

CHINA

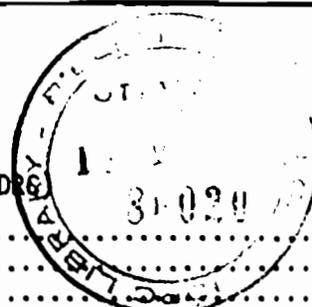
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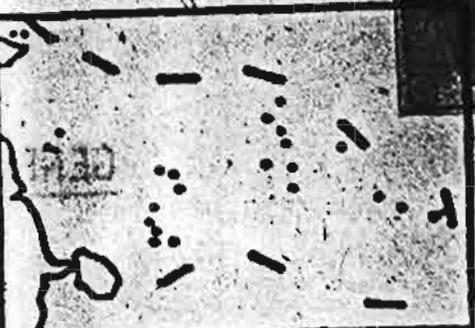
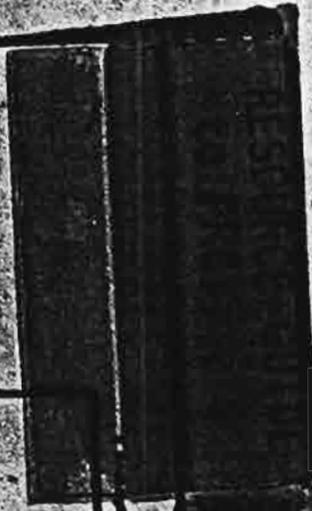
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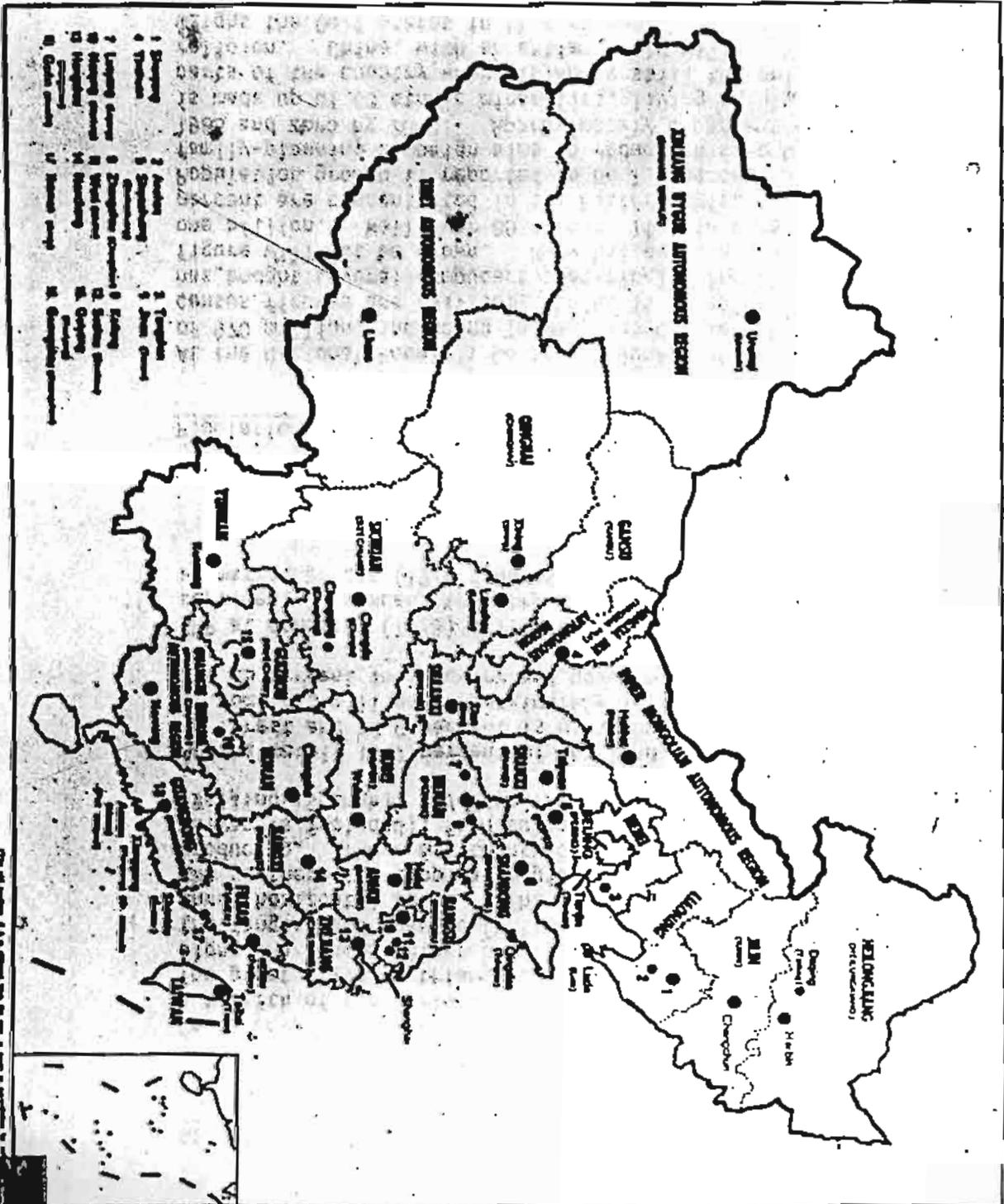


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(This map is subject to change without notice.)



(The 4th edition of this manual was the first to show the present boundaries.)

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## GENERAL INFORMATION

China covers an area of about 3,750,000 square miles, roughly a twelfth of the world's surface. It is very mountainous. The great plain is triangular, with its base line running roughly along the Yangtse River and its apex at Beijing. The two rivers, the Yangtse and Huangho (Yellow River), split the country into three horizontal bands. The northern bands are wheat-producing; the southern sub-tropical regions below the Yangtse are rice-producing. There are twenty-one provinces (twenty-two if Taiwan is included), five autonomous regions and three municipalities (Beijing, Shanghai and Tianjin) which are centrally controlled.

Approximately 10.7 percent of the land is cultivated, 12.7 percent is forest and 43.0 percent is grassland. Of the total workforce of some 443 million, approximately 75 percent work in agriculture and 25 percent in industry and government services.

GNP at constant (1978) prices was U.S.\$352 billion (35 percent services, 37 percent industry and 28 percent agriculture). GNP at market prices (1978 figures) was U.S.\$414 billion.

### Population

At the National People's Congress, June 1979, a total population of 970 million, including Taiwan, was claimed, but until the next census figures are available (China is planning a new census and has bought several computers specifically for this) the true figure will not be known. Many believe the true figure to be one billion. Well over 80 percent live in rural areas and 60 percent are concentrated in the Eastern third of the country. Population growth is reported to be 1.2 percent but a vigorous family-planning campaign aims to reduce this to 0.5 percent by 1985 and zero by 2000. Approximately 6 percent of the population is made up of 60 ethnic minorities, living mainly in the Western parts of the country where Islam is still the only really viable religion. China, with an estimated 10 million Muslims, outweighs the Gulf States in this respect.

## Historical perspective

To understand modern China it is necessary to have some knowledge of China's past. The Chinese name for China is Zhonghua **中华**

or, more simply, Zhongguo **中国**, i.e. the flower at the centre

or the 'middle' or central country. The Chinese first appeared as one of the earliest river-basin civilizations and the name signifies the origin of the tribe located around the Middle Yellow River. For several centuries, they were an isolated civilization gradually radiating outwards. The Han dynasty (206 BC - 220 AD), from which the modern Chinese take their name, made them the most advanced and powerful country in the area and China came to regard themselves as the only outpost of civilization, surrounded by barbarians and the name Zhongguo took on a more significant meaning. The Han dynasty officially adopted the teachings of Confucius, which taught virtue and morality amongst the leadership, order amongst the masses and filial piety in the home.

China's fortunes and development ebbed and flowed under successive dynasties but may be said to have reached the apex of its progress under the Tang dynasty (618 - 907 AD). Each era revealed something of particular note; for instance: Tang (poetry), Song (paintings) and Ming (pottery). The Song dynasty (960 - 1279) was sacked by the Golden Horde of Genghis Khan until ousted by the Ming dynasty in 1386, who, in turn, were deposed by the Manchus (Qing dynasty) in 1644. In spite of the external pressures, China remained a remarkably intact and homogeneous civilization for so long when other historical empires, i.e. Greek, Roman, etc. collapsed in relatively short periods of time. What sparked the technological revolution that made China of the twelfth century the most advanced nation on earth at the time is not clear, but is probably explained by the ability of the Chinese to keep ahead of their immediate neighbours in the most vital skills in the economic, technical and military spheres. The reasons for China's relative stagnation after 1350 and the failure to produce the equivalent of an Industrial Revolution such as occurred in the West have never been adequately explained but have tantalized historians for generations. Probably the best explanation has been attempted by the Oxford historian, Mark Elvin, who has suggested that China's very technical excellence at the time acted as a brake on further development, i.e. farming, water engineering and machines were so perfected in traditional terms that demand fell off and investments in further improvements were discouraged.

China continued to flourish in specific areas but politically fell into turmoil until in 1911 the Qing dynasty was overthrown by forces supporting Dr. Sun Yat-sen and confusion followed with warlords and bandits holding large pockets of the country and foreign powers holding the treaty ports and other concessions. In 1931 Japan invaded Manchuria and engulfed China in full-scale warfare until 1945. The extreme political factions in China united for a time to combat the Japanese threat but after Japan was defeated, the Communists, led by Mao Zedong, established themselves in the north and gradually extended their control, forcing the nationalist leader, Chiang Kai-shek, to flee the mainland to Taiwan. The People's Republic of China was proclaimed on 1 October 1949. In September 1965, at a meeting of the Communist Party Central Committee, Mao Zedong launched the so-called Cultural Revolution, which lasted effectively until his death on 6 September 1976. The period immediately following Mao's death has marked an abrupt change in the policies of the previous twenty-seven years since the revolution, and China is embarking on an entirely new era of development which is marked by a desire to modernize as rapidly as possible.

The capital city, Beijing (Peking), means literally 'northern' capital. The seat of government has changed several times in history as well as in modern times. Peking was first made the capital by Kublai Khan in 1267 AD. The Ming dynasty later established Nanking as the capital but in 1421 re-established the seat of government in Peking. The National Government of Chang Kai-shek made the capital Nanjing (Nanking), i.e. 'southern' capital, until the sacking of the city by the Japanese in 1938 forced him to flee to Chongqing (Chungking), the 'central' capital. The original name for Peking was Peiping meaning 'northern peace'. The nationalists in Taiwan still regard Nanjing as the capital of China and refer to Beijing as Peiping.

#### A Note on the Chinese Language

Chinese, with its idiophonographic script, is considered one of the oldest written languages. The earliest characters (pictographs) have been found cut into tortoise shells or burnt into animal bones. Over the past three millennia, Chinese characters have changed enormously. Chinese is a tonal language. Each character represents one syllable in sound, each sound having though several different meanings. The growth of vocabulary over the centuries increased the numbers of characters to about 60,000, though only about 5,000 or so are actually of use in modern writing and, of these, about 3,000 are the most frequently used. The problems with a complex script, such as Chinese, is that although precise in meaning it presents enormous difficulties in terms of modern communication, especially telecommunication and computing.

To overcome this, a numerical code was developed but this has involved time-consuming transcriptions before and after a message. Early this century China sought to reform the language. The position was further complicated, however, the problem of dialects. China has several major dialects or languages within the one classification, Chinese, e.g. "Mandarin", now referred to in China as "common speech" spoken more in the north, and "Cantonese" mainly in the South. The difference between the two is roughly the difference between "English and French". The written script is the common base. In 1954 the Government established a language reform committee. It concentrated on: (1) getting everyone to speak one "language" i.e. Mandarin (putonghua); (2) simplification of characters (reducing the number of strokes) and (3) gradually adopting a latin form (pinyin). Romanization of Chinese has been on the ISO program for many years now and recent discussions make it likely that pinyin will be adopted as the international standard form of latinization. Meanwhile, the visitor may be excused from being confused. Pinyin was adopted officially in China in 1975 but the situation is not without problems. As the personal level some Chinese are still unsure how to render their names correctly for a visitor. You think you visited a person named so and so on the program but didn't his name appear different afterwards? Chou En-lai or Zhou-En-lai, Teng Hsiao-p'ing or Deng Xiao-ping?

Although Pinyin is now written everywhere Chinese characters still remain and are expected to do so for a many years to come. The intricate relationship of the spoken and written word is much more intense than in other languages but to illustrate what I mean, the chinese symbol for "well", "jing" (井) is a key word in agricultural terminology since it denotes "fields" traditionally laid out along the lines of the drawn characters. Each "jing" was divided up into nine plots, to eight families were assigned the eight exterior plots, the one in the centre containing the well with four paths leading to it from the other fields, being reserved for work jointly on behalf of the landlord or state. Thus, is the basis for China's equalized system of land and taxation. The word for "earth" is denoted by the character "tu" (土) of which the upper horizontal stroke represents the surface of the soil, the lower line the sub-structure and the vertical stroke the vegetation. The word "field", "tian" (田) unmistakably portrays a rice paddy. The character for "male" is a combination of this pictograph "field" with that of "strength" "li" (力) thus (男) literally, "labour in the Fields".

The character for "rice" "mi" (米) is derived from the idea of grains separated by threshing (十).

The traditional way of writing Chinese characters is from the top right hand corner down and then up again in vertical columns. Reading a book in this manner would be like starting at the back for Westerners. Newspapers have, until recently, used this method and variations of horizontal columns left to right or right to left. It is all very confusing. Politics has dictated, however, that the People's Republic have opted for left to right and, as one would expect, Taiwan has chosen to write right to left.

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It is not easy or, often, advantageous to try to learn the rudiments of any language in the usually limited time prior to a trip of this sort, also one has to take into account the well-known complexity of the Chinese language. However, the Chinese, probably more than any other nation, tend to warm to those able to utter just a few simple phrases. As pointed out above, Chinese is a tonal language, so any attempt to master tones at this stage would be a waste of time, but the following basic phrases will be instantly comprehended and acknowledged.

Good morning: *Zao* (spoken with a Tz sound 't'zao').  
How are you? (Standard form of greeting): *Ni Hao ma?* to which the reply is: *Hao Xixie* (pronounced shieh-shieh) - I am well, thank you.

It is as well to remember *xixie* as you will find you need to keep uttering it in response to various friendly gestures. At banquets it is usual also to 'clink' glasses and say *ganbei* which means, roughly, 'bottoms up'.

Finally, Goodbye is *Zaijian* (pronounced Tsaijian). It is usually repeated twice: *Zaijian, zaijian*. It means 'See you again'.

### Economy

The establishment of the Chinese People's Republic on 1 October 1949 heralded a new social order in urban and rural areas. Agrarian reform was a major task and this was achieved rather rapidly, though by stages, beginning with promulgation of the Agrarian Reform Law in June 1950. Land confiscated from land-owners was redistributed to the poor peasants, who were first organized into mutual aid teams by communist cadres. In December 1953 Elementary Producer Cooperatives (EPC) were organized. In the EPC the peasants still retained right to land and livestock with only part given over to the cooperative in the form of a share on joining the cooperative. This was followed by Advanced Cooperatives (APC) in 1955. By 1956 some one million peasant households were organized into 750 000 APCs. In the APCs all land rights except for a small private plot, were abrogated and payment for use of tools or livestock was abolished. In 1958 the gradual process of merging APCs into larger units (communes) was started. The commune was a new unit of rural administration consisting of about 50 - 100 villages and upwards of 20 000 persons. This unit was split for productive purposes into brigades, teams and units. By 1959 some 750 000 APCs had been merged into 26 000 communes. In 1963 some 74 000 communes were in operation comprising some 700 000 brigades and 5 million

teams. On average there would be about seven to eight teams in a brigade and nine or ten brigades in a commune. The major priorities of the rural economy were rapid mechanization and self-sufficiency. The number of communes is now about 50 000.

The most troublesome sector since 1949 has been Chinese industry. The urban sector was never regimented to the same extent as its rural counterpart and for a time State and commercial enterprises flourished, first side by side, then in concert, until 1958 and the Great Leap Forward (GLF) called for a drastic reorganization of the industrial sector. The GLF was conceived to resolve, in one heroic effort, China's basic economic deficiencies and to sweep a nineteenth century China into the mid-twentieth century. Mao's personal contention was that a combination of ideological incentives, human willpower and improved management would resolve China's economic weaknesses. Small-scale rural industries were stressed and backyard iron smelting was promoted to augment China's steel deficiency. Irrational prices, the intricate system of wage rates, excessive political interference, lack of incentives and poor management resulted in a lagging industrial sector. By the late 1970s China's industrial capacity was badly out of tune. A fear of a leftist revival after Mao's death, lack of effective bonus schemes, and old management methods have taken a negative toll.

A new economic policy has recently emerged aimed at shaking up the economy and awakening the nation to its relative backwardness, symbolized by a GNP of less than \$400 000, less than half Japan's, which only has about one-ninth of China's population. Policies have now been changed to encourage foreign capital and foreign advice.

The most important economic reorganization has been the readjustment of urban and rural incomes through the raising of food prices. The Chinese farmer is now getting 20 - 50 percent more for his grain, with the Government paying subsidies to avoid price rises for urban consumers. Urban workers received large wage rises recently to offset increases in meat and fish. Unemployment, especially amongst urban youth and youth returned from the countryside, is a major problem. The Government's response has been to encourage youth to set up cooperative ventures in small manufacturing industries and service trades.

China has large reserves of oil, coal and minerals. In the past, China has not exploited these resources for foreign currency, preferring to utilize its agricultural surplus to generate foreign exchange. This policy may now be reversed.

Canada-China trade is as follows:

Canadian exports to China (\$ millions)		Canadian imports from China (\$ millions)		Trade Balance	
1978	1979	1978	1979	1978	1979
503	461	92	131	411	330

#### Overview of Canada-China Relations

Building on the unofficial relationship which centred on wheat sales beginning in 1960 and on Canada's early recognition of Peking in 1970, Canada and China have developed over the past ten years a close, dynamic bilateral relationship. Canada has played as important a role as any smaller country in prodding China in the direction of a more outward-looking foreign policy and closer ties with the West.

At the political level, there have been a number of high-level visits, including Prime Minister Trudeau's visit to China in 1973, Secretaries of State for External Affairs Sharp, in 1972, and Jamieson, in 1978, Foreign Minister Huang Hua's visit to Canada in 1977 and an exchange of visits by our respective trade ministers, Mr. Horner and Mr. Li Guang, in 1979. Vice Premier Bo Yibo will visit Canada August 21-31, 1980. He is the highest ranking Chinese leader to visit this country. There have been increasingly frank and useful exchanges between our leaders on political, international and bilateral subjects.

Other recent visits have included delegations of the National People's Congress of China and the Canadian Parliamentary Association in 1978 and 1979 respectively; an official delegation which visited China in 1979 to help commemorate the fortieth anniversary of the death of Dr. Norman Bethune; and a 65-member delegation from the Canadian Institute of International Affairs, consisting mainly of a large number of prominent businessmen and a few academics, which visited China in April and May of this year.

Exchanges and bilateral programmes have grown substantially and have encompassed almost every area; besides economic contacts, these areas have included science and technology, music, painting, dance, sports, medicine, the media and education. To mention but a few, the Canadian Brass, the Toronto Symphony Orchestra, Frank Augustyn and Karen Kain, and Celia Franca have visited China in often precedent-setting tours, while Chinese acrobatic troupes and the Peking Opera have visited Canada.

In education, as China's modernization drive has led its leaders to look to the West for expertise, an arrangement to place Chinese mid-career scientists in Canadian institutions of higher learning brought some 190 Chinese scholars to Canada in 1979/80 and a renewal of the arrangement is expected to bring at least 100 more in 1980/81.

A highly successful programme of family reunification has since 1973 been in effect, up to the end of 1979 reuniting some 5,600 Chinese with their relatives in Canada.

### Scientific Research

Since 1949 the Chinese have tended to adopt the Soviet research structure which places a 'supreme academic organ' the Academy of Sciences, at the head of the national research structure. The Chinese Academy of Sciences as it was called, was generally formed out of the old pre-1949 Academia Sinica. The traditional Academia Sinica transferred to Taiwan, along with some of the professional scientists. Later several other 'Academies' were formed. In 1957, the Chinese Academy of Agricultural Sciences was formed from elements of the Ministry of Agriculture. This was followed in 1958 by the Chinese Academy of Medical Sciences. Under the aegis of these Academies of Science were numerous research institutes in various scientific branches, and at Provincial level there were branch academies, e.g. in Shanghai and Guangzhou.

The Academies of Science have not remained isolated from politics and during the brief twenty-year span both the organizations and the scientists themselves have been subject to change. The first such interruption came shortly after their foundation, with the 'Great Leap Forward' and the 'Hundred Flowers' movements; the former, typified by a massive drive to transform labour into physical capital, had massive repercussions on the scientific

establishment; and the latter attempted to 'free' intellectual discussion but led to harassment and imprisonment of some scientists. The creation of the State Scientific and Technology Commission in November 1958 confirmed the absolute political control of scientific research in China. All sciences became subservient to political planners and party representatives were visible at all levels in the research ladder. Scientific studies were integrated with the 'needs of production'. It is generally thought that very little theoretical research was initiated as a result. University research has traditionally received less emphasis in China; however, the work of some of the better institutions has been linked to work being done in the Academies. The universities come under the Ministry of Higher Education.

The Academies of Science received a further jolt in the mid-sixties with the onset of the Cultural Revolution. Internally, this meant many shake-ups; externally, the Academies split responsibilities and were supposed to relocate closer to the 'research needs of industry and agriculture'. The Chinese Academy of Agricultural Sciences became known as the Chinese Academy of Agriculture and Forestry Sciences and remained as such until 1978, when Forestry split off to form its own Academy, the Chinese Academy of Forestry Sciences. A new Chinese Academy of Traditional Medicine was also formed to reflect the importance of Chinese, as opposed to Western, medicine.

During the Cultural Revolution many scientists fell foul of the authorities for their supposedly 'revisionist' views and were either imprisoned or displaced to the countryside. The so-called 'May 7th Directive' was a key reform in this respect, in that it specifically required every male professional under the age of 60 and every female under 55 to indulge in physical labour for varying intervals. In addition, a minimum of 2.5 out of 6 working days in scientific institutions were to be spent on 'political study'. The emphasis of 'foreign science' in China was downplayed.

Since 1978 we can say there has been some normalization of scientific research. In spite of the swing of the political pendulum, the Academies of Science have survived and remain the most prestigious scientific centres of excellence.

## China/Canada Scientific Exchanges

Significant advances have been made in scientific and technological cooperation with the PRC since Madame Sauvé led a delegation of Canadian scientists to China in 1973. Canadian scientific and technological missions have visited China with interests in such fields as agriculture, forestry, fisheries, seismology, metrology, economics, and veterinary medicine. Chinese delegations to Canada have also covered fields as diverse as petroleum, seismology, surface coal mining, laser research, forestry, fisheries, permafrost, biological insect control, surveying and mapping and engineering.

Scientific exchanges are an important component in our relationship with China. There is considerable interest in the Canadian scientific community in developing new areas of cooperation with the PRC and in gaining increased knowledge about the "state of the art" in China. Science is moreover an urgent priority in the PRC's modernization programme and the importance for China of increased SANDT exchanges with the industrialized world was recognized at a National Conference on Science held in Peking in March 1978. Scientific exchanges also complement and promote other Canadian programmes, in particular in the fields of General Relations, by increasing mutual knowledge and people-to-people contacts, and Trade Promotion, by exposing visitors to Canada to our expertise in the various fields where Canada has a reputation for excellence.

In this regard, the Chinese have expressed the view that SANDT exchanges play a role in our overall commercial relationship. While China is not at present in a position to sell to Canada as much as it buys, cooperation in Science and Technology goes some way towards establishing a more balanced relationship. Commercial ventures may at times appear more attractive to the Chinese side if they also provide for SANDT cooperation, such as the training of Chinese experts or the exchange of technical information. It has moreover been our experience that Chinese scientific and technical delegations visiting Canada are often attentive to commercial prospects in their field of expertise.

Canadian proposals for exchanges are submitted to the Chinese authorities at the end of each calendar year by our Embassy in Peking. Each side examines the list presented by the other and a bilateral package is thus agreed upon. While trade delegations pay for their own costs, it is the practice for the host country to pay the expenses (except for international travel) incurred by science and technological missions travelling to and from China. Because our scientific community is less integrated than that of a state-controlled economy, Canadian university groups or professional associations which operate under different budgetary conditions

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than the government have found this formula prohibitive. The Chinese authorities have however accepted a suggestion made by the Secretary of State for External Affairs in January 1976, that exchanges which do not fall under the official exchange programme operate on a self-paying basis.

The present emphasis in the area of SANDT exchanges is to explore new areas of cooperation (such as transport and communications), to send smaller groups for more in-depth scientific discussions, and to facilitate a more regular exchange of information and material between Chinese and Canadian scientists.

### Government

Hua Guofeng is presently Chairman of the Central Committee of the CCP and Premier of the State Council. Hua, who was born in Shaanxi province in 1921, succeeded Chou En-lai as Premier in April 1976, and his appointment as Chairman followed Mao's death in October 1976. Ye Jianying is Vice-Chairman, giving him second place in the leadership and the status, if not executive duties, of a head of state. Other Vice-Chairmen are: Deng Xiaoping, Li xiannian Chen yun and Wangdongxing.

In March 1978, the 5th National People's Congress (NPC) issued a revised constitution in which the highest organ of state is stated to be the NPC itself. The NPC is an elected body which meets annually. It has power to amend the constitution, enact laws and appoint ministers, accept national plans and state budgets, and declare war. The functions of the Congress are vested in a Standing Committee between sessions. There is no special provision for a head of state. The head of state is neither Hua nor Deng, as is usually imagined. Ye Jianying, as Chairman of the Standing Committee, roughly equates the position.

The constitution affirms the leading role of the Chinese Communist Party (CCP) (with only 36 million members out of a total population of 1 billion); it dominates government and all aspects of economic activity. Direction of CCP affairs is in the hands of Chairman Hua and a small Standing Committee (politbureau).

The executive organ of the NPC and the highest level of state administration is the State Council. This consists of the Premier (Hua Guofeng), who presides, and Vice-Premiers and Ministers. The State Council is responsible for administration and supervision of government at all levels. It drafts plans and budgets. Under it are several commissions, e.g. Scientific and Technology Commission, thirty-five Ministries and a few specialized bodies.

Politbureau

Chairman: Hua Guofeng  
Vice-Chairmen: Ye Jianying, Deng Xiaoping, Chenyun,  
Wang Dongxing.

Ministers

Premier: Hua Guofeng  
Vice-Premiers: Deng Xiaoping, Chenyun, Bo Yibo, Chen Muhua  
(Economic Relations with Foreign Countries),  
Chen Xianlian, Chen yonggui, Fang yi (Science  
and Technology), Geng Biao, Gu Mu, Ji Dengkui,  
Li Xiannian, Wang Renzhong, Wang Zhen, Xu  
Xiangqian, Yao Yilin, Yu Qiuli.

Ministers (relevant listing only)

Huo Shilian (Agriculture)  
Yang Yigong (Agricultural Machinery)  
Chen Guodong (Food)  
~~Luo Yuchuan~~ (Forestry)  
Jiang Yizhen (Health)  
Qian Xinzhong (Public Health)  
Jiang Nanxiang (Education)

Commissions (relevant listing only)

Agriculture: Wang Renzhong  
Economic: Kang shi'en  
Planning: Yu Qiuli  
Science: Fang yi

Ministry of Economic Relations with Foreign Countries

Minister: Chen Muhua  
Vice-Ministers: Wang Daohan  
Cheng Fei  
Li Ke  
Shi Lin  
Wei Yuming  
Directors: Xu Lijin  
Chen Xingnong  
Lu Xuejian  
Zhang Wencheng  
Deputy Directors: Yang Rongjie  
Zhang Qi  
Zhang Xianwu  
Yan Peide  
Zeng Qingchao  
Li Buxiao  
Wang Zichuan  
Liu Helin  
Mou Yongmao

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Ministry of Agriculture

Minister: Huo Shilian  
Vice-Ministers: Zhang Gensheng  
Xiao peng  
He Kang  
Zhang Fuyuan  
Liu Xigeng  
Hao Zhongshi  
Wang Changbai  
Zhao Fan  
Zhao Xiu  
Zhu Rong  
Li Youjou  
Xu Yuanquan

Ministry of Farm Machinery

Minister: Yang Yigong  
Vice-Ministers: Xiang nan  
Liu Ng  
Sun Fengshi

Ministry of State Farm and Land Reclamation

Minister: Gao Yang

Ministry of Forestry

Minister: Luo Yuchuan  
Vice-Ministers: Yang Yansen  
Wang Bin  
Yang Jue  
Yang Yangsen

Ministry of Education

Minister: Jiang Nanxiang  
Vice-Ministers: Li Qi  
Li Qitao  
Liu Zhonghuo  
Zhang Chengxian  
Huang Xiubai  
Liu Yangqiao  
Yang Yunyu  
Zhou Liu  
Yong Wentao  
Dong Chuncai  
Guo yi  
Pu Tongxiu  
Liu Xuechu

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Ministry of Public Health

Minister: Qian Xinzhong  
Vice-Ministers: Huang shuze  
Wang wei  
Cui Yueli  
Hu Zhaoheng  
Guo Ziheng  
Tan Yunhe  
Yang shoushan  
Ji Zongquan  
Special Advisor: George Hatem

Foreign Relations -  
Director: Xue Gongchuo  
Deputy Director: Xu Shouren

Bureau of Chinese Medicine -  
Director: Lu Bingkui

Scientific and Technical Association

Chairman (acting): Zhou Peiyuan  
Vice-Chairmen: Liu Shuzhou  
Mao Yisheng  
Huang Jiasi  
Pei Lisheng  
Wan yi

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Camera Repairs, 182 Wang fu jing 王府井 182号 55-4524

Capital Taxi Co. 55-7461  
English spoken (State destination, present location, nationality)

Globe and Mail Office, 2-2-31 San Li Tun (north) 52-1661  
Cable: CANAGLOBE PEKING 三里屯(北)

Canadian Embassy 加拿大大使馆 52-1475/1571  
10 San Li Tun Lu (三里屯路10号) 1684/1741  
1724

Ambassador's Residence 52-1326/1567

Shanghai

Long distance, International 56-5956  
Telex 21-4632

Airlines Japan Airlines 37-8467  
1202 Huai Hai Road C  
淮海中路, 1202

Airport Office 53-6530

## Arrival

There is now a new air terminal in Beijing. The quaint halls of the old terminal redolent with garish murals of socialist realism but with walls of peeling varnish have been abandoned in favour of the universal style of all modern airports, modified only where a scarcity of materials or the peculiar demands of Chinese protocol have required - the arrival and departure lobbies, segregated from local travellers, contain not a single chair for public use - thankfully, the political slogans and massive statues of Mao have been left behind in the old airport. Waiting for one's baggage to appear on the carousel (which stops frequently and inexplicably), one cannot fail to be intrigued by the large amount of cartons that rise through the hatchway instead of one's own bag, all seemingly full of Japanese appliances. Most are claimed by eager Chinese delegations returning from abroad, and the rest by seasoned foreign businessmen and diplomats, to the evident glee of the Chinese friends and officials who have come to greet them. The baggage handlers do their job with relish and an enthusiasm unlike their counterparts in any other part of the world. Arriving delegations are usually quickly identified and whisked away to their hotels, and, after a brief rest, combine with their hosts to go over the itinerary. It is at this point where some hasty changes or new decisions might have to be made due to unavailability of certain individuals, etc.

Each day it is advisable to meet fairly early with your guides to go over the day's events, not only to avoid any confusion but to make amendments if necessary. The assigned guides are used to making last-minute changes to programs, and go to extraordinary lengths to accommodate one, but it is best to keep changes to a minimum. Be especially careful to avoid re-routing as the Chinese transportation authorities are not geared to accepting last-minute changes and aircraft and trains are usually booked up several days in advance.

## Accommodation

Beijing (Peking) has few hotels for a capital of its size and importance. It is usual for high-level delegations to be put up at the Peking Hotel.

Only two years ago, the lobby of the Peking Hotel appeared to one as a vaguely hostile cavern, decorated by Maoist iconography bearing little resemblance to a working hotel. Grudging service could only be prodded from the staff after indisputable evidence of one's bona fide business. There was also the feeling that one was participating in the world's first self-service hotel. Be prepared still to handle your own baggage up to your room in

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this and other hotels. The Beijing Hotel lobby has now been transformed with all the trappings of international hotels elsewhere. It throbs with foreign businessmen, who seem to be positively enjoying themselves. The rooms are large by international standards and are still furnished in the old style with beautifully worked Peking carpets and embroidered bedcovers.

Other hotels are part of another dimension. The Friendship Hotel, a large rambling barracks on the outskirts of Peking, was used to house the Soviet experts and their families before the Sino-Soviet split in the early sixties. It is a warren of corridors and underground walkways. Visitors can get lost on the way to the dining room or the antique bathrooms.

Since dining rooms are housed in separate blocks and linked by the covered walks, a wrong turn and you sit down at what you think is your table, but in an entirely different but identical dining room. Since tables are usually assigned on a group basis, expect to be served only at your table.

Rooms at the Friendship Hotel are furnished in oppressive pre-war furniture solid enough to take the most obese Russian expert. There are other inhabitants too - out of season, luckily.

The point about all this superficial comment is that hotel standards in China vary, and China is changing very rapidly. The unexpected is the norm. Until some of the larger hotels that are being put up in cooperation with the U.S. chains are completed in the 1980s, existing accommodations can appear a little eccentric to visitors.

Hotels provide a Western breakfast. Chinese breakfasts consist of rice gruel (congee), tea and sweet cakes. The Western breakfast, usually consisting of toast and eggs, is fairly good but otherwise it is best to avoid Western-type food and opt for Chinese cooking for lunch and dinner.

### Laundry

Dry cleaning is not recommended. In the hotels, unless otherwise instructed, all laundry is washed with soap in very hot water. Anyone with synthetics is well advised to specify to room service that lukewarm or cold water should be used.

## Hospitality

There is no tipping in China, but an old Chinese saying 'Returning a peach for a plum' indicates that it is not inappropriate to offer your guides, hosts, or others who have been helpful, something in return for their efforts on your behalf. Guides are not adverse to taking small gifts in this way.

Do not be offended, however, if Chinese colleagues or your guides refuse to eat with you. \*There are good reasons for not doing so; the Chinese are very warm and thoughtful people and they genuinely will not wish to burden you with their presence when you may have been with them all day. It is polite to refuse. There is also the question of expense. Foreigners are charged excessive prices for meals by local standards and the Chinese will not wish to put you to any extra expense on their behalf. Grain is rationed in China and even though you will pay the bill, Chinese guests at hotels and restaurants often are faced by having to discreetly surrender valuable ration coupons to the management. Finally, guides work long, tedious hours serving group after group and spend extended periods away from their families. An early evening can be a bonus to them.

A book or souvenirs of Canada (ashtrays with maple leaf motif or paperweights) are popular. Little red maple leaves for buttonholes are gratefully received at all levels of society.

Because the Chinese like to offer banquets as a traditional form of welcome it is usually a good gesture to return the courtesy before departure. A banquet for twenty people might cost as much as Cdn.\$500 depending on the number of courses and amount of liquor. Ten to twelve courses are what you can expect; because politeness requires that the guest samples every dish, it is wise to 'pace' oneself since it is customary to replenish empty dishes. The same holds true of liquor. There is usually a variety: sweet Chinese wine, beer and the mandatory Mao tai - a clear, fiery drink made from sorghum (Gaoliang) - it is one of the strongest liquors in the world - 65 - 70 percent alcohol. Chinese soft drinks are not to be recommended. Tea is available everywhere and on every occasion and should be preferred.

The host will usually present a toast. Often this will mean emptying glasses several times. The effects of the Mao tai are not always immediately apparent.

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The quality of Chinese food offered to visitors in hotels is not of the high standard one is now accustomed to expect of the Chinese - though the quality in the Beijing Hotel is not bad. This is because, with so many visitors now arriving in China, establishments which cater for them have tended to develop a rather bland menu which will be acceptable to most palates yet give a dash of the exotic. It is always nice to branch out independently on the odd occasion and there are a few worthwhile places. Your hosts or guides can usually advise and make arrangements, given adequate notice, but the following may be useful to have on hand in case there is a convenient slot in the timetable. They will also be useful for return banquets.

### Bei Hai Park

In the latter half of the nineteenth century when the Qing dynasty was on the verge of collapse, the Empress Dowager Cixi, the real power in China at that time, used to banquet on her favourite dishes in a park behind the walls of the Forbidden City. After the overthrow of the Qing in 1911, the Empress Dowager's cooks established a public restaurant on the spot, an old vermilion painted pavilion. Its name, Fang Shan, means 'imitating the Imperial Kitchen' and it is one of the few first-class restaurants in Beijing which caters to foreign visitors and the diplomatic circuit. At lunch it is fairly easy to get a table, but dinner requires a booking, often a day or so ahead. The restaurant will charge you by the number in your party, not by dish, and the manager will pick out a menu after you tell him what your 'standard' is. About Yuan 20 (approximately \$2000) a head will be the minimum charge to expect, drinks excluded. Beer is the standard drink, apart from tea.

Most visitors associate Beijing cuisine with Peking Duck. There are three well-known places: the 'Big' Duck, so-called because it is located in a new, multi-storey complex at 24 Qianmen (Tel: 75-1379), near the old Catholic cathedral, the 'Small' Duck at 2 Chongwenwai (Tel: 75-0505) and the 'Sick' Duck, nicknamed because of its proximity to the Capital Hospital, 13 Shuai Fu Yuan (Tel: 55-3310). This is also reputed to be the best of the three.

The Sichuan Restaurant, which serves a spicy fare typical of the Southwestern province, is hidden away in an old courtyard, behind a stone gate with red painted doors and a grove of pine trees - 51 Rong Xian Hutong (Tel: 33-6356). Among the recommended dishes are the braised eggplant in fish sauce, camphor-smoked duck and crispy rice.

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Summer Palace Restaurant. A pavilion within the grounds of the Summer Palace called 'Listening to the Orioles' specializes in fish from the Kunming Lakes, velvet chicken and fried dumplings (Tel: 28-1276).

Go early. Chinese restaurants cater to the masses leaving work at 5.00 p.m. and, consequently, are usually closed by 8.00 p.m.

In Shanghai two good places to eat are the Sichuan Restaurant (Tel: 22-1965) and the Yangzhou (Tel: 22-2779), both on Nanjing Road East. Shanghai also has a French restaurant.

### Liquor

China produces its own wines but these are taken slightly warm at meals. The Shaoxing has a sherry-like taste and is usually ordered at banquets. Grape wine is called 'sour' wine by the Chinese, and is not popular. Imported spirits, such as brandy and whiskey, are very expensive. It is advisable to bring in duty-free whiskey or brandy. The Chinese are fond of brandy and it is a good ploy to have some available to put on the table for the return banquet. Chinese beer is very good and available everywhere. It is usually drunk at meals in preference to soft drinks, which are not well manufactured in China. Since flasks of hot water are available everywhere, including the aircraft, it is worth taking a jar of instant coffee.

### In and around Beijing

The spacious layout of the capital was created by Kublai Khan. The Forbidden City should be visited, as should Bei Hai Park and the Summer Palace, but otherwise the general mass of buildings that make up modern Beijing are a drab disappointment.

Early morning walks are worthwhile, however, as it is possible to see quite a few sights and people, unhurried by the daily rush and dust. Liu Li Chang Street, off Chien Menwai, is good for a stroll because of the antique shops.

Be prepared to draw curious crowds - this is particularly so in Shanghai - but the people are never hostile and if one carries a Polaroid Land Camera and is prepared to take a few instant photographs, an air of conviviality soon breaks out.

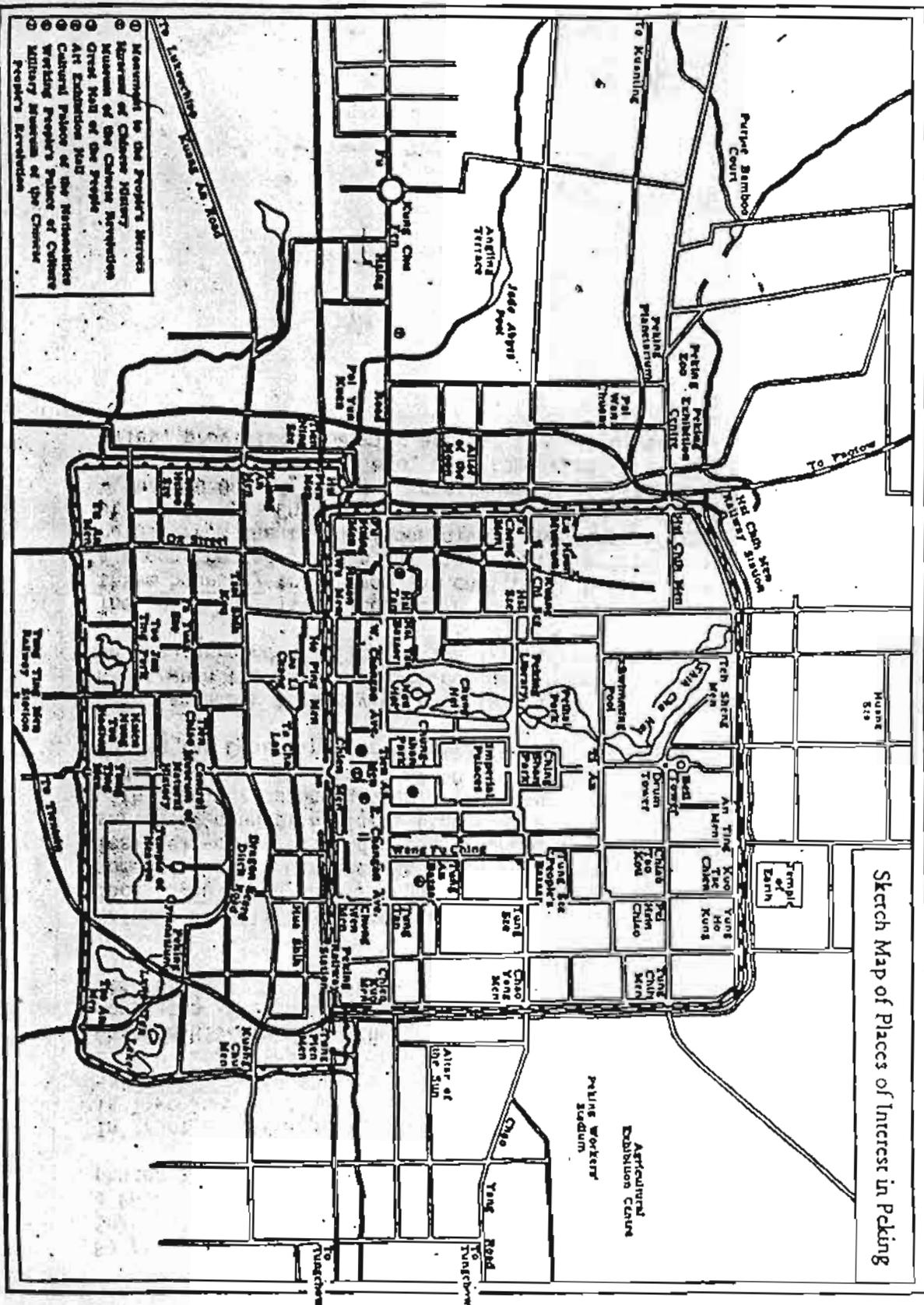
In front of the Imperial Palaces and adjoining the Peking Hotel is Tien An Mien 'The Heavenly Peace' Square, said to be able to hold over one million people. On either side lie the Great Hall of the People (National People's Congress) and the Museum of Chinese History. In the Square is also Mao's mausoleum, hastily completed after his death, but now there is a questionmark over its future.

Beihai Park (literally 'northern sea') is very popular with the local population and is a good place to stroll and get to know some of them. Compared to a few years earlier, people are now less self-conscious and more approachable. Beihai is really a series of connecting lakes (the energetic can hire rowing boats) with a bridge spanning them. The Park has several pavilions and pagodas. The Temple of 10 000 Buddhas (Wanfulou) was built during the Chienlung period (1736 - 1795 AD) of the Qing dynasty.

Late September to early October is a good time to visit the Western Hills when the maples change colour. There are several temples in the surrounding hills, which afford spectacular views.

The Great Wall is, of course, a major attraction, but is some three hours by train from the capital. Visitors are taken on a reconstructed section but views of the original wall, now in ruins, from the train window give a good idea of its original utility. The Chinese name for the Great Wall is Wanli changcheng - the '10 000 li (mile) construction'. The original wall, begun some 2 500 years ago, when completed stretched about 4 000 miles, providing a barrier against the Mongol tribesmen.

Sketch Map of Places of Interest in Peking



- ① Memorial to the People's Service
- ② Museum of Chinese History
- ③ Museum of the Chinese Revolution
- ④ Great Hall of the People
- ⑤ Art Exhibition Hall
- ⑥ Cultural Palace of the International Working People's Palace of Culture
- ⑦ Military Museum of the Chinese People's Revolution

## Shanghai

The first impression of Shanghai is its 'Western' aspect. It was a foreign concession and was built almost entirely by the British who, together with other nations, shared the city as a 'concession' under the 'unequal treaties' foisted upon China as a result of the Opium Wars. With a population of approximately 10 million it is China's largest city, industrial centre and major port. The waterfront, with its famous promenade, the 'Bund', is lined with foreign architecture of circa 1920. The Peace Hotel on the Bund is probably China's best hotel. It was formerly the 'Cathay' which, in its day, along with the Oriental in Bangkok and the Peninsula in Hong Kong, were the best in East Asia. Nanking Road is a long, busy street full of shops. It is also a street full of historical incidents. The People's Park off the Nanking Road is the one which, before the war, reputedly had the sign outside forbidding entry to 'dogs and Chinamen'. Shanghai has many cinemas and theatres, which always draw long lines.

## Shopping

When it comes to window gazing China is not the best place, as one soon discovers. Beijing, especially, seems to have few streets devoted to consumer needs, other than the more basic shops. The Number One Department Store, around the corner from the Beijing Hotel on Wang fu Ching, is worth a stroll if one has time. The same street has bookstores, which give one a feel of the literature China is reading. A massive number of titles are published on science and technology topics each year and these bookstores always draw large crowds.

Antiques are of interest, but forget the idea of picking up something of value cheap. After the Revolution many treasures were taken to Taiwan or sold to merchants in Hong Kong, and museums have picked up the most valuable items. The remaining artifacts the Chinese Government are now willing to sell fetch astronomical prices and dealers in Hong Kong can usually provide objects at more modest prices. Any notions of haggling for a Song landscape or Ming vase can be dashed. To give an example, in 1979 a badly preserved Song monochrome landscape was being offered in an antique shop along Liuli Chang Alley for U.S.\$20 000 and a relatively modern eighteenth century blue and white vase emblazoned with dragons was tagged at U.S.\$133 000.

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The Friendship Stores, reserved for visitors and diplomats, provide the only source of reasonably priced articles. Chinese silks and brocades are good buys, as are fur hats for men and women. Locally manufactured down-filled ski jackets are good value at about Cdn.\$25. Some articles which are very expensive elsewhere are often excellent value in China, e.g. a set of draughting instruments can be had for only Cdn.\$2.00 - 5.00.

Shanghai is the best place for shopping, walking and generally just getting around. Nanjing Road is probably the most famous thoroughfare in China, being the scene of many incidents of recent history. It has a number of large department stores. Shanghai Number One, formerly the Wing On Company (now in Hong Kong), on Nanjing Road is the largest and is well worth a visit.

### Dress

The Chinese tend to be informal and during the warmer months tend to attend meetings, etc. in white, open-necked short sleeved shirts. The dark suit and tie demanded by the Japanese is not necessary, except for very formal occasions. Shorts and open sandals do tend to be frowned on, as do sleeveless blouses and off-the-shoulder dresses.

### Customs

Chinese tend to be extremely courteous to visitors. Sometimes this approaches deference, with whole swathes of shoppers parting to let a visitor through to the counter or even offering places to sit in a crowded room.

Punctuality is highly regarded.

Hotel staffs do not expect tips but do expect expressions of thanks.

Many Chinese do not like to be photographed without giving their permission, especially older persons, though anyone taking a Polaroid camera will be engulfed with people seeking 'demonstrations'. Colour film is not available in China so photography enthusiasts should take plenty in with them.

### Forms of Address

Chinese names usually consist of three characters, though a few people only have two, e.g. Fang Yi, Minister of Science and Technology. The surname comes first, the diminutive name second, thus Mao Zedong. It was common practice until the introduction of pinyin to hyphenize the two diminutives i.e. Mao Tse-tung. Like other languages Chinese tends to have a lot of common surnames: Wang, Li, etc. This is because there were, it is said, in ancient China originally a "hundred common surnames" - "Lao Baixing" - this term is now commonly used to refer to the masses in general. Unless one is meeting with hard core party officials the term "comrade" is rarely used. Forms of address like "Prof. Li", "Mr. Wang" are used. Friends and colleagues address each other as "old" ("lao") so and so, i.e. Lao Wang.

In any reference to China one should avoid terms like 'Red' China, 'Communist' China or 'Mainland' China. It is best to simply say 'China' or the more formal 'People's Republic of China'.

### Health

If one is not feeling too well at any stage of the journey, unless it is serious it is probably just as well not to mention it, since the Chinese hosts will go to extraordinary lengths to rectify the problem. It is not uncommon to find oneself hospitalized for even minor complaints. On the other hand, should one fall ill, excellent care is the rule.

Drinking water should be requested. Tap water is not safe, particularly in rural areas and in Shanghai, where it is drawn from the Whampoa River and is a tacky brown colour.

### Currency

China's currency is called the Renminbi (RMB) - 'people's cash'; the unit is the Yuan (dollar), divided into 100 Fen (cents). Ten fen is known as Jiao. There are notes of ten, five and two yuan and one jiao. Coins come in five, two and one fen denominations. All currency has to be declared on entry but there is no limit to the amount taken in; any left over will be changed on exit, provided it agrees with the statement made on the entry form, so keep the original. (One yuan = Cdn.\$0.8230.).

### Hours of Business

Government offices open from 8.00 a.m. until noon and 2.00 p.m. to 5.00 p.m., though some operate 7.00 a.m. to 6.00 p.m. Monday to Saturday. Sunday is a holiday in China. Appointments usually begin at 8.30 a.m. or 9.00 a.m. but it is not usual to request appointments after noon on Saturday.

Shops stay open to about 7.00 p.m., including Sundays.

### Transportation

Be sure all your flights are firmed up because it is difficult to get CAAC to respond to enquiries. Onward confirmations are very important because it is almost impossible to reconfirm return flights within China. Chinese aircraft do not have smoking and non-smoking sections, and tend to be lax on safety measures. The degree of safety tends to deteriorate by degree of penetration into the interior, where local flights have no seat belts and the seats, designed to fall forward to accommodate baggage, throw one forward on landing. Chinese aircraft operate without navigation lights, as does most ground transportation. Lights are only switched on to signal other drivers and pedestrians. Pedestrians do not have right of way.

Be prepared for unexpected changes in the itinerary because of last-minute changes in airline schedules.

The flight from Beijing to Shanghai takes 1½ hours. By far the best means of transport is the train (14 hours). It is comfortable and a great deal of China can be seen during the journey.

# Chinese Institutions Involved in Energy Policy and Research

The following is a list of institutions involved in the making of energy policy as well as those carrying on research in all aspects of the exploitation of fossil fuels,

nuclear energy, hydroelectricity, and new energy sources. Wherever possible, we have provided the names of important individuals at these institutions.

## State Council Ministries, Commissions and Special Agencies

Ministry of Coal Industry	Minister	Xiao Han
Academy of Coal Mining Science	President	Fan Weitang
Ministry of Petroleum Industry	Minister	Song Zhenming
Ministry of Power Industry	Minister	Liu Lanbo
Nuclear Power Bureau	Dep. Director	Deng Zhikui
Academy of Electric Power Sciences		
First Ministry of Machine Building	Minister	Zhou Zijian
Mining Machinery Bureau		
Second Ministry of Machine Building	Minister	Liu Wei
Nuclear Power Bureau		
Ministry of Geology	Minister	Sun Daguang
State Scientific and Technical Commission		
Second Bureau (Energy Research)	Dep. Director	Lin Hanxiong
Fifth Bureau (Nuclear Research)	Director	Wei Zhaolin

## National Level Offices

National Mining Committee	Chairman	Xu Zailian
National Geodesy and Geophysics Committee	Chairman	Gu Gongxu

## Professional Societies

China Electrical Engineering Society	President	Li Daigeng
China Coal Mining Society	President	He Bingzhang
China Geology Society	Acting President	Xu Jie
China Geophysics Society	President	Gu Gongxu
China Nuclear Energy Society	President	Wang Ganchang
China Nuclear Science and Technology Society	President	Zhang Jiahua
China Petroleum Society	President	Hou Xianglin
Petrogeology Group		
Petroengineering Group		
Oil Refining Group		
China Mineralogical, Petrological and Geothermal Society		
China Water Conservancy Society	President	Zhang Hanying

Research Institutes

INSTITUTE	DIRECTOR	AFFILIATION
Coal Chemistry Institute of Shanxi, Taiyuan	Peng Shaoyi (Deputy)	CAS
Coal Chemistry Institute, Beijing	Wang Yinren	MCI, CACMS
Coal Institute, Beijing	He Bingzhang	MCI/CACMS
Coal Institute, Fushun		MCI/CACMS
Coal Mining Research Institute, Kailuan		MCI/CACMS
Coal Mine Design Institute, Beijing		
Coal Mining Institute, Tangshan		
Coal Mining Machinery Institute, Shanghai		
Mining Machinery Research Institute, Luoyang		
Physical Prospecting Instruments Research Institute, Changchun		
Carbon Chemistry Institute, Shanghai	Peng Shaoyi	CAS
Geochemistry Institute, Guiyang	Tu Guangzhi (Deputy)	CAS
Geology Institute, Beijing	Zhang Wenyou	CAS
Geophysics Institute, Beijing	Fu Chengyi	CAS
Geology Institute, Lanzhou	Huang Ruchang	CAS/Lanzhou Branch
Geology and Geography Institute, Urumchi		CAS/Xinjiang Branch
Geological Exploration and Development Research Institute, Chengdu		SPB
Geology and Paleontology Institute, Nanjing	Zhao Jinke	
Survey and Geophysics Institute, Wuhan	Fang Jiu	CAS
Petroleum Engineering Institute, Fushun		M Petro I
Petrochemical Institute, Beijing		M Petro I
Petroleum Institute, Chengdu		SPB
Ocean Petroleum Institute		
Petroleum Geology Institute of Gansu		
North China Petroleum Survey and Design, Institute of Hebei	Lin Zulu (Deputy)	
Petrochemical Industry Design Institute, Beijing	Deputy, Yang Guangqi	
Petrochemical Industry Institute, Jinan		
Petrochemical Institute of Heilongjiang		
Petroleum Exploration and Exploitation Institute, Beijing	Shen Lisheng	
Petroleum Refinery Institute, Lanzhou		
Daching Underwell Oil Extraction Technology Research Institute, Anda		
Daching Scientific Research and Design Institute, Anda	Yang Yuzhi (Deputy)	
High Energy Physics Institute, Beijing	Zhang Wenyu	CAS
Atomic Energy Institute, Beijing	Wang Ganchang	CAS/2nd MMB

INSTITUTE	DIRECTOR	AFFILIATION
Nuclear Physics Institute, Shanghai		CAS
Atomic Energy Utilization in Agriculture Institute, Beijing		CAAS
Southwest Institute of Physics, Leshan (Sichuan)	Li Zhengwu	2nd MMB
Uranium Ore Dressing and Metallurgy Institute, Beijing		2nd MMB
Reactor Engineering Research and Design Institute, Beijing		
Modern Institute of Physics, Lanzhou	Yang Chengzhong	
Hydraulic Power Design Institute, Beijing		M Power I
Electric Power Planning and Designing Institute		M Power I
Hydraulic and Electric Engineering Institute, Wuhan		
Hydroelectric Survey and Design Institute of Shaanxi		
Yangtze River Hydraulic and Hydroelectric Engineering Research Institute		
Yangtze River Water Conservancy and Hydropower Institute		
Thermal Energy Institute, Changchun		
Guangzhou Institute of Energy Sources	Biomass Div. Head Chen Rusen	CAS
Beijing Institute of New Technology Application	Deputy, Gong Bao Solar Energy	
Institute of Electric Engineering	Deputy, Yang Changqi MHD	CAS
Guangdong Provincial Institute of Geothermal Energy Research, Guangzhou		
Nanjing Institute of Technology		

**KEY**

CAAS - Chinese Academy of Agricultural Sciences  
 CACMS - Chinese Academy of Coal Mining Science  
 CAS - Chinese Academy of Science  
 MCI - Ministry of Coal Industry

MMB - Ministry of Machine Building  
 M Petro I - Ministry of Petroleum Industry  
 M Power I - Ministry of Power Industry  
 SPB - Sichuan Petroleum Bureau

**Educational Institutions**

**SPECIALIZED INSTITUTIONS**  
 (designated "Key" Institutions)

Daching Petroleum College, Anda  
 Southwest Petroleum College, Chengdu  
 Harbin Petroleum Engineering College  
 East China Petroleum College, Jinan  
 Beijing Chemical Engineering College  
 Jilin Geology College, Changchun  
 Sichuan Mining College, Chengdu  
 Coal Mining College, Fuxin (Liaoning)  
 Wuhan Geological College  
 Chemical Engineering College, Beijing  
 East China Water Conservancy College  
 Shanghai Chemical Engineering College  
 Hebei Electric Power College, Shijiazhuang  
 Wuhan Water Conservancy and Electric Power College

**AFFILIATION**

Ministry of Petroleum Industry  
 State Bureau of Geology  
 Ministry of Coal Industry  
 Ministry of Coal Industry  
 State Bureau of Geology  
 Ministry of Chemical Industry  
 Ministry of Water Conservancy  
 Ministry of Chemical Industry  
 Ministry of Electric Power  
 Ministries of Water Conservancy and of Electric Power

## China's Scientific and Technical Association Holds Second Congress

HOWARD S. KLEIN

The Scientific and Technical Association (STAPRC), counterpart organization of the CSCPRC, held its Second National Congress from March 15 to 23, 1980, when a new, expanded role was outlined for the Association in the organization of scientific research and personnel. The 1,500 delegates from 29 regional associations and 95 affiliated societies attending the meeting adopted a new constitution for the Association that calls on its members, scientists, and technicians to "play an advisory role to government departments" on scientific, technological, and other construction projects of China's modernization program. More important, the conferees approved a work report by Zhou Peiyuan, who was elected chairman of the STA, that portrays the Association as the channel to cut across administrative and bureaucratic lines and the forum for airing academic debates.

The nine-day meeting consisted largely of group discussions organized by localities or specializations and was devoted to considering Zhou's work report and specific questions relative to delegates' specialties. About half the delegates were above the level of associate research professor or senior engineer. Some of the group discussions produced proposals for future activities that included:

- A four-point proposal on strengthening the study of biology in schools.
- The proposed establishment of a Ministry of Energy with overall responsibility for China's energy resources.
- A three-point proposal for strengthening geoscience education presented by more than ten interested societies.

In addition to the group discussions the delegates also heard important speeches by several prominent scientists and administrators on some key issues currently under review. For example, Qian Xuesen, Director of the Mechanics Institute and a newly-elected Vice Chairman of the STA, urged "breaking" administrative boundaries between research organizations, schools, and enterprises, while mathematician Hua Luogeng, a Vice President of the Chinese Academy of Sciences, called for more academic activities, noting that "free discussions and often

arguments lead to new ideas." The most important reports, however, were those delivered at the opening and closing of the Congress by Zhou Peiyuan and Hu Yaobang, General Secretary of the Chinese Communist Party and a member of the Standing Committee of its Politburo.

Zhou's work report, entitled "Make Concerted All-Out Efforts, Strive to Modernize China's Science and Technology," was a candid, comprehensive, and politically-oriented three-part review of the history of the STA, the lessons to be learned, and the future policies and tasks of the Association. While Zhou's speech noted the "pioneering spirit" of China's scientists and technicians and cited their contributions to China's development, it also documented the political troubles they have suffered since 1957 and offered suggestions for the organization on how to carry out its mandate while avoiding future difficulties.

### "Special Features" of the STA

According to Zhou Peiyuan, the central point in understanding the STA is that as a mass organization of scientists and technicians, the STA has "special features" that are necessary for the effective conduct of its work. These "features" include freedom to debate issues of science and technology without worry of administrative disciplinary measures. In the past Party cadres have regarded such activities and the scientists themselves with suspicion and mistrust, and Zhou admitted the Association had committed some "leftist mistakes" in the late 1950s. He also noted, however, that

The phenomena of looking down on knowledge and discriminating against intellectuals still exist to a fairly large extent and the role of scientists and technicians has not yet been brought into full play.

Zhou told the STA and its affiliated organizations that because they comprise mass organization of scientific and technical workers, they must organize their work and administration to suit the conditions of the scientists themselves. Contrary to criticisms that this is "special treatment," Zhou said that it is a "precise embodiment" of the Party's work in the Association. Fur-

thermore, he warned the conferees, "if we do not maintain a distinct stand . . . then the Association will lose its special features and its representatives."

The other "special feature" of the STA is its potential source of contacts for scientific and technological workers with similar specializations working in different departments and organizations. The STA's organizational structure cuts across administrative lines, enabling it to actively carry out "exchanges, studies and discussions" among scientists of normally separated work units. While developing the Association's academic activities, Zhou told the conferees they should pay attention to the "inter-connections among various branches of learning and specialties" and "strengthen coordination . . . among various academic societies and specialty organizations."

This mandate is not a new one for the STA, which has, since its creation in 1958, been responsible for domestic academic exchanges. Moreover, Zhou addressed this issue of coordination at the 1978 National Science Conference, saying it was "imperative . . . to conduct all kinds of scholarly exchange activities." What is significant is the identification of this feature of the Association as something "special" and is apparently intended to relieve STA activities of some of the usual bureaucratic restrictions.

In the same way the freedom to hold academic debates and discussions without administrative review is not a new characteristic of the Association's work. In March 1978 Zhou noted that the STA was a "good organizational forum for us to promote contention among different schools of thought . . . and further activate a scholarly atmosphere." His recent reminder to pay attention to these "special features," however, indicates how central this factor is to the STA's activities. Another indicator was an interview, appearing in *People's Daily* on the eve of the Congress, with Yu Guangyuan, Vice Minister of the Scientific and Technological Commission and Vice President of the Chinese Academy of Social Sciences, which highlighted the differences between the STA and the Academy of Sciences or the Scientific and Technological Commission, including the two "special features."

#### Future Policies and Tasks

In addition to developing academic activities, another task of the STA outlined by Zhou is to popularize science and technology, with a specific reference to production and the four modernizations and a special emphasis on the rural areas. In this work STA units and affiliated organizations should coordinate their activities with other mass organizations including the women's federation, youth league, and trade unions. Together, these organizations will promote the importance of science through new books and journals, science fairs, audio-visual aids, and other mechanisms already in use.

The STA at all levels has also been instructed to "find and train talented personnel," breaking with the seniority system to train and recommend promising young scientists. In addition, scientific and technological workers were encouraged to continue their own vocational studies, and Zhou instructed localities that were able to "set up schools for the study of science and technology" or sponsor training courses and lectures to enable scientific and technological workers to take advanced studies. Similarly, Zhou told the STA that at all levels they should organize "youth and junior scientific and technological activities," to create additional channels to locate new personnel.

#### Advisory Role of Professional Societies

Zhou also instructed the conference that the STA "should actively recommend" that scientific and technological workers participate in discussing state construction and science and technology plans and policies. As a "good staff member and adviser" for the party and government, the STA's subordinate organs, according to Zhou, should help study and draft various technological norms and standards, evaluate and determine scientific and technological achievements, and assist educational departments reform scientific and technological education at colleges and secondary schools. Moreover, Zhou insisted, "we should strive to make proposals by scientific and technological workers succeed."

The same point about policy was made by Yu Guangyuan in his *People's Daily* interview. Yu said the STA has a "consultant role" in scientific and technological matters and has already provided "invaluable advice" on several projects since it began this work in 1978. Yu continued that government departments should not neglect the advice of scientists and technicians, whom he advised to persist if they believed their "suggestions were scientifically sound." He warned, however, that the societies should "not lose their independence" even though they were "often supported and subsidized by the government. Administrative departments," Yu said, "should not intervene in their activities."

Another task identified by Zhou Peiyuan resulted in his urging the conferees to "vigorously develop international academic exchanges," and he outlined several formats for these activities. These include "sending out" specialists to attend foreign and international academic meetings or to conduct specialized focus "observation tours"; convening international meetings in China; attracting scientific and technological workers from abroad to work in China; and inviting "well-trained specialists from abroad" to give lectures to China's academic societies. Zhou noted over 20 Chinese academic societies had joined their international counterpart organizations.

Concluding his talk, Zhou noted that none of the tasks of the STA are likely to be achieved unless the Association is strengthened organizationally by helping the scientific and technological workers "become masters of their own affairs." To that end, he called for democratic elections within professional societies, conferring official titles and authority on specialists, improving their livelihood, and for specialists to "boldly step forward to . . . struggle against any act that . . . encroaches on their rights and interests." He added

We . . . must try our best to protect this lively political situation . . . as if it were our own eyes. . . . Time means victory. We must race against the minutes and seconds, make up for losses in time and allow no relaxation of efforts.

#### Hu Yaobang's Speech

The address by Communist Party General Secretary Hu Yaobang was a forthright effort to assure the assembled science leaders that the leadership of the Party understood their past troubles, recognized their intrinsic role in the four modernizations, and was now prepared to deal with certain science and research questions requiring "immediate attention." Hu, delivering his first public statement since being named General Secretary in late February, told the delegates that China's problems must be solved "one by one, step by step," and "cannot be changed overnight." He explained that "first we have to solve those problems which are among the most important," while other important problems, such as those in science and education, must continue for a while. Hu noted, however, referring to problems in "scientific research and education undertakings," that China "must waste no time in solving these problems in a practical way."

The main hindrance to the popularization and development of science in China is the contingent of 18 million cadres that, Hu Yaobang said, had "many unqualified or not well qualified" members. Since these officials lack "professional knowledge and competency," they do not always understand or follow the Party's directives, Hu noted. To remedy the situation and build a contingent of cadres with specialized training and an understanding of the scientific process who are also loyal to the Party, Hu said, is a "main focus" of the Party's organizational work.

Echoing other officials' remarks in recent months, Mr. Hu urged that scientists be utilized more thoroughly in China's development process and encouraged ongoing efforts to search out talented personnel and

systematically promote scientists and technicians who have specialties . . . to the leading positions in the party and the government to lead economic, scientific and educational undertakings.

Mr. Hu also called on all cadres to "study scientific, technical and management affairs related to their own fields" and announced that the Secretariat of the Party Central Committee was prepared to invite certain scientists to "hold discussion meetings and seminars and to ask you to be our teachers." Hu said, "In the field of science, I myself am not qualified. . . . Today . . . I hereby enroll myself with the scientists now present."

Education and the development of a "reserve force" from among young people is another key to developing the nation's science and technology, according to Hu. In this regard he identified two "major problems" for serious thought. First is the problem of approximately 160 million young people, who were deprived of 10 years of formal education between 1966 and 1976, when they were between 8 and 18, and who now cannot be rapidly trained because many have families and "they have to carry out heavy productive labor everyday." Hu called on the STA representatives to give this problem their attention and "figure out the most effective, most convenient and most practical ways" to help this group of people, now between 20 and 30 years of age, become "truly a new generation suitable to the needs of the four modernizations."

The second problem noted by Hu is the state of China's primary and middle schools and the importance of planning and curricula preparation now in order to assure future success for the 210 million youth currently enrolled. While the education system has improved, Hu said, "it still falls short of our expectations . . . our middle and primary schools cannot keep pace with the developing situation."

The main culprit for this situation is apparently China's lack of funds to improve its schools. According to Hu Yaobang, more efforts should be directed at education, but "we cannot expect to increase educational funds overnight." Nevertheless, Hu said, "we need and can seek marked improvement on many issues of education" and promised to "hold a special discussion" on ways to improve China's educational system. For now, a central measure for improving the schools involves all members of society showing more respect for teachers and better care for the students. In addition to encouraging them, students should also be provided with "more and better study materials, textbooks and all kinds of suitable reading material."

A third measure, central to China's scientific and technological development, according to Hu Yaobang, is the Party's full support of the work and talents of the nation's scientists and scientific workers. Hu said the Party is relying on the existing contingent to lead the development of science, on the one hand, and train talented successors, on the other. Praising China's scientific contingent, Hu Yaobang said

Scientists are what they are simply because they possess a strict scientific spirit . . . of innovation

and . . . of creating a style of their own. . . . Scientists can keep on advancing simply because they are never satisfied with their own achievements. . . . Our party hopes that the scientific circles . . . will painstakingly cultivate and disseminate this good-work style . . .

The Second Congress of the STAPRC adjourned shortly after Hu Yaobang's speech but not before the delegates adopted a constitution for the Association, passed a resolution endorsing Zhou Peiyuan's report, and adopted an "appeal" directed to China's scientists and technicians. The appeal calls on these personnel to do a good job as advisers and "take the initiative to be concerned with the formulation of national construction plans and the planning for the development of science and technology."

The convening of the Second Congress of the STA and the expanded role subsequently outlined for it and

its affiliated associations and societies by Zhou Peiyuan and Hu Yaobang mark the latest steps in the reconstruction of China's science infrastructure begun in the early 1970s and accelerated after September 1977. Moreover, the Congress represents the latest effort by the political leadership to mobilize the support of the scientific community for solving the lingering problems of modernization and development. As Hu Yaobang told the conference, "without advanced science and technology, there would be no four modernizations," and it follows that without the support of the scientists the leadership's plans are doomed. The confluence of these interests at the Second STA Congress suggests the requisite levels of support exist both among members of the scientific community and within the Party leadership and each group is prepared to give the other room to be creative and flexible in implementing principles and policies governing scientific research and educational work.

## NATIONAL SCIENCE CONFERENCE

Thirteen days after the delegates to the Fifth National People's Congress (NPC) had left Peking's Great Hall of the People, representatives of China's scientific community filed into the hall to discuss the state of China's science, the basic element needed to achieve the national plan for rapid economic and industrial modernization that the NPC had just ratified. The magnitude of the science conference, attended by some 6,000 delegates, surpassed that of the NPC and its 3,456 delegates. Scientist and technician participants accounted for 63% of the delegates according to official estimates; the rest were administrators. A broad cross-section of scientists, from peasant seed breeders to nuclear physicists and theoretical mathematicians, attended and although no age statistics were given, the general impression was of scientists in their 60s and beyond. The conference's timing seemed to signal to doubters abroad and at home Peking's determination to succeed in its modernization drive by recognizing the critical role played by science and technology.

Although Chairman-Premier Hua Kuo-feng (華國鋒) opened the meeting on March 18, keynoting the event was left to Vice Premier Teng Hsiao-p'ing (鄧小平), the leading force behind China's economic expansion-modernization program. Teng's first post-Cultural Revolution comeback period, after all, seemed to have focused on drafting a new domestic economic course ("Certain Problems Concerning the Acceleration of Industrial Development" 關於加快發展工業的若干問題 drafted in 1975 and usually referred to as the Twenty Points) and strengthening and restructuring the Chinese Academy of Sciences.

