

U.S. Women Scientists China Study Tour - 1981

Under the auspices of the All-China Women's Federation a group of 16 women scientists from all over the United States visited China. During our tour we had an opportunity to meet professional women in many occupations (teachers, government administrators, factory executives, and research scientists). In every case we found that the fundamental problems for professional women in China are exactly the same as the fundamental problems in the United States. These include a) personal conflict concerning home responsibilities and professional responsibilities and b) professional difficulties concerning promotions into the policy setting units.

At the Shanghai Institute of Biochemistry we had a unique and genuinely emotional experience. We met with 15 women scientists and mutually exchanged our research results. These women have been studying English in the 4 month intensive course held right at the Institute and consequently there was no need to use an interpreter. Probably because we were all scientists and because we were not limited by an interpreter our conversations were meaningful and intimate. Indeed we are now in the process of accumulating reprints to be sent to them.

In general the trip was marvelous! It was everything that we had hoped. But certainly the most significant aspect of the China Study Tour was the opportunity to meet with officials of the People's Republic in Beijing who formulate science and technology policy; and then during our travels (Shanghai, Wuxi, Nanjing, Sian, and Beijing) to evaluate the implementation of policy.

After the "smashing of the gang-of-4" in 1977 the "Four Modernizations", which were first enunciated by Zhou Enlai in 1975 became the center of government policy which would take China to the year 2000. The four modernizations are agriculture, industry, national defense, and science and technology. It was apparent during our discussions that modernization of science and technology is the key to the modernization of agriculture, industry, and defense. The

strategy is that the development of science and technology will promote the development of the economy.

Vice Premier Fang Yi met with us and discussed science and technology policy. He said that the basic thrust of China's modernization is "to catch up with the rest of the world after the cultural revolution". To achieve this goal 5 priorities for science and technology have been identified. It is apparent that these priorities reflect the need to modernize agriculture, industry, and national defense. They are:

1. Agriculture: The Vice Premier said, "We must feed our people because the rest of the world cannot feed us". There is great emphasis on increasing food production and on increasing fiber (cotton and silk) production. To this end efforts would be put into land reclamation, soil improvement, water control, development of quality low-priced fertilizers and insecticides, improvement of seeds, developing new strains of high yield grains or fibers.

2. Energy: Sufficient energy is a prerequisite for increased industrial production; moreover the whole world faces a critical shortage of energy. He spoke of the efforts to develop a Chinese petroleum industry, to utilize their vast coal resources, and to explore alternate sources of power such as nuclear power, solar energy, and biomass generation of gas.

3. Materials Science: Materials for new construction, especially steel, are essential for the modernization of industry and for national defense. The Vice Premier spoke of the natural resources which are needed for steel production and that China is not yet fully using these resources. In addition he pointed out the known reserves of titanium, vanadium, and other rare earths which are of interest to other countries in the world.

4. Computer Science: Computers are important for process control and management functions. (Remember the Chinese invented bureaucracy, C.P.) The initial development of China's computer science was interrupted by the cultural

revolution. At that time the emphasis had been on computer hardware. Now there is an awareness that software is equally as important as the hardware.

5. Lasers: The Vice Premier noted the applications to materials processing, precision measurement, telecommunications, medicine, and seed breeding.

Three other areas space science, high energy physics, and genetic engineering had originally been included in the priority list but have been set aside because the financial situation at present will not allow their funding.

The State Science and Technology Commission is responsible for all the science and technology in China. It is through this commission that the national program was formulated. Translating these priorities into real programs is also the responsibility of the commission. They coordinate programs, provide funding, acknowledge accomplishments, coordinate collaborations and foreign exchange.

Our group met with members of the Science and Technology Commission. During this discussion we received some insight into how priorities were translated into programs. First and foremost it is Applied Science which is at the forefront of modernization. It is the applied science which will be important in selecting priorities for the utilization of resources, in developing methods for increasing production, in solving technical (engineering) problems. The basic research will be directed to areas for additional modernization. For example, understanding gene regulation in the silk worm may lead to more fiber production. And whatever foreign technology is applicable to China today will be learned.

Also organizational charts, procedures for budgets, and other bureaucratic business was presented. Much of this can be found in Science in Contemporary China ed. Leo A. Orleans, Stanford University Press, 1980.

In our travels we could see, although in a fragmented manner, the implementation of the modernization policy. There is intensive farming everywhere! I saw patches of wheat 2 feet from the railroad tracks; mountainsides terraced

halfway to the peak, reforestation with fruit trees. Only commune housing interrupts the field after field after field of agricultural products. There is construction everywhere. In the cities much of the building is for housing; but in the country at least some of the building is for housing of animals or construction of water conduits. I have no doubt that the leaders of China are committed to feeding, clothing, and housing this 1 billion people. (In case you have forgotten the Chinese are 1/4 of world's population).

Modernization of society depends upon the modernization of science and technology, and this rests on the shoulders of the 5 million scientific and technical personnel. Everywhere we went it was quite obvious that the turmoil of the cultural revolution had devastating effects on scientists. Two generations of students were not trained as scientists. Those in the universities did not finish their studies, those in middle school (junior high and high school) were not trained well enough to enter the university. Many older scientists were sent to Cadre Camp and did not function as scientists for 5-8 years. At almost every institute we heard, "We have lost so much time". In the short run there is a shortage of trained scientific manpower.

However there is new emphasis on increasing the number of technical personnel. First there is concerted effort to increase the number of young scientists and to improve the quality of science education, i.e. science education funding is increasing every year. Secondly the older scientists, many of them trained in the Western countries before 1949, have been given new status and encouraged to continue training young scientists. And thirdly Chinese educated scientists are being sent abroad in increasing numbers for additional training.

Unfortunately there is an insufficient number of trained personnel at every level from the primary schools to the university to the factories and institutes. It is a mammoth undertaking to steer this pseudo-feudal society into a modern industrial society. And ~~few~~ leaders needed to effect this modernization are few and many are old. At the primary school the first priority in the next few

years is to upgrade the training of the staff, most of whom have no training beyond high school. At the universities there is a scarcity of qualified teachers who can train the next generation adequately.

In spite of the obstacles, the Chinese government has apparently committed the country to the policy of catching up with the Western world. And it is, I believe, in the world's best interest for China to succeed. The University of Minnesota, because of its resources in agriculture, in engineering, in medical sciences, etc. is certainly well suited to develop scholarly exchanges. Of course, initially the flow of technology will be one way, into China. However, this time in history may be an opportunity, similar to the time following World War II, to make friends. If nothing else though, more contact with China will provide insight on our own society and insight into the fundamental nature of human beings everywhere.

June 4, 1981

Hello Everyone,

As you can see the journal has become quite an enterprise. What is enclosed here is only the first draft. I am trying to organize the final tome as best and as fast as I can. I will need all your help to do so.

My ideas are these

- 1) Make editing, spelling, grammatical etc. corrections only on the entries you wrote. Please be careful to check spellings of Chinese names and technical terms. LIST THE PAGE NUMBERS of all your corrections on a separate sheet.
- 2) Add your name on the table of contents for all entries you attended (not as the whole group together)
- 3) ON A SEPERATE SHEET OF PAPER TYPE - a short entry on your thoughts about women in China
- 4) ON A SEPERATE SHEET OF PAPER TYPE a short entry on your thoughts about science in China
- 5) ON A SEPERATE SHEET OF PAPER TYPE A short entry on your thoughts about what the trip meant to you
- 6) ON A SEPERATE SHEET OF PAPER (can be the same as the page number sheet) note any sections of the journal you want deleted from the copy sent to the All China Women's Federation and any thoughts you have about confidentiality of the journal (can we share with friends, etc - I am not talking about publication here)
- 7) Include any entries you were assigned that have not yet been done. Please type as in rough draft. Still missing is

Anne Kahl -- all your entries
Nancy - the last day
Anne Calof - the Sword Dance Drama
Garrett F - "the last entry"

8) Return only the necessary corrections, additions, etc to me. Please don't return the entire rough draft.

9) Enclose a check for \$15.00 made payable to me. So far I have spent \$170.00 and estimate another \$100.00 or so for final typing. I am working on ideas for getting the final copy copied for free - if you have any please let me know.

Please do type all your entries etc, as it will save considerable money at the typing end as it takes much longer to type from handwritten copy. The separate sheets will facilitate collating new entries.

My idea for the final format is

table of contents

daily entries

section on women in China

section on science in China

section on our thoughts about what the trip meant to each of us
Cherill's farewell speech from the last banquet.

HAVE EVERYTHING BACK TO ME BY JULY 1. It goes to the typist then with or without you!

I miss you all.

Meryl

Wusih (Hubin Hotel)

4/25 - Saturday:	Train to Wusih	Group
	Banquet	"
4/26 - Sunday	Peoples Commune	Group
	Silk Factory	"
	Peking Opera	"
4/27 - Monday:	Tai Lake Workers Sanitorium	Group
	Boat Ride - Tai Lake	"
	Turtle Head Park	"
	Xi Hui Park	"

Nanking

4/27 - Monday:	Train to Nanking	Group
	Banquet	"
4/28 - Tuesday:	Nanking Middle School	Group
	Nanking River Bridge	"
	Observatory on Purple Hills	"
	Xuanwa Lake Park	"
	Peking Opera	"
4/29 - Wednesday:	Sun Yat-sen Monument	Group
	Ming Emperor Tomb	"

Xian (Ren Min Da Sha Peoples Hotel)

4/29 - Wednesday:	Plane to Xian	Group
4/30 - Thursday:	Bampo Village	Group
	Xian Hot Spring	"
	Acrobatic performance	"
5/1 - Friday:	Shaanxi Provincial Museum	Group
	Luncheon banquet	"
	Bell Tower	"
	Big Goose Pagoda	"
	Airport - train station shuttle	"

5/6 - Wednesday:	Psychiatric Hospital	Meryl
	Cancer Institute	Relda
	Beijing Neighborhood Visit	Barbara & ?
	Communications Bureau of the Ministry of Electric Power	Carol H.
	Institute of Coal Research	Cherill
	Solar Exhibit - Beijing Planetarium	Lydia M.
	Research Institute of Auto- mation for Machine Building	Terri
	Aero Geolophysical and Aero Geological Exploration	Anne K.
	Beijing Experimental Primary School	Carol P.
	Dance Drama: The Sword Party	Group Anne C.
5/7 - Thursday:	The Great Wall	Group
	Ming Tombs	"
	Meeting with Vice Premier Fang Yi	"
	Farewell banquet & speech	"
5/8 - Friday:	Plane home	Group

4/20 - Sunday

Airport Sheraton Hotel

7:30 first meeting of our group. After initial introductions, we went over the nuts and bolts of the trip with Cheryl and Michael and Bernie from U.S. Travel. It was a time to put faces with the names and feel a mixture of anxiety and excitement as we all finally start on an anticipated journey into the unknown.

Orientation ended at 10:00.

4/21 - Monday

Sheraton SF Airport - Tokyo airport - Shanghai Jing Jang Hotel

Breakfast 8:30 - 1½ hour orientation meeting - more nuts and bolts, everyone a little _____. Left for airport at 11);;. Flight departed 1:30 (1/2 hour late). You could feel the excitement mounting as we finally departed S.F. and were on our way. A sense of group is developing and, although we may all differ in style from each other, there is an evident common bond and sense of mutual concern among all the women. We changed planes in Tokyo - immediately reboarded. Flight was long and each woman dealt with the time and transition from the U.S. to China in her own way - resting, reading about China, getting to know each other a little better as the initial formalities among us vanish. A memorable view of Mt. Fuji leaving Tokyo.

4/21 Arrive Shanghai 8:45. We were met by our hosts whose names I did not yet comprehend. Whisked thorough customs without being checked, into a still wet from washing new bus which took us to the Jing Jang Hotel. We sat in the lobby for 1/2 hour or so for a brief welcome, review of our itinerary for Shanghai, and group introductions. It seems everything must be done according to protocol. Exhaustion is evident; we have been up for 24 hours, but it is all so exhilarating it will be hard to sleep. It is like being in a dream - one that belongs to someone else.

Wednesday 4/22/81 SHANGHAI

7:30 AM - Breakfast

8:30 AM - Visit to Zengshan Hospital

A. Introduction of our hosts, "short" explanation of Zhongshan Hospital, its affiliation, patient population, etc. It is attached to the First Medical College of Shanghai. The hospital was founded in 1936 in memory of Sun Yat Sen. Its departments include medical, surgical, OBGYN, radiology, and a burn unit ("Traumatology"), but no pediatrics department. It is affiliated with, or includes, an Institute of Cardiovascular Disease and a school for training nurses. There are 1332 staff members, including 866 women at all levels (although all of the 376 nurses are women). The hospital has 800 beds at present. The outstanding work includes attempts at early treatment and prevention of liver cancer (primary) to coronary heart disease, as well as work with artificial silk blood vessels, cardiac valve replacement, and kidney transplantation.

B. 9:30 - 10:30 AM - Demonstration of surgery (thyroidectomy) on young women, using only acupuncture anesthetics. Demonstration of various acupuncture treatments for diseases including kidney disease, gastroenteritis, a unilateral paralysis due to stroke, to coronary disease. Artificial silk blood vessel exhibit.

C. 10:30 AM - slide shows.

#1 - Dr. Lee (sp?) - Burn specialist. Slides illustrating her work in burn treatment, including combinations of homografts with autografts on cases where less than 60% of total body area has been burned.

#2 - Dr. Liyen (sp?) - Liver cancer specialist. Primary (not metastatic) hepatoma is 3rd ranking killer in Shanghai, due perhaps to industrial risks, chronic hepatitis, etc. Showed slides illustrating methods for early detection and resection of small tumors.

D. 11:15 AM - Discussion - Medical training in China; of medical treatment in China; student selection for medical training; child care to division of family labor in families where women is professional or worker; American health care systems and health collectives.

12:00 - 2:00 PM - Lunch and free time.

2:00 - 3:45 PM - Walk on the Bund (waterfront) Ann Kahler is lost and found.

4:00 - 6:00 PM - Visit to Shanghai Municipal Children's Palace. Introductory remarks about the purpose of such palaces (basically ideological training through "suitable" extraacademic activities), the ages of the children you attend (up to 16 years), the fact that such children are selected and funneled into "suitable" activities (those with "golden voices" join the chorus, for example) although this "selection" does not appear to be in any way rigid, and anyone who wants to join the various groups studying science and technology, mathematics, etc., may do so.

Observation of children at various activities, including puppet show, ping pong, ballet, Chinese painting, embroidery, clay figuring, Pi Pa (stringed instrument) group, violins, piano, chorus, accordion, chemistry lab, electronics shop, TV repair, ship and airplane models.

5:15 PM - Closing remarks and discussion about how to interest girls in science and technology.

7:00 - 9:30 PM - Banquet with hosts, including national and local directors of China Women's Federation and various professionals, including professors from Shanghai Institutes of Physiology and Biochemistry, a doctor, and physicist.

4/23 - Thursday - Shanghai

7:30 AM - First taste of Chinese breakfast. "Doughy" tasty...

8:30 AM - Off to a workers' village. Drive over continues to be fascinating. Typical city tenements. Saw a woman drawing water from a well in a gourd-like bowl. No dogs or cats. (Found out later they're not allowed on streets of city - meaning aren't allowed in city, practically speaking)

Chao Yan Workers Village: Vice Chairman () gave orientating talk in a pleasant, airy room. More tea.

Summary: Village area = $2 \times 10^6 \text{m}^2$

Before liberation was wasted area - swamp and graveyards. Now, many living quarters.

92K people live in village

23K households

Most people are factory workers.

Before liberation, they lived very poorly, on boats, in tenements that were small and had no light and bad air.

After liberation, were given chance to move here.

Came with no furniture - not even beds.

Life much better now. E.g., 80% of households have TV (that's better?)

Village has: 9 middle schools

8 primary, nursery & kindergarten

2 hospitals

25 clinics

1 1100-seat cinema

Cultural palace

Garden

Swimming pool

60 shops of various kinds

Post office

Bank

15 industrial workshops, which "process raw material for big factories" These now have 3000 workers (each??). Began in 1958 by small production teams or groups. Now 70% of young people work there.

Retirement: are 11K retired workers in village.

Men retire at 60

Woman factory workers at 50

Both men & women office workers at 55

After retirement, get paid 70-80% of last salary and get free medical care (paid for by village)

Retired workers keep busy by:

Group study in neighborhood - 1½ hours (read newspaper, keep up on current events);

Work with children's education;

Help to clean environment on Thursdays.

Will see: Nursery - 2-3 yr olds

School age

Watch assembling workshop

Households:

(buildings here are older and not so good, built two years after liberation and building skills were still backward.)

4/24 - Friday

Greetings at Institute of Arts & Crafts.

We were taken to needlepoint and tapestry division. They do different stitches with different yar (kitten that looked like real fur). Also embroidery.

We saw them doing designs that later go into the needlepoint work.

