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REPORT ON THE CONDITION OF SCIENTIFIC AND TECHNICAL INSTALLATIONS IN THE PRINCIPAL EASTERN CITIES OF CHINA

by
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(This constitutes Report VI (Eastern Tour) of the Series
of tours carried out by members of SBSCO)

Introduction

Throughout this tour I was accompanied by Dr Lu Gwei-Djen. We left Chungking on 7th. March for Shanghai, and Shanghai on 14th. for Peiping. Owing to weather and other air transportation delays we were not able to leave Peiping till the 29th. March. We then visited Nanking from the 31st. March till the 4th. April. On the 6th. April we proceeded to Hongkong. Transportation from Chungking via Peiping to Shanghai was by US ATC, to and from Nanking by rail, and from Shanghai to Hongkong by RAF.

- I. SHANGHAI
- (a) Academia Sinica
 - (b) Lester Institute of Medical Research
 - (c) Army Medical Administration
 - (d) Municipal Food and Drugs Laboratory
 - (e) Tongchi University
 - (f) Aurora University

(a) Academia Sinica

Formerly the Institutes of Physics, Chemistry, and Engineering were located in Shanghai. The Academy has now, however, by way of compensation, taken over the very large former Japanese (Boxer Indemnity) Science Institute which occupies large grounds at no. 320 Rue Ghisi in the former French concession. The Japanese Institute (see leaflet attached for our archives) formerly included departments of Geology, Zoology, Botany, Parasitology, Chemistry and Physics. Academia Sinica now plans to squeeze all their institutes into this building pending the rehabilitation of their other buildings, and eventually the new AS Institute of Experimental Medicine under Dr Robert Lin will expand and take over the whole of these buildings.

At the time of our visit, Dr Wu Shieh-Chou (director of the Chemistry Institute) and Dr Ting Hsi-Ling (Director of the Physics Institute) were actively at work taking over, making inventories, and planning the new layout.

The Japanese building, the main part of which surrounds two closed courtyards, appears to be very well built and equipped, the only possible criticism being that the research rooms are too small. Everything gave the impression of the "last days of Pompeii", the Japanese scientists having hurriedly left for internment, abandoning all equipment, departmental libraries, etc. in an intact condition. The size of the buildings may be estimated at about 5 or 6 times that of an average large-sized Cambridge building such as Biochemistry or Anatomy.

The collection of books in the central and departmental libraries is very fine, being by no means confined to Japanese literature, but there is a great deal of historical and sociological stuff which it is planned to turn over to the institutes of Dr Tao Meng-Ho and Dr Fu Sse-Nien. There is a large collection of economics books from a liquidated Japanese Espionage College which comes into this category. The former Director Sato, was a learned philosopher, and his library is also for disposal.

Among the large quantity of captured scientific apparatus, some spectroscopes may be mentioned which were apparently brought to Shanghai during the war by German submarines. All stacks of the institute's previous publications are intact, but the Japanese geologists destroyed many of their records.

In sad contrast to the above buildings are those of the former AS Physics, Chemistry, and Engineering, opposite Jessfield Park, addr. Brennan Road. These are now a mere shell, with every piece of equipment and apparatus removed. The radiators were unfixed, but most of them remain in a dump, and there is much window glass left, as well as flooring and some woodwork. The former Textile Technology laboratories are the worst injured, having been used as stabling by the Japanese, which still makes them very smelly. Large holes were also torn in the walls. The former Iron and Steel Technology laboratories have nothing of the former equipment, but are piled up with all sorts of junk. A little physics equipment was stored at Aurora University, and this is now coming back, and there will be more for both chemistry and physics returning from Kunming and Beipei, unless it is decided to keep the Kunming laboratory in being as a branch, which would probably be a wise thing to do.

The building was used as the office of the puppet Mayor, who apparently did a great deal of cooking in the fume cupboards.

The general state of these buildings is very depressing. It is reckoned that about \$ NC 600,000,000 will be needed to restore them to their previous state. This figure may be compared with the former annual budget of \$ NC 100,000 and the original building cost of \$ NC 600,000.

The size of these buildings may be reckoned as also about 5 or 6 times that of an average large-size Cambridge laboratory.

(b) Lester Institute of Medical Research

This building, which is in Avenue Road at Haroon Road, is comparatively in excellent preservation. All woodwork is intact, and there is a great deal of apparatus, though some was stolen by the Japanese. On the other hand they also brought some in, especially bacteriological, during the period of their occupation. Unfortunately, the institute is lifeless, being without sufficient funds even for the structural upkeep, apart from payment of staff or normal research expenses. Given funds, however, it could start operations tomorrow. It is most important that this institute be not allowed to lapse.

Among the intact things in the institute is Dr Bernard Read's Museum of Chinese Drugs. The Library, now restored to something like

its original condition, by the devoted and almost unaided efforts of the Director, Dr H.G. Earle, has suffered losses mainly in individual volumes of the sets of specialised journals.

This institute was the scene of some peculiar doings on the part of the Japanese. Wishing to use one of the lagged 37° hot rooms as an incubator, and apparently ignorant of the fact that there were wires in the walls which could be used simply by turning a switch, they laid a radiator flat on the floor and provided it with a special steam boiler of its own in an adjacent room, with holes knocked in the walls for the piping and chimney.

The institute formerly consisted of the departments of Bacteriology, Pathology, Parasitology, Physiology, and Pharmacology. It produced some of the best biologists in China today, such as Dr. M Tang Fei-Fen and Dr Tsai Chia. Under fresh and energetic direction there is nothing to stop it continuing to be a leading element in Sino-British scientific cooperation. (See my accompanying minute)

(c) Army Medical Administration

During the occupation, the Japanese army built extensions to the former Municipal Hospital near the Kiangwan Municipal Centre (N. of Chapel and beside the Kiangwan Airfield), so vast as to house no less than 8000 patients. These buildings are now taken over entirely by the Army Medical Administration, under Surgeon-General Robert Lim, who intends to concentrate there the Anshan College and the branch Colleges of Sian and Kunming, together with the Emergency ("territorial" College of Tuyunkuan (Kweiyang).

At the time of our visit with Lim himself, there were still 2000 Japanese patients and 700 Japanese nurses there, but it was expected that they would be fairly rapidly repatriated. The grounds cover many hundreds of acres, and there are kilometres of corridors, an enormous laundry, kitchen, etc. The plans include a Nursing School, and a Technicians' School, as well as the usual training of army doctors.

