

REPORT OF THE FIRST  
YEAR'S WORKING OF  
THE SINO-BRITISH  
SCIENCE CO-OPERATION  
BUREAU.

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BRITISH COUNCIL CULTURAL  
SCIENTIFIC OFFICE IN CHINA—FEB. 1944

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## INTRODUCTION

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**I**N a covering letter to a number of scientific reports sent to me not long ago by a friend in London, he wrote "Though in fact I can get little scientific work done in war time, I am anxious not to let myself develop more and more into a sort of post-man, and this is why you have not had the reports before." How well, I thought, did this phrase describe much of the function of the Sino-British Science Co-operation Bureau, the British Central Scientific Office in Washington, and other similar elements in the machinery of co-operation which has grown up between the United Nations.

There are, it seems, certain times in history when the apparently banal functions of a "post-office" serving science and learning acquire the greatest importance. There are dark ages when that free communication which is of the essence of international science is destroyed. Thus in the 12th century Maimonides of Cordova, at the court of the Sultan in Cairo, correlated the writings of dispersed and solitary scholars, produced his famous "Guide for the Perplexed", and through his influence on St. Thomas, affected all mediæval philosophy. Thus, too, in the Thirty Years' War, Bishop Komensky (the great Comenius), exiled from his native Bohemia, kept together through years of wanderings not only his church, the **Unitas Fratrum**, but also the band of adherents of "the new, or experimental, philosophy" whose later great achievement was the foundation of the Royal Society, suggested by Comenius himself. And when the Royal Society was founded, what a post office did Oldenburg, its first Foreign Secretary, keep. It was he who opened the series of letters from the microscopist Leeuwenhoek in which the New World beyond the limits of ordinary vision was for the first time described. China to-day, too, affords an example of the paramount necessity for Maintenance of Contact. Inhibited by special social and economic conditions during two millennia from the development of science beyond the empirical stage, the Chinese succeeded, in the last fifty years, in developing a modern scientific movement of considerable strength, and in producing a large number of scientific men of high ability. Then, as the aggression of feudal-imperialist Japan developed, their University and Government laboratories were destroyed, their scientific libraries were burnt or left behind in the retreat to the west; and since 1941, they have been fully blockaded, isolated from the rest of the world by tenuous road, and then

air, communications. It is easy, therefore, to visualise the need for some contact between them and their colleagues in the west, a need which manifests itself, not only as regards pure science, but even more, perhaps, as regards that applied science which is one of the bases of a country's war potential. The aim of the Sino-British Science Co-operation Bureau is to help to assure this contact. It might be described as intellectual lease-lend in both directions.

Efforts of this kind not only ensure the publication of much first-class work which might otherwise be lost, but exert also an important effect on the Chinese scientists and technical men themselves. The feeling that they are no longer, as it were, "buried alive", no longer isolated from the main body of humanity united in the scientific quest, is vital for their morale. Visits by western scientific representatives to their laboratories, often being operated in remote regions and under unimaginable difficulties, emphasise this. And so also does the provision of the tangible and material "tools of the trade", in the shape of scientific apparatus, the rarer chemical reagents, books, journals, etc. Supported morally and materially in these ways, Chinese scientists are enabled to carry on their work, whether in pure science or in science applied to the war effort as the case may be.

The operation of a Science Co-operation Bureau or "clearing-house" for scientific interchange is, doubtless, not the only course which could have been adopted by a British scientist representing the British Council in China at the beginning of 1943. He could have settled down in one place and engaged himself in research, or more easily, perhaps, in some branch of study such as the History of Science, which would need little material resources, except books and the help of Chinese scholars. This was the kind of course followed by Dr. E. R. Hughes, and it would have had many advantages, for no people are quicker than the Chinese to give the respect due to scholarship. But I felt that the need for moral and material help was too desperate to permit of this, and looking back upon the past twelve months, I feel now that with every successive month the rightness of my decision became more evident.

The reader's attention is now directed to **Scheme A**, in which the functions already mentioned are set forth in detail.

The pivotal function, that of Maintenance of Contact, is shown as item (7). Items concerned with intellectual imports precede it; intellectual exports follow it. In connection with this it is desirable to have some idea of the organization of science in modern China, and this may be gained by a glance

at **Scheme B**, in which the romanised Chinese names of the various organizations are given beside their English translations. This scheme may be compared with the schemes illustrating the present-day organization of science in the United Kingdom, the United States and the Soviet Union, given in the report of the proceedings of the Conference of the Association of Scientific Workers, in London, Jan. 1943, under the presidency of Sir Robert Watson-Watt, FRS, published under the title "Planning of Science".

In order to assure the utmost efficiency in scientific exchanges, it is desirable to have as wide a range of contacts as possible on both sides. **Scheme C**, therefore, indicates the organizations concerned with science and technology visited personally by the scientific representative, in England, America, and India, before his arrival in China.

After consultation with the President and Generalissimo and some of his Ministers, the Sino-British Science Co-operation Bureau was associated officially with the organization known as the "Council for the Promotion of Science in the National Defence" (Kuofang koshioh chishu tsouchinhui). This council now has a secretariat of five divisions, (manufactures and technology, communications and medicine, scientific personnel, cultural contacts and publicity, miscellaneous affairs), and is concerned with all the activities which its name would imply. It appears to have comparable functions to the Scientific Advisory Committees of the Cabinet and Ministry of Production, and to the National Register of Scientists kept by the Royal Society and the Ministry of Labour.

In addition to this formal association, and to the innumerable contacts with individual scientists and scientific institutions, the Sino-British Science Co-operation Bureau has had the advantage of special liaison officers within the principal Chinese ministries. A list follows:—

Chwingchengpu	Colonel Chen Ting-Djen, ADC to Gen. Ho, War Minister.
Chingchipu	Dr. Chien Chang-Chao, Mr. Chu Chi-Ching and Mr. Pao Hsin-De.
Chiaoyupu	Mr. Li Wei-Yuan.
Weisengshu	Dr. Chin Bao-Shan, Director.
Nunglingpu	Dr. Shen Tsung-Han, Vice-Director of NARB.
Chungyangyendjiuyuan	Dr. Hsu Hsiang, Foreign Secretary.

Returning now to Scheme A, under its items (1), (2), (4c, e, f.), (6), and (8b), the **List I**, showing information transmitted and exchanged, covers much of what has been done. Not all can be listed, however, for security reasons.

At item (3) of Scheme A we come to the very tangible, namely the supply of scientific apparatus, chemical reagents, and instruments of all kinds for the scientific institutions of China. As **List II** shows, no less than 77 lists of requirements have been sent down to Calcutta during the past year, and in spite of numerous wartime shortages, it has been possible to meet a very large majority of the requests. The working of the Scientific Supplies Service is as follows. Buying in Calcutta is done by the British Ministry of Information, whose officers are assisted by a former Cambridge colleague of mine, Dr. G. G. Banerji, acting as their technical adviser. A revolving fund of £10,000 is available to meet expenses, and is continually being recouped by payments at cost price by the Chinese scientific institutions. The Service therefore acts as an emergency substitute for normal buying channels now completely closed. It enjoys the goodwill of the Government of India, which has facilitated export license formalities. Of the 77 lists so far sent to Calcutta, the proportions work out as follows:—

University laboratories (many of which are, as in England, engaged on war research) ...	40
National Academy laboratories ...	11
Government laboratories ...	10
Government industrial laboratories ...	7
Private industrial laboratories ...	5
Co-operative industrial laboratories ...	4

At the time of writing, some 25 consignments have already reached their destinations in China. This work involves a considerable amount of discrimination, as it is important not to overload the difficult supply route with requested apparatus or reagents which can, in fact, even though with difficulty, be obtained actually within Free China.

Item (4a) in Scheme A refers to microfilms. Some 38 British scientific and technical journals are now reaching China in regular microfilm form. The microfilms are passed on to the "International Committee for the Supply of Scientific and Cultural Reference Materials" (Kuochi shiohshu wenhua tzuliao kungying weiyuenhui), associated with the Ministry of Education; which distributes them in rotation to a considerable number of reading-machine centres in Universities, Government factories, and Arsenal. This committee includes both an American and a British representative (the latter myself) having the status of Chinese Government Advisers. It was originally supported exclusively by the Americans, whose contribution to

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the supply of microfilms to China is still much larger than ours, but the difference is gradually lessening. The present position is shown in **List III**, from which the following summary may be made:—

	Total of Scientific interest	
I. American scientific and technical journals coming since Jan. 1942 from Cultural Division of State Department (6 positives) ...	74	}
II. Medical and scientific journals coming since Jan. 1942 from American Bureau of Medical Aid to China : (6 positives) : American	68	
	9	}
III. British scientific, medical, technical and learned journals coming since Sept. 1943 (6 positives) from British Council ...	38	
IV. British periodicals from Ministry of Information from Jan. 1943 (1 negative copy only) ...	46	}
	11	

N. B. Some of these in III are available from Jan.—Sept. 1943 in incomplete files on 1 negative copy only, which has so far been of very little use.

The International Committee has its own headquarters in a small house in Chungking. I have personally witnessed the delight of Chinese scientists on the arrival of a consignment of microfilm which included up-to-date issues of important journals.

Under item (4d) it was hoped at one time that “diminutive” photoprinted copies of **Nature** might be sent to China, but this has not materialized. However, **Monthly Science News** comes fairly regularly, and copies are distributed by the Ministry of Information to some 40 prominent Chinese scientists. **Monthly Science Abstracts and Reviews** is handed to the headquarters of Academia Sinica, whence it is dismembered and circulated to the Institutes of the Academy. Copies of **Endeavour** appear erratically, and are also handed to the Academy. Odd copies of other scientific and technological journals sometimes come to the British Ministry of Information in Chungking, and are then sent out to the most relevant institutions. Delhi supplies regularly the **Journal of Scientific and Industrial Research** (India); this is sent to NRC. **Industry** (Calcutta) comes regularly for CIC.

The supply of books to Chinese scientific institutions is referred to in item (4g). Over 300 important books have now

arrived. These were ordered and despatched from England as far back as October, 1942. Since new lists of books have been sent to the British Council at frequent intervals since Feb. 1943, it is hoped that these books are the forerunners of a continuous stream. The titles of the books and the institutions to which they have been sent, are given in **List IV**.

