rich in sunshine and rain. ■

Seaweed farmers and Nguyen Van Hieu

In the morning we drove into the hills to Dalat, after inspecting a new physics building under construction in Nha Trang. On the road into the hills, one sees water buffalo, peasants in fields protected from the hot sunshine by conical hats and lush foliage. There are occasional motorbikes, few cars and some jeeps or trucks. The car proceeds with constant honking as it roars through small towns at about 50 miles per hour with an intent chauffeur ready for anything. Small children are leading incredibly large, placid animals of some bullock variety. Along the road, other children are grooming and delousing each other. Most houses have thatched roofs, but some have tile and, occasionally, they are made of brick. The children wear brightly colored clothing and the palm trees are 30 feet high. In the summer, the temperature can reach well over 100 degrees.

We stop at a small village where President Hieu's Center is experimenting in the growing of seaweed in combinations of brackish and fresh water by controlling the pH and the salinity. Here is an example of the applied research of the Center, as opposed to the basic research that can only be done in Ho Chi Minh City or Hanoi. The village has benefited already; its new prosperity has permitted electrification. The Center scientists are actually in the water, "working like peasants," Hieu says proudly. About 30 small children are wandering out, startled to see a car come into the village and stop.

On the way to Dalat, we stop at a railroad crossing. No one knows when the train may come because there is no communication system to tell if it is on time. So only persons on foot and bicycles can get across the railroad crossing while all wait for the train. Even electrical signals could not be relied on since the electricity might fail.

The Dalat Scientific Center

It is cool and lightly forested around Dalat and the scientific center, situated on a high hill, has a beautiful view. The Director Nguyen Dang Khoi and assistant Nguyen Thi Uoc describe the three laboratories.

One is for the development of better cows. One is concerned with the photochemistry of plants and with essences and oils. And one is dealing with the introduction and acclimatization of plants which might, for example, grow in Dalat but need to be developed to grow in other parts of Vietnam.

The dream of the Dalat Center is to have a natural history museum and a botanical garden. They have room for these but they need $100,000 to make them happen.

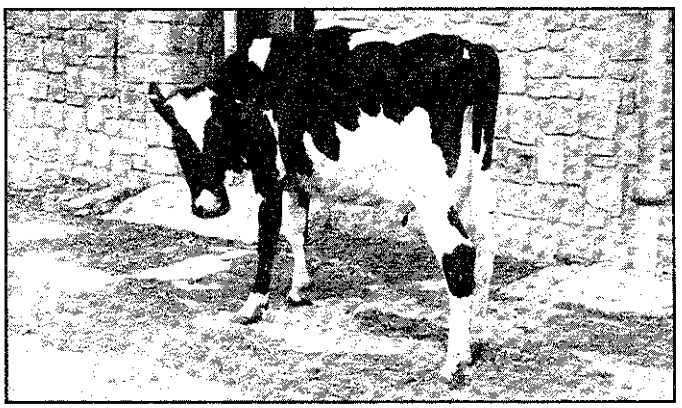
The most advanced project centers around cows. They have learned the technology for implantation of cow fetuses. They work with one imported cow from Cuba and they practice on local cows borrowed from the local farmers. With such techniques they can increase the number of liters of milk per cow from the 1,000 per year that might result today to 3,000. They are extending the technique to Indian Water Buffalos. And they hope to organize a school for technicians to do this work throughout Vietnam. At the moment, their main problem is to get a car so that they could move their equipment around and service cows in more distant places. Foreign support comes mainly from France.

In a meeting with the Vice-Governor of the Province, we learn that they have no experience with tourism but are eager to have it. Their greatest difficulty is the shortage of university-educated people. Often, college graduates do not come back after training, but go to Ho Chi Minh City or Hanoi.

On population control, she said that the population used contraceptive devices when they were free, but now that the province was obliged to charge for them, the population was not using them. There were some cases of malaria and they needed drugs. (This disease may have been spread by Vietnamese soldiers returning from Kampuchea, Hieu thought.) Hieu knows a tree that can produce the anti-malaria drug and he thinks that his chemical institute might be able to process it. He said that malaria was wiped out in the North but may be making a comeback in the province.

Assisting Vietnamese Scientists

In discussions, Hieu and I decided that Hieu needed a scientific advisory board. And foreigners might be interested in small-scale scientific joint ventures in which Vietnamese scientists could work at their low rates on products that could be sold outside the country. They needed equipment—even used equipment; perhaps there was room for some kind of "sister" laboratory arrangement in which Western laboratories could donate their used equipment to a sister laboratory in Vietnam.