Other things:

1. Wood carving on bamboo.
2. Ink drawings on porcelain and ivory
3. Etching on black laquor.
4. Cutting and making silk flowers
5. Paper cutting by Wang Zi Gan - most famous. Prizes from Japan. Been cutting since age 13, for 49 years. Did a cutting of pelican - which is for good health.
6. Girl did doll out of rice flour dough. Delicate painting of face with different color dye in the dough.

Founded in 1956. Most worker grad. of fine arts.

Division 8.

1. Woolen - needlepoint
2. Embroidery
3. Box wood carving
4. Laquer carving
5. Artificial flowers, silk
6. Latern
7. Bamboo carving
8. Porcelain carving
9. Chinese ink carving
10. Ivory carving
11. Paper cutting
12. Doll figuring

Design but not produce in mass.

4/24 - Friday morning
Temple of the Jade Buddha

This was the first stop in our first block of touristy stuff (i.e. pure sightseeing). The temple is behind a semi-ornate, relatively unprepossessing gate stuck in mid-city. Many large statues and ornate carvings. Two Buddhas were jade - one reclining and one sitting, and absolutely boggling. It's hard to imagine blocks of semi-precious stone that large. We were guided by a Buddhist monk. Ran across a family celebrating (?) a funeral. Two rows of monks in one room chanting and beating drums before an altar, the family across the court in another room with tons of food. They looked quite jovial; one invited Lydia Subach to take a picture but our guiding monk said no. Not too many tourists here; a few people were saying prayers. We left some burning incense in front of one altar along with a small contribution. The large sitting Buddha was in a second story room in the nearest temple building - we had to remove shoes and put on slippers to go in and visit him. Relda climbed the stairs, but declined to go into the room.

Museum of Fine Arts:

Added stop for about an hour. Lots of beautiful old paintings, ink drawings, scrolls, and stone or pottery bowls and old artifacts.

We then traveled to the zoo which had a lot of Chinese people. Went to the panda and saw one big panda that was pushed outside for us to photograph. Then saw the golden hair monkey.

Group split up: 6 to Institutes of Physiology and Biochemistry, rest to Jade Buddha Temple, Arts and Crafts Institute, and Zoo.

Minority reports:

1. Institute of Physiology.

Very fine visit.

Physiology faculty = 30. 300 people in all working there.

In 1958, Physiology & Biochemistry split.

This year a new Institute of Brain Research split off.

Chang - head of - cns physiologist, currently in USA.

6 departments (groups in Institute):

6 departments (groups) in Institute:

1. Neuromuscular Systems
2. Central Nervous System (Prof. Mei Zhen-tong,
our hostess)
 - 4 groups:
 - a) Mei: conditioned reflexes
 - b) Pain & acupuncture (got reprints)
 - c) Autonomic brain functions - nonoarimes
(woman lab head)
 - d) Mechanism of EEG
3. Special Senses - physiology of:
 - Vision - electrophysiology
 - Professor Y.M. psychophysics
 - Audition - effects of explosive sound on
hearing (curious they should
study this) Prof. Wang Tri-An
4. Respiration and circulation
 - High altitude physiology
 - Radiotransmitters measure blood pressure
in climbers atop Mt. Everest ?!
5. Neurochemistry

Dr. Tsen (another woman) recently moved over
from Biochemistry, works on Aatylcholine
receptor.
6. Bioelectronics

Designs and builds equipment needed in
Institute of Physiology, including on-line
computers

Whirlwind tour through several labs. They're just getting started again after cultural revolution. Lots of new up-to-date equipment. They're proud of how much of it is Chinese-made.

10:30 - Amy gave "formal" seminar - 30 people.

Anne visited cell biology tissue culture labs. Very gracious hosts. Good questions. Sweet group. I'd love to come back and work there for awhile.

P.S. All knew English. No interpretation necessary.

P.P.S. During Cultural Revolution, they said all basic research halted. No one left - they were all assigned to work on acupuncture, and did. Problem - they weren't sure they'd ever get to do basic science again, so some stopped reading literature in field. This

high and technology backward, but are obviously very proud of their product, especially their high precision line. We spent a lot of time in their huge 20°C constant temperature area, where they do the precision grinding to fabricate their own precision machines.

The factory is quite self-sufficient. It makes its own castings and its own tools and instruments for monitoring quality.

Observations: Workers wore no eye or face protection, even around grinding wheels. These were shielded, but not as completely, I think, as in U.S. Factory has a Department of Production Safety; they are monitored by several levels of government and fined for unsafe conditions. Accidents are not supposed to exceed 5 hours lost per 1000 worked. Their level now is 2.5 per 1000 - seems very high. That means each worker loses about 5 hours per year because of accidents.

Staff consists of 100 engineers, 4 of whom are women, plus 400 assistant engineers and 100 technicians. Madame Wong started as a technician in 1952. She participated in the workers' spare-time university (sort of a work-study program) and became an engineer in 1976. About 1/3 of the workers in the spare-time school and full-time university (which may be the Machine Tool Research Institute) are women.

Cultural Revolution had a huge impact on productivity, quality control, and accident rate (accidents were more than 5x higher than at present). Mr. Liu reported that 15 workers "died of unusual causes" during the period and more than 400 were "framed and persecuted."

Production goals are set by market needs and contracts in hand (sounds like western corporation) but Workers Congress still has to approve the management's plan.

Questions: Just what is an engineer? How much real control do workers have over running of plant?

Thursday 1:30 Fudan University.

Where I asked to see the Genetics area, was personally escorted by one of the assistants to the building and up three flights of stairs to the head of the chromosome laboratory, and was shown some beautifully G&R banded slides of his work. I was then introduced to Dr. Tan, who was in a meeting (all). When I mentioned T.C. Hsu (a former pupil of Dr. Tan) nearly all the members of the meeting sent their greetings. I was then escorted back to join the rest of the group.

Friday _ Prof Chen Shuiming, Shanghai Institute of Cell Biology Studies on cell growth, division, gene expression, etc.

5 Departments: 1. Cancer biology
2. Reproductive biology
3. Nucleic acid biology
4. Cell differentiation
5. Instrumentation

246 people in the 5 departments, and a total of 359 in the Institute. Most studies here concentrate on hepatoma cell cancer in China rate = 50/100,000. Early diagnosis needed because of poor prognosis.

1960 - First hepatoma line isolated (Line L-16)

1974 - 3 more lines BEL 7402, 7404, 7405 from solid tumor no necrosis present. 1 = 53 y , 2 - 69 y , 3 = 41y
All Alpha Fetal Protein positive. After 2 years culture 3 lines are AFP +. Different from Japanese line DOI which fails to retain the AFP. 5 of his colleagues were presented a resume with pictures and charts showing the studies being made with the hepatoma lines. Every lab was immaculate except one which had a small tray of dirty glassware and a distillation apparatus actually working. His Nikon-inverted scope with time lapse camera attachment cost \$4,000 and was beautiful. He was quite interested in the new G banding technique I mentioned so much so that he sent his assistant back with me to the hotel to get a copy of the procedure.

At 1:15 PM, Dr. Li called for me in an official car with chauffeur to drive me to her hospital. She is chief of surgery Shanghai Institute - First Medical College. About 30 doctors (mostly clinicians) were assembled to hear by lecture. As most spoke and understood English fairly well and Dr. Li could translate when necessary, it went well. (She figured clinicians should learn a little about the other disciplines.) Two were in the Tissue Culture field and nodded encouragement of my slide presentation. Then asked pertinent questions at the end, which I could answer. I was then escorted around by the head of the radiation section department to see the radiation equipment which had been built in China. My knowledge being very limited, all I could say was that it looked fine .

As everything ran about 1/2 hour late, Dr. Li took me directly to the restaurant (near our hotel) to meet and dine with her family (husband, daughter and spouse, son, other son and his wife). We had a fine feast carefully planned to not include the usual dishes she knew we had in S.F. Some examples: eel, egg (white only) soft omelet surrounded by shrimp chip. The hors d'oeuvres were shaped like a basket of flowers with transparent, greenish-tan egg slices. Dessert was a sort of coarse rice or other meal pudding with plum jam filling, followed by chicken wing soup. Then she and her daughter escorted me back to the hotel. It was only about 10 minutes away, and I found out pedestrians in the street are at the bottom of the pecking order. Private cars give long toots, buses 2 short toots, to clear the way. Bicycles ring bells at pedestrians, and these jump out of the way.

Friday, April 24

Workers Palace Entertainment

We had been to Peking Opera the night before and, although we were assured that we would enjoy this evening, it was not clear that we were very enthusiastic. But the welcoming attitude of the workers reassured us. It was a long unassuming building, thoroughly used by many different people. Any Trade Union member can use the Palace (a synonym for building). After the official welcome, we were invited to review the workers exhibition, scheduled to open next week. It was not complete, we were told, but if we would understand that we were more than welcome.

We went upstairs to the gallery and walked through the exhibits of various workers sparetime (when do they really have any leisure?) activity. These were arts and crafts done in the building or the demonstration of various hobbies. It was quite a contrast from the Institute, but the dedication shone through every piece of work. Suddenly we were encouraged to hurry along and the next thing we knew we were sitting in rows of chairs facing a large chorus - men and women who clearly had a program prepared for us.

There was a stunning performance of a Chinese folk song, "Song of the Wusu-Li River", with an impressive baritone solo; there was a soprano solo from "Sound of Music" and a tenor aria, and a bass singing "Old Man River" in Chinese!

Then the director, through Hue our interpreter, asked us to sing. We collapsed into laughter. We had not become a cohesive enough group for that. Hue suggested "Row, Row, Row Your Boat." We ignored that and tried a few ideas of our own. Nothing. Then we decided to agree to "Row, Row, Row" as long as the chorus would join us. Cheers. We sang with gusto. Clearly Hue had planned the whole thing from the start. We then went from room to room hearing a small symphony (western music) in a Viennese waltz. Then a marvelous acrobatic act on bicycles (in such a small space), a solo ballet performance, and finally a large enthusiastic Chinese orchestra and Chinese instruments. They played several numbers,

concluding with a Chinese version of "Turkey in the Straw."

We came away exhilarated by the camaraderie and the good fun.

Beatrice M. Bain

Saturday

Carpet factory- Shanghai.

One wall had huge carpet of Great Wall.

Started in 1958 - 1300 workers.

Hand-made wool carpets and tapestry.

Raw material made from other factories and homes in China. Wool - Tibet and other provinces. 1600 year history of making carpets.

4 designs:

1. Beijing design, Traditional dragon, Phoenix animals.
2. Arts design
3. Grotto (colorful) design
4. Plain design - cut in plain color carpet.

Tapestry:

1. Rivers and mountains
2. History relics
3. Copy paintings

90% tapestry and rugs for export. Three kinds of workshop:

- Making carpet (or tapestry)
- Correcting carpet
- Checking and examining carpet.

Wools of all gradation of color - designs are behind the loom.

The workers sit on small stools bent over and put wool on strings and cut off with a large knife. Others with plain carpets sit with large electric scissors and cut in design.

They had showroom to buy - large 14 x 28 was about \$2500.00.

Shanghai - Visit to the Mihang Power Plant (25 April)

The plant is located 35 km SW of Shanghai and the one-hour drive was quite interesting as we saw the city suburbs give way to a more rural setting: wheat, rice and vegetable fields alternating with factories.

The plant itself is fairly large - 598 MW capacity, burns oil and coal and relies on a river for fuel, transportation and water supply. It's 6 vintage 1958 generators account for 98 MW

while a new 125 MW each superheated steam were acquired between 1972 and 1980. Three of the new generator sets are water cooled i.e. modern technology. The flue gases are cleaned of particulates by an electrostatic precipitator (again modern technology). There is no sulfur dioxide control. However, the coal is only 1% sulfur (if their information is trusted - I have doubts because the molstene content of coal "as received" was too low).

Some of the boilers which originally burned oil have been retrofitted to pulverize coal, resulting in a 10% derating (a credible number). The switch to coal is a national policy, since fuel oil is exported to Japan. The higher sulfur, heavier crude oils are sent to Japan because they have the proper refineries to handle these cruder. The lighter, low sulfur oil is refined and used in China.

The emissions are limited by law for the 180 meter high stacks at the Mohang plant to particulates may not exceed 1.5 tonnes/hour and sulfur dioxide 2.5 tonnes per hour. Mohang has not attempted to install flue gas desulfurisation because "there is no room" available. So, they burn low S fuels.

The control of the power output is not as tight as it would be, particularly in areas of frequency. The systems (all Chinese made) are modern, with some ~~mechanical~~^{manual} controls that would be automated in the U.S.

Now for the human side of the operation. We were shown around by Mr. Chui Chen-hiva. Thermal engineer in control of thermal equipment, and by Mrs. Yen Don, who is responsible for the records of power production and for the plant efficiency (this responsibility is difficult to visualize). Mr. Chia did the BI and most of the tour talk. However, Mrs. Yen Don did speak up occasionally and did not give the "shrinking violet" impression.

In the rather spacious main control room two groups of "minority" students were seated at two large tables - no mixing of men and women. They were here on a one-month apprenticeship stint and did not seem to be working too hard. A month is not long enough to learn to operate a power plant and too long to just be working. They did have books on the tables.

As always, our hosts were gracious and willing to give out information - correct or not quite real.

April 24, morning
Shanghai Institute of Physiology

Met by Madame Mei Zhen-Tong who we had met at the banquet, and Mr. Wang Tai-An, Asst. Director of the Institute. Both spoke English, and were very gracious.

The building was attractive - looked "colonial" in design. Interior cement but rooms pleasant, well furnished. Labs reasonable space.

Schedule:

- 1) BI
- 2) Tour of labs.
- 3) Amy - seminar.

Anne - visit cell biology group.

- 1) BI

Institute of Physiology developed from Physiology Division of former Institute of Physiology and Biochemistry. In 1958 divided into 2 institutes. This year, Physiology divided into Institute of Physiology and Brain Research Institute. Now Institutes of Cell Biology, Physiology and Brain Research housed in same building, except Madam Wei's lab, which includes a monkey colony (works on behavioral conditioning) and is next door.

Institute of Physiology has 6 departments:

1. Neuromuscular System
2. Central Nervous System - Madam Mei, head. Four groups in this department, 26-30 people total, including technicians.
 - a. Mei - conditioned reflexes - neurophysiology.
 - b. Pain and acupuncture.

c. Autonomic function - central nervous system
(? monganines?)

d. Mechanism of EEG

3. Physiology of special senses:

Vision and audition.

Visual electrophysiology and psychophysics.

Auditory work - hearing tolerance for explosive sounds.

4. Respiration and Circulation

High altitude physiology.

5. Neurochemistry - Madam Tsen - head. (Just moved over from Biochemistry). New department

ACh receptor work

6. Bioelectronics

Mainly designs and builds equipment needed by other departments in Institute of Physiology.

Labs: Visited # 2b, 2c, 3 and 5.

All very good. Well equipped, German, American, Japanese and Chinese made. Not new, mostly, because this Institute continued to work during Cultural Revolution. (NB: All personnel told to work on acupuncture during this period. Some did, and some didn't work at all. None sent to country that we could tell - all stayed at Institute. Did political work - posters, meetings, etc. In this respect, different from others we met.) They are especially proud of equipment made in China recently, and most especially of that made in their own Department #6 - custom designed and modern. Got reprints from several labs. Talked most with Madame Tsen and Mr. Liu Yiu-M., a psychophysicist working on photoreceptor function. Much of

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research, other than pain and acupuncture, is just getting underway again. Moving along very rapidly, however. They mentioned feeling behind, and especially uninformed with respect to Western research. Said that during cultural revolution many researchers were unsure they would ever be allowed to go back to their own research, and they stopped reading literature. Now have much to catch up on. One way they're doing this is to invite individual researchers from Germany, England and America to come over for 2 weeks or so and teach intensive courses in fields they're interested in. They also have had workshops, with groups of foreigners, again visiting for 2 weeks or so, to teach research techniques as well as data and theory. Very impressive, how hard they're striving to recoup their losses and move again into the forefront of neurobiology in the world. They may very well shoot ahead of the rest of the world with their momentum. I congratulate them, and hope they have no major future setbacks.

Talk: went well. Audience about 20-25. Said they could all get along without translation if I would speak very slowly and simply. From questions got, clearly worked. Very fine group of people. Had a real sense of warmth, communication and sharing of interests. Anne's visit to cell biology was very fruitful. Shared ideas re tissue culture, techniques, student life and such. Sadly, had no time to visit Madame Mei's lab (our host!). She sent reprints to Anne and me to Peking, where we gratefully received them. So considerate!

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4/25 - Saturday

After lunch, went to train to go to Wusih (Wuxi).

Had special waiting room to say goodbye to the vice head of all Chinese Women's Federation in Shanghai. Had own car and served tea.

Train very fast - farm land beautiful with agriculture and workers in field.

Was met in Wuxi by another group of women and taken in two buses to our hotel on beautiful lake.

~~4/26 (missing - Carol P.)~~

4/26 - Peoples Commune, Silk Factory - Wuxi

The Hole (or something like that) People's Commune is a multifunctional commune of Wuxi. There are approximately 20,000 people, 6,500 households and 13 production brigades covering 1800 acres.