Part of the machinery of contact with Chinese science and technology is, as has been said, visits to Universities, industrial plants and research laboratories, arsenals, and the like. Places of this kind visited by me during the past year are given in **List V**. These visits have entailed a large amount of lecturing. To general student audiences, I usually describe the conditions and progress of scientific and University life in wartime England. Groups of biologists and chemists naturally want lectures on my own special subject—Chemical and Experimental Embryology and Morphology—these I am naturally always glad to give. To more specialized groups I have spoken on the History of Science in China as compared with the West; on Science and Religion in East and West; on Food and Nutrition in Wartime England; on the origin of the fundamental ideas of modern progressive thought; on science and society; on the philosophy of science; on university organization, etc., etc. I generally conclude my public lectures with five minutes of Chinese, in the hope and belief that the deficiencies of my language are more than compensated for by the compliment implied to Chinese friends by the fact that a western scientist should have found time to learn at any rate that much. From time to time I have special opportunities in lecturing, as, for instance, at Lanchow in Kansu, where I had the honour of giving a very successful address to about 200 officials of the Kansu Provincial Government, with Governor Ku himself attending, on Science and Civilization in East and West.

The visits referred to in the preceding paragraph have entailed journeys within China of approximately 8000 km. mostly by motor-truck, but also by airplane, river-steamer, junk, sampan, skin-raft, horseback, jeep, bus and bicycle. In most of these journeys I was accompanied by Mr. Huang Hsing-Tsung, (see below).

So far, the problem of incoming intellectual traffic has alone been considered; the converse, that of outgoing traffic, is the subject of items after (8).

Item (8a) refers to original papers by Chinese scientists. So far, 30 of these have been transmitted to the West. Particulars are given in **List VI**. This has been a particularly satisfying part of the work. Reprints of some of these papers are now reaching China. The Americans, during the same period, have transmitted 39.

Under Item (8b), as shown cursorily in **List I**, a large number of issues of Chinese scientific journals have been sent to western libraries.

Work under items (8c,d) has taken a longer time to get under way, but arrangements are now nearly complete for an abstracting service, centered on Chengtu, which will select from Chinese scientific journals those articles and memoirs which merit a wider public, translate them into short abstract form, and despatch them, through the Bureau, to the normal abstract-journals of the west. Arrangements are also nearly complete for the translation of a number of books from Chinese into English. Here attention has been concentrated on books in Chinese on the History of Science and Technology in China, since it was felt that it is precisely in this aspect that China is most commonly misjudged by the West. Chinese achievements in empirical discovery were very great indeed; the problem is why they did not continue into that edifice of theoretical, or modern, science, which was developed in the West.

Item (8e) concerns a very useful, publication, **Acta Brevia Sinensia**, a scientific journal similar to **Nature**, prepared by a committee of the Natural Science Society of China (Chungkuo Tzurjan Koshioh Hui). This comes to the Bureau in typewritten form, and is transmitted to BC, London, and CDS, Washington, where it is hoped that it is printed and circulated widely in scientific circles. 5 issues of this journal have been sent to the west.

Under Item (10) I have written six articles for **Nature** on what I have seen in the Chinese scientific and technical world. These were as follows:—

1. Sci. in SW. China, I. Physico-Chemical Sciences.
2. Sci. in SW China, II. Biol. & Social Sciences.
3. Science in Chungking.
4. Sci. in W Szechuan, I. Phys-Chem. Sci. & Technol.
5. Sci. in W Szechuan, II. Biol. & Social Sciences.
6. Science in China's Northwest.

It is believed that they aroused considerable interest both in England and America. I have also taken a number of photographs of various phases of Chinese scientific and technical activity, with the hope of producing before long an album of pictures in England and America, with some such title as "Science and Technology in Wartime China".

With regard to item (11) it has been the good fortune of the Bureau to find certain products important for the United Nations war effort being made in China, in one case directly as the result of improved methods devised by Chinese scientists. Efforts are constantly being made to bring these into use by other United Nations forces in the asiatic war theatre.

Lastly,—item (18)—it has been possible for me to give assistance to various organisations concerned with moves of scientific personnel, whether it be Chinese students going to England for study, Chinese professors invited there for a period of work, western technical experts coming to China, or Chinese technical experts going to India.

Throughout the year the Bureau has enjoyed close and friendly relations with the American diplomatic authorities, the American technical experts working for the Chinese Government, and with the Representative of the (American) National Research Council, the geographer Dr. G. B. Cressey, who arrived in China at the end of 1943. The same may also be said of the Russian diplomatic authorities, through whom contact, with the eminent scientists of the Moscow Academy, for example, may be had.

From May onwards I was assisted most ably by Mr. Huang Hsing-Tsung, a young organic chemist from Hongkong University, who would have gone to Oxford as Rhodes Student had he not taken up wartime work with the Bureau. For the last few months I have also had the able collaboration of Miss Liao Hung-Ying, formerly of Somerville College, Oxford, who had been lecturer in Chemistry at Wuhan and Huahsi Universities successively.

The above survey will, it is hoped, have given some idea of the many tasks which a Bureau of this kind is called to undertake. I am deeply convinced that the need for it will not cease with the end of the present war. No doubt, with the resumption of reliable mails not subject to the delays or misunderstanding of censorship, normal scientific communication will be re-established, and the more purely post-office qualities of a Co-operation Bureau will be rendered unnecessary. But post-war International Science Co-operation means a great deal more than that.

I believe that the time has gone by when enough can be done by scientists working as individuals, or even as groups working in Universities or Societies, within individual countries, and contacting each other as individuals across national boundaries. Science and Technology are now playing so predominant a part in all our civilization, and will in the future so increasingly do so, that some means whereby science can effectually transcend international boundaries is urgently necessary. The Science Co-operation Offices which, as a result of the stress of war, the United Nations have found it necessary to establish in one another's capitals, are a piece of machinery which certainly ought to continue after the present war. The need for contact can be met, neither by establishing "scientific attachés" at all

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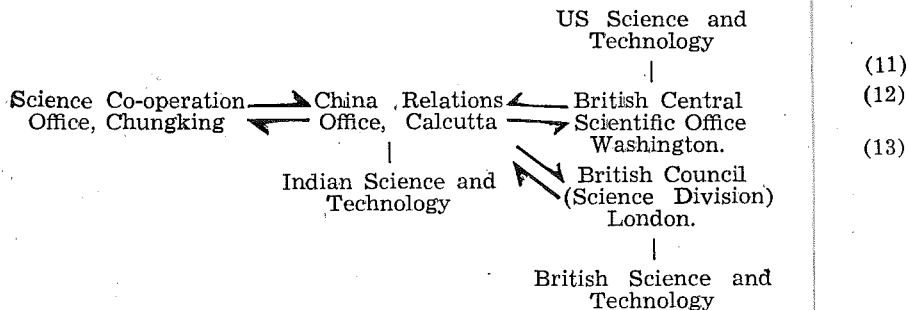
Embassies, for that would be too subject to diplomatic formalities; nor by sending from one country to another industrial scientists or engineers whose loyalty is to particular commercial interests, for then their advice is likely to be neither unbiassed nor disinterested. What I should like to see would be some sort of World Science Co-operation Service, whose representatives in all lands would have semi-diplomatic status and full governmental facilities in communication and transportation, but who would be drawn from either governmental or academic laboratories (to which they might return after a certain period of service), and would therefore be free from all commercial entanglements. One of the immediate aims of such a World Service would be the conveyance of the most advanced applied and pure science from the highly industrialized western countries to the less industrialized eastern ones; but there would be plenty of scope for traffic in the opposite direction also. Such a Service would be the ideal, not platonic but attainable, of which the present Science Co-operation Offices are the faint and pioneer copy.

In retrospect, the accomplishment of the past year seems sometimes considerable, but more often almost nothing in comparison with what there is to do. In assessing it, account should be taken of two factors, the pioneer nature of the enterprise, and the special difficulties of work in wartime China. Ministries of Information, Air and Military Missions, and the like, are an established part of international intercourse, include numerous personnel, and start with a recognition of their needs and the outlay involved in supplying them. But hitherto science (dominant in our lives though it is) has not been thought essential in this international intercourse. The establishment of a science co-operation bureau would therefore, on account of its novelty and unfamiliarity, all the more when undertaken by a single representative, be attended with some difficulties even in a country possessing all the facilities of an advanced industrial civilization. In China, on the other hand, where the language problem offers special obstacles of its own, where in the war capital housing is an almost insoluble problem and telephone and other communications very inefficient, where a visit to a factory only a few miles away may involve a couple of days' journey by sedan-chair, and where, owing to the isolation of the country by blockade, all the remaining worn-out motor vehicles are subject to constant time-consuming break-downs, often in remote places, owing to lack of spare parts—the difficulties of accomplishing anything may be dimly envisaged. However, something has been done, even though it can be regarded only as a beginning.

# SCHEME A.

## WORK of the SINO-BRITISH SCIENCE CO-OPERATION BUREAU

- (1) Supply of already existing information on problems arising in China:
  - (a) pure science
  - (b) applied science
- (2) Supply of ideas from the West to meet specific problems arising in China:
  - (a) pure science
  - (b) applied science
- (3) Supply of essential research chemicals and apparatus:
  - (a) pure science
  - (b) applied science; fine scientific production
  - (c) practical teaching
- (4) Supply of scientific literature :
  - (a) microfilms
  - (b) reading machines for microfilms
  - (c) journals
  - (d) diminutives
  - (e) offprints
  - (f) typescript copies
  - (g) books
- (5) Supply of manuscript scientific papers, articles, and reviews from the West for publication in Chinese scientific journals.
- (6) Special services, such as offer to cut thin rock sections by the Indian Geological Survey; printing of maps for the Chinese Geological Survey by the Indian Cartographic Office; and provision of list of edible and poisonous plants in North Burma and the Shan States for Surgeon-General's Department.
- (7) Contact with the West :
  - (a) transmission of important scientific correspondence between Chinese and Western scientists.
  - (b) contact with Chinese scientific mission in London and Washington (if appointed).
  - (c) contact with government departments concerned with science in London and Washington.



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LONDON

WASHINGTON

SINO-BRITISH SCIENCE CO-OPERATION OFFICE.

軍政部，兵工署

Services Research  
Departments

Office of Scientific  
Research and  
Development

衛生署，軍醫署

Medical Research  
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Committee for  
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Department of  
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Research and  
Development

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Agricultural  
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- (8) Output of scientific material from China :
  - (a) Manuscript papers by Chinese scientists for publication in Western scientific journals;
  - (b) Current Chinese printed, duplicated, or mimeographed publications for Western scientific libraries;
  - (c) Translation from Chinese of good scientific papers for publication in the West;
  - (d) Abstracting service for Western abstract journals;
  - (e) *Acta Brevia Sinensia*, Science Newsletter prepared by the Natural Science Society of China.
- (9) Output of technical memoranda on matters arising in China for the help of the other United Nations.
- (10) Output of information about Chinese science for publication in the West :
  - (a) articles by Chinese scientists and this office for publication in the West;
  - (b) Photographs of the scientific side of the Chinese war effort.
- (11) Output of actual fine scientific products from China.
- (12) Advice to the Chinese government, if desired, at any time, on possible new industries, etc.
- (13) Assistance with problems of exchange of personnel :
  - (a) mature scientists
    - (i) industry
    - (ii) university
  - (b) technical experts
  - (c) research and graduate students.