If sufficient equipment can be obtained in a short time, and sufficient trained teachers and researchers, this College could become one of the finest and largest Army Medical Colleges in the world, quite able to vie with Millbank and Leningrad.

Some research is already under way on amigen, started by Dr Cotui from New York. Elaborate plant is being put up by Dr Hsu Cheng-Lun for making pyrogen-free distilled water. Drs. Li Kuan-Hua the biochemist, Wan Hsing the nutritional specialist, Rjung Tu-Shan the radiologist, and Ling Fei-Ching the bacteriologist, are already at work.

It was in connection with this College that I proposed to London that the joint British Council / Royal College of Surgeons team in orthopaedic surgery should come out to China.

(d) Municipal Food and Drugs Laboratory

This is housed in the Municipal Government Buildings, at no. 233 Hankow Road, and is at present in the charge of Dr Ma Bi-Teh (Peter Mar), another good man formerly at the Lester. It is equipped to deal with routine analyses of food and drugs, toxicology, etc. sufficient for the former international settlement but not big enough for Greater Shanghai.

Here we learnt some of the drawbacks of the taking over of the Shanghai Municipality by the Kuomintang. Bureaucratism must keep coming in. All wages have been lowered, and staff increased on the secretarial side, so that where before there were 6 chemists with 1 secretary, there are now 9 chemists with 5 secretaries. One analyst,

15 years with the laboratory, has had to leave owing to the lowered salaries, and another, Mr Tai Rjeng-Lai, 22 years of service, is thinking of it. Moreover, believe it or not, every municipal employee was requested to keep a daily diary of his political thoughts.

This laboratory suffered no war damage.

(e) Tongchi University

The buildings of this ~~university~~ former German-Chinese University at Wusung were not visited, but we are informed that they were shelled and are a complete ruin. We understand that the Djiaoyupu is searching for alternative temporary accommodation to allow of the return of the university from Lichuang and Sulfu in Szechuan.

(f) Aurora University

Also not visited. The Roman Catholic University, under French auspices, believed not to have suffered damage of any kind. The same applies to the affiliated Musée Heude.

II. PEIPING

- (a) Beiching (Pekin) University (Bei Ta)
- (b) Chinghua University
- (c) Yenching University
- (d) NARB Agricultural Experiment Station
- (e) National Library of Peiping
- (f) Peiping Academy
- (g) Peking Union Medical College
- (h) Chungkuo University
- (i) Chungfa University
- (j) Fu-Rjeng University

(a) Pekin University

This university, perhaps the foremost in China, has suffered relatively little war damage owing to the fortunate circumstance that the Puppet Government adopted it as their university and protected it. It has, in fact, benefitted to the extent of an entirely new Medical College constructed and partially equipped by the Japanese.

The College of Science occupies reconstructed temple buildings (Ma Shen Miao, dedicated to the horse-god Hayagriva) near the Coal Hill NE of the Forbidden City, which now houses the Ku Kung Bowukuan (Palace Museum). Benches are old-fashioned and very worn (cf. the Corn Exchange buildings at Cambridge) but the laboratories are spacious enough. A large amount of equipment is available, though some of it has been damaged by misuse and neglect. Stores are all intact, including, for example, much Pyrex glassware. This applies to Chemistry, Physics, and Biology, only Geology has a good modern building, also perfectly intact and functional. Advanced students were seen already at work in organic chemistry under Dr Tseng Chao-Lun and Dr Sah Ben-Tieh. Unfortunately the great majority of specimens in the Biological Museum have been lost.

Chemistry has its own departmental library, and there is also a general science library on the model of the Cambridge Philosophical Society's Library. No losses.

The University Library (comparable with the Bodleian or Cambridge UL) occupies steel stacks in a large building and houses a magnificent collection of books, both Chinese and western. There are many Sung dynasty books. Of course, no

western books new since 1937. But the library was enriched rather than despoiled during the occupation.

In general, the accommodation in the scientific departments might be assessed as from $\frac{1}{2}$ to $\frac{2}{3}$ that of Cambridge buildings in all branches. The buildings of the faculties of law, history, etc. are suffering slightly from lack of upkeep, but are in general in good condition.

The unexpected gift of the Japanese is the new Medical School which occupies extensive buildings in pink stucco, mostly of one storey, on a site just north of the Roman Catholic Cathedral and episcopal palace, the Bei Tang. (In parenthesis, the library of the Bei Tang, with its unique collection of 17th. century scientific books personally presented to Fr. Ricci by their authors, is in perfect preservation, and continues to enjoy the loving care of Fr. Verhaaren). The Japanese intended their buildings as an alternative to the American-founded PUMC (see below), and erected them in 1942. Present director is Dr Ma Wen-Chao, anatomist and cytologist. There are 680 students, including those in pharmacy, dental, and nursing. It is thought to be the biggest medical school now operating in China. The Japanese 4-year course has been restored to a 6-year course. A number of the PUMC staff worked here during the war, when PUMC was closed, e.g. Dr Liu Sse-Chih, the biochemist who worked formerly with Warburg in Berlin and Keilin at Cambridge. The medical school springs originally from an independent origin; then it became the medical school of Peiping University (National, but under German and Japanese influence); then when this split, the refugees forming the Northwestern Medical College, first at Sian and later at Hanchung, those who remained at Peiping were incorporated with ex-PUMC people into the Bei Ta Medical College (puppet and now "recaptured").

The only department really well equipped is that of Anatomy and Histology, since those were the subjects which interested the Japanese director. Pathology is inadequately equipped and Physiology even more so. We saw a class of pharmacy students doing toxicology practical work - they gave a very living impression and were using the American edition of the classical German book Autenrieth. Pharmacology is empty, it was never equipped. Biochemistry has a little apparatus but is dead. Dr Liu has a room but no funds sufficient to allow of his getting any research done. Public Health and Bacteriology are under the well-known Dr C.K. Lin (Ling Tsung-Yang) but have almost no equipment. A gas plant, but no money to work it.

This institute, which has been a valuable prize for the Chinese, urgently needs a lot of new equipment. (see leaflet attached, for the archives).