The predominant concern is freshwater fish farming to supply Wuxi. Each pond is stocked with 8 different kinds of fish to assure an ecological balance. Recently they introduced an African Carp because it matures in 1 year rather than 2. In addition to the fish farming there is grain production (both wheat and paddy rice). The wheat is a winter wheat; they use artificial fertilization; and maybe there is crop rotation with alfalfa. Another concern is the production of leaves, including mulberry leaves, for silk worms. The finest silk thread is produced when the worms have mulberry leaves. The commune also has some animals (predominantly pigs, ducks, and chickens) and fruit trees (peaches and oranges).

Plots of land have been allotted to families for individual use ($20 \text{ m}^2/\text{person}$). In general these plots are used for vegetables and any surplus may be sold for private profit. I might add that it is hoped that the surplus from these plots will provide the extra food production needed to feed the populace.

Now I would like to include some random observations: There are many signs of general well being. First there are floors in every house I saw; the people look healthy; I saw a young woman with white gloves; and there are a few flowers tucked into household gardens. There are piles of bricks, stone, and sand everywhere. Like the rest of China there is a housing shortage and like the rest of China there is a building boom.

One problem which plagues the whole country is the job shortage. Indeed "This commune already has enough members so there will be no new workers".

The brief introduction was given by the Director of the Commune and it was not brief. During that time he recounted the history of the collectivization of the farming land; the many contradictions which were resolved, etc.

Today the commune is run according to "correct policy" and scientific farming.

Probably the most noteworthy point of the trip to the commune was the discussion of fisherman vs silk growers. The men are fishermen; the women are silk growers. Lidia Manson asks, "Who earns more?" The Director answered in Chinese to Shan Sham and by the expression on her face we knew the answer - The Fisherman. The fundamental problems facing women in the work place are the same in China as here.

Lastly I should point out that the commune is a total community. There are schools from nurse school through middle school; first aid facilities; and a hospital. Visiting the hospital was one of the few times I had a sense of a facade. My general impression is that the hospital is not really functional; and indeed the patients we saw probably got up and went home after we left.

In the afternoon we visited the #1 Wuxi Silk Factory. It is quite large - 1400 workers and 75% of them are women. They make 6×10^6 m/yr in 20 different products and about 30% is exported. There is automation in the weaving, of sorts. Later in our tour I talked with a westerner who compared the facilities to something around 1920. For example the fabric is generally only 1 meter wide and the "automation" is a paper tape control of the threads.

During the B.I. we learned that 1 cocoon draws out into a single thread of approximately 600 m and that approximately 8 of these are wound together to make a weaving thread.

While some of the group was shopping I wandered off and discovered a huge old auditorium and on stage was a class; a class of young women studying Euclidean geometry. It was rather symbolic of the whole struggle of learning in the face of all obstacles.

On the way back to the hotel we stopped at the Grand Canal, an essential waterway link between the agricultural south and the industrial north. In the evening the group went to the Peking opera.

April 26 - Saturday

Report on Saturday Night at the Opera at Wuxi:

The Opera at Wuxi was given by the Shanghai-Beijing Troupe #2. In contrast to the performance that we saw in Shanghai, the presentation at Wuxi consisted of three separate productions. All of the presentations were in the classical Beijing Opera style; the musical accompaniment was in the classical, pentatonic mode.

The first act presentation was a performance of "Punishment for the Murderer," a dramatic (and acrobatic) rendition of a story about a young general who wished to usurp the leadership position of an older general. The territory of the Duke is under attack by an invading force. The young general wishes to be appointed as commander of the troupes to fight the invaders. However, the Duke appoints the older general as commander and the younger as the second in command, to his chagrin. During the course of battle against the invading force, the young general uses the opportunity to slay the older general.

At the end of the battle, the younger general is troubled, and cannot give a clear account of his actions to the Duke. The young general grows more and more agitated and uneasy. He sees the ghost of the older general. In an acrobatic frenzy, he becomes insane and accidentally kills himself.

The second act featured a performance of "Lian Shen Inn," a comic dialog (vaguely reminiscent of Laurel and Hardy) between an avaricious innkeeper and a poor student. As the action begins, the student has just taken a very important examination; if he passes, he will obtain an important civil position. The student comes to the inn to find a room to stay while he waits to hear the results. The innkeeper, a venial fellow, observes his tattered appearance and is reluctant to give him a room. Finally the student persuades the innkeeper to give him lodging in a storeroom.

In a subsequent scene, a messenger comes to the inn and announces to the innkeeper that the candidate has succeeded in his examination. The innkeeper is incredulous - asking if the

messenger really means this student and not someone else. When the innkeeper is finally convinced, his attitude towards the student undergoes a phase transition; the innkeeper becomes obsequious and respectful, shifting the candidate to the best quarters and even tipping the messenger with his own silver cash. The act ends with the innkeeper commending on the lack of common sense of highly educated officials, because the student had used the silver tea kettle as a chamber pot!

The third act was a very dramatic presentation of "The 'Son-in-Law' in the Palace of a Minority Kingdom," a saga of filial devotion. It featured two outstanding singers in the roles of the son-in-law and the emperor's daughter, as well as a nationally famous ar hu player in the orchestra. (The ar hu is the classic, two-stringed Chinese violin, held vertically in the lap.) As the plot unfolded, it is revealed that the male lead has been captured by the Emperor some time ago. The Emperor was impressed by his qualities and had married him off to a daughter. As the story opened, the son-in-law and Emperor's daughter had been married some time and had had a child. The son-in-law has become very homesick and wishes to return home (to another kingdom), and see his aged mother. His wife questions him about his sickness, asking him if he is unhappy with her or their child or other things - to all of which he responds no, it's none of these things.

Eventually, the son-in-law reveals that he is the fourth son of the Emperor of another kingdom and that he wishes to return home to be with his mother. His wife eventually agrees that he should go. It is ambiguous at the ending as to whether or not he will return to his wife and child.

In brief, the contrasting styles of the three acts, the colorful costumes and sets, and the haunting, sometimes dissonant music, combined to make a fascinating evening.

4/27 - Monday

Sanatorium - Wusih

Workers' sanitarium in a beautiful setting.

Before the liberation, was a "wasted" island - nothing on it.

Sanitarium built in 1952.

The island is 130,000 sq.meters and the sanitorium is 13,000 sq.meters. There are four sanatoriums around the lake.

400 beds

200 medical staff and doctors (100 doctors)

100 staff personnel

Has pharmacy (Chinese and western), X-ray, PT, OJ and acupuncture Rx.

People come here who are not contagious .

Major illness: hypertension, stomach trouble, cardiovascular.

Average stay: 2-3 months.

All costs payed by state. Patients receive full pay and also get extra subsidy for food.

Main people are factory workers, transportation workers and teachers.

50% given for food

20 yuan/month to eat in sanitarium restaurant

10 yuan/month government gro_____

Day in sanatorium:

A.M.: check by doctors and treatment

P.M.: Enjoyment, tai chi, boxing, tennis, ping pong.

Also have entertainment: performing opera, movies, etc.

Medical personnel at grass roots decides who needs to go to sanitarium.

Beds are usually full although in going through, seemed much less.

Many people just seemed to be in for relaxing.

Morning to Lake Workers' Sanatorium (written by Lydra Seebach)

We walked directly from the Workers' Sanatorium to the boat dock for our ride on Tai Hu Lake. The boat was a 70 ft. motor launch with the forward cabin reserved for us. Tea, candies and peanut and sesame brittle and lichee nuts were spread out. We traveled a mile or so to Three Hillocks Islands where we spent twenty minutes ashore, and then boated back, landing at Turtle Head Park. The sea was calm with wind out of the northwest at 0-5 knots. On the way back we passed an array of poles in the water, with a floating clump of grass attached to each. We were told that this was part of the fishing industry. The fish layed their eggs on the grass and these were collected for the hatcheries.

After walking around Turtle Head Park for 15 minutes, we returned to the hotel for lunch. Baggage was packed and sent off to the train station.

After lunch we spent an hour or so visiting the Xi Hui Park in the city of Wuxi. The park was named for the two nearby hills of Xishan and Huishan. It was on a hill and consisted of various Ming buildings in the Ji Chang Yuan Gardens and walkways.

Leaving the park we went directly to the train station and the train to Nanjing. Although there were a few hills, it was obvious from the flat irrigated fields and flooded paddies that we were still in the flood plain of the Yangtze.

We arrived late in Nanjing, where we were met by the local Women's Federation officials who immediately whisked us off (after a five minute clean-up period) to a banquet.

4/29 - Tuesday - Nanking

Chinese breakfast this morning included cream puffs (light on the cream), cookies, fungus, and the tasty style lettuce we had for dinner last night.

We went to the Nanking Middle School affiliated with the Nanking Teachers College, and were given a BI by Hi Min, the

head of the Teachers Federation at the school. The school has a 6 year program, 40 classes, 198 teachers and staff, and 2030 students (45% of whom are girls). Every student is required to take 13 subjects: Chinese language, math, foreign language, politics, physics, chemistry, biology, public health and hygiene, history, geography, physical culture, music, and fine arts. In addition, in the upper middle school period, there are electives offered: advanced English, Japanese, computer science, literature, electricity and radio, etc.

There are 6 classes a day, 3 in the morning and 3 in the afternoon. The third afternoon class would be recreation, physical culture, or scientific activities. (I think these are supposed to be "clubs" more than classes.) Children go to school 6 days per week, have a 1½ month summer vacation and 4 month winter vacation.

We were also told in the Bi that Lu Xun, a famous writer and thinker of the early 20th century, had studied at the school.

After this information had been presented, we visited some classes, then returned to the briefing room for a long question period.

The first class we visited was an English lesson. The teacher stood at the head of the room and read from Gulliver's Travels. The students repeated what she read, (short) sentence by sentence. Then the teacher asked questions, and called on the students to respond. Their answers were directly derived from the sentences they had just read -- no new words inserted. The students hadn't obviously volunteered (e.g., raised hand), but they may have in a way I wasn't aware of. There were 27 girls and 28 boys in the class, seated on benches at desks for two, always in same sex pairs. We were told they were 14 years old. Anne Calof put in a brief stint as head reader.

The next class was "drawing three dimensional figures" (geometric shapes); 28 girls, 28 boys; age 15.

The next class was a physics class -- an experiment with an inclined plane. There were 28 girls and 34 boys (always in same sex pairs) aged 17 - 18.

In addition we went into (1) a chem lab set up with 26 analytical balances at desks and 16 oscilloscopes off to the side on the floor; (2) an optics lab with about 30 set-ups; and (3) a biology specimen (e.g. human skeleton) storage area. We were told there were 4 physics labs -- the mechanics and optics we had seen, and in addition a heat lab and an electricity lab.

We also observed (outdoors) an exercise class with 8 lines of students - a line of boys, a line of girls, etc.

Walking back to the briefing room we stopped at the community blackboard and asked what the notices said. They included (1) procedures to be followed in case of "shock" (I think this meant an earthquake, not trauma); (2) a party slogan to the effect that one should help others; (3) a letter from a school alumnus detailing how hard he studied, how the youth league gave him discipline, how he studied at university in Russia, how the party helped and supported him, and what a fascinating technical job he had now; and (4) a quotation from a famous humanitarian.

In the question period we learned that 20% of the school's students go on to university (the number last year was 80, which is not 1/5 of 2000, so some number is wrong here), about equal numbers of boys and girls. This is a key school and attracts the best students (500 are in dorms, 1000 are far enough from home to stay at school for lunch (it was ambiguous whether the 1000 included the 500 resident students). The university exam may be taken more than once (up to age 25).

The admission exam for science majors includes math, physics, chemistry, foreign language, Chinese literature, political science, This year biology will be added. The exam for a liberal arts major substitutes history and geography for physics and chemistry. The foreign language exam is oral (at least in part), the literature exam has an essay section, and the other exams are of the "short answer" type.

A class is 45 minutes long; each teacher has 12 classes per week and only teaches one subject. 57% of the teachers are female -- we were told about the same percentage applied to

the science teachers but it seemed to me that it was a made-up number (for the science teachers). Teachers colleges train in psychology, methodology, and pedagogy.

The foreign languages taught at present are English and Japanese; they hope to add French and Russian soon.

Students do not have much homework. They buy their own textbooks but the price is very low. We were told that parents pay a symbolic small fee for the board costs.

The texts and curriculum are unified for all of China, but this is being rethought. Texts were written 3 years ago by the Ministry of Education. The school has a library -- we were told it had 200 seats (to describe its size). When questioned about the number of books, Mr. Min said 100,000.

In response to questions about discipline, we were told that a frank talk would be the starting point, expulsion a very rare occurrence for "hard core" cases. The school assumes responsibility (along with the family and society) for shaping the character of the students. Students must develop morally, physically, and intellectually. Teachers love students; students respect teachers; all progress together.

Family planning is taught in physiology, public health and hygiene.

After the formal close of the discussion, there was some informal chat with students present (at our initiative).

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As I walked around the Middle School I was joined by a young man who was a senior student - in foreign languages, currently specializing in English. He was tall, very courteous and quite nervous. He did not repeat the standard conversational questions and answers, but volunteered some conversation of his own. He said he had studied classical music (I believe violin) but that he had given it up when going to Middle School and then studying to pass the exams for college.

Later he volunteered that he liked all kinds of music, "rock," and he smiled. He said his father was in the diplomatic service, in Paris he told me. "He brings me tapes when he comes

home." He said he had a stereo and I asked him whether he could carry it around on the street, playing his music. He really couldn't understand what I was saying, although I tried to describe the young people of his age in my hometown who walk around with their stereos in hand, playing loudly. I said it was like the Japanese - but he couldn't get the idea. And we walked on back to the briefing area exchanging the usual comments about hoping he would come to visit in the United States (he did not think that very likely), and that he spoke English very well (he was properly modest). The visit was made very pleasant with his attendance on me and our conversation. Later several of my colleagues said they would have liked to talk to students and ask more questions of students and I realized I had been chosen by this young man out of respect for my age - and I was very grateful.

Bea Bain

4/28 - The Nanjing Yangtze River Bridge

The longest in China and the pride and joy of the PRC because it was built by the Chinese entirely, with no outside help after the Russians pulled out in 1958. It is an impressive accomplishment (see photo).

The construction started in 1960 and was completed in 1968. 100,000 tonnes of steel were required and to produce this huge amount an iron work (steel mill to us) had to be built first - in northern China - where the ore and the coal are found. The steel was shipped to Nanjing by rail. The cement is of local origin.

The bridge proper is 1,577 meters long (4,589 m. including approaches). It's a double decker: 4 lanes of car, truck and bike traffic on top, 2 railroad tracks below. It is supported by 10 piers (pylons) made of concrete and wood. 5,000 workers built the bridge. It is now the scene of one or two suicides per year, unrequited love mostly.

After lunch we went to the Observatory in the Purple

Hills. It had old bronze copies of even more ancient astronomical instruments -- Madame Song, our hostess there, showed us a celestial globe designed 1800 years ago by an Eastern Han astronomer. The original was of bamboo, and the copy (made in the Chin dynasty) is of bronze. We were told a lovely legend of "star crossed" lovers -- Cow Boy and Weaving Girl, stars on either side of the Milky Way. They ran off together, but the heavenly governess didn't approve and took Girl back. Boy pursued, almost recaptured Girl, and Mother threw out the Milky Way to block their way. (Every 7th of July - New Years - a bridge is made so the lovers can meet.)

We also saw two versions of armillary spheres. One was originally made in 104 BC and copied 500 years ago. It was stolen by the Germans but returned after WWI. The second was a two-person sphere made 600 years ago. (Stolen by the French but returned in 1902.) Mme Song said it was the original, but my guidebook says it is a reproduction.

The sundial on display was used to determine that there are $365\frac{1}{4}$ days per year.

There are 6 modern telescopes/domes on the grounds -- used primarily to track satellites (man-made). We saw one with a 60 cm diameter lens. There are 200 employees at the Observatory (267 meters above sea level), who can observe an average one out of three nights. (The largest telescope lens in China is in Blying and is 1 meter in diameter.) One third of all astronomers are women.

Research projects include: (1) celestial mechanics, (2) celestial measurement, including instrumentation, and (3) celestial physics, including solar research.

Xuanwu Lake Park - I walked around the park grounds with some others in the group. We found a peony garden full of buds but not yet in bloom. Cherrill found a couple necking in a pagoda. Others rowed and went roller skating. (Nancy Tooney will report).

4/29 - Wednesday

(On the morning of 4/29 we visited the mausoleum where Sun Yatsen was buried June 1, 1929. Sun died of cancer in Beijing but requested to be buried in Nanjing.

The mausoleum is a majestic building on the side of a hill. 392 steps lead to the entrance. Written on the second gate in Sun's handwriting are Chinese characters which read, "The world belongs to the public." Sun's three principles are engraved over the main entrance to the mausoleum: National democracy; people's livelihood; and national independence and equal rights. Sun's body rests below a reclined state of himself.