## SCHEME B.

### Summary of the organisation of Science in China.

Government organisation	Chinese name	Abbreviation used
The Central Executive Committee of the Kuomintang		
Party gives rise to		
I Executive Yuan	Hsingchengyuan	EY
II Legislative Yuan	Ligayuan	LY
III Judicial Yuan	Sefayuan	JY
IV Control Yuan	Kanchayuan	CY
V Examination Yuan	Kaoshihyuan	KY
VI Supreme National Defence Council	Kuofang Tsuigao weiyuenhui	SNDC
VII Ministry of Information	Chungyang suanchuanpu	CMOI
The Executive Yuan gives rise to		
1 Ministry of War	Chwingschengpu	MoW
2 Ministry of Economics and National Resources	Chingchipu	MoENR
3 Ministry of Agriculture and Forestry	Nunglingpu	MoAF
4 Ministry of Communications	Chiaotungpu	MoC
5 Ministry of Education	Chiaoyupu	MoE
6 Ministry of Finance	Tsaichengpu	MoF
7 Ministry of the Interior		
8 Ministry of Foreign Affairs	Waichiaopu	FO
9 Ministry of Social Affairs		
10 Ministry of Food		
11 Ministry of Justice	Weisengshu	NHA
12 National Health Administration		
13 National Academy (Academia Sinica) (with 10 Institutes)	Chungyang vendjiuyuan	AS

12	National Health Administration	Weisengshu	NHA
13	National Academy (Academia Sinica) (with 10 Institutes)	Chungyang yendjiuyuan	AS

Summary of the organisation of Science in China—(Contd.)

Government organisation	Chinese name	Abbreviation used
14 Peiping Academy (with 9 institutes)	Peiping yendjiuyuan	PA
15 Council for the Promotion of Science in the National Defence	Kuofang Koshioh chishu tsouchinhui	CPSND
16 Board of Trustees for the Administration of the Indemnity Funds remitted by the British Govt.	Kuanli Chungying chien-huantungsehui	BIT
The Supreme National Defence Council gives rise to		
1 Military Affairs Commission	Chwingse weiyuenhui	MAC
2 Aeronautical Affairs Commission under which is the Chinese Air Force Research Bureau	Hongkung weiyuenhui	AAC
3 National Planning Commission	Hongkung yendjiuyuan	CAFRB
The Ministry of War includes	Chungyang chiehchichu	NPC
1 Army Medical Administration	Chwingishu	AMA
2 Army Ordnance Administration	Bingkungshu	AOA
The former includes		
1 Army Medical College	Chwingishu yendjiuso	AMRI
2 Emergency Medical Training Schools	Bingkungchang	
3 Army Medical Research Institute	Bingkungshu yendjiuso	AOARI
The latter includes		
1 The Arsenals	Tzeyuenweiyuenhui	NRC
2 Central Ordnance Research Institute	Kansuikuangchu	KPA
The Ministry of Economics includes		
1 The National Resources Commission (many state-operated mines and plants including the Kansu Petroleum Administration.)		

Summary of the organisation of Science in China—(Contd.)

Government organisation	Chinese name	Abbreviation used
2 Mining and Industrial Adjustment Administration controlling private plants and the Huanghai Industrial Research Institute	Kungkuangtiaochenchu Huanghaihuashiohyendjiuso	MIAA
3 National Industrial Research Bureau (with 17 experiment stations)	Chungyangkungyehshihyenso Chungyangdichihitaichaso	NIRB NGS
4 National Geological Survey	Chungyangnungyehshihyenso	NARB
The Ministry of Agriculture includes		
1 National Agricultural Research Bureau (with 12 research departments)		
2 The Agricultural Experiment Stations		
The Ministry of Education includes		
1 The Universities.	Tashioh (shortened in all cases to Ta)	
<i>e.g.</i> Chinghua Univ.	Chinghua Ta	
Peiping Univ.	Peiping Ta	
Nankai Univ.	Nankai Ta	
these three are united in the		
Nat. SW Assoc. Univ. at Kunming	Lien Ta	
Yunnan Univ. at Kunming	Yunnan Ta	
Central China Univ. at Tali	Huachung Ta	
Wuhan Univ. at Chiating	Wuhan Ta	
Tongchi Univ. at Lichuang	Tongchi Ta	
Nat. Central Univ. at Shapingba	Chungyan Ta	
Chungking Univ. at Shapingba	Chungking Ta	
Szechuan Univ. at Chengtu	Szechuan Ta	

Summary of the organisation of Science in China—(Contd.)

Government organisation	Chinese name	Abbreviation used
Yenching Univ.	Yenching Ta	
Chilu Univ.	Chilu Ta	
Nanking Univ.	Ginling Ta	
West China Union Univ. these four united at Chengtu	Huaansi Ta	
Nat. NW Univ. at Chengtu	Hsibei Ta	
Chekiang Univ. at Tsunyi	Chekiang Ta etc., etc., etc.	
2 National Institute for Compilation and Translation	Kuoli pientsekuan	NICT
3 Scientific apparatus Mfg. Plants; and controls		
4 International Committee for Supply of Scientific and Cultural Reference Materials (Microfilms)	Kuochi shiohshu wenhua tzuliao kungyingweiyuenhui	MFFC
The National Health Administration includes		
1 National Epidemics Prevention Bureau	Chungyangfangichu	NEPB
2 National Institute of Medical Research (with 15 departments)	Weisengshuyendjiuso	NIMR
Academia Sinica gives rise to		
1 National Research Council (consisting of all heads of institutes with thirty co-opted members)	Chungyangyendjiuyuan pingyihui	NRC
The Institutes of Academia Sinica are:		
History and Philology		
Social Sciences		
Zoology and Botany		



## ABBREVIATIONS USED OTHER THAN THOSE IN SCHEME B.

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ARC	Agricultural Research Council (British)
AScW	Association of Scientific Worker (British)
BA	British Association (for the Advancement of Science)
BCSO	British Central Scientific Office (in Washington)
BC	British Council (for Cultural Relations)
BM	British Museum
BMNH	British Museum of Natural History
CRO	China Relations Office (Indian)
CSIR	Council of Scientific and Industrial Research (Australian)
CSDS	Cultural Division, State Department (American)
DSIR	Department of Scientific and Industrial Research (British or Indian)
FIB	Food Investigation Board (British)
MRC	Medical Research Council (British)
NCL	National Chemical Laboratory (British)
NCTC	National Collection of Type Cultures (British)
NPL	National Physical Laboratory (British)
NPA	National Planning Association (American)
NRPB	National Resources Planning Board (American)
RGS	Royal Geographical Society (British)
RS	Royal Society

## SCHEME C.

A LIST OF ORGANISATIONS CONCERNED WITH SCIENCE  
VISITED IN THE WEST, BEFORE THE ARRIVAL OF THE  
BRITISH SCIENTIFIC REPRESENTATIVE IN CHINA.

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### LONDON :

#### *Official :*

Admiralty (Chief Scientific Adviser) ; Agricultural Research Council ; Biological War Committee ; British Broadcasting Corporation (Far East Section) ; Burma Office ; Chemical Society Advisory Council ; Chinese Embassy ; Ministry of Information ; Colonial Office ; Department of Scientific and Industrial Research ; Foreign Office ; India Office ; Lord Privy Seal's Office (Sir Stafford Cripps) ; Medical Research Council ; Ministry of Aircraft Production (Scientific Advisers)—Ministry of Economic Warfare—Ministry of Food—Ministry of Health—Ministry of Home Security—Ministry of Information (Far East Section)—Ministry of Supply—Ministry of War transport ; Post-War Relief Advisory Committee of the Cabinet ; Privy Council (Lord Hankey) ; Royal Society ; Scientific Advisory Committee of the Cabinet ; Scientific Advisory Committee of the Ministry of Production ; United States Embassy ; U.S.S.R. Embassy ; War Office (Scientific Advisers, and Intelligence).

#### *Unofficial :*

China Medical Aid Committee ; Federation of British Industries ; Friends Ambulance Organisation ; Fund for Relief of Distress in China ; Political and Economic Planning Club ; Rockefeller Foundation ; Royal Institute of International Affairs ; United Aid to China Committee.

### WASHINGTON :

#### *Official :*

Vice-President's Office ; Administrative Aides to the President ; Board of Economic Warfare (China Division) ; Board of Economic Warfare (Mining and Engineering Division) ; Board of Economic Warfare (Reoccupation and Reconstruction Division).

Aviation Physiology Committee ; British Air Commission ; British Central Scientific Office ; British Embassy ; British Political Warfare Mission ; British Food Mission ; British Information Services ; British Overseas Press Service ; Bureau of Standards (war textile research).

Chinese Consulate and Embassy ; Chinese Defence Supplies Organisation ; Chinese Delegation for international Intellectual Co-operation. Chinese Information Services, Committee for Medical Research. Department of Agriculture. Foreign Relief and Rehabilitation Office. Free French Delegation (Science Bureau). Indian Agent-General's Office. Indian Supply Mission. Lease-Lend Administration. National Academy of Sciences. National Research Council. National Resources Planning Board. Office of Scientific Research and Development (National Defence Research Committee ; Chemical and other Divisions). Office of Strategic Services. Office of War Information. President's Committee for Control of War Relief. Public Health Service. State Department. State Department (Cultural Division). Surgeon-General's Department. War Department.

*Unofficial :*

American Bureau of Medical Aid to China ; American Council of Learned Societies ; Associated Board of Christian Colleges in China ; China Institute. China Medical Board. Committee on National Morale. Indusco. Institute of Pacific Relations. Library of Congress. Milbank Foundation. National Planning Association. International Labour Office. Rockefeller Foundation. United China Relief. Universal Trading Corporation.

INDIA :

*Official :*

All-India Imperial Agricultural Research Institute ; All-India Institute of Hygiene ; All-India Radio Corporation. American Supply Mission. Anglo-American Relations Office. China Defence Supplies. China Relations Office. Chinese Consulates. Chinese Ministry of Finance. Chinese High Commissioner. Council of Scientific and Industrial Research. Department of Education. Department of External Affairs. Department of Finance. Department of War Transport. Geological Survey of India. G.H.Q. (Chinese Liaison and Intelligence). Indian Medical Service

(Surgeon-General). Ministry of Information. R.A.F. Medical Service. R.A.M.C. (Eastern Army). Radio Research Committee. U.S.A. Consulates. Viceroy's Secretariat.