Teng's speech before the National Science Conference gave him an opportunity to outline his pragmatic views on modernization in very blunt terms. He stated that it was time to do away with empty talk, formalism, and ostentation and to concentrate on practical results,

efficiency, and speed. During the Cultural Revolution, he said, the work of the Chinese Communist Party had been focused on "the political revolution" but now the emphasis should be on "the work of modernization." He spoke in broad terms of the past problems and future tasks of Chinese science.

In the course of his talk, Teng was especially eloquent on the need for China to be self-reliant without isolating itself from world science. "Backwardness," said Teng, "must be perceived before it can be changed. A person must learn from the advanced before he can catch up and surpass them...Independence does not mean shutting the door on the world, nor does self-reliance mean blind opposition to everything foreign." In addition, Teng called for active development of international academic exchange and expressed thanks to foreign friends who had helped China in science and technology. Teng was thus recognizing — and pressing on his more conservative (especially party) listeners — the importance of ongoing scientific cross-fertilization.

Teng emphasized the need for mastery of science and technology in order to achieve the other three modernizations of agriculture, industry, and national defense. In a striking comment, Teng stated that the more up-to-date China's economy becomes, "the more our people will support the socialist system." Laying the groundwork for China's scientific development, Teng addressed three key requirements: (1) understanding that scientists also are workers; (2) development of a large force of "red and expert" science and technology personnel; and (3) a clear division of responsibilities between the party committees in charge of science and technology units and the units' technical personnel.

His comments served to assure scientists that their work was no less socialist than that of others and to admonish party cadres to let scientists

work unharassed. Sweeping away the radicals' attempt to arouse class antagonism between manual workers and intellectuals, Teng declared that "those who labor, whether by hand or brain, are all working people in a socialist society." He went on: "To devote oneself to our socialist science and contribute to it is an important manifestation of being red, the integration of being red and expert."

After granting scientists their socialist bona fides, Teng set out to free them from extraneous activities — including political meetings — that might deter them from their work. The party's prescription that scientists should spend five-sixths of their time on substantive work (leaving only one-sixth for political meetings) was a *minimum*, Teng stressed, indicating that some units may have taken the rule too literally. He said that scientists and technicians should not be expected to spend a lot of time studying political books and participating in meetings unrelated to their work.

Teng went on to state the need to limit party committees' involvement in science. Defining the relationship between party committees and technicians, Teng said the party should be responsible for logistics, personnel matters and planning, leaving the technicians free to carry on their scientific activities. The job of the party committee in scientific institutes, Teng pointed out, was to create an environment in which scientific achievements could be made and new scientists trained. The gist of all this would appear to dilute the power wielded by party cadres over scientific activities.

Fang Yi (方毅), a vice premier and politburo member and minister in charge of the State Scientific and Technological Commission, spoke next to the National Science Conference delegates. He defined the kinds of work scientists and technicians would be performing under the draft "Outline National Plan for the Development of Science and Technology, 1978-1985." Setting 1985 as a target date, the objectives of this eight-year

3  
plan include: (1) increasing the number of scientific researchers to 800,000; (2) building centers for experiments; (3) focusing efforts on 108 key projects in scientific and technological research; and (4) generally upgrading the level of scientific work in China. Significantly, the plan aims for China to achieve parity by 1985 with 1970s' world science in several fields. The irony in this effort is that world science will not be standing still. Fang acknowledged this fact: "While we are trying to catch up with and surpass other countries, they are also forging ahead."

The eight-year plan draft pays special attention to eight spheres: agriculture; energy resources; materials (steelmaking, detection of ore and metals deposits, increased rare and other metals production); electronic computers (ultra large-scale integrated circuits); lasers (laser physics, laser spectroscopy); space (satellites, research on skylabs and space probes); high energy physics (a proton accelerator with a capacity of 30,000 to 50,000 million electron volts); and genetic engineering (for pharmaceuticals and high-yield crop varieties).

Hua Kuo-feng's speech came later in the National Science Conference proceedings and the thrust of his remarks convinced many observers that differences in emphasis, if not of more severe dimensions, separate China's two top leaders. Hua's address was directed more to a party that might be smarting after Teng's speech and less to the scientists' work needs. One can speculate on the reason behind the differences in Hua's and Teng's speeches. Party displeasure may have been communicated forcefully enough to send Hua to the podium six days after Teng to mute the impact of the vice premier's remarks. Or perhaps Teng was chosen to admonish party people from cramping the scientists. Following this latter line of thought, the wonder in his performing this task is that Teng's pre-Cultural Revolution

career was concerned with running the party. Yet perhaps for this very reason, Teng, the former party secretary-general, was the best voice to convince party hardliners that the central leadership meant for their grip on science to be loosened. The apparent difference in emphasis may be simply a division of labor between the two leaders. Teng has apparently staked out science, education, and technology as interests he will shepherd toward realizing economic modernization. It may have been incumbent on Hua as party chairman to ensure an ideological framework for the scientific push ahead.

联合国开发计划署驻华代表处  
UNITED NATIONS DEVELOPMENT PROGRAMME IN CHINA

10 May 1960

UNDP-PROGRAMME 1960-1961

(Borrowed Funds from Third Cycle IPF)

LIST OF PROPOSED PROJECT FUNDING

Project No.	Project Title	UNDP Inputs (1000 US\$)	Exe- cuting Agency	Government Implementing Agency
<u>AGRICULTURE, FORESTRY, FISHERIES</u>				
EPR/60/003	Strengthening of Agricultural University	800	FAO	Ministry of Agriculture
CPR/60/014	Test & Experiment Section of Tropical Crops Research Ingtt. of South China	500	FAO	Ministry of Agriculture
CPR/60/015	Fish Catchment Preservation	300	FAO	General Administration of Aquatic Products
CPR/60/016	Research Centre on Comprehensive Use of Timber	500	FAO	Ministry of Forestry
CPR/60/020	Land Resources Control and Exploitation in North West Hilly Loess Region	200	FAO	Ministry of Agriculture

Project No.	Project Title	UNDP Inputs (1000 US\$)	Executing Agency	Government Implementing Agency
CPR/60/021	Techniques of Self-Cleaning for Bran Oil Production	130	FAO	Ministry of Food
CPR/60/022	Techniques of Meat Freezing	110	FAC	Ministry of Commerce
CPR/30/023	Beijing Vegetables Research Centre	250	FAC	Beijing Municipality
CPR/60/056	Semen Freezing and Artificial Insemination Techniques	120	FAO	Ministry of Land Reclamation
CPR/60/039	Study on Intensive Culture of Poplar	100	FAC	Ministry of Forestry
CPR/00/036	Remote Sensing Techniques for Agricultural Purposes	650	FAC	Ministry of Agriculture
CPR/00/037	Clive Oil Extraction	160	FAC	Ministry of Food
2/	Meteorology	700	MAC	State Bureau of Meteorology
CPR/00/050	National Rice Research Institute	50	Govt.	Ministry of Agriculture
<u>INDIGENOUS AND FOREIGN INVESTMENT</u>				
CPR/00/002	Export Packaging Research Institute	200	IFC/UNIDO	Ministry of Foreign Trade
CPR/00/025	Training in Commodity Inspection Technique	150	IFC	Ministry of Foreign Trade (Commodity Inspection Bureau)

12/ Supplementary assistance to be incorporated in CPR/79/000 through a project revision.

Project No.      Project Title      US\$ Input (1000 US\$)      Executing Agency      Government Implementing Agency

CPR/80/025	Strengthening of the Legal Affairs Department of CCPIA	60	E/	China Council for the Promotion of International Trade
3/	Study Tour on Joint Enterprises	42	ITC	Foreign Investment Commission
CPR/80/026	Higher Institute for International Economics	400	CPE	Foreign Investment Commission
CPR/80/029	International Trade Information & Export Market Research	150	ITC	Ministry of Foreign Trade (International Trade Research Institute)
4/	Strengthening the Institute for Foreign Trade	50	ITC	Ministry of Foreign Trade (Institute of Foreign Trade)
CPR/80/039	Photo Services for Trade	40	ITC	China Council for the Promotion of International Trade
5/	Study Tour on Export Processing Zones	43	ITC	Foreign Investment Commission
CPR/70/028	Trade and Foreign Investment Service	11	ITC	Foreign Investment Commission
<u>SCIENCE AND TECHNOLOGY</u>				
CPR/80/011	Chemical Reaction Engineering for Extractive Metallurgy	300	UNESCO	Academy of Sciences (Institute of Chemical Engineering)
CPR/80/013	Transfer of Know-how Through Expatriate Nationals (MCTEII)	150	OPM/IR Cff.	Ministry of Economic Relations with Foreign Countries

To be incorporated through a project revision in CPR/79/023  
 To be incorporated through a project revision in CPR/79/024  
 To be incorporated through a project revision in CPR/79/028  
 Pending

Project No.	Project Title	UNDP Inputs (1000 US\$)	Exe- cuting Agency	Government Implementing Agency
CPR/CO/036	Research in High-Priority Scientific Projects	700	UNESCO	State Commission for Science and Technology
CPR/CO/037	Centre for Research in Organic Geochemistry	100	UNESCO	Academy of Science
CPR/CO/035	Demonstration Centre for Solar Heating and Cooling	350	TCD	State Commission for Science and Technology
CPR/CO/033	Manufacturing Technique of Synthetic Diamond Blanks	32	UNIDC	Ministry of Geology
CPR/CO/040	Techniques in Direct Coal Liquefaction	700	UNIDO	Ministry of Coal
CPR/CO/034	Training Centre on Materials Science - Metals	200	UN/	Academy of Sciences
<u>DIVISIONAL PROTECTION AND HEALTH</u>				
CPR/CO/006	Training Centre in Primary Health Care	200	WHO	Ministry of Health
CPR/CO/030	Biomedical Information Centre	200	WHO	Ministry of Health
CPR/CO/031	Research Centre in Traditional Medicine	300	WHO	Ministry of Health
CPR/CO/032	National Drug Standardization Research Centre	150	WHO	Ministry of Health
CPR/CO/033	Food Hygiene Standards and Quality Control	150	WHO	Ministry of Health

Project No.	Project Title	UNDP Inputs (1000 US\$)	Executing Agency	Government Implementing Agency
CPR/CO/036	Experimental Centre (Shanghai) for Clinical Diagnosis	200	WHO	Ministry of Health
CPR/CO/037	Research--Dental Science and Periodontics	160	WHO	Ministry of Health
CPR/CO/040	Prediction Experiment in Beijing - Tianjing - Tangshan - Zhang Regions (earthquake prediction)	1000	UNESCO	The State Seismological Bureau of China
CPR/CO/038	Strengthening the Institute of Urinary Surgical Science	150	WHO	Ministry of Health
CPR/CO/051	Controlling Air Pollution at Thermal Electric Plant	100	UNEP	Ministry of Electric Power
CPR/CO/030	Improvement of Techniques in Pollution Measurement	300	WHO	The Office of Leading Group of Environmental Protection of the State Council
CPR/CO/039	Environmental Pollution Control in Beijing	300	WHO	Beijing Municipal Environmental Protection Bureau
<u>EDUCATION AND CULTURE</u>				
CPR/CO/044	IS No Film Laboratory	250	UNESCO	Ministry of Culture
CPR/CO/043	Strengthening of China Printing Science Technique Institute	250	UNESCO	CPIII
CPR/CO/041	Improvement of Technical Training and Research in Universities (Harbin & Emlen)	800	UNESCO	Ministry of Education
CPR/CO/047	Pilot Centre for Secondary Education	200	UNESCO	Ministry of Education (Shanghai Normal University)

Project No.      Project Title      UNDP Inputs (1000 US\$)      Executing Agency      Government Implementing Agency

MINERAL RESOURCES (INCLUDING WATER RESOURCES)

CPR/00/010	National Reference Centre for Hydrological Data	250	MIC	Ministry of Water Conservancy
CPR/00/019	Automatic Flood Forecasting System of Samenzia to Huayuanou Reach of Lower Yellow River	300	MIC	Ministry of Water Conservancy
CPR/00/040	Laboratory for Geological Samples Testing	200	UN-ETCD	Ministry of Geology
CPR/00/050	Manufacture Techniques of Quartz-spring Gravimetre	30	UN-DACD	Ministry of Geology
CPR/00/051	Quick Analysis of Geological Samples	150	UN-DACD	Ministry of Geology
CPR/00/053	Deep Oil-well Drilling Techniques	90	UN-ETCD	Ministry of Geology
CPR/00/055	Research on Geothermal Resource in Beijing Area	250	UN-ETCD	Ministry of Geology
CPR/00/049	Training Centre for Drilling Techniques	500	UN-DACD	Ministry of Petroleum

INDUSTRY

CPR/00/005	Research Centre for Synthetic Fibre	500	UNIDO	Ministry of Textile Industry
CPR/00/008	Research Centre of Plastic Techniques	450	UNIDO	Ministry of Light Industry

• Possibly combined with CPR/00/050  
to be pending.

Project No.	Project Title	UNDP Inputs (1000 US\$)	Exe- cuting Agency	Government Implementing Agency
CPR/CO/007	Leather Technology Centre	250	UNIDC	Ministry of Light Industry
CPR/CO/008	Synthetic Pesticide Pilot Plant	150	UNIDC	Ministry of Chemical Industry
CPR/CO/009	Chemical Engineering Research Laboratory	400	UNIDC	Ministry of Chemical Industry
CPR/CO/010	Improvement of Building Materials Production - Phase I	300	UNIDC	Ministry of Building Materials
CPR/CO/011	Testing and Manufacture of Tractor & Motor Farm Machinery	700	UNIDC/FAO	Ministry of Agricultural Machinery
CPR/CO/031	Application Laboratory for Synthetic Dye-stuffs	300	UNIDC	Ministry of Chemical Industry
CPR/CO/030	TV Picture-tube Production	500	UNIDC	Fourth Ministry of Machine Building
CPR/CO/031	Metallurgical Technology	500	UNIDO	Ministry of Metallurgy
CPR/CO/052	Improvement of Machine Building Technology	500	UNIDC	First Ministry of Machine Building
CPR/CO/030	Automobile Bearings Manufacturing and Training	200	UNIDC	First Ministry of Machine Building
CPR/CO/045	Manufacturing techniques of Aluminium doors and windows	500	UNIDC	The State General Administration of Building Construction
<b>INFRASTRUCTURE</b>				
CPR/CO/001	Workshop on Port Administration New York	25	Govt.	Ministry of Foreign Trade and Ministry of Communication

Project No.	Project Title	UNDP Inputs (1000 US\$)	Exe- cuting Agency	Government Implementing Agency
CPT/00/012	Training Centre for Managers of Enterprises	300	CPE/UNIDO	State Economic Commission
CPT/00/023	Strengthening Telecommunications.	415	ITU	Ministry of Post and Telecommunications
CPT/00/042	Strengthening of Deijing No.2 Foreign Language Institute ( <u>Foreign languages for special purposes</u> )	400	Govt.	Beijing No. 2 Foreign Language Institute
CPT/79/028	International Centre for Economic and Technical Exchange	600	Govt.	Ministry of Economic Relations with Foreign Countries
CPT/00/027	Shipping Data Processing Centre	250	INCO	Ministry of Communication
CPT/00/033	Coastal Engineering Research	200	ECDC	Ministry of Communication
CPT/00/	Programme Personnel Training and Consultancies (e.g. Animal Production in Arid Zones - Animal Health / Diagnostic Laboratories - Photocopying Machines Manufacturing)	1032	Various	Various
CPT/00/	Pre-Investment Projects	1000	Various	Various
CPT/00/	ECDC Projects	1500	Various	Various

Reminiscence

# Dr. Bethune's Spirit Will Live For Ever

by Jiang Yizhen



This is an abridged translation of a first-hand account from the late 1930s when the Chinese people were waging a war against Japanese imperialist aggression. The author, then working with Dr. Bethune in the field hospitals of the 8th Route Army in the enemy's rear areas, vividly describes Dr. Bethune's great spirit of internationalism.

The author, Minister of Health in the late 70s and now Second Secretary of the Hebei Provincial Party Committee, wrote this article to commemorate the 40th anniversary of Dr. Bethune's death.

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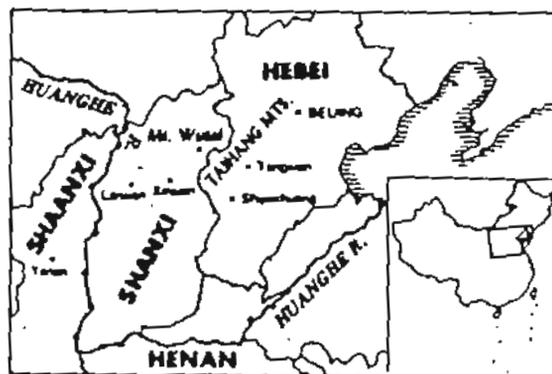
I HAD just returned to Yanan in the spring of 1938 from leading a cavalry company across the Huanghe River—still full of ice floes—into Shanxi Province to bring wounded soldiers back to the rear for medical treatment when I was suddenly told to go and receive Dr. Norman Bethune of the Canadian-U.S. Medical Team. I had heard that Dr. Bethune was a surgeon of remarkable skill who had performed several major operations with Dr. Ma Haide\* after arriving in Yanan. A lot of wounded had just arrived from the battle of Pingxingguan and I wanted to consult someone about some of the difficult cases. So the opportunity was really a golden one.

Dr. Bethune was quartered in a compound at the foot of Phoenix Hill. His room was chock-a-block full of several big cases of medical equipment and medicine, including an X-ray set, which he always carried with him. A striking man with grey hair and blue eyes, he looked

\* Ma Haide (George Hatem) is an American doctor who came with Edgar Snow to Baoan in northern Shaanxi in 1938. He remained and joined the Chinese Red Army.

very kind. But his prominent brow and wide chin indicated a sense of purpose and determination. He wore a short coat and high leather boots which gave him a refined and militant appearance suited to that of a soldier or a poet. When we met, he handed me his name card. I hastily apologized for I had none to give him. However, as soon as he heard about the new casualties coming in from the front, he threw aside all ceremony, hastily picked up his medical kit and hurried me off.

A great number of wounded required urgent medical attention. They were scattered in dozens of caves along the valley. Only the seriously injured could be given tattered cotton quilts, others had to make do with a rough mesh of cotton. We badly needed medical equipment and even such ordinary medical supplies as methylated spirit, anaesthetics and adhesive tape could not be found. As for soap and towels, they were luxuries which we never even dreamt of having. Dr. Bethune followed me from one gulch to another. When I commented: "Conditions here are pretty bad," Dr. Bethune replied: "That's true. It's because conditions are bad that we have to work. As soon as I came to



Yanan, someone told me that one mustn't judge medical work in the Eighth Route Army according to Western standards or make comparisons with big hospitals outside, and that it's impossible to transplant regular hospital procedures here. That, I have come to see and believe. But how can we make some progress?" He then pointed to a man hobbling along on crutches and asked: "Don't you feel there are too many cripples?"

I had already noticed that most of the cripples had had their legs amputated because their wounds had been improperly treated. I, therefore, frankly admitted that this situation was due to our poor knowledge and skill. I explained that very few of our doctors had attended a regular medical college or school or had worked in a modern hospital. He then asked how I became a doctor. I told him that I had been an apprentice at the Red Army Hospital ten years earlier and later I had attended the Red Health School in Jiangxi Province. During the Long March there were thousands of wounded and no medicine or doctors to treat them. I felt so sad about it that I took a pair of tailor's scissors and operated on my class brothers. Later we captured a set of scalpels and surgical scissors from the enemy so I learnt as I practised. I could be considered fortunate for I had more training than many of our medical personnel who hadn't been given any instruction on sterilizing wounds to prevent serious infection or on using splints. So many patients with broken limbs were not getting proper treatment. Dr. Bethune listened carefully and then suddenly seized my hand and firmly shook it, saying: "I'm deeply moved by the way you have stuck to your work in such primitive conditions. We should set up a school to train medical personnel. I'm sure most of the wounded here didn't have to become cripples. If we could have operated on them within 24 hours after they were wounded and put splints around their broken bones, their legs would not have had to be amputated!" He then added: "I've already spoken to Comrade Mao Zedong about organizing mobile operating units for the front. I am positive that 75 per cent of the badly wounded can recover if operated on immediately. What do you think?"

It was a bold idea for the world had not yet seen such a high recovery rate. Obviously, Bethune had formulated a new concept for medical treatment. He said that after seeing the existing conditions, he felt more strongly than ever that he should be at the front as soon as possible. It was ridiculous, he said, to let a pa-

tient's condition deteriorate to an extent beyond remedy before any treatment is given to him. These soldiers fervently want to recover and return to the front. How can doctors let them hobble off on crutches?

For several days running, Dr. Bethune performed major operations and worked with us to reorganize the hospital. Two big rooms were vacated and swept clean to serve as operating rooms. We made some mattresses by stuffing cloth with straw. The odds and ends of the cloth were made into towels, gauze dressings and surgical masks which were sterilized by steaming. We also divided several dozen patients into different categories according to the nature of their wounds so that treatment could be given in an orderly fashion. I felt that Dr. Bethune worked with a purpose in mind and was not out for superficial appearances. He knew how to organize work along scientific principles and was good at getting others to join him in the work.

It was a pity that not all of us understood his bold, creative ideas. We discussed his proposal to organize mobile operating units for the front several times but made no headway. Some people said that he was needed in Yanan, some said that conditions were too difficult behind enemy lines; and others said, a man nearing 50 couldn't take the physical strain and should be taken care of. The more we talked, the more complicated the problem appeared. When the gist of our conversation was translated for Dr. Bethune and he heard that he should be given special care and attention, he leapt out of his chair, picked it up and hurled it out the window. The chair crashed through the lattice window and landed in the courtyard. He shouted angrily: "I didn't come here to enjoy a good life! Rare roast beef, ice cream and soft beds are stuff I had long ago! I gave them up to realize my ideals! It's the wounded that need care and attention, not me!" All of us were shocked. However, the difficult problem suddenly became very simple. Everyone said in one voice: "All right! To the front then!"

Later, Dr. Ma Haide quietly reminded Dr. Bethune that he had behaved discourteously. Dr. Bethune, however, chuckled and said: "I'm willing to apologize to everyone, but you people have to apologize to the amputees with crutches!"

So the problem was solved in the "Bethune style." The supply department loaded all the necessary medicine and medical equipment on to 13 mules. Still, he felt they were not enough.



Dr. Bethune performing an operation on a wounded soldier at the front.

He only agreed to leave the X-ray unit behind when he heard we had to slip through the enemy blockade lines and we already had an unwieldy load. On May 2, like a victorious general, Dr. Bethune set out in high spirits with his cavalcade for the Shanxi-Chahar-Hebei base area. It was decided that Dr. Ma Haide was to act as Bethune's liaison with the outside world. He was beside himself with joy and looked very satisfied. When I went to bid him farewell, he grasped my hand and said: "Gone are the days when doctors stayed at the rear to wait for the wounded to come to them. The doctor's place is at the front!"

## (II)

In August, I led a medical unit to the Shanxi-Chahar-Hebei base area. Before we set out, Dr. Ma Haide gave us some Canadian cigarettes, chocolate bars, a tin of cocoa and a tube of shaving soap for Dr. Bethune. Bethune's X-ray unit was also loaded on to a pack animal and, braving the midsummer heat and sun, we started on our journey. When we arrived at the Shanxi-Suiyuan area, however, we had to stop to deal with the huge number of wounded who had gathered at an operating room set up by Dr. Bethune when he passed through three months earlier. There were 300 wounded in Xinxian County and 800 in Lanxian County and

there were only two surgeons in the area. After the Kuomintang troops fled, the Eighth Route Army became the main force fighting the Japanese behind enemy lines and the number of casualties had mounted steeply. Some of the soldiers were only lads of 17 or 18. They had been wounded before there was time to issue them uniforms. As Dr. Bethune had said, they were brimming with enthusiasm, knew no fear and had never experienced the taste of "disillusionment" in life. A doctor must not let a patient become disillusioned. So we had to break our journey and do our best for them.

Winter was coming when Dr. Bethune again cabled, urging us to hurry on. We set out for the Wutai Mountains in wind and snow and arrived at the site of the No.2 clinic of the rear base hospital of the Shanxi-Chahar-Hebei military region. Four days later, enemy planes circled over and strafed the village. Fighting had also started in the ambush along the highway between Guangling and Lingjiu. We decided to hurry to the battlefield where we could hear the sound of shooting. The field hospital was situated six kilometres away from the battlefield. Though the site had been chosen by General Wang Zhen, the commander of the 359th Brigade, he was now worried about its safety as the enemy was using planes, tanks and poison gas, so he personally came to direct the medical work on the battlefield. The operating room had been set up in a ruined temple and stretchers holding the wounded blocked the entrance. There was only Dr. Bethune to perform operations. When we arrived, we discovered that he had been operating for 40 straight hours. The anaesthetist who doubled as interpreter had swooned from overwork and Dr. Bethune had ordered him to rest. There was no gas lamp in the temple, only two dim hurricane lamps. Long-sighted, Dr. Bethune was having trouble performing operations for such a long stretch of time in this poor light. He had to stoop down and examine the wounds with a flashlight. Despite the bitter cold, his brow glistened with beads of sweat and his chapped lips bled. We didn't bother to unload our pack animals and set up an operating table. In fact, we didn't even waste time talking. I rushed up to him and took the scalpel from his hands. He picked up the fur hat from the floor that General Wang Zhen had sent him and tottered out of the operating room. Completely exhausted, he could hardly stand up straight.

The fighting was heavy. Our men wiped out 700 to 800 enemy troops and sustained some

600 to 700 casualties. It took us another whole day and night to finish treating the wounded. On December 7, we returned to Yangjiazhuang Village and met Dr. Bethune who had just returned from an inspection tour of the rear area hospital. As soon as he saw me, he threw an arm round my shoulders in a semi-hug and joyfully exclaimed: "Magnificent! I've just examined all those we operated on at the front and only one out of the 71 died! None of them got infections! This is unprecedented! It's a big step forward!"

When Bethune had personally told Comrade Mao Zedong back in Yanan that an operating unit set up near the front could save 75 per cent of the seriously wounded, someone had scoffed behind his back that it was "an idle boast!" However, in a little more than half a year, Dr. Bethune had accomplished the task which was a breakthrough in the annals of medicine. He had, furthermore, surpassed his 75 per cent expectation, so it was no wonder he was so elated! Later, he wrote a report to the region's commander General Nie Rongzhen, describing the details of the achievement and pledging, "We can do even better!" Bethune's motto was: Do better, and better and still better! If today isn't better than yesterday, then life is meaningless!

After several months at the front, Dr. Bethune had grown thinner, become wan and sallow and looked a bit uncouth. He wore a grey cotton army uniform with long puttees wrapped around his shanks. He had grown a thick, gray beard which was flecked with white and which made him appear much older. But he looked happier and more lively. After he had calmed down from his excitement, I handed over the things we had brought him from Yanan. It was then that I discovered that an important part of the X-ray set was missing. I couldn't understand what had happened. Did we forget to bring it with us in the rush of packing, or had it been lost en route? Because of this, a valuable piece of equipment had turned into a pile of junk. Dr. Bethune did not scold us. Instead, he said: "Well, as there's no dynamo to be found here, the X-ray unit can't be of any use." He then picked up the tube of shaving soap and burst out laughing: "I've no use for shaving soap now that I'm sporting a beard!"

He was very disappointed that we had not brought him books, newspapers or journals as he missed reading materials. He said: "I'd swap all this for a newspaper!" After a while,

he began gaily chattering away with the few newly learnt words of Chinese: "I'm very fortunate, very happy, very satisfied. I have everything: potatoes, a stove, coal, firewood, a horse, a saddle and a fur hat. I'm living like a king!"

### (III)

When we left Yanan, Dr. Ma Haide said jokingly that Bethune was a "dangerous man." I noticed he loved to kick up a fuss and get into trouble. He was not quiet and wouldn't let others enjoy being quiet. Even his colleagues complained: "A friend like him is really exhausting." Wherever he went he smashed everything that was set hard and fast. After I got to know a little about Bethune's life, I, too, felt that he was a rebel against the old world, old concepts and old customs. He was always full of creative energy.

Dr. Bethune grew up in a comfortably-off family. His grandfather was a doctor, his father a clergyman, and his mother a missionary. Even before he started going to school he had commenced dissecting insects and animals and investigating anatomy. During his days as a medical intern in London, he earned money by collecting works of art. He was well on the way to making a fortune when he tired of such dealings and went to Detroit, U.S.A., to set up his own medical practice to serve the poor. Some "famous doctors" referred patients to him that they could not heal or those they had mishealed. Dr. Bethune's fame grew and he prospered financially. He then noticed that those "famous doctors," who charged Bethune a commission for having referred their patients to him, had wrongly set their patients' broken limbs on purpose to rake in more money. He declared war on such criminal deeds and proposed socialized medicine of "taking medicine right down to the people." Later, he cast aside the chance of becoming rich and threw himself into the cause of the Spanish people's struggle against fascism. He devoted his life to working for a better society. His life was like that of a raging fire.

He came to China in 1938 to fight alongside us. He did not regard himself as a foreigner and loved being called an "Eighth Route Army man." He was fond of calling soldiers "my son," and regarded the special concern shown him as a sign of disrespect. When he found that he was receiving more pocket money than others, he sternly protested. After being in the Shanxi-Chahar-Hebei area

for half a year or so, he brought order to the medical and health work, set up a model medical unit, and established various rules and regulations. He worked 18 hours and performed eight operations a day on an average. He took part in all kinds of work, no matter how big or trivial. He designed teaching materials, drew up programmes, wrote poetry, painted and even began to write a novel. He never cared about the hardships of life. He had no radio, no sofa, no bathtub, no amusements, no newspapers, and because of the language barrier, there was no one with whom he could have heart-to-heart talks. Instead, he climbed hills, forded rivers and dodged shells and bullets. Such an existence he regarded not as a hardship but as happiness, for he had found the most precious "comrades who were disciples of communism." He felt that to live and work together with such people was the greatest happiness in his life.

He was not always easy to get along with, but was kind to his patients, bringing them bottles and pans. He would fly into a rage whenever he encountered procrastination, indecision or sloppy work, and would not forgive any manifestation of irresponsibility towards the patients. Once, when he saw a doctor using a scalpel to peel a pear, he angrily pushed the doctor out of the room and banned him from performing surgery. He slapped a doctor for not putting splints on a fractured limb. Many people complained that he was bad tempered. He, however, often said that "a doctor must have the heart of a lion and the hand of a lady." He was like a mother to the wounded and like a raging lion to those who were rough with patients.

Of course, these conflicts and squabbles also bothered Dr. Bethune. Many medical workers in our army were illiterates who put their faith in good intentions and not science. The best way to deal with the problem was not to fly into a temper but to raise their medical knowledge and skill. In Yanan, Dr. Bethune had suggested to Comrade Mao Zedong the training of medical personnel and had even expressed the hope of sending them to be trained in big cities. After crossing the Huanghe River, he realized how impractical his idea was. As soon as he arrived at the Shanxi-Chahar-Hebei area, he wrote a letter to the Party Central Committee and the military area command proposing that a "well-equipped medical school" be established to train medical personnel. How easy it was to talk about being "well-



Bethune's statue at Beihune Square in Montreal, Canada. (Presented by the Chinese People's Association for Friendship With Foreign Countries.)

equipped" for, in fact, we had to be content with the simplest and most primitive instruments.

On January 3, 1939, weekly surgical courses formally began and the trainees for each course numbered 50. Dr. Bethune wanted me to teach as he had language difficulties. More important, he wanted to go to the front to propagate his experience in organizing mobile operating units to work near the battlefield. I knew that he had sent a cable to hasten me there to set up a school, so I had to reply, "I'll give it a try." Seeing that I agreed, he joyfully exclaimed: "Now, I have another 'other self'!" I replied with a laugh: "I'm not your 'other self'. I'm your scapegoat!" When the interpreter translated this for him he roared with laughter.

After a meal of meat dumplings on the evening of the Spring Festival, Dr. Bethune took a mobile operating unit eastward to the central Hebei plain area where the fighting was heaviest. It was snowing and the weather was freezing. He had on his beloved fur hat with the earflaps down and had muffled up his face. His energetic figure was soon swallowed up in the blinding snowstorm.

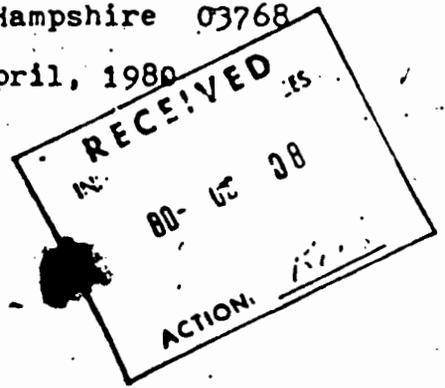
INSTITUTE OF CURRENT WORLD AFFAIRS

JYB-4

In China: a time to study

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29 April, 1980



Mr Peter B. Martin  
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Dear Peter

December 14, 1979. Passengers on Tarom flight 245 from Bucharest are disembarking in Ben Gurion International Airport. Most of them are young Israelis returning from vacation in Rumania. My wife Brenda and daughter Anna are getting on the airline shuttle bus to go to the terminal. I follow, two or three passengers behind them. I sense being addressed and look to my left. A young woman Sabra in civilian clothes standing on the tarmac by the bus door addresses me in a language that I do not get. Is it Hebrew, Arabic?

- "Sorry, I did not get you."
- "Passport please," she said in English.
- I put down my hand luggage, search for the passport in my coat and jacket pockets, only to remember that the passports are in the briefcase with Brenda on the bus.
- "My passport is in my briefcase on the bus." I said to her.
- "Ah! You have a friend too. Call your friend and get the passports."

I have always considered Brenda my friend and was happy to hear the Sabra confirming it. I get on the bus, call Brenda from over the heads of half a dozen passengers, get off the bus only to see the door being shut. Suddenly a man jumps to the front of the bus from behind me, and orders the driver to open the door. I look around me, now fully aware of what is going on, to see that I am surrounded by people, some in civilian clothes and others in military uniform, armed with the famous Uzi gun. The door of the bus opens. Brenda appears with a puzzled look on her face, Anna tugging along. Little does the Sabra know that I have two friends with me not one.

I retrieve the passports from the briefcase. The Sabra feasts her eyes on the many Chinese visas stamped

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Joseph Y. Battat is currently an Institute Fellow and his area of interest is the People's Republic of China. Up until recently he lived there with his family for two and a half years.

in my passport and orders us to follow her. We go to the left towards a red-haired man standing in front of a yellow US-made van, with an Uzi strapped on his shoulder. He is busy examining the passports of two young Arab-looking (or shall we say Semitic-looking) men. After a brief exchange he lets them go. Then comes our turn. He glances through our papers, and invites us to get into the van. The doors shut from the outside. He asks Brenda to sit on a bench beside him, and me on a chair across a small table from him. The interrogation begins with the Uzi laid on the table, its muzzle pointing straight at my heart.

Welcome back to the REAL world!

January 1980. Although I have not written a cheque for two and a half years I remember that using personal cheques is more practical than using cash all the time. So I present myself to a Baybank branch in the Boston area and inform the teller that I want to open an account.

- "You have to see the manager," she says.

- "How much money do you want to put in your account?" asks the manager.

Having heard my answer he then fires his machine-gun with unexpected ammunition: \$500.00 minimum balance, NOW account, family account, personalized cheques, your needs, choice, service charges, extended credit, and 5% interest.

- "Now which account do you want to open?" he shoots at me, without giving me time to blink. I feel drunk with all his words whirling in my head, and try to choreograph them into something meaningful.

Welcome back to the REAL world!

Not that we have been living in an unreal world but in a different one.

A world, as seen through our eyes, where: wherever we go there is a large thermos bottle full of hot water and a cup of Chinese tea waiting to be enjoyed. A world where we have a chauffeured black limousine at our disposal but it takes fifty minutes to cover 9.6 miles to go to work daily. A world where we are the center of attraction often surrounded by more than a hundred pairs of inquisitive eyes, yet feeling at times desperately isolated. A world where we are not free to travel beyond a certain perimeter without permission from the authorities, yet when we do all sorts of doors open to us and we enjoy first-class treatment. A world where lunch at work is more like a banquet prepared by a special chef, yet we long for a bacon, lettuce and tomato sandwich. A world where the chief surgeon in a

hospital delays his supper to operate on me until late in the evening, then gives me his meal when he finds out that the canteen is closed, and goes back home where he will have very little to eat until the next morning. A world where Chinese is spoken. A world so different from ours that we ended up not learning about it so much as learning about ourselves and our own society.

Yes, Peter, I was in China and lived there for two and a half years!

"May I see your radio?" asked the Chinese Customs officer, after glancing at the customs form I had just filled. I had to declare the foreign exchange, cameras, watch, and electric and electronic equipment I was carrying with me into China. I obliged and handed him my Sanyo Model RP8700 short-wave radio which turned out to be my major source of news from the West for the duration of my stay in China. He examined it turned it around and around, fingered the dozen or so knobs, attempted to pry it open, and finally looking defeated said:

"Cassette?"

"No, radio" I replied

"Cassette!" he insisted and went back to fingering the radio searching for the nonexistent cassette recorder.

My explanation of this incident is that I was at the end of a line of fourteen Canadian exchange students clearing customs, almost all of whom had acquired a radio-cassette recorder in Hong Kong before entering China. Only two of us got ourselves short-wave radios. The customs officer, having examined a stream of radio-cassette recorders expected the same from me. In his famous and widely read paper (in China) "On Contradiction," Mao Tse-tung presented the concept of the universality and particularity of contradiction and, if we extrapolate a little, of every question subject to study. But my customs officer rather failed in considering the particularity of my taste. However, "seeking truth from facts," he finally passed it as a radio.

The first year in China, from August 1977 to September 1978, saw me as a Canadian student on a fellowship from the Canada -China Student Exchange Program established in 1973 following Pierre Trudeau's visit to the "Middle Kingdom". A number of similar programs have been established since the early 1970's between China and Japan, Australia, New

Zealand, and Western European and Third World countries. A student and researcher exchange program was established and implemented with the U.S. in 1979 after "normalization" of relations between the two countries.

All students arriving in Beijing(Peking) must go to the Beijing Language Institute (BLI) to study Chinese for six months to a year, depending on their prior knowledge of the language and the progress they make in their studies. Those with adequate Chinese language ability acquired prior to going to China stay for a few weeks at BLI brushing up on the language while waiting to be assigned to a university to take courses in a subject of their choice. The Chinese Ministry of Education reserves the right to choose the university and at times the subject of study too when not enough space is available to satisfy the foreign student's first choice.

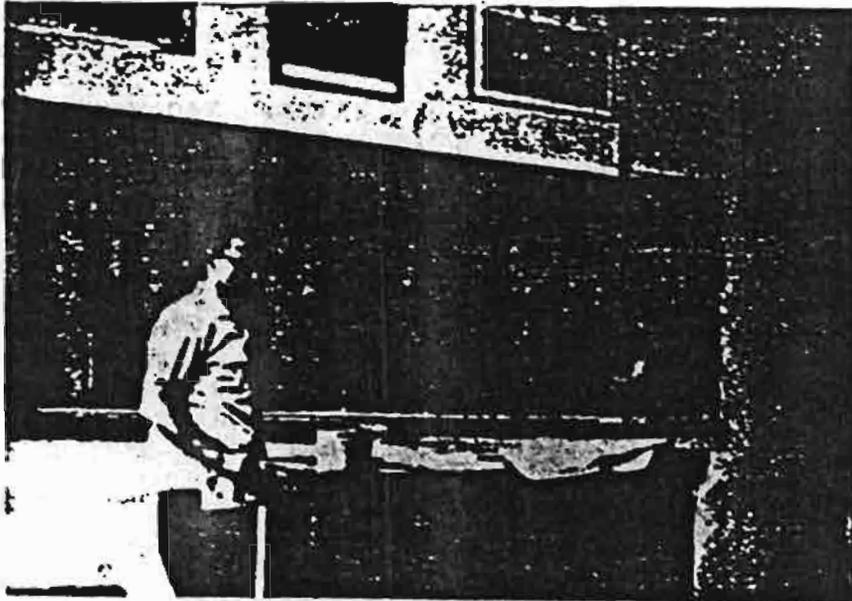
In 1977 one-year courses in the following subjects were offered for students from the Western World: Language, Literature, History, Political Philosophy and Medicine. The universities which were accepting western students at the time included Beijing University, Fudan University in Shanghai, Nanjing University in Nanjing and Liaoning University in Shenyang. The academic level and the range of coverage of the courses were not adequate and often below the expectation of the students who were required in most cases to have already graduated from university. For instance, the only "source materials" used in a semester course of Contemporary Chinese History at Beijing University were the Selected Works of Mao Tse-tung. In a one-year Political Philosophy course given at the same university only original works by Marx, Engels, Lenin and Mao were used. Despite the students' repeated requests, the teaching staff refused to make available original works of philosophers or political scientists, the critique of whom made by the four mentioned above we were studying, or essays analysing the four's writings.

The Third World countries students participated in totally different education programs from that of their Western counterparts. They came for technical and professional degree training in fields such as Medicine (Western and Chinese), Agronomy, Civil Engineering and Textile Engineering. The first year in China is dedicated to the study of the Chinese language and to the attempt to overcoming the cultural shock they are hit with upon their arrival, often compounded by a total lack of preparation about Chinese society, culture, customs and standard of living. Then they undertake their professional training

for a period of four to five years in various universities across China, up one year on average from before 1978.

After a two-month stay at the BLI to raise my Chinese language level, interrupted by a surgical operation and one week's hospitalization, I went in November 1977 to Beijing University to study Political Philosophy. As alluded to before, the one-year course which ended in July 1978 covered briefly the socialist philosophical tenets held in Marxism, Leninism, Mao Tse-tung Thought as understood by the Chinese at the time and taught to foreign students. The works we studied and analyzed are considered classics in the field. They included the Communist Manifesto by Marx and Engels, Critique of the Gotha Program by Marx, Lenin's State and Revolution, Materialism and Empirio-Criticism, Imperialism, the Highest Stage of Capitalism, Engels' Anti-Duhring, and Mao's "On Practice," "On Contradiction," "On the Ten Major Relationships," and "On the Correct Handling of Contradictions among the People" from his Selected Works.

Beijing University set up a special class of Philosophy for Western students. No Chinese students were included. Canada, West Germany, Holland, France, the United Kingdom, Japan and Italy had representation in the class. Lecturers, usually a different one per work studied, covered their materials in two or three three hourly sessions each week. They made the point of using numerous examples, often taken from the Modern and Contemporary periods of Chinese History, to illustrate and elaborate on their teaching. This made the lectures livelier, more interesting, educational and at times controversial. 1977 was a year when a nation-wide ferocious anti-Gang of Four campaign was being waged. This of course was reflected in the course, especially in the illustrations selected by our lecturers. The Gang was labelled, or given a "hat" - ironically, an accusation often thrown at the Gang itself - with all sorts of unflattering philosophical attributes, e.g. metaphysical, non-dialectical and idealist. Some lecturers were carried away to the point of crediting the Gang with the excesses that took place in the Rightist Campaign in 1957 and during the Great Leap Forward. At that time Jiang Qing, Mao's wife, played an insignificant role, if at all, on the Chinese political scene. Zhang Chun-qiao and Yao Wen-yuan were middle-level cadres in Shanghai undoubtedly with very little power to influence local policies let alone national ones. And Wang Hong-wen was a worker or at most a low level cadre in a textile factory in Shanghai.



"Mao Tse-tung On Combining Theory With Practice"  
One of many topics studied in the foreign students  
Philosophy class at Beijing University - July 1978

The most enjoyable part of our study was the weekly or bi-monthly three hours discussions we used to have with our lecturers covering parts of the materials we were studying at the time. The discussions were, to say the least, lively. The students usually prepared well either individually or in small groups prior to the session. The discussions contributed to our understanding of the materials and, more so, of the Chinese understanding and interpretation of it. A repeated point of contention between the students as a whole and the lecturers was the historical and political interpretation and assessment of Stalin's policies in the 1930s and 1940s. The lecturers argued the case that Stalin's major mistakes were to be found in his internal policies and stemmed from the fact that he did not recognize the existence of class struggle and contradictions among the people during the socialist stage of a country's historical development. Thus, instead of using non-antagonistic methods to solve internal problems and differences caused by varied perceptions and legitimate interest, Stalin resorted to the use of force as he considered all contradictions to be antagonistic caused by foreign or internal enemies to Socialism. But he is to be praised for building the Soviet Union's economy and

military power, and for his foreign policy line which checked and defeated Fascism, opposed Imperialism and strengthened International Socialism. Mao Tse-tung gave an assessment of Stalin's policies saying they were 30% bad and 70% good.

The foreign students, particularly the British, begged to differ with Mao's conclusion. The counter-argument went as follows: the suffering and deaths in Stalin's Soviet Union can't be sterilely dismissed merely with albeit important philosophical argument. The German-Soviet Pact was signed in 1939 followed by the German invasion of the Soviet Union, catching it militarily ill-prepared and causing the loss of twenty million lives. The sharing of Poland with Germany and the Soviet-Finnish war in 1939 were not exactly anti-imperialist. Finally and most interestingly, the foreign students argued that had the Chinese Communist Party not resisted the repeated directives and interferences in its own affairs from the Comintern, the People Republic of China may not have existed today!

Despite repeated opportunities to exchange facts and views on the subject, both sides kept their original positions at the end of the academic year.

In 1977 the whole Chinese education system was undergoing major changes, discarding many of the novelties introduced during or following the Cultural Revolution and reestablishing some of the features present in the first part of the 1960s. The selection of students from the ranks of workers, peasants and soldiers gave place to that of using the examination system. The open door schooling quietly died away. The first and major task for the students is to study not make revolution. Top leadership in universities across the nation was being replaced. Universities were being reorganized. So although it was an exciting time for a foreign student to be in a Chinese university, it was not a propitious one to do any serious scholarly research work. Administrative and teaching staff did not know how to handle requests from the foreign students and were waiting for clearer directives from the Ministry of Education. Access to faculty and library facilities were limited. I asked to meet with members of the Economics Department and was turned down. One administrative member of the Foreign Student Office at the university refused even to tell me where the Economics Department building was. At the time post-Mao economic policies were on the drawing board with major modifications and departures from the recent past being introduced. Consequently, Economics departments

in universities were undergoing major readjustment and understandably kept out of bounds from curious foreign students. I am happy to note that beginning Fall 1978 when things began to settle down on the education front, the academic level of teaching and the opportunity for foreign students to do some scholarly research were enhanced. A case in point, although rather exceptional, is that two people in Nanjing University were unofficially working on their doctoral thesis with some teaching staff acting as their advisors cum research assistants.

My extra-curricula activities were varied and straddled over two worlds in Beijing, that of foreign students and of "Foreign Experts." Educational institutions organized visits, trips and cultural activities for their foreign students. When at BLI and Beijing University, I too enjoyed these activities though for the 1977-78 academic year their scope and frequency were reduced due to the ongoing reorganization in the Chinese education field. When at BLI the Canadian students visited Shijiazhuang, a city 250 kilometers southwest of Beijing, where Dr Norman Bethune's Memorial is located. (Dr Bethune is a Canadian surgeon who went to China in 1938 to join the Communists and help them in their guerilla warfare. He died on the war front in 1939 while on duty as a military surgeon.) A foreign student is allowed to travel around China twice a year for a period of three weeks each, the hosting university subsidizing one trip. In addition, I took part in student organized outings such as a 90 kilometers bicycle ride to the Ming Tombs on the outskirts of Beijing and climbing the famous Mount Tai in Shandong Province. Beijing University organized visits to factories, museums and other places of interest. Also, it arranged for the foreign students in the Philosophy class to spend six days of work and discussions in a woolen blanket factory in the northern suburbs of Beijing.

Brenda was the bread winner in the family as a "Foreign Expert" teaching English as a second language at the School attached to the No.1 Beijing Foreign Languages Institute. As her dependent I enjoyed a number of privileges: living in an apartment with hot running water, a bathtub and a shower; access to a canteen where Chinese and international meals are served daily; cheap local transportation and a number of other amenities. Apart from weekly visits to local organizations, cultural performances and trips organized by the Foreign Experts Bureau, we had a series of conferences where distinguished men and women spoke on subjects of politics, philosophy, theater and cinema, education,

health care, literature and economics. But my most valuable experience in the world of foreign experts in Beijing was undoubtedly the personal relationships Brenda and I developed with the majority of her Chinese colleagues, a group of twenty five teachers of English. These relationships grew up to be warm and relaxed, including numerous visits to our respective homes, cooking, wedding and dancing parties, outings and long discussions. Also in 1978, I participated in U.S.-China trade activities, representing a U.S. firm in Beijing. This sideline occupation ended with our subsequent move to Shanghai.

To my mind the most interesting part of being in China at that time was not the study of the Chinese language or Political Philosophy, nor the pursuit of any scholarly endeavour. It was the human experience of living in, and observing a fascinating country undergoing major changes, in the process of assessing its own history of the last thirty years, trying to heal the wounds and repair the damages it had suffered in the last decade, building up all the enthusiasm it needs to face the enormous tasks of bringing itself out of feudalism and into a modern socialist state. That was, and still is for that matter, a country at a crossroad, where decisions were being made and directions being set which will determine the fate of a quarter of humanity. The complexity of the situation in China and the magnitude of the tasks it is facing and willing to shoulder leave nothing short of a deep feeling of awe, and are not easy to describe without giving way to the dryness and impersonality of statistics about the needs and aspirations of one billion people. So I shall limit myself to relating a personal experience as an illustration.

Foreign students at Beijing University live in separate dormitories, one for the boys and the other for the girls. Only two years before my arrival at the university were Chinese students, selected by the administration, allowed to room with their foreign counterparts at the request of the latter. My room was nine feet by eleven, whitewashed with a concrete floor. It was furnished spartanly but functionally: two twin beds, two small tables cum desks and chairs, two book-cases and one clothes cupboard. Light entered through the only window facing the West. A small radiator placed under the window heated the room in the winter. The same size room in the Chinese students dormitories lodged six people. It contained three pairs of bunkbeds, one table and chair, one book-case or perhaps two, and one clothes cupboard. So by Chinese standards foreign students were treated royally albeit not as comfortably as they may have been back home.

One morning in mid-November 1977 a commotion in the hall distracted me from my reading. Then came a knock at the door. I opened it and let in Teacher Liu, one of the two teachers responsible for the foreign students in the philosophy course. He announced that my roommate is about to move in, which he did five seconds later with the help of half a dozen of his friends, mainly female. I was of course the object of curiosity for all of them who were wondering what kind of a strange being their poor friend Li Ling-suo would have to live with now.

Xiao Li, meaning "Young Li" or "Little Li," was a young man of 25 years old at the time, rather tall for a Chinese with a slim body. He comes from a county neighboring the ancient city of Xian in the northwestern part of China. Both his parents worked as shopkeepers in the county seat. So in a way, although they were of peasant lineage, they were not peasants by occupation nor were they workers. He lost his father to illness when he was fourteen years old, his mother and uncle supporting him through school. When he was of high-school age the Cultural Revolution erupted and like millions of his generation he answered the call from Chairman Mao to make revolution. Not only did he make revolution in his county but also carried the revolution into many parts of China and at the same time learning from the peasants. This was a unique opportunity offered to millions of young people to travel free around their country and learn about it. Some of these people I talked to told me that their travels left a deep impression upon them and opened up new vista in their understanding of China, its problems and its people's aspirations. But because of the chaos it generated this practice was stopped in mid-Cultural Revolution.

Xiao Li "graduated" from high-school in 1969, an euphemism for he would have graduated with the normal schooling level had the Cultural Revolution not virtually put a stop to the Chinese education system for a period of four years starting in 1969. He then joined the People's Liberation Army for three years and then returned to his home town to work in the Office of the county's Revolutionary Committee. He was then involved in various administrative tasks such as investigating allegations raised against local cadres and doing organizational work in an afforestation project which three years later earned a front page coverage in the People's Daily. During that time he became a member of the Communist Party.

His work unit, in this case the county's Revolutionary Committee, selected him to go to university to further his



Xiao Li and I in Xiao Li's  
corner of our room

formal education. He entered Beijing University in 1975 for a three and a half years study of Philosophy. The bulk of the curriculum was Marxist philosophy, but it included an introduction to Western and Chinese Classical philosophies, and a short critique of Modern and Contemporary Western philosophies.

As Xiao Li had worked for over five years (counting his three years in the army) before going to university, he was entitled to his full salary, of 55 yuan (around US\$36) a month, paid by his work unit. His salary was a good one for a 25 years old man in China and he was quite well off as a student. In 1977-78, typically a student who didn't receive a salary from his ex-work unit got a 19.50 yuan monthly stipend from the university, 15.50 of which covered the cost of three daily meals at the canteen. The rest, about US\$2.60, was to buy books, stationery and for pocket money. Often the family had to subsidize the student. Only when the family per capita monthly income fell short of a minimum amount, around 35 yuan, did the State make an additional contribution in the vicinity of 15 yuan to support the student. To cover similar expenses, Canadian students received 120 yuan from the Chinese government and a subsidy of Can\$100 a month, a total of 260 yuan. Tuition, room and teaching materials were provided free for both Chinese and foreign students.

not improve the life of the people, including their material life, then we do not want this socialism!"

He claimed that there are two essential factors at play in repairing the enormous damage caused by the Cultural Revolution and in putting China on a normal development course. The first is leadership; at the top and at all levels, there is the need for a dedicated group of capable people who have at heart the welfare of the Chinese people at large and who are able to work and cooperate together peacefully in making and implementing policies. The second is to put the stress on economic development in order to afford social reforms. For that a peaceful situation must prevail in industry and rational management practised accompanied by technological development aided by the transfer of technology from abroad. I used to point out to him in various ways the interactions existing between the development and use of technology, and social factors, often using examples from the experiences of the West and the Third World. Whereas in the beginning he used to dismiss them saying that China is different in its culture and political system, he recognized later on the potentiality of problems, thus benefitting us of interesting and rewarding discussions on China's present developmental policies and their possible outcome.

Xiao Li's appetite to learn about the West was matched only by my appetite to learn about China. He wanted to know about our daily life, our education, legal and political systems, our standard of living and purchasing power, the problem of poverty and welfare system - he was quite impressed with the Canadian Health Care System - consumerism, the press, and dozens of other topics. Before becoming my roommate for nine months, Xiao Li's relationship with foreigners was nonexistent until he went to Beijing University and minimal even then as he was living in a Chinese student dormitory. His knowledge of foreign countries came almost exclusively from Chinese sources: books (fairly rare), newspapers (extremely poor and dogmatic coverage until 1978), and the Reference News (a daily selection of news carried in major papers around the world and translated in Chinese). I doubt very much that he had regular access to a short-wave radio to listen to foreign broadcasts. (When together we used to pool and compare the daily news from all the sources available to both of us.) By asking him to share a room with a "Big Nose", the university administration had given him a rather unique opportunity to be in touch with an outside source of information.

Unlike some of his classmates who were roommates of foreign students, he took advantage of the situation to learn as much as possible and satisfy his intellectual curiosity. What he thought of the strange habits and idiosyncracies of a "Foreign Devil" and of the many signs of his society's affluence, he never let me know. He was very courteous, hospitable and helpful to me in more ways than one. We were sorry to part in late July 1978, after his graduation. He has been assigned not to go back to his native county but to help reestablish and teach in a Party school in a neighbouring county. (The system of Party schools was reinstated in 1977). Saying goodbye was an extremely emotional moment for both of us, realizing the rather valuable and unique experience we had shared. Fortunately, we met again for three days in Xian in July 1979 and now keep in touch through our correspondence.

Xiao Li is a "worker-peasant-soldier" student. He is a very intelligent young man, well read, eloquent with a clear mind and a good sense of humour. He was considered one of the best students in his class and many a time his classmates would come to him for help. When one thinks about it, had it not been for the Cultural Revolution's new education policies, had he been selected mainly on scholarly merit upon his graduation from high-school, Xiao Li would have probably never entered university. Or if he did, undoubtedly not the prestigious Beijing University, but a second or third rate one. Nowhere, not even in China, are things just black or white. The Cultural Revolution is not an exception.

Sincerely yours



Joseph Y. Battat



CENTRE DE RECHERCHES POUR LE DEVELOPPEMENT INTERNATIONAL

MEMORANDUM

*Handwritten signature/initials*

TO/A: John Woolston  
David Steedman

DATE: 1e 13 mars 1980

FROM/DE: Louis Berlinguet

SUBJECT/OBJET: Programme d'études démographiques et de sciences de l'information  
en Chine

Il y a quelque temps, je vous avais informé du départ prochain pour Pékin d'un jeune Canadien, monsieur Robert Tellier, que je connais et estime depuis très longtemps.

Je reçois aujourd'hui sa première lettre dans laquelle il me fait part de la situation générale. Il m'envoie de plus un certain nombre d'informations concernant les activités prochaines de UNDP dans les secteurs de l'éducation, de la démographie et des sciences de l'information.

Au cas où ces renseignements pourraient vous être de quelque utilité et connaissant votre intérêt pour la Chine, je me permets de vous transmettre ces documents à titre d'information.

*Louis Berlinguet*

ORIGINAL PASSED TO: T.GAVIN  
Copy passed to: K.Broadbent

c.c. Ivan Head  
(sans document, pour information).

BACKGROUND

Beijing, République de Chine

MAR 5 1980  
IDRC / CRDI

M. Louis Berlinguet  
premier vice-président  
Centre de Recherche pour le  
Développement International  
C.P. 8500  
Ottawa, Ontario, K1G 3 H 9

Beijing, le 29 février 1980

M. Berlinguet, bonjour,

voilà un mois déjà que nous vivons à Beijing au coeur de l'Empire du Milieu. Alors que de jours en jours nous devenons plus familiers avec la vie chinoise, nous faisons aussi nos premières armes dans l'apprentissage du Mandarin. Nos rapports avec les Chinois ont été jusqu'ici extrêmement cordiaux et enrichissants. Ils sont très prévenants à notre égard et manifestent beaucoup d'intérêt et de motivation. Ils sont enfin surtout animés par une très vive curiosité; si le nombre de questions qu'ils peuvent nous poser dans une journée est parfois incroyable, l'intensité avec laquelle on nous regarde sur la rue et on nous observe dans tous nos mouvements est souvent presque gênante. Il suffit ainsi d'entrer dans un magasin pour regarder la marchandise et de commencer à parler avec le vendeur pour que tout de suite cinquante personnes se massent derrière nous, commentent et discutent. Tout le monde rigole de nous voir là en train d'essayer de se faire comprendre et c'est en somme très sympathique.

Tout comme on nous l'avait décrit, le logement dans cette capitale constitue un problème de taille. Depuis notre arrivée en effet nous résidons à l'hôtel et il semble qu'il en sera ainsi pour encore un bon moment jusqu'à ce qu'on nous assigne un appartement. Si ce demeure un bon traitement pour des nomades comme nous, il reste que pour bien d'autres comme ces hommes d'affaires qui sont venus en Chine pour établir les bureaux de leurs compagnies, la pilule est parfois dure à avaler. Plusieurs d'entre eux en effet vivent à l'hôtel depuis plus d'un an. Après les correspondants de presse et les diplomates, ceux-ci viennent en dernier sur la liste de priorité pour le logement. Alors que seulement une centaine d'appartements pour étrangers sont actuellement en construction et que 52 d'entre eux devraient être livrés d'ici un à deux mois, 80 ont déjà été réservés pour le personnel des diverses ambassades et délégations nationales.

Côté travail, mon épouse, Siri Melchior, s'est engagée avec grande énergie dans les travaux de lancement et de coordination du nouveau programme de UNFPA. Pour ma part, j'ai amorcé mes recherches et pris contact avec quelques bureaux du gouvernement chinois pour faire l'inventaire de mes possibilités d'implication dans des activités de communication. Il souffle en effet en ce moment un vent ( une brise ) de réforme dans le domaine de l'éducation, surtout du côté du renouvellement des méthodes pédagogiques par l'utilisation de techniques audio-visuelles. C'est dans cette veine qu'il me sera je crois possible d'offrir mes services pour aider les Chinois à développer des programmes d'entraînement à l'utilisation de ces instruments pédagogiques en classe, de même qu'à la production de matériel éducatif ( illustrations, diapositives, jeux , etc) original et chinois.

D'autres possibilités d'emploi pourraient aussi s'offrir du fait que les programmes d'enseignement des langues prennent actuellement beaucoup de vogue. Beaucoup de Chinois par les temps qui courent vont aller étudier à l'étranger et les différents instituts de langues étrangères recrutent plusieurs professeurs d'anglais et de français. Il est enfin aussi question que je puisse offrir des services de consultation à court terme en communication à quelques projets de UNDP ou de UNFPA.

Ce nouveau programme des Nations Unies s'est établi en septembre dernier et ce, moins d'un an après que les premières discussions aient été entamées avec le gouvernement chinois. Plusieurs projets n'ont encore qu'au stade de document mais il semble que ce serait normalement au mois de mars que la machine devrait démarrer pour de bon. Je vous fais ici parvenir une liste des projets auxquels UNDP et UNFPA apporteront leur contribution. Dans certains d'entre eux on apportera un support technique et financier à des activités qui mobiliseront des effectifs à l'échelle nationale telle celle du recensement de population de juillet 1981 ou celle du programme de publicité et d'éducation à la planification des naissances. D'autres comporteront plutôt d'importants éléments de recherche et de documentation qui pourraient peut-être intéresser votre organisme.

La plupart de ces projets comportent des budgets desquels une grande partie des fonds iront à l'achat d'équipements, des ordinateurs notamment, et mettent l'accent sur l'apport de services de consultants à court terme plutôt que sur celui d'experts résidents ( encore les problèmes de logement) de même que sur les stages de formation à l'étranger.

Considerant l'experience hautement reconnue du CRDI dans divers pays en matiere de recherche et de documentation et l'interet que vous portez personnellement a son developpement, j'espere enfin que vos contacts avec les representants du gouvernement chinois seront fructueux et que votre organisme pourra bientot apporter sa contribution pour favoriser les echanges entre la Chine, le Canada, le Quebec et les autres pays.

Tout comme je vous l'avais exprime lors de mon passage a Ottawa, soyez assure de mon entiere collaboration pour vous communiquer les information que vous croirez utiles au developpement de ce dossier. De meme il me ferait grand plaisir d'en suivre les progres et de m'informer sur les recentes activites du Centre. J'apprécierais vivement ainsi que vous me fassiez parvenir quelques unes des publications recentes du CRDI, plus particuliere-ment celles qui traitent de sujets dans le domaine des communications et des etudes de population.

En attendant d'avoir le plaisir de votre visite en Chine, je demeure sincerement votre.



Robert Tellier  
communicateur

J. Hulse via A. McNaughton

28 July 1980

K. Broadbent

File: 4166-22

China trip

This is an initial response to your request to help identify some key persons and institutions for your forthcoming visit to the PRC. Last week I telexed Nyle Brady at IRRI for confirmation of some of their contacts, though I believe many will be covered by the list I have drawn up below. It is usual for the Chinese officials responsible for such visits to draw up a relevant itinerary, and they are pretty good at this, but, unless you can pinpoint some names or priorities beforehand, you might come away frustrated by not getting to speak with key people in your field.

BEIJING

1. Ministry of Agriculture and Forestry (MAF)

General: Minister - Suo Shihan  
Vice-Minister - Xiao Peng  
Director, Bureau of Foreign Affairs (MAF) -  
Li Yingkai  
Deputy Director\* - Ma Ling (see also 4 below)

Post-harvest: Director, Commune Industries Department (MAF) -  
Chang Zhijai

Aquaculture: Director, Bureau of Freshwater Fisheries (MAF) -  
Chang Yangchung  
Deputy Director - Sun Chiaji

The MAF would be a priority visit for you in Beijing (Peking) and I would expect from there you would get good advice for further contacts in agriculture/aquaculture, etc.

/continued...

J. Hulse via A. McNaughton -2-

28 July 1980

2. Chinese Academy of Agricultural Sciences (CAAS)

President: Jin Shanbao  
Vice-President: Ho Guangwan

Please note: Lin Shicheng, rice breeder and Deputy Director of Research at CAAS, was recently appointed to the IRRI Board, so it might be useful to touch base with him. Within the CAAS there are a number of specialized institutes that you may, time permitting, wish to visit:

- Crop Breeding and Cultivation Institute;
- Crops Institute;
- Institute of Mechanical Engineering, etc.

It is probably best to indicate your own priority area of interest when requesting a visit to the CAAS.

3. Chinese Academy of Forest Sciences (CAFS)

Director: Hou Zhipu

This is an offshoot of CAAS and, until late 1978, was combined with (2) above, as the Chinese Academy of Agriculture and Forestry Sciences. Two members of the new Academy attended the recent Rattan and Bamboos Workshop in Singapore. They are:

Deputy Chief, Bamboo Division: Shi Quantai  
Deputy Chief, Division of Foreign Affairs: Chao Chingju.

4. Chinese Association of Agriculture

Deputy Secretary-General: Ma Ling\* (He is also a contact of IRRI)  
Secretary: Huang Yunming

/continued...

J. Hulse via A. McNaughton -3-

28 July 1980

- 5. China Aquatic Products Society
- 6. China Forestry Society  
Director: Wu Zhonglun
- 7. Beijing Agricultural University

SHANGHAI

- 1. Shanghai Branch of the CAAS  
Deputy Chairman: Tang Chieyan
- 2. Shanghai Branch of Chinese Association of Agriculture  
Tung-jiapon
- 3. Bureau of Aquatic Products  
Director, Freshwater Division: Kao Kengchiao
- 4. Shanghai Institute of Aquatic Products Research  
Director: Tao Chishia  
Yan Zangfu  
Director, Freshwater Division: Kao Kengchiao

/continued...

J. Hulse via A. McNaughton -4-

28 July 1980

GUANGZHOU (Canton)

1. Aquatic Products Bureau

Deputy Director: Sun Xiaomin  
Fish Breeding: Guofu

2. Provincial Research Institute of Aquatic Products and  
Fish Breeding Farm

Director, Training Department: Mao Chenhua  
Manager of Farm: Zeng Vupian

3. Marine Division at Guangzhou

Head: Li Kemin

The selected site for the FAO/UNDP project is:

Aquaculture Centre,  
Wuxi,  
Jiangsu Province.

One could, of course, draw up a huge list of potential places but I think visits to the Ministry, the various Academies and Societies listed here will provide very fruitful contacts. I would expect that, in any case, visits to one or two production brigades/teams will form part of the tour.

I will produce a more detailed briefing guide before the date of your departure but, in the meantime, please get back to me if you have any specific questions or want additional information.

K. P. Broadbent

KPB/ERM  
80-06-735

c.c. S. Akhtar

### CHINA'S NEW AGRICULTURAL ORGANIZATIONS

Beijing's readjustment program, making agriculture the basis of the economy and calling for an increase in state investment to 14 percent, compared with 10.7 percent in 1978, has been coupled with the creation of an extensive organizational structure to formulate and implement agricultural policy. Over the past few months, six new ministries have been established to keep China's food production ahead of its growing population.

In addition, a new scientific society, the Chinese Atomic Energy Agricultural Society, has been added (June) to China's long list of academic organizations. It will be chaired by an expert in radiation genetic breeding, Xu Guanren. The society's charter calls for the promotion of atomic energy science and technology in the specialized fields of agriculture.

The State Agricultural Commission, a high-ranking body under the State Council, and headed by Vice Premier Wang Renzhong, was established in February to draw up agricultural plans in conjunction with the State Planning Commission and monitor the performance of the new ministries of:

Ministry	Minister
Agriculture <sup>1</sup>	Hou Shilian
Forestry <sup>1</sup>	Lo Yuchuan
Agricultural Machinery <sup>2</sup>	Yang Ligong
Water Conservancy <sup>3</sup>	Qian Zhengying
State Farms and Land Reclamation	Gao Yangmin
Ministry of Food	Chen Guodong <sup>4</sup>

Other cabinet level changes include:

- Reinstitution of the State Agricultural Bank (March).
- Establishment of a "national commission to survey natural resources and for agricultural zoning" (April), also chaired by Wang Renzhong. This is probably an ad hoc agency formed to complete land surveys, investigate resource utilization, and map out zones for specialized production and agricultural mechanization.
- Inauguration of a Scientific and Technical Committee (May), chaired by Jin Shanbao and responsible to the Ministry of Agriculture. Composed of more than 70 members, it will review agricultural policy in terms of its science and technology implications.

<sup>1</sup> Formerly part of the Ministry of Agriculture and Forestry.

<sup>2</sup> Formerly part of the First Ministry of Machine Building.

<sup>3</sup> Recently divided from the Ministry of Water Conservancy and Power Industry. The new Ministry of Power Industry is under Liu Lanbo.

<sup>4</sup> Transferred in June from the All-China Federation of Supply Marketing Cooperatives, now under a new director, Niu Yinguang.

## CHINA'S 10-YEAR PROGRAM FOR THE DEVELOPMENT OF AGRICULTURE AND THE NATIONAL ECONOMY (1976-85)

Chinese Premier Hua Kuo-feng (華國鋒) delivered a wide-ranging Government Work Report on February 26 to the National People's Congress (NPC). Published eight days later, the report acknowledged agriculture as the "foundation of the national economy" that without accelerated growth would stymie the "upswing" in industry and the whole economy.

Hua's report disclosed that a 1975 conference met to draft a 10-year Program for the Development of the National Economy (1976-85) on the basis of large-scale investigations and research that had been made for that purpose. The program, however, was sabotaged by the "gang of four." After their downfall, further studies of the draft program were made, appropriate changes were incorporated, and the revised draft was submitted to the NPC. Except for two items — grain and steel — none of the other targets were disclosed. The highlights of the program's plan for

agriculture and those in Hua's report that are related to agriculture are presented — with analysis — in the discussion that follows.

The program's grain target for 1985 is 800 billion catties, that is, 400 million metric tons (mmt). The average annual growth rate of the gross value of agricultural production between 1978 and 1985 is targeted at 4% to 5%. Grain is the bulk of agricultural production in China. Thus, the average annual rate of increase in grain production would be, by and large, in the same range as that set for the gross value of agricultural production. At the targeted annual increase, the total increase in grain by 1985 would be between 36.86% and 47.75% compared with 1977. On this basis, grain production for 1977 can be derived at between 270.7 mmt and 292.3 mmt; the mean would be 281.5 mmt. Last December's *China Reconstructs* gave a figure for grain production in 1949: 113.2 mmt. This obviously includes

soybeans. From this it follows that the targeted 400 mmt for 1985 and, for that matter, the derived figure for 1977 should both include soybeans.

In the 11 years from 1966 to 1976, despite "gang of four" interference, one-third of the provinces, municipalities, and autonomous regions managed to achieve an average annual 4.3% rate of increase in grain output; some achieved a 5.5% growth rate. Now, Hua reasoned in his report, freed from the "gang of four" the country as a whole should be able to achieve a 4%-5% increase each year during the next eight years.

Hua's comment is a clear indication that grain production is taken in China as a parallel to the gross value of agricultural production. The annual rate of increase he called for is admittedly a cautious target compared with ones set during the Great Leap Forward or even during the more sober years of the early 1970s. What will probably occur is that as more inputs (more pumps and machinery, fertilizer, and improved seeds) become available in the early 1980s, the targeted 4% to 5% annual increase will begin to be achieved.

According to Hua, by 1985, the area of stable, high yield land would be equal to one mou<sup>\*</sup> per person in the rural population; by 1980, one-third of China's counties will be Tachai-type ones.

While the number of Tachai-type counties by 1980 is the same as the one in Hua's report at the First National Conference on Learning from Tachai in 1975, the target year for the building of stable, high yield land per mou per capita of the agricultural population has apparently been pushed forward to 1985

from the 1980 declared by Ch'en Yung-kuei (陳永貴) in 1976 at the Second National Conference on Learning from Tachai. Deferring the goal is perhaps a change introduced into the revised draft program and as such would appear to illustrate cautiousness and pragmatism on the part of Chinese planners.