Our second stop was Madam Chiang Kai-shek's home. It was built by the government in 1934. After Liberation, her sister, Madam Sun Yatsen, lived there. Chiang Kai-shek was his wife's second husband. Madam Chiang was "forced" to divorce her first husband. Before marrying Chiang, Madam Chiang "entertained" both her former husband and Chiang. The driveway and entrances to the home were constructed in a manner which allowed Chiang or Madam Chiang's former husband to slip in and out without encountering the other.

Our final sightseeing stop in Wusi was the most likely site for the tomb of the 1st Ming Emperor Tai Zu. Begun in 1381, 100,000 military workers completed the structure in 2 years. Tai died at the age of 71, 15 years after the completion of the tomb. Twelve servants were buried alive with Tai and 64 concubines were buried with him when they died.

We walked a pathway near his tomb called the "sacred way." Large pairs of near life-size statues bordered the walkway. The statues were of people, elephants, lions, horses, and other animals.

We flew to Zian on an Iliushin 62 propeller plane. The trip took over 4 hours and included 2 stops. We arrived in Xian 45 minutes late. The Director of Shensi Province Women's Federation, Madam Chiang, greeted us. A very B.I. told us: Population of

Population of Xian: 30,000; main industry: textiles; 10 dynasties had their capitals in Xian.

4/30 - Thursday - Xian

It rained today, for the first time on our tour. Wouldn't you know it was on a day when our hosts planned a picnic. The rain was never hard, though, and cleared up by noon.

The hotel we are staying at is called Ren Min Da Sha, People's Hotel. It was built in the ponderous Russian style.

The area of Xi'an has had a long history in China's civilization. Six or seven thousand years ago, it was the site of the Neolithic village Banpo (see below). Changan was the capital of China during parts of eleven dynasties. Starting in the Han dynasty two thousand years ago, Changan was the beginning of the Silk Road which linked China with Western civilizations. More recently, Xi'an was the place where Chiang Kai-shek was captured and forced to fight the Japanese rather than the Communist Chinese.

Since liberation, Xi'an has grown from 100,000 people to 2 million. Two thousand factories have been built, mainly light industry like textiles. The city is laid out with the light industry in the east, the power plants in the west, the heavy industry in the north, and the cultural centers like universities in the south.

Our first visit in the morning was to the Banpo Museum. The museum covers the archeological site of a village in use for 1000 years - 6000-7000 years ago. There are three parts to the village: a living area is only 1/10 excavated; the rest is completely done. The site was discovered in 1953, and the museum was built in 1958.

Since the village lasted so long, its remains show several stages in the evolution of the culture. The oldest culture was just a group of people who banded together. Then came a matriarchal, then patriarchal clan, finally the slave society. There was also a sequence of housing styles, from a half-buried pyramid with a tunnel entrance, to a round hut with a conical roof, to a square building with a pointed roof. At least during the matriarchal

period, storage pits were outside the huts; during the patriarchal period they moved into the huts, evidently indicating the rise of individualism. A ditch surrounded the village, as protection against animals. Children were generally buried in urns right outside the house; adults were buried in a common graveyard, and had objects buried with them.

The village had Stone Age (Neolithic) technology, but seemed to be very clever. They used pins to hold a stone axe onto its handle. They had water bottles which were narrow at the top and bottom and fat in the middle. These are easy to fill and hard to spill. For food, they were diverse. They raised cereals, hunted for deer, fished in the Chen River, and domesticated poultry, pigs and dogs. They had a wooden frame under the mud walls of the huts, and they baked the mud with fires so it would last. Their kilns could reach 800°C. The designs on their pottery were stylized pictures of fish and a human face. They also had inscriptions which were the predecessors of the inscriptions on oracle bones.

The museum was very well laid out. There were glass cases in which pictures illustrated how implements were used, and several versions of the implements were displayed. At the digging site, signs explained just what was shown. Different areas were excavated to different levels, showing the stages of development.

Our second stop was at the museum which covers the pit in which the Qin warriors were buried. We ate our picnic lunch indoors there, during the BI ("Brief introduction"). Emperor Ying Zhen was the first emperor to unify all of China. To commemorate this, he called himself the first Qin emperor,

Qin Shi Hueng. He lived 259 - 210 BC. After unifying the country, he started work in earnest on his tomb. Around 700,000 people worked for 11 years on the tomb before the emperor died. The tomb itself is a conical hill now 47 meters high, and 6 km in circumference. We got to stop and take pictures of this hill, but we didn't have time to climb it. It hasn't been excavated yet.

The relics which have been unearthed are from three pits 1.5 km from the tomb. These contain an army of clay figures to defend the tomb. The first pit was found in 1974 by peasants digging a well. The other two were discovered in 1976 but were reburied to preserve the statues. The museum was built over the first pit, where excavation and restoration are still going on. The pit is divided by 10 support walls into 11 passages, floored with bricks. Around the outside are three rows of warriors facing out, protecting the flanks. All of the other statues are facing east. In all, there are about 6000 warriors and horses. The average height of the warriors is 18 meters, with the officers being taller according to their rank. They were carved in clay, fired, and painted, although the paint has eroded away by now. In 206 BC a provincial warlord set fire to the pit, causing it to collapse and break many of the statues, so restoration is a major part of the work. The wooden handles of the warriors' weapons have rotted away, so the warriors no longer carry them. The remaining bronze parts are represented by displays in the museum.

In the afternoon we stopped at the Xi'an Hot Springs. The spring was discovered ~3000 years ago during the Western Zhou

dynasty. Many dynasties built buildings here, resulting in a variety of architectures. Only Ming and Qing buildings remained, however, before replicas of the Tang buildings were rebuilt in 1959. Inside the entrance is the Nine Dragon Pool containing the marble boat where the emperor bathed. In front of it is a palace for relaxing afterwards. Behind the pool is a hotel built in Chinese traditional style, which won the silver medal in an architectural contest. Off to the side are buildings built during the Qing dynasty. We saw the tub where a Qing concubine bathed.

We were shown a well where the water first surfaces, but didn't see any water. We did see a bunch of kids filling canteens at another little well. The water is 43°C at its source, just above body temperature by the time it gets to the tubs. It is high in sulphur and lime and is supposed to be good for gastritis. We drank some with our tea during the BI.

Chiang Kai-Shek had a house at this spring. He was here when the attempt was made to capture him. He ran away up the mountain, but was eventually searched out. This event, called the Xi'an Incident, took place on 12 December 1936.

On the way back to the hotel we made a quick stop at a Friendship Store. This time, the hot items seemed to be brocade jackets and embroidered robes.

In the evening we went to see an acrobatic performance, given in honor of May Day (tomorrow), which is their Labor Day. It seemed to be a big deal for foreigners, with about 80% of the audience foreign, and the Ministers of Tourism and such there to shake hands with everyone.

There was quite a variety of acts. The first featured shaggy, playful lions (one- and two-person varieties) cavorting and walking on balls. There was an act in which a man juggled two ceramic jars (separately); a magic act; a trapeze act; roller skating on a six-foot round table; and foot-juggling a cylinder, a job, and a table. There were two women on a flying ladder; a woman on a tall unicycle who flipped bowls from her foot to her head (similar to an act we saw at the Workers' Cultural Palace in Shanghai); traditional games in which a man carried a 100 kg knife and bent five 120 kg bows simultaneously; acrobatics on a bicycle; and a juggling and balancing act. About 2/3 of the acts were performed by women including strength moves that in the United States would definitely be done by men. Some comic relief was supplied by a clown who reappeared a few times to do magic acts and then give away how he did them. The final act was a magic act by a famous 74-year-old man named Zhou. He showed us some card tricks, cut a woman in half, and shot a man from a cannon on the stage up to the second balcony.

In general, Si'an gives the impression of being a much more rural city than any we've seen before. Mules (donkeys?) often pull carts, instead of just people. Walls around courtyards are often made of brick covered with mud. A rooster woke us each morning in the hotel. Older women often wear white scarves on their heads; younger women often have long hair which they wear in braids. It's interesting that along rural roads there are occasional rather large brick buildings, which have the character for "male" on one end and "female" on the other. The speech is more like that of Beijing than any we've heard so far.

May 1, 1981

Morning: Shaanxi Provincial Museum

11 dynasties had their headquarters in Shaanxi. The museum contains exhibits of artifacts from five dynasties: Chou, Chin, Han, Sui and Tang, and spans a period of about 3000 years (1122 BC to 1900's).

Chan dynasty: Still a slave society - had bronze artifacts. Agriculture was developed in the Chan dynasty. Shells were first used as jewelry and then as currency. Records of the dynasties were kept on the pottery and metal ware. Slaves and war chariots were buried with the emperors.

4000 years ago characters of Chinese writing were written on the bones of animals. The characters were refined somewhat and 3000 years ago the characters presently in use were developed.

400 BC - China entered the warring age (475 to 221 BC is referred to as the "Warring States Period." Books were in use at this time as well as simple tools for architecture.

Chan dynasty: Building of the Great Wall. Emperors began to be buried with pottery figures of soldiers rather than live soldiers.

221 BC Emperor Chin was the first to unify the country. He also standardized the systems of currency and weights. Money is now made of bronze and has large shapes (not round) similar to a straight-edge razor with a hole at one end for stringing. The palace of Chin was burned by an enemy and the fire lasted 3 months. Chin and Wu led an uprising protesting the use of so many people and supplies to build the emperor's palace.

Note: lexicon (dictionary) in use at this time.

Western Han dynasty - 206 BC - 8 AD

Agriculture developed very fast in the Han dynasty. Animal husbandry was developed - horses, chickens, sheep - also workshops for processing crops. Currency has now become small, round and metal with holes for stringing remaining.

Earthquake detection device: a large egg-shaped container with dragon heads around the sides. Small statues of frogs with open mouths are positioned under the dragon heads. Pebbles fall from the dragon heads into the frogs' mouths. The direction of the earthquake was determined by the frog(s) which did not catch the pebbles.

Large stone animals - stylized - were used to decorate and protect tombs.

Finally religious statues appeared which had forms like humans (Buddhism) - Tang dynasty.

"Forest of Tablets" - 1030 tablets of engravings ranging from the Han to Ching dynasties: tablets were used mostly as decorations for graves and not to record history. The tablets of the Tang dynasty (618 - 907) had Buddhist scriptures. There were more than 100 tablets. These tablets had previously been kept in the state library. One tablet describes the introduction of
into China in the Tang dynasty. Some tablets were the writings of famous writers and philosophers. The most highly qualified calligraphers were used to do the writings.

Sui dynasty: 589 - 618 AD. Built the Great Canal from Peking to Huangchou.

Tang dynasty: All men aged 20 to 60 served one month out of each year in the army and were required to provide their own

horses and supplies. The emperor maintained power by separation of the officers and enlisted men. Plows were being used and irrigation devices using gears and buckets were in use.

White porcelain and tri-colored pottery were made at this time. Yellow, green and red were used.

Silk Road - Silk was carried to the western parts of China.

Later in Tang there were colored wall paintings which were mostly in tombs.

After leaving the museum we returned to the hotel and quickly got our luggage gathered together. At noon we met with our hosts for a luncheon banquet.

The luncheon with the women of the Shaanxi Women's Federation was held at the Xian Hotel where Chiang Kai-shek negotiated after the Xian incident.

The wine used for toasts was non-alcoholic and looked like milk. It was served warm. The wine was a rice wine and very sweet. It tasted like very sweet rice gruel to which some yeast had been added.

Some new dishes:

- Green bean noodles - wide, translucent, chartreuse in color, were very slippery and tasty.

- A dish of beef tendon served with mushrooms, bamboo shoots and other vegg.

- Filled pastries - dough resembles filo leaves - made into dumpling shape, then cut to form petals and dipped in colored sugar at the top, to make them seem like flowers. They were filled with sweets.

After lunch we left for the Bell Tower. The Bell Tower was first built in 1384. In the Ming dynasty. A bell was hung on the second floor of the building to tell the people of Xian the time every morning. The bell has been moved in the Shaanxi Museum. The building is about 600 years old, 36 m. high and covers an area

of 13,000 sq.meters. This building architecture is characteristic of Ming dynasty; there are three stories outside but inside there are only two stories. The building is made of brick and wood without a single nail.

Before liberation the building was not taken care of; in 1953 it was repaired and reconstructed.

The main structure is the same as in the Ming dynasty - which includes four large (red) pillars. The furniture is very beautiful, ornately carved mahogany with marble insets from the Ching dynasty (about 200 years old). Overhead the tops of pillars, beams and ceilings were all painted in intricate designs and bright colors. Several interesting pieces of pottery were in the very beautiful room.

We climbed the stairs to the third floor which was furnished in the same Ching dynasty furniture, and went out to a veranda where we had a lovely view of the city from each side of the building. The streets were especially crowded with people since today is a holiday.

Big Goose Pagoda

Built in the Tang dynasty, is 60 meters high (7 stories). The pagoda is part of a monastery and was used to house religious texts. The inside is hollow with wooden staircases leading to the top. At each level there are vaulted passages leading to openings that give a view of the outside.

It was extremely hot and we were all happy to enjoy the air-conditioned comfort of the bus for our ride to the airport. We left for the airport at 4 pm for a 5 pm flight. Upon arrival at the airport we were informed that a "big wind" was forecast

for Xian and our flight had been cancelled. Lin was very busy trying to get us on a train which it seemed had no space available. There were several groups of tourists at the airport who also had no hotel room and no airplane. By now it was after five p.m. We decided to load our hand luggage into the bus so we would be ready to leave quickly. No sooner had we put our luggage on the bus than we were told to get our luggage that had been checked. All of us scrambled onto a small loading dock and dug our luggage out. We threw the luggage in one bus and most of us packed into the second bus. We had less than half an hour to get on the train - if we could get seats. We roared off to the bus station singing "We Shall Overcome" and laughing. At the bus station we waited again. Shall we stay in Xian and wait it out or ride the train for 24 hours? At 5:20 Lin came to tell us we were getting on the train (which was leaving in 10 minutes). Everyone was carrying or dragging luggage from the bus to the train. We got shoved onto a car of Chinese people which had lots of bunks and reeked of garlic. Then we were pushed into another car with compartments with bunks. All this time we have no tickets - and aren't sure we have seats, but we and our luggage are on board. Finally Lin directed us to compartments and we settled into groups of four in four compartments. We were all hot and grimey and frazzled, but in good humor.

The "big wind" is a dust storm with gale-force-like winds. As we were leaving Xian the wind was picking up. The further we travelled the more dusty the air got and the winds increased. A "seven degree" wind was predicted. Wind speed is measured in 1 to 10 degrees with 10 being about hurricane strength. We are settled down to tea and talk

and were served a fine dinner about 8 p.m. After dinner we mixed and talked with some German scientists who were travelling to Peking also.

After the heat and excitement of the day, we quieted down to a good night's sleep in our cozy compartments.

May 2 - On the train from Sian to Beijing

Woke about 6:30 to sound of early-bird voices out in the hall. The berths are firm but quite comfortable; pillows weigh a ton (filled with rice hulls) but are also surprisingly comfortable. You certainly don't roll off once a depression for your head is made. Had a real lazy Sunday morning feeling. We (Amy, Carol P., Merrill and I) sat around for an hour and a half in our nightgowns, drinking coffee and chatting -- until Lin came to tell us breakfast was ready. Mad scramble to get dressed!

Morning was quiet, tranquil, and thoroughly pleasant. Small conversations, quiet watchings-out-windows, and catching up on journals. Great financial dealings while Merrill collected money to pay for our tickets. Imagine climbing onto a sleeper car on Amtrak with no reservations, no tickets, and no demonstration of ability to pay -- and merrily riding off into the sunset!

Wind is still blowing like mad at noon -- two, too. Wei keeps trying to get us to take an afternoon nap. The day is flying, even with "nothing to do." I think we are all caught up in the process of relaxing completely.

Four or five women from the National Women's Federation met us at the train. It was quietly satisfying to note that we had a much

more ceremonious reception than the arrogant German scientists that shared our sleeper car. Found out that we would be staying at the Peking Hotel - Hooray!

In the lobby of the Beijing Hotel we were welcomed briefly and given our individual invitations to a banquet in the Great Hall of the People. The banquet was hosted by the national ACWF, was magnificent. Surpassed everything we had before by orders of magnitude and formality, elegance and beauty. As we entered the Great Hall we were met by a reception line, floodlights, and both still and movie cameras. Group photo camd after reception line welcome, then formal welcome and all-around introductions in an elegant meeting room. No slipcovers on the furniture here.

(Ought to collect names of people from Bea) Dinner address was by Madam Lei _____, Vice Mayor of Beijing. She is a charming lady who speaks English well, orates very authoritatively in Chinese.

Interesting note: She is the only Chinese woman we have seen yet who was wearing a traditional pre-Liberation (Mandarin style?) blouse under her suit jacket.

Piece de resistance was, of course, Peking Duck, which was heavenly. There must have been a dozen cold appetizers -- eleven courses in all. All but the cold dishes were served, on clean plates each time, by a bevy of attractive young Chinese waiters. We were in the Shansi Hall - very elegantly decorated in red and green. Can't believe this is really a classless society.