*Unofficial :*

Haffkine Institute. Indian Institute of Science, Bangalore. Indian Science Congress. Universal Trading Corporation. University of Bombay. University of Calcutta. University of Delhi.

LIST I.

LIST I.

List of the principal interchanges of scientific information & material eastbound and westbound.

	From	To
1	Information on typhus control	NHA
2	100 gms. cryst. vitamin B <sub>1</sub>	NHA
3	Urea-stibamine	NHA
3a	100 gms. each B-naphthalene and phenanthrene	Peiping Academy (Chem.)
3b	Dichlorophenol-indophenol and B-carotene	Wuhan Ta and Lien Ta
4	Reprints on nerve surgery	NHA
5	Reprints on Animal Husbandry	NARB
6	Reprints on rat control	NHA
7	Monographs from Imperial Bureau of Agricultural Sciences	NARB and Chinghua Ta (General Physiol.)
8	Data on improvement of freshwater fisheries	NARB
9	Reports on blood transfusion	NHA and AMA
9a	Botanical papers	Kew Gardens
10	Geological Survey journals	British Geological Survey, etc. RGS, etc.
11	All-China Geographical Institute materials	RCS, etc.
12	Geographical literature	Chem. Soc. RS, etc.
13	Chemical literature	RS, Air Ministry, etc.
14	Meteorological literature	Geol. Soc.; RS, etc.
15	Geological papers	
16	Report of wartime activities	RS and circulated

List of the principal interchanges of scientific information & material eastbound and westbound.—(Contd.)

		From	To
17	Report of wartime activities	Academia Sinica	RS and circulated
18	Report of activities	NICT	BC
19	Monograph on Vibrational spectra of Molecules	Dr. Wu Ta-Yo	Sir C. V. Raman, and the Cavendish Laboratory
20	Prof. S. Bhagavantam's book on the same subject	Andhra Coll. India	Dr. Wu Ta-Yo
22	Monograph on Dynamics of Faulting		Geol. Dept. Lien Ta
23	Monograph on Plant Biochem	CAFRB	Chem. Dept. Lien Ta
24	Aeronautical Science papers	DSIR, Delhi	Air Ministry
25	Technical memoranda on vegetable lubricants	All-India Hygiene Insti.	NRC
26	Arrangements concerning malaria exhibition	All-India Agric. Exp. Sta.	AMA
27	Data on crop rubber	Dr. L. J. Harris, Cambridge	NRC
30	Reprints on Nutritional Sci.	Dr. A. T. Henry	Lien Ta (Nutr.)
31	Reprints on Epidemiology from Wellcome Institute	FIB	Shanghai Med. Coll.
32	Memos on food drying	FIB	NHA
33	Notes on yeast as a food	Glaxo and MRC	NHA
34	Memos on rice and vit. B <sub>1</sub>	MRC	NHA
35	Bulletin of War Medicine (complete set)	MRC	AMA
36	Do.	MRC	NHA
37	Information on vitamin A		London, for distribution
38	10 parcels Chinese scientific journals of all kinds, including Academia Sinica's <i>Sinensia</i>		NARB
39	Reports and monographs	US Dept. of Agric.	Huashi Ta (Home Econ.)
40	Home Economics Report	Do.	

## List of the principal interchanges of scientific information &amp; material eastbound and westbound.—(Contd.)

		From	To
41	Sample of vitamin B concentrate	Tien Yuen Works	Coonor Nutr. Labs. for testing AMA NRC
42	Data on edible and poisonous plants in war areas		
43	Annual Report Australian CSIR		
44	Nutritional Sci. Reports		
45	<i>Science and Culture</i> (India) with article on <i>Academia Sinica</i>	US Dept. of Agric.	Lien Ta (Nutr.) AS
46	2 Monographs on shipbuilding	CRO	Lien Ta (Naval Architecture)
47	Tibetan Grammar	CRO	Huahsi Ta (Anthropol.)
48	Monograph on Indian Banking	CRO	AS (Sociology)
49	Synopsis of Hygiene	BC	AMA
50	Further memoranda on dried foods	FIB	NHA
51	Data on Seger Cones	Pottery Research Assoc. BC	NIRB AS AS
52	Assorted scientific journals		
53	<i>BC Monthly Science Abstracts and Reviews</i>		
54	171 Reprints and 3 Monographs from US scientists on the biochemistry of amino-acids		
55	11 cultures of bacteria and moulds for industrial fermentations	NCTC	Shanghai Med. Coll. NRC, Tungli Oil Works Lab.
56	3 Cultures of food yeasts	NCL	NHA (Nutr. Sci.)
57	20 Monographs on zoology	Indian Zool. Survey do	AS (Zool. and Bot.) Sci. Soc. of China
58	Do.		Dr. H. C. Yin, Ching-hua Ta (General Physiol.)
59	40 Reprints from US scientists and 50 of his own		

List of the principal interchanges of scientific information & material eastbound and westbound.—(Contd.)

	From	To
60	14 large and 17 small monographs on Planning	NPC
61	2 Bulletins of the Coal Utilisation Research Assoc.	NRC
61a	Monograph on Coal	NRC
61b	Monograph on Petroleum	NRC, KPA
61c	Monograph on US crop rubber	NRC
61d	Monograph on Indian crop rubber	NRC
62	Material on Ni-Cr steel metallurgy	AOA, MoW, NRC
63	Monograph on World Food Board plan Sir John Orr	For Minister T. V. Sung
64	28 monographs and 14 bulletins on Indian natural resources	NGS
65	Report on Artificial Insecticides	Chungshan Ta (Entomology), AMA, NHA
66	Reprints on statistics	NARB
67	5 reprints on technical optics	Wuhan Ta (Physics)
68	8 medical monographs	NIMR
69	2 medical monographs	AMA
70	Information on refractory bricks	AOA, NRC
71	Copies of <i>Endeavour</i>	Academia Sinica
72	4 cultures of bacteria and yeasts for industrial fermentations	Huanghai Res. Institute
73	Monograph on Isotopes and the mass-spectrograph	Wuhan Ta (Physics)
74	List of Isotopic Masses	do
75	Data on mechanical properties of timbers	Dr. Aston, FRS
76	Correspondence	Prof. Chadwick, FRS Chungyang Ta (Forestry) Imperial Bureau of Plant Genetics



List of the principal interchanges of scientific information & material eastbound and westbound.—(Contd.)

	From	To
95	Lit. on industrial fermentation	DSIR etc.
96	Monograph on Latitude and Longitude of places in China	RGS
97	Report and Journal	RS, BM, etc.
98	Papers on stereochemistry	Dr. Mills, etc.
	Huanghai Res. Inst.	
	NGS	
	Kansu Sci. Educ. Inst.	
	Dr. Yuan Han-ching	

## LIST II.

**List of Chinese scientific institutions for which research apparatus and reagents have been obtained from India in the Science Supplies Service.**

1	Huanghai Industrial Research Institute	23	Tongchi Ta (Physiology)
2	National Geological Survey	24	Szechuan Ta (Entomology and Plant Pathology)
3	Lien Ta (Chem)	25	Szechuan Ta (Agronomy)
4	Lien Ta (Biol)	26	Wuhan Ta (Microbiology)
5	Lien Ta (Physics)	27	Yunnan Ta (Sericulture)
6	Peiping Academy (Chem)	28	Yunnan Ta (Agronomy)
7	Chinghua Ta (Radio)	29	Yunnan Ta (Mining and Metallurgy)
8	Chinghua Ta (Metallurgy)	30	Yunnan Ta (Biology)
9	Chinghua Ta (Entomology and Plant Pathology)	31	Yunnan Ta (Chemistry)
10	Tongchi Ta (Embryology)	32	Academia Sinica (Chemistry)
11	AOA, 23rd. Arsenal	33	Chiuta Salt Co. Research Laboratories
12	Ginling Ta (Physical Chemistry)	34	Ginling College (Geography and Geology)
13	Indusco, Lanchow Laboratories	35	Peiping Academy (Physiology)
14	Chungyang Ta (Physiology)	36	Chinghua Ta Aeronautics)
15	Chungyang Ta (Biochemistry)	37	Peiping Academy (Optics)
16	Chungyang Ta (Anatomy)	38	Chilu Ta (Pharmacology)
17	Huashi Ta (Archaeology and Ethnology)	39	Chilu Ta (Physiology)
18	Wuhan Ta (Physiology)	40	Szechuan Ta (Nutritional Science)
19	Wuhan Ta (Physics)	41	Peiping Academy (Physics)
20	Szechuan Provincial Agricultural Experiment Station	42	Huanghai Industrial Research Institute, 2nd. list
21	Peiping Academy (Zoology).	43	Yungli Chemical Industries Research Laboratories
22	NHA, NEPB Vaccine Institute, Kunming	44	Chungyang Ta (Physics)
		45	Academia Sinica (Zoology and Botany)

**List of Chinese scientific institutions for which research apparatus and reagents have been obtained from India in the Science Supplies Service.—(Contd.)**

46	Huahsi Ta (Chemistry)	71	Nat. NW Normal (Teachers Training) College (Science Depts.) Shihliidien
47	Tungli Oil Works (NRC) Research Laboratories	72	Chekiang Ta (Chem. Biol., Physics)
48	Air Force Research Bureau Experiment Station	73	Nat. Sericultural Research Institute, Tsunyi
49	Kuangsi Ta (Chemistry)	74	Huahsin Metallurg. Works
50	Lien Ta (Physics), 2nd list	75	Huahsi Ta (Chem), 2nd list
51	AMA Central Research Institute	76	Nat. NW Epizootic Bureau, Lanchow
52	NRC Central Radio Works Research Laboratories	77	Peiping Academy (Geophysics)
53	AOA 23rd. Arsenal, 2nd list		
54	MoENR, MIAA Laboratories		
55	Academia Sinica (Chemistry), 2nd list		
56	KPA Drilling Division Research Laboratory		
57	KPA Refinery Division Research Laboratory		
58	KPA Medical Division Clinical Research Laboratory		
59	Indusco Machine Works, Lanchow, Research and Development		
60	Indusco Clinical Research Laboratory, Lanchow		
61	Indusco Food Research Laboratory, Kweilin		
62	NHA, NEPB Vaccine Institute, Lanchow		
63	Kansu Science Education Institute		
64	Chinghua Ta (General Physiology)		
65	Huahsi Ta (Clinical Research)		
66	Huahsi Ta (Pathology)		
67	Lien Ta (Biology), 2nd list		
68	AMA Central Research Institute (Microchemistry)		
69	NRC Central Radio Works, 2nd list		
70	Nat. NW (Jun) Medical College.		