Hua said in his report that China would strive to keep its natural rate of population increase within 1% in the next three years. Should this low rate of increase be reached by 1980, the deferment of the target year would involve only a maximum of 5% increase in the absolute acreage of stable, high yield land targeted for 1980. This, then, will allow builders of stable, high yield land to reach a slightly higher goal in eight instead of the originally scheduled three years.

In his report Hua stipulated that by 1985 the 12 large grain-producing base areas together with the state farms should double or triple the volume of grain available for marketing. Assuming that 30% of the grain produced in these areas has generally been sold to the state in the past, doubling or tripling that amount by 1985 would mean that 60% and 90% respectively must be marketed, taking the present level of production as 100%. If the population in those areas increases 10% by 1985, they must raise grain production by 40% by 1985 to double their grain sales to the state. The annual rate of increase would then be somewhat less than 4%. To triple their sales, they will have to push up production by 70% by 1985, an average annual rate of increase of more than 8% — a much more difficult goal to attain annually for eight years. From these targets for the major grain producers, Chinese authorities appear to be reverting to the

\* one mou = 1/6 of an acre, or 7,260 sq. ft.

policy of the early 1960s that concentrated state aid and supply of inputs on the major bases where the yield levels are high and the conditions are more responsive to increased inputs.

The low-yield, grain-deficit areas should strive to achieve self-sufficiency or a surplus in the next two or three years. Judging from this target, all the areas in the country should achieve self-sufficiency by 1980. Poor areas like Kweichow and Tsinghai may have a difficult row to hoe if they are to achieve grain self-reliance in the next two or three years. On the other hand, a rich area like Chekiang, which is heavily burdened with a large population, may easily lose its grain self-sufficiency should unusually poor weather conditions occur in any particular year. Unless substantial yield increases are achieved in the next two or three years in the marginal areas, self-sufficiency in grain in these areas can hardly be sustained.

The ten-year program seeks to establish base areas for the production of cotton, oilseed, and sugar crops, which will become the major source of these commodities for state procurement. This plan to set up base areas for industrial crops would seem to spell a degree of regional specialization despite a policy of regional self-sufficiency in basic needs. It would be difficult, however, for these areas to achieve significant success as major industrial crop suppliers unless they are assured the state will meet their grain needs. Growing grain sufficient for their own needs would weaken their capacity to increase production of industrial crops. How the state intends coping with this dilemma is unclear.

A number of other measures to increase farm production in general were

also mentioned in Hua's report. Among them is land reclamation. New state farms are to be opened (which would mean reclamation on a large scale). Land reclamation will also be done at lower levels (provincial, prefectural, county, and commune levels) in a planned way so as not to interfere with soil conservation goals. Putting new land under cultivation is one way for China to increase farm production, but it is very expensive and in some cases could result in increased erosion. These two problems must presumably be solved before large-scale land reclamation can be carried out.

More state investment in large-scale water conservation programs is slated over the next eight years. A major goal is to bring more water from the south to the north, and amelioration of the soils in low-yield areas will be given attention. So far, the PRC has been successful in bringing water from the Yangtze to limited areas in the lower reaches of the Huai River Valley. Nothing has been done in the middle or the upper reaches due to the magnitude of the engineering involved. The improvement of low-yielding soils takes time — eight years may not be enough.

Agricultural research will be strengthened, particularly the breeding of superior crop varieties, searching for more sources of organic fertilizer, and studying rational ways of applying chemical fertilizer. As Chinese scientists spend more time on research without having to labor for long periods in the countryside, more and better results will be achieved. Nevertheless, it takes several years to develop a new variety. The stress on organic fertilizer appears to mean that China will continue to rely on organic fertilizer as the major source of plant nutrients.

More farm machines are to be made available in the next eight years. By 1985 then, some 85% of major farm operations are scheduled to be mechanized. Chemical fertilizer and agricultural chemicals are to be increased.

The mechanization of 85% of important farm tasks compares interestingly to the 70% that are to be done by machine by 1980. With five more years allowed, the former figure appears a more pragmatic goal than the 70% one. The association of chemical fertilizer and agricultural chemicals with farm machines again indicates that in the Chinese conception of farm mechanization fertilizer and pesticides are included.

To attain its agricultural goals, the government will increase appropriations and material and equipment allocations. The state also is aware of the importance of high peasant morale, without which agricultural output increases cannot be achieved.

Measures to boost the morale of the peasants include encouragement of sideline production and brigade- and commune-run enterprises. Income from these sources will account for an increasing proportion of the peasants' total income. As a result of disrupted sideline production over the past several years, cash income was substantially reduced. State aid will be given to the poor brigades so that they can improve their financial status within a short period of time. Moreover, commune members are allowed to keep their private plots and run family sideline businesses, and rural free markets are permitted. These latter measures are a return to pre-Cultural Revolution practice.

The state-fixed purchase price for farm products will be appropriately in-

creased, and parity between the price of agricultural products and that of industrial goods will be studied and further adjustments made. If farm prices rise and the price of industrial products, especially those needed in agricultural production, fall, commune income will gradually increase while the costs of farm production will be reduced. Eventually the rural-urban gap in standard of living will be narrowed.

According to Hua, the principle "to each according to his labor" should be further enforced, workpoints registered in accordance with the labor done, and "equal pay for equal work" applied without prejudice to women. The work-quota system should be reinforced. The government hopes that under normal conditions 90 per cent of the commune members will have an increase in income every year.

While commune officials are prevented from getting workpoints without actually working, the greatest advantage accrues to those families with a large work force. A family with only one farm laborer may find it difficult to make ends meet, even though he has completed his labor quota. Furthermore, if an increase is allowed for members' income in an average year, the collective, i.e., the commune or brigade, will be short of the money needed for further investment in production.

Other morale boosters slated to be in effect by 1985 are an eight-year education for rural children (10 years for urban ones) and improved rural (and urban) housing.

In the coming years, large numbers of youths will be sent to the countryside.

How welcome on the communes these additional mouths will be is unclear, but too many additions could be perceived by the peasants as eroding newly won economic gains. Thus, their presence may not be much of a boost to commune morale. The youths' morale, however, should benefit from spare-time education that is to be provided in the rural areas so that they can further their education during leisure hours. Examinations will be given to see if any of them are qualified for a higher post. Due promotion will

be given to those who have proved themselves thus qualified.

In sum, the target set for grain in 1985, while ambitious, is attainable. Although the measures planned to implement the program are not new, morale in the countryside apparently is greatly improved. Should China's weather be normal or better than normal in most years between 1978 and 1985, the targeted 400 mmt of grain in 1985 stands a good chance of attainment.

## FAO-PRC COOPERATION

FAO, the Food and Agriculture Organization of the United Nations, has over the past few years established a well-developed program of exchanges with China. Since 1973, when the PRC renewed its membership in FAO, collaboration has taken place in a number of different areas. China is now a major contributor to the FAO and has shown an eagerness to participate in FAO technical seminars and training programs and to participate in technical assistance activities.

FAO programs in China consist of three main types including technical missions; study tours, workshops, and training programs; and fellowships in China. Technical missions to China, which actually began in 1972, have been conducted in such diverse areas as water buffaloes in China, freshwater fisheries and aquaculture, forestry, grain post-harvest technology, and commune management.

Study tours, workshops, and training activities sponsored by the FAO in China have been largely financed by the UN Development Program (UNDP) and have included participants from up to 14 FAO member countries in a given tour as well as FAO technical personnel. Since 1977 several such tours have taken place, some emphasizing regional interests and others stressing common inter-regional problems. Among the topics explored have been a variety of agriculture, forestry, and aquaculture related subjects, soil and water conservation and management, biogas production and use, and agricultural processing technology. In 1980 the program will include 12 study tours, workshops, and training courses involving some 240 participants from developing countries in Asian, Africa, Latin America, and the Middle East. Topics covered will be in areas similar to those mentioned above. In addition to these groups, a number of single-country delegations have also visited China under FAO and UNDP sponsorship. These have so far been dominated by groups from Nepal, although Ethiopia and the Philippines have also participated, and have focused on such areas as hill irrigation, soil and water conservation, and multiple-use mountain forestry development. Additional groups of this type will travel to China in 1980.

The FAO fellowships program for training in China was confined until 1970 to freshwater fisheries. Since 1975 it has provided training for more than 100 fisheries technicians from more than a dozen countries in Asia, although more recently it has primarily benefited fellows from Sri Lanka and Bangladesh. Discussions are underway for major UNDP/FAO assistance for development of a new permanent training center in China in freshwater fisheries and possibly in sericulture.

Chinese participation in other FAO programs takes several forms, the first of which being participation in FAO's governing bodies and technical meetings. The vice chairman of the FAO council is Chinese and in 1979 Chinese representatives attended the World Fisheries Congress and the World Conference on Agrarian Reform and Rural Development. China has also sent technical missions abroad which were organized and financed by FAO. In 1978 Chinese technical missions covered the areas of olive production and processing and seed processing. In 1979 China sent a study tour to examine drying equipment for cereals.

Finally, cooperation between China and the FAO has included visits by Chinese experts to FAO Headquarters in Rome. Five senior Chinese soil scientists spent a week with FAO technical staff in Italy during 1978. In 1979 four Chinese specialists arrived for discussions on food policy and nutrition. Permanent representatives from China included a fisheries specialist who joined the FAO professional staff in Rome in October 1979 and a plant protection expert who is now on the FAO staff at its Regional Office in Bangkok.

It is envisaged by both sides that FAO-Chinese collaboration will expand greatly over the next few years as increased funding becomes available.

BRIEFING NOTES FOR SKELLY  
MISSION TO THE PEOPLE'S  
REPUBLIC OF CHINA  
APRIL 19 - MAY 1, 1981

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China and Canada

, 1974 (Canadian Forestry Service)

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Research Centre with PRC

BRIEFING NOTES FOR FORESTRY  
MISSION TO THE PEOPLE'S  
REPUBLIC OF CHINA  
APRIL 19 - MAY 1, 1971

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CANADIAN EMBASSY STAFF IN CHINA

Address:

Chancery: 10 San Li Tun Road, Chao Yang District.

Tel: 521475, 521571, 521741, 521684, 521724

Cable: Domcan Peking  
Telex: Domcan Peking

Ambassador's Residence:

9th Floor, Bang Gong Lou (West Entrance), Gong Ren Ti Yu Guan Da Lu,  
San Li Tun Area.

Ambassador	- Mr. M. Gauvin
Minister (Commercial)	- Mr. A.A. Lomas
Canadian Forces Attaché	- Col. J.E. Houghton
First Secretary (Counsellor and Head of Chancery)	- Mr. M. J. Higganbotham
First Secretary (Commercial)	- Mr. C.J.R. Sarrazin
First Secretary (GENERAL SECRETARY)	- <del>Dr. M. Sun</del> JAN WALLS
First Secretary (Commercial)	- Mr. P.S.H. Lau
Second Secretary	- Mr. R. McDougall
Second Secretary	- Mr. A. Laporte
Second Secretary	- Mr. J.A. Makin
Second Secretary (Commercial)	- Mr. A. Rusinek

Up to date as of February 25, 1981

CANADIAN DELEGATION TO CHINA

Ministerial Group

- The Honourable John Roberts -- Minister, Department of the Environment and Minister of State for Science and Technology, Ottawa
- Mr. J. Blair Seaborn -- Deputy Minister, Department of the Environment, Ottawa
- Ms. Danielle Wetherup -- Departmental Coordinator, Department of the Environment, Ottawa
- Mr. Herb Metcalfe -- Policy Advisor, Department of the Environment, Ottawa

Technical Forestry Group

- Mr. F. Les C. Reed -- Assistant Deputy Minister, Canadian Forestry Service, Department of the Environment, Ottawa
- Mr. W. K. Fullerton -- Director General, Forestry Relations and Renewal Directorate, Canadian Forestry Service, Department of the Environment, Ottawa
- Mr. W.J.B. Devitt -- Chief Forester, Pacific Forest Products Ltd., Victoria, B. C.
- Dr. G.L. Baskerville -- Assistant Deputy Minister, Forest Resources, Department of Natural Resources, Fredericton, N. B.
- Dr. M. Lortie -- Professor of Forest Protection, Laval University, Québec, P.Q.

Interpreter

- Dr. J. Duval -- Department of Secretary of State, Ottawa

HINTS FOR OFFICIAL DELEGATIONS

Before you leave

- ✓ Advise the Embassy in Peking, through the Department of External Affairs in Ottawa, of your itinerary requests well in advance - i.e. months, so that these can be negotiated with the Chinese authorities.
- Your object is to learn in detail about China; to maximize your gains read about your subject in China well in advance - scan delegation reports (available through the appropriate department or through the External Affairs Library) - look for names of individuals and organizations you might wish to meet with - look up Chinese journals which were published up to 1966 in most scientific fields and which after a hiatus of a decade, have recently reappeared. In some fields, journals are published with English abstracts.
- Look up journals for reports of delegations to China. Among non-specialized journals which have published such reports are China Quarterly and the Scientific American.
- Speak to colleagues who might have gone or who have been in contact with visiting Chinese delegations.
- IN ORDER TO MAXIMIZE YOUR GAINS MAKE YOUR ITINERARY REQUESTS ON WHAT IS KNOWN ALREADY.
- Try to get approval for a final itinerary before you leave through the Departments of External Affairs or ITC. If not requested early in advance, itineraries are usually not provided by the Chinese host organization until the delegation reaches China.
- Emphasize mutuality - offer seminars to Chinese specialists in return for visits to their institutions.
- Stress your credentials - refer to internationally known articles you have published, techniques discovered, equipment manufactured. This will establish your credentials and whet your hosts' appetite.

After you arrive in China

- When you arrive in China you may find the projected itinerary and other arrangements are inconsistent with the objectives of your mission. Request a meeting with your hosts as soon as possible.
- 1. Stress the objectives of the mission, pointing out this was a mission agreed to by both governments in the interest of friendship and cooperation;

2. Refer to all requests submitted beforehand, providing reasoning for each;
3. Stress all reciprocal arrangements that have been made or will be made in favour of visiting counterpart Chinese delegations to Canada;
4. Point to any advantage to the Chinese side in making the changes you are requesting.

Be patient, be firm and show your sincerity and friendship in any way you can, suggesting acceptable compromises.

#### Friendship

- Chinese reaction to foreigners is a mixture of suspicion ("vigilance" in official parlance), and genuine good will particularly towards Canadians. If you behave with the warmth and candour we are known for, this will ease your burden considerably. Chinese feelings about the humiliation they received at the hands of foreigners over the last century run very deep, but they are touched and flattered whenever they find a foreigner to empathize with.
- Don't indulge in political flattery. It embarrasses both sides.
- Learn something about Dr. Norman Bethune.

#### Reports

- Divide up responsibilities for report writing among the members of the delegation, writing reports as you go.
- Write two reports: one unclassified report, including all the general achievements of your trip and a description of what you saw of general scientific interest; and a confidential report touching on more sensitive bilateral issues and anything which could be embarrassing to your hosts.

#### Accompanying personnel

- If available, a Canadian interpreter can play a useful role to the delegation, interpreting the politics and culture of China to you as well as the language. The Chinese will also normally provide both an interpreter and a liaison officer from the host organization. This liaison man is often a professional from your field of expertise and can be a valuable source of supplementary information.

- A Canadian interpreter can provide a useful "contact person" for the Chinese helping to clear up any of the normal problems arising during such a tour.
- Similarly it can be useful to have an Embassy officer, more familiar with the country and its authorities to accompany you.

#### Return Invitations

- While in China think about extending future relations in your field, extending invitations for return visits to Canada, or to specialized conferences here that you may be involved with.

#### Literature, Slides, Films

- Take along literature from your field. It will be appreciated. Also take slides or films of recent developments achieved in Canada in your field. 35 mm projectors are generally available in China. You may borrow a 16 mm movie projector and a slide projector from our Embassy in Peking (for use in Peking only since the Embassy has a limited supply).

#### The Canadian Embassy in Peking, 10 San Li Tun

- Visitors are always welcome at the Embassy (tel. 521 475, 521 571) which is equipped with a small (30 ft.) swimming pool and a tennis court, as well as a small but up-to-date library on Chinese subjects.
- Should you have any special requests from the Embassy in Peking it is best to contact them in advance as their resources (both human and material) are not unlimited.

#### Gifts

- Large expensive gifts are generally not accepted by the Chinese, who will however gratefully accept smaller items of symbolic value. For leading person of host organizations, native carvings, native prints, hand-carved native handicraft items have been found acceptable.
- for others - souvenir pens, flag pins, maple leaf pins, mementos of Norman Bethune (brochures, pictures of his birthplace, etc.), colour photographs of your hosts are all suitable items for general distribution. MAKE SURE SOUVENIRS ARE MADE IN CANADA.

### Use of Embassy Telex and Diplomatic Bag

- Official missions may use Embassy Telex facilities to communicate with their Department or for urgent personal reasons.
- Reasonable amounts of material may be sent back and forth by Diplomatic Bag. For shipment of heavier items (books, parcels, etc.) costs will normally be recovered from the organization or department responsible for the visit.

### Protocol Order

- You will need a protocol order - Chinese insist on this. A delegation leader must be identified. Other members of the delegation may be listed in alphabetical order.
- At meetings with the Chinese, the delegation leader will be greeted by the Chinese host and ushered to the seat of honour, usually a sofa in the center of a semicircle of chairs. Members of the delegation are expected to spread themselves out in the room, usually intermingled with Chinese officials in attendance.

### Return Banquets

- Make sure you have enough funds to cover the costs of a return banquet for your hosts. (The Embassy has no funds for return banquets hosted by visiting delegations.)
- The cost is likely to average about Can. \$23 to \$28 per person or about Yuan 30-35. The number of Chinese guests, while depending on the number present at the welcoming banquet, usually exceeds the number of Canadians present. You can usually count on inviting at least twelve Chinese guests for a return banquet.
- This banquet is usually held either in Peking prior to departure or in the last city visited.

The Embassy will be glad to help you pick an appropriate restaurant and to help you select a suitable menu.

## HINTS FOR VISITORS TO THE PRC

### Introduction

A visit to the People's Republic of China can be a fascinating and rewarding experience, but as with travel to any other country, it is wise to be prepared for what you will encounter. While the doors of China have not exactly been flung open, certainly there has been a large increase in the number of visitors to the People's Republic in the past two years (over 800,000 in 1979). One result has been a strain on facilities for receiving guests; that is hotels, restaurants, transport, guides etc. You will be greeted with great courtesy in China, but may find that there have been minor alterations to your programme owing to overbooked facilities. Itinerary arrangements will be in the hands of your host, China Travel Service (Luxingshe) for most tourists, or other organizations depending on the nature of your visit. Your host organization will do its best to accommodate your requests, but it is well to bear in mind that facilities are stretched to the limit.

You should remember that China is still a developing country, and that hotel facilities in many cases are not comparable to Canadian standards. Nonetheless, facilities offered will be clean and comfortable, and service will be friendly.

A careful reading of this paper should give you a general idea of what to expect in China, and suggest how best to prepare yourself for your trip. As the Chinese say "Yi lu ping an" - Bon voyage!

### Visa

- Private visitors to China should apply very early through the Embassy of the People's Republic of China, 415 St. Andrew Street, Ottawa, K1N 5H3 (telephone 234-2706) or the Consulate of the People's Republic of China, Georgia Towers Hotel, Suite 1908, 1450 West Georgia Street, Vancouver, B.C.
- One should note that the Chinese do not normally grant individual tourist visas (other than for people of Chinese ancestry wishing to visit relatives). It is best to go as part of a delegation.
- Some Canadian travel agencies have experience in putting together a delegation, and may have an empty slot. Such agencies include: Travel Unlimited, 166 E. Pender Street, Vancouver, B.C. V6A 1T4; Skyline Travel Service, 1148 East Georgia Street, Vancouver, B.C.; Waddel's World of Travel Ltd., 1662 Avenue Road, Toronto, Ontario M5M 3Y1.
- It is advisable to apply for a new passport if your passport carries a Taiwan stamp.
- Travellers with official government delegations will have their visas looked after by the Department of External Affairs.

- Visas are granted within two weeks of application, normally sooner for official government delegations.

#### Sponsoring Organizations

- China International Travel Service (Luxingshe) - handles most 'tourist' groups.
- Overseas Chinese Travel Service - for travellers of Chinese ancestry.
- Association for Friendship with Foreign Countries - handles counterpart friendship groups.
- People's Institute for Foreign Affairs - handles retired and non-government (i.e. opposition) politicians and officials, some prestigious academics (particularly those with close government affiliation, as well as politicians from countries with which China has no relations.
- Official groups are sponsored by counterpart organizations, ministries, bureaux, academies such as the Academy of Sciences, sports federations, etc.
- While in China, these organizations will be your hosts in every way and will in all cases be your channel to the Chinese

authorities through the interpreters and guides whom they will supply.

#### Inoculations

- Travellers must have a valid smallpox vaccination (i.e. must have been vaccinated within last 3 years).
- A cholera vaccination is required by the Hong Kong government.
- Immunization. A Guide for International Travellers is available through the Department of National Health and Welfare which has information offices in most major Canadian cities.
- WHEN PLANNING THEIR TRIP TRAVELLERS SHOULD REMEMBER THAT TO REACH CHINA ACROSS THE PACIFIC OCEAN IT IS NECESSARY TO CROSS THE INTERNATIONAL DATE LINE AND ONE FULL DAY IS LOST.

#### Travellers Cheques/Chinese Currency Controls

- Most international travellers cheques are accepted, including American Express, Citibank and Thomas Cook. For long-term visitors who may be required to carry large amounts of Chinese currency, RMB travellers cheques are also available for use within China. There are available in large denominations and eliminate the need to carry wads of 10 Yuan bank notes, the highest denomination issued. If RMB travellers cheques are

purchased with foreign currency, the Exchange voucher must be kept for purposes of reconversion.

- At the border you will have to declare all your foreign currency holdings (you may not import or export Chinese currency although Foreign Currency Certificates can be taken out of the country) and each time you change money you will be given an Exchange voucher. You may be required to produce these vouchers to change your money back when you leave.
- Exchange rates - fluctuate with international currency market and so floats with the Canadian dollar. The rate usually hovers around US \$1.00 = 1.60 RMB or Can. \$1.00 = 1.28 RMB. (Renminbi or "people's currency", is usually called a Yuan and written Y, in colloquial speech it is referred to as a Kuai.)
- Chinese currency is issued in notes of 10, 5, 2 and 1 Yuan. The Yuan is divided into ten Jiao (referred to colloquially as a Mao) and notes of 5, 2 and 1 Jiao are circulated. These notes are smaller in size to the Yuan notes. Coinage is issued in denominations of 10, 5, 2 and 1 Fen. Ten Fen equals one Mao; One hundred Fen equals one Yuan.
- On April 1, 1980, the Bank of China introduced foreign currency certificates for use by all foreigners. Certificates can be purchased at airports, banks and hotels in denominations of 50, 20, 10, 5 and 1 yuan plus 1 Jiao. Notes of 100 yuan and 5 jiao are to be issued later. The new currency is for use in all hotels, shops and restaurants frequented by or reserved for foreigners, including "Friendship Stores". All transportation costs within China undertaken by foreigners and other services provided by China Travel Service must be paid for in the new currency certificates. If regular Chinese currency is required for purchases in non-tourist shops, the Foreign Currency Certificates may be exchanged, but only at banks. Certificates can be reconverted to foreign currency upon departure if the exchange voucher is presented. Some foreign residents of China (students, foreigners working on contract to the Chinese government) may use regular Chinese currency for day to day expenses upon presentation of a special card issued by the Bank of China.

#### Travel to China

- One may enter China by train through Shumchun (Shenzhen) on the Hong Kong border, or by air from a number of cities including Tokyo, Paris and Manila direct to Peking (Beijing). Air service is also available from Hong Kong to Canton. In the near future a direct Hong Kong - Peking air link will be established as well as direct service from the USA.
- Canadian airlines (Canadian Pacific) fly to Hong Kong and to Tokyo, but as yet do not fly to either Shanghai or Peking.

- Train from Hong Kong - arrange through China Travel Service (Luxingshe), Hong Kong, 77 Queens Road, Central Hong Kong (tel. 5-259121); China Travel Service (Kowloon), 27 Nathan Road, first floor, entrance on Peking Road, Kowloon, Hong Kong (tel. 3-664127).
- It is most advisable to stop at least overnight at either Tokyo or Hong Kong in order to overcome the "jet lag" caused by the Trans-Pacific flight.

### Travel within China

#### Air

- Tickets will be bought by the guide or host organization.
- Passengers are limited to 33 lbs. (15 Kg.) of checked luggage and will be charged if luggage is overweight. There are daily flights between Guangzhou (Canton), Shanghai and Peking.
- Service between smaller centres is less frequent and smaller aircraft are used. There are few flights at night or in inclement weather. This may oblige the host organization to reschedule flights and entails delays.
- Light meals served on longer flights; on shorter ones, gum, candy, dried fruits and tea are served.

Peking - Shanghai	1½ hours
Guangzhou (Canton) - Peking	2½ hours
Guangzhou-Shanghai-Peking	4½ - 5 hours

#### Train, Bus, Taxi

- First class railway passenger coaches normally accommodate only 32 persons. Accommodation designed for four people is sometimes shared by one two foreigners. In dining cars one may breakfast on Western food; other meals normally feature Chinese cuisine.
- dining, conversation, even sleep, are frequently interrupted by loudspeaker announcements of stops, time, news reports, and interludes of revolutionary and martial music. Some Western music is now also heard on trains. It is often quite easy to turn off the loudspeaker, particularly in the private "soft seat" compartments, where the switch is underneath the table.
- Stops are sometimes long enough to allow passengers to get off the train to stretch their legs and buy local delicacies from vendors at the station.
- Within a city, most groups travel on Chinese or Japanese-made tour buses, although local travel of some officially-sponsored groups is by "Shanghai sedan", etc.

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- In major cities, most hotels that serve foreign visitors now have small fleets of taxis for hire. For a fixed hourly rate, drivers generally will wait while the visitor goes about his business or sightseeing activities.

#### Things to take with you

- Patent medicine (take you favourite cold or headache tablets and a diarrhoea medicine)
- Reading material, guidebooks -- see suggested list. Some Western news publications (e.g. Time Magazine, Readers Digest) are available for foreign currency in hotel lobbies.
- Shortwave radio. News reports of Voice of America (VOA) the BBC and Radio Japan (English service) can be picked up in most parts of China with little difficulty.
- Razors (battery of 220 V/50 AC); razor blades, Chinese blades and not designed to cope with Western beards.
- Feminine napkins, tampons
- Clothes (summer) - shortsleeve shirts, blouses
  - rainwear
  - comfortable walking shoes, sandals
  - 1 suit, 1 evening dress (pantsuit optional) for formal banquets
  - sweater(winter) - sweaters
  - warm underwear
  - warm coat, gloves, hat
- Imported cigarettes, liquor, instant coffee, cosmetics and colour film are available for foreign currency certificates only in most hotels and Friendship Stores.

#### Customs

- On arrival at the port of entry you will be asked to fill out forms declaring foreign currency, jewellery, watches, cameras, tape recorders, film and blank tapes carried in with you. You may bring in 2 cameras - still and movie (super 8) or two still cameras. There is no restriction on the amount of currency or film you may bring in (as long as it is within "reasonable" bounds). Customs officials are courteous and helpful.

#### Behaviour

- Chinese tend to be rather formal at first; highly conscious of protocol and hierarchy.

- Cheerfulness and warm cordiality will tend to let your hosts relax a little, so that by the end of your tour your relations may be on a much more informal level.
- Flirting, patting, and off-colour jokes must be avoided. Such behaviour will deeply shock the Chinese and will mar the visit. The handbook for foreign students states: "In China, relations between men and women are solemn and legitimate".
- In general, complex jokes are unlikely to be understood but Chinese are extremely fond of slapstick on informal occasions.
- It is in your interest to maintain good relations with your guides and interpreters. They can be useful keys to China's culture and politics but their instructions need not be dogmatically followed. You can walk around town and it is possible to arrange a meal in a restaurant.

#### Chinese Names

- Chinese personal names usually consist of a 3-character combination, with the surname being given first. There is a paucity of surnames, and many Chinese share a few commonly used names. A Chinese with the name, for example, of WANG RONG-HUA should be addressed as Mr/Mrs./Miss WANG.
- Chinese geographical names are now spelled in the Latin alphabet using the Pinyin system. Many common Western spellings of Chinese place names have changed. Some often used examples are:

Peking	now Beijing	
Tientsin	now Tianjin	
Canton or Kwangchow	now Guangzhou (pronounced	Guang-joe)
Soochow	now Suzhou	" Sue-joe
Hangchow	now Hangzhou	" Hang-joe
Kueilin	now Guilin	
Nanking	now Nanjing	
Kirin	now Jilin	
Sian	now Xian	" See-Ann
Chungking	now Chongqing	" Chong-ching

- Many other names, such as for example Shanghai, Wuhan, Harbin have not changed.

#### Communications

- Mail service to and from China is good. There are post offices in most hotels from which letters and parcels may be sent (there is an inexpensive book rate).

Overseas - letter - 52 fen (0.52 RMB)  
- airletter - 35 fen  
- postcard - 43 fen

- Airmail normally takes about 6 days from China to Canada, and a little longer the other way.
- Those who wish to receive mail while in China should make sure to include the full title of the delegation, c/o the host organization in China or c/o the Canadian Embassy in Peking. Remember to address letters correctly to People's Republic of China.
- Use of Chinese characters for host organizations will facilitate delivery.
- Telephone service in China is good, and overseas telephone calls (by satellite) are quite clear. To book an overseas call ask for the English language overseas operator. Calls can usually be put through promptly. Remember the time difference (note - all of China is in one time zone). China - 13 hours ahead of EST, 16 hours ahead of PST.

#### Telegrams

- In most cases phoning Canada is cheaper than cabling.
- Telegrams cost 1.40 (yuan) a word with a 21 word minimum.
- Nightletter 0.75 per word.

#### Media

- If you are anxious to hear world news while you are there take a short wave radio. BBC World Service and the Voice of America can be heard in most regions of China as well as other western stations. The only other source of foreign news is the English and French summaries of foreign press agency reports compiled by the Chinese. These are available daily in Peking but with a delay of some days in other cities (sometimes impossible to obtain altogether).

#### Dress

- Dress comfortably, not ostentatiously. Men may never need to wear a tie in China, nor will women need to wear evening dresses, although they may wish to do so at formal banquets.
- As Chinese curiosity can be unnerving it is best to minimize provocation.

- Dress conservatively as far as colour is concerned. You may not wish to look like a Christmas tree.
- Do not dress too revealingly; avoid miniskirts and shorts or skimpy T-shirts. But it is quite permissible to wear skirts, especially in summer.
- For winter carry sweaters that you can wear under a jacket. Not all rooms are heated, and Chinese custom is to increase the layers of clothing as the weather gets colder.

### Electric Current

- 220 volts - 50 cycles
- Sockets may vary from international standard; adaptors for these are available in hotels - transformers are not.

### Interpreters

- Remember to speak clearly and slowly (sentence by sentence) if you wish to be interpreted efficiently.
- When preparing lectures figure that it will take 1 hour for what would normally be a 20-minute lecture.
- Etiquette provides that the host organization in each city provides its own interpreter. These may not be up to the standard of the interpreters of the national organization, who are generally quite good.

### Visits

- No matter what your official business, it is almost inevitable that while in China you will be taken to visit schools, factories, nursery schools and Communes. Plain tourism is always an important component of any visit to China.
- Here, the procedure is usually a "brief introduction" and tea, followed by a tour of the facilities. The same procedure applies to official government visits. Often there will be a question and answer session following the tour.
- The "brief introduction" is always an overview of the current political situation, followed by an accounting of the progress made since 1949, often with statistics.
- You may wish to thank your hosts as you leave. (Your cue for this will be a statement by your host about how grateful they were to receive you.)

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- To gain the most out of a question and answer session it might be better to prepare your questions beforehand, asking only the questions you feel are important and have a good chance of being answered.

### Climate

- China's climate ranges from temperate and continental in the North and Northeast to sub-tropical in the South. When preparing your wardrobe have your itinerary as well as the season in mind.

Northeast - at Harbin in the North there is a climate not unlike that of Winnipeg with a median temperature of  $-18^{\circ}$  in winter and  $21^{\circ}\text{C}$  in summer with about  $15^{\circ}\text{C}$  in spring and fall (little snow).

North China - Peking has a very dry and cold winter, a dusty and windy spring, a hot, humid and sometimes rainy summer, and cool and fine autumn. Temperatures average  $-7^{\circ}\text{C}$  in winter and  $27^{\circ}\text{C}$  in summer and  $17^{\circ}\text{C}$  in the fall.

Central China - Wuhan has a damp and cool winter and an extremely hot summer. Winter temperatures average  $4^{\circ}\text{C}$  and summer temperatures average  $32^{\circ}\text{C}$ . Spring and fall are pleasant at  $21^{\circ}\text{C}$ .

East China - Shanghai has a cool, damp winter (average  $7^{\circ}\text{C}$ ) and a hot summer ( $32^{\circ}\text{C}$ ), and a warm fall and spring ( $21^{\circ}\text{C}$ ).

South China - Guangzhou (Canton) - a sub-tropical climate. Winters are damp and may be chilly at  $15^{\circ}\text{C}$  (no heating), summers are hot at  $32^{\circ}\text{C}$ , while spring and fall are still very warm.

### Photography

- Chinese black-and-white film (ASA 100, 135 or 120) of reasonable quality and price is widely available (although not always readily found in cassettes). Imported colour film is available for purchase with foreign currency certificates. The Chinese will process Fuji, Agfa and Kodachrome colour slide films, but you may prefer to send/take these out for processing. This normally poses no problem. (The Chinese do reserve the right to prevent exposed film and/or tape cassettes from leaving the country under special circumstances.) NOTE: Colour photographs of your hosts will be very gratefully accepted.
- Photographing in railway stations, airports and off airplanes, and from certain bridges is forbidden, but photographing most tourist sites is allowed.
- Before taking picture of people or of street scenes it is best to ask permission of your guide or of your subject. When in doubt, always check with your guide.

- Polaroid prints are fascinating to the Chinese.

#### Tape-recording

- Always ask permission before tape-recording speeches or lectures.

#### Entertainment

- More than likely you will be treated to some kind of evening entertainment in each city you visit. This may be a sports match, an acrobatic show, modern revolutionary opera, ballet, a puppet show, or variety show. Most drama still revolves around some political theme in today's China, but it need not be heavy-handed, and the technical quality is often very good. However, villains and heroes are always very clearly defined, as in Peking Opera.
- In Peking, individual evening activities such as disco and ballroom dancing, bowling, billiards, etc. are available at either the Club of the Palace of Nationalities (Minzu Gong) next to the Minzu Hotel, or at the International Club. Western and Chinese liquor is served at the dances, which are closely "chaperoned" by the Chinese.

#### Etiquette and Protocol

##### Hierarchy and Protocol

- Chinese have a strong sense of hierarchy. The leader of a delegation - and every delegation must have a designated leader - will travel in the lead car, with his counterpart, while other members will travel behind, either by car or by bus.
- At dinners the delegation leader will sit with his counterpart host.
- Official delegations should provide the Chinese with a protocol order: Delegation leader(s) at the head followed by the rest in alphabetical order.

##### Punctuality

- Unlike some other Asian countries, Chinese are punctual. You are also expected to be so.

##### Clapping

- You will generally be greeted by hand-clapping wherever you go. It is customary in China that one responds by clapping briefly in return.

### Criticism

- After a visit one will often be asked for "criticism and suggestions". Here you may be sincere if you wish, but try to be realistic and to the point. It is sometimes wiser to make a very brief point or no comment at all.

### Tipping

- There is none in China. If you are particularly well disposed towards a staff member you may wish to give him/her a flag pin or some such similar souvenir.

### Banquets and feasts

- You will have at least one or two of these while in China (usually one in each city). Here there will be a speech by the host followed by many toasts - to friendship, to developing relations, to the health of the guests, of those present, etc. You will be expected to reply in kind.
- Chinese are not heavy drinkers despite the ferocious power of some of their liquor (e.g. Mao-tai). You will notice that even during toasts they may not in fact be "emptying their glass" as in the meaning of the Chinese toast "gan bei".
- Chinese meals are made up of many different dishes and courses and you are expected to taste a little of each one. Often your host will place food on your plate for you. Plan for this and try not to fill yourself on the early courses. If you have eaten your fill, simply leave food on your plate. This does not indicate that you dislike the food, simply that you have been satisfied.

### Accommodation

- Hotel costs vary by city and type of accommodation but most hotels which serve foreign guests have certain similar amenities. The rooms are usually simple but functional, containing twin beds, a desk (equipped with stationery, pen and ink), an easy chair, a bureau, and a bathroom. Lighting is often poor and plumbing is often not to Canadian standards. (One of the strongest impressions of China can be the nightly gloom.) Each floor has a service counter where cigarettes and liquors can be obtained, refreshments and ice ordered, dining tables reserved, cables and messages received, and where you may leave your key while away. Laundry is picked up from the rooms and returned the next day; drycleaning takes a little longer.
- There is usually a store where one may buy confectioneries, souvenirs, postcards and toiletries.

- Places to change money and send cables exist in most hotels.
- Each room has a flask of boiled drinking water (room temperature) and a thermos flask which can be refilled by asking a service person. There is also a small tin of tea. (Sometimes also cigarettes and fruit).
- Most hotels in North China (i.e. draw a line just north of and parallel to the Yangtze) have central heating or provide electric heaters. Extra blankets are also provided.
- There is no air conditioning in most hotels but rooms are usually equipped with fans.
- There are TV lounges in most hotels, which broadcast from about 7-11 p.m. each night; programmes consist of news (in the form of newsreels), and a cultural programme or film, as well as English language lessons.
- Some hotels have radios (even SW) in the rooms.
- Accommodation is nearly always pre-arranged by Luxingshe or the host organization.

#### Dining

- Most of your meals will be taken in hotel dining rooms. Here you may have western breakfasts but other meals will more often consist of Chinese food (cooked with western tastes in mind).
- Do not worry about not being able to use chopsticks. You may either use a spoon or ask for a fork, usually available in places serving foreigners.
- No visitor to China need worry about the quality of the cooking.

#### Accommodation in various cities

- Peking - Official delegations frequently stay in the new 17-storey wing of the Peking Hotel. One of China's newest and most luxurious hotels (complete with pushbutton curtains) located at the corner of Wangfujing and Changanjie just two blocks from Tiananmen, it is in the heart of Peking's business and administrative centre, just outside the old imperial city. Rooms here are about \$40.00 a day, a two-room suite about \$80.00 and up. Service staff include many young students assigned for language practise. (You may find different floors have different language specialists, corresponding to national origins of the guests.) The older wing is staffed by many who have been there since it was under French management. The rooms are also considerably cheaper in this wing.

- Dining hall serves both western and chinese food.
- Other hotels accommodating foreigners:
  - Xin Qiao (Hsin Chiao) - Southeast of Tiananmen in the old Legation Quarter; with a sixth floor dining hall serving Western food, and a ground floor dining hall serving Chinese food. Both restaurants are excellent.
  - Nationalities Hotel (Minzu Fandian), next to the Nationalities Cultural Palace (one of the architectural wonders of 1958) which include The Great Hall of the People, Revolutionary Museum, National Gallery and Agricultural Exhibition Hall.
  - Qian men - in the old shopping area by that name, not far from the area for antiques, Liulichang.
  - Peace Hotel - just north of the Capital Hospital.
- Some of China's most comfortable hotels are the formerly foreign-owned ones, still completely preserved by the Peoples's Government.
- In Shanghai: VIP visitors often stay at the Jinjiang Hotel, away from the downtown (the old Cathay mansions). Others stay at the Peace Hotel on the Bund (where you can have an excellent chocolate sundae on the top floor restaurant); the Shanghai Mansions, once the tallest building in China - on the other side of Soochow Creek; the Jiang An Hotel (formerly the Haig Apartments) and the International Hotel.
- In Shen yang (formerly Mukden), capital of Liaoning in the Northeast (formerly Manchuria), the tourist hotel was once the Mukden Railway Hotel, with wide corridors, high ceilings and a marble lobby; an interesting landmark. Among the relics of those days are billiard tables which have been preserved by a caretaker whose tenure also dates from the 1940's. VIP visitors are housed in a guest house Northeast of the city.
- Xian (Sian) (Shaanxi Province) has one huge hotel near the shopping district (Renmin Daxia), built in a grotesque Stalinist-cum-traditional Chinese style, and another smaller guest house on the outskirts of town (The Xian Hotel).
- Nanjing (Nanking) (Jiangsu) - the Nanjing Hotel is renowned for its quiet setting amidst a rose garden and its service. Some of its rooms are air conditioned.
- Suzhou (Soochow) - the Grand Hotel is also set in a garden just a few minutes walk from the Grand Canal.

- Hangzhou (Hangchow) - has three hotels serving foreigners, all of which overlook the lake and are excellent spots for strolling, although they are at some distance from the centre of town. The food is excellent.
- Guangzhou (Canton) - most foreigners stay at the "Dong Fang Hotel" - across from the complex housing the China Export Commodities Fair. It accommodates several thousand of those who come each year (April 15 - May 15) (October 15 - November 15) to the Canton Trade Fair. This hotel has a newer 11-storey wing and an older eight storey structure. There is a dining room in each of the structures, shops, post offices, and a large bar, the "Purple Cockatoo". Maxims, a Hong Kong restaurant chain, also operates a coffee shop/restaurant in which payment must be made in foreign currency.
- There is also a Guangzhou Fair Liaison Office to assist businessmen with their appointments.
- The White Cloud (Bai Yun) Guest House, a new multi-storied structure is also often used to house foreign visitors. Visitors of Chinese descent are often lodged in the Overseas Chinese Hotel in the centre of the city.

#### Water

Boiled water is provided in hotel rooms and hot (boiling) water is available almost everywhere. It is not advisable to drink the tap water.

#### Medical Care

- Medical care is provided in Chinese hospitals for those foreign guests who unexpectedly fall ill. You can expect to be treated well, according to Western medical practice, and can try Chinese medicine if appropriate and if you so wish. However, those with serious problems are usually encouraged by the Chinese to return home for treatment, an advice with which we usually concur.
- In serious cases, it is advisable to contact the Canadian Embassy for assistance.
- Chinese do not have RH negative blood and do not stock it. Visitors with RH negative blood should be prepared to tell physicians should problems arise.
- Given the climate in North China, colds and coughs are common in winter. Visitors travelling at this time might wish to take favourite cold medicine and cough lozenges along.
- In summer especially, diarrhoea is not infrequent, so take along a remedy suggested by your doctor.

**NOTE:** - if you are examined by a Chinese doctor Chinese generally consider "high" blood pressure at a level considered normal in Canada. If you have had your blood pressure read recently you might want to jot it down for reference.

### Shopping

- In most cities you will be taken to the Friendship Store - a store reserved for foreigners selling export quality goods as well as antiques, carpets and jewellery. There are also special antique stores which sell various antiques and curios (none more than 200 years old). Make sure you keep the red seal on the item and your receipt with you for antiques you have purchased, otherwise you will not be allowed to take them out of the country. In some cities you can also arrange for things to be shipped home.
- For simpler native crafts there are handicraft stores. You might want to wander about the streets and pick them out yourself, but it is best to have a Chinese speaker with you. Otherwise transactions might prove difficult.
- Shanghai and Peking have special shops for old books. Peking's is on Liulichang where most of the antique shops are located, and Shanghai's is on Fuzhou lu. Ask your guide in each city to show you handicraft stores or fan shops.
- Some good buys:
  - Rubbings are inexpensive and take up little space, and make excellent buys.
  - Scrolls - usually copies of paintings - are inexpensive but good copies of famous paintings or good originals are expensive.
  - Silk - usually an excellent buy but you will need to have your guide with you to buy cotton, as this is rationed. Cotton coupons are not required for purchases made in Friendship Stores, however.
  - Furs, fur hats - especially good buy.
  - Porcelain - a good buy if you can find a way of shipping it home.

**NOTE:** - You might want to check with Canadian customs before you leave on your trip to determine what kind of goods you may bring back. A brochure entitled "I Declare" is available at all Canada Customs offices.

Some Books to Read

- There are many excellent books about China you might like to read now or take with you. Here are just a few:
- Edgar Snow Red Star Over China, Random, NY 1938. (4th edition 1975). A standard work on the rise of Communism in China, written in the late 1930's by the first Western correspondent to reach the "Red" areas.
- William Hinton's Fanshen (available in paperback). Takes you to a village in North China in the late 40's and gives an excellent worm's-eye view of the Chinese revolution.
- Stuart Schram's Mao Unrehearsed (in Penguin paperback) is a collection of unofficial versions of some of Mao's speeches published during the Cultural Revolution, in a very readable volume which captures Mao's wit as well as his political style.
- David & Nancy Milton's The Wind will not Subside. The Cultural Revolution viewed by two Americans who were in Peking at that time, and gives a picture of the passions which have ruled China's recent past.
- Jan Myrdal's Report from a Chinese Village shows a remote and rural China, with many of personalities in it from a village in North Shensi in 1960.
- Ross Terrill's The 800 Million (1972) is a well-written general work about China, while his Flowers on an Iron Tree (1975) is an interesting look at five cities in China.
- Han Su-yin's trilogy the Crippled Tree, Birdless Summer, and A Mortal Flower, is an account of modern Chinese history as seen through the personal experiences of Han Suyin.
- Orville Schell, In the People's Republic, New York, 1977 - A portrait of China by a young American who lived and worked in China for two months in 1976.
- None of these books is an academic treatise, and all were chosen as possible pillow companions for your trip. Those who wish a more complete guide to China should buy or borrow Nagel's Encyclopedia Guide to China, a book truly encyclopedic in its detail on China's history and places of interest. Somewhat outdated (not much revised since 1965) it is still unexcelled and includes maps of every city you might possibly visit.
- (Odile Cail) Fodor's Guide to Peking contains much useful information for those who will be in Peking for more than a few days, including most of Peking's better restaurants.

- Ruth Lor Malloy's Travel Guide to the People's Republic of China, Morrow, NY, 1975 contains much general information about travelling in China. It is an excellent book, but is now a little dated.
- Arne J. de Keijzer and Frederic Kaplan's The China Guidebook 1979/80, Lippincott, 1979 and Fodor's Guide to the People's Republic of China, 1979 are the most recent publications dealing with travel to and within China.

Three books of historical interest offer a Canadian perspective on China:

- Frederick Nossal's Dateline Peking, Toronto, 1962 was written by the correspondent who opened the Globe and Mail bureau in Peking in 1959. At that time, the Globe and Mail was one of only four Western News Agencies or journals to be represented in China.
- Jacques Hébert and P.E. Trudeau, Two Innocents in China (trans. from French by I.M. Owen) Toronto, 1968. An account of an extended tour of China made by the authors in 1960.
- Chester Ronning, A Memoir of China in Revolution, New York, 1974. A personal account of the more than quarter century spent in China by Chester Ronning. Ronning, born of missionary parents was Chargé of the Canadian Embassy in Nanking at the time of the fall of the Nationalist régime in 1949.

Northern Asia Division  
 Department of External Affairs  
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UNCLASSIFIED

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CHINA - GOVERNMENT AND PARTY ORGANIZATIONS

The dominant political power in China is the Chinese Communist Party. Its theoretical governing body is a Congress of Party delegates held approximately every four years. A Party Congress elects a Central Committee of between 150 and 200 members, plus alternates. The Central Committee meets in full plenum once or twice a year. The 11th Congress was held in July 1977 and the Central Committee has met in full plenum five times since then. The Sixth Plenum is expected shortly. The Central Committee nominally elects the Party's key organs of power. The Chairman of the Central Committee is the head of the Party. Pending his expected demotion at the forthcoming plenum, Hua Guofeng remains Chairman. There are four Vice Chairmen, including Deng Xiaoping, like the Chairman elected by the Central Committee. The Central Committee, secondly, elects a Political Bureau (or Politburo) of about 25 members, who constitute the most powerful organ of power in the country, and a Politburo Standing Committee from among Politburo members. The Standing Committee currently consists of seven leaders: the Chairman, the four Vice Chairmen, the General Secretary and the Premier. Finally, the Central Committee elects a Secretariat, consisting of a General Secretary and about one dozen Secretaries who are primarily the heads of departments of the bureaucracy which falls under the Central Committee. The General Secretary is Hu Yaobang, a long time protégé of Deng Xiaoping.

The governmental apparatus has a similar structure. Its nominal parliament, the National People's Congress (NPC), is elected once every five years and holds one annual session. The current NPC is the 5th and it has met three times in full session since 1978. It elects a Standing Committee of about 175 which meets more frequently to approve appointments and government policies and which has some law-making powers. At the same time, the NPC elects a Chairman, Vice Chairmen and a Secretary-General of the Standing Committee. Since abolition in 1975 of the separate head of state office, that of the "Chairman of the People's Republic of China" (once Liu Shaoqi), the Chairman of the Standing Committee of the NPC has exercised head of state functions. The incumbent is the 81-year old Ye Jianying, former Marshall and ex-Minister of Defence.

Executive authority is vested in a State Council, China's "Cabinet", headed by a Premier (currently Deng supporter Zhào Ziyang). There are usually close to one dozen Vice Premiers, having responsibility to coordinate the work of several ministries each, and roughly another thirty Ministers heading government ministries.

China is a centralized unitary state but for administrative purposes it is divided into 21 provinces, five autonomous regions (where minority nationalities make up a large proportion of the population, for example, Inner Mongolia and Tibet) and three autonomous municipalities with provincial status (Beijing (Peking), Tianjin (Tientsin) and Guangzhou (Canton)). Province-level administrations have parallel Party and governmental organizations like those at the central level. The Party head is a First Secretary. The provincial government leader is a Governor (Chairman of the People's Government in autonomous regions and Mayor in autonomous municipalities).

One other body of a quasi-parliamentary character is the Chinese People's Political Consultative Conference (CPPCC). It is a "united front" body bringing together communist and (largely pre-1949) non-communist parties and its main purpose is to mobilize support for government policies among non-communists. The Chairman of this organization is Deng Xiaoping.

CONFIDENTIAL

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CHINA - RECENT INTERNAL POLITICAL DEVELOPMENTS

With the death of Chairman Mao Zedong in September 1976 and the fall of the radical "Gang of Four" soon after, China began a process of extensive policy re-orientation. Amidst a series of not always coherent transformations of political and economic approach, there has been a distinct shift from the leftist tendencies of Mao's later years to more pragmatic policies.

The first great policy initiative of the post-Mao leadership was the so-called "Four Modernizations" unveiled in February 1978, an ambitious plan to modernize China's economy by the end of this century. Targets proved too ambitious and the resulting imbalances led to a policy of "readjustment" a year later, putting primary emphasis on the rural economy and light industry and scaling down some larger projects, chiefly in the heavy industry sector, which had been planned or begun. An economic "reform" package, involving decentralization of decision-making to enterprises among other initiatives, has been discussed but the current trend is to settle into long-term readjustment and maintain considerable central financial control.

The post-Mao leadership has followed similarly see-saw policies in political reform. Experiments with freer speech were undertaken, then terminated. Electoral reform at the local level, involving a choice of candidates by having more on the slate than there are offices to be filled, has been implemented, although nomination practices are closely vetted by the Communist Party. Establishment of written criminal and civil codes of law has been a landmark development. Despite shortcomings in Chinese legal practices assessed against Western standards, this development will effect some improvement in the legal protections available to ordinary Chinese. Finally, the post-Mao regime has carried out a policy of relative relaxation in China's cultural, social and intellectual life, abandoning many of the more rigid and extreme trappings of Maoism.

Developments within the leadership since 1976 in large measure are the story of Deng Xiaoping's relentless rise to ascendancy. The initial post-Mao leadership was a coalition led by Chairman Hua Guofeng and including veteran bureaucratic and military figures, a Maoist wing and, eventually, Deng, rehabilitated for the second time in four years after periods of disgrace. Successively, Deng turned around several key policy priorities in December 1978; obtained the elevation of aging economic adviser Chen Yun, who has headed "readjustment" efforts; demoted and by March 1980 purged from the Politburo its Maoist wing; at the same time re-established the Party Secretariat under his key protégé, General Secretary Hu Yaobang; replaced Hua Guofeng as Premier in September 1980 by another protégé, Zhao Ziyang; and in late November obtained Politburo approval for Hua's removal from the chairmanships of the Party and the Party's Military Affairs Commission. Deng has apparently assumed responsibility for the latter himself while nominating Hu as the new Party Chairman. A new Defence Minister appointed in March 1981, Geng Biao, appears to be an ally of Deng.

Deng's ascendancy, breaking compacts governing his return to power in 1977, has sent shock-waves through groups hostile to him, especially parts of the army which continue to venerate Mao and left-leaning lower and middle echelons of the Party. His takeover, accordingly, still awaits the blessing of a Central Committee plenum; much delayed but possibly on track for April. Resistance has also led him to make a number of policy compromises to re-establish a Party consensus; these involve economic policy, stricter control of dissident elements and more lenient treatment of leftist cadres, withdrawing for the time being the threat of a purge.

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CHINA'S ECONOMY

Since 1976, economic policy in China has moved through three fairly distinct phases.

Beginning in 1977, China embarked on its "four modernizations" program. In early 1978, an ambitious program of development involving 120 major capital projects was unveiled, with the focus on large centrally-controlled enterprises and the setting of high targets, including the doubling of steel production by 1985. Foreign inputs in such projects promised to be high. At the same time China indicated for the first time its willingness to accept direct foreign credits and by mid 1979 it had begun to accept development assistance.

The "China trade euphoria" was punctured by the postponement in February 1979 of a number of contracts for imports of capital equipment, primarily because of a shortage of foreign exchange and a lack of coordination in accepting foreign credits. In June 1979 China officially announced a policy of "economic readjustment", reversing the emphasis on heavy industry, and calling instead for agricultural development to take top priority. As well, the revised five year plan focused on light industry, energy and infrastructure. Foreign technology and equipment was still expected to play a major role in modernizing these sectors.

Other economic measures involved reforming the system of economic management, a highly-centralized state-planning system modelled largely on the Soviet-type model current in the 1950s. During 1979 and 1980 the Province of Sichuan, under Zhao Ziyang who became Chinese premier in September 1980, became a laboratory where greater financial and managerial autonomy was given to a number of local enterprises. Economic reforms involved competition for profits, allowing market forces a role in setting prices and increasing autonomy for local enterprises to deal directly with foreign suppliers and customers.

Despite readjustment and reform, Chinese hopes for rapid economic recovery have not materialized. By September 1980, large deficits for 1979 were revealed in government expenditure and foreign trade (\$2 billion, cut to \$500 million in 1980). Immediately thereafter, came the abrupt cancellation of the \$250 million trade centre in Peking. In October the second phase of the Baoshan Steel Mill, being built in conjunction with Japanese interests, was postponed indefinitely and since then a number of other major foreign contracts have been cancelled. At the same time, China has effected an internal currency devaluation which is intended to regulate the process of too-rapid modernization by dampening the demand within China for imported products, while giving a boost to exports. Finally, there are clear indications that the decentralization of economic decision-making will be checked somewhat and coordinated more closely by the central organs.

After a series of high-level meetings at which economic policy has been closely re-examined, the official press early in 1981 called for a policy of a "further readjustment" mainly by reducing the scale of capital construction, tightening expenditures and reducing deficits. To combat inflation (unofficially estimated at 7-10% annually) price-controls enforced by the central authorities are to be re-imposed. Local initiatives will be more closely scrutinized to ensure they conform to national economic priorities.

For foreign trading partners, this third phase of "further readjustment" has led to reduced expectations. Capital projects and joint ventures have been dealt a major setback. China's reluctance to use foreign credit on infrastructure items that cannot be traded on a compensation basis further adds to problems of dealing with China. It appears that until at least 1985 China will move slowly and carefully in economic development and foreign trade. Although prospects still appear good for increased commodity trade, in the capital goods sector at least, selling to China will continue to be a long-term investment.

SELECTED INFORMATION

	<u>CHINA</u>	<u>CANADA</u>
<u>Area (km<sup>2</sup>):</u>	9,596,961	9,976,189
<u>Population (million):</u>	960	23.1
<u>Density (inhabitants/km<sup>2</sup>):</u>	88.3	2.3
<u>Education (1978/79) (number of students):</u>		
Primary:	146,240,000	3,455,608
Secondary:	65,480,000	1,820,620
Vocational	880,000	
Higher	850,000	616,795
<u>Finance:</u>		
Gross National	1.22 Yuan = US \$1 US 346 Billion	Can \$1.16 = US \$1 US 199 Billion
Gold and Foreign Exchange	US 2.5 Billion	US 3.7 Billion
<u>Foreign Trade (1978):</u>		
<u>Imports (Billion):</u>		
Japan	US 15.4 30%	US 45 USA 71%
West Germany	10%	Japan 5%
USA	8%	
Australia	5%	
North Korea	5%	
<u>Exports (Billion):</u>		
Food (fruits, vegetables, meat & products, cereals):	US 13.7 30%	US 47.197 24%
Textiles and clothing:	29%	7%
Crude oil	15%	6%
Motor vehicles		6%
Machinery		6%
Non-ferrous metals		6%
Timber		5%
Newsprint		5%
Chemicals		5%
Cereals		5%
Metal ores		5%
<u>Destination:</u>		
Hong Kong	20%	US 70%
Japan	19%	Japan 6%
North Korea	6%	

	<u>CHINA</u>	<u>CANADA</u>
<u>Transport &amp; Communication (1978):</u>		
Roads (km)	890,000	972,000
Motor vehicles (1976)		
Passenger car	50,000	9,016,300
Commercial	1,044,000	2,266,400
Railways (km)	50,000	69,967 (1977)
Passenger (km) (million)	45,670	2,660
Ton (km) (million)	530,300	200,900
Air Traffic		
Passenger (km) (million)	1,500,000	25,967
Ton (km) (million)	97,000	675,800
Inland Waterways (km)	136,000	
Telephones (Dec./77) (million)	5	14.5
Radio Receivers (million)	45	23.9
TV (million)	1	9.9
<u>Agriculture (in 1,000 metric tons) (1978):</u>		
Rice	160,000	
Corn	40,000	4,215
Wheat	53,000	21,146
Barley	20,000	10,387
Oats		3,621
Rye		605
Millet	25,000	
Potatoes	42,000	2,453 (FAO-1978)
Tomatoes		508
Beetroot	2,702	57
Dry peas	5,000	80 (FAO-1978)
Soybeans	13,000	512
Peanuts	2,800	
Rapeseed	1,400	3,357
Linseed		533
Sugar	3,500	Sugarbeets 112
Tobacco	950	155
Tea	268	
Apples		453
Cotton	2,167	
Jute	1,088	
Milk	4,700	7,600 (FAO-1978)
Beef and Buffalo Meat	2,200	Beef 1,179
Veal		1,040
Pork	14,000	615
Fish	4,660	1,280
<u>Livestock (in 1,000)</u>		
Horses	6,500	345
Asses	11,500	
Cattle, Buffalo	93,890	12,877
Sheep	169,940	392
Pigs	301,290	6,714
Goats	70,000	
Chickens	1,370,000	77,068

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	<u>CHINA</u>	<u>CANADA</u>
<u>Forestry:</u>		
Forest land (million ha)	258	323
Round wood (million m <sup>3</sup> )	250	122
<u>Industry (in 1,000 metric tons - 1978):</u>		
Coal & Lignite	618,000	34,602
Crude Oil	104,050	64,275
Natural Gas (m <sup>3</sup> )		7,200,000
Electricity (kwhr)	256,550,000	335,708,000
Iron Ore	40,000	41,942
Pig Iron	34,790	10,338
Crude Steel	31,780	14,898
Bauxite	1,100	34
Aluminum	200	508
Copper	200	366
Nickel		127
Lead	100	366
Zinc	100	1,245
Mangnesite	1,000	38
Manganese Ore	300	Mn metal 1
Tungsten	12	
Uranium		9
Asbestos		1,422
Gold (Troy oz.)		1,606
Silver (Troy oz.)		40,168
Cement	65,240	10,443
Sulfuric Acid	6,610	3,140
Plastics	679	701
Fertilizers	8,693	2,199
Soda Ash	1,329	60
Caustic Soda	1,640	30
Cotton Yarn	2,380	
Cotton Fabrics (m)	11,029,000	
Man-made Fibres	285	17
Wood Pulp		19,018
Newsprint		8,811
Other Papers & Paperboard	4,390	3,455
Motor Vehicles (units)	149	1,818

N.B. - Information is based on the Encyclopedia Britannica, 1979, FAO Production Yearbook, Vol. 32, 1978, and Statistics Canada Publications, 1978.

OS:ef  
Dec. 1/80.

China's Production of Major Wood Products (1979)\*

Commercial forest volume:	9,500 million m <sup>3</sup>
Roundwood harvested:	54,390,000 m <sup>3</sup> (0.56%)
Sawn timber:	10,000,000 m <sup>3</sup>
Wood-based panels:	600,000 m <sup>3</sup>
Wood pulp (1978):	2 million tons
Newsprint (1978):	500,000 tons

Exports (1978)

Industrial roundwood:	38,000 m <sup>3</sup>
Sawn timber:	216 m <sup>3</sup>
Plywood:	1,240 m <sup>3</sup>

Imports (1978)

Industrial roundwood:	7,600,000 m <sup>3</sup>
Sawn timber:	54,000 m <sup>3</sup>
Plywood:	13,000 m <sup>3</sup>
Wood pulp (1978):	> 100,000 tons
Newsprint (1978):	> 100,000 tons

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March 27, 1981

CHINESE FOREIGN POLICY

A cornerstone of China's foreign policy remains opposition to what the Chinese call "Soviet hegemonism". They view Soviet activities in Asia as an attempt to surround and isolate China. The two most evident manifestations of the Soviet "pincer" from the Chinese point of view are Afghanistan and Vietnam. The slight prospects that Sino-Soviet state relations might have been somewhat improved through bilateral talks were forestalled by the Chinese reaction to the Soviet invasion of Afghanistan. Relations with Vietnam continue to be strained as China maintains support for anti-Vietnamese guerrilla groups in Kampuchea and because of tension on the China-Vietnam border. The Chinese have threatened to repeat the limited invasion of Vietnam that took place in early 1979 if the situation so merits. They are, however, unlikely to take such a step except in the event of extreme Vietnamese action (such as a full-scale invasion of Thailand). More generally, the Chinese seek to counter Soviet initiatives in other parts of the world.

Relations with the West, which underwent modification in the early 1970s as China ended its period of almost total isolation, have strengthened considerably in the past few years. A Treaty of Peace and Friendship was signed with Japan in 1978 and agreement on the establishment of diplomatic relations with the United States was reached the same year. China has expanded its contacts with the Western world on all levels, from visits to Europe, Japan and the United States by government leaders to the placement of thousands of Chinese scholars in Western universities. Increasing ties with the West in the form of economic and technical cooperation, financing and air-links have been matched by a growing interest in multilateral institutions, particularly those in a position to respond to China's development needs. China recently, for example, joined the IMF and IBRD. China has stressed that the development of its relations with the West is a strategic, long-term policy. They serve to foster modernization while acting as a counterweight to the threat posed by the Soviet Union.

Taiwan remains a sensitive area in Chinese foreign policy considerations. In agreeing to the establishment of diplomatic relations with the United States, the P.R.C. made several concessions in its Taiwan policy, including willingness not to make an American suspension of arms sales to Taiwan a condition for establishing relations (although it continues to oppose these sales). Chinese policy on eventual reunification with Taiwan remains unchanged, but China's previous confrontational policy has been modified considerably. Although the P.R.C. now openly tolerates private contacts by foreigners with both Taiwan and the mainland, it remains as vigilant as ever concerning government-to-government contact and firmly opposes any actions which might imply a "two-China" policy. China's concerns in this area were recently heightened by candidate Reagan's campaign remarks about an official relationship between the United States and Taiwan and by the decision of the Netherlands Government to permit a sale of submarines to Taiwan. Although it remains suspicious of American policy, China has been somewhat reassured by President Reagan's behaviour in office. On the other hand, it has reacted to the Dutch sale by withdrawing its Ambassador and sending the Dutch Ambassador home, as well as cutting back on bilateral programs, including trade.

China considers itself a part of the developing world, and as such has taken a strong interest in promoting relations with "Third World" countries, particularly those with an anti-Soviet leaning. In the past, the P.R.C. made substantial contributions in the field of foreign aid, particularly in Africa, but the need for resources at home has led to a cut-back in such aid. Nonetheless China continues to promote the view of developing countries in such fora as the North/South dialogue, and to counter Soviet influence among the non-aligned states. In this regard, China recently made some effort to improve its relations with India in the wake of Indian concerns over Afghanistan, although without notable success. China has been invited to the North/South summit to be held in Mexico in October 1981.

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A NOTE ON CHINESE ROMANIZATION

China inaugurated in the 1950's a new system of Romanization called pin yin, which is used to teach phonetics of the language. Within the last few years, this system has been applied to names and some understandable confusion has arisen among foreign readers. Most sounds in pin yin are similar to their counterparts in English or French. The following are sounds which raise difficulties:

<u>Pinyin</u>	<u>English Equivalent</u>
c	'ts' in 's <u>ats</u> '
q	'ch' in 'c <u>hip</u> '
x	halfway between 's' and 'sh'
z	'dz' or 'ds' in 'c <u>ards</u> '
zh	'j' in 'j <u>ump</u> '
ao	'ow' in 'n <u>ow</u> '
ai	'ai' in 'a <u>isle</u> '
ei	'ei' in 'f <u>reight</u> '
ou	'ou' in 'y <u>ou</u> '

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Canada/China Relations

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Northeast Asian Division  
Department of External Affairs  
April 1980

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## Survey of Relations

### CANADA AND THE PEOPLE'S REPUBLIC OF CHINA

The increasing involvement of the People's Republic of China, following the Cultural Revolution, in contemporary international affairs is one of the most significant factors influencing international politics today. The 1970 review of Canada's external relations, Foreign Policy for Canadians, expressed "the hope that Canada would be able to make a contribution towards bringing China into a more constructive relationship with the world community". Canada's establishment of diplomatic relations with the People's Republic of China in 1970, our part in the assumption by Peking of China's seat in the United Nations, and the vigorous program of exchanges carried out over the past several years has been a contributing factor in the emergence of China from its earlier isolation.

While it is impossible to determine the exact measure of Canada's contribution to China's decision to become a major and responsible actor in international affairs, Canada's role can be considered a distinctive and important accomplishment of contemporary Canadian foreign policy. A remarkable degree of confidence has been established between the two countries given the limits that history, geography and differing political viewpoints impose.

#### (1) Relations Prior to 1970

Canadian missionaries and merchants provided Canada's earliest contacts with China in the late 19th century. In 1906 the Canadian Government opened a Commercial Office in Shanghai. Although a Chinese Consulate General was established in Ottawa, with offices in Vancouver, Toronto and Winnipeg, prior to 1909, an ambassadorial exchange was not agreed upon until 1941. It was not until April 1943 that a Canadian legation was established in China.

In April 1949 the People's Liberation Army entered the capital of the Nationalist Government, Nanjing. The Canadian Embassy in Nanjing closed in 1951 and the Canadian Consulate in Shanghai in 1952. This marked the end of Canada's old relationship with China.

During the following two decades Canada maintained no official relations with the People's Republic of China. The "Republic of China" maintained an embassy in Ottawa, but Canada as a matter of policy did not reciprocate in Taipei. While it was clear that the Peking Government was in effective control of the mainland and therefore met the classic test for recognition, the atmosphere of bitterness which followed the outbreak of hostilities in Korea in 1950, and the fact that the authorities on Taiwan and the Peking

Government both claimed to be the sole legal government of China, presented serious obstacles to successive Canadian Governments wishing to establish official relations with the People's Republic of China.

After 1960, China emerged as a major market for Canadian wheat despite opposition to sales to "Red China" in some quarters. Neither did contacts cease on a personal level: the list of Canadians visiting China between 1949 and 1970 includes Prime Minister Trudeau who visited China in 1960. The mystery of China continued to fascinate Canadians despite the lack of diplomatic relations.

## (2) Establishment of Diplomatic Relations

In 1968, Prime Minister Trudeau pledged, if elected, to review Canada's China policy and to initiate discussions with the People's Republic of China on the establishment of diplomatic relations. This decision reflected not only changed public perceptions of the China-recognition issue, but an interest in strengthening relations with the countries of Asia.

Talks between Canada and China, which began in Stockholm in February 1969, culminated in the joint communiqué of October 13, 1970. The primary stumbling block during the twenty months of negotiations was the issue of Taiwan. As a result of the negotiations, the Canadian Government recognized the Government of the People's Republic of China, while on the status of Taiwan the communiqué read: "The Chinese Government reaffirms that Taiwan is an inalienable part of the territory of the People's Republic of China. The Canadian Government takes note of this position of the Chinese Government". Canada's position was, and is, that the Canadian Government neither endorses nor challenges the Chinese Government's position regarding the sovereignty of Taiwan. This formula, or one similar to it, has been used since 1970 by many of the countries which followed Canada's lead in establishing relations with Peking.

## (3) The Issue of Taiwan

As a consequence of Canada's agreement to normalize relations with the PRC, diplomatic relations were severed with Taiwan, and all official contacts were terminated. The so-called "Republic of China" (Taiwan) continues to claim that it is the sole legal government of all China, but has suffered increasing diplomatic isolation since 1970. Though Canada has no official contacts with the regime on Taiwan, private trade and "people-to-people" contacts continue between Canadians and Taiwanese.

(4) At the United Nations

In 1966, instead of voting against the annual resolution proposed by Albania in the United Nations, which would have given the China seat to Peking and unseated Taipei, Canada shifted to an abstention. Following the establishment of diplomatic relations, Canada voted, in November 1970, for the seating of the People's Republic of China in the United Nations. Canada continues to support actively the participation of the PRC in governmental and other international organizations.

(5) The Exchange of Ambassadors

In April 1971, the Secretary of State for External Affairs announced the appointment of Ralph Collins as first Ambassador of Canada to the People's Republic of China. Mr. Sharp also announced that the Canadian Government had given agrément to the appointment of Huang Hua, now China's Minister of Foreign Affairs, as China's first Ambassador to Canada. Both Mr. Huang and Mr. Collins are distinguished career diplomats.

Canada's present Ambassador in Peking, Arthur Menzies, former High Commissioner to Malaysia and Australia and Ambassador to NATO, took up his post in October 1976. The present Chinese Ambassador to Canada, Wang Dong arrived in Ottawa in July, 1977. Mr. Wang was China's Ambassador to Sweden from 1969 to 1972, and led the Chinese during the Stockholm talks with Canadian officials that resulted in the establishment of diplomatic relations between Canada and the People's Republic of China in 1970.

(6) Ministerial Visits

During the decade since the establishment of diplomatic relations with China and the exchange of ambassadors, a number of ministerial visits have taken place, starting in the summer of 1971 with an important delegation of Canadian officials and businessmen led by the Honourable Jean-Luc Pépin, the then Minister of Industry, Trade and Commerce. During Mr. Pépin's visit, a framework for Sino-Canadian economic cooperation was established providing for the exchange of missions, trade exhibitions and regular consultation on trade matters. Mr. Pépin also secured agreements from the Chinese to "consider Canada first" as a source of wheat to meet their domestic needs.

In October 1973, Prime Minister Trudeau visited China. During his tour, important bilateral agreements or understandings were reached in such areas as trade, consular affairs (family reunification) and scientific and cultural

exchanges. The agreement on family reunification has made it possible for several thousand Chinese to emigrate to Canada for the purpose of rejoining long-separated relatives.