5/3 - Visit (Conference) with the PRC State Commission on
Science & Technology

Brief introduction was given by (our interpreter)
Xu Jian, Deputy Director of the Chinese Scientific and Technological
Commission. It is a pleasure to welcome the first delegation of
women scientists; we wish to offer a cordial reception. This will
strengthen academic exchange.

30 years since PRC established. We have made great progress
in missiles, satellites, etc., and in science and technology. We
have 5 million people engaged in this type of work - 90% of which have
been added and educated since the founding of PRC. In summary, we
have not paid enough attention yet so one of the four modernizations
now concentrates on science and technology (hereinafter called s/t).
This development should parallel the development of the economy.

The Information Officer then continued:

Repeating need to parallel development of the economy and that of s/t
she indicated that readjustment of national economy produced reinforced
attention to s/t. State Council had approved this addition. The
priority need is to serve the country's economic and social
development - for example: reform the social structure.
"Rationalize" the location of production and resources, and take s/t
into account - s/t must be used to allocate size of national projects
and prioritization.

1) Emphasizing agriculture and energy - nitrous fertilizers,
textile, machine building, and other specifics.

2) Research in production techniques should stress appropriate

technology, both in industry and agriculture, development of techniques should consider social needs.

3) Projects should be labor intensive and intellectual intensive. These projects should take their place alongside the large-scale energy developments.

4) Technical structure should be "layered" in China, multi-layered and simultaneous development of automation with handicraft. Factories already have resources - should aid development of the extension of their knowledge and techniques within their own unit. Each unit should engage in research on self-improvement and greater efficiency. In addition, Institutes should then deal with high-powered basic research. This is now handled more by existing factory/producers by contract of basic research. Important to link basic research and practical use. Since basic research is the jog of many of the US Women S in the delegation, know that there have been some successes in China in this area. Examples:

. Biochemical Institute has coordinated insulin research with Beijing/Fudan U.

. Some theoretical mathematical work has also been handled this way.

We wish to unify planning and "rationalization" of basic science.

Under present economic situation, we are reinforcing basic/applied linkages. Not overinvesting in major expensive projects.

Looking for assistance in applied scientific achievements from foreign countries.

Self-reliance principle means: Try to learn from others, adapt to own needs. Stress learning those things which improve China's situation.

Research Establishment - 5 categories:

1. Chinese Academy of Sciences - highest- involves multi-disciplinary sciences and natural sciences

- basic research & high level research in technology

- National defense

Many institutes belong to CAS.

2. Industry/Agriculture Ministries have their own institutes and academy. Geology, Agriculture have own Chinese Academy.

Public Health has the Chinese Academy of Medical Science. These all serve own disciplinary needs.

3. Top level universities - scientific research done there with strong personal and sophisticated equipment. Each university specializes in its own area of basic/applied development.

4. Local provincial research institutions may focus on local problems; may concentrate on development

5. Manufacturing & mining industries do own research.

State Commission is responsible to the State Council for the entire country - establish guidelines for all ministries and set priorities of research units.

SSIC tasks:

1. Establish science policy approved by State Council.

2. Establish National Plan; set priorities; coordinate all s/t for ministries and localities.

3. Decide on national projects and budget according to Plan; fund as prioritized.

4. Organize registration of projects, reward, evaluation of work done.

5. Coordinate for:

- . Cooperative/exchange arrangements with foreign countries;
- . Invitations to specialists to come to China to organize group consulting and consultants to program and to evaluation of results.

Examples: Both governmental and non-governmental person-to-person and institute-to-institute. Today's delegation is an example of this task.

Division Chief, Planning Bureau

Welcomes, indicates others have summarized National Plan, History of Planning in PRC.

1. Developed 3 times since founding of PRC 1956-67 - first National Plan - establ. S/T Commission. Under Chou En-lai organized more than 600 specialists to develop 12-year plans; major principle was to engage in task-oriented activity - catch up with advanced countries. 12 priorities - among them peaceful util of nuclear energy, radio-electronics, power/energy techniques, automization of production and precision instruments, survey of resources, new legal system (check this one??), organic synthesis, new power machines of heavy industry, Yellow River and Yangtze River development, mechanization and electrification of agriculture, prevention and treatment of major diseases, some additional basic research.

2. Reorganized Plan - 1963-72

SSTC did this one: Principle - catch up with 60's advance, try to set higher levels for 70's. Made agriculture the priority - clothes, food, and consumption goods; in particular foundation for indus. Production of cereals also education and training of personnel to do s/t.

3. Long-Range Plan - 1978-1985

Done by Scientific Contress - 8 fields: agriculture, energy, material science, computer science, laser - space science, high energy physics, genetic engineering. 108 proejcts were selected as central to country. Now this Plan has been readjusted and modified in its implementation (last 3 postponed) according to 5 principles already listed by Deputy Director.

Stress on parallelism to promote national development, but there are still problems even with readjustment. Still haven't given s/t enough attention. The importance of agriculture is accepted; production and investment there are ok. But not enough on s/t to develop general production to (1) improve quality, (2) reduce cost, (3) increase variety of production. Also there are a wide range of production problems as yet unsolved.

Now we stress focus on s/t to meet national needs and economic development - not to dislocate economy in one area.

The Long-Term Plan (current) is to realize 4 modernizations - spiritual needs as well as material needs must be met. Therefore s/t must be coordinated in the future with: agriculture, energy, light industry, textires, transportation, etc. (included in priorities)

Management Achievements:

1. National budget

2. Manufacturing contributes most to government expenditures.

SSTC prepares budget plan, Ministry of Finance then assigns budget down through the levels, for (1) operational, (2) research, (3) capital construction apportionment is handled by SSTC - These monies are used to support major research.

Those projects managed by the State:

1. Major large projects. Right now these are under a pilot program of management by Research Institutes (?does this mean decentralized?) ed. note
2. Projects done by ministry or provincial s/t - the provincial commissions.
3. Regional projects
4. Older research institutions propose projects on their own initiative.

Personnel Bureau head

State Council values this work so created special personnel section for this area (s/t) more than 5 mill in this labor force.

- 1.86 - Engineers
- .32 Agriculture
- 2.32 Scientific research
- 1.0 Teachers and higher educ
- 1.5 Medical work

Women occupy important positions - 1.67 mill are female. 31.6%

At the senior level - prof/assoc prof.	3,500
Above lecture level and engineers	110,000

The suggestion is made that foreign specialists are probably still necessary despite rapid progress of PRC. Before liberation, 50,000 people and 10 research institutes with few achievements. So increased over 100 x since 1949. However, China still can't meet own needs and the level of expertise needs to be improved.

Current personnel - 4 categories:

- Foreign-trained intellectuals, for example Minister and Vice Minister of Industry.

In the 50's, these people became leading scientists and the disciplines, for example, deputy director of high energy, also of semi-conductor and of elements and organic chemistry.

- Some from "older" China

- 90% are trained since New China - some still trained in foreign countries.

- some 20,000 selected to be trained in China's own schools - young peasants, workers. For example, Minister of Textile Industry is originally a worker, then sent to Middle School and on to University. All are hard working, devoted to PRC and successful contribution. Some women among them. Examples: Specialist in Chemical Engineering, Drtr of Inst of CE in Kwangtung Province - discover (perfection?) of cellulose fiber. A woman astronomer who discovered a new celestial body. Some survey team members - etc.

Policy of Educated "Intellectuals":

After 3rd reorg of Communist party, the leading members of the party/government, scientists, technicians through this past work, and achievements now become workers (a prized group). Now agree we must give them full play for the creativity and make use of their talents in Nationalization and education, training such talent in PRC. Recently Party Committee Log included them in the top echelons. More than 2000 now elected at top level; more than 20,000 at divisional level. 1/10 of these are women.

Such people are continuing to be selected. Women scientists are becoming Directors of institutions and hospitals. For example: President, Peking Hospital Medical College; Director, Children's Hospital, Shanghai; Deputy Director, Fudon University.

Intellectuals now "belong." Scholars should be content.

Education

- Equality of opportunity for all men and women
- Reinstated examinations (on a trial basis) to choose most qualified
- Reconstitute giving of degrees, divide by discipline
- Respect older scientists; allow them to train and teach new students , but must allow creativity to flourish among middle-aged. Rank according to experience.

- Now wish to emphasize update and training. Developing a long-term plan for this at present; educational curriculum review also includes continuing and adult education.

- Foreign education - select some students to send abroad but also select some for shorter study periods among present scholars and professors for visiting appointments.

- New plans for self-study, passing exams, getting degrees. During Cultural Revol. nearly 1 mill graduated from universities but at such a low level that they must now update their training.

For scientists and engineers who suffered during 10 chaotic years, must now improve their working and living conditions. Financial conditions were very bad, their present status is still somewhat poor and this probably affects their work. Need improvement.

For all positions, m & f totally equal. Especially in cities, women are high proportion (40-45%)

- in particular, medical/public health - 53%
- in some insitutes- Sanitary Engineering - 41% in chemical, and in Microbiology 26% an assoc prof and above.

But women scientists still have household responsibility so have to make greater effort. Realize their situation must be improved - wish to raise salaries, improve housing so they can give more energy to scientific work. Some institutes and ministries are establishing canteens, nurseries, kindergartens. The example is given of Shanghai Commission using those "waiting to work" to provide children's lunch. A committee has arranged after-school care with retired personnel to teach science and technology and care for and organize summer activities.

China must wait for improved economic conditions to do more for scientists and technicians. Prosperity will eventually come. Personnel will have better conditions then.

In answer to various questions it was explained that investigators and evaluations go from s/t to factories for site visits, that high-yield strains of cotton are now being developed through the Chinese Academy and Institute of Cotton in Shantung (working in tandem); that more women leaders and scientists need to be trained and that socialization of housework will help. Again reference was made to the work in Shanghai and the fact that the Committee of Western Suburbs in Beijing was also making headway. Electrification in Northern China was helping in trying to build household machinery.'

It was suggested that following principle of family planning will help.

In response to question about numbers of teachers it was suggested it was rather lack of facilities and equipment rather than lack of teachers; about 70% of those in universities do graduate work at institutes as well.

Also it was suggested that a more unified design is needed for scheduling foreign study for Chinese students and teachers.

In response to question about transportation - research on this problem is done in Ministry of Trans & Rwy

Question on budgeting was answered: Research Institutes budgeted annually. Money must go to assigned tasks first, then others if possible. Operational money - annually. research projects sometimes by project-time needed, with progress reports annually.

About self-study:

Still in very new pilot stage.

About grading, trying to equalize grading so as not to require higher grades of women than men students:

This was our longest meeting to date. A very interesting one, although very much handicapped by a poor interpreter (the Commission's own). We all took copious notes and emerged from the government building where the meeting had been held to a biting wind and dust blowing. It was noon and we hurried back to the hotel (just a few blocks away) for lunch. Many of us had Institute meetings in the afternoon - the others were to go to a temple for sight-seeing.

May 3 - Sunday

In the afternoon, seven of us took a somewhat leisurely trip to a Buddhist Temple in Beijing, about 15 minutes from the hotel. We went in the bus with our new Beijing guide, Wang Yi. She was very pleasant and volunteered her assistance with places to shop, asking us each to indicate what we wanted to find. Later she told us she was 29 and had one room which had been found for her by the office (At _____ Women's Federation) which was in a unit shared by

another couple. The office bus comes to pick her up and take her home from work. Because the conversation turned to sexual permissiveness she said it was not permitted, by the family or working colleagues, to have sex before marriage. How would anyone know, we asked. She said her fiance's family has him come home by eight and she is always chaperoned. Also it is more traditional to live at home with one's parents until marriage. Why was she not at home? Her parents live quite far away, she said; she was assigned to this job out of college. How did she feel about that, we asked, but just then we arrived at the Temple and the question went unanswered.

Yung Ho Lama Temple - also Yong He Gong or Palace of Eternal Harmony. This is a Buddhist temple built by Emperor C'hin in honor of his mother who was Buddhist. He is supposed to have been born on this spot (his "bathing bowl" is there to see). Since he could not go to Tibet to see the temples there, he had this lamasery built here in Beijing.

In style this is quite similar to the Jade Buddha Temple, but it seems in some ways larger, with more buildings to go through, each with its separate Buddha replica. In the third is a huge representation of a Buddha, a black one, it seems, made of a single trunk of sandalwood, we were told - the size would rival our redwood in girth. It seemed at least 30 feet tall.

In some ways, even more interesting than the temple itself, and the story of its building in this foreign country, was the story of its preservation. At the start of the cultural revolution, we were told, the young people were destroying all buildings of this

sort, but Chou En-lai decreed this temple should be protected. It was closed down and left totally alone until relatively recently when restoration started. It has only been opened to the public this spring.

It is also true, we were told, that the artifacts in temples of this sort are considered to be somewhat erotic by the Chinese. So that is another reason, it would seem, that some parts of the temple are not really "ready" to be open to the public as yet.

During the afternoon of May 3, I, Debbie Dalke, visited the Institute of Geophysics, Academia Sinica. I visited with 4 women scientists, two of whom had published research papers. One was on seismic wave modeling and earthquake predictions, the other was a seismic analysis of tectonic plate movement in Northern India.

Two of the women knew a few English words. With the aid of Shan Shan's non-scientific vocabulary, we shared basic elements of our work. The women express great joy at receiving their first female scientist visitor. They were delighted with the "few small gifts", our study tour pins and JPL's saturn pictures.

The Chinese women initiated a discussion on the status of women, declaring themselves equal to their male professional counterparts, but admitting they did most of the housework. I told them most American women did not feel professionally equal to men, and discussed ERA, abortion, and how long it had taken women to earn the right to vote. The 2-1/2 hour visit passed very quickly.

Sunday May 3

Lecture at Cancer Institute

Was drive over (in taxi) with Xu Xue-hai of the all China Women's Federation and was received by Dr. Pan, the assistant to Dr. Wu Min and Dr. Ling who speaks very good English and acted as translator. There were about 50 people. The lecture lasted about 3/4 hour and cut it short but not much needed translating. Three or four people asked pertinent questions and then one student(?) wanted to know the history or background of Hela cell contaminater. Took another 15 minutes to explain. Then visited the lab (Pan's) of people working in tissue culture on esophargial cancer. Was shown cultures, and pictures of the cell growth on glass or plastic, filter paper on nylon. They grow cells on media 199 or 1640 + newborn calf serum. Recommending trying pig's serum. then visited Dr. Hsia's lab where she is trying to grow tumor tissue from the esophagus in organ culture. Explants look healthy but so far only survive about 14 to 20 days, then the epethilial layer thins out and degenerates. Talked shop and left about 5:15 after leaving them some reprints on technique of obtaining cultures from pleural effusion and a new procedure for elongating chromosomes prior to staining and thus producing more bands when stained for G banks.

Visit to the Institue of High Energy Physics, Chinese Academy of Sciences, Beijing

Sunday afternoon, May 3. Visited by Cherrill M. Spencer.

I was met by Ms Zharg Zong Ye and Mr. Chen Xianneng; the director of the institute had waited to meet me but our taxicab had

problems in finding Debbie Dalbe's institute (who was sharing the taxi) so I was one hour late! So the director had left for an important conference by the time I arrived. Most of the senior members of the Institute were at the same conference (out in the hills near Beijing) so I didn't give the talk I had prepared. Ms. Zhang, who is the head of the Nuclear Physics Theory Group, welcomed me and gave me a BI to the structure of the Institute and the nature of its employees, a summary of this information follows:

The Institute is divided into three divisions: Experimental High Energy Physics; Theoretical Physics, which is further subdivided into High Energy Physics (HEP) and Nuclear Physics; and Accelerator Technology. The total employees number 1800, many of them live in apartments in the Institute's compound. There are the following facilities in the compound: nursery, middle school, clinic, cafeteria, grain shop, and grocery.

There are 20 physicists in the Nuclear Physics Theory group, 5 of them are women. They all graduated before the Cultural Revolution and so are all aged over 40. They hope to be assigned about 5 graduate students this winter (the Institute is not associated directly with any one university); currently 2 Nuclear Theory students (both women) are studying for their PhD's in the USA. There are about 40 physicists in the HEP theory group, 4 of them are women.

The Experimental High Energy Physics division is divided into four groups: counter physics; streamer-chamber; general detector and "Number One" physics laboratory. Mr. Chen is in the counter physics group and he provided me with the following facts: There are about 40 physicists and technicians in the counter physics group, one-third of them are women. 14 of these people are abroad working in other HEP

laboratories (for example, Mr. Chen's wife is at the Stanford Linear Accelerator Center and she put me in contact with Mr. Chen in the first place).

The representation of women in the theory and experimental groups is higher than in the USA and Europe. However, the fact that there are more women doing experimental research reflects the same situation as in the USA and Europe; no doubt this means that a higher status is attributed to theoretical research than experimental research. This situation may be equalized as more graduate students are enrolled (there having been none in the short history of the Institute until this year).