LIST III.

## Union List of American and British Journals on Microfilm available in China.

I. American Scientific and Technical Journals of which complete and selected files from January 1942 are being sent on microfilm to China from the Cultural Relations Division of the Department of State, Washington, D.C.

American Cinematographer.  
 American Economic Review.  
 American Historical Review.  
 American Journal of Botany.  
 American Political Science Review.  
 American Sociological Review.  
 Architectural Forum.  
 Architectural Record.  
 Bell System Technical Journal.  
 Biological Abstracts.  
 Brick and Clay Record.  
 Bulletin of the American Association of Petroleum Geologists.  
 Bulletin of the American Meteorological Society.  
 Ceramic Industry.  
 Chemical Abstracts.  
 Chemical and Engineering News.  
 Child Development and Care (selection).  
 Civil Engineering.  
 Department of State Bulletin.

Economic Geography.  
 Electrical Engineering.  
 Electronics.  
 Engineering and Mining Journal.  
 Experiment Station Record (agricultural).  
 Far Eastern Quarterly.  
 Federal Reserve Bulletin.  
 Foreign Agriculture.  
 Foreign Commerce Weekly.  
 Geophysics.  
 Harvard Journal of Asiatic Studies.  
 Industrial and Engineering Chemistry (Analytical and Industrial Editions).  
 International Conciliation.  
 Journal of Agricultural Research.  
 Journal of Applied Mechanics.  
 Journal of Applied Physics.  
 Journal of Chemical Education.  
 Journal of Farm Economics.  
 Journal of Geology.  
 Journal of Higher Education.  
 Journal of Modern History.  
 Journal of Nutrition.  
 Journal of Physical Chemistry.  
 Journal of the Aeronautical Sciences.

**Union List of American and British Journals on Microfilm available in China.---(Contd.)**

Journal of the American Chemical Society.  
 Journal of the American Optometric Association.  
 Journal of the American Oriental Society.  
 Journal of the American Society of Agronomy.  
 Journal of the Arnold Arboretum, Harvard University (selections).  
 Library Journal.  
 Magazine of Art.  
 Mathematical Reviews.  
 Mechanical Engineering.  
 Mining Technology.  
 Monthly Weather Review.  
 Musical Quarterly.  
 National Reconstruction.  
 Physical Review.  
 Phytopathology.  
 Plant Physiology.  
 Proceedings of the American Society of Civil Engineers.  
 Proceedings of the Institute of Radio Engineers.  
 Psychological Abstracts.  
 Psychological Bulletin.  
 Quarterly Journal of Economics  
 Quarterly Review of Biology.  
 Review of Scientific Instruments.  
 School and Society.  
 Science.

Science News Letter.  
 Scientific Monthly.  
 Survey of Current Business.  
 Theatre Arts.  
 Transactions of the American Institute of Chemical Engineers.  
 Transactions of the American Society of Mechanical Engineers.  
 American and British Medical and Scientific Journals of which complete and selected files from January 1942 on microfilm are being sent to China from the American Bureau for Medical Aid to China, New York City.  
 American Journal of Anatomy.  
 American Journal of Clinical Pathology.  
 American Journal of Diseases of Children.  
 American Journal of Hygiene.  
 American Journal of Nursing.  
 American Journal of Ophthalmology.  
 American Journal of Pathology.  
 American Journal of Physiology.  
 American Journal of Psychiatry.  
 American Journal of Rontgenology and Radium Therapy.  
 American Journal of Syphilis, Gonorrhoea, and Venereal Diseases.  
 American Journal of Tropical Medicine.

II.

Union List of American and British Journals on Microfilm available in China.—(Contd.)

American Review of Tuberculosis.  
 Anaesthesiology.  
 Anatomical Record.  
 Annals of Internal Medicine.  
 Annals of Otolaryngology, Rhinology and Laryngology.  
 Annals of Surgery.  
 Archives of Dermatology and Syphilology.  
 Archives of Diseases in Childhood.  
 Archives of Internal Medicine.  
 Archives of Neurology and Psychiatry.  
 Archives of Ophthalmology.  
 Archives of Otolaryngology.  
 Archives of Pathology.  
 Archives of Pediatrics.  
 Archives of Physical Therapy (with International Abstracts).  
 Archives of Surgery.  
 Biochemical Journal.  
 British Journal of Children's Diseases.  
 British Journal of Experimental Pathology.  
 British Journal of Ophthalmology.  
 British Journal of Physical Medicine.  
 British Journal of Surgery.  
 British Journal of Tuberculosis.  
 Civil Engineering.  
 Current List of Medical Literature.  
 Epidemiological Record.

Hospital Abstract Service.  
 Hospital Management.  
 Hospital Progress.  
 Hospitals.  
 Hygeia.  
 Industrial and Engineering Chemistry.  
 International Medical Digest.  
 Journal of Biological Chemistry.  
 Journal of Bone and Joint Surgery.  
 Journal of Clinical Investigation.  
 Journal of Experimental Medicine.  
 Journal of Immunology.  
 Journal of Infectious Diseases.  
 Journal of Investigative Dermatology.  
 Journal of Laboratory and Clinical Medicine.  
 Journal of Laryngology and Otology.  
 Journal of Nervous and Mental Diseases.  
 Journal of Nutrition.  
 Journal of Pathology and Bacteriology.  
 Journal of Pediatrics.  
 Journal of Pharmacology and Experimental Therapeutics.  
 Journal of Urology.  
 Journal of the American Chemical Society.  
 Journal of the American Dental Association.  
 Journal of the American Medical Association.  
 Lancet.

Union List of American and British Journals on Microfilm available in China.—(Contd.)

- Laryngoscope.  
 Military Surgeon.  
 Modern Hospital.  
 Municipal Engineers Journal.  
 Nursing Mirror.  
 Nutritional Abstracts and Reviews.  
 Physiological Reviews.  
 Public Health Nursing.  
 Quarterly Cumulative Index Medicus.  
 Radiology.  
 Surgery.  
 Surgery, Gynaecology and Obstetrics.  
 Water Works and Sewerage.  
 Water Works Engineering.
- III. Microfilms of complete files of British Scientific, Medical, Technical and Learned Journals from Sept. 1943 now reaching China from the British Council, London.
- Asiatic Reviews.  
 Biological Reviews.  
 Botanical Magazine.  
 British Medical Journal.  
 Discovery.  
 Economic Review.  
 Electrical Review.  
 Endeavour.
- Engineer.  
 Engineering.  
 English Historical Review.  
 Flight.  
 Geographical Journal.  
 Geological Magazine.  
 Historical Review.  
 Journal of Agricultural Science.  
 Journal of the Chemical Society.  
 Journal of Experimental Biology.  
 Journal of Genetics.  
 Journal of Hygiene.  
 Journal of the Institute of Civil Engineers.  
 Journal of the London Mathematical Society.  
 Journal of Obstetrics and Gynaecology.  
 Lancet.  
 Mechanical World.  
 Mind.  
 Monthly Science News.  
 Nature.  
 New Phytologist.  
 Parasitology.  
 Philosophy.  
 Practical Mechanics.  
 Quarterly Journal of Geological Society.  
 Quarterly Journal of Mathematics.  
 Quarterly Journal of Medicine.

**Union List of American and British Journals on Microfilm available in China.—(Contd.)**

- Royal Astronomical Society (Monthly Notices and Memoirs).  
 Transactions of the Faraday Society.  
 Transactions of the Institute of Mining Engineers.
- IV. Microfilms of British Scientific and Technical Journals for which the British Council has been asked but which have not yet arrived in China.  
 Annals of Botany.  
 Botanical Review.  
 British Chemical Abstracts.  
 Chemistry and Industry.  
 Journal and Proceedings of the Linnean Society.  
 Journal of Applied Biology.  
 Journal of Botany.  
 Journal of Ecology.  
 Journal of Economic Biology.  
 Journal of Physiology.  
 Journal of Plant Physiology.  
 Journal of the Iron and Steel Institute.  
 Philosophical Magazine.  
 Plant Breeding Abstracts.  
 Proceedings of the Royal Society (Series A and B).  
 Proceedings of the Zoological Society.  
 Quarterly Journal of Microscopic Science.  
 Review of Applied Mycology.
- V. Microfilms of British periodicals from Jan.—Dec., 1943 which have reached China in one negative

- copy only and which are therefore only available on request to headquarters (files incomplete).  
 Aeroplane.  
 Agenda.  
 Air Ministry Weekly News Letter.  
 Anglo-Soviet Journal.  
 British Today.  
 British Book News.  
 Bulletin of International News.  
 Civil Defence.  
 Contemporary Review.  
 Discovery.  
 Economic Journal.  
 Economic Review.  
 Economist.  
 English Digest.  
 Flight.  
 Fortnightly Review.  
 Freedom Forum.  
 Horizon.  
 Ideal Kinema.  
 Illustrated London News.  
 Inter-Allied Information.  
 Irish Digest.  
 Journal of the Parliaments of the Empire.  
 Kinematograph Weekly.  
 Lancet.

**Union List of American and British Journals on Microfilm available in China.—(Contd.)**

Life and Letters Today.  
Listener.  
Manchester Guardian weekly.  
The Navy.  
New Statesman and Nation.  
News Review.  
Nineteenth Century and After.  
Picture Post.  
Political Quarterly.  
Postscript.  
Publisher's Circular and Booksellers News.

Radio Times.  
Round Table.  
Spectator.  
Time and Tide.  
Times Literary Supplement.  
War Commentary.  
Weekly News Letter.  
World Affairs.  
World Review.  
World Digest.

N.B.—There are also incomplete files of some of the journals in List III from Jan.—Sept., 1943, in one negative copy only.