Significant ministerial visits have taken place in other fields as well, namely foreign affairs (Hon. Mitchell Sharp in 1972 and Honourable Don Jamieson in 1978), petroleum (Hon. Donald McDonald 1973), science and technology (Hon. Jeanne Sauvé 1973), wheat (Hon. Otto Lang 1977), and trade (Hon. Jack Horner, 1979). Ministerial visits are part of an ongoing programme of developing cooperation with China and will continue in a number of fields. On the Chinese side, a number of ministers and vice ministers have visited Canada, including Mr. Huang Hua as Foreign Minister in 1977 and the Minister of Foreign Trade Mr. Li Qiang in October 1979.

(7) Dr. Norman Bethune

One important Canadian figure has formed a continuing link between Canada and China: From January 1938 to November 1939, Dr. Norman Bethune, provided important medical services to the Chinese Eighth Route Army (the precursor of today's People's Liberation Army) in the war with Japan. Dr. Bethune was a prominent thoracic surgeon in Canada and held radical views concerning the organization of medical services, judged by the standards of the time. In 1936 he organized the Canadian Mobile Blood Transfusion Service in Spain during the Civil War. After a brief return to Canada he went to China where he died in 1939 after contracting blood poisoning while performing an operation.

Mao Tse-tung wrote "In Memory of Norman Bethune" after the doctor's death. This tribute became one of the three most commonly read articles in China during the Cultural Revolution of the late 1960's. Consequently, Bethune has become one of the best-known non-Chinese historical figures in China today and Canada is now widely known there as the homeland of Norman Bethune. Dr. Bethune's birthplace in Gravenhurst, Ontario has been purchased and restored by the Federal Government. On August 30, 1976, a Vice-Ministerial delegation from China attended the official opening of Bethune House as an historical site. In 1979 ceremonies were held in China and Canada to mark the fortieth anniversary of the death of Norman Bethune. A Canadian delegation which included two of Dr. Bethune's nieces travelled to China as guests of the Chinese government to take part in the commemorative activities.

(8) Exchange Programmes

Science and Technology

Significant advances have been made in scientific and technological cooperation with the PRC since 1973. Canadian scientific and technological missions have visited China with interests in such fields as agriculture, forestry, geology, fisheries, seismology, metrology, economics, oceanography and veterinary medicine. Chinese delegations to Canada have also covered many fields, for instance, petroleum, seismology, surface coal mining, laser research, forestry, fisheries, permafrost, biological insect control, surveying and mapping, and engineering. Though many fields remain to be explored, important exchanges of information have been facilitated by this programme, which is managed by the Department of External Affairs.

Medicine

Exchanges in the medical area have also been a sector of special interest in Sino-Canadian relations. A delegation from the Canadian Medical Association visited China in 1973, and out of their visit grew a programme of exchange. Under the Bethune Medical Exchange, Chinese doctors have, among other areas, studied neuro-physiology, urology and organ transplantation in Canada while Canadian doctors have studied acupuncture techniques

Culture and Sports

Culture and sports have also been key parts of the large Canada-Chinese exchange programme. Sports exchanges have included competitions in Canada and China by athletes in table tennis, badminton, basketball, swimming, gymnastics, volleyball, hockey and speedskating.

China's cultural contribution to the exchange programme was crowned by the Exhibition of Archaeological Finds of the People's Republic of China at the Royal Ontario Museum in Toronto from August to November 1974.

More recently, the 150 member Shanghai Ballet made a highly successful visit to Canada on its first tour of the West, and in 1979 the Peking Opera troupe played to packed houses across the country.

Canadian culture has also received commendable exposure in China, ranging from exhibitions of Eskimo art, landscape paintings and photography to performances by the Toronto Symphony Orchestra in Peking, Shanghai and Canton, a successful tour by the Canadian Brass Quintet, and workshops

given by noted Canadian dancers Celia Franca, Karen Kain and Frank Augustyn.

### Education

In September, 1973, a bilateral agreement was reached providing for the creation of an academic exchange programme. Since the inauguration of the programme, more than a hundred Canadian students have studied for two year terms in China and a larger number of Chinese students have studied English or French in Canada. Reciprocal exchanges of university professors have taken place, and for the past three years, Canadian teachers of English and French as a second language have worked on short-term assignments in China.

As a result of policy changes in China, greater emphasis has been placed on upgrading skills in the areas of science and technology, and a decision has been made to send abroad for further training large numbers of teachers and researchers. In June 1979, an arrangement was reached with the Chinese Ministry of Education for the placing of Chinese scholars in Canadian universities. (Under the terms of this arrangement, "Scholar" has been defined as a person pursuing research or studies for purposes other than attaining a university degree). The Council of Ministers of Education, of Canada, in cooperation with the provincial education authorities and other federal and provincial agencies was charged with the placement and language evaluation of the scholars in consultation with the academic community.

In addition to the special scholar programme, it was agreed that the Chinese Government could place undergraduates and post graduates in Canadian universities through normal channels. The Chinese Government agreed to facilitate access to Chinese institution of higher learning for Canadian scholars and students. Both sides agreed to encourage closer ties between their respective universities and colleges.

### (9) Trade Relations

In 1979, Sino-Canadian trade stood at \$759 million, composed of \$592 million in exports to China and \$167 million in imports from China. The total trade figures represent a five-fold increase over 1970, the year in which Canada established formal diplomatic relations with the Peking government.

The 1979 figures represent a 25% increase over 1978. Most significant is the increase in Chinese exports to Canada, up by 75.8% over the previous year. Despite this

increase, there is still a large imbalance in bilateral trade in Canada's favour, owing largely to wheat sales. Canadian sales to China have traditionally been dominated by wheat but in recent years there has been a diversification into other primary commodities such as aluminum, nickel, sulphur, potash, forest products, and also manufactured items. In 1979 non-wheat sales to China constituted 31% of the total, as compared to only 3% in 1969. Canada's goal is to preserve our traditional market for grain (a new 3 year agreement was signed in February 1979) while at the same time pursuing opportunities to participate in China's programme of modernization. Prospects appear promising in the capital goods market, where particularly in the fields of agricultural mechanization, resource development (ferrous, non-ferrous, petroleum, forestry) and infrastructure upgrading (energy, communications, transportation), Canada has expertise needed by China.

Commercial relations with China are facilitated by the annual Canada/China Joint Trade Committee, which meets alternately in Ottawa and Peking. Large numbers of commercial delegations are also exchanged. Canadian businessmen also regularly attend the twice annual Chinese Export Commodities Exhibition in Canton.

Recently, efforts have focused on China's drive to modernize, drawing in part on foreign technology and foreign credits. To this end, the Export Development Corporation has concluded an agreement in principle to extend a \$2 billion line of credit to China to support the purchase of Canadian services and equipment. Private Canadian banks have also extended credit to the Bank of China for import financing.

The newly formed Canada-China Trade Council has been constituted to assist Canadian businessmen, both exporters and importers, in doing business with China. Private-sector initiatives in conjunction with ministerial level missions such as that led by the Hon. J. H. Horner in February 1979, and other government supported activities, are part of a continuing effort to expand the commercial relationship between Canada and China.

#### (10) Media

The interest of the Canadian public in China has been promoted by the establishment of a small but active Canadian press community in Peking. At the present time, two of the three resident Canadian correspondents in Asia are based in Peking, one from the Globe and Mail (which has operated a bureau in Peking since 1959) and the other from CTV. The CBC plans to open a bureau in Peking in the near future.

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The New China News Agency has two correspondents in Ottawa.

(11) Conclusion

Although Canada no longer enjoys in Chinese eyes the Special position which immediately followed recognition in 1970, Canada continues to be a country on which China focusses much attention. The positive efforts made by Canada toward bringing China into full participation in the international community, since 1970, and the contributing factors that pre-dated recognition, have created a solid base of goodwill upon which to build. The prospects for future cooperation in trade, political, cultural and other fields are promising as both sides work to expand relations on a basis of mutual respect and benefits.

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CANADA/CHINA RELATIONS: AN OVERVIEW

The increasing involvement of China in contemporary international affairs following the Cultural Revolution is one of the most significant factors influencing international politics today. Canada's establishment of diplomatic relations with the People's Republic of China in 1970, our part in Peking's assumption of China's UN seat, and the vigorous program of exchanges over the past decade have been contributing factors in China's emergence from its earlier isolation. While it is impossible to measure exactly the contribution Canada made to China's decision to become a major and responsible actor on the international scene, it can be considered a distinctive and important accomplishment of contemporary Canadian foreign policy. A remarkable degree of confidence has since been established between the two countries considering the limits imposed by history, geography and differing political viewpoints.

Since 1970, relations between Canada and China have developed across a broad front stimulated by a number of ministerial visits which have established a framework for Sino-Canadian economic cooperation, secured Chinese agreement to "consider Canada first" as a source of wheat for their domestic needs and reached important bilateral agreements or understandings on trade, family reunification, scientific, educational and cultural exchanges. The agreement on family reunification has permitted more than 11,500 Chinese to immigrate to Canada.

These visits promote specific bilateral interests as well as engender goodwill and create greater understanding. Nowhere is this understanding better exemplified than in the exchange program in the fields of science, technology, music, art, sport, dance, medicine and the media. Numerous Chinese groups have toured Canada and Canadian missions have visited China. In February 1978 the Toronto Symphony made a successful visit to Peking, Shanghai and Canton. More recently the Chinese acrobatic troupe toured Canada from coast to coast.

Canadian exports to China in 1980 totalled \$866 million, 60 percent of which was wheat. During the same year Canada imported \$154 million worth of goods from China, chiefly textiles, clothing and food specialities. The large and growing trade surplus in Canada's favour has become a sensitive issue in Sino-Canadian trade relations, particularly in the wake of textile restraints. Official discussions on trade matters are conducted by the Canada/China Joint Trade Committee which meets annually, alternately in Ottawa and Peking. In October 1979 a three-year renewal of the 1973 Trade Agreement was agreed to. In addition, an Economic Cooperation Protocol, which identified specific sectoral areas in which the two sides will concentrate efforts to promote trade, was concluded. These measures, in conjunction with a \$2 billion EDC line of credit to finance the purchase of Canada goods and services, provide the framework for increased Canada-China trade and economic cooperation.

Canada's decision in 1979 to accept a large number of Chinese scholars in Canadian institutions of higher learning has given significant impetus to academic ties and has lent a new dimension to scientific and technological cooperation. There are at present approximately 500 Chinese students and scholars studying at various institutions of higher learning across Canada.

Although in Chinese eyes Canada no longer enjoys the special position which immediately followed our recognition of the PRC in 1970, it continues to be a country on which China focuses much attention. Canadian efforts to bring China into full participation in the international community, plus other factors such as Dr. Norman Bethune's contributions to the Chinese revolution, have created a solid base of goodwill upon which to build. As both sides work to expand relations on a basis of mutual trust and respect the prospects for future cooperation in trade, political and cultural fields are promising.

CANADIAN TRADE WITH CHINA\*

(\$ Millions)

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	<u>EXPORTS</u>	(wheat/percent of exports)	<u>IMPORTS</u>	<u>NET TRADE BALANCE</u>
1965	105	(104/99%)	15	plus 90
1966	185	(185/99%)	21	plus 164
1967	91	(89/98%)	25	plus 66
1968	163	(158/97%)	23	plus 140
1969	123	(120/98%)	27	plus 96
1970	142	(122/86%)	19	plus 123
1971	204	(191/94%)	23	plus 181
1972	261	(254/90%)	48	plus 213
1973	273	(187/69%)	53	plus 220
1974	438	(334/76%)	61	plus 377
1975	376	(307/82%)	56	plus 320
1976	196	(143/73%)	88	plus 108
1977	369	(310/84%)	82	plus 287
1978	503	(347/69%)	95	plus 408
1979	592	(411/69%)	167	plus 424
1980	866	(533/62%)	154	plus 712

\* SC, Trade by Countries, Ottawa

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MAJOR CANADIAN EXPORTS TO CHINA BY COMMODITY  
(Canadian \$ Millions)

	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Food (primarily wheat)	509.6	347.4	411.5	532.8
Aluminum	10.5	90.0	49.1	59.2
Wood Pulp	17.1	17.8	38.1	73.2
Fertilizer Materials	2.5	.9	23.1	47.8
Newsprint	2.5	10.7	23.0	21.4
Sulphur	8.5	8.9	12.0	30.8
Motor Vehicles	-	-	8.6	-
Copper	6.1	8.2	6.7	13.5
Paperboard	0.8	0.8	3.5	8.6
Aircraft	-	2.4	3.1	1.0
Tallow	4.1	2.2	2.7	1.8
Textiles and Related Fibres	4.8	2.2	2.6	1.9
Asbestos	0.1	0.5	2.1	1.0

MAJOR CANADIAN IMPORTS FROM CHINA (1980)

Textiles	105.-
Food (meats, fish, speciality food)	23.1
Minerals	1.7
Chemicals	3.1
Métals	3.9
Machines	1.8
Miscellaneous	12.2

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CHINA/CANADA EXCHANGES IN  
SCIENCE AND TECHNOLOGY

Significant advances have been made in scientific and technological cooperation with the PRC since Madame Sauvé led a delegation of Canadian scientists to China in 1973. Canadian scientific and technological missions have visited China with interests in such fields as agriculture, forestry, fisheries, seismology, metrology, economics, transport, communications, and veterinary medicine. Chinese delegations to Canada have also covered fields as diverse as petroleum, seismology, surface coal mining, laser research, forestry, transportation, fisheries, permafrost, biological insect control, surveying and mapping and engineering.

Scientific and technological exchanges are an important component in our relationship with China. There is considerable interest in the Canadian scientific community in developing new areas of cooperation with the PRC and in gaining increased knowledge about the "state of the art" in China. Science is moreover an urgent priority in the PRC's modernization program and the importance for China of increased SANDT exchanges with the industrialized world was recognized at a National Conference on Science held in Peking in March 1978. Scientific exchanges also complement and promote other Canadian programs, in particular in the fields of general relations, by increasing mutual knowledge and people-to-people contacts, and trade promotion, by exposing visitors to Canada to our expertise in the various fields where Canada has a reputation for excellence.

In this regard, the Chinese have expressed the view that SANDT exchanges play a role in our overall commercial relationship. While China is not at present in a position to sell to Canada as much as it buys, cooperation in Science and Technology goes some way towards establishing a more balanced relationship. Commercial ventures may at times appear more attractive to the Chinese side if they also provide for SANDT cooperation, such as the training of Chinese experts or the exchange of technical information. It has moreover been our experience that Chinese scientific and technical delegations visiting Canada are often attentive to commercial prospects in their field of expertise.

Canadian proposals for exchanges are submitted to the Chinese authorities at the end of each calendar year by our Embassy in Peking. (Inter-departmental meetings were held in March 1980 to explore the desirability of initiating negotiations with the Chinese with a view to signing a formal SANDT agreement. It was the consensus that a formal agreement was not needed and that the existing ad hoc arrangement had worked well and proven sufficient to meet Canadian objectives.) Each side examines the list presented by the other and a bilateral package is thus agreed upon. While trade delegations pay for their own costs, it is the practice for the host country to pay the expenses (except for international travel) incurred by science and technological missions travelling to and from China. Because our scientific community is less integrated than that of a state-controlled economy, Canadian university groups or professional associations which operate under different budgetary conditions than the government have sometimes found this formula prohibitive. The Chinese authorities have however accepted a suggestion made by the Secretary of State for External Affairs in January 1978, that exchanges which do not fall under the official exchange program operate on a self-paying basis.

The present emphasis in the area of SANDT exchanges is to explore new areas of cooperation (such as transport and communications), to send smaller groups for more in-depth scientific discussions, and to facilitate a more regular exchange of information and material between Chinese and Canadian scientists. In 1980 the following exchanges were completed: from China to Canada: Study Group on Dry Grasslands and Animal Husbandry; Satellite Broadcast Technique (as part of the Dept. of Communications/Ministry of Post and Telecommunications Agreement); from Canada to China: Petro-basin Geo-Chemistry; Transportation. Exchanges which had been proposed for 1980 but have not yet taken place are: from China to Canada: Petro-basin Geo-Chemistry; Chinese Academy of Sciences delegation; Fish Toxicology, Transportation, Herbal Medicine; from Canada to China: National Research Council delegation, Pond Fishery; Herbal Medicine; Entomology; and Methane Technology. Of these, Petro-basin Geo-Chemistry and Transportation delegations from the PRC will definitely go forward in 1981. Consideration is still being given to the others. Most recently (Dec. 9-12, 1980) Dr. James Harrison visited China on behalf of the Geological Survey of Canada at the invitation of the PRC Minister of Geology, Sun Daguang who visited Canada in May 1979. Dr. Harrison returned to Peking in February and March 1981 to lead a small United Nations team to discuss policies on the development of energy and mineral resources.

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CANADA/CHINA STUDENT PLACEMENT PROGRAMME

Since 1977 China has followed a policy of seeking to upgrade science and technology. In this context, the Chinese Government announced a world-wide programme to send their students abroad to study in these areas. In August 1978, a request was made by China to place a large number of students in Canadian universities and on June 7, 1979 an arrangement was reached with the Chinese Ministry of Education to further the developments of educational exchanges and cooperation between Canada and the PRC.

The arrangement provided for the placement of Chinese scholars in Canadian universities for the academic year 1979-80. Through an exchange of notes, it was agreed, in July 1980, that the Educational Arrangement should be extended to cover academic year 1980-81. (Under the terms of this arrangement, "scholar" has been defined as a person pursuing research or studies for purposes other than attaining a university degree.) The Council of Ministers of Education, Canada (CMEC), in cooperation with the provincial authorities and other federal and provincial agencies (such as the National Research Council) was charged with the placement and language evaluation of the scholars in consultation with the academic community.

Unless other arrangements were made by the receiving institution, or province, the Chinese Government was responsible for the direct research costs for each scholar's programme. Other costs involved (accommodation, living, travel, personal books and equipment, health insurance and supplementary language training) were also the responsibility of the Chinese Government.

In addition to the special scholar programme, it was agreed that the Chinese Government could place undergraduates and postgraduates in Canadian universities through normal channels. The Chinese Government agreed to facilitate access to Chinese institutions of higher learning for Canadian scholars and students. Both sides agreed to encourage closer ties between their respective universities and colleges.

In the first year following the signing of the arrangement, applications were received from 232 Chinese scholars wishing to study in various fields of science and technology. To date, 197 of these scholars have been placed in Canadian institutions.

For academic year 1980-81, 114 applications from scholars have been received. To date 62 scholars have been placed.

DOCTOR NORMAN BETHUNE

Dr. Norman Bethune occupies a special place in communist Chinese lore and has become a symbol of Canada-China friendship.

Dr. Norman Bethune arrived in China early in 1938. He then proceeded to the battlefield where he met Chairman Mao at his headquarters in Yanan, and joined the revolutionary army in a border area where he was the only fully qualified doctor for 13 million people. In November 1939, while operating on a wounded soldier, he contracted blood poisoning and died.

On learning of his death Chairman Mao wrote an essay in honour of his memory, which is still required reading in China today. Every Chinese knows about the Canadian Doctor "Baiguoh" (Bethune's Chinese name) and Canadian visitors to China are reminded that Bethune, the great "internationalist fighter", created a bridge between the people of both countries. Many visit his grave in Shihjiazhuang south of Peking, where a museum devoted to Bethune and the 800-bed Norman Bethune International Peace Hospital are located.

In China, Bethune is a hero and a legend. In Canada he is a "Canadian of historical significance" and was officially recognized as such in August 1972. A year later the Department of External Affairs acquired his birthplace in Gravenhurst, Ontario and the Norman Bethune Memorial House was officially opened in August 1976 when a Chinese delegation led by the Vice-Minister of Public Health travelled to Canada to attend the opening ceremony. An official Canadian delegation, headed by Dr. William Barootes of Saskatchewan, attended events commemorating the 40th anniversary of Bethune's death in November 1979.

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Scientific Exchanges in Forestry between China and Canada

Background

In September 1973, a Canadian scientific delegation led by the Hon. Jeanne Sauvé, Minister of State for Science and Technology visited China. The Prime Minister visited China that same year and an agreement (informal) was reached on exchanges, including forestry. As a result, a Canadian forestry mission visited China in 1974 and that same year a forestry delegation from China came to Canada.

A subsequent visit to China took place in 1975 by Messrs. Ross Macdonald and Doug Pollard of the CFS. At that time the importance of the exchange of biological material (e.g. seed, parasites, viruses,) was stressed by the Canadians. Not much progress on exchanges occurred in spite of repeated efforts on our side. Some contacts were maintained however with individual scientists on both sides.

By December 1978 the political climate in China had apparently changed and requests for and offers of tree seed were received. In October 1979 a forest fire control delegation visited Canada (leader - LI SHI QUANG - Deputy Director, Protection Bureau, Ministry of Forestry, Peking). Furthermore, a delegation of entomologists visited Canada in June 1980 (leader OIU SHOU SI, Engineer, Protection Bureau, Ministry of Forestry, Peking). A further visit took place in July of 1980 by a group of FAO-sponsored foresters from China to study the management of forest research (leader - TAO DON DAI - Vice President, Chinese Academy of Forestry), while the Deans of the Canadian forestry faculties spent 17 days in China during June and July of 1980 to discuss forestry education issues.

In August of 1980 Ross Macdonald of CFS attended the International Congress of Entomology in Japan and took the opportunity to visit China. In view of the obvious desire by China to open its borders (3 forestry missions to Canada in one year!) and promote further exchanges, CFS took the initiative in suggesting that some kind of formal arrangement be developed between the Ministry of Forestry in Peking and Canada. In cooperation with Internal Affairs a Memorandum of Understanding (MOU) was drafted and discussed by Macdonald with Chinese (forestry) officials and the Canadian embassy in Peking. (~~copy attached~~)

revised by Min Roberts

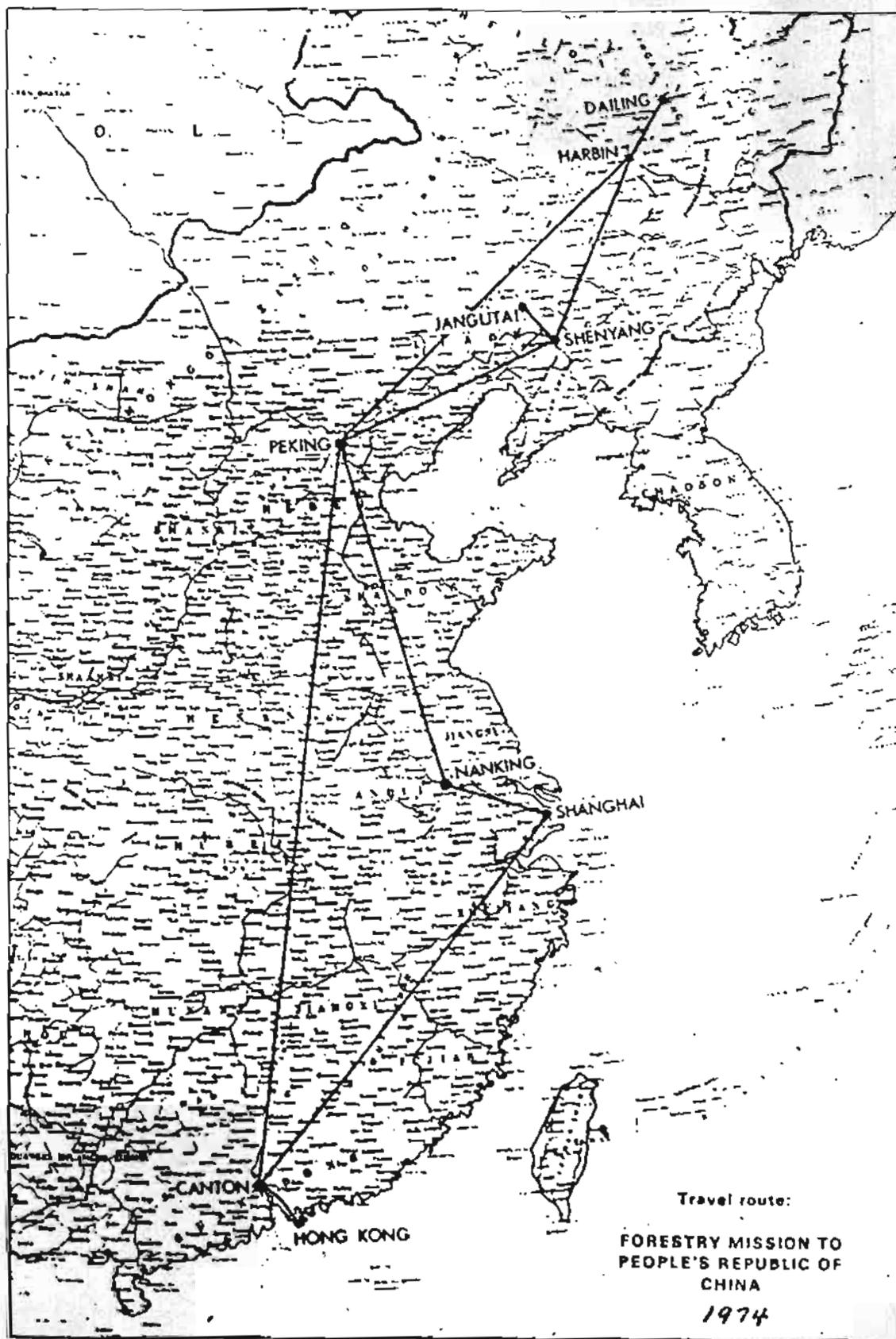
1981

CANADIAN FORESTRY MISSION TO PEOPLE'S REPUBLIC OF CHINA

OCTOBER, 1974

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- Dr. R. J. Bouchier -- Director of Program Coordination & Evaluation,  
(Leader) Canadian Forestry Service, Department of the  
Environment, Ottawa
  
- Dr. R. M. Prentice -- Program Coordination, Forest Protection,  
Canadian Forestry Service, Department of  
the Environment, Ottawa
  
- Dr. D. P. Fowler -- Research Scientist, Maritimes Forest Research  
Centre, Canadian Forestry Service, Department  
of the Environment, Fredericton, New Brunswick
  
- Mr. E. L. Young -- Chief Forester, British Columbia Forest Service,  
Victoria, B. C.
  
- Dr. B. Bernier -- Vice Dean, Faculty of Forestry, University of  
Laval, Québec, P.Q.
  
- Mr. Leif Holt -- Woodlands Manager, Bowaters-Mersey Paper Co.,  
Liverpool, Nova Scotia



Travel route:

FORESTRY MISSION TO  
PEOPLE'S REPUBLIC OF  
CHINA

1974

3. Canada/China Trade - Forest Products

WOOD PRODUCTS

Background:

While Canada does not presently export lumber, plywood or other solid wood products to China, efforts toward establishing trade in these product areas are being encouraged by the Department.

Recent forest products initiatives involving the Department include two incoming Chinese missions within the past year. In July 1979, a six-man technical delegation from the Ministry of Railways spent two weeks examining the Canadian treated wood industry and in February of this year, the Department hosted a senior four-man delegation from the Ministry of Forestry on a comprehensive two week tour of the forest products industry in British Columbia. Talks with the latter mission revealed a serious interest in Canada as a supplier of wood products and forest products processing equipment. Contacts were established between the major companies and the Chinese and since that time considerable communication has been taking place.

As well, within the past year, two other incoming missions concerned with forest protection have been organized by the Department of Environment.

Issues:

The theme raised by the Chinese has been the potential for Canadian/Chinese forest related joint ventures. These were in three forms:

- (1) Canadian capital investment in China usually in the form of a plant which would be run by the Chinese with the payback to Canada in the form of products of the plant. In this regard, preliminary discussions are presently underway between the Chinese Ministry of Forestry and MacMillan Bloedel Ltd. concerning the building of a major forest products complex in China. Mr. C.C. Knudson, Chairman and C.E.O. of this company, reviewed this proposal with the appropriate Chinese authorities during the recent visit to China by the Canada/China Trade Council. Another major Canadian forest products exporter is also represented on this Council.
- (2) Chinese labour and technical input on a Canadian run project in a third country. This possibility is presently being examined by a Canadian forest products consulting engineering group.

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- (1) Offers of supply of Chinese labour for forest products operations in Canada. This issue has been raised by the Chinese on several occasions over the past few months. This presents difficulties in the area of immigration, labour and minimum wage legislation.

Although Canada has been exporting pulp and paper to China for several years, trade in lumber, plywood and other primary wood products is still at the discussion stage. The outlook is encouraging in view of statements of the Chinese that they do not have adequate forest resources and are experiencing difficulty meeting their present requirements. As their economy grows, this shortfall may become more acute and perhaps provide the needed pressure for an allocation of foreign exchange for the import of wood products. The Canadian industry, particularly in British Columbia, is anxious to penetrate the large Chinese market.

#### PULP AND PAPER

Background: Our first major contact with China in the pulp and paper field was established in November 1977 when the Department sponsored a Pulp and Paper Mission to China. The mission concluded that the Chinese pulp and paper mills were generally backward and small, but appropriate to the process. Some reforestation was practised to increase the yield of wood resources which were in short supply.

Since 1977, China embarked on a program of modernization and rapid economic development which increased China's need for pulp and paper products. At this time, B.C. Forest Products Ltd., a west coast pulp and paper company sent a team of engineers to China and helped to improve the efficiency of a Chinese paper mill at Kirin. As a result of rising pulp and paper requirements of the Chinese, the cooperation and active pursuit by officials of Canadian companies and the Department, Canadian pulp and paper exports to China increased from Cdn \$20.2 million in 1977 to Cdn \$64.6 million in 1979; a rise of some 319 per cent in two years while all goods exported from Canada to China rose by 60 per cent in the same period.

China used to purchase pulp and paper products on a short term basis from west coast companies such as MacMillan Bloedel, B.C. Forest Products, Canadian Cellulose and Northwood. However, in part at the persuasion of Canadian officials, China is gradually steering away from spot buying and switching to long term purchase contracts.

Issues:

In early May 1980, two meetings were held between Departmental officials and officials of the Chinese Embassy in Ottawa. We were informed that in the future China would prefer to purchase even more pulp and paper products from Canada including products from Eastern Canadian mills rather than from the Nordic countries. They also hinted at China's interest in entering joint-venture arrangements with Canadian companies to develop the sector in China. The Chinese also approached Canadian government and industry officials with a proposal for a joint-venture pulp project in Canada, using Chinese workers. They were told that such an approach would not be well received in Canada, however the training of some Chinese managerial and technical personnel in Canada may be negotiable.

Two events developed subsequent to these meetings. First, an incoming mission from China in late May and early June 1980 resulted in additional pulp and paper sales to China.

Second, an incoming Chinese mission led by Vice Minister Han Peixin of The Ministry of Light Industry met with officials of the Department in early July 1980 to discuss a variety of trade matters. Amongst them, the joint-venture pulp and paper approach in Canada was raised again by Mr. Han. Besides the difficulty of employing Chinese labor in Canada he was also made aware of the fact that forest matters fall under provincial jurisdiction.

Further, the joint venture issue was raised by the Chinese in the meetings in August with the Vice Premier, Mr. Bo. Subsequently, further discussion ensued with the Minister of State Capital Construction, Mr. Xie Belyi.

FORESTRY TRADE

A Chinese trade delegation sponsored by their Ministry of Light Industries, just returned to China during the week of April 13th, after discussions in Canada regarding a joint venture for a pulp mill in Canada. Industry, Trade and Commerce was the host. (April, 1981)

EXPORTS OF WOOD PRODUCTS BY CANADA TO CHINA\*

Products	Unit	1977		1978		1979		1980	
		Quantity	\$000	Quantity	\$000	Quantity	\$000	Quantity	\$000
Hardwood Logs	m <sup>3</sup>	--	--	21	20	--	--	--	--
Softwood and Hardwood Lumber	m <sup>3</sup>	--	--	130	15	--	--	3,046	501
Veneer	m <sup>2</sup>	--	--	--	--	18,580	8	60,526	40
Plywood	m <sup>3</sup>	--	--	--	--	--	--	2	1
Wood pulp	ton	68,265	17,110	70,533	17,880	103,373	38,144	140,904	73,171
Newsprint	ton	9,525	2,300	33,659	10,670	58,377	23,000	46,404	21,386
Printed paper	ton	--	--	1,996	780	--	--	--	--
Liner board	ton	4,399	832	4,354	790	2,948	750	5,524	2,123
Corrugated board	ton	--	--	--	--	11,793	2,740	22,103	6,468
Waste paper	ton	--	--	--	--	91	11	--	--
<b>Total</b>			<b>20,242</b>		<b>30,155</b>		<b>64,649</b>		<b>103,690</b>

\*From Trade of Canada - Exports Stats Canada #65-202

Future Opportunities

It appears that Canada will maintain a level of about 100,000 tons/year of pulp exports to China, replacing tonnage formerly supplied by Scandinavia. Encouraging signs are evident for future newsprint sales to China, with several three-year contracts signed by Canadian companies. There are also prospects for kraft papers and boards and groundwood printing papers, coated and uncoated grades.

Involvement of International Development Research  
Centre with People's Republic of China

On September 16, 1980, a Memorandum of Understanding was signed between the International Development Research Centre (IDRC) and the State Scientific and Technological Commission of the People's Republic of China.

No specific mention is made of forestry in the Memorandum of Understanding, but this activity would fall within the general interest area of "Agriculture, Food and Nutrition Science" of IDRC.

Under the Memorandum of Understanding, eight possible forestry research projects have been submitted by the Academy of Forestry to IDRC for consideration, as follows:

1. Use of bamboos
2. Shelter forests
3. Tree by-products (e.g., oils, fruits, etc.)
4. Fuelwood supply
5. Soil protection
6. Wood preservation
7. Fast-growing species
8. Fibreboard and panels

Request received for \$2,000,000 funding from the People's Republic of China.

IDRC will concentrate on (1) and (7) for the time being. The Associate Director of IDRC, Giles Lessard, plans to visit China this year (1981).

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NAMES OF RECENT CHINESE FORESTRY VISITORS TO CANADA

Mission (FAO sponsored) on management of forest research,  
July, 1980 (Montreal to Vancouver)

- ✓ Tao Dong Dai - Vice President, Academy of Forestry, Peking
- Liu Yong Liang - Director, Department of Forestry Science,  
Ministry of Forestry, Peking
- ✓ Wang Yung Tao - Chief, Division of Scientific Research,  
Academy of Forestry, Peking
- ✓ He Jinke - Director, Institute of Chemical Industry for  
Forest Products, Academy of Forestry, Peking
- Tang Guangyi - Chief, Division of Forestry Machinery,  
Bureau of Forestry, Sichuan Province
- Lin Shuyi - Deputy Chief, Planning Division, Ministry of  
Forestry
- Zhao Shaoyi - Engineer, Chemical Industry of Forest Products,  
Bureau of Forestry, Guansi Province

Mission by Forest Fire Specialists,  
September, 1979 (New Brunswick to British Columbia)

- Li Shiguang - Director, Forest Protection, Ministry of  
Forestry, Peking
  - Zhou Er Sheng ✓ - Deputy Division Chief, Ministry of Forestry,  
Peking
  - Zheng Huan Neng - Associate Professor, Northeast Forest College,  
Heilongjiang Province
  - Jin Ji Zhong - Engineer, Institute of Forest Protection,  
Heilongjiang Province
  - Cong Guang Sheng - Engineer, Institute of Forest Protection,  
Heilongjiang Province
  - Liu Jian Bei - Interpreter, Bureau of Foreign Affairs,  
Ministry of Forestry, Peking
- .../2

Mission by Forest Entomologists,  
June, 1980 (New Brunswick to British Columbia)

- Qiu Shou Si - Engineer, Department of Forest Protection,  
Ministry of Forestry
- ✓ Chen Chang Fie - Assistant Research, Academy of Forestry
- Sun Xi Lin - Assistant Research, Academy of Forestry (interpreter)
- Xu Shi Duo - Engineer, Southern Forest Plant Quarantine  
Service, Ministry of Forestry

Memorandum of Understanding  
Concerning a Program of Technical Cooperation and Exchange  
in the Field of Forestry

Between

The Minister of Environment Canada

and

The Minister of Forestry of the  
People's Republic of China

MEMORANDUM OF UNDERSTANDING  
CONCERNING A PROGRAM OF COOPERATION AND  
EXCHANGE IN THE FIELD OF FORESTRY

Between

The Minister of the Environment of Canada

And

The Minister of Forestry of the People's Republic of China

In order to promote exchanges and cooperation in the forestry field and in a spirit of friendly cooperation, the Ministry of Forestry of the People's Republic of China and the Department of the Environment of Canada ("the parties" for short below) have come to the following understanding:

I. Based on equality, mutual benefit and reciprocity, the parties agree to carry out exchanges and cooperative activities.

II. The parties have identified the following areas of cooperation and exchange:

1. Forest tree genetics and tree improvement
2. Forest management
3. Forest protection, including forest fire control and biological and chemical control of forest pests
4. Forest harvesting operations and wood processing
5. Forest influence on the environment.

III. The parties agree that cooperation can be effected by:

1. Exchange of information, publications and other relevant documents on forest science and technology
2. Exchange of tree seeds, seedlings, genetic and biological materials
3. Exchange of visits and study groups of scientists, engineers, other specialists, and trainees doing cooperative research
4. Other exchanges of interest to both sides.

IV. The Executing Agencies for the Memorandum of Understanding between the Ministry of Forestry of the People's Republic of China and the Department of the Environment of Canada will be the Department of Foreign Affairs of the Chinese Ministry of Forestry and the Canadian Forestry Service respectively.

V. The parties may identify individuals outside their organizations in the public or private sector to participate in cooperative activities or exchanges in the areas of interest identified in paragraphs II and III.

VI. The Executing Agencies of the parties concerning the program of exchange and cooperation shall discuss and decide the mutual dispatching of study groups including dates, number of persons and duration of stay and any

other related matters through correspondance. If meetings respecting the implementation of this Memorandum of Understanding are required, these can be arranged between the parties by mutual consent.

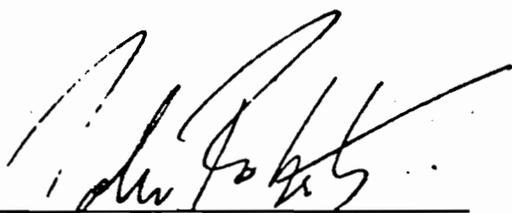
VII. Bearing in mind the general principles of reciprocity each party will provide to the other, as appropriate, its information, publications, documents, tree seeds, seedlings, genetic and biological materials identified in paragraph III. For reciprocal exchanges of delegations, study teams or individuals, the international travelling expenses shall be borne by the sending party and in-country expenses shall be met by the receiving side. However, the number of persons dispatched and the duration of stay (based on man/months) shall be on an equal and reciprocal basis. When the number of persons sent by one party and their duration of stay exceed the reciprocity arrangements, the sending party shall bear all the additional expenses in the host country.

VIII. This Memorandum of Understanding shall take effect upon signature. It shall remain in effect for an initial period of three years. It may be terminated by either party on three months notice to the other. It may also be renewed by mutual consent for an additional period of time to be negotiated.

XI. This Memorandum of Understanding may be amended at any time by mutual consent; any modifications shall be embodied in supplementary arrangements effected through exchanges of letters between the parties to be appended to this Memorandum of Understanding.

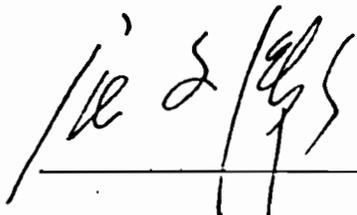
X. This Memorandum of Understanding is signed by the two parties on 28 April, 1981, in Beijing in duplicate in the Chinese, English and French languages, each version being equally authentic.

Minister of the Environment  
of Canada



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Minister of Forestry  
of the People's  
Republic of China



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中华人民共和国林业部长和  
加拿大环境部长  
关于林业交流和合作谅解备忘录

中华人民共和国林业部和加拿大环境部(以下简称双方),本着友好合作精神,为促进林业领域的交流和合作,达成谅解如下:

一、双方同意在平等、互利和互惠的基础上进行交流和合作。

二、双方确认下列交流和合作范围:

- (一) 林木遗传和改良;
- (二) 森林经营;
- (三) 森林保护(包括防火、森林虫害的生物和化学防治);
- (四) 森林采伐作业和林产品加工;
- (五) 森林对环境的影响。

三、双方同意交流和合作可包括下列形式:

(一) 交换林业科学技术资料、出版物和其它有关文献；

(二) 交换林木遗传材料；种子、苗木和生物材料；

(三) 互派代表团、考察组或科学家、工程师和其他专家到对方进行专业参观、考察，互换培训人员，进行合作研究；

(四) 双方同意的其它合作形式。

四、双方各自指定中华人民共和国林业部外事局和加拿大环境部林务局为本谅解备忘录的执行机构。

五、双方可协调非政府机构、公司或个人参加本谅解备忘录第二、三款中规定的交流和合作项目的活动。

六、本谅解备忘录双方执行机构经通信联系，互相协商和确定双方交流和合作项目的内容、互访人数、执行时间、期限和其它有关事宜。必要时，经双方同意可举行会议，磋商执行本谅解备忘录的有关事宜。

七、根据互惠原则，双方各自向对方提供本谅解备忘录第三款中规定的资料、出版物、文献、林木遗传材料、种子、苗木和生物材料；双方互访的代表团、考察组和个人国际旅费由派遣方自理，在接待方境内的费用由接待

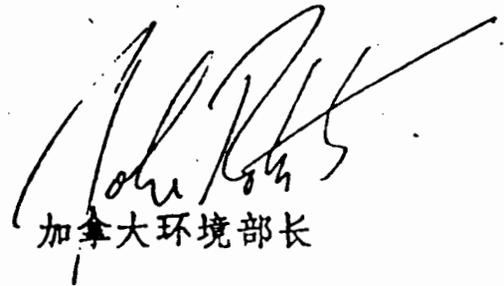
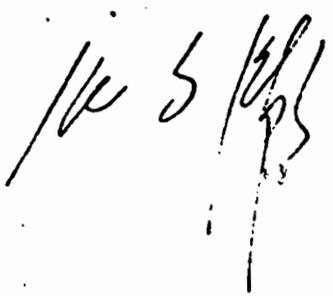
方负担。但是，双方的互访人数和停留期限（按人月计）应大致相等。如在任何一方派出人数和停留期限超出对等安排的情况下，其增加部分在接待方境内的费用由派遣方自理。

八、本谅解备忘录自签字之日起生效，有效期为三年。在有效期内任何一方都有权终止本谅解备忘录，但必须在三个月以前通知对方。期满后，经双方协商亦可延长有效期。

九、本谅解备忘录经双方同意可进行修改，修改内容以通信方式交换意见，经互相确认后，即为本谅解备忘录的附件。

十、本谅解备忘录于一九八一年四月二十八日在北京签订，一式两份，每份都用中文、英文和法文写成，三种文本具有同等效力。

中华人民共和国林业部长



加拿大环境部长

PROCOLE D'ENTENTE  
AU SUJET D'UN PROGRAMME DE COOPERATION  
ET D'ECHANGE DANS LE DOMAINE DE LA FORESTERIE  
ENTRE

LE MINISTRE DE L'ENVIRONNEMENT DU CANADA

ET

LE MINISTRE DES FORETS DE LA REPUBLIQUE POPULAIRE DE CHINE

En vue de promouvoir des échanges et une coopération dans le domaine de la foresterie et dans un esprit de coopération amicale, le Ministère des forêts de la République Populaire de Chine et le Ministère de l'Environnement du Canada (en raccourci ci-après appelés les parties) ont convenu ce qui suit:

I. Dans un climat d'égalité, d'avantage mutuel et de réciprocité, les parties s'entendent pour exécuter des échanges et des activités de nature coopérative.

II. Les parties ont identifié les champs de coopération et d'échanges suivants:

1. la génétique forestière et l'amélioration des arbres;
2. l'aménagement forestier;
3. la protection des forêts, ce qui comprend le combat des incendies forestiers et la lutte biologique et chimique contre les ravageurs des forêts;
4. les opérations d'exploitation forestière et la transformation du bois;

5. les conséquences de l'activité forestière sur le milieu.

III. Les parties conviennent que cette coopération peut être atteinte par:

1. l'échange d'information, de publications et autres documents appropriés sur les sciences et la technologie forestières;
2. l'échange de matériel de semences d'arbres, de semis et autre matériel biologique et génétique;
3. l'échange de groupes de visiteurs et d'étude ou de scientifiques, d'ingénieurs et d'autres spécialistes de même que du personnel en formation travaillant en coopération à des sujets de recherche;
4. l'échange d'autres sujets d'intérêt mutuel aux deux parties.

IV. Les Agences responsables de l'exécution du Protocole d'Entente entre le Ministère des forêts de la République Populaire de Chine et le Ministère de l'Environnement du Canada seront respectivement le Bureau des Affaires extérieures du Ministère chinois des forêts et le Service canadien des forêts.

V. Pour les activités coopératives ou les échanges dans les champs d'intérêts identifiés aux paragraphes II et III, les parties peuvent identifier dans les secteurs publics ou privés des participants externes à leur propre organisation.

VI. Les agences responsables de l'exécution du programme d'échange et de coopération discuteront et décideront par échange de correspondance de l'envoi mutuel de groupes d'études incluant les dates, le nombre de personnes, la durée des visites et toute autre question. Si les rencontres concernant la réalisation de ce Protocole d'Entente étaient requises, elles pourront être organisées entre les parties après consentement mutuel.

VII. Se rappelant les principes généraux de réciprocité, chacune des parties fournira à l'autre aux moments appropriés, l'information, les publications, les documents, les semences d'arbres, les semis et le matériel biologique et génétique, c'est-à-dire ce qui a été identifié au paragraphe III. Pour les échanges réciproques de délégations, de groupes d'études ou d'individus, les dépenses de voyages internationaux seront à la charge de la partie qui envoie et les dépenses à l'intérieur du pays seront à la charge de la partie qui reçoit. Cependant le nombre de personnes envoyées et la durée du séjour (sur la base d'homme/mois) reposeront fondamentalement sur une base d'égalité et de réciprocité. Quand le nombre de personnes envoyées par l'une des parties ou que la durée du stage excède les ententes de réciprocité, la partie qui envoie supportera tous les frais additionnels encourus dans le pays hôte.

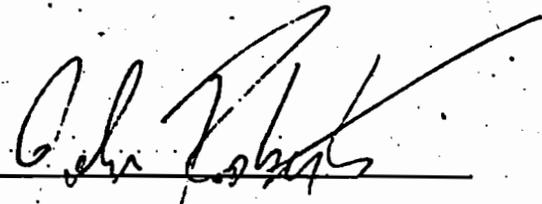
VIII. Ce Protocole d'Entente prendra effet à la signature. Son effet portera d'abord sur une période initiale de trois ans. Chaque partie peut y mettre fin en donnant à l'autre partie un avis de trois mois. Suite à consentement mutuel, il peut aussi être étendu à une période de temps plus longue sujet à négociation.

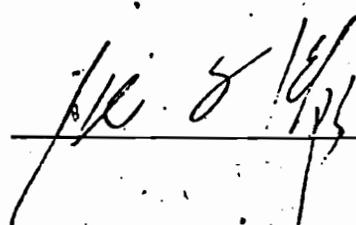
IX. Ce Protocole d'Entente peut être amendé n'importe quand suite à un consentement mutuel; toute modification sera incorporée dans les ententes supplémentaires effectuées par voie d'échange de lettres entre les parties et ajoutée à ce Protocole d'Entente.

X. Ce Protocole d'Entente est signé par les parties le 28 avril 1981, à Beijing, en duplicata en chinois, anglais et français, chacune des versions étant également authentique.

Ministre de l'Environnement  
du Canada.

Ministre de forêts de la  
République populaire de Chine

  
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*mult*

INTRODUCTION

1. The executive agencies for the Memorandum of Understanding between the Department of Environment of Canada and the Minister of Forestry of the People's Republic of China will be the Canadian Forestry Service and the Foreign Affairs Bureau of the Chinese Ministry of Forestry respectively.

Acting in a spirit of friendship and cooperation and recognizing that cooperation in the field of forestry science and technology is to the benefit of both countries, the Parties have come to the following Understanding:

AREAS OF EXCHANGE AND COOPERATION

2. The Parties have identified the following specific areas for cooperation and exchange:

- (a) Forest management including regeneration, stand tending and harvesting operations
- (b) Forest protection including fire control and biological and chemical control of forest pests
- (c) Tree improvement including forest tree seeds
- (d) Environmental issues related to the management of the forest resource

Cooperation to be effected by:

- (e) Exchange of publications and other relevant documents in the public domain
- (f) Exchange of visits by study groups of specialists, research personnel and technicians

OUTSIDE COOPERATION

3. The Parties may identify individuals outside their organization including representatives of other departments or organizations in the public or private sector, to participate in cooperative activities or exchanges in the areas of interest identified in paragraph 2.

CONSULTATIONS AND MEETINGS

4. Bearing in mind the general principles of reciprocity, the Parties will exchange visits and study groups of specialists, research personnel and technicians. The concrete arrangements for the mutual dispatching of study groups including dates, number of persons and duration of stay will be discussed and decided by correspondence through normal diplomatic channels.
5. Consultations between the Parties concerning the programme of exchange and cooperation will be through normal diplomatic channels.
6. If meetings respecting the implementation of this Memorandum of Understanding are required, these can be arranged between the Parties by mutual consent.

FINANCIAL ARRANGEMENTS

7. The receiving country agrees to pay all in-country expenses, provided exchanges of delegations and individuals are on a reciprocal basis, to be settled in advance after annual consultation through diplomatic channels to determine timing, number of persons, and length of visits. If reciprocity is not

FINANCIAL ARRANGEMENTS (Cont.)

possible, the sending party shall pay all its expenses in the country being visited.

In the exchange of material such as publications and biological matter (e.g., tree seed samples), the sending party will pay the necessary costs involved, where reasonable.

RECIPROCAL BENEFITS

8. The Parties will use their best efforts to ensure that China and Canada derive maximum scientific and technological benefits from the programmes of exchange and cooperation in the areas of forestry identified in this Memorandum of Understanding.

ENTRY INTO FORCE, DURATION AND TERMINATION

9. This Memorandum of Understanding will take effect upon signature by duly authorized representatives of the Parties. It will remain in effect for an initial period of three years. Thereafter, it will be renewed by mutual consent for an additional period of time to be negotiated. It may be terminated by either Party on three month's notice to the other.

AMENDMENTS

10. This Memorandum of Understanding may be amended at any time by mutual consent; any modifications will be embodied in supplementary arrangements effected through exchanges of letters between the Parties to be appended to this Memorandum of Understanding.

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SIGNATURE

11. This Memorandum of Understanding, consisting of paragraphs 1 to 11 inclusive has been made in duplicate in the English, French and Chinese languages, each version being equally authentic.

For the Minister of Environment  
Canada:

(Title)

Signed at

Date

For the Minister of Forestry of the  
People's Republic of China:

(Title)

Signed at

Date

FORESTRY OFFICIALS IN PEOPLE'S REPUBLIC OF CHINA

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Ministry of Forestry - Peking

- Yong Wen Tao - Minister of Forestry (appointed September, 1980)
- Zhang Dong Ming - Director, Bureau of Foreign Affairs, Ministry of Forestry. Visited British Columbia in 1979. Discussed draft Memorandum of Understanding with Macdonald in Peking 1980. Sly fox.
- Li Shiguang - Deputy Director, Department of Forest Management, Ministry of Forestry, Peking. Leader of fire delegation to Canada in 1979. Developed close rapport with Ted Young. Is responsible for forest protection and also national parks.
- Zou Erzheng - Deputy Division Chief, Department of Forest Management, Ministry of Forestry, Peking. Member of fire delegation to Canada 1979. Assistant to Li Shiguang.
- Zhu Xiastan - Interpreter, Foreign Affairs Bureau, Ministry of Forestry, Peking.
- Yuan Tianyan - Division Chief, Education Department, Ministry of Forestry, Peking.
- Gao Dian Zhong - Deputy Director, Foreign Affairs Bureau, Ministry of Forestry, Peking.
- Wang Ham Sheng - Foreign Affairs Bureau, Ministry of Forestry, Peking. Arranged trip for Forestry Deans to China in 1980.

Academy of Forest Science,  
Ministry of Forestry, Peking

- Tao Dong Dai - Vice President, Academy of Forest Science. Visited United States and Canada in 1980 as leader of FAO sponsored delegation to study organization and management of forest research.
- Tao is a veteran of the Long March, and therefore a power in the system.
- Zhang Yu Qui - Physicist working on satellite imagery in Forest Management Division. Has been in correspondence with Jim Lee of the Pacific Forest Research Centre.
- Huang Chung Li - Forest Management Division. Graduate of the University of Toronto, 1948.

CHINESE SEED REQUESTED BY CANADIAN AGENCIES

<u>Species</u>	<u>Origin</u>	
Alnus hirsuta	2 provenances from northern parts of the range	50 grams per lot
Alnus sibirica	3 provenances from across the species range	50 grams per lot
Betula pubescens	2 provenances from northern parts of the range	25 grams per lot
Betula verrucosa	2 provenances from northern parts of the range	25 grams per lot
Larix sibirica	3 provenances from across the species range	250 grams per lot
Picea asperata	3 provenances from across the species range	75 grams per lot
Picea jezoensis	3 provenances from across the species range	25 grams per lot
Picea koraiensis	3 provenances from across the species range	75 grams per lot
Picea schrenkiana	3 provenances from across the species range	75 grams per lot
Pinus koraiensis	3 provenances from across the species range	5.5 kilograms per lot
Pinus sibirica	2 provenances from across the species range	2.0 kilograms per lot
Populus lasiocarpa	2 provenances from northern parts of the range	10 grams per lot
Populus maximowiczii	2 provenances from northern parts of the range	10 grams per lot

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1446-60/C11-1

Government of Canada / Gouvernement du Canada

MEMORANDUM

NOTE DE SERVICE

G.A. Steneker  
International Forestry Relations Branch  
Forestry Relations & Renewal Branch

B.D. Haddon  
Petawawa National Forestry Institute

SECURITY - CLASSIFICATION - DE SÉCURITÉ
OUR FILE / NOTRE RÉFÉRENCE PI-10-047
YOUR FILE / VOTRE RÉFÉRENCE
DATE 5 February, 1981

SUBJECT / OBJET: Chinese seed requested by Canadian agencies

Enclosed is a "short list" of tree seed species, sources and quantities requested by various Canadian agencies. The species listed are those apparently most in demand by C.F.S. establishments and provincial governments. I understand from Ben Wang that this list will soon be taken to the People's Republic of China by a Canadian delegation.

I have been able to respond to several individual Chinese requests for Canadian seed, but have not seen a consolidated list of Chinese requirements.

BDH/rls  
Encl.

B.D.H.

ITEMS FOR CONSIDERATION IN DISCUSSIONS  
WITH THE CHINESE

Memorandum of Understanding

Origin

First draft of Memorandum of Understanding was discussed by Ross Macdonald of the Canadian Forestry Service with Chinese officials, August, 1980, in China. The officials were:

Mme. Hsia Wen Yin	-- Director, Forestry Institute, Peking
Zhang Dong Ming	-- Director, Bureau of Foreign Affairs, Ministry of Forestry, Peking
✓ Tai Dong Dai	-- Director, Academy of Forestry, Peking
Li Shignang	-- Director, Forest Protection, Ministry of Forestry, Peking

Overall idea very well received by the Chinese.

Financial Arrangements

Chinese very much persisted for the inclusion of a reciprocity clause regarding expenses. We have accepted this under para. 7, but should make it clear that it will be truly on a one-to-one basis (i.e., person-to-person). The Chinese are known to send large groups and Canada would not be able to keep up with such numbers to visit China.

Forestry Trade

At various opportunities the Chinese are likely to mention the possibility of joint-venture forestry projects using Chinese labour. Canada has informed the Chinese on a number of occasions of the difficulties that such an arrangement would present (see issues of Canada/China trade - forest products).

Future Exchange

Forestry Students

After visit by Forestry Deans to China in 1980, Dr. Nordin of the University of Toronto, in thank you letter to Lo Yu Chuan, Minister of Forestry, mentioned that he looked forward to a visit by Chinese educators to Canada in 1981.

Biological Material

Attached is a list of forest tree seed which the Canadian Forestry Service would like to receive from China.

- Ms Che momi - Head, Forest Pathology. Has contact with Dr. Hiratsuka of Northern Forest Research Centre, re stem rusts.
- Chen Chan Jie - Insect pathologist. Member of forest pest delegation to Canada 1980. Involved with exchange of virus material with Canada. Is good candidate for exchange experience at Forest Pest Management Institute.
- Mrs. Hsia Wen-yin - Director, Forestry Institute, Peking
- Chen Lu Qi - Vice President, Forestry Institute
- Wang Kai - Vice President, Academy of Forest Science (?)
- Zhang Tien Yun - Vice President, Nanking College of Forest Products

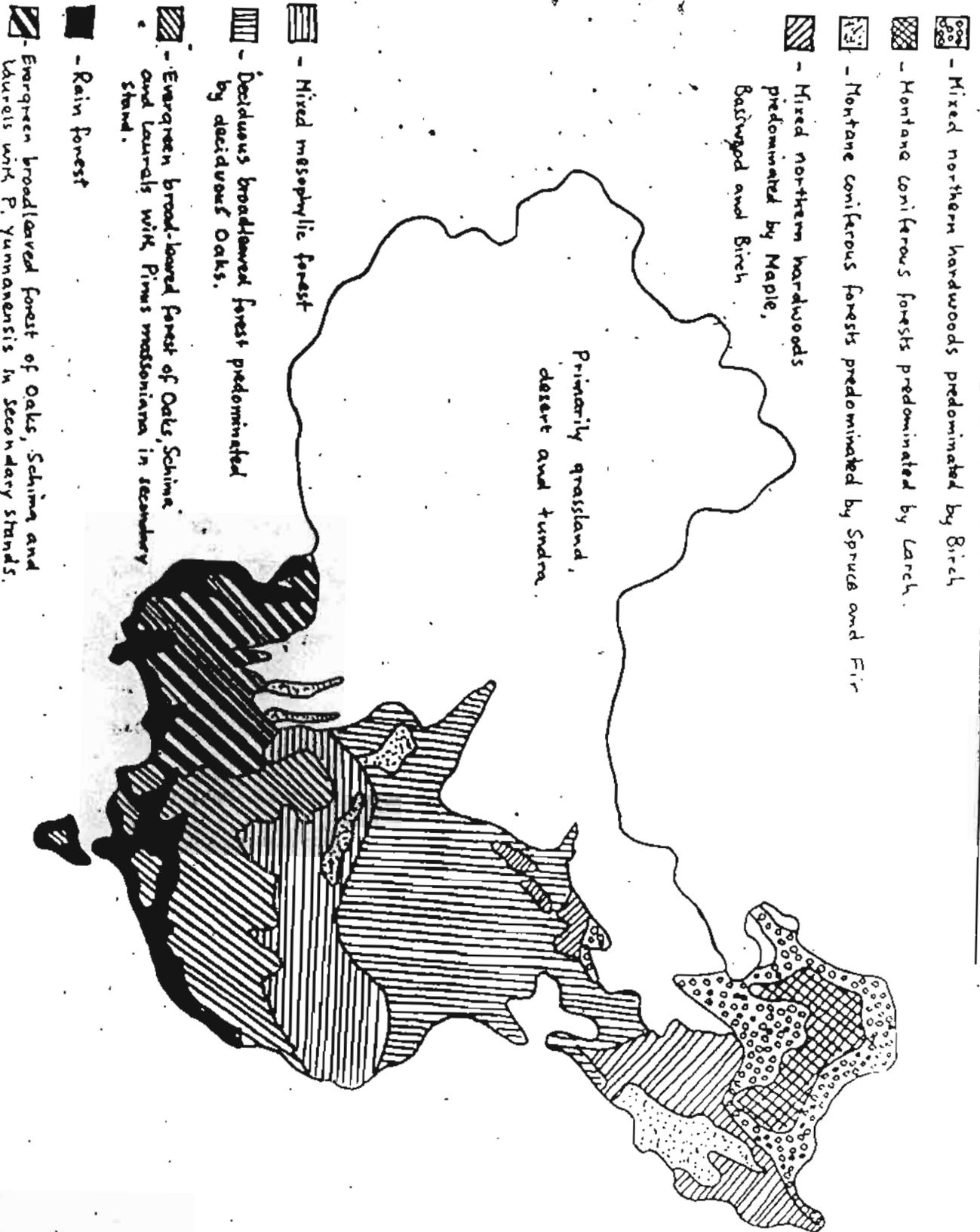
Province of Heilongjiang

- Zheng Huanneng - Associate Professor, Northeast College of Forestry, Harbin. Member of fire delegation to Canada in 1979. An authority on forest fire technology.
- Jin Jizhong - Forest Protection Engineer, Institute of Heilongjiang Province, Harbin. Member of fire delegation to Canada in 1979. Good potential for exchange experience in Canada. Very bright.
- Cong Guangsheng - Engineer at Heilongjiang Forestry Bureau. Member of 1979 fire delegation to Canada. Practical man.
- Wu Zhan Yuam - Director, Dailing Forestry Science Research Institute.
- Wang Ji Ying - Interpreter (has been in Alberta).
- Feng Xmyr - Deputy Director, Bureau of Forestry, Harbin. (Has been in Canada).
- Yang Yeu Chai - President, Eastern Forestry Institute, Harbin
- Sun Zhijiam - Vice Chairman, Provincial Foreign Affairs Office, Harbin

Canton

- Madam Yi Bing - Chief of the Office of Forestry Bureau of Guangdong Province
- Wang Lian Gao - Deputy Director, Forestry Bureau, Guangdong Province
- Zhung Xiam Yon - Deputy Director, Forest Research Institute, Guangdong Province

# MAIN FOREST TYPES OF CHINA



## FORESTRY IN CHINA

### Statistics

Total land area:	945,000,000 ha	(Canada: 912,800,000 ha)
Total forest area:	120,000,000 ha	(Canada: 341,700,000 ha)
Population:	914,139,000	(Canada: 23,671,500)
Per capita forest area:	0.13 ha	(Canada: 14.4 ha)
Total standing forest volume:	9,500 million m <sup>3</sup>	(Canada: 19,281 million m <sup>3</sup> )
Per capita forest reserve:	10 m <sup>3</sup>	(Canada: 814 m <sup>3</sup> )
Annual industrial production:	54,400,000 m <sup>3</sup>	(Canada: 155,895,000 m <sup>3</sup> )
Production for fuelwood:	40,000,000 m <sup>3</sup>	

Forest inventory carried out twice on national scale since 1949.

### Contribution of Wood Reserve

80% productive forest (closed)	
6% shelterbelts	)
7% trees of economic use (e.g., fruit trees, etc.)	)
3% bamboo	)
4% other	)
	) often in close association with agriculture (agro-forestry)

### Forestry development

Because of wars and poor management, the forest area was greatly reduced. By 1949 (liberation), forests covered about 8.6% of land area.

Since 1949, a total of 28,000,000 ha have been planted. Recent annual planting rate is about 4,000,000 ha/year.

Present forest cover equals 12.5% of total land area. The goal is to increase this amount to 20% by the year 2000. March 5, 1980 directive: mobilize entire population to plant trees. March 12 is National Arbor Day (started in 1979).

"Green Great Wall" project -- recently announced (1978) campaign involving the planting of shelterbelts along 6000 km stretch along borders with Mongolia. Primarily for soil protection. In central and south China, plantations are primarily for timber production. In the agricultural areas, "four sides" planting (i.e., around houses and along roads, rivers, lakes, etc.).

In general, the area of new plantations is somewhat larger than the forest area harvested each year.

#### Major problems

- Forests are few and unevenly distributed (north east and south east contain at least 50% of all forests)
- Erosión
- Shortfall in timber supply compared to demand
- Poor age-class distribution. Over mature in inaccessible areas, and over-felling in accessible areas.
- Lot of biomass still wasted
- Fire losses (Heilongjiang Province)
- Effective communication with 900 million people

#### Goals

- By year 2000, obtain forest coverage of 20% of land
- Emphasize mechanization to replace manual labour
- Increase protection of agricultural areas (shelterbelts)
- Establish industrial plantations -- poplars, etc. in north; Chinese fir in the south
- Increase protection
- Build roads
- Needed investment
- Readjust age distribution
- Emphasize training and education

Fuelwood (80% of population is rural)

A very important factor in Chinese forestry development. It is estimated that annual cut for fuelwood is about 40 million m<sup>3</sup>. However, this could be more if it is accepted that up to 70% of the total annual cut is used for fuelwood.

It is estimated that 1 m<sup>3</sup> of fuelwood is needed per person per year. Considering average production of 2.5 m<sup>3</sup>/yr/ha, each person would need 0.4 ha. There is 0.13 ha of forest per person.

Administration of Forests in People's Republic of China

The national forest authority is the Ministry of Forests, established in 1978 (Minister - ~~Luo Yuchuan~~) when it separated from Agriculture.

Ministry is responsible for about 50% of the total forest area. The remainder comes under communes and Heilongjiang Province.

The diagrams illustrate the national forest administration and that for Heilongjiang Province.

Ownership

- (1) Private - (i.e. non-collective) - practically non existing.
- (2) State forests - includes both unexploited reserves (often marginal and/or isolated forests) and new plantations (about 4% of total plantings, or about 150,000 ha/yr.) State makes first investment and forests are managed as a self-supporting enterprise by local communities.
- (3) Heilongjiang Province - produces more than 1/3 of all industrial wood in China
- (4) Commune forests - timber plantations, and amenity fuelwood and protection plantations (includes "four around" plantings). About 28 million ha planted since 1949. Gives good income to collectives, sometimes more than agricultural crops.

There are about 50,000 communes in the whole country. They are autonomous in most senses. They have the size of small towns. Communes are broken down into brigades or production groups (often natural villages), and equipes. The communes apply policies of the State and propose production plans to brigades and equipes.



Forest Research in China

The principal establishment for forest research is the Academy of Forest Science, located in Peking, and established in 1958.

The Academy is organized into 12 sub-institutes or departments (see chart). Seven are located in Peking. In addition, there are a number of new experimental field stations throughout China.

The department of most interest to foresters is the Forest Institute in Peking.

Total staff of the Academy is about 600, with 70% engaged in research. The Forest Institute has a staff of about 245, including about 200 professionally trained people.

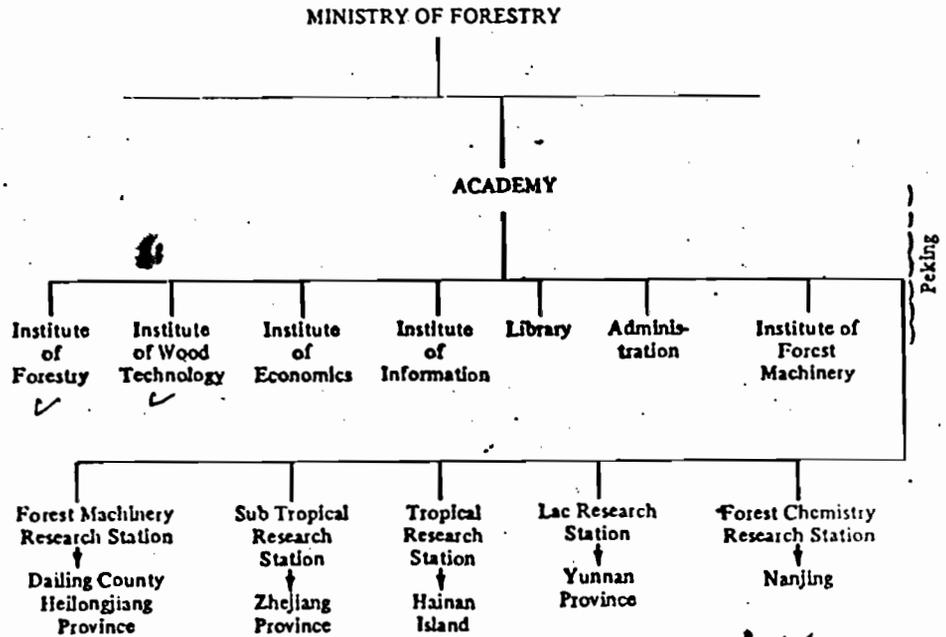
Various provinces have their own research institute. The provincial institutes are not responsible to the Academy, but the Academy has considerable influence on programs and acts as a coordinator.

Programs

Research programs include both basic and applied work. Importance is given to genetics, seed orchards, forest protection, shelterbelts and soil protection.

There is emphasis on natural rather than artificial techniques in forest management (e.g., mycorrhiza versus artificial fertilizers).

ORGANISATION OF THE ACADEMY OF FOREST SCIENCE



Peking

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## Forestry Education in China

Education in forestry is provided by 11 forestry colleges (of which 6 are under the responsibility of the Ministry of Forests), and 19 Departments of Forestry associated with agricultural colleges.

More than 7000 students are enrolled currently; since 1949, over 60,000 forestry students have graduated. ✓

In addition there are 32 secondary forestry schools to train forest technicians.

The three principal forestry colleges are in Peking, Harbin and Nanking.

No post-graduate training is offered yet, but this is expected in a few years. ✓

The national government sets curriculum with slight local modifications possible. Field work constitutes about 20% of the curriculum.

Graduates are assigned back to their own provinces. There are no tuition fees, and a living allowance is provided.

2

## Wood Processing Industry in China\*

### Wood Resource

The most important forest zone is found in north-east China. Virgin forests remain only in the less accessible parts. The region contains approximately 60% of China's total timber reserves and, at present, most of the large wood processing plants are located there or in nearby cities. The wood harvesting and transportation systems are rather conventional and somewhat obsolete but they tend to correspond to the availability of low labour power.

### Development of Wood Processing Plants (5 phases)

(1) Pre-liberation (pre-1949)

Primitive, mostly manual, exploitation of virgin forests. Main product was saw timber, which was exported.

(2) 1949-1960

All plants nationalized. Consolidation of mills into production units. Mechanization, more construction, processing at source, modernization, increase quality, better regional balance. By the end of the period, 25% of wood waste was utilized.

(3) 1961-1965

Wood industry badly affected by withdrawal of aid from USSR. Struggle for self-reliance.

(4) 1966-1975

Cultural revolution. Repeated disruptions and frequently shifting policies.

(5) Current

Science and technology emphasized. Output of industry greatly increased. A lot of production increases the result of better utilization standards.

There is emphasis on integration and better distribution of plants inside the country. New plants tend to be more in forest communities.

\*Based on FAO tour in 1978

Size of Plants

Sawmills	-- large	-- 200,000 m <sup>3</sup> /yr.
	medium	-- 100-200,000 m <sup>3</sup> /yr.
	small	-- <100,000 m <sup>3</sup> /yr.

Fibreboard	-- large	-- >15,000 tons/yr.
	medium	-- 5-15,000 tons/yr.
	small	-- <5,000 tons/yr.

Particle board	-- typical	-- about 2,300 m <sup>3</sup> /yr.
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Plywood	-- large	-- 10,000 m <sup>3</sup> /yr.
	medium	-- 5-10,000 m <sup>3</sup> /yr.
	small	-- <5,000 m <sup>3</sup> /yr.

Recruitment

- (1) In case of trained personnel, industry applies to central government and distribution is central.
- (2) With permission from central government, local people can be hired (usually less skilled).

Training

- (1) Short courses.
- (2) Through university attendance

Wages

There is eight-grade scale from manager down. Plant manager does not always receive highest pay. Some piece work and bonus payments occur. Normally 8 hrs/day, 6 days/wk.

Leave

- (1) Vacation -- up to 12 days/yr. based on performance.
- (2) Sick leave - maximum 6 months, at 100% salary.  
After that, 80% salary.
- (3) Maternity leave - maximum 80 days (full pay)

Safety Standards

Inconsistent, often hazardous.