(b) Chinghua University

Chinghua, formerly one of the leading triad of universities in Peiping, has suffered the worst of the three. Located a long way outside the city to the NNW, just off the road to the Summer Palace, and in a splendid wooded campus of its own, it was used as a military hospital by the Japanese throughout the war, and they have not fully evacuated it yet. We visited it with Dr Chen Tai-Sun, Dean of its faculty of law and economics, on the day after the worst March snowfall for 30 years.

Its condition may be summarised by saying that while its buildings are intact, they are mere shells, everything having been lost from the interior except flooring and windows.

Accommodation was very fine; each of the buildings for Biology, Chemistry, and Physics, was (and is) equivalent to a normal large-sized Cambridge laboratory building. There was a galaxy of good men, e.g. ~~mmh~~ Dr Tai Fang-Lan and Dr Shen Tong and Dr Li Chi-Tong and Dr Tang Pei-Sung in biology, Dr Chang Tze-Gao and Dr Sah Ben-Tieh in chemistry, Dr Wu Yo-Hsun and Dr Yao Yu-Tai in physics.

While the buildings are now stripped (and this applies also to Engineering, which is very extensive), their condition is in all cases much better than Academia Sinica's Shanghai buildings. The Gymnasium was turned into a hospital kitchen by the Japanese, and the Library was used for wards. Its strength was in western books, but unfortunately only 30% of the books have so far been recovered from Japanese and other libraries in Peiping; and the rest are conjectured to have been removed either to Manchuria or Japan. The large auditorium in Byzantine style is all right, and the power plant remains, though whether damaged by neglect is not yet known. There are 4 or 5 dormitories, which can house a total of 1400 students, of which 15% women.

The university expects to reopen in the coming winter but it is estimated that it will take at least 2 years to rehabilitate it to anything approaching its pre-war condition. Since it is supported by the American Boxer Indemnity Fund (China Foundation) its rehabilitation may perhaps be sooner expected than that of some of the universities purely under the Djiaoyupu.

(c) Yenching University

This university is generally regarded as the leading "missionary" university of China. Its campus, about equally large, adjoins that of Chinghua, but its buildings, instead of being constructed in the purely modern style, are a mixture of western and Chinese, analogous to Ginling College and Nanking University at Nanking.

Yenching has suffered distinctly less than Chinghua because its buildings, instead of occupation by the Japanese army, were used as laboratories by the Japanese "North China Development Company". A considerable amount of scientific and technical equipment was left behind by this industrial concern after the surrender, and this would largely have compensated the university for its original apparatus which had been stolen, if Yenching had not had to dispute the Japanese stuff with the National Industrial Research Bureau (under the Chingohipu) which is setting up an NIRB branch at Peiping. However, an amicable settlement has been arrived at. This apparatus includes much chemical, some physical, and no biological.

The Yenching laboratories retain most of their woodwork, and a good many books. Much wiring was stolen. Much glassware is still needed. The physics machine-shop was quite ruined, and the biological museum specimens almost all destroyed. Biology, indeed, has suffered worst, only 2 microscopes being left, and one Japanese microtome. 150 have been ordered, but cannot be expected before the spring of 1947.

Counting departmental as well as the central libraries about 15% of the books have been lost. The University Library was very strong in Chinese books, even disputing a supremacy with Bei Ta, but has suffered severely by the loss of indivi-

dual volumes of "tsung-shu" collections, which it is almost impossible to replace. The collections of gazetteers of "hsien chih" have also suffered. On the whole, however, the library situation at Yenching is unexpectedly good. The Harvard-Yenching Institute has not suffered severely. The small archaeological museum started just before the war is intact.

Under the presidency of Dr Lu Chih-Wei active rehabilitation is under way, and carpenters, plumbers, and electricians are already busy. This was the only university in Peiping of which this could be said. The size of the laboratories is considerably less than Bei Ta or Chinghua Ta, since Physics and Biology share a not too big building and Chemistry and Mathematics share another. The Library is also distinctly cramped.

Loss of books from the Biological departmental library is assessed at 30%, and from the Physical 20%.

Considerable assistance will be needed to restore Yenching to its former state, though not nearly as much as in the case of Chinghua. (see leaflet attached for archives).

(d) National Agricultural Research Bureau Agricultural Experiment Station.

This was in many ways the surprise piece of the tour. An enormous building, probably the largest scientific institution in China, standing in over 600 acres of grounds, has fallen intact into the hands of the Chinese. It has been taken over by Dr Shen Tsung-Han, leading agriculturist of NARB, and is in perfect condition, though the Japanese were never able to equip it properly. It occupies a site on the road to the Summer Palace, about halfway between the city and the Chinghua-Yenching campuses, and obstructs the old imperial paved road so that all the traffic now takes the more modern tarred road.

The main building, in very modern architectural style, has a palatial reception suite, guestroom, and director's office, and there is even furniture stored ready for a visit of the emperor himself. It is a pity that the Japanese did not devote the money spent on these quite unnecessary extravagances to putting in better equipment. Out of 400 microscopes, only 3 good German ones are found, the rest being unsuitable for the finest work.

The library has relatively little European or USA literature, but a rich collection of the "hsien chih" local gazetteers or geographies, especially for N. China.

From Beipei 9 members of NARB have already arrived, but they are lost in the enormous building. Owing to the shortage of adequately trained Chinese agricultural biologists, several Japanese scientists are being kept on. We met four; Dr Kato (injurious insects of Mongolia), Dr Kondo (attractive: aphids and general horticultural economic entomology), Dr Hatai (unattractive: American-born: insect physiology), Dr Oeda (said to be distinguished: agricultural hydraulic engineering). In addition there are 36 Japanese field agriculturists staying on. They live in a separate mess building from the Chinese, and are believed not to be anxious to return to Japan. They are retained as specialists and in no case as heads of sub-departments.

This was the only case we met with of Japanese being retained as specialists. But it points up something

I have long said, namely that if the western democracies were not very liberal and prompt in sending technical experts to help the Chinese, the latter would be necessitated by the nature of the situation, to employ Japanese. In this connection, it may be of interest that just at the time of our visit, one ~~unidentified~~ American scientist had arrived at Yenching - Prof. Pitman of the Utah State Agricultural Experiment Station, to investigate the possibility of starting a sugar-beet industry in the Peiping region.