LIST OF CENTRES WHERE MICROFILM READING MACHINES ARE AVAILABLE :

I. Under the INTERNATIONAL CULTURAL SERVICE OF CHINA:

- |                 |   |
|-----------------|---|
| Chungking       | 1. International Cultural Service H.Q., Chiuching Middle School.                    |
|                 | 2. College of Science, University of Nanking Chiuching Middle School, Tsengchiayai. |
|                 | 3. American Publication Service, Chiuching Middle School.                           |
|                 | 4. National Central Library, Lianglukou.  |
|                 | 5. Universal Engineering Corporation, 205 Chung chenglu.                            |
|                 | 6. Agricultural Association of China 104 Tsaotse Nanya.                             |
|                 | 7. National Resources Commission, Niugoutou.  |
|                 | 8. Ministry of Communications, 248 Kuofulu.   |
|                 | 9. Ministry of Social Affairs, Lingsenglu.  |
| Shapingba       | 1. National Central University Library.   |
|                 | 2. Nankai Institute of Economics.   |
| Beipei          | Geological Survey of China  |
| Chengtu         | Joint University Library, Huahsiba  |
| Chiating        | National Wuhan University Library   |
| Kunming         | 1. National Southwest Associated University Library.                                |
|                 | 2. Academia Sinica  |
|                 | 3. Peiping Academy  |
|                 | 4. Yunnan University  |
|                 | 5. Chinghua University Research Institute   |
|                 | 6. National Epidemic Prevention Bureau  |
| Liangfeng       | Provincial Kweilin Science Institute  |
| Tsunyi (Meitan) | National Chekiang University Library.   |
| Lanchow         | National Northwest Library  |
| Taiho           | Research Institute of Local Reconstruction  |
| Tali            | Huachung University   |
|                 | also at AOA Arsenals and NRC Industrial Plants.                                     |

II. Under the AMERICAN BUREAU FOR MEDICAL AID TO CHINA :

- |          |   |
|----------|---|
| Koloshan | National Health Administration Research Institute, and the National Shanghai Medical College. |
| Kweiyang | 1. Emergency Medical Service Training School.   |
|          | 2. National Hsiang Ya Medical College, and the National Kweiyang Medical College.             |
| Chengtu  | National Central University Medical College, etc.   |
| Anshun   | Army Medical College.   |
| Lanchow  | National Kansu Medical College, etc.  |

## LIST IV.

### List of books transmitted to Chinese scientific institutions.

1	Orr	Fighting for What?	Foreign Minister T. V. Soong
2	Yeaxley	Adult Education	Nat. School of Adult Education, Bishan
3	Graham-Kerr	Vertebrate Embryology	Dr. Tung Ti-chao, Tongchi Ta
4	Plimmer	Organic and Biochemistry	Shanghai Medical College, Geo- graphical Dept.
5	Whittlesey	Germany's plan for World Domination (Geopolitics)	Chungyang Ta.
6	Orr	Fighting for What?	Indusco
7	Orr	Fighting for What?	International Division, Chinese Ministry of Information.
8	Wolf	History of Science in 16th and 17th centuries	Dr. Chang Tzu-Kung.
9	Handbook of	Chemistry and Physics 1943	Dr. Sun Tsun-Chueh
10	Handbook of	Chemistry 1941	NRC Tungli Oil Works
11	Orr	Fighting for What?	Dr. Peng Shu-Ling
12	Jennings	Parliament	Comité d'Information
13	G. Winstanley	Collected Works	Chinoise, Kwellin
14	More	Utopia	Academia Sinica (Sociology)
15	Stamp	Science of Social Adjustment	do
16	Salvemini	Under the Axe of Fascism	do
17	Tawney	The Acquisitive Society	do
18	Tawney	Equality	do
19	Tawney	Religion and the rise of Capitalism	do
20	Ginsberg et al.	The Study of Society	do

List of books transmitted to Chinese scientific institutions.—(Contd.)

21	Oakeshott	Social and Political doctrines of contemporary Europe	Academia Sinica (Sociology)
22	Pirrenne	Economic and Social History of Mediaeval Europe	do
23	Allee	Social Life of Animals	do
24	Orr	Fighting for What?	do
25	Tawney	Land and Labour in China	do
26	Adams	Recent advances in Town Planning	Dr. Liang Se-Chêng
27	Laski	The State in Theory and Practice	Architectural Research Institute
28	Willey	The 17th Century Background	Academia Sinica (Sociology)
29	Tarn	Hellenistic Civilization	Academia Sinica (History)
30	Willey	The 18th Century Background	do
31	Clark	The 17th Century	do
32	Pascao	Social Basis of the German Reformation	do
33	Thomson	Aeschylus and Athens	do
34	Hughes	Chinese Philosophy	do
35	Alexander	Short History of Philosophy	do
36	Gooch	English Democratic Ideas in the 17th Century	do
37	Trevelyan	History of England	do
38	Childe	Man makes Himself	Dr. Li Chi, Nat. Museum
39	Boas et al.	General Anthropology	do
40	Waley	Analects	do
41	Mead	Sex and temperament in 3 Savage Societies	Academia Sinica (History)
42	Waley	The Way and its Power	Dr. Li Chi, Nat. Museum
43	McTaggart	Some Dogmas of Religion	Academia Sinica (History)
44	Otto	Idea of the Holy	do
45	Cole	Practical Physiological Chemistry	do
			Shanghai Medical College

List of books transmitted to Chinese scientific institutions.—(Contd.)

46	Bourne	Nutrition and the War	Lien Ta (Nutrition)
47	Orr	Fighting for What?	do
48	Bacharach	Science and Nutrition	do
49	Alexander	Space Time and Deity, 2 Vols.	Lien Ta (Univer. Library)
50	Hudson	Europe and China	do
51	Purcell	Problems of Chinese Education	do
52	Stebbing	Ideals and Illusions	do
53	Collingwood	Speculum Mentis	do
54	Lowry	Historical Introduction to Chemistry	Lien Ta (Chemistry)
55	Handbook of	Chemistry 1941	do
56	Jeans	Universe Around us	Lien Ta (Physics)
57	Handbook of	Chemistry and Physics 1943	do
58	Kaye and Laby	Tables of Physico-Chemical Constants	
59	Sharp.	Introduction to Cytology	Lien Ta (Biology)
60	Gatenby	Biological Laboratory Technique	do
61	Waddington	Introduction to Modern Genetics	do
62	Goldschmidt	Physiological Genetics	do
63	Sansome and Phillip	Recent Advances in Plant Genetics	do
64	de Beer	Vertebrate Zoology	do
65	Jennings	Biological Basis of Human Nature	do
66	Upton	The Microscope	do
67	Darlington	Recent Advances in Cytology	do
68	Skene	Biology of Flowering Plants	do
69	Smith	The Virus, Life's Enemy	Chinghua Ta (General Physio- logy research Institute)
70	Oparin	Origin of Life	do
71	Pryde	Recent Advances in Biochemistry	do

## List of books transmitted to Chinese scientific institutions.—(Contd.)

72	Burnet	Biological Aspects of Infectious Disease	Chinghua Ta (General Physiology research institute)
73	Hill	Adventures in Biophysics	do
74	Large	Advance of the Fungi	do
75	Harrow and Sherwin	Textbook of Biochemistry	do
76	Handbook of	Chemistry and Physics 1943	Peiping Academy
77	Glasstone	Textbook of Physical Chemistry	Academia Sinica (Chemistry)
78	Handbook of	Chemistry and Physics 1943	do
79	Topley and Wilson	Principles of Bacteriology and Immunity	Dr. Tang Fei-Fên, National Epidemics Prevention Bureau, Kiuming
80	Handbook of	Chemistry 1941	do
81	Bernal	Social Function of Science	Dr. Yap Chu-Fei for Circulation
82	Crowther	Social Relations of Science	do
83	Graubard	Man, the Slave and Master	do
84	Waddington et al.	Science and Ethics	do
85	Lewis ed.	Christianity and the Social Revolution	do
86	Hall et al.	Frustration of Science	do
87	Zinsser	Rats, Lice, and History	do
88	Clark	Science and Social Welfare in the Age of Newton	do
89	Needham ed.	Science in the U.S.R.	do
90	Waddington	Scientific Attitude	do
91	Crowther ed.	Science and World Order	do
92	Anon	Science in War	do
93	Holorenskaw	The Levellers and the English Revolution	do
94	Handbook of	Chemistry and Physics 1943	Electrico-Chemical and Metallurgical Works NRC Sanchi

List of books transmitted to Chinese scientific institutions.—(Contd.)

95	Woodger	Biological Principles	Academia Sinica (Biology)
96	Russell	Form and Function	do
97	Needham	Man a Machine	do
98	Huxley et al.	The New Systematics	do
99	de Beer	Embryos and Ancestors	do
100	Jennings	Genetics	do
101	d'Arcy Thompson	Growth and Form	do
102	Huxley	Evolution; the Modern Synthesis	do
103	Calloway and Burgess	Applied Mycology and Bacteriology	Huanghai Research Institute
104	Handbook of	Chemistry 1941	do
105	Barton-Wright	Recent Advances in Botany	Academia Sinica (Botany)
106	Tansley and Chipp	Aims and Methods in the study of Vegetation	do
107	Weaver and Clements	Plant Ecology	do
108	Hill	Economic Botany	do
109	Ridley	Dispersal of Plants	do
110	Tansley	British Islands and their Vegetation	do
111	Fritsch	The structure and Reproduction of the Algae	Academia Sinica (Biology)
112	Chapman	An Introduction to the study of Algae	do
113	Allen	Science of the Sea	do
114	Johnstone, Scott and Chadwick	The Marine Plankton	do
115	Mortensen	Handbook of the Echinoderms of the British Isles	do
116	Carpenter	Life in Inland Waters	do
117	Piney	Recent Advances in Microscopy	do
118	Wenyon	Protozoology 2 vols.	do
119			do
120	Parker and Haswell	A Textbook of Zoology 2 vols.	do
121			do

List of books transmitted to Chinese scientific institutions.—(Contd.)

122	Imms	A General Textbook of Entomology	Academia Sinica (Biology)
123	Bodenheimer	Problems of Animal Ecology	do
124	Campbell	An Outline of Plant Geography	do
125	Raunkiaer	The Life-Forms of Plants and Statistical Plant Geography	do
126	Handbook of	Chemistry and Physics 1943	Dr. Wang Shou-Chin NRC Central Machine Works, Kunming.
127	Handbook of	Chemistry 1941	Chinghua Ta (General Physics)
128	Handbook of	Chemistry 1941	Army Medical Administration
129	Handbook of	Chemistry 1941	National Institute of Industrial Research
130	Handbook of	Chemistry 1941	Huahsi Ta (Chemistry)
131	Handbook of	Chemistry 1941	Chungyang Ta (Physiology and Biochemistry)
132	Handbook of	Chemistry 1941	National Agricultural Research Bureau
133	Handbook of	Chemistry 1941	National Bureau National Health Administration Research Institute, Koloshan
134	Handbook of	Chemistry 1941	National Epidemic Prevention Bureau
135	Handbook of	Chemistry 1941	Chungyang Ta (Chemistry)
136	Handbook of	Chemistry and Physics 1943	Chinese Air Force Research Institute, Chengtu
137	Handbook of	Chemistry and Physics 1943	National Institute of Industrial Research
138	Handbook of	Chemistry and Physics 1943	Army Ordnance Administration, Central Research Institute.
139	Handbook of	Chemistry and Physics 1943	Chungyang Ta (Physics)

List of books transmitted to Chinese scientific institutions. — (Contd.)