Imported cow from Cuba

Scientists who wanted to see members of divided families could be invited to lecture; in the coming months, however, Hieu hopes that the divided family issues could be resolved generally.

Ho Chi Minh City, Alias Saigon

After a five-hour drive from Dalat, covering 125 miles and many near-misses with bicycles and trucks, one arrives at a real hotel, the Caravelle. Here the older waiters speak French and the younger ones speak English. Here one can walk to the old U.S. Embassy over which the Vietnamese have been careful not to fly a Vietnamese flag; from the first, they planned for the return of the Americans. Happily, the city was taken over so quickly that the bridges were not blown up.

The best communications with Kampuchea are from Ho Chi Minh City and the Kampuchean consulate was able to call Phnom Penh and get a visa, which heretofore had never been provided. This made possible the visit to Cambodia about which members read in the April newsletter.

At first, it looked like inflation had been 10% in one week, but in fact, they were using different exchange rates for the Dong in Hanoi (3600) and in Ho Chi Minh City (4000). And it was obvious that many people in Ho Chi Minh City were quite well-off. Apparently, when the war ended, many valuables in banks disappeared into the ground and, after Doi Moi got started, had been unearthed.

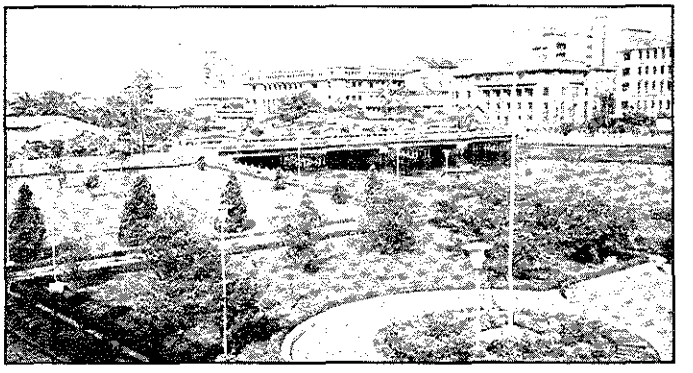
In Vietnam, the tradition has always been for families to walk on three legs: one son in government to achieve influence, one son in business to get rich and one abroad, just in case.

On Sunday, a tour of the city revealed a large museum for Ho Chi Minh, a museum for primitive peoples, a pleasant children's zoo with an exposition that included paddle boats on the water. There are many more motorbikes here than in Hanoi and even some private cars. Some thought is being given to a private university based on tuition.

Much more English is spoken in the South. And many Cyclo drivers (who peddle bicycles that can carry riders in front) speak English. Indeed, there appears to be a class of persons whose English is good because of their previous work with the U.S. army or embassy, etc. but whose position is held down for precisely the same reason. One such person stops a visitor on the street. He explains that he was an Army interpreter and suffered 7 years in the reeducation camps. He has been trying for 14 years to leave the country. But now he has changed his mind about staying. Doi Moi has persuaded him that, perhaps, he can make it here. Now there is much more freedom of speech and economic freedom. He is going to give it a try.

A Major Business Project: Eucalyptus

Vietnam is planning three major projects: oil exploration, communications and, a $600,000,000 project in growing wood for the production of paper. Mr. Pham Quang Hung, Director General of Printing Production Science, Inc. is in charge of the paper project. He ran a state company, somehow owned by the city, which had been taken over after the war, from a Catholic mission that had run the printing plant earlier.



Ho Chi Minh City, taken from Ho Chi Minh City Museum

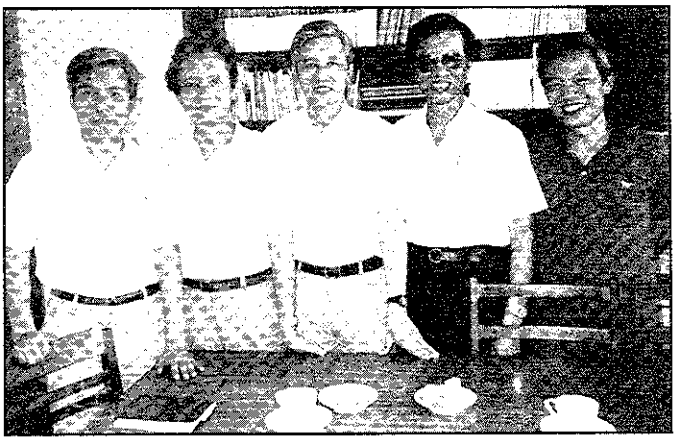
They wanted to plant 1,000,000 hectares of eucalyptus in the South of Vietnam and to grow about 2 billion trees; they needed the $600,000,000 over ten years. A French company had shown enough interest to have a representative living with them. (In an aside, he recommended that Americans arrive before the Japanese.) Five French banks had shown some interest but they needed more foreign interest. A visitor was given copies of plans showing the acreage involved and various estimates. Later it appeared that only $240,000,000 of outside capital might be required, over ten years, and that money would start returning after five. In the long run, they needed a paper mill.