Mr. Chen told me more about the subgroups in the counter physics group. He himself is writing programs for a PDP 11/03 microcomputer (the same as I use in my work) which will be used to take on-line data from a scintillation counter hodoscope. I was escorted by Ms Zhang, Mr. Chen and several other people to see 8 different laboratories where prototypes of the following particle detectors were being assembled and tested: plastic scintillation hodoscopes (both the plastic and the photomultiplier tubes are made in China); time expansion chamber; lead glass counter (being read by CAMAC); large (2m x 2m) multiwire proportional chamber with 2 mm spacing; and avalanche chamber connected to a multichannel analyzer. The electronics associated with these detectors ranged from 20 year old modules to about 3 year old modules. They also had some fast Tektronix oscilloscopes (about 8 years old) and at least one Chromemco micro-computer. I also visited the machine shops where some of the vacuum pipes for the new postponed 50 GEV proton synchrotron were being

machined. The machines were mostly Chinese built and the shops were better equipped with more up to date machines relatively speaking than the laboratories. There are 80 workers in the shops including 6 female lathe workers (putting them way ahead of the SLAC, Stanford Linear Accelerator Center, machine shops in female representation).

At every lab I visited I was given a 5 minute explanation, by the person working there, of their project, usually in reasonable English. Generally they seemed to know what they were doing and were up to date in the relevant literature and developments; most of the detectors were a very small size and had been built so the physicists could learn about a certain technique. As the particle accelerator they had started to build, with which they would have done experiments, has been postponed, they are obviously not yet building any full-size detectors.

My overall impression was that they were all quite excited by the work they are doing, even though they had no definite goal in mind. The conference which most of the Institute senior members were attending was apparently called to discuss the future of the Institute under the modified priorities of the 8 year plan. (See discussion with Fan Yi.)

May 4 (Monday) afternoon

State Seismological Bureau

Anne Kahle, Debbie Dalke, Cherrill Spencer, Carole Hamilton

Met at the National ("State" and "National" seem to be used synonymously) Seismological Bureau with representatives from the Center for Seismic Analysis and Prediction, the Institute of Geology, and the Institute of Geophysics, all sub-organizations of the Seismological Bureau.

We heard a brief history of the country's earthquake study and prediction work. Started in 1966 after the quake, and has been prodigious. They have had many large quakes since, providing them with lots of data to work from. Also described their quake prediction network, which is extensive and fairly successful. Certainly more successful than anything we have. Much discussion followed on earthquake prediction in general - until we had to be pried away to go to the next place.

Next we visited the seismic data collection that serves the Beijing area - one of six such stations nationwide. Station is run by the Institute of Geophysics, collects data from 21 observation stations covering an area of about 350 km by 400 km. Saw their recording instruments, data processing facility, and communications terminal. They have capacity for 8 channels from each station transmitted over phone lines. Not all channels are used yet.

Following day a smaller group (Anne K., Carole H. and Carol P.) visited one of the observing stations, where the data are collected. They have quite a comprehensive set of instruments - seismometers, two nuclear precision geomagnetometers ~~swdkhdkadkpk~~ augmented

by less exotic instruments, and a gas chromatograph. The last is used for radon measurements on samples of water from three wells hand-collected each day. Data sent to the collection center in Beijing are one channel from a boneholi seismometer and one for geomagnetic measurements.

Interesting point was that we needed a foreign travel permit and a stop at a checkpoint to get out of town.

Communications Bureau, Ministry of Electric Power
May 6 (Wednesday) afternoon
C. Hamilton

Went with Wei to this office - otherwise by myself. They had sent ahead a list of questions they wanted to discuss. Lin told me about them last night, and Wei read them to me from her notes. Seemed innocent enough - the questions were quite broad. Impossible to answer in one afternoon, but certainly basis for good discussion

When we got there (late, because we had some problem getting past the gate - thought for a while we'd come to the wrong place), were ushered into a room filled with about forty people (3 women, I think). We were introduced to the Section Chief of the Communications Bureau, a Mr. Yuen (?), and Wu Jing Chang, Head of the Production Department.

BI consisted of a six-page printed description of their power industry and about ten sentences. They they started on their questions. Became rapidly obvious that (a) they were expecting to consult an expert who could give them specific advice on what kind of communications to use in their system and how to solve their computer interface problems, and (b) there wasn't a whole lot of

overlap between what I could tell them about JPL work and their current interests. The meeting was not comfortable, but we all made the best of it (I hope). They did present me with a pretty watercolor of the Great Wall as a memento, and I will follow up with more info.

May 4 - afternoon

Visit to Qing hua University's Dept. of Thermal Engineering

This was one of the days when the tour split into 4 or 5 subsets. Mine consisted of only one s/t person, hence Chen Chen and myself were deposited on the doorstep of the Dept. of Thermal Engineering and the bus left. I did not know whether I was going to meet coal combustion, or solar energy, or _____ any other kind of specialist in thermal energy. We were met by the Vice Director of the Thermal Engineering Dept., Dr. Felipe Tgeng Fei Woo, an alumni of UC Berkeley (Mech Engrg). Dr. Woo spoke good English and did all of the interpreting. Chen Chen caught up on her sleep.

Dr. Woo's first question was, did I have slides on solar - I did. Went to the standard BI room about 25-30 persons were there: researchers, faculty and at least one industrial employee - a woman specialist in hi vacuum techniques developed in a radio tube manufacturing facility. There were a very few other women in the BI room, but none spoke.

I asked to be informed on the on-going projects in Dr. Woo's department and was told that their assignment was to develop solar-thermal power generators for the villages. They are using available technology to increase the temperature of hot water from flat plate collectors and running a Ranhole Fecon II cycle turbine generator with the hot

water as a source. The cycle efficiency is low (1 - 2%) and the smallest generator set they could purchase was 10 KW. The plan calls for 2 KW sets to service 10 families (light bulbs: 20-60 watt; TV about 100 watt) with light and TV. I was shown the experimental set-up. Good ingenious engineering but the concept is not likely to be very fruitful, the efficiency is too low and the scope too small.

Before the visit to the labs Dr. Woo mentioned that Shanghai was using aquifers for seasonal storage of cold water and he knew about the four seasonal aquifer storage projects in the US. The Chinese stumbled onto the aquifer storage schemes when they found that the ground water level in Shanghai was dropping because of water overuse in summer and started injecting tap into the aquifer in winter. The water came from the river and was very cold. In a couple of years the temperature of the aquifer water cooled to 11°C and could be used to air condition the textile mills of Shanghai. After this great success story I had to admit that all four aquifer storage programs funded by our Dept. of Energy had been cancelled, then showed my slides of our (TRW) work on the aquifer in Bethel, Alaska. And also showed the slides on the solar-thermal project TRW conducts in Oregon to make steam for frying potatoes (Ore-Ida frozen french fries).

I took some shots of the test rig in which the novel collector efficiency is compared to that of a flat plate collector.

Dr. Woo gave us a ride back to the hotel. During that ride he explained how he got his research money - a good portion is by contract with industry. Also, there is a shortage of faculty.

Dr. Woo told me about a village he had visited nearly where a 8m³ Biomass digester furnishes gas for working and lighting while a passive solar collector provides showers. The digester cost 150 yuan; is made of concrete and runs on straw and human and livestock byproducts. A similar digester made of clay would cost 50 yuan. Too bad we had no time to visit that village.

May 4
Institute of Computing Technology

In the afternoon of May 4, I, Terry Roberts, went alone to the Institute of Computing Technology. I was hosted by Professor Xia Pei-su, whom I'd met at the Beijing banquet; around eight other women computer scientists participated in our talks. We did not use an interpreter.

The Institute of Computer Technology employs 700 people, of whom one third are women. Of the 100 most senior people (professors and senior technicians), however, only 15% are women. The ten departments of the Institute cover hardware development quite thoroughly, and software development less thoroughly. Several people present were proud of having participated in the building of China's first model of several generations of computers. Now Xia is working on an SMI array processor for use in petroleum exploration. Software concentrates on compiler construction and computer-aided design tools. Programming is done mostly in ALGOL and FORTRAN, using English keywords. Programming style doesn't seem to adhere to current Western preferences: a source program I saw used mostly one- and two-character variable names, and had no indentation or comments.

At the banquet, I'd expressed interest in seeing their prototype system to input Chinese characters, so I was given a demo of the system. It works by displaying a row of characters across the bottom of the screen and having the user select the desired one with a light pen. There are two methods of determining what characters would be displayed and available. The first is to indicate with the lightpen what the first and last strokes of the character look like (two-corner method). The second is that after a character is input, the system automatically displays the characters which are most likely to follow that one. System response was quite good, under one second to display the sets of characters, and the man who was giving the demo was quite facile with the system. There are over 100 different systems in China for inputting characters, but none has yet caught on. I would be interested to see how easily a new user could learn this system, and how well people would like it for day-to-day work. Before and after the demo we discussed difficulties with the systems being developed by major Western companies.

My hosts asked me to give a talk about what I do. I described the system that I work on, but I'm afraid that it involves such a high level of system integration and user interaction that it was difficult for them to imagine. They also asked about the organization of Xerox, and what other divisions did. Despite some difficulties in communication, the meeting was a pleasant and productive one.

Biophysics. Research in this division concentrates on chemical and physical processes in living organisms, and includes several departments:

1. Radiobiology. Studies effects of ionizing radiation.
2. Sensory Biophysics (see below - this is one visited, so more details).
3. Studies abnormal behavior in animals before earthquakes.
4. Cell biology. Studies self-assembly and self-organization of cells. Work with egg yolk granules of hermaphroditic shrimp (arthropod).
5. Instrumentation. Working on liquid scintillation and centrifugation.
6. Theoretical Biology. Work on quantum biology and statistical thermodynamics.

Sensory Biophysics (Department #2 above) includes several groups:

- a. Biophysics of sense organs. Working on compound eye of insects (housefly and dragonfly) structure and physiology.
- b. Neurophysiology of visual systems of higher organisms. Work on rat (electrophysiology of visual cortex - hemispheric interconnections, anatomy of retina-fugal pathways), cat and frog (electrophysiology - nucleus isthry). Soon to include monkeys, which are plentiful in southern China and cost about 50 yuan each. (In this country, \$500 to \$1000 each!!)
- c. Computer modelling - simulate vision.
- d. Mathematical modelling of visual receptive fields.
- e. Visual psychophysics (our female host's lab). Binocular stereopsis.

Visited 2 a, b and e. Labs were all more spacious than in Shanghai Institute of Physiology, which had groups doing similar work. (Head of lab 2.b. had in fact done graduate work in Shanghai Inst. Physiol. Wife was in this Institute in Beijing, so he applied to transfer and got it (one of the lucky ones!). Equipment was good, and adequate for work being done. Several of younger investigators, including heads of labs 2.a and 2.b, had been sent abroad for a year after cultural revolution to do postdoctoral work. Dr. Tiao (2.b) went to Cambridge 1976-77, and head of 2.a went to Germany 1978-79. Seems this was this Institute's way of helping researchers to "catch up" after cultural revolution hiatus. Institute of PHysiology in Shanghai, in contrast, has invited foreign researchers to China for 1 to 2 weeks, for intensive lectures symposia or technique training sessions. Labs here also seemed to have begun to collect data recently, but to have more done than those in Shanghai. Work was fairly current, perhaps a year or so behind, probably reflecting (a) foreign training on the plus side and (b) their claim to have access to western journals (a year or two out of date!), but relative lack of access to meeting programs, symposia proceedings, and the "network" in the west, all of which are more current. They asked if we could help them with this. We'll try!

May 4 - afternoon

Visit by Bea Bain, Meryl Brod, and Barbara Filmer, to the Marco Polo Bridge People's commune and its Home for the Respect of the Aged.

We were greeted by Mr. Gao Bu Yun, the Vice Director of the Management Committee of the commune. Before our visit to the Home, we were briefed on the commune in general.

This is one of the large communes, with 2000 hectares (5000 acres) of land and 47,000 people in 11,000 households. The residents are divided into 21 production brigades and 141 production teams. The main activity of the commune is vegetable growing: 40% of the land is tilled and they provide 1/7 of the vegetables used in Peking. They consider provision of food to the capital their major responsibility, vegetables being paramount, but they also devote land and labor to grain, animals (who provide manure), and fruit. To diversify somewhat, there is some light industry too (machine parts, truck bodies).

Last year they produced 123,000 tons of vegetables (130 varieties) such as tomatoes and cucumbers, the latter providing 10 harvests in a good year. Greenhouses are used in the winter to provide "costly" vegetables not suitable for "ordinary people." (I suppose these go to the hotels.) In addition to the vegetables, last year the commune produced 30,600 hogs, 510,000 Peking ducks, and 770,000 kg of fruit (mainly apples, but also pears, peaches and grapes).

All the land is irrigated so the commune is no longer troubled by droughts. Production has risen steadily, but the pace of increase probably can't keep up. Average per capita income in 1975 was 305 yuan and in 1980 was 399 yuan. A five member family can earn

150 yuan per month. ("Rent" is free -- members own their own homes; vegetables are free; medical care, kindergarten, and nursery school are free.) The money is used to buy coal, which is cheap, and electricity, as well as watches, bicycles, and TV sets -- 20 to 30% of the members have their own TV. The commune is quite well-to-do, since the average income of peasants in China is 80 yuan per year.

Further development depends on soil improvement, water conservation and mechanization. The commune is somewhat mechanized, and is moving toward more "modernization" but vegetables do require fine handwork. There are 250 tractors, 50 of which are big ones. There are 270 trucks for transport of produce to the city.

The commune has a hospital and each brigade has a clinic, with a total of 240 medical personnel. Emphasis is on preventive health measures and education about hygiene. There are 7 middle schools and 19 primary schools -- we were told they now have universal middle school education in the commune, and we were also told that education is not compulsory. I think this means that school is available to all, but all do not "choose" to attend. A campaign to eliminate illiteracy encouraged older members to learn to read and write also.

The following information on the Home for the Respect of the Aged was provided in part at the BI and in part by Mr. Shi Guizeng, the Director at the Home. There is a deep tradition in China that children or other relatives care for the elderly, but this is not always possible -- hence, the Home. The commune has 2400 retirees, 62 of whom live in the home. The retirement age is 65 for men and

60 for women ("women grow old more quickly"). Previously, the Homes were administered by the brigade and there were 5 on the commune. However, the finances and population couldn't support the brigade level system and they closed the homes one by one. In 1980, the commune opened a new home for the aged -- with 3 beds per room (except in the case of 4 couples who are each provided a room of their own), communal dining room, a "tailor shop" where staff sew clothes for the elderly residents, common gardens and vegetable plots, a community room (with films once a week), and central heating and a bath house with running hot water -- of which they seemed especially proud (justifiably, I thought). There are 2 medical personnel, one of whom is there each day (not fully trained "western" physicians).

Retirees generally receive a pension, but those in the home (where all needs are provided for) receive only 3 yuan per month pocket money. Those in good health may receive extra money for light work (e.g., child care or manual labor in the gardens).

When we arrived at the home, we were truly amazed to learn that 52 of the 62 residents are men. This was explained as due to "historical reasons." (We later learned it had been a very poor commune early in its history, and young women had been reluctant to marry and commit their life to it. Hence, many single old men now.) It is all very new, clean, bright and open. We saw about 20 residents, eagerly smiling and watching us. We were told that about 20 were unable to use the community dining room and had meals brought to them. We didn't see any signs of these presumably rather frail elderly. That left about 20 residents unaccounted for --

perhaps they were the ones who are strong enough to be out working. The oldest resident is more than 80 years old. (A 93 year old died a few months ago.)

Besides the clinic and the tailor shop, we went into the kitchen -- with two smiling chefs presiding over bamboo steamers at least a yard in diameter. We also went into the rooms of two couples -- with beds, a dresser, a mirror, some chairs, and lots of photos and pictures on the walls. I have been to only one old people's home in the US, and it seemed to me that this one in the commune was every bit as comfortable (given the relative overall standard of living in the US and China). The design of the quarters facilitated socializing among the residents, and efforts were made to provide them with some stimulation from the "outside." Of course, we didn't see the really frail residents and have no idea what kind of company and stimulation they are provided with.

One last observation on the Home: All of the elderly residents had terrible looking teeth.

As a close to our visit, we went to the Marco Polo Bridge, built in 1199. It is a "cultural treasure" protected by the government. It is indeed very beautiful, built entirely of stone. There are posts about a foot or two apart along both sides of the bridge, and each post is topped by a unique lion head. The commune director lovingly pointed out the lions, some of which are weather worn and some of which have been restored. He seemed to know each post personally and intimately. We all were touched by his love of the bridge. He also was proud to point out that resistance to the Japanese advance in China (at the turn of the century?) began at this

bridge. (Another bridge has been built a short way downstream in order to reduce traffic over this one and thus to help preserve it.)

I should add for general interest that on the way to the commune we asked our driver the price of gas -- it is 99 fen per 1/2 kg.

Monday May 4 - Temple of Heaven Park

This temple was built in 1402 and situated in park. It is unusual in that no nails were used. The temple interior has 4 round columns for the 4 seasons, and around their exterior 12 square columns which represent 12 months of the year. The dome of the temple is supported by beams at various angles so as to give support. The temple and courtyard are surrounded by a circular peripheral wall. The acoustics were such that one person standing on left side could whisper and be heard by person standing in identical position on right side of the circular wall.