140	Handbook of	Chemistry and Physics 1943	National Geological Survey
141	Handbook of	Chemistry and Physics 1943	Kansu Petroleum Administration Oilfield.
142	Handbook of	Chemistry and Physics 1943	Army Ordnance Administration, 23rd Arsenal
143	Hughes	Chinese Philosophy	do
144	Hughes	Chinese Philosophy	do
145	Hughes	Chinese Philosophy	do
146	Orr	Food, Health and Income	Dr. Hughes for distribution
147	} Stitt	Tropical Diseases, 2 vols.	do
148		Recent Advance in Bacteriology	do
149	Dible	The Nation's Water Supply	National Health Administration, Research Institute, Koloshan
150	Walters	England's Water Problem	Shanghai Medical College.
151	Sales and Bland	Pharmacology and Therapeutics	do
152	Cushny	Human Physiology	National Health Research Insti- tute, Koloshan
153	Starling	Physiology in Modern Medicine	do
154	McLeod	Organic and Biochemistry	do
155	Plimmer	Materia Medica	do
156	Hale-White	Conditioned Reflexes	do
157	Pavlov	Physical Basis of Personality	do
158	Stockard	Theories of Sensation	do
159	Rawdon-Smith	Sex and Internal Secretions	Chungyang Ta (Psychology)
160	Allen et al.	Organic and Biochemistry	do
161	Plimmer	Practical Physiological Chemistry	Chungyang Ta (Medical School, Chengtu)
162	Cole		do

List of books transmitted to Chinese scientific institutions.—(Contd.)

163	Needham and Green ed.	Perspectives in Biochemistry	Chungyang Ta (Medical School, Chengtu)
167	Benedict	Race and Racism	Huahsi Ta (Anthropol.) Dr. Li An-Chê
168	Benedict and Weltfish	Races of Mankind	do
169	Haldane	New Paths in Genetics	do
170	Hogben	Nature and Nurture	do
171	Beveridge	British Food Control	Academia Sinica (Sociology)
172	Tawney	Agrarian China	All-China Geographical Institute
173	Wheeler	Social Insects	Academia Sinica (Sociology)
174	Rostovtzer	Social and Economic History of the Hellenistic World	do
175			do
176			do
177	Waley	Chinese Poems	Chungyang Ta (Literature) Dr. Chu Ta-Kao
178	Waley	More Chinese Poems	do
179	McNeice	Plant and Phantom	do
180	McNeice tr.	Agamemnon of Aeschylus	Chungyang Ta (Literature) Dr. Chu Ta-Kao
181	Auden and Isherwood	Ascent of F 6	do
182	Porteous	Farmer's Creed	Huahsi Ta (Agriculture) Dr. Dickinson
183	Russell	English Farming	do
184	Paterson	Science in Agriculture	do
185	Percival	Agricultural Botany	do
186	Ernle	English Farming Past and Present	do

List of books transmitted to Chinese scientific institutions.—(Contd.)

187	Auld and Ker	Practical Agricultural Chemistry	Huahsi Ta (Agriculture) Dr. Dickinson
188	King	Farmers of 40 Centuries	do
189	King	Farmers of 40 Centuries	National Agricultural Research Bureau, Beipei
190	Smith	Britain's Food Supply in Peace and War	do
191	Comber	Scientific Study of the Soil	do
192	de Sigmond	Principles of Soil Science	do
193	Orr	Fighting for What?	do
194	Watson and More	Agriculture	do
195	Addison	Policy for British Agriculture	do
196	Waksman	Humus	do
197	Russell	Soil Conditions and Plant Growth	do
198	Wilkins	Research and the Land	do
199	Wibberley	The New Farming	do
200	World List of	Scientific Periodicals	do
201	Singer	Studies in History and Method of Science (Vol. II)	Academia Sinica (Central Library)
202	Wolf	History of Science, Technology and Philosophy in the 16th and 17th Centuries	do
203	Wolf	History of Science, Technology and Philosophy in the 18th Century	do
204	Fulton	Readings in History of Physiology	do
205	Singer	Short History of Biology	do
206	Sherrington	Man on his Nature	do
207	Partington	Short History of Chemistry	do
208	Needham ed.	Comenius, Teacher of Nations	do
209	Whitehead	Science and the Modern World	do

List of books transmitted to Chinese scientific institutions.—(Contd.)

210	Aristotle	Minor Works	Academia Sinica (Central Library)
211	Galen	Natural Faculties	do
212	Lucretius	Nature of Things	do
213	Whetham and Whetham	Readings in Literature of Science	do
214	Singer	Short History of Science	do
215	Horney	New Ways in Psychoanalysis	Chungyang Ta (Psychology)
216	James	Varieties of Religious Experience	do
217	Freud	Civilization and its Discontents	do
218	Trotter	Instincts of the Herd in Peace and War	do
219	Ainsworth	Plant Diseases of Great Britain	Chungyang Ta (Plant Pathology) Dr. Shen Chih-I
220	Anon	Radio Amateurs Handbook	Lanchow CTC Laboratory
221	Davies	Chemistry of Milk	Dr. Louis Lu, Huahsi Ta (Agriculture)
222	Wilson	Bacteriological Grading of Milk	do
223	Harvey and Hill	Milk Products	do
224	Harvey and Hill	Milk Production and Control	Dr. Louis Lu Huahsi Ta (Agriculture)
225	Hammond	Farm Animals	do
226	Hughes	Chinese Philosophy	Wuhan Ta (Library)
227	Handbook of	Chemistry and Physics 1943	Wuhan Ta (Physics and Chemistry)
228	Handbook of	Chemistry and Physics 1943	Academia Sinica (Physics)
229	Newman	Recent Advances in Physics	do
230	Hill	Living Machinery	National College of Adult Education, Bishan

List of books transmitted to Chinese scientific institutions.—(Contd.)

231	Hegner et al.	Parasitology	Dr. Chang Kuei, Chiu Ta (Biology) Szechuan Ta (Agriculture)
232	Fryer and Brooks	Insect and Fungus Pests of the Farm	do
233	Imms	Recent Advances in Entomology	do
234	Martin	Scientific Principles of Plant Protection	do
235	Gardner et al.	Fundamentals of Fruit Production	do
236	Metcalf and Flint	Destructive and useful Insects	do
237	Metcalf and Flint	Fundamentals of Insect Life	do
238	Wardle and Buckle	Principles of Insect Control	do
239	Wigglesworth	Principles of Insect Physiology	National Sericult. Institute Tsunyi
240	Darlington and laCour	Handling of Chromosomes	Research Institute of Biology, Chekiang Univ.
241	Gately and Painter	Microtomists' Vademecum	National Sericult. Institute
242	Johannsen and Butt	Embryology of Insects and Myriapods	do
243	Hughes	Chinese Philosophy	Huhsi Ta, Dr. Lo Chung-Shu
244	Barton-Wright	Recent Advances in Plant Physiology	Chekiang University Plant Physiology Research Institute
245	Miller	Plant Physiology	do
246	Stiles	Introduction to Principles of Plant Physiology	do
247	Went and Thimann	Phytohormones	do
248	Handbook of	Chemistry 1941	do
249	Handbook of	Chemistry 1941	do
250	Eyre	Bacteriological Technique	Wuhan Ta (Biology) Dr. Gao Shang-Yin
251	Borradaile et al.	Invertebrata	do
252	Hogben	Animal Biology	do
253	Waksman	Principles of Soil Microbiology	do

List of books transmitted to Chinese scientific institutions.—(Contd.)

254	Dundy	Outlines of Evolutionary Biology	Wuhan Ta (Biology) Dr. Gao Shang-Yin
255	Clarke	Botany as an Experimental Science	National College of Adult Education, Bishan
256	Thaysen and Bunker	Microbiology of Cellulose	Wuhan Ta (Biology)
257	Stephenson	Bacterial Metabolism	do
258	Hiley	Improvement of Woodlands	National Forestry Laboratory, Chiating
259	Lloyd	Engineering for Forest Rangers in Tropical Countries	do
260	Desch	Timber	do
261	Howard	Manual of Timbers of the World	do
262	Doane et al.	Forest Insects	do
263	Boyce	Forest Pathology	do
264	Dallimore and Jackson	Handbook of Coniferae	do
265	Fisher	Statistical Methods for Research Workers	Szechuan Agricultural Experimental Station (Dr. Li Hsien-Wên)
266	Sanders	Outline of British Crop Husbandry	Szechuan Agricultural Experimental Station (Dr. Li Hsien-Wên)
267	Hunter and Leake	Recent Advances in Agricultural Plant Breeding	do
268	Hector	Introduction to Botany of Field Crops, 2 vols.	do
269	Heald	Manual of Plant Diseases	Huashi Ta (Dr. Ho Wên-Chün)
270	Needham	Biochemistry and Morphogenesis	Tongchi Ta (Dr. Tung Ti-Chou)
271			

List of books transmitted to Chinese scientific institutions.—(Contd.)

272	Abbey	Practical Goatkeeping	National Animal Husbandry Research Station, Yungchang (Dr. Tsai Wu-chi)
273	Hall	Feeding of Crops and Stock	do
274	Black	Veterinary Dictionary	Chungyang Ta, Agriculture (Dr. C. S. Lo)
275	Anthony	Diseases of the Pig	do
276	Shorter Oxford	English Dictionary, 2 vols.	Academia Sinica (History and Philology)
277	Richards	Mencius on the Mind	do
278	Latourette	Chinese History and Culture	do
279	Johnston	Confucianism and Modern China	do
280	Hughes	Invasion of China by the Western World	do
281	Plimmer	Organic and Biochemistry	Tongchi Ta (Medical School)
282			Dr. Liang
283	Cole	Practical Physiological Chemistry	Yunnan Ta (Medical School)
284	Plimmer	Organic and Biochemistry	do
285	Cole	Practical Physiological Chemistry	Chekiang University Dr. C. C. Tan
286	Huxley and Haldane	Animal Biology	do
287		Chemical Embryology, 3 vols.	Dr. Tung Ti-Chao, Tongchi Ta
288	Needham		
289			

## LIST V.

### List of Chinese Scientific and Technical Institutions visited by the British Scientific Representative

1	Chinghua Ta General Physiology Research Institute	Tapuchi
2	Chinghua Ta Plant Pathology Research Institute	do
3	Chinghua Ta Radio Research Institute	do
4	Yunnan Provincial Geological Survey	do
5	Peiping National Academy, Depts. of Chemistry Physics and Optics Physiology Zoology	Heilongtang do Hsishan
6	Chunghua Ta Metallurgy Research Institute	do
7	Lien Ta, Science Faculties, Depts. of Botany, Nutritional Sci. Plant Physiology Entomology Chemistry	Tapuchi Kunming
8	NHA, NEPB, Vaccine Institute	Hsishan
9	NHA, Headquarters	Hsinchiao
10	AMA, Surgeon-General's Headquarters	do
11	Academia Sinica, Institute of Zoology and Botany	Beipei
12	Nat. Institute of Compilation and Translation	do
13	Nat. Geological Survey	do
14	Nat. Agricultural Research Bureau	do
15	Academia Sinica, Institute of Meteorology	do
16	Chungking Ta	Shapingba
17	NRC, Headquarters	Chungking

List of Chinese Scientific and Technical Institutions visited by the British Scientific Representative—(Contd.)