Science And Technology Committee Of Ho Chi Minh City

The Chairman of the Science and Technology Committee of Ho Chi Minh City, Hoang Anh Tuan, talked about the various scientific interests of the city, such as insecticides that would cut down on food losses, air pollution, sewage, housing, etc. He felt that the city needed management advice and city planners. They needed lectures on the science of management. If FAS could do one thing, it should send them some experts in management.

The Vice-President of HCM City, Nguyen Van Huan, complained also of not having enough intellectuals to manage the economy. The economy was bad. People were sleeping under the bridges. Students were studying on the road without tables or chairs. They needed help from abroad.

A visitor suggested they look into intelligence testing. As was the case with the United States before the 1930s, Vietnam has no child labor law and the parents decide, basically, how long each child will stay in school. With intelligence testing, the families and the Government could encourage the students with the highest scores to stay in school and, moreover, to arrange elite primary and high schools, such as our Bronx High School of Science. It was explained to them that intelligence testing had been widely discredited inside the United States for a number of reasons linked to the structure of American society. But for countries with little schooling and different structures, it might serve quite well. In the end, strong interest was



Ho Si Thoang, center, Director of the Center for Scientific Research in Ho Chi Minh City, with associates

expressed in finding a psychologist who could come to Vietnam and who understood how to administer these tests—interest up to the level of the Minister of Education. Accordingly, FAS is looking for volunteers interested in this project.

Ho Chi Minh Branch of the National Center: Ho Si Thoang

The head of President Van Hieu's Saigon branch is Ho Si Thoang, a chemist, who visited the United States in 1983 and 1986. He supervises 500 scientists who deal with problems in South Vietnam.

They also complained about a lack of information, a shortage of Western journals, and excessive reliance on Soviet journals and Soviet scientists. One suggestion that arose was the desirability of having at least one of their representatives at the annual meetings of the American Physics Society and the American Chemical Society, etc. In fact, as one scientist said, they want to attend the meetings of the American Potato Society. They could stay, they said, with colleagues. But they mainly needed travel expenses. It appeared to a visitor that many of the things they were interested in were being done in America by large agriculturally-oriented corporations rather than by scientists—at least outside the agricultural colleges. Another suggestion that arose was the "renting" of laboratories. They could do experiments quite cheaply here if foreign scientists or capitalists wanted to retain them to do the experiments.

Vietnamese Conglomerates

At a oil services company called Pham Tduan, they wanted venture capitalists but had little idea how they could arrange to pay them. Vietnam now has a foreign investment law but it has not been studied yet by the aspiring capitalists in the South. Accordingly, they are often far too optimistic about the ease of finding investors.

One of the projects in which they were engaged was the milking of horseshoe crabs (for Lumulus Amoebocyte Lysate which is used, they advised a visitor, to detect Pyrogen and other endotoxins.) They had about 1,000 horseshoe crabs. They were also breeding seahorses.

The Polytechnic University of HCM City

The sad news for Americans at the Polytechnic University is that students arrive after having selected English in high school only to realize that they must study Russian or it will be impossible for them to progress in science—there are no English textbooks or journals. (Of 200,000 book titles, 170,000 are written in the USSR; of 400 periodicals only seven are in English or French). Entry to the University is very competitive and the students work very hard—sometimes too hard. They like computers and electronic engineering, but not water resources and geology. One student, in only four months, devised a translation software program that translated the Ho Chi Minh Last Testament in a second.

The University has no sister-university status with American institutions although it had some relationship with the University of Missouri at Rolla before the end of the Vietnamese War. It would like, of course, relationships with American universities, large or small.

The living conditions are so difficult that the level of student achievement is declining somewhat. The staff have to moonlight and cannot concentrate on their teaching.