In this particular case, it would be in any case desirable to retain some Japanese, since all the entomological museum and herbarium records have been kept in that language. In general liaison with the Japanese experts is Dr Chu Feng-Mei, a distinguished plant pathologist who speaks and writes Japanese fluently and whose work, in connection with his ingenious apparatus for separating the spherical nematode-infested wheat grains from the normal long ones, will be found noticed in File 3.11.

As already said, the equipment of the institute is quite inadequate for its size, but what there is is mostly new. Some of it seems to be of fairly good quality, e.g. autoclaves, potentiometers, thermostat incubators, etc. etc., but much of it seems rather cheap and nasty, and in particular exception could be taken to the bench taps which were unanimously leaking and very badly designed for convenience of working.

There are departmental libraries. Agricultural and Soil Chemistry has a particularly good one, and also a good lot of apparatus. There was noticeable among the young Chinese technicians a much higher degree of unpleasantly formal bowing obsequiousness than anywhere else in China; no doubt the result of the long occupation of the North by the Japanese, it is to be hoped that this will now wear off after a time. They also, like many of the other citizens of Peiping, frequently wear operating-theatre gauze masks over the mouth and nose; this particular one in the Japanese bonnet, while perhaps not without value during the famous Peiping dust-storms, seemed to have no point in the kind of weather that prevailed while we were there.

The hydraulic engineering laboratory had some large equipment ~~and~~ similar to that at Kiluba and Wugung (see 3.11) but it was not too impressive in view of the much better facilities. Dr Ceda is credited with having linked hydraulic engineering and soil science more closely than others. It is estimated that while only 5% of N. China land is now made productive by irrigation, 30% could be.

Elsewhere in the grounds there is a veterinary vaccine plant, still functioning, now under a Dr Ma. It supplies, or can supply, all N. China, Manchuria, and part of Korea. Though there is plenty of equipment, the methods standardised by the Japanese are considered old-fashioned.

Dr Shen Tsung-Han was very desirous that Rothamsted should send out as soon as possible technical experts in one or all of the following subjects :-

- (i) alkaline soil rehabilitation (cf. Egypt)
- (ii) plant viruses (if possible Dr F.P. Bawden)
- (iii) locust control (if possible Dr B.P. Uvarov)
- (iv) water utilisation (wells, drainage, irrigation, etc.).

(See leaflet attached for our archives).

(e) National Library of Peiping

In the absence of Dr Yuan Tong-Li, this magnificent national library is under the direction of Drs. Ku Tze-Kang and Wang Fang-Lu; we met only the former. The library ~~was~~ was formerly under the China Foundation but is now directly under the Djiaoyupu.

Between July 1937 and Dec. 1941 there was no interference by the Japanese, but after Pearl Harbour they removed 29 cases of Kuomintang and Communist political pamphlets and books. Since the surrender about one fifth of these have been recovered, but not the best items. During the main part of the war, moreover, the Japanese prohibited public access to all newspapers between 1936 and 1941. Dr Ku was arrested after Pearl Harbour, but soon released, and the library came under the Puppet Djiaoyupu. None of the staff were dismissed, but 2 Japanese-speaking Chinese were introduced as liaison men. Though the Japanese army officers were allowed to borrow books, the losses during the occupation were very slight. No effort was made to remove rare books to Japan. Indeed, 500 cases of rare books which were found in Shanghai, and which had been on their way for safe keeping at the Library of Congress in Washington, were brought back to Peiping and reinstalled. The library was personally protected by the Japanese army commander in Peiping, who ~~was~~ refused to allow some of the books to be sent to Shanghai when the Japanese army authorities there requested it. All this was no doubt because the Japanese considered themselves as safe and as permanent in Peiping as in Tokyo.

The basement contains great treasures. A large collection of Tibetan, Mongol, and Manchu books is under the care of a Mongol lama, a former collaborator of Mr Yu Tao-Chuan, now in London. The MSS "Ssu Ku Chuan Shu" from the Rjeho Palace, is quite safe. Nearly 100 volumes of the MSS "Yung Lo Ta Dien" Dictionary (the largest single collection in the world) are all safe. The library has what is perhaps also the greatest collection of Sung dynasty books in the world, and this has been enriched since the surrender by the gift of a further large collection from a certain family made by Dr T.V. Sung. The library also possesses Liang Chi-Chao's desk and library, and a ~~very~~ big collection of stone rubbings, especially the Man versions of the classics.

(f) Peiping Academy

As regards buildings, the Peiping Academy in Peiping has fared somewhat better than the Academia Sinica in Shanghai, but unfortunately has as yet been unable to gain possession of its former property.

The main scientific building, which formerly housed the Institutes of Chemistry, Physics, and Nuclear Physics, adjoins the Sino-French University (Chungfa Ta; see below), and is at present in complete disorder. Nevertheless, most of the equipment is still in hand. The building, ~~was~~ which is about twice the size of an average Cambridge institute, was not occupied by Japanese soldiers until a short while before the surrender, and the representatives of the Academy had time to remove to safe places all the most important pieces of apparatus. Of the rest, such as routine chemicals, only about 10% was lost. At the time of our visit, however, little attempt at reorganisation seemed to be in progress, perhaps because of the difficulty of

transporting staff from Kunming.

The former buildings of the Institutes of Zoology and Botany are situated outside the city wall to the W a short distance along the road which leads to the western hills. These are still occupied by the Chinese Army, and were not visited by us, but we were told that apart from the books and equipment which was evacuated to Kunming and Wugung, nothing remains either of the laboratories or the zoological and botanical gardens.

The History Institute had a building in the Chungshai park, but it is still occupied by the Generalissimo's Headquarters, who have, however, promised to vacate the premises soon.

The Ming dynasty observatory on one of the wall towers to the ESE of the city, was visited by us, and all the instruments found to be in perfect condition.

The Geological Institute is unharmed.

In general the present situation is characterized by a lack of money and personnel for re-establishment and re-organization. Mr Su, the archaeologist, is camping out in one room of the Physics building, and together with Dr Yang Kuang-Bi, an organic chemist who was inactive throughout the occupation while lying low, and President Li Ling-Yu, of Chungfa Ta, seems rather appalled at the amount to be done and the lack of money or skilled help with which to do it.