18	Futan Ta, Departments of Chemistry Biology Mathematics	Beipei
19	All-China Institute of Geography	Beipei
20	Central Political Training Institute	Nanwenchuan
21	Chungyang Ta, Departments of Biology Physiology Plant Physiol. and Pathol. Zoology Physics	Shapingba
22	Science Society of China, Laboratories, Bot. and Zool.	Beipei
23	NHA Research Institute, Depts. of Pharmacology Nutritional Science Medical Entomology Bacteriology Parasitology Public Health	Koloshan
24	Shanghai Medical College	Koloshan
25	Nat. Industrial Research Institute Depts. of Fermentations Oil and Fat Technology Pure Chemicals Motor Fuels Analytical Chem. Plastics Colloids Cellulose Technol.	Beipei do do do do do Panchi do

## List of Chinese Scientific and Technical Institutions visited by the British Scientific Representative—(Contd.)

27	Ceramics	Panchi
37	Tanning Technol.	do
38	Electricity	do
39	Textile Technol.	do
40	Nat. Central Technical Training School	Shapingba
41	NRC, Electrical Power Plant	Tzuluching
	Chiuta Salt Works, and traditional salt industry	do
	NRC, Power Alcohol Plant	Tzuchung
	Indusco Laboratories	Chengtu
	Huahsi Ta, Chilu Ta, Ginling Ta, and Yenching Ta Laboratories, Zoology	Huahsiba
	Biochemistry	
	Parasitology	
	Chemistry	
	Physics	
	Mathematics	
	Tanning Technology	
45	Scientific Apparatus Mfg. Works (MOE)	Supochiao
46	Municipal Popular Science Hall	Chengtu
47	Huahsi Ta Medical and Dental School	Huahsiba
48	Chungyang Ta Medical and Dental School	Chengtu
49	Szechuan Provincial Agricultural Experiment Sta.	do
50	Szechuan Ta, Depts. of Botany	do
	Nutrition	
	Entomology and Plant Pathol.	
	Sericulture	
	Horiculture and Pomology	
	Forestry	
	Agronomy	

List of Chinese Scientific and Technical Institutions visited by the British Scientific Representative—(Contd.)

51	Huahsi Ta, Dept. of Pharmaceutical Chemistry	Huahsiba
53	Ginling Ta, Dept. of Visual Education and Cinematography	do
55	Huahsi Ta, Museum of Archaeology and Ethnology	do
56	KKTCC Factories, Paper, Copper Wire, and NRC Machine Works	Chengtu
57	Huahsi Ta, Agricultural Research Institute	Huahsiba
58	Ginling Ta, Faculty of Agriculture and Forestry	do
61	Chinese Air Force Research Bureau Experiment Sta.	Chengtu
65	NRC Tungli Oil Cracking Plant	Hsiaolongkan
67	NRC Central Radio Works	do
68	AMA Surgical Instrument Factory and Pharmaceutical Farm	Shapingba
69	AMA Research Institute	Beiwenchuan
70	Wuhan Ta, Depts. of Physics Chemistry Biology Mathematics	Chiating
71	Nat. Central Polytechnic College (Light Industries)	do
72	NIRB Forest Products Research Station	do
73	NRC Wood Dry Distillation Plant	Chingyiba
74	Huanghai Industrial Chemistry Research Institute	Wutongchiaio
75	NRC Low Temperature Carbonisation Plant	Hsiba
76	Yungli Chemical Works	Hsintangku
77	Tongchi Ta, Depts. of Engineering Biology, Zoology and Embryology Physiology and Anatomy Geodetics, Surveying and Cartography	Lichuang
78	Academia Sinica, Institute of History	Beilingao
79	Academia Sinica, Institute of Economics and Sociology	do

List of Chinese Scientific and Technical Institutions visited by the British Scientific Representative—(Contd.)

80	Institute for the History of Chinese Architecture	Yuehliangtien
81	National Central Museum	Lichuang
82	NRC, Transportation Centre	Lanchow
83	NHA, NEPB, Vaccine Institute	do
84	Kansu Science Education Institute	do
85	NRC Kansu Machine Works	do
86	NHA, Personnel Training Institute	do
87	NRC Electrical Mfg. Plant	Shihidien
88	Nat. NW Normal (Teachers' Training) College	Lanchow
88 a	Kansu (Commercial) College	do
88 b	Nat. NW (Junior) Medical College	do
88 c	Nat. NW Polytechnic College	do
89	KPA Oilfield Laboratories	Laochünmiao
90	AOA, 23rd. Arsenal, Luhsien	Luhsien
91	AOA, Central Physico-Chemical Laboratories	do
92	AOA and NRC, Tatakou Iron and Steel Works	Tatakou
93	NRC, Blast Furnace Plant	Tzeho
94	NRC, Steel Plant and Rolling Mills	Bachi
95	NRC, Electrochemical and Metallurgical Works	Sanchi
96	Chiaotung Ta	Djiulengpo
97	MoAF, Veterinary Vaccine Production Institute	Hsiaohsihu, Lanchow
98	Tienfu Coal Mine and ancillary Plants	Baimiaodze, Beipei
99	Central Automotive Parts Mfg. Co.	Hualongchiao.

## LIST VI.

List of Scientific Papers by Chinese scientists transmitted for publication in the West.

	Title	Author	Origin	Western journal
1	Morphogenesis of the Amphibian Ear-Vesicle, I	Tsui Chi-Lan	Yunnan Ta (Biol.)	Quart. Journ. Mic. Sci.
2	do II	do	do	do
3	Theory of the Meson	Chang Tsung-Sui	Chungyang Ta (Math. Physics)	Proc. Roy. Soc. A
4	Vector Spin	do	do	do
5	Pharmacology of the heart of <i>Daphnia</i>	Y. Chiung Puh	Acad. Sinica (Biol.)	Journ. Physiol.
6	A vacuum-tube galvanometer for a glass electrode	Ling Chun-Yu	Wuhan Ta (Biol.)	Journ. Physiol.
7	A simple glass electrode for blood pH determ.	do	do	do
8	Plane factorisation of pseudo- Euclidean rotations	Li Hua-Tsung	Wuhan Ta (Maths.)	Quart. Journ. of Maths.
9	Functional Matrix Equations	do	do	do
10	Development of egg-fragments, isolated blastomeres, and fused eggs in the goldfish	Tung Ti-Chou and Tung (Yeh) Yu- Fung	do	do
11	Experimental studies on the development of the pronephric duct in the anuran embryo	Tung Ti-Chou and Ku Su-Hui	Tongchi Ta	Journ. Zool. Soc.
12	Income and Capital	Fan Hung	do	Journ. Anat.
13	<i>Ex ante</i> Savings and Liquidity Preferences	Wu Bao-San	Acad. Sinica (Sociol.)	Journ. Econ. Studies
			do	do

List of Scientific Papers by Chinese scientists transmitted for publication in the West.—(Contd.)

	Title	Author	Origin	Western journal
14	Unified Moment Constants	Chang Yo-Ling	Szechuan Irrigation Commission	Structural Engineering
15	Excitation Processes in the night sky and aurora	Wu Ta-Yo	Lien Ta (Physics)	Proc. Indian Acad. Sci.
16	Arrangement of double molecules on a lattice	Chang Tsung-Sui	Chungyang Ta (Physics)	Physical Review
17	Polarity-determination in the amphibian embryo, IV, demonstration of the diffusion of a specific chemical substance	Tung Ti-Chou and Tung (Yeh) Yung Fung	Tongchi Ta	Journ. Exp. Zool.
18	Studies on the biology and pathogenicity of <i>Colletotrichum indicum</i>	Li Ling and Juhwa Y. Yang	Szechuan Agric. Exp. Station	Journ. Appl. Biol.
19	An Oxidation test for blown vegetable oils	Sun Tsun-Chueh and H. Y. Chien	NRC Tungli Oil Works	Journ. Ind. and Eng. Chem.
20	Chinese clays as absorbing agents in petrol purification	Sun Tsun-Chueh and F. H. Yao	do	do
21	On Maris and Hulbert's Theory of Aurorae and Magnetic Storms	Wu Ta-Yo	Lien Ta (Physics)	Proc. Indian Acad. Sci.
22	Influence of the thyroid on pregnancy and parturition in the rabbit	Chu Rjen-Bao	Ginling Ta (Physiol.)	Journ. Endocrinol.
23	Role of thyroid and sex hormones in regulation of gonadotrophic activity of anterior pituitary	Chu Rjen-Bao and S.S. You	do	do

List of Scientific Papers by Chinese scientists transmitted for publication in the West.—(Contd.)

	Title	Author	Origin	Western journal
24	Sodium sulphate as an agent causing the development of "chloride-secreting" cells in <i>Macropodus</i>	Liu Chien-Kang Sun Tsun-Chueh, Chin Tao-Seng and D. Y. Hsia	Acad. Sinica (Zool.) NRC Tungli Oil Wks.	Nature
25	Synthesis of Hydrocarbon lubricants from vegetable oils	Wang Hsiu and Hu Mei	Peiping Acad. (Chem.)	Ind. and Eng. Chem.
26	Synthesis of Belmacamgenin and Belmacamdin from <i>Belmacam-da sinensis</i>	Ling Chih-Bing, Tan Hao-Sung and Huang Keh-Lai	Chinese Air Force Research Bureau Exp. Sta.	Journ. Chem. Soc.
27	Torsion of a crescent-sectioned Prism			Proc. Roy. Soc. A
28	Indispensability of Mn and other micro-elements in plant growth as compared with the effect of indoleacetic acid and colchicine	Lo Tsung-Lo	Chekiang Ta (Plant Physiol)	Ann. Bot.
29	On the Occurrence of <i>Colletotrichum capsici</i> in China	Li Ling and K. R. Ling	Szech. Agric. Exp. St.	Indian Journ. Agric. Sci.
30	Factors affecting the Development of Cotton Diseases	Li Ling	do	Annals of Appl. Biol.