Incentives

Complicated system based on production and quality.  
Payment by money or moral bonus.

Productivity

Low, due to small size of plants. All workers are included, not only "productive" ones (e.g., sawmill about 150 m<sup>3</sup>/yr/person). However, there is no unemployment.

Possibility of Technology Transfer

China is often considered a developing country. However, it has solved many problems of the developing world. China is not an obvious example of forest industry because of small plant scale and somewhat backward industry to suit its situation.

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THE CANADIAN FORESTRY SERVICE

CANADA'S FOREST RESOURCE

Canada's wood resources rank among the country's greatest natural assets. Forest lands cover about 340 million ha or about half of the land in ten provinces. Roughly 200 million ha are considered capable of producing merchantable stands within acceptable lengths of time. The forest industry employs over 300,000 people and generates employment directly and indirectly for one million Canadians. Forest products account for one job in seven in our manufacturing industries. In 1980 the sales value of forest products were \$22 billion, one and one-half times those of primary metals, three times those of farm crops, and 13 times those of fisheries. Forest products are Canada's principal export industry. In 1980 its net foreign earnings totalled \$11.5 billion, more than those of agriculture, fisheries, fuels, mines, iron and steel mills, chemicals and fertilizers combined.

To support its forest industry, Canada harvests about 160 million m<sup>3</sup> annually over an area of about 800,000 ha. Annual losses due to wild fires are about 1 million ha, whereas losses due to insect and disease, although difficult to estimate, may total considerably more.

In addition to their economic value, Canada's forests are of prime ecological importance. They present a habitat for a rich variety of wildlife and a vast recreational area for Canadians and visitors from abroad. The forests also regulate water runoff, thus minimizing flooding and erosion.

TERMS OF REFERENCE

The provinces own 91% of the forests within provincial boundaries. The remainder is privately-owned or under federal ownership. The actual management and protection of most of Canada's forests is therefore the responsibility of the provinces. In the northern territories, forest land is administered by the federal Department of Indian and Northern Affairs.

The Canadian Forestry Service is a component of the federal Department of the Environment and operates under the terms of the Forestry Development and Research Act of 1970. Under these terms, it has a mandate to coordinate federal forestry policies and programs. It may enter into agreements with the provinces or with any other party to improve forest protection, management or use, to conduct forestry publicity or education and to carry out or coordinate forestry research.

Further provisions enable the Service to undertake forest surveys and provide advice concerning federally-owned lands administered by other departments or agencies. At their request, the Canadian Forestry Service can also assume responsibility for the protection and management of such lands.

The Forestry Service dates back to 1899. The federal government has thus been involved in forestry research and related programs for over 80 years.

PROGRAM

The main objective of the Canadian Forestry Service is to promote wise management and use of the forests for the social and economic benefit of all Canadians.

To achieve this, the Canadian Forestry Service has divided its work into several main areas of activity, including research and technical services, forest relations and renewal, policy and economics, and services to federal agencies. It is also responsible for international forestry relations.

More specifically, the Canadian Forestry Service gathers information on the status and use of the forests from provincial and industrial sources and analyses trends in supply and demand. The Service also spearheads a metric conversion program for all measurements used in forestry operations.

Canadian Forestry Service scientific and technical knowledge is used by the provinces and the forest industry to solve national and regional problems and to help manage and protect the forests.

The Service conducts research and surveys to find means of protecting the forests from pests, diseases, fire and industrial pollutants. It examines ways to establish and rear trees for wood fibre as well as for recreational use, for their aesthetic value and for the regulation of water quality and runoff.

Through direct grants and contributions, the Canadian Forestry Service supports forestry research by a number of specific private agencies. These are Forintek Canada Corp. (forest products research), the Forest Engineering Research Institute of Canada (FERIC), and the six Forestry Faculties. In addition, a certain amount of contracting-out research is carried on. Recent emphasis has been on the use of wood as an alternate source of energy to that from conventional non-renewable sources.

The Service plays an advisory role in the development and implementation of subsidiary forestry agreements between the federal Department of Regional Economic Expansion (DREE) and provincial governments. ( )

The Canadian Forestry Service is represented on the Board of Directors of the Pulp and Paper Research Institute of Canada, FERIC, and Forintek Canada Corp.

There is a growing demand for Canadian participation in international studies, assistance in forest studies, and for experts to fill assignments in other countries. As well, Canada must monitor international forestry events in order to interpret their implications for Canadian forestry interests. The Canadian Forestry Service therefore is active in a number of international bodies. These include the Food and Agriculture Organization of the United Nations, as well as its subordinate the North American Forestry Commission, the aid programs administered by the Canadian International Development Agency, and several other organizations such as the Commonwealth Forestry Institute. )

The Service also participates in such international scientific organizations and programs as the International Union of Forestry Research Organizations, the Commonwealth Forestry Conference, and the Man and the Biosphere Program of UNESCO. Bilateral agreements and cooperation in forestry exist with the USSR and the People's Republic of China. Other more general science and technology exchange agreements including forestry exist with a number of countries.

ORGANIZATION

Canada's forests and the problems of managing and protecting them vary considerably from one part of the country to another. The Canadian Forestry Service is organized accordingly. Six Research Centres operate under regional direction: -- the Newfoundland Forest Research Centre, St. John's, Newfoundland; the Maritimes Forest Research Centre, Fredericton, N.B.; the Laurentian Forest Research Centre, Ste. Foy, Quebec; the Great Lakes Forest Research Centre, Sault Ste. Marie, Ontario; the Northern Forest Research Centre, Edmonton, Alberta; and the Pacific Forest Research Centre, Victoria, B.C.

Research and services covering most of the major fields of investigation already described are conducted at all the Centres. Priorities vary however and each Centre concentrates on those forestry problems of most immediate concern to the region it serves.

There are, in addition, two Institutes: - the Petawawa National Forestry Institute, Chalk River, Ontario, and the Forest Pest Management Institute at Sault Ste. Marie, Ontario. Research programs at the Institutes generally have a broad national application.

Headquarters of the Service in Ottawa includes the office of the Assistant Deputy Minister, a Director General of Research and Technical Services, a Director General of Forestry Relations and Renewal, a Director General of Policy and Economics, a Director of Finance, and a Chief of Administration.

Total staff of the Canadian Forestry Service is about 1,040 and includes about 370 professional and 390 technical personnel.

ADDRESSES

Canadian Forestry Service Headquarters

Mailing address: Canadian Forestry Service  
Environment Canada  
Ottawa, Ontario  
K1A 1G5

Assistant Deputy Minister	-- Mr. F.L.C. Reed
Director General, Research and Technical Services Directorate	-- Mr. J.H. Cayford
Director General, Forestry Relations and Renewal Directorate	-- Mr. W.K. Fullerton
Director General, Policy and Economics Directorate	-- Vacant
Director of Finance	-- Mr. G. Belisle
Chief of Administration	-- Mr. L.G.W. Dufour

Newfoundland Forest Research Centre

Environment Canada  
P.O. Box 6028  
Building 304, Pleasantville  
St. John's, Newfoundland  
A1C 5X8

Director: Dr. W. J. Carroll

Maritimes Forest Research Centre

Environment Canada  
P.O. Box 4000, College Hill  
Fredericton, N. B.  
E3B 5G4

Director: Dr. M.M. Neilson

Laurentian Forest Research Centre

Environment Canada  
P.O. Box 3800  
1080 Route du Vallon  
Ste. Foy, Quebec  
G1V 4C7

Director: Dr. C.H. Winget

Great Lakes Forest Research Centre

Environment Canada  
P.O. Box 490  
Sault Ste., Marie, Ontario  
P6A 5M7

A/Director: Mr. R. A. Haig

Northern Forest Research Centre

Environment Canada  
5820 - 122nd Street  
Edmonton, Alberta  
T6H 3S5

A/Director: Mr. A.D. Kiil

Pacific Forest Research Centre

Environment Canada  
506 West Burnside Road  
Victoria, B. C.  
V8Z 1M5

Director: Mr. D.R. Macdonald

Petawawa National Forestry Institute

Environment Canada  
Chalk River, Ontario  
K0J 1J0

Director: Dr. R.M. Newnham

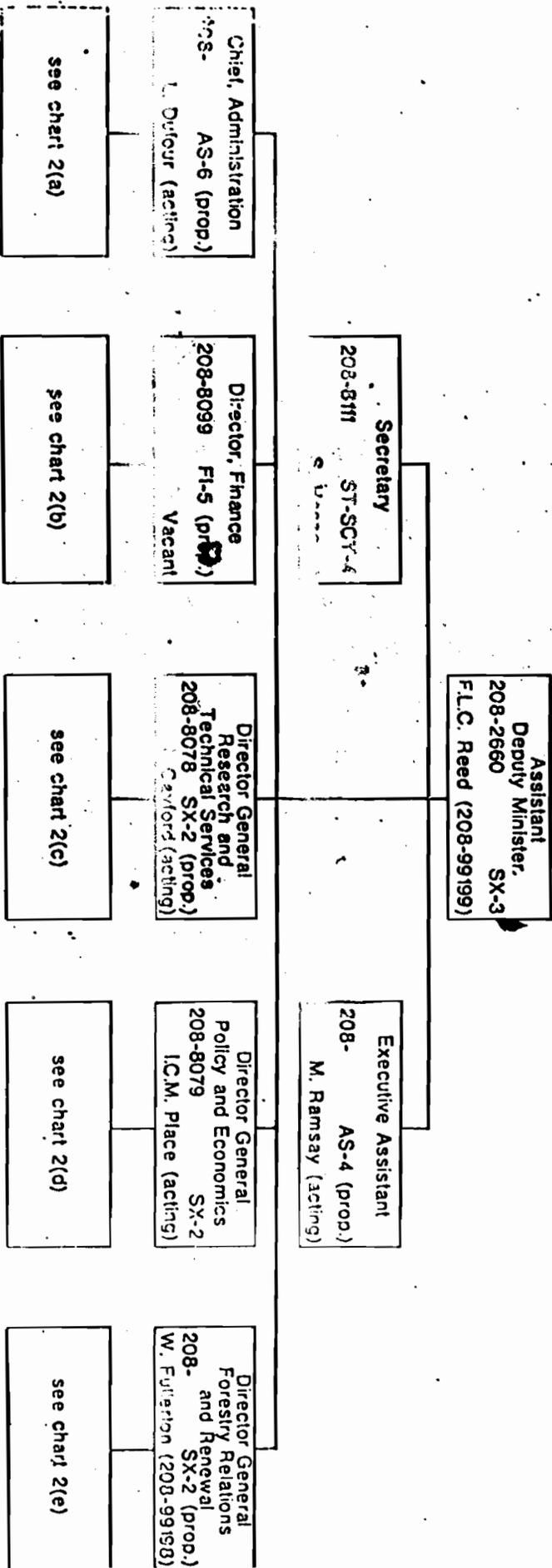
Forest Pest Management Institute

Environment Canada  
P.O. Box 490  
Sault Ste. Marie, Ontario  
P6A 5M7

Director: Dr. G.W. Green

OFFICE OF THE  
ASSISTANT DEPUTY MINISTER  
Chart 1

CANADIAN FORESTRY SERVICE

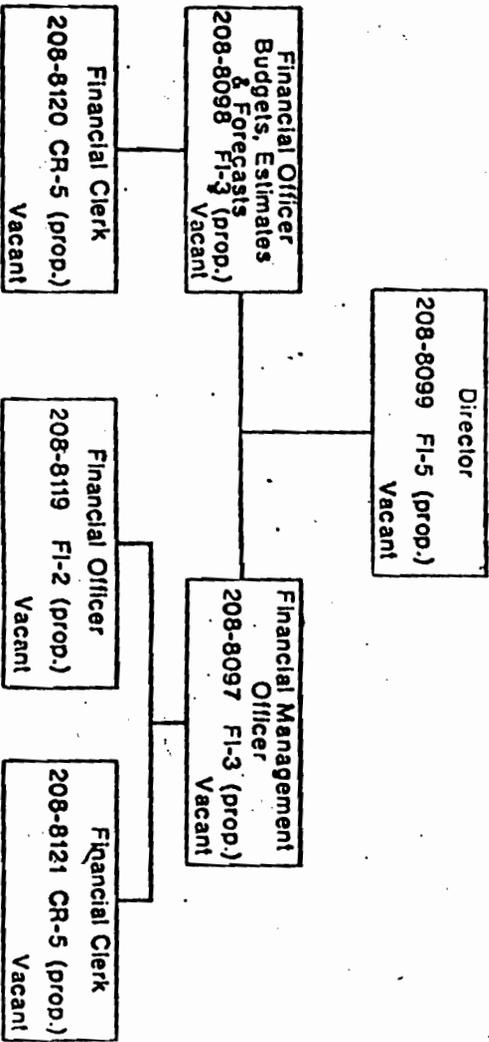


*Handwritten signature*

November 1, 1980



FINANCE BRANCH CANADIAN FORESTRY SERVICE  
Chart 2(b)

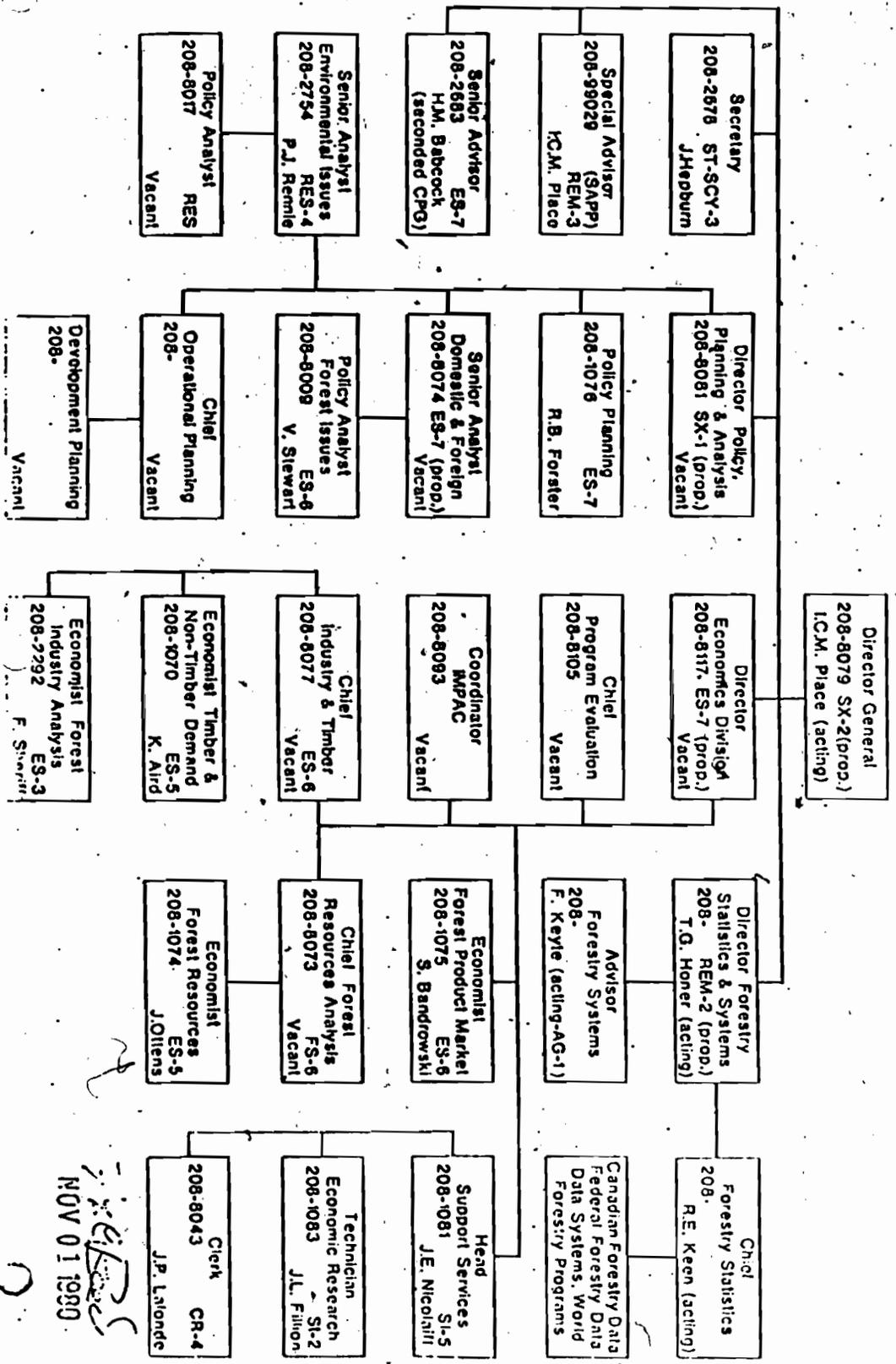


*[Signature]*  
NOV 01 1980



POLICY & ECONOMICS  
DIRECTORATE  
Chart 21(d)

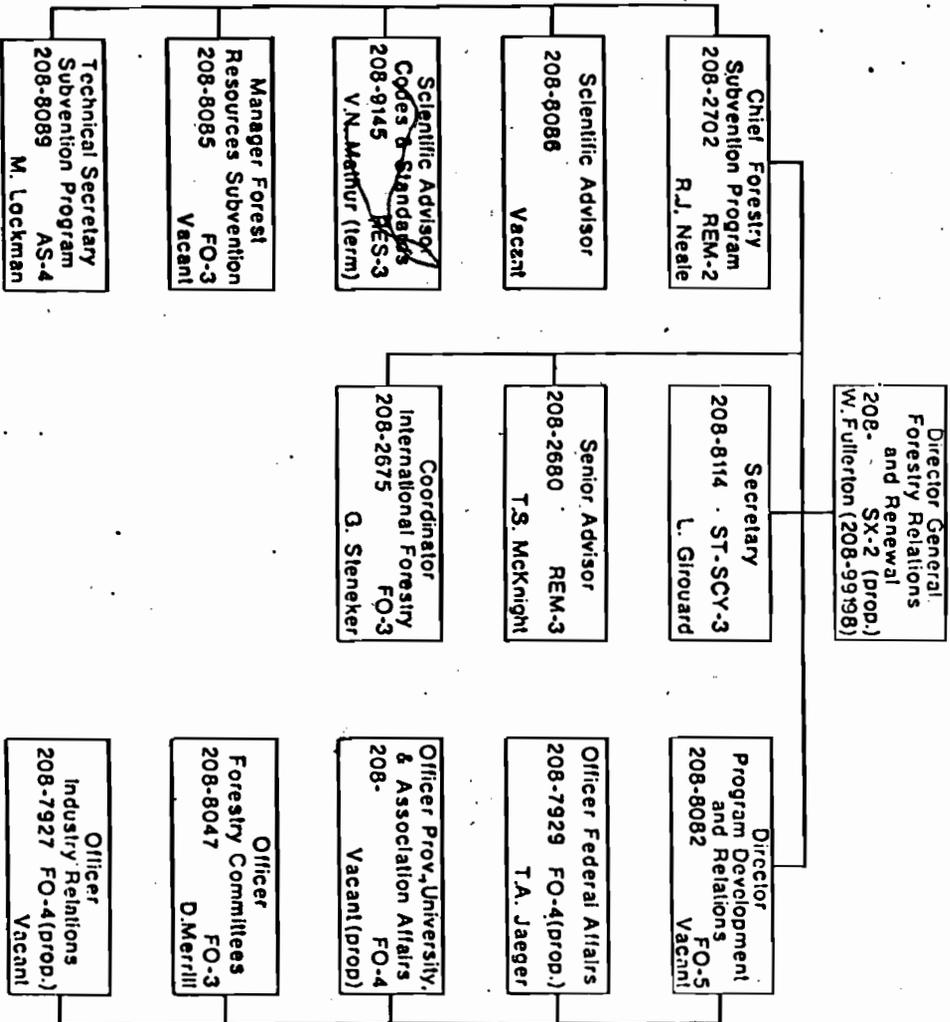
CANADIAN FORESTRY SERVICE



NOV 01 1980

FORESTRY RELATIONS AND RENEWAL DIRECTORATE  
Chart 2(e)

CANADIAN FORESTRY SERVICE



*W. Fullerton*  
NOV 01 1980

FACT SHEET SUMMARY  
CANADIAN FOREST SECTOR

1. Canada's land area	9.17 million km <sup>2</sup>
- forest land	3.14
- productive forest	1.98
- improved farm land	0.44
- parks, federal & provincial	0.44
2. Ownership of forest land	
- provincial	87 per cent
- private	8
- federal	5
3. Forest industry employment: 1979	
- logging	54 thousand
- wood industries	122
- pulp, paper & allied	128
	<hr/> 304
4. Roundwood production: 1979	157 million m <sup>3</sup>
- Atlantic provinces	10 per cent
- Quebec	22
- Ontario	13
- Prairie provinces	7
- British Columbia	48
5. Species mix of roundwood production	
- softwood	92 per cent
- hardwood	8
6. Exports of forest products: 1979	
- softwood lumber	\$ 3 831 million
- wood pulp	3 076
- newsprint	3 222
- other	1 660
	<hr/> \$11 789

7. Net contribution to trade balance, or exports less imports: 1979	
- farm, food, beverage	\$ 1 098 million
- fish	976
- coal, petroleum, natural gas	730
- metal ores, concentrated	2 815
- iron, steel, non-ferrous metals	1 627
- chemicals, fertilizers	102
	<u>\$ 7 348</u>
- forest products	10 681
- machinery and equipment including automotive	(8 537) deficit
8. Railway freight: 1979	
- forest products share	238 million tonnes
(plus purchased chemicals, fuels, equipment, etc.)	15 per cent
9. Capital and repair expenditure: 1980 forecast	
- logging	\$ 594 million
- wood industries	684
- paper & allied	1 307
	<u>\$ 3 085</u>
10. Estimated value of shipments of forest products: 1979	
- lumber	\$ 4.8 billion
- plywood, other panels	0.9
- market pulp exports	3.1
- newsprint	3.6
- other paper & paperboard	2.7
- miscellaneous, including secondary manufacturing	4.0
	<u>\$ 19.1</u>

11. Taxes and other revenue generated  
by forest sector: 1979

- provincial	\$ 1 735 million
- federal	<u>1 312</u>
	<u>\$ 3 047</u>

12. Public expenditure on forest  
renewal: 1979

- regeneration, timber stand improvement	\$ 156 million
---	----------------

13. Canada's share in world forest economy

- softwood growing stock	15 per cent
- industrial roundwood production of softwood species	15
- wood pulp production	16
- newsprint production	37
- exports of manufactured forest product	25

FACTS ON FOREST RENEWAL AND MANAGEMENT IN CANADA

Growing Stock depletion

Area cut-over	760,000 ha/yr
Losses due to Wild Fires (average from 1970-79)	620,000 ha/yr
Losses due to Insects and Diseases	600,000 <sup>+</sup> ha/yr

Renewal of Growing Stock

Natural regeneration (after clearcutting)	560,000 ha/yr
Planting (313 million trees produced in 1980 which would regenerate 20% of cut-overs -- 66% bare root, 34% containers)	160,000 ha/yr
Seeding (inconsistent success and no expansion expected)	40,000 ha (for 1979)

Stand Management

Clearing young stands	on experimental basis only
Fertilization	15,000 ha/yr
Thinning	not on commercial scale yet

INTRODUCTION AND OVERVIEW

Ivan L. Head  
President, IDRC.

I

A senior IDRC delegation visited the People's Republic of China from September 8 to September 17, 1980.

This was far from the first contact between the Centre and China. A number of IDRC publications have related to scientific activity in that country; some Centre personnel had travelled there in their individual capacities as members of non-IDRC delegations; a variety of communications and requests for information and possible support had been received by different divisions. One or two of these requests included invitations to staff members to visit China.

Any evaluation of the competence of Chinese institutions, the range of their research interests, the position they occupy in the country's hierarchy, and their role - if any - in the official developmental process, was next to impossible without some initial and orderly contact with an organ designated by the P.R.C. government. Without such a contact, no responsible response could be made. For this reason I approached the P.R.C. Embassy in Ottawa in early 1979 and enquired of the Ambassador whether his government would be interested in exploring with the Centre the possibility of a cooperative program. I sought at the same time some advice from the Canadian Embassy in Beijing.

Report 1

In the Ottawa conversation I emphasized the necessity of some P.R.C. focal point for Centre contacts as a precondition to any effective cooperation. In describing the Centre's functions and mandate I added that we would like to discuss with Chinese authorities the possibility of TCDC activities employing in other developing countries Chinese technologies and scientists with the financial and managerial support of IDRC.. The Ambassador accepted my caution that I could not authorize IDRC travel to China or positive response to Chinese requests without first obtaining some official Chinese government involvement.

Centre officers were then informed by me that all enquiries and invitations from China were to be placed on "hold" until the P.R.C. government informed the Centre of its attitude. The Board of Governors was informed of this strategy and expressed no disagreement.

For some 14 months, as enquiries continued to be received, desultory communications were recorded at government levels. On two occasions I paid formal calls upon the Ambassador; brief conversations ensued at social functions; the Canadian Ambassador in Beijing informed me that he had presented literature received from us to the Chinese authorities. Centre program staff patiently waited for the embargo to be lifted.

In June of 1980, I was informed verbally by the Chinese Chargé d'Affaires that an IDRC delegation of six or seven persons would be welcome to visit China for a period of 10 days in September as guests of the State Scientific and Technological Commission. I accepted the invitation but asked that it be extended in writing to permit the Centre to mount a delegation. (The official written communication did not reach the Centre until early August.)

It was proposed to management that the goals of the visit be:

- (a) To acquaint the SSTC in some detail of the mandate, the programs and the processes of the Centre.
- (b) To gain some sense of the scientific structure and hierarchy within China, of the role of government, of development priorities and programs, and of attitudes toward institutions such as IDRC.
- (c) To learn in such detail as time would permit the reputation, range of interest, and extent of competence of Chinese scientific institutions in both the academic and governmental sectors.
- (d) If, following initial discussions in China it appeared to the delegation prudent to do so, to negotiate and, if possible, sign a country agreement inclusive of provision for third-country cooperative programs.
- (e) To entertain in preliminary fashion project proposals.

To assure the greatest likelihood of success of the visit, it was agreed that the delegation be representative of all program divisions. The delegation consisted of the following:

Ivan L. Head - President

J. A. Hulse - Director, Agriculture, Food and Nutrition  
Sciences Division

John Woolston - Director, Information Sciences Division

John Gill - Director, Health Sciences Division

Nihal Kappagoda - Vice-President Planning (representing David  
Steedman, Director, Social Sciences Division,  
who was unable to change previous travel  
commitments.)

Jingjai Hanchanlash - Asia Regional Director

Ann Carson - Secretary to the delegation.

The dates selected for the visit (September 8-17) were communicated to the Chinese Embassy as was a suggestion that the agenda of work be organized to permit two or three days of discussions between full delegations on each side, three or four days of individual programs for the division directors in institutions reflecting their responsibilities while general talks of a procedural or informational nature would continue involving the President and the Regional Director, concluding with a day or two of full delegation meetings to assess progress and plan future activities. An invitation to engage in

sightseeing through China was refused in order to ensure adequate time for business, but the suggestion was proposed for travel to Shanghai by those members of the delegation wishing to contact counterparts there. (All of the above was discussed with the Scientific Attaché to the P.R.C. Embassy who called upon the President at the Centre for this purpose. The same information was transmitted as well to the Canadian Ambassador in Beijing to ensure that he would be fully acquainted with the program. Because of the precedential nature of the visit, I informed by letter each of the Prime Minister, the Secretary of State for External Affairs and the Under-Secretary of State for External Affairs.)

Visas were issued by the P.R.C. Embassy to the Ottawa-based travellers, and by the P.R.C. Embassy in Bangkok to Jingjai Hanchanlash (who is a Thai citizen) en route from the Asian Regional Office in Singapore to Tokyo where the delegation assembled.

Briefing documents were assembled for delegation members by Kerry Broadbent of Information Sciences Division who is a Chinese linguist and who had recently travelled through China as a member of a non-Centre group. Arrangements had been made by the President's Office with External Affairs to supplement the Centre's own materials with non-classified briefing notes.

A range of modest gifts was acquired and distributed to the delegation for presentation by the members at their discretion - volumes of photographs published by the National Film Board of Canada, copper plates featuring ceramic maple-leaf designs by Quebec handicraft artists, lucite paperweights with "floating" Canadian coins, metal maple-leaf lapel pins. (A list of gifts and recipients - apart from the lapel pins - is attached to this as Appendix "H".) In addition to gifts, a selection of Centre literature was available for distribution by the delegation. Because of the bulk and weight of these materials - much of it of a scientific nature - it was sent independently by air cargo to the Canadian Embassy in Beijing and picked up on arrival.

Head, Woolston, Gill and Carson travelled to Tokyo by CP Air; Hulse and Hanchanlash met the delegation there, flying from Amsterdam and Singapore respectively; Kappagoda joined the party in Beijing after flying from Europe through Asia. Transportation to Beijing from Tokyo was on a Pakistan International Airlines non-stop flight (on board which was the former Secretary of State for External Affairs, the Honourable Flora MacDonald, and her party on a private visit).

II

On arrival at Beijing airport the delegation was met by representatives of the SSTC, by the Ambassador of Canada and Mrs. Menzies, and by other members of the embassy staff. Accommodation was provided

at the Friendship Hotel (which proved convenient for travel to meetings, quiet, interesting because of its history and its patrons, and entirely adequate in terms of comfort, service and food. Because meals were served at set times and because the delegation was assigned its own table in one of the dining rooms, there were frequent and regular opportunities for discussion, thus reducing the need for delegation meetings. The food at all meals but breakfast was Chinese, and superb.) A mini-bus and driver were placed at the disposal of the delegation, an interpreter from the SSTC acted in a liaison capacity. (Patience is counselled at Beijing airport. The facility is new and handsome. Arrangements for arriving and departing passengers are of international standard. Baggage retrieval, however, is chaotic with suitcases arriving on the same conveyor from a number of flights, all interspersed with immense numbers of cartons of imported electronic and other goods. The final delegation suitcase was not delivered until more than an hour had elapsed following the arrival on the belt of the first.)

Following check-in at the hotel, the delegation met with officials of the SSTC to discuss and fix the proposed program. (This was the first occasion on which a detailed program had been presented to us.) It became apparent immediately that a fractionation of the delegation as had been proposed would be very difficult because of transportation and interpreter difficulties, and that travel to

Shanghai was not possible. In the event, additional cars and interpreters were provided from time to time and a trip to Shanghai was proposed for the President, but this was declined.

Agendas for the several members of the delegation will be found in their individual chapters which form discrete portions of this report. There will be found in Appendix C the agenda of the President as actually implemented. A number of activities were not settled, it should be stressed, until shortly prior to the time they took place. (A combination of flexibility and firmness is necessary for visitors to China. Every effort is made to accommodate the wishes of visitors, and with the utmost courtesy, but information and confirmation are oft-times delayed.)

### III

Leading the SSTC delegation was Wu Mingyu, Director of the Commission's Policy Research Office. Only he and Wu Yikang, Deputy Director of the Foreign Affairs Bureau of SSTC, made substantive contributions to the discussions involving the full delegations. (The first Wu spoke little English, the second Wu was much more confident with the language, but spoke it only in informal circumstances.) The official who negotiated the terms of the Memorandum of Understanding was Yu Renquan, Deputy Division Chief of the Foreign Affairs Bureau. Yu had lived for a period in the United States; his English was entirely

adequate but far from fluent. (The full list of SSTC officials involved in the discussions is attached as Appendix "E" to this report.)

Much of day one was occupied with a full and detailed exposition of IDRC by the President, the Program Directors and the Regional Director. Through a series of well-designed questions about Centre activities and programs, it became increasingly apparent that the Chinese found attractive IDRC's emphasis on responsiveness, on practical research for the benefit of the rural sectors, and its goals of enhancing indigenous research competence. Questions related to affiliations, to examples of projects, to training opportunities, to the CGIAR, etc. They were well-chosen and revealed not only that close attention had been paid to what we said - as in the questions about Centre procedures - but that the materials provided through the two Embassies had been carefully read.

At the conclusion of this exchange the IDRC film "Stretching the Earth" was screened, and the print handed to the SSTC for permanent retention in its library. (The screening was far from satisfactory; the projector was ancient and noisy with a sound drum that had not been cleaned for sometime. The image was projected on the wall of the room where we were meeting after the drapes had been quite ineffectively drawn.)

I then turned the discussion to the structure, jurisdiction and priorities of the SSTC. A detailed account of the information given us is found at Appendix "F". The transmission of this information and ensuing questioning took about one half of the afternoon session.

The second day commenced with an enquiry from me about the best means for IDRC and the SSTC to explore future cooperation. Somewhat to my surprise at this early stage, I was invited to prepare a draft Memorandum of Understanding for consideration by the Commission and by affected ministries including the Ministry of Foreign Affairs. I agreed to do so and a conversation then ensued about the contents of such a memorandum. At this point I introduced the concept of third country projects which had earlier been made to the P.R.C. Embassy in Ottawa.

A whole series of questions was then directed to the IDRC delegation on the range of Centre activity, on the nature of workshops and conferences, on the scope of our publications and fellowship programs, and on the specifics of project support and accounting. Detailed answers were provided and a step-by-step description of a "typical" project formulation, implementation and accounting was offered.

A long discussion then ensued on the Centre's Social Sciences programs with particular attention devoted to the area of education. Chinese institutional shortcomings and the distribution of education research responsibilities were related to us. The experimental "radio university" was described. (An account of this exchange will be found in the chapter of this report entitled "Social Sciences in China".)

In the course of the next several days a Memorandum of Understanding was drafted, presented and negotiated. Approval of other ministries was presumably obtained although we were requested, in order to permit execution during the trip, to delete specific references to revenue issues, (customs and income taxes) because shortage of time would not permit full consultations to take place between the SSTC and whatever ministry was responsible for those activities. With remarkably little difficulty, agreement was reached and the document signed the final day of the visit. The Chinese first indicated to us that on their side the signatory would be Mr. Wu Mingyu. When we suggested that my counterpart would more appropriately be Vice-Minister Tong Dalin, the latter was substituted.

The agreement in draft and final versions was typed in English by Ann Carson on a modern electric machine at the Canadian Embassy. The morning of the signing, however, the Chinese requested a minor

alteration in wording of no significance and we agreed. Because the SSTC did not have at hand vellum paper, the page involved was corrected in each of the official copies. For this purpose a manual typewriter of uncertain vintage and origin was brought into the room where, surrounded by both delegations, Ann painfully inserted the changes. For their part, the Chinese found it necessary to re-type two complete pages of the Chinese version because of major typographical errors discovered by Dr. Mary Sun who authenticated the Chinese text on our behalf.

The document as executed is reproduced as Appendix "A" to this report. Appendix "B" is the form of letter I have since sent to the SSTC recounting procedural issues discussed and agreed upon with Wu Mingyu.

#### IV

The several institutional visits by delegation members are reported on in this and later chapters of this report, catalogued according to subject matter. One such is included here, however, because of its general nature.

- The Chinese Academy of Sciences (Academica Sinica)

This Academy occupies premises in the same building as the SSTC which only accentuates the difficulty we had in fully perceiving the relationship between the two bodies. Both, for example, are responsible to Fang Yi. We were told it is one of five major organizations in China with responsibility for science and technology. It emphasizes basic research and the upgrading of previously obtained results. (It was clear, however, that a good deal of effort was expended in applied research.) It consists of more than 120 institutions and 12 branch academies in the provinces (see attached list - Appendix "G".)

The institutions, the majority of which are in Beijing, are divisible into five main disciplines: Biology, Mathematics and Physics, New Technologies, Chemistry, Earth Sciences. The Academy employs some 80,000 persons of whom 30,000 are professionals. It was described to us as a "research center" whereas the SSTC was a "coordinating body". The research programs are determined by committees of each discipline which are then responsible for the program of work and the budget. Some final decisions and allocations of funds is done at a central point, however.

The Academy also undertakes major research projects "designated by the state". Research priorities from both government and industry are communicated to the Academy.

Though in their introduction officers of the CAS emphasized basic research as their prime mandate, later discussions with various people indicated that its program embraces a large applied research and technological component. For example, the National Institute of Zoology carries out research on hormone-induced spawning of cultivated fish (three reports on this subject were carried by Jingjai to F. B. Davy), studies of plant parasites and diseases, and insect sex pheromones among several programs related to plant protection. Its Soil Science Institute was said to have a nationwide program of studies to relate soil characters to crop and animal production. Its Institute of Microbiology is studying genetics and enzymology of various microorganisms in relation to possible future industrial use.

Of the very few publications seen, the quality of English seemed extremely good. No very clear answer was given to a question which asked what proportion of its projects derived from fundamental problems raised from practical technological experience, and how much latitude was given to scientists to pursue basic research stimulated only by their own curiosity.

In an exchange with John Woolston, we were told that in the computer field more research was underway in the hardware sector

than in software. John suggested that it was likely more in China's interest to reverse this ratio.

The Academy was designed originally on the Soviet model, but flaws have emerged and changes are now being introduced. There is a desire, for example, to integrate the research and educational processes. It would like to cooperate with Canadian institutions in a number of fields including "radio science", telecommunications and computers. Because of soil similarities the Chinese feel that cooperative research with Canadian institutions would be valuable.

A memorandum of understanding has been signed with the U.S. Academy of Sciences and it is hoped soon to sign one with the Smithsonian Institute. A number of member institutes have signed agreements with their counterparts in the United States and in Australia. The Academy is preparing to sign an agreement with the National Research Council of Canada. It organizes an annual international scientific conference.

The Academy had hoped this year to join ICSU and had sent a delegation for this purpose but conditions proved not to be acceptable and so no step was taken.

V

A discussion with Mr. H. Shallon, the UNDP Regional Representative helped immensely in setting in perspective the Chinese science and technology picture. He made available a list of activities in this sector which UNDP was supporting financially. Seven regional training centres, based in China, have been identified for program assistance: aquaculture, primary health care, rural development, mini-hydro, biogas, acupuncture, and sericulture. These will serve China and China's neighbours.

Shallon is attempting to encourage foreign experts of Chinese origin to return to China to offer help in their fields of concentration. UNDP will pay expenses but not salaries in such endeavours.

To Shallon's knowledge, IDRC was the first organization to gain Chinese cooperation in joint developmental activities outside China.

VI

Overall impressions on a trip of this brevity are bound to be of limited value, and are recorded subject to that qualification.

Our visit coincided with the meeting of the National People's Congress which confirmed both a change in leadership and a significant change in policy direction. The stimulus provided by the Congress to look outward, to cooperate with foreign agencies, to exercise a degree of independent judgment, and to act in pragmatic fashion, contributed immensely to the interest shown in IDRC and led, without question, to the conclusion of the Memorandum of Understanding. There was little hesitation on the part of the Chinese to mourn the losses occasioned by the Cultural Revolution: an entire generation of scholars, library materials, scientific advances. Compared with my previous visit in 1973, however, I detected a sense of confidence not earlier present. We encountered no invitations to point out Chinese shortcomings, few tedious statistical accounts of accomplishments or production increases, and no accusations against outsiders as the authors of Chinese misfortune.

Discussions tended to be business-like, generally informative, and candid as well as responsive. As one example, our host at Beijing University was much too junior and too narrow in responsibility to be able to respond adequately or authoritatively to our questions. At the Ministry of Education the ministry interpreter was bold but the Canadian Embassy accompanying officer said the quality of interpretation was abysmal. Where we met senior personnel in the company of the SSTC interpreter, the meetings were very productive - even more so, of course, where English was employed. The discussions at the SSTC fell into this

category, as did those at the CASS. The quality of individual calls by other members of the delegation is mentioned in the following chapters.

One welcome conversation, but which was curiously bland, was that with Vice-Premier Fang Yi. The two delegations were received, photographed, and seated in formal splendour in one of the large rooms of the Great Hall of the People. The conversation, through interpreters, was entirely between the Vice-Premier and me and extended to some 75 minutes. The occasion was clearly intended by the Chinese to be an honour to us but, equally, it was not employed as an opportunity to extend any policy insights. My questions about Chinese attitudes toward the Brandt Commission Report, the just-concluded Special Session of the General Assembly, or the forthcoming Global Negotiations were all fielded courteously but non-responsively. I was told, however, that the salient decision of the People's Congress was a continuation of the central planning function which is integral to a socialist society, but with an introduction of managerial discretion and responsibility at the implementation stage. Quite clearly, the Sichuan lesson of Premier Zhao Ziyang was now dominant.

Always were we dealt with courteously and with genuine friendship. Our requests for modifications in the program were dealt with seriously and every effort was made to respond positively.

To one who had not been in China for 7 years, the most obvious change was in the evidence and assortment of consumer goods and industrial products of foreign origin. The appearance in Tian An Men Square and elsewhere of billboards advertising the benefits of household electrical products or foreign airlines was quite a departure from the past as were the displays in hotels and stores of a range of Kodak colour films and cameras (adjacent, in one shop in the Friendship Hotel, to the Coca-Cola cooler). Fleets of Toyota mini-buses in bright coloured trim conveyed foreign delegations here and there, a welcome contrast to the somber Soviet-designed automobiles, once the sole device for this purpose. Huge mobile cranes, bull-dozers and construction vehicles were regularly seen, most often of Japanese or Italian manufacture. The juxtaposition of this equipment next to manual endeavours was a startling contrast. On the road leading to the Su Zhuong Brigade, for example, a stretch of the highway was being widened, requiring the felling of trees and the movement of a good deal of fill. The trees were first manually stripped of their bark and were then cut by pairs of men using cross-cut saws. In some sections the fill was moved in tractor-drawn farm wagons, and unloaded by labourers using shovels. Elsewhere, modern bull-dozers of a D-8 size were seen. (Nary a Le Tourneau, however.)

Beijing continues to be the world's largest unfinished city. Construction was underway everywhere, largely apartment blocks of not unpleasing design. Construction materials, cranes, and workers'

"temporary" accommodation successfully disguised what may someday be attractive boulevards and thoroughfares.

Undisciplined traffic - much of it of a bicycle nature, on the ubiquitous "Flying Pigeon" model - continues as in the past. Some efforts are underway to separate bicycle and motor vehicular traffic by the erection of barriers. Turn signals, traffic lights, and pedestrian cross-walks are all universally ignored.

The most lasting impression carried away by the IDRC delegation, however, was of none of these things. It was of the overwhelming need and desire of the Chinese for more and better education and training. By our calculations, as many as 6 million unemployable students enter the labour force every year. Possessed of no vocational or marketable skills, and denied university entrance by the shortage of places, these youths must present a terrible worry to the authorities.

Youth unemployment ranks with food shortages as the most critical problem facing most developing countries. To be made aware of this particular time-bomb in China, however, was unnerving. If future political stability in China is of interest to the outside world, as it most assuredly must be, concerted efforts are called for to meet an alarming situation.

The impact of the cultural revolution has left an absolute blank in the ranks of qualified Chinese in the age group which any nation relies upon to be most energetic and effective - those in their thirties and forties. It was our conclusion that the single-most effective contribution to China that any outside agency could make would be the provision, within China and without, of training.

Finally, it should be said that while the Chinese were quite obviously relishing the prospect of developmental assistance from without, they gave no impression of depending upon it or of vigorously soliciting it. They are surely wise in continuing to emphasize the quest for self-sufficiency wherever possible. At the date of the visit only one bilateral assistance program was in effect (Japan, with a pledge of U.S. \$1.5 billion over a 4 to 5 year period) and two were in advanced stages of negotiation (Australia and Norway). The UNDP and UNICEF programs are each of modest size when measured against need (U.S. \$15 million and \$7 million respectively for 1980 and 1981).

A problem facing IDRC and other funding organizations is the choice of funding level for China. It must be of a size to make some impact, yet not be so large as to worry other recipient countries that assistance will be diminished and diverted. IDRC, which does not engage in country allocations, must decide whether to fix some figure for China in an attempt to meet each of these concerns.

Chapter Two

AGRICULTURE, FOOD AND NUTRITION SCIENCES IN CHINA

J. H. Hulse

Director, Agriculture, Food and Nutrition Sciences Division, IDRC

Unfortunately, since almost all meetings were highly formal, and a great deal of time was taken up in exchanging diplomatic courtesies and expressions of good will (I can't recall how many times the virtues of Dr. Norman Bethune were extolled) and since we were confined entirely to Beijing, I talked to relatively few research workers on any subject in detail, and saw no research in progress. It should be emphasized that at all times we were received with great courtesy and friendliness and I believe all of us came away with the firm impression that the PRC earnestly wishes to open its doors to cooperation with other countries and is anxious to receive assistance in virtually all of the traditional forms, including overseas training, visits by foreign specialists, gifts of equipment and financial support of its research and development activities. Without wishing to draw too close a parallel, and I hope my remarks will not offend our dear colleague Fawzy Kishk, I was strongly reminded of the situation in Egypt following that country's shedding of the Soviet yoke. The parallel is of two highly civilized nations whose culture and scholarship long precedes that of North America and most of Europe that, for political reasons, were totally isolated from science and technology and other forms of scholarship and material progress in the rest of the world. It is not surprising that

both would look upon the IDRC style of support as almost ideally suited to their needs. What gives me cause for concern is that once the word gets around the thousands of research scientists (there are more than 4,000 institutions that specialize in agriculture or agricultural machinery) the flood of proposals will hit us like the Yangtse in full spate.

Of particular interest to AFNS is the Chinese Academy of Agricultural Sciences, the Chinese Academy of Forest Sciences and the Bureau of Aquatic Products, all of which fall under the Ministry of Agriculture. There are more than 4,000 institutes specializing in agriculture and agricultural machinery throughout the country but it was not possible to determine how many of these are truly research institutes and how many provide mainly demonstration and extension services.

It was repeatedly emphasized that the PRC's first priority is agriculture because of the urgent need adequately to feed and cloth the present 970 million people. Though the products of land and aquatic animals make some contribution, by far the main source of energy and other nutrients are edible plants. The Chinese expressed approval of AFNS' priority on cereal grains, food legumes and oilseeds; legumes they consider to be extremely important and they are anxious to increase yields and the production of soybean and other legumes both in intercropping and sequential cropping systems. They also expressed particular interest in AFNS' systems approach and emphasized their future intention of studying more thoroughly oil and agroclimatic conditions throughout the PRC to determine for each region the

most productive combinations of crops and livestock. In future more attention will be given to animal husbandry, fisheries and forestry. They were particularly interested in José Valle-Riestra's concepts of integrated animal production: feeding animals cultivated weeds on marginal lands, aquatic plants, tree leaves, and various agricultural by-products. In spite of the widespread belief that PRC has access to limitless human labour, they made it clear that often labour demand exceeds supply and appropriate mechanization will be expanded. They were particularly interested in the Behar 10 HP power unit and claim to have developed a similar concept based upon a 12 HP diesel unit manufactured in China.

In the northwest region, greater attention will be given to animal husbandry with emphasis upon improved pastures and cross-breeding to create more efficient feed converters. In the Southeast, more intensive multiple cropping is sought and they are looking for higher yielding and more rapidly maturing lines of rice and virtually any other food crop that can be produced. They are conscious that to achieve maximum productivity from multiple cropping, more efficient irrigation and drainage systems, and a higher degree of biological control of pests is urgently needed. They believe that in the northcentral region much higher productivity can be achieved on the Loess plateau along the Yellow River.

It was refreshing (would the same were true in North America and Europe) that the PRC give absolute top priority to agriculture and second priority to energy. At present, coal provides 75% of the nation's energy, hydroelectric less than 5%, though the latter may increase as the flood control dams are constructed along the major rivers. Each dam will provide a source of hydroelectric power. Exploration for additional coal and for petroleum sources will be expanded and nuclear power is also foreseen as a major future source. The Chinese do not seem to share the concerns of the more vocal members of North American society concerning nuclear power hazards.

Biogas (methane) will continue to be important in rural areas but it was interesting to be told that biogas use is based more upon traditional experience than scientific knowledge and control and that a good deal of research is required to improve the efficiency with which organic materials are converted to biogas and to design better systems by which to use it.

Forest products are seen as a major source of fuel for rural communities in the future and as is mentioned later, cooperation with IDRC and anyone else interested in reforestation with rapid growing species will be welcomed.

It was interesting to learn that in the eyes of the Chinese, all that is small is not necessarily beautiful or most desirable. They have found that many small industries, including fertilizer manufacturers and iron and steel producers, are much less efficient in energy utilization than larger units. Therefore in the future, in the interest of energy conservation, one will see much larger production units in a number of industries. In this regard they recognize their need for help in the design and construction of plants and equipment, particularly in the design of large-scale manufacturing units. Among others, they are particularly interested in ferrous and non-ferrous metals, including the processing of titanium ores and other rare earths; in the manufacture of synthetic rubber and other organic polymers; and in the higher technology industries based upon advanced electronics, lasers, integrated circuits and late generation computers.

PRC also proposes to give more attention to medical science and public health, including both modern and traditional medicine. At the close of the first meeting at SSTC, the Director and later the Vice-President, emphasized that the PRC is a relatively poor developing country that seeks and will welcome all of the assistance it can obtain from IDRC and other developing agencies.

- 6 -

## II

Ministry of Agriculture and  
Chinese Academy of Agricultural Sciences

A half-day meeting was arranged attended by Jingjai and myself with representatives of the Ministry and Academy. It was agreed in advance that I would give a talk about the structure and work of AFNS illustrated by slides taken at typical projects.

The first part of the discussion was not very satisfactory since the interpretation was clearly less than adequate and it was not until the last hour that we discovered one of the scientists from the Academy, who had sat quietly throughout the meeting, spoke very much better English than the interpreter. From that point on we made some progress. On the PRC side there was a good deal of repetition of what has been stated above about the priority that China gives to agriculture, therefore all that will be recorded are the specific requests made for IDRC cooperation.

The three top priorities for project help were: 1) triticale, 2) rapeseed and 3) sorghum.

- 1) Tritacale - about 20,000 ha are under octaploid triticale in areas north of Peking and near Guiznoy in the southwest. It is used entirely

for human food, mainly in steamed bread and noodles. From the description of their difficulties, it would appear their research is at about the same level that CIMMYT and Manitoba were at in 1972-73. The principal difficulties described are lodging, shrivelled grains (unfilled endosperm), low grain yields and low hectolitre weight. They requested:

- a) a visit by Chinese breeders and agronomists to Manitoba to study the U of M triticale research program, its recent progress, and to select advanced lines that appear best suited to future trials in China;
  - b) a visit by the leader of the U of M triticale team (Ed Larter) to China to help them design their future research program;
  - c) a continuing exchange of information and planting materials between PRC and Manitoba;
  - d) financial support from IDRC to expand the PRC triticale program. They are particularly anxious to get advice and receive equipment for determination of seed quality, for physical studies on triticale doughs and chemical analyses.
- 2) Rapeseed - rapeseed in China covers more than 3 million ha and is grown in almost all suitable areas from the north to the south. It is probably the vegetable oil consumed in largest quantity. They wish to improve their yields, disease resistance, and are particularly interested in

low erucic and low glucosinolin lines. The proposed form of support is exactly similar to that for triticale, namely:

- a) visits by Chinese scientists to Saskatchewan to study the rapeseed breeding and quality control program;
- b) a visit by a Canadian rapeseed breeder to the PRC;
- c) a continuing exchange of materials and information;
- d) financial support from IDRC again principally for laboratory equipment by which to determine quality characters.

3) Sorghum - more than 6 million ha are under sorghum (Kaoliang) the two main breeding stations being in Shenshi and in what was Manchuria. Their best yields are from hybrids and average 2.2 t/ha; their local varieties average about 1.5 t/ha. The hybrids are, they claim, produced, multiplied and distributed by individual communes and one gained the impression that quality and competence in the production and distribution of hybrids is far from uniform across communes. Their purpose is to plan their sorghum breeding program to produce both higher yielding lines and improved hybrids and they are particularly concerned to improve grain quality. Mrs. Gan Shao-Shyn, the Deputy Director of Research at the Chinese Academy, stated that most of their sorghum lines are high in tannins which are not well liked since in the north the sorghum is pearled, boiled and eaten like rice. They would prefer low polyphenol

types which are easy to pearl and in this connection they were interested in the Prairie Regional Laboratory decorticator since they have been working on various machines for abrasive decortication. When I mentioned that Hugh Doggett is an Associate Director at IDRC, countenances lit up like the harvest moon since the name of the supreme maestro is obviously well known to them.

Two other subjects of interest to them were soil fertility and pasture research. They claim that many of the soils in south China are low in potash. They feel the need for a detailed comprehensive soils study throughout the southern region and also a research program to study response to potash treatment of all the major crops. I suggested that a study of the magnitude they envisage would best be referred to FAO's Land and Water Division to be financed by UNDP (which incidentally has already approved about \$5 million worth of agricultural projects in PRC). FAO has far better facilities than we to undertake major soil surveys and in any event, the three projects referred to above are probably the most we could contemplate over the next couple of years.

Their needs in improved pastures was less well defined. One has the impression that they are looking at large rangeland production such as one finds in western Canada. Therefore a visit to one of Agriculture Canada's or the Government of Alberta's pasture and livestock production centres would be the most suitable first move.

The CAAS is the highest level research organization within the Ministry of Agriculture. It has two main functions: (a) to direct agricultural research on a wide range of practical problems in cooperation with field research units; and (b) to coordinate the agricultural research function of all national, regional and field testing agencies. It was learned in private conversation that improved crop cultivars and cropping systems from whatever source are tested through a fairly large range of regional networks. The lines of executive control were not entirely clear but from one conversation it appeared that the CAAS holds no administrative control over provincial or local programs undertaken at the country, commune or brigade level. Apart from the visit to the biogas demonstration we were permitted no direct contact or discussion with the rural agricultural community but in private conversation I was informed that the provincial academies are responsible for research relevant to the specific agricultural needs of their home provinces and while much of this is carried out at the field level, the provincial academies, like the National Academy, exercised no executive control over the field testing or adoption of new cultivars or agricultural systems by the communes or brigades.

From various conversations we were led to believe that agricultural research enjoys a considerable degree of decentralization of authority and decision making which is said to account for the high rate of adoption of improved production technologies and higher yielding varieties.

In a visit that consisted mostly of friendly diplomatic exchanges within the capital city, to what extent decentralization of authority among the more remote communes and brigades exists it is impossible to say. Nevertheless, others, including several friends at IRRI who have travelled more widely, appear to be impressed that decentralization of responsibility and authority does in fact exist and is effective. One can only accept at face value the often repeated statement that every Chinese agricultural scientist and worker at all levels seeks always to improve his and his group's performance and efficiency.

In addition to the National and Provincial academies and the institutes responsible to them, there exist probably thousands of agricultural experimental stations at the commune level. I was informed that field testing units are administered by production brigades but no opportunity was presented to us to witness research or field testing at the commune or brigade level if one excludes the brief visit to the biogas demonstration.

No opportunity was allowed to visit plant breeding programs but conversations with various agricultural scientists indicated that considerable emphasis is given to hybridization, particularly of rice and sorghum, with seed multiplication facilities being available at the level of the commune and the brigade.

The CAAS also seems to place considerable hope in useful mutation being derived from gamma irradiation though what if any practically useful results have been achieved was not demonstrated or discovered.

### III

#### State Agricultural Commission

This is one of the eight Commissions referred to above and the one to which the Ministry of Agriculture and the Academy of Agricultural Sciences responds. It appears to be responsible for all agricultural policy, including scientific research and cooperation with other countries, though in terms of science and technology, where its responsibility ends and that of the SSTC begins is not quite clear.

Under the control of the State Agricultural Commission there are five Ministries: 1) Agriculture, 2) Forestry, 3) Land Reclamation and State Farms, 4) Agricultural Machinery, 5) Water Conservation, and two Bureaus: 1) Aquatic products and 2) Meteorology. The people who attended this meeting, Mr. Zhand Chen Hua, the Director of the General Office of Foreign Affairs, and Mr. Ma Genou, both seemed more concerned with policy than with research and therefore the discussions were more general than specific. Again, this was another instance where we suffered from interpretation. After Jingjai and I had told them about IDRC, they told us that UNDP is supporting 12 major projects, most important of which are soil conservation and control

of water erosion in the northwest; animal husbandry, mainly sheep and cattle, also in the northwest; the artificial insemination of animals and crossing to superior breeds; and establishment of a centre for agricultural machinery, both of the latter two in or close to Peking. We tried to discover who decides the order of research and development priorities in all of the Ministries for which the Commission is responsible, but we did not get a very clear answer. They said that Provinces are allowed to decide many of their own research priorities but that the Ministry of Agriculture controls the program and priorities of the Academy of Agricultural Sciences. In general it seemed that in relatively modest projects such as the rapeseed, triticale and sorghum projects discussed, the Ministry or the Academy could define the objectives and how each project could proceed. The State Agricultural Commission would probably be drawn in if a major program requiring large new funding from China appeared necessary.

IV

Bureau of Aquatic Resources

I had hoped to hold a meeting similar to that with the Academy of Agricultural Sciences but instead we were taken to see the Wuan Chiun Shun Fish Farm located a few kilometers outside Peking. As on all occasions, we were received most courteously but it was evident that this

is a production unit, not a research station. The interpretation was about the worst we encountered and consequently the following statements should be taken with some reserve.

The total water area of 12.8 ha consisted mainly of several very large excavated ponds or small lakes which are fed from a network of ditches into which water is pumped from a deep well. They claim that the fish population in each pond consists of more than 50% grass carp and that the remainder, including big head, chinese carp and tilapia (I did not see any tilapia) subsist entirely on food fertilized by the detritus from the grass carp. They claim that no additional fertilization or feed is provided though at one point we did see some pelleted feed. In one or two small ponds there were thick rich blooms of algae but it was claimed that this is a natural growth and is not stimulated by the addition of phosphate or any other form of fertilization. They claim that they average a yield of 10 t/ha of fish per year but since several conversions were made from Chinese units of measurement to metric, it is not inconceivable that some error took place along the way. The grass carp are fed wild grasses cut from around the ponds and water weeds harvested from several surrounding channels. There was some cultivation of soybeans along the edges of the fish pond and it was stated that a form of soy milk is produced to feed to the carp juveniles which appeared to be contained in pens of knotted natural fibre. Close by there were a few small pig farms but there was no evidence that the pig manure was

used to fertilize the ponds though they stated that ensilaged water weed and water hyacinth is included in the hot diet. On our way we passed a large wood-fired steamer over which a mixture of barley and maize was being cooked and through the interpreter one of the technicians said that this was fed to the fish by hand scattering.

We were not enabled to meet any scientists from the Bureau of Aquatic Products and since my request for a visit to one of the aquaculture research stations near Shanghai was considered inconvenient if not impossible, we really learned very little about aquaculture research except that it is considered a priority and they would like support from IDRC to expand their research in fish nutrition and the control of fish diseases though these were not specified.

V

#### The Chinese Academy of Forestry Sciences

This was by far the most interesting visit since we were taken to a research institute and were able to converse with active scientists, two of whom spoke excellent English and several others understandable English.

The Academy consists of eight institutes: 1) Forestry, 2) Wood Industries, 3) Forest Economics, 4) Technological Information, all of which are in Beijing, 5) Sub-Tropical Forests, 6) Tropical Forests,

7) Studies on Lac, the insect that produces lacquer and adhesive, and  
 8) Wood Chemistry. The Academy employs a total staff of 1500, 800 of whom are research workers and technicians. The Deputy Director, Mr. Chen Ping-An, stated that the institute was seriously damaged during the cultural revolution but since the dismissal of the Gang of Four, much of the Academy's facilities and program have been restored. Nevertheless, they desperately need additional money for research equipment and for the training of scientists overseas.

At the institute in Beijing work is in progress on forest conservation, wood utilization, new economic products from forests, development of wood industries, drying and other forms of preservation, physical properties and response to adhesives in the production of plywood and other uses. Their more fundamental studies include genetic control of important characters, properties of exotic plants and trees, entomology and pest control, tree pathology, physiology and biochemistry. A national survey of forest soils is in progress and they are particularly interested in agro-forestry, and research is in progress to combine Chinese, Lombardy and other poplars with various food crops. The entomology division seems to be particularly well staffed where they are making a broad study of defoliating insects, particularly those such as Diprionidae that attack conifers (the larvae eat the needles). They are studying the taxonomy, identification, biology and control by biological, microbiological and viral means of all insects of importance.

They are also studying the permeability of various tree species to preservatives and to different temperature and pressure conditions.

In the physiology and biochemistry division, they are studying photosynthesis, nutritional requirement and nutrient uptake, seed physiology, rate of germination and the influence of plant hormones and other biochemical components of germination.

The biochemistry group has also extracted some interesting condensed polyphenols which appear to be flavonoids (quite distinct from the hydrolyzable tannins customarily found in tree barks) which they find can be caused to react with urea or formaldehyde to produce polymers which they use in fibreboard.

They are particularly interested in rapid propagation and have started work on isozymes and upon tissue culture techniques.

Their classified collection includes more than 17,000 specimens from 150 different families. One of their greatest interests is Paulownia elongata of the Bignoniaceae, which is the fastest growing tree in China covering almost one-third of the total area of the country between the 20° and 40° latitudes. It is characterized by a deep root and a thin crown and therefore is ideal for growing in combination with agricultural

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crops. It can be propagated from seed, each of its many seed shells containing about 1,000 seeds. It can also be propagated vegetatively. It grows at the rate of 5 m/yr and we were shown samples and photographs of trees with a diameter of 25 cm and a height of 12 m after three years and 80 cm in diameter and 22 m high after 10 years. The wood does not split or warp, consequently in addition to its being useful for furniture it is a wood mainly used for making Chinese musical instruments. More than one million hectares of food crops are grown under Paulownia and it was claimed that better than 6 t/ha of wheat are achieved under Paulownia, the leaves of which are used as fodder. *Y green manure*.

Last we went to the fibreboard division which started in 1959 but was interrupted by the Gang of Four but is now back in full action making fibreboard from a variety of sources, using both wet and dry processes to produce mainly medium density fibreboard. As mentioned above, the binding resins are now being made from the condensed polyphenol derived from tree bark, polymerized with urea or formaldehyde. In general the resin represents about 10% of the board.

All of those we visited were extremely interested in Gilles Lessard's social forestry projects in Africa and also in the utilization of forest products in the Andean Pact project. Two of the scientists from the institute had attended the Bamboo Workshop and when a bamboo research network

is formulated, the Academy of Forestry Sciences would like to be included.

The Vice-President of the Chinese Academy of Forestry Dr. Tao Dung-dai, was our host and guide throughout the visit.

## VI

### Meeting with Ministry of Light Industries and The Institute of Food and Fermentation Industries

We asked for but were not given the names of all present, but the principal participants were Dr. Zhang Xue Yuan, Director of Engineering in the Ministry; Dr. Liu Yi, Deputy Director; and Dr. Yaing Zang-1 head of Food Processing in the IFFI. Dr. Wang, the Director of the IFFI was unable to attend. Though the need for scientific cooperation and technical assistance is recognized and IDRC could, with appropriate resources, give very useful cooperation to people engaged in the postharvest systems of the PRC, it was evident that identifying those with whom to cooperate will not be a simple matter. The various components of the postproduction system are spread among many agencies. For example, the Institute of Food and Fermentation in the Ministry of Light Industries is responsible for secondary processing of cereals, that is of products made from milled flours. Dependent upon the scale of the milling operation, primary processing may be the responsibility of the Ministry of Agriculture, the Ministry of Food, or the Ministry of Commerce.

Development and manufacture of the machinery and equipment is likewise spread over several different administrations. Consequently, though they expressed interest in the IDRC concept of integrated postproduction systems, practical implementation of the systems' philosophy may not be easy to achieve in the PRC.

Similarly with fish: the Bureau of Aquatic Resources seems to be responsible for salting and freezing and the Ministry of Light Industries for canning but we did not get a clear answer to the question who would be responsible for the elaboration of minced fish products from deboned species from the by-catch and other sources.

About an hour was taken up in describing the main elements of the AFNS postproduction program and the Technonet Project in Southeast Asia, the latter by Jingjai. Subsequently, the main interests expressed by Dr. Zhang were:

- a) Improved methods of processing fruits and vegetables, both for export and local consumption;
- b) The development of high protein food sources, particularly for infants (a cooperative program with UNICEF is being developed);
- c) Improvements in food packaging technology.

The extensive postharvest losses in fruits and vegetables seems a matter of major concern and they would welcome cooperation with IDRC

both in developing improved methods of preservation and in breeding and agronomic research by which to extend the time frame in which the principal food crops mature. It was interesting that while the Ministry of Light Industry does not bear the responsibility for primary processing of cereals and fish, it employs some horticultural research workers responsible for developing fruit and vegetable types suited to a commercial processing industry. It appears that the PRC has accepted the Western philosophy of complete vertical integration of production, processing and marketing of fruits and vegetables together with a relative lack of integration of cereal and other grain production and processing equally typical of North American and European economies.

The Ministry regards cottonseed as one of its main underused sources of edible protein and, since, apparently, their main varieties are not gossypol-free, they would welcome IDRC's help in establishing processes for the removal of gossypol from cottonseed meal. We promised to find out whether the methods developed at the Southern Regional Laboratory and later in Kenya, both of which depend upon acetone or other solvent extraction, are still covered by patent.

The main interest in packaging is in retortable pouches and we promised to send them information on the present state of the technology.

Jingjai will contact the Asian packaging association and JHM will make enquiries of the Canadian packaging association and the International Union of Food Science and Technology.

Dr. Zhang and his colleagues were very interested in the Operations Research Workshop to be held in Singapore in October and Jingjai agreed that we could extend an invitation to one representative to attend. Jingjai will send a formal invitation as soon as he returns to Singapore; in the meantime, the Ministry of Light Industry in consultation with the SSTC will try to select a suitable candidate.

Because of their direct responsibility for secondary processing of all cereal products, the Ministry of Light Industry would like to be kept informed of all IDRC publications, workshops, and project progress related to the functional and nutritional properties of cereal, legume and oilseed flours. Though among rural communities most wheat, sorghum, maize, and millet flours are eaten as steamed bread or as various forms of porridge, within the cities there is a continually growing demand for fermented baked bread. Though the bread served in the hotel was probably a relatively low extraction rate (75-80%) with a high proportion of imported strong wheat, bread seen in the local stores and being eaten out of hand by people passing by appeared to be of a higher extraction rate and possibly of mixed cereal composition.

VII

General Comments

During so short a visit, most of which was spent in meeting rooms in Beijing in conversations conducted through various interpreters, one could obtain little more than a very general impression of the state of food and agriculture. Among the thousands of bicyclists and pedestrians seen on the streets and relatively few rural people we met face to face, no signs of malnutrition or under nutrition were evident. During the only two trips out of the city, one to the Great Wall on a rainy Sunday, the other to the commune, most impressive was the very high intensity of land cultivation; not one square centimeter seemed left to weeds. Most prominent were short straw rice, most of which seemed close to maturity; maize, which was being harvested; soybeans and a variety of other legumes, most abundant of which from the car appeared to be a climbing variety of *Phaseolus* growing up a loose trellis of thin cane embedded crosswise at a 60° angle to the horizontal; a vast array of what looked like young cabbage; and a fair quantity of what from a distance looked like aubergine, though the plants seemed taller and more erect than I remember. In most instances, the maize appeared as a monocrop though in quite a number of cases what looked like soybeans and other leguminous species were grown as an intercrop, sometimes in single rows, sometimes as two rows of maize with one of legume. Soybeans also appeared to be growing around the edges of a number of rice paddys and maize fields. Though less frequent, we saw quite a number of fields of

sorghum in monocrop, almost all of it appearing to be tall, open-panicled and fairly deeply pigmented. In none of the sorghum fields did I see evidence of intercropping.

Of particular note were the poplars and willows which lined every street and road we travelled along with the exception of the widest boulevards in the city. Also in great abundance along roadsides and around cultivated plots were castor oil bushes. I was not able to discover who owns or harvests the seeds of what looked like a wild outcrop but presumably seeds are crushed locally and the castor oil is either exported or internally converted to ricinoleic and other fatty acids.

Though several fields of rice had lodged badly after an unusually heavy rain storm, one was greatly impressed by the immaculate good order of all of the plantations. Not a weed was to be seen among the thousands of rows of cabbage and other vegetables that we passed.

Particularly pleasant was the friendliness and courteousness of almost everyone we met, practically without exception a smile was returned by a smile.

Now that an agreement of cooperation has been signed, it is hoped that future visits may be arranged well in advance of the time of arrival. It is also essential well ahead of time that more detailed preparation be made and contacts established with Chinese scientists and

technologists who are actively engaged in areas of research in which AFNS has demonstrable competence and can offer useful advice and productive cooperation. Because of the linguistic difficulties, it is necessary to schedule longer visits than are called for in countries with whom we can more easily communicate.

Just before leaving for PRC I was given eight brief project proposals from the Academy of Forestry Sciences. These have been passed to Gilles Lessard. The Academy of Agricultural Sciences also promised to send us several proposals.

regions of the world;

conducting research into the problems of the developing  
for the purposes of initiating, encouraging, supporting and  
public corporation established by the Parliament of Canada  
Centre-of Canada (hereinafter referred to as "IDRC") is a  
And whereas the International Development Research

and institutions;

the liaison of these activities with foreign governments  
China (hereinafter referred to as "China"), and for  
technological activities within the People's Republic of  
for the organization and coordination of scientific and  
referred to as "the STIC") is possessed of the responsibility  
Commission of the People's Republic of China (hereinafter  
Whereas the State Scientific and Technological

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THE INTERNATIONAL DEVELOPMENT RESEARCH CENTRE OF CANADA

AND

OF THE PEOPLE'S REPUBLIC OF CHINA

THE STATE SCIENTIFIC AND TECHNOLOGICAL COMMISSION

BETWEEN

MEMORANDUM OF UNDERSTANDING

institutions or agencies in Canada for their mutual benefit.  
institutions or agencies in China and

conducted cooperatively between  
focused on developmental problems  
(iii) to support and finance research projects  
countries, in cooperation with China.

institutions in other developing  
activities requested by research  
cooperative development research

(ii) to support and finance  
China.

research and other institutions in  
research activities requested by  
(i) to support and finance development

Governors

(a) Subject to the approval of the IDRC's Board of  
IDRC hereby agrees:

ACCORDINGLY THE SSTC AND IDRC AGREE AS FOLLOWS:

IDRC:  
And whereas the SSTC welcomes collaboration with

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4 ...

(a) To ensure that development research activities supported by IDRC in China are undertaken in accordance with the agreed terms and conditions that IDRC attaches to such projects and that any funds granted by IDRC to institutions or agencies in China are expended in accordance with such terms and conditions.

2. The SSTIC hereby agrees:

(c) To seek the concurrence of the SSTIC regarding assignment of any adviser, consultant or other person to China.

(b) To ensure that any agreements involving collaboration between IDRC and any institution or agency in China in development research activities shall be made with the concurrence of the SSTIC, it being understood that the terms and conditions of each agreement will be negotiated direct between IDRC and the recipient institution or agency.

- a) Agriculture, Food and Nutrition Sciences,
- b) Health Sciences,
- c) Information Sciences, and
- d) Social Sciences.

by IDRC in the following fields:

3. The development research activities referred to herein will fall within the programmes supported and financed

IDRC for its programmes in China. are not normally resident in China, provided by advisers and consultants, and their families who permits and multiple re-entry visas for foreign and to facilitate the issuance of residence connection with development research activities, (c) To facilitate visits to China by IDRC staff in

Memorandum of Understanding.

projects undertaken in accordance with this institutions or by IDRC for use in the agreed brought into China by research and other and moving pictures, and sound recordings, or commodities, including publications, still and taxes on the importation of any equipment (b) To facilitate the exemption from customs duties

5. This Memorandum of Understanding shall enter into force on the date of signature and shall remain in force until it is terminated by either the SSTC or IDRC giving six months notice in writing. The termination of the Memorandum of Understanding shall not affect the validity or duration of projects hereunder which are initiated prior to such termination.