(g) Peking Union Medical College

The former work of this very large and up-to-date institution of American character, under the China Medical Board of the Rockefeller Foundation, was, as is well known, to act as a training school for qualitatively highly trained Chinese physicians and surgeons, and as a focus for advanced Chinese medical studies. Its Hospital had 370 beds, and there were some 200 undergraduate and some 200 postgraduate medical students. It was fully the equivalent of any up-to-date teaching hospital in the USA.

The administrative offices have now been taken over by the Generalissimo's Kuomintang/Communist/American Executive Headquarters. Apart from this febrile activity, the rest of the laboratories and hospital, though in perfect structural condition, and by no means lacking scientific equipment (though most of the medical equipment was stolen), are unused, while the dust slowly accumulates and complete emptiness reigns.

The only part of the organization which is functioning is the Library, which, with its perhaps unique collection of old Chinese medical books, is mercifully intact. This has recently been opened to the public.

The China Medical Board is receiving a good deal of blame and criticism for its extreme slowness in deciding on the future of PUMC. It will soon be a whole year since the end of the war, and still no decision is taken. It may well be that the Board is uncertain as to how much control it will have to turn over to the Chinese Government, but it is most unfortunate that a decision could not have been speeded up. This gives us, of course, something of a start with regard to the Lester, if we were in a position to take it.

Many of the staff, such as the eminent biochemist, Dr Wu Hsien, whom we met, were lying low and quite inactive through the occupation, and are eager to resume productive work.

(h) Chungkuo University

This is a Private, not National, University, and is therefore akin to Nankai University at Tientsin, but differs in having been more political and less technological in aim and origin than Nankai, and having never had anything like as good ~~as~~ a reputation as the latter. It has served as an overflow university from the more famous ones in Peiping. It was founded in 1913 by Wang Cheng-Ting (later Foreign Minister and Ambassador to the USA until a famous scandal sent him into other work; I think he is now connected with the Chinese Red Cross) at a time when it was the ambition of every well-known scholar to found a university. It is said to be now less closely associated with the Kuomintang political circles than it was originally.

It occupies large and grandiose but decaying buildings, formerly the palace of a Manchu prince. The laboratories are very small; Physics and Chemistry occupy one floor only of their own building, and Biology, though it has a building of its own, is poorly equipped. Obviously only elementary teaching, and no research, is possible.

The University Library is not bad, but no better than several of the universities had while in exile. Total number of students over 2000.

Present President is ~~named~~ Mr Ho Chi-Kung, a military man, sometimes Mayor of Peiping, and significantly a friend of Gen. & Feng Yu-Hsiang's.

Funds are obtained mostly from student fees, but there are subsidies from the Djiaoyupu and contributions from prominent politicians and merchants. It is rather hard to see what the future of this institution is. At the time of our visit there were plenty of students about, and during the war the standard has been higher than previously owing to the presence on the staff of good men who will now return to Chungkuo Ta, Bei Ta, Yenching Ta, etc.

(i) Chungfa University

This is the Sino-French Boxer Indemnity University, to be distinguished from such other French efforts as Aurora University in Shanghai because it is definitely secularist in atmosphere, while they are Roman Catholic. In this way the spirit of Voltaire and Diderot is approachable by Chinese students. There is support also by the Djiaoyupu, by student fees, and from some private endowments. Throughout the war and in fact since the fall of France the university has been inoperative, since the Boxer Funds were frozen. It is expected that they will shortly again become available and that the university will reopen. It had an exiled ghost of itself in Kumnang, which was little more than a group of lath-and-plaster huts, but which served to maintain some continuity.

President Li Ling-Yu (also a member of the Peiping Academy, the Physics-Chemistry building of which adjoins the university) told us that some research, especially in Sinology, for which there is a special Institute, went on through all the occupation. The library of this Institute, as well as the University Library, is to all intents and purposes intact. The university had formerly three agricultural research stations outside the city, and one of these was completely destroyed. Normally there are some 400 students, of which few have any previous French connections. Laboratories are

relatively small and indifferently equipped but were not damaged appreciably during the occupation.

(j) Fu-Rjeng University

This is the Roman Catholic University of Peiping, at which the western staff is largely German or Austrian. The same remarks as were made about Chungkuo Ta are applicable to it, i.e. the standard has been somewhat raised during the war by the presence of good men from other universities of greater fame who will now return to them. On the other hand Fu-Rjeng Ta is a great contrast to Chungkuo Ta because it is excessively neat, clean, and well-organized.

Fu-Rjeng's main buildings are in the form of two large quadrangles about the same size as the first court of St. John's College, Cambridge. The ~~main~~ front and back parallel with the road consist entirely of classrooms, the chemical, physical and biological laboratories occupy the connecting wings at right angles to the road. The central part at right angles to the road contains the University Library. There are also departmental libraries. We viewed that of Psychology and Philosophy, which was choice enough, though characteristically lacking anything on psycho-analytic matters owing to the theological censorship. That of Sinology, in which department the journal "Monumenta Serica" (really the university's chief claim to fame) is prepared, seemed to be excellent. The University Library was very well arranged and apparently untouched by the war.

There is a separate Women's College in a very fine old Mancini Prince's Palace adjoining, with the buildings in excellent repair, including a reading-room of its own. Women students attend some of the same classes as the men, but have some special buildings of their own, such as a Home Economics Laboratory with two sections, one for Western, and one for Chinese, cooking methods.

Normally there are about 1500 men students and 900 women. Only a small percentage are Roman Catholics, and there seemed to be a commendable absence of direct propaganda addressed to the student body. The general atmosphere was quite impressive.

III. NANKING

- (a) Academia Sinica
- (b) National Central University
- (c) Nanking University (Ginling Ta)
- (d) Ginling (Women's) College
- (e) National Geological Survey
- (f) National Institute of Health (NIA)

(a) Academia Sinica

Nanking is the home headquarters of the National Academy, and the buildings are delightfully situated in a spacious campus which includes the wooded hill of Chintienshan ("Hill of Respect to Heaven") adjacent to the famous Buddhist temple Chimingsse ("Cockerow temple") where the Liang emperor Wu-Ti starved himself to death as an act of Buddhist piety. This area is separated from the Houmu Lake by the city wall, and is adjoined by the large campus of National Central University to the South.