Also the walkway up to the temple is made up of squares. On the first square, if one claps once they have echo of one. If on 2nd square and claps twice, they have echo of 2 and if on third square and clap 3 times, the echo is 3 times.

Outside the wall of temple and circular wall is a 3-tier marble structure which in center has a circular area that if you stand on it and yell, it sounds as if your yelling into a well.

Meeting with Institute of Psychology
Kuang Pei Zi and Guan Lin Cho

Unfortunately, the two representatives were from the one division of the Institute that I have no background in - Biological Research - so we had no professional interests in common to discuss. Amy was more familiar with their field (learning and memory - animal laboratory research). The Institute has 7 divisions: education, animal research, medical psychology, child development, perception, industrial psychology, and theoretical psychology. 150 people work at Institute, most of whom were trained at Beijing University.

Highlight of meeting was a question asked by the woman on sex education. She wanted to know what exactly it was and what was taught. Amy gave her a fairly explicit account of the history, need and content of sex education in the US. Quan was clearly embarrassed, but interested. It was that stage of curiosity where it takes all your courage to ask the question but you are still afraid to hear the answer. Guan feels that there is no need for sex education for children in China because there is no sexual contact before marriage, but she does say that women - or maybe all Chinese - don't know anything about sex - no one talks about it, children are not exposed to any sexual material, and women find out about it "on their wedding night."

6 May, PM

Research Institute of Automation for Machine-Building Industry

T. Roberts

In the afternoon of May 6, Cherrill Spencer and I visited the Research Institute of Automation for Machine-Building Industry. This is the research arm of the first ministry of machine-building. They have a strong applications orientation, often doing work under specific contracts from factories. Our host was Yan Siaojun, the vice chief engineer.

Of the ten departments in the Institute, we were shown labs belonging to four departments that we showed the most interest in.

1. In the Computer-Aided Design department, we saw a computer with all its peripherals mostly handmade. We saw a plot of a 1K memory chip and output from a database which utilizes Chinese characters. But we made little progress in figuring out how the software worked.

2. The Microcomputer department showed us a standard Motorola hardware and software development environment. Such systems are used to develop micro-computers for machine tool control, data processing, and data acquisition. They have more than ten computers in the department, which is one for every three people. We saw a color display, but so far they don't make use of the color capacity.

3. In the Robotics department we saw a six-foot arm which was designed to remove a gear from a very hot environment. The arm has five degrees of freedom of motion and the capability of lifting 30 kg. It does not have any feedback mechanism to allow for its target not being positioned precisely, but evidently that's not a problem. Unfortunately, we couldn't see the arm in action.

4. The final stop at the Electro-Physical department to see a 1.5 MeV electron accelerator, used to develop plastics. We also

saw a model of a 25 MeV accelerator used for cancer radiation therapy.

After the visits, we had a short additional discussion with Yan. Interesting comments included the fact that there's a national trading company which takes care of all of China's trade with other countries. The Institute gets its budget both from the Ministry and from its contractual clients. There are research institutes for each of the ten machine building ministries, which don't coordinate as much as they'd like when work overlaps. Questions about nurseries were deferred until the next meeting, the one with women.

Finally we had a meeting at which several women scientists were present. Most didn't speak the whole time; there was one older spokeswoman. Overall, 40% of the workers in the Institute are women. It was impossible to find out what percentage of higher level personnel were women, but they did say that there were more than ten female "leaders." Women tend to be concentrated in the service and information departments. We asked individuals whether they personally shared the housework equally with their spouses. The women described various arrangements, but all seemed fairly egalitarian. A man joked that his wife made him do half the work. The meeting ended with the hosts asking about our impressions of China.

May 5 - Beijing
Seismological Bureau

Part of the group visited the State Seismological Bureau. The visit consisted of an overview of Chinese earthquake history and a discussion of their prediction techniques. Of note is their reliance on abnormal animal behavior as an earthquake precursor, as yet an unexplained phenomena. Another important difference between Chinese and American seismology is the participation of Chinese amateurs in earthquake prediction. Peasants are taught to monitor activity such as well water levels or electrical currents in the earth and report changes to the Seismological Bureau.

The group visited a data collection center where seismic signals were transmitted through phone lines onto seismographs. Magnetic data was also being collected here.

A brief meeting took place on the afternoon of May 6 at the Ministry of Petroleum. Debbie Dalke gave a talk entitled "The Use of Surface Deformation Data to Determine the Geometry of Massive Hydraulic Fractures." None of the four Chinese petroleum engineers spoke English, which unfortunately hampered an in-depth exchange of ideas. The Chinese were excited about the technique, developed by M. D. Wood, Inc., which was a totally new concept to them. An agreement was made to exchange written information which could be translated from English to Chinese.

Wednesday, May 6

Visit to Dr. Wong An-chi
Institute of Genetics - Academie Sinica - Beijing

The Institute is several miles outside the city in a rural area. A fairly large, 7 story building (with elevator). Was met by Dr. Wong and one assistant and escorted to a meeting room with about 12 people waiting to meet me. Dr. Wong - educated at Radcliffe, Ohio, etc. - speaks excellent English. I showed some of my slides on chromosome abnormalities in our cell lines and left them a slide of the new technique which elongates chromosomes and increases the number of G bands. They were very eager to try this new modification. Saw their work on SCE (sister chromatid exchange) G&R&C banding - which is quite equal to ours. They are interested in RNA - and AFP (fetal protein) and are working along the same lines as everyone else.

Dr. Wong accompanied me back to the hotel - invited me to lunch, and left at 1:30. One of her assistants in coming to the US in June for 1/2 year and may come to Houston. If he does, he may take one or 2 of my cell lines back with him.

5/6 - Beijing - An Ping Psychiatric Hospital

My host was Yang Hua-Yu, a young (35?) doctor who had the ease of gait and manner that one associates with a psychiatrist who works comfortably and well with inpatient schizophrenics. Dr. Hua-Yu feels that mental illness is highly stigmatized in China as it is in the US, and so most patients feel very inferior, especially when hospitalization is required. The hospital can only meet 10-15% of the needs in Beijing and so those admitted are either the most

severely disturbed or the elite. (I'm not sure which) Otherwise, the mentally ill are cared for by family and neighborhood/work units. Judging from the scarcity of mentally disturbed people I saw on the streets, I would say that most are kept close to home.

Compared to a US mental hospital, An Ping, like most other medical facilities we saw, is what we would consider a relic from the 30's. However, it was very well kept up, wards were reasonable in size (20 beds) and each floor had its own dining room, nursing station and bathrooms.

There is some rehabilitation therapy (patients make the string market bags) and scheduled activities. It seemed, however, that most patients spend the majority of the day on the ward in their pyjamas. Patients appeared well fed, not overly medicated and comfortable with surroundings, on what I would classify as moderately severe wards. All wards are locked.

Different types of therapy are used, depending on preference of attending physician who has total responsibility for a patient and does all the therapy themselves. (No psychiatric nurses) Caseload is about 20 patients per doctor. Behavior therapy is very popular with some insight therapy, group therapy and milieu therapy. I was told that each patient has a group twice a week and individual therapy once a day, but was also told that there is little individual therapy - so I am not sure how much treatment occurs. Little electroshock is used. Primary use of psychotropic drugs - no lithium.

There are: 160 doctors
740 nurses
1,650 patients
1,650 beds

Patients age from 4 to 50.

Average length of stay is 3 - 4 months (6 months for chronic).

The hospital has 3 sections:

1. Outpatient clinic (sees about 200 patients a day)
2. General psychiatric hospital
3. Chronic, long-term facility.

Doctors training is medical school plus 2 years of psychiatric internship.

Recently some doctors have been trained at the hospital in a 4 year program. Straight from middle school, but this approach has not proved satisfactory and is being eliminated.

Dr. Hua-Yu believes that psychological care will spread outside the psychiatric hospital in China in the near future. Neighborhood committees and some big factories are already paying attention to "the psychology of life" - the problems of living - and mental health is just starting to be a concept the average person is aware of. He feels more money and more education about mental health is very needed in China.

May 6 - Afternoon

Visit to a Peking neighborhood

the municipality of Peking is divided into 11 districts. We were in the Western district which is subdivided into (?) neighborhoods. The neighborhood is 2 sq. km, with 59,000 people in 16,000 households. The neighborhood is further divided in 26 residence committees, each of which "governed" about 2000 people in about 500 households.

Our host was Mr. Chang Yen Feng, responsible person of the neighborhood. We were talking in the meeting room of the ZHung Ta (Brick Tower) residence committee. Also present were 4 older women who were a retired school teacher, 2 retired cadres, and a retired worker.

The neighborhood has 100 staff members (district government employees) who guide the work of the residence committee in implementing the tasks assigned by the district government. The neighborhood staff also relay "demands and requests" from the residence committee back to the city government. The tasks the neighborhood/residence are assigned include hygiene and family planning, complaints, social order, after school education, mediation of quarrels, and "women's work."

Each residence committee has 20 members, elected annually by registered residents 18 years of age and older. Most are workers, and are not paid for this activity. Under the supervision of the 26 residence committees are 990 activists (volunteers), many of whom are women (especially older women) and young people waiting for jobs.

(An Election Committee of the district decides the number of deputies from the neighborhood to be elected to the District People's Congress. Then, the residence committee nominates candidates - more than the number of places to be filled. Voting is by roll call.)

The neighborhood runs some production groups -- garments, ballet shows, arts and crafts -- as well as service centers such as groceries, canteens, nurseries, and kindergartens. There are 2000 cadres to help manage these activities. Each residence committee also has a clinic. We were told that the services

generally weren't as comprehensive or as well equipped at the neighborhood level as at the higher government level, but they were close by and "convenient."

Our visit to the clinic, in the same courtyard as the meeting room, led us to a small clean room with a cabinet full of dried herbs, 2 beds (with curtains around each one) and acupuncture charts on the wall. The clinic has 3 staff people, who have taken a short hospital training course in which they learn to treat minor problems, to do preventive health work, and to do such things as change dressings, take temperatures and blood pressure, and give injections. They also do acupuncture. I was horrified to learn that, in addition to giving children polio vaccine, they also are immunized against smallpox. (It is supposed to be wiped out, after a massive World Health Organization campaign -- The virus should be under lock and key in only a very, very limited number of "leakproof" facilities.) Residents can get insulin shots, if they provide their own insulin (kept cold in a neighbor's refrigerator).

We learned a little of the mediation activities. One dispute was over space in a shared courtyard. One family wanted to build an addition to their house (which was reasonable because of the number of family members) but it would block the light of their neighbors -- who objected, reasonably enough. In this case, Solomon arranged that an addition be built, but that it be smaller than originally planned so as not to block the sun entirely. Another dispute was leading to a divorce (mother-in-law problems on the part of the wife -- she didn't want to live with the mother, but when the mother lived elsewhere it was a financial drain and still resented). Here the mediation committee could do nothing, the suit

went to court and a divorce was allowed.

We also visited a home and were welcomed by a retired woman whose "old man" still worked. She lived in a very roomy apartment in a multi-story building -- off of a wide and long interior (private) corridor were a bathroom, kitchen, bedroom and living room. Another bedroom led off from the living room. In this spacious apartment (compared to other homes we had seen) lived the old couple and 2 of their 3 sons. (One son was married but his wife was in another part of China. The third son and his wife had moved to another apartment after the birth of their child.)

Our hostess and her husband earned 200 yuan per month, so they didn't charge their sons any board. (Ying our interpreter earned 49 yuan per month.) Their rent was 8 Yuan per month, water and electricity 15 yuan per month.

Our sense was that this was a comfortable, educated and privileged family. (The sons' bedroom was full of books.) For my part, the sense of privilege derived from the living space they were assigned. Larger rooms and more of them than the agricultural commune homes we had seen in Shanghai and Wuxi. The most crowded and darkest quarters were in the Shanghai commune -- two rooms for 4 people, and shared kitchen and bathroom. The most elegant home, however, was in the commune in Wuxi -- with its elegant mahogany furniture, numerous potted plants, delicate water colors on the walls, and a central private garden.

We had much more of a sense of a formal (rather than informal) government involvement in personal life in the Peking neighborhood. Committee members and activists mediate disputes, discuss family

planning, etc. Perhaps the formality derives from the traditional (at least in the West) isolation of urban life, or perhaps it was just a quirk that the Neighborhood's BI discussed these and the Agricultural commune's did not -- too busy relating production statistics!

May 6 PM

Solar exhibit at the Beijing Planetarium

The intrepid team Chen Chen - Manion braved the wilds of Beijing to reach the Planetarium. On the way we passed a long, long queue of people waiting to see a plastics exhibit. No such queue at the solar exhibit.

As usual, our hosts were waiting for us on the front steps. Mr. Chen Xiao-hong, vice director of the Planetarium, gave a brief BI which Chen Chen rendered in English. After that this gentleman smiled and remained silent while I talked with Ms Lu Weide, Research Associate, Beijing Research Institute of Solar Energy. She speaks English fairly well and was very cordial. Her section is devoted to developing cheap collectors for cooking and other thermal devices: accelerated sprouting of wheat, welding of lathe bits, etc. The concentrators I saw at the exhibit use small mirror squares (factory wastes) inlaid into the concrete dish; solar tracking is unusual. An air heater utilizes steel shavings (waste) to store heat. The emphasis is on cheap and simple and the scale is modest: boil 1/2 gallon of water, weld 5-6 bits in a day, etc. It all fits nicely with the rural economy of China. I have only 3 photos of the concentrators and of Ms Lu Weide because I ran out of film.

Wednesday morning, May 6
Visit to the Central Coal Mining Research Institute, Beijing
Visited by Cherrill M. Spencer

I was met by Ms Xia Huili, assistant supervisor of the Laboratory of Physical Chemistry, Institute of Coal Chemistry, and Ms. Pant Weizhen, engineer in the Central Coal Mining Research Institute. Also present during my visit was Mr. Trev Su-a-Quan, an American Chinese who has been living in Beijing for 2 years; he is a friend of our travel agents (U.S. Travel Bureau) and is an engineer working at this institute in coal gasification research.

Ms. Xia welcomed me and gave me a BI to the Institute which is structured in the following way: The Central Coal Mining Research Institute (CCMRI) is under the wing of the Ministry of Coal; it is divided into nine research institutes, 3 of which are in the building I was visiting in Beijing. These three are the Beijing Institutes of Coal Mining, of Coal Mine Reconstruction, and of Coal Chemistry. The latter research institute is further divided into 5 laboratories: Coal Analysis, Physical Chemistry, Gasification, Liquefaction, and Coking.

Ms. Xia expressed the sentiment that my visit and the talk I was about to give would help promote them in their research, especially in the research into the analysis of coal liquid which they were just beginning. I addressed by talk entitled "Continuous On-line Analysis of Coal" to an audience of about 40 people -- just under half being women. They were mostly scientists and technicians from the Coal Chemistry Institute and also some representatives from the Ministry of Electric Power. Ms Pang interpreted for me; she and Ms Xia had both visited the USA last year and she spoke very good English and did a good interpreting job.

I offered to answer questions after my talk and they came mostly from the Ministry of Electric Power people - they said they appreciated the usefulness of the instruments I had described and I gave them (and left behind for everyone) several reprints and journal articles on these instruments. They also said my talk had been clear and understandable although I was describing a completely new technique to them; this was gratifying to hear.

I asked to see some of their coal analysis labs and this I did even though they had not planned for me to. I saw three brand new, state of the art, Perkin-Elmer (US company) analytical instruments: a liquid chromatograph, a gas chromatograph and an infra-red spectrophotometer, which were all in use. Then I was given a demonstration of a Japanese-made spectrometer which did an automatic analysis of a small coal-ash sample.

All the scientists/technicians whom I saw working in these laboratories were women; I enquired as to why there were so many women in the Coal Analysis Lab and if there was such a high percentage in the other divisions of the Institute. My question was met by laughter, apparently it was obvious to them that the reason for the large percentage of women in coal analysis was that all the men were in the divisions associated with research for coal mining -- and, of course, only men could work down the mines. My analysis of this situation is: Although work involving going down a coal mine was considered too dangerous (and maybe hard) for women, this was as far as the sex discrimination went -- in order to keep up the overall female representation at the Institute it had been organized (I can't believe it was an accident) that there be more of them in the jobs not requiring trips down a mine! This was one of the few examples

I noticed on our trip of overt job-related sex discrimination; usually there would be some women doing a job. (Come to think of it, I didn't see any policewomen at all!)

Friday May 8

We'll be sitting here for a second and taking off in a moment. The difference between a second and a moment was 1.5 h.

Our last day in China

Beijing - May 8

We were informed that our luggage must be ready to go by 8 AM. It was in some ways hard to believe we could tear ourselves away and pack all our gear into the luggage we had been dragging around for nearly three weeks. But for once we were ready on time, gathered for a somber breakfast, once more Western style. We could never impress our desire for Chinese breakfast on the personnel of the Beijing Hotel.