4. "Development research activities" as referred to herein are inclusive of
- the provision of fellowships and the training of personnel,
  - the sponsorship of research workshops,
  - the financing of scientific research projects (including cooperative scientific projects),
  - the exchange of scientific personnel between China and Canada and between China and other developing countries,
  - the provision of scientific and technological information.

( )

TENN DALIN

Vice Minister

滕大林

John J. Head

and Technological Commission

For The State Scientific

Development Research Centre

For the International

texts being equally authentic.

in duplicate, in the Chinese and English languages, both

Done at Beijing, this 16th day of September, 1980.

I am writing to you to place on record the discussions that took place between Director Yu and myself on the occasion of the signing of the Memorandum of Understanding between IDRC and the SSTC. At that time we agreed to pursue the following procedures with respect to development research activities:

1. Requests for IDRC financial support can be initiated by either the SSTC or any research institution or agency in China. In the case of the latter, IDRC will inform the SSTC of the requests.
2. Discussions on the technical aspects of any specific development research activity will be carried out by IDRC staff with the researchers of the respective recipient institution or agency. IDRC will inform the SSTC of the progress of such discussions.

Dear Mr. Yu:

Mr. Yu Renquan,  
 Deputy Division Chief,  
 Foreign Affairs Bureau,  
 State Scientific and  
 Technological Commission,  
 Beijing,  
 People's Republic of China.

October 2nd, 1980.

Yours sincerely,  
ORIGINAL SIGNED BY  
Ivan L. Head.  
ORIGINAL SIGNED FOR  
Ivan Head.

With every good wish.

This technical understanding will assist greatly in the translation of the Memorandum of Understanding into firm action. I should add that responses are now being considered to the requests that were handed to IDRC on the morning of the signing. Copies of those responses will be made available to you as indicated above.

4. Any problems encountered during either the formulation or the implementation stage of development research activities will be brought to the attention of the SSTC in the hope that the Commission will be of assistance in their resolution. In particular, either the institution in question or IDRC may seek the help of the SSTC to facilitate entry visas and accommodation in China.
3. Agreement on any specific development research activity will be concluded direct between IDRC and the recipient institution or agency. Copies of such agreements will be sent to the SSTC for their information.

SSTC Delegation

Director of the Policy Research

Wu Mingyu

Office of SSTC

Wu Yikang

Deputy Director of the Foreign

Affairs Bureau of SSTC

Yu Renquan

Deputy Division Chief of the

Foreign Affairs Bureau of SSTC

Yang Naichou

Deputy Division Chief of the

Fourth Bureau of SSTC

Sun Zhongqian

Deputy Division Chief of National

Computer Committee

Qu Ningkang

Deputy Division Chief of Scientific

and Technical Bureau of the

Ministry of Agriculture

Liu Zhaodong

Deputy Division Chief of Institute

of Scientific and Technical

Information of China

Yue Yanzhang

Official of the Foreign Affairs

Bureau of the State General

Administration of Aquatic Products

Qian Zuosheng

Official of the Foreign Affairs

Bureau of SSTC

Official of the Foreign Affairs

Bei Luying

Bureau of SSTC

THE STATE SCIENTIFIC AND TECHNOLOGICAL COMMISSION

Appendix F

A. Structure and Relationships

The SSTC is one of eight commissions in the government structure. Others are the State Planning Commission, State Economic Commission, State Agricultural Commission, State Capital Construction Commission, State Energy Commission, State Import and Export Commission, State Machine Building Commission. It is charged with the responsibility for the organization and coordination of scientific and technological activities in the PRC. At present, the work of the SSTC accounts for one-third of all S and T work in the PRC.

abilities:

As described to us, the SSTC has the following respon-

(a) "Working out" development policy in science and technology.

(b) "Working out" development programs in science and technology.

(c) Management, coordination and support of major projects involving science and technology.

(d) Provision of sophisticated scientific instruments.

(e) Initiation of work leading to coordination of information systems.

(f) Organization of cooperative activities with foreign countries in the field of science and technology.

(a) Institutes (more than 100 in number) operating under the umbrella of the Academy of Science. There are in some cases branches at the provincial level. These employ in total some 80,000 people, of which 20,000 are professional scientists.

responsibility of the SSTC:

in the country, the coordination of whose activities is the There are four different categories of research institutes

results.

planning, foreign affairs, work facilities, and scientific research. The other bureaus are involved with policy research,

- (v) nuclear energy.
- (iv) agriculture, light industry, textiles and medicines; and
- (iii) electronics, transportation and telecommunications;
- (ii) energy and energy resources;
- (i) basic and new sciences (e.g. laser);

for the coordination of activities in:

and importation of publications. The five specialized bureaus are scientific and technological information, importation of instruments, bureaus) and three enterprises. The latter are responsible for The SSTC has 10 bureaus (of which five are specialized

.../4

- food crops with less emphasis on cereal grains than in the past; in the North soybeans, in the South improved cropping techniques
  - multi-purpose development: animal husbandry, pasture management, forestry and fisheries
  - textile crops
  - mechanization in sparsely settled areas
- (i) Agriculture

the following:

(1978-85) programme for the development of science and technology are The priorities for assigned research in the eight-year

B. Programme Priorities

- (b) Universities and colleges of higher learning. These number about 500, of which 90 have the competence to do research work.
- (c) Institutes attached to various ministries: Agriculture, Metallurgy, Forestry, Medical Sciences, Traditional Medicine (e.g. Institute for Medium and Large Enterprises).
- (d) Institutes in certain enterprises and in most municipalities. (These later number some 400 and concentrate on agriculture and agricultural machinery, but are of uneven quality).

- biological control of insects, and irrigation in the South.

(ii) Energy

- development and exploitation of oil, coal and hydro-electric resources
- popularisation of biogas technology, particularly in the rural areas (70,000 units now in operation; large-scale installations for power generation to be pursued)
- building nuclear power plants
- provision of power to rural areas through such techniques as small-scale hydro-facilities
- adjustments in enterprises which have been built up on wrong patterns of energy use, e.g. small chemical fertilizer plants
- emphasis on conservation.

(iii) Materials industry

- upgrading iron ore deposits through concentration techniques
- techniques for the separation of metals (titanium a special and long term interest)
- rare earths
- polymers

(iv) Equipment manufacture

- improving the quality of components, e.g. bearings, hydraulics
- substitution where possible of high technology imports such as electronics, computers, integrated circuits, lasers

(v) Medical science and public health

- combination of western and Chinese traditional medicines
- elimination of epidemic diseases
- research on bilharzia, malaria
- acupuncture uses
- bone fracture and burns treatment (where successes have been gained)

(vi) Environmental protection

- pollution
- sanitation and water supply in rural areas including recycling techniques.

In all the above sectors, emphasis will be on the practical, rather than the theoretical. Mention was made of the present uneven quality of scientific work. Increasing attention will be given to the application of science and technology for the solution of economic and social problems.



INTERNATIONAL DEVELOPMENT RESEARCH CENTRE  
CENTRE DE RECHERCHES POUR LE DEVELOPPEMENT INTERNATIONAL

MEMORANDUM

TO / A: Centre Officers

DATE: December 15th, 1980.

FROM / DE: Ivan L. Head

SUBJECT / OBJET: China

The SSTC has been informed of the decision of the Board of Governors to authorize the expenditure of up to Cdn. \$2,000,000. during calendar years 1981 and 1982 in support of project activity defined in the September 16, 1980 Memorandum of Understanding. That communication, plus the completion in recent days of the China trip report, will undoubtedly stimulate increased numbers of project requests. For the Centre's part, I am anxious that some activity fall under the "third-country" provisions of Article I(a)(ii).

The Memorandum of Understanding sets forth the procedure to be followed by IDRC in its dealings with Chinese research institutions. Kindly ensure that all your program staff are aware of the central role played by SSTC. Please note as well that it is not necessary to mark all, or any, correspondence to my attention, to that of the Chinese Embassy in Ottawa, or to the Canadian Embassy in Beijing. Nor need SSTC be more than kept broadly informed until a project is ready for formal submission and consideration.

The ceiling figure of \$2 million makes necessary a Centre overview of China activity. I have asked Ernest Corea to maintain a running journal of activities and commitments. Kindly ensure that he be kept informed of the nature of Chinese proposals and responses so that, periodically, he can report to Management Committee the extent of the Centre's involvement, actual and potential. He need not be supplied with any but critical documents, but must be in a position to monitor the totality of the Centre's relationship. Such a central overview has not before been required for any country, and so a departure in your record keeping procedures is required.

Mr. Corea will relieve you of the necessity of communicating with the Department of External Affairs seeking Embassy assistance in Beijing, and with the PRC Embassy here with respect to visas. In each instance, a single channel of communication will be much the most efficient.

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I have asked Kerry Broadbent if he would lead his linguistic skills to the assistance of Mr. Corea when such are required. For my part, I have transferred to Ernest copies of all policy documents and correspondence to ensure one central repository.

I. L. H.

FACULTY OF FORESTRY  
UNIVERSITY OF TORONTO

PERSONAL & PRIVATE

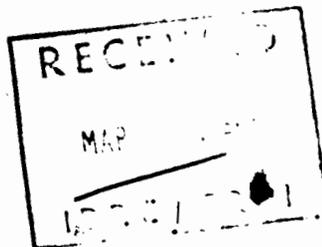
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Compline is  
of J. Warden  
DEAN

File No.

TRIP TO CHINA

1980



FRIDAY, 20 JUNE 1980

We were due to leave on Air Canada Flight 149 at 19:00, but when we arrived at the airport the flight was delayed until 22.15 arriving Vancouver at midnight. We were met at the Vancouver airport by my brother Voge and his wife Eveline as well as venerable Joe Gardner who received his two passports with stamped Chinese visas. By 2:00 a.m. we were in bed in Delta, B.C.

SATURDAY, 21 JUNE 1980

An early breakfast and conversation and off to the Vancouver airport for JAL Flight 015 to Tokyo where we will stay overnight. The trip today took an even 10 hours and we arrived in Tokyo at the New International Airport where we took an airport hotel bus to the Nikko Nerita Hotel. Tonight we had dinner at the hotel, courtesy of JAL and got a good night's sleep in preparation for our JAL flight tomorrow morning at 9:30; JAL 783, which will arrive Peking at 2:30 p.m.

MONDAY, 23 JUNE 1980, Tokyo to Peking

Up at 5:00 a.m. this morning and gourmet breakfast at 6:00 with the Gardners. Flying time of Flight 703 DC 10 to Asaka is 1 hour. We depart Osaka at 11:30 arriving Peking at 15:05. The temperature in Peking is

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81°F. Our DC 10 Flight was two-thirds empty but at Osaka it filled up with group tourists heading for China.

When we arrived in Peking it was 88°F. We were met by three members from the Ministry of Forestry and Agriculture and by an interpreter called Mr. Zhu.

My first impression of Peking coming in from the outskirts are beautiful treed roadways and, in Peking proper, the wide streets, and at the time of the rush hour when we arrived (about 4:00) the streets were jammed with bicycles, people, buses, and cars. On our way to town we passed the magnificent Peking railroad station with the large main square.

My initial reaction to Peking also is that it is a clean city, and the clothing of the Chinese people is not as drab as I had been reading. Actually, there is a lot of white and other colours worn by both men and women.

We were met at the airport in Peking by an interpreter and three Ministry of Forestry personnel whose names will appear later in this report. They took us to the Friendship Hotel in the 90° heat where we discussed the following itinerary for our travel in China.

MONDAY, 23 JUNE 1980

Arrival and preliminary discussions with Ministry of Forestry personnel.

TUESDAY, 24 JUNE 1980

8:40 Imperial Palace

14:00 Nursery and southwest outskirts of Beijing (Peking).

18:30 p.m. <sup>Hs</sup> AG Pingen<sup>m</sup> Roast Duck restaurant, banquet: host -  
Minister of Forestry

WEDNESDAY, 25 JUNE 1980

8:00 a.m. Chinese Academy of Forestry  
14:00 p.m. <sup>F</sup> Peijing Wood Processing Plant  
18:00 p.m. Guests of Alton A. Lomas (and wife Elia) <sup>e</sup>

THURSDAY, 26 JUNE 1980

8:00 a.m. The Great Wall and Ming Tombs  
18:30 p.m. At 18:30 University Deans hosted a dinner banquet for  
Ministry of Forestry personnel present at the Tuesday  
dinner.

FRIDAY, 27 JUNE 1980

12:50 to the airport leaving for Harbin by air at 14:30.

SATURDAY, 28 JUNE 1980

Harbin to <sup>Manche</sup> Dailing by train (about 5 hours)

SUNDAY, 29 JUNE 1980

<sup>Manche</sup>  
Dailing

TUESDAY, 1 JULY 1980

Dailing to Harbin by train and the afternoon at the forestry school  
in Harbin.

WEDNESDAY, 2 JULY 1980

Harbin to Peking by air.

THURSDAY, 3 JULY 1980

At 09:00 by air to Nanking from Peking.

FRIDAY AND SATURDAY, 4 & 5 JULY 1980

In Nanking

SUNDAY, 6 JULY

Nanking to Canton by air leaving at 12:00 noon.

JULY 6 - 9 1980

Canton three days to visit the Forestry Academy, National Park Reserve and sightseeing.

TUESDAY, 10 JULY 1980

Canton to Hong Kong by train

MONDAY, 23 JUNE 1980

We had an interesting meeting with Alton A. Lomas, Minister (Commercial) of the Canadian Embassy here in Beijing. He will be accompanying us to Harbin when we go there this Friday, 27 June.

As he advised, a key person in forestry at the People's Republic is Zhang (surname) Dong Ming, who is the Director of Foreign Affairs for the Ministry of Forestry. He is also the Deputy Director of the Export Import Division of the Ministry of Forestry as well as being President of the Professional Society of Foresters in China. Mr. Zhang will be hosting a Ministry of Forestry formal banquet this Tuesday.

I exchanged some Chinese Yuan for American Express currency in U.S. dollars at a bank bureau here in the Friendship Hotel. The exchange rate per U.S. dollar is 1.46 for each U.S. dollar.

The Ambassador of Canada, Mr. Arthur R. Menzies, invited our entire group to luncheon on Thursday, the 26th at 12:30 but we may be unable to accept because of the day to the Great Wall and Ming Tombs. Needless to say we will miss this luncheon unless the Ambassador can make it for some other day.

In hosting the dinner banquet on Thursday evening, 26 June, the arrangements are being made by Canadian staff with the cost of about \$30-\$35 a plate.

TUESDAY, 24 JUNE 1980, PEKING, CHINA

We are accompanied this morning by our interpreter and by the Division Chief of the Education Department, Ministry of Forestry. The correct names and addresses are as follows:

<sup>Yang</sup> Yang, Tianyin (first name), Division Chief of the Education Department, Ministry of Forestry, Beijing (Peking), China

Our interpreter's name is as follows:

✓ Zhu (surname), Xiastan, Interpreter, Foreign Affairs, Department of the Ministry of Forestry, Beijing, China

This morning we are on our way to the Imperial Palace<sup>2</sup> or Forbidden City, as it was once known, in our air-conditioned minibus. (The photograph of the minibus is of Mr. <sup>Yang</sup> Yang, Mr. Zhu, interpreter, and number one wife.)

The morning was spent at the Imperial Palace (or Forbidden City as it is called) and in the afternoon we visited one of four City of Peking nurseries. About 500,000 trees are planted each year within the city itself. At the City Nursery in the southwest suburbs approximately 300 species are grown and outplanted within the city. Species include several varieties of pine and cedar, and one specimen of Acer saccharinum from Canada which is not doing too well. Trees are grown annually along with an unspecified production of horticultural variety of plants such as berbirs. The area involved is approximately 15 acres with a labour force of about 125 people. ✓

This nursery is called the Garden and Park Nursery of Peking. In the number 2 roll of Kodachromes note the eight-year-old cedar (Deodar, about 12 feet tall). In the second Kodachrome roll (there) at the Garden Park Nursery near the outskirts of Beijing, there is a red and white sign, in Chinese characters of course, which read: COVER THE COUNTRY WITH TREES. The message is generally FOR THE GREATER FLORY OF COMMUNISM, etc.

Just a note on Peking (or Beijing as it is called): The initial impression that strikes you is the beautiful wide streets tree-lined with poplars and a variety of other species. I also thought I would be overwhelmed with the numbers of people but so far here in Peking the numbers have not been that striking, at least not up until now.

Coming up this week in our schedule tonight, 24 June, we are hosted by the Ministry of Forestry to a banquet. Wednesday evening, 25 June, we are invited to a reception at the Commercial Minister's residence, and Thursday evening, we will be hosting a dinner for our Chinese Ministry of Forestry people. Tonight the dinner will be hosted by the Minister of Forestry. And, of course, on Friday,

27 June, we leave by air for Harbin. The name of the Minister is Mr. Lo, Yu-Chuan (first name). Another person who will be present tonight, 24 June, at the dinner being hosted by the Minister of Forestry is Mr. Zhang Dongmin (first name), who is Director of Foreign Affairs for the Ministry of Forestry here in Peking.

During the evening of 24 June an official dinner was tendered to our delegation by the Minister of Forestry, Government of People's Republic of China, Peking. Also attending the dinner was Mr. Dongming Zhang (surname), Director, Bureau of Foreign Affairs, Ministry of Forestry, People's Republic of China.

Side note: On February 23, 1979, Mr. Lo was appointed Minister of Forestry at the time when the Ministry of Agriculture and Forestry was divided into two Ministries, the Ministry of Forestry and the Ministry of Agriculture.

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Another person present at the dinner was Mr. Dianzhong Gao, Deputy Director of Foreign Affairs, Ministry of Forestry, Peking, China.

Also accompanying us on the tour in Peking is Mr. Tianyin Yuan, Deputy Divisional Chief, Educational Bureau, Ministry of Forestry.

WEDNESDAY, 25 JUNE 1980, PEKING

Today was an exhausting but exciting day. In company with our interpreter Mr. Xiantan Zhu and the Division Chief of the Education Department of the Ministry of Forestry, Mr. Tianyin Yuan, we visited the historic great wall and the Ming tombs. Our Kodachromes should tell the real story of this day. During the evening we were guests at a reception by Mr. Alton Lomas, Minister (Commercial), and at this reception were the following people:

↓  
Mr. Dongming Zhang, Director, Bureau of Foreign Affairs, Ministry of Forestry, People's Republic of China

Mr. Zhong Ren Zhao, Deputy Division, Chief of Foreign Affairs Bureau, Ministry of Forestry

Mr. Dianzhong Gao, Deputy Director, Department of Foreign Affairs, Ministry of Forestry

Mr. Tianyin Yuan, Deputy Division Chief, Educational Bureau, Ministry of Forestry, Peking

Mr. Lu Qi Chen, Vice President, Beijing Forestry Institute and Professor

Dr. Mary Sun, First Secretary, Canadian Embassy, Peking

THURSDAY, 26 JUNE 1980, PEKING

I was up at 5:00 a.m., this morning to catch up on my notes and schedule plans. I must make a note that Professor Feng knows Professor Love and Dr. Sisam, and to say hello from Professor Feng.

Mr. Wang, Vice President of the Academy gave us a briefing this morning with three of his staff which I <sup>shall</sup> ~~will~~ list shortly. The first laboratory we saw was the forest soils lab and there is a photograph of it in roll six. The pathologist here is Miss Moni Chem, <sup>who</sup> has been in Japan, knows Dr. Zuffa in Canada and has a father in Japan also. I must give the name to Dr. Hubbes for the forwarding of some papers.

In roll six there is a photograph of Miss Chem, Mr. Wang and Pete Murphy and Professor Feng.

This morning we are getting a quick review of all the divisions here at the Academy. In our tour, we are now examining the tree physiology laboratory. After walking around the lab it seems reasonably well equipped. The forestry disease laboratory seems like a minimal operation, but Miss Chem is very interested in promoting exchanges and receiving literature. Interestingly, there is also a woman that seems to be in charge of tree physiology lab investigations.

As we are walking along here I am getting little bits of information. Mr. Wang, the Vice President of the Academy with the Minister of Forestry has just come back from a trip to the United States where he visited various parts of the country. Miss Xy-Xiam Lu is in charge of the wood chemistry laboratory. She took her training <sup>at</sup> Tientsin University in the Department of Chemistry.

They seem to have an excellent wood collection. Three thousand wood specimen<sup>s</sup> for 800 genera, both foreign and native woods. The wood collection

as well as the wood anatomy wood collection (in the wood anatomy laboratory) look excellent. They seem to have basic equipment for microtomes and an extensive collection of slides of wood to photograph in the wood anatomy laboratory. (In the wood anatomy laboratory here <sup>Aix</sup> they have been helping <sup>\*</sup> dating woods taken out of the Ming Tombs.

That was a very fast visit to the Academy of Forest Science but we did get a general idea of what is going on in forestry and in the Provinces, and we will learn more as we visit the other regions of Harbin, Nanking, and Canton.

Side note: The weather is just magnificent, about 85 degrees, no rain, just wonderful.

In our visit today, we are accompanied both by Mr. W. Yuan<sup>1</sup> and Mr. Wang, Ham Sheng, who is a staff member of the Foreign Affairs Bureau and who has arranged the total trip for us.

Continuing on the notes for the program at the Chinese Academy of Forestry. We were met this morning at the Academy by the Vice President, Mr. Kai Wang (surname), and he is Vice President, Chinese Academy of Forestry, Wan Shou Sham, Beijing, China. Mr. Wang speaks English quite well and has a Master's degree from the University of Michigan, Ann Arbor, (Michigan). He took his degree in the late forties. The other three staff members are Mr. C.L. Hueng of the Forest Management Division of the Forest Research Institute, Chinese Academy of Forestry, Wan Shou Sham, China (speaks English very well). Next is Mr. Chih-King Pam, Arboretum of the Chinese Academy of Forestry, Wan Shou Sham, Peking, China (also speaks English well), and, from the Institute of Wood Technology, there was Miss Shie Zheng Oau.

Mr. Wang, the Vice President, emphasizes that the main policy in Forestry in China is one to plant trees every where, and second on all four sides --

meaning, rivers, villages, houses, and roads. This is an extremely simple policy but, amazingly, it is clear and it works very well.

The Chinese Academy of Forestry is under the jurisdiction of the Ministry of Forestry and (it) was established in 1958.

The main duties of the Academy are to take fundamental and applied research in all disciplines of forestry and to provide technical guidance to provincial forestry services and to cooperate in research and teaching with the colleges and departments of forestry.

Their descriptive book mentions ten research institutes but we were only given the names of nine and these are:

Research Institute of Forestry  
Wood Industry (of which Mr. Wong is Director)  
Sub-Tropical Forests  
Tropical Forests  
Chemical Uses of Forest Products  
Economics  
Forest Technical Information  
Institute of LAC (Entomology)  
Institute of Logging

There are also three Forest Experiment Stations in various parts of the country including Mongolia.

Mr. Wong indicated that there are 1,937 staff in all ranks within the Institutes with 1,194 of these individuals directly involved in research.

The Academy was seriously damaged by the Gang of Four. During the period 1968-1978 all academic (Academy) staff were dispersed throughout China

to work as labourers. In 1978, the Academy began to be reformed and Mr. Wang indicated that instruments were still packed in boxes sitting in hallways. There are eleven forestry colleges and 19 departments of forestry in the Schools of Agriculture throughout the country. There are, however, only three announced key forestry colleges in China (and these are) Peking, Harbin, and Nanking. These three forestry colleges constitute the centres of high excellence of all forestry colleges in the country.

There are no postgraduate degrees given in forestry but they hope to do this at both the Master's and Ph.D. levels within the next couple of years, particularly at Peking, Nanking, and Harbin.

The Ministry of Forestry, of which Mr. Lo is the Minister, has about 19 bureaus and the Bureau of Forestry Education under the Ministry is responsible for education in forestry through China. There are 19 other bureaus including foreign affairs. The State actually owns all the forests but there is a possibility that provinces will own the forest in the future.

Some of the key objectives in research of the Academy are to develop faster growing species, develop an inventory, and how to protect these resources from fire, insects, and diseases.

We were also given some literature to supplement the information that we were given verbally today. In roll 6 you will find a group photograph of Mr. Wang and staff. Still continuing with Thursday, 26 June -- after a nice lunch with the Honourable Arthur Menzies, Canadian Ambassador to China and Mrs. Lomas accompanied by Dr. Mary Sun, Paul Lau, and the Lomas' daughter, Christiana, we left immediately for the Wood Processing Plant in the south-east suburbs of Peking.

The noise in this fibreboard plant is deafening and Peter Murphy made the observation that there were no hard hats being worn by the workmen. The fibreboard plant has a normal processing procedure but that doesn't look too bad; (although) the equipment appears to be a bit ancient but seems to work well. The finished product is very much like Masonite. According to Joe Gardner, it is more like our fibreboard. The labour-intensive situation here everywhere is so apparent. They have thousands and millions to assign to the labour force in all sectors of the industries. The fibreboard mill itself is beautifully landscaped.

(A Chinese official speaking: ..... have a sawmill, another is for furniture making. Talking about the cast machineries ... at that time ... the level of the machinery is very low and it would only come to 10 per cent of the total machinery in this factory, most (part) of the work should be done manually, but the timber recovery comes only 30 per cent so that things ... for this year ... we have developed ... big factory it can produce more than 16 varieties of products -- fibreboard, particleboard, plyboard, furniture, also simple portable housing for sleeping, prefabricated houses).

The main market is Peking. There are two plants of this kind near Beijing (Peking). The shifts here vary depending on the workshop activity -- one shift two shifts, or continuous three shifts at an eight-hour clip.

So, as the sun sets in the east, we leave this fine Processing Plant to rush back to our Hotel Friendship for a quick bath and then to a very fine Peking restaurant where we are playing host to the Minister of Forestry and his wife and the senior people of the Ministry of Forestry. After the Minister of Forestry, an absolute key individual is Dongming Zhang.

SATURDAY, 27 JUNE 1980, PEKING TO HARBIN

We spent the morning shopping on our way to the airport. Sha Tan and Yuan accompanied us. We had lunch at the airport in 32 degree Celsius weather without any airconditioning at the airport. It was hot! <sup>AA</sup>L. Lomas from the Embassy, wife Alea, and daughter Christiana are coming with us to Harbin along with Sha Tan and Yuan.

SUNDAY, 28 JUNE 1980, HARBIN TO NANCHA

The morning started at 5:10 a.m. to be greeted downstairs in the lobby by one Joe Gardner, who had a marvellous night's sleep, at least ten minutes. Last night we were tendered a grand banquet by the local foresters in Harbin which included the senior official from the Northeastern Forestry College. All the names I will get today on the train on our way to Nancha.

We started the morning with breakfast with Mr. and Mrs. Lomas, daughter Christiana, Joe Gardner, Pete Murphy, and Jack Ker. The fantastic breakfast looks like Canadian brands of meats, coffee, nice jam. We are going to get the train at 6:00 a.m. After breakfast we were trundled off to the nearby train station and we left at 6:08 a.m.

In Peking yesterday, it was really hot, 32 degrees Celsius, with about 100 per cent humidity and we thought going to Harbin would give us some relief. However, we got out of our British Trident aircraft at Harbin airfield and it was like walking into a blast furnace. It was the hottest day in 33 years and the temperature was 37 degrees C. During the night, however, the wind blew hard and it cooled down very nicely. We managed to get three or four hours sleep before we were awakened about 4:30 a.m. to get ready for the train to Nancha at 6:00 a.m. this morning

As we were leaving suburban Harbin, it is obvious that it is a highly industrialized city, and one of the industries we saw this morning was a large pulp and paper mill. The train itself is a comfortable club car. We are in a private room, and companions include Gardner and Murphy, and I have just been interrupted by a young lady in the train bringing us hot tea and slippers for the day's journey. Nancha is about five to six hours.

We are looking at the countryside on the way to Nancha and our labour-intensive impression is certainly reinforced -- there are people everywhere working in the fields, and something you don't see much of is mechanized equipment. You see the odd tractor, but for the most part a lot of horses and people doing the physical work.

WIKES  
We have been advised by the Chinese that there are fourteen Chinese students in the United States this year taking Master's degrees and the financial arrangements are that the United States is supplying \$400 a month for living expenses, and waiving tuition costs. In essence, the Chinese are only covering the return fare to the United States. The Chinese are sending 10 more students for forestry degrees in 1981, on the same basis. They would like to send students to Canada but financed on the same basis. We should examine the possibilities of providing such funding.

SUNDAY, 28 JUNE 1980, NANCHA

In discussions with our Chinese colleagues on the train trip from Harbin to Nancha, I have learned that the fourteen students that are in the United States at the moment are being funded by the United States for one-year periods only, not leading to formal degrees. Ten more are due to go to the US in 1981.

Of more importance to Canada is that six students are being supported and financed fully by the State Ministry of Forestry, the six students to study for a one-year period without degree involvement at Canadian universities. I do not know currently where these students are scheduled to study, but this information will be forthcoming in Canada within the immediate future.

We arrived Nancha at 12:35 p.m. and met with a blast furnace of hot air ~~again~~, of about 37 degrees C., but with the assurance that it will cool off by tonight again. Things are relatively primitive here compared to Harbin but, again, for us extremely interesting and exciting. I am impressed by the numbers of people.

We were met by provincial Forestry Ministry officials with large smiles and we were taken by <sup>mini</sup> omnibus to our hotel which seems to be a private dormitory residence for invited guests. My room is a three-room suite; it is very satisfactory with the bathroom tub three feet high and five feet deep; it looks like a swimming pool. It will get quick use tonight. And so to lunch at 1:00 p.m. The Chinese prepared a sixteen course light lunch for us including a birthday cake on my birthday.

We had a briefing with local provincial authorities at 14.00 hours and this was followed by an inspection of the hydrolysis plant.

Wood hydrolysis factory: The products of the mill include ethanol, absolute alcohol, fibreboard, particleboard. The logs they are utilizing include Korean pine (*Pinus Korjensis*). There are seven headrigs on two shifts operating seven days a week; 300,000 cu. meters of lumber are produced. The machinery looks a bit ancient to me with steam escaping here and there but ~~it~~ seems to be working reasonably well, nonetheless. As I am looking, there are one, two, three, four, ..... up to eighteen workers who are sitting at the head of the assembly line of the fibreboard material doing absolutely nothing but ~~waiting~~. I counted only 18

but Joe Gardner counted 32. We are now in the hydrolysis plant and getting an explanation of the procedures here. The animal fodder production is added in different proportions depending upon what animal the feed is for. In the case of cattle, dry yeast, feed grade, is exported to Japan and Denmark.

Children singing. Those voices were the Kindergarden school children who were taken to visit. It was a large two-storey building just filled with children of workers in the wood-processing plant here at Nancha.

We had a briefing again following our visit to the processing plant this afternoon. Another sixteen-course dinner.

It has cooled down nicely here in Nancha but the mosquitos<sup>c</sup> are out in full force and we will see what they do to us tonight.

At the briefing this afternoon I was presented with a hat in a green colour mainly to commemorate my birthday. Three more are being delivered to Harbin to my colleagues Jack, Joe, and Peter.

The mill today was extremely labour-intensive and a lot of people seemed to be standing around without that much to do. As Joe Gardner said, they could be put to work to clean up a rather messy environment that can be dangerous to the labour force. It was quite messy.

Tonight they also loaned us two bicycles and the staff photographer squired us around for about an hour biking before dinner. That was Peter Murphy and I. Most enjoyable. I am sure there must be at least 600 million bicycles in China, all one-speed.

And that ends another rather full day. Up tomorrow morning at six o'clock, breakfast at seven, and away at eight. Tomorrow, first thing, we travel about 33 kilometers to Dailing from Nancha by <sup>min</sup> omnibus.

Tomorrow evening, 29 June, we end up at the train station leaving Dailing at 9:43 p.m., arriving Harbin at 4:00 a.m. in the morning. On July 2, we fly from Harbin to Peking, spending a night at a nearby airport hotel. And then, on July 3, we travel to Nanking for a couple of days and the <sup>not</sup> Canton.

SUNDAY, 29 JUNE 1980, THE VILLAGE OF NANCHANG

It is a beautiful sunny morning, 6:00 a.m. and things are humming and moving here in this village. Trains are rolling by, people on bikes, walking, carts with horses and donkeys, and so on. Workers here do have a six-day week, but industries are on a seven-day schedule.

This morning I had several alarm clocks including coal-burning locomotives and trains rushing back and forth, <sup>not to mention</sup> (and) roosters. The roosters started crowing at 4:00 a.m. and stopped about 5:30. I think they must be trained that way.

Last night here in Nanchang we had our customary sixteen-course dinner, chatted awhile with our Chinese guests, and then to bed by around 9:30 p.m.

The key people at the Nanchang Hydrolysis Complex are, as follows:

Men, Xiambim (first name), Vice Chairman, Nanchang Hydrolysis Complex

Gao, Dong (first name), Administrative Chief, Nanchang Hydrolysis Complex

Then from the Foreign Affairs office at Harbin City there are the following two people:

Zhao, Xin, Deputy Section Chief

Xu, Chen (first name), Staff Officer, who accompanied us to Nanchang and Dailing. The Vice Chairman of the Nanchang Hydrolysis Complex is in a photograph I took on the morning of the 29th. He is in a brown shirt

and tan pants.

So here at Nancha we took a photograph with the Vice Chairman of the Hydrolysis Plant Complex and his staff and took off in our minibus at 8:00 a.m. for Dailing which is about 33 kilometers from Nancha. In our minibus this morning are Al and Alea Lomas and daughter Christiana, our interpreter Shau-Tan and Mr. Yuan who is accompanying us on the entire trip from Peking.

On our way to Dailing I took photographs of a dark ridged area on the hillside and it was an area where they grow ginseng as a herbal remedy. Between Nancha and Dailing (33 kilometers) we go through picturesque countryside, tree covered and the road itself is a narrow, bumpy gravel road, but the weather is absolutely gorgeous - not a cloud in the sky and the temperature a dry 25°. This will probably go up to 35° by noon.

As we travel between Nancha and Dailing we see a lot of typical white birch, yellow birch, ash, spruce, Abies and pines - Pinus Koriensis.

The countryside varies, incredibly similar to the Nova Scotia hillside type of terrain with all the similar tree species; spruce, balsam, pine, white and yellow birch, and, of course, poplars.

As we're nearing Dailing there is an exposure from the hillside overlooking the Dailing Nursery and 1978 Plantations of Larix. The Larix we see in the distance were planted between 1953 and 1958 and it looks like beautiful growth.

Just a sidenote on our bicycle trip last night in Nancha. As soon as we stopped at a bridge there were about 50 or more Chinese that came out of the woodwork as if by magic to see these unusual foreigners. It is rare that anyone gets up to Harbin, Nancha, and Dailing. Everywhere we travel there is always a patch of garden of potatoes, beans, and corn.

Note the Pinus Koriensis about 4 inches at d.b.h., 25 ft tall. Also common here too in the Pinus Koriensis Plantation is Mongolian Oak. They also have "Canadian" sandflies biting fairly consistently.

As we are travelling along to Dailing, or Ding-a-Ling as we call it, the hillsides and mountains are tree-covered and planted heavily with Pinus Koriensis, larch, spruce, and fir. The spruce and fir seem to average about 8 ft. of growth a year. There is a photograph of a lot of people working in a field on the way to Ding-a-Ling and they are working and weeding a Poplar nursery. There are some large plantations there. They are 20 years old and 13 metres tall.

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Military rank of the soldier is identified by the number of pockets. There are just two pockets for the ordinary soldier, and the more pockets you have the higher the rank goes.

The plantations here seem remarkably free from diseases although we noticed a degree of top killing probably caused by shoot moth or weevil.

So the road to Ding-a-ling is a very pleasant one. Kodochrome of back of homes are passing by with stacked fuelwood. It gets very cold here in winter and everyone seems to have a great stock of fuelwood. Another shot of a Plantation on the hillside in roll 12. Dailing is a small town nestled in the hillside surrounded by large pine, spruce, and fir. The Dailing/Nancha area is the first environment where I have seen goats. So the roads here in the village of Dailing are rough, gravel, dusty, no pavement whatsoever. We pass a number of large mills with extensive areas of wood storage. Note the photographs in roll 12.

So many interesting things as you drive along. Grain, for example, is all broken down and ground by hand.

Fifteen to 20 million seedlings are planted each year. Five million of the seedlings are for mountain planting. These are roughly 3 years old - Larix 2 years and Pine 3 years. It is all for outplantings. Plantations on the hillsides.

Kodachrome roll 12 shows the women weeding in the nursery at Dailing. At the Dailing nursery there is a rim of tall pine trees. They are Pinus Silvestris variety.

There is also a photo of the greenhouse. Here at the Dailing nursery I have just finished roll 12. At the edge of the nursery we stopped at the Larix Gmelina Seed Orchard. Large cedar is for the development of better stock for planting.

The children here at the nursery are so shy but all smiles and so friendly.

Another note of interest; there are spittoons everywhere in China. The Chinese spit a lot and think it is good for bronchitis and similar ailments. Every day here is somebody's Sunday, so that people have at least one day off a week for leisure time. A husband and wife do not necessarily have the same day off. School children have Saturday afternoon and Sunday afternoons off. At the large wood-processing plant, electric power saws are used to trim up the logs. The photographs taken in roll 13 and the Dailing wood-processing plant show two log-deck arrangements for logs that are trimmed and transported in a narrow cable conveyor to the mill for cutting. All the trimmed edgings of logs get diverted to the pulpmill.

As we are driving into the forests there are a lot of plantings. The hillsides are absolutely green with pines, larch, spruce, and fir. Again, just very attractive country. Could be parts of the Ontario and Quebec or the Maritime

terrain with white birch, poplars, and pine. About 20 days are taken each spring for plantings starting about April 25. From May 4 all the people in the region spend the days planting trees. School children are used widely in the planting process.

The roadsides in this Dailing area are dotted with all kinds of yellow and crimson tiger lilies - very attractive. In the nearby Dailing forests there are spruce, fir, pine and some hardwoods with the conifers running about 150 ft tall. About 14 to 16 inches, at least, in diameter.

Regarding the logging that we are about to see, generally it is done during the winter when the soil is firm with snow and during the summer the wet soil generally prevents logging in many areas. The big trees here are averaging 200 years of age. Roll 13 has photographs of a Volvo truck taking out whole tree lengths. It is the first logging truck I've seen in China but they really must have a lot of it in some places. In roll 13 you see a skidder dragging whole tree lengths. It is made in Harbin. In Dailing we visited a field station of the Harbin Forestry College where students come to do field practice studies. It seems to be an excellent area. It is a lovely forested area with varying altitudes; spruce, pine, fir, a white and a yellow birch, poplar, and something that looks like Maple.

Students come out here three or four times a year.

The large group of poplars here that looks like cottonwood.

At the Northeastern Forest Institute Field Station they have a large park area reserve that is used for practice field studies by students. There is also an area for research studies.

In the Museum of the Field Station of the North-eastern Forestry Institute there is a wild boar which is about 6 ft long - a fearsome looking animal - there are one, two, three types of deer, plus a larger animal that looks like an elk (about the same size). There is also a fearsome looking black bear which is dangerous. They also show badgers and weasel, and a large variety of birds. Some beautiful pheasants, of course; the typical male pheasant looks like the one we have in B.C. and Eastern Canada. An otter, grouse, and various kinds of duck - very interesting display. Four saber-toothed dentures that extend about four inches. Our day is coming to a close at 5:20, and we are gathered here in the meeting room of the Field Station of the North Eastern Forestry Institute having tea and de-briefing of what we've seen today.

6,400 hectares are in this Experimental forest; total volume comes to one million four hundred and thirty three thousand cu. metres. There are 80 forest workers and they serve in teaching and research. This Field Station was established in 1958. From 1958 until now they have received 8,000 students from the North Eastern Forest Institute coming here for practice studies. Students come for field work<sup>m</sup> June and July, but they also come in the winter to see logging.

When we got back from the park reserve tonight the hosts at the Field Station had some very nice touches. For example, they had basins of ice cold water, soap and towels so we could freshen up before having tea and discussions of what we saw today.

Mr. Woo is Director of the Provincial Research Service and he mentioned a liaison with the State Ministry of Forestry in Peking and that they cooperate and receive financing for their various research projects.

6:00 p.m. and we are halfway out of the forest and will reach Dailing about 7:00 where, no doubt, we will have another sixteen-course meal before boarding our train to Harbin at 9:43. We will arrive back in Harbin about 4:00 a.m., and I am sure there will be no problem sleeping on the train in the comfortable bedrooms. For the first time today I had a touch of Confucian's revenge, and I suspect some small magic pills will keep things in order.

At the Field Station in Dailing they had captured a small bear cub in the forest recently and there are one or two Kodochromes of this little black bear.

Another oddity here in the life of the Chinese; I have yet to see a graveyard. It seems that most people are cremated and very little space is needed for burial. One can just imagine out of a billion people there must be a million passing away each day. It is almost a zero growth situation in China. Family Planning has really taken over and Chinese families rarely have more than one child. Again just a fabulous evening here where the temperature has gone down to about 10 to 15°C. in the cloudless sky.

Since I received that soldier's green cap in Nancha last night at the  
I have been wearing it continually. It is cotton  
and very cool and light to wear.

MONDAY, 30 JUNE, 1980. HARBIN NORTHEASTERN FORESTRY INSTITUTE COLLEGE

In their plant analysis laboratory they seem to be getting some modern equipment - not much - but what they do have seems good - mostly of Chinese manufacture. One unit here is manufactured in West Germany. Basically an X-ray Spectrophotometer. The West German equipment is brand new and they are obviously quite proud of it. One piece of microscopic equipment is the latest thing and they have a few more which haven't been unpacked yet. In the meteorology lab they have basic meteorological instruments, all of Chinese manufacture.

Certainly they are better equipped in zoology than we are within the Faculty of Forestry at the University of Toronto.

Just a few notes about the President of the Northeastern Forestry Institute. A man about 70 years old, but very active and obviously very sharp. In our tour this morning we are now in the remote-sensing laboratory. There is an instrument here provided by FAO for remote sensing. It is provided by Interpretation Systems Inc. Item IS 1-130. The Interpretation Systems Incorporated have a mapping unit made by Electrohome Canada.

The wood technology lab. for teaching is neat and tidy. Some of the equipment is a little old but the wood collections look good.

In their wood collection museum they have an extensive number of samples both in the rough wood and in pine blocks. In summary, the wood collection looks quite good. The physical plant facilities here are extensive, - 130,000 sq. metres of space. In the museum we also saw a moose and other animals.

We also visited the plant taxonomy or dendrology laboratory with 15,000 species accessioned. There are three similar collections like this one for plants in northern China.

The next laboratory visited was the Biological Control Unit. There is one professor who was studying viruses of insects on oak and Larix. Equipment like electron-scanning microscopes are available at other Institutes. Their classes of instruction are limited to 30 students - for each course there are eight lecturers with two lab. assistants. Another laboratory we are visiting is the Pathology laboratory - a pretty good collection of a variety of fungi diseases that occur in China. They have more than 200 fungus species accessioned. Rusts and root-rot seem to be quite serious on Pinus Koriensis.

After our look at the laboratories and facilities this morning we had a another briefing and examination of the afternoon's program.

This morning we visited the northeastern Forestry Institute of Harbin.

The morning session was introduced by the President who provided briefing and a very fine reception. The President is also Vice President of the Chinese Forestry Association.

The school was established in 1952 with 12 Departments, distributed in three major areas; biology, forest products, and forest economics. Under biology there are three fields, forestry, protection, and wildlife.

Under forest products there are eight departments in logging, wood processing, forest products and chemistry, forest engineering for road development, forest machinery, and application, design of forest machinery, design of wood processing, and electrification and automation of equipment. In addition to the main operation of the school in Harbin there are also two forestry experiment stations and two small practice mills.

There are 130,000 sq. metres of space, 75 laboratories and classrooms, and a library with 400,000 volumes.

There are 596 staff of which 91 are full professors and associate professors. There are two other ranks; lecturers and assistant lecturers.

There are 2,200 students enrolled in the Harbin Institute as well as a few postgraduate students. Five hundred to 600 students are graduated each year following a four-year curriculum.

In sketching a history, the President indicated that between 1890 and 1949 only 1,500 foresters were graduated from schools. Since the school was formed in 1952 Harbin itself has graduated 7,000 students.

The President made a point of mentioning the ravages of the "gang of four" and that from 1967 to 1973 the school was inoperative and no teaching occurred. The President himself was sent to farmwork for two years. During that period also, 40% of the school's instruments were damaged.

Dean Ker asked what the interest might be in agri-forestry. The President answered that there are two points of view on the subject of agri-forestry. The President said that agriculture and forestry should not be separate and that there needs to be better planning of interrelations between agriculture and forestry.

Several technical meetings have been held to examine agri-forestry.

The President also indicated that they were weak in the social sciences at Harbin. There, within the four years, the students must make up 2,200 units of courses of study.

Physics is very important to the forestry student curricula at Harbin as well as chemistry. These courses are taught in first year. Botany is also an important core subject. Dendrology, of course, is another basic core subject. Other core topics are algebra, ecology, mathematical statistics.

The core topics that we have been talking about make up 75% of the curriculum content. Another 25%: remote sensing, forest economics, and foreign languages. Students are required to do a thesis and a comprehensive practical study. English and physical education are also requirements.

The following is a general review of the curriculum by the President. Students have three weeks<sup>f</sup> vacation in the summer and four weeks during the winter months. The National Government sets the curriculum. The Institute at Harbin has the flexibility to adjust the curriculum to meet local conditions. Basically, the curriculum is the same at the three key Institutes. Masters of two years and Ph.D. <sup>f</sup>4 years will probably be adopted in 1981. At present there are no degrees given. Degree-granting status will probably be passed, therefore, in 1981 by the 4th Congress of the Peoples Republic of China. The first<sup>f</sup> language is English and number two is German and Japanese. Jack Ker asked about the percentage of time devoted to practical field studies in relation to the classroom work. Twenty percent of the curriculum is applied to practical field studies. Peter Murphy asked what the main problems are in the northeast China region and how the country is geared to meet the solution of these problems. The answer from the President: No. 1, establishment of plantations. No. 2, fire control. Fire losses equal cutting volume. So fire is a great problem.

Murphy asked whether or not cutting and growth were in balance. Growth does not meet cutting and fire losses. Joe Gardner asked what proportion of the students are women; the answer, 20%. They have had as much as 25%. Students are required to operate the electronic computer.

Computer analysis and measuring centres use computer services. What happens to graduates regarding employment? The President replied that the State puts them to work. Graduates are assigned back to their original provinces. Graduates fill out a form indicating where they would like to work. The only problem is to have good working conditions. Five hundred to 600 students are enrolled each year. In 1985 the enrollment will be increased to 1,000. Students are selected according to scholarship standing. Each student gets 20 Yuan per month (\$16.00 Cdn.) for living, besides that they get everything free. The Institute provides lodging to the students free of charge. There are no fees.

Students have to pay for food but the government does pay 20 Yuan per month to each student so they only spend money for paper materials for their courses. There is an old Chinese saying that health and friendship does not come only from one side. The question period is now reversed, and the first question concerned forest fire protection directed towards Pete Murphy. Murphy's reply is that the first question is the prevention of fire. Changing attitudes of people. The next question is Mr. Chung - the question the President asked was how undergraduate and graduate students are financed. Brief remarks were provided by Deans Ker, Murphy and Gardner.

TUESDAY, 1 JULY 1980 - HARBIN

Last night the group was taken to a two-hour acrobatic show that was spectacular and enjoyed by everyone. There was a particularly good display by a young lady, called feet ballet, where she did impossible things with an

umbrella, lying on her back and working with her feet. This morning we were visiting an art and craft shop where they are using wheat, straw and paper to construct the famous colored eggs. In the grinding of the jade sculpturing the workers were not wearing protective glasses and while we were there one young lady got something in her eye.

The ivory sculpturing in the photo is an intricate piece about 9" tall, would take 3 months to do at a cost of 2,800 Yuan or 2,000 Canadian dollars.

In the arts and crafts shop we visited this morning there was everything from sculpturing to jade stone ivory to a variety of framed pictures made out of wheat straw in various colorful scenes of people, countryside, and so on. Eighty percent of the products are exported out of China so very little is sold within the country. A fair amount goes to the Canton International Fair. The average wage for a worker here is 60 Yuan <sup>of</sup> 48 to 50 dollars per month; with overproduction, they get more.

So we are visiting the children's train and are taking a 1.2 <sup>km</sup> ~~kil~~. ride in the train that runs through the park area. We are travelling from Peking station to Harbin and return. It is quite a delightful thing, with little childrens' theatre and so on. (See photos).

Here are some names from the June 30 visit at Dailing.

Mr. Wu, Zhanyuan, Director of Dailing Forestry Sciences  
Research Institute, Dailing, Helongjiang Province, China.

Mr. Zhu, Manli (first name), Engineer of Dailing Forestry Sciences Research Institute. (Same address as Mr. Wu).

Mr. Wei, Liangi, Deputy Chief of the Office of the Dailing Forest Experiment Bureau. (Same address as Mr. Wu).

Mr. Huang, Remsham, Director of Laing Shui Experimental Forestry Farm, Heilongjiang Province, Dailing, China.

In our trip on the river today, Tuesday, July 1, I took a photograph of some waterfront buildings with the ferris wheel over to the left which is the scene of the wheat straw painting that we bought in Harbin.

A short trip in a boat. We visited a workers' sanatorium. A 300-bed sanatorium for the rehabilitation of workers who have suffered injuries of various kinds. The sanatorium is mainly for chronic cases. There are four divisions: cardiac division, stomach disorders, respiratory diseases, the fourth division is for sciatica, rheumatic, and similar diseases. They also have units of physiotherapy, hydrotherapy and ultra-violet treatments. They also do acupuncture. Workers are allowed a free three-month stay and receive full salary and have their expenses paid. They are able to take courses in foreign languages and other technologies. They have television in <sup>several</sup> different parts of the hospital for patient viewing.

This contract is mainly for chronic diseases, not industrial accidents, and has a capacity of 2,300 patients annually.

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It is a gorgeous day here, about 85° F. and a dry heat. It is pleasant.

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Harbin has a nice river front with thousands of people out for swimming. It is a town of about 2.4 million people, and up until 1956, the Russians were here in great numbers and so much of the construction and major buildings were done by them.

WEDNESDAY, 2 JULY, 1980

This morning Jack Ker and Pete Murphy are going out to the Northeastern Forestry Institute College to get some further detail on the forestry college curriculum and to establish some further contacts with individuals. Also to find out the details regarding two of their staff coming out to Canada for Graduate Studies in the coming year. I am staying back in my room this morning to consolidate our notes and to detect any gaps in our information to this time.

After lunch today we head out to the airport for our flight back to Peking.

Another gorgeous day in Harbin, about 85° and sunshine. So far we have had only one day with a little bit of rain which didn't bother our trip because it was mostly occurring during our overnight train ride to Nancha. After lunch today we visited an antique shop where prices of \$1,000 Canadian were common for a variety of very fine articles. A wall scroll, for example, sells for \$4,000 Canadian.

We left the hotel for the airport at 3:15 for our 4:15 flight to Peking. We will spend the night at the nearby airport hotel and then take a 9:30 flight to Nanking on the morning of Thursday, July 3. Speaking with Mr. Wong on the way to the airport today (July 2) he confirms that Mandarin is the official national language. Mr. Wong, our interpreter, cannot understand Cantonese, because he says it is a very different language to Mandarin. Mr. Wong, last year, was in Edmonton, Alberta, and British Columbia, so has some idea of our conditions.

The Harbin area is flat agricultural land with tree-lined roads and windbreaks in the fields. Many of the windbreaks are obviously young trees which have been planted recently. Harbin is a great potato<sup>growing</sup> area.

An interesting item on population is their stringent regulations regarding children. If you have just one child it is eligible for a free education, and this education will carry right through to the University level. If a couple has two children, only the one child gets the benefit of education. A couple with three children receives a reduction in salary and no university education for their three children.

About the people; one thing we can't mention too often is their friendliness. They will wave to you without hesitation, and in the cities a large crowd will gather very quickly if you stop. In my China guidebook on page 166 it mentions that in the Nanking area there have been over 28 million trees planted since 1949 in their extensive afforestation program. The Guidebook also mentions that Nanking has 14 Institutions of higher learning, 340 middle schools, and

over 1,500 primary schools with a combined student population of about 550,000. The most famous University of Nanking started in 1902. Following the educational reforms in 1977 Nanking University has emerged as one of the key universities in China. There is no mention of the Forest Products Forestry College, but it also is one of the three key forestry faculties in China, along with Harbin and Peking.

A few notes about Harbin.

Harbin is an industrial and rail centre situated in the far northeast of China. It is the capital of Heilongjiang Province, located 694 miles north of Peking. It is 1-1/2 hours by air from Peking. It has a population of 2.4 million people. It is located on the <sup>2019 mile</sup> Sungari River.

In carrying on with Wednesday, July 2, 1980, at the airport at Harbin this afternoon was Mr. Feng (first name Xmyr), Deputy Director of the General Bureau of Forestry of Heilongjiang, Harbin, Peoples Republic of China. He has been to Canada. He swims 3,000 metres a day and looks in excellent shape. I'd say he was a man of about 40 to 50. Note photographs taken of him in the airport building.

We held a reception for the Harbin people and some of the key persons present were:

Mr. Feng, Xmyr, Deputy Director, General Bureau of Forestry of Heilongjiang Province, Harbin, Peoples Republic of China.

Mr. Yang, Yen-chai, President, Eastern Forestry Institute,  
Professor of Dendrology, Helongjiang Province, Harbin, Peoples  
Republic of China.

Mr. Sun, (first name Zhijian), Vice Chairman, Helongjiang  
Provincial Foreign Affairs Office, Helongjiang Province,  
Harbin, Peoples Republic of China.

Note the photographs taken of the above three individuals.

Carrying on from the last tape I mentioned that Mr. Feng, Mr. Yang and  
Mr. Sun were present on the evening of July 1 on the occasion of our reception  
at the hotel. I took photographs of these three gentlemen under the two flags  
of Canada and China (celebrating the National holiday of Canada).

Carrying on with the listing:

Mr. Tao, Huimin, Division Chief, Foreign Affairs Division of  
Helongjiang Provincial General Bureau of Forestry, Helongjiang  
Province, Harbin, Peoples Republic of China.

Mr. Jiang, Songniam, Officer in Charge of the General Office,  
Northeastern Forestry Institute, Harbin, Helongjiang Province,  
Peoples Republic of China.

Miss Liu, Jurong, Interpreter of Helongjiang Provincial General  
Bureau of Forestry, Helongjiang Province, Harbin, Peoples  
Republic of China.

( Mr. Wang Jiying, Section Chief, Foreign Affairs Division of Helongjiang Provincial General Bureau of Forestry, Helongjiang Province, Peoples Republic of China.

Mr. Mar Zhanhe, Staff of Helongjiang Provincial General Bureau of Forestry, Helongjiang Province, Harbin, Peoples Republic of China.

Just a note on Mr. Wang, he was the knowledgeable interpreter with an excellent vocabulary who has visited Edmonton and B.C. He would be a good interpreter to any group of Chinese in Forestry visiting Canada in the future.

To ensure identification, the following individual accompanied us on the entire trip: Mr. Yuan Tianyan, and he is Division Chief, Education Department, Ministry of Forestry, Peking, Peoples Republic of China.

The interpreter who accompanied us on the trip was: Mr. Zhu Xiantan, Interpreter, Foreign Affairs Department, Ministry of Forestry, Peking, Peoples Republic of China.

A further note on the Ministry of Forestry (Beijing) Peking, Peoples Republic of China. Regarding the organization of the Ministry there are 19 Offices and Departments as follows:

General Administration Office

Office of Policy Study

Department of Education

- " " Planning
- " " Finance
- " " Investigation and Planning
- " " Capital Construction
- " " Seed and Seedlings
- ✓ " " Afforestation
- " " State Forest Farms
- " " Forest Protection
- " " Timber Production
- " " Forest Products Industry
- " " Forestry Machinery
- ✓ " " Foreign Affairs
- " " Material and Goods Handling
- " " Information
- " " Personnel
- " " Forestry Science and Technology

In my notes, there is a complete listing of staff for the Northeastern Forestry Institute at Harbin, China, which should be included in the listing of the Report.

And so we are here at the hot Peking Airport Hotel on an overnight stay ready to take our plane to Nanking July 3 at 9:30 a.m.

After a hot and humid overnight stay in the Airport Hotel of the Chinese

Aeronautical Administration Commission Airport we took off in CAAC flight to Nanking at 9:55. Flight 1507 (560 k. to Peking) will take an hour and 20 minutes at 8000 metres, 25,000 ft. The fare is 123 Yuan which is roughly \$97 Canadian. By Canadian standards the air fares here are expensive. One line we can't forget from our interpreter Shau-tan is, "don't forget your luggages!"

Just in case I misplace the paper I would like to record the staff of the Northeastern Forestry Institute at Harbin, China, Helongjiang Province.

Yang Yen-Chai, President of the Northeastern Forestry Institute and Professor of Dendrology.

Jiang, Song-Niam, also in charge of the general office.

Liu, Ji-xiang, Dean, and Associate Professor of Chemistry.

Xu, Yong-Ming, Vice Director of Research Department, Associate Professor of Metal Heat Treatment.

Zhang, Quing, Vice Chief of the General Office

Zhou, Hai-Ping, Secretary of the General Office

The following staff attended our discussion meetings:

Cheng-Viaxian, Vice Director of the Forestry Department.

Zang, Huan-neng, Associate Professor of Fire Protection.

Sao, Li-ping, Professor of Forest Pathology.

Shi, Ji-Yam, Vice-Director of the Logging and Transport Department  
and Associate Professor of Logging.

Zhang, De-yi, Associate Professor of Forest Engineering.

Zhu, Zeng-Xiam, Associate Professor of Timber Drying.

Zhoa, Guang-yam, Vice Director of the Forest Road and Bridge,  
and Associate Professor of Bridge Design.

Li, Ji-Zham, Vice Director of the Forestry Machinery Department and  
Associate Professor of Tractor Machines.

Zhu, Guo-xi, Vice Director of the Machinery Department and  
Associate Professor of Tractor Machines.

Zhu, Guo-xi, Vice Director of the Machinery Department, Associate  
Professor Truck Using and Repairing.

You-Chang-fu, Vice Dean of Road Engineering.

Chang, Jiang, Vice Director of the Basic Course Department,  
Associate Professor of Theory Mechanics

and that ends the listing for the Northeastern Forestry Institute of Harbin,  
Peoples Republic of China.

The temperature here as we are landing in Nanking is  $25^{\circ}\text{C}$ . or about  $77^{\circ}\text{F}$ .  
That doesn't sound too bad. The airport is also military with a lot of migs  
and other military equipment.

At the Nanking airport we were met by Joe Gardner's <sup>a</sup>McMillan lecturer  
of last year and two Vice Presidents of the Nanking Province region. Our drive  
in from the airport leaves an excellent impression - wide streets, beautiful  
tree-lined and sculptured plants, cedars, sycamores and other hardwoods and  
conifers. We are also fortunate with the weather. It is only  $25^{\circ}\text{C}$ . and very  
comfortable. In fact, we haven't been as comfortable in a city in China during  
the whole trip.

So our introduction to Nanking is pleasant - a very favourable one. We  
are in a Nanking Hotel, for the first time nicely airconditioned, with beauti-  
ful hotel grounds. This afternoon we are going to visit the College of  
Forestry and tonight we are invited to a dinner. Tomorrow we will go back to  
the Institute for a detailed discussion.

At the Nanking airport we were met by two Vice Presidents of the Nanking Forest Products Industries Institute. The names of the two Vice Presidents are: Zhong Tatien Yong and Cheng, Aveisseng.

I thought that the Nanking area would be entirely flat but there are some nearby hills that are quite high.

Other genera of insects here are Ips, Hylobius, and Monachamus urussobi, the latter being the long-horn beetle. The bylaws to control nature being encouraged here are birds that feed on insects, so that nests are built in each spectra<sup>u,v</sup> of the forest. They have an excellent collection of birds and eggs, and some of the smaller animals like deer and monkey, pheasants, ducks, and small birds including eagles and several hawks, pelicans and other birds. Professor Psiung, who was the <sup>A</sup>McMillan lecturer, has explained to us the Bamboo laboratory which has so many - such a variety of products. In the Nang<sup>J</sup>ing area ... genera and 300 species of trees in the whole of China. Bamboo can be divided into two groups. Bamboo has at least 30 species, 30 different uses. The various species vary in height from 30 centimeters to 30 meters (in height). They have 7-1/2 million acres of bamboo plantations and two-thirds of the plantations are the one species - the hairy bamboo. Professor Psiung is responsible for all bamboo research in China. What I said a lot earlier about species was referring to bamboo, there are 300 species in the whole of China.

They have an extensive '.... Herbarium with 70,000 accessions (in this Herbarium). Over 3,000 species are recorded here, which is less than <sup>6/10</sup> half of the species that

are known to China, and the Herbarium includes exotics such as eucalyptus; metasequoia was discovered here and distributed to the world. There are 200? species of *Cryptomeria fortunei* which can be of massive size. The analytical lab. we were shown here (and there goes the lecture bell) is rather ancient in equipment.

There are more than 3,000 species of trees in China, and of the woody plants there are in excess of 7,000. In the Arboretum grounds of the Nanking Institute there are 1,000 tree species represented.

Students get two years of English with four hours a week during a one-year term. There is general examination for entrance to the undergraduate curriculum in professional forestry.

On the way back from the Institute this afternoon we made a quick stop at the Friendship store.

FRIDAY, JULY 4, 1980 - Nanking

This morning on our <sup>mini</sup>omnibus way to the Nanking Institute it is a dull, humid, relatively cool morning. Last night, July 3, at the Nanking Hotel the two Vice Presidents of the College hosted an elaborate banquet for our delegation. It was Mr. Zhong Tien Yong who was the host. Other Institute people who were present included Vice President Cheng, Kewi-Sheng, the latter who speaks English. Other Chinese present were Mr. Le, Secretary of the College Administrative Office as well as Professor <sup>H</sup>siung who was the <sup>4</sup>McMillan lecturer last March, 1980.

In China there are eleven Forestry Colleges of which six are under the responsibility of the Ministry of Forestry. The others are under the authority of the Provinces. He is explaining about the six Forestry Colleges. The conditions that are quite different for each of the Colleges <sup>is</sup> that they started at different times. He again mentioned the three key colleges as Harbin, Nanking and Peking. The other three Forestry Colleges are in the process of being restored and are not really operational now.

In the whole of China there are 11,000 students in forestry. To clarify - 11,000 students in all the forestry colleges, 11 of these as well as the 16 Departments in schools in universities of agriculture.

As we entered the meeting room this morning we were met by the entire staff and by clapping, and of course, we clapped back.

At the Nanking Institute they called Faculties "Departments" and Departments "Faculties" in our sense of the terms. So, at the Institute they have Departments and then under the Department what they call Faculties are really areas of major study. In the curriculum there are 50 courses. Amongst these courses there are core courses and elective courses. The core courses include politics, physical education, English, mathematics, physics ... analytical chemistry, organic chemistry, botany, dendrology, meteorology, soil science, plant physiology, surveying skill, statistics, forest ecology, forest mensuration, forest genetics, ent ..... silviculture, forest pathology. forest entomology, forest management and agricultural machinery. Plantations are national products, forest economics and business administration. Those are the core courses and then there are electives.

In the second year politics, physical education and English are repeated as well, and then they take meteorology, soil science, plant physiology, surveys,

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statistics and forest ecology. In the third year they take politics and English and the core courses of mensuration, forest genetics, silviculture, pathology, entomology. In the Fourth year they take ten electives.

In the Department of Wood Industry there are two options; artificial boards and chemical wood processing; and these have specific curricula.

In artificial boards the different courses include mechanical drawing, mechanics, strength of materials, mechanics of materials, mechanics of machinery, machine design, electrical engineering, electronics, chemistry, wood technology, thermal dynamics, transport lifting machinery, adhesives and cording materials, machine design, wood products processing, plywood, particle-board and fibreboard. These courses are distributed over a three-year period. About 60 students take the artificial board-option, with 240 in all years.

Graduates go all over China in factories as technicians.

The next option is Chemical Processing. The courses taken include politics, physical education and English, mathematics and physics, and in addition, physical chemistry and ..... chemistry, mechanics, mechanical drawing, electricity and electronics, chemical engineering or chemical processing equipment, wood chemistry, automatic control ....., logging analytical instruments, thermal engineering, industrial design, chemical processing of forest products. .... Anatomy is given under wood chemistry.

One important gap in the program here is computer science. They don't have the facility here, but they said they were in the process of constructing a building especially for computers so they should be in the position to give computer science in the future.

This morning we have covered the three areas of concentration. There are several others.

In the Department of Forest Engineering there are three areas of concentration. Forest engineering and timber harvesting, manufacture and design of forest machinery, and application of forest engineering. These are three separate areas of concentration.

The emphasis here is on wood-processing and wood chemistry and wood technology. For example, wildlife is not duplicated here, there is less emphasis on forest management. Logging machinery is emphasized at Harbin.

Agriculture is dominant, leaving very little land for afforestation and plantations. So great emphasis at Nanking in afforestation, plantations, and development of and selection of the proper trees for these purposes.

Regarding students in paper making and wood preservation, a delegation was sent to Canada last year to examine this particular area.

This morning we met with 17 members of the Nanking Institute.

- Question: How is research funded in China?

Four sources - one from the National Academy of Sciences of the Central Government, The National Ministry of Forestry; at the Provincial level there is a Provincial Scientific Research Council and the Ministry Provincial

Question: How is research funded in China?

Four sources - one from the National Academy of Sciences of the Central Government, The National Ministry of Forestry; at the Provincial level there is a Provincial Scientific Research Council and the Provincial Ministry of Forestry.

Regarding cooperation, Professor Zhong would like to have personnel exchanges with all the colleges.

Vice President Zhong of the Nanking College would like to promote personnel exchanges, library exchanges, seeds and specimens, and to establish connections between specialists.

We agreed that in all these areas there should be no problem in developing such interchange and that we would encourage it.

We also indicated that we hoped a delegation of forest education specialists would come to Canada next year and that we would be tendering an invitation.

There are six Chinese students coming to Canada next year and they are fully supported by Chinese scholarships. Financing, however, is a problem for additional students.

The younger students who would come to Canada would go on degree programs. The older Professors would come for a one-or two-year study period without

leading to degrees - merely <sup>to</sup> take courses and <sup>to</sup> take field studies to upgrade their knowledge.

This afternoon, July 4, we are visiting the Botanical Gardens and the Doctor Sun Yat Sen Memorial. At our dinner banquet last night, we received gifts that were sent on by the Minister of Forestry. The ladies received sandalwood fans and the men a goodluck stork pinetree framed picture. Accompanying us this afternoon on our visit to the Botanical Gardens is Mr. Zhong, Vice President of the Nanking Technological College of Forest Products.

At the morning briefing at the College on July 3, it was mentioned that we were the fourth delegation from Canada. The Nanking Technological College of Forest Products was established in 1952 in the centre of the city, and then it was moved to the outskirts to its present location in 1955. All six major buildings were finished in the period 1955-59. Of the Forestry Institutes this is the only one of the schools that deals with forest products in <sup>China</sup> Canada.

Students come from various areas of China and the two objectives of the college are to educate foresters and to provide professional technicians for the industry. Since 1952 to the present 6,000 foresters have been trained.

Originally 5 departments were drawn from 5 universities to make up the college. In 1952 there were less than 100 students and staff. In 28 years 5 departments and eight areas of concentration have developed, and presently there are 482 teachers, 1,200 students. Next year they expect to have 1,600 students.

Here we are at the botanical garden building for the usual briefing and tea. The botanical garden has exchanged seeds with Ottawa, Department of Agriculture, Botanical Gardens, University of Montreal, University of Alberta, University of Toronto, and the University of Guelph. After a brief review by Mr. Wang, who speaks English well, we had a visit to the Exhibition room which was beautifully presented and they had copies of certificates of award given to the Botanical Institute by both the National and Provincial Governments. They have quite a section of medicinal plants. The Herbarium is really impressive; 500,000 accessions of individual plants. There are 15,000 species of plants. So this afternoon we visited the Hortus Botanicus Nanjingensis, the oldest botanical garden in Nanking (Nanjing), Province of Jiangsu, Peoples Republic of China. This botanical garden was established in 1929 and rebuilt in 1954. It is owned by the Province and covers an area of 186 hectares. The Research Associate, Mr. Wang, Chai-shi, spoke English very well and gave us a guided tour of the botanical gardens. He has had seeds from the University of Toronto, University of Guelph, from the Research Branch in Ottawa, as well as the University of Montreal and University of Alberta. He would like to have continuing exchanges of seed. On the way back from the botanical gardens we visited the Doctor Sun Yat Sen Memorial. When we arrived we experienced our first rain and we did not get up to the top (note the kodachrome exposures in roll 19).

At this point we also gave our interpreter Zhu an O.K. to take off to visit his sister who lives nearby. Following a visit to the Sun Yat Sen Memorial we paid a brief visit to the rather famous nine-storey Pagoda. The

Pagoda is only 50 years old, so it is relatively modern, and has nine floors, of course, for good luck. So we climbed up the nine-floor Pagoda tower and got a view of the first Ming Dynasty Empire's burial area. Note the two pagodas in the distant hills in roll 19 - that is if they can be seen through the mist.

At a quarter to five it started raining, for the first time today, a typical monsoon so we got soaked walking from the Pagoda to the <sup>''''''</sup>ombibus. It felt good.

SATURDAY, July 5, 1980 - Nanking

Riding on the omnibus this morning we had discussions with Professor <sup>H</sup> Psleng Hsiung of the Nanking Institute. One thing he made clear this morning is the status of graduates of the Nanking Institute as Foresters and Technicians. Both are trained to the same professional level of competence. The main difference is that technicians go to industry to do operational jobs.

There are 11 independent colleges and 16 departments of forestry affiliated with agricultural universities. Of the 11 independent colleges, 6 are under the direct administration of the Federal Ministry of Forestry and 5 the direct responsibility of the Provinces.

This morning our first stop was at a kindergarden; and we were met at the front door by about 20 little girls and boys with a lot of make up, and the usual reception. A briefing by the kind lady in charge.

The children at the kindergarden are boarded all week and the mother and father take the children back only on weekends. There are 470 children, ranging

in ages between 3 and 6. There is a staff of 75 including teachers, doctors and assistants. Children 4 to 6 have two classes each morning, and those 1 to 4 have one class per morning. Education is through playing and singing various types of games. They also take the children out to the country and to the factories to see how these activities are accomplished. When the weather is fine they take them to the parks. The children are educated in the social norms to be honest and brave and the other fine qualities and social graces.

The children are taught to love work and love people and to protect property. The children are also briefed on international affairs.

Children 3 - 6 are at an important period of development and they are trained to take care of their health - a great deal of attention is paid to their nourishment. Note the photograph of the matron in charge of the school.

We have just completed our visit to the Kindergarden which terminated with a delightful concert by the children including dancing and gymnastics.

The weather again in Nanking fortunately is overcast and rainy but it means it is relatively cool and not hot as we had anticipated.

26" television (colour) costs 4,552 Yuan, which is roughly \$3,600 Canadian. This is in one of the large department stores. A 12" black and white is 670 Yuan which is roughly \$550 Canadian, so the Chinese have to save up for about seven or eight years to be able to afford to buy a television.

After the Kindergarden we were taken shopping in the Chinese Department Store where I took a number of pictures. Everywhere crowds gathered around in curiosity. So after dinner on July 5 we left at 2:30 to see the Panda bears at the Nanking Zoo at the nearby Lake Shan and then went for a boat ride on the lake (see roll 21 for photographs, also roll 20). Roll 21, note the old wall of Nanking taken from the lake.