The buildings were completed only six months be-

fore the war, and fortunately have not suffered to any great extent. There are 4 main buildings at Chintianshan (a) the Geological Institute, with a roof of blue tiles like the Temple of Heaven at Peiping, (b) the History and Philology Institute, with a roof of green tiles like a mosque, (c) the Sociology Institute and Headquarters, with a mixed colour roof. There is then (d) the Meteorological Institute, particularly well planned, on the top of the hill. Besides these, there was the Biology Institute, some distance away, and in an old building, and the Psychology Institute, in a small building within the Chintianshan campus.

It is now intended to move the Headquarters offices entirely to the Psychology building, since Psychology is going to Shanghai, thus liberating the joint building entirely for Sociology. The old Biology building will be used as a dormitory, since Biology will be at Shanghai for some time to come.

In the midst of these buildings there is the grave of a Japanese scientist, Dr Serizai, formerly of Shanghai Science Institute, who came to Nanking immediately after its fall and made the Japanese army commander issue orders to respect all intellectual installations. He then died in Nanking a few weeks later. The Academia Sinica people regard him as in some sort the saviour of their property, even though his actions may have been done on behalf of the Japanese Government, and therefore do not propose to remove the tomb. In this connection, there is still one Japanese scientist continuing work under Academia Sinica; from the publications I saw, he is evidently a brilliant comparative anatomist specialising on molluscs, but I have mislaid his name.

Though the structural condition of the Geology building is excellent, the inside is in some confusion. Over 100 boxes of books and specimens have been located in Peiping; these will presently be brought back. A good deal of Japanese zoological books and apparatus is in the building; this will be transferred to the Biology Institute of AS at Shanghai in the former Japanese building there. Among the large number of rock specimens remaining, a high proportion have unfortunately lost their labels, and it will take a lot of work to get them straight again. Fortunately the entire stock of Geological Publications, including many with elaborate maps, formerly issued by Academia Sinica, is intact and in good order on the top floor. The building also contains many books belonging to Chungyang Ta library and other libraries, now awaiting their return.

The building of History and Philology is in excellent shape, and work is actively going on in packing up a large quantity of material, books, MSS, objects of art, etc. which had been brought here by the Puppet Government from the Palace Museum in Peiping (Ku Kung Bowikuan) for exhibition. Barring accidents in river transit, there will be no loss in the splendid library of the institute, which will come back from Lichuang in due course.

At the back of the Sociology building, there is a special building containing steel stacks with the whole of the Academia Sinica's publications, all intact. It is great blessing that these have not been interfered with, since they are urgently wanted by many Western libraries.

Rehabilitation was most active at the Meteorological Institute on the top of the hill; carpenters, plasterers, etc.

Unfortunately there have been considerable losses from its library, though most of it should return safely from Beipei. The institute is the finest Meteorological Institute I have seen anywhere.

The Academy's famous Astronomical Observatory is located some distance out of the city, to the NE on the top of the Purple Mountain, and we made the trip up there with Dr Wang Chia-Chi (Director of the Zoological Institute) who is acting in charge of all Academia Sinica installations in Nanking at present.

In general it may be said that the damage is not as great as had been feared. The worst damage has been done to the Dormitory and Office building, which is also the largest on the site, which has been very badly knocked about, and now retains only walls and roof, all window-frames and much flooring having gone, and of course all piping and wiring. The Japanese set up radiolocation equipment in and around the Observatory, and their equipment is still there. The aerials at any rate are of very unimpressive construction, but we were of course not able to form any opinion of the cases of radio apparatus.

The transit building is in good shape, with the bearings still in place. The domes are all right, and the dome buildings have intact floors and all mountings still there, though rather rusty. It would seem that they are quite repairable. The buildings of the equatorial and the "changing stars" instrument are also all right. In the rooms under the biggest dome building there is flooring and even some glass-fronted shelving remaining. The director's house is not in bad shape but needs reglazing and repainting. Estimated cost of total repairs is \$ NC 100,000,000.

There are in the Observatory grounds two beautiful Ming Dynasty instruments brought from Peiping, and larger than any at present on the Wall Tower there (see above). These have not been damaged in any way.

Halfway down the hill road there are the buildings of the Terrestrial Magnetism Laboratory, but these have been so completely destroyed that only the walls are standing.

(b) National Central University

These buildings, which are of impressive size (equivalent to Cambridge laboratories, department for department), surrounding a central Great Hall, and which look, like the Legislative Yuan building, somewhat Russian in style, were used by the Japanese, as in the case of Chinghua, for a military hospital. The Japanese have now been entirely cleared out. The gutting has happily been not nearly so complete as at Chinghua, and a good deal of benches, woodwork, etc. is left, though perhaps because the buildings were not originally so good as Chinghua's, their structural condition, and also their flooring, plastering and painting, is now somewhat dilapidated. Active rehabilitation is going on, though very slowly on account of lack of funds and manpower. It is thought that the students on their return may be willing to do a good deal of work such as painting.

As regards scientific equipment, all is gone, just as at Chinghua. It is reckoned that of the 50% which could not be evacuated to Chungking (Shapingta) all has been lost.

The central auditorium fortunately retains its chairs.

In the University Library all the steel shelving was taken away by the Japanese. It is reckoned that some 70% of the books were taken to Shapingba, these will return, but the remainder have all been lost.

The Physics, Chemistry, Biology, Medical and Dental buildings have good lecture-rooms, but the former are in rather bad repair. The machine-shop is ruined and the gas generator lost. The central boiler building is flooded and whether the machinery can be made to work again is not known.

The only redeeming feature is that the Japanese built a large number of brick and wooden buildings on the campus (e.g. 9 rows of brick one-storey structures in excellent repair, with good flooring and windows, and these will serve well for the accommodation of some of the university's 4500 students. Some little gardens for the Japanese hospital patients make the place quite cheerful.

Nothing is left inside the Gymnasium, which was used as a kitchen. The Middle School buildings will also be available for the university, since it is not planned to return it to this site.

(c) Nanking University (Ginling Ta).

One of the better "missionary" universities, this institution comprises a cluster of grey buildings in semi-Chinese style (cf. Yenching Ta, and in Nanking Academia Sinica and Ginling College) on a rather small campus out through by a road. It is substantially unaffected by war and occupation because the Japanese chose to house their Puppet National Central University on its campus. All the scientific buildings are in good preservation, with wiring, plumbing and woodwork intact, together with a full complement of apparatus, though much of it now needs renewing on account of sheer age, i.e. there are no modern balances, centrifuges, etc. The benching is also old and worn. In Chemistry we saw active repairs proceeding.