There was a good deal of last minute changing of money. A few had purchases to make rather than have any funds left over. There were some last-minute misunderstandings about "real" money and "foreign money" which were troublesome but not desperate, and then we boarded the buses with our Chinese friends still with us. (Not all, because Shan shan and Barbara Filver had gone ahead to handle the luggage.)

It was a rather long drive to the airport. I started to think it was longer than I remembered when I realized I hadn't been in the Beijing airport before. Our arrival had been by train! As we drove, Ann Kahle and I were sitting near Wie and had a chance for a real conversation with her as we drove along. Then Sherrill asked Lin whether she had been able to get a detailed statement of the new "campaign" that had been initiated this past March and in which

the All-China WF was playing a big part. Lin said she did indeed, and drew a sheet out of her purse and read off the title: "The Five Stresses and the Four Beautifications." Then she asked Wie to translate it and read it to us -- which she did -- explaining carefully as she went. This is what she read:

National Forum - 11 organizations

All-China WFC

Youth League

Ministries of Education and Public Health

and several others

established a new campaign now under way.

The Five Stresses and the Four Beautifications:

5 stresses: decorum, manners, hygiene, discipline, morals.

Four Beautifications:

1. Beautification of the mind:

Cultivating a fine ideology

Moral character

Integrating and upholding Party leadership and socialist system.

2. of language: use and popularization of polite language.

3. of behavior:

be useful to people

work hard

show concern for others

observe discipline

safeguard collective interests

4. of environment:

pay attention to personal hygiene

sanitation at home and in public places.

I took a couple of notes and read it back to her to be sure I had it right. It wasn't until later that I realized I had forgotten to ask her again for the list of guests at the first A-C WF Beijing banquet.

And then we were at the airport - moving through the large empty VIP rooms to one of our own. We hesitated there briefly while Ann and I went to look for Chinese papers to buy with our last tiny bit of Chinese money. Then we saw Barbara sitting in a big "regular" waiting room - dry and hot, and I raced back to my bag to get her some water. Just as I did this our flight was called and before we had time for extended farewells all our Chinese friends, our travelling companions and those who had greeted us from the beginning of our stay in Beijing, were lined up saying goodbye. It was terrible. We were really leaving. We piled on board, found our seats (a big separated), and settled in for the long flight. Wrong!

The first thing we knew we were filling out forms of exit cards and discovered we were en route to Shanghai before leaving China. We recovered, as usual, to be given more forms to fill out. Then we needed -- health, etc., but who knows. Soon it was announced that we would indeed disembark and turn in exit cards, show passports in Shanghai, but not have to take off all hand luggage. Of course, no pictures in an airport anyway, so when we landed we filed off and into the airport building we had seen only at night when we first arrived. After going past the bureaucratic window we emerged into a duty-free area. Shopping again. Several of us found items to buy and one important one was beer - 35¢ (and they could take American money - and it was cold).

It was very hot in Shanghai so we were glad to re-board and

settle in again. We taxied out to the end of the runway to leave China behind. Wrong!

The pilot (it was a Pan-Am plane, of course) came on with "Ladies and gentlemen, it seems we have a little trouble with the second engine. We are returning to the airport for further investigation." We certainly couldn't disagree with that. For some time we sat on the plane even though the airconditioning was off and it was very hot and muggy. But then it was announced that a part must be brought in from Hong Kong, so it might be as much as two hours. It was.

Meantime we had located among our scattered seats an older American woman from Pasadena being sent home from a tour on which she had become ill. She had been in a hospital and she was now barely able to travel and very weak. She was alone and terrified. In part because she had read the letter that was going home with her and had learned that there had been a heart involvement along with pneumonia. So our group of 16 women scientists adopted her and assured her we would see to it that she got home safely. That took some doing, too. It was hard enough for us -- and we were still relatively energetic.

So we took turns sitting in the plane with our new sick friend and going into the airport through guards and attendants. We joked about the fact that everything fell apart as soon as Lin was no longer running our lives.

In 2-1/2 hours we left Shanghai. By this time we were more than ready to leave China, altho we had begun to suspect our troubles were not over. So true! We settled in for the flight to Tokyo (Norita) but as we watched the time it seemed clear we would miss

the connection there if we had to change planes. Surely Pan-Am would have the connecting flights wait, we reasoned. Wrong. We learned the plane we were on went on to NY and those people were ok. (Our two NY members were stopping 1-1/2 days in SF so they were not included.) We, however, arrived in Tokyo too late; that is, the flight to LA had left 20 minutes before, and we were nowhere near the SF flight time. In the last minutes of the Pan-Am flight Meryl had taken her ticket and Lidia's and made every sign of knowing how to take charge in this emergency. We cleared the way for her and she pushed ahead to look for alternatives. There were two desks for Pan Am - two men and a larger number of concerned and irate passengers. It was clear Meryl should negotiate for us all while we held a spot in two lines and those who were off to LA went a different path. Pan Am seemed less than efficient in clearing the way for us, but eventually we all chose to fly in a Northwest Orient flight to Honolulu and take a chance on another flight two hours later to SF. As it developed, Amy already was ticketed to Honolulu so we joked about following her. When the LA group, including our lady in the wheelchair, also were on the same flight all seemed settled. In addition, the flight was almost empty so nearly everyone had a row to stretch out on as the long hours dragged by. By this time it seemed we had been up for days - we had crossed the international date line and things began to fade behind us.

It all seemed too real as we realized we had to go through customs in Honolulu (notorious) and get our luggage on another flight. Meryl was fierce about this, insisting on our being assigned someone to help us in this transition, and it worked. Customs was as tough as we feared -- but we did get through and finally reassembled in

Northwest Orient ready for the S.F. flight. This time we had lost our LA members and we separated without seeing Ann K. again, who had to try to get her rock garden gift past the USDA. We learned that Pan-Am in Tokyo had not made the phone calls - telex messages - they had promised and we all tried to reach someone on the mainland to let them know not to worry that the Pan-Am flight in which we were scheduled would arrive in S.F. without us on it.

But we were safe -- even if seven hours late -- and we arrived in S.F. totally exhausted at evening hours of the Friday, May 8 -- the same Friday we had left Beijing (technically, but we had crossed the international dateline not knowing just when in all the excitement. What we did know was that we had been up and travelling for more than 24 hours -- and the trip took its toll.

Without very much fanfare we parted company at the baggage claim area in S.F.

Mirabile dicta all the bags came thorough. With lots of argument. Pan-Am arranged overnight accommodations for our two Minnesota members at the airport and off they went.

Our superb vacation was over. We would reassemble, of course, one way and another, in smaller groups at different times. But nothing would ever be the same again. Once more we were 16 individuals returning to our work and our lives in the U.S. Our lives were changed -- by the shared experience, by the special treatment, by each other. It seemed like a dream.

Monday evening

Discussion with members of All China Women's Federation.
Madame , ACWF, leading meeting.

History

Movement for emancipation of Chinese women began before liberation. Much of activity was centered in Kanan (?) and other Communist-held or revolutionary strongholds. Some women's work was also carried out in Nationalist China during that time. Japanese were invading China, and main purpose of women's movement was to mobilize women against their Japanese aggressors.

First National Women's congress was held in April 1949, year of liberation. ACWF leaders ^{were} elected at that meeting. Since then, have held 3 more, the last in ^{Sept.} 1978. None held during cultural revolution, 1966-76. Women's Federation work ceased during that time.

[NB: Plan is to have them every 5 years, and to elect officers at that time.]

Present Tasks of ACWF

1. Educate women to make a greater contribution to the socialist movement, socialist reconstruction, and the four modernizations. To do this, must raise cultural and technological levels of women.
2. Central task: upbringing, training and education of children and teenagers. There are 300x10⁶ children under age 14 in China. Very important to educate them in proper way if want to change & improve China. This is seen as a long-range task of strategic significance.
3. Uphold the rights of women and children. Main stresses:
 - a) Popularize and implement new marriage laws, including divorce right

Madame Kang, President of ACWF is a member of standing committee of National People's Congress; Vice Pres. of ACWF, Madame Lin Li Yuan (?) is a Deputy of NPC. At provincial and grass roots level as well, ^{many} WF leaders are Deputies of same-level Peoples Congresses. [Same undoubtedly goes for membership in Communist Party.] These women at all levels convey information about women's needs to the government and relay government policies and desires to WF. They serve for information transfer in and out of government. Other ~~means~~ routes for conveying information to (and from?) government are via National women's conferences of various sorts. ~~There are~~ ACWF person

- Questions on this part:
1. Does the ACWF have administrative or other power over provincial or local groups? Yes, is a hierarchy. Grass roots CWF, for example, is subject to local party leadership, to local government and to ^{Provincial} ACWF.
 2. Must president &/or other officers of ACWF be party members? "Hard to say, but usually is a coincidence."

Election Process

[NB: I think this is right. My notes were slightly confusing. Corrections appreciated!] Deputies to National Women's Congress elected: ^{are} by Provincial level Women's Federations to represent grass roots levels in that district; b) from all fields of endeavor in which women are active, and all levels of such endeavors. Examples: representatives from medical facilities, the military, scientists, national minorities, agriculture, industry, foreign service, etc. etc. ^{further example:} At the time of the last (4th) also participates in government meetings. [Ed. For example, the planning meeting, last March (?) which resulted in the Four Beautifications Movement ~~was attended~~ the ACWF and a number of Ministries and other government groups.]

- b) Help people to set up harmonious families.
- c) Labor protection for both urban and rural women.
- d) ^{Help people to} Carry out family planning in a proper way.
- e) Improve work capability of women at all levels. ^{personnel and welfare} of ACWF runs a special school for training women ^{workers}.
- f) Improve working and living conditions of cadres and masses.
- g) Increase contact with women from all over the world.
- h) Increase contact among women in China at all levels of society, and further a "united front" among Chinese women. (Ed. Do we even need the Women's federations at district and local levels plan and carry out their own work according to local conditions, needs and capabilities, in accordance with overall goals of ACWF.)

Finance

ACWF is financed by the Government and functions under the leadership of both the Communist Party and the Government.

Women's organizations at different levels draft a budget (annually?) and ^{submit} ~~approve~~ to government body at same level and locality for approval. Money is then obtained from general government budget at that level. eg. The ACWF gets its appropriation from the Federal government; the Provincial WF, from the Provincial government, etc.

How does the ACWF relate to/cooperate with the government?

Many ACWF leaders are also in government at all levels. For example,

National Women's Congress, Madame ^{was} in Paris working at Foreign Affairs Office, Chinese Embassy; she was elected to be a delegate to NW Congress representing foreign affairs field (Ministry of Foreign Affairs ??). Several thousand women in all attended the 4th Nat. Women's Congress.

~~That is~~ Election of Women's Federation people at levels below Provincial is hierarchical; that is, commune (or equivalent) level elects county level, County level elects Provincial level, and, as stated above, Provincial level elects delegates to Nat Women's Congress. ^{Ed. gather} ACWF officers elected by NW Congress; all other ACWF personnel are employees assigned there. ^{also} gather that same is true for lower levels; delegates to meetings elected, but other working at that level - eg. the municipal, provincial and etc. ^{WF} women we met in different cities are all employees. ³ Whether it's the county level delegates or the county level employees who elect the provincial level delegates isn't clear. In fact has written to Lin for confirmation of most of above! (end Ed. comment)

Working methods of ACWF

1. ACWF decides on stresses, and issues call to local W.F.s to work on these.
2. ^{ACWF} Calls meetings / conventions of women cadres / leaders at provincial level, and other levels, and different professional, cultural, etc. fields.
3. Sends staff members to provincial and "grass roots" levels to listen to women, and to report (in writing) needs of women.

Summary

Social system in China is very different from that in western countries, and the organization of women is correspondingly different. For example, in USA, France, Britain there are lots of women's groups of many different kinds. In China, each social group, i.e. Trade Unions, youth, women, has one and only one organization to which all of that group at least nominally belongs.

Status of women has improved greatly with development of socialist society in China. In 1954, 147 women were delegates to Nat. People's Congress, 11% of total, and 5% of standing committee of NPC. In 1976, 741 women, 21.2% of total, were delegates to N.P.C., and 19.4% of standing committee is now female. Women also hold many high offices in government: 3 vice chairmen of standing committee, one vice premier, 3 Ministers (heads of Ministries) and 45 vice Ministers on state council. Many more women work in Provincial government: early after liberation, there were 6000 women workers and staff members at that level; now, there are 35 x 10^6 women in such jobs. (!)

Discussion

- 1. Several questions on education of children a major stress for ACWF. The Ministry of Education is in charge of children's education, and the Youth League looks after the concerns of youth. The Women's Federation role centers on a) stressing the responsibility of the family, and the direction the family can give in the education of children, and b) running some nurseries and day care facilities. An example: the ACWF worked to get both parents involved with childrearing, and fought to get the laws regarding responsibility for childrearing changed. They

or other places which are working with children and do evaluations. Weaknesses are criticized, and good points are praised. Inspection teams may include members from the ministry of education or public health, or of light industry if food is involved. Women's organizations at all levels have sections designated to receive letters of complaint. Investigations are made of these, and reports are sent to the organizations concerned if a real problem exists and the complaints are justified. For example, justified complaints about discrimination in education would be referred to the Ministry of education. Also, the Secretariat of the Communist party central committee also sees the need for correct education of children. They, for example, recently organized a meeting of more than twenty groups at the central level to discuss what is being done.

The other major focus for the work of the ACWF is the improvement of the status and level of productivity of women in the work force. This aim existed prior to the cultural revolution, and continues ("the work goes on..."). One example: in rural areas women play a large role in agricultural work, and in urban areas, in textiles and light industries. Labor insurance and protection are concerns of the Women's Federation in both rural and urban areas. The work with children's education was added to this aim after the cultural revolution in response to the perceived changing needs of China.

- 2. Working methods of All China Women's Federation. The national organization: a) issues calls to local women's Federations

other groups are working towards similar goals; for example, children's books writers, tailors who make children's clothes, dietitians who work on food provision and diets for children. All of these share in influencing children's education. The ACWF coordinates these and influences the direction of these aspects of children's education.

This role in the education of children became a stress for the ACWF after the cultural revolution, and partly as a result of it. The relatively greater participation of youth in the revolution led to the realization that one key to the desired changes in society must be the proper education of children toward that goal. The present focus of this education are: correct moral standards, proper behavior and determination to serve the socialist force and to work towards an effective socialist society.

More recently the ACWF has been stressing the need for effective population control, and advocating one child per family. This has introduced more factors in their work with children, such as how to educate one child in a family correctly, how to restructure families and society around this new, limited family unit. This will change living patterns of everyone in society, but how, and what to change to work toward, are not clear. This cannot be done by the Women's Federation alone; they must join hands with other cultural groups, educational groups, hospitals, factories and so on.

The work with children is monitored in several ways. First, inspection teams are organized which go to local units, schools

- 3. What are major difficulties Chinese women face?
 - a) The cultural, scientific and technical level of woman is still not high enough.
 - b) Women cannot completely free themselves from heavier home responsibilities. The feudal influence still remains, especially in remote areas, mountain areas. Day care for small children is still not guaranteed. More and more factories, offices, hospitals and other places of employment (including professional ones, e.g. law offices, they said) have nurseries for preschool children of employees but still not universal. Not clear how common. ACWF offices used to run a nursery and intend to start one soon. Stopped during cultural revolution, since all work of ACWF stopped, and hasn't yet been reinstated.
 - c) While China doesn't have a female unemployment problem, there are women waiting for jobs, especially among those who have recently graduated from high school (upper middle school) or university. Both men and women graduates frequently must wait for jobs, currently. Jobs are assigned by the state, although some selection is possible.

Type of
as to job and/or location may be submitted. An effort ~~is~~ is
be made to ~~not~~ match these with ^{current employment} needs, ~~which~~ though no guarantees
exist. If a job is refused, the prospective employee must typically
wait many months for another assignment. This is discouraged!
New jobs for several million people are assigned each year. The
biggest source of jobs is from retirement of older workers.

4. The status of Chinese women has improved greatly with the development
of ^{socialist} society since liberation. Statistics:

In 1954, 147 women (11% of total) were delegates to the People's Congress
and 5% of the Standing Committee of the People's Congress
~~were~~ ^{were} women. In 1978, 741 (21.2%) were delegates
to the ^{PC} and 19.4% of the ^{PC} Standing Committee were women.

UB, 20
Talent

Now, three vice chairmen of the Standing Committee are
women, and there are one female vice premier, three women
ministers and 45 ^{female} vice ministers on the state council. Many
more women are active in government at Provincial levels.
For example, shortly after liberation there were 6000 women
workers and staff members at this level. Now there are
35 million. Great progress has been made, but they are
still not satisfied.

5. What are major problems of women in America?
a) With respect to employment, we slid back seriously after world
War ~~to~~ and haven't recovered. b) Our problems stem from lack
of equality. For example control of birth, abortion and related
issues ~~are~~ ^{are associated with this}. c) Our problems are not taken seriously.
END