Regarding Mr. Cheng, Vice President of the Nanking College. There is a photograph of him in roll 21 in the boat on the lake.

*McLaughlin*  
July 5, 1980 - Nanking "My name is Bill ~~McGloughlin~~<sup>McLaughlin</sup>, I live at 525 Northmoor Street, Moscow, Idaho 83843".

*Garry Matias*  
"My name is ~~Garry Matias~~<sup>Garry Matias</sup>, I live at 1719 East East Street, Moscow, Idaho 83843".

These two American Assistant Professors from the University<sup>4</sup> of Idaho, Moscow, are here for two months. Both are <sup>first</sup> sociologists working for the US Parks Division. They were with us on our tour today.

Tonight we are going to an evening's performance of the visiting Chinese Korean-ethnic Ballet Troupe.

SUNDAY, JULY 6 - Nanking, Peoples Republic of China

This morning we were picked up in the omnibus at 8:30 and there to greet us at the Nanking Hotel were the two Vice Presidents of the Nanking College as

well as Mr. Li, Secretary of the College and Professor Hsiung. We went to visit the famous Yangtze River Bridge for an hour and then we returned to the hotel to pack our bags for the noon flight to Canton. Last night we were taken to see the Korean Dance and Musical Group from Northern China. This is an ethnic Korean Troupe which is part of the Peoples Republic of China, not Korea. It is a fabulous colourful dance group that provided traditional singing, with beautiful soprano, tenor and bass voices.

The people at Nanking, as in Harbin, have been extremely hospitable and have gone out of their way to make us feel at home.

One social problem in Nanking was the fleas in the hotel which affected two of the girls. We thought the hotel was cockroach-free, but on this last evening Pete Murphy found a "one-foot" monster!

Our stay here in Nanking has been tolerable. We got the hot weather in Peking and Harbin where we expected it to be (especially in Harbin) relatively cool, but in Nanking, which should be getting 100°F. it was a cool 80, or about 26°C.

Just a note on the Ethnic Korean Musical and Dance Group we saw last night in Nanking (July 5).

One of the dance numbers was called the lumberjacks, which lasted for about 20 minutes, and depicted the lumber activities in Northern China. The National Ballet of Canada might well do some emulating here for our forested country.

The Yangtze River is at least a mile wide at Nanking, and a silty brown color.

This last day in Nanking the sky is clearing and the sun is coming out and we are getting a taste of how hot it can be just before we leave for the airport.

So here we are on our way to the Nanking Airport accompanied by two Vice Presidents Zhong and Cheng, the latter speaks English, as well as Professor Hsiung and Mr. Li, Secretary of the Administration Office of the Nanking Institute.

So we departed Nanking Airport on Flight 131 for Canton at 11:50. We are in an old Viscount which travels about 325 miles/hour so the flight which would normally take an hour and a half in a jet is going to take us 3 hours today.

After the flight on the Viscount to Canton, it is 33°C. with about 100% humidity. Probably equivalent of about 40°C. As we are driving in our airconditioned omnibus to our hotel again we are travelling along tree-lined streets - quite an attractive setting. Canton is set amongst high hills making it an attractive location, but it is hot. We are met by three men and two women, an older woman and one young Chinese girl. At this moment I don't know who they all are. One is the Deputy Director of Forestry for the Province, and as usual we will get the names later.

The Chinese talking going on here is boisterous and friendly, and the welcome is, as usual, just warm and great.

MONDAY, 7 JULY, 1980 - Canton to Sowchin

Unfortunately, Jack Ker was ill this morning ~~and~~ couldn't go with us to Sowchin. So there was just Gardner, Murphy and Nordin on this two-day excursion. Travelling with us this morning are Madam Yi Bing, Chief of the Office of the Forest Bureau of Guang~~Don~~ Province and also Mr. Lu, Winjie who is on the staff of Forestry of the Bureau of Guang~~Dong~~ Province here in Canton.

Yesterday afternoon we were met at the airport also by Mr. Weng, Liangao who is Deputy Director of the Forest Bureau of Guang~~Dong~~ Province in Canton. And also by Mr. Yang Jragim who is Section Chief of the Office of Forest Bureau of Guang~~Dong~~ Province. It is hot this morning, about 35°C. and 100% humidity. The road to Sowchin is a wide paved road with bicycle paths on each side that are filled with people on bicycles. This is harvest time in the Canton area, and wheat and rice particularly are being harvested.

The road is absolutely full of people with bicycles with two big baskets on either side and they are carrying watermelon, you name it (half of roll 21 is on the road to Sowchin).

There is a great use of water buffalo for plowing. The first time I have seen it on this trip. Also it is rather interesting that women seem to smoke a lot, and we didn't notice this in the north. On the road to Sowchin we are also seeing our first tea farms. We are also seeing our first eucalypts and

they are being grown here quite widely. Also a variety of pines and, of course, the bamboo. On the road to Sowchin the trees lining the road for the most part look like a long-leafed pine Casuarina equisetifolia. The soil in this region is red-iron rich. There are generally a lot of trucks and small omnibuses and some cars on the road and they are frequent, particularly trucks. Interestingly, you don't see much evidence of military vehicles or military personnel. On this busy road to Sowchin we saw our first diesel locomotive. All the others have been steam-powered. We also saw our first banana tree on the road to Sowchin.

The eucalyptus by the roadsides does not look that good, it is twisted, curvy, and not straight-stemmed.

There is an interesting black goat also that is common in this area. After an hour and twenty minutes travel we are taking the ferry across the North River.

Note at our ferry stop on the road to Sowchin there are a number of photographs at the ferry dock showing the unfinished bridge and the very busy traffic on the North River and the mountainous surroundings.

On the other side of the ferry landing Madam Lu bought some lichi fruit which is now in season and is absolutely delicious. This is also sugarcane country.

On the Sowchin road as we are heading into the mountains the terrain

reminds one of Southern B.C. in the vicinity of Oliver.

On the mountain sides, as we travel to Sowchin the pines grown are Pinus masoniana. I would say there are hundreds of Chinese working on the roads repairing them. It is difficult to see a field that doesn't have Chinese working.

I see also why there is so much Peking duck eaten in China - there are thousands of them as you travel along the road. All the gravel seems to be obtained by hammer-breaking larger stones into gravel size. That's the tough way to make gravel but certainly there are a lot of people here to do it. The sugarcane that we see growing is about half its mature height. We are staying at the Seven Stars Hills. The story is that seven stars fell to earth and formed these hills. This area is also known for caves and six lakes. And we are off this afternoon to see the caves. Where we are staying tonight is called Chow Ching City. So our first sightseeing stop this afternoon is in the Chow Ching vicinity ..... we take a long boat into a cave 300 metres long with a ceiling that is about 5 ft. from the water surface. This cave was discovered 1300 years ago and there are formations in the rock that resemble fish and animals. The cave makes a horseshoe turn and then comes back to its place of origin. It gave us a bit of relief from the intense heat outside. In roll 23 is the photograph of the Bush against the mountain. It's the eggflower tree - the eggflower tree is called angipemi tree.

*angipemi*

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In Kodachrome roll 23 there is an exposure of red lotus with the red lotus lily pads. The second cave we visited is the largest, about 1200 years recorded history, and there are inscriptions on the wall that date back to the earliest dynasties. There are some 200 poems and inscriptions on the walls.

At the entrance it is about 30 metres high. Our Chinese hosts everywhere throughout our trip were generous with their sidetrips and sightseeing trips. We didn't pay for anything, so we must remember to do the same thing when they come to Canada. Again, throughout the large cave there are a number of natural sculptings like faces, animals, cactus flowers, and so on. Next we visited the Water Moon Palace, built 400 years ago during the Ming Dynasty.

We drove in our omnibus to the top level of the road. The palm tree with the long hanging fruit on the photograph in roll 26 is called caliouta palm. There is an exposure of "Shau-tan" and myself by a sign which says "No tourist beyond this point of nature reserve".

Correction, there are not 50,000, not 15,000 hectares but 1,500 hectares, and of these 300 are reserved for the natural forest. One hundred and seventy birds are in the area.

One thing I miss in the skies of China - all the time we've been here I haven't seen one small aircraft in the skies, or even heard one. They just don't exist except at military training airfields.

So, after we completed a nice walk in the natural forest of the Ding Fu Nature Reserve we returned to the omnibus and to the Reserve Park Headquarters for a short de-briefing and tea. In the Nature Reserve Park we stopped at the Chingjun Buddhist Temple, which is very famous here in south-east Asia. Note roll 26.

At the Chingjun Buddhist Temple, as we are descending the nature park hill on foot, I bought a package of the red begonia tea, which will be interesting to try when we get back home.

I'd say the temperature conservatively is about 40°C. See roll 26 for our stop at a lovely waterfall and pool in the Ding Fu Park Reserve. All the people in the photographs are Chinese tourists here for the day from Canton. They are all friendly and hollered "hello" "hello" and I, of course, gave them the old "he haw".

Note the large exposure of roll 26 of a Japanese Shinto Shrine. On roll 27 exposures 1 & 2 are photographs of the Ding Fu Reserve Park main building with the Director in front, whose name is Bing Wang Chi (Bing is the last name).

Just saw two small black dogs, an animal that is a very rare species in China.

In roll 27 note the fire break on the ridges of the high hills.

There are

no big trucks taking grain stooks out of the fields. Everything is done in two baskets on the shoulder and carried to small central areas in the fields where it is thrashed by small machines. And so back to our hotel for lunch and the 3 1/2 hour drive this afternoon back to Canton.

And tonight we have a meeting with a number of people from the local College of Forestry and the Academy of Science.

On Tuesday, 8 July, 1980 we left our hotel at Sowchin at 1:35 p.m. for our trip back to Canton. It is a blistering hot day with one quick stop for a photo of the red lotus blossoms in the nearby lake.

Note on travel by omnibus in China. The going is pretty slow because there are so many bicycles and small cars and three-wheeled motorized vehicles on the road plus roadwork, so a trip that would take normally an hour takes about 3 hours.

Just a note on the highway that we have been using. This one that we are on now back to Canton from Sowchin is extremely rough with hard rock shoulders - definitely not smooth at all.

Miscellaneous. There is no such thing as "pampers" for children in China. All babies and children have open-ended trousers. Whoever gets China started on pampers is an instant billionaire.

They have a very nice habit here in hotels. Each room is supplied with large thermos filled with hot water and a can of tea leaves. Also a flask of boiled water.

As we drive through the narrow streets of Canton one is overwhelmed with the number of people on bicycles. All bicycles have one speed so that everyone peddles along at the same steady pace. No-one seemingly out of step, and it seems to go with the whole system.

As we're driving along here at 5:00 p.m., top of the rush hour at Canton, one is overwhelmed with the numbers of people.

TUESDAY, 8 JULY, 8:00 p.m. - Canton

At the hotel this evening we convened a meeting with the Dean and three of his colleagues from the Canton Forestry College. Tomorrow they will be providing a listing of their academic staff. The curriculum is basically the same for all the Forestry Schools in the country and Mr. Yean confirmed that the curriculum is set by the Ministry of Forestry for all colleges and universities and departments throughout China.

The School of Agriculture and Forestry is one of the departments. There are 96 teachers, of these six are professors, 4 are associate professors and the rest are lecturers. There are 240 undergraduates and they predict 360 undergraduates in the near future. Also they mention the possibility of 140 post graduates in the future.

In response to a question on the emphasis on the curriculum at Canton, the Dean said that they concentrate on subtropical conditions. Presently there are twelve post graduate students, but no degrees are given at this time.

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They have produced about 2,500 undergraduate students at the Canton school. The other departments are agriculture, soils and chemistry, plant protection, and horticulture; another department is silkworm, next agricultural machinery, and animal science and animal breeding (same department).

Professors also do research work in addition to teaching.

Each department is entirely independent of the others, however, and all teaching is done by the department - there is no integration as we know it here in Canada.

WEDNESDAY, 9 July - Canton

We are off in our omnibus this morning on this hot, humid, sunny day, accompanied by Madam Yi, Mr. Yuan and our interpreter Mr. Zhu (Shau-Tan).

And this morning we are off to White Cloud hill where we are seeing along the way Pinus Massonia which is the main species. Here at the Seven Star Hill, the Seven Hills are gathered like the big dipper in the sky.

On Monday, 6 July when we arrived at the Canton airport we were met by the following people of the Forestry Bureau of Guang<sup>1</sup>/<sub>1</sub> Dong Province.

Mr. Weng Liangao, Deputy Director of Forestry Bureau

Madam Yix/Bing, Chief of Office of the Forestry Bureau

Mr. Yang, Jragin, Second Chief of Office of the Forestry Bureau

Mr. Lu, Wenjie, Staff of Forestry Bureau

Mr. He, Weien, also Staff of Forestry Bureau

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On Sunday afternoon we had a greeting by the Deputy Director and then Madam Yi gave us a briefing on our tour as follows: on July 7th Monday we are to leave the hotel 8:00 a.m. and we actually left about 9:30 a.m. because of Jack Ker being ill and finally Gardner, Murphy and Nordin set out for Sowchin for a 2-1/2 hours drive by minibus arriving Sowchin 12:30. At 3:00 o'clock on Monday, July 7 we began our tour of what was actually a recreational conservation area, an extremely scenic area for lakes and mountains and caves.

TUESDAY, 8 July (additional information)

We are visiting another conservation area and arboretum and after lunch we returned in the afternoon to Canton and arrived there about 5:00 p.m.

So today after returning from an extremely interesting tour Joe, Pete, and I had a leisurely session of beer and the usual great Chinese dinner.

Here in Sowchin it was about 38°C and at night as we go to bed it is still close to 40°C, hot and humid - about the hottest night we have had on the whole trip which generally, from a weather point of view, hasn't been too bad at all.

Surprisingly slept very well in the humid 40°C weather. The fan blasting straight on is an essential survival kit. During a walk at 6:30 a.m. the birds are singing and the cicadas also doing their thing with great gusto.

Much of the eucalyptus that we saw growing along the roadside and fields

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on the way from Canton to Sowchin were in poor form and seem to be genetically poor choice. In other places like Sowchin some of the Eucalyptus show excellent form.

I think the Mao creed of planting trees everywhere on four sides, this being a simple policy that has resulted in a tremendous program of tree plantings throughout China. But it seems evident also that in the haste to plant China green, techniques have not been perfected nor has species selection been tried and proved before planting.

Here at Sowchin the athletes are out on the lake practicing their <sup>4</sup>Kyak racing skills. Sowchin seems to be a centre for these athletic activities.

6:00 a.m. or earlier outings on a trip like this are to be recommended because you see the people going about their business, families going to work, boys and girls going to school. Note the early morning sculling in Kodachrome roll 25.

This morning, Tuesday, 8 July, is another gorgeous morning and we are going to visit Ding Ho Mountain Forest Conservation Park.

In this Canton Sowchin area we haven't seen a horse. His role has been taken over by the buffalo. Here at Ding Ho I uncovered a sign saying that it was UNESCO supported. So at the Ding Ho Mountain Park Reserve we had the usual briefing session over tea. At Ding Ho for the first time we had a special

red-colored tea made from the begonia plant. It is red and sweet. Joe Gardner has just said it would be great with ice cubes. Sugar, of course, has been added to this red begonia tea so it is sweet. It tastes quite refreshing, however.

The gardens at the park were built in 1956 and last year UNESCO began supporting a project nature reserve. This nature reserve is 50,000 hectares, so it is quite a large nature reserve. Correction 15,000 hectares. There are 300 hectares of natural forest being protected here which is not open for public. They have records going back 400 years of forested area of 300 hectares.

Both broadleaved and evergreen trees are planted in this nature reserve. There are 1,700 species of trees represented in this nature reserve. Conifers predominate in the nature reserve. Ding-Hu/Shan Arboretum.

UNESCO is supporting ecological studies at the nature reserve. UNESCO is only providing guidance, no funding. The Chinese government has paid for the instruments as well so that UNESCO provides no funding whatsoever. They have introduced 500 species of exotic trees, but the main emphasis is natural reserve.

The exact location of this nature reserve is  $23^{\circ}$  10 min. North by  $112^{\circ}$  34 min. east longitude.

After the briefing we are heading out in our omnibus into the nature reserve to see some examples of the work going on (in roll 26 photograph of

Pinus massonia on the hillsides.

Carrying on with July 9 in Canton, we are climbing to 1,000 metres or 3,000 or more feet to the top of White Cloud Hill. It is the highest promontory in the region and it provides an unparalleled view of Canton and the countryside.

So, after a visit to the White Mountain Recreation Reserve we spent about 45 minutes in an Arts and Crafts shop. Jack Ker wasn't feeling right up to scratch so he stayed back for a brief rest. Everyone else seems to be in reasonably good shape.

We are downtown Canton, and we just can't believe the overwhelming masses of people.

At the Forestry Research Institute of Guang <sup>king</sup> Dong Province we were briefed by the Deputy Director of the Forest Research Institute (name later).

The Institute was established in February 1959 so the Institute is 20 years old.

He also mentioned the trouble they had with the "gang of 4" - they lost six years of research studies; the place was just closed up and everyone was sent out to the country to work. The Institute was renewed in 1972 so they have been operating now for eight years. There are four research divisions;

silviculture, forest industry research division, forest protection and control division, and the forest machinery research division. There are 61 staff members who are engaged in research work. They concentrate on four species - eucalyptus, pine, casuarina (for windbreaks) and, of course, bamboo. So the total research goes on these four species, as it concerns problems in Canton Province, or Guang ~~Dong~~ <sup>Ning</sup> Province as they say here.

They have introduced some fast-growing species from abroad and from within the country.

Casuarina equisetifolia is used primarily for windbreaks. They also do research on shelterbelts for agricultural farms.

In Forest Protection, the main emphasis is stressed - in forest protection insect pest control is the main activity, the pine moth, Dendrolimus - and they use a fungus Bavaria bassinia. This fungus is also used for the control of the pine moth. In the forest products the main work is on wood anatomy.

The Division of Forest Machinery has just been set up and it is just getting underway.

Just a sidenote. Every section room has a picture of Mao and the current Prime Minister.

The Research Station has 50 hectares of research area. This includes an arboretum. In addition there is a staff of 14 members, that is supporting staff for information purposes and library. The financial support comes from the

Province, but the policy directions and liaison with other Provinces is coordinated by the Federal Ministry of Forestry in Peking. For example, for pest control the pine moth is distributed throughout half of China; Pinus massonia is a major problem covering many Provinces. Usually the Academy of Forestry in Peking calls meetings of the Provinces together every two years in Peking at the Academy of Forest Sciences which is under the Ministry of Forestry. They also use viruses for biological control of the pine shoot moth.

Pinus massonia covers almost half of China in the south, and the pine shoot moth is the most serious forestry problem of Pinus massonia.

In front of the Institute is Eucalyptus citradora and in roll 33 there is a photograph of it; there is also a photograph in roll 33 of the main Provincial Forest Research Institute. They also have a plantation of Gmelina arborea, and some Taxodium disticum. In roll 33, note the end of the water - a five-year-old plantation of Gmelina arborea.

The Forest Research Institute has 700 species of trees in the arboretum, including 70 species of bamboo. The arboretum grounds are absolutely delightful.

The Arboretum is impressive with cement nameplates for all the different trees. Note the row bordering the road leading to the research building of Planaceliota. Note the main building of the Research Building with the cedars in the foreground. That mountain area as we turn in to the Institute is all Pinus ascliota. The mountain has been logged and replanted. After logging

the ground is burned and seedlings are planted. There are 2,000 wood samples and all the local species. They have 2,000 samples representing 900 species / Amongst 350 genera. The wood collection is nicely displayed and beautifully presented. Note photograph of Mr. Cao, the Chief Wood Engineer of the Research Institute.

There is a book out describing the 230 species growing on the Island of Hunan. It seems to be a Province rich in wood resources.

There is also a book on the identification of the Provinces' tree species.

Just passing quickly by the soil analysis lab. Seems reasonably well-equipped with a fair number of new items of equipment. The whole top floor of the Research Institute is for Forest Biological Control. It is entirely devoted to Pine shoot moth control. There are three forms of biological control: Parasitic moth, the fungus bavaria, and viruses. The fungus bavaria is the most effective biological agent they have been able to develop up until this time. Seventy percent of the pine plantations in this Province are controlled by this means.

In the control plots 30% of the plantations are sprayed chemically. In

the control plots trees are stripped by the Pine shoot moth, and trees will be dead within two years, and usually by the end of the first year. The spray is mainly applied from the ground manually. The fungus medium is ground up with its medium mycelia spores - everything, and is diluted. Per gram of powder should contain per mm of fluid contains 0.2 billion/billion spore forms, whatever that means. That is one gram to 2 billion spores. 15,000 hectares have been sprayed with the virus. It is too bad that we didn't spend the whole day here at the Provincial Research Institute.

We had been given no idea that there was such an interesting Research Institute in Canton. If we had known we would have spent yesterday afternoon, and at least this morning here instead of being so rushed.

Mr. Cao speaks English well and he is the Engineer in Charge of Wood Products of the Department. The Deputy Director of the Forest Research Institute of Guangdong Province who gave us the briefing was Mr. Zhung, Xiam-You.

Carrying on 9 July, 1980, and the visit to the Forest Research Institute of Guangdong Province, the Deputy Director of the Forest Research Institute is Mr. Zhung, Xiam-You and he gave us the briefing this afternoon. The other person Mr. Wu, Ro-Guang, is Chief of the Division of Forest Protection and the Entomologist responsible for the interesting biological control applications for the pine shoot moth of Pinus massonia. I should put him in touch with the Sault Ste. Marie laboratory of the Canadian Forestry Service and see if they have had any touch with him. According to Mr. Wu he didn't even know the Sault Ste. Marie lab. existed.

Regarding the Department of Forestry of the South China Agricultural College in Canton, Peoples Republic of China, here is a list of the professors:

Mr. Chui Yim Tsam, Director of the Department and Silviculturist

Mr. Lor Toung Jan, Vice Director of the Department and Landscape Architect.

Mr. Laing, Jee Tsue, Second Vice Director of the Department of Forestry and Forest Pathologist, and interestingly an associate professor.

A list of the other full professors, as follows:

Professor Soung, Peng Fay, Forest Management

Ho, Tin Sand, Wood Anatomy

Jang, Ying, Zoology

Wang, Chuang, Forest Pathologist

A list of the Associate Professors as follows:

Mr. Lang, Bo Hawn, Dendrology

Mr. Joung, Pim Foug, Forest Ecologist

→ Mr. Lin, Wang To, Dendrology, especially bamboo and pine

The correct mailing address is:

Mr. Cai, Shao-Song, Chief Engineer, Wood Research Branch  
Forest Research Institute of Guang Dong, Saho, Guang Zhou,  
Peoples Republic of China. Guang Zhou meaning Canton.

Tonight, July 9, in Canton we are being tendered our departing banquet by the local Provincial Ministry of Forestry for Guang<sup>1</sup> Dong Province.

After our marvellous dinner at the <sup>San Hsi</sup> Ban Shei restaurant tonight we started our meeting with Mr. Yuan of the Peking Ministry of Forestry, who has been with us on this whole trip. We took advantage of asking him a few questions.

Of the 11 Forestry Colleges 6 are financed by the State Government from Peking, and 5 are financed directly by the respective Provinces. Of the 16 Departments of Forestry and Agriculture universities seven belong to the Ministry of Agriculture, and the other nine Forestry Departments are financed by the Provincial Governments. So the State Ministry of Forestry at Peking provides policy guidance on curriculum but each school has the right to develop its own Provincial emphasis in response to the problems of the Province.

Graduates of the Colleges supported by the National Government are decided by the National State Government and those graduates coming from Provincial Governments have the responsibility to assign jobs to the graduates provincially trained. While the State Government in Peking sets general policy for curriculum, individual schools throughout China can set curriculum designed to meet local conditions and requirements. However, the closest consultation must be maintained between the schools and the State Ministry of Forestry in Peking.

For the 6 Forestry Colleges under direct responsibility of the Ministry of Forestry they have to ensure the disposition of graduates from the six schools.

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of forestry under the direct responsibility of the National Ministry. So it is the National Ministry that sets the policy of forestry education and forestry in the country.

I asked what would be the most obvious help to the PRC Department of Forestry in education from Canada. Answer: we hope to send honor students to Canada for forestry study and the exchange of materials, seeds and library materials, and so on.

Forestry Minister Yuan, who has been with us on this whole trip ....., delegations and exchanges of personnel and teachers, lecturing with special students and so on.

Question: Should exchanges be done through the State Ministry of Forestry in Peking or should it be done through the Provincial Institute and agencies throughout China.  
Answer: (from Mr. Yuan) Forestry exchanges and similar matters, contact should be directly with the National Department of Forestry rather than working with the specific institutions.

Seeds and exchanges of publications or wood specimens - these can be exchanged directly, and materials sent directly to Institute, but for exchanges of students and lecturers it should be done through the National Ministry.

THURSDAY, 10 JULY, 1980 - Canton to Hong Kong by train

Last night the Deputy Director of Forestry for the Province of Guangdong,

Mr. Weng, Madam <sup>y.</sup> Li and Mr. Lu hosted a banquet on our behalf at the <sup>Fan Hsi</sup> Ban Shei restaurant in Canton. It is probably the finest restaurant in Canton and the food was superb.

This morning the Deputy Director and Madam <sup>y.</sup> Li, Mr. Lu, Mr. Weng who handled all the details of our trip here in the Canton area, Mr. Yuan and Mr. Zhu (Shau-Tan) also saw us off at the station and made sure we got through without any baggage examination. We were whisked through customs without baggage check.

As we are travelling from Canton to Hong Kong by train the countryside is beautiful. It is a cloudless blue sky, and in the midst of harvest time. Fields are full of people working industriously and thrashing wheat with their tiny one-man thrashing machines. The terrain is flat, bordered by small hills.

The train is clean, air-conditioned with a Cafeteria Club Car. There is live music and a color television set in the car which advertises products and facilities in Hong Kong and shows Chinese movies.

SUNDAY, 13 JULY, 1980 - Hong Kong

We were met at the train station by the Hong Kong Hilton Mercedes Benz chauffeur-driven cars and arrived at the hotel in reasonable style.

Today I took Joseph Lee and Jack Chan both of the Class of 1980, Faculty

)  
of Forestry, U. of T. to Repulse Bay to see some of the urban forestry  
situations in Hong Kong. We had a fabulous brunch at the hotel.

Vidar J. Nordin  
Faculty of Forestry  
University of Toronto

6 October 1980

City. The basic purpose is to achieve shade in this hot and humid city for the pedestrians, cyclists and others. Several species have been planted such as Cestanis spp., Cedrus deodara, Miraseucioia, Platanus acerifolia, Pinus densiflora, Pinus nigra, Quercus aquisetina etc. etc. The earliest trees are about 35 years but most date back to the revolution, 20 or so years ago. The trees clear the air (to some degree), cut down traffic and other noise as well as provide shade and greenery to the town. They are planted in such a way that the different crown shapes and growth characteristics fulfil these functions.

2 College of Forestry : Nanking

4 September 8.00 - 1.00 Forestry College - Nanking

Precipitation 2000 mm p.a.

Established in 1952 as Nanking Forestry College but renamed in 1971 to Nanking Forestry Industry College. At the initial stages it was of a small scale ; with only the forestry industry faculty, afforestation and utilization sections. The total population was about 30 (staff and students together). After the Great Proletarian Revolution changes took place. Now there are three faculties:-

1. The faculty of Forestry : with afforestation and forest protection sections;
2. Forest Industries Faculty : with three specialities :-
  - a) Wood technology e.g. fibre board
  - b) Plant and machinery
  - c) Forest chemical industry
3. Faculty of Forestry Engineering - specialised in machinery making.

The college has two forestry farms and one factory - mainly for the purpose of teaching. There are 44 laboratories with 33 teaching groups. The building area of the college is 90,000 Km<sup>2</sup> mostly established between 1955 - 1959.

Total student enrolment is 827. Pre-enrolment requirement is graduation from senior middle school. The cost for running the college comes from the province and also research grants from the state government in Peking. Students from workers, peasants and soldiers with two years experience in their fields both from the Nanking Province and others. They would have applied for admission but must be supported by their communes and schools. The open teaching method is applied making maximum use of practical experience in factories and farms - to transform their ideology into that of serving the masses, working with the masses and studying with the masses.

Research Subjects have been concentrated on local problems. It is therefore problem solving oriented and is linked with practice. There is also basic/theoretical research "on the basis of experience and on the basis of theory, determine practice" (on the principle of cause and effect) and this forms the basis for linking the students with the masses and practice with theory; thus increasing the capabilities of the foresters to help and work with the masses.

There are 394 teachers 17 of them are Professors and associate professors whilst 311 are assistants. These deliver lectures and so can the students and workers. Courses are for a three year duration. Originally it was 5 years but was shortened after the Great Proletarian Cultural Revolution which stipulates that officers can teach the soldiers - the soldiers can teach others, and the soldiers can also teach the officers" - calling from Chairman Mao. The entire system develops and strengthens socialist thinking. Education Revolution is continuing. The basic courses are Maths, Physics, Chemistry, Political education. The latter lasts for three years and must be taken by all student groups. The basic subjects are done in the first year, whilst the speciality courses last accordingly. Special courses are finished in 2nd year.

Insects Pests Demonstration Laboratory

Samples of popular pests and the principle parts of trees damaged

3.24

were on display. The Red Eye Bee as a 90% effective biological control is explained. The bee parasitizes not only *Antheraea pernyi* Ginerin (moth) but other species as well. To include knowledge of Fauna in the Forestry teaching, stuffed animals such as :-

1. *Capricornis sumatraensis* B.
2. *Vulpes vulpes* L.
3. *Muntiacus reevesi* O.
4. *Canis lubus* L.
5. *Felis temmincki* Vigors
6. *Felis lynx* L.
7. *Muntiacus reevesi*
8. *Panthera pardus*
9. *Presbytis francoisi*
10. *Sus scrofa* L.
11. *Myocaster coypus* M.
12. *Lutra lutra*
13. *Verrucula indica* D.
14. *Mustela sibirica*

are displayed and made familiar to the students.

#### Birds

1. *Acio otus otus*
2. *Circus aeruginosus*

The protection of Yaatsung Tung (wild animals) is everybody's responsibility. The masses have responded well.

#### Bamboos:

Given emphasis as they are widely distributed in the country. Intensive research is currently being done.

Specimens : e.g. of Bambusa vulgaris, etc. (found in hot areas)

#### Phyllostachys nigra

#### Phyllostachys bambusa

Phyllostachys pubescens - has highest economic value. Introduced by several countries e.g. Japan. Has measurements diameter 25cm and 25cm high above 15°C and 1000mm in rainfall.

#### Sinocalamis oldhami

#### Sinocalamis spp.

Chinno bambusa (square bamboo)

The different bamboo species can be used for soil stabilization e.g. in Puerto Rico - Central America - where Phyllostachys species have been used for soil stabilization.

Laboratory: Tree Variety breeding

Work on research combines teaching, scientific work and production. This section has introduced cedar, metasequoia etc., in Southern China. It has also done genetic works and tree variety breeding. As for the research work on populus varieties work has been done on several e.g. Pomulus pseudo-simonii etc. Work has also been done on Pinus species e.g. Pinus pubescens, P. burchiana, P. rigida, P. taeda. Some varieties have been proved very successful. Much of research work introduced after the Revolution.

Naturally strains e.g. P. simonii are promoted. Metasequoia is a local wild variety (unknown) now widely promoted. There is room for more work on Salix spp. Much of the genetic material is obtained from national reserves such as in Tu Chian Province for Cedar e.g. Quinchuan lanciolata.

Laboratory:

Herbarium - has 60,000 specimen with 3,000 species of trees and shrubs. Out of these more than 200 are conifers. Indigenous genera include Abies, Picea, Quinchuan, Cryptomeria. The rubber plant Eucymia ulmoides Oliver is useful for natural rubber and has been found useful for treatment of elementary blood pressure. (An illustrated checklist of the principle species is under preparation in Peking.

To maintain professional vitality, the college is Member to the Botanical Society and Forestry Society of China.

Laboratory: Pathology

Comprehensive cross section of diseases, excellent visual training aids. The objective is to develop rationale for comprehensive control methods implying many possible measures - this is not synonymous with

ecological control - but places more emphasis on the principle of prevention is better than cure.

The masses are relied upon to report on incidences of "unusual conditions" and several reports are received. This reporting is after the fact of disease outbreak. A Government Administration officer decides on environmental action and not the college. Thus there is no environmental office as such.

With regard to introduction of species and varieties quarantine conditions and stations exist between nations. Such conditions apply for Animal and Plant Protection at ports. Regarding protection of ecological integrity and reference parts, in China there are natural reserves within which all varieties and species are left to grow naturally e.g. in Chakang Province for genetic resource for currently known useful species and those on which not much is known about. These can be 10-20 thousand hectares. Arboreta and botanical gardens do exist also for both teaching and afforestation purposes.

Forest Machinery : On display

Augers (hole drillers) chain saws and spray machines. Using local inventions and imported types for teaching purposes.

(U.S. Lowest temperature in Nanking is 19°C and highest 39°C.)

Out of the graduating students some are assigned to research and teaching work. There is room for basic research and fact finding research as well.

This visit to the college exposed the "provincial" example of the education system. Although the teaching curriculum has been reduced from 5 to 3 years, there is continuity in the preparation of scientists, fact finding researchers. It is therefore a system which seems to castigate the past but continues to draw from it in disguise. A great deal of specialized work has been done on barboos; that experience could be promoted in relevant areas in the world through exchanges between foresters - protracted exchanges.

# FORESTRY IN CHINA

What is the structure of forestry in China? How does China's outlook differ from that of other countries and from traditional approaches? What kind of success and failure has Chinese forestry experienced? How have political and administrative reforms affected forestry? How is the classic land competition between agriculture and forestry dealt with in China? How does China instil forestry consciousness in its people? These are among the questions which the author attempts to answer. He made an extensive tour of forestry in China in 1974.

Jack Westoby

It is always difficult to truly understand how a society other than one's own works. A study of the constitution, if there happens to be a written one,

*Jack Westoby, British forestry economist, was deputy to the head of the FAO Forestry Department at the time of his retirement as an international civil servant in January 1974. In 1973 Mr. Westoby participated in the discussions which led to China resuming active membership in FAO. Over the years he has written and lectured extensively on forestry development.*

does not tell very much. Nor does a chart setting out structural relations, powers and responsibilities. Several important things are always missing. One is how the existing situation evolved from what went on before. Another is modification, sometimes subtle, already under way. More important, no chart explains the differences between what is supposed to happen and what actually happens.

It is the same with forest laws and regulations. Some countries have comprehensive forest laws and regulations. Reading them, one is convinced that

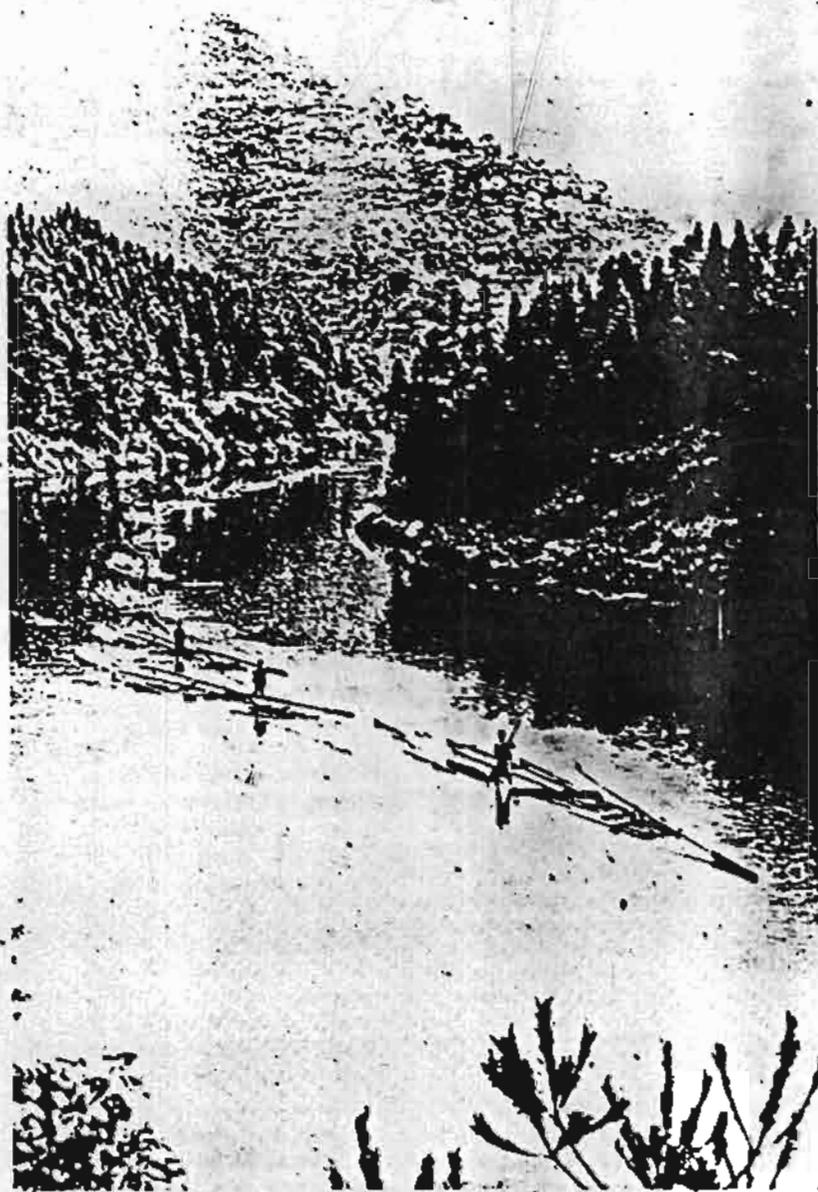
these can serve as a model. Yet, when one comes to examine how they work out in practice, one finds that they are so much useless paper. The reasons are many. Often it is a matter of staff; too few staff, undertrained staff, staff so badly underpaid that a livelihood is only possible if bribes are accepted and a blind eye turned to misdemeanours. Sometimes it is the machinery of the law: an overworked judicial system, or courts and tribunals susceptible to political pressures or capable of being suborned. Sometimes the forest law is frustrated by the general uncertainty about land titles.

Yet there are other countries where the forest law — if a special law exists — only makes sense after one has digested 10 or 20 distantly related acts on the statute book. And the regulations which have been issued may be a mish-mash of important matters and seeming irrelevancies. Yet the system works.

In China, forestry activities are still governed by the basic regulations for the protection of forests promulgated by the State Council on 27 May 1963. These regulations, comprising seven chapters and 43 articles, have been amended since then only to take account of certain organizational changes which have occurred; there has been no amendment of substance. Thus, references to the "people's councils" of provinces, autonomous regions and municipalities, and to the "management committees" of people's communes, are replaced by references to the "revolutionary committees" at these several levels. Similarly, the reference to the Ministry of Forests has been replaced by reference to the Ministry of Agriculture and Forests, within which the Ministry of Forests has now been absorbed.

These regulations cover state forests, collectively owned forests, and trees belonging to individual householders. They tell everybody what to do — sometimes in a very general way, sometimes very precisely. For example, Article 3 lays down that:

"Revolutionary committees at the various levels must strengthen propaganda and education in order to promote forest consciousness and forest education, and mobilize the masses to properly protect forests and trees."



RAFTING TIMBER IN HUNAN PROVINCE

*A forest consciousness which is comparable to that of Scandinavia*

out, will depend largely on the energy and initiative of the particular revolutionary committee concerned. They leave considerable room for local interpretation.

#### Administration changed

By contrast, a sub-clause of Article 12, which deals with felling and transport, provides that any collective unit which fells more than 10 cubic metres of timber in any one year from its own forests to meet its own needs (including the needs of individual members of the unit) must have the authorization of the district revolutionary committee.

But although the basic regulations for forestry in China remain the same today as they were in 1963, the administrative structure through which they are applied has been transformed. This transformation is qualitative rather than formal, for although the political/administrative structure remains more or less intact, the way in which it operates has undergone a number of changes. These can perhaps best be summarized as a far-reaching devolution of responsibilities, coupled with a complete renewal of organs of management.

#### Increased autonomy

The main political units in China remain the 21 provinces, the five autonomous regions, which rank as provinces, and the three autonomous cities (Peking, Shanghai and Tsientsin), which with their surrounding rural areas also have the status of provinces. The degree of autonomy of these main political units seems to have increased, if anything, since the cultural revolution.

The provinces are divided into administrative districts and large cities. The administrative districts are divided into counties, which in turn comprise smaller towns and people's communes. Occasionally there is an intermediate level, the county being divided into districts, each of which groups a number of people's communes. Each people's commune consists of a number of production brigades, and each production brigade of a number of production teams — these last being the basic accounting unit in the

Article 17 relates to grazing in the forest, and says that:

"Livestock grazing near the forests must be strictly supervised to avoid damage to trees. In the forest zones

where conditions permit, limited areas may be designated for grazing."

These are fairly general prescriptions, and how far they are carried out, and the way in which they are carried

people's communes. In the case of some of the larger communes, with many production brigades, these brigades may be grouped into management districts, which thus constitute an intermediate link in the system.

On the urban side, the cities are divided into urban districts, and these in turn into neighbourhoods, which correspond roughly to brigades in the communes. Under the neighbourhoods are street committees, corresponding to teams. Factories, depending on their size, may come under the leadership of the provinces, districts or counties; within the commune, they may constitute a production brigade or team. Some small collective units (for example, a housewives' group running a workshop) fall under the leadership of the neighbourhoods or even street committees.

#### Spreading responsibility

All this remains substantially as it was, save that all down the line there has been a devolution of responsibility. Thus, many large industrial enterprises, formerly directly under the supervision of the appropriate ministry of the central government, are now the responsibility of the provinces, and so on. Broadly speaking, one can say that the responsibilities at the lower levels have increased and their scope for initiative enhanced. This transfer of responsibilities downward has been accompanied by a severe thinning of the administrative ranks at the higher levels, notably in the central ministries, and a corresponding reinforcement of the ranks at the lower levels — where the action is. As we shall see later, this has been accompanied by the transfer to the provinces of many of the central research institutes and higher education institutes.

Parallel with this, in the course of the cultural revolution new organs of management arose at every level, in the shape of revolutionary committees, composed of cadres, representatives of the masses, and members of the People's Liberation Army or local militia. These are now the organs of political power at every level, and in the course of their consolidation efforts have been made to ensure that they fully respond to the two "three-in-

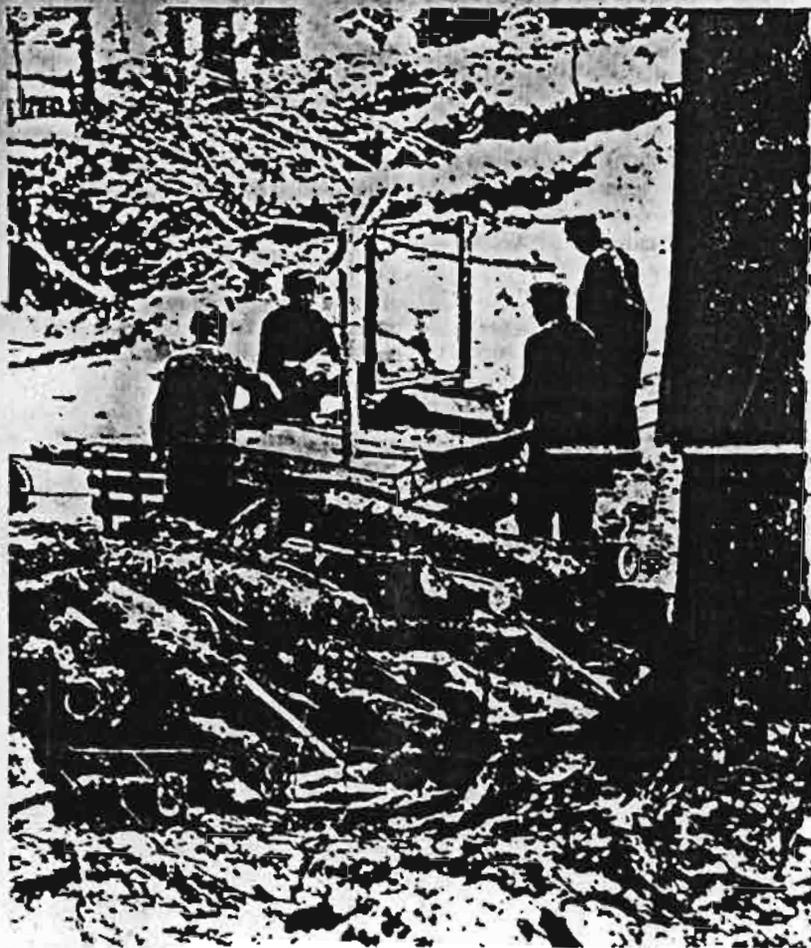
one" criteria so often referred to in China: cadres, technicians and masses; old, middle-aged and young.

At each level, the revolutionary committee appoints a standing committee. This is the executive organ of government. Thus, the provincial standing committee receives its mandate from, and reports to, the provincial revolutionary committee. In conducting the work of government, the standing committee is assisted by bu-

these bureaux maintains contact with, and gives leadership to, its counterparts in the departmental organizations at the next lower level.

#### "Leadership" and "control"

As a semantic indication of the kind of devolution of responsibilities and of the de-bureaucratization which has occurred since the cultural revolution, lower level organs are now invariably



FOREST WORKERS IN HEILUNGKIANG PROVINCE, CHINA'S MAIN WOOD SOURCE

*Allisboth cut should be put on end of the cuttings.*

reux established to carry on the administration. These will include bureaux concerned with planning, education, health, trade and so on — and normally one such bureau is the agricultural and forestry bureau. Each of

described as being "under the leadership of" — and never "under the control of" — the immediately higher organs.

This, then, in broad outline, is the administrative structure in China.

today.<sup>1</sup> There are many local variants.

At the national level, forestry affairs are dealt with in the Ministry of Agriculture and Forestry, and are conducted under the leadership of one of the seven Vice-Ministers. At the time of writing, this is Liang Chang-Wu, who headed the Chinese delegation to the Seventh World Forestry Congress in 1972. The work is organized in five divisions, namely:

- Timber production
- Forest industry and forest products
- Forest resources and forest management, including forest protection and wildlife management
- Afforestation
- Supply and distribution of wood.

The central forest authority no longer has responsibility for the central research institutes, since these have been relocated and are now responsible to the provinces. Similarly, the Academy of Forest Science, formerly dependent on the Ministry of Forests, has been moved to Harbin and is under the leadership of the revolutionary committee of the province of Heilungkiang, the province which contains the richest of China's forest resources.

The external relations of the central forest authority are conducted through the Bureau of Foreign Affairs of the Ministry of Agriculture and Forests.

#### The forest service

It follows that it is no longer possible to speak of a state forest service in the generally accepted sense, i.e., of an independent forest service with a hierarchical chain of command running down through forest regions and forest conservancies. Instead, agriculture and forestry are integrated at all levels, from the Ministry down, usually in the agricultural and forestry bureaux of the provinces, administrative districts, counties, etc. These bureaux are under the political control of the revolutionary committees at the respective levels, and the bureaux at the several levels deal with agricultural and forestry matters alike, along with the interrelations between agriculture and forestry. Naturally, the forestry members of

these bureaux have very frequent contacts with their forestry counterparts at the immediately higher and lower levels.

These bureaux, at the appropriate levels, have direct responsibility for the state-owned sector — state forests, state-owned forest industry enterprises, research institutes. Not, however, for forestry education institutions, which ultimately depend, through the education departments or bureaux, on the Ministry of Education. The other important function of the bureaux is to give guidance and technical advice to the collectively owned sector — in essence, the communes, production brigades and teams — as well as to other organs and institutions conducting forestry activities; these include railways, mines, factories, and so on.

What are these services which the forestry bureaux (and the state-owned enterprises for which they have responsibility) provide to the collectively owned sector? I discovered, in the areas I visited, that they go far beyond professional advice and technical assistance. Moreover, they go far beyond what is normally encompassed by a forestry extension service. Most important, I believe, are the education and training activities. These take many forms: short training courses, one-day or one-week technical consultations for cadres, technicians or model workers, arranged at provincial, county or district level; the promotion of exchange visits, on-the-job training in sawmills, timber yards, forest farms and research institutes; preparation of information sheets and instructional pamphlets; and so forth. Some of this is carried out in conjunction with the provincial forestry colleges. In addition, each state enterprise has a demonstration function. Next in importance, I suppose, comes the on-the-spot advice offered to the communes, brigades and teams by the staff of the forestry bureaux, state forest farms and research institutes. These staff now constantly visit, and for sustained periods work alongside members of, the communes. Any new problem cropping up, therefore, is promptly spotted, and measures to cope with it put in hand.

They give advice on management, and in some cases actually provide management services until the collec-

tive has acquired its own nucleus of trained and experienced people. They act as animators, persuading the communes to undertake various kinds of forestry activities, providing the know-how and even lending executive staff to get things moving. They supply seed and planting stock. They organize experiments and trials. The relationship between the state and collectively owned sectors in forestry — at least in the areas I visited — is a living and second one.

#### Starting from scratch

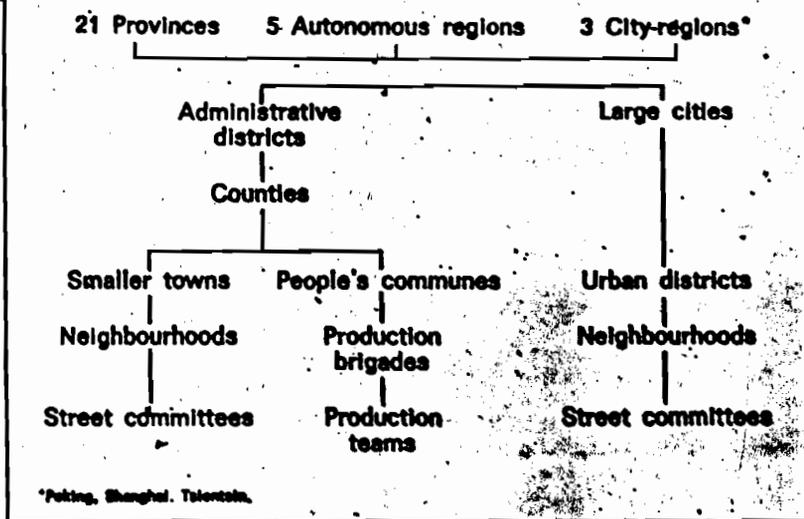
Has it always been that way? Apparently not. An example was given by Liu Ping, chairman of the revolutionary committee of the Dune Fixation and Shelter Belt Experimental Station at Chang Ku Tai, close to the border with Inner Mongolia in northern Liaoning.

"We came here in 1952, starting from scratch, knowing nothing," he told me. "After many initial mistakes, we got the dunes fixed and the march of the desert halted. As you see, we already have natural regeneration under some of our early plantings. We built shelterbelts, reclaimed land for the plough, and saw our crop yields go steadily up. We were pretty pleased with what we had managed to achieve on our 200 or so hectares. But during the cultural revolution, we came up sharply against some basic questions: What is all this in aid of? Whom are we supposed to serve? We decided we had spent far too much time and effort on our own show, and far too little on helping the communes round here to benefit from our experience. So we changed course. Mind you, we try not to let our programme here fall behind. But we spend much more time out with the production teams, helping them to fix dunes and set up shelterbelts. As a matter of fact, we learn a lot faster ourselves that way too."

"The same applies to cultivation of fruit trees," he went on. "Everybody told us fruit trees would never grow up here. But we've made 80 varieties of apples, pears and grapes grow. We used to show them off proudly to anyone who would come and look. But since the cultural revolution, we have been training technicians from the

<sup>1</sup> For a succinct account of political structure see Juan Robinson, *Economic management China 1972*. London, Anglo-Chinese Educational Institute, 1973.

## CHINA'S ADMINISTRATIVE STRUCTURE



production teams in how to get fruit orchards going and keep them running, and we ourselves leave the station and work with them to help them set up fruit orchards."

### Where to put forestry

Liu Ping's story was one of many I heard in a similar vein. Whatever may have been the situation of the state forestry sector before the cultural revolution there is no doubt that today it is the very antithesis of a bunch of desk-bound bureaucrats and ivory tower researchers.

There has long been general debate among foresters of the world as to the desirability of including forestry among the responsibilities of agricultural ministries. The consensus has been that, whether included within the agricultural ministry or not, there is need for a separately organized state forest service with a high measure of autonomy. The arguments rest partly on technical considerations: forestry is, generally speaking, a long-range activity, and its successful conduct requires not only a specialized staff, but also sustained financial support; i.e., not subordinate to oscillations in forest revenue or the financial vicissitudes of the central exchequer. But there are political reasons as well. Most agricul-

tural ministries deal with a wide variety of subject matter, and issues arise daily which are urgent and pressing. Moreover, they all operate in an area which is politically sensitive, where there is competition between agriculture and forestry for resources — be it land or finance — and where forestry is handled in a department or section of the agricultural ministry, that department tends to be a Cinderella department. As the foresters lament bitterly: "Trees have no vote."

This is especially true of many developing countries, where a high proportion of the working population is employed in agriculture, and where the prevailing agrarian structure often gives rise to acute social tensions. This has usually meant that the forestry sector has been grossly neglected, and its potential contribution to the agricultural sector itself overlooked. If governments and politicians choose to ignore, or pay only lip-service to, the multiple role of the forest and its development potential, then forest consciousness is not likely to spread among the people. This is why many foresters have argued for the establishment of a separate ministry of forests in those developing countries where the forest resource is sufficiently rich to enable it to play a significant role in overall economic development.

Does this mean that the abolition of the separate ministry for forests in China represents a step backward? No, because the situation in China is quite unlike that in other developing countries.

Firstly, there now exists in China a degree of forest consciousness that is unequalled anywhere else in the world, save possibly in parts of Canada and some of the nordic countries. The fact that forestry affairs have for long been conducted by a department which enjoyed the status of a separate ministry has probably helped to create this. But the main underlying reason for this is the importance attached to forestry by the Chinese Communist Party, and the periodic and vivid dicta of Chairman Mao concerning forestry. These have succeeded in creating a widespread awareness of the significance of forestry. Secondly, although most of the presently productive forests are in the state sector, much of the newly created forest, and forests yet to be created, have been and will be established in and by the people's communes, while new plantings in the state sector will be heavily dependent on labour furnished by the people's communes. Thirdly, few countries have such dire need of protective afforestation as has China, and the establishment of shelterbelts, windbreaks and watershed protection forests must be closely integrated with agriculture — must, in fact, be part and parcel of agricultural planning.

### An upsurge of activity

There is no reason to suppose, therefore, that the abolition of the separate ministry of forests has led to, or will lead to, any neglect of forestry. On the contrary, there is every evidence that, taken along with all the other consequences of the cultural revolution (the devolution of authority, the relocation of research institutes, staff transfers to lower levels, the requirement that all cadres shall spend at least a fourth of their time at the production front, the contribution of the middle school students, and so on), there has been a considerable upsurge in forestry activity since the cultural revolution. This is what is claimed, and so far as afforestation is concerned the age composition of the plantations which I

334

saw in various parts of China fully bear out this claim.

Thus the integration of agriculture and forestry, which has taken place at all levels in China, has had a positive impact on both agriculture and forestry. This integration has been a conscious process. "We believe we have resolved the age-old conflict between agriculture and forestry." This state-

removing the threat of flood, diminishing the impact of drought, enlarging the irrigated area and mobilizing hydroelectric power. Several of the major schemes have been centrally conceived, and implemented by the provinces concerned. But these major schemes are complemented by hundreds and thousands of smaller schemes, initiated and carried out at

future be furnished, by members of the people's communes. It is doubtful, to say the least of it, that this effort would have been forthcoming had not commune members been persuaded that it would in due time contribute to their collective and individual well-being. It is equally doubtful whether the effort would have been sustained had not the works accomplished started to give palpable results, in the shape of increased yields, fewer harvest failures, etc.



WHEAT FIELDS SHELTERED BY TUNG TREES (*Aleurites cordata*)

*The accent is on protection forestry*

ment was first made to me in Heilungkiang, where forestry is the dominant activity. But it was echoed in Hunan, where the agricultural sector predominates. The very fact that it was made repeatedly indicates an awareness that in the past the two sectors were seen as conflicting, representing competing claims on land and resources.

Without doubt, China's most spectacular achievements since liberation have been in the area of water conservation — taming the rivers. No visitor to China in recent years has failed to be impressed by the sheer magnitude of the work accomplished. Although much still remains to be done, great strides have already been made toward

lower levels. What is truly staggering is the amount of human effort that has gone into this work. To give but one example, the repair and reinforcement of the dikes along the lower reaches of the Yellow river alone involved 350 million cubic metres of earthwork and more than 9 million cubic metres of stonework. This was carried out with virtually no earth-moving machinery, by sheer muscle power, making use of shoulder poles, hand tools, and primitive, locally devised lifting devices. The taming of China's rivers has required, and will continue to require for some time yet, literally hundreds of millions of man-days, and the main bulk of this effort has been furnished, and will in

### Watershed afforestation

The example of the lower reaches of the Yellow river could be supplemented by countless others. But it is less well known that, from the very start (and beginnings were made in the liberated areas even before 1949), similar attention was paid to regulating water flow and countering soil erosion in the upper catchments, through afforestation. Here, too, the effort was on a gigantic scale, and the claims advanced through frequent news releases in the early days as to areas afforested and number of trees planted, both on the watersheds and in dike consolidation, were of such a magnitude as to strain the credibility of most people in the west — including mine.

Travelling through China today, and talking with forest officers at various levels, it becomes obvious that these claims were not exaggerated. Undoubtedly, however, much of this work was misdirected and of low quality, so that in many cases survival rates were very low indeed.

Chinese foresters are very frank about these mistakes. In many instances, they point out, afforestation campaigns were not preceded by surveys of soil quality and appraisals of climatic conditions, so that wrong species were frequently selected. This led to low survival rates, and poor growth among the survivors. There was little emphasis on seed selection in the early days. Planting techniques left much to be desired — there had been inadequate tests and trials. Because China had had but little experience of man-made forests of, for example, pure pine species, when these plantations were invaded by pests, as happened in south China, prompt counter-measures

were not taken. But the principal culprit seems to have been inadequate tending: neglect of weeding and hoeing, and failure to carry-out thinning in due time. Certainly, in discussing these problems with workers and technicians of commune production teams and forest farms, this seemed to have been the lesson which had been most thoroughly learned. Time and time again I was told that after-care was twice as important as planting techniques in assuring success.

### Successes and failures

It would, however, be a great mistake to write off altogether the efforts of the 1950s and early 1960s. True, there were many failures, and even more cases of incomplete success. But this is not the whole picture. There are many success stories too, and I saw a number of healthy, fully stocked plantations that had been created in that period. It is not possible, on the basis of my limited observations, to quantify the success ratio, but by and large the best plantations that I saw that had been established during that period tended to be in areas which already had a forestry tradition.

Looking back, it is evident that the volume of forestry expertise and experience available in China was insufficient to give technical underpinning to an afforestation programme of unprecedented magnitude. Moreover, a large proportion of this expertise and experience was concentrated in the forested regions, charged with the task of re-establishing and expanding the timber supplies needed to sustain China's development programme. The remaining technical forces were therefore inevitably thinly spread, and not always available where needed. Much, not surprisingly, was located in centralized institutions and at provincial and county offices.

New forests, of course, are created by people, not by professional foresters, just as new towns are built by construction workers, not by architects. The job of the professional forester or forestry technician is to provide guidance to the men and women carrying out the work. He draws on the accumulated experience he has digested and makes use of the technologies he

has mastered in order to help the people on the spot to resolve any unforeseen problems that may arise. The masses that created the new forests in China in the 1950s and 1960s not only lacked experience, but they were facing a host of technical problems not previously encountered. And they were grievously lacking in the kind of guidance that would have enabled them to shorten their learning experience and rectify errors quickly. The wonder is, not that there were so many failures, but that there were so many successes.

Measures taken during the last 15 years, and notably since the cultural revolution, have radically altered the situation. The most important of these are: the steady build-up of the corps of trained foresters and technicians; the designation, in each production team, of commune members with special responsibility for forestry affairs within the collective, and their training through thousands of short courses; the creation of a widespread forest consciousness, largely through the schools; the decentralization of research and training institutions; and the radiation of technical staff to the production front; and the stipulation that all cadres and technicians shall spend a significant proportion of their time in actual production.

### Survival rates

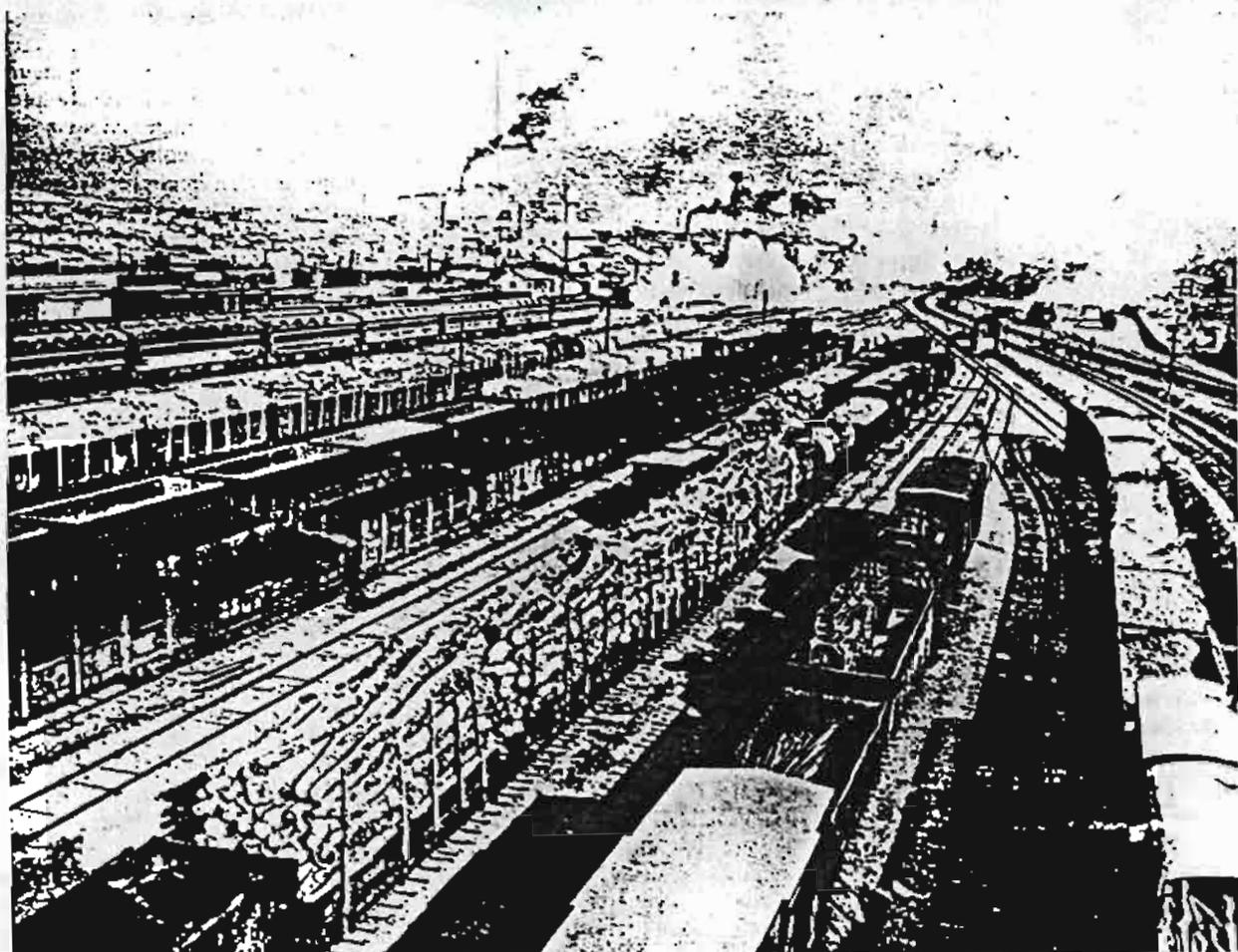
These are the basic reasons why new plantings carried out during the last seven or eight years (and new planting still proceeds on a colossal scale) show good survival rates. Time after time, I passed hillsides where single stems or clusters of trees of 5-10 metres — the survivals of earlier plantings — stood out from a 100% cover of young trees established within the last five years. Similarly, during my long road and rail journeys, I saw that many gaps in early line plantings had been made good. I cannot of my own knowledge say that this is true over the whole of China. But I do know that it is true over much of Heilungkiang, Liaoning and Hunan, along the communication routes connecting these provinces, and in the agricultural communes around Harbin, Peking and Kwangchow.

Thus the integration of agricultural and forestry responsibilities at the suc-

cessive levels, from the Ministry downward, has led to vigorous and widespread forestry activity, mostly sponsored by the people's communes, and this activity has been given a tremendous fillip by the changes which have come about as a consequence of the cultural revolution. Much — in fact, probably most — of this activity has been in protective afforestation: dune fixation, shelterbelts, catchment afforestation and dike consolidation. But a good deal of effort has also been devoted to amenity planting — along major and minor roads, in and around the communes, around factories and workshops, in city streets and parks, and in restored and newly created recreation areas close to the cities.

### Production forestry

This does not mean that productive afforestation, planting designed primarily to provide industrial timber, has been neglected. Nearly every commune that I passed through had devoted some areas to timber production, over and above the ubiquitous road, field and stream line-planting. Sometimes this was designed to provide fuelwood, but more often it was aimed at the production of construction and transmission poles and, eventually, of saw timber. Poles still play a big role in the construction of both dwellings and nonresidential buildings in the countryside, and most communes, adhering to the doctrine of self-reliance, are seeking to make themselves independent of outside supplies of suitable timber. Heavier industrial timber still comes for the most part from the traditional timber "export" zones, notably northeast China; but considerable efforts are now afoot to create new bases for sizable forest industry complexes, as, for example, the Chinese fir campaign in Hunan. As and when adequate local timber supplies become available, the communes themselves establish processing plants: sawmills, joinery shops, furniture factories and so on. The major forest industry enterprises above the commune level on the mechanical woodworking side come under the aegis of the appropriate agricultural and forestry bureau. This may be, depending on the size and im-



TIMBER MOVING THROUGH KIAMUSZU STATION, HARBIN PROVINCE

*The need for big reserves of industrial timber is now being stressed*

importance of the enterprise, at the district, county or provincial level.

On a world scale, forestry is moving steadily toward greater emphasis on man-made forests, artificial plantations of native and exotic species with a much shorter maturing cycle than obtains in natural forests. China is no exception. Even so, much of forestry is still a long-term business, and long-term planning is therefore essential.

Each provincial authority has been asked to prepare proposals for the progressive development of forestry activities over a 12-year period. The provincial authorities are presently consulting their constituent counties and districts, and through them, the communes, preliminary to drawing up

provincial proposals. Once this stage has been completed, the provincial proposals will be discussed centrally, modified, adjusted and integrated to provide the basis for China's first national perspective plan for the forestry sector. One must assume that the necessary consultations with the ministries and organs responsible for important aspects of forest industries will take place throughout.

#### Supporting agriculture

The preparation of this perspective plan does not mean that hitherto forestry activity has proceeded without any long-term objectives. The 12-year programme for the development of agriculture (1956-68) was built around

the slogan: "Take food grain as the key link, and ensure an all-round development of animal husbandry and forestry." It has meant, however, that outside the timber "export" areas, the main orientation of the massive forestry effort in the countryside has been in the direction of protective afforestation to support agriculture, and productive afforestation to reduce dependence on "imports" of timber from other areas. It is only within the last few years that the importance of creating substantial new reserves of industrial timber to meet national needs has been emphasized. The Chinese fir afforestation campaign in Hunan is a case in point, although a major justification for the campaign lay in the fact that the rural economy faced strict limits to the



BAMBOO HOUSES IN THE TAI AUTONOMOUS AREA OF YUNNAN PROVINCE

*The themes most repeated are "self-reliance" and "serve the people"*

amount of land that could be tilled, so that prospects for a continuing rise in welfare dictated diversification and putting to some use all land that could not be put under the plough.

In the foregoing pages I have contented myself with trying to give a "feel" of what is happening on the forestry front in China today. Space exigencies preclude a detailed description of what I saw in the various parts of China I visited. But *many* readers may be interested in my main impression, which can be summarized as follows:

1. China is well on the way to becoming the most forest-conscious na-

tion in the world. The principal reasons for this are: the importance accorded forestry in development policy; the appreciation of the multiple role of the forest built up in the schools; the mass involvement of millions of peasants in both productive and protective afforestation.

2. Agriculture and forestry are more effectively integrated than in any other country I have visited.

3. The gigantic afforestation campaign continues unabated -- indeed, has intensified in recent years. There were many errors in the early days, but most of these have now been made good.

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4. In Heilungkiang, China's timber source, a rapidly expanding network of all-weather roads is steadily bringing previously inaccessible forest into production. Narrow-gauge railways are being torn up and replaced by permanent roads. The emphasis is now on silviculture and management, and on the establishment of permanent management/logging centres (forest farms). Allowable cut should steadily rise to the end of the century.

5. In that part of the "great green wall" which I visited -- the Liaoning border with Inner Mongolia -- the desert has been successfully halted, land reclaimed for agriculture, overgrazing eliminated, and crop yields inside the new dense network of shelterbelts have risen sharply. Although growth rates are of course low, the earliest new forests are showing ample natural regeneration.

6. Hunan province is halfway along in its campaign to establish a million hectares of Chinese fir (*Cunninghamia lanceolata*) on its bare hills. Take is high, and growth rates good.

7. While the accent is on protection forestry (dune fixation, shelterbelts, dike consolidation and watershed afforestation) and production forestry, recreation and amenity forestry are by no means neglected. China could learn much from the west about the management of recreation forests, but could teach much about urban forestry, which is particularly well advanced.

8. In some cities, air and water pollution has been dramatically reduced. But there are some which still have a long way to go.

9. Statistics at the local level are readily given, and mostly verifiable. Overall national statistics for the forestry sector are not yet being released.

10. The two dominant themes in Chinese society today are "self-reliance" and "serve the people". These are not mere slogans. They profoundly influence the way in which people live, work and behave to each other and to strangers.

11. China has much to learn from other countries, and the Chinese know this. But any foreign equipment or research finding will be scrutinized carefully before it is introduced or applied to ensure that it is appropriate to Chinese conditions.

# A NEW GREAT WALL FOR CHINA

by HAI LAN  
*China Features*

**C**hina will have a new Great Wall —  
made of trees.

The 7,000 km shelterbelt now under construction in the north of the country, beyond the 2,000-year-old Great Wall, will eventually wind through 11 provinces and autonomous regions to form one of the world's great natural barriers, as remarkable an achievement in its own way as its famed stone counterpart.