Normally the number of students is something over 1000 with 150 women.

The only real damage has been to the library. We there met Mr Cyril Bates, the only Westerner now on the campus, who reported that about 10% of the books are lost, and - worst of all - the puppets destroyed the card catalog which had taken 25 years to build up. There are, of course, no new books since 1937. The size of the library is estimated as some 30,000 foreign and some 70,000 Chinese books; the collection being especially rich in "fang chih" (geographies and gazetteers) in which it is considered to take the third place among world libraries.

Mr Bates had a criticism of the caretakers put in by the Djiaoyupu after the surrender. They at once proceeded to "lose" the keys of the library, so that now new locks and keys will have to be provided.

Some other damage was done by Japanese or Puppets. Two specimen cells from the ancient Examination Hall at Nanking were converted to latrines, but are reconvertible. All maps and farm implements were removed from the university farms. Wiring and radiators were torn out from the otherwise intact library building. At one time the campus housed 4000 refugees.

(d) Ginling (Women's) College (Ginling Mu Ta)

A visit to the campus of this, the most famous women's college in China, shows at once that the buildings in semi-Chinese style were, and still are, both colourful, well-constructed, and comfortable. Unfortunately the damage has been rather severe on the their contents. While the structures are all intact and much glazing and wiring remains, the Japanese tore out all the radiators, dirtied the paint, knocked the plaster about, and cut ~~down~~ off the legs of the formerly beautiful furniture.

In the Science Building there remains still some woodwork, but 90% of the apparatus and equipment has been lost. The Japanese left behind a few bottles of chemicals only. Some of the rooms in this building are now being used by UNRRA people for sorting incoming old clothing.

The Music Building and Auditorium is in very good condition.

So also is the Library, and the books are now coming back, having been taken by the Japanese and placed in a library attached to their Vaccine Production Plant. 30% of the books are already back (though there is not enough shelving to receive them), and it is expected that another 30% will shortly be recovered. Expectations about the last 30% are uncertain. Some repairs were seen in progress, and the books are being sorted. Some of the classrooms are in active use by a Girls' Middle School attached to the College, and the gymnasium, not damaged, was very much in use.

Ginling College had previously 200 students, but in Chengtu has had over 400. The institution was originally modelled on Smith College in the USA and still receives degrees from New York State University. Its education was, at any rate as far as the sciences were concerned, fully up to average B.Sc. standard, but it was never possible to do any appreciable amount of research in the available accommodation or with the facilities at Ginling College.

(e) National Geological Survey of China

The Geological Survey has three or four fine buildings in very modern style in good grounds to the E of the main part of the city, but within the city walls. Fortunately they are in perfect condition. However, the large Soil Science and Fuel Technology Laboratories on an adjoining site have been somewhat knocked about, and have not as yet been vacated by the Chinese Air Force which commandeered them at the time of the surrender.

One of the surprises of the tour was to find that the Japanese had taken great trouble to collect books from dozens of libraries all over Nanking and place them, in some cases merely stacking them on the floor, in such a way as to fill the main building of the Geological Survey from floor to ceiling. The idea seems to have been to start a central scientific library. Libraries ravaged for this purpose included the Government Presidential Secretariat Library, the Executive Yuan Library, the Legislative Yuan Library, the Examination Yuan Library, National Central University Library, Academia Sinica Libraries, etc. etc. Very active sorting has now ~~having~~ been going on for some time under Mr Chou and Mr Ting of Academia Sinica, and since the labels were never removed, it is anticipated that the vast majority of the books will be returnable to their original owners, which include many

private individuals. The number of books thus collected amounts to over 1½ million. There is, for example, an enormous room full of "fang chih" (geographies and gazetteers) which some people feel it is rather a pity now to separate. I spoke to Dr Han Li-Wu about this, and there may be a chance that they will be kept together; failing this the catalog made by the Japanese could be printed and serve as a union catalog for all the Nanking Libraries.

For reasons unknown the Japanese transferred the very valuable collection of early Ching dynasty painted MSS maps from the National Library of Peiping to the Geological Survey in Nanking, but these are all intact and are being returned.

The stores of the Geological Survey publications are approximately intact. The rock collections are also more or less all right, but many labels have been lost or confused.

(f) National Institute of Health (Medical Research) and National Health Administration.

NHA and NIH have several very large buildings on a spacious site to the east of the city and south of the Geological Survey. The HQ of NEPB (National Epidemics Prevention Bureau - vaccine manufacture) is also here, as well as the National Central Hospital (800 beds). The organisation of NHA, which is rather complex, is as follows :-

- ~~There~~ There are 4 Divisions as well as Administrative HQ
Administrative HQ has 4 Sections :
- (1) Medical Services (Control of Government Hospitals and Registration of medical men) - Dr Fang I-Chi
 - (2) Health Services (Public Health inoculation and mother Stations, etc.)
 - (3) Epidemic Prevention (Vaccine Production Plants and Field Units) - Dr Tang Pei-Fen, Dr Pollitzer the plague expert, etc.
 - (4) General Affairs
- Division I Operation of Government Hospitals
Division II National Institute of Health (Medical Research) corresponding to Mt. Vernon and Mill Hill in the MRC - Dr Chi Chang-Gan
Division III National Epidemic Prevention Bureau (operation of the plants at Kunming, Lanchow, Peiping, etc.)
Division IV a new Bureau of Pharmaceuticals and Biologicals - Dr Yang Yung-Nien

All these bureaus and laboratories are located, rather mixed up together, in the Nanking buildings. Nearest the road is the large hospital. Behind that to the right is the Nurses Dormitory, the Auditorium, and the NIH lecture-rooms and teaching laboratories. Behind, in centre line, is a large laboratory building used partly as offices for NHA HQ and partly as laboratories for the Divisions of Nutrition and Public Health in NIH. Next behind, to the right, is a walled-in inclosure used by the Japanese for plague research (probably for its war dissemination as well as its control) and now converted to a storehouse. Behind again, in centre line, is the NIH

Bacteriological building. Finally dormitories for research staff and students.