Freedom Of The Press Is Gaining In Vietnam

Editor-in-Chief Vu Tuat Viet prints 90,000 copies of his newspaper and ten times that number read it. Started in 1975, they were not, he said, really able to please their readers until 1986 with the beginnings of the Doi Moi renovation spirit. At that time, a Central Committee statement "Criticism and Self-Criticism in the Struggle Against Negative Phenomena" gave the newspaper something to rely on in its desire to print articles critical of many things, even of members of the Party.

The paper started a "Reader's Column" and, within 8 months, received 3,200 letters. These criticized the weaknesses of the party members, recommended measures to fix these weaknesses and accused specific people of corruption. They were able to print 200 of the letters and turned those with specific charges over to the authorities while investigating some themselves.

While they used to avoid printing any bad news, they now boast of being the first in Vietnam to print the fact that a Vietnamese Air Lines plane had crashed in Bangkok and even printed the names of the victims. (However, their links to the outside world are such that they did not find out about this accident themselves until a month later and their report was taken, really, from a Bangkok newspaper.)

The editor said there was a lot of bribery. Currently, they were investigating a case in which the accused had refused to carry out a sentence of a judge, had stalled for time and then disappeared. There was also embezzlement of state property, undemocratic procedures in dealing with the people, irresponsibility, waste and, of course, bureaucracy. This corruption had hurt the economic situation, he said.

The corruption was caused, he felt, by the lack of moral values, the too low salaries of government employees and flaws in the legal system. For them, Doi Moi was a life-or-death matter. □ *—Jeremy J. Stone*

U.S. ADVISORY COMMITTEE OF THE NATIONAL CENTER FOR SCIENTIFIC RESEARCH OF VIETNAM

Scientists interested in serving on an advisory committee of the National Center for Scientific Research of Vietnam should write to President Nguyen Van Hieu of the National Center in care of FAS. Describe your scientific specialty and any ideas about your interest in helping to improve scientific relations between the United States and Vietnam. Areas of possible interest include exchanging students with Vietnam, visiting and lecturing in Vietnam, and exchanging materials in your specialty.

You may also, if you wish, address directly the heads of the constituent research institutes in the same letter or an attached one. The heads of the institutes are as follows:

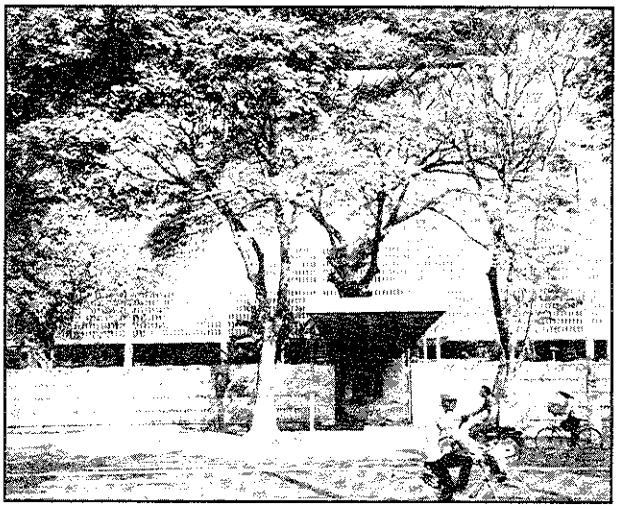
National Center for Scientific Research of Vietnam
President:
Professor Nguyen Van Hieu, D.Sc. (Physics)
Vice-President:
Professor Vu Dinh Cu, D.Sc. (Physics)
Professor Phan Dinh Dieu, D.Sc. (Mathematics)
Professor Nguyen Van Dao, D.Sc. (Mechanics)
Professor Dand Ngoc Thanh, D.Sc. (Biology)
Professor Ho Si Thoang, D.Sc. (Chemistry)
Professor Trinh Van Tu, Ph.D. (Technology)

Hanoi Institutes and their Directors:

Institute of Mathematics: Prof. Hoang Tuy, Ph.D.
Institute of Computation Science & Cybernetics: Prof. Bach Hung Khang, D.Sc.
Institute of Mechanics: Prof. Nguyen Van Dao, D.Sc
Institute of Physics: Prof. Nguyen Van Hieu, D.Sc.
Institute of Theoretical Physics: Prof. Dao Vong Duc; D.Sc.
Institute of Nuclear Physics: Prof. Dao Vong Duc, D.Sc.
Institute of Chemistry: Prof. Quach Dang Trieu, D.Sc.
Institute of Polymer Chemistry: Prof. Dang Van Luyen, D.Sc.
Institute of Natural Product Chemistry: Prof. Hoang Van Phiet, Ph.D.
Institute of Biology: Prof. Le Xuan Tu, D.Sc.
Institute of Physiology and Chemistry of Man and Animals: Prof. Nguyen Tai Luong, D.Sc.
Institute of Ecology and Resources: Prof. Dang Ngoc Thanh, D.Sc.
Institute of Geology: Prof. Nguyen Trong Yem, Ph.D.
Institute of Geography: Nguyen Thuong Hung, Ph.D.
Institute of Geophysics: Nguyen Dinh Xuyen, Ph.D.
Institute of Technology and Tropicalization: Prof. Vu Dinh Cu, D.Sc.
Institute of Material Technology: Prof. Nguyen Van Loc, D.Sc.
Institute of Energy Research: Prof. Nguyen Huu Mai, D.Sc.
Institute of Ocean Geology: Nguyen Duy Bach, D.Sc.
Institute of Marine Biology in Nha Trang: Prof. Le Trong Phan, D.Sc.
Institute of Oceanography: Vo Van Lanh, Ph.D.

Ho Chi Minh City Institutes and their Directors

Institute of Applied Mathematics and Informatics: Tran Tranh Trai, Ph.D.
Institute of Mechanics: Prof. Nguyen Xuan Hung, D.Sc.
Institute of Space Physics and Remote Sensing Technology: Prof. Nguyen Si Hong, Ph.D.
Institute of Physics: Prof. Hoang Anh Tuan, Ph.D.
Institute of Chemistry: Tran Manh Tri, D.Sc.
Institute of Experimental Biology: Prof. Nguyen Van Uyen, Ph.D.
Institute of Earth Sciences: Ho Van Chin, Ph.D.
Institute of Ecological Research: Doan Canh, Ph.D.
Research Center in Dalat: Nguyen Dang Khoi, Ph.D.
Center for Application of Science and Technology: Prof. Nguyen Van Gia, D.Sc. ■



Empty U.S. Embassy: The Vietnamese have deliberately avoided putting a Vietnamese flag over the building

SCIENTISTS INTERESTED IN VIETNAM

Scientists interested in lecturing in Vietnam should write FAS with an indication of their interest and should enclose a resume; we will send these on to Hanoi.

Scientists who are part of separated families in Vietnam may have a special interest in such lectures and we encourage them to apply with a view to our trying to help.

Specialists in city management with an interest in Hanoi and/or Ho Chi Minh City should write. Both cities have explicitly asked for help.

Finally, as mentioned within, psychologists interested in developing or applying IQ testing for Vietnamese should write us. ■

FAS & INTERNATIONAL SECURITY AFFAIRS

The U.S.-Soviet confrontation is ebbing fast. In the kind of editorial which editorial writers can produce only every 40 years, the New York Times headlined: "The Cold War Is Over" on April 2, 1989. (FAS members will be pleased to know that FAS was the first and most important authority cited in this lengthy editorial.)

But the arms race continues and the task of eliminating the weapons produced in this 40 year competition will be with us for several decades more.

Part of the task of avoiding nuclear war, and of producing and maintaining a climate in which we can eliminate those weapons turns on eliminating regional disputes. And among these regional disputes, none is more important than that of Indochina. FAS's interest in scientific exchange with Vietnam is part and parcel of a reconciliation program that will aid the U.S. in playing a constructive and pacific role in that region. Similarly, and related to it, is the FAS role in generating a new approach to Cambodia where, of course, the main immediate problem is to prevent the return of the Khmer Rouge. (See our April Report.)

In these and other regional disputes, FAS is benefiting enormously from its past work with Moscow and Beijing and, of course, with Washington. We find ourselves well positioned indeed to have our ideas heard with respect on these and other fronts. And we are using this skillfully.

Meanwhile, as the June newsletter will show, we have put out a statement opposing both MX and Midgetman as unnecessary and anachronistic for this time. And we have sent the President a letter outlining the approach we feel should be taken in and out of START for strategic weapons. □

COMMITTEE FOR SCIENTIFIC COOPERATION WITH VIETNAM

The US committee for Scientific Cooperation with Vietnam was founded in 1978. The exchange of scientists involves seven areas: Mathematics, Medicine,, Science, Engineering, Appropriate Technology, Agriculture, Higher Education, and Culture. Participating scientists may visit host universities from three weeks to one year. The committee is planning to offer post-doctoral fellowships and to initiate a separate committee for graduate students.

Interested parties may address correspondence to:

Dr. Judith Ladinsky, Chair
US Committee for Scientific
Cooperation With Vietnam
107 Bradley Hospital
1300 University Avenue
Madison, WI 53706

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