Since the founding of the People's Re-

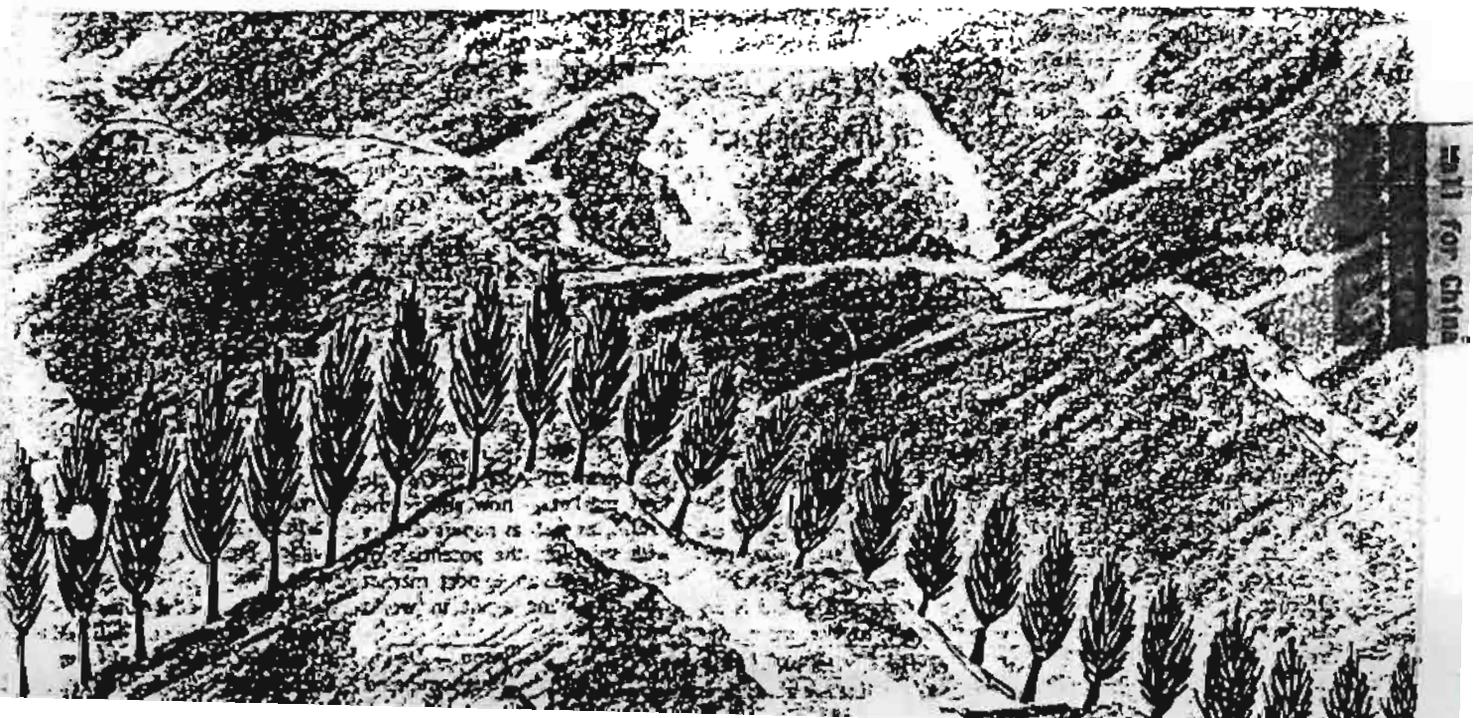
public of China in 1949, great efforts have been made to turn the country green. Forests now cover more than 120 million ha of China's total land mass of 9.6 million km<sup>2</sup>, 28 million of those hectares are reforested. In 30 years, the percentage of forested land has risen from 8 to 12.7%.

Notwithstanding, the country remains relatively poor in tree resources. Distribution of forests is uneven and there are still some 86 million ha of barren mountains and wasteland. This situation has caused a shortage of timber, expansion of deserts, soil erosion, pollution and destruction of ecological balance. But the urgency of tackling this problem has been recognized at the high-

est levels. In March this year, the Central Committee of the Chinese Communist Party issued a directive to the relative ministerial departments to "speed up the reforestation of the country."

And last year, the Chinese government even added a new festival to the Chinese calendar — "Tree-Planting Day," which now falls on every March 12. On this date, several hundred million people turn out to plant trees on bare hillsides, along roads and riverbanks and wherever an unused patch of earth can be found. The nation's efforts last spring were rewarded with 3,300 million ha of new trees — and the total planted in 1979 covered 4,489 million ha.

Most of China's forests are in the country's cold north zone, where trees take longer to grow into useful timber than in the more temperate south. So large stretches of fast-growing firs have been planted in 13 southern provinces, including Hunan, Fujian, and Guangdong. More than 2 million ha of trees — including oil-tea camellia and tungoil [*Aleurites fordii* Hemsl. (Cuph.)] trees —



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## Enumeration of Philippine Dipterocarps Updated

In 1938, there were 51 species of Philippine dipterocarps recorded. However, many of these species were reduced to synonymy and many "endemic" species were found to occur outside the country. Since 1965, 5 new species (2 reduced to synonymy) were described and 2 extra Philippine taxa (a species and a forma) were found to occur in the country.

Philippine dipterocarps now stand at 39 species, 7 subspecies and 2 formas.

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were planted in these provinces last spring alone.

Peasants are encouraged to plant trees around their houses, and in some rural communes, they are given private plots on mountainsides and wastelands on which to plant trees, which then become their own property. This is a dramatic change from the policy of a few years back, when trees planted by peasants on their land were confiscated by production brigade leaders on the grounds that their ownership represented a "return to capitalism."

In Yanzhou county, Shandong province, East China, a region previously poor in forest resources, paulownia [of the family *Scrophulariaceae*] and poplar [of the genus *Populus*] trees have been planted in rows of 2 and 3 along 4,200 km of highway and 3,980 km of canal in the past 6 years. These tree-belts divide the country's 46,000 ha of cultivated land into 7,000 pieces, each averaging 7 ha.

A total of 30 million trees have been planted in China in the last 6 years. Fields

are criss-crossed with tree-belts and villages surrounded by them. These tree-belts help to reduce wind speed and moisture evaporation, increase relative humidity and produce better crop yields.

Some 6.7 million ha of shelter-belts have been built and 5,000 million trees planted on the North China Plain in the past 30 years. Peasants in these areas have devised a new farming method of inter-planting crops with paulownia trees. These have sparse leaves, which do not obstruct the sunlight, and deep roots which enable them to absorb moisture and nutrients from soil below that from which the crops derive their sustenance.

The leaves of paulownia trees are rich in nitrogen and make good, green manure. Experiments have shown that the average output of grain from fields interplanted with paulownia trees is 10 to 20% higher than that of ordinary fields. Farmlands interplanted with paulownia now total 1.4 million ha in 8 provinces, including Hebei, Henan and

Shandong. And a total of 700 million paulownia trees in these provinces provides 70,000 m<sup>3</sup> of timber for export every year.

In northwest and north China, 3 million ha of shelter-belts have been built to control the expanding deserts. The Taklimakan Desert, China's biggest in the autonomous region of Xinjiang, for instance, which has for centuries been nibbling away at farmland and pastures and gobbling up villages, is now kept in check by some 166,000 shelter-belts.

And Youyu county, north of the Great Wall in Shanxi province, which was once almost totally barren, now boasts of 50,000 ha of forest, as opposed to a puny 530 ha 30 years ago.

China's longterm reforestation plan aims at 30% forest cover — 20% by the end of the century. And by 1985, China hopes to have most of the farmland in its plain areas fully interlaced with tree-belts. □



### Natural Background

China is located in the east part of Islands) to 83 degrees (Hefungkiang) north east longitude. Its total land area is about is a mountainous country with 33% mountains, 12% plains and 19% basins. Tibet-Tsingha as the roof of the world with an average height toward the east. In general, the elevation toward the east. Along the coast, the elevation height of 500 meters a.s.l. The inter-mountain lakes makes the landmass of China very fertile tremendous influences on climate, soil

Because of the Pacific influence, precipitation the coastal areas and they decrease gradually 0.5 for annual precipitation/annual evaporation precipitation are used as indexes to draw down to the southwest; from the west southwestward along Yunnan Range, L (southeast of Tibet). China can be divided northwest half is far from the Pacific, extremely arid, except for the northern mountain most valleys of Tibet which have some forest divided into two subzones along Alkimsan north part is Singkiang-Mongolia with a climate (vegetation zones 1, 3 and 5). The Plateau with a mean summer temperature meadow and scrub (vegetation zones 2 and

The southeast half has abundant precipitation five subzones in accordance with increase east China with subarctic and cold temper mixed forests (vegetation zones 7 and 8), Northern and deciduous hardwood forests (vegetation temperate climate and deciduous and evergreen and 11). South China with sub-tropical and forests (vegetation zone 12), and Yunnan climate and forest vegetation because of its zone 6).

### Forests of China

China is a country with perhaps the world. There are more than 20,000 species than 2,000 genera and 300 families. The woody species, of which tree species number 3,000 Pinaceae and Turodiaceae in the world. Chinese genera *Cathaya*, *Camptochaeta*, *Fukusawa*, *Quercus*, *Pseudolarix* and *Taxus* specific *Ginkgo biloba* is a special product of China.

### Natural Background

China is located in the east part of Asia, ranging from 4 (South Sand Islands) to 53 degrees (Heilungkiang) north latitude and from 73 to 135 degrees east longitude. Its total land area is about 9.6 million square kilometers. China is a mountainous country with 33% mountains, 26% plateaus, 10% hilly lands, 12% plains and 19% basins. Tibet-Tsinghai Plateau is the highest; it is known as the roof of the world with an average height of near 5,000 meters above the sea level (a.s.l.). In general, the elevation decreases gradually from the west toward the east. Along the coast, the elevation of hills decreases to an average height of 500 meters a.s.l. The inter-mixture of mountains, valleys, plains and lakes makes the landmass of China very complicated topographically and exerts tremendous influences on climate, soil and vegetation.

Because of the Pacific influence, precipitation and humidity are high along the coastal areas and they decrease gradually toward the interior. If a ratio of 0.5 for annual precipitation/annual evaporation and 400 mm of annual precipitation are used as indexes to draw a diagonal line from the northeast down to the southwest; from the west slope of Takhsingan Mountains southwestward along Yensan Range, Lupanshan and Changtu to Pomi (southwest of Tibet), China can be divided into two major zones (Fig. 1). The northwest half is far from the Pacific, surrounded by high mountains, and extremely arid, except for the northern mountains of Singkiang and the southern-most valleys of Tibet which have some forest vegetation. This half can also be divided into two subzones along Alkinshan (Astin Tagh) and Kilienshan. The north part is Singkiang-Mongolia with desert, semidesert and grassland climate (vegetation zones 1, 3 and 5). The southern part is Tibet-Tsinghai Plateau with a mean summer temperature less than 10°C and alpine desert, meadow and scrub (vegetation zones 2 and 4).

The southeast half has abundant precipitation and can also be divided into five subzones in accordance with increase of temperature southward: North-east China with subarctic and cold temperate climate and coniferous and mixed forests (vegetation zones 7 and 8), North China with temperate climate and deciduous hardwood forests (vegetation zone 9), Central China with warm temperate climate and deciduous and evergreen forests (vegetation zones 10 and 11), South China with sub-tropical and tropical climate and monsoon forests (vegetation zone 12), and Yunnan Plateau with great variation of climate and forest vegetation because of topographic differences (vegetation zone 6).

### Forests of China

China is a country with perhaps the greatest variety of plants in the world. There are more than 20,000 species of seed plants belonging to more than 2,000 genera and 300 families. The woody plants comprise about 7,500 species, of which tree species number 3,000. There are about 30 genera of Pinaceae and Taxodiaceae in the world. China has 20 of them. Among these: genera *Callaya*, *Cunninghamia*, *Fukienia*, *Glyptostrobus*, *Keteleeria*, *Metasequoia*, *Pseudolarix* and *Taxus* specifically occur naturally only in China. *Ginkgo biloba* is a special product of China. China also has many valuable hard-

covers 12.7% which amounts to 121.86 million hectares with a volume of 3.939 billion m<sup>3</sup>. Forest area and volume per capita are 0.12 hect. and 9.5 m<sup>3</sup> respectively which are far below the average world level. It is estimated that China has about 258 million hectares, 37.2% of total land area, suitable for forests, but one-third of that still remains unforrested (Table 1).

Table 1. Utilization of forest land in China

Utilization	Million hectares	Percent
Fully stocked forests	121.86	47.4
Thinly stocked forests	15.63	6.1
Shrub land	29.75	11.5
New plantations	1.51	1.5
Nurseries	0.21	0.3
Lands unforrested	85.82	33.2
Total:	257.60	100.0

The existing forests of China including natural forests and plantations can be classified into the following categories: 80% timber production forests, 6% shelterbelts, 7% economic stands, 3% bamboos and 4% others. The average volume increment is 2.6%, or about 250 million m<sup>3</sup> produced annually and just a little more than the annual timber consumption of the whole country.

In general, China is rich in tree species, but poor in forest resources. Forests are very unevenly distributed and mostly concentrated in the remote border areas. In terms of forest coverage, Taiwan comes first with 58%, Fukien second with 48%, Tsinghai last with 0.3% (Figure 2). In timber volume, Heilungkiang ranks the highest with 25% of the total; Tibet, Szechuan and Yunnan rank next with 15%, 14% and 10% respectively. Ninghsia comes last with 0.05%.

Forestry of China

Since establishment of the People's Republic of China in 1949 much attention has been paid to forest development. The government has formulated a series of general and specific policies. Forest inventory has been carried out twice on a national scale. Provincial and local forest organizations have been organized to direct forestry activities in their appropriate regions. Development of the forest industry, forest research and forestry education are emphasized equally. At the National People's Congress Standing Committee Meeting held in 1979, March 12th was named as National Arbor Day, and a "Forest Law" was promulgated. All these measures are effectively promoting the forest development of China.

1. Afforestation and Reforestation.

In the past, China was very rich in forest resources. Because of long history of exploitation, extensive conversion of forest land into agricultural fields and repeated destruction by wars, China's forests had suffered serious damage and were almost exhausted. At the end of 1979, the forest coverage of China comprised an estimated 8...

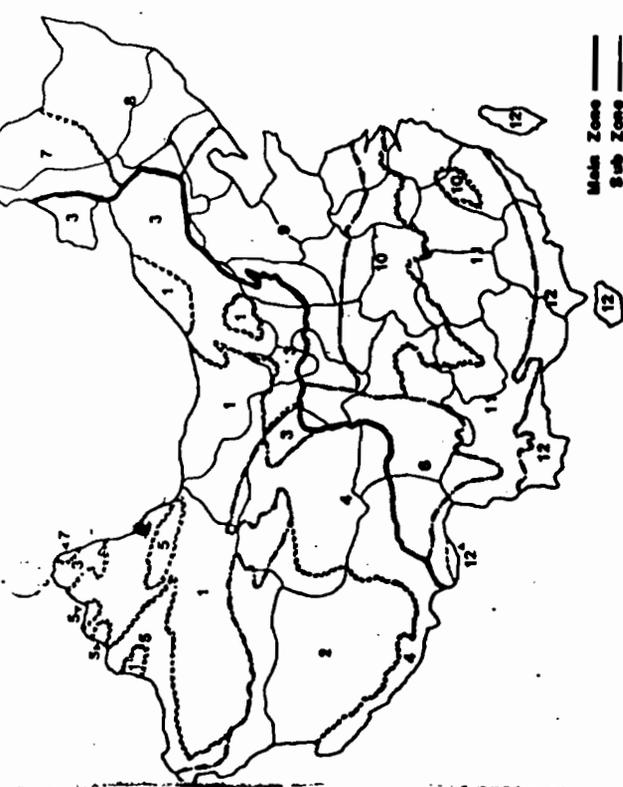


FIGURE 1. MAJOR VEGETATION ZONES OF CHINA

1. Desert and semidesert scrub zone
2. Alpine cold desert zone
3. Steppe and meadow zone
4. Alpine meadow and scrub zone
5. Dry mountainous forest steppe, steppe and desert complex zone
6. Subalpine coniferous forest zone with some warm temperate and subtropical hardwoods in deep valleys
7. Subarctic coniferous forest zone
8. Cold temperate mixed forest zone
9. Temperate summer green forest zone
10. Warm temperate mixed forest zone
11. Subtropical evergreen forest zone with some warm temperate and subtropical monsoon forest zone
12. Tropical and subtropical monsoon forest zone

wood species belonging to such genera as *Castanea*, *Castanopsis*, *Cyclobalanopsis*, *Fagus*, *Quercus*, *Cinnamomum*, *Phoebe*, *Pseudotsuga*, *Schinus*, *Acer*, *Fraxinus*, *Juglans*, *Tilia*, *Ulmus*, *Sophora*, *Ormocora*, *Populus*, *Betula*, etc. Some other economic woody plants such as *Ternstroemia oleosa*, *C. sinensis*, *Aleurites fordii*, *A. montana*, *Sapindus sebiferum*, *Juglans regia*, *Morus alba*, and many species of palms and bamboos are widely distributed, and some are commonly cultivated in appropriate areas of China. Due to favourable climate, many introduced exotic tree species have become well acclimatized in certain parts of China, for example *Pinus eliotii*, *P. taeda*, *Cedrus deodara*, *Taxodium ascendens*, *T. distichum*, *Carya ilinoensis*, *Olea europaea*, *Elaeis guineensis*, *Platanus acerifolia*, *Excelsipitus* spp., *Tectona grandis*, *Robinia pseudoacacia*, *Cassia stamea*, *Albizia salcata*, *Suaeda macrophylla*, *Populus canadensis* and other poplar varieties and hybrids.

At present, the sawn timber production annually. More than 600,000 cubic meters of resin are produced every year. Forest chemicals such as tannin, shellac and alcohol have gradually increased and been greatly improved in quality.

#### 4. Forestry education and forest research.

There are 11 independent forestry colleges and 16 forestry departments associated with agriculture colleges in which more than 7,000 students are enrolled. The independent colleges offer courses in such major fields as silviculture, forest protection, forest wildlife, landscape design, soil conservation, logging and transportation, wood utilization, forest chemistry, civil engineering in forest areas, forest economics, etc. Silviculture is the only major study in most forestry departments of agricultural colleges. More than 60,000 professional foresters have been graduated since 1949. In addition, a three-year program of graduate study is given in such specialized areas as forest genetics, forest ecology, silvicultural practices, mensuration, dendrology, landscape design, forest pathology, forest entomology, soil conservation, wood technology, wood seasoning and wood chemistry at the Northeast Peking, and Nanking Colleges of Forestry. There are 32 secondary forestry schools teaching forest technicians. In the major forest areas, short term courses are also given to professional personnel.

Under the Forestry Academy of China, ten national research institutes are located in different regions. These institutes research silvicultural problems relating to tree species, forest pathology, forest entomology, tree improvement, forest chemistry, wood technology, forest machinery, shelterbelts, forest economics etc. Provinces, autonomous regions and districts also have their own research institutes to take care of their forest problems. In addition, the forestry colleges and forestry departments carry on some research in their appropriate areas of specification either operating independently or cooperating with some institutes related.

#### Prospect for China's Forestry

As mentioned above, China has made great progress in forest development in past years. But compared with the industrially advanced countries, China still has a long way to go. Forestry still is a weak link in the Chinese economy. Because of shortages and uneven distribution of forest resources, the supply of timber and other forest products is far below the demand, and Chinese people suffer constantly from wind-storms, floods, soil erosion and drought which cause serious damage to agricultural production and living environments. What China is going to do is to speed up its forest development. That is, to green the mountains and hills suitable for forests in order to raise the forest coverage up to more than 20% of the total land area by the end of this century, to improve silvicultural techniques and forest management, to mechanize silvicultural and logging operations to raise labour productivity, and to develop forestry education and forest research in order to promote high technical and scientific levels of forestry staff members and workers.

Modern forest sciences and practices are not limited to certain regions but are of global interest. The vast landmass of China, with her potentially high forest productivity, resourceful manpower, and our heritage of classical silvicultural practices are the foundation of our forest development, but we need more modern knowledge and technical cooperation. If we implement our plans well, we can better achieve our goals with confidence.

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Through efforts of the Chinese people and government, more than 30 million hectares have been successfully planted since 1949, of which about 20% are state-owned; the rest belong to local communes.

In the northern provinces and regions, priority is given to the establishment of farmland shelterbelts, soil and water conservation plantations, windbreaks and sandbreaks, etc. The "3-N" Project (Northeast China, North China and Northwest China shelterbelt systems), commonly known as "Green Great Wall", with strips about 6,000 kilometers long and 1 kilometer wide has been undertaken for several years. Particularly in the Sinkiang and Inner Mongolia regions, some deserts and sand dunes formed after deforestation and removal of lesser vegetation have been successfully checked or stabilized by planting drought-resistant trees and shrubs.

In the central and south parts of China, timber production and economically specialized plantations are of most importance and successfully established. In the agricultural areas, "four sides" (river and lake, hill, road and house sides) plantings are steadily carried out on a large scale. In the remote mountain areas with sparse population such as Kwangsi, Yunnan, Szechuan, Shensi, etc. *Pinus massoniana*, *P. yunnanensis*, and *P. armandii* are acridly-seeded successfully.

## 2. Forest Protection.

In the forest areas, people are fully mobilized and well organized to control forest fires and forest pests. A system of job-responsibility for controlling forest fires is established. Measures such as fire-breaks, look-out towers, transportation and communication lines, forest patrols, landing fields and airborne fire brigades are set up. Similarly, surveys are regularly carried out to determine occurrence and predict development of major forest insects and diseases. In addition to the chemical measures commonly practiced in forest protection, biological controls are going to be widely adopted. At the same time, more attention is being paid to selecting tree species and varieties for pest resistance.

In addition, there are 45 natural conservancies established for keeping the original vegetation intact ecologically. They amount to more than 15 million hectares altogether, about 0.16% of China's territory. Rare and endangered tree species such as *Cathaya argyrophylla*, *Davidia involuta*, *Hopea hainanensis*, *Madhuca hainanensis*, etc. are carefully protected. Similar measures are taken to protect the rare and endangered animals such as giant pandas, golden monkeys, takins, northeast tigers, red crown cranes, etc.

## 3. Forest exploitation and forest industry.

Since the founding of the People's Republic of China, more than 10,000 kilometers of narrow gauge railway and over 60,000 kilometers of road have been built in the national forests.

The commercial timber production, arranged in a unified way by the government, has increased from 5.8 million cubic meters in the early days of liberation to more than 45 million cubic meters annually. The general policy for forest exploitation is "taking silviculture as foundation and integrating harvest with tending". Both the national and the commune forests must assume the tasks of both timber production and forest regeneration and management. In general, the area of new plantations is a little larger than the forest area harvested annually.

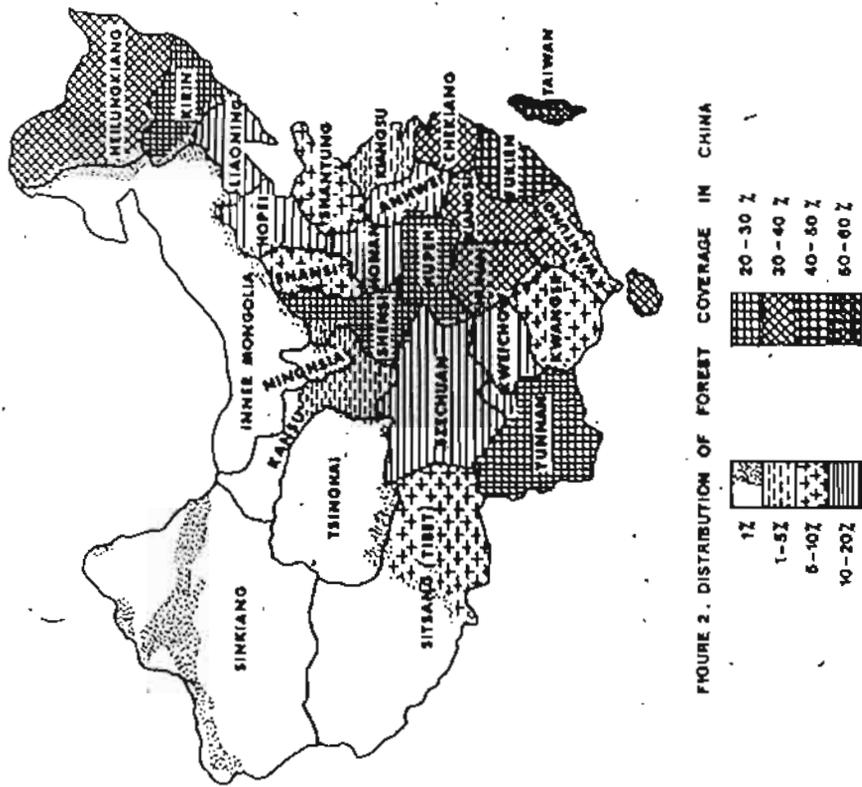


FIGURE 2. DISTRIBUTION OF FOREST COVERAGE IN CHINA

During the past years, national investment in forestry has steadily increased, e.g. an increase of 243% for 1952-57 and 182% for 1957-77 are reported. China has carried out a national program of afforestation and reforestation and made great achievements. Planting for timber production and environmental protection are of the first priority. Plantations aimed to produce cooking oil, industrial oil, fuel and other special products are also emphasized in accordance with the local needs and environmental conditions (Table 2).

Table 2. Classification of forest plantations established during 1949-77

Plantation	Percentage of area planted
Timber production	66.5
Shelterbelt and protection	6.3
Economically specialized	11.8
Bamboo	13.3
Fuel	2.1

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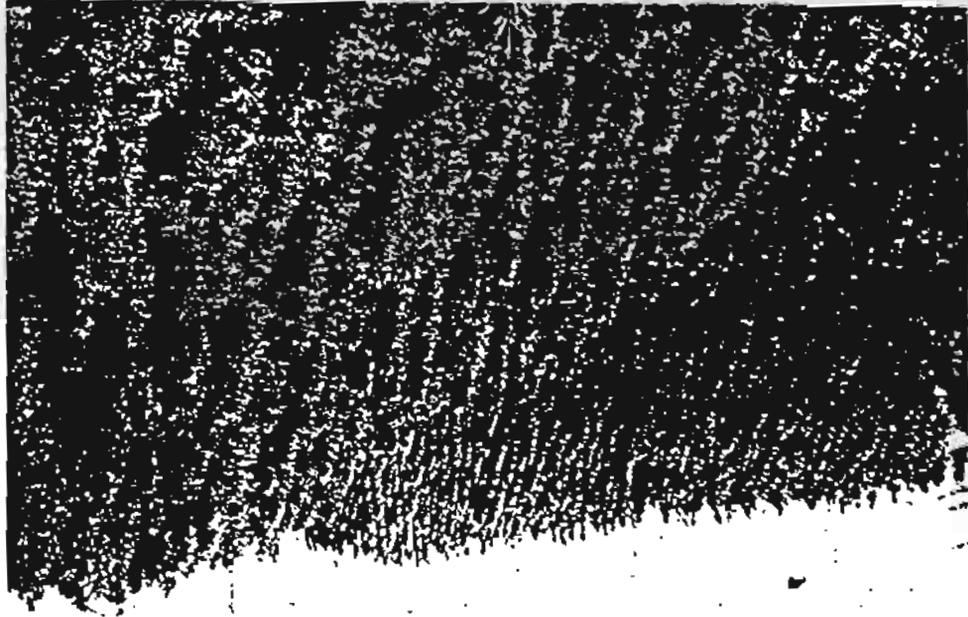
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Young plantation of *Cunninghamia lanceolata* in Central China

## UN ARBRE CHINOIS QUI FAIT POUSSER LES CÉRÉALES

EN Chine, la plantation de paulownias remonte à une époque très ancienne. Les paysans les plantent non seulement pour la beauté de leurs fleurs mauves et blanches et en raison de leur croissance rapide, mais tout particulièrement parce qu'ils leur assurent, en culture intercalaire, une meilleure production céréalière, rapporte Tian Sang, de l'agence China Forest dans le bulletin du Crdi.

Le tronc d'un paulownia de dix ans peut atteindre jusqu'à 40 cm de diamètre, et il existe dans le comté de Qianjiang (au sud-ouest de la province chinoise de Sichuan) un paulownia de 18 ans d'une hauteur de 21,7 m et d'un diamètre de 1,05 m. Cet arbre produit une moyenne extraordinaire de 0,37 m<sup>3</sup> de bois par an.

Le paulownia s'adapte à diverses conditions écologiques et en Chine il pousse depuis l'île tropicale de Hainan jusqu'à Pékin, et de Taiwan jusqu'aux plateaux de Loess du cours moyen et supérieur du fleuve Jaune. Même les régions montagneuses et les vallées qui s'élèvent à 2 000 m au-dessus du niveau de la mer, au sud-ouest de la Chine, sont couvertes de forêts de paulownias.

Le bois de paulownia est léger et il a un très beau grain. Il est durable, résiste à l'érosion et à l'humidité, et il se travaille facilement. Ses propriétés en font un excellent matériau d'insonorisation et de résonance. On dit que certains empereurs de la Chine ancienne (il y a 4 000 à 6 000 ans) firent construire des xylophones en bois de paulownia.

Aussi est-il largement utilisé comme bois de charpente et dans la fabrication de portes, de fenêtres, de meubles et de colles, tout en étant fort recherché par les artisans.

Les branches de l'arbre servent de combustible, et les feuilles, les fleurs, les fruits et l'écorce ont des propriétés médicinales. Certaines unités scientifiques des provinces de Henan et de Shandong ont utilisé le paulownia dans des médicaments et des sérums pour traiter la trachéite, la laryngite et la pneumonie. La teneur en azote des feuilles du paulownia est plus élevée que celle des feuilles du faux indigo (*amorpha*), qui sont utilisées comme engrais vert. Elles constituent aussi un aliment de qualité pour les porcs, les moutons et les lapins.

### L'ARBRE CONTRE LES CALAMITÉS

Mais le paulownia est surtout utilisé par les agriculteurs chinois pour augmenter leur production de céréales. Une grande partie des terres dans les provinces de Henan et de Shandong, sur le cours inférieur du fleuve Jaune, sont consacrées à des cultures associant le paulownia. Il y a déjà vingt ans, les agriculteurs de ces régions plantaient des paulownias pour lutter contre les tempêtes de sable, la sécheresse et les gelées. Ces grands arbres ont permis d'obtenir des rendements élevés et constants. Ainsi, à la brigade de production Kongchang dans le comté de Lankoo (province de Henan) la production de céréales est passée de moins de 0,75 t en 1963 à une moyenne de 5,25 t par hectare depuis que l'on associe le paulownia aux cultures. De tels exemples ne sont pas rares. Une étude entreprise par la Section du paulownia de l'Académie chinoise de sciences forestières révèle que la production céréalière des régions où l'on pratique ce type de culture est plus élevée que dans celles où il n'existe pas.

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De plus, la chute tardive des feuilles du paulownia à l'automne protège les récoltes contre le gel. Le blé qui pousse sous les arbres donne toujours un meilleur rendement et les résultats obtenus par diverses brigades de production de Xiezhong, dans le comté de Minquan (province de Henan) le confirment.

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SELECT BIBLIOGRAPHY

ON GENERAL TOPICS OF INTEREST

As a Chinese historian recently pointed out in a witty essay on the historical antecedents of China-watching\*, If it is accepted that at the end of the eighteenth century more books were published in China than in the rest of the world put together, it is probable that more books are being published today on China than on any other country in the world. If Mao didn't always succeed in producing bumper harvests in his own country he did at least manage to raise a lush harvest of rhetorical blooms outside. Anybody who believes that they have something to relate tries to get into print about China. Even the most minor anecdotes are dutifully recorded. What is worse, formally reputable scholars, desperate to record their findings, have prematurely gone into print, only living to regret the day they did. Chiang Ching had hardly come into prominence before Roxanne Witke burst into prose about the chairman's wife. Small wonder then that the bona fide reader is deluged by a tidal wave of dubious literature about a country which seemingly fascinates us all. How difficult it is then to provide a reading list that is not full of sycophantic outburst, dated material or dubious statistics. At the risk of falling into these traps a select list is set out below:

General

Two books stand out in this category:

1. Simon Leys "Chinese Shadows" published by Penguin Books, U.K. originally published in French under the title "Ombres Chinoise". Leys has also written a good account of the period of the Cultural Revolution entitled "The Emperor's New Clothes" also in Penguin Books.
2. Claude Roy, well known amongst China scholars, and who first wrote "Keys to China" several years ago has just published another very good book simply entitled "Sur la Chine" and published by Gallinard, Paris.

History

For those with the time, inclination and interest, Joseph Needhams life work "Science & Civilization in China" will provide answers to many questions. As a resource it is second to none. Vols. are in the Centre's Library. For a general historical overview there is Eberhards "A History of China". Modern history is probably covered best in C.P. Fitzgerald's "A History of Communist China", published by Penguin Books as is Lucien Branco's "Origin of the Chinese Revolution" Palo Alto, Stanford University Press, 1971.

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\* Lo Hui-min, 'The Tradition and prototypes of the China-watcher', Canberra: ANU Press, 1978.

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The Chinese revolution is very well covered by C.P. Snow "Red Star Over China", N.Y. Vintage Books, 1971, now in paperback and available in most libraries. There have been many biographies of Mao but the best has been produced by Jerome Chen of York University here in Canada and is far better than Stuart Schrams "Mao Tse-Tung" (Penguin Books) 1967, the "standard" western bibliography. No Canadian should go to China without reading up something on the life and work of Dr. Norman Bethune the Canadian doctor who worked with the Chinese Eighth Route Army during the war against Japan in the 1930's (see reprint general section).

Travel Encyclopedia Guide to China, Geneva (1974) - Nagel

Nagel's 1,500 page guide is useful if you are contemplating a lot of sightseeing, especially to some of the antiquities but it is rather dated and one needs to check against conditions on the ground. ✓ The China Handbook by De Keijzer and Kaplan 1979 is available in the Centre and is fairly good for a quick background. The chapter on visiting China's Healthcare facilities is extracted from Victor and Ruth Sidels "Serve the People: Observations on Medicine in the People's Republic of China."

Fodor's People's Republic of China, New York, David Mackay, 1979.

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FORESTRY REVIEW

## FORESTRY IN CHINA: I ADMINISTRATION

By D. R. JOHNSTON\*

## SUMMARY

In September and October 1979 a British Forestry Mission visited The People's Republic of China as guests of the Chinese Government. During their three-week visit they travelled from Canton in the south to Nancha in the north east, met Vice-Premier Wang and attended a dinner given by Chairman Hua to celebrate the 30th anniversary of the People's Republic.

China covers an area of 960 million hectares and has a population of about 960 million people. The country is organised administratively into 26 provinces and autonomous regions and three autonomous cities. Each province is divided into about 8 prefectures, 80 counties and 2000 communes. About 80 per cent of the population are classified as rural peasants who are grouped into production brigades and production teams within the communes. The forestry administration mirrors the civil administration down to the county level.

About half of the forest area is controlled by the Ministry of Forestry and this includes a large area of unmanaged forest in the north east, Tibet, south west and the south. The other half is owned by the communes and by Heilongjiang Province, which from a forestry point of view is semi-autonomous.

An important aspect of forestry in China is the environmental planting to protect agricultural land against windblown sand and flood water and to provide shade and protection in towns and villages. This planting was everywhere seen to be of a high standard. Twenty-eight million hectares of timber plantation have been planted since 1949 of which 22 million hectares have been planted by the communes. The impression was gained that much of this planting has been only partially successful and the Government has plans to improve the situation.

Forest management and, especially, forest research suffered greatly as a result of the 1966 Cultural Revolution. All the research stations visited by the Mission had been completely closed from 1966 until the early or mid-seventies and although many of the research workers appeared to be very able people they were not fully in touch with current developments outside China and the research programmes are not yet fully integrated with the urgent problems of management.

## Introduction

In September and October 1979 a British Forestry Mission visited The People's Republic of China as guests of the Chinese Government. During their three week visit they travelled from Canton in the south to Nancha in the north east, met Vice Premier Wang and attended a dinner given by Chairman Hua to celebrate the 30th anniversary of The People's Republic. The Mission consisted of the leader, Sir Ralph Verney, a Commissioner of the British Forestry Commission, Earl Bathurst representing private forestry, Professor J. D. Matthews of Aberdeen University, Mr. T. S. Smith, Chairman of the Home Timber Merchants Association of Scotland, Mr. R. H. Kemp, Mr. D. R. Johnston, Director of Research and Development of the British Forestry Commission and Chairman of the Commonwealth Forestry Association and Miss Penny Brooke, Deputy Director of the Great Britain China Centre.

The following account which deals primarily with forest administration, planning and management is almost certainly slightly inaccurate in a number of details, because it was not possible in the time available either to see a truly representative cross section of all aspects of Chinese forestry or to discuss the subject, in detail,

\* Director of Research and Development, British Forestry Commission.

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Forestry Review.

Forest Administration

The national forest authority is the Ministry of Forestry in Peking which, like the other executive ministries, is subordinate to the State Council.

Although the Ministry of Forestry has an overall concern with all forestry activities it is only directly responsible for about half of the total forest area. The other half is owned by the communes and by Heilongjiang province.

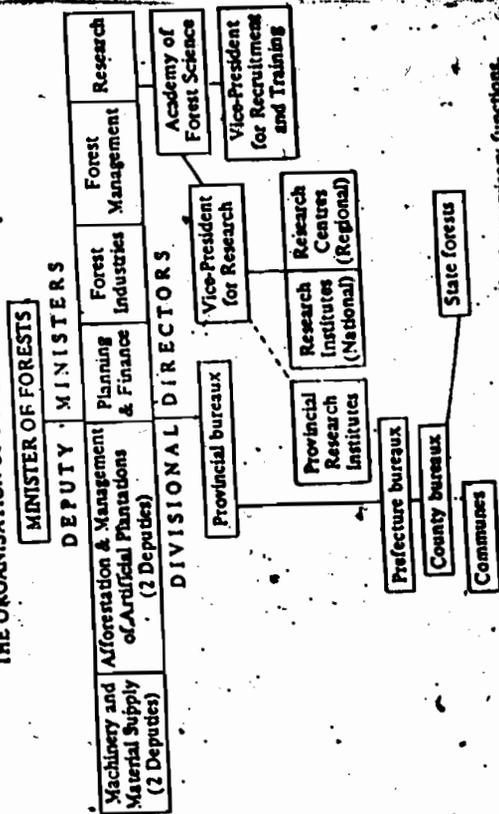
There is a bureau of forestry in each province, prefecture and county which is technically responsible through the chain of command to the Minister of Forestry but administratively responsible to the civil administration.

These bureaux are responsible for giving advice and guidance to the communes and for allocating national planting and felling targets at each level of administration. They are also responsible for distributing state aid to the collective forests to which amounts in total to 100 million yuan per annum. These funds are used to supplement contributions from the communes to establish new plantations and to buy new equipment. The provincial bureaux are responsible for the provincial research institutes and for forest survey, inventory and production forecasting within the province. The state forests are managed primarily by the bureaux at county level with a permanent labour force of forest staff. If there is a relatively small plantable reserve contiguous to a collective forest the bureaux may employ collective labour to undertake the state planting.

One of the objects of the cultural revolution was to eliminate inequalities in wages and to that end piecework was abolished. Experience has shown that communist workers are probably no more motivated than workers in other countries and piecework is now gradually being reintroduced in an effort to improve a very low level of productivity.

The organisation of the forest administration is shown in Table 1.

TABLE 1  
THE ORGANISATION OF FOREST ADMINISTRATION



Broken lines show indirect relationship; solid lines show direct supervisory functions.

with all levels of management. Furthermore, the Chinese Government is in the process of introducing new laws and regulations, some of them on a trial basis, and this further confused the picture. Nevertheless, it is believed that the report gives a reliable overall impression of Chinese forestry at the present time.

#### Civil Administration

China covers an area of 960 million hectares and has a population of 960 million people, concentrated mainly in the eastern third of the country. Of the total population about 80 per cent live in rural areas. There are 120 million hectares of forest which cover 12.7 per cent of the land surface.

For political and administrative purposes the country is divided into 26 provinces and autonomous regions and many autonomous cities - Peking, Tientsin and Shanghai. Each province is divided into prefectures, 80 counties and 2000 communes. The provincial centres, the very large towns or cities, the prefectures are based upon medium-size towns and the communes upon small towns. The communes are the principal administrative centres of the rural peasants who are grouped into production brigades, which govern several villages or production teams. The operational unit is the production team which works communally on the collective land. Each family is also allocated a small area of land, about 36 square metres, per head, which they work privately. A production brigade typically comprises about 3000 people and a production team about 300.

The income of the peasants depends upon the output of their collective farms but the majority of the people who work in the towns and cities and in public services are paid a fixed wage depending upon their qualifications and experience. Most wage earners can earn some sort of bonus depending upon their performance and production and upon the profitability of their enterprise. There is little movement from one job to another.

It is occasionally possible for peasants in wealthy communes to earn more than the wage earners in the towns but in the less fertile areas their earnings are very low. Most housing in the rural areas is privately owned but in the towns and cities almost everyone rents accommodation from the local administration or from his enterprise. Many of the welfare services such as health and education are provided by the communes or factories but the public services such as roads, regional transport and higher education are generally the responsibility of the provinces. Education is free in the towns but the peasants have to make a contribution to the primary education of their children. There appears to be no welfare system for the small proportion of people who are not within the system and these people may become beggars, black market operators or criminals.

The Government is making efforts to control the population. This is done by exhortation and education by the provision of free birth control facilities and by fiscal means. People who have only one child are paid a child allowance of five yuan per month. This ceases if a second child is born and a third child is taxed at five per cent of the parents' income. There are also no clothing coupons for more than two children. Any couple who sign a declaration promising to have only one child are given various benefits. In the country these include free schooling and an additional allocation of private land to encourage them for the land which would have been allocated to their children.

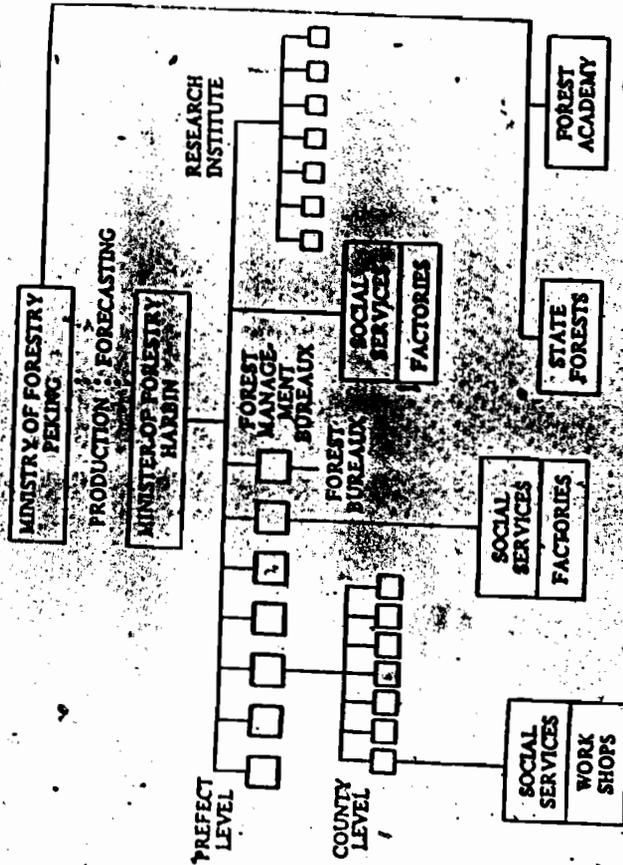
The Mission was told that everyone who has been in recognised employment qualifies for an unemployment benefit fund, on retirement, for a pension. Each of these amounts to about 70 per cent of average earnings.

Heilongjiang province has a unique system of administration which results from the over-riding importance of forestry in that province. There is very little collective forestry in Heilongjiang and the only state forests are the reserves of inaccessible and largely untouched forest in the north of the province.

Most of the very large area of managed forest belongs to and is managed by the forestry bureaux within the province whose work is directed by the General Forestry Administration of Heilongjiang Province.

Furthermore, owing to the dominating importance of forestry, the whole of the civil administration in rural areas is incorporated within the forest administration which is responsible for schools, hospitals and factories. The organisation of the Heilongjiang forest administration is shown in Table 2.

TABLE 2  
THE ORGANISATION OF THE FOREST ADMINISTRATION IN HEILONGJIANG



Forestry Objectives.

The People's Republic of China took over a country devastated by a long period of warfare and natural catastrophes. It is logical therefore that the initial impetus for tree planting was inspired by an urgent need to protect the agricultural land against windblown sand and flood and to humanise the treeless landscape of the plains. It is possible to identify six parallel forestry objectives. These are:-

1. To protect the agricultural land from windblown sand and flood water. To this end a series of shelterbelts is being planned as a barrier to the wind and

sand from the Mongolian desert. The shelterbelts which will, *in toto*, be about 7000 km in length, are to be established in a zone about 200 miles deep and running approximately parallel with and to the north of the Great Wall. The total cost of the project, which is the particular responsibility of a vice-minister, will be about 900 million yuan and special departments of all the forestry bureaux in the area have been established to implement the work. Flood protection takes two forms. One is the afforestation of bare hills to prevent erosion and uncontrolled run-off, the other is the building up of banks along rivers and canals and their consolidation by tree planting.

2. To improve the human environment in rural areas, especially in the northern and central plains, by planting trees around houses, villages, roads and water-courses. This is referred to as 'Four Around' planting and has the additional merit of providing firewood and local protection for the land.
3. To improve the urban environment by street and park planting.
4. To establish new, timber producing forests, mainly south of the Yangtze river.
5. To conserve and improve the existing productive forests in the north east and the south west by restricting the cut to the current annual increment and by replanting after felling.
6. To protect all forests against fire and disease.

Forest Management

From the management point of view the forests can be classified in two ways - by functional types and by ownership classes.

Functional Types

The functional classification is shown in Table 3.

TABLE 3.  
CLASSIFICATION OF FORESTS BY FUNCTION

Function	Percentage	Area Million hectare
1. Timber producing	80	96
2. Shelterbelts	6	7.2
3. Non-timber tree crops	7	8.4
4. Bamboo	3	3.6
5. Amenity etc.	4	4.8
		120

Ownership Classes

Although China is a communist country there are marked differences in the *de facto* ownership pattern. These are as follows:

1. Collective forests belonging to the communes  
(a) 'Four around' Planting

This is the planting around houses, villages, roads and streams in the rural areas. This is done primarily for amenity but partly for fuelwood and local soil protection. Because the benefits are obvious, quickly achieved and close to home the standard of planning, execution and maintenance appears to be very good and this class of planting is a realistic example of the integration of forestry with agriculture and of practical conservation.

(b) Forests planted for timber production

The Mission saw only a relatively small area of this class of planting on the hills in Guangdong Province where *Pinus massoniana* has been planted. Much of this forest was established by a massive mobilisation of the peasants in the 1950s and from observation and discussion it is apparent that a large proportion of the 22 million hectares planted by the peasants throughout China is in a poor condition. This is due to a combination of circumstances which include poor species and provenance choice, disease, neglect and heavy and coarse brushing for firewood. Although the forests belong to the collectives it is apparent that they do not arouse the same enthusiasm as agriculture or 'Four around' planting. The Government makes available, via the forestry bureaux, an annual sum of 100 million yuan to help the communes plant their forest land and to purchase seed and equipment. But not even this is sufficient to stimulate sufficient and sustained interest in the management and protection of the developing forests and the Government is now proposing to distribute further funds and to establish integrated land-use planning units at county level to resolve the conflicts between forestry and agriculture.

2. State forests

(a) Unexploited reserves

There are very large reserves of unexploited forest in the extreme north of the country, in Tibet and in S.W. China and Hainan. In Northern China, for example, there are about 500,000 ha of untouched forest and in Tibet there are estimated to be 1400 million m<sup>3</sup> of over-mature unexploited forest, 800 million m<sup>3</sup> of which are in the disputed zone between Tibet and India. Some of this forest is alpine and some is sub-tropical.

(b) New planting

Out of a planned planting target of about 4 million ha the Ministry of Forestry is responsible for only about 150,000 ha and the communes and Heilongjiang province for the remainder. The state planting is done by permanent forest staff organised primarily by the forest bureaux at county level.

3. Heilongjiang Province

There are 18 million hectares of mixed broadleaved and coniferous forest in Heilongjiang province containing 300 woody species of which twenty have a commercial value. The principal coniferous species are *Larix dahurica*, *Pinus sylvestris*, *Pinus koraiensis*, *Picea ferenensis*, *Picea asperata*, and *Abies holophylla* and the more common hardwood species are *Fraxinus mandshurica*, *Phellodendron amurense*, *Juglans mandshurica*, *Betula costata* and *Quercus mongolica*. Much of the forest has been overcut and degraded in the past but something like 30 per cent by area but 42 per cent by volume is inaccessible and virtually unexploited. This virgin forest belongs to the Ministry of Forestry. The remainder of the forest area, about 12.5 million hectares, is owned by the semi-autonomous

forest administration under a provincial Minister of Forestry in Harbin and is yielding, at present, about 14 million m<sup>3</sup> per annum or a little over one m<sup>3</sup> per hectare per annum which is approximately equal to the current annual increment. The Heilongjiang forests are therefore providing more than one third of the industrial wood currently produced in China (see below).

The forests are being exploited by the removal of individual, mature or over-mature trees and also by clear felling and replanting. The coupes are of irregular shape and those seen by the Mission ranged from about 10 to 20 hectares in area.

4. Amenity planting in cities and towns

There is great enthusiasm for urban planting in China. This is not usually the responsibility of the forestry bureaux but of various departments of the civil administration.

Data Collection

Mapping, forest inventory and production forecasting are done within each province by a specialist team within the forestry bureau. The data are sent to the Ministry of Forests in Peking where they are collated to form the basis for strategic planning.

Annual Cut

The forest law of 1979 limits the cut to the current annual increment. The object of this law is to prevent the overcutting and forest degradation which has occurred in the past but there is some evidence that it is applied uncritically at the lower levels of management. The cut in a young plantation forest or in a seriously over-cut natural forest should be less than the current annual increment whereas in a forest with a surplus of over-mature trees it is both prudent and economical to cut more than the increment. It would be a surprising coincidence if the optimum cut from the managed forest should equal the current annual increment in a county or province or even over the country as a whole and there would appear to be a need for a more flexible approach to the calculation of allowable cut. This would require less emphasis on increment assessments and more on future growth potential, standing volume and expectation of life.

It is difficult to obtain reliable figures of production and consumption but total production appears to be of the order of 75 million m<sup>3</sup> per annum of which about 35 million m<sup>3</sup> are industrial wood and 40 million m<sup>3</sup> are fuel. There are some imports of industrial wood from S.E. Asia.

The areas of unmanaged reserve are a special case. Their standing volume is high and they represent a capital reserve of great value which is currently producing little or no increment and yielding no produce. They are all in relatively inaccessible areas and considerable capital investment in survey and inventory, roading, machinery, transport, and human settlement would be required to bring them into production.

This investment would appear to be worthwhile were the capital available. The valuable overmature growing stock could be cut at a rate determined by the expectation of life of the standing trees, by the rate at which new roads and labour could be provided, by the time required to install new processing capacity and by the ability of the Ministry of Forests to replant the felled area.

In view of the heavy demands upon China's limited capital resources it is at least possible that a good case could be made for a major loan from the World Bank to open up these unexploited reserves of wealth.

## Forest Planning

The principal planning agency in China is the Planning Commission which ranks above the Ministries and which is responsible for all planning at the strategic level.

So far as forestry is concerned the Planning Commission determines a national planting programme and assesses the requirements of wood for industry. The Commission then calculates a national cut which the Minister of Forestry is asked to produce. The Minister in turn calls representatives of all the provincial forestry bureaux to a meeting in Peking to discuss the practicability of the planting and felling programme and to decide how it shall be allocated between provinces.

The required felling programme is not arbitrary because it is based upon the production forecasts prepared at the provincial level and collated by the Ministry of Forests which passes the information to the Planning Commission. Nevertheless there are disagreements between the Planning Commission and the Ministry of Forestry which, on occasions, considers that the programme set by the Commission is either not achievable or is in excess of what is prudent from a management point of view. It is unlikely that the estimates of standing volume, increment or growth potential are very precise and it is therefore possible that the provincial bureaux and the Ministry of Forests err on the safe side.

When agreement has been reached between the Planning Commission and the Ministry the process of allocation and discussion is repeated at the provincial, prefecture and county levels.

## Control

The control of felling and planting programmes and of the use of government funds does not appear to be very strict. Some communes have been known to spend money intended for afforestation and management on the construction of waterways and even on providing themselves with a troupe of singers and dancers.

The impression was gained that failure to achieve targets is by no means uncommon but it is not clear how seriously this is taken. It is obvious however that as from next year the Government intends to tighten up its system of financial and operational control. This is in line with the current policy of strengthening the whole legal system in China.

## Research

## Organisation

The fountain head of forest research in China is the Academy of Forest Science in Peking which is responsible directly to the Ministry of Forestry.

This Academy was established in 1958 and it succeeds an earlier forestry research institute. From 1966 until May 1978 the work of the Academy was either abandoned or amalgamated with the Academy of Agricultural Sciences.

The Academy is organised into twelve sub-institutes or departments, seven of which are situated in one complex in Peking and five of which are located in the provinces.

The organisational chart is shown in Table 4. In addition to the main research institutes there are a number of new experimental field stations throughout China.

The department of most direct interest to foresters is the Forest Institute in Peking which consists of 14 branches. These are -

- (1) Management and inventory and statistics
- (2) Mensuration (Measurement)

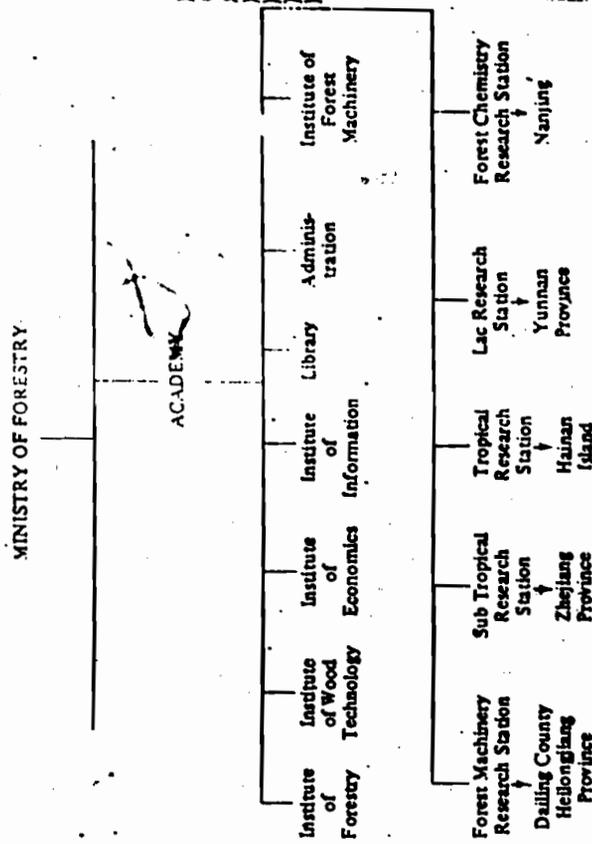
- (3) Silviculture
- (4) Shelterbelts and sand fixation
- (5) Non-timber commercial trees
- (6) Soils and site
- (7) Physiology
- (8) Genetics, tree breeding and provenance
- (9) Botany - mainly taxonomy
- (10) Exotic introduction
- (11) Entomology
- (12) Pathology
- (13) Ecology
- (14) Urban planting and environmental protection

This institute also has a number of silvicultural field stations in various parts of China.

The total staff of the Academy is 600 of whom 70 per cent are engaged in research and the total staff of the Forest Institute is 244 of whom 199 are technically or professionally trained.

There is a research institute in each province which reports to the provincial bureau and in Heilongjiang there are twenty four research or experimental stations at the Forestry bureau (or County) level.

TABLE 4  
ORGANISATION OF THE ACADEMY OF FOREST SCIENCE



Research is also carried out in teaching establishments such as the Academy of Forestry in Harbin and by various provincial departments responsible for arboreta and conservation areas.

The provincial research institutes are not responsible to the Academy but the Academy has a considerable influence upon their work and acts as a coordinating body in national forest research. The coordination is effected by periodic meetings in Peking of the Directors of Provincial Institutes. There are also special meetings of research workers concerned with a particular aspect of research and regional operational meetings to communicate the results of research to foresters in the field.

The Heads of the various institutes appear often to be political appointees with no experience of or qualifications in research. They are advised by professionally qualified deputies.

#### Current programmes

The Academy of Forest Science is responsible for both basic and applied research while the provincial institutes are, in theory, primarily concerned with practical forestry problems and possibilities in their provinces. The work done at the higher teaching establishments appears to be mainly academic in nature. The research work in the arboreta and parks appears to be almost entirely taxonomic.

It is difficult to summarise the research programme because there was no opportunity to see more than a small part of it but it is clear that genetics, tree breeding and the establishment of seed orchards, forest protection, site studies, ecological shelterbelts and sand stabilisation are regarded as important areas of research. The seed orchards are so far composed of non-progeny tested phenotypically superior grafted parent trees but preliminary work on progeny testing is underway.

In general, the Chinese concentrate on natural as opposed to artificial techniques. Thus they emphasise mycorrhizal and soil research rather than fertilising, and biological control rather than the use of pesticides and fungicides. This derives, in part, from their inbuilt philosophy and in part from their large reservoir of cheap labour and the absence of a large petro-chemical industry.

They are able to develop crude but effective methods of biological control because they are not constrained by considerations of safety. The standard method of producing control material is to collect or breed insects infected with a viral, bacterial or fungal disease and to macerate the dead bodies in water which is then sprayed on infected crops from the air or by hand. Effective virus control is said to have been obtained with about 20 pests, notably *Dendrolimus pini* on *Pinus massoniana* and *Clostera anachoreta* on poplar. It is probable, however, that for most of the diseases control has so far only been achieved in the laboratory.

Another form of biological control of *Dendrolimus pini* - which is a serious pest - is the use of macerated mycelia and spores of the fungus *Beauveria bassiana* which is sprayed on to the infected trees. There is so far, however, a serious snag in this project because the life cycle of the moth is such that the spraying has to be done in the dry season when the fungus cannot survive. Attempts are being made to induce a mutation in the fungus by subjecting it to a laser beam in the hope that a more drought resistant mutant will be developed. This seems to be a very long shot indeed.

There is widespread interest within the research stations in detailed soil studies and soil analyses, in the more academic aspects of genetics, such as chromosome counting, and in tissue culture.

A number of research organisations are trying to develop natural phenolic glues to replace phenol formaldehyde in chipboard, plywood and furniture manufacture.

#### The formulation of research programmes

The research workers themselves appear to be usually preoccupied with basic or academic research, but this is not surprising, if only to their own devices most research workers prefer to develop a theme in which they are personally interested. It is more satisfying and in some ways easier than having to identify the practical aspects of management which may benefit from research and to draw up a list of priorities based upon an assessment of the expected benefit/cost ratios of various projects. This preference for academic research is reinforced if there is a shortage of support staff and if there are any constraints upon travelling. Most applied research involves field trials which require the employment of manual workers and technical staff. There is probably no shortage of manual workers in China but the ratio of technical support staff to graduate research workers appears to be very low. There is also an impression that project leaders in the institutes may not find it at all easy to travel freely to the sites of field experiments due to a shortage of vehicles and to the considerable distances involved. It is also something of a constraint that few people in China have learned to drive a car so that research workers are dependent upon official drivers.

Another factor which tends to encourage academic research is the fact that research workers are permanent scientists. There is no interchange with field management. One of the objectives of the Cultural Revolution of 1966 appears to have been to break the barrier between research and practice by sending research workers to work as peasants in the fields. The main object of the Cultural Revolution was to impose equality upon the population of China. The effect seems to have been to lower material standards generally and to halt or even reverse economic development. The effect on research and education was disastrous because research workers and teachers were seen as an elite group. It is said that the reasons for appointing political as opposed to scientific directors of research institutes at the present time is, in part, an attempt to prevent research from becoming too academic. This also is unlikely to be effective because the political directors themselves have no research or forestry experience and therefore have no basis on which to judge the relative merits of different research projects. There is also a suspicion that the political directors may favour research which they think will gain China international prestige.

Finally, the research institutes have barely had time, since their reinstatement after the Cultural Revolution, to forge strong links with field management.

It was not possible in the limited time available to learn in detail how the research programmes are agreed. At the policy or strategic level the Ministry of Forestry plays a major role in the formulation of the research policy of the Academy of Forestry and the Academy, in turn, exerts a strong influence upon the strategies of the provincial institutes. Although the central direction appears to be very strong there is discussion at the provincial level between the provincial, prefecture and county forest bureaux and the provincial research institutes.

The Academy of Forestry Science guides provincial research policy by way of the periodic - often biennial - conferences in Peking attended by senior officials of the provincial forestry bureaux and the provincial research institutes. The size of these gatherings must preclude any real discussion and they appear to be occasions at which the Academy identifies the main areas of applied research to be undertaken by the various provinces.

The inter provincial meetings of research workers working in a particular field, which are held from time to time under the leadership of the Academy of Forest Science, serve to exchange information and promote collaboration at the project or experimental level.

Most of the work of a provincial institute is intended to serve the needs of the province itself but the Academy of Forest Science sometimes commissions and pays for work of a more general nature from a particular institute.

The final research programmes undertaken by the Academy of Forest Science and by the provincial research institutes appear to be a compromise between the requirements of management and the predilections of the institutes themselves.

#### *Assessment of Research Work*

Any assessment of the current forest research in China has to take account of the Cultural Revolution which brought almost all forest research to a complete standstill from 1966 to about 1976-78. During this time the research stations were closed, some equipment and books were destroyed and the research workers were sent into the country to work as peasants and to 're-educate' themselves by reading arid tracts on revolutionary communism. Therefore the research stations seen by the Mission had barely re-established themselves after this inter-regnum and a number of the senior people were over 60 or even over 70 years of age.

The general impression is that the quality of staff seen by the Mission is surprisingly high but that they have been largely isolated from outside influences. It is unlikely, however, that these people represent a true cross-section of research workers in China. They may well be an elite sample. The nature of the work and the high ratio of project leaders to support staff suggest that there is an undue preoccupation with academic research not only in the Academy but also in the provinces. On the other hand, if people have been away from intellectual life for ten years there has hardly been time to establish strong links with practising foresters and the research workers will tend to carry on with the work with which they are familiar.

There is also duplication and lack of communication. As an example of poor communication the Mission heard very differing opinions from various research workers on the status and even the existence of Dutch elm disease in China.

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INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

LGL 368

CENTRE DE RECHERCHES POUR LE DEVELOPPEMENT INTERNATIONAL

MEMORANDUM  
RECEIVED  
MAY 29 1981  
IDRC/CRDI

TO/A: See Distribution Below

DATE: May 27, 1981

FROM/DE: Secretary's Office

File: 4323-15

SUBJECT/OBJET: Summary of Talks - SSTC, China

Enclosed please find a copy of the Summary of Talks between representatives of the Centre and the State Scientific and Technological Commission of the People's Republic of China which was signed at Ottawa on May 23, 1981.

*J. B. Bhoi*

ISB/nh  
encl.

Distribution: President  
OVPP  
Division Directors  
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GRB/LGL/ADK

1. Pls refer to Jett with  
any comments.

SSTC 1000

SUMMARY OF TALKS BETWEEN  
THE SCIENTIFIC AND TECHNOLOGICAL COOPERATION DELEGATION  
OF THE STATE SCIENTIFIC AND TECHNOLOGICAL COMMISSION OF  
THE PEOPLE'S REPUBLIC OF CHINA AND  
THE INTERNATIONAL DEVELOPMENT RESEARCH CENTRE

MAY 23, 1981

A Delegation of the State Scientific and Technological Commission of the People's Republic of China (SSTC), led by Mr. Wu Yikang, Deputy Director, Foreign Affairs Bureau, met with representatives of the International Development Research Centre (IDRC), led by Mr. Ivan L. Head, President, in Ottawa, Canada, from May 18 to May 23, 1981, for discussions on scientific and technological research development cooperation between SSTC and IDRC. These discussions were carried out in the spirit of candour and friendship which characterized the Memorandum of Understanding between SSTC and IDRC signed at Beijing, China, on September 16, 1980.

Pursuant to the Memorandum of Understanding, IDRC reiterated that subject to funds being made available to IDRC by the Parliament of Canada, the IDRC Board of Governors had approved the expenditure of up to \$2 million (Canadian) in calendar years 1981 and 1982 in support of research projects of the People's Republic of China.

Several research project proposals submitted by SSTC to IDRC in the fields of agriculture, health, and information sciences were discussed in detail.

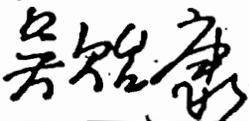
The projects which IDRC undertook to support in principle, subject to the satisfactory development of the project proposals in final form, are identified in Appendix "A" to this Minute.

The projects falling outside the area of activities of the Program Divisions of IDRC for which IDRC is unable to commit direct support but in respect of which IDRC undertook to facilitate contacts and discussions of SSTC with pertinent Canadian Government Departments, agencies and institutions, are identified in Appendix "B" to this Minute.

IDRC reiterated that after the submission by SSTC of detailed research project proposals to IDRC, the final approval of IDRC's Board of Governors is required for each project in accordance with standard IDRC practice.

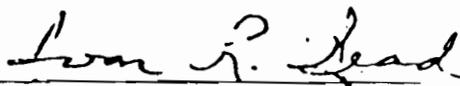
Both SSTC and IDRC agree to work towards a growing, effective and fruitful research collaboration between IDRC and Chinese research institutions for the benefit of the People's Republic of China and of other developing nations.

SIGNED at OTTAWA, CANADA, this 23rd day of May, 1981.



Wu Yikang

For the Scientific and Technological  
Cooperation Delegation of the  
State Scientific and Technological  
Commission



Ivan L. Head

For the International Develop-  
ment Research Centre

APPENDIX "A"

PROJECTS WHICH IDRC UNDERTOOK TO SUPPORT IN PRINCIPLE  
SUBJECT TO  
THE SATISFACTORY DEVELOPMENT OF THE PROJECT PROPOSALS IN FINAL FORM

✓ 1. Bamboo Research

In response to an invitation from the Chinese Academy of Forestry, IDRC undertook to send its Associate Director responsible for Forest Science to visit China in June 1981 for the purpose of discussing the details of the project with China's bamboo scientists at the Academy of Forestry and for visiting the bamboo research facilities and projects.

✓ 2. Paulownia

It was agreed that during the visit of IDRC's Associate Director for Forest Science to China in June 1981 in connection with the Bamboo Research proposal, he would visit the Paulownia forest in Honan and will discuss the objectives and methodologies of a proposed Paulownia research project which might be supported by IDRC at a later date.

3. Rapeseed Breeding

IDRC undertook to send a small mission from Canada to visit China to assist in formulating an appropriate proposal that will enable the Chinese scientists to use Canadian rapeseed varieties with low erucic acid and glucosynilates in the Chinese rapeseed breeding programs.

4. Freshwater Fish-Farming (Guyana)

IDRC indicated that it was open to a request from the Guyanese Government that short-term Chinese consultants be engaged on this project within the IDRC funds budgeted for the project.

5. Method of Wastes Treatment and its Assessment in Rural Areas

Subject to submission of further and better particulars by SSTC to IDRC on this project, IDRC undertook to consider the proposal in depth as a project falling within the area of activity of its Health Sciences Division.

6. Training in Epidemiology

IDRC indicated that Canadian academic institutions have developed a substantial expertise in epidemiology which is regarded as a primary tool for the identification and evaluation of health-related problems.

Canadian universities have expressed their willingness to participate in this project.

SSTC undertook to provide a formal response on this proposal by the middle of June 1981. If the response is favorable, appropriate arrangements will be made for the selection of up to 30 duly qualified Chinese physicians in accordance with mutually agreed criteria to undergo the training envisaged under this project.

7. Sulphide Particle Board Glue

IDRC undertook to provide travel funds for a Canadian scientist to visit China and to report on the feasibility of a collaborative research project in particle board technology between IDRC and the Chinese Academy of Forestry through IDRC's newly-created Cooperative Program Unit.

8. Male Reproductive Physiology and Cranial Nerve Hormone

It was agreed that SSTC would forward a request to IDRC's Fellowship Program for two suitably qualified Chinese scientists to undertake advanced research studies in male reproductive physiology at a Canadian institution or institutions for a period of one year.

9. Joint Survey by the Information Specialists of China and TECHNUNET (Asia)

The joint group will study the industrial extension network supporting medium and small scale enterprises in Singapore, the Philippines, Thailand, Malaysia and Hong Kong, preferably between July 21 and August 8, 1981, and in China, preferably during the period September 21 to October 4, 1981.

It was agreed that IDRC would cover international airfares and living expenses outside China for the Chinese and TECHNUNET groups and inter-city fares within China for the TECHNUNET group.

SSTC would cover the living expenses and local transportation costs for the members of the group within China.

SSTC and IDRC agreed to facilitate the tasks of the joint group by attending expeditiously to any technical or administrative problems that may arise.

10. Training of Senior Personnel Involved in the Management of Information Centres

The training course includes policy aspects of information at an institutional level. SSTC proposed nine subjects for inclusion in its curriculum.

IDRC indicated that it had already identified four Chinese-speaking instructors and that the curriculum, duration and dates of this course will be agreed at the time of the visit to Ottawa of Mr. Liu Zhaodong in June 1981.

11. MINISIS Information Retrieval Software

IDRC indicated its plans to install in September 1981 MINISIS and training staff at the five institutions in Beijing that are receiving H.P. computers under the auspices of the United Nations for which ISTIC staff would be welcome as observers.

IDRC stated that it was ready to offer MINISIS software and training directly to ISTIC as soon as ISTIC itself acquired an H.P. computer.

12. Documentation Retrieval Systems in the Chinese Language

IDRC indicated that this proposal was within the area of concern of its Information Sciences Division.

SSTC and IDRC agreed that the whole matter could be explored further when Mr. Liu Zhaodong visited IDRC in June 1981.

SSTC agreed that the Chinese-speaking IDRC specialists charged with implementing MINISIS in Beijing in September 1981 could visit ISTIC at that time to investigate whether cooperation on specific matters such as the processing of Chinese script on computers could be developed.

APPENDIX "B"

PROJECTS FALLING OUTSIDE THE AREA OF ACTIVITIES OF THE PROGRAM DIVISIONS OF IDRC FOR WHICH IDRC IS UNABLE TO COMMIT DIRECT SUPPORT BUT IN RESPECT OF WHICH IDRC UNDERTOOK TO FACILITATE CONTACTS AND DISCUSSIONS OF SSTC WITH PERTINENT CANADIAN GOVERNMENT DEPARTMENTS, AGENCIES AND INSTITUTIONS

1. Grass Seed Cultivation

The project proposal is for Canadian assistance in the pasture research programs undertaken in China.

IDRC undertook to seek appropriate assistance in this matter from Agriculture Canada.

2. Application of Potash Fertilizers

The proposal requests assistance on research in the application of potash fertilizers.

IDRC undertook to obtain information from the Potash Institute in Toronto, Canada, for the use of SSTC and to examine the possibilities of a Chinese scientist visiting Canada to examine potash application programs under funding by private Canadian industry involved in potash fertilizers.

3. Fishways or Fish Ladders Program

This proposal relates to the need for technical advice from Canada in the design and construction of fishways to permit such existing fish species as sturgeon to pass without injury between different water levels created by dams and barrages.

In consultation with the Director-General (International) of Fisheries and Oceans, IDRC arranged a meeting between the SSTC delegation and the Director of the Fisheries and Oceans Salmonid Enhancement Program so that the Canadian experience and sources of relevant information could be placed at the disposal of SSTC.

IDRC undertook to maintain contact on this issue with Fisheries and Oceans to determine under what auspices qualified scientists from China could visit Canadian fishway installations and, if considered necessary, how Canadian scientists might visit China to give on-site advice.

4. Community Drinking Water Disinfection and Sewerage Treatment

The proposal is a request for two persons from China to undertake an advanced course of research studies at the Canadian Centre for Inland Waters under financial sponsorship of IDRC.

IDRC undertook, subject to receipt of further and better particulars about the proposal from SSTC, to put SSTC in contact with appropriate Canadian institutions interested in, and financially willing, to support this project.