On the whole, the buildings are in excellent condition, but much apparatus and wood fittings have been lost. These latter are now being actively replaced, but under great difficulties, as one teakwood bench was costing at the time of our visit \$ HC 1,070,000. Many of the empty laboratories are being used as offices and dormitories. Besides the sections mentioned above, there is space for Sanitation Chemistry, Medical Entomology, Parasitology and Immunology. Buildings of a former vaccine production plant are available for use. It is expected that the whole staff and equipment of the institutes at Koloshan will be transferred here as soon as possible.

IV. HONGKONG (a) Hongkong University
(b) Queen Mary Hospital

(a) Hongkong University

is, without question, the most seriously devastated of all the institutions visited on this tour. In a number of cases, nothing is left of buildings but the walls.

The Physics, Chemistry, and Biology building, in fine modern style on a curving site overlooking the harbour, is still structurally intact, but absolutely nothing is left save walls, concrete floors, and roof. Woodwork, plumbing, flooring, wiring, and steel windowframes, are all gone, to say nothing of scientific equipment. The position here is much worse, therefore, than Chingma in Peiping or Academia Sinica in Shanghai.

The Notung and Peel Engineering buildings just adjacent, are not so badly dealt with as their glass windows and flooring are intact. But there is practically no equipment left inside, and they are at present being used by the Navy as godowns.

The buildings of Physiology, Anatomy, and Pathology on the campus proper are in as bad a state as the Physics-Chemistry-Biology building. The scale of all these buildings is rather small, probably for each department one half to one third of the average accommodation at Cambridge, at most. We were shown the room which formerly contained Prof. Lindsay Ride's precious and unpublished collection of data on physiological anthropology. We were also struck by the state of the former Pathological Museum, where the concrete floor, deprived of its boards, is strewn all over with dried but recognisable pathological specimens, such as skulls, femurs, malignant growths, etc., the whole gloomily contemplated by two sentries from the Jaipur Rifles - this is a scene which will long remain in our minds. The Surgery building still possesses its glass but is otherwise gutted.

As for the Great Hall, it is gutted, and has no roof, but a graduation ceremony with some 30 students was recently held in it as a symbol of revival.

The University Library, for some extraordinary reason, is to all intents and purposes intact. It includes the valuable Hankow Club collection of books on China in foreign languages, said to be one of the most important of its kind in the world. The Librarian, Mr Chen Ching-Bao, stuck to his post throughout the occupation and to avoid

ered to have been largely instrumental in saving the library. Deposited in it are collections belonging to individual professors. It also contains the complete issue of publications of the Chinese Geological Society and the Geological Survey of China for around 1938, covering, I think, the period while Beipei was still in touch with Hongkong. Arrangements could and should now be made between the organisations concerned for the distribution of these issues to their original destinations in the geological libraries of the world. Doubtless it had been intended to send them out from Hongkong but the attack and fall took place before this could be done.

The Library catalog is apparently in good order.

The Students' Union is gutted and roofless.

The Fung Ping-Shan Chinese Studies Library and building is intact and in good order.

The Students' Hostels are all gutted inside, but only one (that built by the CMS) has lost its roof.

The Northcote Teachers' Training College is in good condition and has just been reopened.

The Nethersole Hospital is all right and working.

Before the war there were rather over 600 students, all residential.

(b) The Queen Mary Hospital

This magnificent hospital, which stands in an isolated position to the E of the city commanding a magnificent view, is substantially unharmed, though it was used by the Japanese, first as a hospital and then as godowns. It was finished in 1937 and is really more up to date than PUMC in Peiping. The only damage to be seen is the ripping out of some glass cupboards and the looting of some wash-basins by the Japanese.

The Radiology department here is outstanding and contains the only X-ray deep therapy apparatus in Asia, or at any rate in the Far East; this is used for focussing X-rays on pelvic cancers, for instance. It is only temporarily out of use as the Japanese drained all the oil out of it (? to cook with). The Japanese did not make use of the excellent oil drip steam cooker in the hospital kitchen, nor of the large central heating plant, also oil-fired, probably not understanding their use.

The Hospital now has 395 ordinary patients and 200 from the Navy. It is expected to return shortly to its normal function of serving the civil population of Hongkong, and will undoubtedly constitute a magnificent teaching hospital, when the teaching equipment has been replaced.

We were shown round the Hospital and University by Prof. Gordon King (Gynaecology) now acting ADMS for the Colony. We also met Col. Rowell, Director of Education, and other officials.

Summary

It may be convenient to summarise the information we have gained according to the following table :-

INSTITUTIONS :-

| | <u>Enhanced</u> | <u>Unaffected</u> | <u>Damaged</u> | <u>Seriously Damaged</u> | <u>Ruined</u> |
|----|------------------------|--------------------------|---------------------------|--------------------------|-----------------------|
| 1) | Acad. Sin. S'hai | Municip. Food S'hai | Lester Med. S'hai | Acad. Sin. S'hai | Tongchi Ta S'hai |
| 2) | Army Med. Ad. S'hai | Aurora Ta S'hai | Yenching Ta P'pg | Chingma Ta P'pg | Hongkong Ta H'kong |
| 3) | Bei Ta P'pg | Peiping Nat. Library | PUMC P'pg | Peiping Acad. P'pg | |
| 4) | WARB P'pg | Chungkuo Ta P'pg | Chungfa Ta P'pg | Acad. Sin. H'kg | |
| 5) | | Fu-Rjong Ta P'pg | Acad. Sin. H'kg | | |
| 6) | | Nanking Ta H'kg | Chungyang Ta H'kg | | |
| 7) | | Qu. Mary Hosp. H'kong | Cinling Hu Ta H'kg | | |
| 8) | | | Nat. Geol. Surv. H'kg | | |
| 9) | | | Nat. Inst. Health H'kg | | |

It will be seen that the above table has the form of a symmetrical statistical distribution curve - in other words, though the general damage is severe it is not as bad as it might have been, or as might have been expected. Chinese intellectual installations have of course been saved mainly by the atomic bomb which brought about the end of the war without extensive fighting in the eastern cities.

In the above table it has been necessary to insert Academia Sinica in two cities in duplicate, since their gains and losses have both been extensive.

Finally, it might be said that there is nothing here which could not be fairly quickly repaired by the Chinese Government, if it were in a financially sound position and if it had political stability. Unfortunately it is just these provisos which can not be assumed. A good deal of aid to China in reconstructing cultural, scientific and educational machinery is still therefore urgently necessary.